# Board of County Commissioners
# Hearing Date: August 6, 2025
## *Canyon County Development Services Department*

## PLANNING DIVISION ADDENDUM

| | |
|---|---|
| **CASE NUMBER:** | **RZ2022-0012** |
| **APPLICANT:** | **Elizabeth Allen, Bristlecone Land Use Consulting** |
| **PROPERTY OWNER:** | **6 Point Properties LLC (former owner: McGuire)** |
| **APPLICATION:** | **Conditional Rezone of Parcel R32862 from an "A" Zone to a "CR-R-1" Zone, subject to conditions of a development agreement.** |
| **LOCATION:** | **62.97-acre parcel located adjacent to 15453 Karcher Road (SH-55), Caldwell; also referenced as a portion of the NE¼ of Section 16, Township 3N, Range 3W, Canyon County, Idaho.** |
| **PLANNER:** | **Dan Lister, Planning Supervisor** |
| **P&Z RECOMMENDATION:** | **Approval Subject to Dev. Agreement Conditions** |

**SUMMARY:**
The applicant requests a conditional rezone from "A" (Agricultural) to "CR-R-1" (Conditional Rezone – Single Family Residential. The development agreement will restrict future subdivision to an average lot size of one acre with no more than 48 buildable lots and will require fire hydrants connected to a well, water tank, or an alternative method deemed appropriate by the Caldwell Fire Department.

The Planning & Zoning Commission heard the case at a public hearing held on June 12, 2025. After deliberation, the Planning & Zoning Commission recommended approval with conditions (**Exhibits 1 & 2**).

- At the March 20th hearing, the Planning & Zoning Commission considered a zoning map amendment (rezone) to an "R-1" zone with no conditions. The applicant requested the zone to select the best development at the time of platting based on the county and city's future land use designation. The "R-1" zone allows for a higher density if connected to city services (CCCO 07-10-21(2). However, based on concerns from neighbors regarding city density and growth, the Planning & Zoning Commission asked the applicant to amend the application to a conditional rezone to restrict lots to one acre. The hearing was tabled to allow the applicant time to amend the application (**Exhibits 1a & 2a**).

The Staff report packet dated March 13, 2025, and June 12, 2025, and all supporting material are contained in **Exhibit 3**. Any additional comments received for the subject public hearing may be found in **Exhibit 4**. A draft version of the Board's Findings of Fact, Conclusions of Law & Order (FCO) may be found in Exhibit VI. Any additional supporting documentation may be found in **Exhibit 5**.

**EXHIBITS:**

1. **Planning & Zoning Commission FCOs – June 12, 2025**
2. **<u>Planning and Zoning Commission Minutes</u>**
   a. March 20, 2025
   b. June 12, 2025
3. **Staff Report Packet – June 12, 2025 (includes March 20th Packet)**
4. **Comments Received by July 27, 2025**
   a. Nampa Highway District #1; Received May 1, 2025

b. Idaho Dept. of Environmental Quality Received on July 7, 2025
c. Sue Reizenstein Received on July 9, 2025

**5. Additional Supporting Documents Received by July 27, 2025**

a. Applicant's PowerPoint Presentation

**EXHIBIT 1**

**Planning and Zoning Commission FCOs – June 12, 2025**

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Case No. RZ2022-0012

BOCC Hearing: August 6, 2025

**PLANNING AND ZONING COMMISSION**

**FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER**

In the matter of the application of:
**6 Point Properties LLC – RZ2022-0012**
The Canyon County Planning and Zoning Commission considers the following:

1) Conditional Rezone of Parcel R32862 from an "A" (Agricultural) Zone to a "CR-R-1" (Conditional Rezone – Single Family Residential) Zone.
2) Development agreement limiting development to an average lot size of 1 acre, with no more than 48 buildable lots.
3) Location: The 62.97-acre parcel is located adjacent to 15453 Karcher Road (SH-55), Caldwell; also referenced as a portion of the NE¼ of Section 16, Township 3N, Range 3W, Canyon County, Idaho.

**Summary of the Record**

1. The record is comprised of the following:

   A. The record includes all testimony, the staff report, exhibits, and documents in Case File RZ2022-0012

      a. All exhibits can be found in the staff report dated March 20, 2025, and the addendum dated June 12, 2025.

**Applicable Law**

1. The following laws and ordinances apply to this decision: Canyon County Code of Ordinances (CCCO) §01-17 (Land Use/Land Division Hearing Procedures), CCCO §07-05 (Notice, Hearing and Appeal Procedures), CCCO §07-06-01 (Initiation of Proceedings), CCCO §07-06-07 (Conditional Rezones), CCCO §07-10-27 (Land Use Regulations (Matrix)), Idaho Code §67-6511 (Zoning Map Amendments and Procedures), and CCCO §09-01-21 (Area of City Impact Agreement).

   a. Notice of the public hearing was provided per CCCO §07-05-01 and Idaho Code §67-6509.

   b. The presiding party may establish conditions, stipulations, restrictions, or limitations which restrict and limit the use of the rezoned property to less than the full use allowed under the requested zone and which impose specific property improvement and maintenance requirements upon the requested land use. Such conditions, stipulations, restrictions, or limitations may be imposed to promote the public health, safety, and welfare, or to reduce any potential damage, hazard, nuisance, or other detriment to persons or property in the vicinity, to make the land use more compatible with neighboring land uses. *See* CCCO §07-06-07(1).

   c. All conditional rezones for land use shall commence within two (2) years of the approval of the board. If the conditional rezone has not commenced within the stated time requirement, the application for a conditional rezone shall lapse and become void. *See* CCCO §07-05-01

2. The commission has the authority to exercise powers granted to it by the Idaho Local Land Use and Planning Act ("LLUPA") and can establish its own ordinances regarding land use, including subdivision permits. *See* I.C. §67-6504, §67-6511.

3. The commission shall have those powers and perform those duties assigned by the board that are provided for in the local land use planning act, Idaho Code, title 67, chapter 65, and county ordinances. CCCO §07-03-01, 07-06-05.

4. The burden of persuasion is upon the applicant to prove that all criteria are satisfied. CCCO §7-05-03.

5. Idaho Code §67-6535(2) requires the following: The approval or denial of any application required or authorized pursuant to this chapter shall be in writing and accompanied by a reasoned statement that explains the criteria and standards considered relevant, states the relevant contested facts relied upon, and explains the rationale for the decision based on the applicable provisions of the comprehensive plan, relevant ordinance and statutory provisions, pertinent constitutional principles and factual information contained in the record. The County's hearing procedures, adopted per Idaho Code §67-6534, require that final decisions be in the form of written findings, conclusions, and orders. CCCO §07-05-03(1)(I).

**The application, RZ2022-0012, was presented at a public hearing before the Canyon County Planning and Zoning Commission on June 12, 2025. Having considered all the written and documentary evidence, the record, the staff report, oral testimony, and other evidence provided, including the conditions of approval and project plans, the Planning and Zoning Commission decides as follows:**

## CONDITIONAL REZONE CRITERIA – CCCO §07-06-07(6)

**1. Is the proposed conditional rezone generally consistent with the comprehensive plan?**

**Conclusion:** The request is generally consistent with the 2020 Canyon County Comprehensive Plan.

**Findings:** (1) The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c).

"The residential designation is a zone specifically set aside for residential development. A minimum lot size is established in order to accommodate a septic system and a well on the same parcel. In areas where soils are not adequate to support septic systems, development alternatives must be considered. Residential development should be within areas that demonstrate a development pattern or residential land uses" (Page 12 of the 2020 Comp. Plan).

(2) The subject parcel is located in the Caldwell Area of City Impact. The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d). The "Residential Estates" classification includes land that is "suitable for low-density residential uses of a semi-rural character. This classification is intended to protect and enhance single-family living areas that are rural in character or otherwise transitional in relationship to more urbanized residential areas of higher density. Such areas may not necessarily have a full range of urban utilities and services contingent upon topography, density, lot size, and development designs. The residential density range shall not exceed two (2) dwelling units per gross acre" (Page 44 of the 2040 Caldwell Comprehensive Plan).

(3) Based on population projection by COMPASS for Caldwell and Canyon County, the applicant finds the request addresses housing needs by providing residential development, which "will help reduce the need to provide housing in rural areas that are not anticipated to be annexed into city limits" (Exhibit A.2).

(4) The request aligns with many goals and policies of the 2020 Comprehensive plan, including, but not limited to:

- ***Property Rights Goal 1:*** *Canyon County will ensure that land use policies, restrictions, conditions, and fees do not violate private property rights or create unnecessary technical limitations on the use of property.*
- ***Population Policy 2:*** *Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses.*

- ***Economic Development Policy 6:*** *Encourage commercial and residential development in a controlled, planned, and constructive manner, which will enhance, not destroy, the existing lifestyle and environmental beauty of Canyon County.*
- ***Land Use Goal 1****: To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.*
- ***Land Use Policy 1:*** *Review all residential, commercial, and industrial development proposals to determine the land use compatibility and impact to surrounding areas.*
- ***Land Use Residential Policy 1:*** *Encourage high density development in areas of city impact.*
- ***Natural Resources Policy 4:*** *Use appropriate zoning designations and other strategies to minimize adverse impacts of development on natural resource areas.*
- ***Hazardous Areas Policy 2:*** *Discourage development in or near natural hazardous areas, such as airports, power line corridors, electrical substations, flood plains, unstable soil areas and steep slopes, high velocity wind and storm prone areas, except for industries, which may require these conditions.*
- ***Public Services, Facilities and Utilities Goal 1:*** *Canyon County will endeavor to provide public services and facilities related to solid waste management, emergency medical service, development review, law enforcement, community health, and other services for which it is responsible in a fair, efficient, and professional manner.*
- **Transportation Goal 1.** *Coordinate with and assist Canyon County Highway Districts, the Idaho Transportation Department (ITD), Valley Regional Transit (VRT), and the Community Planning Association of Southwest Idaho (COMPASS) in developing and managing a well-planned, sustainable, multimodal transportation system that provides for the safe, efficient, cost-effective movement of people and goods and that supports the region's residential, commercial, industrial, and public development vision.*
- ***Special Areas, Sites and Recreation Goal 1:*** *To encourage the preservation of recreational, historical, archeological, and architectural landmark areas of the county for the beneficial use of future generations.*
- ***Housing Goal 1:*** *Encourage opportunities for a diversity of housing choices in Canyon County.*
- ***Agriculture Policy 3:*** *Protect agricultural operations and facilities from land use conflicts or undue interference created by existing or proposed residential, commercial, or industrial development.*

*For supporting evidence, see the findings in the subsequent criteria.*

(5) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**2. When considering the surrounding land uses, is the proposed conditional rezone more appropriate than the current zoning designation?**

**Conclusion:** In consideration of the surrounding land uses, the proposed request to an "CR-R-1" (Single-Family Residential) zone is more appropriate than the current "A" (Agricultural) zone.

**Findings:** (1) The subject parcel, approximately 62 acres, is zoned "A" (Agricultural, Exhibit B.2e). Per CCCO section 07-10-25(1): "*The purposes of the A (Agricultural) Zone are to: A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations; B. Limit urban density development to Areas of City Impact*

*in accordance with the comprehensive plan; C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65; D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan."*

The subject parcel consists of moderately suited soils and is considered prime farmland if irrigated (Exhibit B.2h). The Canyon Soil Conservation District does not recommend the approval of the request (Exhibit D.7).

(2) Although there are still large agricultural parcels and uses in the vicinity (Exhibit B.2a & b), the applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.5d), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibit A.2).

The parcel is surrounded by residential development:

- The north boundary for the Parcel abuts Karcher Road and Somerset West Subdivision, zoned "R-R" (Rural Residential) and approved in 1974 with 57 lots (0.65-acre average lot size; Exhibit B.2g).
- The south boundary abuts a 40-acre property in agricultural use (Exhibit B.2a), and Moonstruck Subdivision Phase 3 was approved in 2003 with 11 lots (1.09-acre average lot size, Exhibit B.2g).
- The east boundary abuts Stecher Subdivision, Vanal Heights Subdivision, and El Rancho Heights, both zoned "R-R" (Rural Residential; Exhibit B.2e).
    - Stecher Subdivision was approved in 1959 with 14 lots (0.72 acres average lot size). The subdivision was amended to include 49 lots in 1968 (0.62-acre average lot size, Exhibit B.5b).
    - Vanal Heights Subdivision was approved in 1960 with 70 lots (0.41-acre average lot size; Exhibit B.5a).
    - El Rancho Heights was approved in 1977 with 79 lots (0.43-acre average lot size, Exhibit B.5c)
- The west boundary abuts Wintergreen Subdivision and Canyon Lake Estates (Exhibit B.2g).
    - Wintergreen Subdivision was approved in 2000 with 7 lots (1.04-acre average lot size).
    - Canyon Lake Estates Phase 1 was approved in 2008 with 19 lots (1.21-acre average lot size).

(3) As conditioned (Attachment A), the request for an "R-1" (Single-Family Residential) zone allows an average minimum lot size of one acre (Exhibit F). Per CCZO Section 07-10-25(3): *"The purpose of the R-1 (Single-Family Residential) Zone is to promote and enhance predominantly single-family living areas at a low-density standard."*

The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c & d). The subject parcel is located in the Caldwell Area of City Impact. City jurisdiction is approximately 0.25 miles from the subject parcel. The

Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d).

The request matches the existing built environment and zones found in the area.

- The parcel is located near residential and commercial zones (Exhibit B.2e & f).
- Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**3. Is the proposed conditional rezone compatible with surrounding land uses?**

**Conclusion:** The request to "CR-R-1" is compatible with surrounding land uses.

**Findings:** (1) Pursuant to CCCO §07-02-03, land uses are compatible if: *a) they do not directly or indirectly interfere or conflict with or negatively impact one another, and b) they do not exclude or diminish one another's use of public and private services.*

a. The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c). The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d).

b. The applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.4), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibits A.2 & F).

c. The request matches the existing built environment and zones found in the area.
   - The parcel is located near residential and commercial zones (Exhibit B.2e & f).
   - Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

d. Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development remains compatible with the surrounding land uses.

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**4. Will the proposed conditional rezone negatively affect the character of the area? What measures will be implemented to mitigate impacts?**

**Conclusion:** The proposed use will not negatively affect the character of the area. Any necessary measures to mitigate impacts can be addressed at the time of subdivision platting.

**Findings:** (1) The character contains a mix of agricultural, residential, and commercial uses (Exhibit B.2a, B.2e, B.2f, B.2j & C).

a. The subject parcel, two parcels to the south, and a few parcels to the north still maintain agricultural production on large agricultural parcels. Parcels R32869 and R32870 are both 40 acres and are in agricultural production (crops and livestock). Parcel R32870 was rezoned in 2019 to "CR-R-1" (RZ2019-0012, Exhibit B.4) and is currently in the platting process (Norse Landing Subdivision, Exhibit B.2g & B.5d).

b. The parcel is located near residential and commercial zones (Exhibit B.2e & f).

c. Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

d. Based on the County and City of Caldwell Comprehensive Plans, residential and commercial growth is the character promoted in the area (Exhibit B.2c & B.2d).

(2) On March 20, 2025, after hearing concerns from neighbors regarding city residential density impacts in an area that maintains a rural character (Exhibit G), the applicant agreed to table the hearing to amend the application to reduce residential density to maintain a one-acre lot size commensurate with recent land decisions in the area still within county jurisdiction (Exhibit F). *See Attachment A for conditions*.

(3) Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development does not negatively impact the area.

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

5. **Will adequate facilities and services, including sewer, water, drainage, irrigation, and utilities be provided to accommodate the proposed conditional rezone?**

**Conclusion:** Adequate sewer, water, drainage, irrigation, and utilities to accommodate the future development can be provided at the time of platting.

**Findings:**

(1) The applicant states the sewer will be via an individual septic system, water via individual domestic wells, drainage to be retained on-site, irrigation via pressurized irrigation through a priority right irrigation well, and utilities via Idaho Power and Intermountain Gas (Exhibits A.2, A.4 & F).

The applicant's letter of intent is based on developing one-acre lot sizes. As conditioned (Attachment A), the "R-1" zone allows an average minimum lot size of one acre. Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances), which will ensure development includes adequate services and facilities.

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

6. **Does the proposed conditional rezone require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns? What measures have been taken to mitigate traffic impacts?**

**Conclusion:** The subject property does have legal access. Access for residential development will be determined during the platting process.

**Findings:**

(1) The property currently has frontage along SH-55 (Karcher) and Kimball Avenue (a local public road). Access to SH-55 from Kimball has been blocked by the Idaho Transportation Department. The property currently uses Vista Drive, a public road, to S. 10th Avenue, a minor arterial public road (Exhibits A.2, A.6 & F).

(2) Future development will use SH-55, Vista Drive (local road through Vanal Heights Subdivision), and the stub road to the south parcel that will, once developed, provide additional access alternatives (Exhibits A.6 & B.5d). If the request is approved, subdivision platting is required, which requires access to meet public road and access requirements (CCCO §07-17-09).

(3) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**7. Does legal access to the subject property for the conditional rezone exist or will it exist at the time of development?**

**Conclusion:** A Traffic Impact Study was provided demonstrating that a 49-residential-lot development will not have an impact.

**Findings:**

(1) A revised Traffic Impact Study (TIS) was prepared on December 13, 2024 (Exhibits A.6 & F). The development of 49 residential lots is anticipated to create 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour at full build-out. The development includes right-of-way dedication along SH-55 and internal public roads with access points from SH-55 (Ashland Drive), Kimball Avenue (Vista Drive), and a future stub to the south. With subdivision improvements, SH-55 improvements, and build-out of 2027, additional improvements/mitigation are not anticipated. As conditioned by the development agreement, development will not exceed the 48 residential lots (Attachment A).

(2) Highway District #4 reviewed the initial and revised TIS and found the request with 49 lots is not anticipated to significantly degrade the Level of Service (LOS) at nearby intersections after SH-55 is widened to five lanes. Other impacts from the development will be mitigated by right-of-way dedication, frontage improvements, and impact fees (Exhibit D.11).

(3) Idaho Transportation Department (ITD) accepts the TIS subject to right-of-way dedication for the Ashland Drive right-turn lane from SH-55 (Exhibit D.8). The dedication and improvement are necessary to support the future development of the south parcels that will be stubbed through the development on the subject parcel.

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**8. Will the proposed conditional rezone amendment impact essential public services and facilities, such as schools, police, fire, and emergency medical services? What measures will be implemented to mitigate impacts?**

**Conclusion:** The request is not anticipated to impact essential public services and facilities, including, but not limited to schools, police, fire, and emergency medical services. Any necessary measures to mitigate impacts can be addressed at the time of platting.

**Findings:**

(1) Future development will be served by the Vallivue School District (Exhibit B.1). The District has concerns about the capacity of Vallivue High School. Current enrollment is approximately 1,300 students with a capacity of 1,800 students. The District states two elementary schools will open in the Fall of 2025. The letter does not oppose the request or recommend any mitigation measures (Exhibit A.2 & D.2). Per Exhibit H.1, updated letter from Vallivue School District: "Currently, the surrounding schools can accommodate such a small development. The district's main concern is with large swaths of land approved for major development that could compromise the district's overall capacity to provide appropriate services over the next ten years."

No comments were received from the Brown Bus Company or Caldwell Transportation.

(2) Served by the Canyon County Sheriff's Office. No comments were received.

(3) The property is served by the Caldwell Rural Fire Protection District (Exhibit B.1). The district can approve the request subject to compliance with code requirements and conditions of approval (Exhibits D.3 & H.4). The nearest station is Station 2. Distance: 2.8 miles. The estimated response time is 8 minutes. Conditions include fire hydrants, roadway widths, access roads, and addressing requirements. See condition no. 3 of the development agreement conditions regarding fire hydrants (Attachment A). No comment was received from Canyon County Paramedics/EMT.

(4) The United States Forest Canal that lies within the boundary of the subject parcel is operated and maintained by the Boise Project Board of Control. The Boise Project Board of Control asserts the federal easement of 25 feet northwest and 25 feet southwest of the canal's centerline. Landscaping other than gravel is not approved in the easement. Fencing, gates, and pathways may be constructed off the canal easement. Any improvements within the easement or any piping/relocation of the canal must be approved by the Bureau of Reclamation and the Boise Project Board of Control prior to construction. Any roadways and utilities crossing the canal must be approved through a crossing agreement by the Bureau of Reclamation and the Boise Project (Exhibit D.1). No comment was received from Wilder Irrigation District.

(5) Mitigation: If the request is approved, subdivision platting is required, which requires notification to affected essential services for review and comments before subdivision approval (CCCO §07-17-09).

(6) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**CCCO §09-01-21: AREA OF CITY IMPACT AGREEMENT**

**Conclusion:** The City of Caldwell submitted a letter dated January 4, 2024 (Exhibit D.4). The letter states the subject parcel is located in the City of Caldwell's Area of City Impact and within 0.25 miles of the City of Caldwell's incorporated limits. The parcel is designated as Residential Estates in the City of Caldwell's Comprehensive Plan.

The City of Caldwell is working on a comprehensive plan update. "Although this area currently is designated as Residential Estates in the City's current Comprehensive Plan, there is potential for this land use designation to change to a Highway Corridor zone in the future" (Page 2 of the letter). Zones in the Highway Corridor designation would allow for a mixed-use land-use designation that combines higher-density residential with commercial services.

The City of Caldwell is not opposed to the proposed rezone to low-density residential, but would like to see the frontage along Karcher Road preserved for commercial services at a minimum. If approved, the City of Caldwell would request that street landscape buffers along Karcher Road and Kimball Avenue be installed per the City of Caldwell's Landscaping Ordinances. This would include the requirement for all common open space, buffers between different land uses, and pathways. Any connection to City services would require a formalized Municipal Services Agreement to be entered into. If the request is approved, subdivision platting is required, which requires notification to the City of Caldwell and compliance with Caldwell's subdivision and landscaping ordinances unless waived by the County (CCCO §07-17-09 and §09-01-19).

The applicant finds that the project as requested is compatible with the existing built environment, compatible with the City's adopted comprehensive plan, and currently does not have a path to annexation (Exhibit A.2). As conditioned, the request complies with the city's residential estates designation and intent when was the future land use designation at the time of application submittal (Exhibit B.2d & G).

**Findings:** (1) See Exhibits A.2 & F (Applicant Letter of Intent/Revised Application), B.2 (Case Maps), D.4 & D.5 (City of Caldwell letters), and G (P&Z Minutes March 20, 2025).

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**Order**

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Planning and Zoning Commission recommends **approval of** Case # RZ2022-0012, a conditional rezone of Parcel R32862 from an "A" (Agricultural) Zone to a "CR-R-1" (Conditional Rezone – Single Family Residential) Zone subject to conditions of the development agreement (Attachment A).

**DATED** this 12 day of June, 2025.

**PLANNING AND ZONING COMMISSION**
**CANYON COUNTY, IDAHO**

Robert Sturgill, Chairman

State of Idaho )

SS

County of Canyon County )

On this 12th day of June, in the year 2025, before me Caitlin Ross, a notary public, personally appeared Robert Sturgill, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he (she) executed the same.

CAITLIN ROSS
COMMISSION #20251885
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 05/07/2031

Notary: Caitlin Ross

My Commission Expires: 5/7/2031

**ATTACHMENT A**

**DEVELOPMENT AGREEMENT CONDITIONS**

1. All development shall comply with all applicable federal, state, and county laws, ordinances, rules, and regulations that pertain to the subject property and the proposed use.
2. The subdivision of the subject parcel, R32862, shall maintain an average lot size of 1 acre, with no more than 48 buildable lots.
3. The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.
4. The developer shall comply with CCCO §07-06-07(4) Time Requirements: "All conditional rezones for a land use shall commence within two (2) years of the approval of the board."

**EXHIBIT 2**

**Planning and Zoning Commission Minutes**

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Case No. RZ2022-0012

BOCC Hearing: August 6, 2025

CANYON COUNTY PLANNING & ZONING COMMISSION
MINUTES OF REGULAR MEETING HELD
Thursday, March 20, 2025
6:30 P.M.

1ST FLOOR PUBLIC MEETING ROOM SUITE 130, CANYON COUNTY ADMINISTRATION BUILDING

| | |
|---|---|
| Commissioners Present : | Robert Sturgill, Chairman<br>Brian Sheets, Vice Chairman<br>Harold Nevill, Commission Secretary<br>Geoffrey Mathews, Commissioner<br>Matt Dorsey, Commissioner – sworn in at 9:13 p.m. |
| Staff Members Present: | Jay Gibbons, Director of Development Services<br>Dan Lister, Principal Planner<br>Michelle Barron, Principal Planner<br>Emily Bunn, Associate Planner<br>Madelyn Vander Veen, Associate Planner<br>Amber Lewter, Associate Planner<br>Caitlin Ross, Hearing Specialist |

**Chairman Sturgill** called the meeting to order at 6:33 p.m.

**Commissioner Nevill** read the testimony guidelines and proceeded to the first business item on the agenda.

**Item 1: Consent Agenda**

A. **December 19, 2024 MINUTES**
B. **January 16, 2025 MINUTES**
C. **Case No. RZ2022-0016 – Goodwin**: Approve revised FCO's
D. **Case No. CR2023-0005 – Bowery:** Approve revised FCO's
E. **Case No. CU2022-0008 – Tellez**: Approve revised FCO's

**Motion:** Commissioner Sheets moved to approve the Consent Agenda, seconded by Commissioner Mathews. Voice vote, motion carried.

**Item 2A:**

**Case CR2022-0031 - Werhane:** The applicant, William and Gena Werhane, is requesting a conditional rezone of Parcels R33590012B and R33590012C, approximately 8.93 acres, to amend the County zoning map from an "A" (Agricultural) Zone to a "CR-C-1" (Conditional Rezone – Neighborhood Commercial) Zone. The request includes a development agreement. The property is located at 0 Hwy 55, Caldwell, southeast of the Hwy 55/Sunny Slope Road and Churruca Lane intersection.

On March 20, 2025, the case was proposed to be tabled to a date certain of May 15, 2025.

**MOTION:** Commissioner Sheets moved to **continue** Case No. CR2022-0031 to a date certain of May 15, 2025, seconded by Commissioner Mathews. Voice vote, motion carried.

**Item 2B:**

**Case No. VAC2024-0001 - Thueson:** The applicant, Lance Thueson, represented by Becky Yzaguirre of Ardurra, is requesting a vacation of a fire access easement in Lot 10 Block 1 of Castleton Place Subdivision. There is now another access to the subdivision from Lewis Lane through Jack's Place Subdivision. The subject property is located at 1002 Huntington Court, also referenced as Parcel R29411109.

**Chairman Sturgill** called the applicant to testify.

**Becky Yzaguirre – (Representative) IN FAVOR – 332 Broadmore Way, Nampa, ID 83687**

Ms. Yzaguirre explained the request of a vacation of a 20-foot fire access easement located in the Castleton Place Subdivision. She further explained the accesses to the subdivision. Ms. Yzaguirre noted a letter from the Nampa Fire District stating they did not need the plat note and approved the removal of the easement.

Commissioner Nevill asked how the change would affect the average lot size. Ms. Yzaguirre explained it does not change the lot size since the plat has already been recorded, and now that the permanent secondary access has been provided, it is now buildable based on the requirements of the approved plat.

**Planner Madelyn Vander Veen** reviewed the Staff Report for the record.

Chairman Sturgill asked when the plat was approved and what the county regulations were for the size of the lots in a rural residential zone. Planner Vander Veen stated the minimum lot sizes used to be smaller, so either the plat was approved and the area was later rezoned to rural residential, or the plat was approved during a time when the rural residential zoning allowed the smaller lot sizes. Chairman Sturgill asked what the average lot size is for this subdivision, to which Planner Vander Veen did not know.

**MOTION:** Commissioner Sheets moved to close public testimony on Case No. VAC2024-0001, seconded by Commissioner Matthews. Voice vote, motion carried.

**Deliberation:**

None.

**MOTION:** Commissioner Sheets moved to **recommend approval** for Case No. VAC2024-0001, seconded by Commissioner Mathews.

**Discussion on the Motion:**

None.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**Item 2C:**

**Case No. CU2024-0003 - Garman:** Kris Garman requests a conditional use permit for a special events facility of approximately 16.15 acres in the "A" Agricultural Zone. The subject property is located at 26117 Lower Pleasant Ridge Rd, Wilder ID 83676 also referenced as Parcels R37158, R37157010, and R37157010D.

**Chairman Sturgill** called the applicant to testify.

**Kristina Garman – (Applicant) IN FAVOR – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**

Ms. Garman is requesting a conditional use permit to be able to generate income from the partially viable

agricultural area on her property. Ms. Garman explained the history of Garman Hill and their wishes to keep the area in the family in the future. She further explained she believes their property aligns with the 2030 Comprehensive Plan and does not believe there would be any negative impact or disruption on public services or nearest major roads. In working with the Wilder Fire District and Idaho Transportation Department, there did not seem to be a need for a traffic impact study. There would be sufficient utilities and parking provided based on the events, which are geared to preserve the essence of the land with shared events from the community. Their plan is to be able to run year-round, weather permitting, while providing smaller, more personal events during the "off" seasons. Ms. Garman explained that any surrounding neighbors that this would affect are all in support of this application, and went into further detail of the parking situation compared to the event area.

Ms. Garman's ten (10) minutes of testimony expired.

**MOTION:** Commissioner Sheets moved, seconded by Commissioner Mathews to give Ms. Garman three (3) minutes of additional testimony. Voice vote, motion carried.

Ms. Garman continued with addressing concerns regarding conditions 15, 16, 18, and 21-27, explaining requirements that have already been met and requesting either removal or rewording of some of these conditions.

Chairman Sturgill clarified which conditions needed further evaluation.

Commissioner Nevill asked why condition 23 should be removed. Ms. Garman explained there is plenty of space and parking to accommodate 400-600 people, and believes as a business owner, it is her responsibility to comply with the restrictions of attendees and does not believe ticketing is appropriate. Commissioner Nevill also clarified the reasoning of changing/removing conditions 24 and 25. There was also discussion regarding the hard restrictions of condition 27. Commissioner Nevill reassured the applicant and explained the reasoning behind the strictness of this condition. Commissioner Nevill asked for clarification of traffic navigating to Hwy 95 after an event, and Ms. Garman explained there would be sufficient direction as needed and an alternative, safer route to Hwy 95. Commissioner Nevill asked about emergency services. Ms. Garman stated the Nampa Fire Department Assistant Chief has written a letter of support for access on and off the property if needed.

Commissioner Sheets asked if there would ever be an issue with traffic backing up on Lower Pleasant Ridge Rd to the highway, and Ms. Garman explained the low risk of that with their plan to route any vehicles coming onto the property, and their primary goal of not letting the traffic get backed up on Lower Pleasant Ridge Rd.

Chairman Sturgill asked if the parking spaces were paved or dirt, and Ms. Garman answered it was a grass parking lot. Chairman Sturgill asked how it drains compared to elevation and if standing water was expected. Ms. Garman stated to the west, and there would not be standing water in the parking lot. Chairman Sturgill wanted to clarify why some conditions were requested to be removed as they were covered in other codes, to which Ms. Garman stated it was just her personal comment to have them removed, and it would not get it the way of her business. Chairman Sturgill clarified the distance between the applicant's property and the next nearest property and that the subdivision to the northwest is downhill from their property. He also asked about the potential issue of sound complaints, to which Ms. Garman agreed if a future owner were to bring in bigger amplifiers, then the neighbors may file a code compliance complaint at that point. Chairman Sturgill asked how the applicant would propose mitigating a high volume of traffic leaving at once after an event, and Ms. Garman gave an example of a plan.

**Planner Emily Bunn** reviewed the Staff Report for the record.

Commissioner Nevill asked for clarification on the changes to condition 20. Planner Bunn explained her conversation with Code Enforcement in wanting the condition to clearly state despite the number of events per week, the overall number of events per year has to stay at or below 59. There was also clarification on the conditional use permit being tied to the property owner, and condition 5 regarding Southwest District Health's recommendations on the number of porta-potties and frequency of pumping and maintenance. Commissioner Nevill asked about the distance of the eastern entrance to Hwy 95. Planner Bunn stated Planner Michelle Barron quoted 215 feet. There was further discussion on parking and circulation plans.

Commissioner Mathews clarified that the prior property divisions would not affect approval of the conditional use permit. Planner Bunn explained the one parcel to the west would have a residential building permit and the other to the northeast would be designated as agricultural only.

Chairman Sturgill confirmed a condition could be added regarding signage/flags. Chairman Sturgill asked about emergency services response times. Planner Bunn did not indicate any comments regarding response times from emergency services.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Nicole Keller – IN FAVOR – 9165 N Bullwinkle Ln, Eagle, ID 83616**
Ms. Keller stated she is showing support from the vendor side, explaining that her vendor in the wedding industry is very versed in helping wedding venues stay compliant with parking, noise compliance, etc.

**JoAnn Maupin – IN FAVOR – 20031 Hwy 95, Wilder, ID 83676**
Ms. Maupin lives across the road from the applicant and gives full support and has no problems with the venue.

Chairman Sturgill asked if amplified music 5 days a week until 11 pm was an issue, to which Ms. Maupin answered she had no problems with that.

**Sam Maupin – IN FAVOR – 20031 Hwy 95, Wilder, ID 83676**
Mr. Maupin agreed with the prior testimony, and stated they hear more noise from the City of Wilder than they do the applicants' property. There is easy access with no issues with people pulling in and out.

**Rose Leist – IN FAVOR – 82 N Boundary St, Nampa, ID 83651**
Ms. Leist was recently hired as the venue manager for Garman Hill and is in full support of the applicant. She believes the applicant has a good commitment with being compliant while giving an opportunity for the community to enjoy the space and the nature around it. They are not looking to have an event every day of the week, but rather wish to maintain the pristineness of the land while supporting the community.

**Shiloh Webb – IN FAVOR – 25954 Jacks Rd, Parma, ID 83660**
Mr. Webb fully supports local businesses and looks forward to having this area as a potential venue.

**Lauren Garman – IN FAVOR – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Garman is excited for her mother to have this passion project. Her goal is to bring the community together while providing a safe place for everyone to get together and have a good time. She believes this

is a great opportunity for young adults to gather rather than bars and fully supports this endeavor.

**Sherry Jetton – IN OPPOSITION – 27255 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Jetton expressed concerns regarding the lack of employees, the number of attendees and traffic concerns, the number of events per week, turnarounds for emergency services, and hours of operation.

Commissioner Nevill asked if 450 attendees was better than 600. Ms. Jetton stated that that many people for longer stretches of days is too much, aside if it were a smaller community event, and the noise and traffic flow were the highest concerns. Commissioner Nevill clarified that the concerns about the number of people and the number of events were of equal significance.

**Josh Jetton – IN OPPOSITION – 27255 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Mr. Jetton agreed with his wife's testimony, and further expressed concerns about the basement being turned into a second residence, the traffic increase heading west on Lower Pleasant Ridge Rd, and the lack of notification to some of the residence in the subdivision west of the property. He noted the fire department was voluntary and closer to 2 miles away, although the response time is quick.

**Jeff Schnell – IN OPPOSITION – 20194 Silver Spur Dr, Wilder, ID 83676**
Mr. Schnell represents and is a resident of Apple Hills Subdivision that was not contacted. He expressed concerns regarding the speed limit on Lower Pleasant Ridge Rd, access issues for emergency services, and the previous violation regarding amplified music, especially on their busier Wednesday events.

Commissioner Sheets clarified that the sound went past 10 pm on one of their Wednesday evenings, and Mr. Schnell stated he thought it was someone intoxicated discussing their life plans.

Commissioner Nevill confirmed the street people could potentially cut through to get to Batt Corner Rd off of Lower Pleasant Ridge Rd.

**Kristina Garman – (Applicant) REBUTTAL – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Garman addressed the concerns regarding emergency plans and traffic flow. She is open to discussing writing out and submitting an emergency plan. She also made a note that the number of employees that was discussed did not count the hired vendors. Ms. Garman further explained the event facility does not draw from domestic water and the basement residence would not raise issues with amenities, and the only building permits that would be required would be for their shop and daylight basement. She stated there were 23 letters mailed for the neighborhood meeting, 8 of which were on Silver Spur, and concerns raised by the only 2 that attended were adapted into the overall plan of the facility. She also addressed no concerns of anyone needing to use the subdivision as access to or from the property, that there is adequate parking, and the fire station has a high response time with only being 1.3 miles away.

Commissioner Sheets brought up the domestic water statement, to which Ms. Garman stated water bottles would be provided through vendors, and it was further clarified that it would be very minimal water usage for any dust mitigation or guests staying at the Air B&B.

Commissioner Nevill asked what would happen to the land if this application was not approved. Ms. Garman answered she would have to sell it, but her goal is to look for other ways to utilize the land. Commissioner Nevill asked if this event venue would add to the agricultural way of life, to which Ms. Garman stated she believes it would because they have a very intentional business plan to support local and the community as much as possible.

Commissioner Mathews mentioned the prior testimony on moving the speed limit sign, and Ms. Garman said she would fully support that.

Chairman Sturgill asked if the applicant would be amendable to adding a condition regarding permanent direction arrows. Ms. Garman stated she would be opposed since these signs would be in her yard, but that she takes full responsibility of ensuring the area is roped off and signed when appropriate. It was agreed that the condition could state traffic signs and arrows need to be placed for every event. Chairman Sturgill asked if having the conditional use permit tied to the property rather than the applicant was a deal breaker. Ms. Garman explained that she would want to get the full investment from the property as she has spent a great deal of time and money investing on this property.

Planner Bunn confirmed the requirements for the discussions regarding water, sewer, and signage.

**MOTION:** Commissioner Sheets moved to close public testimony on Case No. CU2024-0003, seconded by Commissioner Matthews. Voice vote, motion carried.

**Deliberation:**
There were discussions on condition 5 regarding frequency of pumping and maintenance of porta-potties, condition 8 regarding building permits and certificates of occupancy, condition 13 regarding a dust mitigation plan, condition 15 regarding temporary signage for events, condition 18 regarding number of days of events per year, condition 20 regarding the number of events per week, conditions 21 and 22 regarding rental agreements, condition 23 regarding ticketing, condition 24 regarding guest counts, and condition 27 regarding the conditional use permit attached to the property owner, with an addition of condition 28 to have a written emergency plan created and submitted.

**MOTION:** Commissioner Sheets moved to **approve** Case No. CU2024-0003, adopting the FCOs that the application does meet criteria, with amendments to conditions 5, 8, 13, 15, 18, 20-22, 24, 27 and 28, seconded by Commissioner Nevill.

**Discussion on Motion:**
Commissioner Nevill commented that this was a good way to preserve the agricultural way of life. He believes the conditions are adequate in mitigating the concerns of the neighbors.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**Commissioner Dorsey** was sworn in at 9:13 p.m.

**Item 2D:**

**Case No. RZ2022-0012 - McGuire:** The applicant, William B. McGuire, represented by Bristlecone Land Use Consulting, requests a Zoning Map Amendment (rezone) of Parcel R32862, approximately 63 acres, from an "A" (Agricultural) zone to an "R-1" (Single Family Residential) zone. The subject property is located at 15453 Karcher Rd, also referenced as Parcel R32862, R32862010.

**Chairman Sturgill** called the applicant to testify.

**Elizabeth Allen – (Representative) IN FAVOR – 1330 Williams Lane, Nampa, ID 83686**
Ms. Allen explained the purpose of their application, and mentioned the preliminary plat will be forthcoming. According to the comprehensive plan, this area has been and is identified as residential, and Canyon County has already exceeded the proposed population of 257,000, so the plan will help meet the housing goals. The surrounding land uses and character of the area are primarily residential, and the

proposed 1-acre single-family residences will blend in with the existing surrounding areas. Facilities and services, which will be further explained during the platting process, are sufficient, with individual septic and wells, and services from Idaho Power and Intermountain Gas. Legal access already exists and traffic impact studies have already been approved by Idaho Transportation Department, with a right of way dedicated for the Hwy 55 expansion. Public services are also adequate and available.

Commissioner Nevill asked for clarification on the Hwy 55 expansion. Ms. Allen explained there would be 5 lanes total, but more details would be addressed during the platting process regarding access from Hwy 55 onto the property. Commissioner Nevill asked if the property to the northwest was a land trust, to which Ms. Allen was unsure. Commissioner Nevill asked what the timeframe was for Caldwell services. Ms. Allen said there is a water line in the area, but it would take a couple of years to be able to connect to it due to infrastructure improvement, and sewer is 1.5 miles away. Commissioner Nevill clarified that future homeowners would have to agree to connect to the city services.

Chairman Sturgill read a letter from Vallivue School District regarding school capacity concerns, and asked if school services are available for this application. Ms. Allen noted that as of right now, this is just an application for a rezone, and future details would be covered during the plat, but she believes there would still be adequate services. Chairman Sturgill asked if the applicant had any conversations with the school district regarding crowding issues, and Ms. Allen did not know if they had.

**Principal Planner Dan Lister** reviewed the Staff Report for the record.

Commissioner Sheets asked if a rezone with access to city services was with 12,000 sq. ft lots. Planner Lister answered yes, 12,000 feet was the minimum unless a plan unit development, or a conditional use permit, was applied for to modify it for smaller lot sizes.

Commissioner Nevill clarified that this was a different group asking for this request than some prior that got approved subdivisions that did not go through. Commissioner Nevill inquired on the fire fighting water plans. Planner Lister mentioned that this would be discussed during the platting process, and explained what the typical requirements would be. Commissioner Nevill also got clarification on a property northwest of the applicant's property, and that it was conditionally rezoned for a community convenience area with future city connection.

Commissioner Mathews asked about the access to the platted subdivision south of the applicant that has agricultural land between each parcel. Planner Lister explained the stubs for access to each property, with the agricultural parcel's access from Kimball.

Chairman Sturgill confirmed there was no indication of response time for emergency services.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Tom Whittemore – IN OPPOSITION – 15220 Castle Way, Caldwell, ID 83607**

Mr. Whittemore expressed concerns regarding water usage and fire protection, the lack of plans when widening Hwy 55 for a new access into the new subdivision, per a conversation with the construction company, Knife River, and the opposition of access coming off of Castle Way or Fiesta Way.

Commissioner Mathews confirmed that the conversation with Knife River excluded any plans for access onto this property from Hwy 55.

**Howard Spry – IN OPPOSITION – 15141 Vanita Ct, Caldwell, ID 83607**
Mr. Spry also expressed concerns about the potential increase in water usage.

Commissioner Nevill asked if it would be better if there were fewer houses with individual wells, or a higher density that is connected to city water. Mr. Spry indicated he would prefer to not lose his water supply if houses came in with their own wells.

**Harry Ballance – IN OPPOSITION – 15596 Moonlight Dr, Caldwell, ID 83607**
Mr. Balance expressed concerns regarding less than 1-acre lots, water, ingress/egress through the surrounding subdivisions, and habitat being ruined. He requested not to go any smaller than 1-acre lots.

**Elizabeth Allen – (Representative) REBUTTAL – 1330 Williams Lane, Nampa, ID 83686**
Ms. Allen addressed the concerns regarding connection to the city services, the size of lots, and the additional pressure to public services if the lots were any smaller than 1-acres. She also addressed the topic of access, stating there would be access from Hwy 55 and Vista Dr, only creating access on public roads. Ms. Allen stated there has always been a concern with wells, and noted wells do need properly maintained as they get closer to the 20-30-year lifespan. She reiterated that a lot of these concerns would be addressed during the platting process, and that this is simply just the rezoning for the property.

Commissioner Nevill what the ability to farm this parcel was. Ms. Allen said the property is currently being farmed, but with challenges. Commissioner Nevill brought up the concern about the Deer Flat National Wildlife Refuge, to which Ms. Allen commented the boundary is around the lake, and this specific area shouldn't have as big of an impact.

Planner Lister clarified how many lots could become available if adhering to the 12,000 sq. ft size.

Chairman Sturgill asked if there were any conversations regarding a conditional rezone versus a straight rezone, to which Planner Lister commented on the several occasions that topic was discussed.

Commissioner Dorsey asked for clarification of accesses. Planner Lister explained the stubs and access points, which could alleviate higher traffic pressure. The applicant has been working very closely with ITD to ensure access off Hwy 55.

**MOTION:** Commissioner Sheets moved to close public testimony on Case RZ2022-0012, seconded by Commissioner Mathews. Voice vote, motion carried.

**Deliberation:**
Commissioner Mathews expressed concerns about waiting too long to receive City input, and would like to condition this application if possible.

Commissioner Sheets talked about the potential of smaller sized lots, regardless of the applicant's intent. He would also prefer a conditional rezone. Commissioner Mathews agreed.

Commissioner Nevill agreed with Commissioners Sheets and Mathews, and will not support a straight rezone. Commissioner Dorsey also agreed.

There was discussion on the benefits of denying versus continuing this case. If tabled, a revised application and re-noticing would be required.

**MOTION:** Commissioner Nevill moved to **continue** Case No. RZ2022-0012 to a date uncertain, seconded by Commissioner Sheets.

**Discussion on Motion:**
Commissioner Sheets addressed concerns on the density, water and sewer sources, and access to Hwy 55.

Commissioner Nevill added clarification on public services.

Roll call vote: 4 in favor and 1 opposed. Motion passed.

**3. DIRECTOR, PLANNER, COMMISSION COMMENTS:**
Director of Development Services Jay Gibbons announced Josh Johnson as the new Assistant Director, and talked about planner positions being filled. There was discussion on the upcoming April 3, 2025 hearing and the comp plan to prioritize ordinances with upcoming workshops.

Commissioner Dorsey asked about the rumors of administrative splits, and there was discussion on this topic.

Commissioner Sheets asked about the new Hearing Examiner. Director Jay Gibbons talked about the new Hearing Examiner and the process of the hearings that are being worked through, including which cases will go to the Hearing Examiner versus Planning & Zoning.

**4. ADJOURNMENT:**

**MOTION:** Commissioner Sheets moved to adjourn, seconded by Commissioner Nevill. Voice vote, motion carried. Hearing adjourned at 10:41 P.M

An audio recording is on file in the Development Services Departments' office.

Approved this 15th day of May, 2025

Brian Sheets, Acting Chairman

ATTEST
Caitlin Ross

Caitlin Ross, Hearing Specialist

CANYON COUNTY PLANNING & ZONING COMMISSION
MINUTES OF REGULAR MEETING HELD
Thursday, June 12, 2025
6:30 P.M.

1ST FLOOR PUBLIC MEETING ROOM SUITE 130, CANYON COUNTY ADMINISTRATION BUILDING

| | |
|---|---|
| Commissioners Present : | Robert Sturgill, Chairman<br>Brian Sheets, Vice Chairman<br>Harold Nevill, Commission Secretary<br>Geoff Mathews, Commissioner<br>Matt Dorsey, Commissioner |
| Staff Members Present: | Jay Gibbons, Director of Development Services<br>Dan Lister, Planning Supervisor<br>Deb Root, Principal Planner<br>Karla Nelson, Principal Planner<br>Amber Lewter, Associate Planner<br>Caitlin Ross, Hearing Specialist |

**Chairman Sturgill** called the meeting to order at 6:30 p.m.

**Commissioner Nevill** read the testimony guidelines and proceeded to the first business item on the agenda.

**Item 1: Consent Agenda – Action Items**

A. **April 17, 2025 MINUTES**
B. **May 1, 2025 MINUTES**
C. **Case No. CU2024-0009 – Sunroc Corporation:** Approve FCO's
D. **Case No. CU2024-0011 – Lanum:** Approve FCO's

Commissioner Mathews abstained from voting on item 1B, Commissioner Dorsey abstained from voting on items 1A and 1B, and Chairman Sturgill abstained from voting on items 1C and 1D, due to not being present for the correlated hearings.

**Motion:** Commissioner Sheets moved to approve the Consent Agenda, seconded by Commissioner Nevill. Voice vote, motion carried.

**Item 2A:**

**Case No. CU2024-0013 – The Wild Oak, LLC:** The applicant, Derek Olson, represented by Rafael Sanchez with Provost & Pritchard Consulting Group, is requesting a Conditional Use Permit for a special events facility named The Wild Oak on approximately 3.72 acres in an "A" (Agricultural) zone. The subject property is located at 19781 Middleton Rd, Caldwell, ID 83605, also referenced as Parcel R34316.

On April 3, 2025, this case was continued to a date certain of June 5, 2025. Due to scheduling, the June 5, 2025 hearing was rescheduled to June 12, 2025.

**Chairman Sturgill** affirmed the applicant to testify.

**Matt Barnes – (Representative) IN FAVOR – 1965 S Eagle Rd, Ste 140, Meridian, ID 83642**
Mr. Barnes reviewed the request of a conditional use permit for a special events facility. The venue can host up to 150 events per year with a capacity of 220 attendees. This case was continued to obtain plans for water and wastewater, and after meeting with DEQ and Southwest District Health, the applicant agreed to upgrade to a transient non-community water system as well as updating the site plan to accommodate an approved septic system. Mr. Barnes also explained a few changes regarding paving the right of way to Middleton Road and parking surfacing. Originally, the request for music was to end at 11:00 p.m., but music will now cease at 10:00 p.m. to allow for guests to clear by 11:00 p.m. He reiterated the building would be fully enclosed and more trees would be planted to help mitigate noise and traffic concerns, and light sources would be turned down and directly towards the property.

Commissioner Nevill asked for clarification on a transient non-community water system. Mr. Barnes explained it is a higher water quality standard than a private residential system, and is designed for small commercial systems with no residential use. Commissioner Nevill inquired on the type of events the applicant is proposing, which is mainly weddings and receptions, and confirmed the plan for the planting of more trees. He also asked the representative to convince the commissioners that 150 events was feasible, and Mr. Barnes explained their plans of keeping everything indoors and reducing the shutoff time to mitigate noise and to be mindful of the neighbors.

Commissioner Sheets confirmed the applicant's interest in obtaining the county definitions for landscaping, street buffering and parking standards. Mr. Barnes stated they wanted to do ag-based surfacing and reached out to the City of Caldwell who confirmed it was not a requirement. Commissioner Sheets asked about the timeframe to finish construction, to which Mr. Barnes commented 6 months might not be enough time, but understands the county's position on not dragging it out too long. Commissioner Sheets also confirmed conditions placed regarding lighting and parking would be acceptable.

Commissioner Dorsey asked why a gravel parking lot would give a "rural feel" and if there was a dust mitigation plan. Mr. Barnes stated they wanted more of a country rural feel than pavement.

Chairman Sturgill confirmed the proposed limit of 200 guests, 220 including vendors.

**Planner Amber Lewter** reviewed the changes to the Staff Report for the record.

Commissioner Sheets asked if any of the new information affected any of the conditions that were originally proposed. Planner Lewter said not with staff. Commissioner Sheets confirmed that the new information would be considered for the conditions for the FCOs.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Derek Olson – (Applicant) IN FAVOR – 999 W Waning Lane, Eagle, ID 83616**
Mr. Olson explained the events facility is his family's livelihood, so limiting to just 50 events per year would be challenging. He also clarified there would potentially be small social gatherings in addition to weddings and ceremonies, such as a décor showroom with a coffee shop, to provide for and involve the community. Mr. Olson stated he has met with neighbors and addressed any concerns and are respectful of the area.

Commissioner Nevill asked for clarification on the coffee shop as that could require rezoning to a commercial zone. Mr. Olson clarified it would not be a coffee shop as far as a business and selling coffee, but more of a coffee stand for guests to enjoy a cup of coffee while at some of these events. Commissioner

Nevill confirmed the applicant would be open to rezoning to commercial if they did choose to expand their operations. After some discussion, Commissioner Nevill asked if conditioning the number events to 130 to 170 events per year would be adequate, to which Mr. Olson agreed that would be sufficient and offered adding no events on Mondays and Tuesdays to have breaks between events.

**Peter Goeman – IN OPPOSITION – 16981 Alleghenny Way, Caldwell, ID 83605**
Mr. Goeman explained his concerns regarding noise, lights and operating hours. The proposed location is adjacent to a residential subdivision. He is happy to see the applicant is proposing an earlier shutoff time, but is wondering if there could be more limitations on the number of events per year. Mr. Goeman expressed concerns about alcohol being served and amplifying the noise and other issues, and requested that if this application is approved that reasonable restrictions are considered.

**Matt Barnes – (Representative) REBUTTAL – 1965 S Eagle Rd, Ste 140, Meridian, ID 83642**
Mr. Barnes believes the prior concerns regarding noise and lighting had already been addressed, and commented that there may not be as many events during the winter, and during the summer it's still light out close to 10, so the lights concern shouldn't be as big of an issue. He stated their ultimate goal is to work with everyone and mitigate issues as best as they can.

Commissioner Dorsey confirmed that the music would end at 10:00 p.m., which would allow everyone to be off the property by 11:00 p.m.

Chairman Sturgill asked if the representative knew the distance in feet or yards between the venue and the closest residence. After some research, it was determined the venue was roughly 180 to 200 feet to nearby properties.

**MOTION:** Commissioner Mathews moved to close public testimony on Case No. CU2024-0013, seconded by Commissioner Nevill. Voice vote, motion carried.

**Deliberation:**
Commissioner Nevill stated he is not in favor of this application due to it being inappropriate to put a year-round event center next to a subdivision. Commissioner Mathews agreed with Commissioner Nevill. Commissioner Sheets brought up that the future land use is commercial, and believes conditions could be crafted to adequately address some of the issues that have been discussed. Commissioner Dorsey agreed with Commissioner Sheets, and stated his only reservation is why the property is not being annexed into the city.

**MOTION:** Commissioner Sheets moved to **approve** Case No. CU2024-0013, adopting the FCOs that the application does meet criteria, while amending conditions 8b and 11b, adding the slide addressing concerns and considerations the applicant presented, and adding conditions that all amplified music shall decease by 10:00 p.m., a maximum of 150 events per year, and the parking lot shall not be paved. Seconded by Commissioner Dorsey.

**Discussion on the Motion:**
Commissioner Nevill asked if the condition regarding the total number of guests should be considered. Commissioner Sheets stated he does not have any measured way to justify an increase or decrease outside of what's in the proposal. Commissioner Nevill confirmed that adding a condition regarding an emergency plan would also be sufficient.

Roll call vote: 3 in favor, 2 opposed, motion passes.

For the record, Commissioner Dorsey left during the break, but there is still a quorum present.

**Item 2B:**

**Case No. RZ2022-0012 – McGuire:** The applicant, William B. McGuire, represented by Bristlecone Land Use Consulting, requests a Conditional Rezone of Parcel R32862, approximately 63 acres, from an "A" (Agricultural) zone to a "CR-R-1" (Conditional Rezone - Single Family Residential) zone. The request includes a development agreement limiting residential development to a one-acre average minimum lot size with no more than 48 buildable lots and will provide fire hydrants to serve subsequent subdivision development. The subject property is located at 15453 Karcher Rd, also referenced as Parcel R32862, R32862010.

On March 20, 2025, this case was continued to a date uncertain.

**Chairman Sturgill** affirmed the applicant to testify.

**Elizabeth Allen – (Representative) IN FAVOR – 1330 Williams Lane, Nampa, ID 83686**

Ms. Allen described the location of the property and their request for a conditional rezone for a subdivision. She also talked about a conceptual plan regarding access to the proposed subdivision. Since the prior hearing, it was discovered Caldwell Fire Department would have to sign off on the building permits to ensure adequate fire access and water; therefore, all subdivisions, regardless of annexation, must meet the minimum standards of fire flow and hydrants. Idaho Department of Water Resources did not have any concerns about water depletion in the area, and the proposed plan is individual wells. Ms. Allen addressed a concern from the prior hearing regarding wildlife, and described the property outside of the Deer Flat National Wildlife Refuge or lands designated for hunting. Surrounding farmers are in support of the application, and will continue farming until the inability to do so. Current access sites will not be affected. The impact to the school distract was not proposed to be of huge significance, and nothing was brought up from the school district regarding mitigation. Ms. Allen stated she believes the conditional rezone and subsequent subdivision will be compatible with the area.

Chairman Sturgill asked for clarification on the oversight for wells. Ms. Allen stated she did not have all of the details, Planning Supervisor Lister may be able to elaborate, but there would be penalties for overuse of water, which hasn't existed before.

**Planning Supervisor Dan Lister** reviewed the amended Staff Report for the record.

Commissioner Sheets confirmed that the maps about geese was showing there is no hunting, but geese are still present.

Commissioner Nevill asked about the water enforcement, to which Planning Supervisor Lister was also not familiar with, but offered to print the plan for review.

Commissioner Mathews asked who the neighbors to the south were. Planning Supervisor Lister reiterated this was a farmer who is in the middle of developing it.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Tom Whittemore – IN OPPOSITION – 15220 Castle Way, Caldwell, ID 83607**

Mr. Whittemore is serving as the president of El Rancho Subdivision, and mentioned there were over 100 signature submitted expressing concern about the development. He also expressed concerns about the

water and wells going dry, and reviewed an article from the newspaper years prior regarding the aquifer going dry in eastern Idaho. Although that is not close, it is still a concern in the Treasure Valley. Recycled and surface water is being used to help with water levels in the aquifers. Surrounding neighbors in an area of one of Mr. Whittemore's properties had to re-drill wells due to the water levels dropping. He believes a study should be conducted to ensure sufficient water resources for the new subdivision. Mr. Whittemore clarified they are not opposed to the development, but opposed to how it might affect the water.

Mr. Whittemore's three (3) minutes of testimony expired. Chairman Sturgill approved an extra minute of testimony.

Mr. Whittemore continued with requesting clarification on the exits and where they are located.

Commissioner Nevill asked about city water. Mr. Whittemore believes city water is connected at Mallard Park, but is unsure of where and whether that is including any of the surrounding subdivisions. Commissioner Nevill asked if it was conditioned that this new subdivision was connected to the city, would that help with his concerns? Mr. Whittemore stated it would, as long as existing water supplies are not adversely affected by the continued development.

**Elizabeth Allen – (Representative) REBUTTAL – 1330 Williams Lane, Nampa, ID 83686**
Ms. Allen mentioned the option to connect to city water and sewer was not available at this time due to upgrades to the system and potentially elevation. She also explained prior wells were likely failing due to how the wells were installed, not because of the aquifer, and that all wells eventually need serviced to continue working properly, or new wells need drilled. Ms. Allen exhibited the ingress and egress areas.

Commissioner Nevill asked for clarification on the expansion for Hwy 55, to which Ms. Allen described what was shown on the picture was the concept plan and the right of way for the expansion.

Planning Supervisor Lister added for the record that this was just the first step to another process, and a plat still has to be reviewed. He also added that the City of Caldwell may insist on connecting to city services unless waived by the Commission.

**MOTION:** Commissioner Sheets moved to close public testimony on Case No. RZ2022-0012, seconded by Commissioner Nevill. Voice vote, motion carried.

**Deliberation:**
Commissioner Sheets commented that the applicant came back with their application having completed the previously requested items, so he would be in favor.

Commissioner Mathews agreed with Commissioner Sheets, although he is reluctant due to all the new development changing the migratory patterns for the birds in the area. He is in favor due to the applicant meeting all requirements.

**MOTION:** Commissioner Sheets moved to **recommend approval** for Case No. RZ2022-0012 to the Board of County Commissioners, finding that the application does meet criteria and approving all conditions. Seconded by Commissioner Mathews.

**Discussion on the Motion:**
None.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**Item 2C:**

**Case No. CR2022-0025 – Callister:** Callister LLC represented by Ardurra is requesting a Conditional Rezone of approximately 45.8 acres from an "A" (Agricultural) zone to a "CR-R1" (Conditional Rezone – Single-Family Residential) zone on parcel R37617010B. The request includes a development agreement to limit residential development to 37 residential lots. The subject property is located approximately 1345 feet south of Purple Sage Road on the east side of Lansing Lane, Middleton.

**Chairman Sturgill** called the applicant to testify.

**Kim Trout – (Applicant) IN FAVOR – 3778 N Plantation River Dr, Boise, ID 83703**

Mr. Trout started by stating all 8 conditions and the consistency with the comprehensive plan have been met for this application. He explained the applicant is willing to provide areas for school bus stops as needed and to equip all homes with approved sprinkler systems. The proposed lot size adheres to Canyon County's policies and requirements. The applicant is dedicating 50 feet of right of way on Lansing Lane and providing alternative routes to mitigate traffic concerns. The area does not meet the threshold for a traffic impact study. Mr. Trout continued to explain the sprinkler installations would mitigate emergency service concerns, and the proposed site is compatible with surrounding land use. He requests approval.

Commissioner Nevill confirmed that the subject property has been out of production since last year. He asked for more clarification on how this area is transitioning, and Mr. Trout stated the properties to the west and south are transitioning, which would likely cause the subject property to become an agricultural island. It was also confirmed there has not been a date set for the installation of a traffic light that the applicant would be willing to pay their proportion for. Commissioner Nevill asked about the school capacities and firefighting systems. Mr. Trout stated there would be an estimate of 17 more students that might be coming from this development, but does not believe this would add to the capacity issue. He also mentioned that he was unaware of any conditions at this time that require anything more than what was proposed regarding firefighting systems. Commissioner Nevill further asked about a community water system, and Mr. Trout stated it was a non-starter and would be a $600,00-$700,00 impact to the development. Commissioner Nevill commented that the developer's economics are not taken into consideration, but rather the land use and water.

Commissioner Sheets also asked for clarification on the proportional share for the traffic light. Mr. Trout did not have a definite answer.

Chairman Sturgill asked if any of the surrounding developments had a recent traffic impact study, to which Mr. Trout did not have an answer. There was also no answer on the fire response and target times.

Commissioner Mathews asked if Mr. Callister just recently acquired this property, to which Mr. Trout stated his client was shaking his head yes.

**Planner Deb Root** reviewed the Staff Report for the record.

Chairman Sturgill asked if there was a value on how much this development is going to impact services that are already authorized. Planner Root was unable to give a value.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Cheryl Palange – IN OPPOSITION – 9155 Pursuit Dr, Middleton, ID 83644**

Ms. Palange expressed her concerns around the lot sizes. She described previously approved plats and their lot sizes, and shared that 2/3rd of the proposed property have lot sizes smaller than an acre. She also elaborated that the estimated number of children at the schools would be more like 22, and the elementary schools are already full. Ms. Palange also expressed concerns regarding traffic, and agreed that the installation of a traffic light could take a while. With how high the speed limit is in the area, there are concerns of higher levels of danger with 2 outlets right across from each other.

Ms. Palange's three (3) minutes of testimony expired. Chairman Sturgill approved an extra minute of testimony.

Ms. Palange continued that her subdivision was supposed to have both fire hydrants and sprinklers and has neither, and was curious on how the applicant will ensure there is adequate firefighting systems. Ms. Palange's last concern was regarding the lack of maintenance of the common spaces.

Commissioner Nevill asked if the subject property was in production. Ms. Palange stated she drove by recently and can clearly see something is growing. Commissioner Nevill asked if there had been any documented issues with wells, to which Ms. Palange answered her subdivision had not had any issues, but some of the older surrounding ones may have.

**Melissa Stead – IN OPPOSITION – 9265 Tule Dr, Middleton, ID 83644**

Ms. Stead stated her main concerns are regarding traffic and safety risks. Where the bus stops go will be a huge concern. There will be a strain on public services and an overpopulation of the schools. Although she understands the growth that is inevitable, Ms. Stead said she is not in favor of seeing another agricultural land turn into another development. She would advocate for a minimum of 2-acre lots, which will allow the owner to continue to sell and make use of the land, but will help control the impact to schools, public services, and traffic.

Chairman Sturgill asked about the number of developments that have been authorized but not yet developed. Ms. Stead believes there are over 7 different approved developments with less that 1-acre lots, which adds to the overpopulation scale they are seeing in Middleton.

**Kim Trout – (Applicant) REBUTTAL – 3778 N Plantation River Dr, Boise, ID 83703**

Mr. Trout commented on the growth in the field, stating the former rancher/farmer is no longer renting the property, all irrigation equipment has been removed, and it is volunteer growth. He agreed that the area is growing, but the potential impact to schools, public services, etc. is just speculation. He believes the developer has met all requirements under the county's zoning and ordinances. He also stated the average of the lot size has been met, and it is not a remedy to impose a standard on the developer that doesn't exist in county ordinance. Mr. Trout answered the questions regarding sprinklers, and that it was a recommendation from the Middleton Fire Department, and the building inspectors would need to verify the sprinklers have been installed as required on the building permits.

Chairman Sturgill provided evidence and statistics of the elementary schools being over capacity, and asked how the applicant would address that impact. Mr. Trout commented that he believes that would be up to the citizens and not to the development community to address that issue.

**MOTION:** Commissioner Nevill moved to close public testimony on Case No. CR2022-0025, seconded by Commissioner Sheets. Voice vote, motion carried.

**Deliberation:**
Commissioner Nevill stated he is not in favor of this application, and added that questions 3, 6, and 8 could be strengthened.

Commissioner Sheets complimented Mr. Trout in his presentation, and agreed with Commissioner Nevill.

Commissioner Mathews added that it is a cumulative impact of the development on the traffic, public services, and schools.

**MOTION:** Commissioner Nevill moved to **recommend denial** for Case No. CR2022-0025, to the Board of County Commissioners, and modify the Findings of Fact, Conclusions of Law & Order to revise findings for question 3, in regard to the proposed conditional rezone not being compatible with surrounding land uses, question 6, in regard to the impact to traffic, and question 8, in regard to the impact to public services. Seconded by Commissioner Sheets.

**Discussion on Motion:**
Commissioner Sheet suggested options to reducing capacity for the schools, and added the affected intersections are addressed and the addition of any residential units in the area until improved would be inappropriate.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**3. DIRECTOR, PLANNER, COMMISSION COMMENTS:**
There was discussion on whether or not to keep the hearing for July 3, 2025. It was decided to continue with the hearing and correlating documents from the May 15, 2025 hearing would be sent to Chairman Sturgill so he could choose to participate in the final vote for the case being presented on July 3. There was also discussion on the status of obtaining more commissioners.

**4. ADJOURNMENT:**

**MOTION:** Commissioner Nevill moved to adjourn, seconded by Commissioner Sheets. Voice vote, motion carried. Hearing adjourned at 9:12 P.M.

An audio recording is on file in the Development Services Departments' office.

Approved this 3rd day of July, 2025

Robert Sturgill, Chairman

ATTEST
Caitlin Ross

Caitlin Ross, Hearing Specialist

**EXHIBIT 3**

**Staff Report Packet - June 12, 2025**

-

Case No. RZ2022-0012

BOCC Hearing: August 6, 2025

# Planning and Zoning Commission
# Hearing Date: June 12, 2025
## *Canyon County Development Services Department*

## PLANNING DIVISION ADDENDUM

| | |
|---|---|
| **CASE NUMBER:** | **RZ2022-0012** |
| **APPLICANT:** | **Elizabeth Allen, Bristlecone Land Use Consulting** |
| **PROPERTY OWNER:** | **6 Point Properties LLC (Formerly McGuire)** |
| **APPLICATION:** | **Conditional Rezone of Parcel R32862 from an "A" Zone to a "CR-R-1" Zone, subject to conditions of a development agreement.** |
| **LOCATION:** | **62.97-acre parcel located adjacent to 15453 Karcher Road (SH-55), Caldwell; also referenced as a portion of the NE¼ of Section 16, Township 3N, Range 3W, Canyon County, Idaho.** |
| **PLANNER:** | **Dan Lister, Planning Supervisor** |

**SUMMARY:**
On March 13, 2025, the Planning and Zoning Commission (P&Z) heard the subject case, RZ2022-0012, regarding the zoning map amendment (rezone) of the subject parcel, R32862, from an "A" (Agricultural) zone to a "R-1" (Single Family Residential). The P&Z continued the hearing of the case to allow the applicant to (1) revise the application to a conditional rezone to restrict future lots to maintain a one-acre lot size, and (2) provide additional information regarding potential water, SH-55 access/traffic, and school impacts. March 13, 2025, staff report attached. See Exhibit G for P&Z Minutes.

On April 15, 2025, the applicant submitted a revised application for a conditional rezone that will restrict future subdivision to an average lot size of one acre with no more than 48 buildable lots and will require fire hydrants connected to a well, water tank, or an alterative method deemed appropriate by the Caldwell Fire Department (See Exhibit F for revised application and letter of intent).

Proposed development agreement conditions (Exhibit F & I):

1. All development shall comply with all applicable federal, state, and county laws, ordinances, rules, and regulations that pertain to the subject property and the proposed use.
2. The subdivision of the subject parcel, R32862, shall maintain an average lot size of 1 acre, with no more than 48 buildable lots.
3. The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.

The developer shall comply with CCCO §07-06-07(4) Time Requirements: "All conditional rezones for a land use shall commence within two (2) years of the approval of the board."

Additional Information

- The applicant proposed individual wells and does not propose a community water system. The applicant finds that a community system would require a higher density to make it cost-effective (Exhibit F).
- The applicant attached the Traffic Analysis Study (TIS) prepared in 2022, which was reviewed and accepted by the Idaho Transportation Department (ITD), which included right-of-way dedication along SH-55 as part of the SH-55 widening improvements and proposed project (Exhibit F, Attachment 2). Highway District #4 provided comments, which triggered a revised TIS in 2023 (Exhibit A.6). Public

right-of-way dedication was made, and specific improvements were identified to be addressed at the time of platting.

- Legal access will be provided via SH-55 and Vista Drive. Stub roads to the south will be provided for future connectivity. No connections will be made to Devon Drive, Fiesta Way, Castle Way, or any private roads in the area (Exhibit F).
- The proposal, as conditioned, would equate to 18 children based on 0.39 children per household. Assuming the 18 children would be different ages, impacts on West Canyon Elementary, Vallivue Middle School, and Vallivue High School are negligible (Exhibit F). *See Exhibit H.1 for VSD Letter.*

Note: The case was scheduled to be heard on June 5, 2025. Due to a lack of quorum, the case was tabled until June 12, 2025. A courtesy notice was sent on May 20, 2025, to the property owner within 1,000 feet regarding the changed hearing date.

**COMMENTS**

Notification to affected agencies and property owners within 1,000 feet was completed per CCCO §07-05-01. The comment deadline was May 26, 2025. The following comments/information were provided:

- Vallivue School District (VSD; Exhibit D.2 & H.1): "Currently, the surrounding schools can accommodate such a small development. The district's main concern is with large swaths of land approved for major development that could compromise the district's overall capacity to provide appropriate services over the next ten years."
- City of Nampa (Exhibit D.9 & H.2). No comment.
- Idaho Dept of Water Resources – Floodplain (Exhibit D.10 & H.1): No floodplain or floodway. Therefore, no comment.
- Caldwell Fire District (Exhibit D.3 & H.4): Can approve subject to compliance with code requirements and conditions of approval. The nearest station is Station 2. Distance: 2.8 miles. The estimated response time is 8 minutes. Conditions include fire hydrants, roadway widths, access roads, and addressing requirements.
- Idaho Dept of Environmental Quality (Exhibit D.6 & H.5). Informational, not project specific.
- Exhibit H.6: A neighbor (name unknown) dropped off the 2024-2025 Idaho Migratory Game Bird Rules prepared by the Idaho Dept of Fish and Game (IDFG). Page 27 & 28, Areas closed to Goose Hunting, demonstrates that the general area of the request is a safe area for geese.

**EXHIBITS:**

**F. Revised Application**

**G. P&Z Minutes – 3/13/2025**

**H. Comments/Additional Information**

1. Vallivue School District
2. City of Nampa
3. Idaho Dept of Water Resources Floodplain
4. Caldwell Fire District
5. Idaho Dept of Environmental Quality
6. Page 27 & 28 of the 2024-2025 Idaho Migratory Game Bird Rules prepared by IDFG
7. Applicant's PowerPoint Presentation

**I. Draft Findings of Fact, Conclusions of Law & Order (FCOs)**

# Planning and Zoning Commission
# Hearing Date: March 13, 2025
## *Canyon County Development Services Department*

## PLANNING DIVISION STAFF REPORT

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|---|---|
| **CASE NUMBER:** | **RZ2022-0012** |
| **APPLICANT/REPRESENTATIVE:** | **Elizabeth Allen, Bristlecone Land Use Consulting; Robert R. Nash** |
| **PROPERTY OWNER:** | **Six Point Properties – Kristin Short** |
| **APPLICATION:** | **Zoning Map Amendment (Rezone) of Parcel R32862 from an "A" Zone to a "R-1" Zone.** |
| **LOCATION:** | **62.97-acre parcel adjacent to 15453 Karcher Road (SH-55), Caldwell; also referenced as a portion of the NE¼ of Section 16, Township 3N, Range 3W, Canyon County, Idaho.** |
| **ANALYST:** | **Dan Lister, Principal Planner** |

**REQUEST:**
The applicant requests an amendment to the official zoning map to rezone the property from "A" (Agricultural) to "R-1" (Single-Family Residential)**.** *See **Exhibit A** for more information.*

**PUBLIC NOTIFICATION:**

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| **Neighborhood meeting conducted on:** | **March 30, 2022** |
| **JEPA notice sent on:** | **January 3, 2024** |
| **Full Political notice:** | **February 14, 2025** |
| **Affected Agency notice:** | **February 14, 2025** |
| **Neighbor notification within 1,000 feet mailed on:** | **February 14, 2025** |
| **Newspaper notice published on:** | **February 14, 2025** |
| **Notice posted on-site on:** | **February 19, 2025** |

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**1. BACKGROUND:**
The subject parcel, R32862, was created in its current configuration in 1982 when it was divided to create Parcel R32862010, approximately 3.2 acres (PI2019-0361, Exhibit B.3). In 2002, a conditional use permit was approved on appeal to divide the subject parcel into 55 residential lots (CU2002-108). The approval expired due to the request not commencing within two years or being completed in five years. In 2007, a conditional use permit was submitted for the development of 215 residential lots on the subject parcel (CU2007-55). However, the case was closed due to a lack of action by the applicant.

The property is currently in agricultural production and receives an agricultural tax exemption (Exhibit B.1). The parcel is not located in a mapped floodplain (Exhibits B.1 & D.10).

**2. HEARING BODY ACTION:**

Pursuant to the Canyon County Code of Ordinances (CCCO) §07-06-01(3) requests for comprehensive plan changes and ordinance amendments may be consolidated for notice and hearing purposes. Although these procedures can be considered in tandem, pursuant to Idaho Code section 67-6511(b), the commission, and subsequently the board, shall deliberate first on the proposed amendment to the comprehensive plan; then, once the commission, and subsequently the board, has made that determination, the commission, and the board, should decide the appropriateness of a rezone within that area. This procedure provides that the commission, and subsequently the board, considers the overall development scheme of the county prior to consideration of individual requests for amendments to zoning ordinances. The commission, and subsequently the board, should make clear which of its findings relate to the proposed amendment to the comprehensive plan and which of its findings relate to the request for an amendment to the zoning ordinance.

Pursuant to CCCO §07-06-01(4)B if an amendment to a zone or zone boundary is approved, then the approved amendment shall be effective immediately upon written approval and shall be established and clearly indicated, as soon as practicable, on the zoning map or maps adopted as part of this chapter. The board shall, when considering an application for an amendment to the zoning ordinance, consider the comprehensive plan and other evidence gathered through the public hearing process.

The commission should consider the procedures outlined above within CCCO §07-06-01(3).

**OPTIONAL MOTIONS:**

**Approval of the Application**: "I move to approve RZ2022-0012, McGuire, finding the application **does** meet the criteria for approval under §07-06-05 of the Canyon County Code of Ordinance, **with the conditions listed in the staff report, finding that**; [*Cite reasons for approval & Insert any additional conditions of approval*].

**Denial of the Application**: "I move to deny RZ2022-0012, McGuire, finding the application **does not** meet the criteria for approval under §07-06-05 of the Canyon County Code of Ordinance, **finding that** [*cite findings for denial based on the express standards outlined in the criteria & the actions, if any, the applicant could take to obtain approval (ref.ID.67-6519(5)*].

**Table the Application:** "I move to continue RZ2022-0012, McGuire, to a [*date certain or uncertain*].

**3. HEARING CRITERIA:**

**Table 1. Zoning Amendment Criteria Analysis**

| **HEARING CRITERIA (CCCO §07-06-05(1)): The commission shall review the particular facts and circumstances of each proposed zoning amendment and make a recommendation regarding the same to the board. The presiding party shall make its review in terms of the following standards and shall find adequate evidence regarding the following criteria when evaluating the proposed zoning district boundary amendment:** | | | | |
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| **Compliant** | | | **County Ordinance and Staff Review** | |
| **Yes** | **No** | **N/A** | **Code Section** | **Analysis** |
| ☒ | ☐ | ☐ | **07-06-05(1)A** | **Is the proposed zone change generally consistent with the comprehensive plan?** |
| | | | ***Staff Analysis*** | **Conclusion:** The request is generally consistent with the 2020 Canyon County Comprehensive Plan.<br><br>**Findings:**<br>The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c). "The residential designation is a zone specifically set aside for residential development. A |

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| | | | | minimum lot size is established in order to accommodate a septic system and well on the same parcel. In areas where soils are not adequate to support septic systems, development alternatives must be considered. Residential development should be within areas that demonstrate a development pattern or residential land uses" (Page 12 of the 2020 Comp. Plan).<br><br>The subject parcel is located in the Caldwell Area of City Impact. The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d). The "Residential Estates" classification includes land that is "suitable for low-density residential uses of a semi-rural character. This classification is intended to protect and enhance single-family living areas that are rural in character or otherwise transitional in relationship to more urbanized residential areas of higher density. Such areas may not necessarily have a full range of urban utilities and services contingent upon topography, density, lot size, and development designs. The residential density range shall not exceed two (2) dwelling units per gross acre" (Page 44 of the 2040 Caldwell Comprehensive Plan).<br><br>Based on population projection by COMPASS for Caldwell and Canyon County, the applicant finds the request addresses housing needs by providing residential development which "will help reduce the need to provide housing in rural areas that are not anticipated to be annexed into city limits" (Exhibit A.2).<br><br>The request aligns with many goals and policies of the 2020 Comprehensive plan, including, but not limited to:<br><br>- **Property Rights Goal 1:** *Canyon County will ensure that land use policies, restrictions, conditions and fees do not violate private property rights or create unnecessary technical limitations on the use of property.*<br>- **Population Policy 2:** *Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses.*<br>- **Economic Development Policy 6:** *Encourage commercial and residential development in a controlled, planned, and constructive manner, which will enhance, not destroy, the existing lifestyle and environmental beauty of Canyon County.*<br>- **Land Use Goal 1**: *To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.*<br>- **Land Use Policy 1:** *Review all residential, commercial, and industrial development proposals to determine the land use compatibility and impact to surrounding areas.*<br>- **Land Use Residential Policy 1:** *Encourage high density development in areas of city impact.*<br>- **Natural Resources Policy 4:** *Use appropriate zoning designations and other strategies to minimize adverse impacts of development on natural resource areas.* |

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| | | | | - **Hazardous Areas Policy 2:** *Discourage development in or near natural hazardous areas, such as airports, power line corridors, electrical substations, flood plains, unstable soil areas and steep slopes, high velocity wind and storm prone areas, except for industries, which may require these conditions.*<br>- **Public Services, Facilities and Utilities Goal 1:** *Canyon County will endeavor to provide public services and facilities related to solid waste management, emergency medical service, development review, law enforcement, community health and other services for which it is responsible in a fair, efficient and professional manner.*<br>- **Transportation Goal 1.** *Coordinate with and assist Canyon County Highway Districts, the Idaho Transportation Department (ITD), Valley Regional Transit (VRT), and the Community Planning Association of Southwest Idaho (COMPASS) in developing and managing a well-planned, sustainable, multimodal transportation system that provides for the safe, efficient, cost-effective movement of people and goods and that supports the region's residential, commercial, industrial, and public development vision.*<br>- **Special Areas, Sites and Recreation Goal 1:** *To encourage the preservation of recreational, historical, archeological and architectural landmark areas of the county for the beneficial use of future generations.*<br>- **Housing Goal 1:** *Encourage opportunities for a diversity of housing choices in Canyon County.*<br>- **Agriculture Policy 3:** *Protect agricultural operations and facilities from land use conflicts or undue interference created by existing or proposed residential, commercial, or industrial development.*<br>*For supporting evidence, see the findings in the subsequent criteria.* |
| ☒ | ☐ | ☐ | **07-06-05(1)B** | **When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation?** |
| | | | ***Staff Analysis*** | **Conclusion:** In consideration of the surrounding land uses, the proposed zone requests to an "R-1" (Single-Family Residential) zone is more appropriate than the current "A" (Agricultural) zone.<br><br>**Findings:**<br>Existing: The subject parcel, approximately 62 acres, is zoned "A" (Agricultural, Exhibit B.2e). Per CCCO section 07-10-25(1): "*The purposes of the A (Agricultural) Zone are to: A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations; B. Limit urban density development to Areas of City Impact in accordance with the comprehensive plan; C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65; D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan.*"<br><br>The subject parcel consists of moderately-suited soils and is considered prime farmland if irrigated (Exhibit B.2h). Canyon Soil Conservation District does not recommend the approval of the request (Exhibit D.7). |

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| | | | | Although there are still large agricultural parcels and uses in the vicinity (Exhibit B.2a & b), the applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.5d), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibit A.2).<br><br>The parcel is surrounded by residential development:<br>- The north boundary for the Parcel abuts Karcher Road and Somerset West Subdivision, zoned "R-R" (Rural Residential) approved in 1974 with 57 lots (0.65-acre average lot size; Exhibit B.2g).<br>- The south boundary abuts a 40-acre property in agricultural use (Exhibit B.2a) and Moonstruck Subdivision Phase 3 approved in 2003 with 11 lots (1.09-acre average lot size, Exhibit B.2g).<br>- The east boundary abuts Stecher Subdivision, Vanal Heights Subdivision, and El Rancho Heights, both zoned "R-R" (Rural Residential; Exhibit B.2e).<br>o Stecher Subdivision was approved in 1959 with 14 lots (0.72-acre average lot size). The subdivision was amended to include 49 lots in 1968 (0.62-acre average lot size, Exhibit B.5a).<br>o Vanal Heights Subdivision was approved in 1960 with 70 lots (0.41-acre average lot size; Exhibit B.5a).<br>o El Rancho Heights was approved in 1977 with 79 lots (0.43-acre average lot size, Exhibit B.5c)<br>- The west boundary abuts Wintergreen Subdivision and Canyon Lake Estates (Exhibit B.2g).<br>o Wintergreen Subdivision was approved in 2000 with 7 lots (1.04-acre average lot size).<br>o Canyon Lake Estates Phase 1 was approved in 2008 with 19 lots (1.21-acre average lot size).<br><br><u>Request</u>: The request for an "R-1" (Single-Family Residential) zone allows an average minimum lot size of one acre or, for parcels within the Area of City Impact with central sewer and/or water services, the lot size may be reduced to 12,000 square feet (CCCO Section 07-10-21(2)). Per CCZO Section 07-10-25(3): "*The purpose of the R-1 (Single-Family Residential) Zone is to promote and enhance predominantly single-family living areas at a low-density standard.*"<br><br>The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c & d).<br><br>The request matches the existing built environment and zones found in the area.<br>- The parcel is located near residential and commercial zones (Exhibit B.2e).<br>- Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).<br><br>The subject parcel is located in the Caldwell Area of City Impact. City jurisdiction is approximately 0.25 miles from the subject parcel. The Caldwell 2040 |

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| | | | | Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d). The City of Caldwell is not opposed to the proposed rezone to low-density residential, but would like to see the frontage along Karcher Road preserved for commercial services at a minimum. If approved, the City of Caldwell would request that street landscape buffers along Karcher Road and Kimball Avenue be installed per the City of Caldwell's Landscaping Ordinances. This would include the requirement for all common open space, buffers between different land uses, and pathways. Any connection to City services would require a formalized Municipal Services Agreement to be entered into. |
| ☒ | ☐ | ☐ | **07-06-05(1)C** | **Is the proposed zoning map amendment compatible with surrounding land uses?** |
| | | | ***Staff Analysis*** | **Conclusion:** The request to "R-1" is compatible with surrounding land uses.<br><br>**Findings:**<br>Pursuant to CCCO §07-02-03, land uses are compatible if: *a) they do not directly or indirectly interfere or conflict with or negatively impact one another and b) they do not exclude or diminish one another's use of public and private services.*<br><br>The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c). The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d).<br><br>The applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.4), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibit A.2).<br><br>The request matches the existing built environment and zones found in the area.<br>- The parcel is located near residential and commercial zones (Exhibit B.2e).<br>- Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).<br><br>Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development remains compatible with the surrounding land uses. |
| ☒ | ☐ | ☐ | **07-06-05(1)D** | **Will the proposed zoning map amendment negatively affect the character of the area? What measures will be implemented to mitigate impacts?** |
| | | | ***Staff Analysis*** | **Conclusion:** The proposed use will not negatively affect the character of the area. Any necessary measures to mitigate impacts can be addressed at the time of subdivision platting.<br><br>**Findings:**<br>The character contains a mix of agricultural, residential, and commercial uses (Exhibit B.2a, B.2e, B.2j & C). |

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| | | | | - The subject parcel, two parcels to the south, and a few parcels to the north still maintain agricultural production on large agricultural parcels. Parcels R32869 and R32870 are both 40 acres and are in agricultural production (crops and livestock). Parcel R32870 was rezoned in 2019 to "CR-R-1" (RZ2019-0012, Exhibit B.4) and is currently in the platting process (Norse Landing Subdivision, Exhibit B.2g & B.5d).<br>- The parcel is located near residential and commercial zones (Exhibit B.2e).<br>- Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).<br><br>Based on the County and City of Caldwell Comprehensive Plans, residential and commercial growth is the character promoted in the area (Exhibit B.2c & B.2d).<br><br>Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development does not negatively impact the area. |
| ☒ | ☐ | ☐ | **07-06-05(1)E** | **Will adequate facilities and services including sewer, water, drainage, irrigation, and utilities be provided to accommodate the proposed zoning map amendment?** |
| | | | ***Staff Analysis*** | **Conclusion:** Adequate sewer, water, drainage, irrigation, and utilities to accommodate the future development can be provided at the time of platting.<br><br>**Findings:**<br>The applicant states the sewer will be via an individual septic system, water via individual domestic wells, drainage to be retained on-site, irrigation via pressurized irrigation through a priority right irrigation well, and utilities via Idaho Power and Intermountain Gas (Exhibit A.2 & A.4).<br><br>The applicant's letter of intent is based on developing one-acre lot sizes. The "R-1" zone allows an average minimum lot size of one acre or, for parcels within the Area of City Impact with central sewer and/or water services, the lot size may be reduced to 12,000 square feet (CCCO Section 07-10-21(2)). Therefore, adequate services would be dependent on the residential density. Residential lots less than one-acre lot size would require connection to city services or community systems, which would be determined via a planned unit development approval (via a conditional use permit) and/or at the time of preliminary platting.<br>- Community systems will require Idaho Department of Water Quality review and approval (Exhibit D.6).<br>- Connection to the available city services will require a pre-annexation agreement and a formalized Municipal Services Agreement (Exhibit D.4 & D.5).<br><br>Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon |

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| | | | | County Code of Ordinances) which will ensure development includes adequate services and facilities. |
| ☒ | ☐ | ☐ | **07-06-05(1)F** | **Does legal access to the subject property for the zoning map amendment exist or will it exist at the time of development?** |
| | | | ***Staff Analysis*** | **Conclusion:** The subject property does have legal access. Access for residential development will be determined during the platting process.<br><br>**Findings:**<br>The property currently has frontage along SH-55 (Karcher) and Kimball Avenue (a local public road). Access to SH-55 from Kimball has been blocked by the Idaho Transportation Department. The property currently uses Vista Drive, a public road, to S. 10th Avenue, a minor arterial public road (Exhibit A.2 & A.6).<br><br>Future development will use SH-55, Vista Drive (local road through Vanal Heights Subdivision), and the stub road to the south parcel that will, once developed, provide additional access alternatives (Exhibit A.6 & B.5d). If the request is approved, subdivision platting is required, which requires access to meet public road and access requirements (CCCO §07-17-09). |
| ☒ | ☐ | ☐ | **07-06-05(1)G** | **Does the proposed zoning map amendment require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts?** |
| | | | ***Staff Analysis*** | **Conclusion:** A Traffic Impact Study was provided demonstrating a 49 residential lot development will not be an impact.<br><br>**Findings:**<br>A revised Traffic Impact Study (TIS) was prepared on December 13, 2024 (Exhibit A.6). The development of 49 residential lots is anticipated to create 523 trips per weekday, 39 trips during the AM peak hour and 51 trips during the PM peak hour at full build-out. The development includes right-of-way dedication along SH-55 and internal public roads with access point from SH-55 (Ashland Drive), Kimball Avenue (Vista Drive) and future stub to the south. With subdivision improvements, SH-55 improvements, and build-out of 2027, additional improvements/mitigation are not anticipated. A new study will be required at the time of platting if the development increases residential density to meet planned city growth.<br><br>Highway District #4 reviewed the initial and revised TIS and found the request with 49 lots is not anticipated to significantly degrade Level of Service (LOS) at nearby intersections after SH-55 is widened to five lanes. Other impacts from the development will be mitigated by right-of-way dedication, frontage improvements, and impact fees (Exhibit D.11).<br><br>Idaho Transportation Department (ITD) accepts the TIS subject to right-of-way dedication for the Ashland Drive right-turn lane from SH-55 (Exhibit D.8). The dedication and improvement are necessary to support future development of the south parcels that will be stubbed through the development on the subject parcel. |

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| | | | **07-06-05(1)H** | **Will the proposed zoning map amendment impact essential public services and facilities, such as schools, police, fire, and emergency medical services? What measures will be implemented to mitigate impacts?** |
| ☐ | ☐ | ☐ | ***Staff Analysis*** | **Conclusion:** The request is not anticipated to impact essential public services and facilities including, but not limited to schools, police, fire, and emergency medical services. Any necessary measures to mitigate impacts can be addressed at the time of platting.<br><br>**Findings:**<br><br>Schools: Future development will be served by the Vallivue School District (Exhibit B.1). The District has concerns about the capacity of Vallivue High School. Current enrollment is approximately 1,300 students with a capacity of 1,800 students. The District states two elementary schools will open in the Fall of 2025. The letter does not oppose the request or recommend any mitigation measures (Exhibit A.2 & D.2).<br><br>No comments were received from the Brown Bus Company or Caldwell Transportation.<br><br>Police: Canyon County Sheriff's Office. No comments were received.<br><br>Fire protection & Emergency Medical Services: The property is served by the Caldwell Rural Fire Protection District (Exhibit B.1). Caldwell Rural Fire does not oppose the request subject to compliance code requirements provided in their letter. Requirements include fire hydrants, adequate street identification, and adequate access, roadways, and turnarounds (Exhibit D.3).<br><br>No comment was received from Canyon County Paramedics/EMT.<br><br>Irrigation District: The United States Forest Canal that lies within the boundary of the subject parcel is operated and maintained by the Boise Project Board of Control. The Boise Project Board of Control asserts the federal easement of 25 feet northwest and 25 feet southwest of the canal's centerline. Landscaping other than gravel is not approved in the easement. Fencing, gates, and pathways may be constructed off the canal easement. Any improvements within the easement or any piping/relocation of the canal must be approved by the Bureau of Reclamation and Boise Project Board of Control prior to construction. Any roadways and utilities crossing the canal must be approved through a crossing agreement by the Bureau of Reclamation and the Boise Project (Exhibit D.1). No comment was received from Wilder Irrigation District.<br><br>Mitigation: If the request is approved, subdivision platting is required, which requires notification to affected essential services for review and comments before subdivision approval (CCCO §07-17-09). |

**Table 2. Area of City Impact - Caldwell**

**CCCO §09-01-21: Caldwell Area of City Impact – Zoning Ordinance Amendment Proposals: All proposed amendments to the text and/or map of the Canyon County zoning ordinance or subdivision regulations, which may relate to the Caldwell area of city impact, shall be referred by the county to the city of Caldwell in the same manner as provided for in subsection 09-01-17(3) of this article. Any recommendation of the city of Caldwell shall be considered in the same manner as provided for in subsection 09-01-17(3) of this article.**

**CCCO §09-01-17(3): Notice of all proposals to amend the county comprehensive plan, which may pertain to the Caldwell area of city impact but which do not originate from the city of Caldwell, shall be given to the city of Caldwell community development director at least thirty (30) calendar days prior to the first county public hearing at which such proposal is considered by the county, and the city of Caldwell may make a recommendation before or at said public hearing. After the city receives its initial thirty (30) days' notice, any further notice of proposed changes to the proposal will be provided to the city of Caldwell at least seven (7) days prior to the public hearing. If a recommendation is received by the county from the city of Caldwell, the recommendation shall be given consideration by the county, provided it is factually supported. Such recommendation shall not be binding on the county. If no recommendation is received, Canyon County may proceed without the recommendation of the city of Caldwell.**

| Compliant | | | County Ordinance and Staff Review | |
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| **Yes** | **No** | **N/A** | **Code Section** | **Analysis** |
| | | | **§09-01-21** | **Caldwell Area of City Impact – Zoning Ordinance Amendment Proposals** |
| ☒ | ☐ | ☐ | ***Staff Analysis*** | The City of Caldwell submitted a letter dated January 4, 2024 (Exhibit D.4). The letter states the subject parcel is located in the City of Caldwell's Area of City Impact and within 0.25 miles of the City of Caldwell's incorporated limits. The parcel is designated as Residential Estates in the City of Caldwell's Comprehensive Plan.<br><br>The City of Caldwell is working on a comprehensive plan update. "Although this area currently is designated as Residential Estates in the City's current Comprehensive Plan, there is potential for this land use designation to change to a Highway Corridor zone in the future" (Page 2 of the letter). Zones in the Highway Corridor designation would allow for a mixed-use land-use designation that combines higher-density residential with commercial services.<br><br>The City of Caldwell is not opposed to the proposed rezone to low-density residential, but would like to see the frontage along Karcher Road preserved for commercial services at a minimum. If approved, the City of Caldwell would request that street landscape buffers along Karcher Road and Kimball Avenue be installed per the City of Caldwell's Landscaping Ordinances. This would include the requirement for all common open space, buffers between different land uses, and pathways. Any connection to City services would require a formalized Municipal Services Agreement to be entered into.<br><br>The applicant finds the project as requested is compatible with the existing built environment, compatible with the City's adopted comprehensive plan, and currently does not have a path to annexation (Exhibit A.2). If the request is approved, subdivision platting is required, which requires notification to the City of Caldwell and compliance with Caldwell's subdivision and landscaping ordinances unless waived by the County (CCCO §07-17-09 & §09-01-19). |

**4. AGENCY COMMENTS:**

Agencies including the Canyon County Sheriff's Office, Canyon County Paramedics/EMT, Brown Bus Company, Caldwell Transportation, COMPASS, Idaho Transportation Department, Valley Regional Transit, Caldwell Rural Fire Protection District, Boise Project Board of Control, Wilder Irrigation, (Canyon) Highway District No. 4, Vallivue School District, Idaho Power, Intermountain Gas, CenturyLink, Ziply, Deer Flat National Refuge, Idaho Agriculture Aviation Association, Canyon Soil Conservation District, Idaho Dept. of Environmental Quality, Idaho Department of Water Resources (Water Rights), Idaho

State Dept. of Agriculture, Southwest District Health, and the City of Caldwell were notified of the subject application.

Staff received agency comments from City of Caldwell (Engineering), City of Caldwell (Planning), Vallivue School District, Idaho Transportation Department, Boise Project Board of Control, (Canyon) Highway District #4, Idaho Dept. of Environmental Quality, Canyon Soil Conservation District, and Caldwell Fire Department. All agency comments received by the aforementioned materials deadline are located in **Exhibit D**.

Pursuant to Canyon County Ordinance 01-17-07B Materials deadline, the submission of late documents or other materials does not allow all parties time to address the materials or allow sufficient time for public review. After the materials deadline, any input may be verbally provided at the public hearing to become part of the record.

**5. PUBLIC COMMENTS:**

Staff received one letter in opposition which includes a petition from 102 homeowners by the materials deadline of March 10, 2025. Opposition includes concerns regarding water availability, traffic impacts created by future development, and opposition to El Rancho Heights public roads. All public comments received by the aforementioned materials deadline are located in **Exhibit E.**

Pursuant to Canyon County Ordinance 01-17-07B Materials deadline, the submission of late documents or other materials does not allow all parties time to address the materials or allow sufficient time for public review. After the materials deadline, any input may be verbally provided at the public hearing to become part of the record.

**6. SUMMARY & RECOMMENDED CONDITIONS:**

In consideration of the application and supporting materials, staff concludes that the proposed zoning map amendment (rezone) is **compliant** with Canyon County Ordinance 07-06-05. A full analysis is detailed within the staff report.

**7. EXHIBITS:**

**A. Application Packet & Supporting Materials**

1. Master Application
2. Letter of Intent
3. Legal Description
4. Land Use Worksheet
5. Neighborhood Meeting
6. Traffic Impact Study Update – December 13, 2024
7. Applicant's PowerPoint Presentation

**B. Supplemental Documents**

1. Parcel Tool – Parcel R32862
2. Cases Maps/Reports
   a. Aerial
   b. Vicinity
   c. Future Land Use
   d. Future Land Use – Caldwell
   e. Zoning
   f. Cases
   g. Subdivisions
   h. Prime Farmland

i. Contours
j. Lot Classification
k. TAZ
l. Dairy, Feedlot & Gravel Pit

3. PI2019-0361
4. RZ2019-0012
5. Adjacent Plats
   a. Vanal Heights Subdivision
   b. Stecher Subdivision
   c. El Rancho Heights Subdivision
   d. Norse Landing Subdivision Preliminary Plat

**C. Site Visit Photos: January 10, 2025**

**D. Agency Comments Received by: March 10, 2025**

1. Boise Project Board of Control; letter dated January 8, 2024;
2. Vallivue School District #139; letter dated January 17, 2024 & February 25, 2025
3. Caldwell Rural Fire Protection District; letter dated February 18, 2025;
4. City of Caldwell – Planning; letter dated January 4, 2024;
5. City of Caldwell – Engineering; email dated March 6, 2025;
6. Idaho Dept. of Environmental Quality; letter dated February 21, 2024;
7. Canyon Soil Conservation District; letter dated April 29, 2023;
8. Idaho Transportation Department; letter dated February 3, 2025;
9. City of Nampa; email dated February 14, 2025;
10. Idaho Dept. of Water Resources – NFIP; email dated February 18, 2025; and
11. Highway District #4; letter dated May 23, 2023 & January 14, 2025

**E. Public Comments Received by: March 10, 2025**

1. Tom Whittemore, President of El Rancho Heights Subdivision, including signed petitions; letter dated March 10, 2025

Exhibit 3

**EXHIBIT A**

**Application Packet & Supporting Materials**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: March 10, 2025

# MASTER APPLICATION

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**

111 North 11th Avenue, #310, Caldwell, ID 83605
zoninginfo@canyoncounty.id.gov Phone: 208-454-7458 Fax: 208-454-6633

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| **PROPERTY OWNER** | OWNER NAME: 6 Point Properties/ Kristin Short |
| | MAILING ADDRESS: 16402 Orchard Ave Caldwell, ID |
| | PHONE: 541-786-2403 EMAIL: 6pointdevelopment@gmail.com |
| **I consent to this application and allow DSD staff / Commissioners to enter the property for site inspections. If owner(s) are a business entity, please include business documents, including those that indicate the person(s) who are eligible to sign.** | *Signature:* Kristin Short *Date:* 3/10/25 |
| **(AGENT) ARCHITECT ENGINEER BUILDER** | CONTACT NAME: Robert R. Nash |
| | COMPANY NAME: |
| | MAILING ADDRESS: 10365 W Highlander Rd. Boise, ID 83709 |
| | PHONE: 208-861-4966 EMAIL: rob.r.nash@gmail.com |
| **SITE INFO** | STREET ADDRESS: 15453 Karcher Rd. Caldwell, ID 83607 |
| | PARCEL #: R3286200000/ R328201000 LOT SIZE/AREA: 69.161 |
| | LOT: BLOCK: SUBDIVISION: Tillman Ridge Subdivision |
| | QUARTER: N 1/4 SECTION: 16 TOWNSHIP: 3N RANGE: 3W |
| | ZONING DISTRICT: AG FLOODZONE (YES/NO): No |
| **HEARING LEVEL APPS** | _____CONDITIONAL USE _____COMP PLAN AMENDMENT _____CONDITIONAL REZONE |
| | ____ ZONING AMENDMENT (REZONE) _____DEV. AGREEMENT MODIFICATION _____VARIANCE > 33% |
| | _____MINOR REPLAT _____VACATION _____APPEAL |
| | _____SHORT PLAT SUBDIVISION _____ PRELIMINARY PLAT SUBDIVISION _____FINAL PLAT SUBDIVISION |
| **DIRECTORS DECISION APPS** | _____ ADMINISTRATIVE LAND DIVISION _____EASEMENT REDUCTION _____SIGN PERMIT |
| | _____PROPERTY BOUNDARY ADJUSTMENT _____HOME BUSINESS _____VARIANCE 33%> |
| | _____PRIVATE ROAD NAME _____TEMPORARY USE _____DAY CARE |
| | _____OTHER_____ |
| CASE NUMBER: | DATE RECEIVED: |
| RECEIVED BY: | APPLICATION FEE: CK MO CC CASH |

*Revised 3/1/22*

Canyon County Development Services
111 North 11th Avenue, #310
Caldwell, Idaho 83605
www.canyoncounty.id.gov
208-454-7458

# AFFIDAVIT OF LEGAL INTEREST

I, Lo Point Properties (name), 16402 Orchard Ave (address)

Caldwell (city), ID (state) 83607 (zip code)

being first duly sworn upon oath, depose and say:

1. That I am the owner of record of the property described on the attached application and I grant my permission to

Robert R. Nash (name), 10365 W Highlander Rd. (address) Boise, ID 83709

to submit the accompanying application pertaining to the subject property.

2. I agree to indemnify, defend and hold Canyon County and its employees harmless from any claims to liability resulting from any dispute as to the statements contained herein or as to the ownership of the property, which is the subject of the application.

Dated this 10 day of March, 20 25.

Kristen Short
(signature)

STATE OF IDAHO )
ss
COUNTY OF CANYON )

On this 10 day of March, in the year 2025, before me Jessica Frazier a notary public, personally appeared Kristen Short, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same.

JESSICA FRAZIER
COMMISSION #20203945
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 09/21/2026

Notary:

My Commission Expires: 9/21/2026

# MASTER APPLICATION

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**

111 North 11th Avenue, #140, Caldwell, ID 83605

www.canyonco.org/dsd.aspx Phone: 208-454-7458 Fax: 208-454-6633

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|---|---|
| **PROPERTY OWNER** | **OWNER NAME:** William B McGuire 2011 Revocable Trust |
| | MAILING ADDRESS: 4023 Spyglass Road, Chico, California 95973 |
| | PHONE: 530-513-0085 EMAIL: bill.mcguire.hobie@gmail.com |

**I consent to this application and allow DSD staff / Commissioners to enter the property for site inspections. If owner(s) are a business entity, please include business documents, including those that indicate the person(s) who are eligible to sign.**

*Signature:* _____ *Date:* 9-28-2021

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| **(AGENT) ARCHITECT ENGINEER BUILDER** | **CONTACT NAME:** Elizabeth Allen |
| | COMPANY NAME: Bristlecone Land Use Consulting LLC |
| | MAILING ADDRESS: P.O. Box 3953, Nampa, Idaho 83653 |
| | PHONE: 907-978-3439 **EMAIL:** elizabeth@bristleconelanduseconsulting.com |

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| **SITE INFO** | STREET ADDRESS: |
| | **PARCEL #:** R3286200000 **LOT SIZE/AREA:** 62.991 acres |
| | LOT: BLOCK: SUBDIVISION: |
| | QUARTER: N 1/4 SECTION: 16 TOWNSHIP: 3N RANGE: 3W |
| | ZONING DISTRICT: AG FLOODZONE (YES/NO): No |

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| **HEARING LEVEL APPS** | ____CONDITIONAL USE ____COMP PLAN AMENDMENT ____CONDITIONAL REZONE |
| | X ZONING AMENDMENT (REZONE) ____DEV. AGREEMENT MODIFICATION ____VARIANCE >33% |
| | ____MINOR REPLAT ____VACATION ____APPEAL |
| | ____SHORT PLAT SUBDIVISION ____PRELIMINARY PLAT SUBDIVISION ____FINAL PLAT SUBDIVISION |

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| **DIRECTORS DECISION APPS** | X ADMINISTRATIVE LAND DIVISION ____EASEMENT REDUCTION ____SIGN PERMIT |
| | ____PROPERTY BOUNDARY ADJUSTMENT ____HOME BUSINESS ____VARIANCE 33% > |
| | ____PRIVATE ROAD NAME ____TEMPORARY USE ____DAY CARE |
| | ____OTHER_____ |

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|---|---|
| CASE NUMBER: | DATE RECEIVED: |
| RECEIVED BY: | APPLICATION FEE: CK MO CC CASH |

*Revised 1/3/21*

**Exhibit A.1 - 3**

Canyon County Development Services
111 North 11th Avenue, #310
Caldwell, Idaho 83605
www.canyoncounty.id.gov
208-454-7458

# AFFIDAVIT OF LEGAL INTEREST

I, bill McGuire (name), 4023 Spyglass Road (address)

Chico (city), CA (state) 95973 (zip code)

being first duly sworn upon oath, depose and say:

1. That I am the owner of record of the property described on the attached application and I grant my permission to

Elizabeth Allen, Bristlecone Land Use Consulting (name), P.O. Box 3953, Nampa, Idaho 83653 (address)

to submit the accompanying application pertaining to the subject property.

2. I agree to indemnify, defend and hold Canyon County and its employees harmless from any claims to liability resulting from any dispute as to the statements contained herein or as to the ownership of the property, which is the subject of the application.

Dated this 19 day of September, 20 24.

(signature)

STATE OF IDAHO )
ss
COUNTY OF CANYON )

On this _____ day of See Attached, in the year 20____, before me _____, a notary public, personally appeared _____, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same.

Notary: _____

My Commission Expires: _____

## CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

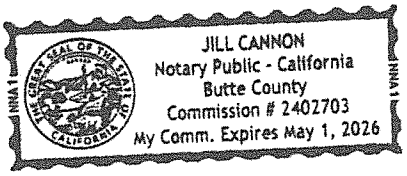
State of California )
)
County of Butte )

On Sept 19, 2024 before me, Jill Cannon, Notary Public,
personally appeared William Bradford McGuire,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Jill Cannon (Seal)



Bristlecone
LAND USE CONSULTING

January 6, 2024

Canyon County
Development Services Department
111 N. 11th Avenue, Room 310
Caldwell, Idaho 83605

**RE: TILLMAN RIDGE REZONE UPDATED LETTER OF INTENT**

Dear Mr. Lister,

On behalf of the property owner, we are pleased to submit this updated letter of intent for the Tillman Ridge Rezone. We are proposing a Zoning Map Amendment from A (Agriculture) to R-1 (Single Family Residential) for Parcel R3286200000. The approximately 63-acre parcel is located at the southwest corner of Karcher Road/HWY 55 and Kimball Avenue. A preliminary plat consisting of 52 lots (48 residential lots and four (4) common lots) with an average lot size of one (1) acre is forthcoming after the approval of this request.

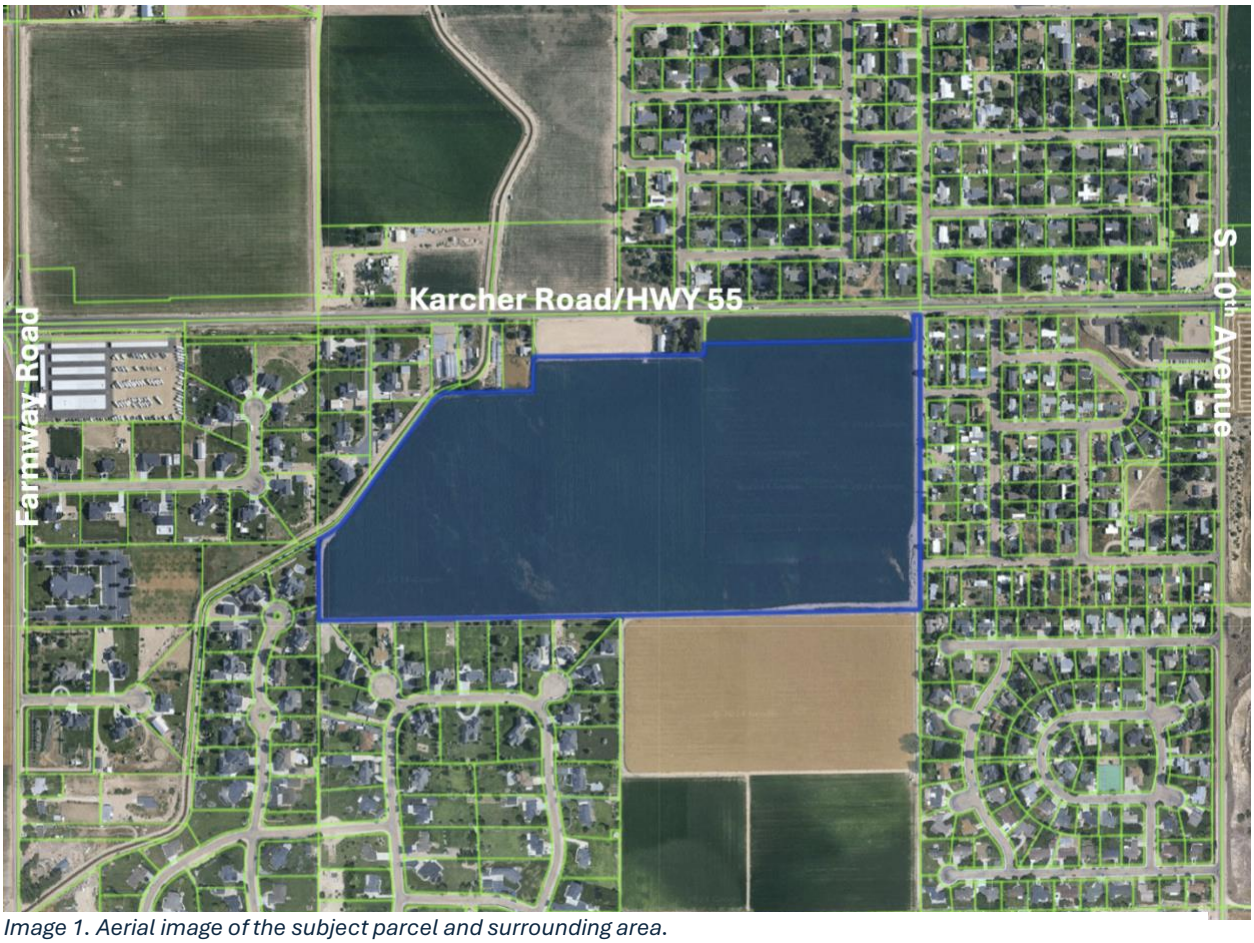



*Image 1. Aerial image of the subject parcel and surrounding area.*

The information below provides an analysis of the rezone criteria and the agency comments that the Development Services Department has received in response to the agency notice.

**A. Is the proposed zone change generally consistent with the comprehensive plan;**

The proposed zone change to R-1 is consistent with Canyon County 2020 Comprehensive Plan ("Plan"), which designates the future land use of the subject property and the properties to the north, south, east, and west as Residential. In addition to aligning with the future land use map, the proposed zone change aligns with the following goals and policies:

*Property Rights Policy 8. Promote orderly development that benefits the public good and protects the individual with a minimum of conflict.*

*Population Goal 1. Consider population growth trends when making land use decisions.*

*Population Policy 3. Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses.*

*Economic Development Policy 6. Encourage commercial and residential development in a controlled, planned, and constructive manner, which will enhance, not destroy, the existing lifestyle and environmental beauty of Canyon County.*

*Chapter 4 Economic Development Policy 7. Canyon County should identify areas of the county suitable for commercial, industrial and residential development. New development should be located in close proximity to existing infrastructure and in areas where agricultural uses are not diminished.*

*Land Use Goal 1. To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.*

*Land Use Goal 2. To provide for the orderly growth and accompanying development of the resources within the county that is compatible with the surrounding area.*

*Land Use Goal 4. To encourage development in those areas of the county which provide the most favorable conditions for future community services.*

*Chapter 4 Land Use Residential Policy 2. Encourage residential development in areas where agricultural uses are not viable.*

*Chapter 4 Land Use Residential Policy 3. Encourage compatible residential areas or zones within the county so that public services and facilities may be extended and provided in the most economical and efficient manner.*

*Chapter 11 Housing Goal 1. Encourage opportunities for a diversity of housing choices in Canyon County.*

As discussed in Chapter 2 of the Plan, based on COMPASS projections, the population in Canyon County in 2025 was anticipated to be 255,796. The current population of Canyon

County, based on U.S. Census data, is estimated at 257,674. To help accommodate the growth in population, the proposed rezone, and forthcoming preliminary plat will provide 44 buildable lots for single-family homes. Providing housing within this area of Canyon County will help reduce the need to provide housing in rural areas that are not anticipated to be annexed into city limits.

In a letter dated January 4, 2024, provided to the Development Services Department, the City of Caldwell commented on this proposal as the subject property is within the Area of City Impact. Although the Idaho Local Land Use Planning Act now requires that the County Comprehensive Plan apply to areas of city impact, we evaluated the City of Caldwell's Comprehensive Plan. The subject property's future land use designation is Residential Estates in the City of Caldwell's existing Comprehensive Plan. In their update to their Comprehensive Plan (not yet adopted), the future land use of the subject property may change to Highway Corridor, which would support a mixed land use with high-density residential with commercial services. High-density residential and commercial development for the subject property would not be compatible with the existing built environment as it is surrounded by established single-family residential uses with average minimum lot sizes ranging from 0.29 to 2.30 acres. The subject property does not currently have a path of annexation.

**B. When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation;**

An R-1 zoning designation is more appropriate than the existing Agriculture zoning designation. As shown in Image 1, the subject property is immediately adjacent to RR (Rural Residential) zoning on the north and east and is primarily surrounded by single-family residential subdivisions on all sides. A property just south of the subject property, shown in yellow at the bottom of Image 2, was Conditionally Rezoned to Single Family Residential (CR-R1) and is currently in the process of being platted with 34 residential lots, two common lots, and one irrigation control lot (Norse Landing Subdivision). One parcel sits between the Norse Landing Subdivision and the subject property.

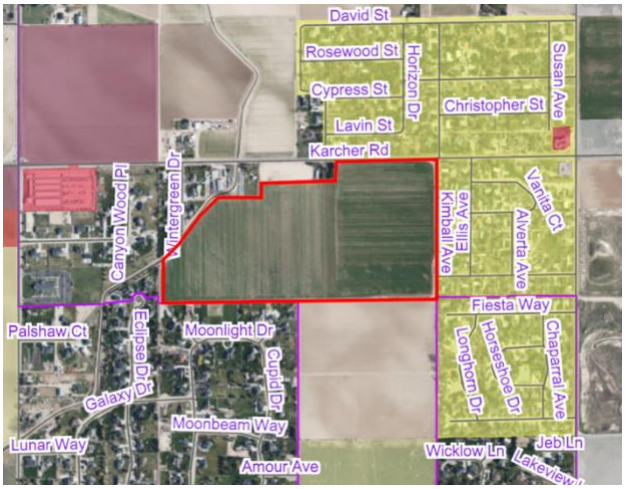


*Image 2. Zoning Map.*

We recognize that the soils of the subject property are identified as Prime Farmland as explained in a letter to DSD from Canyon Soil Conservation District dated April 29, 2023, but due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/HWY 55, and the forthcoming subdivision to the south (Norse Landing), the subject property has become too fragmented for farming and the number of residences in the area makes the movement of farm equipment challenging. As the subject property is within an area of city impact, rezoning the subject property will provide the opportunity to develop single-family homes to provide housing in an area where growth is planned instead of parcels outside of areas of city impact where agriculture is the primary use.

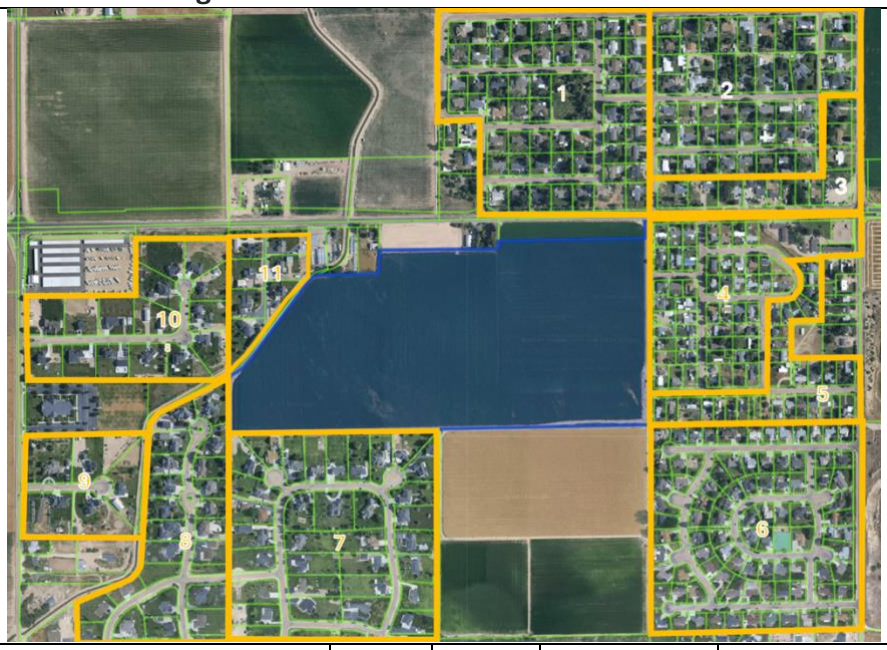
**C. Is the proposed zoning map amendment compatible with surrounding land uses;**

As explained in B and D, the primary surrounding land use is single-family residential. The proposed zoning map amendment to R-1 is compatible with the surrounding residential uses and will fill a gap between the adjacent residential subdivisions.

**D. Will the proposed zoning map amendment negatively affect the character of the area? What measures will be implemented to mitigate impacts?**

As explained in A and B, the immediate surrounding area is primarily single-family residential and will not be negatively affected by a zoning map amendment to R-1 (Single Family Residential). The forthcoming preliminary plat proposes 44 single-family residential lots that will provide uses consistent with the area's existing residential character. As shown in the image in Table 1, the subject property is surrounded by residential subdivisions. The average lot size of these subdivisions ranges from 0.29 to 2.30 acres, as outlined in Table 1. An R-1 zoning designation requires an average minimum lot size of 1.00 acre, which will provide a residential development compatible with the area's single-family character.

**Table 1. Surrounding Subdivisions**




| Subdivision Name | Label | Acres | No. of Lots | Average Lot Size |
|---|---|---|---|---|
| Somerset West | 1 | 36.89 | 57 | 0.65 |
| Stecher Sub-Amended | 2 | 30.27 | 49 | 0.62 |
| Stecher | 3 | 10.07 | 14 | 0.72 |
| Vanal Heights | 4 | 28.60 | 70 | 0.41 |
| Vanal Heights Re-Subdivision | 5 | 6.08 | 21 | 0.29 |
| El Rancho Heights | 6 | 40.00 | 96 | 0.32 |
| Moonstruck PH 3 | 7 | 11.98 | 11 | 1.09 |
| Moonstruck PH 2 | | 25.75 | 27 | 0.95 |
| Moonstruck West | 8 | 44.44 | 56 | 0.79 |
| Autumn Falls | 9 | 11.49 | 5 | 2.30 |
| Canyon Lake Estates PH 1 | 10 | 22.94 | 19 | 1.21 |
| Wintergreen | 11 | 7.26 | 7 | 1.04 |

**E. Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed zoning map amendment;**

Adequate services facilities and services will be provided to accommodate zoning map amendment to R-1 (Single Family Residential) as outlined below:

- Sewer: The lots will be served by individual septic systems at the time of development.
- Water: Individual wells will serve each residential lot at the time of development.
- Drainage: All stormwater will be retained on-site with swales.
- Irrigation: Each residential lot and common lot will utilized pressurized irrigation via a priority right irrigation well.
- Utilities: The area is served by Idaho Power and Intermountain Gas. Utility easements will be provided at the time of platting.

**F. Does legal access to the subject property for the zoning map amendment exist or will it exist at the time of development;**

Legal access to the subject property exists and will be provided at the time of development. The main access will be via Vista Drive, which provides access to S. 10th Avenue. Kimball Avenue runs along the eastern boundary of the subject property and no longer allows access to Karcher Road.

**G. Does the proposed zoning map amendment require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts; and**

A Traffic Impact Study ("TIS") was included with this application at the time of subdivision. A revision was requested by the Idaho Transportation Department ("ITD") in a letter submitted to the Development Services Department ("DSD") dated January 16, 2024. The revised TIS has been prepared and submitted to DSD, ITD, and Canyon Highway District No. 4 ("CHD#4"). ITD has planned to widen Karcher Road/Highway 55. To accommodate this project, the property owner has dedicated the required amount of right-of-way to ITD (approximately six (6) acres). No additional mitigation measures are needed at this time.

CHD#4 provided two comments to DSD dated May 23, 2023 and August 9, 2023. In response to the May 23, 2023 comment letter, the revised TIS has been submitted, ROW has been dedicated, and specific improvements will be addressed at the time of platting. The August 9, 2023 comment letter provided comments on the preliminary plat submitted with this application. DSD has since changed its policy and no longer permits preliminary plat applications to proceed with a rezone application and requires the preliminary plat to proceed only after the rezone is approved. Therefore, the CHD#4 comments will be addressed when the preliminary plat moves forward.

**H. Will the proposed zoning map amendment impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts? (Ord. 16-007, 6-20-2016)**

The proposed zoning map amendment to R-1 will not impact essential public services and facilities. The Caldwell Fire Department, Caldwell Police Department, and Canyon County

Sheriff serve the area. The area falls under the Vallivue School District. Vallivue School District provided a comment letter to DSD on January 17, 2024, explaining that two new elementary schools will open in 2025 and that Vallivue High School has not reached capacity. In the forthcoming Preliminary Plat, 48 buildable lots are planned. As not every household will have school-age children, the proposal is not anticipated to impact schools.

As explained above, the requested zoning designation of R-1 is compatible with the existing character of the area, aligns with the Comprehensive Plan, and fulfills the criteria for rezoning. We thank you for your time and consideration.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Elizabeth Allen
Bristlecone Land Use Consulting
Principal

RILEY PLANNING SERVICES

P.O. Box 405
Boise, ID 83701

September 6, 2022

Canyon County Board of County Commissioners
Canyon County Planning & Zoning Commission
c/o Daniel Lister, Planning Official
Canyon County Development Services
111 N. 11th Avenue
Caldwell, ID 83605

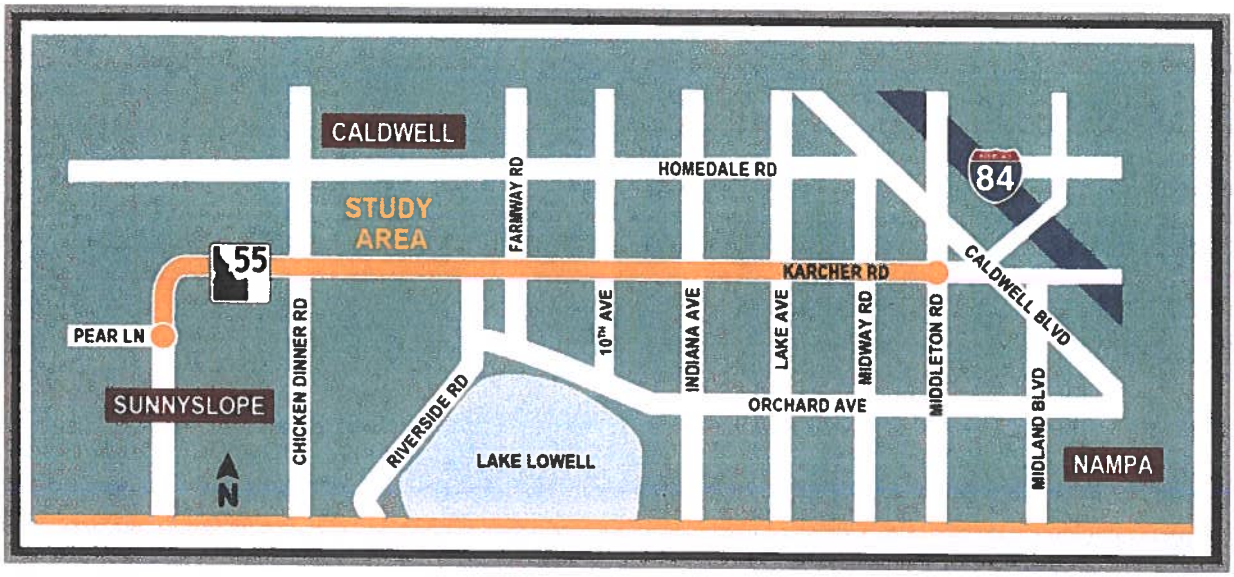
**RE: TILLMAN SUBDIVISION**
**REZONE & PRELIMINARY PLAT APPLICATIONS**
**15453 KARCHER ROAD**

Dear Commissioners:

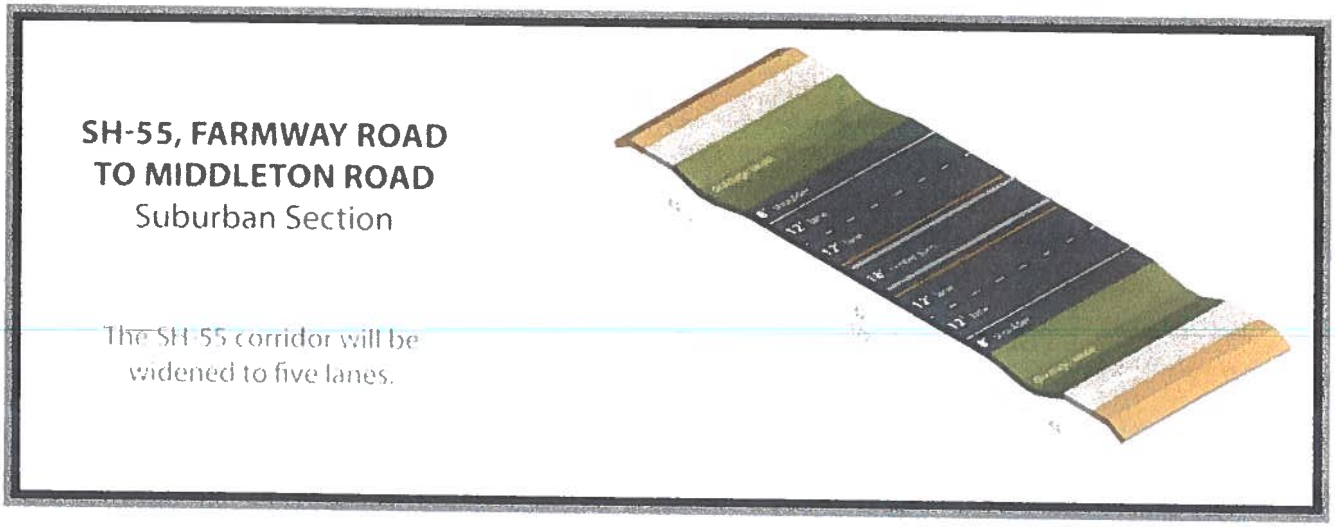
On behalf of the property owners, please accept the attached Rezone and Preliminary Plat Applications for Tillman Subdivision. The site is generally located at the southwest corner of Kimball and Karcher Road, Caldwell. This site was previously approved for a 55 lot subdivision by Canyon County in November of 2002.

In summary, the discussion that follows provides information about significant changes occurring in this area of Caldwell, the current and known future conditions, the character of the surrounding area, the requested entitlements and pertinent process information.

The site is composed of two parcels with a total of 69.16 acres and is currently being leased for farming. With the Karcher Road Corridor study underway and initial design materials expected in the near future to increase Karcher Road / HWY 55 to at least 5 lanes, this area of the Caldwell Area of Impact will be substantially changed in character.



According to materials published by Idaho Transportation Department, the intermediate design plans are slated to be available in 2022. The section of the corridor abutting the site will have the suburban road section shown below.




In addition to the substantial change in the character of the State Highway abutting the north boundary of the site, Kimball Avenue is to be closed on the south side of of HWY 55 and access to the higher classified roads will be via Vista Drive to north bound 10th Avenue. Kimball does not extend past the south bounary of the subject site and cannot be extended southward, according to CHD #4, because of existing residences that encroach into area that would been needed for right-of-way. Additional details are available in the Traffic Impact Study provided with the application.

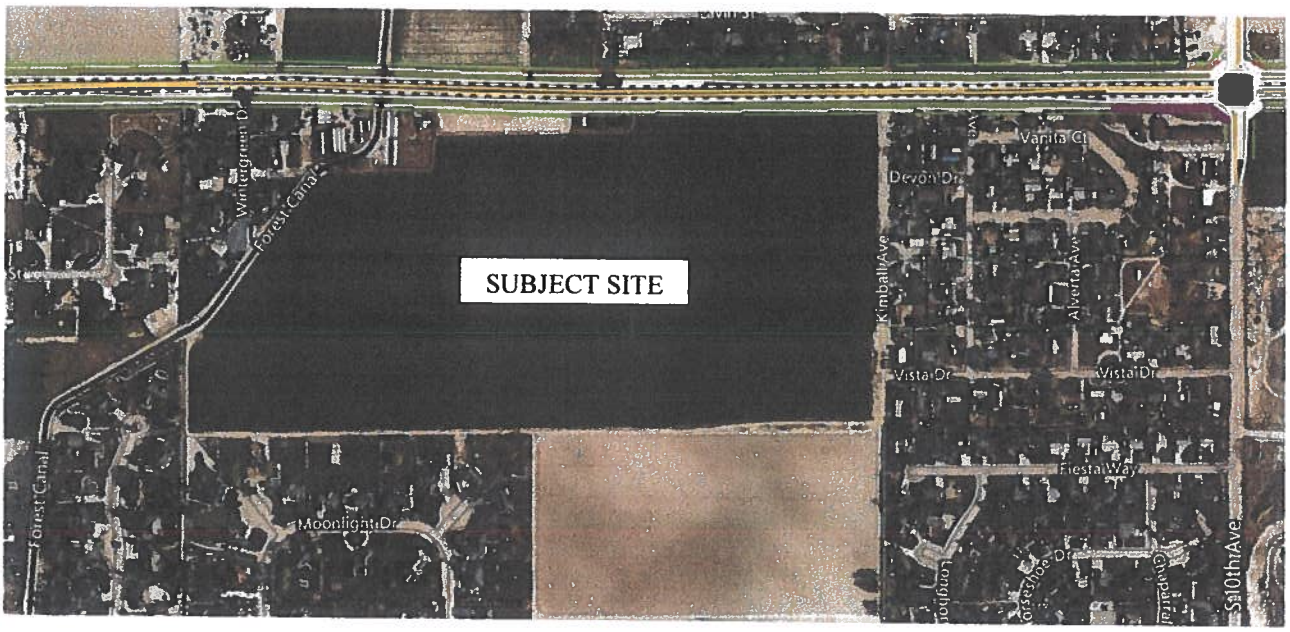
While *Idaho Statue 49-619. SLOW MOVING VEHICLES* does not explicitly prohibit operating slow moving equipment on a state highway there are criteria including prohiting vehicles that obstruct the free movement of traffic on highways. Inclusion in the City of Caldwell Area of Impact as well as the challenges to farming this site, the proposed subdivision is an appropriate transition with 1+ acre lots complementary in nature to the surrounding subdivisons developed over the last several decades.

A Traffic Impact Study has been prepared and submitted to ITD and CHD #4. The preliminary plat does not include ROW acquisition of additional Karcher Road frontage as the plans have not been finalized and ITD has not approached the applicants regarding acquiring right-of-way. The applicant understands that there will be some loss of area along the north property line. The layout does include compliance with the CHD #4 standards for road width and corner radii.

Supplemental information regarding the Highway 55 Corridor and the above referenced Idaho Stature are included in the application packet.

The proposed subdivision includes 54 lots based on current conditions with an average lot size of 1.07 acres. The subdivision name and street names have been approved by CCDS. This site does not have surface water rights, but does have a priority right irrigation well which will be used for PI

for the proposed residences. City municipal utilities are not available – each site will have a septic system and well. The site is not in a NP Area of concern and a pre-application meeting was held with Southwest District. The receipt for the meeting fee is included in the application packet. Below is a snapshot from the ITD Karcher Corridor Project Page that shows the proposed road alignment, closure of Kimball on both sides of the highway, and the surrounding development. A new subdivision just north of Orchard is approved and in process with access via Widget Avenue. Two undeveloped parcels separate the subject site from the new subdivision to the south.

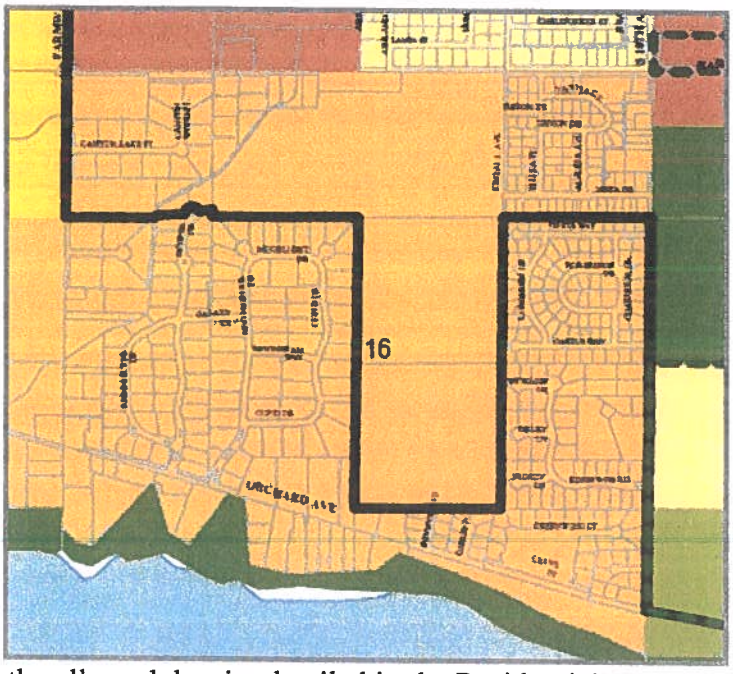



In addition to the preliminary plat application, a rezone (Zoning Map Amendment) to R-1 consistent with the Caldwell Future Land Use Map designation of Residential is requested. Based on the criteria provided by the Canyon County Code, the site location and known future conditions a conditional rezone does not appear to be warranted. The requested zone change is consistent with the surrounding area and reflects the vision of the City of Caldwell based on their published Future Land Use Map. Adequate facilities and services including legal access are available or can be provided and appropriate mitigation is discussed in the TIS. The applicant and project team are happy, however, to defer to the preference of Canyon County.

A rural local road section is proposed for the site. The maximum trip generation during the PM peak hour from this site will be 25 trips although this trip rate will be reduced by the number of lots that will be lost to ITD ROW based on the current factor of 0.47 PM trips per residence.

The site will be substantially isolated due to the highway expansion and this presents an excellent opportunity to request the CHD road section detailed in 3020.020. In addition, there are environmental benefits to the use of appropriately designed and constructed swales. An EPA Stormwater Best Management Practice fact sheet on elimination of curb and gutter is included in the application packet. According to this fact sheet, swales reduce pollutants concentrations as well as other benefits. This subdivision appears to meet the appropriate CHD criteria as well. Of the surrounding subdivisions the preponderance utilize a swale system and many do not have sidewalks.

A pre-application conference was held with CCDS on January 12, 2022, a parcel inquiry was issued by CCD under the Tracking Number PI2019-0361 and a neighborhood meeting was held at the Caldwell City Library on March 30, 2022 with about 15 attendees. Nine of those that attended the meeting signed in on the included neighborhood meeting sign-in sheet.




The requested Zone of R-1 is consistent with both the current 2020 Comprehensive Plan and the in-process Comprehensive Plan update given the site is within the Caldwell Area of Impact and its proximity to the City boundary. The proposed density of one (1) unit per acre is appropriately lower than the allowed density detailed in the Residential Estates information provided in Chapter 5 of the current Comprehensive Plan.

Recently approved annexation into the City of Caldwell and development east of this site that includes commercial services such as a much needed grocery store adjacent to Karcher Road enhances the desirability of residential development in this area.

The project team looks forward to working with CCDS staff and respectfully requests a positive staff analysis, a P&Z Commission recommendation of approval and approval by the Board of County Commissioners.

Please do not hesitate to contact me if you have questions or need additional materials.

Best regards,

**RILEY PLANNING SERVICES LLC**

P. Constantikes

Penelope Constantikes
Principal

# Fwd: RE: Case No. RZ2022-0012 - McGuire/Eaton - Rezone

From: "Penelope Constantikes" <penelope@rileyplanning.com>
Date: 06/11/2024 12:45AM
To: Bill McGuire <bill.mcguire.hobie@gmail.com>
Cc: roger-j-smith@msn.com, fishburnrealestate@gmail.com, engelbertphil@gmail.com

Bill:

For your information. Canyon County is requesting that you make a choice regarding the project moving forward. Below is a very detailed response.

Also, attached are the documents provided by CCDS. I have not seen any of them prior to March, 2024.

Best regards,

RILEY PLANNING SERVICES

Penelope Constantikes
Principal

P.O. Box 405, Boise, ID 83701
208.908.1609

300 W. Myrtle Street, Suite 200 B

-------- Original Message --------
Subject: RE: Case No. RZ2022-0012 - McGuire/Eaton - Rezone
Date: Tue, 11 Jun 2024 02:41:29 -0400
From: "Penelope Constantikes" <penelope@rileyplanning.com>
To: Daniel.Lister@canyoncounty.id.gov
Cc: Bill McGuire <bill.mcguire.hobie@gmail.com>

Dan:

Thank you for your email correspondence below and for notifying me that you have been assigned to the project. Below is a discussion of the project, your comments and the project moving forward.

I reviewed the project log and identified the following (skeletal) outline of events related to the project:

- The application was submitted in September of 2022. There was 11 months between submittal and engineering comments.
- In August of 2023, the first comments from Keller were received, changes were made and drawings resubmitted.
- Keller provided comments on the revised drawings in November of 2023, but these comments were not forwarded to the project team.

**Exhibit A.2 - 11**

- Early in February of 2024, I met with Stephanie to obtain information about the staff assignment and application status. Stephanie made me aware of the second set of comments from Keller issued in November, 2023. No follow up was received from Stephanie regarding the staff assignment.
- Project team reached out to Keller; team was provided with the second comment set originally issued by Keller in November 2023 and received in February 2024.
- 2021 - initiated interaction with ITD regarding the expansion of Karcher Road and specifically requested a meeting to discuss impacts to the site. If was very difficult to get information from ITD.
- Both ITD and CHD #4 approved the revised TIS based on comment received in response to initial submittal to both agencies.
- January 2024 - ITD offer to purchase ROW was received from Horrocks. My understanding that the offer was accepted about 45 days later. I not certain that the transfer of the property has occurred.

When you emailed in March, 2024, the finalization of the ROW sale was in the process but not confirmed and completed. It took ITD two years to finalize their development plans adjacent to the site. While I appreciate the ITD request for a TIS update, it would seem that they are specifically responsible for the TIS 'expiring'.

A redesign of the site could not occur until ITD finalized their plans so in essence the applicant was held hostage. I had no information for you because the team was waiting for a finalized appraisal that identified the loss of site area. I reached out to Horrocks every 30 to 45 days by email and by phone during their design phase. Each time I was informed that they had not completed their road design. The expansion of the State Highway will necessitate a redesign of the site and is at no fault of the applicant.

The project primary contact has changed although I am not certain who the primary contact is. Gennie Fishburn is who I assume is taking over that responsibility. William McGuire should be able to clarify that for you. You can reach him at <bill.mcguire.hobie@gmail.com>.

With regard to the comment letters provided:

- Canyon Soil Conservation City of Caldwell: The January 2024, City of Caldwell's letter indicates that "The City of Caldwell is not opposed to the proposed rezone..." I don't perceive their letter to be opposition. In fact, Caldwell desires even more intense development. This site is very close to the City of Caldwell, in the City AOI and adjacent to a high traffic transportation corridor. Public utilities are close by to the southeast (at the City Park), and with Caldwell's change in preference for this corridor it won't be long before the services are even closer. While the Soil Conservation letter reflects their opinion of the preferred property status, the proximity to the City and the City preferences appear to have a higher priority.
- The comments from the Caldwell Rural Fire District letter simply provides conditions.
- The Board of Control is very standard and not unexpected. These are standards that developers comply with regularly across the valley.
- The CHD#4 letter is just a set of design standards that are customary.
- Please see the attached Deed and email correspondence from October 2023, notifying CCDS (yourself, the county engineer at the time and Stephanie Hailey) that Mr Eaton is no longer a 'property owner' and I provided a copy of the new Warranty Deed.
- The letter from Vallivue is appreciated - it doesn't appear to be an opposition letter.

This email will be forwarded to the property owner for his consideration and action, and I will also forward the documents attached to your earlier email.

It would be best if Mr. McGuire made a determination regarding your three options provided below. I hope this information is helpful.

Best regards,

RILEY PLANNING SERVICES

Penelope Constantikes
Principal

P.O. Box 405, Boise, ID 83701
208.908.1609

300 W. Myrtle Street, Suite 200 B

On Mon, 3 Jun 2024 20:13:36 +0000, Dan Lister <Daniel.Lister@canyoncounty.id.gov> wrote:

Penelope,

Below is an e-mail (with attachments) sent to you regarding RZ2022-0012 (McGuire/Eaton). You responded on March 5th that a more substantive response was in the process. Since March 5th, no response or information has been submitted to DSD. Therefore, the application is considered inactive.

The following options are available:

1. Withdraw the application. Submit an e-mail requesting the case be withdrawn.
2. Submit the missing information and address comments. Based on the staff review and review of comments, DSD staff will be recommending denial unless more information is submitted. Please submit the missing information and respond to the opposition letter from affected agencies with information that can help meet the required findings (CCZO Section 07-06-05).
3. Do not respond or provide new information. If no response or missing information is not submitted, the case will be scheduled for the next available hearing.

Please respond to this e-mail by June 18, 2024. If more time is required to submit additional information, please provide a conservative timeframe as to when additional information will be submitted. If not, the Director of DSD may (1) schedule the case for the next available hearing for denial; or (2) place the file in an inactive status and remove the planner from the case to work on active cases.

Sincerely,

**Dan Lister, Principal Planner**

DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959

Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)

**Exhibit A.2 - 13**

Public office hours

Monday, Tuesday, Thursday and Friday

8 am – 5 pm

Wednesday

1 pm – 5 pm

**We will not be closed during lunch hour **

**PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and as such may be copied and reproduced by members of the public.**

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**From:** Dan Lister
**Sent:** Tuesday, February 27, 2024 5:02 PM
**To:** 'Penelope Constantikes' <penelope@rileyplanning.com>
**Subject:** Case No. RZ222-0012 - McGuire/Eaton - Rezone

Penelope,

I've been assigned as the planner of RZ2022-0012 and SD2022-0044. Attached are the comments received regarding RZ2022-0012. See concerns from ITD (Revised TIS required), Vallivue School District, and Canyon Soils Conservation District. Please provide additional information to address their concerns.

The City of Caldwell requests future development to meet their landscaping ordinance requirements. Additionally, the letter speaks of an approval process for connecting to municipal services. Please provide information regarding why a community system is not proposed or why municipal services are not proposed when services are relatively close. I recommend reaching out to the City of Caldwell Engineering Division regarding the matter. If the hearing bodies require connection to city services or a community system, conditions cannot be applied to the rezone. Conditions can only be applied to conditional rezones.

The review and processing of SD2022-0044 will not begin until RZ2022-0012 is approved. This is to ensure (1) the rezone is reviewed based on the required findings, not the proposed subdivision which should not be considered as part of the request, and (2) that RZ2022-0012 is approved before applying DSD staff time to SD2022-0044. Canyon County Code does not require applications submitted concurrently to be processed as combined applications unless approved by the Board of County Commissioners first.

Unless the above comments and questions are addressed, hearing criteria per CCZO Section 07-06-05 will be difficult to approve. If the applicant does not wish to address the comments or questions, the case can be scheduled for the next available public hearing with a recommendation of denial.

Please let me know how you wish to proceed. If additional information will be submitted, please provide a timeframe as to when the information will be submitted.

Sincerely,

**Dan Lister, Principal Planner**

DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959

Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)

Public office hours

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**Attachments** ( 10 files, 5.8 MB)
- 24 01.17 - Case No. RZ2022-0012 - Letter.pdf (261.6 KB)
- Canyon SCD P & Z Agency Notice 4-29-23.pdf (1.2 MB)
- CFD Subdivision Review Template 2023.pdf (136.8 KB)
- DOC450 BOARD OF CONTROL.pdf (145.1 KB)
- RZ2022-0012 CITY OF CALDWELL Karcher Rd Rezone.pdf (507.7 KB)
- SH 55 Karcher Rd- SD2022-0044 Tillman Sub 5.23.23.pdf (2.0 MB)
- TR_McGuire-Eaton 011624.pdf (257.1 KB)
- VSD Response to RZ2022-0012.pdf (83.3 KB)
- Webmail 7.0 - Tillman Subdivision - Updated Deed.pdf (120.9 KB)
- Warranty Deed - Bill McGuire.pdf (1.1 MB)

**Exhibit A.2 - 15**

**REZONE DESCRIPTION FOR**
**WILLIAM B. MCGUIRE 2011 REVOCABLE TRUST, AND**
**GLEN C. EATON, TRUSTEE, THE WILLIAM B. MCGUIRE 2021**
**IRREVOCABLE TRUST**

The following Describes a Parcel of Land being Canyon County Tax Parcel No.'s R3286201000 & R3286200000 Lying in a portion of the NE 1/4 NW 1/4 and all of the NW 1/4 NE 1/4 of Section 16, Township 3 North, Range 3 West, Boise Meridian, Canyon County Idaho being more particularly described as follows:

**COMMENCING** at the West 1/16th Corner of said Section 16; From which, the North 1/4 Corner of said Section 16 bears, North 89°37'07" East, 1327.56 feet; Thence along the Northerly Boundary Line of the NE 1/4 NW 1/4 of said Section 16, North 89°37'07" East, 941.35 feet to the **POINT OF BEGINNING:**

Thence continuing along the Northerly Boundary Line of the NE 1/4 NW 1/4 of said Section 16, North 89°37'07" East, 386.21 feet to the North 1/4 Corner of said Section 16;

Thence leaving said Northerly Boundary Line, and along the Northerly Boundary Line of the NW 1/4 NE 1/4 of said Section 16, North 89°35'34" East, 1326.38 feet to the East 1/16th Corner;

Thence leaving said Northerly Boundary Line, and along the Easterly Boundary Line of the NW 1/4 NE 1/4 of said Section 16, South 00°36'21" West, 1325.46 feet to the NE 1/16th Corner of said Section 16;

Thence leaving said Easterly Boundary Line, and along the Southerly Boundary Line of the NW 1/4 NE 1/4 of said Section 16, South 89°35'31" West, 1326.61 feet to the Center-North 1/16th Corner of said Section 16;

Thence leaving said Southerly Boundary Line, and along the Southerly Boundary Line of the NE 1/4 NW 1/4 of said Section 16, South 89°37'47" West, 1327.92 feet to the NW 1/16th Corner;

Thence leaving said Southerly Boundary Line, and along the Westerly Boundary Line of the NE 1/4 NW 1/4, North 00°37'54" East, 361.35 feet to the Easterly Right of Way Line of the Forrest Canal;

Thence leaving said Westerly Boundary Line, and along the Easterly Right of Way Line of the Forrest Canal the following courses and distance:

1) North 60°37'50" East, 65.15 feet;
2) North 53°11'08" East, 46.22 feet;
3) North 40°47'07" East, 92.17 feet;
4) North 37°31'23" East, 580.55 feet;
5) Northeasterly 78.37 feet along the arc of a curve to the right having a radius of 130.38 feet, a Central angle of 34°26'26 and a Long Chord which bears, North 54°34'08" East, 77.20 feet;

Thence leaving said Easterly Right of Way Line, North 89°37'42" East, 383.64 feet;

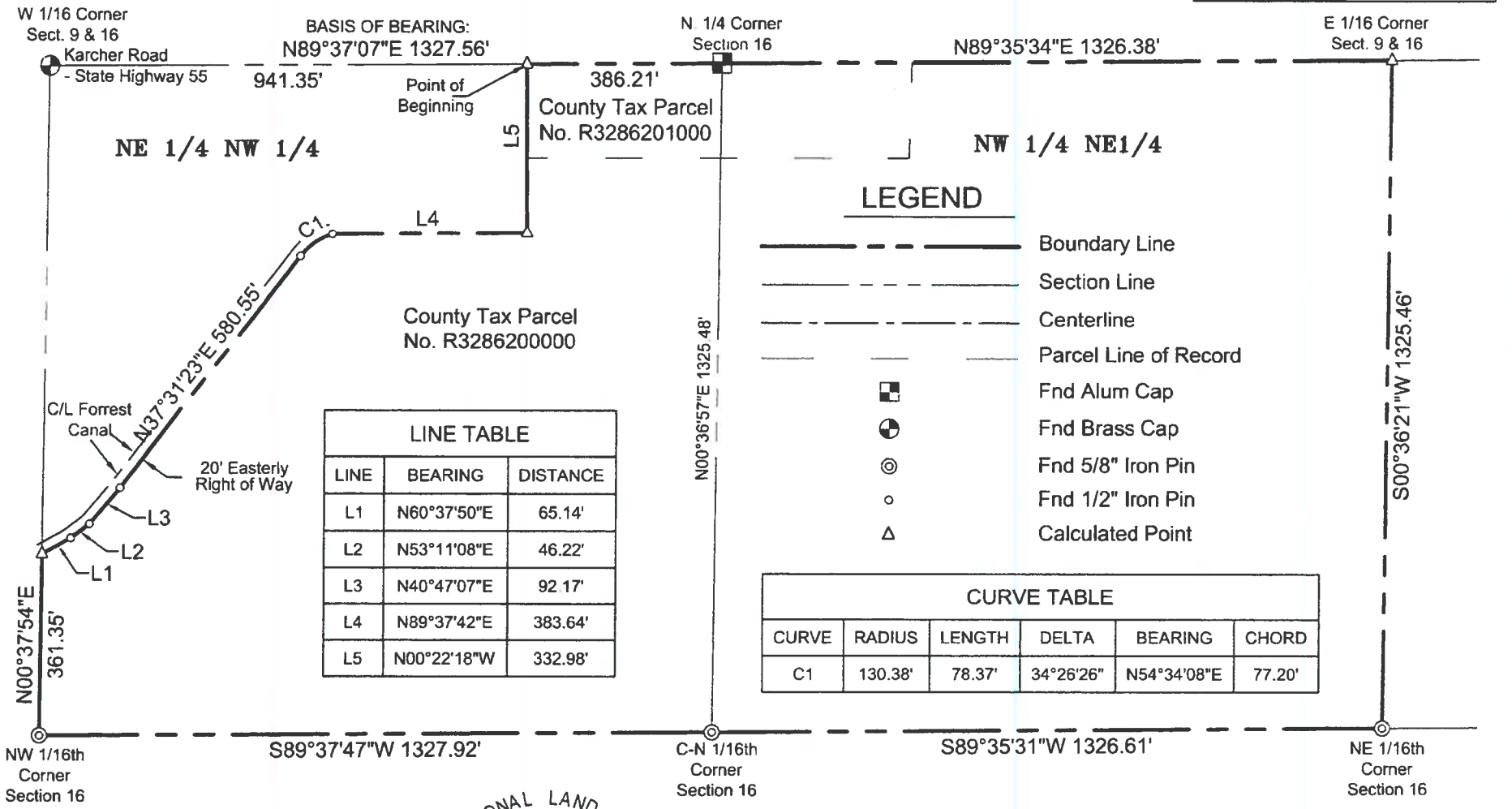
Thence, North 00°22'18" West, 332.98 feet to the **POINT OF BEGINNING:**

**The above Described Parcel of Land contains 69.30 Acres, more or less.**



# REZONE EXHIBIT

LOCATED IN THE NE1/4 NW 1/4 & THE NW 1/4 NE1/4 OF SECTION 16
TOWNSHIP 3 NORTH, RANGE 3 WEST, BOISE MERIDIAN
CANYON COUNTY, IDAHO
2022




## LEGEND

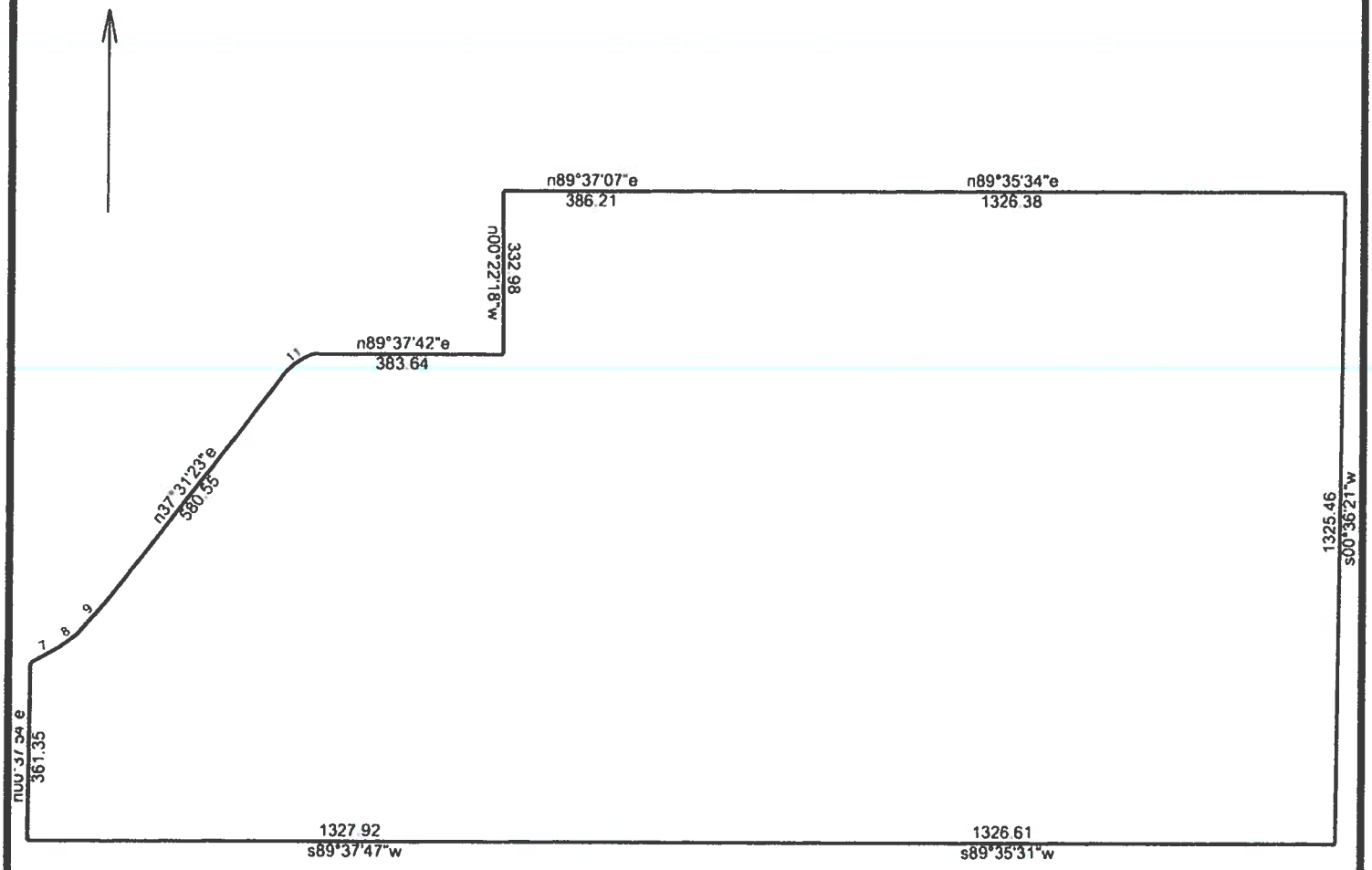
- Boundary Line
- Section Line
- Centerline
- Parcel Line of Record
- Fnd Alum Cap
- Fnd Brass Cap
- Fnd 5/8" Iron Pin
- Fnd 1/2" Iron Pin
- Calculated Point

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | DISTANCE |
| L1 | N60°37'50"E | 65.14' |
| L2 | N53°11'08"E | 46.22' |
| L3 | N40°47'07"E | 92.17' |
| L4 | N89°37'42"E | 383.64' |
| L5 | N00°22'18"W | 332.98' |

| CURVE TABLE | | | | | |
|---|---|---|---|---|---|
| CURVE | RADIUS | LENGTH | DELTA | BEARING | CHORD |
| C1 | 130.38' | 78.37' | 34°26'26" | N54°34'08"E | 77.20' |

PROFESSIONAL LAND SURVEYOR
LICENSED
8/17/22
8251
STATE OF IDAHO
LAWRENCE H. KOERNER


DAVID EVANS AND ASSOCIATES INC.
9179 W. BLACK EAGLE DR.
Boise Idaho
Phone: 208-585-5858




PROFESSIONAL LAND SURVEYOR
LICENSED
8/17/22
8251
Laurence F. Thum
STATE OF IDAHO
LAURENCE F. THUM

# REZONE DESCRIPTION

8/15/2022

Scale: 1 inch= 347 feet | File:

Tract 1: 69.2962 Acres, Closure: n15.1341e 0.01 ft. (1/793663), Perimeter=7633 ft

01 n89.3707e 386.21
02 n89.3534e 1326.38
03 s00.3621w 1325.46
04 s89.3531w 1326.61
05 s89.3747w 1327.92
06 n00.3754e 361.35
07 n60.3750e 65.15
08 n53.1108e 46.22
09 n40.4707e 92.17
10 n37.3123e 580.55
11 Rt, r=130.38, delta=034.2600, chord=n54.3408e 77.18
12 n89.3742e 383.64
13 n00.2218w 332.98

## EXHIBIT A

### PARCEL I:

A part of the Northeast quarter of the Northeast quarter of the Northwest quarter and part of the Northwest quarter of the Northwest quarter of the Northeast quarter of Section 16, Township 3 North, Range 3 West, Boise Meridian, Canyon County, Idaho, more particularly described to wit:

Commencing at the North quarter corner of said Section 16, the Initial Point of this description; thence South 89 deg. 55'15" East 377.00 feet along the North Line of the said Northwest quarter of the Northwest quarter of the Northeast quarter; thence
South 1 deg. 57'10" West 188.00 feet; thence
North 89 deg. 37'41" West 752.88 feet; thence
North 1 deg. 57'10" East 183.63 feet to a point on the North line of the said Northeast quarter of the Northeast quarter of the Northwest quarter; thence
South 90 deg. 00'00" East 376.01 feet along the said North line of the Northeast quarter of the Northeast quarter of the Northwest quarter to the Initial Point of this description.

CONSISTING OF APPROXIMATELY 3 ACRES.

TO HAVE AND TO HOLD the said premises, with their appurtenances, including water rights, unto the said Grantee, its heirs and assigns forever. And the said Grantor does hereby covenant to and with the said Grantee, the Grantor is the owner in fee simple of said premises; that they are free from all encumbrances EXCEPT those to which this conveyance is expressly made subject and those made, suffered or done by the Grantee; and subject to all existing patent reservations, easements, right(s) of way, protective covenants, zoning ordinances, and applicable building codes, laws and regulations, general taxes and assessments, including irrigation and utility assessments (if any) for the current year, which are not due and payable, and that Grantor will warrant and defend the same from all lawful claims whatsoever. Whenever the context so requires, the singular number includes plural.

### PARCEL II:

This parcel is a portion of the Northwest Quarter of the Northeast Quarter and of the Northeast Quarter of the Northwest Quarter of Section 16, Township 3 North, Range 3 West of the Boise Meridian, Canyon County, Idaho, and is more particularly described as follows:

Beginning at the Northeast corner of said Northwest Quarter of the Northeast Quarter the Real Point of Beginning; thence
South 0 deg. 05'58" East along the East boundary of said Northwest Quarter of the Northeast Quarter a distance of 1326.07 feet to the Southeast corner of said Northwest Quarter of the Northeast Quarter; thence South 88 deg. 53'02" West along the South boundary of said Northwest Quarter of the Northeast Quarter a distance of 1326.51 feet to the Southeast corner of said Northeast Quarter of the Northwest Quarter; thence South 88 deg. 54'31" West along the South boundary of said Northeast Quarter of the Northwest Quarter a distance of 1327.91 feet to the Southwest corner of said Northeast Quarter of the Northwest Quarter; thence North 0 deg. 05'11" West along the West boundary of said Northeast Quarter of the Northwest Quarter a distance of 361.35 feet to a point on the Easterly right-of-way for the Forrest Canal; thence traversing said right-of-way as follows:
North 59 deg. 45'05" East a distance of 65.17 feet;

North 52 deg. 31'18" East a distance of 46.07 feet;
North 40 deg. 06'17" East a distance of 92.19 feet;
North 36 deg. 48'31" East a distance of 580.70 feet;
Northeasterly 78.28 feet along the arc of a curve to the right having a central angle of 34 deg. 23'51, a radius of 130.38 feet and a long chord which bears North 54 deg. 00'26" East a distance of 77.11 feet to a point which lies on a line 300.00 feet Southerly from and parallel with the South right-of-way boundary for Idaho State Highway 55; thence
North 88 deg. 54'00" East along said parallel line a distance of 383.66 feet to the Southeast corner of the parcel descrived in the Deed recorded as Instrument No. 348628, records of Canyon County, Idaho; thence
North 1 deg 06'00" West along the East boundary of said parcel a distance of 148.67 feet to a point on the Westerly extension of the South boundary of the parcel described in the Deed recorded as Instrument No. 952783, records of Canyon County; thence
North 89 deg. 08'53" East along said extension and said South boundary a distance of 757.20 feet to the Southeast corner of said parcel; thence
North 0 deg. 43'44" East along the East boundary of said parcel a distance of 188.00 feet to a point on the North boundary of said Northwest Quarter of the Northeast Quarter; thence
North 88 deg. 51'19" East along said North boundary a distance of 949.54 feet to the Real Point of Beginning. Also shown as Parcel 1 on Record of Survey, recorded October 6, 1997 as Instrument No. 9733745.

CONSISTING OF APPROXIMATELY 66 ACRES.

TO HAVE AND TO HOLD the said premises, with their appurtenances, including water rights, unto the said Grantee, its heirs and assigns forever. And the said Grantor does hereby covenant to and with the said Grantee, the Grantor is the owner in fee simple of said premises; that they are free from all encumbrances EXCEPT those to which this conveyance is expressly made subject and those made, suffered or done by the Grantee; and subject to all existing patent reservations, easements, right(s) of way, protective covenants, zoning ordinances, and applicable building codes, laws and regulations, general taxes and assessments, including irrigation and utility assessments (if any) for the current year, which are not due and payable, and that Grantor will warrant and defend the same from all lawful claims whatsoever. Whenever the context so requires, the singular number includes plural.

# LAND USE WORKSHEET

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**
111 North 11th Avenue, #140, Caldwell, ID 83605
www.canyonco.org/dsd.aspx Phone: 208-454-7458 Fax: 208-454-6633

**Required for Conditional Use Permit, Comprehensive Plan and Zoning Ordinance Amendment Applications**

***PLEASE CHECK ALL THAT APPLY TO YOUR REQUEST:***

## GENERAL INFORMATION

**1. DOMESTIC WATER:** ☑ Individual Domestic Well ☐ Centralized Public Water System ☐ City

☐ N/A – Explain why this is not applicable: _____

☑ How many Individual Domestic Wells are proposed? _____

**2. SEWER (Wastewater)** ☑ Individual Septic ☐ Centralized Sewer system

☐ N/A – Explain why this is not applicable: _____

**3. IRRIGATION WATER PROVIDED VIA:**

☐ Surface ☑ Irrigation Well ☐ None

**4. IF IRRIGATED, PROPOSED IRRIGATION:**

☑ Pressurized ☐ Gravity

**5. ACCESS:**

☑ Frontage ☐ Easement Easement width_____Inst. # _____

**6. INTERNAL ROADS:**

☑ Public ☐ Private Road User's Maintenance Agreement Inst #_____

**7. FENCING** ☐ Fencing will be provided (Please show location on site plan)

Type: _____ Height: _____

**8. STORMWATER:** ☑ Retained on site ☑ Swales ☐ Ponds ☐ Borrow Ditches

☐ Other: _____

**9. SOURCES OF SURFACE WATER ON OR NEARBY PROPERTY:** (i.e. creeks, ditches, canals, lake)

N/A

## RESIDENTIAL USES

**1. NUMBER OF LOTS REQUESTED:**

☑ Residential 54 ☐ Commercial _____ ☐ Industrial _____

☐ Common _____ ☐ Non-Buildable _____

**2. FIRE SUPPRESSION:**

☐ Water supply source: _____

**3. INCLUDED IN YOUR PROPOSED PLAN?** See attached project discussion

☐ Sidewalks ☐ Curbs ☐ Gutters ☐ Street Lights ☐ None

## NON-RESIDENTIAL USES

**1. SPECIFIC USE:** N/A

**2. DAYS AND HOURS OF OPERATION:**

☐ Monday _____ to _____

☐ Tuesday _____ to _____

☐ Wednesday _____ to _____

☐ Thursday _____ to _____

☐ Friday _____ to _____

☐ Saturday _____ to _____

☐ Sunday _____ to _____

**3. WILL YOU HAVE EMPLOYEES?** ☐ Yes If so, how many? _____ ☐ No

**4. WILL YOU HAVE A SIGN?** ☐ Yes ☐ No ☐ Lighted ☐ Non-Lighted

Height: _____ ft Width: _____ ft. Height above ground: _____ ft

What type of sign: _____Wall _____ Freestanding _____ Other

**5. PARKING AND LOADING:**

How many parking spaces? _____

Is there is a loading or unloading area? _____

## ANIMAL CARE RELATED USES

**1. MAXIMUM NUMBER OF ANIMALS:** _____

**2. HOW WILL ANIMALS BE HOUSED AT THE LOCATION?**

☐ Building ☐ Kennel ☐ Individual Housing ☐ Other _____

**3. HOW DO YOU PROPOSE TO MITIGATE NOISE?**

☐ Building ☐ Enclosure ☐ Barrier/Berm ☐ Bark Collars

**4. ANIMAL WASTE DISPOSAL**

☐ Individual Domestic Septic System ☐ Animal Waste Only Septic System

☐ Other: _____

# NEIGHBORHOOD MEETING SIGN-UP

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**
111 North 11th Avenue, #140, Caldwell, ID 83605
www.canyonco.org/dsd.aspx Phone: 208-454-7458 Fax: 208-454-6633

## NEIGHBORHOOD MEETING SIGN UP SHEET

**CANYON COUNTY ZONING ORDINANCE §07-01-15**

Applicants shall conduct a neighborhood meeting for any proposed comprehensive plan amendment, zoning map amendment (rezone), subdivision, variance, conditional use, zoning ordinance map amendment, or other requests requiring a public hearing.

**SITE INFORMATION**

| | | |
|---|---|---|
| Site Address: 15453 Karcher Road | Parcel Number: R3286201000; R3286200000 | |
| City: Caldwell | State: | ZIP Code: |
| Notices Mailed Date: | Number of Acres: | Current Zoning: |
| Description of the Request: Large lot residential subdivision. | | |

**APPLICANT / REPRESENTATIVE INFORMATION**

| | | |
|---|---|---|
| Contact Name: Penelope Constantikes | | |
| Company Name: Riley Planning Services LLC | | |
| Current address: P.O. Box 405 | | |
| City: Boise | State: ID | ZIP Code: 83701 |
| Phone: 208.908.1609 | Cell: | Fax: |
| Email: penelope@rileyplanning.com | | |

**MEETING INFORMATION**

| | |
|---|---|
| DATE OF MEETING: March 30, 2022 | MEETING LOCATION: Caldwell City Library |
| MEETING START TIME: 6:00 | MEETING END TIME: Scheduled for 6:30 - stayed until 7:30 |

ATTENDEES: See attached sign in sheet

| NAME (PLEASE PRINT) | SIGNATURE: | ADDRESS: |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |
| 7. | | |
| 8. | | |
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*Revised 11/25/20*

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| 11. |

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| 12. |
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| 16. |
| 17. |
| 18. |
| 19. |
| 20. |

NEIGHBORHOOD MEETING CERTIFICATION:

I certify that a neighborhood meeting was conducted at the time and location noted on this form and in accordance with Canyon County Zoning Ordinance § 07-01-15.

APPLICANT/REPRESENTATIVE (Please print):

Penelope Constantikes, Riley Planning Services LLC

APPLICANT/REPRESENTATIVE (Signature): P. Constantikes

DATE: 03 / 30 / 2022

| Account | OwnerName | InCareOf | Address | City | State | ZipCode |
|---|---|---|---|---|---|---|
| R26678 | ODLUM DANIEL | | 15336 LAVIN ST | CALDWELL | ID | 83607 |
| R26679 | SCHUYLER RICHARD L | | 15360 LAVIN ST | CALDWELL | ID | 83605 |
| R26680 | WRIGHT BRIAN C | | 15374 LAVIN ST | CALDWELL | ID | 83607 |
| R26681 | TORRES CYNTHIA G | | 15406 LAVIN ST | CALDWELL | ID | 83607 |
| R26682 | REEVES JAMES B SR | | 15428 LAVIN ST | CALDWELL | ID | 83607 |
| R26932 | BROWN LYNDSEY | | 16058 KIMBALL AVE | CALDWELL | ID | 83607 |
| R26671 | DUNBAR BENJAMIN SCOTT | | 16057 KIMBALL AVE | CALDWELL | ID | 83607 |
| R26664 | DEKKER GERALD P | | 16056 HORIZON DR | CALDWELL | ID | 83607 |
| R26944 | DEWEESE JEFFRY LEE | | 15200 KARCHER RD | CALDWELL | ID | 83607 |
| R26945 | STECHER MUTUAL WATER ASSN $ | AKAGI SHIRLEY = | 15073 DAVID ST | CALDWELL | ID | 83607 |
| R26945010 | MACKENZIE MARK N 2018 FAMILY TRUST | | 15212 KARCHER RD | CALDWELL | ID | 83607 |
| R26672 | KRAMER DENNIS AND DEBORAH LIVNG TRUST | | 16029 KIMBALL AVE | CALDWELL | ID | 83607 |
| R26663 | PLATT WENDELL B | | 15311 LAVIN ST | CALDWELL | ID | 83605 |
| R26662 | HARTMAN BECKY JO | | 15325 LAVIN ST | CALDWELL | ID | 83607 |
| R26661 | CASTRO FELIX | | 15359 LAVIN ST | CALDWELL | ID | 83607 |
| R26660 | SOTO SALVADOR N | | 15385 LAVIN ST | CALDWELL | ID | 83607 |
| R26659 | STARK RICHARD M | | 15409 LAVIN ST | CALDWELL | ID | 83607 |
| R26658 | PYLES RICHARD | | 15433 LAVIN ST | CALDWELL | ID | 83607 |
| R32869 | LEE KAREN | | 1005 TIETON DR | YAKIMA | WA | 98902 |
| R21723 | CULLEY ROBERT D | | 15196 FIESTA WAY | CALDWELL | ID | 83607 |
| R21724 | SMITH CHERYL K | | 15214 FIESTA WAY | CALDWELL | ID | 83607 |
| R21725 | GENTRY KENNETH L JR | | 15231 FIESTA WAY | CALDWELL | ID | 83607 |
| R21726 | BOYUM ERIC P | | 15232 FIESTA WAY | CALDWELL | ID | 83607 |
| R21727 | BEOUGHER SHARON A | | 15213 FIESTA WAY | CALDWELL | ID | 83607 |
| R27627 | DESERT DENIM RENTALS LLC | | 926 N RIVIERA DR | BOISE | ID | 83703 |
| R27626 | SHARP F DALE | | 2170 E SPRINGWOOD DR | MERIDIAN | ID | 83642 |
| R27625 | ESQUIVEL ANTONIO J | | 15231 DEVON DR | CALDWELL | ID | 83607 |
| R27640 | ROSSER DAVID A | | 15884 KIMBALL AVE | CALDWELL | ID | 83607 |
| R27628 | STEWART LIVING TRUST | | 15885 ELLIS AVE | CALDWELL | ID | 83607 |
| R27629 | LYNSKEY BRAD P | | 15865 ELLIS AVE | CALDWELL | ID | 83607 |
| R27639 | LYNSKEY BRAD P | | 15865 ELLIS AVE | CALDWELL | ID | 83607 |
| R27630 | ARELLANO JOSE | | 15855 ELLIS AVE | CALDWELL | ID | 83607 |
| R27638 | STOWE MERVIN R | | 15856 KIMBALL AVE | CALDWELL | ID | 83607 |
| R27631 | SHARP DALE V | | 15839 ELLIS AVE | CALDWELL | ID | 83607 |
| R27637 | LEOS ENRIQUE | | 15830 KIMBALL AVE | CALDWELL | ID | 83607 |
| R27632 | MONTANA JOHN W | | 15823 ELLIS AVE | CALDWELL | ID | 83607 |
| R27636 | LEOS ENRIQUE | | 15830 KIMBALL AVE | CALDWELL | ID | 83607 |
| R27633 | PROVENCIO CHERYL L | | 541 W PALMER DR | NAMPA | ID | 83686 |

| | | | | | | |
|---|---|---|---|---|---|---|
| R27634 | HICKMAN FRED C | | 15216 VISTA DR | CALDWELL | ID | 83607 |
| R27635 | TUCKER PEGGY | | 15806 S KIMBALL AVE | CALDWELL | ID | 83607 |
| R27649507 | CLARKE NATHAN | | 15207 VISTA AVE | CALDWELL | ID | 83607 |
| R27649505 | DEANDA IRMA | | 15221 VISTA DR | CALDWELL | ID | 83605 |
| R27649504 | QUIBB JUANITA L LIVING TRUST | | 15237 VISTA DR | CALDWELL | ID | 83607 |
| R27618 | ROBINSON CLYDE | | 15973 ELLIS AVE | CALDWELL | ID | 83607 |
| R27617 | SANCHEZ VIVIAN REBECCA LIVING TRUST | | 3525 WHEELER CIR | NAMPA | ID | 83686 |
| R27616 | SHIMMIN RUSSELL R | | 15235 KARCHER RD | CALDWELL | ID | 83605 |
| R27619 | ANDERSON LOWELL | | 15204 DEVON DR | CALDWELL | ID | 83607 |
| R27620 | HORN SUZANN M | WAGNER SUZANN= | 16333 COPPERRIDGE WAY | CALDWELL | ID | 83607 |
| R27621 | JEFFS JOHN O | | 15948 KIMBALL AVE | CALDWELL | ID | 83607 |
| R32884156 | THIEL STEFANIE A | | 15548 STARGAZE CT | CALDWELL | ID | 83607 |
| R32884157 | ZINGG RONALD A | | 15540 STARGAZE CT | CALDWELL | ID | 83607 |
| R32884155 | JENSON WILLIAM J | | 15568 STARGAZE CT | CALDWELL | ID | 83607 |
| R32884154 | BALLANCE HARRY C | | 15596 MOONLIGHT DR | CALDWELL | ID | 83607 |
| R32884153 | BOYD LISA LEANN | | 15624 MOONLIGHT DR | CALDWELL | ID | 83607 |
| R32884152 | EHMANN BRIAN | | 15652 MOONLIGHT DR | CALDWELL | ID | 83607 |
| R32884151 | PRATT MERTON L AND PRATT GLORIA TRUST | | 15616 VENUS CT | CALDWELL | ID | 83607 |
| R32884150 | SHEEHAN MARK J | | PO BOX 36 | CALDWELL | ID | 83606 |
| R32884149 | SMITH ANGEL MARIE | | 15702 VENUS CT | CALDWELL | ID | 83607 |
| R32884148 | STUMM ROBERT S | | 15722 VENUS CT | CALDWELL | ID | 83607 |
| R32906138 | HART CONSTANCE L | | 15766 ECLIPSE DR | CALDWELL | ID | 83605 |
| R32906137 | ROBERSON FAMILY TRUST | | 15761 ECLIPSE DR | CALDWELL | ID | 83607 |
| R32906139 | MANCHESTER LIVING TRUST | | 15738 ECLIPSE DR | CALDWELL | ID | 83607 |
| R32906136 | WONG STEVEN | | 15741 ECLIPSE DR | CALDWELL | ID | 83607 |
| R32906140 | GOOSSENS SCOTT R | | 15708 ECLIPSE DR | CALDWELL | ID | 83607 |
| R32906141 | WJH FAMILY MANAGEMENT LLC | | 15682 ECLIPSE DR | CALDWELL | ID | 83607 |
| R32906100 | MOONSTRUCK WEST HOMEOWNERS | MOOSO DWAIN= | 15592 E ECLIPSE DR | CALDWELL | ID | 83607 |
| R32900200 | ALPHA MORTGAGE FUND II TRUSTEE | | 7971 W MARIGOLD | BOISE | ID | 83714 |
| R32900207 | ANDERSON JASON W | | 15892 CANYON WOOD PL | CALDWELL | ID | 83607 |
| R32900206 | CRILL JOSHUA | | 15866 CANYON WOOD PL | CALDWELL | ID | 83607 |
| R32900205 | WRIGHT MATTHEW THOMAS | | 15809 CANYON LAKE ST | CALDWELL | ID | 83607 |
| R32862010 | MCGUIRE WILLIAM B 2011 REVOCABLE TRUST | | 4023 SPYGLASS RD | CHICO | CA | 95973 |
| R32909 | SANCHEZ JOSEPH F | | 15579 KARCHER RD | CALDWELL | ID | 83607 |
| R32908011 | JAHELKA PAMELA R | | 15633 KARCHER RD | CALDWELL | ID | 83607 |
| R32908206 | FOWLER PHILLIP | | 15962 WINTERGREEN DR | CALDWELL | ID | 83607 |
| R32908205 | WISEMAN ALLEN | | 15946 WINTERGREEN DR | CALDWELL | ID | 83607 |
| R32908201 | LANE TOBY J | | 15939 WINTERGREEN DR | CALDWELL | ID | 83607 |
| R32908204 | JOB KARMA D | | 15914 WINTERGREEN DR | CALDWELL | ID | 83607 |

| | | | | | | |
|---|---|---|---|---|---|---|
| R32908202 | KNEER ERIK | | 15895 WINTERGREEN DR | CALDWELL | ID | 83607 |
| R32908203 | BROWN MITCHELL JAY | | 15877 WINTERGREEN DR | CALDWELL | ID | 83607 |
| R32862 | MCGUIRE WILLIAM B 2011 REVOCABLE TRUST | | 4023 SPYGLASS RD | CHICO | CA | 95973 |
| R32683011 | OSTERHOUDT DONALD D | | 16075 ASHLAND DR | CALDWELL | ID | 83607 |
| R32684011A | DOWEN TAD J | | 1802 FILLMORE ST | CALDWELL | ID | 83605 |
| R32684011 | DOWEN LARRY J @@ | | 15622 KARCHER RD | CALDWELL | ID | 83607 |
| R32683010 | HARVEY GEORGE THOMAS | | 16039 ASHLAND DR | CALDWELL | ID | 83607 |
| R32908 | JAHELKA PAMELA R | | 15633 KARCHER RD | CALDWELL | ID | 83607 |
| R32908012 | JAHELKA PAMELA R | | 15633 KARCHER RD | CALDWELL | ID | 83607 |

**CANYON COUNTY LISTING - R32862 & R32862010 - 300 feet**
**September 10, 2021**

**PROPERTY LISTING DISCLAIMER**

**This information should be used for informational use only and does not constitute a legal document for the description of these properties. Every effort has been made to insure the accuracy of these data & is subject to change without notice; however, the Assessor's Office assumes no liability nor do we imply any particular level of accuracy. The Canyon County Assessor's Office disclaims any responsibility or liability for any direct or indirect damages resulting from the use of these property listings.**

Exhibit A.5 - 5

RILEY PLANNING SERVICES

P.O. Box 405
Boise, ID 83701

March 19, 2022

Dear Neighbor:

Please join me for a neighborhood meeting about a proposed subdivision at 15453 Karcher Road, Caldwell. A vicinity map of the site is provided below. Each lot is larger than 1 acre and a total of 54 lots are proposed. Applications anticipated for this project are a Preliminary Plat and a Rezone of the site to R-1 with Canyon County Development Services.

**WHEN:** **Wednesday, March 30th 6:00 – 6:30 PM**

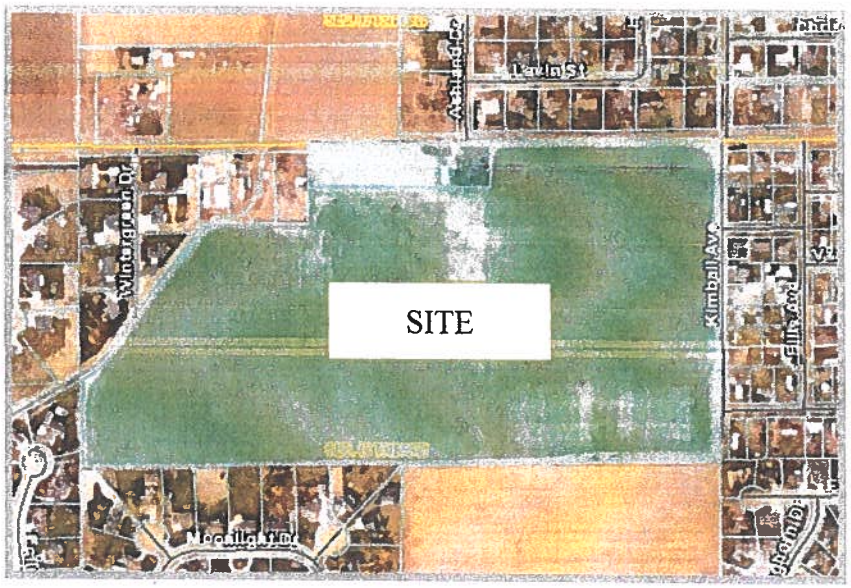
**WHERE:** **Caldwell Public Library, 1010 Dearborn St. in the Dean Miller Conference Room**

The purpose of this meeting is to provide neighbors in the vicinity of the site with an opportunity to learn more about the proposed subdivision. A representative of the property owner will be present at the meeting to answer your questions.

This is not a public hearing and no public elected or appointed officials will be in attendance.

Thank you in advance for your interest. I can be reached at penelope@rileyplanning.com.

Riley Planning Services LLC



RILEY PLANNING SERVICES
P.O. BOX 405
BOISE, ID 83701

BOISE ID 836

19 MAR 2022 PM 3 L



Riley Planning Services
P.O. Box 405
Boise, ID 83701

**NEIGHBORHOOD MEETING SIGN-IN SHEET**
**Wednesday, March 30, 2022 – 6:00 to 6:30 PM**
**CALDWELL PUBLIC LIBRARY**

| NAME | ADDRESS | EMAIL ADDRESS |
|---|---|---|
| Shari Robinson | 15160 Fiesta Way | Sharibrunneg.com |
| Jeanita Sandlin | 15237 Vista Dr | |
| Peggy Lucker | 15826 S Kamila | IdpJTbLT@Hotmail.com |
| Don Job | 15914 Wintergreen | |
| Dennis L. KRAMER | 16029 Kimball Ave | dnns_kramer@yahoo.com IDWR? |
| Lisa Boyd + Brad King | 15624 Moonlight Dr | |
| Pam Jahelka | 15638 Karcher | P.jahelka@shakeusoke.me |
| Joe Sheehan | 15698 Venus Ct | joe.sheehan@gci.net # |
| Angel Smith | 15702 Venus Ct. | angelsmith@outlook.com |
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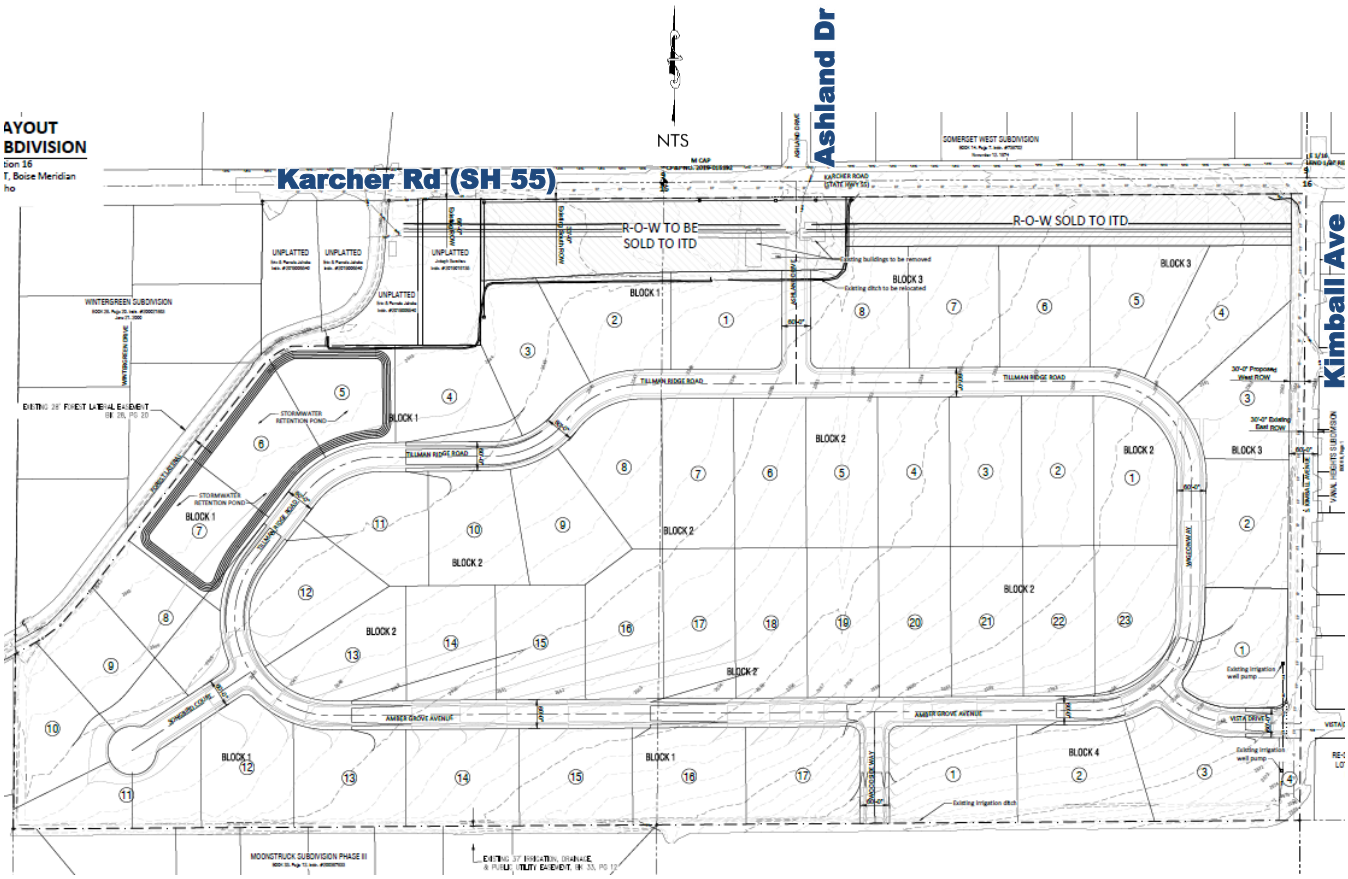
# TRAFFIC IMPACT STUDY UPDATE

# TILLMAN RIDGE SUBDIVISION

Caldwell, Idaho

July 15, 2022

*Updated December 13, 2024*




**Prepared For:**

## Dr. William McGuire

**Prepared By:**

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# EXECUTIVE SUMMARY

Tillman Ridge Subdivision is a proposed residential development located southwest of the Kimball Avenue and Karcher Road (SH 55) intersection in Canyon County, Idaho, as shown in **Figure 1.1**. The original traffic impact study (TIS) for the proposed development was completed in July 2022. The original site plan has been revised. Additionally, the design of the SH 55 corridor project has been changed. CR Engineering, Inc. has been retained to prepare a TIS update to reflect the revised site plan, SH 55 corridor improvements, and current traffic data.

The scope of this TIS update remains the same as the original TIS, which was determined through coordination with Highway District No. 4 (HD4) and the Idaho Transportation Department (ITD). The TIS update evaluated the potential traffic impacts resulting from background traffic growth, in-process developments within the area, and the proposed development, and identified improvements to mitigate the traffic impacts if needed. Traffic impacts were evaluated under weekday AM and PM peak hour traffic conditions based on the proposed land uses and site accesses as shown in the revised preliminary site plan. **Table 1** summarizes the improvements needed to mitigate the traffic impacts for the following analysis years' traffic conditions:

- 2024 Existing traffic
- 2027 Build-out year background traffic
- 2027 Build-out year total traffic
- 2032 Horizon year background traffic
- 2032 Horizon year total traffic

**Table 1 – Intersection Improvements Summary**

| Intersection | | 2024 Existing | 2027 Build-Out Year | | 2032 Horizon Year | |
|---|---|---|---|---|---|---|
| | | | Background | Total | Background | Total |
| 1 | Kimball Ave and Karcher Rd | None | Intersection closed per SH 55 corridor improvements | | | |
| 2 | S 10th Ave and Karcher Rd | None | **SH 55 corridor improvements** | None beyond prior improvements | None beyond prior improvements | None beyond prior improvements |
| 3 | Vista Dr and S 10th Ave | None | None | None | None | None |
| 4 | Ashland Dr (Site Access) and Karcher Rd | Not analyzed | | **SH 55 corridor improvements and construct NB approach** | None beyond prior improvements | None beyond prior improvements |

## 1.0 Proposed Development

1.1 Tillman Ridge Subdivision is a proposed residential development containing 49 single-family lots with an estimated 2027 build-out year

1.2 Based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, the proposed development is estimated to generate approximately 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour at full build-out.

- All trips generated by the site were assumed to be made by personal and commercial vehicles
  - Some children residing in the development are anticipated to walk/bike to the existing/proposed schools within the vicinity of the site
- No internal capture trips or pass-by trips were assumed in the traffic analysis
- The estimated site traffic distribution patterns are:
  - 10% north of the site traveling on S 10th Avenue
  - 5% south of the site traveling on S 10th Avenue
  - 10% west of the site traveling on Karcher Road
  - 75% east of the site traveling on Karcher Road

1.3 The development is proposing two full-movement accesses, one on Karcher Road and one on Kimball Avenue:

- **Site Access on Karcher Road**
  - Located approximately 1,300 feet east of Wintergreen Drive, a private driveway, and 1,030 feet west of Kimball Avenue, aligning with Ashland Drive
    - Meets IDAPA access spacing from nearest upstream and downstream of unsignalized intersection
  - The site access intersection is anticipated to meet minimum operational thresholds under 2027 build-out year and 2032 horizon year total traffic conditions as an unsignalized intersection

- **Site Access on Kimball Avenue**
  - Located approximately 750 feet south of Devon Drive, aligning with Vista Drive to the east
    - Meets 330 feet minimum local road spacing on Kimball Avenue, a 25-mph local road
  - The site access intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road
    - Does not warrant turn lanes under 2027 build-out year or 2032 horizon year total traffic conditions based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*
    - Anticipated to meet minimum operational thresholds under 2027 build-out and 2032 horizon year total traffic conditions under all site access scenarios

## 2.0 2024 Existing Traffic Conditions

2.1 Review of the most current five-year (2019-2023) crash data at the study area intersections show no apparent safety issues:

- Kimball Avenue and Karcher Road intersection
  - Five (5) report crashes with four (4) rear-end crashes due to inattention or following too close
  - Estimated crash rate is 0.21 crashes per million entering vehicles (ACC/MEV)
- S 10th Avenue and Karcher Road intersection
  - 16 reported crashes with 11 rear-end crashes and four (4) angle crashes
  - Estimated crash rate is 0.42 ACC/MEV

- Vista Drive and S 10th Avenue intersection
  - No reported crashes

2.2 With 2024 existing traffic, all study area intersections meet HD4 and ITD minimum operational thresholds analyzed with the existing intersection control and lane configuration. Additionally, none of the unsignalized study area intersections require turn lanes based on NCHRP Report 457 or ITD turn-lane guidelines. As a result, no intersection improvements are needed to mitigate 2024 existing traffic operations

## 3.0 2027 Build-Out Year Background Traffic Conditions

3.1 The SH 55 corridor improvements are anticipated to be implemented by 2027 and are included in the background traffic condition analysis. The following improvements as outlined in the *SH-55, Farmway Road to Middleton Road Project* were included on Karcher Road within the study area:

- Widen Karcher Road to two travel lanes in each direction with a two-way left-turn lane
- Close the existing approaches of Kimball Avenue and Ellis Avenue
- **S 10th Avenue and Karcher Road intersection** – upgrade signal and widen intersection with the following lanes:
  - Karcher Road approaches – one left-turn lane two through lanes, and one right-turn lane
  - S 10th Avenue approaches – one left-turn and one shared through/right-turn lane (existing)
- **Ashland Drive and Karcher Road intersection** – widen intersection with the following lanes:
  - Eastbound approach – one left-turn lane and two through lanes
  - Westbound approach – two through lanes and one right-turn lane
  - Southbound approach – one shared lane (existing)

3.2 2027 build-out year background traffic was estimated by extrapolating the 2024 existing counts with the following annual growth rates based on the traffic forecasts from the Community Planning Association of Southwest Idaho (COMPASS) travel demand model:

- 6.0% on Karcher Road
- 2.0% on all other study area roadways

3.3 Off-site traffic from two in-process developments in the vicinity of the site was also included in the 2027 background traffic:

- Passero Ridge Subdivision – A residential development with 335 single-family lots located north of Orchard Avenue between S 10th Avenue and Montana Avenue
  - 29 lots have been constructed and occupied
- Norse Landing Subdivision – A residential development with 34 single-family lots located north of Orchard Avenue between Moonstruck Drive and Kimball Avenue

3.4 With the SH 55 corridor improvements and closures of Kimball Avenue and Ellis Avenue, existing traffic north of Karcher Road is anticipated to shift to Ashland Drive or S 10th Avenue, depending on their origin/destination. Existing traffic south of Karcher Road will be required to shift to S 10th Avenue until another connection to Karcher Road west of the Kimball Avenue location is available

3.5 With 2027 build-out year background traffic, all study area intersections are anticipated to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. As a result, no additional improvements are needed to mitigate 2027 background traffic operations:

- The S 10th Avenue and Karcher Road intersection is anticipated to meet minimum operational thresholds with and without the SH 55 corridor improvements
- The Vista Drive and S 10th Avenue intersection is not anticipated to require turn lanes based on NCHRP Report 457 turn lane guidelines

## 4.0 2027 Build-Out Year Total Traffic Conditions

4.1 With 2027 build-out year total traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to warrant turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate 2027 total traffic operations

4.2 The proposed site access on Karcher Road aligning with Ashland Drive will remain a full-movement intersection with the widening of Karcher Road to five lanes. The access on Karcher Road is needed to serve the site and reduce potential traffic impacts on the existing local roads within the adjacent neighborhood:

- With access on Karcher Road, approximately 143 vehicles per day generated by the development are anticipated to travel on Vista Drive through the existing Vanal Heights Subdivision to access the transportation system
- Without access on Karcher Road, the entirety of Tillman Ridge Subdivision (523 vehicles per day) will be required to travel on Vista Drive through the existing Vanal Heights Subdivision to access the transportation system
    - Increasing traffic on Vista Drive, a narrow local road with front-on housing, may lead to potential safety issues for schoolchildren, cyclists, and pedestrians

## 5.0 2032 Horizon Year Background Traffic Conditions

5.1 With 2032 horizon year background traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to require turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate the 2032 horizon year background traffic operations

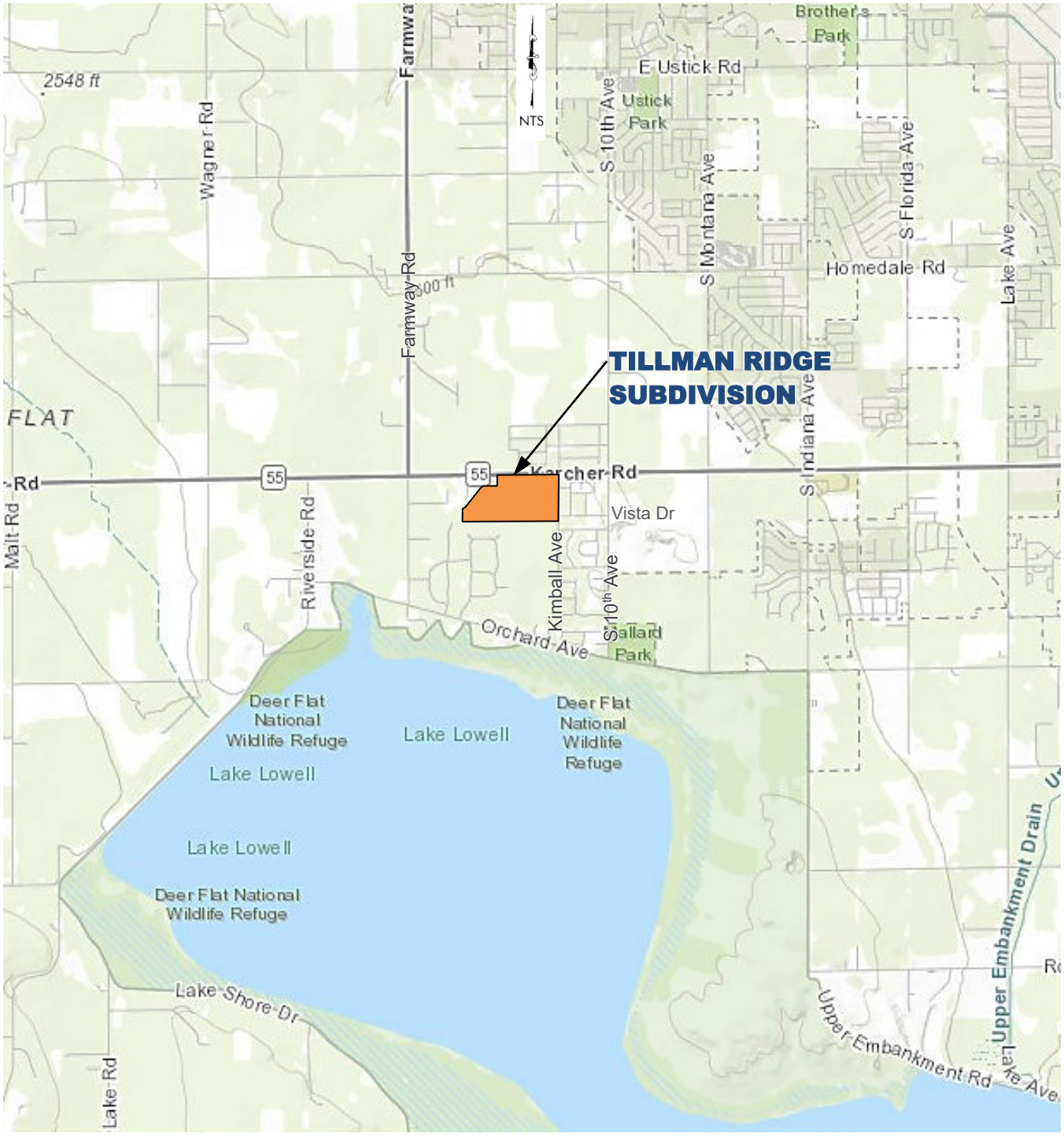
## 6.0 2032 Horizon Year Total Traffic Conditions

6.1 With 2032 horizon year total traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to require turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate the 2032 horizon year total traffic operations

# 1.0 INTRODUCTION

CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) update for the proposed Tillman Ridge Subdivision, located southwest of the Kimball Avenue and Karcher Road (SH 55) intersection in Canyon County, Idaho. **Figure 1.1** shows the site location and its vicinity. The TIS update evaluated the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed development, and identified improvements to mitigate the impacts if needed. The scope of this TIS update remains the same as the original TIS, which was determined through coordination with the Idaho Transportation Department (ITD) and Highway District No. 4 (HD4).

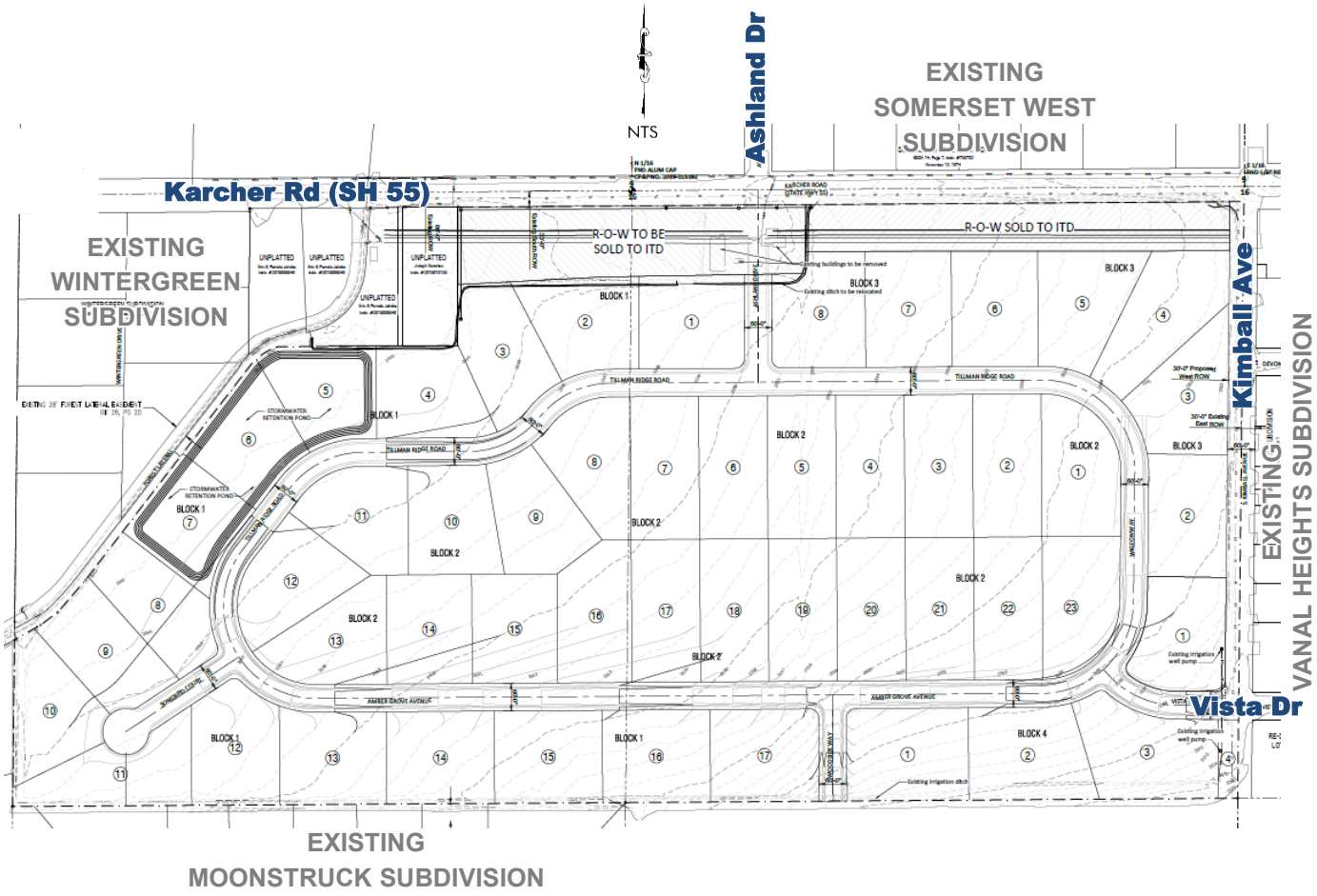
**Figure 1.1 – Site Location and Vicinity**



## 1.1 Proposed Development

**Figure 1.2** shows the preliminary site plan with the proposed site access locations. Tillman Ridge Subdivision is a proposed residential development estimated to contain 49 single-family lots. Based on the preliminary site plan, the development is proposing two full site accesses, one on Karcher Road aligning with Ashland Drive to the north and one on Kimball Avenue aligning with Vista Drive to the east. In addition, a stub road will be constructed to the south for connection for future development; no plans for development immediately south of Tillman Ridge Subdivision are known at this time. The anticipated build-out year is 2027 but this may change depending on the market conditions.

**Figure 1.2 – Preliminary Site Plan**



## 1.2 Study Approach

The TIS update was prepared following ITD *IDAPA 39.03.42 – Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way* and the *Highway Standards and Development Procedures* for the Association of Canyon County Highway District (ACCHD). The scope of this TIS update remains the same as the original TIS, which was determined through coordination with ITD and HD4.

## 1.3 Study Area

The following study area intersections were identified for the traffic impact analysis:

- Kimball Avenue and Karcher Road (SH 55) intersection
- S 10th Avenue and Karcher Road intersection
- Vista Drive and S 10th Avenue intersection
- Proposed site access intersection

## 1.4 Study Period

The analysis peak periods are the AM and PM peak hours of operation of the transportation system. The analysis years and traffic conditions are:

- 2024 Existing traffic
- 2027 Build-out year background traffic
- 2027 Build-out year total traffic
- 2032 Horizon year background traffic
- 2032 Horizon year total traffic

## 1.5 Analysis Methods and Performance Measure Thresholds

Intersection capacity analysis was performed using Synchro 12 (Version 12.2.3.12), which utilizes the HCM 7th Edition (HCM7) methodologies. All parameters used in the analysis were based on existing data when available or Synchro default values, when not available. Level of service (LOS) for intersections is based on the average delay of vehicles traveling through the intersection on a scale of A (best) to F (worst).

The study area roadways and intersections fall under the jurisdiction of HD4 and ITD. For this study, the minimum operational thresholds for HD4 intersections are LOS D with a maximum volume-to-capacity (v/c) ratio of 1.00 for any lane group. For ITD intersections, mitigation improvements are required for any individual movement either operating at LOS F or with a v/c ratio greater than 0.90 (*Memo No. 39, District 3 Operational Procedures*).

# 2.0 EXISTING CONDITIONS

## 2.1 Roadway Network, Intersection Control, and Lane Configuration

A brief description of the existing roadways within the study area is summarized in **Table 2.1** below. The roadway functional classification is based on the 2011 HD4 Functional Classification Map and the ITD iPlan OpenData ArcGIS database. **Figure 2.1** summarizes the study area intersection control and lane configuration.

**Table 2.1 – Existing Roadway Characteristics**

| Roadway | Functional Classification | Number of Lanes | Posted Speed Limit (mph) | Pedestrian Facilities |
|---|---|---|---|---|
| Karcher Rd (SH 55) | Principal Arterial (Statewide Route) | 2-3 | 55 | • No sidewalk or bicycle lanes |
| Kimball Ave | Local Road | 2 | 20 north / 25 south of Karcher Rd | • No sidewalk or bicycle lanes |
| S 10th Ave | Minor Arterial | 2 | 35 | • No sidewalk or bicycle lanes |
| Vista Dr | Local Road | 2 | 25 | • No sidewalk or bicycle lanes |
| Ashland Dr | Local Road | 2 | 20 | • No sidewalk or bicycle lanes |

## 2.2 Existing Traffic Volumes

Weekday AM and PM peak hour traffic counts were obtained at the study area intersections on November 14, 2024. The peak hour intersection turning movement counts were collected on a weekday for a 2-hour period at 15-minute intervals between 7:00 and 9:00 during the AM peak hour and between 4:00 and 6:00 PM during the PM peak hour. Existing intersection turning movement counts are included in the appendix. **Figure 2.2** summarizes the existing 2024 peak hour traffic.

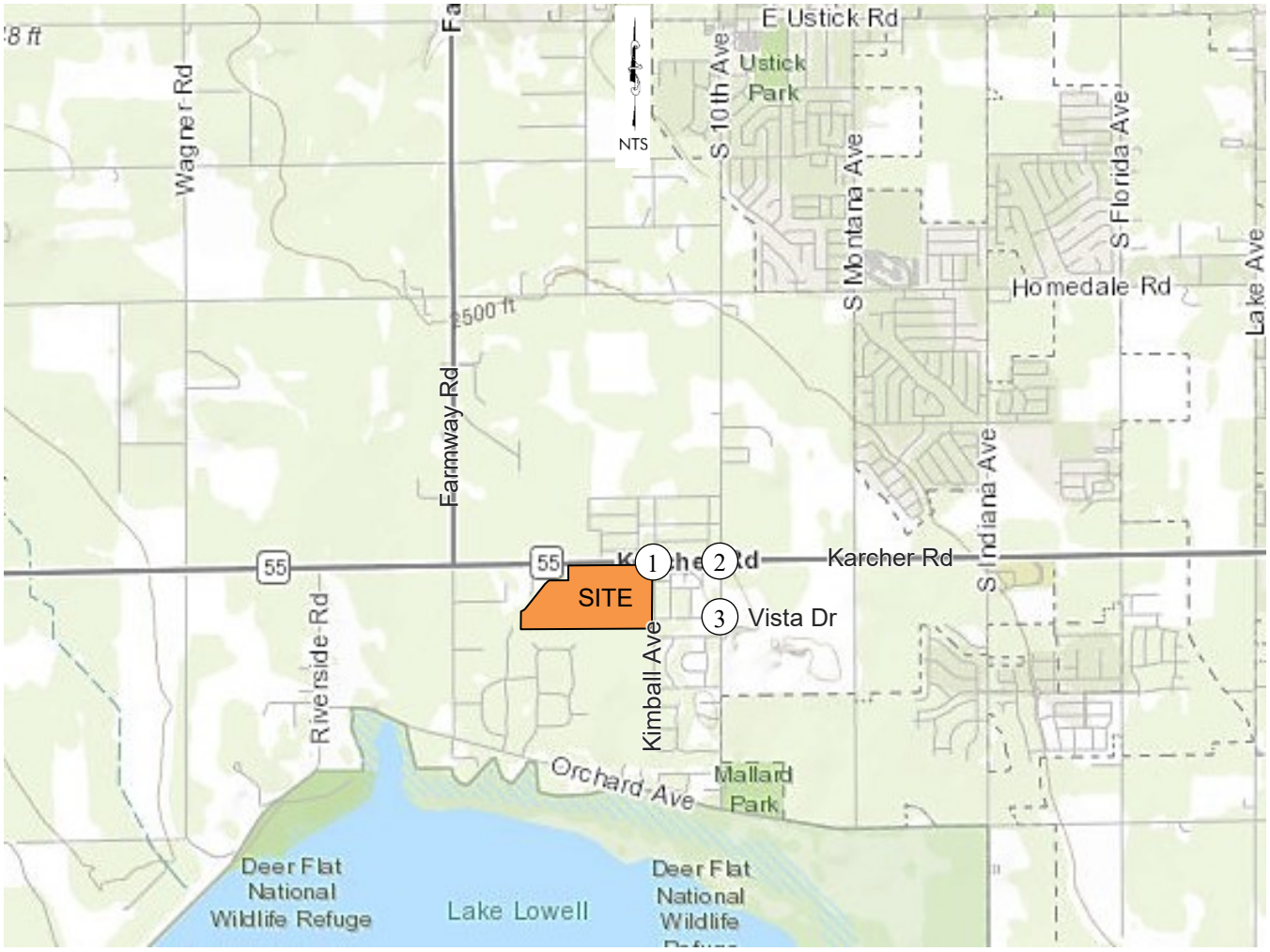
## 2.3 Intersection Crash Data

The most current five-year (2019-2023) crash data was obtained from the ITD Highway Safety website (https://itd.idaho.gov/safety). **Table 2.2** summarizes the crash data for the study area intersection. A review of the historical crash data shows no major crash patterns at the study area intersections. The study area intersection crash rates are less than 1.00 crashes per million entering vehicles (ACC/MEV)

**Table 2.2 – Intersection Crash Data (2019-2023)**

| Intersection | | Total Crashes | *Crash Severity* | | | Notes | Crash Rate (ACC/MEV) |
|---|---|---|---|---|---|---|---|
| | | | *PDO* | *Injury* | *Fatal* | | |
| (1) | Kimball Ave and Karcher Rd | 5 | 3 | 2 | 0 | • 4 rear-end crashes due to inattention or following too close | 0.21 |
| (2) | S 10th Ave and Karcher Rd | 16 | *8* | *8* | *0* | • 11 rear-end crashes, 4 angle crashes | 0.42 |
| (3) | Vista Dr and S 10th Ave | No reported crashes | | | | | |

**Figure 2.1 – 2024 Existing Intersection Control and Lane Configuration**



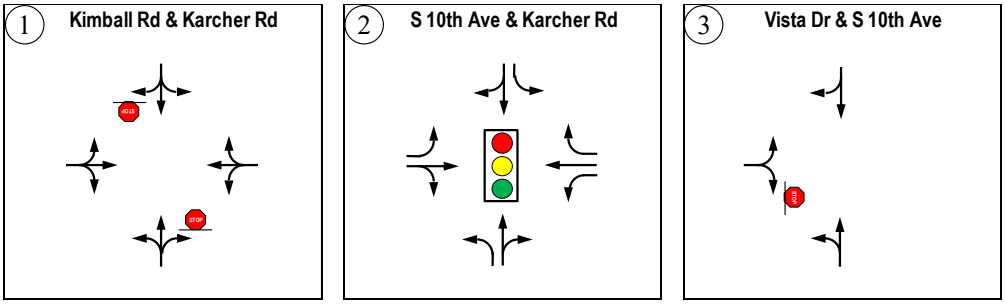
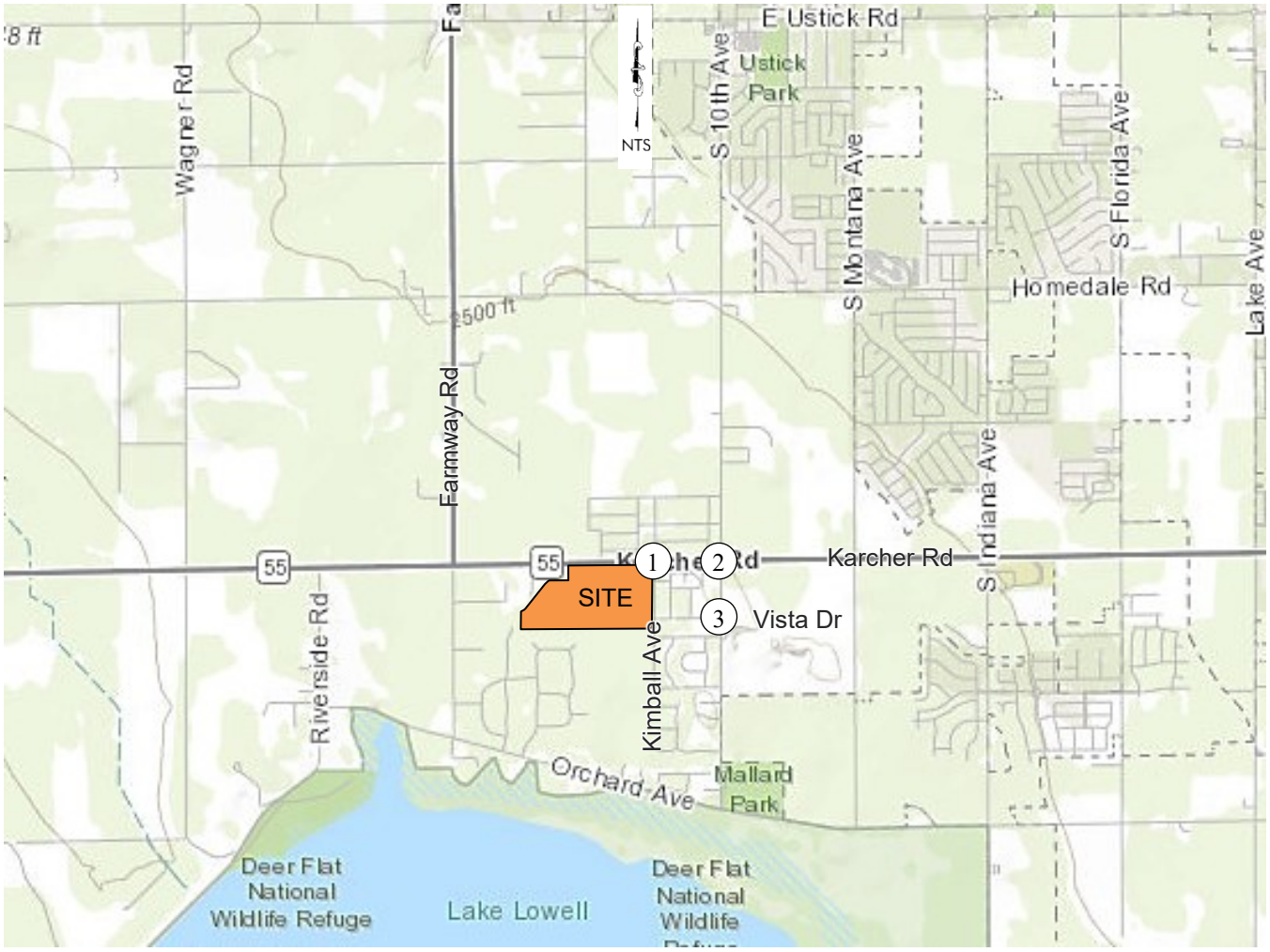
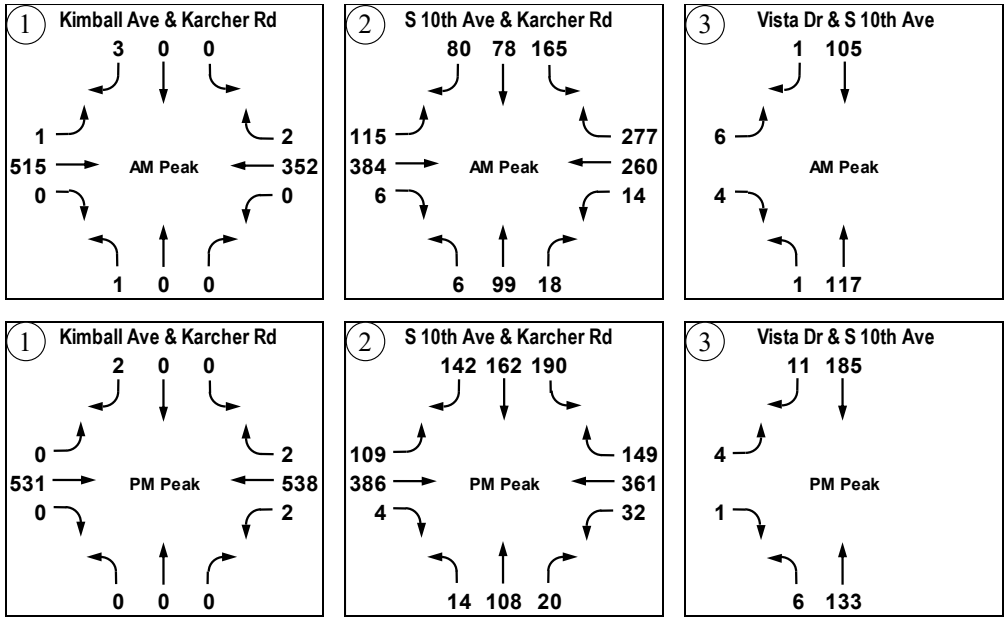



**Figure 2.2 – 2024 Existing Peak Hour Traffic**

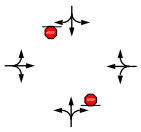
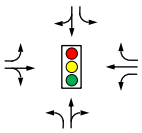


## 2.4 Intersection Operations

To determine the existing traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration and 2024 peak hour traffic. Copies of the analysis reports are included in the appendix. **Table 2.3** summarizes the intersection capacity analysis results. All study area intersections currently meet HD4 and ITD minimum operational thresholds under 2024 existing traffic conditions.

**Table 2.3 – Intersection Operations – 2024 Existing Traffic**

| Intersection | | Control / Lane | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd |  | NB | C | 21 | 0.01 | A | - | - |
| | | | EB | A | 10 | < 0.01 | A | - | - |
| | | | WB | A | - | - | A | 9 | < 0.01 |
| | | | SB | B | 11 | 0.01 | B | 12 | < 0.01 |
| 2 | S 10th Ave and Karcher Rd |  | Intersection | C | 21 | 0.65 | C | 21 | 0.69 |
| | | | EBL | C | 27 | 0.78 | C | 27 | 0.78 |
| | | | EBTR | B | 17 | 0.76 | B | 17 | 0.75 |
| | | | WBL | C | 30 | 0.46 | C | 27 | 0.51 |
| | | | WBT | B | 19 | 0.68 | B | 19 | 0.79 |
| | | | WBR | C | 21 | 0.80 | B | 16 | 0.39 |
| | | | NBL | C | 33 | 0.43 | C | 29 | 0.46 |
| | | | NBTR | C | 24 | 0.65 | C | 23 | 0.63 |
| | | | SBL | C | 33 | 0.81 | C | 29 | 0.80 |
| | | | SBTR | B | 18 | 0.44 | B | 20 | 0.76 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | A | 10 | 0.02 | B | 11 | 0.01 |
| | | | SB | - | - | - | - | - | - |

## 2.5 Intersection Mitigation

All study area intersections currently meet HD4 and ITD minimum operational thresholds. None of the unsignalized study area intersections require turn lanes based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide* or ITD turn lane guidelines. As a result, no intersection improvements are needed to mitigate 2024 existing traffic operations.

# 3.0 2027 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS

## 3.1 Roadway Network

ITD completed the study and design of the Karcher Road (SH 55) corridor improvements between Farmway Road and Middleton Road (*SH-55, Farmway Road to Middleton Road Project)*. Based on the current project design plans, the following improvements are included on Karcher Road within the study area:

- Widen Karcher Road to two travel lanes in each direction with a two-way left-turn lane
- Close the existing approaches of Kimball Avenue and Ellis Avenue
- S 10th Avenue and Karcher Road intersection – widen the intersection and upgrade the signal with the following lanes:
  - Karcher Road approaches – one left-turn lane two through lanes, and one right-turn lane
  - S 10th Avenue approaches – one left-turn and one shared through/right-turn lane (existing)
- Ashland Drive and Karcher Road intersection – widen intersection with the following lanes:
  - Eastbound approach – one left-turn lane and two through lanes
  - Westbound approach – two through lanes and one right-turn lane
  - Southbound approach – one shared lane (existing)

According to the project webpage (https://itdprojects.idaho.gov/pages/55Farmway), the improvements are under construction and are anticipated to be completed by 2027. **Figure 3.1** summarizes the intersection control and lane configuration for 2027 background traffic conditions with the SH 55 corridor improvements.

## 3.2 Background Traffic

Background traffic growth from 2024 to 2027 was estimated by extrapolating the 2024 existing traffic counts with the following annual growth rates:

- Karcher Road (SH 55) – 6.0%
- All other study area roadways – 2.0%

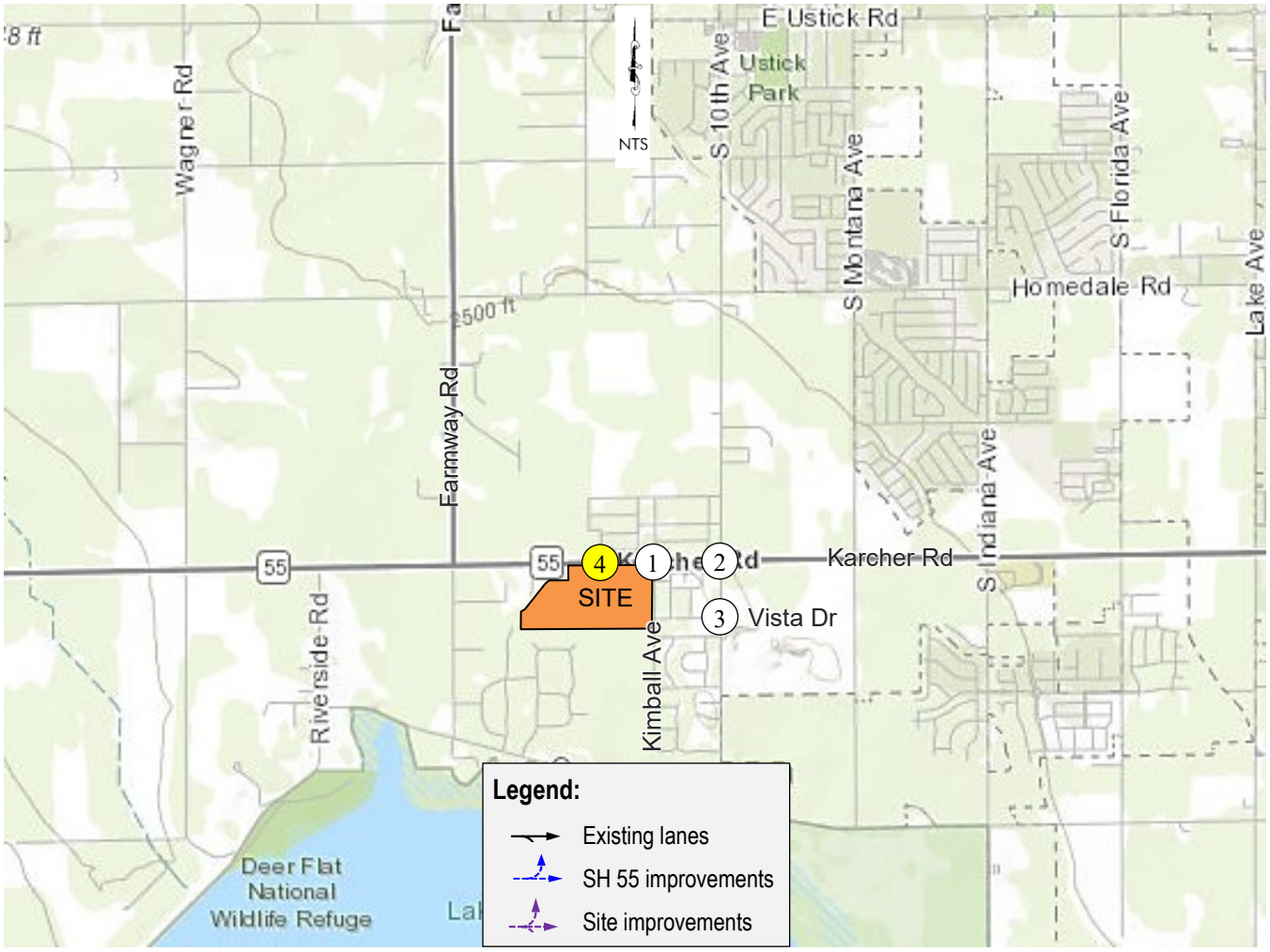
These annual traffic growth rates are based on COMPASS forecasts between 2019 and 2030 and other accepted TIS in the area. COMPASS forecasts are included in the appendix. In addition, two in-process developments in the area that are expected to contribute off-site traffic to the study area intersections were included in background traffic:

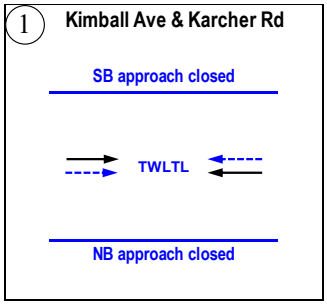
- Passero Ridge Subdivision – A residential development with 335 single-family lots located north of Orchard Avenue between S 10th Avenue and Montana Avenue with a build-out year of 2026
  - Approximately 10% (29 DU) of Passero Ridge Subdivision has been constructed/occupied
- Norse Landing Subdivision – A residential development with 34 single-family lots located north of Orchard Avenue between Moonstruck Drive and Kimball Avenue

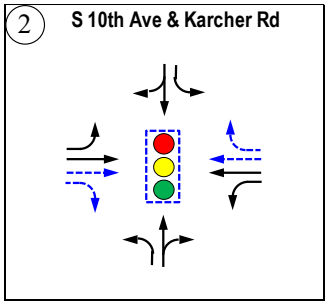
With the corridor widening and road closures as discussed above, traffic north of Karcher Road is anticipated to shift to Ashland Drive or 10th Avenue, depending on their origin/destination. Kimball Avenue traffic south of Karcher Road and Ellis Drive traffic will be required to shift to 10th Avenue until another connection to Karcher Road west of the Kimball Avenue location is available.

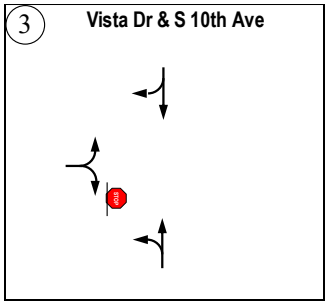
**Figure 3.2** summarizes the projected 2027 AM and PM peak hour background traffic at the study area intersections.

**Figure 3.1 – 2027 Intersection Control and Lane Configuration**



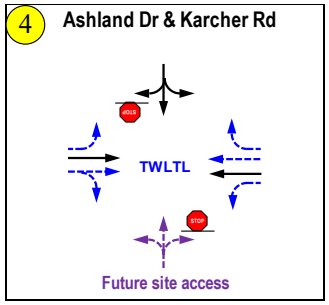
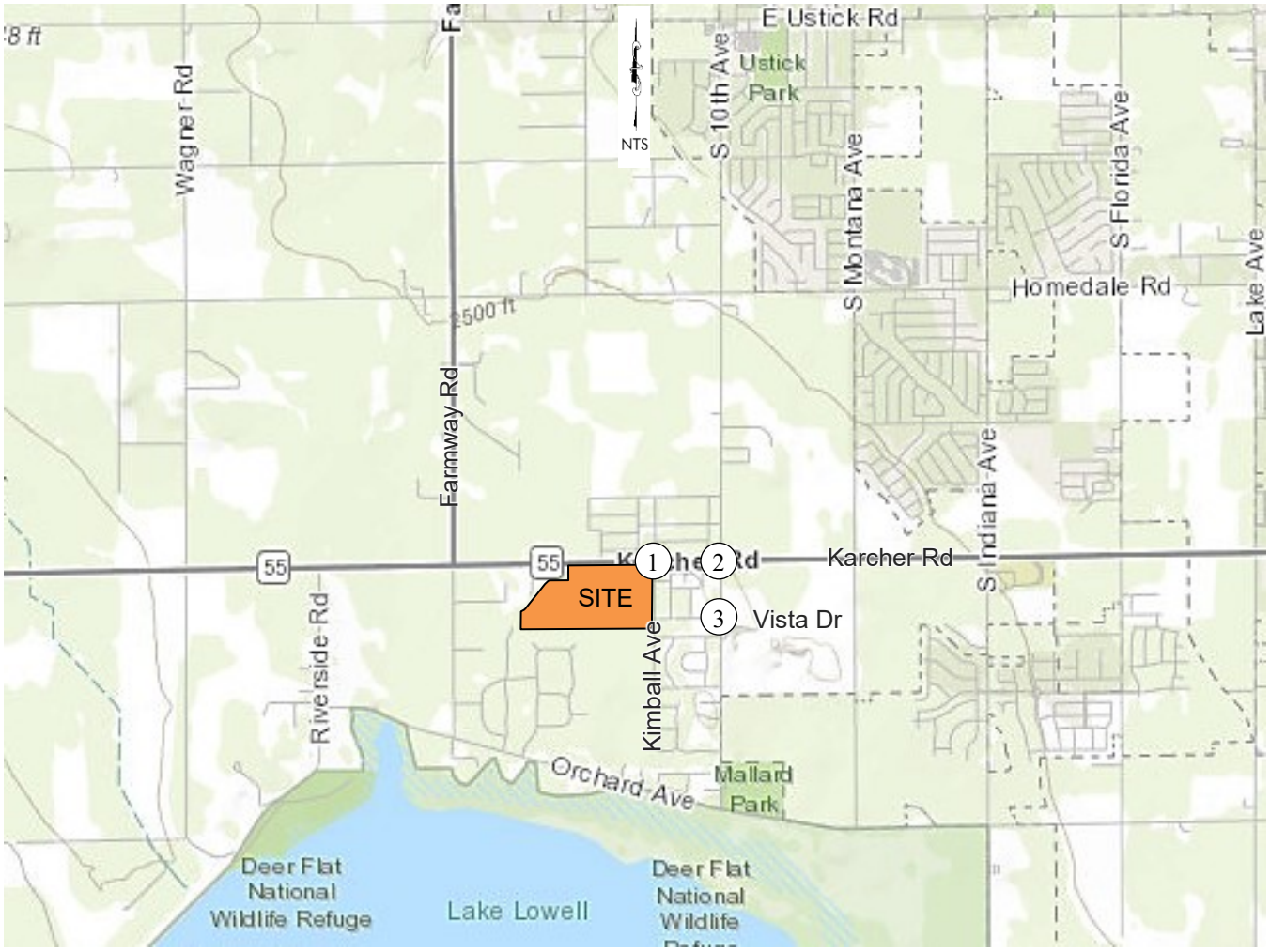
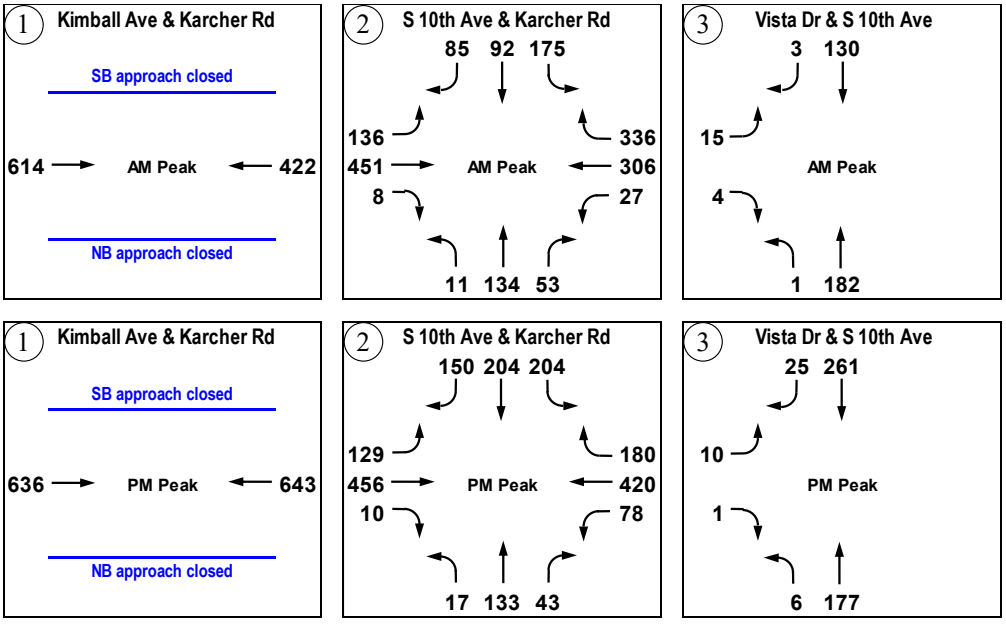



**Figure 3.2 – 2027 Build-Out Year Peak Hour Background Traffic**

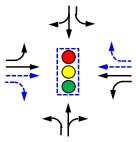


## 3.3 Intersection Operations

To determine the 2027 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 3.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, all study area intersections are anticipated to meet minimum operational thresholds under 2027 background traffic conditions.

**Table 3.1 – Intersection Operations – 2027 Build-Out Year Background Traffic**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 25 | 0.61 | C | 21 | 0.68 |
| | | | EBL | D | 38 | 0.80 | C | 26 | 0.78 |
| | | | EBT | B | 16 | 0.41 | B | 18 | 0.62 |
| | | | EBR | B | 14 | 0.02 | B | 16 | 0.03 |
| | | | WBL | C | 35 | 0.53 | C | 26 | 0.68 |
| | | | WBT | B | 19 | 0.36 | B | 20 | 0.65 |
| | | | WBR | C | 24 | 0.85 | B | 20 | 0.63 |
| | | | NBL | D | 37 | 0.45 | C | 28 | 0.48 |
| | | | NBTR | C | 29 | 0.77 | C | 22 | 0.69 |
| | | | SBL | D | 47 | 0.83 | C | 29 | 0.81 |
| | | | SBTR | B | 20 | 0.42 | B | 18 | 0.77 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.03 | B | 12 | 0.02 |
| | | | SB | - | - | - | - | - | - |

[1] Intersection meets minimum operational thresholds without SH 55 corridor improvements

## 3.4 Intersection Mitigation

All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2027 background traffic conditions. The Vista Drive and S 10th Avenue intersection is not anticipated to warrant any turn lane based on NCHRP Report 457 turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2027 build-out year background traffic operations.

# 4.0 2027 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS

## *4.1 Roadway Network*

The study area roadways and intersections are expected to remain the same as 2027 background traffic conditions as shown in Figure 3.1. The development is planning to improve Kimball Avenue and Karcher Road along the site frontages. In addition, Tillman Ridge Subdivision is proposing to construct the south leg of the Ashland Drive and Karcher Road intersection, as well as constructing the west leg of the Vista Drive and Kimball Avenue intersection for site access.

## *4.2 Site Traffic*

### 4.2.1 Trip Generation

Site trip generation is estimated using the procedures recommended in the latest edition of the *Trip Generation Manual (11th Edition)*, published by the Institute of Transportation Engineers (ITE). **Table 4.1** summarizes the site trip generation. At full build-out, Tillman Ridge Subdivision is estimated to generate 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour.

**Table 4.1 – Build-Out Site Trip Generation Summary**

| Land Use | ITE Code | Size | Unit | Period | Total Trips | Entering | | Exiting | |
|---|---|---|---|---|---|---|---|---|---|
| Single-Family Detached Housing | 210 | 49 | DU | Weekday Daily (vpd) | 523 | 50% | 261 | 50% | 262 |
| | | | | AM Peak Hour (vph) | 39 | 25% | 9 | 75% | 30 |
| | | | | PM Peak Hour (vph) | 51 | 63% | 32 | 37% | 19 |

### 4.2.2 Trip Capture

Based on ITE methodologies, the development is not expected to retain trips internally within the site. No reduction for internal trip capture was assumed in the traffic analysis.

### 4.2.3 Pass-By Trips

The development is not expected to generate pass-by trips. No pass-by trips were assumed in the traffic analysis.

### 4.2.4 Modal Split

For traffic analysis purposes, all trips generated by the development were assumed to be made by personal and commercial vehicles. Some children residing in the development are anticipated to walk/bike to the existing/proposed schools within the vicinity of the site

### 4.2.5 Trip Distribution and Assignment

Site traffic was distributed and assigned to the external roadway system based on current travel patterns, site layout, and the general location of the site within the area. **Figure 4.1** shows the estimated site traffic distribution patterns for the proposed development. **Figure 4.2** and **Figure 4.3** summarize the estimated AM and PM peak hour site traffic with the proposed accesses as shown in the site plan.

## *4.3 Total Traffic*

The 2027 site traffic is added to the 2027 background traffic as determined above to obtain the 2027 total traffic. **Figure 4.4** and **Figure 4.5** summarize the estimated 2027 peak hour total traffic at the study area intersections. **Table 4.2** summarizes the proportionate share of the site traffic at each study area intersection.

**Table 4.2 – Build-Out Site Traffic Percentage at Study Area Intersections**

| Intersection | | % Site Traffic of 2027 Total Traffic | | |
|---|---|---|---|---|
| | | AM Peak | PM Peak | Average |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | |
| 2 | S 10th Ave and Karcher Rd | 1.8% | 2.1% | 1.9% |
| 3 | Vista Dr and S 10th Ave | 3.7% | 3.0% | 3.3% |
| 4 | Ashland Dr/Access and Karcher Rd | 2.5% | 2.8% | 2.7% |

**Figure 4.1 – Estimated Site Traffic Distribution Patterns**

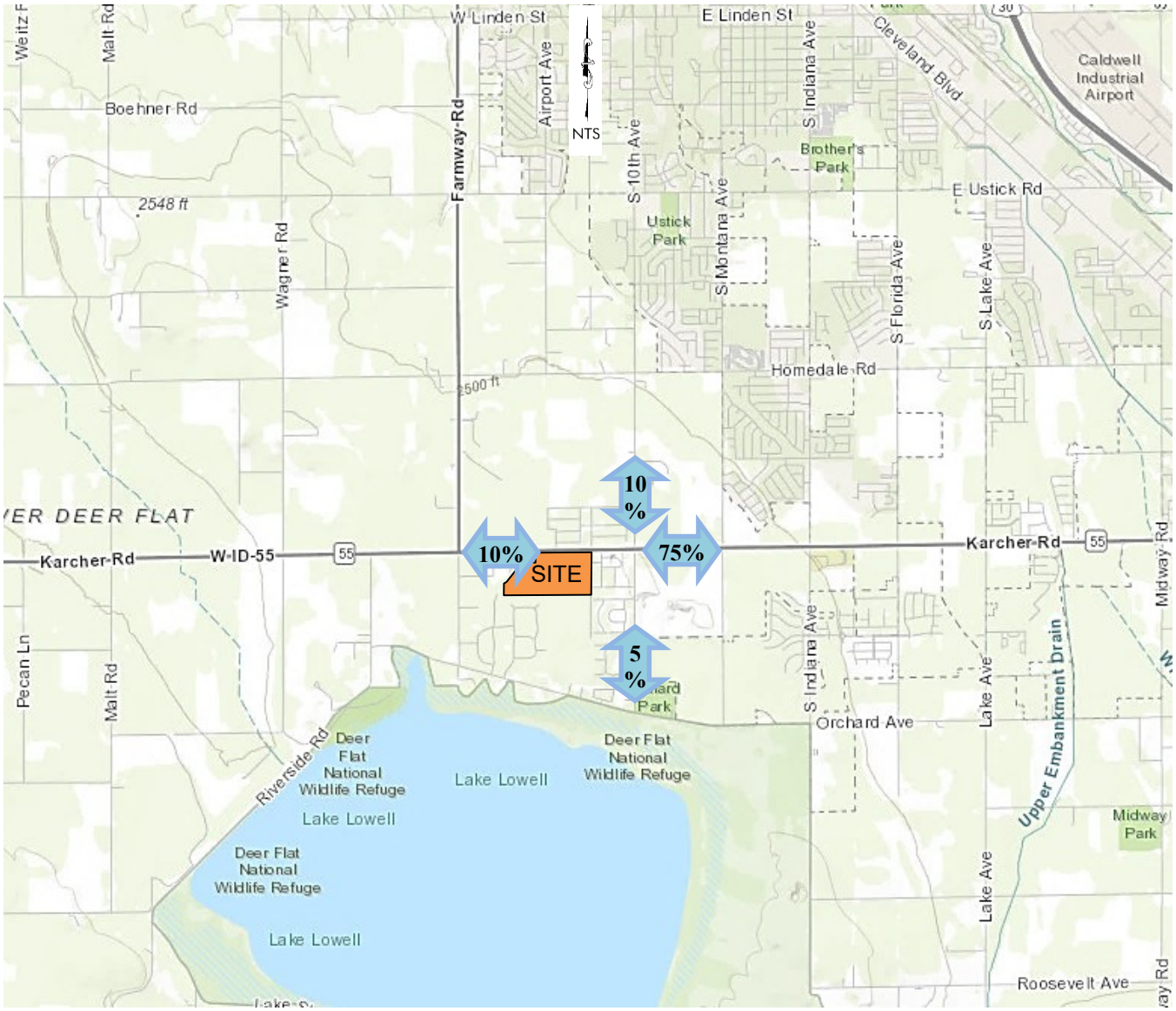
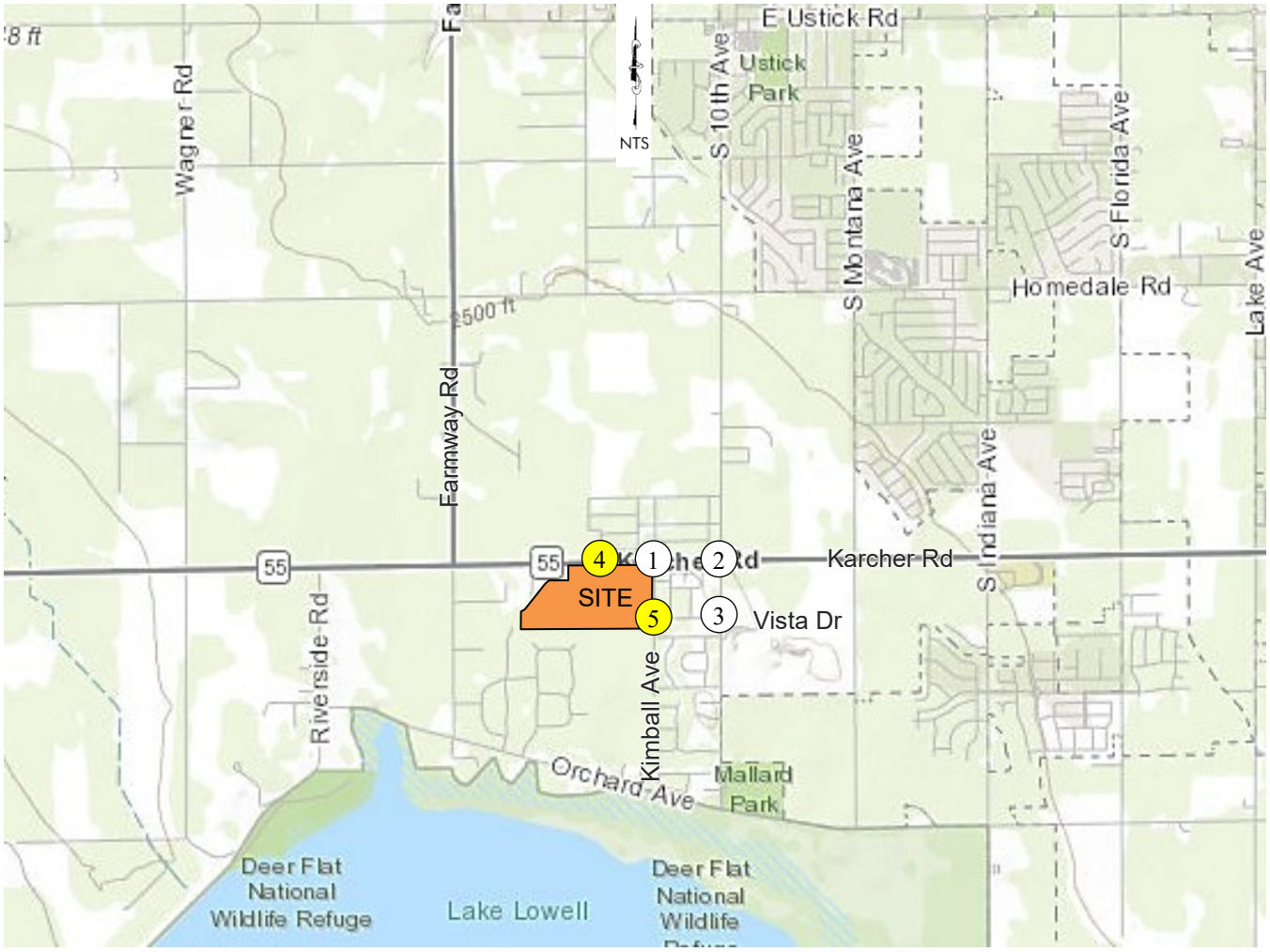


**Figure 4.2 – 2027 Build-Out Year AM Peak Hour Site Traffic**



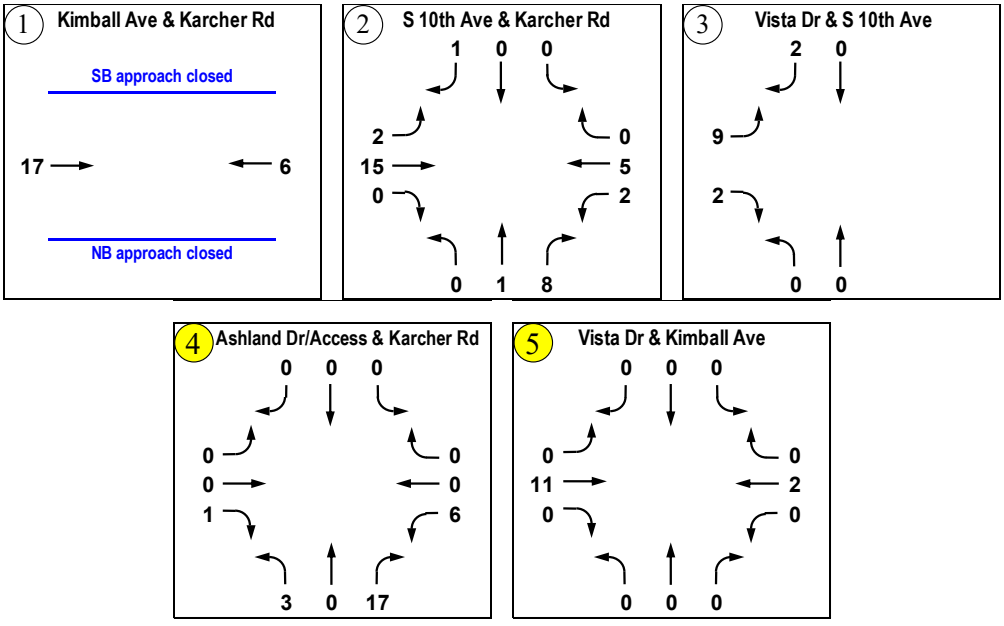
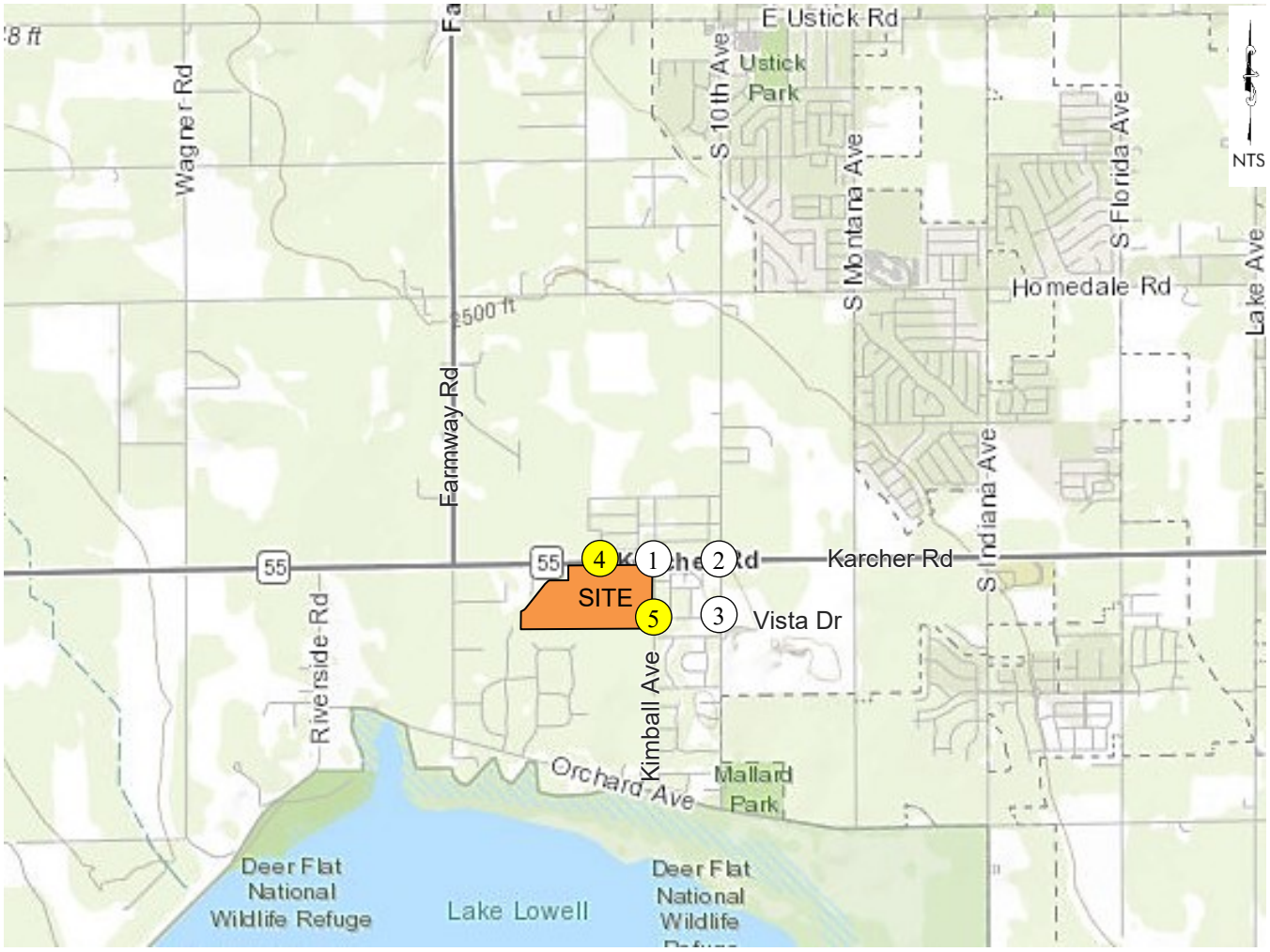



**Figure 4.3 – 2027 Build-Out Year PM Peak Hour Site Traffic**



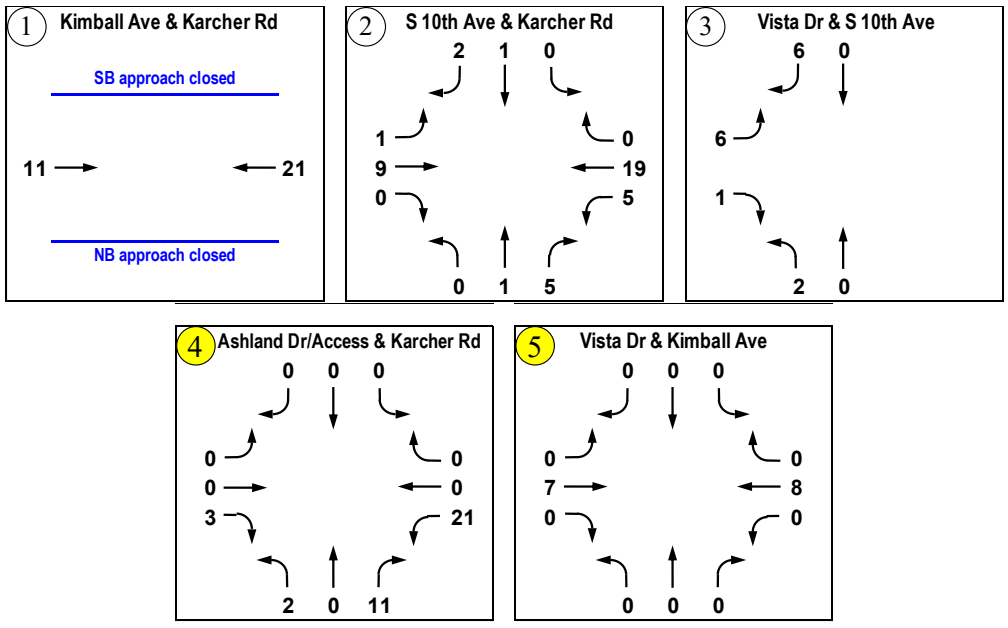
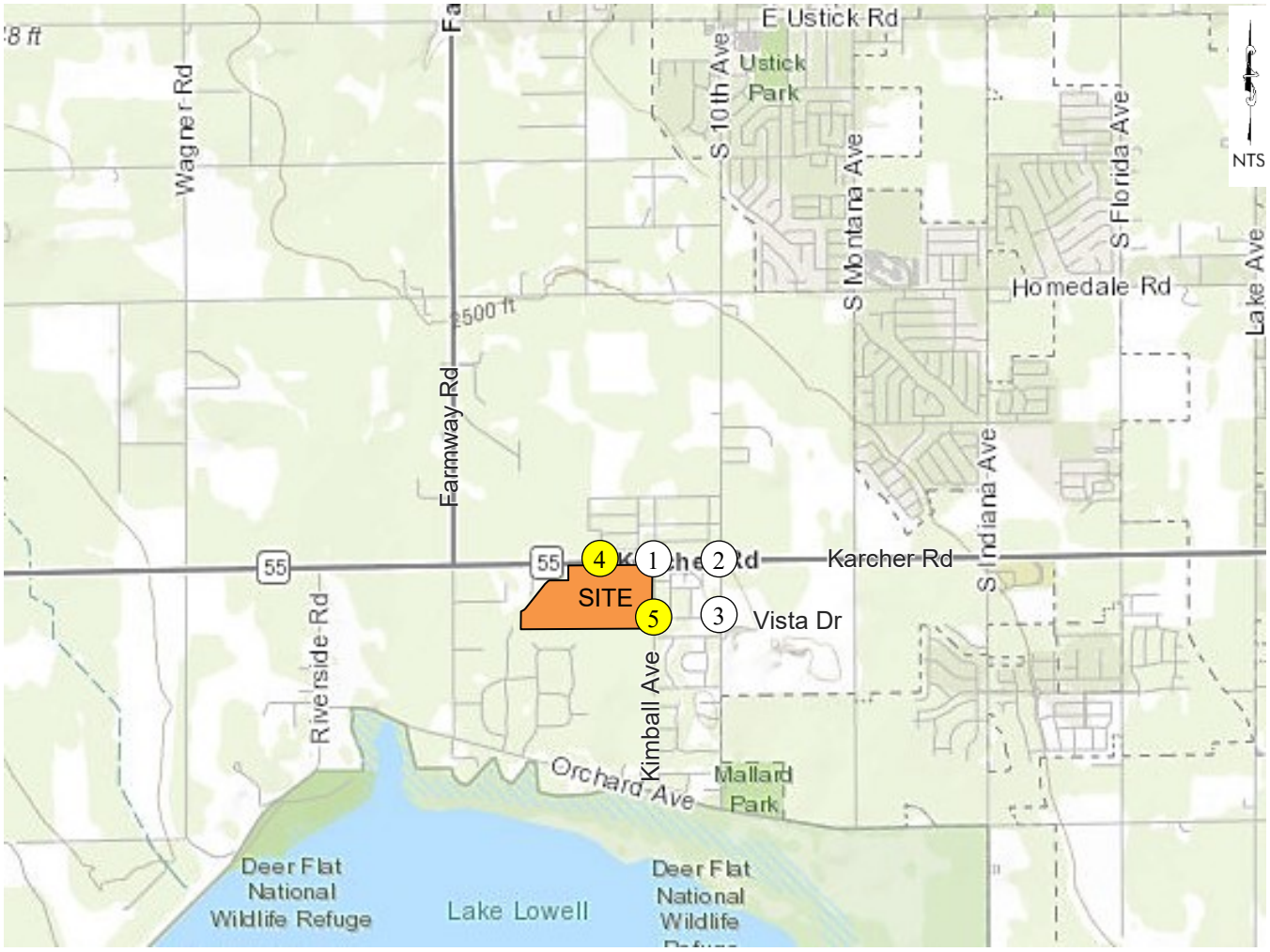



**Figure 4.4 – 2027 Build-Out Year AM Peak Hour Total Traffic**



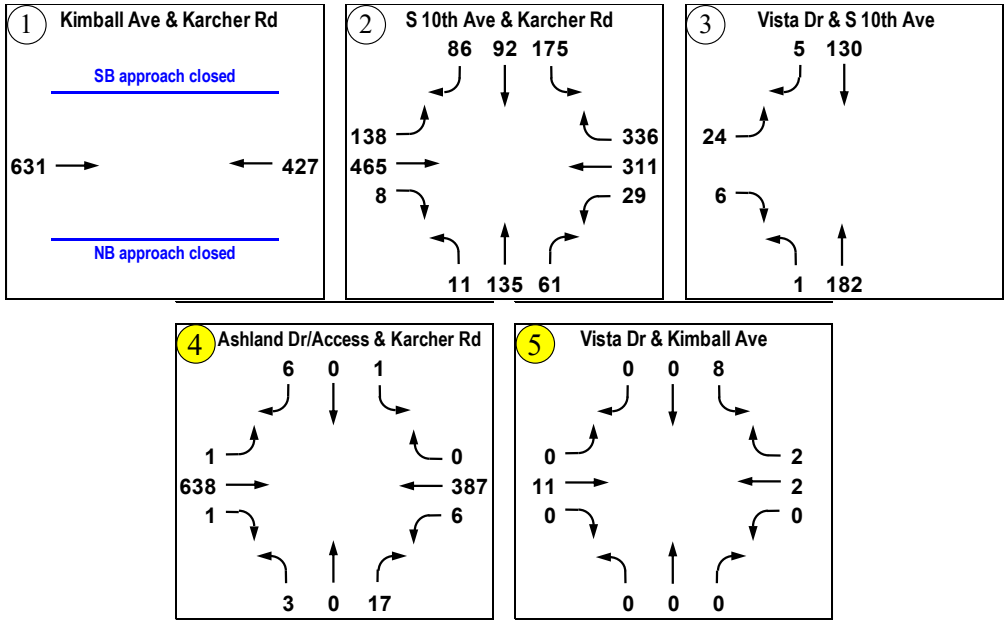
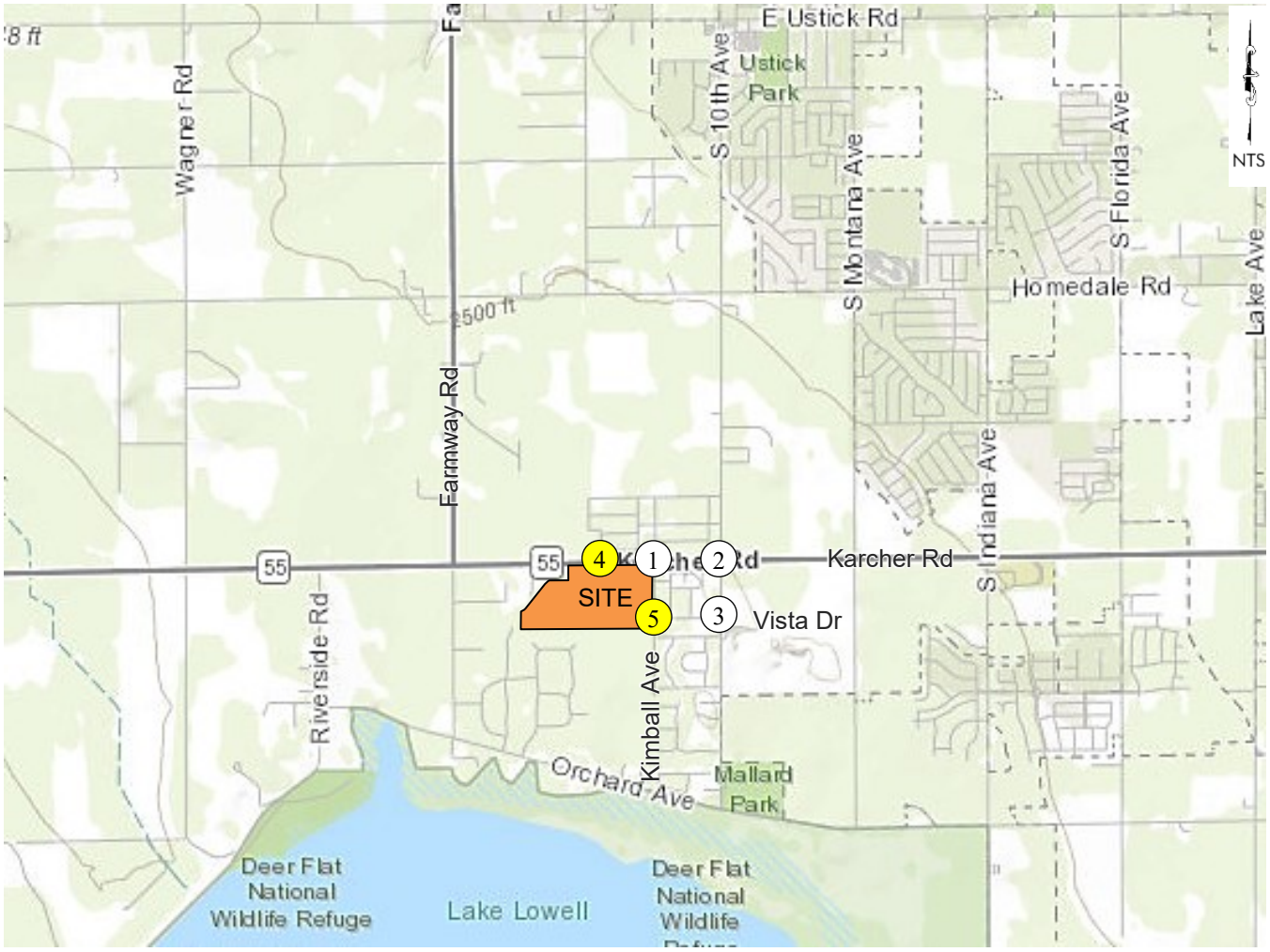
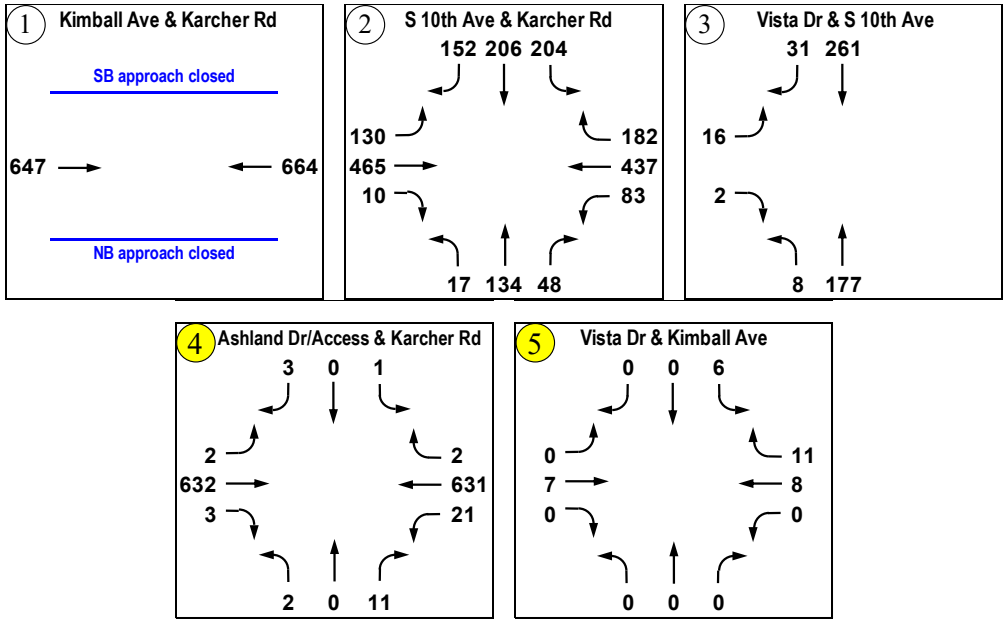



**Figure 4.5 – 2027 Build-Out Year PM Peak Hour Total Traffic**

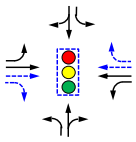
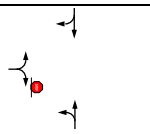
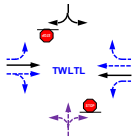


## 4.4 Intersection Operations

To determine the 2027 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 4.3** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2027 total traffic conditions.

**Table 4.3 – Intersection Operations – 2027 Build-Out Year Total Traffic**

| Intersection | | Control / Lane<br>SH 55 Improvements<br>Site Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 25 | 0.62 | C | 21 | 0.68 |
| | | | EBL | D | 40 | 0.80 | C | 26 | 0.79 |
| | | | EBT | B | 17 | 0.43 | B | 19 | 0.62 |
| | | | EBR | B | 14 | 0.02 | B | 16 | 0.03 |
| | | | WBL | D | 35 | 0.54 | C | 27 | 0.71 |
| | | | WBT | B | 20 | 0.37 | B | 20 | 0.66 |
| | | | WBR | C | 25 | 0.85 | C | 20 | 0.62 |
| | | | NBL | D | 38 | 0.45 | C | 29 | 0.48 |
| | | | NBTR | C | 29 | 0.78 | C | 22 | 0.70 |
| | | | SBL | D | 48 | 0.83 | C | 30 | 0.81 |
| | | | SBTR | C | 20 | 0.41 | B | 18 | 0.77 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.05 | B | 12 | 0.04 |
| | | | SB | - | - | - | - | - | - |
| 4 | Ashland Dr [1] and Karcher Rd |  | NB | B | 12 | 0.04 | B | 12 | 0.02 |
| | | | EBL | A | 8 | < 0.01 | A | 9 | < 0.01 |
| | | | EBT | - | - | - | - | - | - |
| | | | EBR | - | - | - | - | - | - |
| | | | WBL | A | 9 | 0.01 | A | 9 | 0.02 |
| | | | WBT | - | - | - | - | - | - |
| | | | WBR | - | - | - | - | - | - |
| | | | SB | B | 10 | 0.01 | B | 12 | 0.01 |

[1] Intersection meets minimum operational thresholds without SH 55 corridor improvements

## 4.5 Intersection Mitigation

All study area intersections are anticipated to continue to meet HD4 and ITD minimum operational thresholds under 2027 build-out total traffic conditions. The unsignalized study area intersections are not anticipated to warrant any turn lane based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2027 build-out year total traffic operations.

The Ashland Drive and Karcher Road intersection is anticipated to warrant a westbound left-turn lane if the SH 55 corridor improvements are not constructed.

The Vista Drive and Kimball Avenue intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road. The intersection is anticipated to meet minimum operational thresholds.

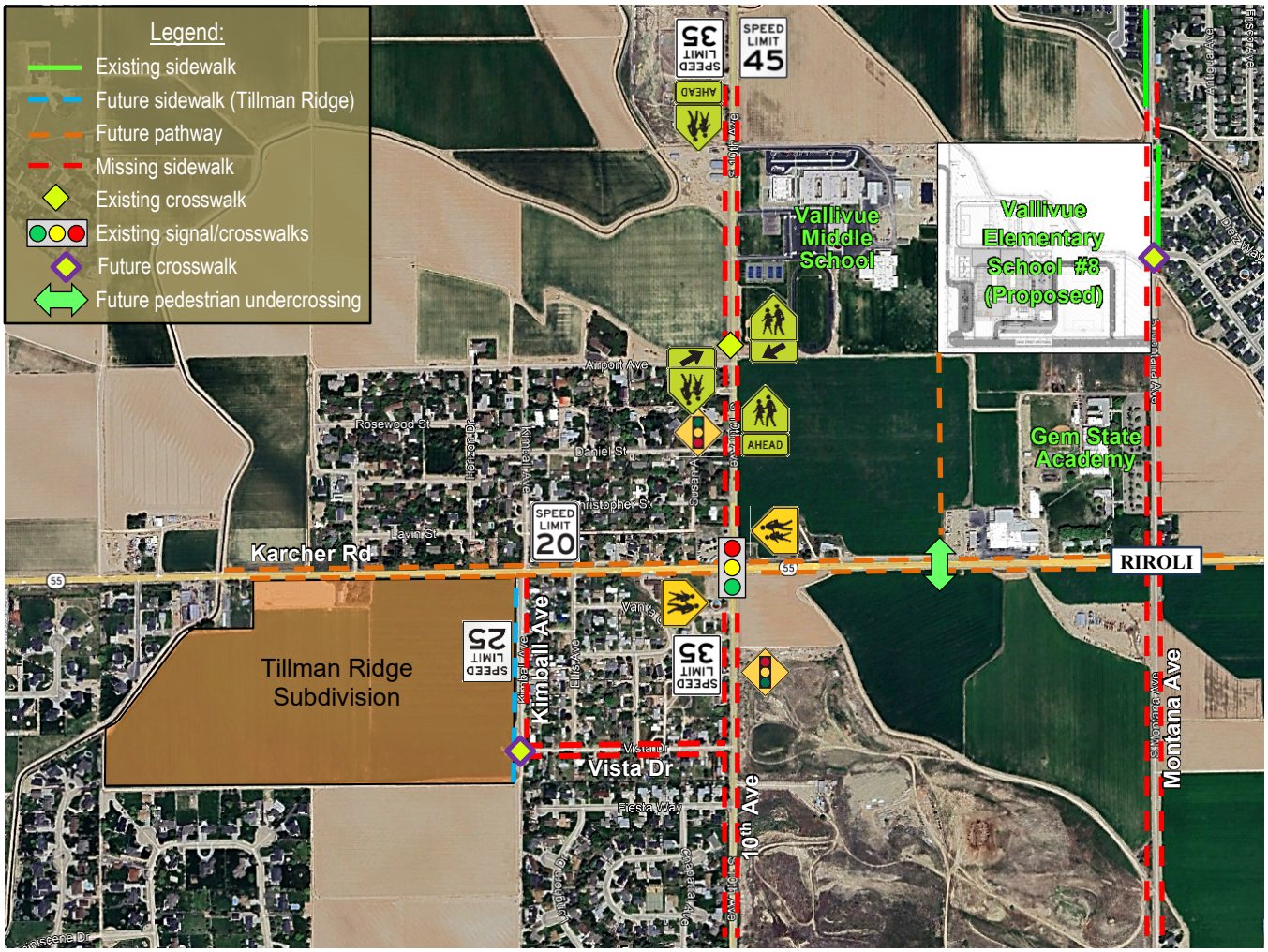
## 4.6 School Routes and Crossings

Tillman Ridge Subdivision is located approximately ½ mile southwest of the existing Vallivue Middle School and the proposed Vallivue Middle School #8. Some children residing in the development are expected to walk/bike to/from school. **Figure 4.6** summarizes the existing school facilities and potential school routes between Tillman Ridge Subdivision and the schools. No existing sidewalks were observed along the school routes. The development is expected to construct sidewalks on Kimball Avenue along the site frontages. Sidewalk on S 10th Avenue will be constructed with future development northeast of the S 10th Avenue and Karcher Road intersection or future roadway widening of S 10th Avenue. The future undercrossing and pathways along Karcher Road will be constructed with the SH 55 corridor improvements.

Based on the anticipated school routes, existing signage, and crossings, the following improvements are suggested to better accommodate schoolchildren circulation between the site and schools:

- Upgrade the existing School Crossing Assembly signs on Karcher Avenue at S 10th Avenue from traditional yellow to fluorescent yellow-green color as stated in the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD)
- Install a new crosswalk on the north side of the Kimball Avenue and Vista Drive intersection
- Install sidewalk on the east side of S 10th Avenue between Vallivue Middle School and Karcher Road
- Install sidewalk on the west side of S 10th Avenue between Karcher Road and Vista Drive
- Install sidewalk on the north side of Vista Drive

**Figure 4.6 – School Route, Crossings, and Facilities**



## 4.7 Site Access and Circulation

**Figure 4.7** shows the proposed site access locations, internal circulation, and ADT estimate. Tillman Ridge Subdivision is proposing two full accesses, one on Karcher Road to align with the existing Ashland Drive, and one on Kimball Avenue to align with the existing Vista Drive. A stub road is also proposed to the south for future connectivity with the existing vacant parcel.

Site access spacing on Kimball Avenue, a 25-mph local road along the site frontage, is governed by HD4 and is determined by the Highway Standards and Development Procedures for the Association of Canyon County Highway Districts (ACCHD). According to HD4 access spacing requirements, the minimum spacing is:

- 1/8-mile (660 feet) local road spacing on same side of roadway
- 1/16-mile (330 feet) local road spacing on opposite side of roadway
- 270 feet driveway spacing for a minor generator taking access on a local road on same side of roadway

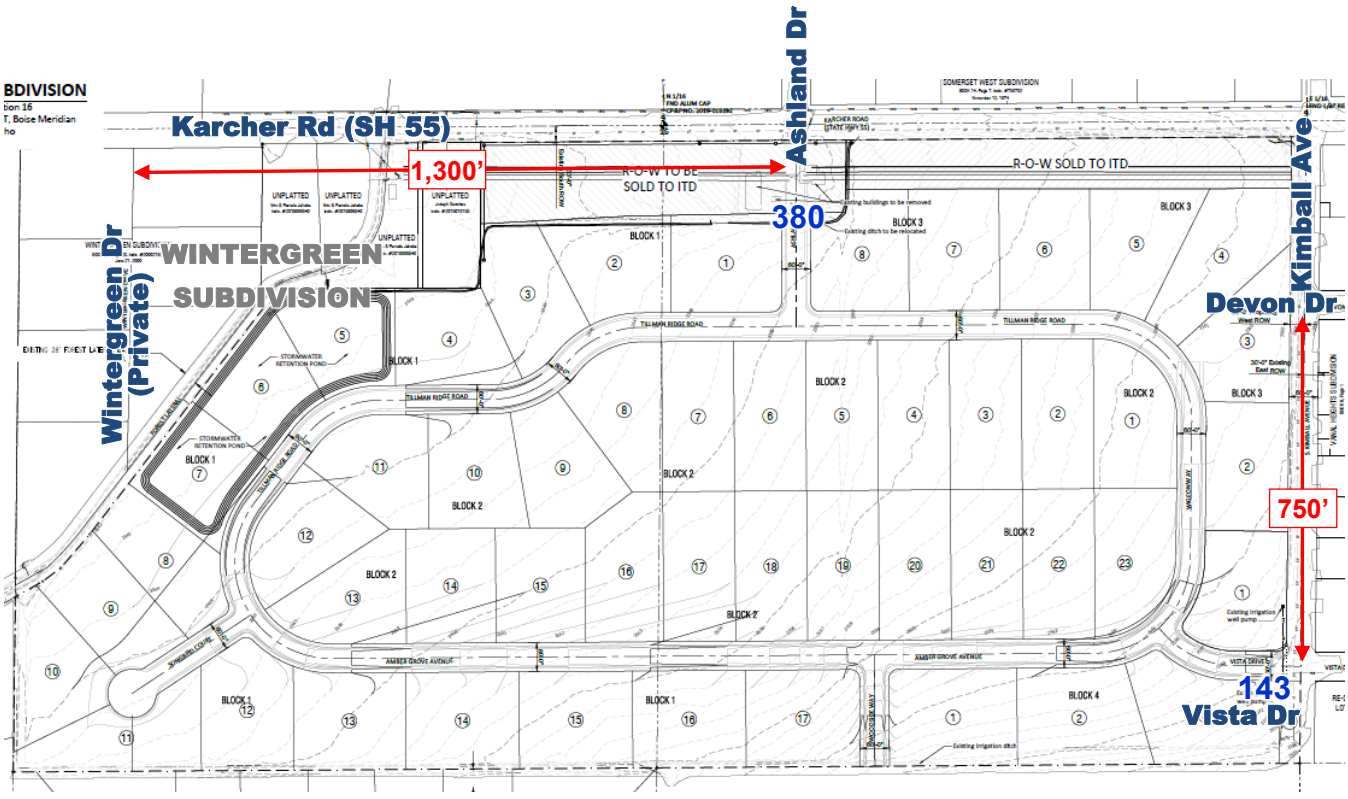
Site access spacing on Karcher Road (SH 55), a 55-mph principal arterial statewide route along the site frontage, is governed by ITD and is determined by IDAPA 39.03.42 *Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way*. The minimum spacing requirements on Karcher Road along the site frontage are:

- 1,320 feet public road spacing
- 790 feet driveway distance upstream from public road intersection
- 500 feet driveway distance downstream from unsignalized public road intersection
- 500 feet separation distance between unsignalized accesses

Both proposed site access intersections meet access spacing guidelines as full-movement accesses.

The proposed internal roadways are local streets with front-on housing. All internal local roadways are expected to carry less than 1,000 vehicles per weekday (vpd). Tillman Ridge Subdivision is forecasted to add 143 trips per weekday to Vista Drive under 2027 build-out conditions.

**Figure 4.7 – Site Access, Circulation, and ADT Estimate with Full Access on Karcher Road**

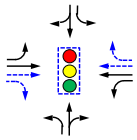


## 4.8 Alternate Site Access Scenario

HD4 requested additional traffic impact analysis without a direct site access on Karcher Road. This site access scenario will divert all site traffic onto Vista Drive and primarily impacts two study area intersections, the Vista Drive and S 10th Avenue intersection and the S 10th Avenue and Karcher Road intersection.

**Table 4.4** summarizes the intersection capacity analysis results without a direct site access on Karcher Road. The impacted intersections are anticipated to meet minimum operational thresholds. No additional improvements are needed.

**Table 4.4 – Intersection Operations – 2027 Build-Out Year Total Traffic (No Direct Access to Karcher Road)**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| ② | S 10th Ave and Karcher Rd |  | Intersection | C | 26 | 0.64 | C | 22 | 0.70 |
| | | | EBL | D | 41 | 0.80 | C | 26 | 0.78 |
| | | | EBT | B | 17 | 0.42 | B | 19 | 0.66 |
| | | | EBR | B | 15 | 0.02 | B | 16 | 0.04 |
| | | | WBL | D | 36 | 0.57 | C | 27 | 0.78 |
| | | | WBT | C | 20 | 0.37 | B | 20 | 0.65 |
| | | | WBR | C | 26 | 0.85 | C | 21 | 0.64 |
| | | | NBL | D | 38 | 0.47 | C | 28 | 0.48 |
| | | | NBTR | C | 30 | 0.79 | C | 22 | 0.71 |
| | | | SBL | D | 50 | 0.84 | C | 30 | 0.81 |
| | | | SBTR | C | 20 | 0.40 | B | 18 | 0.75 |
| ③ | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.09 | B | 13 | 0.06 |
| | | | SB | - | - | - | - | - | - |

# 5.0 2032 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS

## 5.1 Roadway Network

The study area roadways and intersections are anticipated to remain the same as 2027 background traffic conditions as shown in Figure 3.1.

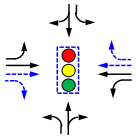
## 5.2 Background Traffic

2032 background traffic was estimated by extrapolating the 2024 existing traffic counts with the annual growth rates and including off-site traffic as discussed in Section 3.2. **Figure 5.1** summarizes the 2032 AM and PM peak hour background traffic at the study area intersections.

## 5.3 Intersection Operations

To determine the 2032 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 5.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, all study area intersections are anticipated to continue to meet minimum operational thresholds under 2032 background traffic conditions.

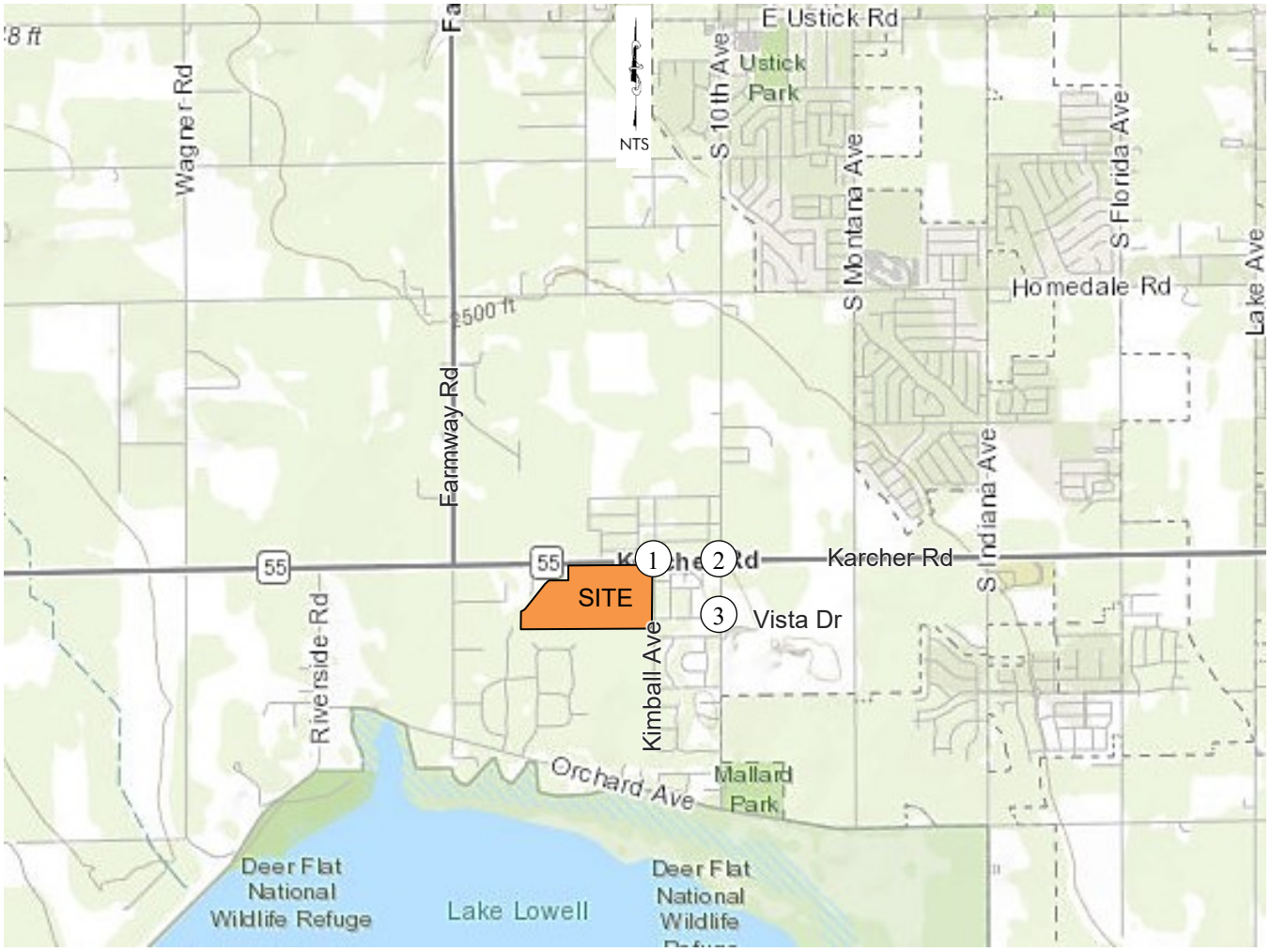
**Table 5.1 – Intersection Operations – 2032 Horizon Year Background Traffic**

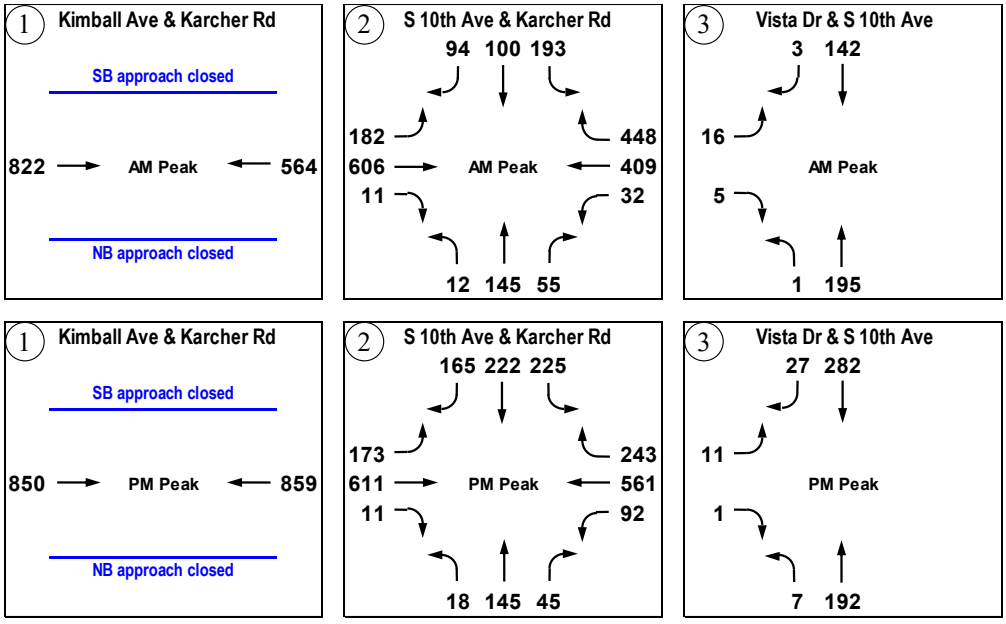
| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave and Karcher Rd |  | Intersection | C | 25 | 0.64 | C | 23 | 0.69 |
| | | | EBL | D | 38 | 0.84 | C | 29 | 0.80 |
| | | | EBT | B | 18 | 0.49 | B | 20 | 0.64 |
| | | | EBR | B | 15 | 0.02 | B | 16 | 0.02 |
| | | | WBL | D | 43 | 0.59 | C | 33 | 0.78 |
| | | | WBT | C | 24 | 0.46 | C | 23 | 0.73 |
| | | | WBR | C | 20 | 0.71 | B | 14 | 0.42 |
| | | | NBL | D | 45 | 0.47 | C | 34 | 0.49 |
| | | | NBTR | D | 36 | 0.81 | C | 27 | 0.74 |
| | | | SBL | D | 37 | 0.85 | C | 28 | 0.82 |
| | | | SBTR | C | 24 | 0.44 | C | 22 | 0.80 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.04 | B | 12 | 0.03 |
| | | | SB | - | - | - | - | - | - |

## 5.4 Intersection Mitigation

All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2032 background traffic conditions. The Vista Drive and S 10th Avenue intersection is not anticipated to warrant any turn lane based on NCHRP Report 457 turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2032 horizon year background traffic operations.

**Figure 5.1 – 2032 Horizon Year Peak Hour Background Traffic**



# 6.0 2032 HORIZON YEAR TOTAL TRAFFIC CONDITIONS

## 6.1 Roadway Network

The study area roadways and intersections are expected to remain the same as 2032 background traffic conditions. With the SH 55 corridor improvements, the proposed access on Karcher Road aligning with Ashland Drive will continue to permit all movements into and out of the development.

## 6.2 Site Traffic

Site traffic trip generation, modal split, and distribution are expected to remain the same as discussed in the previous section.

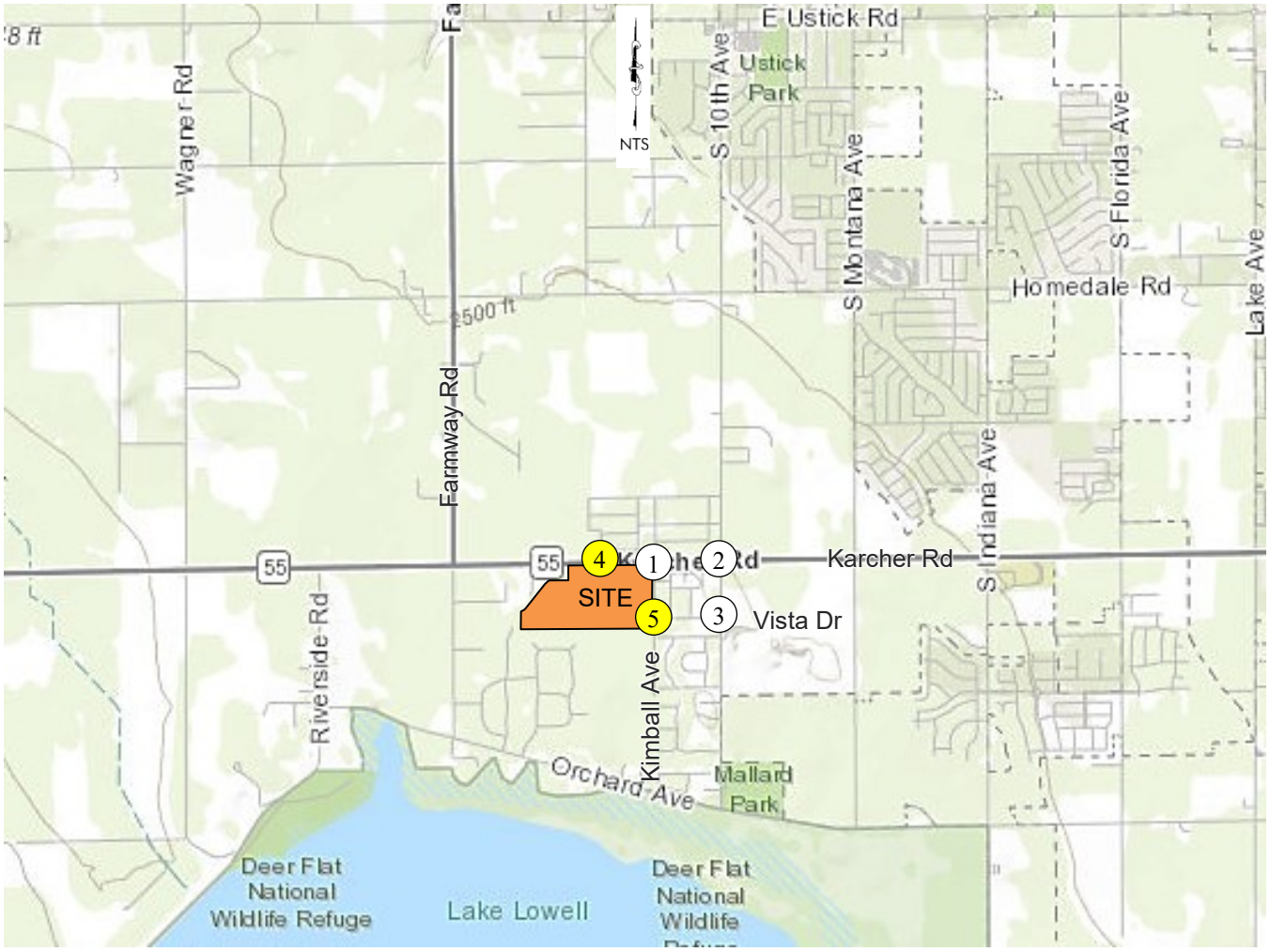
## 6.3 Total Traffic

The build-out site traffic was added to the 2032 background traffic as determined above to obtain the 2032 horizon year total traffic. **Figure 6.1** and **Figure 6.2** summarize the estimated 2032 peak hour total traffic at the study area intersections. **Table 6.1** summarizes the proportionate share of the site traffic at each study area intersection under the 2032 horizon year total traffic conditions.

**Table 6.1 – Build-Out Site Traffic Percentage at Study Area Intersections**

| Intersection | | % Site Traffic of 2032 Total Traffic | | |
|---|---|---|---|---|
| | | AM Peak | PM Peak | Average |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | |
| 2 | S 10th Ave and Karcher Rd | 1.4% | 1.7% | 1.6% |
| 3 | Vista Dr and S 10th Ave | 3.4% | 2.8% | 3.1% |
| 4 | Ashland Dr/Access and Karcher Rd | 1.9% | 2.1% | 2.0% |

**Figure 6.1 – 2032 Horizon Year AM Peak Hour Total Traffic**



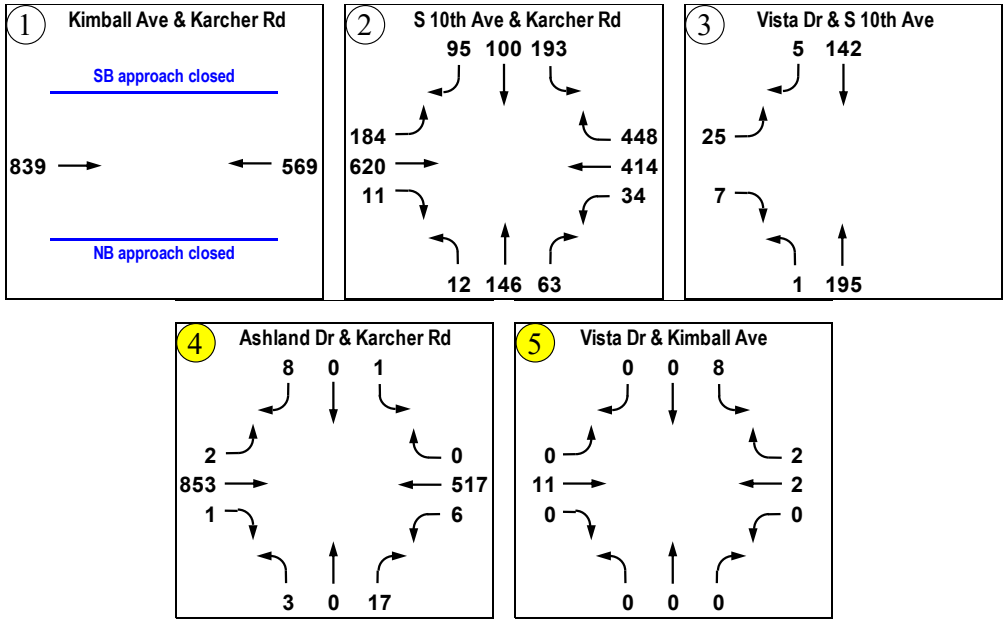
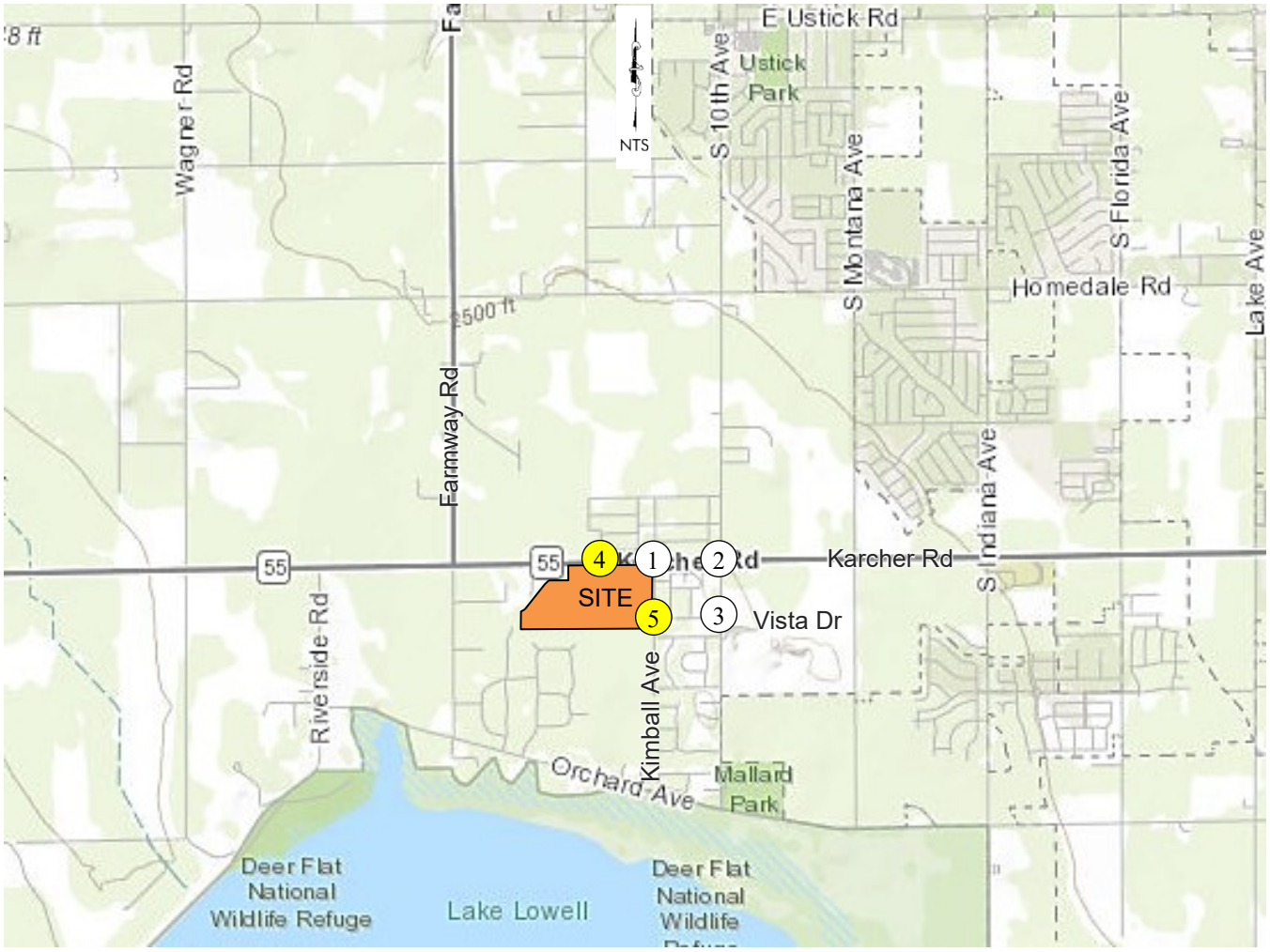
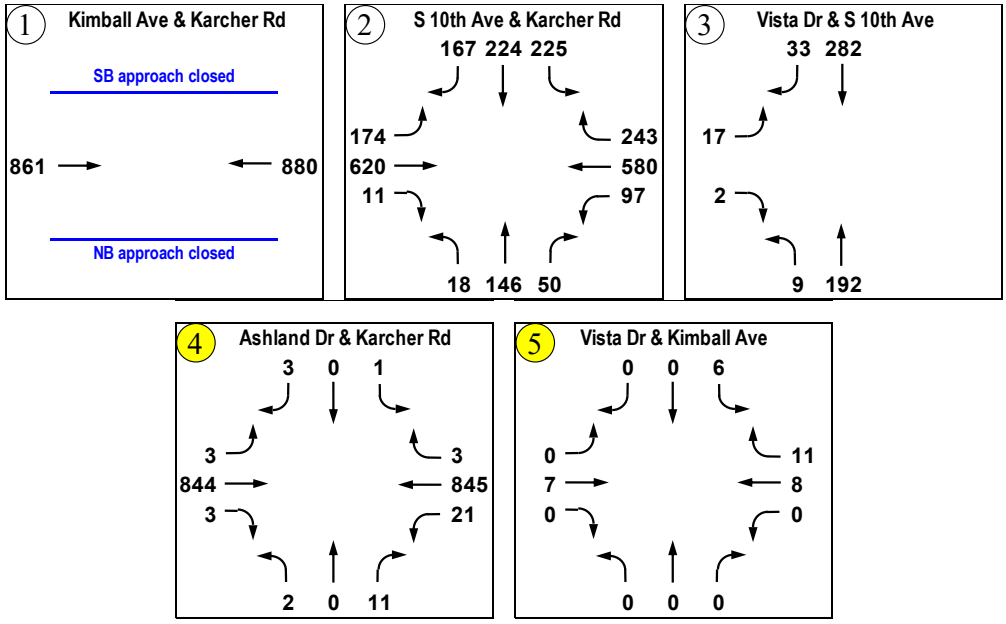



**Figure 6.2 – 2032 Horizon Year PM Peak Hour Total Traffic**

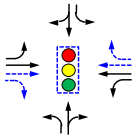
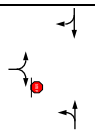
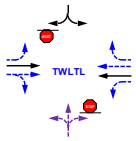


## 6.4 Intersection Operations

To determine the 2032 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the calculations are included in the appendix. **Table 6.2** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2032 horizon total traffic conditions.

**Table 6.2 – Intersection Operations – 2032 Horizon Year Total Traffic**

| Intersection | | Control / Lane<br>SH 55 Improvements<br>Site Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 26 | 0.66 | C | 23 | 0.70 |
| | | | EBL | D | 39 | 0.84 | C | 30 | 0.80 |
| | | | EBT | B | 19 | 0.49 | C | 21 | 0.65 |
| | | | EBR | B | 15 | 0.02 | B | 17 | 0.02 |
| | | | WBL | D | 45 | 0.62 | C | 33 | 0.78 |
| | | | WBT | C | 24 | 0.45 | C | 24 | 0.74 |
| | | | WBR | B | 19 | 0.70 | B | 15 | 0.41 |
| | | | NBL | D | 47 | 0.47 | C | 35 | 0.50 |
| | | | NBTR | D | 37 | 0.82 | C | 28 | 0.75 |
| | | | SBL | D | 39 | 0.85 | C | 29 | 0.82 |
| | | | SBTR | C | 25 | 0.44 | C | 22 | 0.80 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.06 | B | 13 | 0.04 |
| | | | SB | - | - | - | - | - | - |
| 4 | Ashland Dr and Karcher Rd |  | NB | B | 14 | 0.05 | B | 13 | 0.03 |
| | | | EBL | A | 9 | < 0.01 | A | 10 | < 0.01 |
| | | | EBT | - | - | - | - | - | - |
| | | | EBR | - | - | - | - | - | - |
| | | | WBL | B | 10 | 0.01 | A | 10 | 0.03 |
| | | | WBT | - | - | - | - | - | - |
| | | | WBR | - | - | - | - | - | - |
| | | | SB | B | 11 | 0.02 | B | 14 | 0.01 |

## 6.5 Intersection Mitigation

All study area intersections are anticipated to continue to meet HD4 and ITD minimum operational thresholds under 2032 horizon year total traffic conditions. The unsignalized study area intersections are not anticipated to warrant any turn lane based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2032 horizon year total traffic operations.

## 6.6 Site Access and Circulation

As discussed in Section 4.7, all proposed site access locations meet access spacing guidelines. All internal local roadways are expected to carry less than 1,000 vpd. The development is estimated to add 143 vpd on Vista Drive. The total average daily traffic on Vista Avenue is projected to be less than 1,000 vpd.

The proposed site access intersections are not anticipated to warrant any turn lane based on ITD and NCHRP Report 457 turn lane guidelines.

The Vista Drive and Kimball Avenue intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road. The intersection is anticipated to meet minimum operational thresholds.

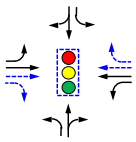
## 6.7 Alternate Site Access Scenario

HD4 has requested analysis to determine the need for Tillman Ridge Subdivision to access SH 55. In this scenario, the development only constructs the Vista Drive to access the external roadway network via S 10th Avenue. **Table 6.3** summarizes the intersection capacity analysis results with the alternate site access scenario. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds.

With no direct access to Karcher Road and the closure of Kimball Avenue and Ellis Drive, all site traffic will utilize Vista Drive to enter and exit the site. The ADT on Vista Drive west of S 10th Avenue is anticipated to exceed 1,000 vpd but less than 2,000 vpd.

Vista Drive is a narrow local road with front-on housing. The Vista Drive segment between Kimball Avenue and S 10th Street is straight with no existing traffic calming measures in place to reduce potential speeding. Schoolchildren residing within the site and existing homes are anticipated to walk/bike on Vista Drive to/from schools within the area. Adding additional vehicular traffic onto Vista Drive may lead to potential safety issues. Therefore, direct access on Karcher Road is needed to reduce site traffic on Vista Drive.

**Table 6.3 – Intersection Operations – 2032 Horizon Year Total Traffic (No Direct Access to Karcher Road)**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| ② | S 10th Ave and Karcher Rd |  | Intersection | C | 27 | 0.66 | C | 24 | 0.70 |
| | | | EBL | D | 41 | 0.85 | C | 30 | 0.80 |
| | | | EBT | B | 20 | 0.49 | C | 22 | 0.69 |
| | | | EBR | B | 16 | 0.02 | B | 18 | 0.03 |
| | | | WBL | D | 46 | 0.66 | C | 32 | 0.78 |
| | | | WBT | C | 25 | 0.45 | C | 24 | 0.73 |
| | | | WBR | B | 20 | 0.70 | B | 15 | 0.42 |
| | | | NBL | D | 47 | 0.49 | C | 35 | 0.50 |
| | | | NBTR | D | 38 | 0.84 | C | 28 | 0.76 |
| | | | SBL | D | 40 | 0.86 | C | 29 | 0.82 |
| | | | SBTR | C | 25 | 0.43 | C | 22 | 0.79 |
| ③ | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.09 | B | 13 | 0.07 |
| | | | SB | - | - | - | - | - | - |

# APPENDIX A: Traffic Counts

## Kimball Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

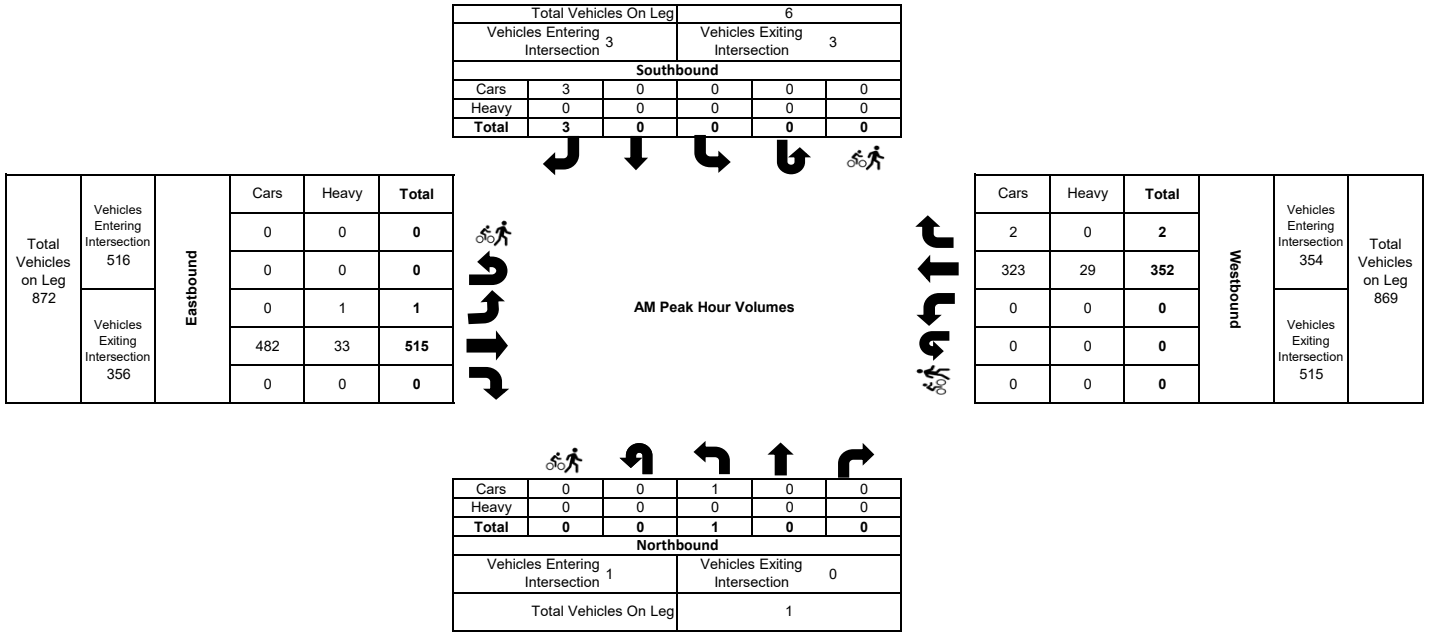
| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 1 | 1 | 1 | 0 | *3* | 0 | 0 | 74 | 1 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **193** |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 69 | 0 | 0 | *69* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 170 | 0 | 0 | *170* | **240** |
| 7:30 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 79 | 0 | 0 | *79* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 118 | 0 | 0 | *119* | **200** |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 87 | 0 | 0 | *87* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 130 | 0 | 0 | *131* | **219** |
| Hourly Total | 0 | 2 | 1 | 3 | 0 | *6* | 0 | 0 | 309 | 1 | 0 | *310* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 2 | 533 | 0 | 0 | *535* | **852** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 81 | 0 | 0 | *81* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 122 | 0 | 0 | *122* | **204** |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 2 | 0 | *102* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 142 | 0 | 0 | *142* | **244** |
| 8:30 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **207** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 83 | 1 | 0 | *84* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 117 | 0 | 0 | *117* | **202** |
| Hourly Total | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 348 | 3 | 0 | *351* | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 502 | 0 | 0 | *502* | **857** |

## Kimball Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 107 | 1 | 0 | *108* | **231** |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 151 | 1 | 0 | *153* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 0 | 0 | *133* | **287** |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 1 | 0 | *119* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 143 | 0 | 0 | *143* | **262** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 138 | 0 | 0 | *138* | **261** |
| Hourly Total | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 2 | 514 | 2 | 0 | *518* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 521 | 1 | 0 | *522* | **1041** |
| 5:00 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 147 | 0 | 0 | *147* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 117 | 0 | 0 | *117* | **265** |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 141 | 0 | 0 | *141* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 128 | 0 | 0 | *129* | **271** |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 126 | 0 | 0 | *126* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 113 | 0 | 0 | *113* | **240** |
| 5:45 PM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 137 | 0 | 0 | *137* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 0 | 0 | *100* | **239** |
| Hourly Total | 0 | 1 | 0 | 3 | 0 | *4* | 0 | 0 | 551 | 0 | 0 | *551* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 458 | 0 | 0 | *459* | **1015** |

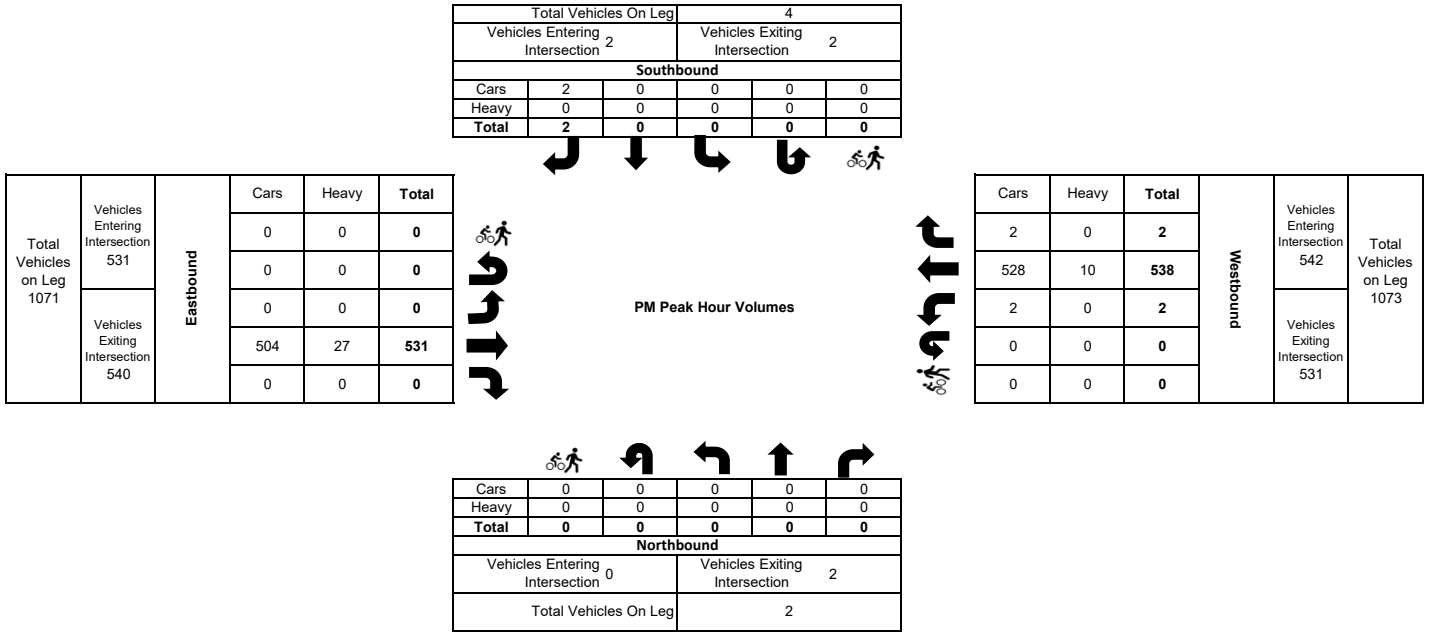
# Kimball Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Norhtbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 87 | 0 | 0 | *87* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 130 | 0 | 0 | *131* | **219** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 81 | 0 | 0 | *81* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 122 | 0 | 0 | *122* | **204** |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 2 | 0 | *102* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 142 | 0 | 0 | *142* | **244** |
| 8:30 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **207** |
| Peak Hour Total | 0 | 0 | 0 | 3 | 0 | *3* | 0 | 0 | 352 | 2 | 0 | *354* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 1 | 515 | 0 | 0 | *516* | **874** |
| PHF | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | *0.375* | 0.000 | 0.000 | 0.880 | 0.250 | 0.000 | *0.868* | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | *0.250* | 0.000 | 0.250 | 0.907 | 0.000 | 0.000 | *0.908* | **0.895** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 8.24% | 0.00% | 0.00% | **8.19%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 100.00% | 6.41% | 0.00% | 0.00% | **6.59%** | **7.2%** |



# Kimball Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 151 | 1 | 0 | *153* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 0 | 0 | *133* | **287** |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 1 | 0 | *119* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 143 | 0 | 0 | *143* | **262** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 138 | 0 | 0 | *138* | **261** |
| 5:00 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 147 | 0 | 0 | *147* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 117 | 0 | 0 | *117* | **265** |
| Peak Hour Total | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 538 | 2 | 0 | *542* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 531 | 0 | 0 | *531* | **1075** |
| PHF | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | *0.500* | 0.000 | 0.500 | 0.891 | 0.500 | 0.000 | *0.886* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.000 | 0.928 | 0.000 | 0.000 | *0.928* | **0.936** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 1.86% | 0.00% | 0.00% | **1.85%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 5.08% | 0.00% | 0.00% | **5.08%** | **3.4%** |



## S 10th Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

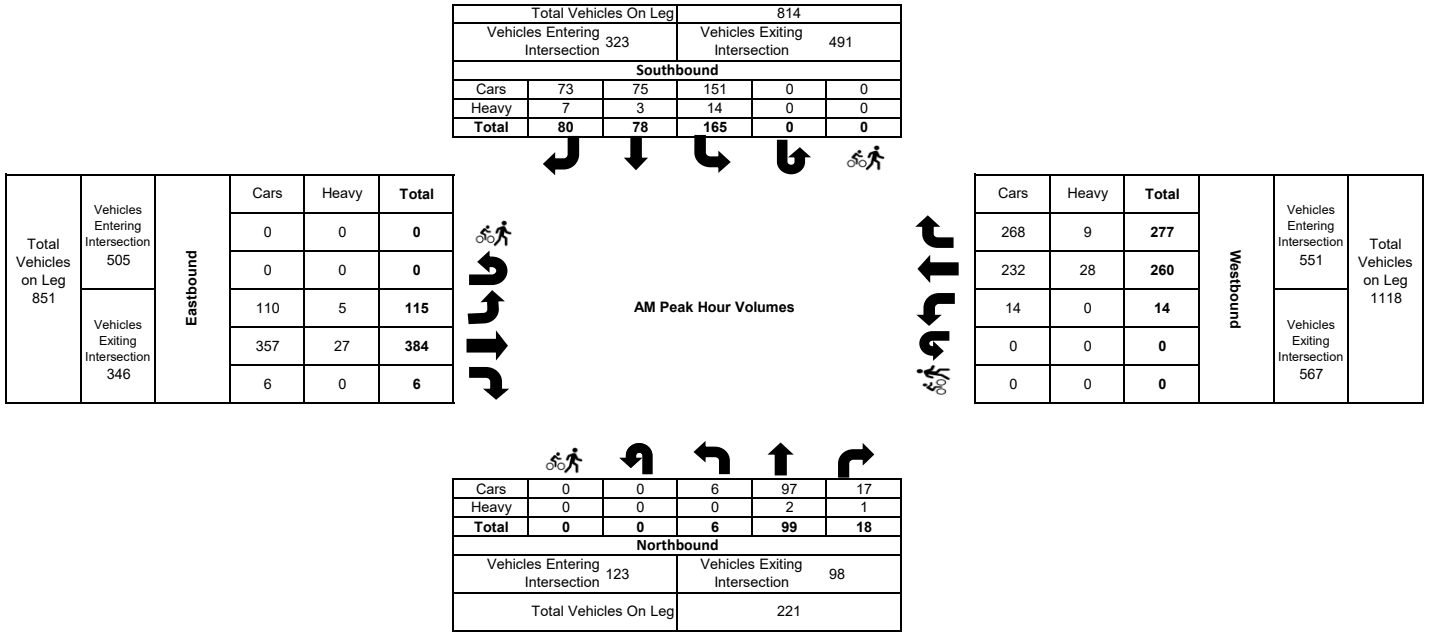
| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 24 | 8 | 10 | 0 | *42* | 0 | 2 | 59 | 26 | 0 | *87* | 0 | 4 | 16 | 3 | 0 | *23* | 0 | 17 | 93 | 4 | 0 | *114* | **266** |
| 7:15 AM | 0 | 28 | 20 | 17 | 0 | *65* | 0 | 0 | 48 | 32 | 0 | *80* | 0 | 5 | 29 | 4 | 0 | *38* | 0 | 24 | 121 | 7 | 0 | *152* | **335** |
| 7:30 AM | 0 | 30 | 14 | 14 | 0 | *58* | 0 | 2 | 68 | 54 | 0 | *124* | 0 | 2 | 24 | 3 | 0 | *29* | 0 | 24 | 99 | 2 | 0 | *125* | **336** |
| 7:45 AM | 0 | 41 | 17 | 18 | 0 | *76* | 0 | 2 | 61 | 51 | 0 | *114* | 0 | 2 | 27 | 7 | 0 | *36* | 0 | 23 | 102 | 4 | 0 | *129* | **355** |
| Hourly Total | 0 | 123 | 59 | 59 | 0 | *241* | 0 | 6 | 236 | 163 | 0 | *405* | 0 | 13 | 96 | 17 | 0 | *126* | 0 | 88 | 415 | 17 | 0 | *520* | **1292** |
| 8:00 AM | 0 | 40 | 20 | 20 | 0 | *80* | 0 | 6 | 59 | 91 | 0 | *156* | 0 | 1 | 16 | 2 | 0 | *19* | 0 | 34 | 86 | 0 | 0 | *120* | **375** |
| 8:15 AM | 0 | 54 | 27 | 28 | 0 | *109* | 0 | 4 | 72 | 81 | 0 | *157* | 0 | 1 | 32 | 6 | 0 | *39* | 0 | 34 | 97 | 0 | 0 | *131* | **436** |
| 8:30 AM | 0 | 30 | 15 | 18 | 0 | *63* | 0 | 4 | 57 | 26 | 0 | *87* | 0 | 1 | 16 | 8 | 0 | *25* | 0 | 27 | 112 | 1 | 0 | *140* | **315** |
| 8:45 AM | 0 | 23 | 18 | 17 | 0 | *58* | 0 | 1 | 63 | 32 | 0 | *96* | 0 | 3 | 13 | 4 | 0 | *20* | 0 | 21 | 84 | 0 | 0 | *105* | **279** |
| Hourly Total | 0 | 147 | 80 | 83 | 0 | *310* | 0 | 15 | 251 | 230 | 0 | *496* | 0 | 6 | 77 | 20 | 0 | *103* | 0 | 116 | 379 | 1 | 0 | *496* | **1405** |

## S 10th Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 48 | 29 | 32 | 0 | *109* | 0 | 2 | 90 | 34 | 0 | *126* | 0 | 6 | 29 | 6 | 0 | *41* | 0 | 22 | 78 | 3 | 0 | *103* | **379** |
| 4:15 PM | 0 | 31 | 35 | 39 | 0 | *105* | 0 | 3 | 91 | 42 | 0 | *136* | 0 | 9 | 23 | 4 | 0 | *36* | 0 | 36 | 86 | 2 | 0 | *124* | **401** |
| 4:30 PM | 0 | 48 | 38 | 33 | 0 | *119* | 0 | 6 | 79 | 37 | 0 | *122* | 0 | 4 | 23 | 12 | 0 | *39* | 0 | 17 | 116 | 0 | 0 | *133* | **413** |
| 4:45 PM | 0 | 50 | 46 | 26 | 0 | *122* | 0 | 7 | 95 | 40 | 0 | *142* | 0 | 2 | 25 | 3 | 0 | *30* | 0 | 33 | 95 | 1 | 0 | *129* | **423** |
| Hourly Total | 0 | 177 | 148 | 130 | 0 | *455* | 0 | 18 | 355 | 153 | 0 | *526* | 0 | 21 | 100 | 25 | 0 | *146* | 0 | 108 | 375 | 6 | 0 | *489* | **1616** |
| 5:00 PM | 0 | 41 | 33 | 42 | 0 | *116* | 0 | 9 | 93 | 39 | 0 | *141* | 0 | 4 | 34 | 3 | 0 | *41* | 0 | 30 | 80 | 2 | 0 | *112* | **410** |
| 5:15 PM | 0 | 51 | 45 | 41 | 0 | *137* | 0 | 10 | 94 | 33 | 0 | *137* | 0 | 4 | 26 | 2 | 0 | *32* | 0 | 29 | 95 | 1 | 0 | *125* | **431** |
| 5:30 PM | 0 | 45 | 29 | 33 | 0 | *107* | 0 | 5 | 104 | 34 | 0 | *143* | 0 | 2 | 26 | 7 | 0 | *35* | 0 | 21 | 93 | 3 | 0 | *117* | **402** |
| 5:45 PM | 0 | 40 | 27 | 38 | 0 | *105* | 0 | 6 | 93 | 31 | 0 | *130* | 0 | 1 | 29 | 8 | 0 | *38* | 0 | 26 | 68 | 2 | 0 | *96* | **369** |
| Hourly Total | 0 | 177 | 134 | 154 | 0 | *465* | 0 | 30 | 384 | 137 | 0 | *551* | 0 | 11 | 115 | 20 | 0 | *146* | 0 | 106 | 336 | 8 | 0 | *450* | **1612** |

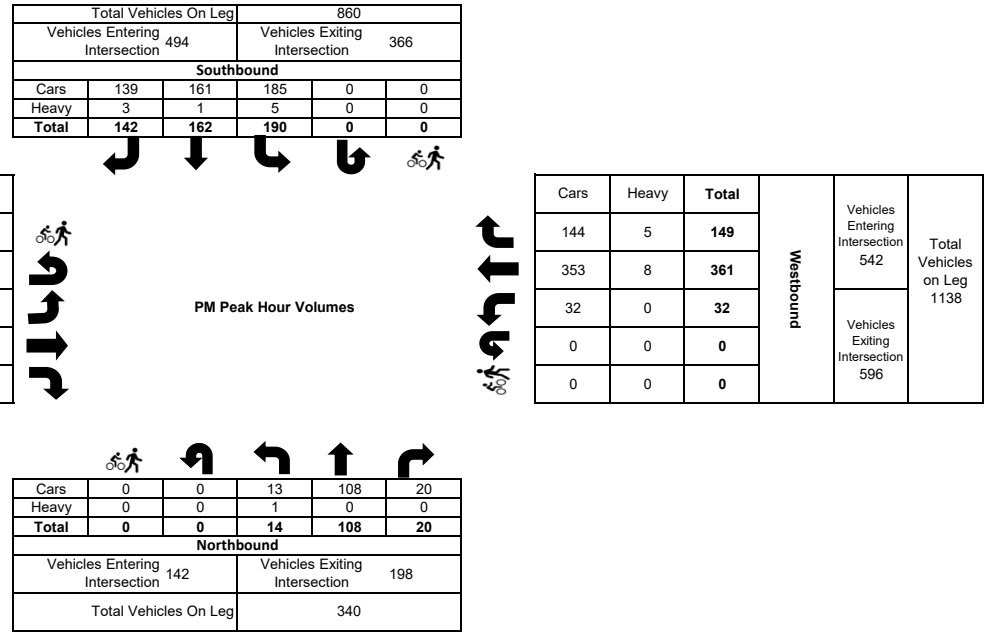
# S 10th Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Norhtbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:30 AM | 0 | 30 | 14 | 14 | 0 | *58* | 0 | 2 | 68 | 54 | 0 | *124* | 0 | 2 | 24 | 3 | 0 | *29* | 0 | 24 | 99 | 2 | 0 | *125* | **336** |
| 7:45 AM | 0 | 41 | 17 | 18 | 0 | *76* | 0 | 2 | 61 | 51 | 0 | *114* | 0 | 2 | 27 | 7 | 0 | *36* | 0 | 23 | 102 | 4 | 0 | *129* | **355** |
| 8:00 AM | 0 | 40 | 20 | 20 | 0 | *80* | 0 | 6 | 59 | 91 | 0 | *156* | 0 | 1 | 16 | 2 | 0 | *19* | 0 | 34 | 86 | 0 | 0 | *120* | **375** |
| 8:15 AM | 0 | 54 | 27 | 28 | 0 | *109* | 0 | 4 | 72 | 81 | 0 | *157* | 0 | 1 | 32 | 6 | 0 | *39* | 0 | 34 | 97 | 0 | 0 | *131* | **436** |
| Peak Hour Total | 0 | 165 | 78 | 80 | 0 | *323* | 0 | 14 | 260 | 277 | 0 | *551* | 0 | 6 | 99 | 18 | 0 | *123* | 0 | 115 | 384 | 6 | 0 | *505* | **1502** |
| PHF | 0.000 | 0.764 | 0.722 | 0.714 | 0.000 | *0.741* | 0.000 | 0.583 | 0.903 | 0.761 | 0.000 | *0.877* | 0.000 | 0.750 | 0.773 | 0.643 | 0.000 | *0.788* | 0.000 | 0.846 | 0.941 | 0.375 | 0.000 | *0.964* | **0.861** |
| Heavy Vehicle % | 0.00% | 8.48% | 3.85% | 8.75% | 0.00% | **7.43%** | 0.00% | 0.00% | 10.77% | 3.25% | 0.00% | **6.72%** | 0.00% | 0.00% | 2.02% | 5.56% | 0.00% | **2.44%** | 0.00% | 4.35% | 7.03% | 0.00% | 0.00% | **6.34%** | **6.4%** |



# S 10th Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound S 10th Ave U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | Westbound Karcher Rd U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | Northbound S 10th Ave U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | Eastbound Karcher Rd U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:30 PM | 0 | 48 | 38 | 33 | 0 | *119* | 0 | 6 | 79 | 37 | 0 | *122* | 0 | 4 | 23 | 12 | 0 | *39* | 0 | 17 | 116 | 0 | 0 | *133* | **413** |
| 4:45 PM | 0 | 50 | 46 | 26 | 0 | *122* | 0 | 7 | 95 | 40 | 0 | *142* | 0 | 2 | 25 | 3 | 0 | *30* | 0 | 33 | 95 | 1 | 0 | *129* | **423** |
| 5:00 PM | 0 | 41 | 33 | 42 | 0 | *116* | 0 | 9 | 93 | 39 | 0 | *141* | 0 | 4 | 34 | 3 | 0 | *41* | 0 | 30 | 80 | 2 | 0 | *112* | **410** |
| 5:15 PM | 0 | 51 | 45 | 41 | 0 | *137* | 0 | 10 | 94 | 33 | 0 | *137* | 0 | 4 | 26 | 2 | 0 | *32* | 0 | 29 | 95 | 1 | 0 | *125* | **431** |
| Peak Hour Total | 0 | 190 | 162 | 142 | 0 | *494* | 0 | 32 | 361 | 149 | 0 | *542* | 0 | 14 | 108 | 20 | 0 | *142* | 0 | 109 | 386 | 4 | 0 | *499* | **1677** |
| PHF | 0.000 | 0.931 | 0.880 | 0.845 | 0.000 | *0.901* | 0.000 | 0.800 | 0.950 | 0.931 | 0.000 | *0.954* | 0.000 | 0.875 | 0.794 | 0.417 | 0.000 | *0.866* | 0.000 | 0.826 | 0.832 | 0.500 | 0.000 | *0.938* | **0.973** |
| Heavy Vehicle % | 0.00% | 2.63% | 0.62% | 2.11% | 0.00% | **1.82%** | 0.00% | 0.00% | 2.22% | 3.36% | 0.00% | **2.40%** | 0.00% | 7.14% | 0.00% | 0.00% | 0.00% | **0.70%** | 0.00% | 4.59% | 5.70% | 0.00% | 0.00% | **5.41%** | **3.0%** |



## Vista Dr & S 10th Ave
## Caldwell, Idaho
## Thursday, November 14, 2024

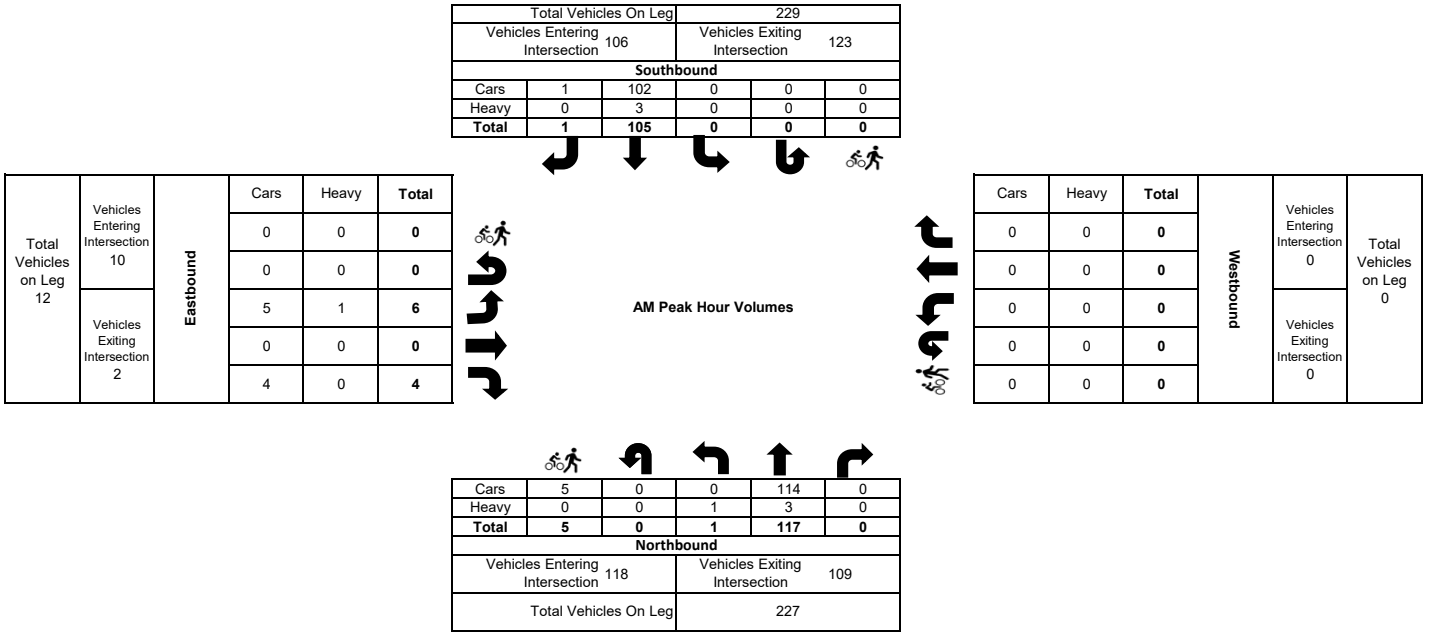
| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 0 | 12 | 2 | 0 | *14* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 1 | 0 | 2 | 0 | *3* | **37** |
| 7:15 AM | 0 | 0 | 32 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 1 | 0 | *3* | **71** |
| 7:30 AM | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 28 | 0 | 0 | *28* | 0 | 3 | 0 | 1 | 0 | *4* | **52** |
| 7:45 AM | 0 | 0 | 22 | 0 | 0 | *22* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 33 | 0 | 5 | *33* | 0 | 0 | 0 | 1 | 0 | *1* | **56** |
| Hourly Total | 0 | 0 | 86 | 2 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 116 | 0 | 5 | *117* | 0 | 6 | 0 | 5 | 0 | *11* | **216** |
| 8:00 AM | 0 | 0 | 31 | 1 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 1 | 0 | *2* | **55** |
| 8:15 AM | 0 | 0 | 29 | 2 | 0 | *31* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 0 | 0 | *2* | **69** |
| 8:30 AM | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 23 | 0 | 0 | *23* | 0 | 0 | 0 | 0 | 0 | *0* | **44** |
| 8:45 AM | 0 | 0 | 19 | 0 | 0 | *19* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 0 | 0 | *1* | **41** |
| Hourly Total | 0 | 0 | 100 | 3 | 0 | *103* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 100 | 0 | 0 | *101* | 0 | 4 | 0 | 1 | 0 | *5* | **209** |

## Vista Dr & S 10th Ave
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 0 | 37 | 4 | 2 | *41* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 36 | 0 | 0 | *36* | 0 | 1 | 0 | 0 | 0 | *1* | **78** |
| 4:15 PM | 0 | 0 | 39 | 3 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 37 | 0 | 0 | *39* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:30 PM | 0 | 0 | 43 | 1 | 0 | *44* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 37 | 0 | 0 | *37* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:45 PM | 0 | 0 | 46 | 4 | 0 | *50* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 31 | 0 | 0 | *33* | 0 | 0 | 0 | 0 | 0 | *0* | **83** |
| Hourly Total | 0 | 0 | 165 | 12 | 2 | *177* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 4 | 141 | 0 | 0 | *145* | 0 | 3 | 0 | 0 | 0 | *3* | **325** |
| 5:00 PM | 0 | 0 | 40 | 2 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 35 | 0 | 0 | *37* | 0 | 3 | 0 | 1 | 0 | *4* | **83** |
| 5:15 PM | 0 | 0 | 56 | 4 | 0 | *60* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 30 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | **92** |
| 5:30 PM | 0 | 0 | 36 | 5 | 0 | *41* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 37 | 0 | 0 | *39* | 0 | 2 | 0 | 0 | 0 | *2* | **82** |
| 5:45 PM | 0 | 0 | 30 | 1 | 0 | *31* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 33 | 0 | 0 | *35* | 0 | 1 | 0 | 0 | 0 | *1* | **67** |
| Hourly Total | 0 | 0 | 162 | 12 | 0 | *174* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 8 | 135 | 0 | 0 | *143* | 0 | 6 | 0 | 1 | 0 | *7* | **324** |

# Vista Dr & S 10th Ave
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

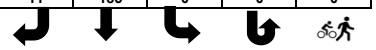
| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Norhtbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:15 AM | 0 | 0 | 32 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 1 | 0 | *3* | **71** |
| 7:30 AM | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 28 | 0 | 0 | *28* | 0 | 3 | 0 | 1 | 0 | *4* | **52** |
| 7:45 AM | 0 | 0 | 22 | 0 | 0 | *22* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 33 | 0 | 5 | *33* | 0 | 0 | 0 | 1 | 0 | *1* | **56** |
| 8:00 AM | 0 | 0 | 31 | 1 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 1 | 0 | *2* | **55** |
| Peak Hour Total | 0 | 0 | 105 | 1 | 0 | *106* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 0 | 5 | *118* | 0 | 6 | 0 | 4 | 0 | *10* | **234** |
| PHF | 0.000 | 0.000 | 0.820 | 0.250 | 0.000 | *0.828* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.250 | 0.836 | 0.000 | 0.250 | *0.819* | 0.000 | 0.500 | 0.000 | 1.000 | 0.000 | *0.625* | **0.824** |
| Heavy Vehicle % | 0.00% | 0.00% | 2.86% | 0.00% | 0.00% | **2.83%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 100.00% | 2.56% | 0.00% | 0.00% | **3.39%** | 0.00% | 16.67% | 0.00% | 0.00% | 0.00% | **10.00%** | **3.4%** |



# Vista Dr & S 10th Ave
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:30 PM | 0 | 0 | 43 | 1 | 0 | *44* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 37 | 0 | 0 | *37* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:45 PM | 0 | 0 | 46 | 4 | 0 | *50* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 31 | 0 | 0 | *33* | 0 | 0 | 0 | 0 | 0 | *0* | **83** |
| 5:00 PM | 0 | 0 | 40 | 2 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 35 | 0 | 0 | *37* | 0 | 3 | 0 | 1 | 0 | *4* | **83** |
| 5:15 PM | 0 | 0 | 56 | 4 | 0 | *60* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 30 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | **92** |
| Peak Hour Total | 0 | 0 | 185 | 11 | 0 | *196* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 6 | 133 | 0 | 0 | *139* | 0 | 4 | 0 | 1 | 0 | *5* | **340** |
| PHF | 0.000 | 0.000 | 0.826 | 0.688 | 0.000 | *0.817* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.750 | 0.899 | 0.000 | 0.000 | *0.939* | 0.000 | 0.333 | 0.000 | 0.250 | 0.000 | *0.313* | **0.924** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 0.75% | 0.00% | 0.00% | **0.72%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | **0.3%** |

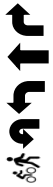
| Total Vehicles On Leg | | | 333 | | |
|---|---|---|---|---|---|
| Vehicles Entering Intersection | 196 | | Vehicles Exiting Intersection | 137 | |
| **Southbound** | | | | | |
| Cars | 11 | 185 | 0 | 0 | 0 |
| Heavy | 0 | 0 | 0 | 0 | 0 |
| **Total** | **11** | **185** | **0** | **0** | **0** |



| Total Vehicles on Leg 22 | Vehicles Entering Intersection 5 | Eastbound | Cars | Heavy | Total |
|---|---|---|---|---|---|
| | | | 0 | 0 | **0** |
| | | | 0 | 0 | **0** |
| | Vehicles Exiting Intersection 17 | | 4 | 0 | **4** |
| | | | 0 | 0 | **0** |
| | | | 1 | 0 | **1** |



**PM Peak Hour Volumes**



| Cars | Heavy | Total | Westbound | Vehicles Entering Intersection 0 | Total Vehicles on Leg 0 |
|---|---|---|---|---|---|
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | Vehicles Exiting Intersection 0 | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |



| | | | | | |
|---|---|---|---|---|---|
| Cars | 0 | 0 | 6 | 132 | 0 |
| Heavy | 0 | 0 | 0 | 1 | 0 |
| **Total** | **0** | **0** | **6** | **133** | **0** |
| **Northbound** | | | | | |
| Vehicles Entering Intersection | 139 | | Vehicles Exiting Intersection | 186 | |
| Total Vehicles On Leg | | | 325 | | |

## Ashland Dr & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

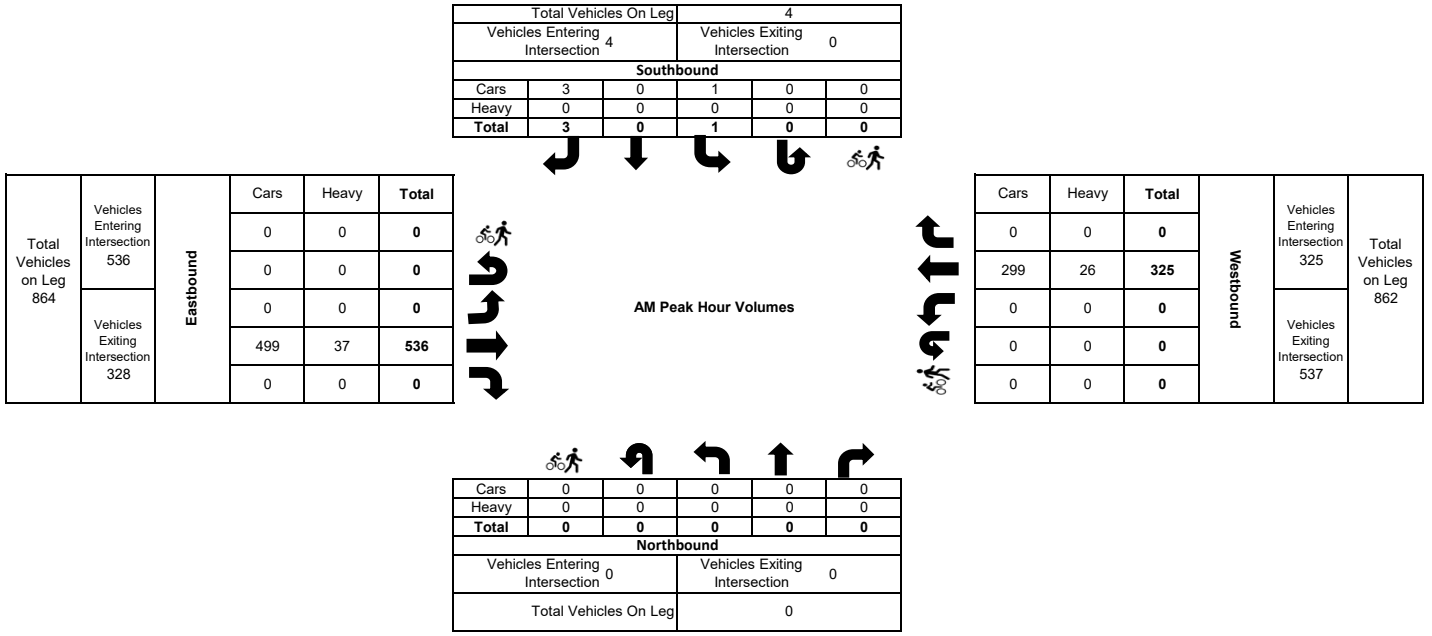
| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 2 | 0 | 2 | 0 | *4* | 0 | 0 | 69 | 0 | 0 | *69* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 112 | 0 | 0 | *112* | **185** |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 158 | 0 | 0 | *158* | **238** |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **207** |
| 7:45 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 88 | 0 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 132 | 0 | 0 | *132* | **222** |
| Hourly Total | 0 | 3 | 0 | 5 | 0 | *8* | 0 | 0 | 319 | 0 | 0 | *319* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 525 | 0 | 0 | *525* | **852** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 75 | 0 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **198** |
| 8:15 AM | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 94 | 0 | 0 | *94* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 130 | 0 | 0 | *130* | **226** |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 80 | 0 | 0 | *80* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **201** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 116 | 0 | 0 | *116* | **194** |
| Hourly Total | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 327 | 0 | 0 | *327* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 490 | 0 | 0 | *490* | **819** |

## Ashland Dr & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 139 | 0 | 0 | *139* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 101 | 0 | 0 | *101* | **241** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 145 | 1 | 0 | *146* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 131 | 0 | 0 | *131* | **277** |
| 4:30 PM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 121 | 0 | 0 | *121* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 142 | 0 | 0 | *143* | **266** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 139 | 0 | 0 | *140* | **255** |
| Hourly Total | 0 | 2 | 0 | 1 | 0 | *3* | 0 | 0 | 520 | 1 | 0 | *521* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 513 | 0 | 0 | *515* | **1039** |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 149 | 1 | 0 | *150* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **265** |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 2 | 0 | *135* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 134 | 0 | 0 | *134* | **269** |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 136 | 0 | 0 | *136* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 122 | 0 | 0 | *122* | **259** |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 128 | 0 | 0 | *128* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 101 | 0 | 0 | *101* | **229** |
| Hourly Total | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 546 | 3 | 0 | *549* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 472 | 0 | 0 | *472* | **1022** |

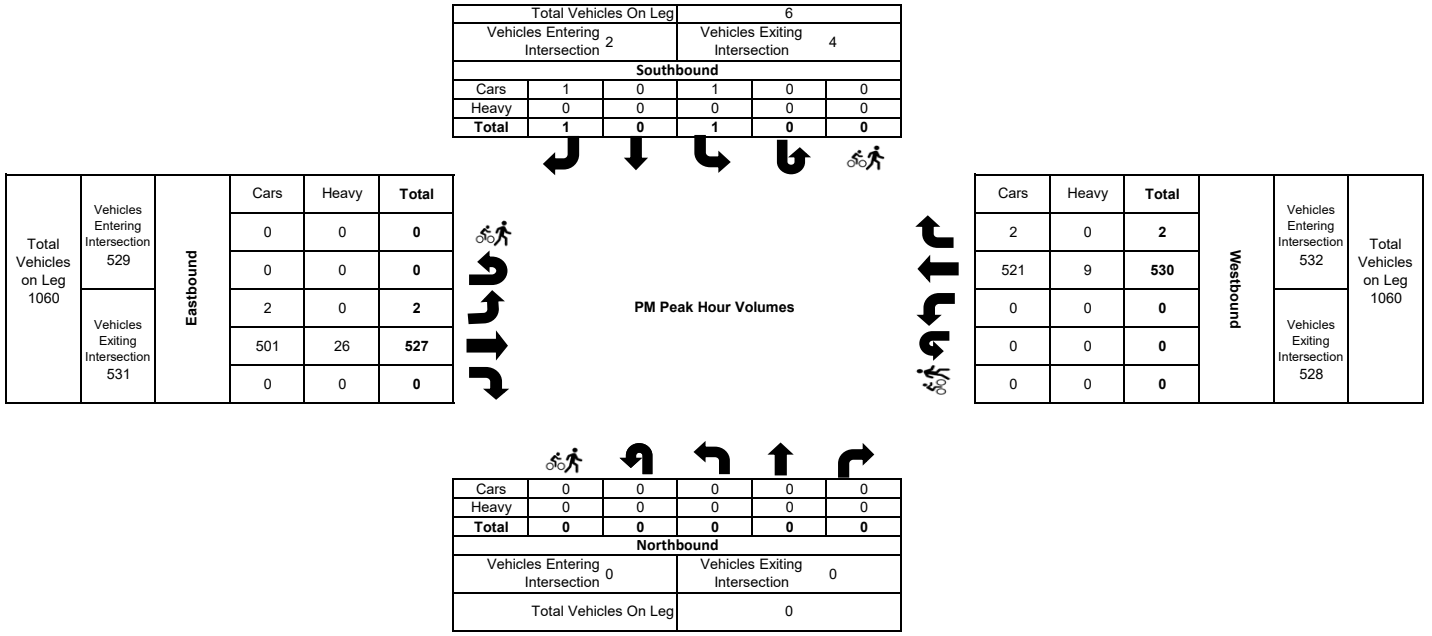
# Ashland Dr & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Norhtbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 158 | 0 | 0 | *158* | **238** |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **207** |
| 7:45 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 88 | 0 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 132 | 0 | 0 | *132* | **222** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 75 | 0 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **198** |
| Peak Hour Total | 0 | 1 | 0 | 3 | 0 | *4* | 0 | 0 | 325 | 0 | 0 | *325* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 536 | 0 | 0 | *536* | **865** |
| PHF | 0.000 | 0.250 | 0.000 | 0.375 | 0.000 | *0.500* | 0.000 | 0.000 | 0.923 | 0.000 | 0.000 | *0.923* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.000 | 0.848 | 0.000 | 0.000 | *0.848* | **0.909** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 8.00% | 0.00% | 0.00% | **8.00%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 6.90% | 0.00% | 0.00% | **6.90%** | **7.3%** |



# Ashland Dr & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

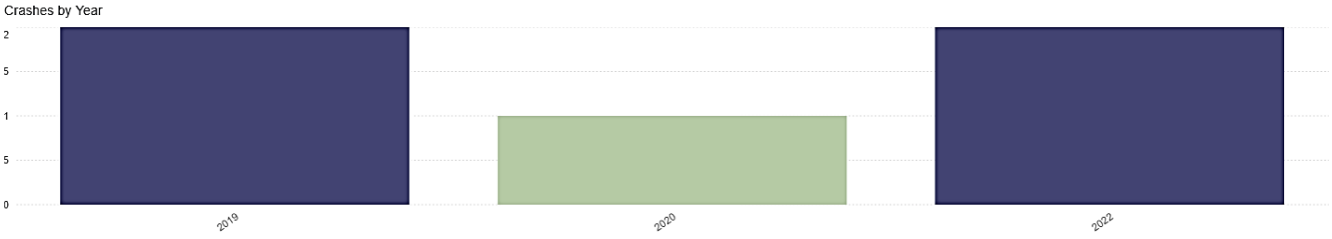
| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 145 | 1 | 0 | *146* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 131 | 0 | 0 | *131* | **277** |
| 4:30 PM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 121 | 0 | 0 | *121* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 142 | 0 | 0 | *143* | **266** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 139 | 0 | 0 | *140* | **255** |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 149 | 1 | 0 | *150* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **265** |
| Peak Hour Total | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 530 | 2 | 0 | *532* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 527 | 0 | 0 | *529* | **1063** |
| PHF | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | *0.250* | 0.000 | 0.000 | 0.889 | 0.500 | 0.000 | *0.887* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.500 | 0.928 | 0.000 | 0.000 | *0.925* | **0.959** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 1.70% | 0.00% | 0.00% | **1.69%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 4.93% | 0.00% | 0.00% | **4.91%** | **3.3%** |



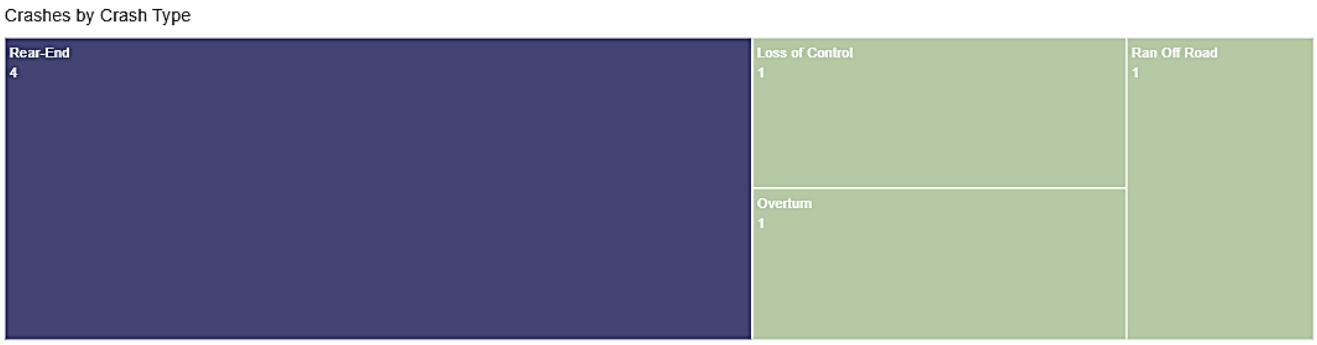
# APPENDIX B: Intersection Crash Data

## Kimball Road and Karcher Road Intersection 2019-2023 Crash Data



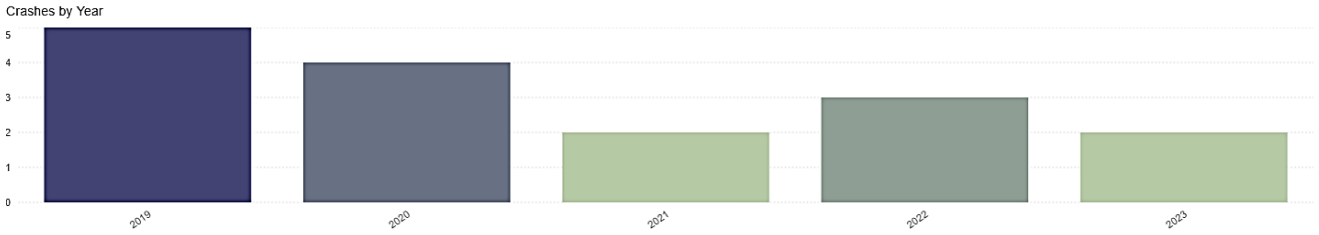

This chart shows the total # Crashes by Year



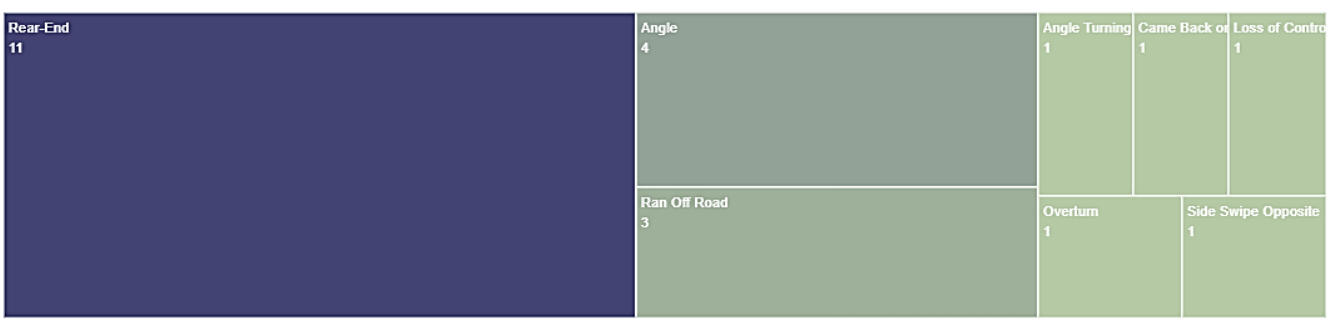
| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Asleep, Drowsy, Fatigued | 1 | |
| Following Too Close | 3 | |
| Inattention | 2 | |
| None | 5 | |

## 10th Avenue and Karcher Road Intersection 2019-2023 Crash Data



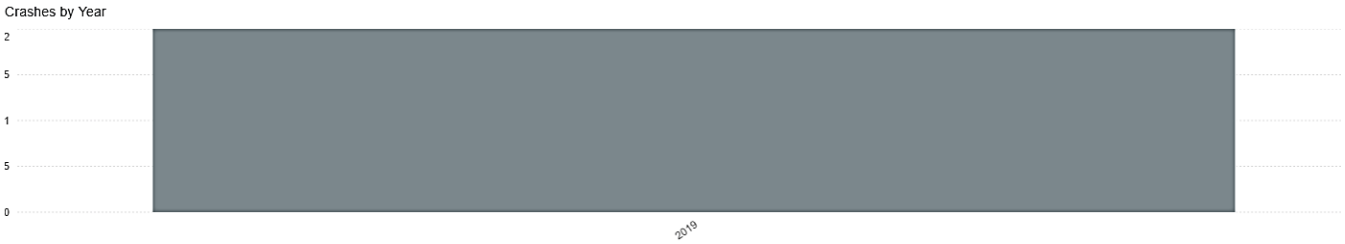

This chart shows the total # Crashes by Year



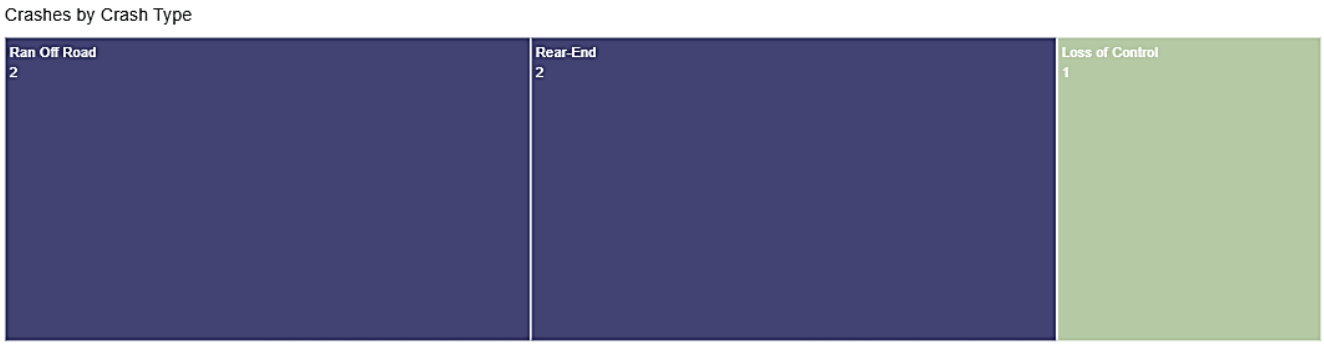
| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Alcohol Impaired | 3 | |
| Asleep, Drowsy, Fatigued | 1 | |
| Drug Impaired | 1 | |
| Emotional – Depressed, Angry, … | 1 | |
| Exceeded Posted Speed | 1 | |
| Failed to Maintain Lane | 1 | |
| Failed to Obey Signal | 4 | |
| Following Too Close | 6 | |
| Foot Slipped Off or Caught On … | 2 | |
| Improper Overtaking | 1 | |
| Improper Turn | 1 | |
| Inattention | 3 | |
| Light Defect | 1 | |
| None | 16 | |
| Speed Too Fast For Conditions | 1 | |

## Ashland Drive & Karcher Road Intersection 2019-2023 Crash Data




This chart shows the total # Crashes by Year



| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Following Too Close | 2 | |
| None | 2 | |

# APPENDIX C: 2024 Synchro Reports

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 1 | 515 | 0 | 0 | 352 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |
| Future Vol, veh/h | 1 | 515 | 0 | 0 | 352 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 100 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 572 | 0 | 0 | 391 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 393 | 0 | 0 | 572 | 0 | 0 | 966 | 968 | 572 | 967 | 967 | 392 |
| Stage 1 | - | - | - | - | - | - | 574 | 574 | - | 392 | 392 | - |
| Stage 2 | - | - | - | - | - | - | 391 | 393 | - | 574 | 574 | - |
| Critical Hdwy | 5.1 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 3.1 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 784 | - | - | 1001 | - | - | 234 | 254 | 519 | 234 | 254 | 657 |
| Stage 1 | - | - | - | - | - | - | 504 | 503 | - | 632 | 606 | - |
| Stage 2 | - | - | - | - | - | - | 633 | 606 | - | 504 | 503 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 784 | - | - | 1001 | - | - | 233 | 253 | 519 | 233 | 254 | 657 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 233 | 253 | - | 233 | 254 | - |
| Stage 1 | - | - | - | - | - | - | 503 | 502 | - | 632 | 606 | - |
| Stage 2 | - | - | - | - | - | - | 630 | 606 | - | 503 | 502 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.02 | 0 | 20.56 | 10.51 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 233 | 3 | - | - | 1001 | - | - | 657 |
| HCM Lane V/C Ratio | 0.005 | 0.001 | - | - | - | - | - | 0.005 |
| HCM Control Delay (s/veh) | 20.6 | 9.6 | 0 | - | 0 | - | - | 10.5 |
| HCM Lane LOS | C | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Future Volume (veh/h) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 134 | 447 | 7 | 16 | 302 | 322 | 7 | 115 | 21 | 192 | 91 | 93 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 171 | 589 | 9 | 35 | 446 | 400 | 16 | 177 | 32 | 236 | 206 | 211 |
| Arrive On Green | 0.10 | 0.33 | 0.33 | 0.02 | 0.25 | 0.25 | 0.01 | 0.12 | 0.12 | 0.14 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1753 | 1764 | 28 | 1781 | 1752 | 1572 | 1781 | 1539 | 281 | 1697 | 834 | 853 |
| Grp Volume(v), veh/h | 134 | 0 | 454 | 16 | 302 | 322 | 7 | 0 | 136 | 192 | 0 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1820 | 1697 | 0 | 1687 |
| Q Serve(g_s), s | 4.1 | 0.0 | 12.3 | 0.5 | 8.5 | 10.5 | 0.2 | 0.0 | 3.9 | 6.0 | 0.0 | 5.0 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 12.3 | 0.5 | 8.5 | 10.5 | 0.2 | 0.0 | 3.9 | 6.0 | 0.0 | 5.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.15 | 1.00 | | 0.51 |
| Lane Grp Cap(c), veh/h | 171 | 0 | 598 | 35 | 446 | 400 | 16 | 0 | 210 | 236 | 0 | 417 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.76 | 0.46 | 0.68 | 0.80 | 0.43 | 0.00 | 0.65 | 0.81 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 311 | 0 | 1784 | 320 | 1745 | 1566 | 320 | 0 | 826 | 301 | 0 | 763 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.1 | 0.0 | 16.2 | 26.5 | 18.3 | 19.1 | 26.9 | 0.0 | 23.1 | 22.8 | 0.0 | 17.4 |
| Incr Delay (d2), s/veh | 3.0 | 0.0 | 0.8 | 3.4 | 0.7 | 1.5 | 6.4 | 0.0 | 1.3 | 9.8 | 0.0 | 0.3 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.8 | 0.0 | 6.9 | 0.4 | 4.9 | 5.6 | 0.2 | 0.0 | 2.9 | 5.0 | 0.0 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 27.1 | 0.0 | 17.0 | 29.9 | 19.0 | 20.6 | 33.3 | 0.0 | 24.4 | 32.6 | 0.0 | 17.6 |
| LnGrp LOS | C | | B | C | B | C | C | | C | C | | B |
| Approach Vol, veh/h | | 588 | | | 640 | | | 143 | | | 376 | |
| Approach Delay, s/veh | | 19.3 | | | 20.1 | | | 24.8 | | | 25.3 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.9 | 11.6 | 6.3 | 23.8 | 5.7 | 18.8 | 10.6 | 19.5 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 5.9 | 2.5 | 14.3 | 2.2 | 7.0 | 6.1 | 12.5 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.0 | 1.5 | 0.0 | 0.6 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.3 |
| HCM 7th LOS | C |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Future Volume (vph) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.92 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1809 | | 1671 | 1648 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1809 | | 1671 | 1648 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 134 | 447 | 7 | 16 | 302 | 322 | 7 | 115 | 21 | 192 | 91 | 93 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 230 | 0 | 6 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 134 | 453 | 0 | 16 | 302 | 92 | 7 | 130 | 0 | 192 | 157 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 31.0 | | 1.1 | 22.1 | 22.1 | 0.9 | 14.2 | | 9.9 | 23.2 | |
| Effective Green, g (s) | 9.9 | 31.0 | | 1.1 | 22.1 | 22.1 | 0.9 | 14.2 | | 9.9 | 23.2 | |
| Actuated g/C Ratio | 0.13 | 0.40 | | 0.01 | 0.29 | 0.29 | 0.01 | 0.18 | | 0.13 | 0.30 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 221 | 709 | | 25 | 492 | 447 | 20 | 331 | | 213 | 493 | |
| v/s Ratio Prot | c0.08 | c0.26 | | 0.01 | 0.17 | | 0.00 | c0.07 | | c0.11 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.61 | 0.64 | | 0.64 | 0.61 | 0.21 | 0.35 | 0.39 | | 0.90 | 0.32 | |
| Uniform Delay, d1 | 32.0 | 18.7 | | 38.0 | 24.0 | 21.0 | 38.0 | 27.9 | | 33.3 | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.2 | 1.4 | | 35.0 | 1.6 | 0.1 | 3.8 | 0.3 | | 35.3 | 0.1 | |
| Delay (s) | 35.2 | 20.1 | | 73.0 | 25.6 | 21.1 | 41.8 | 28.1 | | 68.6 | 21.2 | |
| Level of Service | D | C | | E | C | C | D | C | | E | C | |
| Approach Delay (s/veh) | | 23.6 | | | 24.5 | | | 28.8 | | | 45.4 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.65 | | |
| Actuated Cycle Length (s) | 77.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 54.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 1 | 117 | 105 | 1 |
| Future Vol, veh/h | 6 | 4 | 1 | 117 | 105 | 1 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 82 | 82 | 82 | 82 | 82 | 82 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 7 | 5 | 1 | 143 | 128 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 279 | 129 | 129 | 0 | - | 0 |
| Stage 1 | 129 | - | - | - | - | - |
| Stage 2 | 150 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 682 | 921 | 1022 | - | - | - |
| Stage 1 | 864 | - | - | - | - | - |
| Stage 2 | 845 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 681 | 921 | 1022 | - | - | - |
| Mov Cap-2 Maneuver | 681 | - | - | - | - | - |
| Stage 1 | 863 | - | - | - | - | - |
| Stage 2 | 845 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.81 | 0.07 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 15 | - | 761 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.016 | - | - |
| HCM Control Delay (s/veh) | 8.5 | 0 | 9.8 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

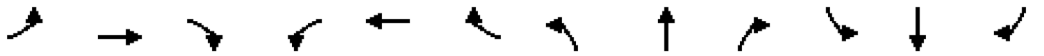
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 531 | 0 | 2 | 538 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Future Vol, veh/h | 0 | 531 | 0 | 2 | 538 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 565 | 0 | 2 | 572 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 574 | 0 | 0 | 565 | 0 | 0 | 1141 | 1144 | 565 | 1143 | 1143 | 573 |
| Stage 1 | - | - | - | - | - | - | 565 | 565 | - | 578 | 578 | - |
| Stage 2 | - | - | - | - | - | - | 577 | 579 | - | 565 | 565 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 999 | - | - | 1007 | - | - | 178 | 200 | 524 | 177 | 200 | 519 |
| Stage 1 | - | - | - | - | - | - | 510 | 508 | - | 502 | 501 | - |
| Stage 2 | - | - | - | - | - | - | 502 | 501 | - | 510 | 508 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 999 | - | - | 1007 | - | - | 176 | 199 | 524 | 177 | 200 | 519 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 176 | 199 | - | 177 | 200 | - |
| Stage 1 | - | - | - | - | - | - | 510 | 508 | - | 500 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 499 | 499 | - | 510 | 508 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.03 | 0 | 11.97 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 999 | - | - | 7 | - | - | 519 |
| HCM Lane V/C Ratio | - | - | - | - | 0.002 | - | - | 0.004 |
| HCM Control Delay (s/veh) | 0 | 0 | - | - | 8.6 | 0 | - | 12 |
| HCM Lane LOS | A | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | 0 |



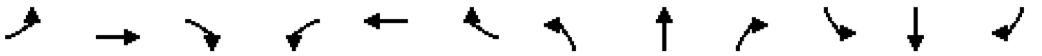
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Future Volume (veh/h) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 112 | 398 | 4 | 33 | 372 | 154 | 14 | 111 | 21 | 196 | 167 | 146 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 143 | 534 | 5 | 65 | 469 | 394 | 30 | 176 | 33 | 245 | 219 | 191 |
| Arrive On Green | 0.08 | 0.30 | 0.30 | 0.04 | 0.25 | 0.25 | 0.02 | 0.11 | 0.11 | 0.14 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1739 | 1790 | 18 | 1781 | 1870 | 1572 | 1711 | 1529 | 289 | 1767 | 921 | 805 |
| Grp Volume(v), veh/h | 112 | 0 | 402 | 33 | 372 | 154 | 14 | 0 | 132 | 196 | 0 | 313 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1808 | 1781 | 1870 | 1572 | 1711 | 0 | 1818 | 1767 | 0 | 1725 |
| Q Serve(g_s), s | 3.3 | 0.0 | 10.4 | 0.9 | 9.7 | 4.2 | 0.4 | 0.0 | 3.6 | 5.6 | 0.0 | 8.8 |
| Cycle Q Clear(g_c), s | 3.3 | 0.0 | 10.4 | 0.9 | 9.7 | 4.2 | 0.4 | 0.0 | 3.6 | 5.6 | 0.0 | 8.8 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 0.47 |
| Lane Grp Cap(c), veh/h | 143 | 0 | 539 | 65 | 469 | 394 | 30 | 0 | 209 | 245 | 0 | 410 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.75 | 0.51 | 0.79 | 0.39 | 0.46 | 0.00 | 0.63 | 0.80 | 0.00 | 0.76 |
| Avail Cap(c_a), veh/h | 325 | 0 | 1893 | 336 | 1959 | 1647 | 323 | 0 | 868 | 330 | 0 | 820 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.4 | 0.0 | 16.5 | 24.6 | 18.2 | 16.2 | 25.3 | 0.0 | 21.9 | 21.7 | 0.0 | 18.4 |
| Incr Delay (d2), s/veh | 3.5 | 0.0 | 0.8 | 2.3 | 1.2 | 0.2 | 4.1 | 0.0 | 1.2 | 7.0 | 0.0 | 1.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.2 | 0.0 | 5.9 | 0.7 | 6.0 | 2.1 | 0.3 | 0.0 | 2.6 | 4.5 | 0.0 | 5.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 26.9 | 0.0 | 17.2 | 26.8 | 19.4 | 16.4 | 29.4 | 0.0 | 23.1 | 28.6 | 0.0 | 19.6 |
| LnGrp LOS | C | | B | C | B | B | C | | C | C | | B |
| Approach Vol, veh/h | | 514 | | | 559 | | | 146 | | | 509 | |
| Approach Delay, s/veh | | 19.3 | | | 19.0 | | | 23.7 | | | 23.1 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.5 | 11.3 | 7.1 | 21.1 | 6.1 | 17.6 | 9.6 | 18.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 5.6 | 2.9 | 12.4 | 2.4 | 10.8 | 5.3 | 11.7 |
| Green Ext Time (p_c), s | 0.1 | 0.4 | 0.0 | 1.3 | 0.0 | 1.0 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 20.7 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Future Volume (vph) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1790 | | 1770 | 1863 | 1568 | 1687 | 1818 | | 1752 | 1732 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1790 | | 1770 | 1863 | 1568 | 1687 | 1818 | | 1752 | 1732 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 112 | 398 | 4 | 33 | 372 | 154 | 14 | 111 | 21 | 196 | 167 | 146 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 96 | 0 | 6 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 112 | 401 | 0 | 33 | 372 | 58 | 14 | 126 | 0 | 196 | 290 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.1 | 29.6 | | 2.5 | 22.9 | 22.9 | 1.0 | 15.1 | | 10.0 | 24.1 | |
| Effective Green, g (s) | 9.1 | 29.6 | | 2.5 | 22.9 | 22.9 | 1.0 | 15.1 | | 10.0 | 24.1 | |
| Actuated g/C Ratio | 0.12 | 0.38 | | 0.03 | 0.29 | 0.29 | 0.01 | 0.19 | | 0.13 | 0.31 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 199 | 674 | | 56 | 543 | 457 | 21 | 349 | | 223 | 531 | |
| v/s Ratio Prot | c0.07 | c0.22 | | 0.02 | c0.20 | | 0.01 | 0.07 | | c0.11 | c0.17 | |
| v/s Ratio Perm | | | | | | 0.04 | | | | | | |
| v/c Ratio | 0.56 | 0.60 | | 0.59 | 0.69 | 0.13 | 0.67 | 0.36 | | 0.88 | 0.55 | |
| Uniform Delay, d1 | 32.8 | 19.6 | | 37.5 | 24.6 | 20.4 | 38.6 | 27.5 | | 33.7 | 22.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.2 | 0.9 | | 9.8 | 2.9 | 0.0 | 47.8 | 0.2 | | 29.2 | 0.6 | |
| Delay (s) | 35.0 | 20.6 | | 47.3 | 27.5 | 20.5 | 86.4 | 27.8 | | 62.9 | 23.3 | |
| Level of Service | C | C | | D | C | C | F | C | | E | C | |
| Approach Delay (s/veh) | | 23.7 | | | 26.7 | | | 33.4 | | | 38.5 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 78.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

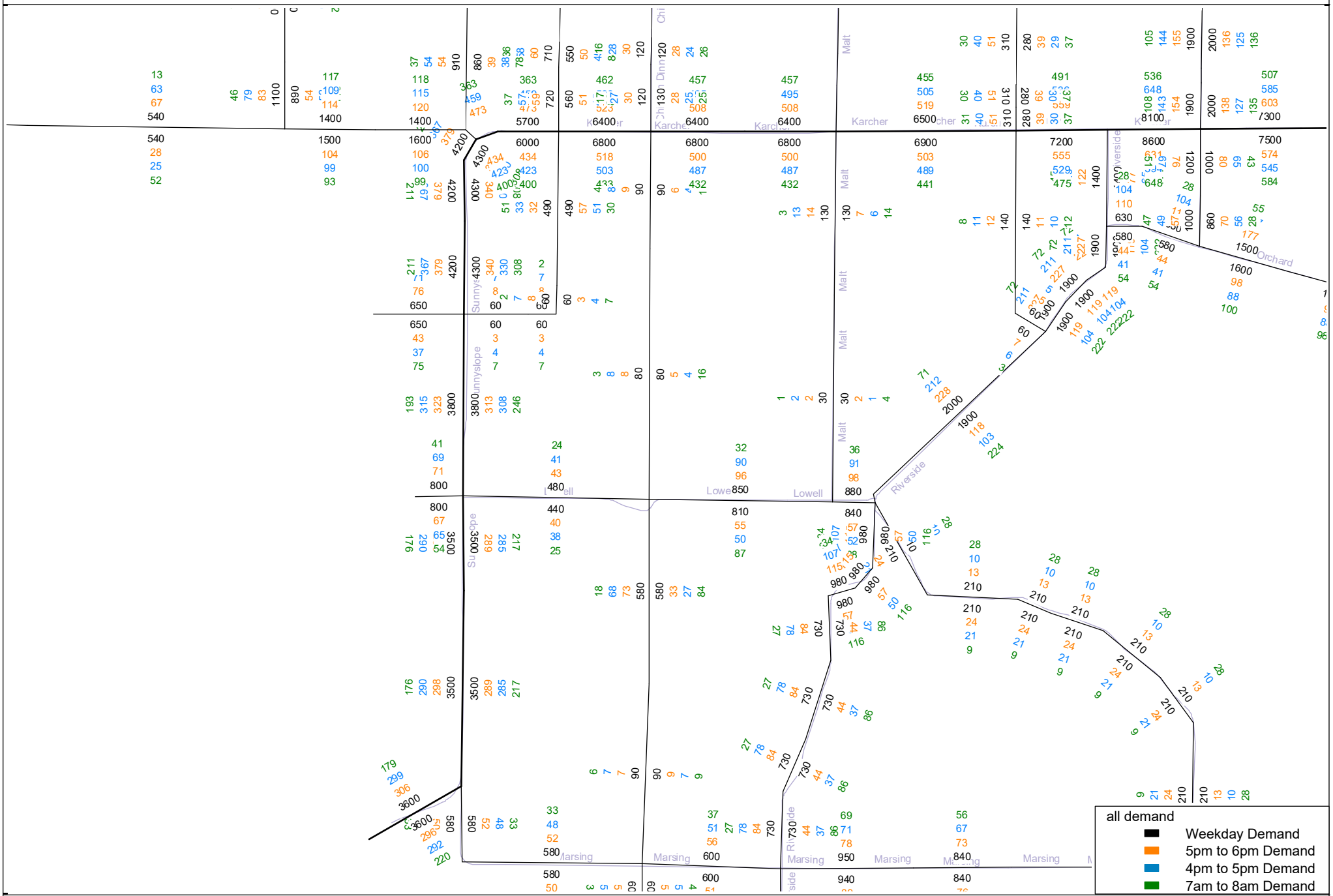
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 1 | 6 | 133 | 185 | 11 |
| Future Vol, veh/h | 4 | 1 | 6 | 133 | 185 | 11 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 1 | 7 | 145 | 201 | 12 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 371 | 207 | 213 | 0 | - | 0 |
| Stage 1 | 207 | - | - | - | - | - |
| Stage 2 | 164 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 630 | 833 | 1357 | - | - | - |
| Stage 1 | 828 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 627 | 833 | 1357 | - | - | - |
| Mov Cap-2 Maneuver | 627 | - | - | - | - | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.51 | 0.33 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 659 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.008 | - | - |
| HCM Control Delay (s/veh) | 7.7 | 0 | 10.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

# APPENDIX D: COMPASS Reports

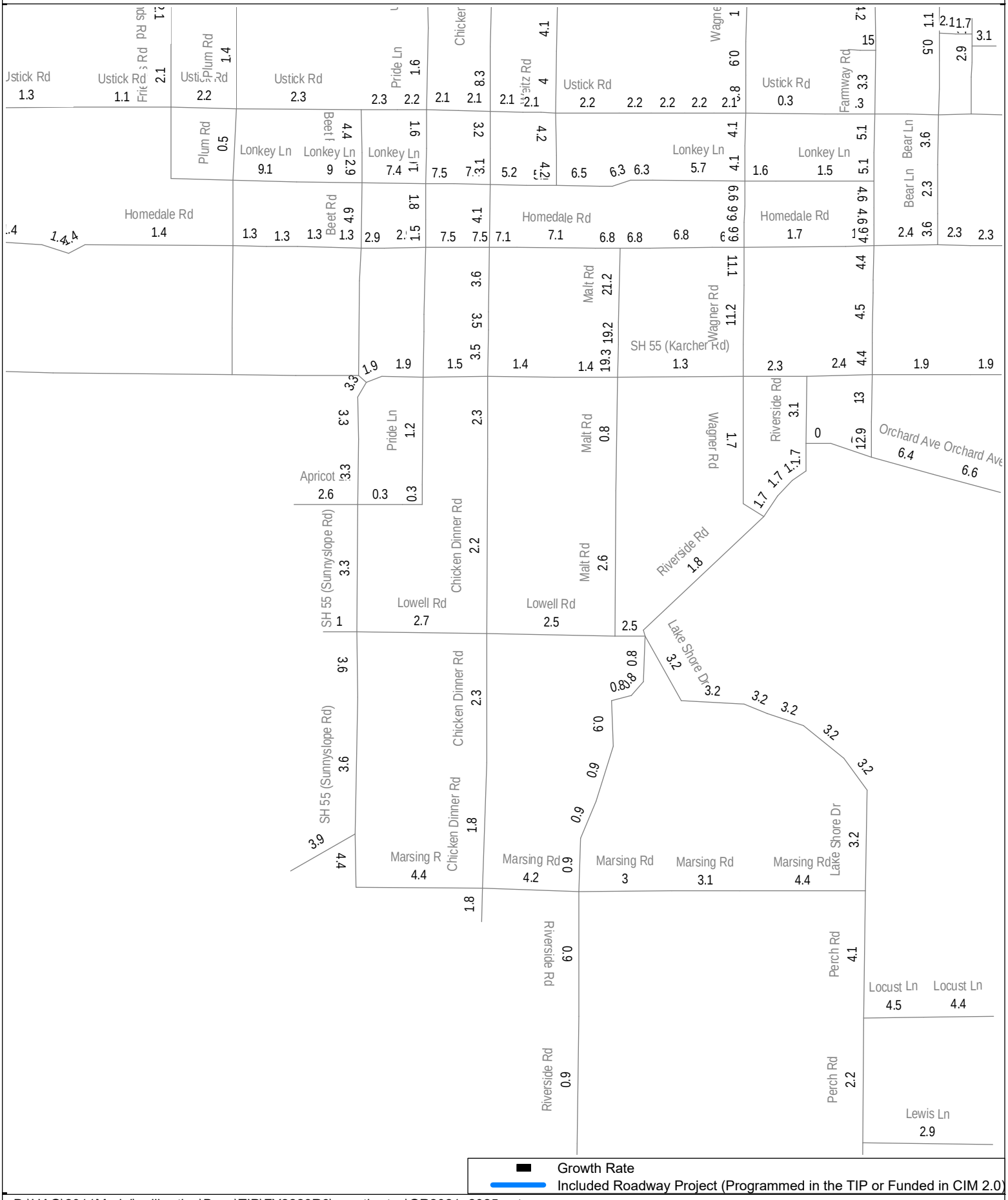



D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2021\ALLDEMAND_b2021.NET
New Regional Model calibrated to 2011/12 conditions - completed in January 2015

cube

(Licensed to Community Planning Association)

2021 Peak Hour to 2025 Peak Hour Compounded Annual Growth Rates
7/20/2021



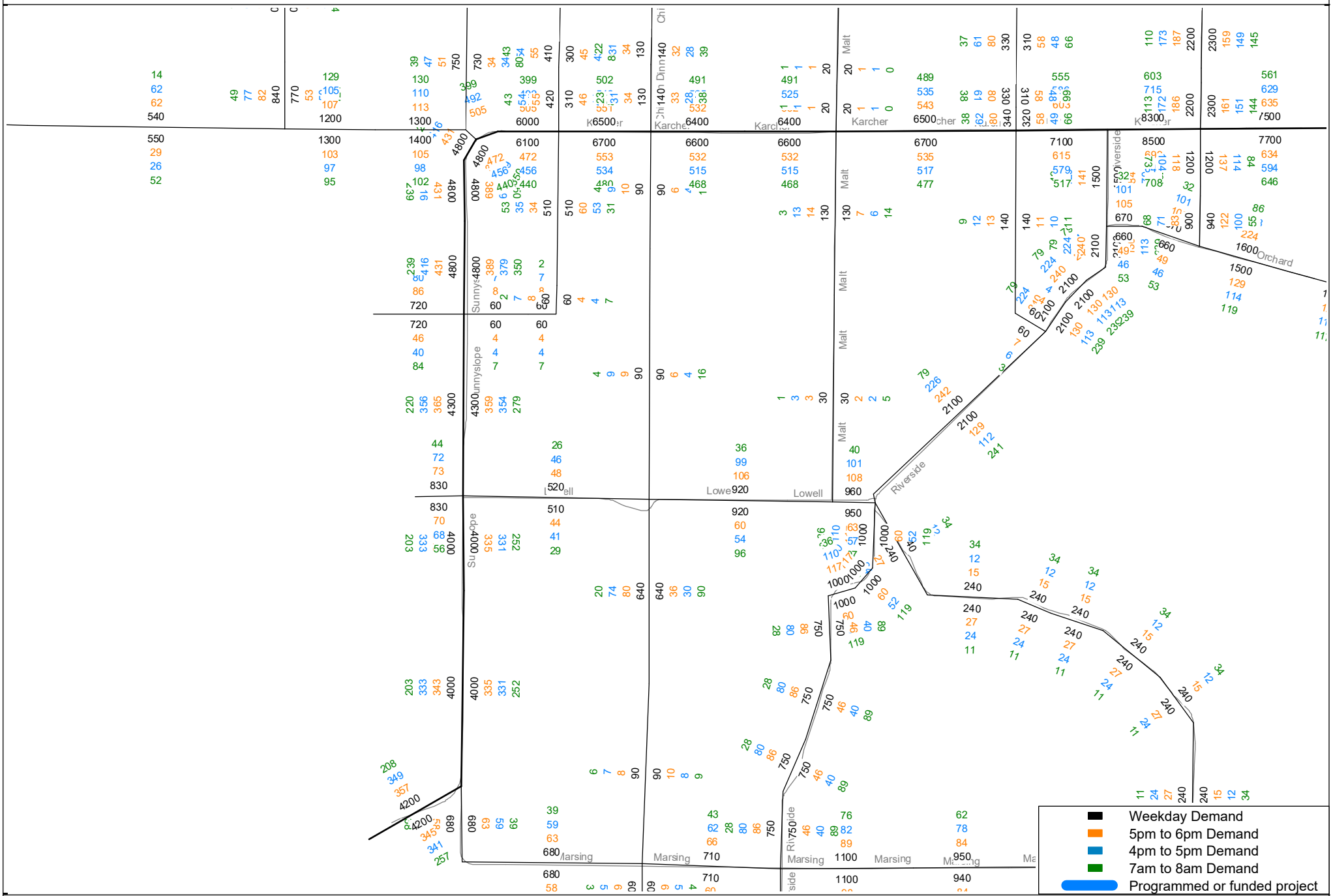

Growth Rate
Included Roadway Project (Programmed in the TIP or Funded in CIM 2.0)

D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\growthrates\GR2021_2025.net
COMPASS reserves the right to rerun the model for any reason deemed necessary.

cube

**Exhibit A.6 - 68**
(Licensed to Community Planning Association)

2025 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021

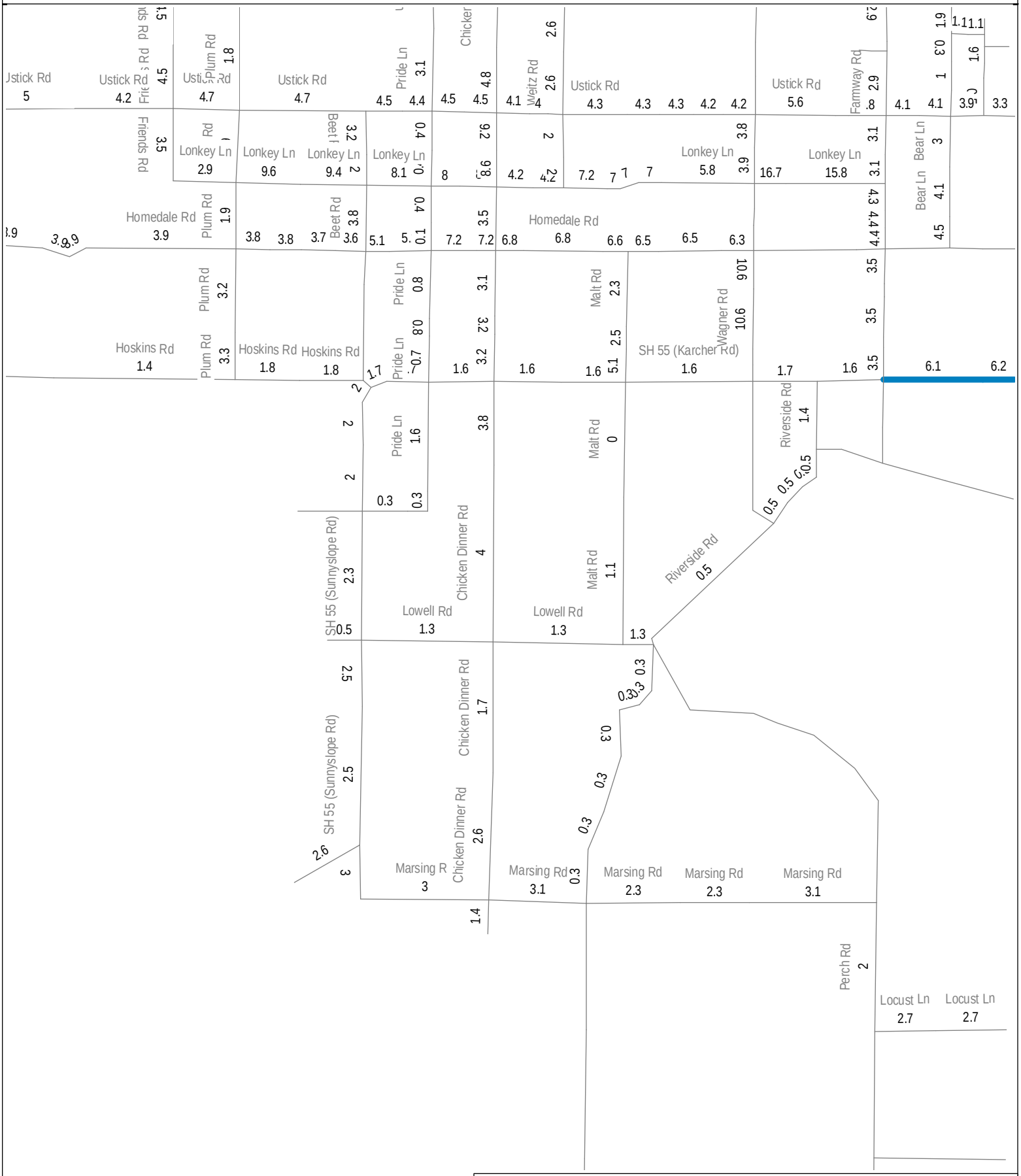



D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2025\ALLDEMAND_b2025.NET
New Regional Model calibrated to 2011/12 conditions - completed in January 2015

cube

(Licensed to Community Planning Association)

2025 Peak Hour to 2030 Peak Hour Compounded Annual Growth Rates
7/20/2021



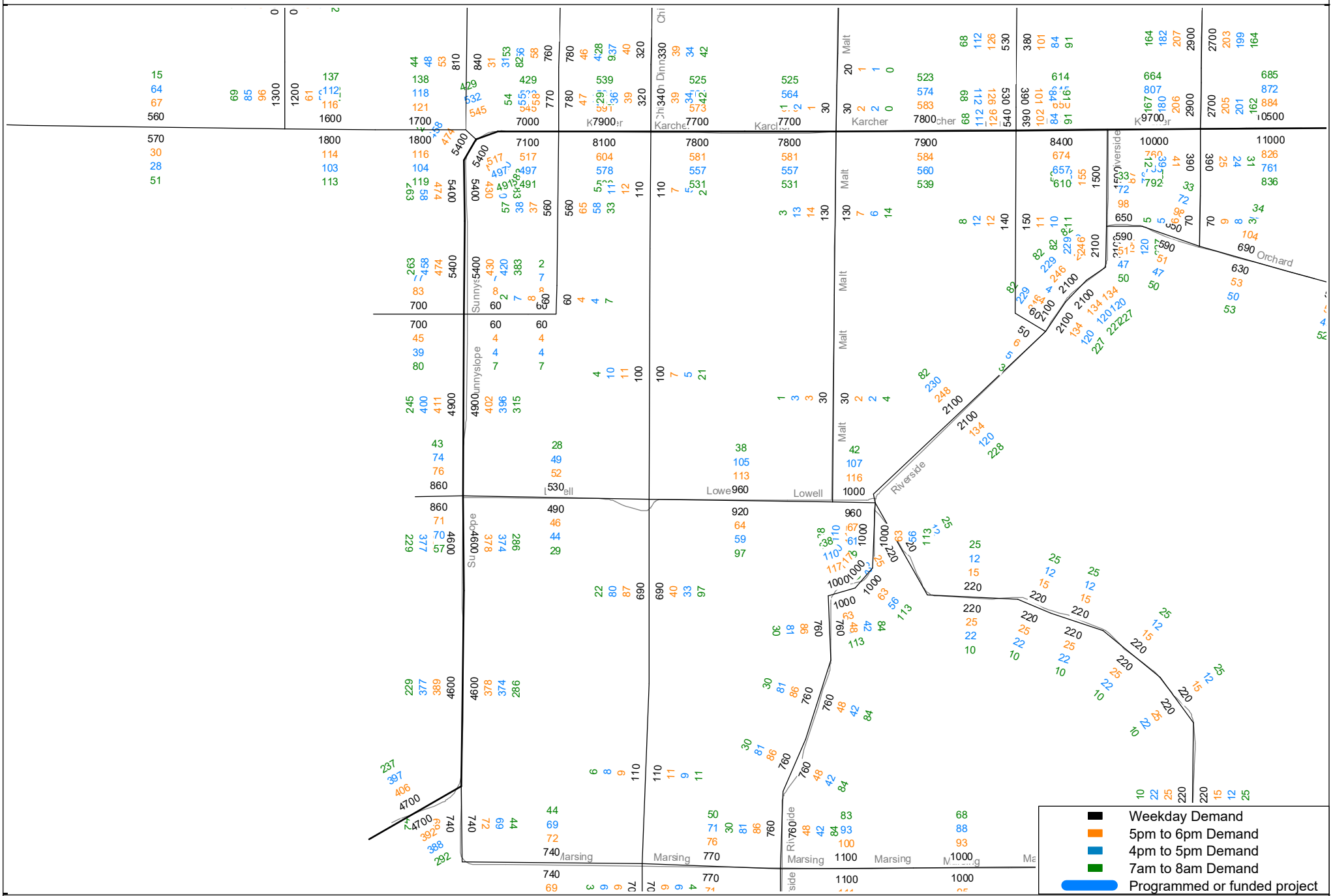

D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\growthrates\GR2025_2030.net
COMPASS reserves the right to rerun the model for any reason deemed necessary.

cube

**Exhibit A.6 - 70**

(Licensed to Community Planning Association)

2030 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021

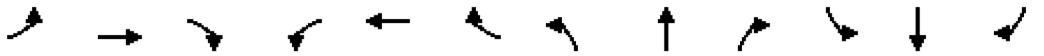



D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2030\ALLDEMAND_b2030.NET
Roadway assumptions per CIM 2040 2.0 (Dec 2018) and reconciled demographic data set as of April 2019

cube

(Licensed to Community Planning Association)

# APPENDIX E: 2027 Background Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 189 | 1220 | 567 | 57 | 933 | 441 | 27 | 194 | 77 | 233 | 244 | 225 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.15 | 0.15 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1275 | 505 | 1697 | 882 | 813 |
| Grp Volume(v), veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 0 | 208 | 194 | 0 | 196 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1780 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 5.6 | 7.4 | 0.2 | 1.1 | 5.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Cycle Q Clear(g_c), s | 5.6 | 7.4 | 0.2 | 1.1 | 5.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 189 | 1220 | 567 | 57 | 933 | 441 | 27 | 0 | 271 | 233 | 0 | 469 |
| V/C Ratio(X) | 0.80 | 0.41 | 0.02 | 0.53 | 0.36 | 0.85 | 0.45 | 0.00 | 0.77 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 255 | 2525 | 1173 | 261 | 2462 | 1163 | 261 | 0 | 794 | 246 | 0 | 754 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.1 | 16.1 | 13.9 | 31.8 | 19.3 | 22.7 | 32.6 | 0.0 | 27.2 | 28.0 | 0.0 | 19.8 |
| Incr Delay (d2), s/veh | 8.8 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 4.4 | 0.0 | 1.7 | 18.6 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 4.2 | 0.1 | 0.8 | 3.2 | 8.4 | 0.4 | 0.0 | 5.6 | 7.2 | 0.0 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.8 | 16.2 | 13.9 | 34.6 | 19.3 | 24.4 | 37.0 | 0.0 | 28.9 | 46.6 | 0.0 | 20.0 |
| LnGrp LOS | D | B | B | C | B | C | D | | C | D | | B |
| Approach Vol, veh/h | | 661 | | | 743 | | | 220 | | | 390 | |
| Approach Delay, s/veh | | 21.1 | | | 22.5 | | | 29.3 | | | 33.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.5 | 15.5 | 7.3 | 29.5 | 6.2 | 23.8 | 12.5 | 24.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 9.5 | 3.1 | 9.4 | 2.4 | 8.3 | 7.6 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 0.7 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 24.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 294 | 0 | 12 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 151 | 501 | 3 | 30 | 340 | 79 | 12 | 196 | 0 | 194 | 172 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 22.8 | 22.8 | 2.5 | 15.4 | 15.4 | 1.0 | 16.1 | | 9.8 | 24.9 | |
| Effective Green, g (s) | 9.8 | 22.8 | 22.8 | 2.5 | 15.4 | 15.4 | 1.0 | 16.1 | | 9.8 | 24.9 | |
| Actuated g/C Ratio | 0.14 | 0.31 | 0.31 | 0.03 | 0.21 | 0.21 | 0.01 | 0.22 | | 0.14 | 0.34 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 234 | 1061 | 497 | 61 | 697 | 333 | 24 | 391 | | 225 | 569 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.10 | | 0.01 | c0.11 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.65 | 0.47 | 0.01 | 0.49 | 0.49 | 0.24 | 0.50 | 0.50 | | 0.86 | 0.30 | |
| Uniform Delay, d1 | 29.7 | 20.0 | 17.1 | 34.4 | 25.1 | 23.7 | 35.5 | 24.7 | | 30.7 | 17.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.5 | 0.1 | 0.0 | 2.3 | 0.2 | 0.1 | 5.8 | 0.4 | | 26.3 | 0.1 | |
| Delay (s) | 34.2 | 20.1 | 17.1 | 36.6 | 25.3 | 23.8 | 41.3 | 25.0 | | 57.0 | 17.5 | |
| Level of Service | C | C | B | D | C | C | D | C | | E | B | |
| Approach Delay (s/veh) | | 23.3 | | | 25.0 | | | 25.9 | | | 37.2 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 72.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 54.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

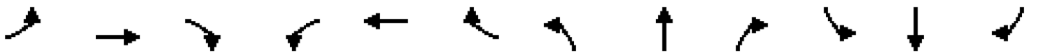
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 4 | 1 | 182 | 130 | 3 |
| Future Vol, veh/h | 15 | 4 | 1 | 182 | 130 | 3 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 17 | 4 | 1 | 202 | 144 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 356 | 146 | 148 | 0 | - | 0 |
| Stage 1 | 146 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 615 | 901 | 1003 | - | - | - |
| Stage 1 | 848 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 615 | 901 | 1003 | - | - | - |
| Mov Cap-2 Maneuver | 615 | - | - | - | - | - |
| Stage 1 | 847 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.65 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 659 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.032 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 170 | 759 | 349 | 118 | 666 | 295 | 38 | 199 | 64 | 260 | 274 | 202 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.07 | 0.19 | 0.19 | 0.02 | 0.15 | 0.15 | 0.15 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1356 | 436 | 1767 | 1000 | 738 |
| Grp Volume(v), veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 0 | 181 | 210 | 0 | 365 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1792 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 3.8 | 6.3 | 0.3 | 2.2 | 5.8 | 5.6 | 0.5 | 0.0 | 4.9 | 5.9 | 0.0 | 9.9 |
| Cycle Q Clear(g_c), s | 3.8 | 6.3 | 0.3 | 2.2 | 5.8 | 5.6 | 0.5 | 0.0 | 4.9 | 5.9 | 0.0 | 9.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 170 | 759 | 349 | 118 | 666 | 295 | 38 | 0 | 263 | 260 | 0 | 476 |
| V/C Ratio(X) | 0.78 | 0.62 | 0.03 | 0.68 | 0.65 | 0.63 | 0.48 | 0.00 | 0.69 | 0.81 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h | 330 | 3328 | 1533 | 342 | 3437 | 1521 | 328 | 0 | 1046 | 336 | 0 | 1010 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.5 | 18.0 | 15.6 | 23.3 | 19.2 | 19.1 | 24.7 | 0.0 | 20.7 | 21.1 | 0.0 | 17.0 |
| Incr Delay (d2), s/veh | 3.0 | 0.3 | 0.0 | 2.5 | 0.4 | 0.8 | 3.4 | 0.0 | 1.2 | 8.2 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.5 | 3.5 | 0.1 | 1.5 | 3.4 | 3.0 | 0.4 | 0.0 | 3.4 | 4.9 | 0.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 25.5 | 18.3 | 15.6 | 25.8 | 19.6 | 20.0 | 28.1 | 0.0 | 21.9 | 29.3 | 0.0 | 18.0 |
| LnGrp LOS | C | B | B | C | B | B | C | | C | C | | B |
| Approach Vol, veh/h | | 613 | | | 699 | | | 199 | | | 575 | |
| Approach Delay, s/veh | | 19.8 | | | 20.4 | | | 22.4 | | | 22.1 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.8 | 12.8 | 8.6 | 16.9 | 6.3 | 19.3 | 10.3 | 15.2 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 7.9 | 6.9 | 4.2 | 8.3 | 2.5 | 11.9 | 5.8 | 7.8 |
| Green Ext Time (p_c), s | 0.1 | 0.6 | 0.0 | 1.7 | 0.0 | 1.3 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 20.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 148 | 0 | 10 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 133 | 470 | 3 | 80 | 433 | 38 | 18 | 171 | 0 | 210 | 346 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 18.6 | 18.6 | 6.3 | 14.9 | 14.9 | 1.1 | 16.7 | | 9.9 | 25.5 | |
| Effective Green, g (s) | 9.9 | 18.6 | 18.6 | 6.3 | 14.9 | 14.9 | 1.1 | 16.7 | | 9.9 | 25.5 | |
| Actuated g/C Ratio | 0.14 | 0.26 | 0.26 | 0.09 | 0.20 | 0.20 | 0.02 | 0.23 | | 0.14 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 233 | 870 | 404 | 153 | 724 | 320 | 25 | 411 | | 238 | 610 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.05 | 0.12 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.02 | | | | | | |
| v/c Ratio | 0.57 | 0.54 | 0.01 | 0.52 | 0.60 | 0.12 | 0.72 | 0.42 | | 0.88 | 0.57 | |
| Uniform Delay, d1 | 29.5 | 23.4 | 20.2 | 31.8 | 26.2 | 23.6 | 35.7 | 23.9 | | 30.9 | 19.2 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.1 | 0.4 | 0.0 | 1.5 | 0.9 | 0.1 | 60.2 | 0.2 | | 28.8 | 0.7 | |
| Delay (s) | 31.6 | 23.8 | 20.2 | 33.3 | 27.1 | 23.7 | 95.8 | 24.1 | | 59.7 | 19.9 | |
| Level of Service | C | C | C | C | C | C | F | C | | E | B | |
| Approach Delay (s/veh) | | 25.4 | | | 26.9 | | | 30.6 | | | 34.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 28.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 72.8 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

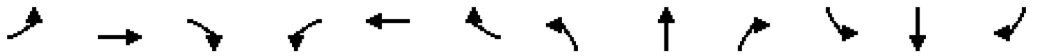
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 1 | 6 | 177 | 261 | 25 |
| Future Vol, veh/h | 10 | 1 | 6 | 177 | 261 | 25 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 1 | 7 | 192 | 284 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 509 | 297 | 311 | 0 | - | 0 |
| Stage 1 | 297 | - | - | - | - | - |
| Stage 2 | 211 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 524 | 742 | 1250 | - | - | - |
| Stage 1 | 754 | - | - | - | - | - |
| Stage 2 | 824 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 521 | 742 | 1250 | - | - | - |
| Mov Cap-2 Maneuver | 521 | - | - | - | - | - |
| Stage 1 | 749 | - | - | - | - | - |
| Stage 2 | 824 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.87 | 0.26 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 59 | - | 536 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.022 | - | - |
| HCM Control Delay (s/veh) | 7.9 | 0 | 11.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



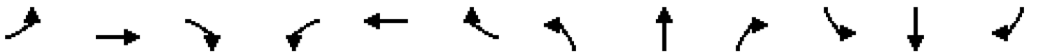
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 189 | 626 | 11 | 57 | 489 | 439 | 27 | 193 | 77 | 234 | 243 | 224 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.15 | 0.15 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 1759 | 32 | 1781 | 1752 | 1572 | 1781 | 1275 | 505 | 1697 | 882 | 813 |
| Grp Volume(v), veh/h | 151 | 0 | 510 | 30 | 340 | 373 | 12 | 0 | 208 | 194 | 0 | 196 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1780 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 5.6 | 0.0 | 17.0 | 1.1 | 11.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Cycle Q Clear(g_c), s | 5.6 | 0.0 | 17.0 | 1.1 | 11.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 189 | 0 | 638 | 57 | 489 | 439 | 27 | 0 | 270 | 234 | 0 | 468 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.80 | 0.53 | 0.70 | 0.85 | 0.45 | 0.00 | 0.77 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 256 | 0 | 1468 | 263 | 1436 | 1289 | 263 | 0 | 665 | 248 | 0 | 631 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.9 | 0.0 | 19.2 | 31.6 | 21.4 | 22.6 | 32.4 | 0.0 | 27.0 | 27.9 | 0.0 | 19.7 |
| Incr Delay (d2), s/veh | 8.5 | 0.0 | 0.9 | 2.8 | 0.7 | 1.8 | 4.4 | 0.0 | 1.8 | 18.3 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 0.0 | 9.7 | 0.8 | 7.2 | 8.3 | 0.4 | 0.0 | 5.5 | 7.2 | 0.0 | 4.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.4 | 0.0 | 20.1 | 34.4 | 22.1 | 24.4 | 36.8 | 0.0 | 28.8 | 46.1 | 0.0 | 19.9 |
| LnGrp LOS | D | | C | C | C | C | D | | C | D | | B |
| Approach Vol, veh/h | | 661 | | | 743 | | | 220 | | | 390 | |
| Approach Delay, s/veh | | 24.1 | | | 23.8 | | | 29.2 | | | 32.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.4 | 15.4 | 7.3 | 29.2 | 6.2 | 23.6 | 12.4 | 24.1 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 9.5 | 3.1 | 19.0 | 2.4 | 8.3 | 7.6 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.7 | 0.0 | 0.6 | 0.0 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.2 |
| HCM 7th LOS | C |

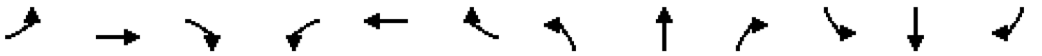
**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1772 | | 1770 | 1727 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1772 | | 1770 | 1727 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 250 | 0 | 12 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 151 | 509 | 0 | 30 | 340 | 123 | 12 | 196 | 0 | 194 | 172 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 34.3 | | 2.5 | 26.6 | 26.6 | 1.0 | 18.3 | | 10.1 | 27.4 | |
| Effective Green, g (s) | 10.1 | 34.3 | | 2.5 | 26.6 | 26.6 | 1.0 | 18.3 | | 10.1 | 27.4 | |
| Actuated g/C Ratio | 0.12 | 0.40 | | 0.03 | 0.31 | 0.31 | 0.01 | 0.21 | | 0.12 | 0.32 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 202 | 702 | | 51 | 531 | 482 | 20 | 373 | | 195 | 524 | |
| v/s Ratio Prot | c0.09 | c0.29 | | 0.02 | 0.20 | | 0.01 | c0.11 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.08 | | | | | | |
| v/c Ratio | 0.75 | 0.73 | | 0.59 | 0.64 | 0.26 | 0.60 | 0.53 | | 0.99 | 0.33 | |
| Uniform Delay, d1 | 37.0 | 22.1 | | 41.5 | 25.8 | 22.5 | 42.6 | 30.3 | | 38.2 | 22.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 12.4 | 3.2 | | 10.7 | 2.0 | 0.1 | 30.1 | 0.6 | | 62.6 | 0.1 | |
| Delay (s) | 49.3 | 25.3 | | 52.2 | 27.8 | 22.6 | 72.6 | 30.9 | | 100.7 | 22.7 | |
| Level of Service | D | C | | D | C | C | E | C | | F | C | |
| Approach Delay (s/veh) | | 30.8 | | | 26.2 | | | 33.1 | | | 61.5 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 35.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 86.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 66.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 168 | 556 | 12 | 107 | 517 | 434 | 37 | 187 | 60 | 254 | 262 | 193 |
| Arrive On Green | 0.10 | 0.31 | 0.31 | 0.06 | 0.28 | 0.28 | 0.02 | 0.14 | 0.14 | 0.14 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1739 | 1767 | 38 | 1781 | 1870 | 1572 | 1711 | 1356 | 436 | 1767 | 1000 | 738 |
| Grp Volume(v), veh/h | 133 | 0 | 480 | 80 | 433 | 186 | 18 | 0 | 181 | 210 | 0 | 365 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1804 | 1781 | 1870 | 1572 | 1711 | 0 | 1792 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 4.7 | 0.0 | 15.5 | 2.8 | 13.6 | 6.0 | 0.6 | 0.0 | 6.0 | 7.2 | 0.0 | 12.2 |
| Cycle Q Clear(g_c), s | 4.7 | 0.0 | 15.5 | 2.8 | 13.6 | 6.0 | 0.6 | 0.0 | 6.0 | 7.2 | 0.0 | 12.2 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 168 | 0 | 567 | 107 | 517 | 434 | 37 | 0 | 247 | 254 | 0 | 455 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.85 | 0.75 | 0.84 | 0.43 | 0.49 | 0.00 | 0.73 | 0.83 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 271 | 0 | 1577 | 280 | 1635 | 1374 | 269 | 0 | 714 | 275 | 0 | 690 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.5 | 0.0 | 19.9 | 28.8 | 21.2 | 18.5 | 30.1 | 0.0 | 25.7 | 25.9 | 0.0 | 21.5 |
| Incr Delay (d2), s/veh | 3.1 | 0.0 | 1.4 | 3.8 | 1.4 | 0.2 | 3.7 | 0.0 | 1.6 | 15.7 | 0.0 | 2.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.3 | 0.0 | 9.1 | 2.0 | 8.7 | 3.3 | 0.5 | 0.0 | 4.5 | 7.0 | 0.0 | 8.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 30.6 | 0.0 | 21.3 | 32.6 | 22.6 | 18.7 | 33.8 | 0.0 | 27.3 | 41.6 | 0.0 | 23.6 |
| LnGrp LOS | C | | C | C | C | B | C | | C | D | | C |
| Approach Vol, veh/h | | 613 | | | 699 | | | 199 | | | 575 | |
| Approach Delay, s/veh | | 23.3 | | | 22.7 | | | 27.9 | | | 30.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.3 | 13.9 | 8.9 | 25.2 | 6.5 | 21.6 | 11.3 | 22.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 8.0 | 4.8 | 17.5 | 2.6 | 14.2 | 6.7 | 15.6 |
| Green Ext Time (p_c), s | 0.0 | 0.5 | 0.0 | 1.5 | 0.0 | 1.1 | 0.0 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.5 |
| HCM 7th LOS | C |

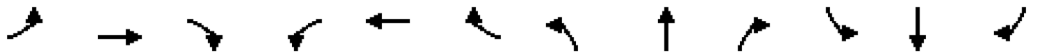
**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 98 | 0 | 10 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 133 | 479 | 0 | 80 | 433 | 88 | 18 | 171 | 0 | 210 | 345 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 30.0 | | 6.5 | 26.3 | 26.3 | 2.2 | 17.5 | | 10.1 | 25.4 | |
| Effective Green, g (s) | 10.1 | 30.0 | | 6.5 | 26.3 | 26.3 | 2.2 | 17.5 | | 10.1 | 25.4 | |
| Actuated g/C Ratio | 0.12 | 0.35 | | 0.08 | 0.31 | 0.31 | 0.03 | 0.20 | | 0.12 | 0.30 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 203 | 628 | | 134 | 573 | 482 | 43 | 367 | | 207 | 518 | |
| v/s Ratio Prot | c0.08 | c0.27 | | 0.05 | 0.23 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.66 | 0.76 | | 0.60 | 0.76 | 0.18 | 0.42 | 0.47 | | 1.01 | 0.67 | |
| Uniform Delay, d1 | 36.0 | 24.6 | | 38.2 | 26.7 | 21.7 | 41.0 | 29.9 | | 37.7 | 26.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.7 | 4.9 | | 4.7 | 5.0 | 0.1 | 2.4 | 0.3 | | 66.4 | 2.5 | |
| Delay (s) | 41.7 | 29.5 | | 42.9 | 31.7 | 21.7 | 43.4 | 30.2 | | 104.0 | 28.8 | |
| Level of Service | D | C | | D | C | C | D | C | | F | C | |
| Approach Delay (s/veh) | | 32.1 | | | 30.3 | | | 31.4 | | | 56.3 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 38.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.4 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# APPENDIX F: 2027 Total Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 191 | 1217 | 565 | 59 | 932 | 440 | 27 | 193 | 87 | 233 | 246 | 231 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1219 | 552 | 1697 | 872 | 821 |
| Grp Volume(v), veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 0 | 218 | 194 | 0 | 198 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1771 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 5.8 | 7.8 | 0.2 | 1.2 | 5.7 | 15.2 | 0.5 | 0.0 | 8.0 | 7.6 | 0.0 | 6.5 |
| Cycle Q Clear(g_c), s | 5.8 | 7.8 | 0.2 | 1.2 | 5.7 | 15.2 | 0.5 | 0.0 | 8.0 | 7.6 | 0.0 | 6.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 191 | 1217 | 565 | 59 | 932 | 440 | 27 | 0 | 280 | 233 | 0 | 477 |
| V/C Ratio(X) | 0.80 | 0.42 | 0.02 | 0.54 | 0.37 | 0.85 | 0.45 | 0.00 | 0.78 | 0.83 | 0.00 | 0.41 |
| Avail Cap(c_a), veh/h | 250 | 2478 | 1151 | 257 | 2416 | 1142 | 257 | 0 | 776 | 242 | 0 | 739 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.6 | 16.6 | 14.2 | 32.4 | 19.7 | 23.1 | 33.2 | 0.0 | 27.5 | 28.6 | 0.0 | 19.9 |
| Incr Delay (d2), s/veh | 9.9 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 4.4 | 0.0 | 1.8 | 19.5 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.8 | 4.5 | 0.1 | 0.9 | 3.4 | 8.5 | 0.4 | 0.0 | 6.0 | 7.5 | 0.0 | 4.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.5 | 16.7 | 14.2 | 35.2 | 19.8 | 24.9 | 37.6 | 0.0 | 29.3 | 48.1 | 0.0 | 20.1 |
| LnGrp LOS | D | B | B | D | B | C | D | | C | D | | C |
| Approach Vol, veh/h | | 679 | | | 751 | | | 230 | | | 392 | |
| Approach Delay, s/veh | | 21.8 | | | 23.0 | | | 29.7 | | | 33.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

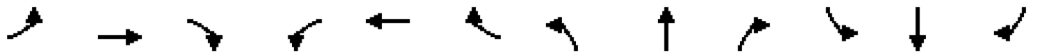
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 16.1 | 7.5 | 29.9 | 6.2 | 24.5 | 12.7 | 24.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 10.0 | 3.2 | 9.8 | 2.5 | 8.5 | 7.8 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 0.7 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.4 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 293 | 0 | 14 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 153 | 517 | 3 | 32 | 346 | 80 | 12 | 204 | 0 | 194 | 173 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 23.1 | 23.1 | 2.6 | 15.8 | 15.8 | 1.0 | 16.5 | | 9.8 | 25.3 | |
| Effective Green, g (s) | 9.8 | 23.1 | 23.1 | 2.6 | 15.8 | 15.8 | 1.0 | 16.5 | | 9.8 | 25.3 | |
| Actuated g/C Ratio | 0.13 | 0.32 | 0.32 | 0.04 | 0.22 | 0.22 | 0.01 | 0.23 | | 0.13 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 232 | 1063 | 498 | 62 | 707 | 337 | 24 | 394 | | 223 | 571 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.11 | | 0.01 | c0.12 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.66 | 0.49 | 0.01 | 0.52 | 0.49 | 0.24 | 0.50 | 0.52 | | 0.87 | 0.30 | |
| Uniform Delay, d1 | 30.2 | 20.3 | 17.2 | 34.7 | 25.2 | 23.8 | 35.9 | 24.9 | | 31.1 | 17.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.1 | 0.1 | 0.0 | 3.0 | 0.2 | 0.1 | 5.8 | 0.5 | | 27.5 | 0.1 | |
| Delay (s) | 35.3 | 20.4 | 17.2 | 37.7 | 25.4 | 23.9 | 41.7 | 25.4 | | 58.6 | 17.7 | |
| Level of Service | D | C | B | D | C | C | D | C | | E | B | |
| Approach Delay (s/veh) | | 23.7 | | | 25.2 | | | 26.2 | | | 37.9 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 27.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 73.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 55.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 24 | 6 | 1 | 182 | 130 | 5 |
| Future Vol, veh/h | 24 | 6 | 1 | 182 | 130 | 5 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 27 | 7 | 1 | 202 | 144 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 357 | 147 | 150 | 0 | - | 0 |
| Stage 1 | 147 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 614 | 900 | 1001 | - | - | - |
| Stage 1 | 847 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 614 | 900 | 1001 | - | - | - |
| Mov Cap-2 Maneuver | 614 | - | - | - | - | - |
| Stage 1 | 846 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.79 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 655 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.051 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

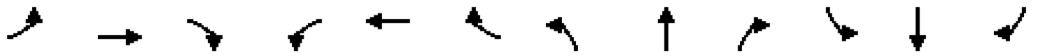
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Future Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 701 | 1 | 7 | 425 | 0 | 3 | 0 | 19 | 1 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 425 | 0 | 0 | 702 | 0 | 0 | 930 | 1142 | 351 | 791 | 1143 | 213 |
| Stage 1 | - | - | - | - | - | - | 704 | 704 | - | 438 | 438 | - |
| Stage 2 | - | - | - | - | - | - | 226 | 438 | - | 353 | 704 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 1130 | - | - | 891 | - | - | 222 | 199 | 645 | 280 | 199 | 793 |
| Stage 1 | - | - | - | - | - | - | 394 | 438 | - | 567 | 577 | - |
| Stage 2 | - | - | - | - | - | - | 756 | 577 | - | 637 | 437 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1130 | - | - | 891 | - | - | 218 | 197 | 645 | 270 | 197 | 793 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 319 | 314 | - | 390 | 311 | - |
| Stage 1 | - | - | - | - | - | - | 393 | 437 | - | 563 | 573 | - |
| Stage 2 | - | - | - | - | - | - | 744 | 573 | - | 618 | 437 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.01 | 0.14 | 11.7 | 10.27 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 559 | 1130 | - | - | 891 | - | - | 691 |
| HCM Lane V/C Ratio | 0.039 | 0.001 | - | - | 0.007 | - | - | 0.011 |
| HCM Control Delay (s/veh) | 11.7 | 8.2 | - | - | 9.1 | - | - | 10.3 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 171 | 770 | 355 | 122 | 683 | 302 | 38 | 197 | 70 | 260 | 276 | 205 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.07 | 0.19 | 0.19 | 0.02 | 0.15 | 0.15 | 0.15 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1318 | 468 | 1767 | 998 | 739 |
| Grp Volume(v), veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 0 | 187 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1786 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 3.9 | 6.5 | 0.3 | 2.5 | 6.1 | 5.7 | 0.5 | 0.0 | 5.2 | 6.0 | 0.0 | 10.2 |
| Cycle Q Clear(g_c), s | 3.9 | 6.5 | 0.3 | 2.5 | 6.1 | 5.7 | 0.5 | 0.0 | 5.2 | 6.0 | 0.0 | 10.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 171 | 770 | 355 | 122 | 683 | 302 | 38 | 0 | 267 | 260 | 0 | 481 |
| V/C Ratio(X) | 0.79 | 0.62 | 0.03 | 0.71 | 0.66 | 0.62 | 0.48 | 0.00 | 0.70 | 0.81 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h | 324 | 3264 | 1504 | 335 | 3371 | 1492 | 322 | 0 | 1022 | 329 | 0 | 991 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.9 | 18.2 | 15.8 | 23.7 | 19.5 | 19.3 | 25.2 | 0.0 | 21.0 | 21.5 | 0.0 | 17.3 |
| Incr Delay (d2), s/veh | 3.0 | 0.3 | 0.0 | 2.8 | 0.4 | 0.8 | 3.5 | 0.0 | 1.2 | 8.8 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 3.7 | 0.1 | 1.7 | 3.6 | 3.1 | 0.4 | 0.0 | 3.6 | 5.1 | 0.0 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 25.9 | 18.5 | 15.8 | 26.5 | 19.9 | 20.1 | 28.6 | 0.0 | 22.3 | 30.3 | 0.0 | 18.3 |
| LnGrp LOS | C | B | B | C | B | C | C | | C | C | | B |
| Approach Vol, veh/h | | 623 | | | 725 | | | 205 | | | 579 | |
| Approach Delay, s/veh | | 20.1 | | | 20.7 | | | 22.8 | | | 22.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

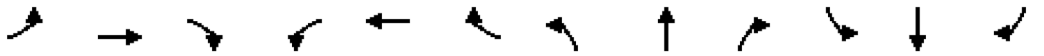
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.0 | 13.1 | 8.8 | 17.3 | 6.3 | 19.7 | 10.4 | 15.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 7.2 | 4.5 | 8.5 | 2.5 | 12.2 | 5.9 | 8.1 |
| Green Ext Time (p_c), s | 0.1 | 0.6 | 0.0 | 1.8 | 0.0 | 1.3 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 149 | 0 | 11 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 134 | 479 | 3 | 86 | 451 | 39 | 18 | 176 | 0 | 210 | 350 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 18.8 | 18.8 | 6.6 | 15.4 | 15.4 | 1.1 | 17.0 | | 9.9 | 25.8 | |
| Effective Green, g (s) | 9.9 | 18.8 | 18.8 | 6.6 | 15.4 | 15.4 | 1.1 | 17.0 | | 9.9 | 25.8 | |
| Actuated g/C Ratio | 0.13 | 0.26 | 0.26 | 0.09 | 0.21 | 0.21 | 0.01 | 0.23 | | 0.13 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 231 | 870 | 404 | 158 | 740 | 328 | 25 | 413 | | 235 | 611 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.05 | 0.13 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.03 | | | | | | |
| v/c Ratio | 0.58 | 0.55 | 0.01 | 0.54 | 0.61 | 0.12 | 0.72 | 0.43 | | 0.89 | 0.57 | |
| Uniform Delay, d1 | 29.9 | 23.7 | 20.4 | 32.1 | 26.4 | 23.6 | 36.1 | 24.1 | | 31.3 | 19.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.4 | 0.4 | 0.0 | 2.0 | 1.0 | 0.1 | 60.2 | 0.3 | | 31.2 | 0.8 | |
| Delay (s) | 32.3 | 24.2 | 20.4 | 34.1 | 27.4 | 23.7 | 96.2 | 24.4 | | 62.6 | 20.2 | |
| Level of Service | C | C | C | C | C | C | F | C | | E | C | |
| Approach Delay (s/veh) | | 25.9 | | | 27.2 | | | 30.7 | | | 35.6 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 73.6 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 61.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 2 | 8 | 177 | 261 | 31 |
| Future Vol, veh/h | 16 | 2 | 8 | 177 | 261 | 31 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 2 | 9 | 192 | 284 | 34 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 516 | 301 | 317 | 0 | - | 0 |
| Stage 1 | 301 | - | - | - | - | - |
| Stage 2 | 216 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 519 | 739 | 1243 | - | - | - |
| Stage 1 | 751 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 515 | 739 | 1243 | - | - | - |
| Mov Cap-2 Maneuver | 515 | - | - | - | - | - |
| Stage 1 | 745 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.01 | 0.34 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 533 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.037 | - | - |
| HCM Control Delay (s/veh) | 7.9 | 0 | 12 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

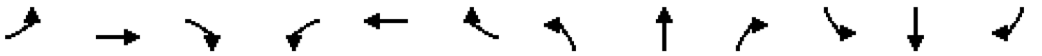
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 658 | 3 | 22 | 657 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 659 | 0 | 0 | 661 | 0 | 0 | 1036 | 1367 | 331 | 1034 | 1367 | 329 |
| Stage 1 | - | - | - | - | - | - | 664 | 664 | - | 701 | 701 | - |
| Stage 2 | - | - | - | - | - | - | 372 | 703 | - | 333 | 666 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 925 | - | - | 923 | - | - | 186 | 146 | 665 | 186 | 146 | 667 |
| Stage 1 | - | - | - | - | - | - | 416 | 456 | - | 395 | 439 | - |
| Stage 2 | - | - | - | - | - | - | 620 | 438 | - | 654 | 456 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 925 | - | - | 923 | - | - | 180 | 142 | 665 | 178 | 142 | 667 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 302 | 265 | - | 292 | 261 | - |
| Stage 1 | - | - | - | - | - | - | 415 | 455 | - | 386 | 429 | - |
| Stage 2 | - | - | - | - | - | - | 603 | 428 | - | 641 | 455 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.29 | 11.57 | 12.19 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 561 | 925 | - | - | 923 | - | - | 505 |
| HCM Lane V/C Ratio | 0.024 | 0.002 | - | - | 0.024 | - | - | 0.008 |
| HCM Control Delay (s/veh) | 11.6 | 8.9 | - | - | 9 | - | - | 12.2 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |



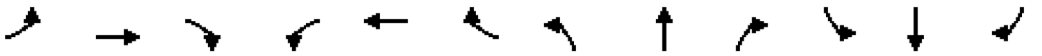
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 191 | 625 | 11 | 60 | 488 | 438 | 27 | 192 | 87 | 233 | 245 | 231 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 1760 | 31 | 1781 | 1752 | 1572 | 1781 | 1219 | 552 | 1697 | 872 | 821 |
| Grp Volume(v), veh/h | 153 | 0 | 526 | 32 | 346 | 373 | 12 | 0 | 218 | 194 | 0 | 198 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1771 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 5.8 | 0.0 | 18.1 | 1.2 | 12.0 | 15.2 | 0.5 | 0.0 | 8.0 | 7.5 | 0.0 | 6.4 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 18.1 | 1.2 | 12.0 | 15.2 | 0.5 | 0.0 | 8.0 | 7.5 | 0.0 | 6.4 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 191 | 0 | 636 | 60 | 488 | 438 | 27 | 0 | 279 | 233 | 0 | 476 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.83 | 0.54 | 0.71 | 0.85 | 0.45 | 0.00 | 0.78 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 252 | 0 | 1441 | 258 | 1410 | 1265 | 258 | 0 | 650 | 243 | 0 | 619 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.4 | 0.0 | 19.9 | 32.2 | 21.9 | 23.1 | 33.0 | 0.0 | 27.4 | 28.4 | 0.0 | 19.8 |
| Incr Delay (d2), s/veh | 9.7 | 0.0 | 1.1 | 2.8 | 0.7 | 1.8 | 4.4 | 0.0 | 1.8 | 19.2 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.8 | 0.0 | 10.3 | 0.9 | 7.6 | 8.5 | 0.4 | 0.0 | 5.9 | 7.4 | 0.0 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.1 | 0.0 | 21.0 | 34.9 | 22.7 | 24.9 | 37.4 | 0.0 | 29.2 | 47.6 | 0.0 | 20.0 |
| LnGrp LOS | D | | C | C | C | C | D | | C | D | | B |
| Approach Vol, veh/h | | 679 | | | 751 | | | 230 | | | 392 | |
| Approach Delay, s/veh | | 25.0 | | | 24.3 | | | 29.6 | | | 33.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 15.9 | 7.5 | 29.6 | 6.2 | 24.3 | 12.7 | 24.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 10.0 | 3.2 | 20.1 | 2.5 | 8.4 | 7.8 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.7 | 0.0 | 0.6 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.9 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 244 | 0 | 13 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 153 | 525 | 0 | 32 | 346 | 129 | 12 | 205 | 0 | 194 | 173 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 34.1 | | 3.8 | 27.7 | 27.7 | 1.0 | 18.9 | | 10.1 | 28.0 | |
| Effective Green, g (s) | 10.1 | 34.1 | | 3.8 | 27.7 | 27.7 | 1.0 | 18.9 | | 10.1 | 28.0 | |
| Actuated g/C Ratio | 0.11 | 0.39 | | 0.04 | 0.31 | 0.31 | 0.01 | 0.21 | | 0.11 | 0.32 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 198 | 685 | | 76 | 542 | 492 | 20 | 375 | | 191 | 525 | |
| v/s Ratio Prot | c0.09 | c0.30 | | 0.02 | 0.20 | | 0.01 | c0.12 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.08 | | | | | | |
| v/c Ratio | 0.77 | 0.77 | | 0.42 | 0.64 | 0.26 | 0.60 | 0.55 | | 1.02 | 0.33 | |
| Uniform Delay, d1 | 37.9 | 23.6 | | 41.1 | 26.0 | 22.6 | 43.4 | 30.8 | | 39.1 | 23.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 15.6 | 4.6 | | 1.4 | 1.8 | 0.1 | 30.1 | 0.9 | | 69.3 | 0.1 | |
| Delay (s) | 53.5 | 28.2 | | 42.5 | 27.8 | 22.7 | 73.5 | 31.7 | | 108.3 | 23.1 | |
| Level of Service | D | C | | D | C | C | E | C | | F | C | |
| Approach Delay (s/veh) | | 33.9 | | | 25.9 | | | 33.9 | | | 65.3 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 37.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 88.2 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 67.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

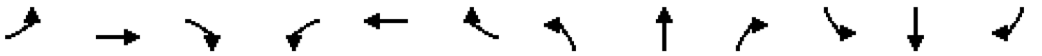
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | ↰ | ↑ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Future Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 100 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 701 | 1 | 6 | 425 | 0 | 3 | 0 | 19 | 1 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 425 | 0 | 0 | 702 | 0 | 0 | 1141 | 1141 | 702 | 1141 | 1142 | 425 |
| Stage 1 | - | - | - | - | - | - | 704 | 704 | - | 437 | 437 | - |
| Stage 2 | - | - | - | - | - | - | 437 | 437 | - | 703 | 704 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1134 | - | - | 895 | - | - | 178 | 201 | 438 | 178 | 200 | 629 |
| Stage 1 | - | - | - | - | - | - | 428 | 440 | - | 598 | 579 | - |
| Stage 2 | - | - | - | - | - | - | 598 | 579 | - | 428 | 439 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1134 | - | - | 895 | - | - | 174 | 199 | 438 | 169 | 199 | 629 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 174 | 199 | - | 169 | 199 | - |
| Stage 1 | - | - | - | - | - | - | 427 | 439 | - | 594 | 575 | - |
| Stage 2 | - | - | - | - | - | - | 588 | 575 | - | 409 | 439 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.01 | 0.13 | 15.74 | 13.09 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 357 | 3 | - | - | 895 | - | - | 453 |
| HCM Lane V/C Ratio | 0.062 | 0.001 | - | - | 0.007 | - | - | 0.017 |
| HCM Control Delay (s/veh) | 15.7 | 8.2 | 0 | - | 9 | - | - | 13.1 |
| HCM Lane LOS | C | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0.1 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 169 | 568 | 12 | 111 | 533 | 448 | 37 | 185 | 66 | 253 | 263 | 195 |
| Arrive On Green | 0.10 | 0.32 | 0.32 | 0.06 | 0.28 | 0.28 | 0.02 | 0.14 | 0.14 | 0.14 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1739 | 1768 | 37 | 1781 | 1870 | 1572 | 1711 | 1318 | 468 | 1767 | 998 | 739 |
| Grp Volume(v), veh/h | 134 | 0 | 489 | 86 | 451 | 188 | 18 | 0 | 187 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1804 | 1781 | 1870 | 1572 | 1711 | 0 | 1786 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 4.8 | 0.0 | 16.2 | 3.1 | 14.6 | 6.2 | 0.7 | 0.0 | 6.5 | 7.4 | 0.0 | 12.8 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 16.2 | 3.1 | 14.6 | 6.2 | 0.7 | 0.0 | 6.5 | 7.4 | 0.0 | 12.8 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 169 | 0 | 580 | 111 | 533 | 448 | 37 | 0 | 250 | 253 | 0 | 458 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.84 | 0.78 | 0.85 | 0.42 | 0.49 | 0.00 | 0.75 | 0.83 | 0.00 | 0.81 |
| Avail Cap(c_a), veh/h | 262 | 0 | 1527 | 272 | 1583 | 1331 | 261 | 0 | 689 | 267 | 0 | 667 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.4 | 0.0 | 20.3 | 29.7 | 21.7 | 18.7 | 31.1 | 0.0 | 26.5 | 26.8 | 0.0 | 22.1 |
| Incr Delay (d2), s/veh | 3.9 | 0.0 | 1.3 | 4.4 | 1.5 | 0.2 | 3.8 | 0.0 | 1.7 | 17.2 | 0.0 | 2.8 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.5 | 0.0 | 9.6 | 2.3 | 9.2 | 3.4 | 0.5 | 0.0 | 4.8 | 7.4 | 0.0 | 8.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 32.3 | 0.0 | 21.6 | 34.1 | 23.1 | 18.9 | 34.9 | 0.0 | 28.2 | 43.9 | 0.0 | 24.9 |
| LnGrp LOS | C | | C | C | C | B | C | | C | D | | C |
| Approach Vol, veh/h | | 623 | | | 725 | | | 205 | | | 579 | |
| Approach Delay, s/veh | | 23.9 | | | 23.3 | | | 28.8 | | | 31.8 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.5 | 14.3 | 9.2 | 26.3 | 6.6 | 22.3 | 11.6 | 23.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 8.5 | 5.1 | 18.2 | 2.7 | 14.8 | 6.8 | 16.6 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.6 | 0.0 | 1.1 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.3 |
| HCM 7th LOS | C |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 94 | 0 | 10 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 134 | 488 | 0 | 86 | 451 | 94 | 18 | 177 | 0 | 210 | 349 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 30.8 | | 6.7 | 27.3 | 27.3 | 2.2 | 17.6 | | 10.1 | 25.5 | |
| Effective Green, g (s) | 10.1 | 30.8 | | 6.7 | 27.3 | 27.3 | 2.2 | 17.6 | | 10.1 | 25.5 | |
| Actuated g/C Ratio | 0.12 | 0.36 | | 0.08 | 0.32 | 0.32 | 0.03 | 0.20 | | 0.12 | 0.29 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 200 | 636 | | 137 | 587 | 494 | 42 | 364 | | 204 | 514 | |
| v/s Ratio Prot | c0.08 | c0.27 | | 0.05 | 0.24 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.67 | 0.77 | | 0.63 | 0.77 | 0.19 | 0.43 | 0.49 | | 1.03 | 0.68 | |
| Uniform Delay, d1 | 36.6 | 24.7 | | 38.7 | 26.7 | 21.6 | 41.5 | 30.4 | | 38.2 | 26.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.7 | 5.0 | | 6.3 | 5.4 | 0.1 | 2.5 | 0.4 | | 70.9 | 2.8 | |
| Delay (s) | 43.3 | 29.7 | | 45.0 | 32.2 | 21.6 | 44.1 | 30.8 | | 109.1 | 29.7 | |
| Level of Service | D | C | | D | C | C | D | C | | F | C | |
| Approach Delay (s/veh) | | 32.6 | | | 31.0 | | | 32.0 | | | 58.5 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 39.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 86.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 72.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

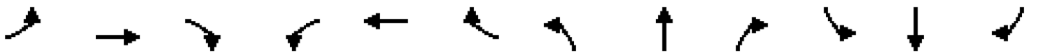
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 658 | 3 | 22 | 657 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 659 | 0 | 0 | 661 | 0 | 0 | 1365 | 1367 | 660 | 1365 | 1368 | 658 |
| Stage 1 | - | - | - | - | - | - | 664 | 664 | - | 702 | 702 | - |
| Stage 2 | - | - | - | - | - | - | 701 | 703 | - | 663 | 666 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 929 | - | - | 927 | - | - | 125 | 147 | 463 | 125 | 147 | 464 |
| Stage 1 | - | - | - | - | - | - | 450 | 458 | - | 429 | 440 | - |
| Stage 2 | - | - | - | - | - | - | 429 | 440 | - | 451 | 458 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 929 | - | - | 927 | - | - | 120 | 143 | 463 | 118 | 143 | 464 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 120 | 143 | - | 118 | 143 | - |
| Stage 1 | - | - | - | - | - | - | 448 | 457 | - | 419 | 430 | - |
| Stage 2 | - | - | - | - | - | - | 416 | 430 | - | 438 | 456 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.29 | 16.67 | 18.64 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 322 | 6 | - | - | 927 | - | - | 268 |
| HCM Lane V/C Ratio | 0.042 | 0.002 | - | - | 0.024 | - | - | 0.016 |
| HCM Control Delay (s/veh) | 16.7 | 8.9 | 0 | - | 9 | - | - | 18.6 |
| HCM Lane LOS | C | A | A | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Future Volume (veh/h) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 152 | 83 | 194 | 103 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 188 | 1194 | 555 | 67 | 928 | 438 | 34 | 191 | 105 | 232 | 255 | 233 |
| Arrive On Green | 0.11 | 0.35 | 0.35 | 0.04 | 0.28 | 0.28 | 0.02 | 0.17 | 0.17 | 0.14 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1137 | 621 | 1697 | 886 | 809 |
| Grp Volume(v), veh/h | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 0 | 235 | 194 | 0 | 197 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1759 | 1697 | 0 | 1695 |
| Q Serve(g_s), s | 5.9 | 7.8 | 0.3 | 1.5 | 5.7 | 15.6 | 0.6 | 0.0 | 8.9 | 7.8 | 0.0 | 6.5 |
| Cycle Q Clear(g_c), s | 5.9 | 7.8 | 0.3 | 1.5 | 5.7 | 15.6 | 0.6 | 0.0 | 8.9 | 7.8 | 0.0 | 6.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.35 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 188 | 1194 | 555 | 67 | 928 | 438 | 34 | 0 | 296 | 232 | 0 | 487 |
| V/C Ratio(X) | 0.80 | 0.42 | 0.02 | 0.57 | 0.37 | 0.85 | 0.47 | 0.00 | 0.79 | 0.84 | 0.00 | 0.40 |
| Avail Cap(c_a), veh/h | 244 | 2422 | 1125 | 251 | 2362 | 1116 | 251 | 0 | 753 | 236 | 0 | 723 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.4 | 17.2 | 14.8 | 32.9 | 20.2 | 23.7 | 33.8 | 0.0 | 27.8 | 29.3 | 0.0 | 20.0 |
| Incr Delay (d2), s/veh | 10.4 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 3.7 | 0.0 | 1.8 | 20.6 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 4.6 | 0.2 | 1.1 | 3.4 | 8.8 | 0.5 | 0.0 | 6.6 | 7.7 | 0.0 | 4.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 40.8 | 17.3 | 14.8 | 35.8 | 20.3 | 25.6 | 37.5 | 0.0 | 29.6 | 49.9 | 0.0 | 20.2 |
| LnGrp LOS | D | B | B | D | C | C | D | | C | D | | C |
| Approach Vol, veh/h | | 662 | | | 751 | | | 251 | | | 391 | |
| Approach Delay, s/veh | | 22.6 | | | 23.7 | | | 30.1 | | | 34.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.8 | 17.0 | 7.8 | 30.0 | 6.5 | 25.3 | 12.8 | 25.0 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.8 | 10.9 | 3.5 | 9.8 | 2.6 | 8.5 | 7.9 | 17.6 |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Future Volume (vph) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1740 | | 1671 | 1658 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1740 | | 1671 | 1658 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 152 | 83 | 194 | 103 | 94 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 297 | 0 | 17 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 151 | 501 | 3 | 38 | 340 | 76 | 16 | 218 | 0 | 194 | 174 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 20.8 | 20.8 | 3.9 | 14.8 | 14.8 | 1.1 | 17.3 | | 9.8 | 26.0 | |
| Effective Green, g (s) | 9.8 | 20.8 | 20.8 | 3.9 | 14.8 | 14.8 | 1.1 | 17.3 | | 9.8 | 26.0 | |
| Actuated g/C Ratio | 0.13 | 0.28 | 0.28 | 0.05 | 0.20 | 0.20 | 0.02 | 0.24 | | 0.13 | 0.36 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 232 | 960 | 450 | 94 | 664 | 317 | 26 | 411 | | 224 | 589 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.10 | | 0.01 | c0.13 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.65 | 0.52 | 0.01 | 0.40 | 0.51 | 0.24 | 0.62 | 0.53 | | 0.87 | 0.30 | |
| Uniform Delay, d1 | 30.0 | 22.0 | 18.7 | 33.5 | 25.9 | 24.4 | 35.8 | 24.4 | | 31.0 | 17.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.9 | 0.2 | 0.0 | 1.0 | 0.3 | 0.1 | 26.7 | 0.7 | | 26.9 | 0.1 | |
| Delay (s) | 34.9 | 22.2 | 18.7 | 34.5 | 26.2 | 24.6 | 62.5 | 25.0 | | 57.9 | 17.1 | |
| Level of Service | C | C | B | C | C | C | E | C | | E | B | |
| Approach Delay (s/veh) | | 25.1 | | | 25.8 | | | 27.4 | | | 37.3 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 28.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 73.1 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

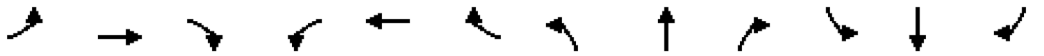
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 43 | 6 | 1 | 182 | 130 | 12 |
| Future Vol, veh/h | 43 | 6 | 1 | 182 | 130 | 12 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 48 | 7 | 1 | 202 | 144 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 361 | 151 | 158 | 0 | - | 0 |
| Stage 1 | 151 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 611 | 895 | 993 | - | - | - |
| Stage 1 | 844 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 610 | 895 | 993 | - | - | - |
| Mov Cap-2 Maneuver | 610 | - | - | - | - | - |
| Stage 1 | 843 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.2 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 635 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.086 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 11.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Future Volume (veh/h) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 139 | 59 | 210 | 214 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 169 | 720 | 331 | 135 | 659 | 292 | 41 | 196 | 83 | 260 | 284 | 206 |
| Arrive On Green | 0.10 | 0.21 | 0.21 | 0.08 | 0.19 | 0.19 | 0.02 | 0.16 | 0.16 | 0.15 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1246 | 529 | 1767 | 1008 | 730 |
| Grp Volume(v), veh/h | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 0 | 198 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1775 | 1767 | 0 | 1739 |
| Q Serve(g_s), s | 3.9 | 6.5 | 0.3 | 3.0 | 5.9 | 5.8 | 0.6 | 0.0 | 5.5 | 6.0 | 0.0 | 10.1 |
| Cycle Q Clear(g_c), s | 3.9 | 6.5 | 0.3 | 3.0 | 5.9 | 5.8 | 0.6 | 0.0 | 5.5 | 6.0 | 0.0 | 10.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 169 | 720 | 331 | 135 | 659 | 292 | 41 | 0 | 279 | 260 | 0 | 490 |
| V/C Ratio(X) | 0.78 | 0.65 | 0.04 | 0.78 | 0.65 | 0.64 | 0.48 | 0.00 | 0.71 | 0.81 | 0.00 | 0.75 |
| Avail Cap(c_a), veh/h | 324 | 3264 | 1504 | 335 | 3371 | 1492 | 322 | 0 | 1016 | 329 | 0 | 992 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.0 | 18.9 | 16.4 | 23.6 | 19.7 | 19.6 | 25.1 | 0.0 | 20.8 | 21.5 | 0.0 | 17.0 |
| Incr Delay (d2), s/veh | 3.0 | 0.4 | 0.0 | 3.6 | 0.4 | 0.9 | 3.2 | 0.0 | 1.3 | 8.8 | 0.0 | 0.9 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 3.7 | 0.2 | 2.1 | 3.5 | 3.1 | 0.5 | 0.0 | 3.8 | 5.1 | 0.0 | 6.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 26.0 | 19.2 | 16.4 | 27.2 | 20.1 | 20.5 | 28.3 | 0.0 | 22.1 | 30.3 | 0.0 | 17.9 |
| LnGrp LOS | C | B | B | C | C | C | C | | C | C | | B |
| Approach Vol, veh/h | | 616 | | | 724 | | | 218 | | | 579 | |
| Approach Delay, s/veh | | 20.6 | | | 21.2 | | | 22.7 | | | 22.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

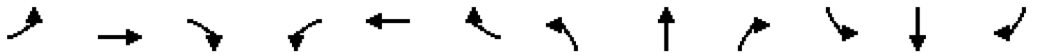
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.0 | 13.5 | 9.1 | 16.5 | 6.5 | 20.0 | 10.4 | 15.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 7.5 | 5.0 | 8.5 | 2.6 | 12.1 | 5.9 | 7.9 |
| Green Ext Time (p_c), s | 0.1 | 0.7 | 0.0 | 1.7 | 0.0 | 1.3 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.5 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Future Volume (vph) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1779 | | 1752 | 1745 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1779 | | 1752 | 1745 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 139 | 59 | 210 | 214 | 155 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 152 | 0 | 13 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 133 | 470 | 3 | 105 | 431 | 36 | 20 | 185 | 0 | 210 | 350 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 15.4 | 15.4 | 8.5 | 13.9 | 13.9 | 2.2 | 17.5 | | 9.9 | 25.2 | |
| Effective Green, g (s) | 9.9 | 15.4 | 15.4 | 8.5 | 13.9 | 13.9 | 2.2 | 17.5 | | 9.9 | 25.2 | |
| Actuated g/C Ratio | 0.14 | 0.21 | 0.21 | 0.12 | 0.19 | 0.19 | 0.03 | 0.24 | | 0.14 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 234 | 722 | 335 | 207 | 677 | 300 | 51 | 428 | | 238 | 605 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.06 | 0.12 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.02 | | | | | | |
| v/c Ratio | 0.57 | 0.65 | 0.01 | 0.51 | 0.64 | 0.12 | 0.39 | 0.43 | | 0.88 | 0.58 | |
| Uniform Delay, d1 | 29.3 | 26.1 | 22.6 | 30.1 | 27.0 | 24.3 | 34.5 | 23.3 | | 30.8 | 19.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.9 | 1.6 | 0.0 | 0.7 | 1.4 | 0.1 | 1.8 | 0.3 | | 28.8 | 0.8 | |
| Delay (s) | 31.2 | 27.8 | 22.6 | 30.8 | 28.5 | 24.4 | 36.4 | 23.6 | | 59.6 | 20.2 | |
| Level of Service | C | C | C | C | C | C | D | C | | E | C | |
| Approach Delay (s/veh) | | 28.4 | | | 27.7 | | | 24.8 | | | 34.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 72.6 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 60.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 28 | 2 | 8 | 177 | 261 | 55 |
| Future Vol, veh/h | 28 | 2 | 8 | 177 | 261 | 55 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 30 | 2 | 9 | 192 | 284 | 60 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 529 | 314 | 343 | 0 | - | 0 |
| Stage 1 | 314 | - | - | - | - | - |
| Stage 2 | 216 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 510 | 727 | 1216 | - | - | - |
| Stage 1 | 741 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 506 | 727 | 1216 | - | - | - |
| Mov Cap-2 Maneuver | 506 | - | - | - | - | - |
| Stage 1 | 735 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.44 | 0.35 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 516 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.063 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.4 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

# APPENDIX G: 2032 Background Synchro Reports

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Future Volume (veh/h) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 161 | 61 | 214 | 111 | 104 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 242 | 1379 | 640 | 61 | 995 | 705 | 28 | 199 | 76 | 253 | 253 | 237 |
| Arrive On Green | 0.14 | 0.40 | 0.40 | 0.03 | 0.30 | 0.30 | 0.02 | 0.15 | 0.15 | 0.15 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1293 | 490 | 1697 | 874 | 819 |
| Grp Volume(v), veh/h | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 0 | 222 | 214 | 0 | 215 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1782 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 9.3 | 12.1 | 0.4 | 1.6 | 9.2 | 21.2 | 0.6 | 0.0 | 10.0 | 10.2 | 0.0 | 8.6 |
| Cycle Q Clear(g_c), s | 9.3 | 12.1 | 0.4 | 1.6 | 9.2 | 21.2 | 0.6 | 0.0 | 10.0 | 10.2 | 0.0 | 8.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 242 | 1379 | 640 | 61 | 995 | 705 | 28 | 0 | 275 | 253 | 0 | 489 |
| V/C Ratio(X) | 0.84 | 0.49 | 0.02 | 0.59 | 0.46 | 0.71 | 0.47 | 0.00 | 0.81 | 0.85 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 629 | 2037 | 946 | 211 | 1183 | 793 | 211 | 0 | 857 | 609 | 0 | 1222 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.8 | 18.3 | 14.8 | 39.4 | 23.5 | 18.4 | 40.4 | 0.0 | 33.8 | 34.3 | 0.0 | 24.0 |
| Incr Delay (d2), s/veh | 2.9 | 0.1 | 0.0 | 3.4 | 0.1 | 1.9 | 4.5 | 0.0 | 2.2 | 3.0 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.8 | 7.3 | 0.2 | 1.3 | 5.8 | 10.9 | 0.5 | 0.0 | 7.7 | 7.6 | 0.0 | 5.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.7 | 18.4 | 14.8 | 42.8 | 23.7 | 20.4 | 44.9 | 0.0 | 36.0 | 37.3 | 0.0 | 24.2 |
| LnGrp LOS | D | B | B | D | C | C | D | | D | D | | C |
| Approach Vol, veh/h | | 887 | | | 988 | | | 235 | | | 429 | |
| Approach Delay, s/veh | | 22.7 | | | 22.7 | | | 36.5 | | | 30.7 | |
| Approach LOS | | C | | | C | | | D | | | C | |

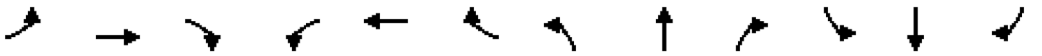
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.6 | 18.1 | 8.0 | 39.0 | 6.5 | 29.2 | 16.7 | 30.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 29.7 | * 40 | 9.8 | 49.4 | 9.8 | 59.7 | 29.7 | 29.4 |
| Max Q Clear Time (g_c+I1), s | 12.2 | 12.0 | 3.6 | 14.1 | 2.6 | 10.6 | 11.3 | 23.2 |
| Green Ext Time (p_c), s | 0.3 | 0.8 | 0.0 | 2.6 | 0.0 | 0.9 | 0.2 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Future Volume (vph) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1767 | | 1671 | 1656 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1767 | | 1671 | 1656 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 161 | 61 | 214 | 111 | 104 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 251 | 0 | 9 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 202 | 673 | 4 | 36 | 454 | 247 | 13 | 213 | 0 | 214 | 192 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.7 | 34.5 | 34.5 | 4.1 | 21.8 | 39.7 | 2.0 | 21.1 | | 17.9 | 37.0 | |
| Effective Green, g (s) | 16.7 | 34.5 | 34.5 | 4.1 | 21.8 | 39.7 | 2.0 | 21.1 | | 17.9 | 37.0 | |
| Actuated g/C Ratio | 0.17 | 0.35 | 0.35 | 0.04 | 0.22 | 0.40 | 0.02 | 0.21 | | 0.18 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 293 | 1176 | 552 | 73 | 723 | 629 | 35 | 376 | | 302 | 619 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.07 | 0.01 | c0.12 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.09 | | | | | | |
| v/c Ratio | 0.69 | 0.57 | 0.01 | 0.49 | 0.63 | 0.39 | 0.37 | 0.57 | | 0.71 | 0.31 | |
| Uniform Delay, d1 | 38.7 | 26.2 | 21.0 | 46.4 | 34.9 | 21.0 | 47.8 | 34.8 | | 38.0 | 21.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.3 | 0.4 | 0.0 | 1.9 | 1.2 | 0.1 | 2.4 | 1.2 | | 6.1 | 0.1 | |
| Delay (s) | 44.0 | 26.6 | 21.0 | 48.3 | 36.1 | 21.2 | 50.2 | 36.0 | | 44.1 | 22.0 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 30.5 | | | 29.0 | | | 36.8 | | | 33.1 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 30.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 98.9 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 62.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

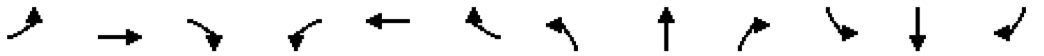
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 5 | 1 | 195 | 142 | 3 |
| Future Vol, veh/h | 16 | 5 | 1 | 195 | 142 | 3 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 18 | 6 | 1 | 217 | 158 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 383 | 159 | 161 | 0 | - | 0 |
| Stage 1 | 159 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 593 | 886 | 990 | - | - | - |
| Stage 1 | 836 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 592 | 886 | 990 | - | - | - |
| Mov Cap-2 Maneuver | 592 | - | - | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.81 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 643 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.036 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Future Volume (veh/h) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 149 | 46 | 232 | 229 | 170 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 223 | 977 | 450 | 122 | 792 | 602 | 38 | 201 | 62 | 283 | 285 | 212 |
| Arrive On Green | 0.13 | 0.28 | 0.28 | 0.07 | 0.22 | 0.22 | 0.02 | 0.15 | 0.15 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1371 | 423 | 1767 | 997 | 740 |
| Grp Volume(v), veh/h | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 0 | 195 | 232 | 0 | 399 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1794 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 6.2 | 10.1 | 0.3 | 3.3 | 9.5 | 7.4 | 0.7 | 0.0 | 6.5 | 8.0 | 0.0 | 13.4 |
| Cycle Q Clear(g_c), s | 6.2 | 10.1 | 0.3 | 3.3 | 9.5 | 7.4 | 0.7 | 0.0 | 6.5 | 8.0 | 0.0 | 13.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 223 | 977 | 450 | 122 | 792 | 602 | 38 | 0 | 263 | 283 | 0 | 497 |
| V/C Ratio(X) | 0.80 | 0.64 | 0.02 | 0.78 | 0.73 | 0.42 | 0.49 | 0.00 | 0.74 | 0.82 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 684 | 3253 | 1498 | 278 | 2511 | 1363 | 267 | 0 | 994 | 695 | 0 | 1374 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.6 | 19.7 | 16.2 | 28.8 | 22.7 | 14.2 | 30.4 | 0.0 | 25.7 | 25.5 | 0.0 | 20.8 |
| Incr Delay (d2), s/veh | 2.5 | 0.3 | 0.0 | 4.0 | 0.5 | 0.2 | 3.6 | 0.0 | 1.6 | 2.2 | 0.0 | 1.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 6.0 | 0.2 | 2.5 | 6.0 | 3.7 | 0.6 | 0.0 | 4.8 | 5.9 | 0.0 | 8.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.1 | 20.0 | 16.2 | 32.7 | 23.2 | 14.4 | 34.0 | 0.0 | 27.2 | 27.8 | 0.0 | 22.0 |
| LnGrp LOS | C | B | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 819 | | | 924 | | | 214 | | | 631 | |
| Approach Delay, s/veh | | 21.9 | | | 21.8 | | | 27.8 | | | 24.1 | |
| Approach LOS | | C | | | C | | | C | | | C | |

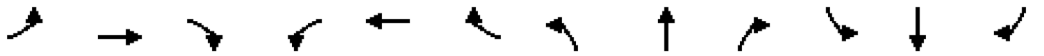
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.4 | 14.5 | 9.5 | 23.4 | 6.6 | 23.3 | 13.4 | 19.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 8.5 | 5.3 | 12.1 | 2.7 | 15.4 | 8.2 | 11.5 |
| Green Ext Time (p_c), s | 0.3 | 0.7 | 0.0 | 2.4 | 0.0 | 1.7 | 0.2 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 22.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Future Volume (vph) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1797 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1797 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 149 | 46 | 232 | 229 | 170 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 139 | 0 | 8 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 178 | 630 | 3 | 95 | 578 | 112 | 19 | 187 | 0 | 232 | 382 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.2 | 27.1 | 27.1 | 9.5 | 21.3 | 39.6 | 2.3 | 19.1 | | 18.3 | 35.1 | |
| Effective Green, g (s) | 15.2 | 27.1 | 27.1 | 9.5 | 21.3 | 39.6 | 2.3 | 19.1 | | 18.3 | 35.1 | |
| Actuated g/C Ratio | 0.16 | 0.28 | 0.28 | 0.10 | 0.22 | 0.42 | 0.02 | 0.20 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 274 | 968 | 450 | 176 | 790 | 651 | 40 | 360 | | 336 | 642 | |
| v/s Ratio Prot | c0.10 | c0.18 | | 0.05 | c0.16 | 0.03 | 0.01 | 0.10 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.65 | 0.65 | 0.01 | 0.54 | 0.73 | 0.17 | 0.48 | 0.52 | | 0.69 | 0.59 | |
| Uniform Delay, d1 | 37.6 | 29.9 | 24.5 | 40.8 | 34.3 | 17.5 | 45.9 | 34.0 | | 35.9 | 24.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.9 | 1.2 | 0.0 | 1.6 | 3.0 | 0.0 | 3.2 | 0.5 | | 4.9 | 1.0 | |
| Delay (s) | 41.5 | 31.1 | 24.5 | 42.4 | 37.4 | 17.6 | 49.1 | 34.5 | | 40.7 | 25.3 | |
| Level of Service | D | C | C | D | D | B | D | C | | D | C | |
| Approach Delay (s/veh) | | 33.3 | | | 32.5 | | | 35.8 | | | 31.0 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 95.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 68.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

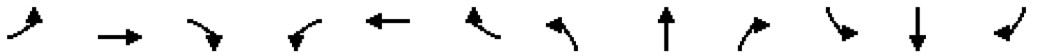
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 11 | 1 | 7 | 192 | 282 | 27 |
| Future Vol, veh/h | 11 | 1 | 7 | 192 | 282 | 27 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 1 | 8 | 209 | 307 | 29 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 551 | 321 | 336 | 0 | - | 0 |
| Stage 1 | 321 | - | - | - | - | - |
| Stage 2 | 230 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 495 | 720 | 1223 | - | - | - |
| Stage 1 | 735 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 492 | 720 | 1223 | - | - | - |
| Mov Cap-2 Maneuver | 492 | - | - | - | - | - |
| Stage 1 | 730 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.32 | 0.28 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 63 | - | 505 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | 0.026 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.3 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

# APPENDIX H: 2032 Total Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Future Volume (veh/h) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 162 | 70 | 214 | 111 | 106 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 242 | 1398 | 649 | 62 | 1016 | 713 | 28 | 197 | 85 | 251 | 253 | 242 |
| Arrive On Green | 0.14 | 0.41 | 0.41 | 0.03 | 0.31 | 0.31 | 0.02 | 0.16 | 0.16 | 0.15 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1239 | 535 | 1697 | 865 | 826 |
| Grp Volume(v), veh/h | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 0 | 232 | 214 | 0 | 217 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1774 | 1697 | 0 | 1692 |
| Q Serve(g_s), s | 9.8 | 12.9 | 0.4 | 1.8 | 9.6 | 21.8 | 0.6 | 0.0 | 10.9 | 10.6 | 0.0 | 9.0 |
| Cycle Q Clear(g_c), s | 9.8 | 12.9 | 0.4 | 1.8 | 9.6 | 21.8 | 0.6 | 0.0 | 10.9 | 10.6 | 0.0 | 9.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.49 |
| Lane Grp Cap(c), veh/h | 242 | 1398 | 649 | 62 | 1016 | 713 | 28 | 0 | 282 | 251 | 0 | 495 |
| V/C Ratio(X) | 0.84 | 0.49 | 0.02 | 0.62 | 0.45 | 0.70 | 0.47 | 0.00 | 0.82 | 0.85 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 503 | 2355 | 1094 | 203 | 1717 | 1044 | 203 | 0 | 717 | 487 | 0 | 977 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.2 | 18.8 | 15.1 | 41.0 | 24.1 | 18.8 | 42.0 | 0.0 | 35.0 | 35.8 | 0.0 | 24.7 |
| Incr Delay (d2), s/veh | 3.1 | 0.1 | 0.0 | 3.7 | 0.1 | 0.5 | 4.6 | 0.0 | 2.3 | 3.2 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.3 | 7.8 | 0.2 | 1.4 | 6.1 | 10.9 | 0.5 | 0.0 | 8.3 | 7.9 | 0.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.3 | 18.9 | 15.1 | 44.6 | 24.2 | 19.3 | 46.6 | 0.0 | 37.3 | 38.9 | 0.0 | 24.9 |
| LnGrp LOS | D | B | B | D | C | B | D | | D | D | | C |
| Approach Vol, veh/h | | 905 | | | 996 | | | 245 | | | 431 | |
| Approach Delay, s/veh | | 23.4 | | | 22.5 | | | 37.8 | | | 31.9 | |
| Approach LOS | | C | | | C | | | D | | | C | |

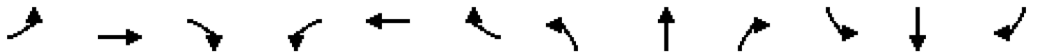
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.0 | 19.0 | 8.2 | 40.9 | 6.5 | 30.5 | 17.2 | 31.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 12.6 | 12.9 | 3.8 | 14.9 | 2.6 | 11.0 | 11.8 | 23.8 |
| Green Ext Time (p_c), s | 0.2 | 0.8 | 0.0 | 2.7 | 0.0 | 0.9 | 0.2 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Future Volume (vph) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1758 | | 1671 | 1654 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1758 | | 1671 | 1654 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 162 | 70 | 214 | 111 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 216 | 0 | 11 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 204 | 689 | 4 | 38 | 460 | 282 | 13 | 221 | 0 | 214 | 196 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.6 | 34.5 | 34.5 | 4.2 | 22.0 | 39.9 | 2.1 | 21.3 | | 17.9 | 37.1 | |
| Effective Green, g (s) | 16.6 | 34.5 | 34.5 | 4.2 | 22.0 | 39.9 | 2.1 | 21.3 | | 17.9 | 37.1 | |
| Actuated g/C Ratio | 0.17 | 0.35 | 0.35 | 0.04 | 0.22 | 0.40 | 0.02 | 0.21 | | 0.18 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 290 | 1173 | 550 | 74 | 727 | 630 | 37 | 377 | | 301 | 618 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.08 | 0.01 | c0.13 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.10 | | | | | | |
| v/c Ratio | 0.70 | 0.59 | 0.01 | 0.51 | 0.63 | 0.45 | 0.35 | 0.59 | | 0.71 | 0.32 | |
| Uniform Delay, d1 | 39.0 | 26.5 | 21.2 | 46.5 | 34.9 | 21.6 | 47.9 | 35.0 | | 38.2 | 22.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.2 | 0.5 | 0.0 | 2.5 | 1.3 | 0.2 | 2.1 | 1.5 | | 6.4 | 0.1 | |
| Delay (s) | 45.2 | 27.0 | 21.2 | 49.0 | 36.3 | 21.8 | 50.0 | 36.5 | | 44.7 | 22.2 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 31.0 | | | 29.5 | | | 37.2 | | | 33.3 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 31.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 99.2 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 62.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 7 | 1 | 195 | 142 | 5 |
| Future Vol, veh/h | 25 | 7 | 1 | 195 | 142 | 5 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 28 | 8 | 1 | 217 | 158 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 384 | 161 | 163 | 0 | - | 0 |
| Stage 1 | 161 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 592 | 884 | 988 | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 591 | 884 | 988 | - | - | - |
| Mov Cap-2 Maneuver | 591 | - | - | - | - | - |
| Stage 1 | 834 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.98 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 637 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.056 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 11 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

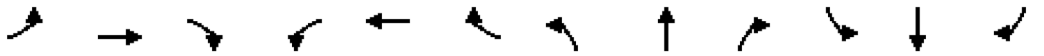
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 853 | 1 | 6 | 517 | 0 | 3 | 0 | 17 | 1 | 0 | 8 |
| Future Vol, veh/h | 2 | 853 | 1 | 6 | 517 | 0 | 3 | 0 | 17 | 1 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 937 | 1 | 7 | 568 | 0 | 3 | 0 | 19 | 1 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 568 | 0 | 0 | 938 | 0 | 0 | 1240 | 1524 | 469 | 1054 | 1524 | 284 |
| Stage 1 | - | - | - | - | - | - | 942 | 942 | - | 581 | 581 | - |
| Stage 2 | - | - | - | - | - | - | 297 | 581 | - | 473 | 943 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 1000 | - | - | 726 | - | - | 132 | 117 | 541 | 180 | 117 | 713 |
| Stage 1 | - | - | - | - | - | - | 283 | 340 | - | 466 | 498 | - |
| Stage 2 | - | - | - | - | - | - | 687 | 498 | - | 541 | 339 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1000 | - | - | 726 | - | - | 128 | 116 | 541 | 172 | 116 | 713 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 226 | 233 | - | 300 | 231 | - |
| Stage 1 | - | - | - | - | - | - | 282 | 339 | - | 462 | 493 | - |
| Stage 2 | - | - | - | - | - | - | 672 | 493 | - | 521 | 339 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.02 | 0.11 | 13.46 | 10.92 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 447 | 1000 | - | - | 726 | - | - | 618 |
| HCM Lane V/C Ratio | 0.049 | 0.002 | - | - | 0.009 | - | - | 0.016 |
| HCM Control Delay (s/veh) | 13.5 | 8.6 | - | - | 10 | - | - | 10.9 |
| HCM Lane LOS | B | A | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Future Volume (veh/h) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 151 | 52 | 232 | 231 | 172 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 223 | 982 | 452 | 129 | 809 | 609 | 38 | 201 | 69 | 282 | 288 | 215 |
| Arrive On Green | 0.13 | 0.29 | 0.29 | 0.07 | 0.23 | 0.23 | 0.02 | 0.15 | 0.15 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1330 | 458 | 1767 | 996 | 741 |
| Grp Volume(v), veh/h | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 0 | 203 | 232 | 0 | 403 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1788 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 6.4 | 10.5 | 0.3 | 3.6 | 10.1 | 7.5 | 0.7 | 0.0 | 7.0 | 8.2 | 0.0 | 13.8 |
| Cycle Q Clear(g_c), s | 6.4 | 10.5 | 0.3 | 3.6 | 10.1 | 7.5 | 0.7 | 0.0 | 7.0 | 8.2 | 0.0 | 13.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 223 | 982 | 452 | 129 | 809 | 609 | 38 | 0 | 270 | 282 | 0 | 503 |
| V/C Ratio(X) | 0.80 | 0.65 | 0.02 | 0.78 | 0.74 | 0.41 | 0.50 | 0.00 | 0.75 | 0.82 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 666 | 3170 | 1460 | 271 | 2447 | 1334 | 260 | 0 | 965 | 677 | 0 | 1339 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 20.2 | 16.6 | 29.4 | 23.1 | 14.4 | 31.2 | 0.0 | 26.2 | 26.2 | 0.0 | 21.2 |
| Incr Delay (d2), s/veh | 2.5 | 0.3 | 0.0 | 3.8 | 0.5 | 0.2 | 3.7 | 0.0 | 1.6 | 2.3 | 0.0 | 1.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 6.3 | 0.2 | 2.6 | 6.5 | 3.8 | 0.6 | 0.0 | 5.2 | 6.1 | 0.0 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.8 | 20.5 | 16.6 | 33.2 | 23.6 | 14.6 | 34.8 | 0.0 | 27.8 | 28.5 | 0.0 | 22.3 |
| LnGrp LOS | C | C | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 829 | | | 949 | | | 222 | | | 635 | |
| Approach Delay, s/veh | | 22.5 | | | 22.2 | | | 28.4 | | | 24.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

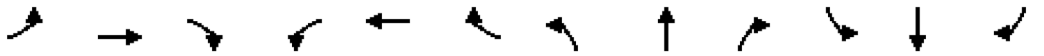
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 15.0 | 9.9 | 24.0 | 6.6 | 24.0 | 13.6 | 20.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 9.0 | 5.6 | 12.5 | 2.7 | 15.8 | 8.4 | 12.1 |
| Green Ext Time (p_c), s | 0.3 | 0.7 | 0.0 | 2.5 | 0.0 | 1.7 | 0.2 | 2.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 23.4 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Future Volume (vph) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1791 | | 1752 | 1743 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1791 | | 1752 | 1743 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 151 | 52 | 232 | 231 | 172 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 133 | 0 | 9 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 179 | 639 | 3 | 100 | 598 | 118 | 19 | 194 | 0 | 232 | 386 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.5 | 28.0 | 28.0 | 9.8 | 22.2 | 40.7 | 2.3 | 19.7 | | 18.5 | 35.9 | |
| Effective Green, g (s) | 15.5 | 28.0 | 28.0 | 9.8 | 22.2 | 40.7 | 2.3 | 19.7 | | 18.5 | 35.9 | |
| Actuated g/C Ratio | 0.16 | 0.29 | 0.29 | 0.10 | 0.23 | 0.42 | 0.02 | 0.20 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 273 | 980 | 455 | 178 | 807 | 655 | 39 | 362 | | 333 | 643 | |
| v/s Ratio Prot | c0.10 | c0.19 | | 0.06 | c0.17 | 0.03 | 0.01 | 0.11 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.66 | 0.65 | 0.01 | 0.56 | 0.74 | 0.18 | 0.49 | 0.54 | | 0.70 | 0.60 | |
| Uniform Delay, d1 | 38.4 | 30.4 | 24.7 | 41.7 | 34.9 | 17.8 | 46.9 | 34.7 | | 36.8 | 24.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.3 | 1.2 | 0.0 | 2.4 | 3.2 | 0.0 | 3.5 | 0.8 | | 5.1 | 1.1 | |
| Delay (s) | 42.7 | 31.6 | 24.7 | 44.1 | 38.1 | 17.8 | 50.4 | 35.5 | | 41.8 | 26.0 | |
| Level of Service | D | C | C | D | D | B | D | D | | D | C | |
| Approach Delay (s/veh) | | 33.9 | | | 33.4 | | | 36.8 | | | 31.8 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 33.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 97.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 69.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 2 | 9 | 192 | 282 | 33 |
| Future Vol, veh/h | 17 | 2 | 9 | 192 | 282 | 33 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 2 | 10 | 209 | 307 | 36 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 559 | 324 | 342 | 0 | - | 0 |
| Stage 1 | 324 | - | - | - | - | - |
| Stage 2 | 234 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 490 | 717 | 1217 | - | - | - |
| Stage 1 | 733 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 486 | 717 | 1217 | - | - | - |
| Mov Cap-2 Maneuver | 486 | - | - | - | - | - |
| Stage 1 | 726 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.46 | 0.36 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 81 | - | 503 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | 0.041 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 844 | 3 | 21 | 845 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 3 | 844 | 3 | 21 | 845 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 879 | 3 | 22 | 880 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 883 | 0 | 0 | 882 | 0 | 0 | 1371 | 1814 | 441 | 1370 | 1813 | 440 |
| Stage 1 | - | - | - | - | - | - | 887 | 887 | - | 924 | 924 | - |
| Stage 2 | - | - | - | - | - | - | 484 | 927 | - | 446 | 889 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 762 | - | - | 762 | - | - | 105 | 77 | 564 | 105 | 78 | 565 |
| Stage 1 | - | - | - | - | - | - | 305 | 360 | - | 290 | 346 | - |
| Stage 2 | - | - | - | - | - | - | 533 | 345 | - | 561 | 360 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 762 | - | - | 762 | - | - | 101 | 75 | 564 | 100 | 75 | 565 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 216 | 192 | - | 207 | 188 | - |
| Stage 1 | - | - | - | - | - | - | 304 | 359 | - | 282 | 336 | - |
| Stage 2 | - | - | - | - | - | - | 515 | 335 | - | 548 | 358 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.24 | 13.21 | 14.22 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 452 | 762 | - | - | 762 | - | - | 395 |
| HCM Lane V/C Ratio | 0.03 | 0.004 | - | - | 0.029 | - | - | 0.011 |
| HCM Control Delay (s/veh) | 13.2 | 9.7 | - | - | 9.9 | - | - | 14.2 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Future Volume (veh/h) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 164 | 86 | 214 | 112 | 104 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 239 | 1381 | 641 | 66 | 1012 | 710 | 34 | 196 | 103 | 250 | 263 | 244 |
| Arrive On Green | 0.14 | 0.40 | 0.40 | 0.04 | 0.30 | 0.30 | 0.02 | 0.17 | 0.17 | 0.15 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1155 | 606 | 1697 | 878 | 816 |
| Grp Volume(v), veh/h | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 0 | 250 | 214 | 0 | 216 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1761 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 10.0 | 13.0 | 0.4 | 2.1 | 9.7 | 22.5 | 0.8 | 0.0 | 12.2 | 10.9 | 0.0 | 9.1 |
| Cycle Q Clear(g_c), s | 10.0 | 13.0 | 0.4 | 2.1 | 9.7 | 22.5 | 0.8 | 0.0 | 12.2 | 10.9 | 0.0 | 9.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.34 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 239 | 1381 | 641 | 66 | 1012 | 710 | 34 | 0 | 299 | 250 | 0 | 506 |
| V/C Ratio(X) | 0.85 | 0.49 | 0.02 | 0.66 | 0.45 | 0.70 | 0.49 | 0.00 | 0.84 | 0.86 | 0.00 | 0.43 |
| Avail Cap(c_a), veh/h | 488 | 2287 | 1062 | 197 | 1667 | 1019 | 197 | 0 | 691 | 473 | 0 | 950 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.4 | 19.6 | 15.8 | 42.1 | 24.9 | 19.5 | 43.0 | 0.0 | 35.6 | 36.9 | 0.0 | 25.0 |
| Incr Delay (d2), s/veh | 3.2 | 0.1 | 0.0 | 4.1 | 0.1 | 0.5 | 4.0 | 0.0 | 2.4 | 3.3 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.5 | 7.9 | 0.3 | 1.7 | 6.2 | 11.4 | 0.7 | 0.0 | 9.0 | 8.1 | 0.0 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 40.5 | 19.7 | 15.8 | 46.2 | 25.0 | 20.0 | 47.1 | 0.0 | 38.0 | 40.1 | 0.0 | 25.2 |
| LnGrp LOS | D | B | B | D | C | B | D | | D | D | | C |
| Approach Vol, veh/h | | 888 | | | 995 | | | 267 | | | 430 | |
| Approach Delay, s/veh | | 24.4 | | | 23.4 | | | 38.6 | | | 32.6 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.4 | 20.3 | 8.5 | 41.5 | 6.9 | 31.8 | 17.4 | 32.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 12.9 | 14.2 | 4.1 | 15.0 | 2.8 | 11.1 | 12.0 | 24.5 |
| Green Ext Time (p_c), s | 0.2 | 0.9 | 0.0 | 2.6 | 0.0 | 0.8 | 0.2 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.8 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Future Volume (vph) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1743 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1743 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 164 | 86 | 214 | 112 | 104 |
| RTOR Reduction (vph) | 0 | 0 | 9 | 0 | 0 | 217 | 0 | 12 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 202 | 673 | 4 | 43 | 454 | 281 | 17 | 238 | 0 | 214 | 196 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.6 | 34.3 | 34.3 | 4.4 | 22.0 | 40.0 | 2.2 | 22.4 | | 18.0 | 38.2 | |
| Effective Green, g (s) | 16.6 | 34.3 | 34.3 | 4.4 | 22.0 | 40.0 | 2.2 | 22.4 | | 18.0 | 38.2 | |
| Actuated g/C Ratio | 0.17 | 0.34 | 0.34 | 0.04 | 0.22 | 0.40 | 0.02 | 0.22 | | 0.18 | 0.38 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 287 | 1152 | 540 | 77 | 719 | 624 | 38 | 388 | | 299 | 630 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.08 | 0.01 | c0.14 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.10 | | | | | | |
| v/c Ratio | 0.70 | 0.58 | 0.01 | 0.56 | 0.63 | 0.45 | 0.45 | 0.61 | | 0.72 | 0.31 | |
| Uniform Delay, d1 | 39.6 | 27.2 | 21.8 | 47.0 | 35.5 | 22.1 | 48.5 | 35.1 | | 38.8 | 21.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.3 | 0.5 | 0.0 | 4.9 | 1.3 | 0.2 | 3.0 | 2.0 | | 6.6 | 0.1 | |
| Delay (s) | 45.8 | 27.7 | 21.8 | 52.0 | 36.9 | 22.3 | 51.5 | 37.1 | | 45.4 | 22.0 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 31.7 | | | 30.2 | | | 38.0 | | | 33.6 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 100.4 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 44 | 7 | 1 | 195 | 142 | 12 |
| Future Vol, veh/h | 44 | 7 | 1 | 195 | 142 | 12 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 49 | 8 | 1 | 217 | 158 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 388 | 164 | 171 | 0 | - | 0 |
| Stage 1 | 164 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 589 | 880 | 980 | - | - | - |
| Stage 1 | 832 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 588 | 880 | 980 | - | - | - |
| Mov Cap-2 Maneuver | 588 | - | - | - | - | - |
| Stage 1 | 831 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.43 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 616 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.092 | - | - |
| HCM Control Delay (s/veh) | 8.7 | 0 | 11.4 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Future Volume (veh/h) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 152 | 61 | 232 | 233 | 170 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 222 | 910 | 419 | 154 | 787 | 599 | 42 | 200 | 80 | 282 | 296 | 216 |
| Arrive On Green | 0.13 | 0.26 | 0.26 | 0.09 | 0.22 | 0.22 | 0.02 | 0.16 | 0.16 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1269 | 509 | 1767 | 1005 | 733 |
| Grp Volume(v), veh/h | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 0 | 213 | 232 | 0 | 403 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1779 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 6.4 | 10.6 | 0.4 | 4.3 | 9.7 | 7.6 | 0.8 | 0.0 | 7.4 | 8.2 | 0.0 | 13.7 |
| Cycle Q Clear(g_c), s | 6.4 | 10.6 | 0.4 | 4.3 | 9.7 | 7.6 | 0.8 | 0.0 | 7.4 | 8.2 | 0.0 | 13.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 222 | 910 | 419 | 154 | 787 | 599 | 42 | 0 | 280 | 282 | 0 | 512 |
| V/C Ratio(X) | 0.80 | 0.69 | 0.03 | 0.78 | 0.73 | 0.42 | 0.50 | 0.00 | 0.76 | 0.82 | 0.00 | 0.79 |
| Avail Cap(c_a), veh/h | 667 | 3173 | 1462 | 271 | 2450 | 1335 | 260 | 0 | 961 | 678 | 0 | 1341 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 21.3 | 17.6 | 28.8 | 23.3 | 14.7 | 31.0 | 0.0 | 26.0 | 26.2 | 0.0 | 20.9 |
| Incr Delay (d2), s/veh | 2.5 | 0.4 | 0.0 | 3.2 | 0.5 | 0.2 | 3.5 | 0.0 | 1.6 | 2.3 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 6.4 | 0.2 | 3.1 | 6.3 | 3.8 | 0.6 | 0.0 | 5.4 | 6.1 | 0.0 | 8.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.8 | 21.7 | 17.6 | 32.1 | 23.8 | 14.9 | 34.5 | 0.0 | 27.6 | 28.5 | 0.0 | 21.9 |
| LnGrp LOS | C | C | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 822 | | | 949 | | | 234 | | | 635 | |
| Approach Delay, s/veh | | 23.4 | | | 22.5 | | | 28.2 | | | 24.3 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 15.4 | 10.8 | 22.6 | 6.8 | 24.3 | 13.5 | 19.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 9.4 | 6.3 | 12.6 | 2.8 | 15.7 | 8.4 | 11.7 |
| Green Ext Time (p_c), s | 0.3 | 0.8 | 0.0 | 2.4 | 0.0 | 1.7 | 0.2 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 23.7 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Future Volume (vph) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1783 | | 1752 | 1745 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1783 | | 1752 | 1745 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 152 | 61 | 232 | 233 | 170 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 138 | 0 | 10 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 178 | 630 | 4 | 120 | 578 | 113 | 21 | 203 | 0 | 232 | 387 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.4 | 27.4 | 27.4 | 10.3 | 22.2 | 40.6 | 2.4 | 20.1 | | 18.4 | 36.1 | |
| Effective Green, g (s) | 15.4 | 27.4 | 27.4 | 10.3 | 22.2 | 40.6 | 2.4 | 20.1 | | 18.4 | 36.1 | |
| Actuated g/C Ratio | 0.16 | 0.28 | 0.28 | 0.11 | 0.23 | 0.42 | 0.02 | 0.21 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 271 | 957 | 444 | 186 | 805 | 652 | 41 | 367 | | 330 | 646 | |
| v/s Ratio Prot | c0.10 | c0.18 | | 0.07 | 0.16 | 0.03 | 0.01 | 0.11 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.66 | 0.66 | 0.01 | 0.65 | 0.72 | 0.17 | 0.51 | 0.55 | | 0.70 | 0.60 | |
| Uniform Delay, d1 | 38.6 | 30.9 | 25.3 | 41.8 | 34.8 | 17.9 | 47.0 | 34.7 | | 37.0 | 24.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.3 | 1.3 | 0.0 | 5.6 | 2.6 | 0.0 | 4.4 | 1.0 | | 5.5 | 1.0 | |
| Delay (s) | 42.9 | 32.2 | 25.3 | 47.5 | 37.3 | 17.9 | 51.4 | 35.7 | | 42.5 | 25.8 | |
| Level of Service | D | C | C | D | D | B | D | D | | D | C | |
| Approach Delay (s/veh) | | 34.4 | | | 33.5 | | | 37.1 | | | 31.9 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 33.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 97.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 69.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 29 | 2 | 9 | 192 | 282 | 57 |
| Future Vol, veh/h | 29 | 2 | 9 | 192 | 282 | 57 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 2 | 10 | 209 | 307 | 62 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 572 | 337 | 368 | 0 | - | 0 |
| Stage 1 | 337 | - | - | - | - | - |
| Stage 2 | 234 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 482 | 705 | 1190 | - | - | - |
| Stage 1 | 723 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 477 | 705 | 1190 | - | - | - |
| Mov Cap-2 Maneuver | 477 | - | - | - | - | - |
| Stage 1 | 716 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.93 | 0.36 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 81 | - | 487 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | 0.069 | - | - |
| HCM Control Delay (s/veh) | 8.1 | 0 | 12.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

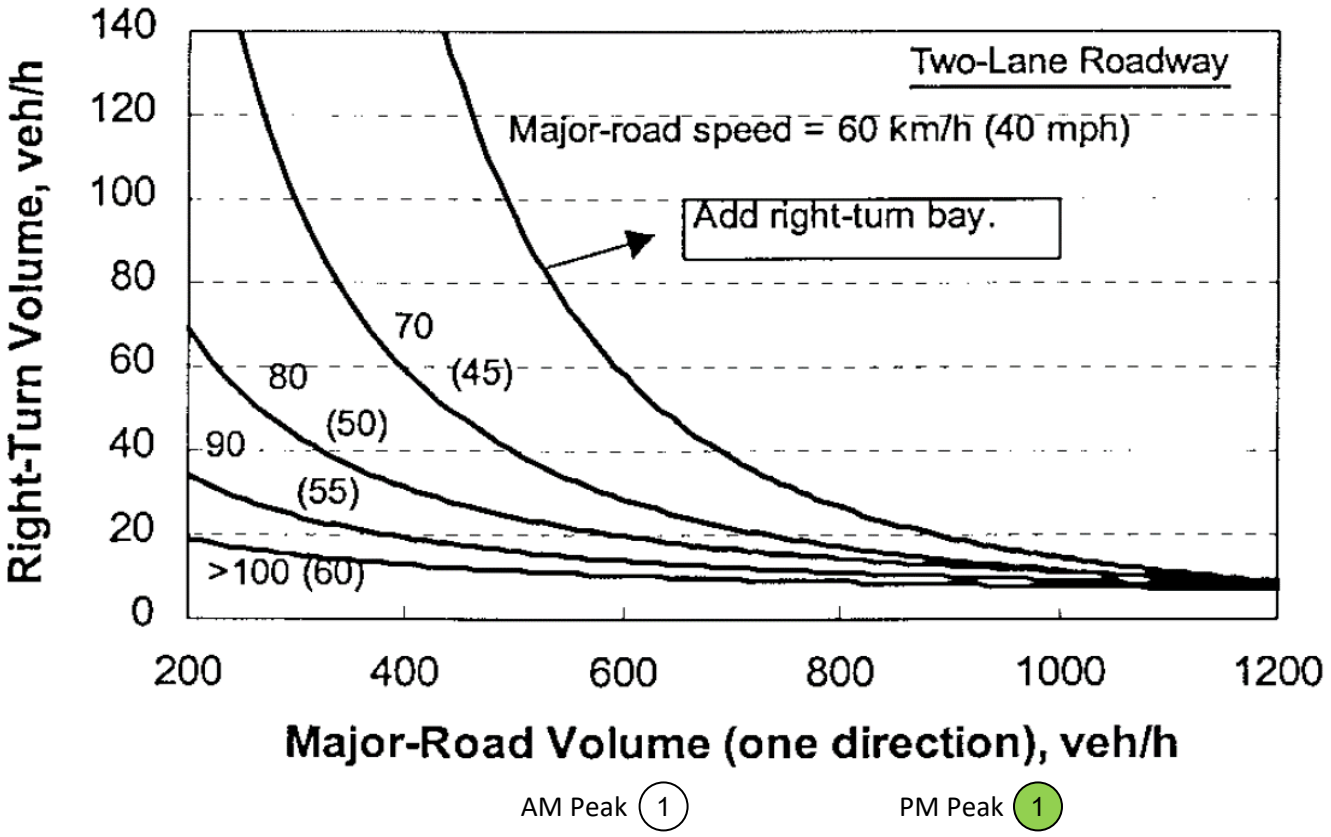
# APPENDIX I: Turn Lane Guidelines Worksheets

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2024 Existing Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 1 | 106 | No* |
| | | | | PM | 11 | 196 | No* |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted



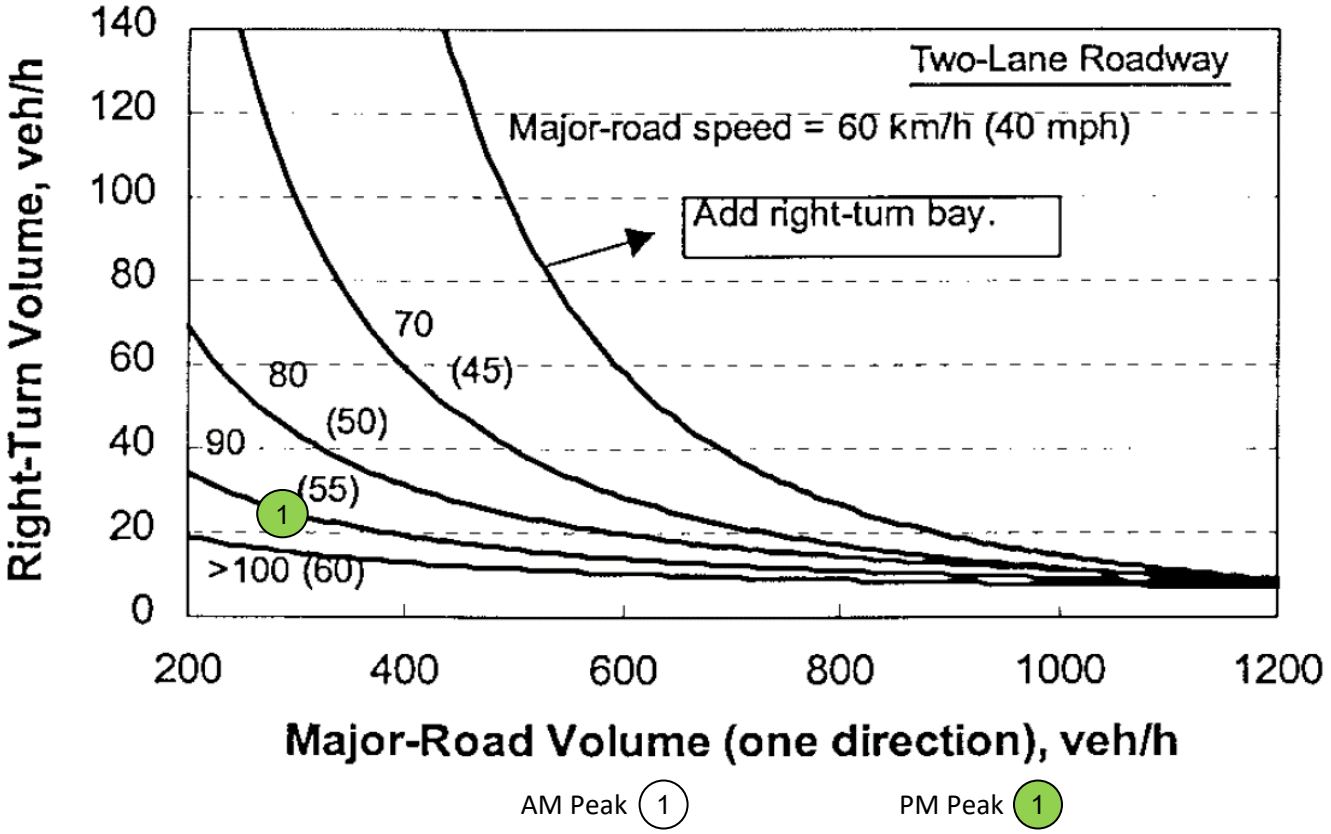

AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2027 Background Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | SB | 35 | AM | 3 | 133 | No* |
| | | | | PM | 25 | 285 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

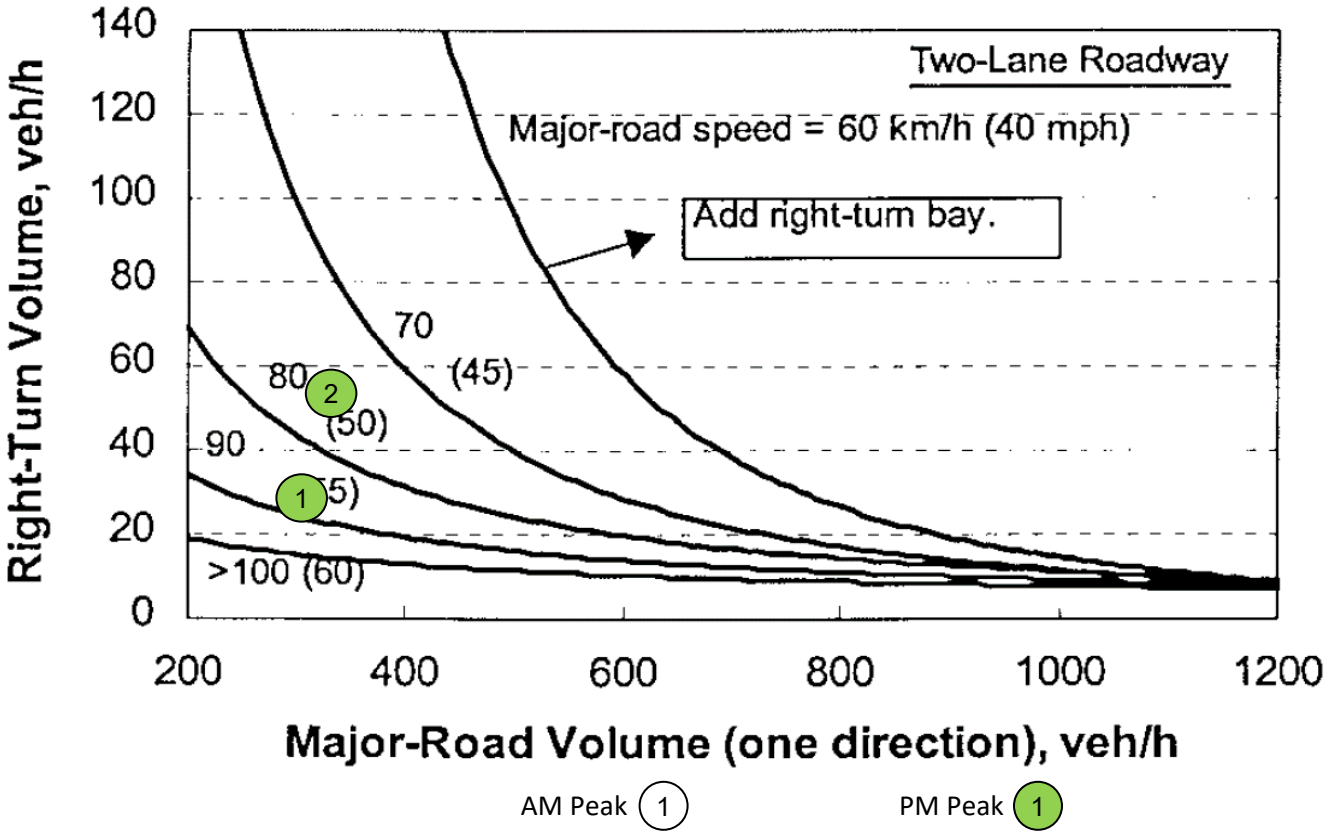


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2027 Total Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 5 | 135 | No* |
| | | | | PM | 31 | 292 | No |
| 2 | Vista Drive & S 10th Avenue (No Karcher Rd Access) | SB | 35 | AM | 12 | 142 | No* |
| | | | | PM | 55 | 316 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted



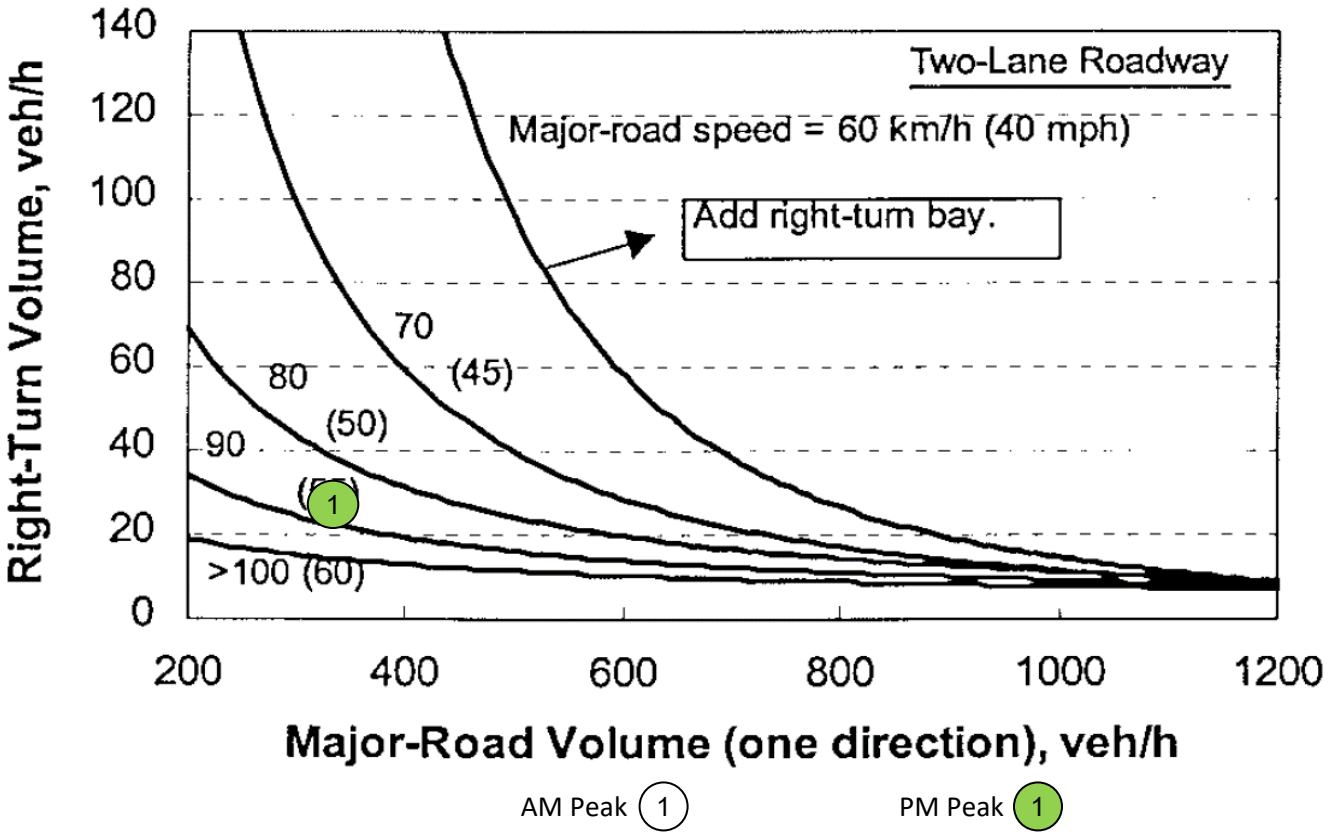

AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2032 Background Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 3 | 145 | No* |
| | | | | PM | 27 | 308 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

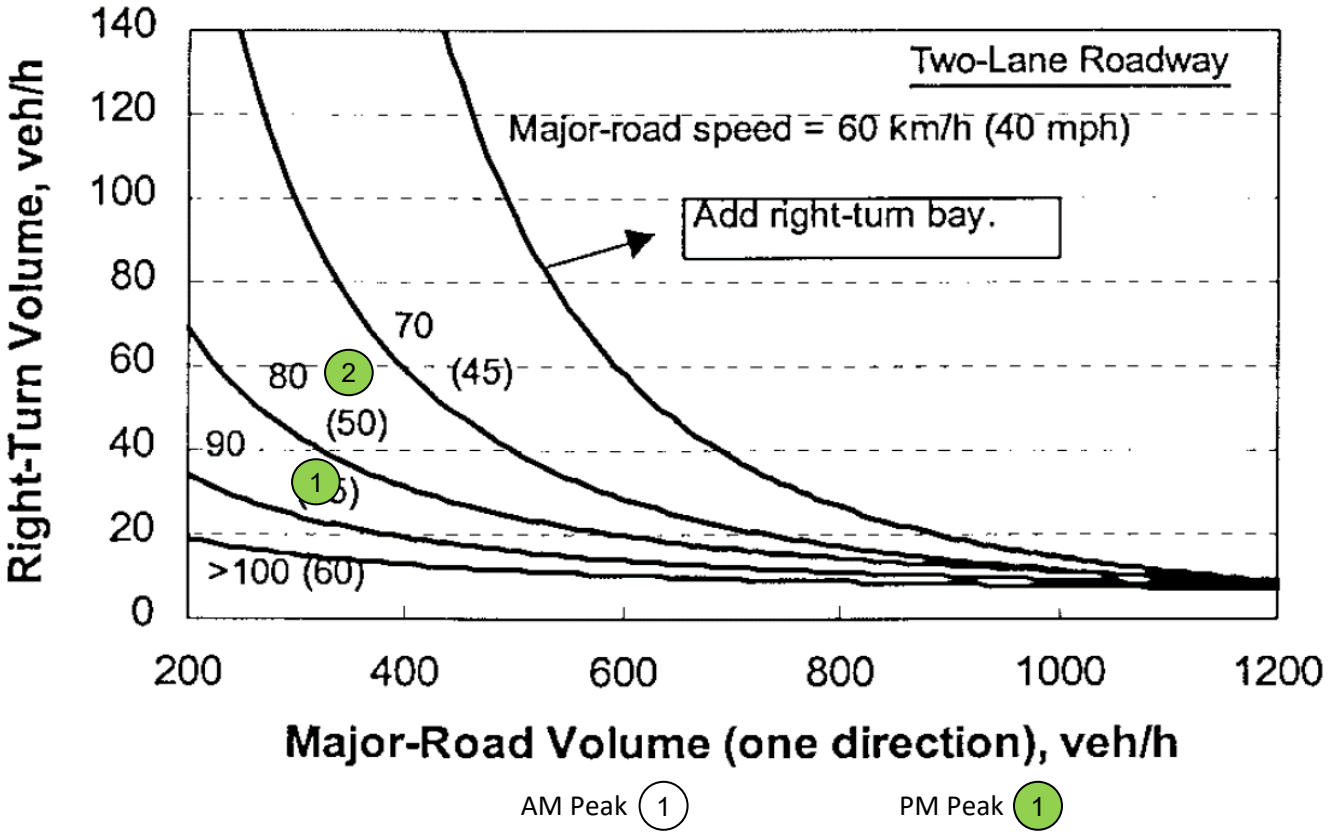


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2032 Total Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 5 | 147 | No* |
| | | | | PM | 33 | 315 | No |
| 2 | Vista Drive & S 10th Avenue (No Karcher Rd Access) | SB | 35 | AM | 12 | 154 | No* |
| | | | | PM | 57 | 339 | No |

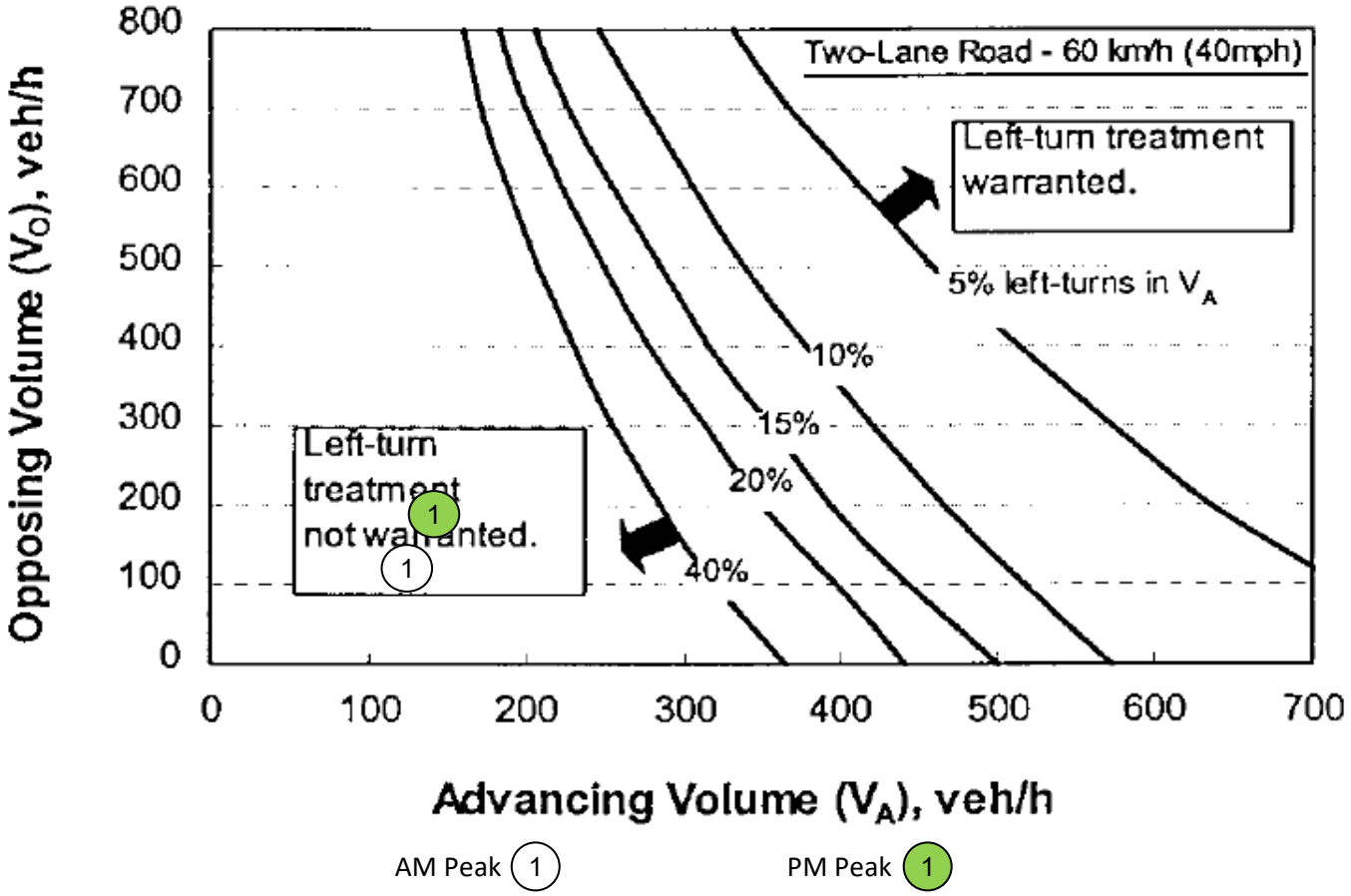
* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2024 Existing Traffic**

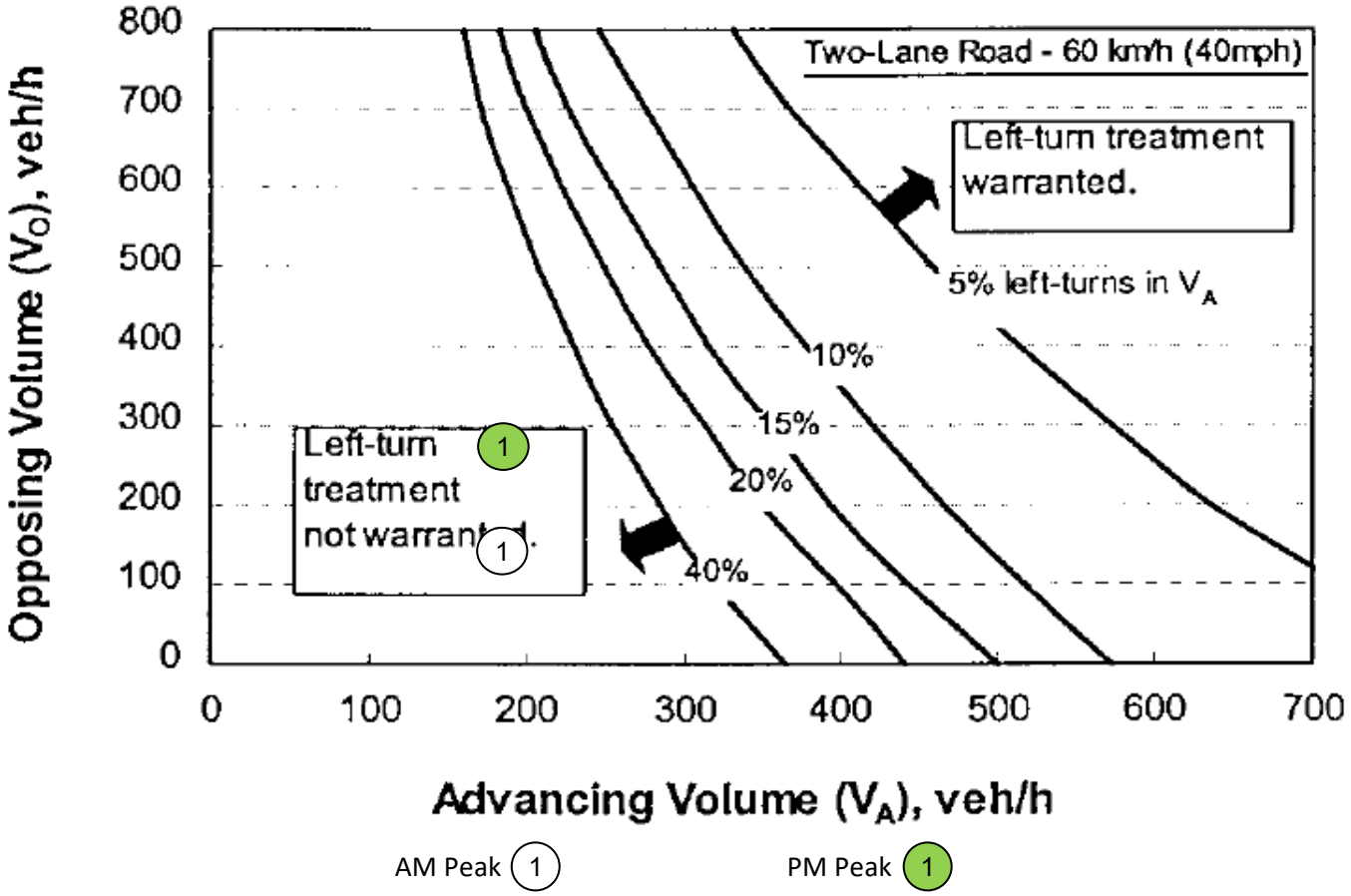
| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 118 | 106 | 0.8% | No |
| | | | | PM | 139 | 196 | 4.3% | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2027 Background Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 183 | 133 | 0.5% | No |
| | | | | PM | 183 | 285 | 3.3% | No |

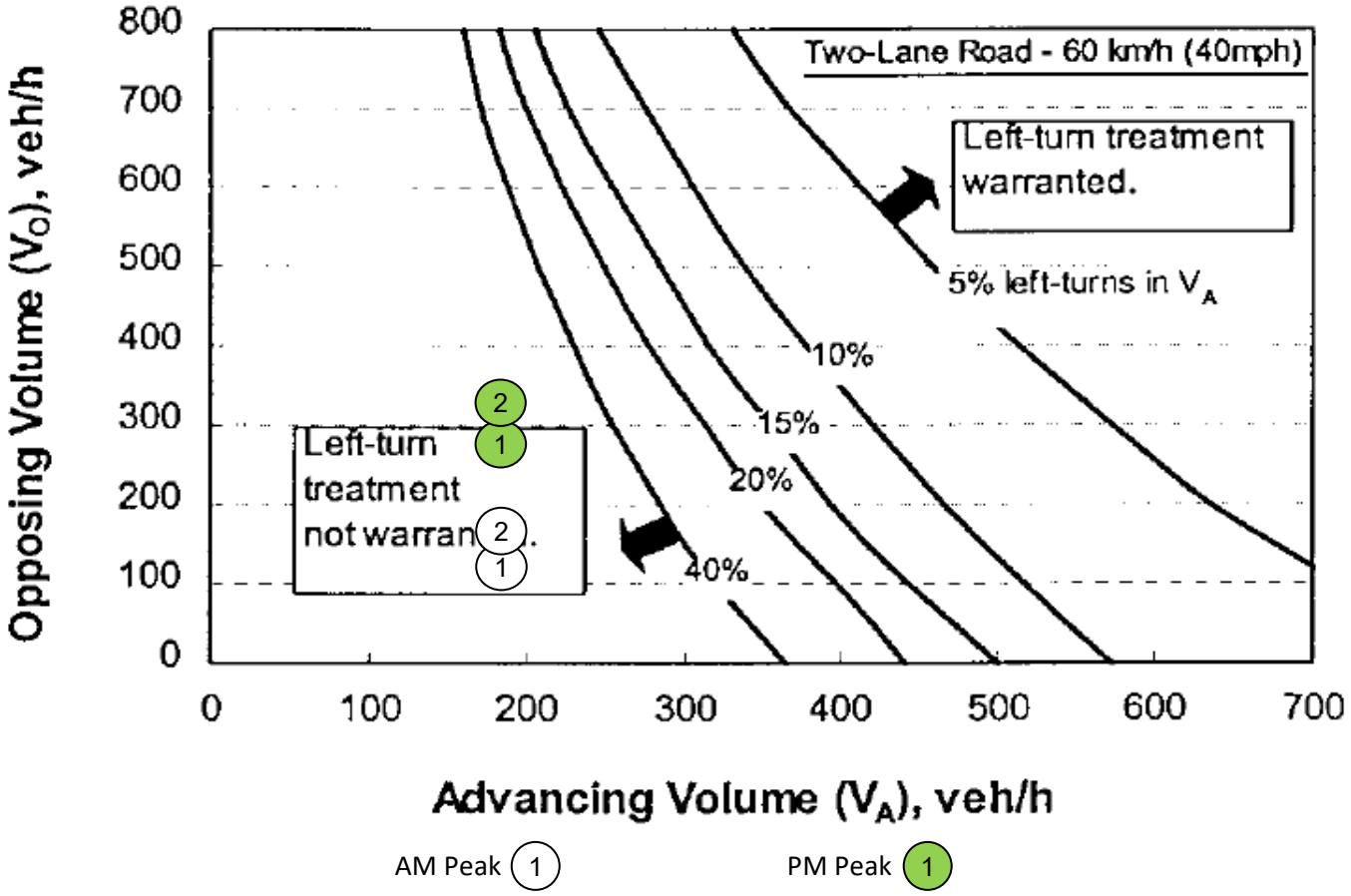



AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2027 Total Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 184 | 135 | 0.8% | No |
| | | | | PM | 185 | 292 | 4.1% | No |
| (2) | Vista Drive & S 10th Avenue (No Karcher Access) | NB | 35 | AM | 184 | 142 | 0.8% | No |
| | | | | PM | 185 | 316 | 4.1% | No |

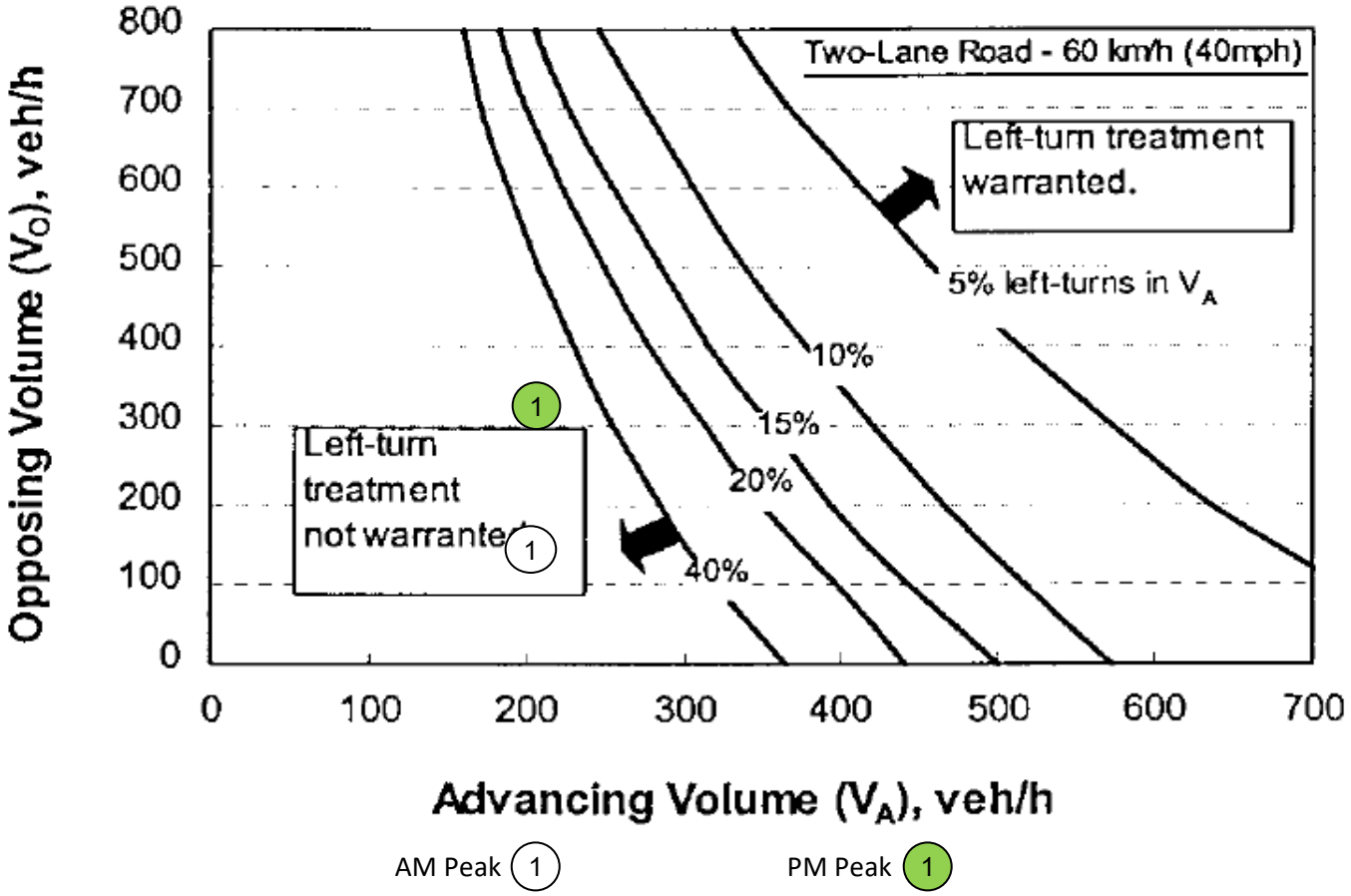



AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2032 Background Traffic**

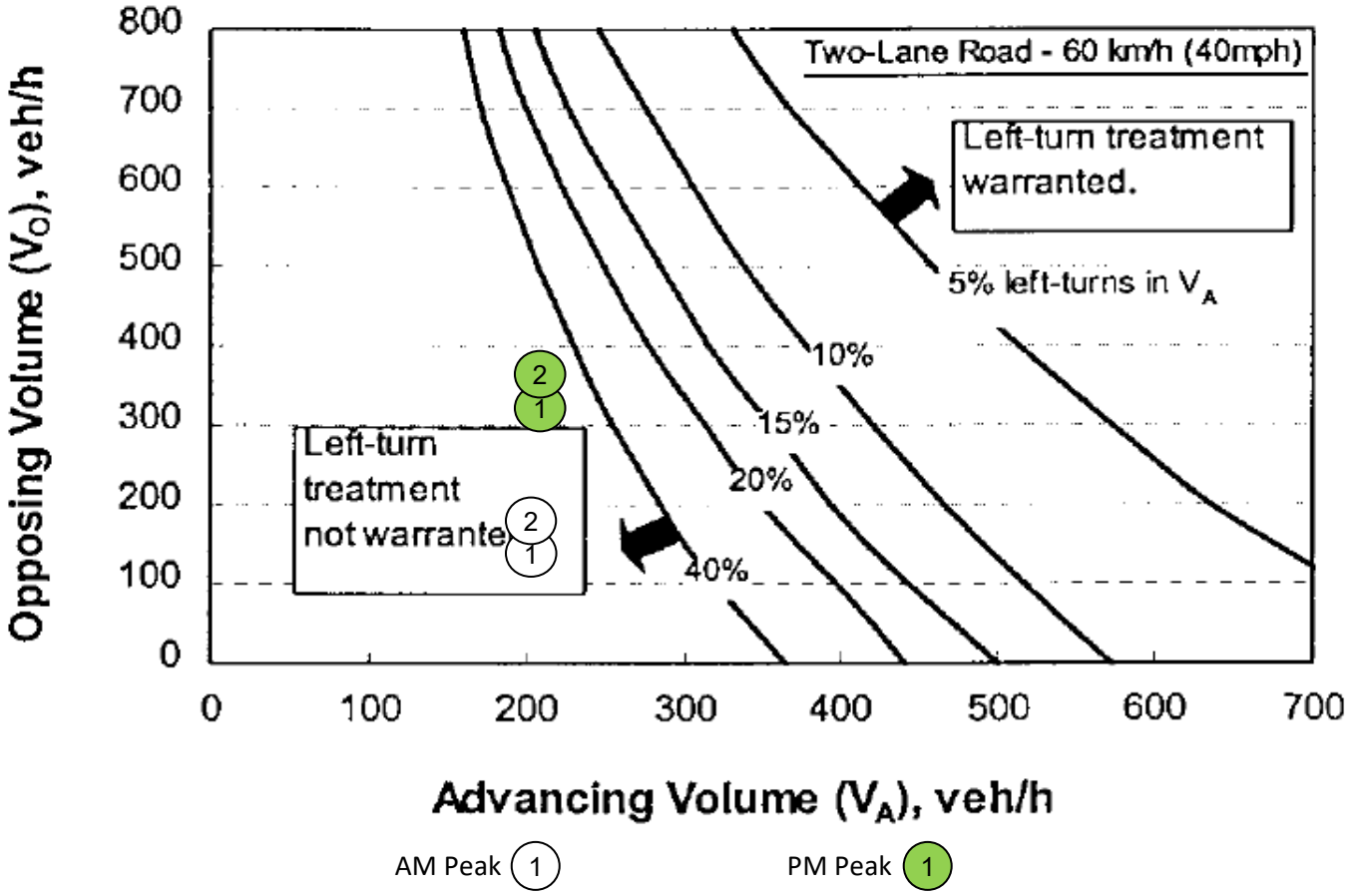
| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 196 | 145 | 0.5% | No |
| | | | | PM | 199 | 308 | 3.5% | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2032 Total Traffic**

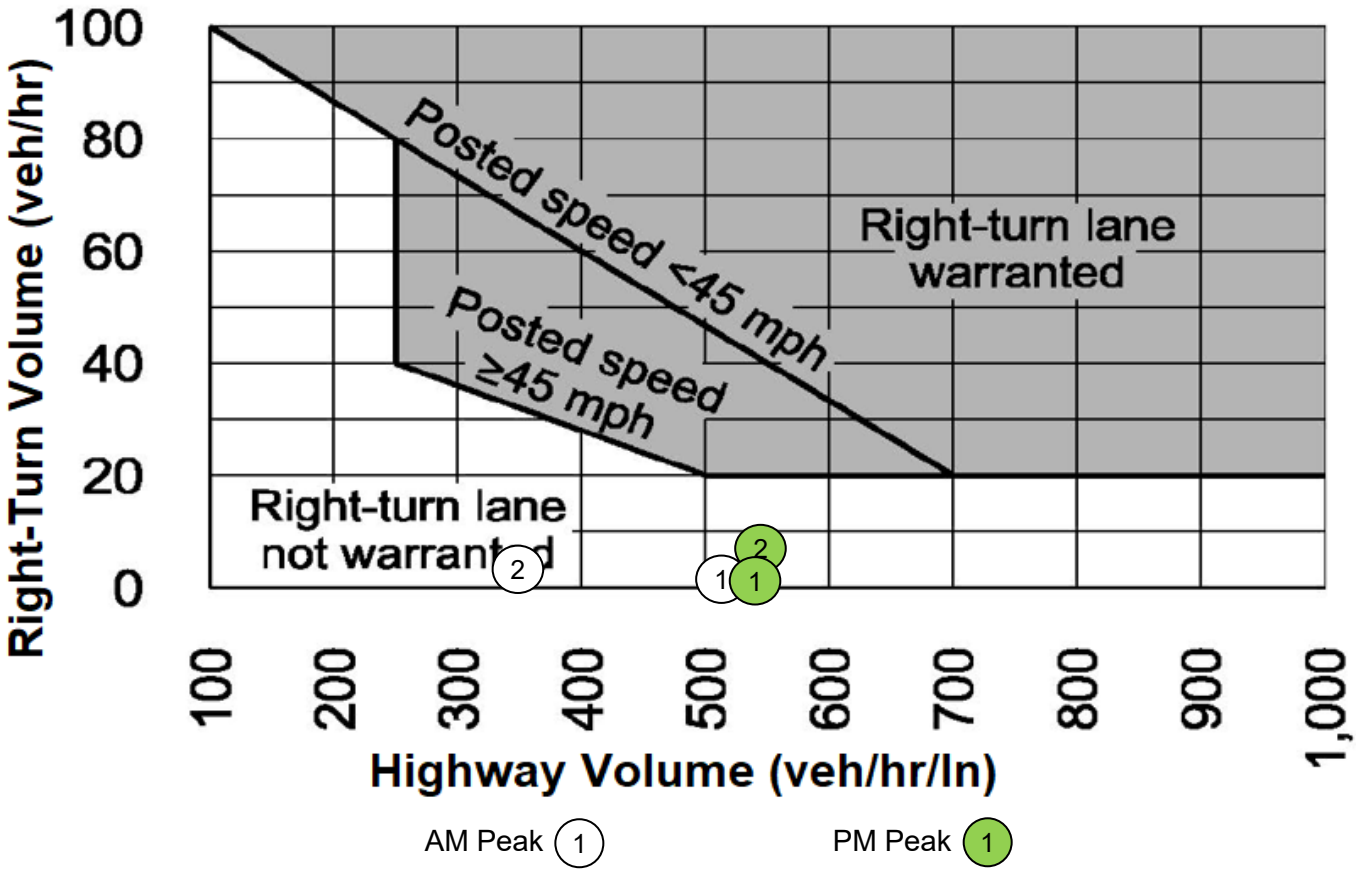
| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 197 | 147 | 0.7% | No |
| | | | | PM | 201 | 315 | 4.3% | No |
| (2) | Vista Drive & S 10th Avenue (No Karcher Access) | NB | 35 | AM | 197 | 154 | 0.7% | No |
| | | | | PM | 201 | 339 | 4.3% | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2024 Existing Traffic**

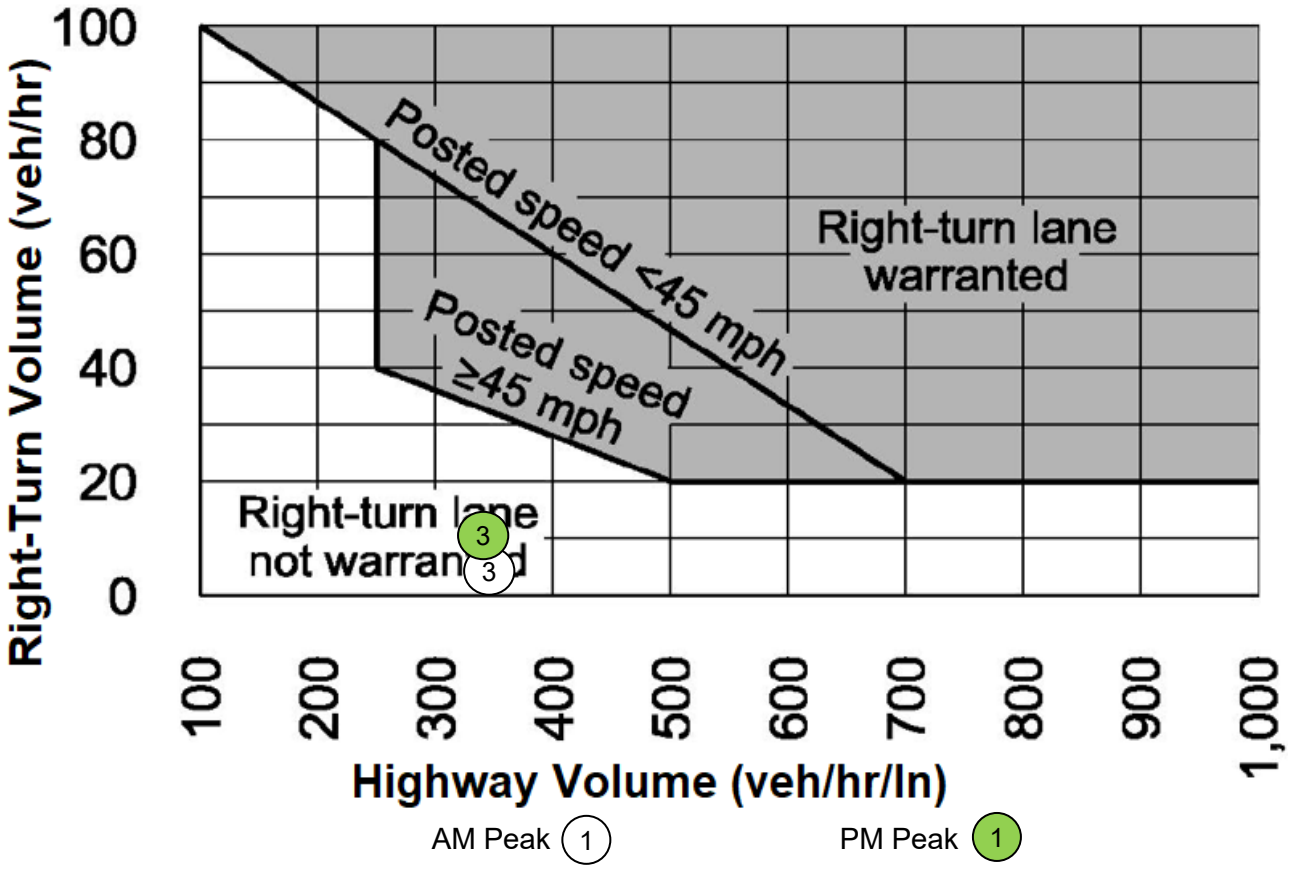
| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | AM | 0 | 516 | No |
| | | | | PM | 0 | 531 | No |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | AM | 2 | 354 | No |
| | | | | PM | 2 | 542 | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2027 Total Traffic**

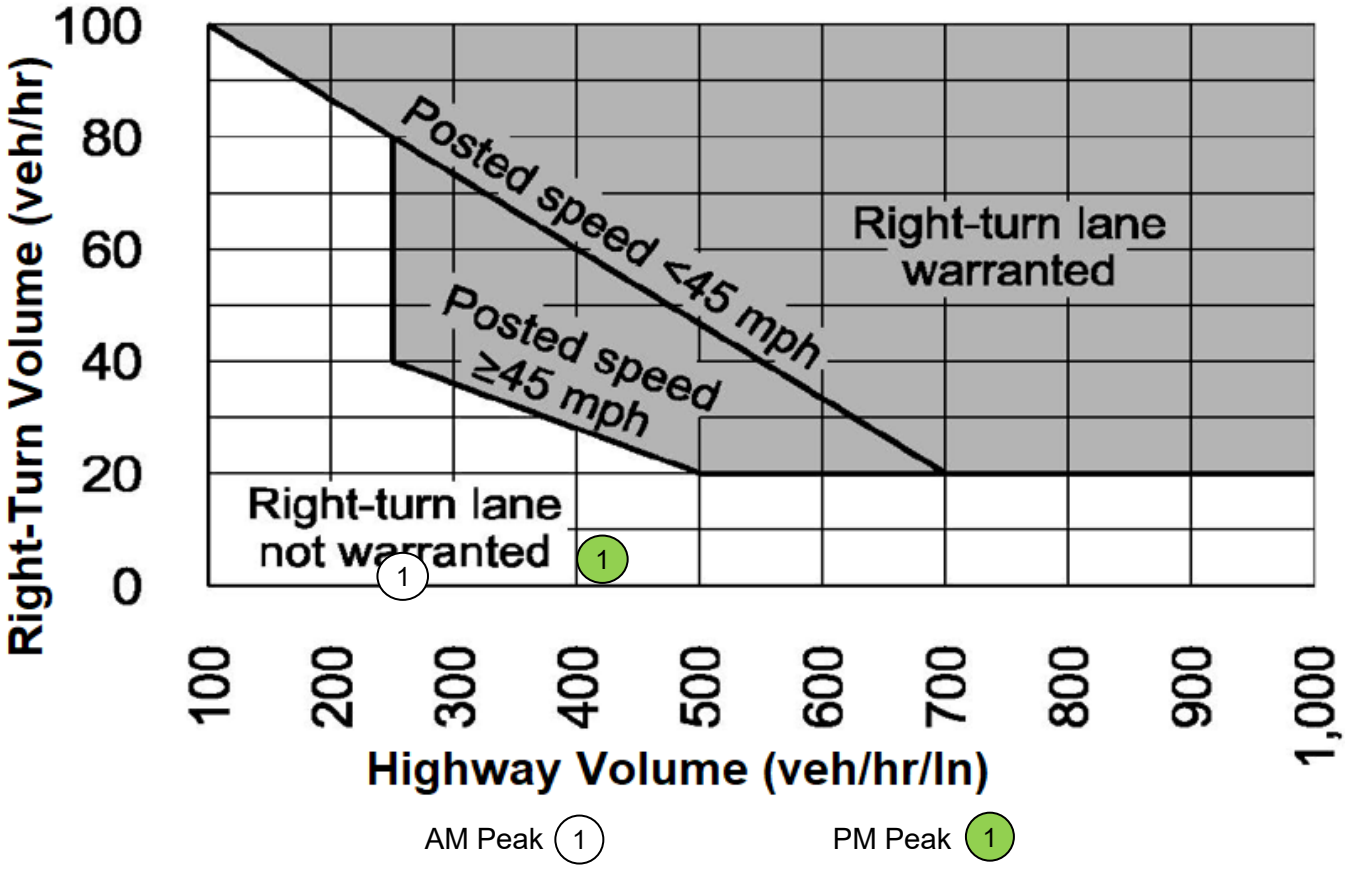
| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| (1) | Kimball Avenue & Karcher Road | EB | 55 | Closed with SH 55 corridor improvements | | | |
| (2) | Kimball Avenue & Karcher Road | WB | 55 | Closed with SH 55 corridor improvements | | | |
| (3) | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 320 | No |
| | | | | PM | 3 | 318 | No |
| (4) | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2027 Background Traffic**

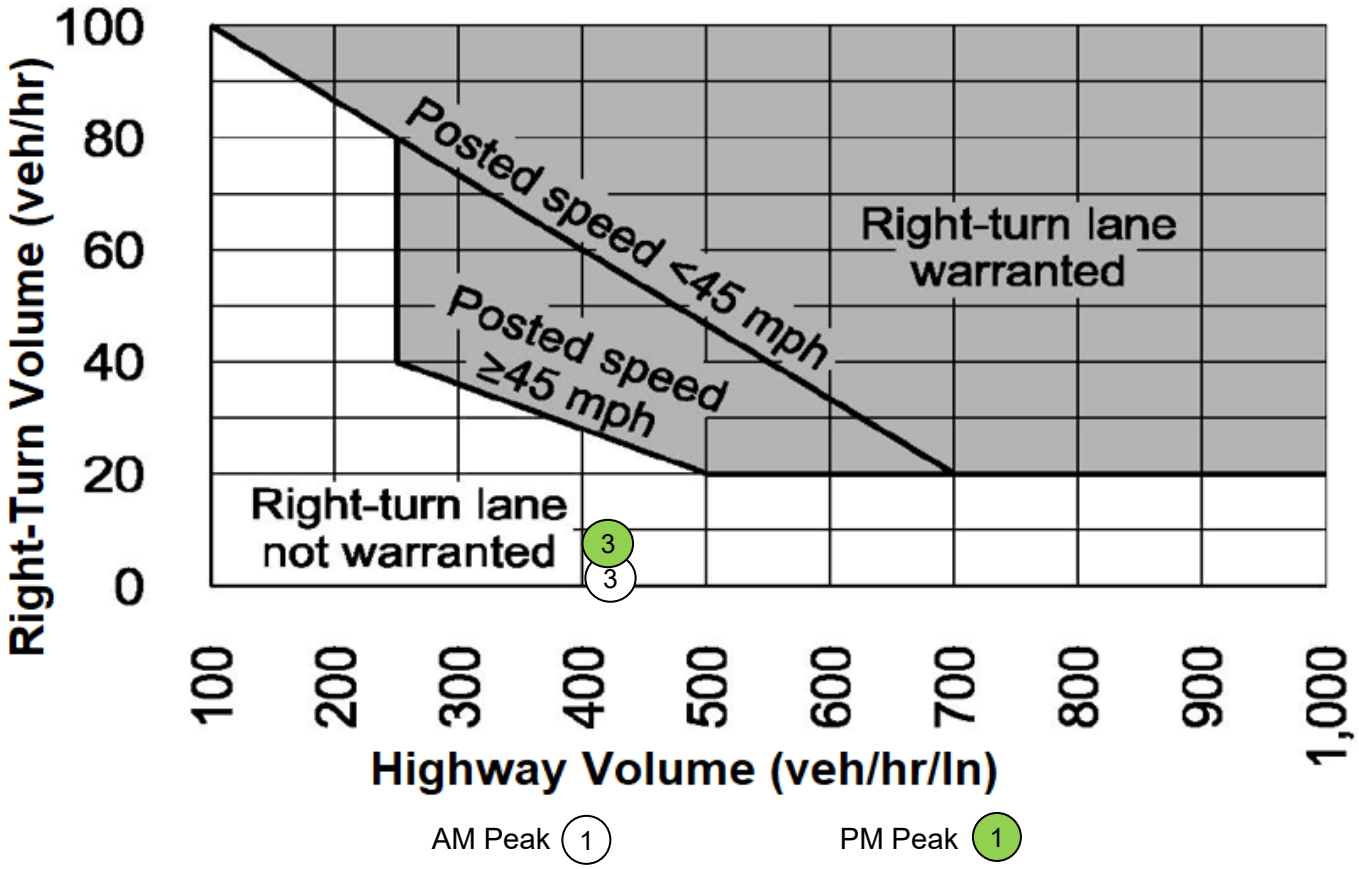
| | Intersection | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2032 Total Traffic**

| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | Closed with SH 55 corridor improvements | | | |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | Closed with SH 55 corridor improvements | | | |
| 3 | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 428 | No |
| | | | | PM | 3 | 425 | No |
| 4 | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |

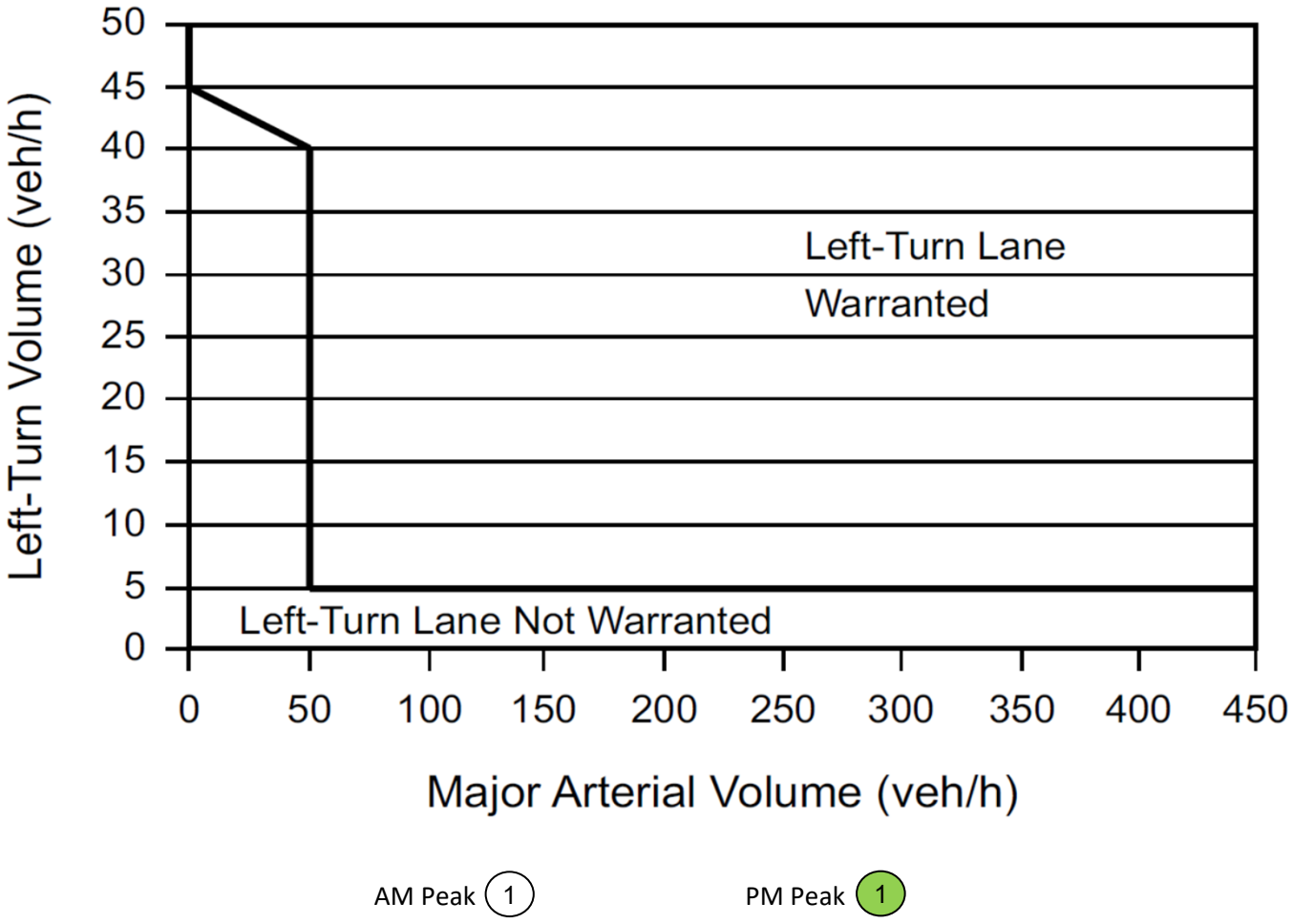


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

AASHTO Left-turn Lane Guidelines for Four-Leg Urban Intersections
**2024 Existing Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Left Turn Volume [vph] | Major Arterial Volume [vphpl] | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | AM | 1 | 435 | No* |
| | | | | PM | 0 | 537 | No* |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | AM | 0 | 435 | No* |
| | | | | PM | 2 | 536 | No* |

* Left-turn volume less than 5 vph - Not Warranted

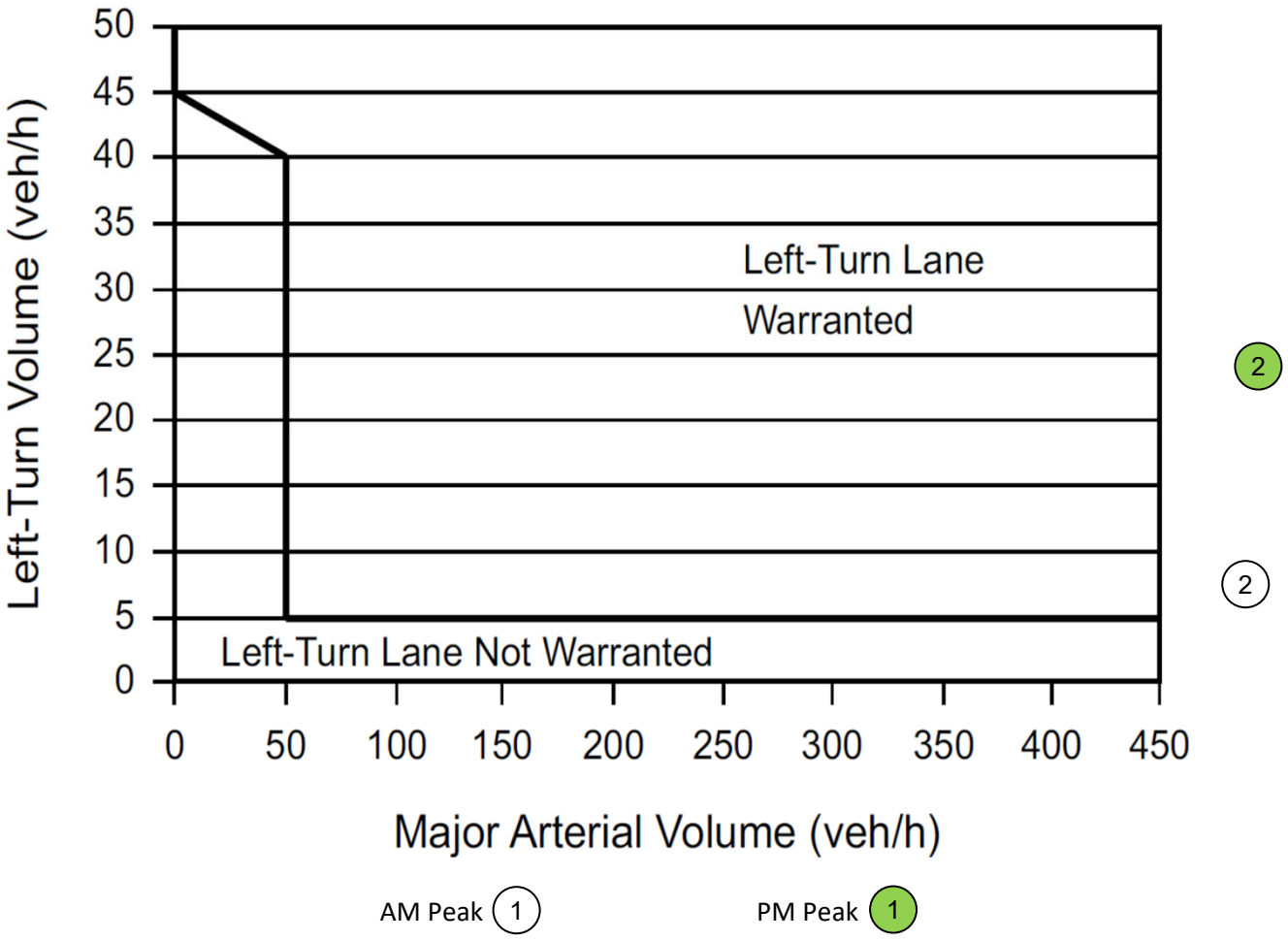


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

AASHTO Left-turn Lane Guidelines for Four-Leg Urban Intersections
**2027 Total Traffic - No SH 55 Corridor Improvements**

| | Intersection | Approach | Speed Limit [mph] | Peak Hour | Left Turn Volume [vph] | Major Arterial Volume [vphpl] | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 516 | No* |
| | | | | PM | 2 | 645 | No* |
| 2 | Ashland Drive & Karcher Road | WB | 55 | **AM** | **6** | **516** | **Yes** |
| | | | | **PM** | **21** | **645** | **Yes** |

* Left-turn volume less than 5 vph - Not Warranted



# Tillman Ridge Rezone

Planning and Zoning Commission Public Hearing
Presentation by: Elizabeth Allen, Bristlecone Land Use Consulting

# Our Request

Rezone from Agriculture to R-1 (Single Family Residential) on a 63-acre parcel. A preliminary plat consisting of 52 lots (48 residential lots and 4 common lots) is forthcoming.

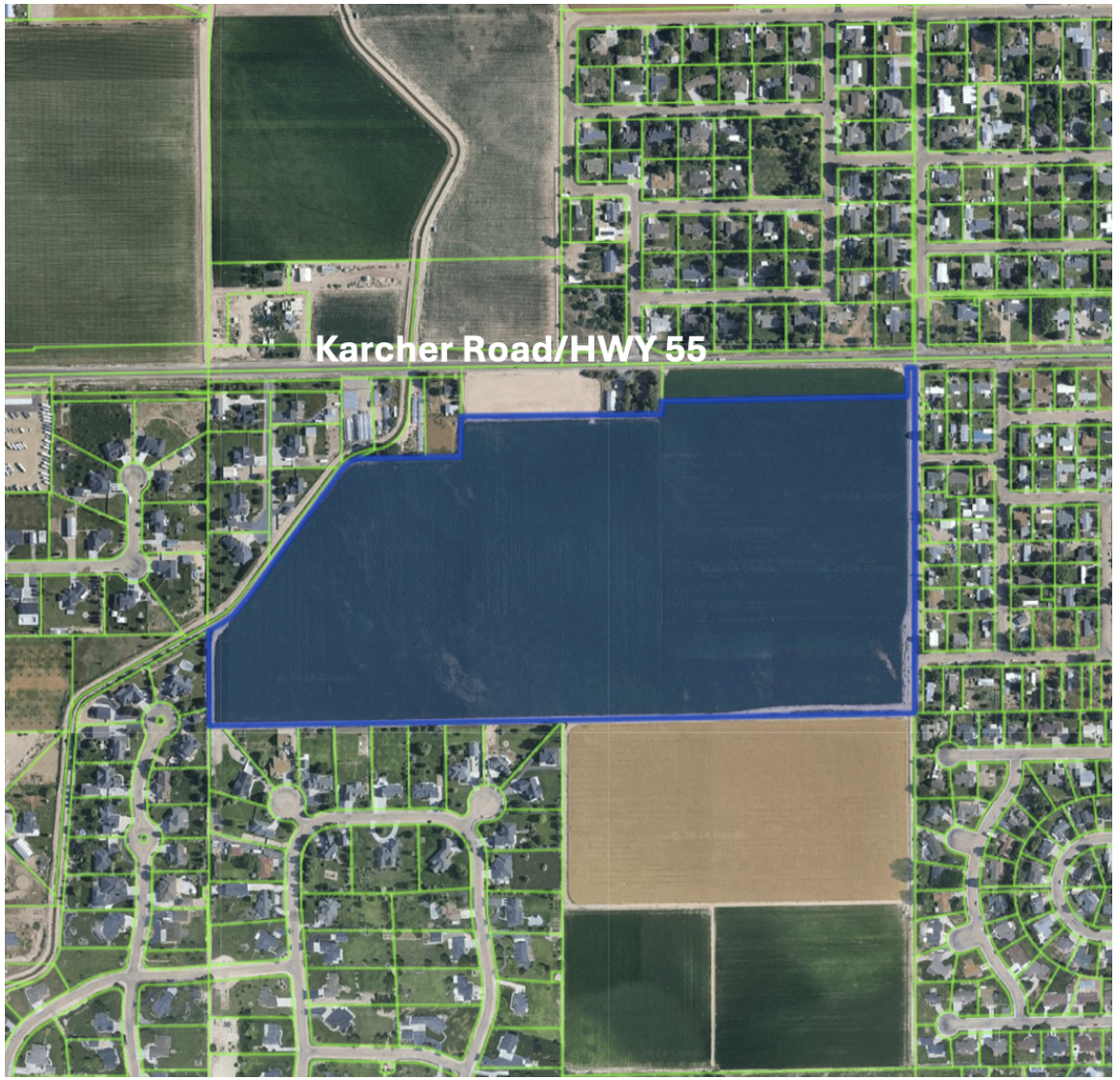



Exhibit A.7 - 2

# Criteria A: Comprehensive Plan

- R-1 zone is consistent with the future land use designation of residential
- Complies with 5 goals and 6 policies

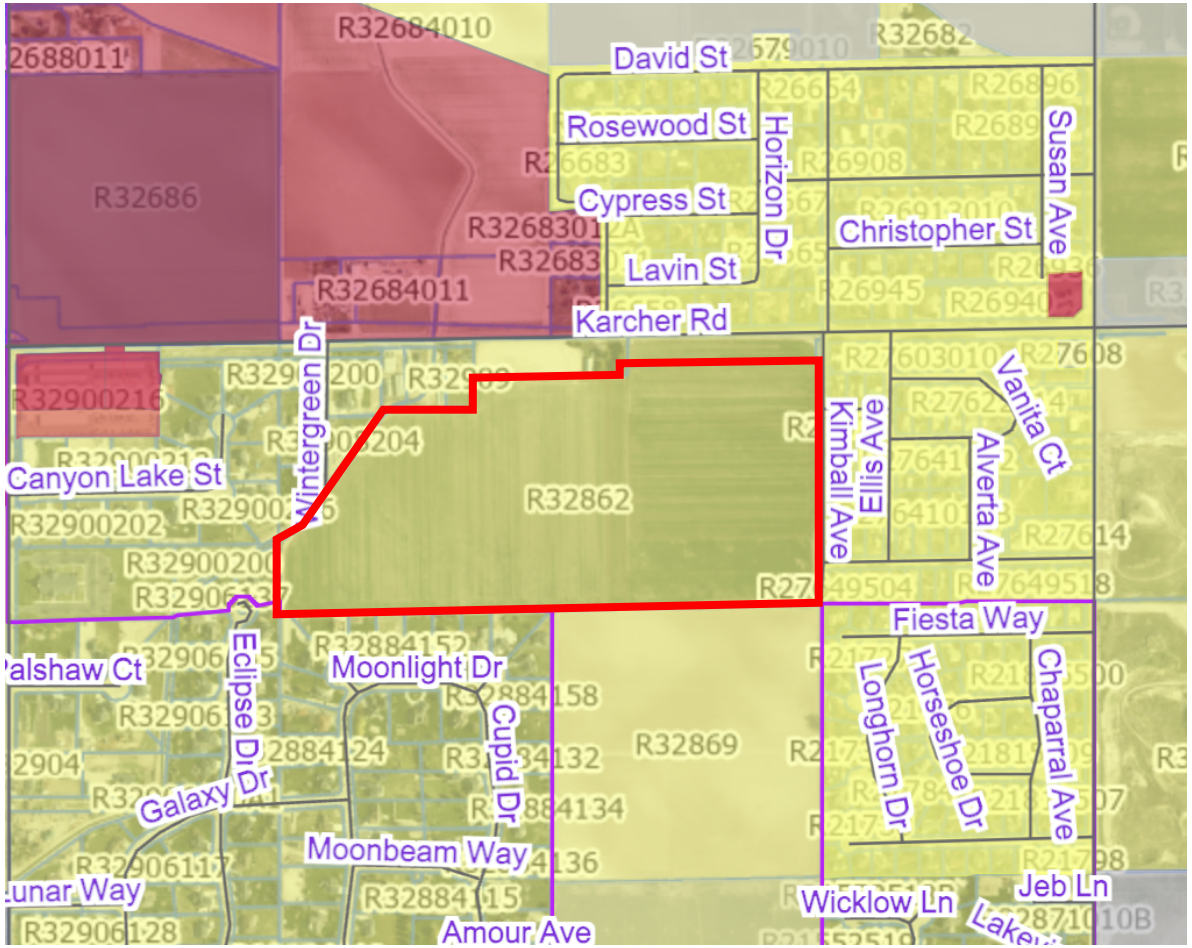



Exhibit A.7 - 3

# Criteria B and C. Surrounding land uses

- Surrounded by existing and planned single family residential

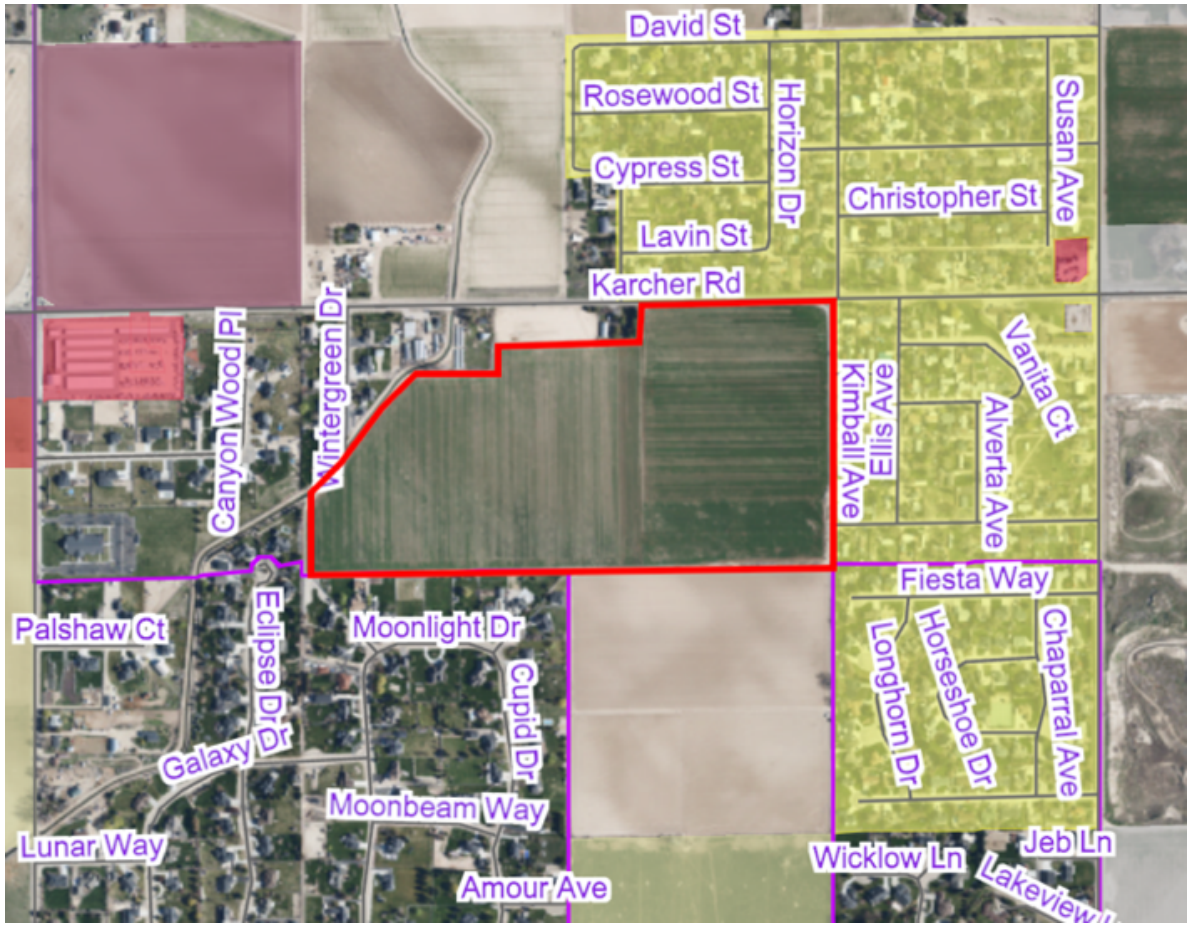



Exhibit A.7 - 4

# Criteria D. Character of the Area

- Primarily single-family residential
- Average lot sizes of adjacent subdivisions: 0.29 to 2.30 acres

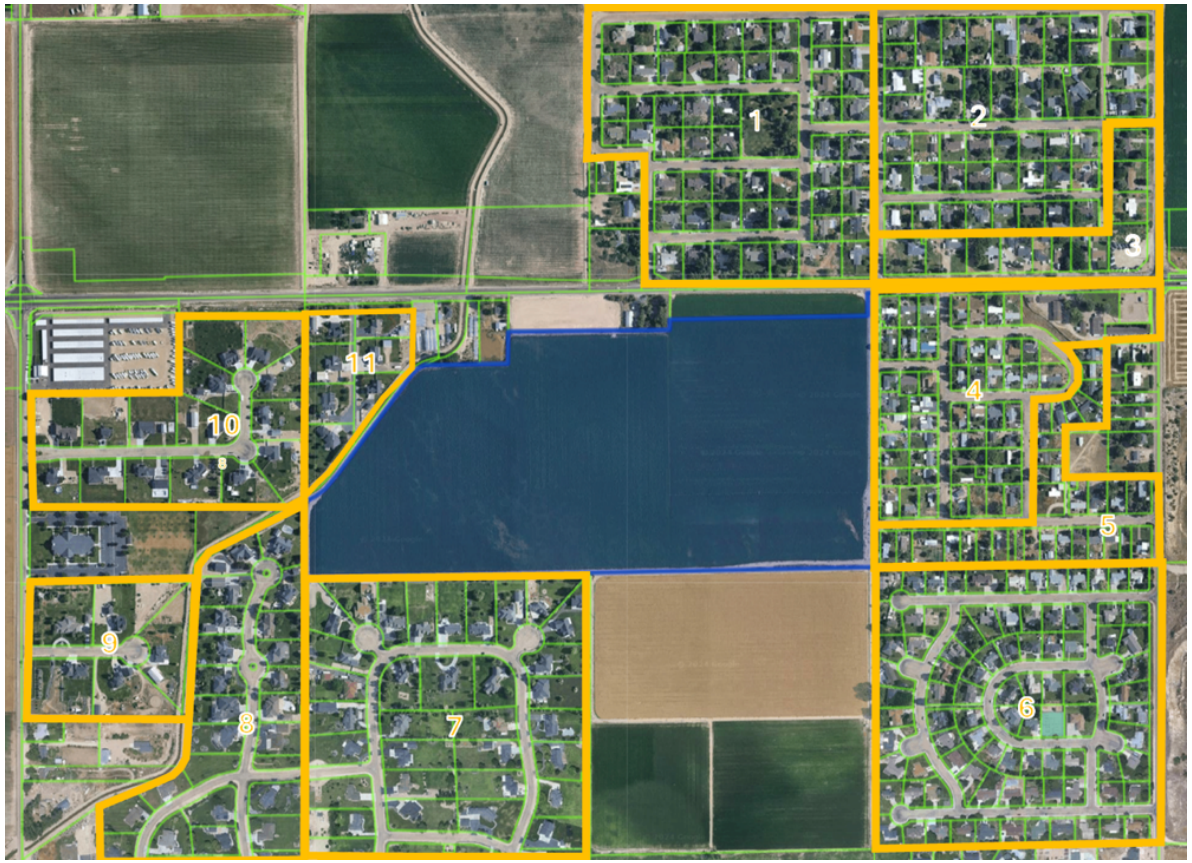
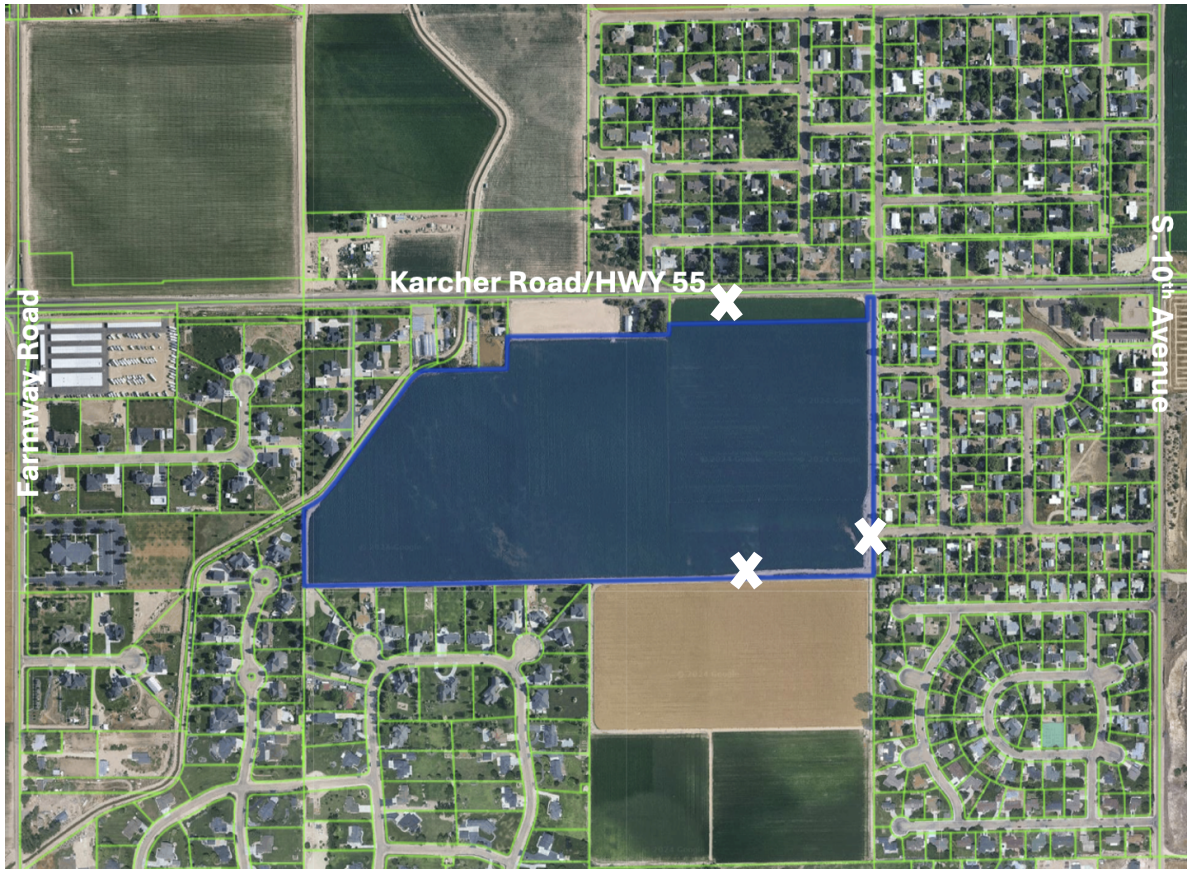



Exhibit A.7 - 5

# Criteria E. Facilities and services

- Sewer: Individual septic systems
- Water: Individual wells
- Drainage: Retained on-site with swales.
- Irrigation: Pressurized irrigation
- Utilities: Idaho Power and Intermountain Gas

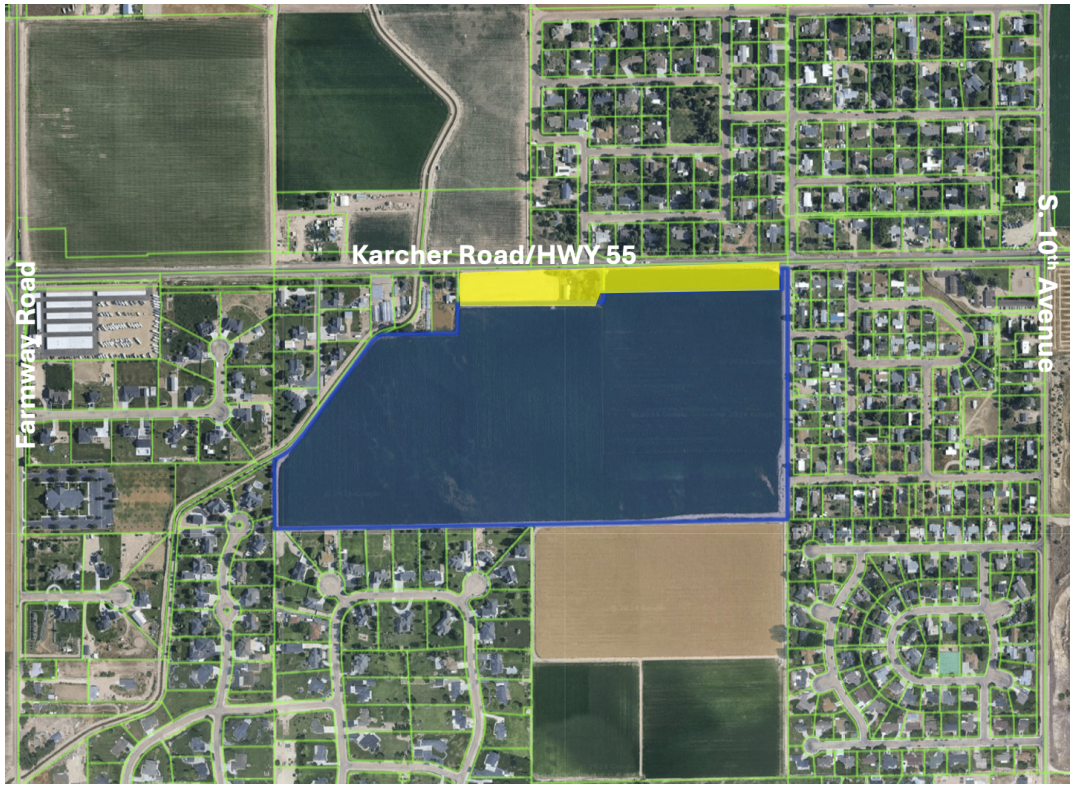
# Criteria F. Legal access




- Available and will be provided at the time of development
- Access via Vista Drive
- Access available on Karcher Road per ITD

# Criteria G. Public street improvements

- TIS completed and reviewed by agencies
- 6 acres of ROW have been dedicated to ITD
- ITD: No additional mitigation required
- CHD#4: Any needed improvements would be addressed at the time of development



# Criteria H. Public services and facilities

- Caldwell Fire Department
- Caldwell Police Department
- Canyon County Sheriff
- Vallivue School District

# Thank you

We respectfully request of approval of the Tillman Ridge Rezone

Exhibit 3

**EXHIBIT B**

**Supplemental Documents**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: March 10, 2025

CANYON COUNTY DEVELOPMENT SERVICES MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY, COMPLETENESS, OR USEFULNESS OF THIS PARCEL INFORMATION TOOL.

# R32862 PARCEL INFORMATION REPORT

3/10/2025 3:04:59 PM

| | |
|---|---|
| **PARCEL NUMBER:** | R32862 |
| **OWNER NAME:** | MCGUIRE WILLIAM B 2011 REVOCABLE TRUST |
| **CO-OWNER:** | MCGUIRE WILLIAM B TRUSTEE |
| **MAILING ADDRESS:** | 4023 SPYGLASS RD CHICO CA 95973 |
| **SITE ADDRESS:** | 0 S KIMBALL AVE |
| **TAX CODE:** | 0590000 |
| **TWP:** | 3N **RNG:** 3W **SEC:** 16 **QUARTER:** NE |
| **ACRES:** | 62.97 |
| **HOME OWNERS EXEMPTION:** | No |
| **AG-EXEMPT:** | Yes |
| **DRAIN DISTRICT:** | NOT In Drain Dist |
| **ZONING DESCRIPTION:** | AG / AGRICULTURAL |
| **HIGHWAY DISTRICT:** | HIGHWAY DISTRICT #4 |
| **FIRE DISTRICT:** | CALDWELL RURAL FIRE |
| **SCHOOL DISTRICT:** | VALLIVUE SCHOOL DIST #139 |
| **IMPACT AREA:** | CALDWELL |
| **FUTURE LAND USE 2011-2022 :** | Res |
| **FLU Overlay Zone Desc 2030:** | |
| **FLU RR Zone Desc 2030:** | |
| **FUTURE LAND USE 2030:** | Res |
| **IRRIGATION DISTRICT:** | BOISE PROJECT BOARD OF CONTROL \ WILDER IRRIGATION DISTRICT |
| **FEMA FLOOD ZONE:** | X **FLOODWAY:** NOT In FLOODWAY **FIRM PANEL:** 16027C0375F |
| **WETLAND:** | Riverine |
| **NITRATE PRIORITY:** | NO Nitrate Prio |
| **FUNCTIONAL Classification:** | Other Principal Arterials |
| **INSTRUMENT NO. :** | 2024018770 |
| **SCENIC BYWAY:** | NOT In Scenic Byway |
| **LEGAL DESCRIPTION:** | 16-3N-3W NE TX 98381 IN NWNE & IN NENW LS ROW |
| **PLATTED SUBDIVISION:** | |
| **SMALL CITY ZONING:** | |
| **SMALL CITY ZONING TYPE:** | |

**DISCLAIMER:**

1. FEMA FLOOD ZONE REFERS TO THE DESIGNATED FEMA FLOOD AREAS. POSSIBLY ONE (1) OF SEVERAL ZONES - SEE FIRM PANEL NUMBER.
2. THIS FORM DOES NOT CALCULATE DATA FOR PARCELS INSIDE CITY LIMITS SO WATCH YOURSELVES.
3. WETLANDS CLASSIFICATION WILL POPULATE IF "ANY" PORTION OF SAID PARCEL CONTAINS A DELINEATED WETLAND.
4. COLLECTORS AND ARTERIALS ARE BASED ON THE SHERRIFS CENTERLINE WITH AN ADDITIONAL 100 FOOT BUFFER.

CANYON COUNTY ASSUMES NO LIABILITY FOR DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR MISUSE OF THIS PARCEL INFORMATION TOOL OR ANY OF THE INFORMATION CONTAINED HEREIN.

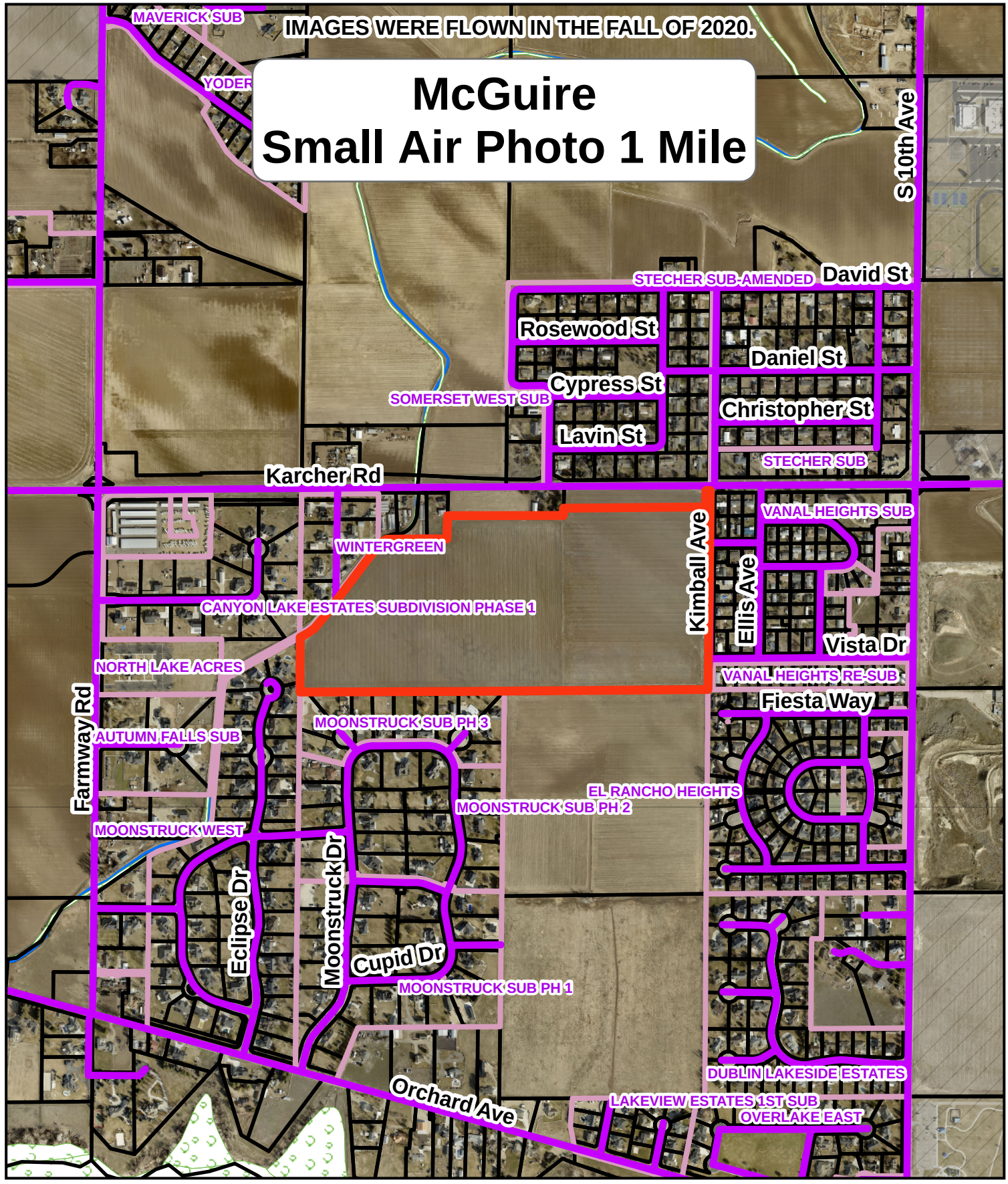
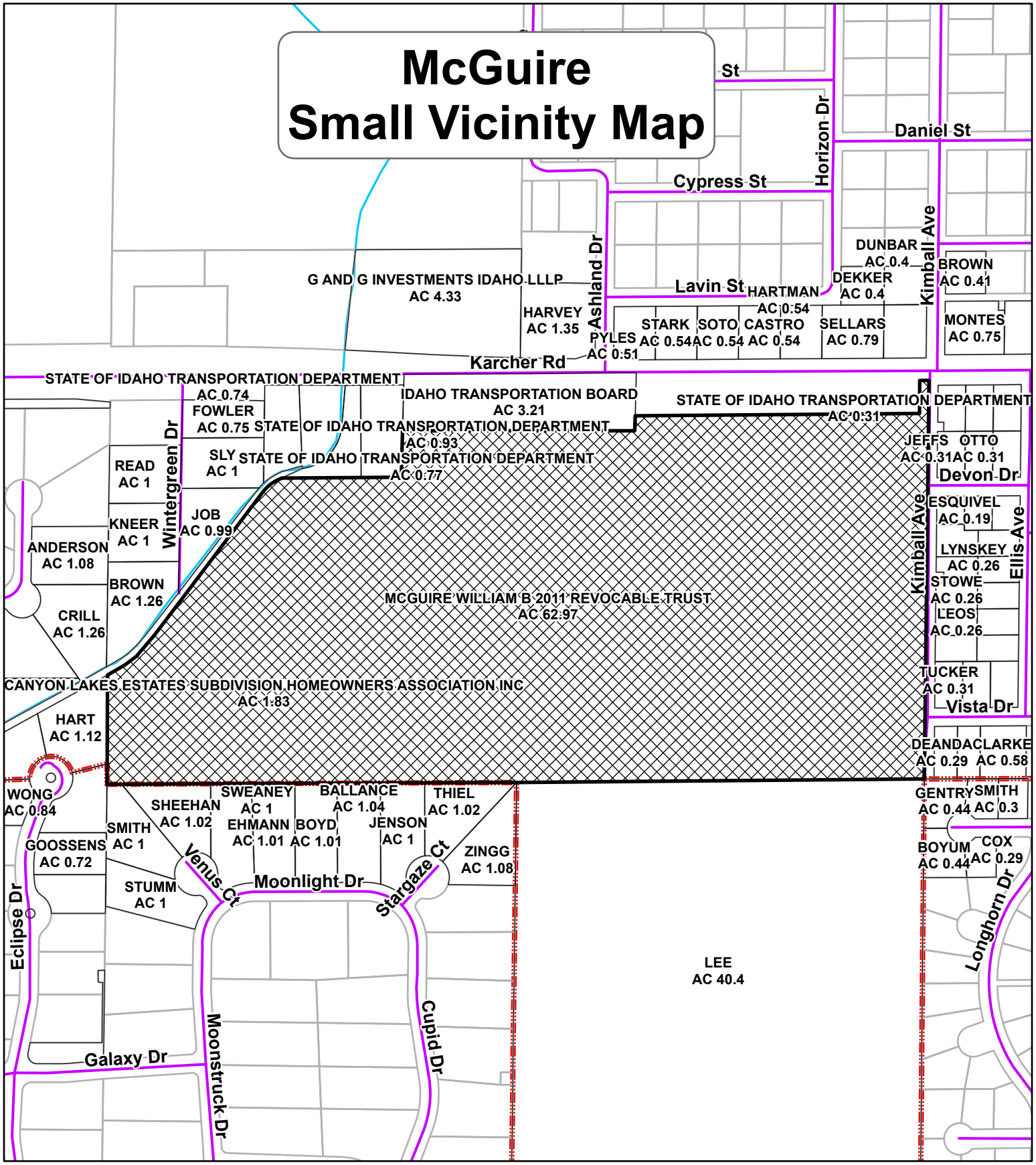
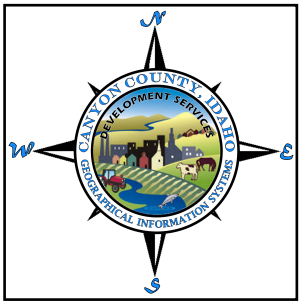

IMAGES WERE FLOWN IN THE FALL OF 2020.
McGuire
Small Air Photo 1 Mile
MAVERICK SUB
YODER
S 10th Ave
STECHER SUB-AMENDED
David St
Rosewood St
Daniel St
Cypress St
SOMERSET WEST SUB
Christopher St
Lavin St
STECHER SUB
Karcher Rd
VANAL HEIGHTS SUB
WINTERGREEN
Kimball Ave
Ellis Ave
CANYON LAKE ESTATES SUBDIVISION PHASE 1
Vista Dr
NORTH LAKE ACRES
VANAL HEIGHTS RE-SUB
Fiesta Way
Farmway Rd
MOONSTRUCK SUB PH 3
AUTUMN FALLS SUB
EL RANCHO HEIGHTS
MOONSTRUCK SUB PH 2
MOONSTRUCK WEST
Eclipse Dr
Moonstruck Dr
Cupid Dr
MOONSTRUCK SUB PH 1
DUBLIN LAKESIDE ESTATES
Orchard Ave
LAKEVIEW ESTATES 1ST SUB
OVERLAKE EAST
City_Limits
Wetlands
0
0.25
0.5
Miles

Exhibit B.2b

# McGuire Small Vicinity Map



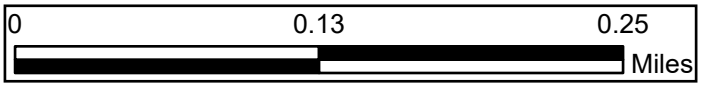
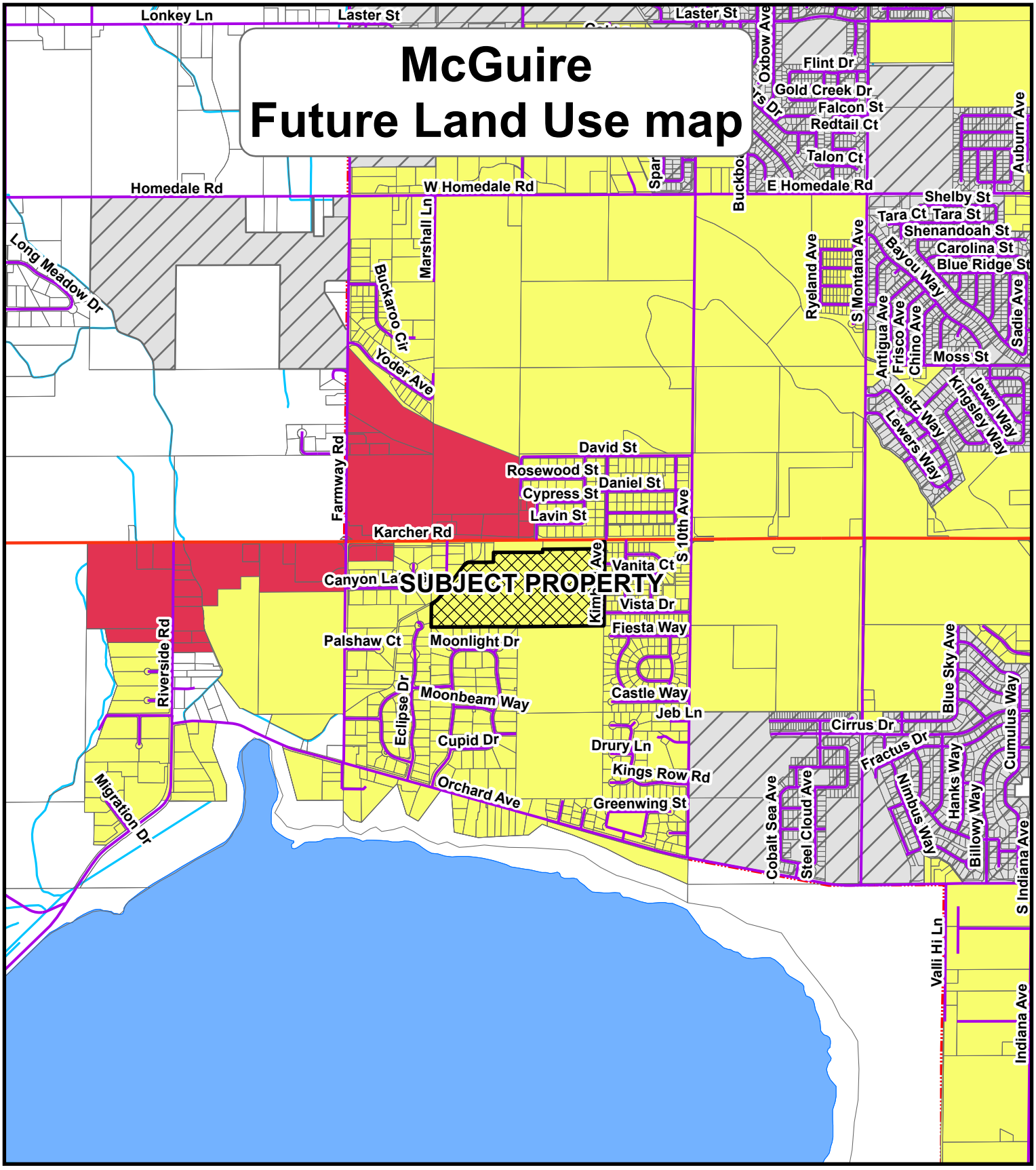
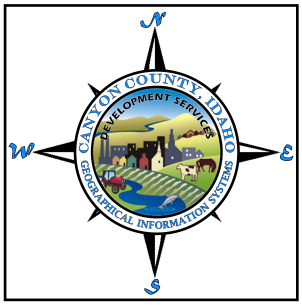




Exhibit B.2b



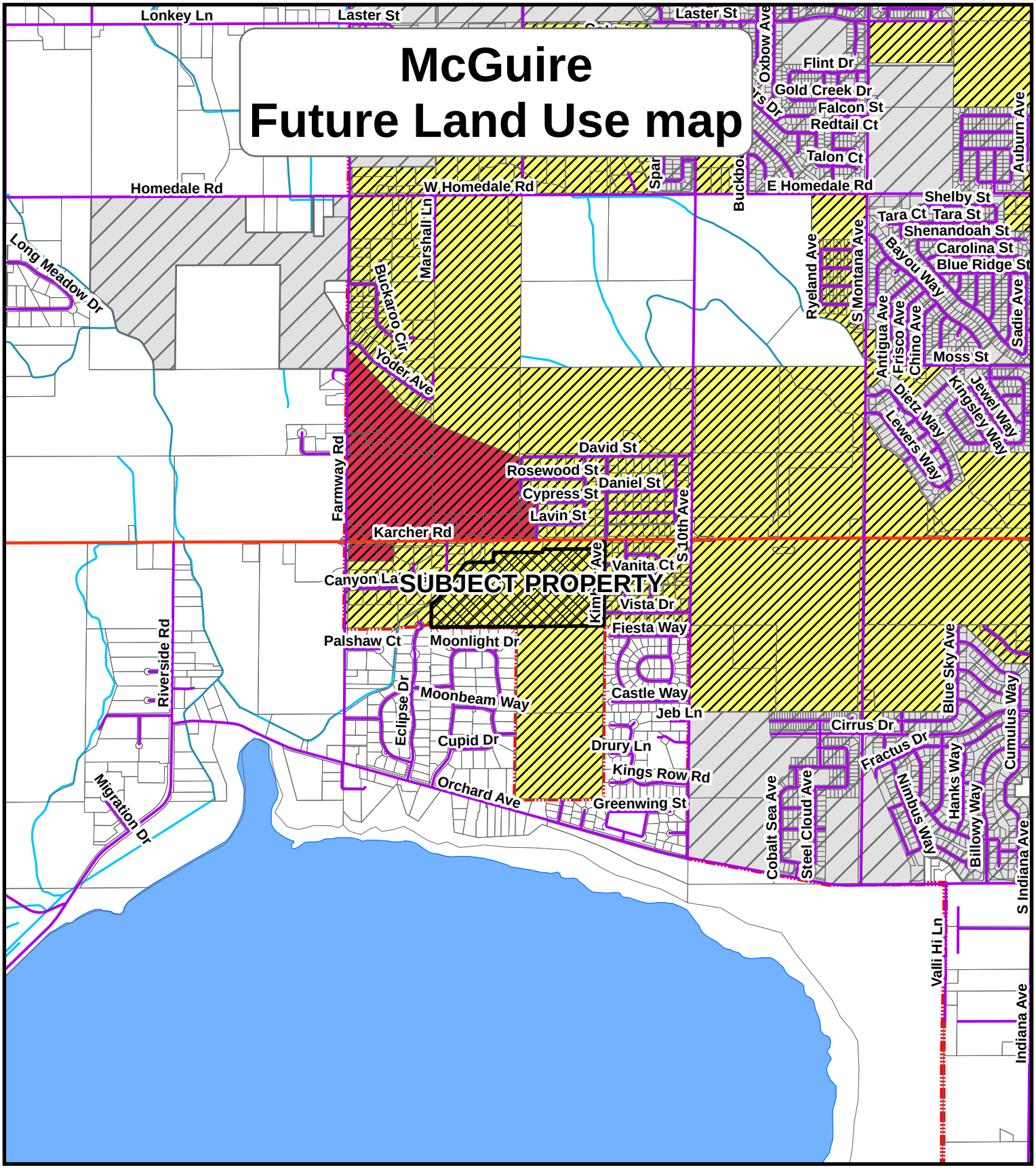



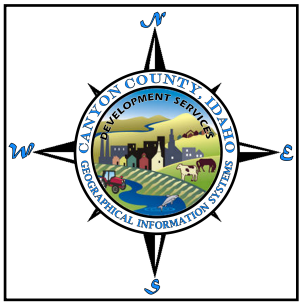

**Legend**

Future Land Use 2011_2022

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL

0 0.4 0.8 Miles




## Legend

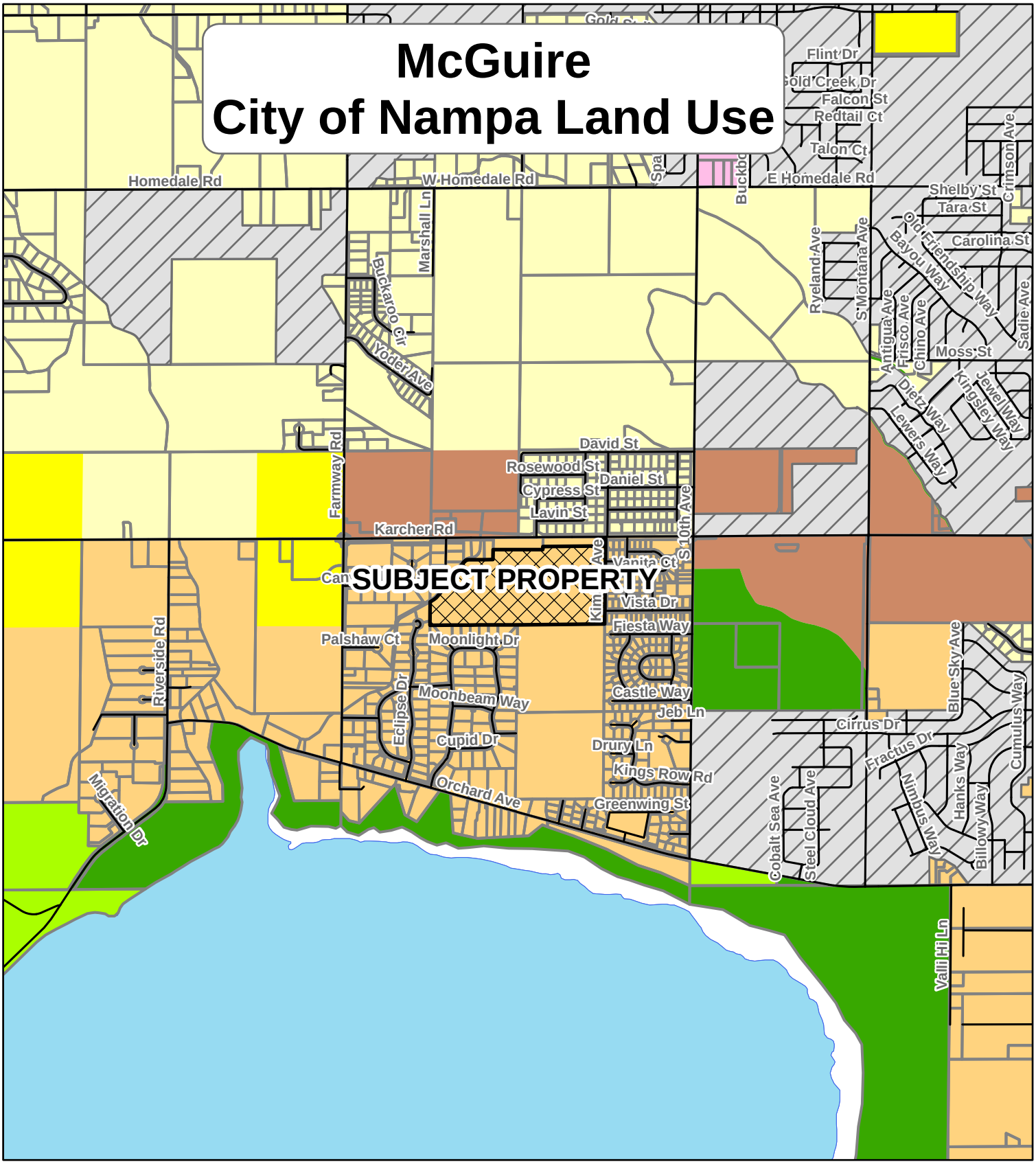
Future Land Use 2030

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL

0 0.4 0.8 Miles

**Exhibit B.2c - 2**

# McGuire
# City of Nampa Land Use



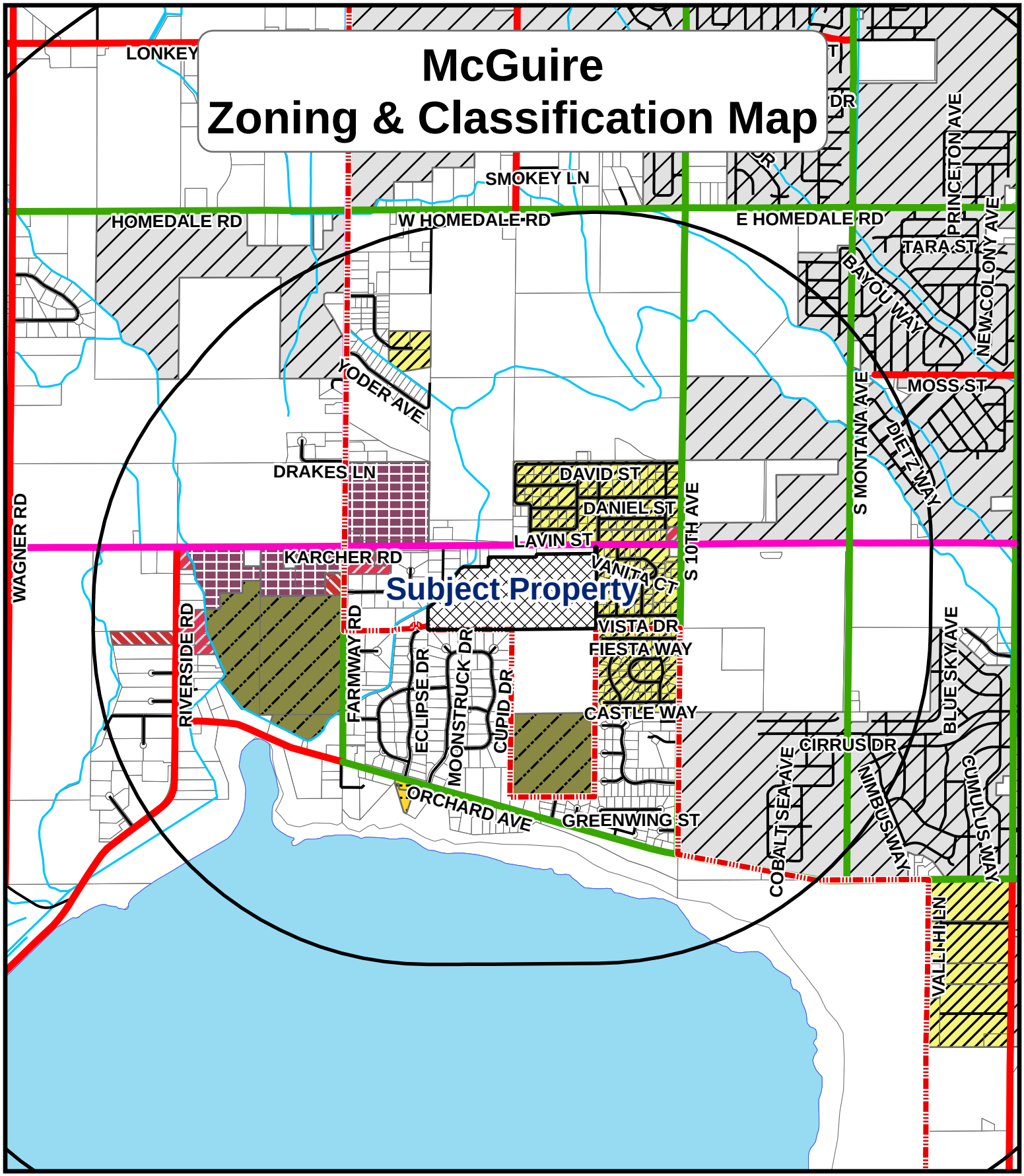

**Cald Comp Plan**

- Residential Estates
- Low Density Residential
- Medium Density Residential
- High Density Residential
- City Center
- Institutional
- Business
- Commercial & Service
- Traditional Neighborhood
- Highway Corridor
- Manufacturing & Production
- Industrial
- Rail Facilities
- Public
- Environmentally Sensitive
- Open Space

0 0.4 0.8 Miles

Exhibit B.2e

# McGuire
# Zoning & Classification Map




CurrentZoning

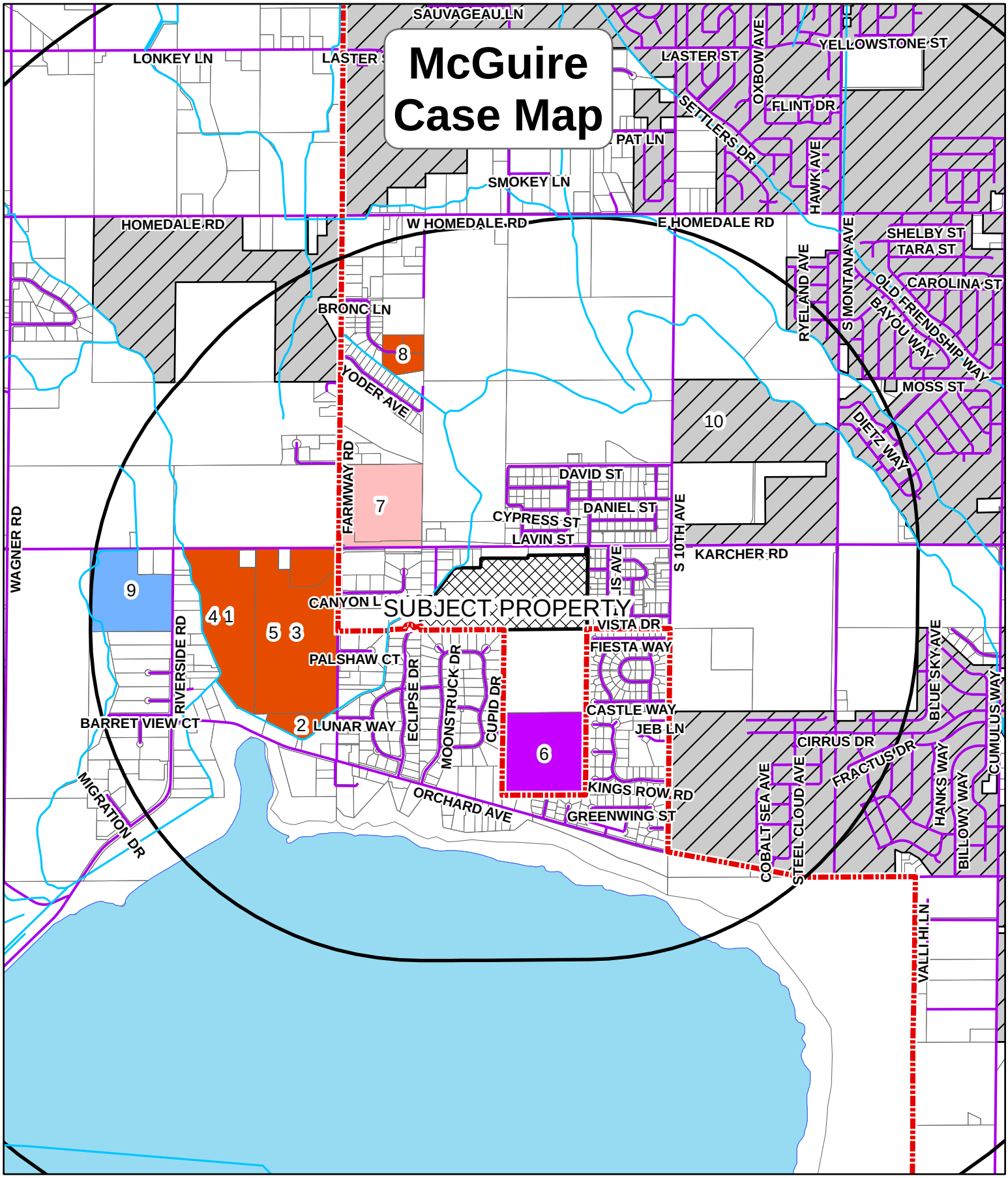
- RR
- CR-RR
- R1
- CR-R1
- R2
- C
- C1
- CR-C1
- C2
- CR-C2
- M1
- CR-M1
- M2
- AG

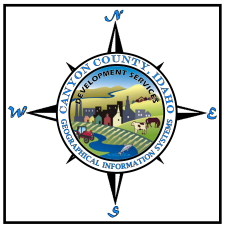
ITD Functional Classification

- Interstate
- Major Collector
- Minor Arterial
- Minor Collector
- Other Principal Arterials

Exhibit B.2e

0 0.5 1 Miles




YEAR

| | |
|---|---|
| 2023 | 2020 |
| 2022 | 2019 |
| 2021 | 2018 |

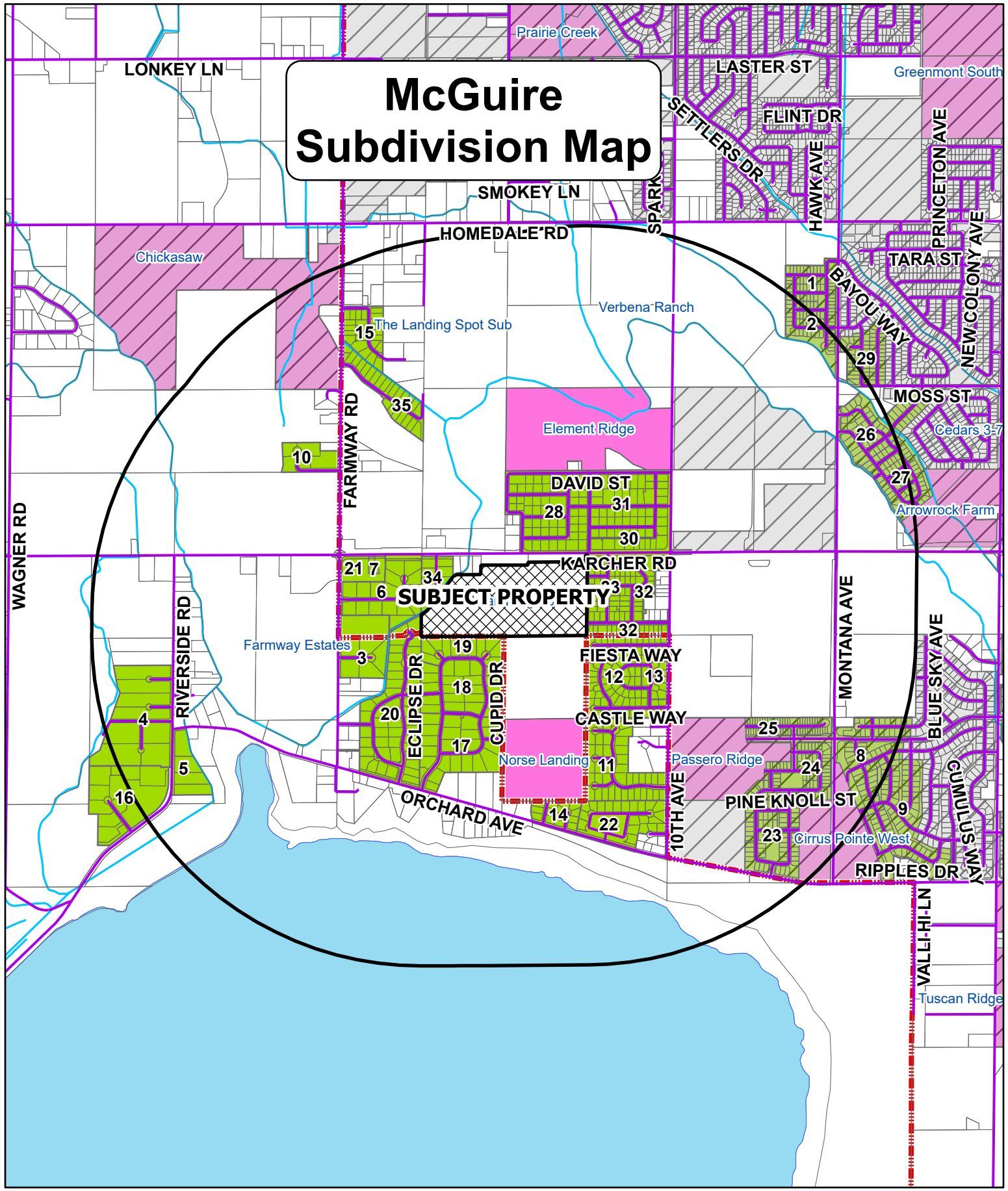
0 0.5 1 Miles

Exhibit B.2f - 2

# CASE SUMMARY

| ID | CASENUM | REQUEST | CASENAME | FINALDECIS |
|---|---|---|---|---|
| 1 | CR2018-0002 | Rezone A to CR-C1,CR-C2,CR-R1 & Comp Plan | KARCHER FARM, LLC | APPROVED |
| 2 | CR2018-0002 | Rezone A to CR-C1,CR-C2,CR-R1 & Comp Plan | KARCHER FARM, LLC | APPROVED |
| 3 | CR2018-0002 | Rezone A to CR-C1,CR-C2,CR-R1 & Comp Plan | KARCHER FARM, LLC | APPROVED |
| 4 | CR2018-0002 | Rezone A to CR-C1, CR-C2, CR-R1 & Comp plan change | Karcher Farm, LLC | APPROVED |
| 5 | CR2018-0002 | Rezone A to CR-C1, CR-C2, CR-R1 & Comp plan change | Karcher Farm, LLC | APPROVED |
| 6 | SD2021-0006 | Preliminary Plat | Moonstruck Heights Sub | APPROVED |
| 7 | RZ2022-0007 | Rezone AG to CR-C2 | Obendorf | APPROVED |
| 8 | RZ2019-0022 | Rezone AG to RR | Rodriquez | APPROVED |
| 9 | RZ2021-0035 | Rezone AG to C2 | Troost Family Living Trust | DENIED |
| 10 | CU2019-0024 | CUP school cafeteria | Vallivue School District | APPROVED |

Exhibit B.2g




SUBDIVISIONS
Plat Type,Plat Status
Preliminary,Approved
Preliminary,Pending

Exhibit B.2g - 1

0 0.3 0.6 Miles

# SUBDIVISION & LOT REPORT

| NUMBER OF SUBS | ACRES IN SUB | NUMBER OF LOTS | AVERAGE LOT SIZE |
|---|---|---|---|
| 35 | 699.67 | 1274 | 0.55 |
| **NUMBER OF SUBS IN PLATTING** | **ACRES IN SUB** | **NUMBER OF LOTS** | **AVERAGE LOT SIZE** |
| 6 | 409.80 | 1127 | 0.36 |

| NUMBER OF LOTS NOTIFIED | AVERAGE | MEDIAN | MINIMUM | MAXIMUM |
|---|---|---|---|---|
| | | | | |

| NUMBER OF MOBILE HOME PARKS | ACRES IN MHP | NUMBER OF SITES | AVG HOMES PER ACRE | MAXIMUM |
|---|---|---|---|---|
| | | | | |

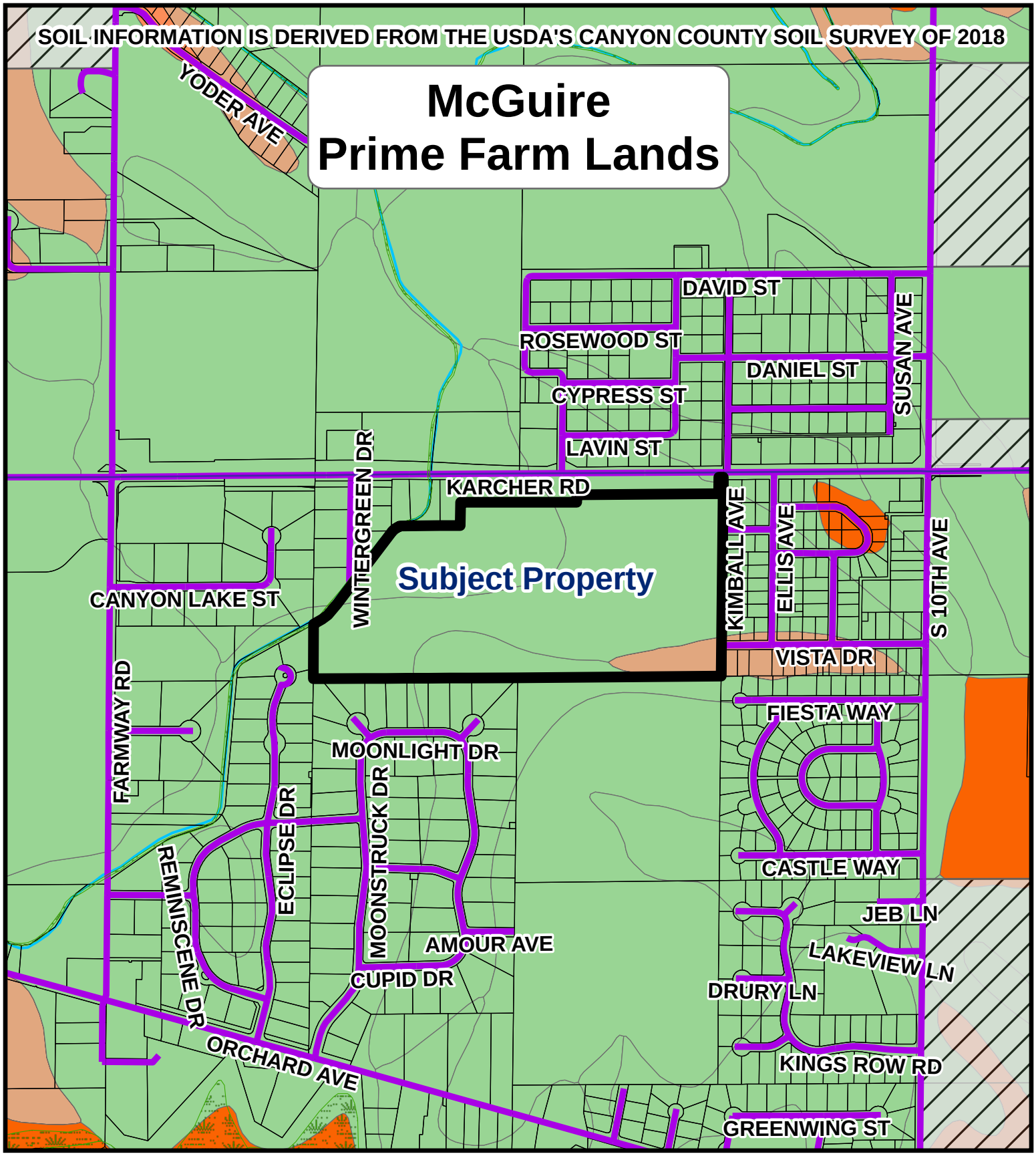
# PLATTED SUBDIVISIONS

| SUBDIVISION NAME | Label | LOCATION | ACRES | NO. OF LOTS | AVERAGE LOT SIZE | CITY OF... | Year |
|---|---|---|---|---|---|---|---|
| ARROWLEAF SUBDIVISION | 1 | 3N3W10 | 12.48 | 57 | 0.22 | CALDWELL | 2020 |
| ARROWLEAF SUBDIVISION NO. 2 | 2 | 3N3W10 | 14.40 | 54 | 0.27 | CALDWELL | 2021 |
| AUTUMN FALLS SUB | 3 | 3N3W16 | 11.49 | 5 | 2.30 | COUNTY (Canyon) | 2005 |
| BARRETT HILLS ESTATES | 4 | 3N3W17 | 37.89 | 8 | 4.74 | COUNTY (Canyon) | 1990 |
| BARRETT HILLS ESTATES #2 | 5 | 3N3W17 | 10.27 | 4 | 2.57 | COUNTY (Canyon) | 1989 |
| YON LAKE ESTATES SUBDIVISION PHA | 6 | 3N3W16 | 22.94 | 19 | 1.21 | COUNTY (Canyon) | 2008 |
| YON LAKE ESTATES SUBDIVISION PHA | 7 | 3N3W16 | 6.46 | 1 | 6.46 | COUNTY (Canyon) | 2018 |
| CIRRUS POINTE SUBDIVISION NO. 7 | 8 | 3N3W15 | 27.06 | 67 | 0.40 | CALDWELL | 2023 |
| CIRRUS POINTE SUBDIVISION NO. 8 | 9 | 3N3W15 | 34.19 | 82 | 0.42 | CALDWELL | 2024 |
| DRAKES LANDING SUB | 10 | 3N3W08 | 9.00 | 6 | 1.50 | COUNTY (Canyon) | 2004 |
| DUBLIN LAKESIDE ESTATES | 11 | 3N3W16 | 27.85 | 40 | 0.70 | COUNTY (Canyon) | 1993 |
| EL RANCHO HEIGHTS | 12 | 3N3W16 | 34.06 | 79 | 0.43 | COUNTY (Canyon) | 1976 |
| EL RANCHO HEIGHTS #2 | 13 | 3N3W16 | 5.64 | 11 | 0.51 | COUNTY (Canyon) | 1990 |
| LAKEVIEW ESTATES 1ST SUB | 14 | 3N3W16 | 7.85 | 14 | 0.56 | COUNTY (Canyon) | 1964 |
| MAVERICK SUB | 15 | 3N3W09 | 12.30 | 25 | 0.49 | COUNTY (Canyon) | 1973 |
| MIGRATION POINTE | 16 | 3N3W17 | 27.56 | 11 | 2.51 | COUNTY (Canyon) | 2001 |
| MOONSTRUCK SUB PH 1 | 17 | 3N3W16 | 31.17 | 27 | 1.15 | COUNTY (Canyon) | 2002 |
| MOONSTRUCK SUB PH 2 | 18 | 3N3W16 | 25.75 | 27 | 0.95 | COUNTY (Canyon) | 2002 |
| MOONSTRUCK SUB PH 3 | 19 | 3N3W16 | 11.98 | 11 | 1.09 | COUNTY (Canyon) | 2003 |
| MOONSTRUCK WEST | 20 | 3N3W16 | 44.44 | 56 | 0.79 | COUNTY (Canyon) | 2004 |
| NORTH LAKE ACRES | 21 | 3N3W16 | 13.79 | 3 | 4.60 | COUNTY (Canyon) | 2004 |
| OVERLAKE EAST | 22 | 3N3W16 | 20.67 | 23 | 0.90 | COUNTY (Canyon) | 1999 |
| PASSERO RIDGE SUBDIVISION NO. 1 | 23 | 3N3W15 | 26.57 | 81 | 0.33 | CALDWELL | 2023 |
| PASSERO RIDGE SUBDIVISION NO. 2 | 24 | 3N3W15 | 21.50 | 75 | 0.29 | CALDWELL | 2023 |
| PASSERO RIDGE SUBDIVISION NO. 3 | 25 | 3N3W15 | 10.80 | 63 | 0.17 | CALDWELL | 2023 |
| QUAIL RIDGE SUB PH 1 | 26 | 3N3W10 | 23.43 | 55 | 0.43 | CALDWELL | 2006 |
| QUAIL RIDGE SUBDIVISIONPH. 2 | 27 | 3N3W10 | 19.39 | 63 | 0.31 | CALDWELL | 2015 |
| SOMERSET WEST SUB | 28 | 3N3W09 | 36.89 | 57 | 0.65 | COUNTY (Canyon) | 1974 |
| SOUTH PARK #2 UNIT #9 | 29 | 3N3W10 | 14.80 | 66 | 0.22 | CALDWELL | 2006 |
| STECHER SUB | 30 | 3N3W09 | 10.07 | 14 | 0.72 | COUNTY (Canyon) | 1959 |
| STECHER SUB-AMENDED | 31 | 3N3W09 | 30.27 | 49 | 0.62 | COUNTY (Canyon) | 1968 |
| VANAL HEIGHTS RE-SUB | 32 | 3N3W16 | 6.08 | 21 | 0.29 | COUNTY (Canyon) | 1973 |
| VANAL HEIGHTS SUB | 33 | 3N3W16 | 28.60 | 70 | 0.41 | COUNTY (Canyon) | 1960 |
| WINTERGREEN | 34 | 3N3W16 | 7.26 | 7 | 1.04 | COUNTY (Canyon) | 2000 |
| YODER 1ST SUB | 35 | 3N3W09 | 14.77 | 23 | 0.64 | COUNTY (Canyon) | 1963 |

# SUBDIVISIONS IN PLATTING

| SUBDIVISION NAME | ACRES | NO. OF LOTS | AVERAGE LOT SIZE |
|---|---|---|---|
| Passero Ridge | 77.53 | 144 | 0.54 |
| Norse Landing | 40.30 | 35 | 1.15 |
| Arrowrock Farm | 35.20 | 135 | 0.26 |
| Cirrus Pointe West | 36.97 | 119 | 0.31 |
| Chickasaw | 145.55 | 475 | 0.31 |
| Element Ridge | 74.25 | 219 | 0.34 |

Exhibit B.2h




TAXLOTS
City_Limits
WETLANDS
2C_Hydro

FARMLAND
- Farmland of statewide importance
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Not prime farmland
- Water/Gravel Pit/ Rock outcrop/ Riverwash/ Terrace Escarpments
- Prime farmland if irrigated
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and reclaimed of excess salts and sodium

Exhibit B.2h - 1

0 0.125 0.25 Miles

# SOIL REPORT

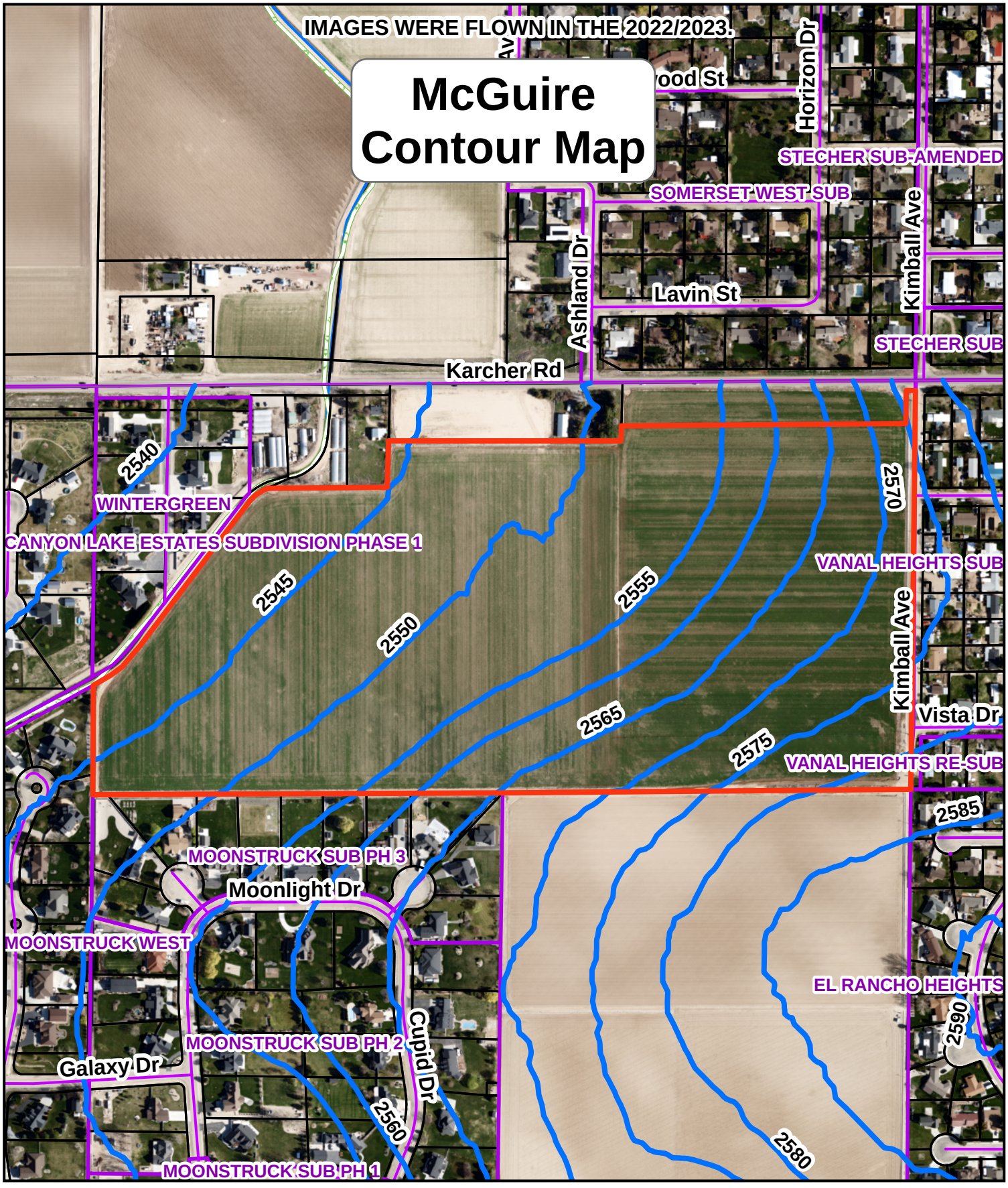
| SOIL CAPABILITY CLASS | SOIL CAPABILITY | SQUARE FOOTAGE | ACREAGE | PERCENTAGE |
|---|---|---|---|---|
| 3 | MODERATELY SUITED SOIL | 267890.32 | 6.15 | 9.77% |
| 3 | MODERATELY SUITED SOIL | 1703804.24 | 39.11 | 62.11% |
| 3 | MODERATELY SUITED SOIL | 644298.47 | 14.79 | 23.49% |
| 3 | MODERATELY SUITED SOIL | 1753.00 | 0.04 | 0.06% |
| 4 | MODERATELY SUITED SOIL | 125248.80 | 2.88 | 4.57% |
| | | 2742994.83 | 62.97 | 100% |

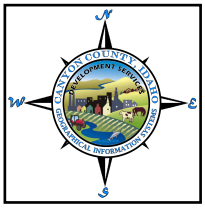
# FARMLAND REPORT

| SOIL NAME | FARMLAND TYPE | SQUARE FOOTAGE | ACREAGE | PERCENTAGE |
|---|---|---|---|---|
| PpB | Prime farmland if irrigated | 267890.32 | 6.15 | 9.77% |
| PrB | Prime farmland if irrigated | 1703804.24 | 39.11 | 62.11% |
| PrA | Prime farmland if irrigated | 644298.47 | 14.79 | 23.49% |
| VmC | Prime farmland if irrigated | 1753.00 | 0.04 | 0.06% |
| PrC | Farmland of statewide importance, if irrigated | 125248.80 | 2.88 | 4.57% |
| | | 2742994.83 | 62.97 | 100% |

**SOIL INFORMATION IS DERIVED FROM THE USDA's CANYON COUNTY SOIL SURVEY OF 2018**

| GRADE | SOILTYPE |
|---|---|
| 1 | BEST SUITED SOIL |
| 2 | BEST SUITED SOIL |
| 3 | MODERATELY SUITED SOIL |
| 4 | MODERATELY SUITED SOIL |
| 5 | LEAST SUITED SOIL |
| 6 | LEAST SUITED SOIL |
| 7 | LEAST SUITED SOIL |
| 8 | LEAST SUITED SOIL |
| 9 | LEAST SUITED SOIL |


IMAGES WERE FLOWN IN THE 2022/2023.
McGuire
Contour Map
Horizon Dr
STECHER SUB-AMENDED
SOMERSET WEST SUB
Kimball Ave
Ashland Dr
Lavin St
STECHER SUB
Karcher Rd
2540
WINTERGREEN
CANYON LAKE ESTATES SUBDIVISION PHASE 1
2570
VANAL HEIGHTS SUB
2545
2550
2555
2565
2575
Vista Dr
VANAL HEIGHTS RE-SUB
2585
MOONSTRUCK SUB PH 3
Moonlight Dr
MOONSTRUCK WEST
EL RANCHO HEIGHTS
2590
Cupid Dr
MOONSTRUCK SUB PH 2
Galaxy Dr
2560
2580
MOONSTRUCK SUB PH 1




Legend
SUBJECT_PROPERTY
TaxParcels
SectionContours
Wetlands

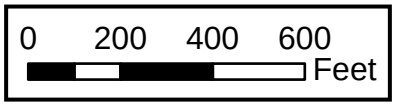
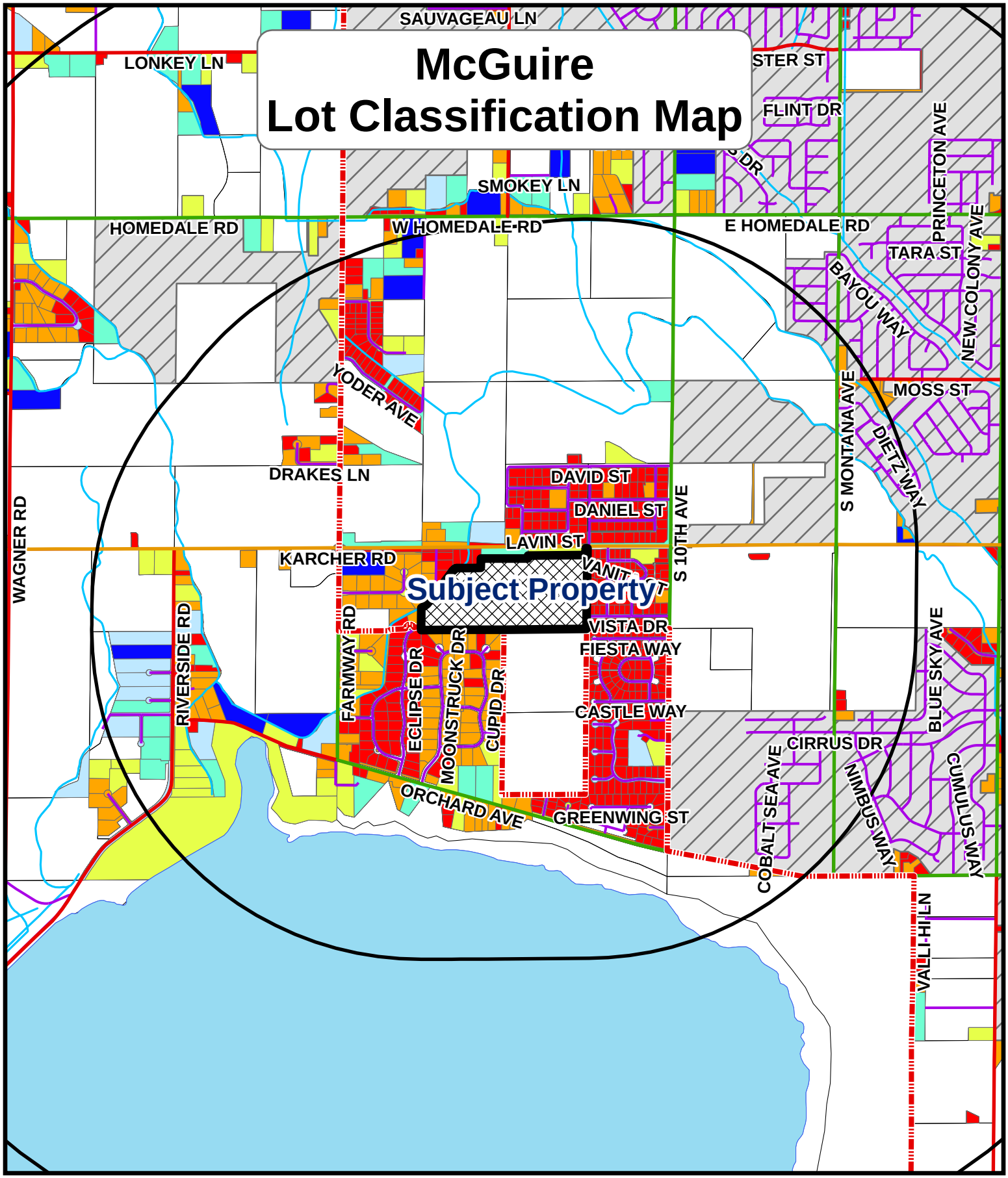

0
200
400
600
Feet

Exhibit B.2j

# McGuire
# Lot Classification Map




**Legend**

| |
|---|
| 0.0 - 1.0 |
| 1.1 - 2.0 |
| 2.1 - 3.0 |
| 3.1 - 4.0 |
| 4.1 - 5.0 |
| 5.1 - 6.0 |

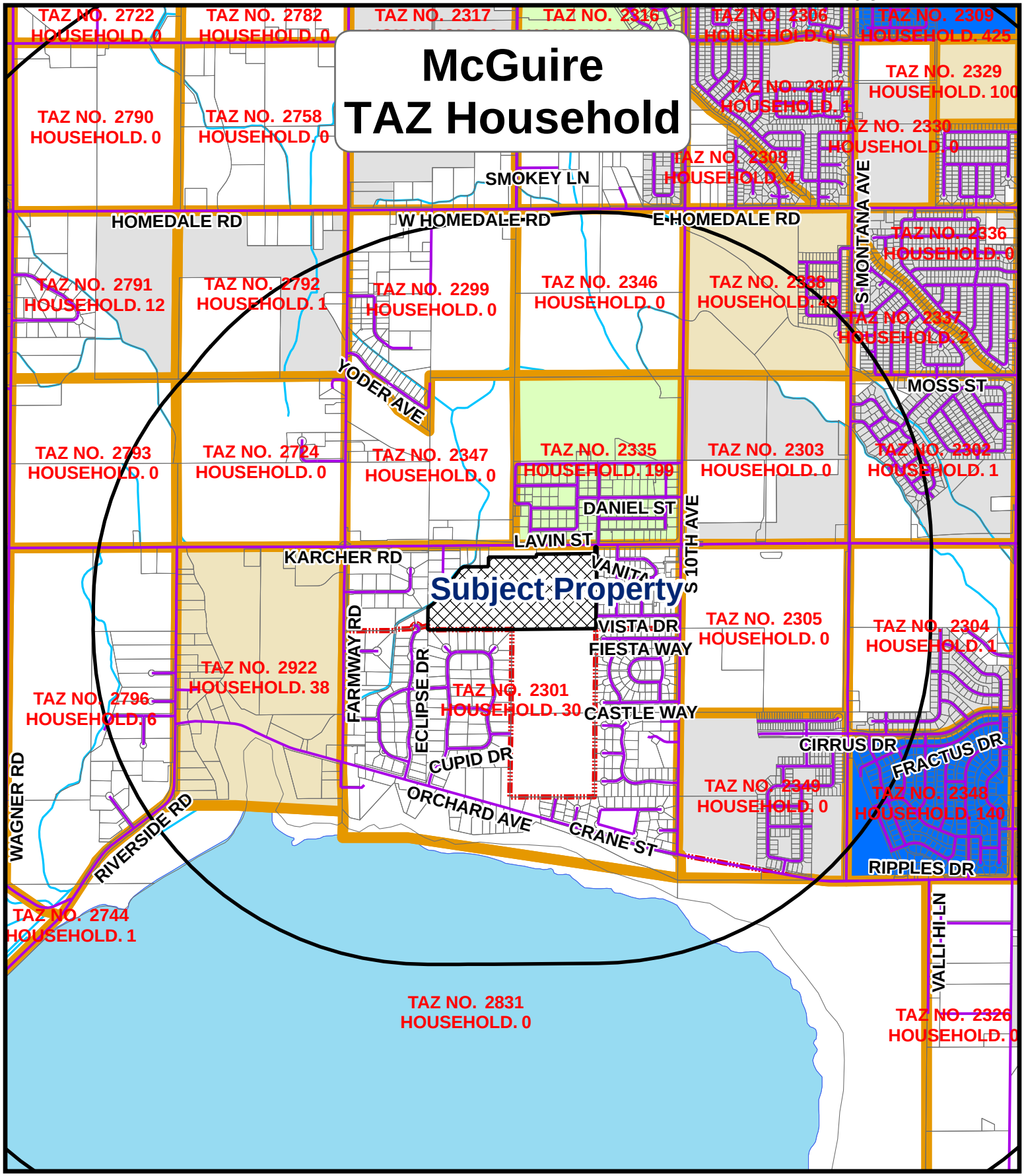
ITDFunctionalClassification

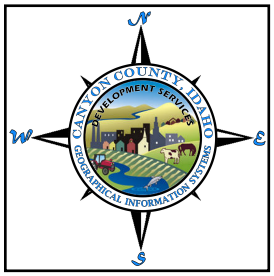
- Interstate
- Minor Arterial
- Major Collector
- Minor Collector
- Other Principal Arterials

Exhibit B.2j

0 0.5

Exhibit B.2k




House Hold 2025-2050

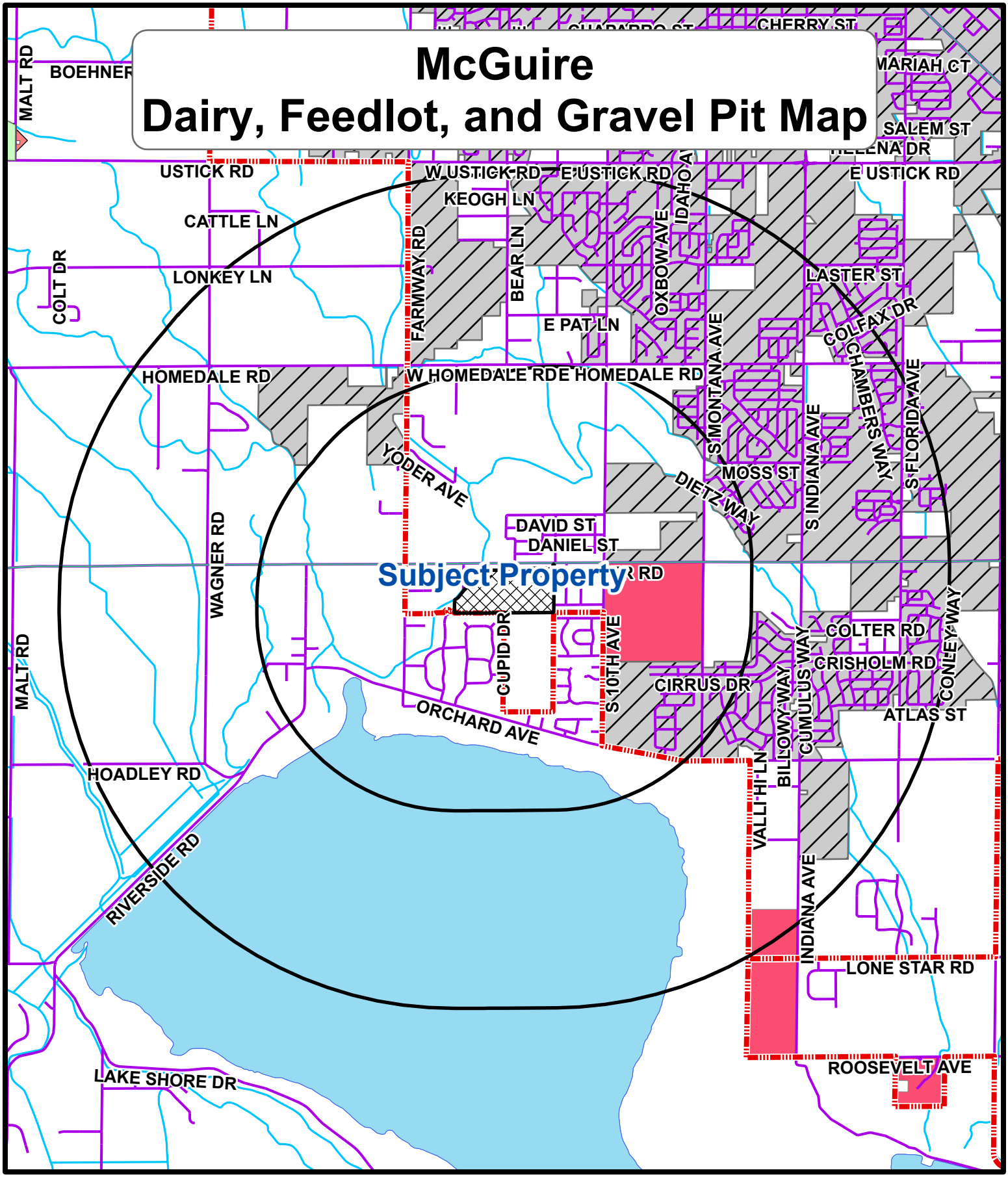
| | |
|---|---|
| -4 - 50 | 251 - 500 |
| 51 - 150 | 501 - 750 |
| 151 - 250 | 751 - 1263 |

Exhibit B.2k

0 0.5 1 Miles

Exhibit B.2l

# McGuire
# Dairy, Feedlot, and Gravel Pit Map




FEEDLOTS

DAIRIES

GRAVELPITS

Exhibit B.2l

0 0.75 1.5 Miles

# Canyon County
# Development Services Department

111 North 11th Ave., Suite 140, Caldwell, ID 83605
Phone 454-7458 Fax 454-6633
www.canyoncounty.org/dsd

## Parcel Inquiry/Research Summary

**Tracking Number:**
**PI2019-0361**

Office Visit Date:
9/14/2019

**Site Address:** 0 S KIMBALL AVE
Caldwell ID

**Assessor Account #:** 32862000 0

**Property Owner:** DOUBLE K INVESTMENTS LLC
BOISE ID 83702

**Person Inquiring:** Alan Mills Mills and Co Realty

**Phone Number:** 2088800525

| | | |
|---|---|---|
| Section: | City Impact Area: | |
| Township: | Flood Zone: | |
| Range: | Subdivision: | |
| 1/4 Sec: | Lot: | Staff Member: |
| Acres: 66.06 | Block: | RANDALL FALKNER |
| Zone: | | |

### Discussion Summary

**Specific Question Detail:** Is R32862 an original parcel? If not, what is the history?

**Specific Answer Detail:** According to the Assessor's maps Parcel R32862 was deeded in 1962 and then divided in 1982 to create R32862010 (3.2 acre parcel) to the north along Karcher Rd. This division was the one time administrative split. Any more splits would require a rezone to residential, followed by going through the subdivision process to legally plat and record lots. As a result, it is not an original parcel. Parcel R32862 does have a building permit available. Parcels less than 80 acres are allowed two residential parcels (minimum lot size is 1 acre to meet individual well and septic distances). R32862 was attempted to be subdivided into a subdivision two different times. In April 2002 it was denied by P&Z Commission, but was overturned by the Commission in November 2002, thus approving the request to divide 66 acres into 55 lots with 11 conditions of approval. However this subdivision was never built. In 2007 an application to divide two parcels (R32862 and R32862010) into 215 residential lots was received by Development Services. In October 2008 however, the case was closed because of a one year delay in bringing the case to a public hearing.

The property research information presented today by the Development Service Department (DSD) is based on the current ordinance and policies, in effect on the date of the summary, and based on your representations and information you have provided about the subject property. This information is valid only at the time of the inquiry and may change when the subject property, ordinances, or policies change. Then information becomes certain, and not subject to change, when DSD accepts an application and fees are paid. Changes to the subject property may invalidate this information.

Director/Staff:_____ Date:_____

PI2019-0361

# Parcel Inquiry Request

**Canyon County Development Services**
111 North 11th Avenue, #140, Caldwell, ID 83605
www.canyoncounty.org Phone 208-454-7458 Fax 208-454-6633

Type of Inquiry: ☐ General Information (e.g. zoning, setbacks)
☒ Status of Entitlements (e.g. is a building permit /land division available?)

*Note: there is a $35.00 fee per entitlement inquiry per parcel. We accept debit/credit cards, cash and checks. A credit card authorization form is attached for your convenience.*

Person Making Inquiry: ☐ Property Owner ☒ Realtor ☐ Other

Name: ALAN MILLS Date: Sept. 10, 2019

Address: BOX 206

City: Middleton State: Idaho Zip: 83644

Daytime Phone Number: 208-880-0525

Email address: millscorealty@msn.com

***Please include as much information below as possible:***

**Site Information:** Address: unknown

Tax Parcel Number (if known) R32862 Approximate Acreage: _____

Provide a detailed description of the information you require. Please be as specific as possible.

I need to know if this is an original parcel & the history of divisions if not.

***Please allow 48 to 72 hours for a written response.***

*The property research information presented by the Development Services Department (DSD) is based on the current ordinances and policies in effect on the date of this summary, and based on your representations and information you provided about the subject property. This information is valid only at the time of inquiry and may change when the subject property, ordinances, or policies change. The information becomes certain and not subject to change when DSD accepts an application and fees are paid. Changes to the subject property may invalidate this information.*

rct# 2091

**Staff Initials:** _____ ☐ **Parcel Tool Attached** ☐ **CAPS Entry** ☒ **Fee** $35.00 pd ck# 7447 **Date:** 9-12-19

**Summary of DSD Response:**

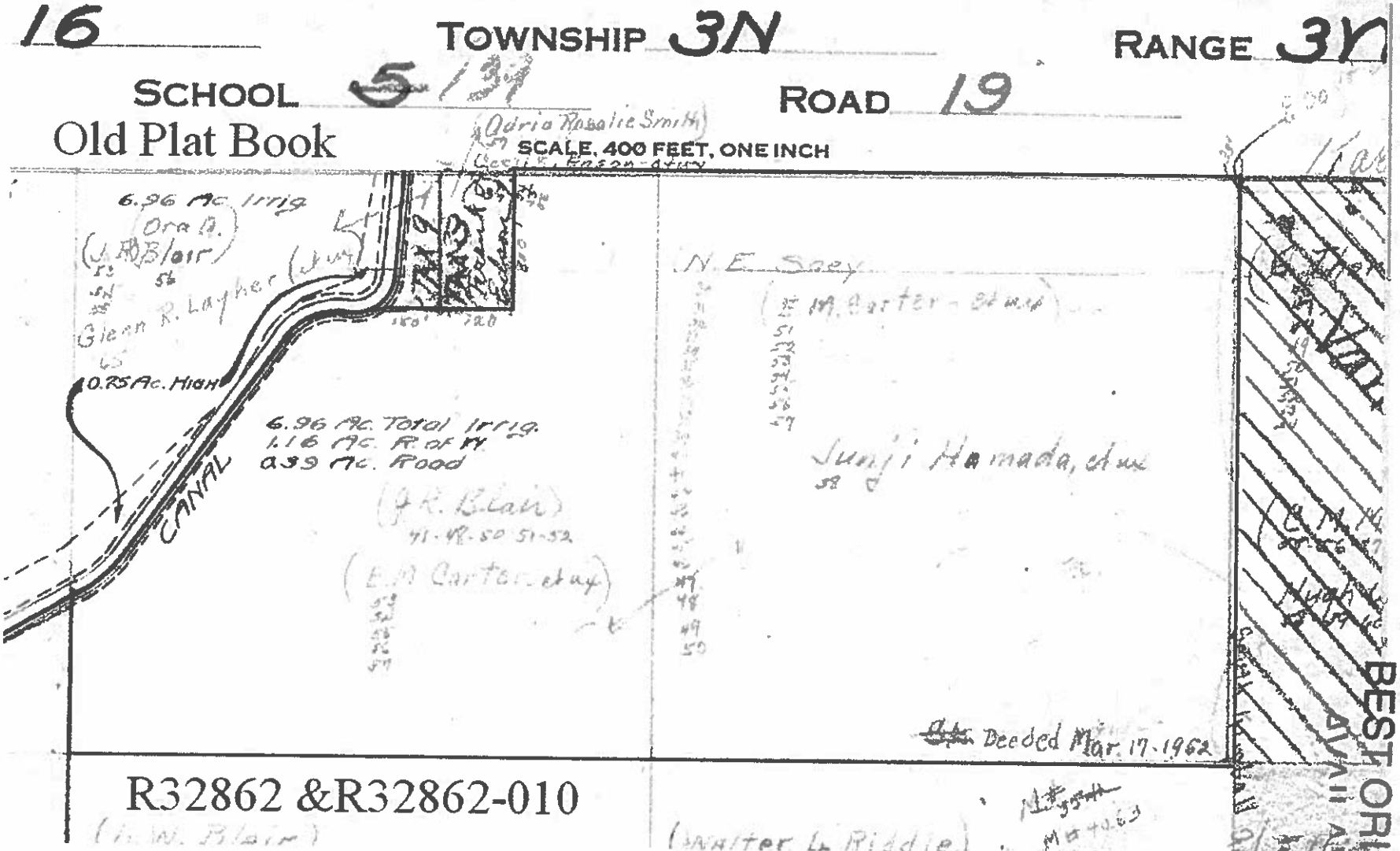
PI2019-0361

16 TOWNSHIP 3N RANGE 3W

SCHOOL 5 / 39 ROAD 19

Old Plat Book

SCALE, 400 FEET, ONE INCH




R32862 &R32862-010

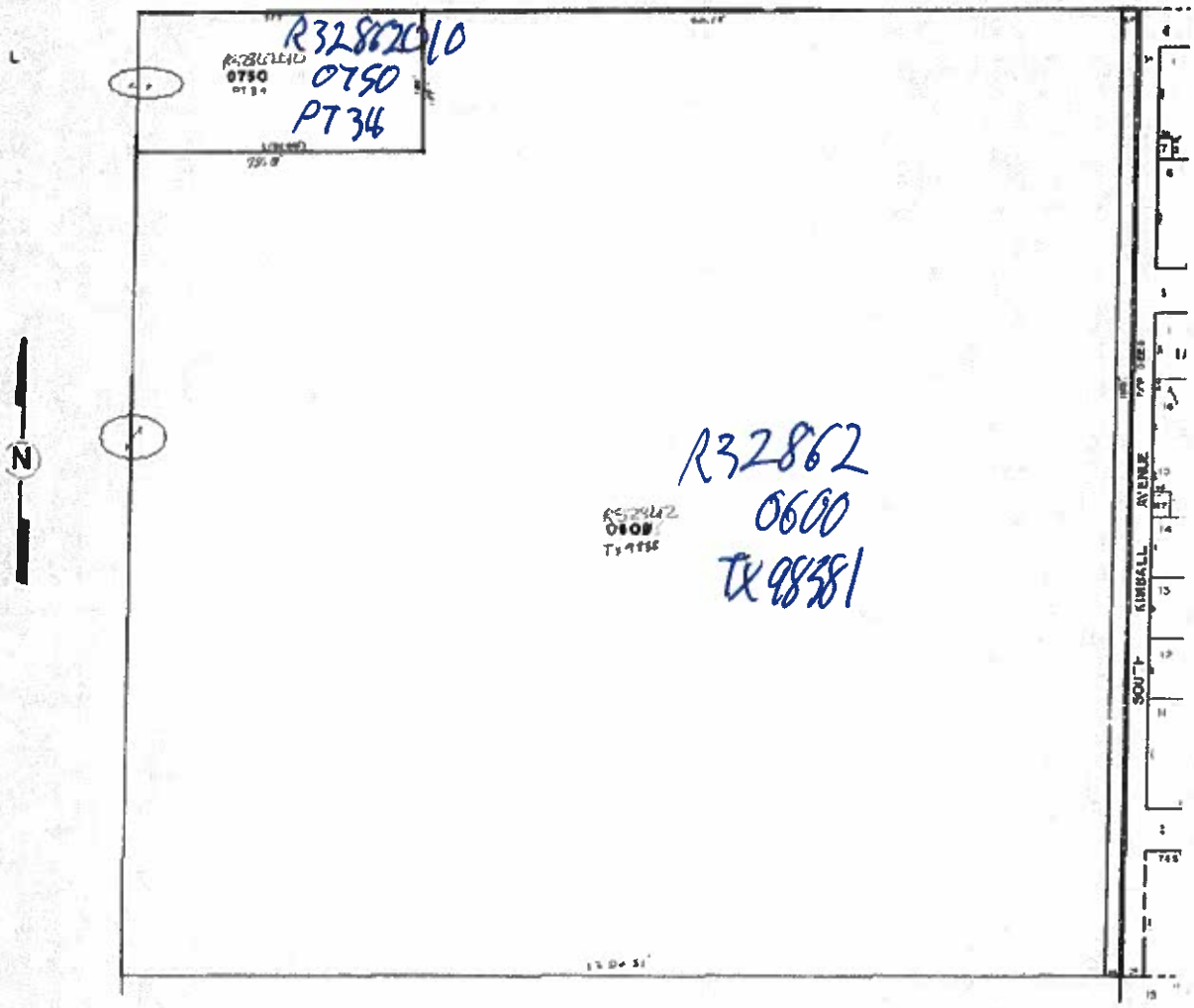
(J. W. Blair)

BEST ORIGINAL AVAILABLE

Exhibit B.3 - 3

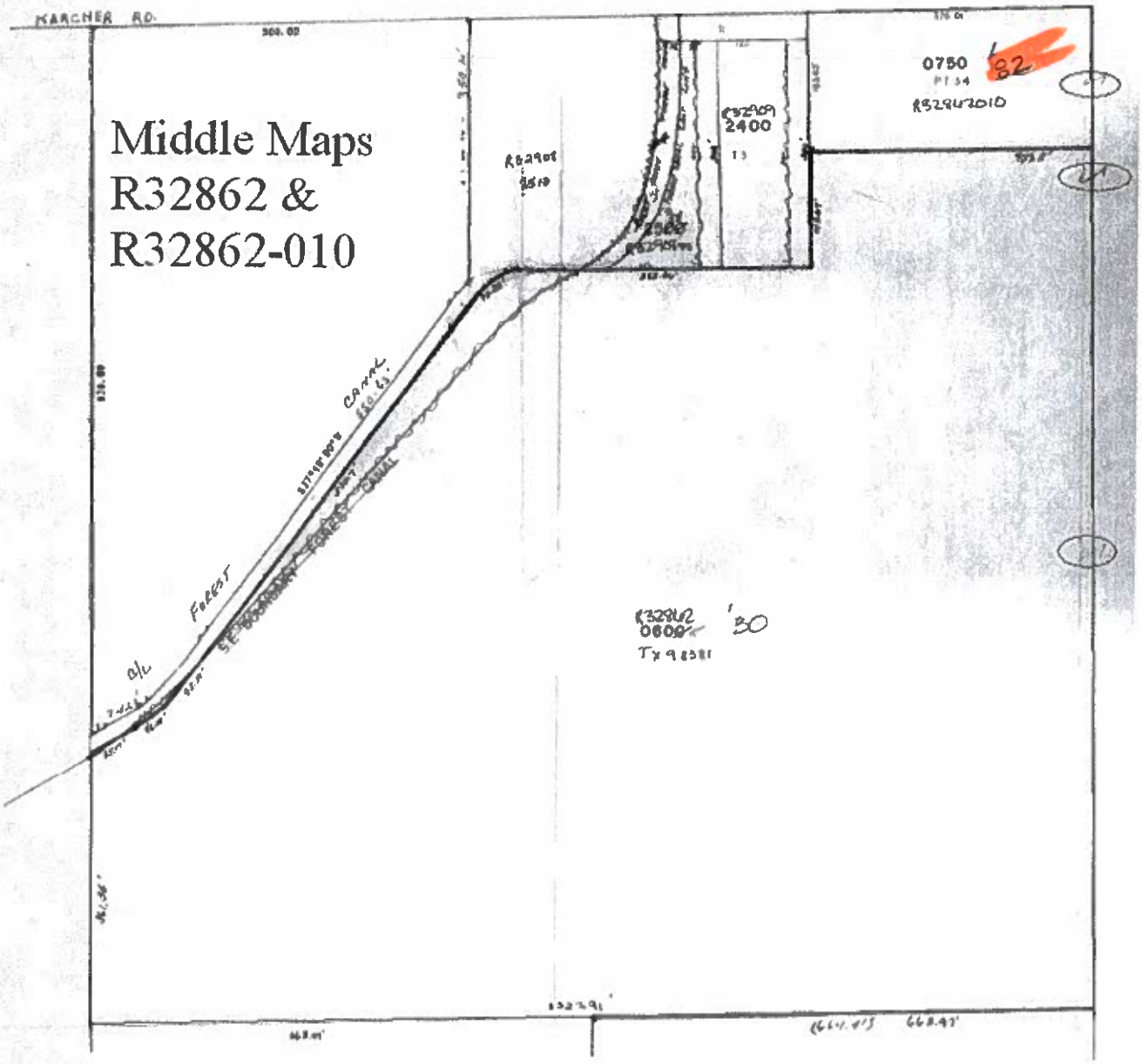
BEST ORIGINAL
AVAILABLE

NE 1/4 Sec. 16, T3N, R3W




Middle Maps

BEST ORIGINAL
AVAILABLE



CANYON COUNTY ASSESSOR'S T NUMBER: 98381 *****CORRECTION********

SECTION/TOWNSHIP/RANGE: 16-3N-3W-NW

SUBDIVISION:
LOT\BLOCK\TRACT:
ACCOUNT NUMBER: 8R32862
TAX YEAR: 1998
INST: # 9829039(AFFIDAVIT)
DATE: AUGUST 4, 1998
GRANTOR: PIONEER TITLE CO
GRANTEE: CORRECTING LEGAL ON WD 9817607
DATE CANCELLED:

NOTICE

THESE DOCUMENTS ARE MAINTAINED FOR ASSESSMENT PURPOSES & SHOULD NOT BE RELIED UPON FOR DETERMINING PROPERTY BOUNDARIES & CURRENT PROPERTY OWNERSHIP.

----------DESCRIPTION----------

This parcel is a portion of the Northwest Quarter of the Northeast Quarter and of the Northeast Quarter of the Northwest Quarter of Section 16, Township 3 North, Range 3 West of the Boise Meridian and is more particularly described as follows:

BEGINNING at the Northeast corner of said Northwest Quarter of the Northeast Quarter the REAL POINT OF BEGINNING; thence

South 0° 05'58" East along the East boundary of said Northwest Quarter of the Northeast Quarter a distance of 1326.07 feet to the Southeast corner of said Northwest Quarter of the Northeast Quarter; thence

South 88° 53'02" West along the South boundary of said Northwest Quarter of the Northeast Quarter a distance of 1326.51 feet to the Southeast corner of said Northeast Quarter of the Northwest Quarter; thence

South 88° 54'31" West along the South boundary of said Northeast Quarter of the Northwest Quarter a distance of 1327.91 feet to the Southwest corner of said Northeast Quarter of the Northwest Quarter; thence

North 0° 05'11" West along the West boundary of said Northeast Quarter of the Northwest Quarter a distance of 361.35 feet to a point on the Easterly right-of-way for the Forrest Canal; thence traversing said right-of-way as follows:

North 59° 45'05" East a distance of 65.17 feet;
North 52° 31'18" East a distance of 46.07 feet;
North 40° 06'17" East a distance of 92.19 feet;
North 36° 48'31" East a distance of 580.70 feet;

Northeasterly 78.28 feet along the arc of a curve to the right having a central angle of 34° 23'51", a radius of 130.38 feet and a long chord which bears

North 54° 00'26" East a distance of 77.11 feet to a point which lies on a line 300.00 feet Southerly from and parallel with the South right-of-way boundary for Idaho State Highway 55; thence

North 88° 54'00" East along said parallel line a distance of 383.66 feet to the Southeast corner of the parcel described in the Deed recorded as Instrument No. 348628, records of Canyon County, Idaho; thence

North 1° 06'00" West along the East boundary of said parcel a distance of 148.67 feet to a point on the Westerly extension of the South boundary of the parcel described in the Deed recorded as Instrument No. 952783, records of Canyon County; thence

North 89° 08'53" East along said extension and said South boundary a distance of 757.20 feet to the Southeast corner of said parcel; thence

North 0° 43'44" East along the East boundary of said parcel a distance of 188.00 feet to a point on the North boundary of said Northwest Quarter of the Northeast Quarter; thence

North 88° 51'19" East along said North boundary a distance of 949.54 feet to the REAL POINT OF BEGINNING.

CANYON COUNTY ASSESSOR'S TAX NUMBER: 04247 SW N 1/2
SECTION/TOWNSHIP/RANGE: 09-3N3W SW & 16-3N3W
SUBDIVISION:
LOT\BLOCK\TRACT: 5200
ACCOUNT NUMBER: R32684-011 + R32862-010
TAX YEAR: 2004
INSTURMENT: 200015108
DATE: 05/01/00
GRANTOR: DOWEN, LARRY J & SHARON-H/W
GRANTEE: DOWEN, LARRY J & SHARON-H/W

NOTICE
THESE DOCUMENTS ARE MAINTAINED FOR ASSESSMENT PURPOSES & SHOULD NOT BE RELIED UPON FOR DETERMINING PROPERTY BOUNDARIES & CURRENT OWNERSHIP.

Part of TX 34

This is an Exception

This parcel is a portion of the SE¼ SW¼ of Section 9, and of the NE¼ NW¼ and NW¼ NE¼ of Section 16, Township 3 North, Range 3 West of the Boise Meridian and is more particularly described as follows:

COMMENCING at the southwest corner of said SE¼ SW¼;

Thence North 88° 54' 00" East along the south boundary of said SE¼ SW¼ a distance of 375.58 feet to the southeast corner of the parcel described in the deed recorded as Instrument No. 687283, Records of Canyon County, Idaho, which point is the **TRUE POINT OF BEGINNING;**

Thence North 0° 06' 00" West along the east boundary of said parcel a distance of 288.10 feet;

Thence South 88° 54' 00" West along the north boundary of said parcel a distance of 74.30 feet;

Thence North 0° 44' 35" West a distance of 116.07 feet;

Thence North 88° 54' 00" East parallel with said south boundary a distance of 1027.82 feet to a point on the east boundary of said SE¼ SW¼;

Thence South 0° 05' 04" East along said east boundary a distance of 404.19 feet to the southeast corner of said SE¼ SW¼;

Thence North 88° 51' 19" East along the north boundary of said NW¼ NE¼ of Section 16 a distance of 377.00 feet;

Thence South 0° 43' 44" West a distance of 188.00 feet;

Thence South 89° 08' 53" West a distance of 752.88 feet;

Thence North 0° 43' 44" East a distance of 184.44 feet to a point on the north boundary of said NE¼ NW¼;

Thence South 88° 54' 00" West along said north boundary a distance of 576.12 feet to the TRUE POINT OF BEGINNING

# STAFF REPORT

| | |
|---|---|
| **TO:** | **CANYON COUNTY PLANNING & ZONING COMMISSION** |
| **HEARING DATE:** | April 4, 2002 |
| **STAFF:** | David J. Forster, Planner II |
| **FILE NO.:** | 011739L16-3N-3W |
| **PARCEL NO.:** | R32862 |
| **APPLICANT:** | Capital Development, Inc.<br>6200 Meeker Place<br>Boise, Idaho 83713 |
| **REPRESENTATIVE:** | Rita Earl<br>Earl & Associates, Inc.<br>314 Badiola Street<br>Caldwell, Idaho 83605 |

## SUMMARY OF THE PROPOSAL

Ramon Yorgason representing Capital Development Inc. for a **Conditional Use Permit** to divide approximately 66.06 acres into 55 lots in an "A" (Agricultural) Zone. The subject property is located at the Southwest corner of State Highway 55 (Karcher Road) and South Kimball Avenue, Caldwell, Idaho, and is further described as being in a portion of the Northeast Quarter and a portion of the Northwest Quarter of Section 16, Township 3 North, Range 3 West, Boise Meridian, Canyon County, Idaho.

## PROCEDURAL HISTORY

1. On **September 10, 2001** the Development Services Department accepted the application and created file no. 011739L16-3N-3W.

2. On **March 12, 2002**, staff notified other agencies of this application and solicited their comments.



EXHIBIT
A.2
011739L

3. On **March 12, 2002** persons owning property within ¼ mile of the site were notified of the hearing by mail.

4. On **March 18, 2002**, notice of the hearing was published in the Idaho Press Tribune.

5. Notice of the public hearing was posted on the subject property on **March 25, 2002**.

## PROJECT DESCRIPTION

### Proposed Use

The applicant is proposing to divide 66 acres into 55 single-family residential lots. The project density will be approximately 1.20 acres and the average lot size will be 1.01 acres. An individual well and septic will service each lot and, irrigation water will be provided by using two existing wells on the subject property.

There will be two access points into the proposed development. One access point will be on to State Highway 55 (Karcher Road) and the other access point off of Kimball Avenue. Each access will be divided with a landscaped island. The road within the development will be dedicated to the public and built to highway district standards. The streets will vary in length and will incorporate three cul-de-sacs.

It is anticipated that there will be berms with landscaping along State Highway 55 (Karcher Road) and Kimball Avenue to reduce any negative impacts from the development to the surrounding properties. The berm and landscaping will be open space and will be maintained by the Homeowner's Association.

## PROPERTY HISTORY

In 1982 a 3.24 acre parcel was divided from the subject property. This division was the one time administrative split. Any further divisions will require a conditional use permit, and any creation of two or more lots will necessitate the need to plat under the current subdivision ordinance.

## PROPERTY DESCRIPTION

### Parcel Number(s) and Location

The parcel number for the subject property is R32862

**Ownership:** Canyon County Assessor records show that Ronald Van Auker owns parcels R32862

date of this staff report the Development Services Department has not received any documentation regarding this request.

8. Whether the proposed use is essential or desirable to the public convenience or welfare?

   A. The proposed use is essential and desirable to the public convenience and welfare.

   B. The proposed development is in the City of Caldwell, Area of City Impact.

   C. The proposed development will fit in nicely with the adjacent residential developments.

**RECOMMENDED ORDER**

Based on the Recommended Findings of Fact and Recommended Conclusions of Law, staff recommends the Planning & Zoning Commission **approve** Capitol Development's Inc request for a conditional use permit with the following conditions.

1. **Right to farm statement, marketing disclosures and deed restrictions.**
2. **The development shall comply with all applicable federal, state, and county, laws, ordinances, rules and regulations that pertain to the property.**
3. **Installation of an adequate septic system or other similar system as determined by Southwest District Health.**
4. **That all access requirements of the Idaho Department of Transportation and the Canyon Highway District No 4 be met.**
5. **L.I.D enacted when city services become available. Installation of dry line sewer be available to hook up to city services and that all wells and septic systems be abandoned when such city services are available.**
6. **A 6-foot high security fence be installed on the northern boundary adjacent to the pubic roadway for security reasons.**
7. **The project will commence within two years and be completed within five years.**



[redacted]

## VII. ORDER OF DECISION

Based on the Findings of Fact, Conclusions of Law and the reasons stated, the Canyon County Planning and Zoning Commission orders that Case # **011739L16-3N-3W** a request by Ramon Yorgason representing Capital Development Inc. for a **Conditional Use Permit** to divide approximately 66.06 acres into 55 lots in an "A" (Agricultural) Zone is **denied.**



[redacted]

WRITTEN FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER WAS APPROVED BY THE CANYON COUNTY PLANNING AND ZONING COMMISSION AT A SCHEDULED MEETING HELD APRIL 18, 2002.

Ed Falkenstien
Planning and Zoning Commission Chairman

4-18-02
Dated

**ATTEST:**

Janet La Mont
Recording Secretary



[redacted]

h. Based upon the preceding Conclusions of Law, the Board Concludes that the proposed use is desirable to the Applicant/Appellant and the public convenience and welfare. [CCCO; Section 07-06-05(3)H.]

3. The Board concludes that the Applicant/Appellant has met its burden of persuasion. [CCCO; Section 07-03-09(1)G].

**ORDER**

Based upon the Findings of Fact and Conclusions of Law, reviewed above, the Board overturns the decision of the Commission and hereby grants Capital Development's request for a conditional use permit to divide approximately 66.06 acres into 55 lots in an "A" (Agricultural) zone. This approval is expressly subject to the eleven Conditions of Approval listed in Exhibit "A", attached hereto and incorporated by reference herein.

**APPROVED** this 13th day of November, 2002

**BOARD OF COUNTY COMMISSIONERS**
**CANYON COUNTY, IDAHO**

Commissioner Todd M. Lakey, Chairman

Commissioner Pat Galvin

Commissioner Matt Beebe

ATTEST: G. Noel Hales, CLERK

By: _____
Deputy



[redacted]

## CONDITIONS OF APPROVAL

### EXHIBIT "A"

The following conditions of approval are hereby made a part of, and hereby incorporated into the Findings of Fact, Conclusions of Law and Order in DSD CASE NO. 011739L16-3N-3W.

1. Right to farm and gravel pit marketing disclosures, right to farm and gravel pit deed restrictions, including a right to farm and gravel pit acknowledgment, and a right to farm and gravel pit restriction on the plat and in all deeds conveying lots in the development, must be used for the subject property in accordance with language in Attachment "1", which is attached thereto and by this reference, made part hereof.

2. The development shall comply with all applicable federal, state, and county, laws, ordinances, rules and regulations that pertain to the property.

3. Installation of an adequate septic system or similar system as determined by Southwest District Health Department.

4. That all access requirements of the Idaho Transportation Department and the Canyon Highway District No. 4 be met.

5. Dry line sewer shall be installed to the lots in the development if, within 90 days of the issuance of the Findings of Fact, Conclusions of Law and Order, the city of Caldwell, upon consultation with the Applicant, provides in writing to the Applicant, all necessary elevations and specified locations to which Caldwell would run sewer lines to the development, and if Caldwell further agrees in writing to be financially responsible for any substantial modifications that are necessary in order to make the dry sewer lines operational with the Caldwell sewer system. The



[redacted]

Applicant must contact the city of Caldwell as soon as reasonably possible following the issuance of the Findings of Fact, Conclusions of Law and Order and if Caldwell has not provided the requisite information and agreement within 90 days, additional time may be granted by the Board at Caldwell's request provided that Caldwell shows good faith efforts to provide the requisite information and agreement within a reasonable time.

6. Developer shall install a 6 foot high berm-fence combination on the northern portion of the development adjacent to Highway 55 (Karcher Road) which shall be maintained by the homeowners' association.

7. The project will commence within two (2) years and be completed within five (5) years.

8. Domestic water wells installed in the development shall be cased and sealed to the level of the aquifer from which the domestic water is taken.

9. Weeds shall be controlled and shall not be allowed to be in excess of 6 inches in height and no noxious weeds shall be allowed on the subject property.

10. Reasonable and customary measures shall be utilized to keep the subject property clean of construction trash.

11. Reasonable and customary dust control measures shall be utilized during construction.



[redacted]

Case No.

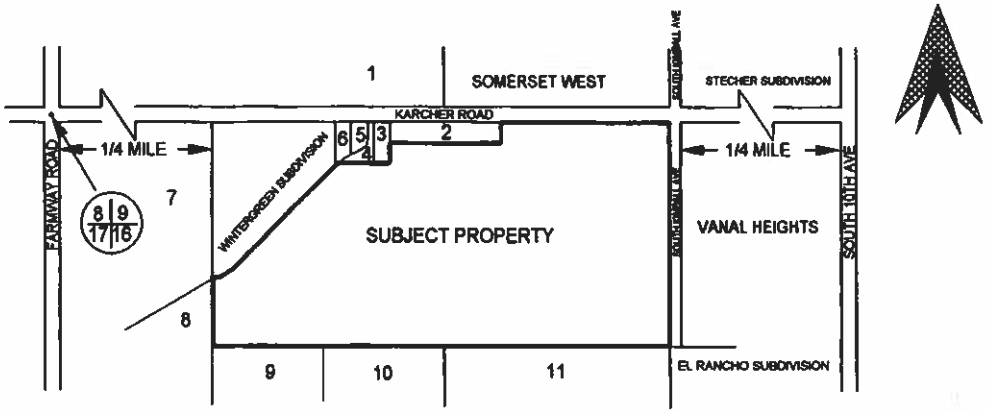
Assessor's #R32862

1/4 MILE NOTIFICATION DIST.

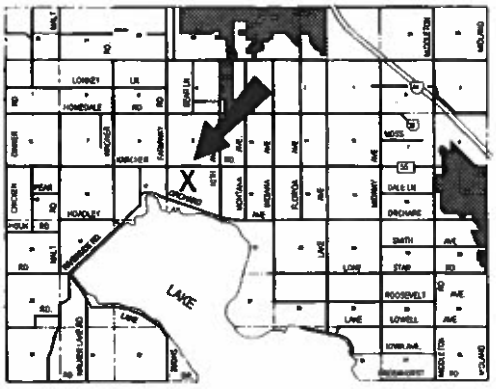
300' PROPERTY OWNERSHIP AND SUBDIVISIONS SHOWN

011739L16-3N-3W

A request by Capital Development, Inc. for a Conditional Use Permit to divide approximately 66 acres into 55 parcels for residential building sites in an "A" (Agricultural) Zone.




1. DOWEN
2. DOWEN
3. ENRICO
4. JENKINS
5. JENKINS
6. JENKINS
7. STAHN
8. TAYLOR
9. EAST VALLEY DEV INC.
10. EAST VALLEY DEV INC.
11. YAMASHITA FARMS, INC




Date: 7 March 2002 Location: NE 16-3N-3W Zoning: A

proportions and dimensions shown on this drawing are approximate

EXHIBIT
B.1
011739L




**Canyon County, 1115 Albany Street, Caldwell, ID 83605**
(208) 454 7458 • (208) 454 6633 Fax • DSDInfo@canyonco.org • www.canyonco.org/dsd

Double K Investments, LLC
3775 Cassia
Boise, ID 83715

October 16, 2008

Dear Sirs;
On April 6, 2007, Canyon County Development Services Department (DSD) accepted your application and associated fee for a Conditional Use Permit for Double K Investments, LLC, to divide two (2) parcels totaling approximately 69.30 acres into 215 residential lots in an "A" (Agricultural) Zone. The subject property is located at the southwest corner of the intersection of Karcher Road and Kimball Avenue, Caldwell, Idaho, in a portion of the N ½ of Section 16, T3N, R3W, BM.

At the public hearing on September 20, 2007, this case was tabled to October 18, 2007. At the public hearing on October 18, 2007, you requested that this case be withdrawn from the agenda and re-noticed at an unspecified later date. This delay was to allow for the development of a new site plan which was necessitated because the City of Caldwell would not be extending city services to the subject property.

In a December 3, 2007 email from your representative, Michael Wilson of Stanley Consultants, Inc., to DSD Planner, Ty Crossley, Mr. Wilson stated that they were waiting on the completion of a Nutrient Pathogen Study before finalizing a new concept plan.

On January 8, 2008, Mr. Crossley contacted Mr. Wilson by telephone for an update. Mr. Wilson stated that the developer was working on the Nutrient Pathogen Study and that Stanley Consultants was waiting for the developer.

DSD must consider the closure of this case file based upon the following criteria:

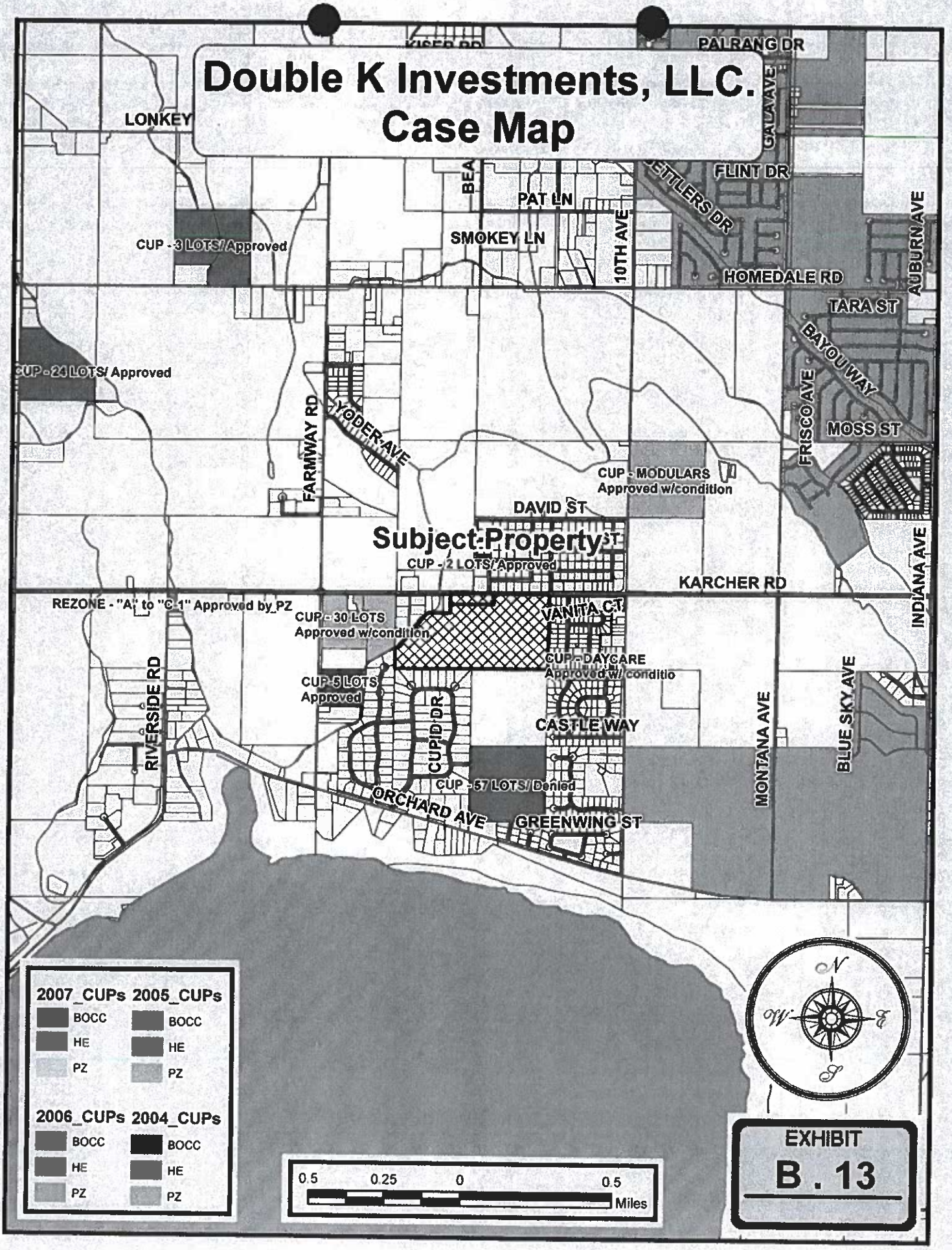
1. Length of the delay in bringing the case to a public hearing.
   *Answer: One (1) year.*
2. Justification for the delay.
   *Answer: The City of Caldwell will not be extending city services to the subject property, thus necessitating the substantial revision of the concept plan and requested number of lots.*
3. Resultant prejudice to the public trust or persons in opposition to the application.
   *Answer: Revision of the development concept plan and number of lots requested essentially constitutes a new application.. This delay asks county taxpayers to subsidize a full duplication of staff review and the production of a new staff report.*

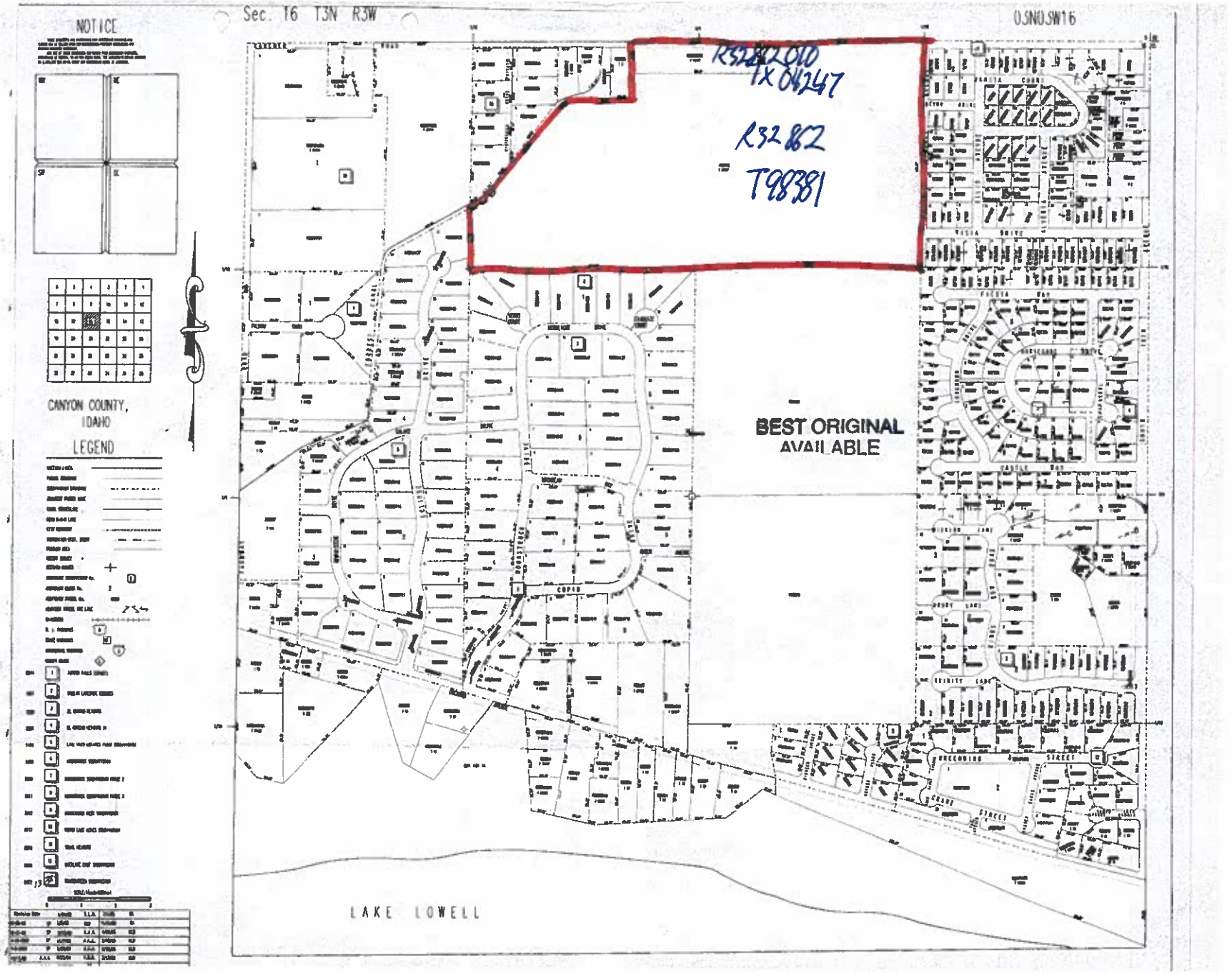
Based upon these criteria, DSD has determined that this case will be **closed**. This letter serves as your **final** notification in this matter.

Sincerely,

Bonnie Ford-LeCompte
Long Range Planning Administrator

Cc Double K Investments, LLC case file
Michael Wilson, Stanley Consultants, Inc.


Double K Investments, LLC.
Case Map
PALRANG DR
LONKEY
GALAXY AVE
FLINT DR
SETTLERS DR
PAT LN
SMOKEY LN
10TH AVE
AUBURN AVE
HOMEDALE RD
TARA ST
BAYOU WAY
FRISCO AVE
MOSS ST
CUP - 3 LOTS/ Approved
CUP - 24 LOTS/ Approved
FARMWAY RD
YODER AVE
CUP - MODULARS
Approved w/condition
DAVID ST
Subject Property
CUP - 2 LOTS/ Approved
KARCHER RD
INDIANA AVE
REZONE - "A" to "C-1" Approved by PZ
CUP - 30 LOTS
Approved w/condition
VANITA CT
CUP - DAYCARE
Approved w/ conditio
CUP - 5 LOTS
Approved
RIVERSIDE RD
CUPID DR
CASTLE WAY
MONTANA AVE
BLUE SKY AVE
CUP - 57 LOTS/ Denied
ORCHARD AVE
GREENWING ST
2007_CUPs
2005_CUPs
2006_CUPs
2004_CUPs
BOCC
HE
PZ
0.5
0.25
0
0.5
Miles
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EXHIBIT
B . 13


NOTICE
Sec. 16 T3N R3W
05N03W16
R32820010
TX 04247
R32862
T98381
CANYON COUNTY, IDAHO
LEGEND
BEST ORIGINAL AVAILABLE
LAKE LOWELL

Print Form

BEST ORIGINAL AVAILABLE

# CANYON COUNTY
## DEVELOPMENT SERVICES DEPARTMENT

Reference Idaho Code 9-338
Public Record – Right to Examine

RECEIVED
APR 30 2008
DRH
CANYON COUNTY DEVELOPMENT SERVICES

I, April Park
Print Name

4/30/08
Date

15702 Venus Ct
Address

Caldwell 83607
City Zip

( ) 859 1288
Telephone

Request to examine and/or take copies of public records contained in case file number, parcel number R32862CCCCC

I certify the requested information will not be used for the purpose of a mailing or telephone list prohibited by Idaho Code § 9-348.

I understand a copying charge of 5¢ per copy will be assessed. Labor charges may apply depending upon the complexity of the request.

I further understand the Development Services Department will respond to this request within three (3) working days pursuant to Idaho Code § 9-339.

Signature

Staff Review Date
Susan L. Hartley 4-30-08

Records of Copies Requested

#Owner is Double K Investments LLC
624 Ranch Rd Boise ID 83702
#Farm is on the corner of Karcher & S Kimball
* I ned any contact names & numbers for the owners of this property. The farmer that is working the farm hit my fence and broke a rail. There are a few names that look like it could be the farmers but no an address of 2 S. Kimball

# Canyon County Board of County Commissioners
## Jenkins – Rezone Case No. RZ2019-0012
Development Services Department

## Findings of Fact, Conclusions of Law, and Order

### Findings of Fact

1. The applicant, William Jenkins, is requesting to conditionally rezone parcel R32870 from an "A" (Agricultural) zone to the "R-1" (Single Family Residential, one acre average minimum lot size) zone. The request includes a development agreement to limit future development on Parcel R32870 to no more than 40 residential lots. The vacant 40 acre parcel is located 200 feet from the intersection of Orchard Avenue and Widgeon Avenue, Caldwell; a portion of the SE ¼ of Section 16 Township 3N, Range 3W, Canyon County, Idaho.

1. The parcel is zoned "A" (Agricultural). The 2020 Canyon County Comprehensive Plan designates the parcel as "Residential' on the Future Land Use map.

2. The subject property is located within Caldwell's City Impact Area. City of Caldwell's Comprehensive Plan designates the parcel as "Residential Estates, two units per gross acre".

3. Notice of the public hearing was provided as per CCZO §07-05-01. Agencies were notified on August 8, 2019. Property owners within 300 feet of the subject parcel boundaries were noticed on August 12, 2019. Newspaper notice was completed on August 16, 2019. The subject property was posted with a notice on or before August 26, 2019.

4. On June 20, 2019, the Planning and Zoning Commission was undecided; and therefore, the request was denied.

5. On September 3, 2019, the Board of County Commissioners, after hearing testimony, tabled the hearing and directed the applicant to submit a development agreement to limit future development on Parcel R32870 to no more than 40 residential lots.

6. On October 17, 2019, the item was tabled to October 21, 2019 due to lack of quorum.

7. The record consists of exhibits provided as part of the public hearing staff report, testimony and any additional evidence submitted during the public hearing on September 3, 2019 and all information contained in Case File #RZ2019-0012.

### Conclusions of Law

For this request, the Board of County Commissioners finds and concludes the following regarding the Standards of Review for a Zoning Amendment (§07-06-05):

**A. Is the proposed zone change generally consistent with the comprehensive plan?**

Conclusion: The proposed zone change is consistent with the 2020 Canyon County Comprehensive Plan.

Finding: The requested rezone is generally consistent with the Comprehensive Plan Future Land Use Map which designates the subject property as "Residential". The request is consistent with multiple goals and policies of the 2020 Canyon County Comprehensive Plan including but not limited to:

- Property Rights Policy No. 1: *"No person shall be deprived of private property without due process of law."*
    - The notice of the public hearing was provided consistent with CCZO §07-05-01.
- Population Policy No. 3: *"Encourage future population to locate in areas that are conducive for residential living and do not pose an incompatible land use to other land uses."*
    - The Future Land Use Map designates the area as "residential". The parcel is located within Caldwell's City Impact Area which designates the subject parcel as "residential estates, two units per gross acre".

- The parcel is located within a 590 acre TAZ (Traffic Analysis Zone). The TAZ (Zone 2260) is used for tabulating traffic-related data. COMPASS (Community Planning Association of Southwest Idaho) maintains and uses the data as part of the Communities in Motion Regional Transportation Plan. The TAZ provides future population, households and jobs forecasts. By 2040, household growth is anticipated to increase by 150 homes. Except for the vacant agriculture parcels, the parcels within the 590 acre TAZ are within existing developed subdivisions. Therefore, low-density/residential estate growth is anticipate to occur on the subject parcel and adjacent agricultural parcels between the years 2020-2040.

- Land Use – Residential No.1: *"Encourage high density development in areas of city impact."*
  - The parcel is located within Caldwell's City Impact Area. The future land use of the area is designated for "residential estates, two units per acre". The city limits are approximately 1,300 feet east of the subject parcel, along 10th Avenue near Mallard Park. City water is approximately 2,700 feet south of the subject parcel (intersection of 10th Avenue and Orchard Avenue. The proposed rezone is consistent with the lot size and density designated by the City of Caldwell for residential estate development.

- Land Use – Residential No. 2: *"Encourage residential development in areas where agricultural uses are not viable."*
  - The parcel consists of moderately-suited soils and is considered prime farmland if irrigated. The parcel is used for cattle grazing. However, pursuant to the applicant's letter of intent, the use is no longer viable. The residential character impacts the agricultural use. The surrounding residential uses have negatively impacted the cattle, the movement of cattle from property to property and increased insurance rates. Therefore, residential development of the parcel is more compatible with the surrounding residential subdivisions.

**B. When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation?**

Conclusion: The proposed zone change is more appropriate as the current zoning designation.

Finding: The 40 acre parcel is zoned "A" (Agricultural) and is surrounded by parcels also zoned "A". However, the majority of the surrounding parcels consist of existing residential subdivisions. The nearest residential zone is "R-R" (Rural Residential, two acre minimum lot size) which encompasses El Rancho Heights Subdivision and Vanal Heights Subdivision. The subdivisions have an average lot size of 0.43 acres.

Future Land Use Map within the Canyon County Comprehensive Plan designates the area as "residential". The parcel is located within Caldwell's City Impact Area which designates the subject parcel as "residential estates, two units per gross acre".

Within one mile of the subject parcel are 24 residential subdivisions. The following subdivisions are adjacent to the parcel:

- El Rancho Heights: Approved in 1976; average lot size of 0.43 acres.
- Dublin Lakeside Estates: Approved in 2004 average lot size of 0.70 acres.
- Lake View Estates 1st Subdivision: Approved in 1964; average lot size of 0.56 acres.
- Moonstruck Subdivision Phase 1: Approved in 1964; average lot size of 1.15 acres.

The parcel consists of moderately-suited soils and is considered prime farmland if irrigated. The parcel is used for cattle grazing. Pursuant to the applicant's letter of intent, the agricultural use is no longer viable. The residential character impacts the agricultural use. The surrounding residential uses have negatively impacted the cattle, the movement of cattle from property to property and increased insurance rates. Therefore, the requested rezone is more appropriate than the current zoning designation.

**C. Is the proposed rezone compatible with surrounding land uses?**

Conclusion: The proposed use is compatible with the surrounding land uses.

Finding: The majority of the surrounding parcels consist of existing residential subdivisions. The nearest residential zone is "R-R" (Rural Residential, two acre minimum lot size) which encompasses El Rancho Heights Subdivision and Vanal Heights Subdivision. The subdivisions have an average lot size of 0.43 acres.

Within one mile of the subject parcel are 24 residential subdivisions. The following subdivisions are adjacent to the parcel:

- El Rancho Heights: Approved in 1976; average lot size of 0.43 acres.
- Dublin Lakeside Estates: Approved in 1993 average lot size of 0.70 acres.
- Lake View Estates 1st Subdivision: Approved in 1964; average lot size of 0.56 acres.
- Moonstruck Subdivision Phase 1: Approved in 2002; average lot size of 1.15 acres.

The parcel consists of moderately-suited soils and is considered prime farmland if irrigated. The parcel is used for cattle grazing. Pursuant to the applicant's letter of intent, the agricultural use is no longer viable. The residential character impacts the agricultural use. The surrounding residential uses have negatively impacted the cattle, the movement of cattle from property to property and increased insurance rates. Therefore, the requested rezone is more compatible with the surrounding land uses.

**D. Will the proposed use negatively affect the character of the area? What measures will be implemented to mitigate impacts?**

Conclusion: As conditioned by the development agreement, the proposed use will not negatively affect the character of the area.

Finding: The area is primarily residential uses. Within one mile of the subject parcel are 24 residential subdivisions with an average lot size of 0.68. The requested rezone will create lot size of one acre or larger which is consistent City of Caldwell's residential estates designation. Therefore, the rezone is in character with the surrounding residential subdivisions.

Letters and testimony from neighbors were received expressing concerns regarding traffic, access and number of housing generated by the rezone request when a conceptual development plan has not been provided by the applicant. As directed by the Board of County Commissioners, the applicant has submitted a development agreement limiting future development to no more than 40 residential lots. Upon review by Canyon Highway District #4, City of Caldwell and ITD (Idaho Transportation Department), the rezone will not create impacts that cannot be mitigated during the platting process. Therefore, the rezone (as conditioned by the development agreement) will not negatively affect the character of the area.

**E. Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed use?**

Conclusion: Adequate sewer, drainage, and storm water drainage facilities and utility systems will be provided to accommodate the residential uses at the time of development.

Finding: City of Caldwell current does not have services adjacent to the property. The nearest water services is approximately 2,700 feet east of the subject parcel. Services will be provided as follows:

- Sanitary Service: Individual septic systems will be required. No comments were received from Southwest District Health (SWDH). Sanitary system review is required at the time of platting by SWDH.
- Water Services: Domestic wells are required for each individual parcel. Well location will be reviewed at the time of platting by Idaho Department of Water Resources and SWDH/Department of Environmental Quality (DEQ).
- Irrigation Services: No comments were received from Wilder irrigation District. However, Wilder Irrigation District typically requires development to not impact any existing irrigation canals or

laterals without approval by the irrigation district. At the time of platting, Wilder Irrigation District will have the opportunity to review the plat and require improvements/restrictions.

**F. Does legal access to the subject property for the development exist or will it exist at the time of development?**

Conclusion: Legal access to the parcel exists from Widgeon Road, a local road.

Finding: The subject parcel access from Widgeon Road (formerly Kalia Road) which connects to Orchard Avenue, a minor arterial. Pursuant to Canyon Highway District #4, improvements at the time of platting will include access improvements on Amour Road (Moonstruck Subdivision-Phase 1), Drury Way (Dublin Lakeside Estates) and/or Widgeon Road (Lakeview Estates 1st), dedication of public road and stub road for future connection.

**G. Does the proposed development require road improvements to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts?**

Conclusion: The rezone of the subject property will not cause undue interference with existing or future traffic patterns as proposed.

Finding: Pursuant to Canyon County Code Section 07-10-03(3), the rezone, as conditioned by the development agreement has the potential to create 380.8 average daily trips (40 primary dwellings) on Orchard Avenue, a minor arterial. Canyon Highway District and ITD do not find the potential residential development of the parcel to create traffic impacts to the existing road system. At the time of platting, Canyon Highway District and the City of Caldwell will require review and improvements such as landscaping, sidewalk and dedication of public roads.

**H. Will the proposed zone change amendment impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts?**

Conclusion: Essential services can accommodate the requested zoning amendment.

Finding: Affected essential public services and agencies were notified. All comments received did not indicate the rezone would impact public services. All essential service and agencies will review and request improvements/restriction of residential development at time of platting application submittal.

**Order**

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Board of County Commissioners **approves** Case #RZ2019-0012, a request to conditionally rezone parcel R32870, approximately 40 acres, from an "A" (Agricultural) zone to an "CR-R-1" (Conditional Rezone - Single Family Residential) zone, subject to a development agreement with the following conditions:

1. The development shall comply with all applicable federal, state, and county laws, ordinances, rules and regulations that pertain to the property.
2. Future development of the subject Property, as legally described (Exhibit "A"), shall not exceed 40 residential lots.

**APPROVED** this 21st day of October, 2019.

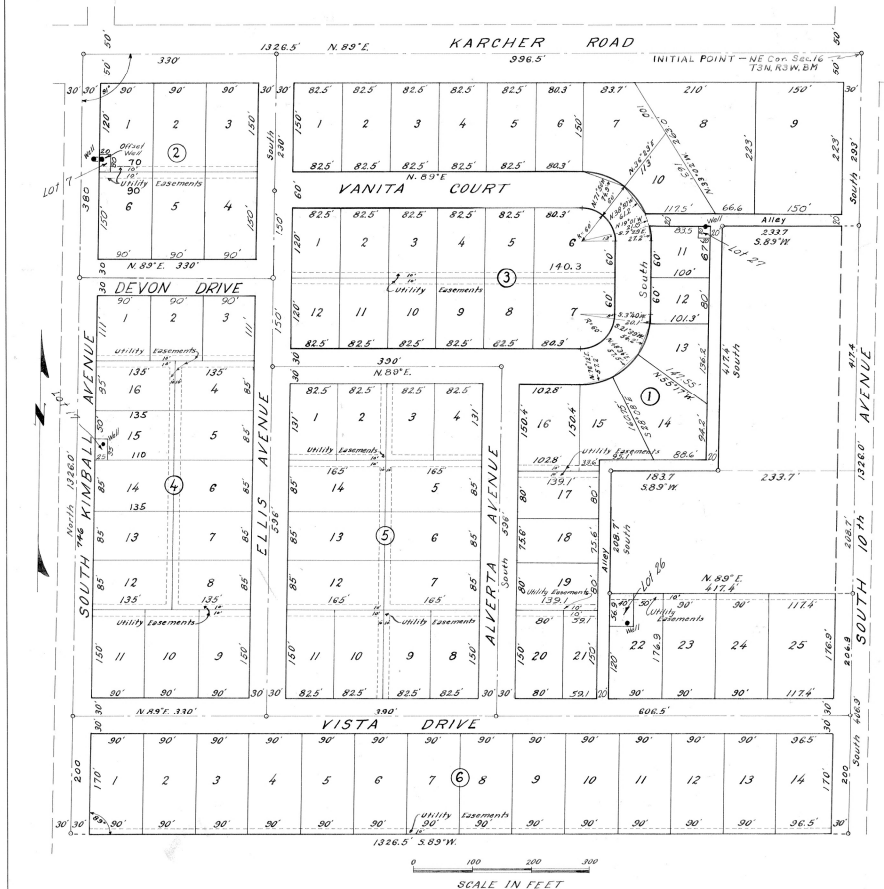
**BOARD OF COUNTY COMMISSIONERS**
**CANYON COUNTY,**

| | Yes | No | Did Not Vote |
|---|---|---|---|
| Commissioner Pam White | ✓ | | |
| Commissioner Tom Dale | ✓ | | |
| Commissioner Leslie Van Beek | | | |

Attest: Chris Yamamoto, Clerk

By: _____

PLAT BOOK 6 PAGE 1




# VANAL HEIGHTS

## A SUBDIVISION IN THE NE¼NE¼ of SECTION 16, T.3N., R.3W., B.M.

STATE OF IDAHO } S.S.
COUNTY OF CANYON }

I, Melvin V. Davenport, a Professional Engineer in and for the State of Idaho, do hereby certify that the survey of VANAL HEIGHTS, Canyon County, Idaho was made by me or under my direction; and I further certify that this Plat correctly represents the survey as made.

IN WITNESS WHEREOF; I have hereunto set my hand and seal this 18 day of May, 1960.

Melvin V. Davenport
Registered Engineer

REGISTERED PROFESSIONAL ENGINEER 627 STATE OF IDAHO MELVIN V. DAVENPORT

STATE OF IDAHO } S.S.
COUNTY OF CANYON }

On this 18th day of May, 1960 before me Wayne E. Davis, a Notary Public in and for the said County and State, personally appeared Melvin V. Davenport, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

IN WITNESS WHEREOF: I have hereunto set my hand and affixed my Notarial Seal the day and year written above.

Wayne E. Davis
Notary Public residing at Caldwell, Idaho
My Commission expires 6-1-61

Instrument No. 489146

STATE OF IDAHO } S.S.
COUNTY OF CANYON }

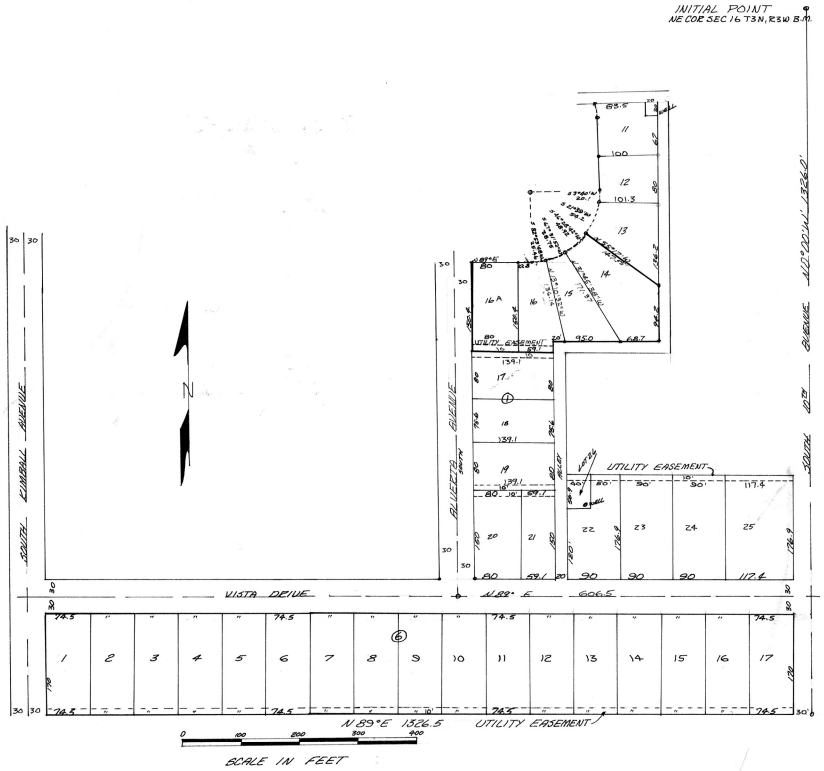
I hereby certify that this Instrument was filed for record at the request of Melvin V. Davenport at 22 minutes past 3 o'clock P.M. this 23rd day of June 1960 A.D.

S. S. Foote
Recorder
By Lavona Sayer
Deputy

Fee $5.00

NOTARY PUBLIC STATE OF IDAHO WAYNE E. DAVIS

# RESUBDIVISION LOTS 14-15-16 BLOCK I AND ALL BLOCK 6 IN VANAL HEIGHTS SUB.




713344

RECORDED AT THE REQUEST OF LINDA E. COURTRIGHT
PLAT BOOK 13 PAGE 8
FEE $5.00

FILED
AUG 21 4 28 PM '73
WALTER FRY
CANYON COUNTY RECORDER
BY [illegible]

## PLAT

OF LOTS 14-15-16-16A BLOCK 1 AND BLOCK 6 OF VANAL HEIGHTS SUBDIVISION SECTION 16 TOWNSHIP 3 NORTH, RANGE 3 WEST, BOISE MERIDIAN IN CANYON COUNTY, IDAHO RECORDED IN PLAT BOOK 6 PAGE 1.

STATE OF IDAHO )
COUNTY OF CANYON) S.S.

I, DONALD E. COURTRIGHT, A REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THE SURVEY OF THE RESUBDIVISION OF LOTS 14-15-16 BLOCK I AND BLOCK 6 VANAL HEIGHTS, WAS MADE BY ME OR UNDER MY DIRECTION. I FURTHER CERTIFY THAT THE DESCRIPTION WRITTEN IN DEDICATION IS CORRECT ACCORDING TO THE SURVEY AND THAT THIS PLAT CLEARLY REPRESENTS THE SURVEY AS MADE. IN WITNESS WHEREOF: I HAVE HEREUNTO SET MY HAND AND SEAL THIS 10 DAY OF August 1973

REGISTERED LAND SURVEYOR 872 STATE OF IDAHO DONALD EUGENE COURTRIGHT

Donald E. Courtright
REG. LAND SURVEYOR.

STATE OF IDAHO )
COUNTY OF CANYON) SS.

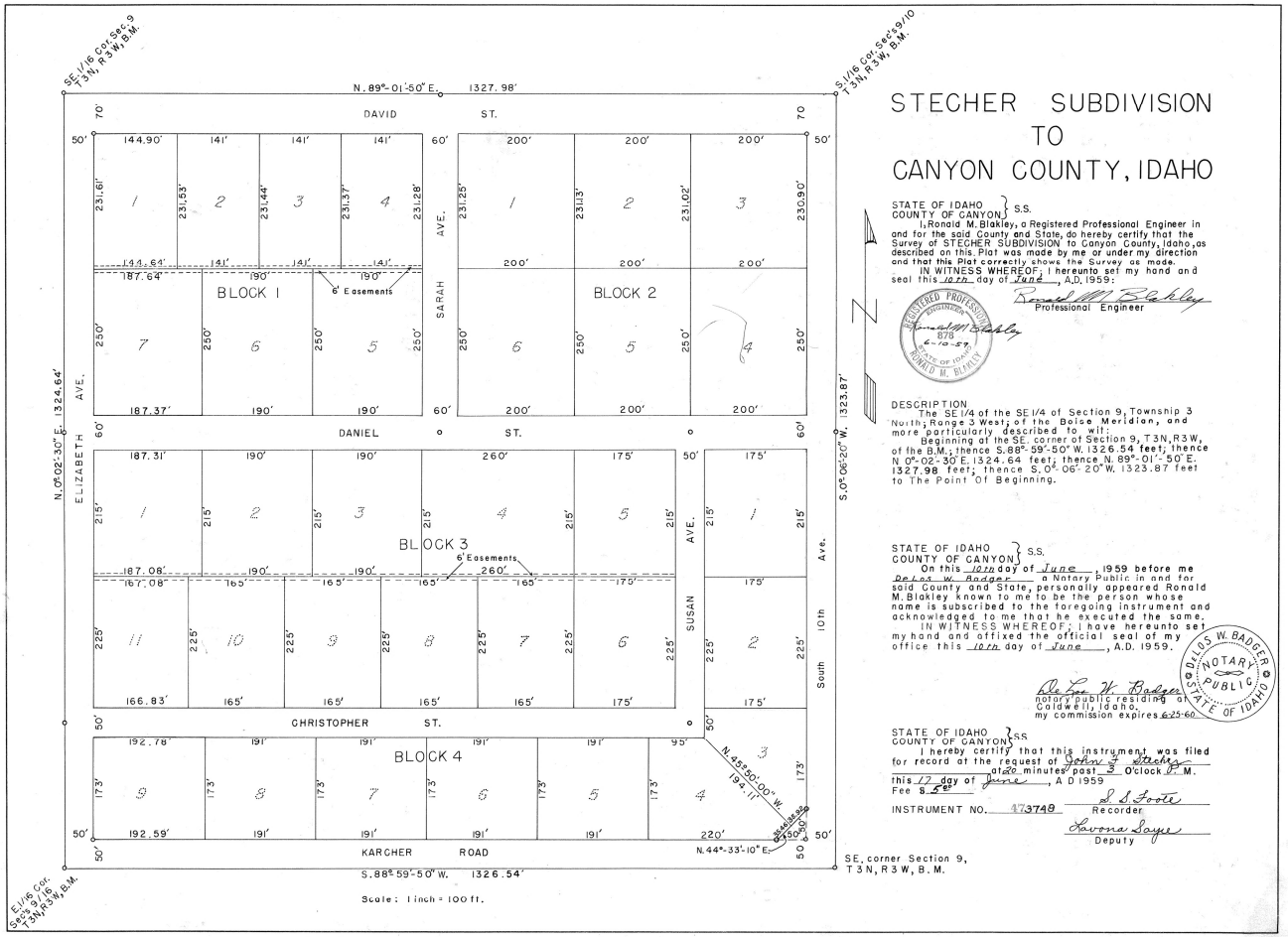
ACKNOWLEDGED BEFORE ME THIS 10 DAY OF August 1973
RESIDING AT Middleton, IDAHO

LINDA E. COURTRIGHT NOTARY PUBLIC

PLAT BOOK 13 PAGE 8

**Exhibit B.5a - 2**

Book 5 Page 46




# STECHER SUBDIVISION TO CANYON COUNTY, IDAHO

STATE OF IDAHO } S.S.
COUNTY OF CANYON }

I, Ronald M. Blakley, a Registered Professional Engineer in and for the said County and State, do hereby certify that the Survey of STECHER SUBDIVISION to Canyon County, Idaho, as described on this Plat was made by me or under my direction and that this Plat correctly shows the Survey as made.

IN WITNESS WHEREOF, I hereunto set my hand and seal this 10th day of June, A.D. 1959:

Ronald M. Blakley
Professional Engineer

REGISTERED PROFESSIONAL ENGINEER 878 6-10-59 STATE OF IDAHO RONALD M. BLAKLEY

DESCRIPTION

The SE1/4 of the SE1/4 of Section 9, Township 3 North, Range 3 West, of the Boise Meridian, and more particularly described to wit:

Beginning at the SE. corner of Section 9, T3N, R3W, of the B.M.; thence S.88°-59'-50" W. 1326.54 feet; thence N. 0°-02'-30" E. 1324.64 feet; thence N. 89°-01'-50" E. 1327.98 feet; thence S. 0°-06'-20" W. 1323.87 feet to The Point Of Beginning.

STATE OF IDAHO } S.S.
COUNTY OF CANYON }

On this 10th day of June, 1959 before me Delos W. Badger a Notary Public in and for said County and State, personally appeared Ronald M. Blakley known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of my office this 10th day of June, A.D. 1959.

Delos W. Badger
notary public residing at Caldwell, Idaho.
my commission expires 6-25-60

DELOS W. BADGER NOTARY PUBLIC STATE OF IDAHO

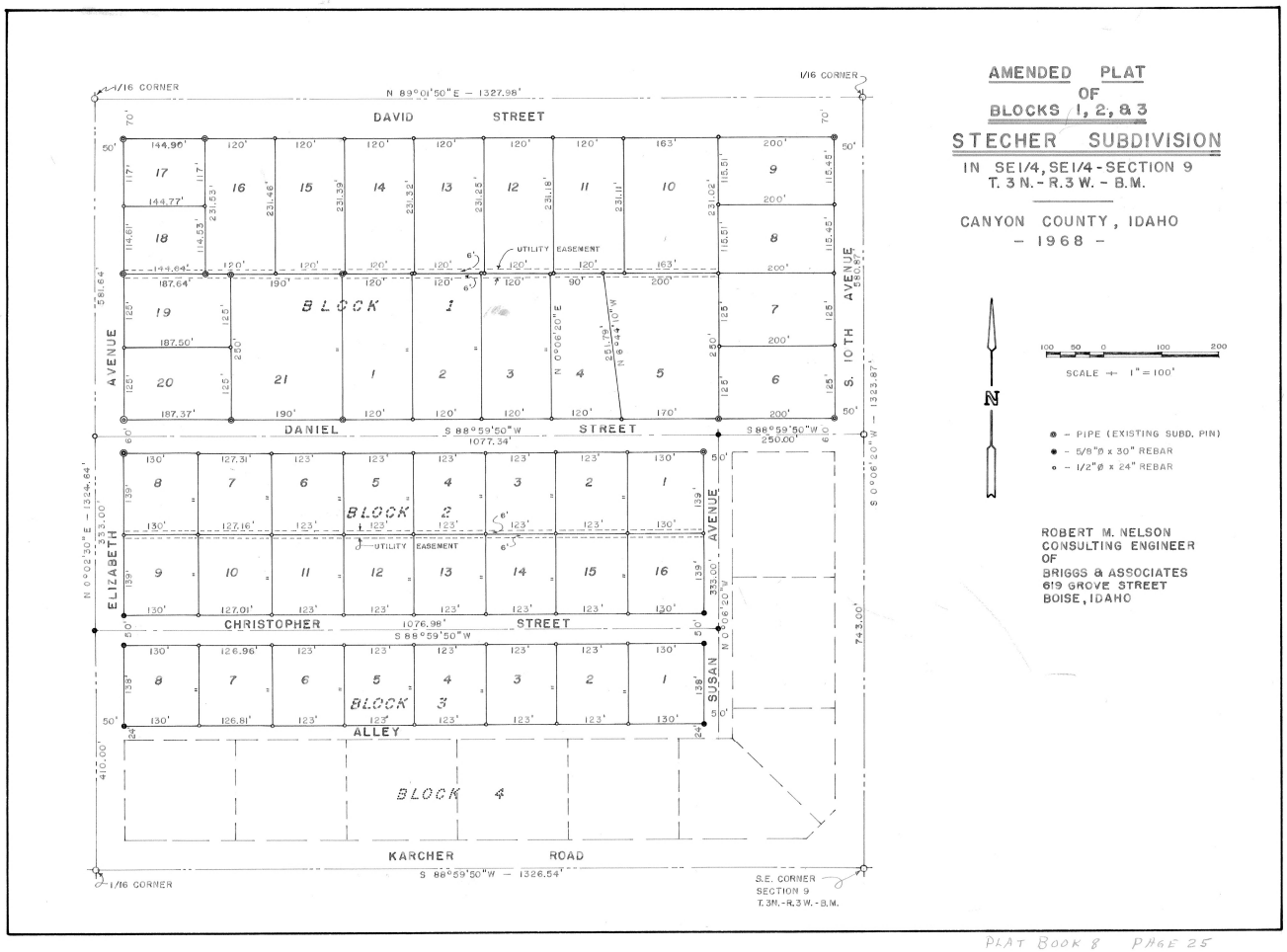
STATE OF IDAHO } S.S.
COUNTY OF CANYON }

I hereby certify that this instrument was filed for record at the request of John J. Stecher at 20 minutes past 3 O'clock P. M. this 17 day of June, A.D. 1959
Fee $ 5.00

INSTRUMENT NO. 173749

L. L. Foote
Recorder

Lavona Sayer
Deputy




# AMENDED PLAT OF BLOCKS 1, 2, & 3 STECHER SUBDIVISION

IN SE1/4, SE1/4 - SECTION 9
T. 3 N. - R. 3 W. - B.M.

CANYON COUNTY, IDAHO
- 1968 -

SCALE → 1" = 100'

● - PIPE (EXISTING SUBD. PIN)
● - 5/8"Ø x 30" REBAR
○ - 1/2"Ø x 24" REBAR

ROBERT M. NELSON
CONSULTING ENGINEER
OF
BRIGGS & ASSOCIATES
619 GROVE STREET
BOISE, IDAHO

PLAT BOOK 8 PAGE 25

**Exhibit B.5b - 2**

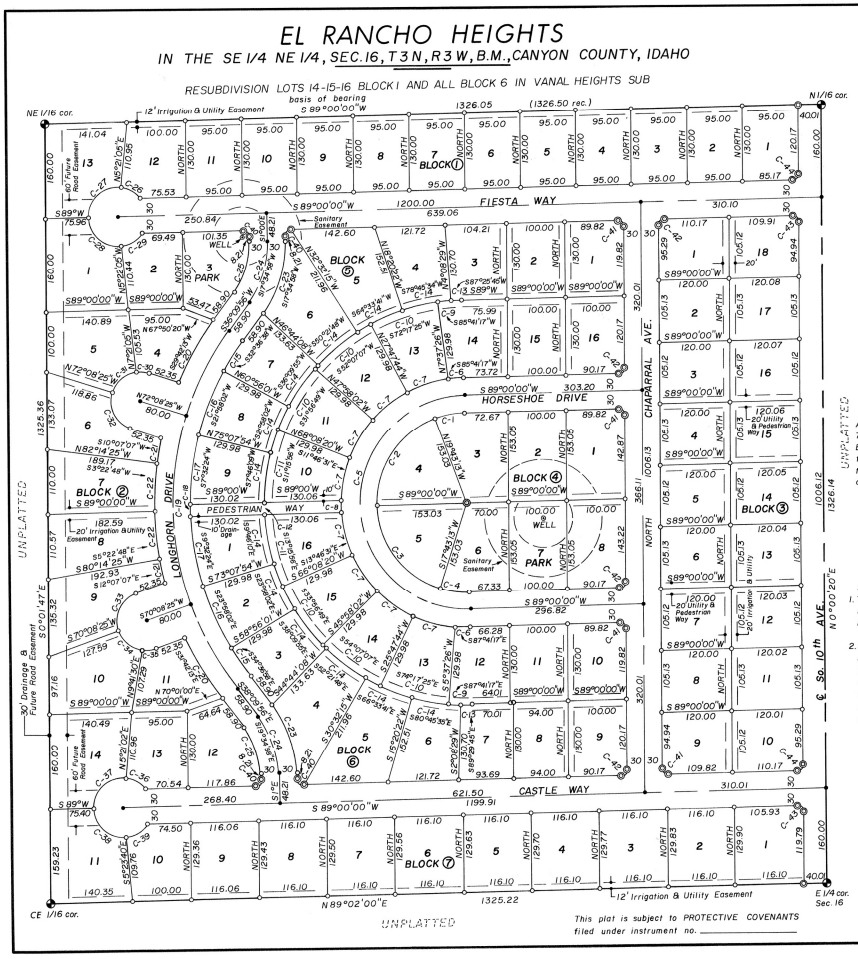
776448

FILED
Jun 11 4 00 PM '76
WALTER FRY
CANYON COUNTY RECORDER
BY Carol
Fee 5.00

# EL RANCHO HEIGHTS

IN THE SE 1/4 NE 1/4, SEC. 16, T 3 N, R 3 W, B.M., CANYON COUNTY, IDAHO

RESUBDIVISION LOTS 14-15-16 BLOCK I AND ALL BLOCK 6 IN VANAL HEIGHTS SUB




LEGEND
- Easements for Drainage, Utilities, Irrigation or the use specified (20' unless otherwise shown)
- Fd. Brass Cap Monument
- Set 5/8"x 30" Rebar w/plastic cap
- Set 1/2"x 24" Rebar w/plastic cap

SCALE: 1" = 100'

## SURVEYOR'S CERTIFICATE

STATE OF IDAHO
COUNTY OF CANYON ss

I, John W. Howe, a Registered Professional Land Surveyor in the State of Idaho, do hereby certify that I have surveyed, subdivided and platted "EL RANCHO HEIGHTS", more particularly described as follows:

All of the SE 1/4 NE 1/4 of Sec. 16, T 3 N, R 3 W, B.M. Idaho.

This parcel contains 40.340 acres. The bearings are based on the plat of VANAL HEIGHTS recorded in Book 6 of Plats at page 1. I further certify that I made the survey under the direction of the owners thereof, and that the size of all lots and the width of all streets are as shown on this plat.

Subscribed and sworn to this 11th day of November 1975.

Notary Public for Idaho
Residing in Caldwell

ALPHA ENGINEERS INC.

REGISTERED LAND SURVEYOR 932 STATE OF IDAHO JOHN W. HOWE

## EASEMENTS

All lots are subject to a 7 ft. Utility & Irrigation Easement along the street frontage(s) in addition to the other easements shown and specified on this plat.

## SANITARY RESTRICTION

1. The SANITARY RESTRICTIONS under Title 50, Chapter 13, Idaho Code are in force.
2. Septic tanks or drainfields are not permitted within 100 ft. of the community wells, and buildings or other possible sources of pollution are not permitted within 50 ft.

CURVE DATA

| CURVE | LENGTH | Δ ANGLE | RADIUS | L CHORD BEARING | L CHORD |
|---|---|---|---|---|---|
| C-1 | 50.00 | 10°43'13" | 183.03 | S 79°38'24" W | 49.78 |
| C-2 | 190.38 | 71°16'47" | 153.03 | N34°38'24"E | 178.34 |
| C-3 | 190.38 | 71°16'47" | 153.03 | S36°38'24"E | 178.34 |
| C-4 | 50.00 | 18°43'13" | 153.03 | S81°38'24"E | 49.78 |
| C-5 | 575.00 | 180°00'00" | 183.03 | S 1°00'00"E | 366.06 |
| C-6 | 24.63 | 6°37'26" | 213.03 | ON PLAT | 24.61 |
| C-7 | 75.00 | 20°10'18" | 213.03 | ON PLAT | 74.61 |
| C-8 | 20.00 | 5°22'44" | 213.03 | S 1°00'00"E | 19.99 |
| C-9 | 39.65 | 6°37'26" | 343.01 | ON PLAT | 39.63 |
| C-10 | 120.76 | 20°10'18" | 343.01 | ON PLAT | 120.14 |
| C-11 | 126.86 | 21°11'27" | 343.01 | ON PLAT | 126.14 |
| C-12 | 20.00 | 3°20'26" | 343.01 | S 1°00'00"E | 20.00 |
| C-13 | 18.81 | 3°08'29" | 343.01 | ON PLAT | 18.80 |
| C-14 | 85.00 | 14°11'53" | 343.01 | ON PLAT | 84.78 |
| C-15 | 58.60 | 7°05'56" | 472.99 | ON PLAT | 58.57 |
| C-16 | 117.21 | 14°11'53" | 472.99 | ON PLAT | 116.91 |
| C-17 | 121.00 | 14°39'25" | 472.99 | ON PLAT | 120.67 |
| C-18 | 20.00 | 2°25'22" | 472.99 | S 1°00'00"E | 20.00 |
| C-19 | 652.54 | 74°19'52" | 502.99 | S 1°00'00"E | 607.73 |
| C-20 | 120.22 | 12°55'26" | 532.99 | ON PLAT | 119.97 |
| C-21 | 43.89 | 4°43'05" | 532.99 | ON PLAT | 43.88 |
| C-22 | 81.49 | 8°45'35" | 532.99 | ON PLAT | 81.41 |
| C-23 | 131.12 | 37°09'56" | 202.14 | ON PLAT(C-24) | 128.83 |
| C-24 | 111.66 | 37°09'56" | 172.14 | ON PLAT | 109.71 |
| C-25 | 92.20 | 37°09'56" | 142.14 | ON PLAT(C-24) | 90.59 |
| C-26 | 40.82 | 46°46'46" | 50.00 | S 61°15'33"E | 39.70 |
| C-27 | 84.08 | 96°21'05" | 50.00 | N 47°10'32"E | 74.52 |
| C-28 | 82.35 | 94°22'05" | 50.00 | N 48°11'02"W | 73.35 |
| C-29 | 42.55 | 48°45'43" | 50.00 | N 60°15'03"E | 41.28 |
| C-30 | 22.00 | 25°12'40" | 50.00 | N 84°44'45"E | 21.82 |
| C-31 | 56.54 | 64°47'20" | 50.00 | S 50°15'15"W | 53.57 |
| C-32 | 78.54 | 90°00'00" | 50.00 | N 27°08'25"W | 70.71 |
| C-33 | 78.54 | 90°00'00" | 50.00 | S 25°08'25"W | 70.71 |
| C-34 | 52.75 | 60°26'55" | 50.00 | S 50°05'02"E | 50.34 |
| C-35 | 25.79 | 29°33'05" | 50.00 | N 84°54'57"E | 25.50 |
| C-36 | 40.82 | 46°46'46" | 50.00 | S 61°15'35"E | 39.70 |
| C-37 | 84.08 | 96°21'02" | 50.00 | N 47°10'30"E | 74.52 |
| C-38 | 82.37 | 94°23'40" | 50.00 | S 48°11'50"E | 73.38 |
| C-39 | 42.53 | 48°44'08" | 50.00 | N 60°14'16"E | 41.26 |
| C-40 | 15.71 | 90°00'00" | 10.00 | VARIES | 14.14 |
| C-41 | 15.88 | 91°00'00" | 10.00 | VARIES | 14.27 |
| C-42 | 15.53 | 89°00'00" | 10.00 | VARIES | 14.02 |
| C-43 | 15.88 | 91°00'20" | 10.00 | VARIES | 14.27 |
| C-44 | 15.53 | 88°59'40" | 10.00 | VARIES | 14.02 |

This plat is subject to PROTECTIVE COVENANTS filed under instrument no. _____

FRONT

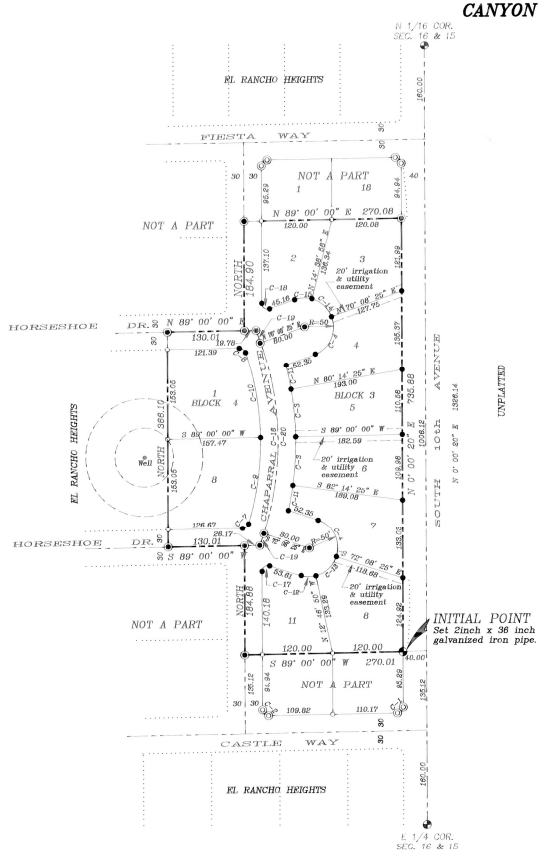
BOOK 14 PAGE 34

# EL RANCHO HEIGHTS II

**IN THE SE 1/4 NE 1/4 SECTION 16, TOWNSHIP 3 NORTH, RANGE 3 WEST, BOISE MERIDIAN**
**REPLAT OF LOTS 2-8 & 11-17, BLOCK 3, LOTS 1 & 8 BLOCK 4**
**CANYON COUNTY, IDAHO**
**1990**

9008901

RECORDED
90 MAY 16 AM 9 18
JOHN LEERR
CANYON CNTY RECORDER
BY C. Kentchick
11.00




N

BASIS OF BEARING = EASTERLY BOUNDARY OF EL RANCHO HEIGHTS SUBDIVISION

0 100 200
SCALE 1" = 100'

## LEGEND

- Found brass/aluminum cap monument
- Set brass/aluminum cap monument
- Set 5/8 inch x 30 inch dia. rebar w/ yellow cap
- Found 5/8 inch dia. rebar
- Set 1/2 inch x 24 inch dia. rebar w/yellow cap
- Found 1/2 inch dia. rebar

## NOTES:

All lot lines common to a public right of way are subject to a 10 ft. wide Utility, Irrigation and Drainage easement.

The SANITARY RESTRICTIONS under Title 50, Chapter 13, Idaho Code are in force.

Septic tanks or drainfields are not permitted within 100 ft. of the community wells and buildings or other possible sources of pollution are not permitted within 50 ft.

This subdivision is subject to the PROTECTIVE COVENANTS filed under instrument number 8714081 for EL RANCHO HEIGHTS.

## CURVE TABLE

| CURVE | GEN. ANGLE | RADIUS | TAN. | LENGTH | CHORD | CHORD BEARING |
|---|---|---|---|---|---|---|
| C-1 | 88° 59' 40" | 10.00 | 9.83 | 15.53 | 14.02 | |
| C-2 | 91° 00' 00" | 10.00 | 10.18 | 15.88 | 14.27 | |
| C-3 | 8° 45' 35" | 532.99 | 40.82 | 81.49 | 81.41 | |
| C-4 | 90° 00' 00" | 50.00 | 50.00 | 78.54 | 70.71 | |
| C-5 | 91° 00' 20" | 10.00 | 10.18 | 15.88 | 14.27 | S 45° 29' 50" E |
| C-6 | 89° 00' 00" | 10.00 | 9.83 | 15.53 | 14.02 | N 44° 30' 00" E |
| C-7 | 71° 23' 12" | 11.14 | 8.00 | 13.87 | 12.99 | N 53° 18' 24" E |
| C-8 | 71° 51' 10" | 11.06 | 8.00 | 13.85 | 12.96 | S 36° 55' 35" E |
| C-9 | 17° 54' 31" | 472.99 | 74.53 | 147.84 | 147.24 | S 7° 57' 15" W |
| C-10 | 17° 54' 22" | 472.99 | 74.52 | 147.82 | 147.22 | S 9° 57' 11" E |
| C-11 | 4° 43' 02" | 532.99 | 21.95 | 43.88 | 43.87 | |
| C-12 | 30° 38' 25" | 50.00 | 13.70 | 26.74 | 26.42 | S 87° 27' 36" E |
| C-13 | 59° 21' 35" | 50.00 | 28.50 | 51.80 | 49.52 | S 47° 32' 23" W |
| C-14 | 55° 20' 27" | 50.00 | 26.30 | 48.13 | 46.68 | S 17° 36' 10" E |
| C-15 | 34° 30' 33" | 50.00 | 15.53 | 30.11 | 29.66 | N 87° 23' 42" E |
| C-16 | 42° 40' 33" | 502.99 | 196.49 | 374.64 | 366.04 | N 1° 00' 00" W |
| C-17 | 107° 51' 35" | 10.00 | 13.73 | 18.83 | 16.17 | N 53° 55' 48" E |
| C-18 | 109° 51' 35" | 10.00 | 14.24 | 19.17 | 16.37 | S 54° 55' 48" E |
| C-19 | 2° 28' 45" | 502.99 | 10.88 | 21.76 | 21.75 | |
| C-20 | 37° 43' 10" | 502.99 | 171.82 | 331.13 | 325.19 | N 1° 00' 00" W |

Surveyed L. Earl April 23, 1990

Skinner & Associates, Inc.
1002 Blaine St. Suite 202
Caldwell, Idaho

Sheet 1 of 2

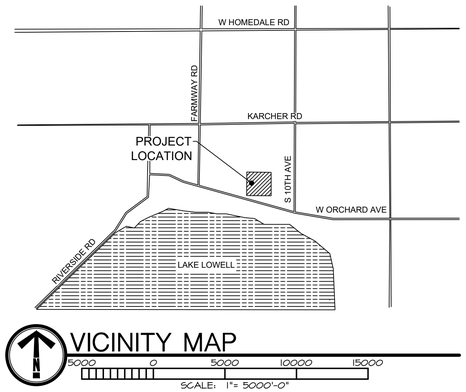
BK. 11, PG. 63

**Exhibit B.5c - 2**

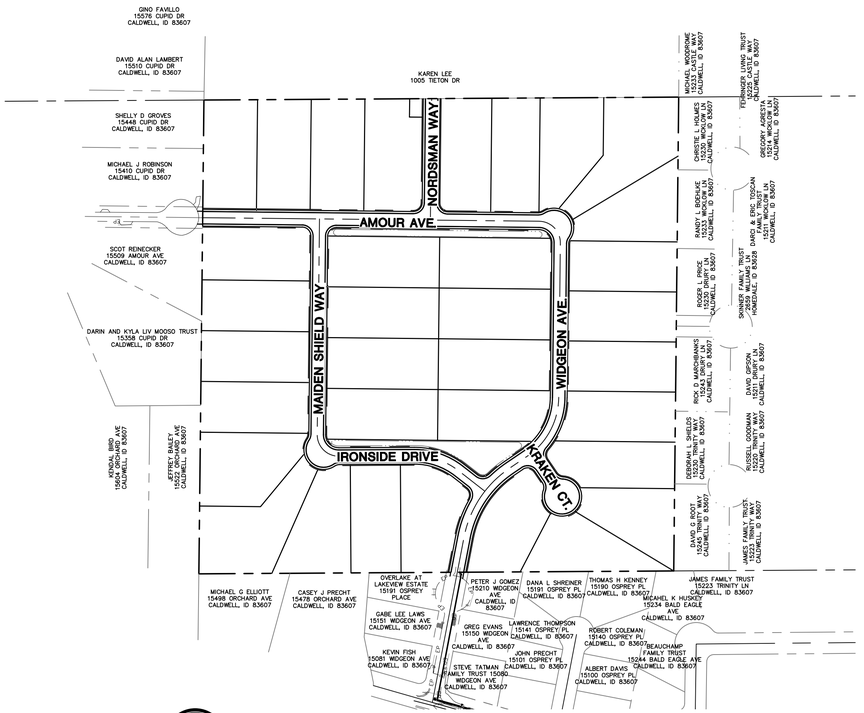
# NORSE LANDING SUBDIVISION

**Exhibit B.5d**

LOCATED IN THE SW 1/4 OF THE NE 1/4, SECTION 16,
TOWNSHIP 3 NORTH, RANGE 3 WEST, B.M., CANYON COUNTY, IDAHO




VICINITY MAP




SITE PLAN

200 0 200 400 600
SCALE: 1"= 200'-0"

## PRELIMINARY PLAT DEVELOPMENT FEATURES:

| | |
|---|---|
| TOTAL ACRES | 40.35 AC |
| EXISTING ZONING | AG-AGRICULTURAL |
| PROPOSED ZONING | R-1 |
| ADJACENT ZONING | AG-AGRICULTURAL |
| TOTAL LOTS | 37 LOTS |
| TOTAL SINGLE FAMILY LOTS | 34 LOTS - 34.92 AC |
| COMMON AREA LOTS | 3 LOTS - 0.74 AC |
| RESIDENTIAL GROSS DENSITY | 0.84 (SINGLE FAMILY UNITS/TOTAL ACRES) |

DIMENSIONAL STANDARDS OF PROPOSED R-1 ZONING: (STANDARDS PER CANYON COUNTY CODE 7-10 UNLESS INDICATED)

| | |
|---|---|
| MAXIMUM BUILDING HEIGHT | 35 FT |
| FRONT SETBACK | 20 FT |
| REAR SETBACK | 20 FT |
| INTERIOR SIDE SETBACK | 10 FT |
| CORNER SIDE SETBACK | 20 FT |
| AVERAGE MINIMUM LOT SIZE | 1 AGRE |
| MINIMUM LOT WIDTH | 60 FT |

## DRAWING INDEX

| Sheet Number | Sheet Title |
|---|---|
| PP1.0 | COVER |
| | TOPOGRAPHIC SURVEY |
| PP1.1 - PP1.2 | PRELIMINARY PLAT |
| PP1.3 - PP1.5 | PRELIMINARY GRADING, DRAINAGE, & UTILITY PLAN |

## BENCHMARK & DATUM

SURVEY WAS CONDUCTED BY COMPASS SURVEYING.

1. ALL CONTOURS WERE DERIVED USING GPS OBSERVATIONS AND ARE ON NAVD 88 DATUM.
2. PROJECT TEMPORARY BENCHMARK ELEVATION WERE ESTABLISH BY GPS OBSERVATION.

- TBM #1 = SET 5/8" INCH IRON PIN WITH RED CLS CONTROL CAP. EL = 2584.62'
- TBM #2 = FOUND 1/2" INCH IRON PIN WITH CAP MARKED "PLS 4277". EL = 2546.60'
- TBM #3 = FOUND 1/2" INCH IRON PIN WITH CAP MARKED "PLS 8793". EL = 2562.53'

## CONTACTS

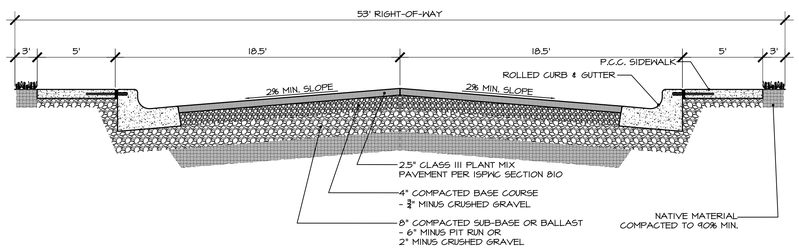
CIVIL ENGINEER:
BRECKON LAND DESIGN
CONTACT: MARY WALL
PHONE: 208-376-5153

OWNER/DEVELOPER:
TRIDENT HOMES
CONTACT: TRACY SKIDMORE
9840 W OVERLAND STE 120
BOISE, ID 83709
PHONE: 208-995-3613

SURVEYOR
COMPASS LAND SURVEYING
CONTACT: RICHARD GREY
PHONE: 208-442-0115

## NOTES

1. ALL LOT LINES COMMON TO A PUBLIC RIGHT-OF-WAY AND THE SUBDIVISION EXTERIOR BOUNDARY HAVE A TEN-FOOT (10') WIDE PERMANENT PUBLIC UTILITY, AND DRAINAGE EASEMENT. THE EASEMENT SHALL NOT PRECLUDE THE CONSTRUCTION OF HARD SURFACE DRIVEWAYS FROM THE PUBLIC RIGHT-OF-WAY TO EACH LOT.
2. THE INTERIOR SIDE YARD LOT LINE SHALL HAVE A FIVE-FOOT (5') WIDE PERMANENT PUBLIC UTILITIES, AND PROPERTY DRAINAGE EASEMENT UNLESS DIMENSIONED OTHERWISE. SAID DRAINAGE EASEMENTS ARE RESERVED FOR HOMEOWNERS ASSOCIATION AND ASSIGNS.
3. ALL REAR LOT LINES SHALL HAVE A TEN-FOOT (10') WIDE PUBLIC UTILITIES, AND PROPERTY DRAINAGE EASEMENT.
4. DOMESTIC WATER FOR THE PROPOSED LOTS SHALL BE PROVIDED BY CALDWELL CITY WATER.
5. SANITARY SEWER DISPOSAL FOR EACH PROPOSED LOT SHALL BE INDIVIDUAL SEPTIC SYSTEM.
6. POST DEVELOPMENT STORM WATER RUNOFF SHALL BE CONTAINED ON SITE THROUGH THE USE OF INFILTRATION FACILITIES.
7. PRESSURE IRRIGATION TO BE PROVIDED. THE SYSTEM WILL BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION. PRESSURE IRRIGATION SYSTEM AND WATER RIGHTS SHALL BE DEDICATED TO THE CALDWELL MUNICIPAL IRRIGATION DISTRICT UPON ANNEXATION INTO THE CITY OF CALDWELL.
8. ANY RE-SUBDIVISION OF THIS SUBDIVISION SHALL BE IN COMPLIANCE WITH THE APPLICABLE SUBDIVISION REGULATIONS IN EFFECT AT THE TIME OF RE-SUBDIVISION.
9. MINIMUM BUILDING SETBACK LINES SHALL BE IN ACCORDANCE WITH CANYON COUNTY ZONING ORDINANCE AT THE TIME OF ISSUANCE OF A BUILDING PERMIT OR AS SPECIFICALLY APPROVED AND/OR REQUIRED.
10. NO PORTION OF THIS SUBDIVISION LIES WITHIN THE 100-YEAR FLOOD PLAIN.
11. IF LOT LINES ARE ADJUSTED, THE EXISTING EASEMENT SHALL MOVE WITH THE ADJUSTED LOT LINE, PROVIDED THAT THE UTILITIES ARE NOT CURRENTLY INSTALLED WITHIN THE EASEMENTS.
12. USER DITCH ON THE NORTH PROPERTY LINE FLOWS EAST TO WEST.
13. LOTS 1 AND 6, BLOCK 3 ARE DESIGNATED AS COMMON AREA LOTS AND WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION AND/OR ASSIGNS. THESE LOTS SHALL HAVE A BLANKET DRAINAGE AND IRRIGATION EASEMENT OVER THE ENTIRETY OF THE LOT.
14. ALL PUBLIC ROADS SHALL BE DEDICATED AS PUBLIC RIGHT-OF-WAY.
15. THE HOMEOWNER'S ASSOCIATION, UNDERLYING PROPERTY OWNER OR ADJACENT PROPERTY OWNER IS RESPONSIBLE FOR ALL STORM DRAINAGE FACILITIES OUTSIDE THE PUBLIC RIGHT-OF-WAY, INCLUDING ALL ROUTINE AND HEAVY MAINTENANCE.
16. EXISTING IRRIGATION LINE ALONG NORTHERN PROPERTY BOUNDARY SHALL BE REMOVED.




1 53' RIGHT-OF-WAY PUBLIC STREET SECTION
Scale: NTS

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CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

| REVISIONS | | |
|---|---|---|
| No. | Date | Description |
| 1 | 2-26-21 | OWNER COMMENTS |
| 2 | 6/11/21 | AGENCY COMMENTS |
| 3 | 9/13/21 | AGENCY COMMENTS |

PROJECT NO.: 20128
DRAWN BY: CS
CHECKED BY: MW/JB
DATE: 02/18/21

SHEET NUMBER
PP1.0

NORSE LANDING SUBDIVISION
CANYON COUNTY, ID
PRELIMINARY PLAT
COVER

PRELMINARY PLAT

THE PROFESSIONAL SERVICES OF THIS DESIGN PROFESSIONAL ARE UNDERTAKEN AND PERFORMED IN THE INTEREST OF THE CLIENT TO WHOM THIS CONSTRUCTION DOCUMENT IS ADDRESSED BY THIS DESIGN PROFESSIONAL FOR THE BENEFIT OF ANY CONSTRUCTION INVOLVED IN THE PROJECT.

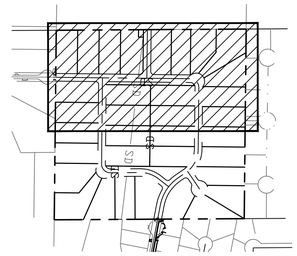


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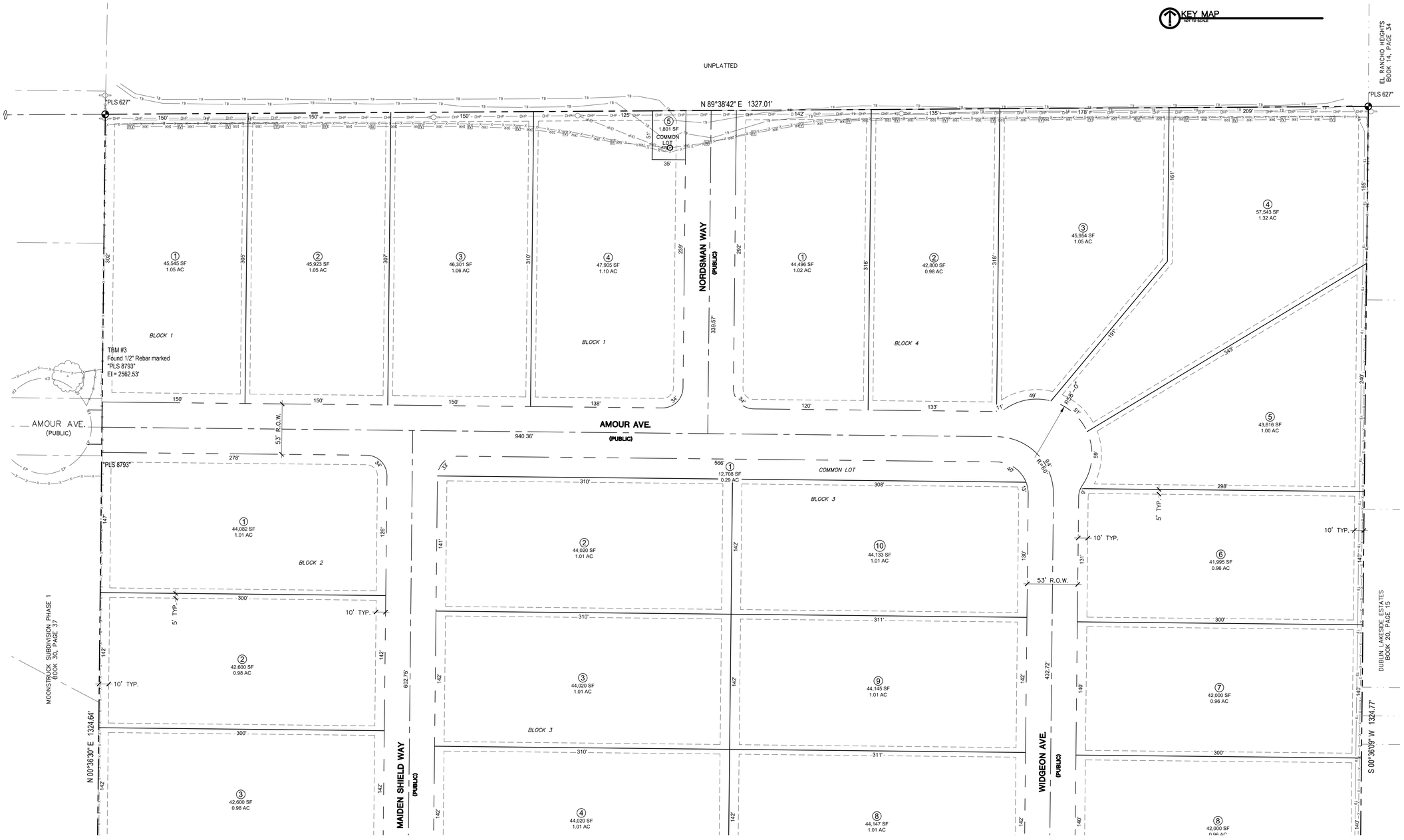
ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVEYING

# PLAT LEGEND

- EXISTING PROPERTY BOUNDARY
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED CENTER LINE
- (5) 1.00 AC — LOT NUMBER AND ACREAGE
- BLOCK 1 — BLOCK NUMBER
- EXISTING TREE
- IRR — EXISTING IRRIGATION
- X — EXISTING FENCE
- EXISTING IRRIGATION WELL AND PUMP



KEY MAP
NOT TO SCALE




PRELIMINARY PLAT

SCALE: 1"= 50'-0"

S:_projects\2021\20128 moonstruck heights\CAD\Sheets\Preliminary Plat\20128 PP.dwg plotted by Claire Smarda on Mon, September 13, 2021 at 03:38 PM

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# NORSE LANDING SUBDIVISION
# CANYON COUNTY, ID
# PRELIMINARY PLAT

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| REVISIONS | | |
|---|---|---|
| No. | Date | Description |
| 1 | 2-26-21 | OWNER COMMENTS |
| 2 | 6/11/21 | AGENCY COMMENTS |
| 3 | 9/13/21 | AGENCY COMMENTS |
| | | |

PROJECT NO.: 20128
DRAWN BY: CS
CHECKED BY: MW/JB
DATE: 02/18/21

SHEET NUMBER
PP1.1

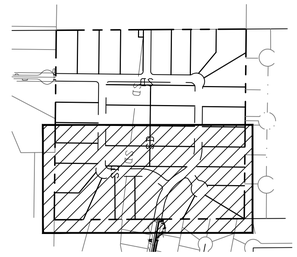
PRELIMINARY PLAT

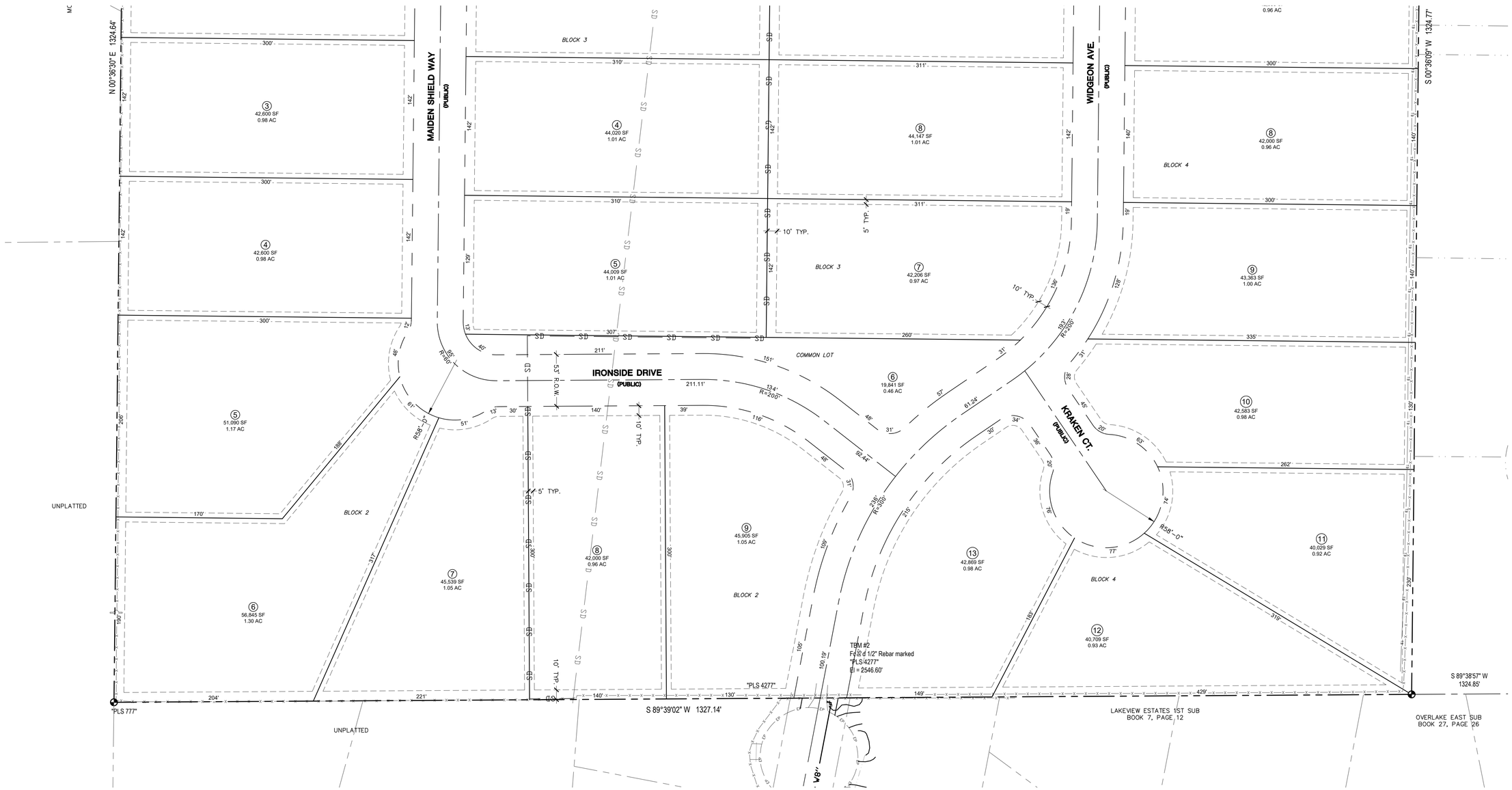
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ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVEYING

# PLAT LEGEND

- EXISTING PROPERTY BOUNDARY
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED CENTER LINE
- (5) / 1.00 AC — LOT NUMBER AND ACREAGE
- BLOCK 1 — BLOCK NUMBER
- EXISTING TREE
- EXISTING IRRIGATION
- EXISTING FENCE
- EXISTING IRRIGATION WELL AND PUMP




PRELIMINARY PLAT

SCALE: 1"= 50'-0"

**Exhibit B.5d - 3**

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# NORSE LANDING SUBDIVISION
CANYON COUNTY, ID

PRELIMINARY PLAT

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| REVISIONS | | |
|---|---|---|
| No. | Date | Description |
| 1 | 2-26-21 | OWNER COMMENTS |
| 2 | 6/11/21 | AGENCY COMMENTS |
| 3 | 9/13/21 | AGENCY COMMENTS |
| | | |

PROJECT NO.: 20128
DRAWN BY: CS
CHECKED BY: MW/JB
DATE: 02/18/21

SHEET NUMBER
PP1.2

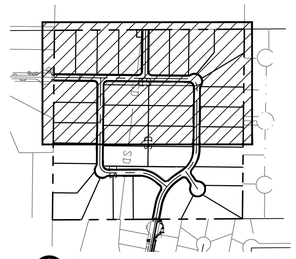
PRELIMINARY PLAT

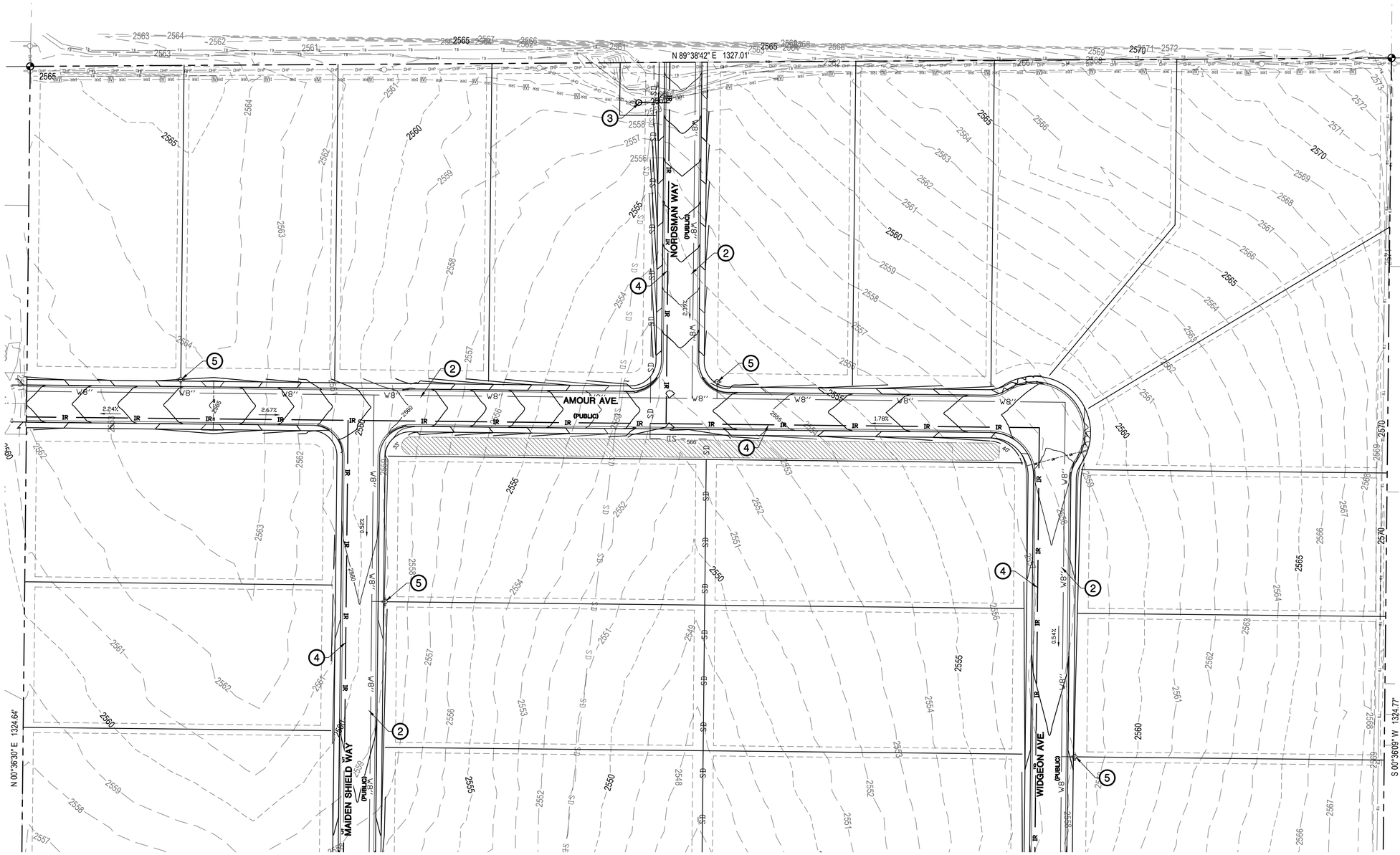

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ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVYEING




## LEGEND

- EXISTING PROPERTY LINE (VERIFY)
- PROPOSED LOT LINE
- PROPOSED BACK OF CURB
- PROPOSED FRONT OF CURB
- PROPOSED CONCRETE SIDEWALK
- IR — PROPOSED PRESSURE IRRIGATION
- W8" — PROPOSED DOMESTIC WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- H2O — EXISTING WATER MAIN
- EXISTING IRRIGATION WELL AND PUMP
- 1040' — PROPOSED CONTOUR
- 1050 — EXISTING CONTOUR
- GB — GB — GRADE BREAK
- 2.55% — FLOW DIRECTION AND GRADIENT
- PROPOSED SWALE BASIN

## CALLOUTS

1. INSTALL 12" WATER MAIN EXTENSION
2. INSTALL 8" WATER MAIN
3. EXISTING WELL TO BE USED FOR PRESSURE IRRIGATION SERVICE. PUMP TO BE INSTALLED PER CALDWELL STANDARDS.
4. PRESSURE IRRIGATION
5. PROPOSED FIRE HYDRANT
6. CONNECT TO EXISTING WATER STUB

PRELIMINARY GRADING, DRAINAGE & UTILITY PLAN

50 0 50 100 150

SCALE: 1"= 50'-0"

**Exhibit B.5d - 4**

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| REVISIONS | | |
|---|---|---|
| No. | Date | Description |
| 1 | 2-26-21 | OWNER COMMENTS |
| 2 | 6/11/21 | AGENCY COMMENTS |
| 3 | 9/13/21 | AGENCY COMMENTS |

PROJECT NO.: 20128
DRAWN BY: CS
CHECKED BY: MW/JB
DATE: 02/18/21

SHEET NUMBER
PP1.3

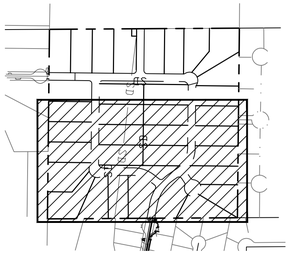
# NORSE LANDING SUBDIVISION
# CANYON COUNTY, ID
# PRELIMINARY GRADING, DRAINAGE, & UTILITY PLAN

PRELIMINARY PLAT

THE PROFESSIONAL SERVICES OF THIS DESIGN PROFESSIONAL ARE UNDERTAKEN AND PERFORMED IN THE INTEREST OF THE CLIENT. NO CONTRACTUAL OBLIGATION IS ASSUMED BY THE DESIGN PROFESSIONAL FOR THE BENEFIT OF ANY CONSTRUCTION CONTRACTOR ON THE PROJECT.

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ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVYEING



KEY MAP

## LEGEND

- EXISTING PROPERTY LINE (VERIFY)
- PROPOSED LOT LINE
- PROPOSED BACK OF CURB
- PROPOSED FRONT OF CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PRESSURE IRRIGATION
- PROPOSED DOMESTIC WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- EXISTING WATER MAIN
- EXISTING IRRIGATION WELL AND PUMP
- PROPOSED CONTOUR
- EXISTING CONTOUR
- GRADE BREAK
- FLOW DIRECTION AND GRADIENT
- PROPOSED SWALE BASIN

## CALLOUTS

1. INSTALL 12" WATER MAIN EXTENSION
2. INSTALL 8" WATER MAIN
3. EXISTING WELL TO BE USED FOR PRESSURE IRRIGATION SERVICE. PUMP TO BE INSTALLED PER CALDWELL STANDARDS.
4. PRESSURE IRRIGATION
5. PROPOSED FIRE HYDRANT
6. CONNECT TO EXISTING WATER STUB

MAIDEN SHIELD WAY (PUBLIC)

IRONSIDE DRIVE (PUBLIC)

WIDGEON AVE (PUBLIC)

KRAKEN CT. (PUBLIC)

N 00°38'30" E

S 00°38'30" W

S 89°39'02" W 1327.14'

PRELIMINARY GRADING, DRAINAGE & UTILITY PLAN

SCALE: 1"= 50'-0"

**Exhibit B.5d - 5**

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# NORSE LANDING SUBDIVISION
# CANYON COUNTY, IDAHO
# PRELIMINARY GRADING, DRAINAGE, & UTILITIY PLAN

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| REVISIONS: | | |
|---|---|---|
| No. | Date | Description |
| 1 | 2-26-21 | OWNER COMMENTS |
| 2 | 6/11/21 | AGENCY COMMENTS |
| 3 | 9/13/21 | AGENCY COMMENTS |
| | | |

PROJECT NO.: 20128
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DATE: 02/18/21

SHEET NUMBER
PP1.4

PRELIMINARY PLAT


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S:_projects\2020\20128 moonstruck heights\CAD\Sheets\Preliminary Plat\20128 PP.dwg plotted by: Claire Smarda on Mon, September 13, 2021 at 03:38 PM

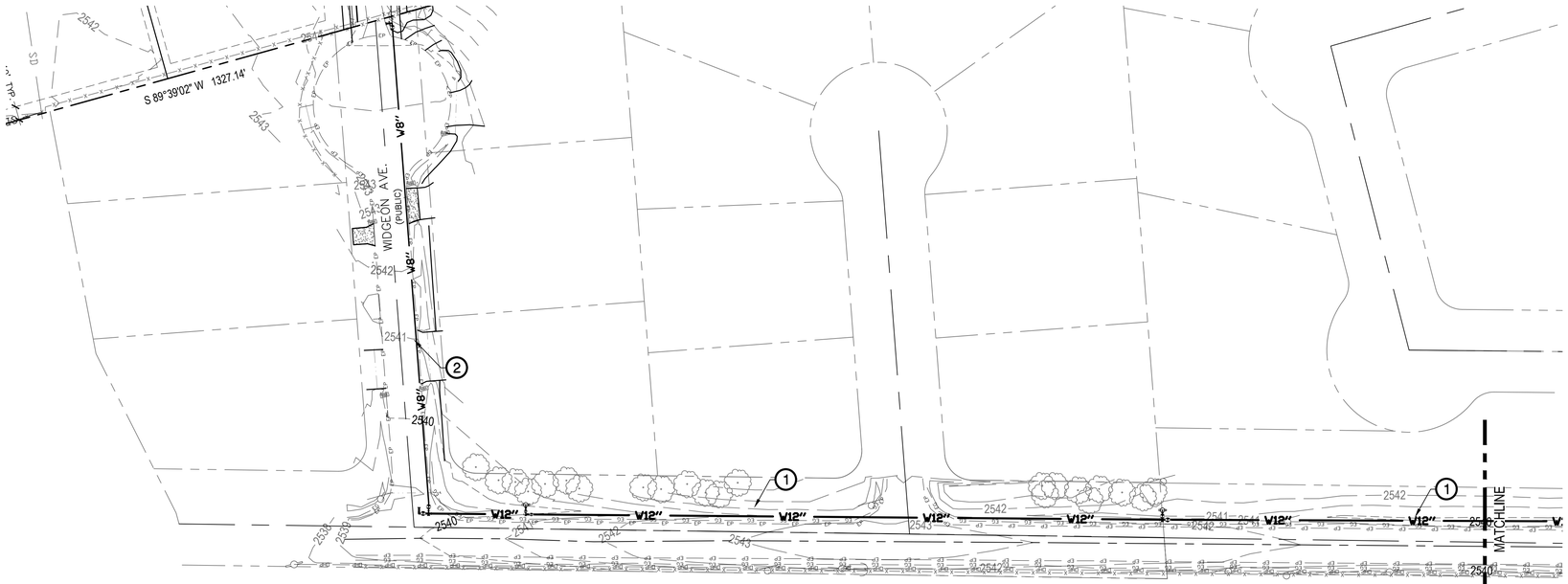

S 89°39'02" W 1327.14'
WIDGEON AVE. (PUBLIC)
ORCHARD AVE
TEAL AVE.
S. 10TH AVE.
MATCHLINE
MATCHLINE
W12"
W8"
SD
2542
2543
2541
2540
2539
2538
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2545
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2583

Exhibit 3

**EXHIBIT C**

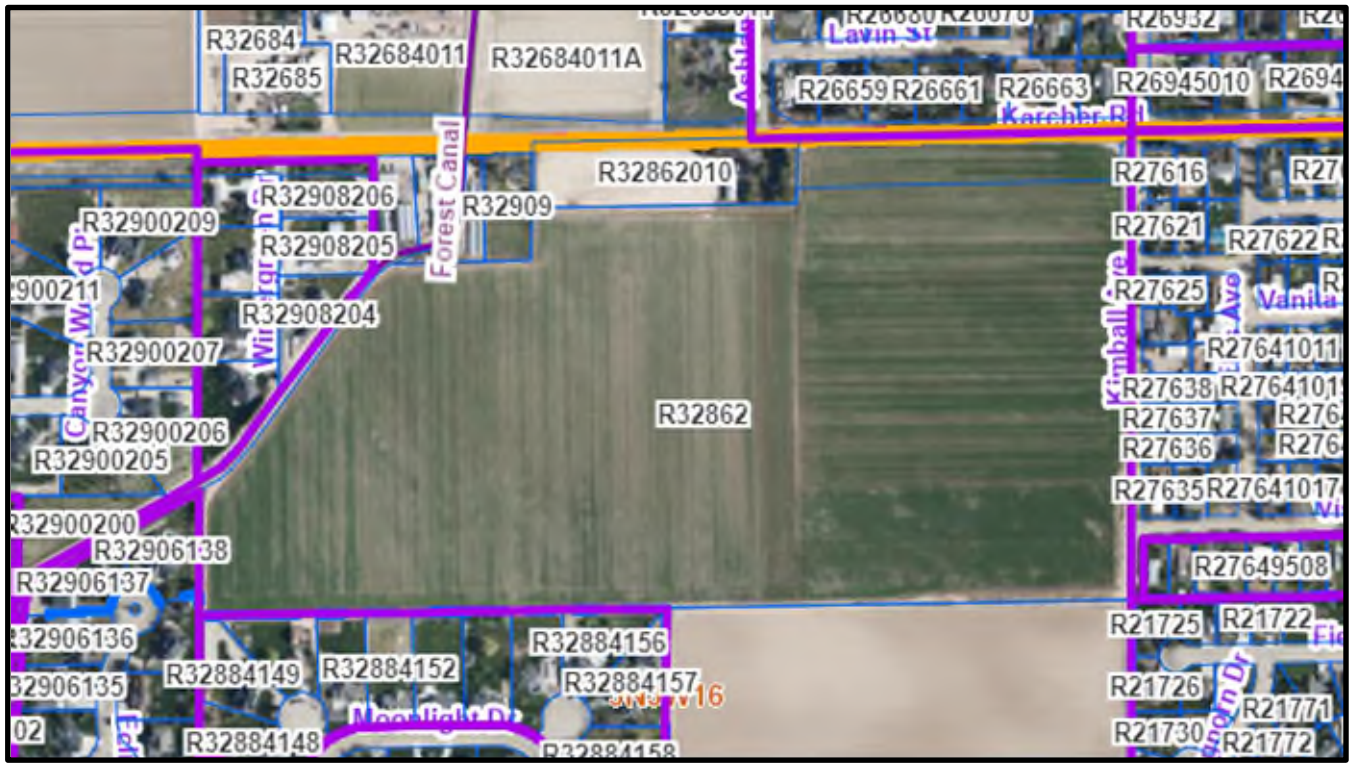
**Site Visit Photos: January 10, 2025**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: March 10, 2025

# RZ2022-0012 – McGuire
# Site Visit: 1/10/2025




R32684
R32685
R32684011
R32684011A
R26659
R26661
R26663
R26945010
R328620
R32908206
R32908205
R32908204
R32909
R32900209
R32900207
R32900206
R32900205
R32862
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R32884157
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R21725
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R21730
R21774
R21772



Exhibit C.1 - 2


R32684
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R32684011A
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R26663
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R27616
R27621
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R32884149
R32884152
R32884148

Exhibit C.1 - 3


R32684
R32685
R32684011
R32684011A
R26659
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R26945010
R32909
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R21772
R32884156
R32884157
R32884149
R32884152
R32884148
Forest Canal

Exhibit C.1 - 4


R32684
R32685
R32684011
R32684011A
R26659
R26661
R26663
R26945010
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R32906135

Exhibit C.1 - 5


R32684
R32685
R32684011
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R21772
R32884148

Exhibit C.1 - 6


R32684
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R32684011
R32684011A
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R26945010
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R32908206
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Forest Canal

Exhibit C.1 - 7


R32684
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Exhibit C.1 - 8

R32900209
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R32862070
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R26945010
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R27641010
R27641011
R27650500
R21775
R21722
R21776
R21770
R21772
Forest Canal






Exhibit C.1 - 10




Exhibit C.1 - 11




Exhibit C.1 - 12




Exhibit C.1 - 13




Exhibit C.1 - 14

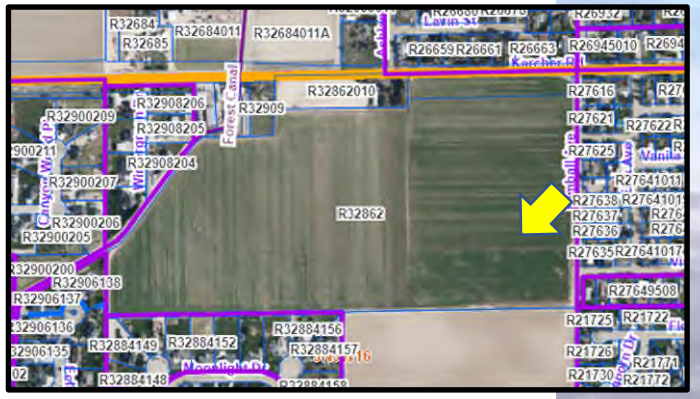



Exhibit C.1 - 15




Exhibit C.1 - 16




Exhibit C.1 - 17




Exhibit C.1 - 18

R32900209
R32900207
R32900208
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R32900206
R32900204
R32906137
R32906138
R32906136
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R32862010
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R32684011
R32684011A
Forest Canal
R26659
R26661
R26653
R26945010
R27625
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R27649503
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R21730
R21772

Exhibit 3

**EXHIBIT D**

**Agency Comments Received by: March 10, 2025**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: March 20, 2025

DONALD BARKSDALE
CHAIRMAN OF THE BOARD

FRED BUTLER
VICE CHAIRMAN OF THE BOARD

ROBERT D. CARTER
PROJECT MANAGER

THOMAS RITTHALER
ASSISTANT PROJECT MANAGER

APRYL GARDNER
SECRETARY-TREASURER

MARY SUE CHASE
ASSISTANT SECRETARY-TREASURER

**BOISE PROJECT BOARD OF CONTROL**

(FORMERLY BOISE U.S. RECLAMATION PROJECT)

2465 OVERLAND ROAD
BOISE, IDAHO 83705-3155

OPERATING AGENCY FOR 167,000 ACRES FOR THE FOLLOWING IRRIGATION DISTRICTS

NAMPA-MERIDIAN DISTRICT
BOISE-KUNA DISTRICT
WILDER DISTRICT
NEW YORK DISTRICT
BIG BEND DISTRICT

TEL: (208) 344-1141
FAX: (208) 344-1437

08 January 2024

RECEIVED
JAN 11 2024
RECEIVED

Canyon County Development Services
111 North 11th Ave., Ste. 310
Caldwell, Idaho 83605

RE: Tillman Sub
15453 Karcher Rd.
Caldwell, ID
Forest Canal 200+00
Sec. 16, T3N, R3W, BM.

**RZ2022-0012**

**Above Canal No Surface Water Right**

Dan Lister:

The United States' Forest Canal lies within the boundary of the above-mentioned location. The easements for this facility are held in the name of the United States through the Bureau of Reclamation under the authority of the Act of August 30, 1890. (26 Stat. 391; 43 U.S.C. 945)

The Boise Project Board of Control is contracted to operate and maintain this facility. We assert the federal easement of 25 feet northwest and 25 feet southeast of the Forest Canal's centerline. Whereas this area is for the operation and maintenance of our facility, no activity should hinder our ability to do so.

The Boise Project does not approve landscaping other than gravel within its easements, as this will certainly increase our cost of maintenance. Easements must remain a flat drivable surface. No variances will be granted.

Fencing, gates and pathways, as may be required, must be constructed just off the canal easement, to ensure public safety and prevent encroachments. No variances will be given.

Parking lots, curbing, light poles, signs, etc. and the placing of asphalt and/or cement over Project facility easements must be approved by Boise Project Board of Control prior to construction.

Project facilities and/or easements that parallel, and are within and/or intended to be within road right-of-ways due to any development of this property must be relocated outside of road right-of-ways.

The construction of any roadway crossings must be conducted only during the non-irrigation season when the canal is dewatered. In any case no work shall take place within the easement before the proper crossing agreements have been secured through the Bureau of Reclamation and the Boise Project Board of Control.

Utilities planning to cross any project facility must do so in accordance with the master policies now held between the Bureau of Reclamation and most of the utilities. In any case, no work shall take place within the easement before proper crossing agreements have been secured through both the Bureau of Reclamation and the Boise Project Board of Control.

Crossing agreements must be secured and signed by all parties prior to March 1st of each year. A time schedule for the construction to be done during the non-irrigation season must be approved by Boise Project prior to any activity within Project easements. No construction will be allowed within the easement boundaries of the Boise Project Board of Control facilities after March 1st of each year. However, on a case-by-case basis, overhead utilities and utilities boring underneath a Project facility may be allowed after March 1st if reviewed and approved by the Boise Project.

The piping and relocation of any Lateral, Canal and/or Drain must be reviewed and approved by the Bureau of Reclamation and Boise Project and is to include all appurtenant boxes and/or structures and must be warranted by the landowner for a period of (5) five-years. The Relocation Agreement must be secured prior to ANY disturbance of that facility.

**Storm Drainage and/or Street Runoff must be retained on site.**

**NO DISCHARGE into any live irrigation system is permitted.**

Per Idaho Statutes, Title 42, local irrigation/drainage ditches that cross this property, in order to serve neighboring properties, must remain unobstructed and protected by an appropriate easement by the land owner, developer and contractors.

**This development is subject to Idaho Code 31-3805, in accordance, this office is requesting a full-size hard copy of the plans to include all drainage plans.**

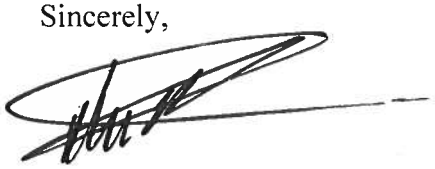
Wording on the preliminary and final recorded plat needs to state that any proposed and/or future usage of the Boise Project Board of Control facilities are subject to Idaho Statues, Title 42-1209.

Future preliminary and final plats must call out the Project easements.

Whereas this development is in its preliminary stages, Boise Project Board of Control reserves the right to require changes when our easements and/or facilities are affected by unknown factors even during the construction phase.

If you have any further questions or comments regarding this matter, please do not hesitate to contact me at (208) 344-1141.

Sincerely,



Thomas Ritthaler
Assistant Project Manager, BPBC

tbr/tr
cc: Tony Avermann Watermaster, Div; 4 BPBC
File

Vallivue School District #139

Lisa Boyd, Superintendent

5207 S. Montana Avenue
Caldwell, ID 83607
Phone (208) 454-0445
Fax (208) 454-0293

February 25, 2025

Re: Case No. RZ2022-0012

Dear Canyon County Planning & Zoning Commission,

If approved, the students residing in the proposed development would attend the following schools:

- West Canyon Elementary School
- Vallivue Middle School
- Vallivue High School

While the district will have additional capacity with the opening of two new elementary schools in the fall of 2025, projections indicate that by 2029, 7 out of Vallivue's 9 elementary schools will exceed capacity due to developments already approved. Currently, West Canyon Elementary has the lowest enrollment of all the elementary schools.

Sincerely,

Joseph Palmer
Assistant Superintendent

Vallivue School District #139

Lisa Boyd, Superintendent

5207 S. Montana Avenue
Caldwell, ID 83607
Phone (208) 454-0445
Fax (208) 454-0293

January 17, 2024

Re: Case No. RZ2022-0012

Dear Canyon County Development Services,

At this time it is uncertain which elementary school the K-5 students in the proposed development would attend as the district has yet to confirm the new attendance boundaries for the two new elementary schools to open in the fall of 2025. The district's primary concern for the foreseeable future is the capacity of the Vallivue High School as new developments are approved. Currently, Vallivue High School has an enrollment of approximately 1,300 students with a capacity for 1,800 students.

Sincerely,



Joseph Palmer
Assistant Superintendent

Date 02/18/2025

Canyon County Development Services
Rezone / Zoning Map Amendment
Parcel: R32862
Re: Case Number: RZ2022-0012

The Caldwell Rural Fire District has reviewed and can approve the application subject to compliance with all the following code requirements and conditions of approval. Any deviation from this plan is subject to Fire Department approval. Please note that unless stated otherwise, this memo represents the requirements of the 2018 International Fire Code (IFC) as adopted by the Idaho State Fire Marshal's Office.

***Conditions for Canyon County Rural Construction: Single Family Home:***

1. Fire hydrants, capable of producing the required fire flow, shall be located along approved fire lanes. Fire hydrant spacing shall meet the requirements of IFC table C105.1.1 (IFC 507.3, IFC B105.2, IFC C105).
2. Roadway serving a fire hydrant shall be a minimum of 26-feet in width. (IFC D103.1)
3. Dead-end fire apparatus access roads exceeding 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus. (IFC 503.2.5)
4. Fire apparatus access roads shall extend to within 150 feet of all portions of the exterior walls of the first story of a building measured by an approved route around the exterior of the building or facility. (IFC 503.1.1)
5. Monument signage for addressing will be required at the entrance and at all intersections within the project. (IFC 505.1)
6. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches. (IFC 503.2.1)
7. The minimum outside turning radius of a fire apparatus access road shall be 48 feet. The minimum inside turning radius shall be 28 feet. (IFC 503.2.4)

8. Fire apparatus access roads shall have an approved driving surface of asphalt, concrete or other approved driving surface and can support the imposed load of fire apparatus weighing at least 80,000 pounds. Please provide documentation the road surface meets this standard. (IFC D102.1)

9. Fire apparatus access roads shall not exceed 10 percent in grade. (IFC D103.2)

10. For streets having a width less than 33 feet back of curb to back of curb parking shall be restricted on one side; for streets having a width less than 27 feet back of curb to back of curb parking shall be restricted on both sides. A note on the face of the final plat is required noting the parking restriction prior to signing of the final plat. In addition, No Parking signs shall be installed in accordance with the requirements of the IFC. (IFC 503.8)

11. Access gates shall comply with requirements of the IFC. If gates are electronically operated, they shall be equipped with an automatic opening mechanism activated by the Opticom or eKnox System.

12. Approved secondary access roads shall be provided per section D106 of the 2018 IFC.

13. *An automatic fire sprinkler system installed per NFPA 13R may be required.*

14. A phasing plan shall be included in documentation to city at time of submittal in accordance with infrastructure 2018 IFC.

15. Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except where approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection where construction of new roadways allows passage by vehicles in accordance with (IFC Section 505.2.

16. **SECTION D107 ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS D107.1** One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds

30 shall be provided with two separate and approved fire apparatus access roads.

**Exceptions:** 1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, access from two directions shall not be required.

17. D104.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

Applicants must submit a completed application with site planning to the Caldwell City Fire Department via the citizen service portal. Citizenserve Online Portal

The application can be found at Permits/Inspections | Caldwell, ID

*General Requirement:*
Fire Department required fire hydrants, access, and street identification shall be installed prior to construction or storage of combustible materials on site. Provisions may be made for temporary access and identification measures.

Specific building construction requirements of the International Building Code, International Fire Code and City of Caldwell Code will apply. However, these provisions are best addressed by a licensed Architect at time of building permit application.

Regards,

Alan Perry
Deputy Chief
Fire Marshal
Caldwell Rural Fire Protection District
Aperry@cityofcaldwell.org

CITY OF
Caldwell, Idaho

JAROM WAGONER
Mayor

208.455.3011
(f) 208.455.3003

City Hall
411 Blaine Street
Caldwell, Idaho 83605

Post Office Box
P.O. Box 1179
Caldwell, Idaho 83606

For a list of the City Council members, visit:
Website
www.cityofcaldwell.org

January 4, 2024

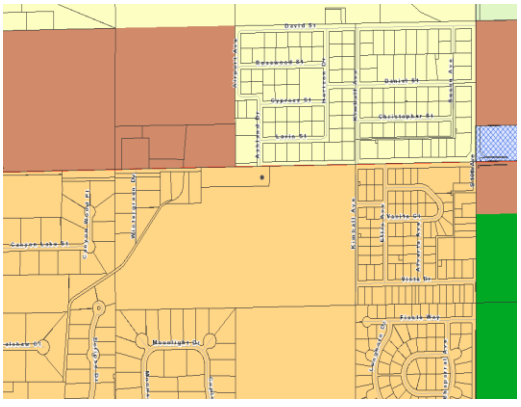
Daniel Lister
Staff Planner
Canyon County Development Services Dept.
111 North 11th Ave. Ste. 340
Caldwell, Idaho 83605

Re: RZ2022-0012
Rezone from "A" to "R-1"
Parcel R32862 and R32862010
Caldwell, Idaho

Dear Mr. Lister

Our office received your notification regarding the rezone request from "A" to and "R-1" zone for the property located at 15453 Karcher Rd, also referenced as Parcel R32862 and R32862010.

This parcels are located within the City of Caldwell's Area of City Impact and within 0.25 mile of the City of Caldwell's incorporated limits.



**Comprehensive Plan Map Legend:**

Light Brown = Residential Estatees
Dark Bown = Highway Corridor
Light Yellow = Low Density Residential

The subject parcels are designated as Residential Estates in the City of Caldwell's Comprehensive Plan.

The City is in the process of updating their Comprehensive Plan, and future land uses along Karcher Road are anticipated to change with the updated future land use map. Although this area currently is designated as Residential Estates in the City'c Current Comprehensive Plan, there is potential for this land use designation to change to a Highway Corridor zone in the future. This zone would allow for a mixed use land-use designation that combines higher density residential with commercial services. The City of Caldwell is not opposed to the proposed rezone to low density residential, but would like to see the frontage along Karcher Road preserved for commercial services at a minimum.

If Canyon County approves the request for rezone, the City of Caldwell would request that street landscape buffers along Karcher Road and Kimball Avenue be installed in accordance with the City of Caldwell's Landscaping Ordinances. This would include the requirement for all common open space requirements, buffers between different land uses, and pathways. Any connection to City services would require a formalized Municipal Services Agreement to be entered into.

Sincerely,

Robin Collins
Director
City of Caldwell Planning and Zoning Department

## Dan Lister

**From:** Dave Marston <dmarston@cityofcaldwell.org>
**Sent:** Thursday, March 6, 2025 3:52 PM
**To:** Dan Lister
**Cc:** Robb MacDonald; Hallie Hart
**Subject:** [External] RE: RZ2022-0012 - McGuire

Dan,

**Sewer:**
Site is sewer master planned to flow towards a future line in Farmway Rd. Closest existing sewer in Farmway Rd is a ¼ mile south of Linden St. Once current construction is completed, sewer in Farmway will be at the south side of Homedale Rd.

**Water:**
Site is located in Water Pressure Zone 4. Closest existing water is in Passero Ridge 4 located on the east side of S. 10th Ave ½ mile south of Karcher Rd. Caldwell Water Department is currently constructing a water line in S. 10th Ave. that would bring water to the intersection of S. 10th Ave. and Karcher Rd.

Thank you.

**Dave Marston**
Mapping Superintendent
205 S 6th Ave – Caldwell, ID 83605
www.cityofcaldwell.org – (208) 455-4676

---

**From:** Robb MacDonald <rmacdonald@cityofcaldwell.org>
**Sent:** Thursday, March 6, 2025 11:12 AM
**To:** Dave Marston <dmarston@cityofcaldwell.org>
**Cc:** daniel.lister@canyoncounty.id.gov; Hallie Hart <hhart@cityofcaldwell.org>
**Subject:** FW: RZ2022-0012 - McGuire

Dave, would you be able to respond to Dan on this request?

Thanks

---

**From:** Dan Lister <Daniel.Lister@canyoncounty.id.gov>
**Sent:** Thursday, March 6, 2025 8:52 AM
**To:** Robb MacDonald <rmacdonald@cityofcaldwell.org>
**Subject:** RZ2022-0012 - McGuire

Robb,

How close are city services to Parcel R32862, intersection of SH-55 and Kimbell? I'm finishing up my staff report for a rezone at that property and need that information for one of my findings. If you can get that to me by March 10th that would be great.

Hope all is well!

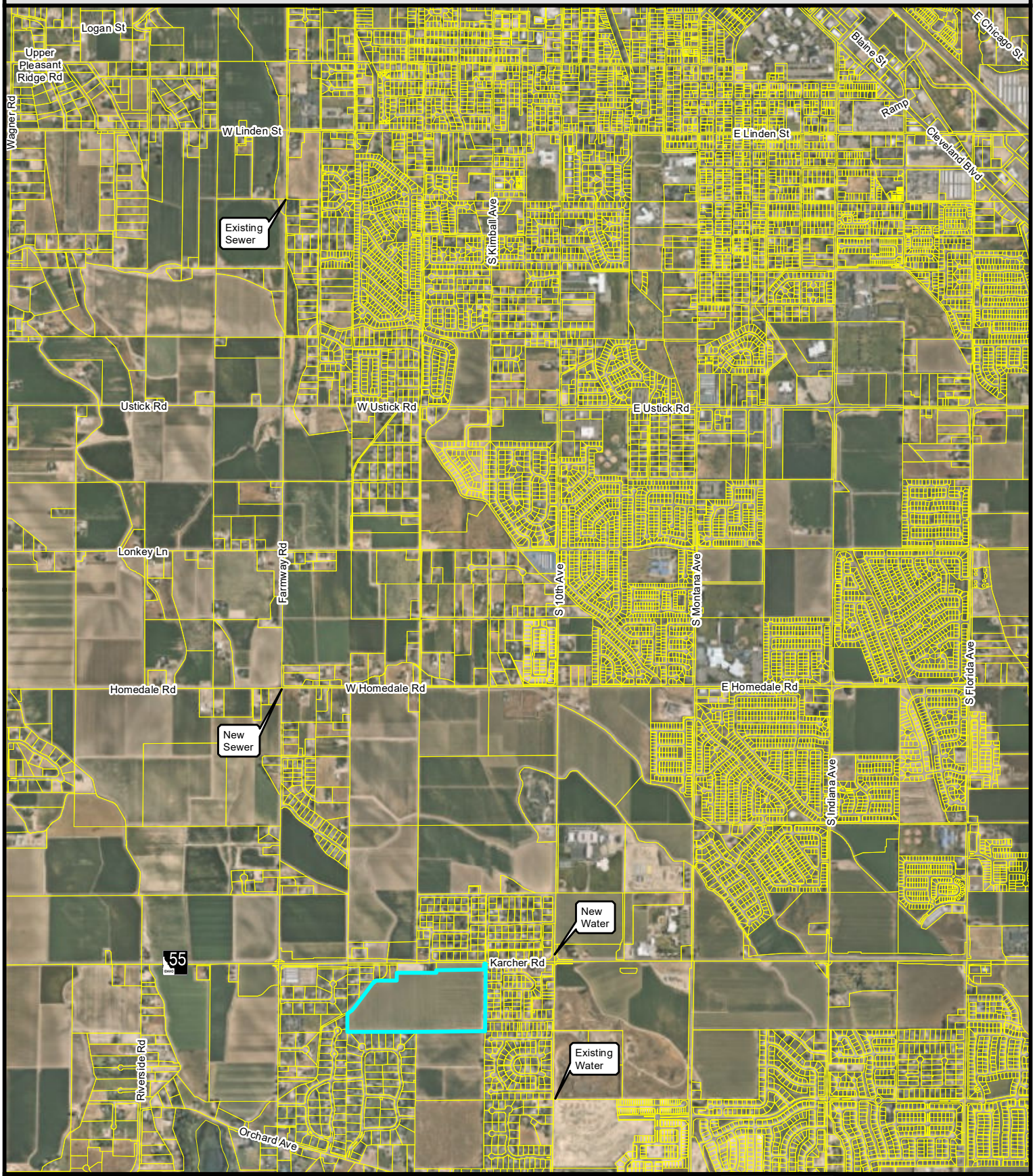
Sincerely,

**Dan Lister, Principal Planner**
DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959
Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)
Public office hours
Monday, Tuesday, Thursday and Friday
8 am – 5 pm
Wednesday
1 pm – 5 pm
**We will not be closed during lunch hour **

**PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and as such may be copied and reproduced by members of the public.**

# Parcel #R3286200000




City of Caldwell

**Legend**

- Subject Property
- Taxlots

1 of 3

DISCLAIMER

The information represented on this map results from the compilation of a variety of source materials. Its intended use is as a resource for the City of Caldwell Staff. The City of Caldwell makes no representation or warranty as to the accuracy of this product, and in particular, its accuracy as to labeling, dimensions, property boundaries, or placement or location of any map features thereon. THE CITY OF CALDWELL DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR WARRANTY FOR FITNESS OF USE FOR A PARTICULAR PURPOSE, EXPRESS OR IMPLIED, WITH RESPECT TO THIS PRODUCT. Any user of this product accepts the same AS IS, WITH ALL FAULTS, and assumes a responsibility for the use thereof.

N W E S

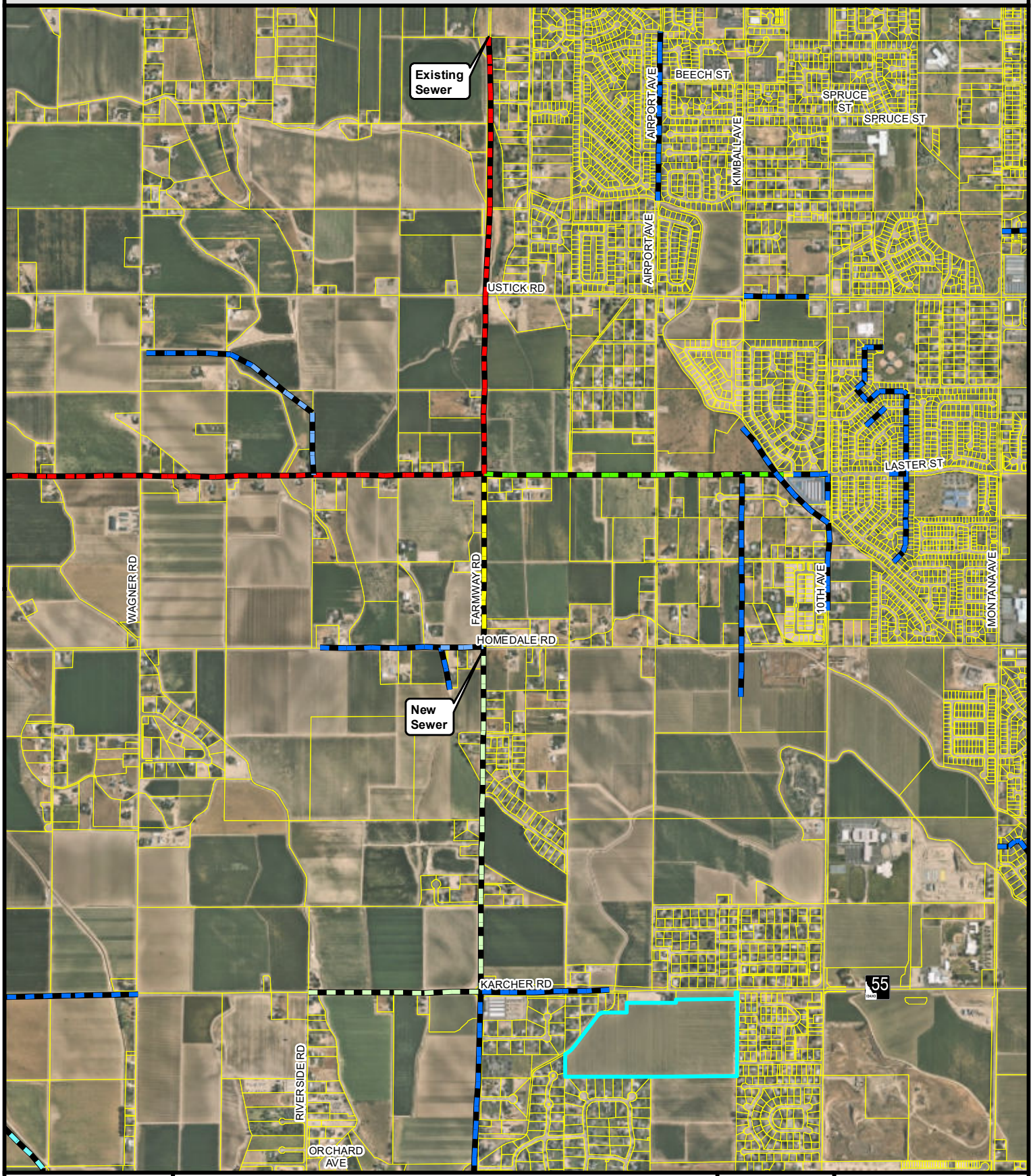
0 1,250 2,500

Feet

1 inch = 2,500 feet

Print Date: 06 Mar 2025

# Parcel #R3286200000




City of Caldwell

**Legend**

- Subject Property
- Taxlots

**Sewer Master Plan**
**Pipe Diameter**

- 36-inch
- 24-inch
- 21-inch
- 18-inch
- 15-inch
- 12-inch
- 10-inch

**2 of 3**

DISCLAIMER

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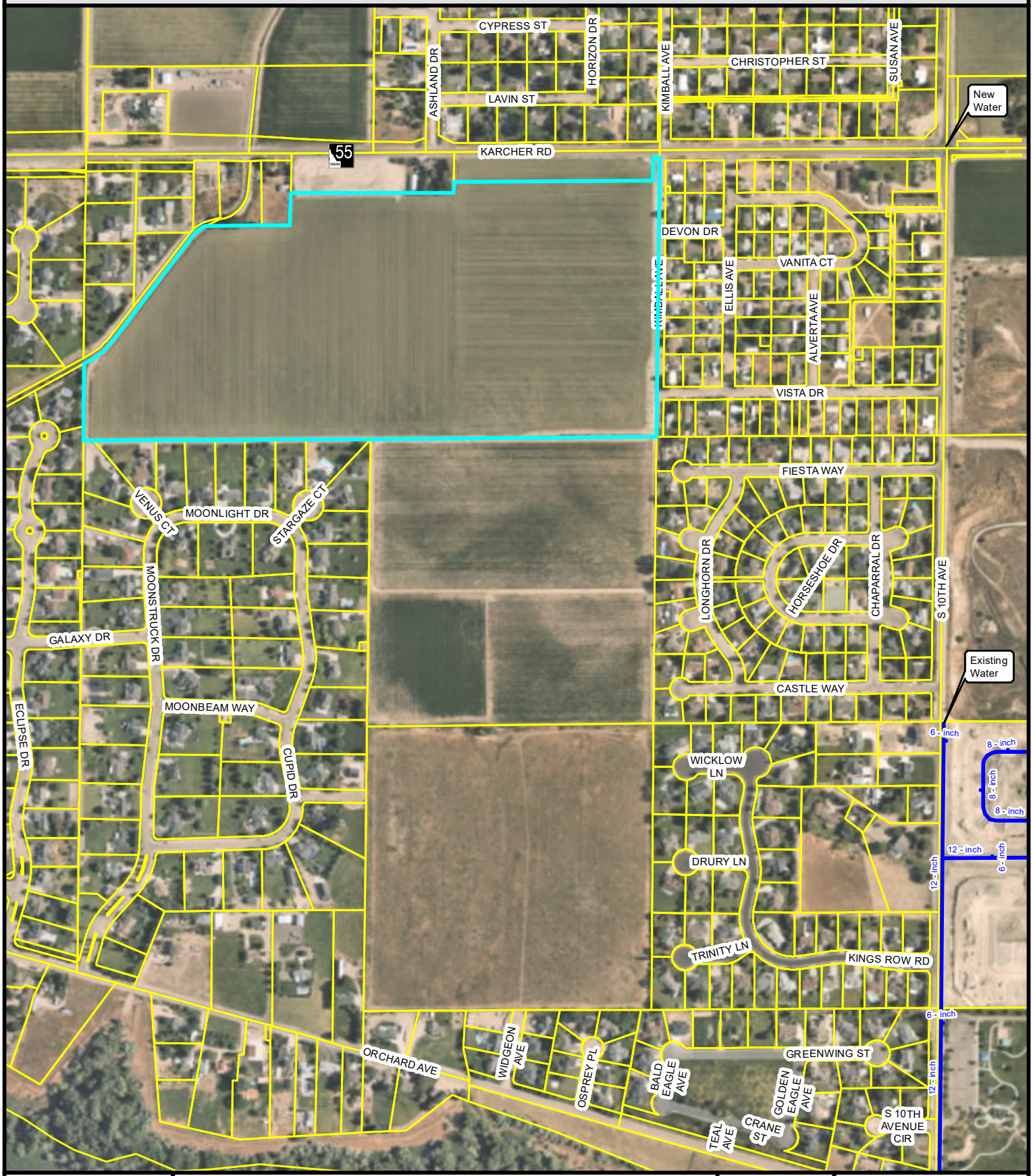
N W E S

0 1,000 2,000 Feet

1 inch = 2,000 feet

Print Date: 06 Mar 2025

# Parcel #R3286200000




City of Caldwell

**Legend**

- Subject Property
- Taxlots
- Water Main

**3 of 3**

DISCLAIMER

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N W E S

0 300 600 Feet

1 inch = 600 feet

Print Date: 06 Mar 2025

1445 N. Orchard St.
Boise ID 83706 • (208) 373-0550

Brad Little, Governor
Jess Byrne, Director

February 21, 2025

Daniel Lister, Assistant Planning Manager
111 North 11th Ave.
Ste. 310
Caldwell, Idaho, 83605
Daniel.Lister@canyoncounty.id.gov

Subject:

Dear Mr. Lister:

Thank you for the opportunity to respond to your request for comment. While DEQ does not review projects on a project-specific basis, we attempt to provide the best review of the information provided. DEQ encourages agencies to review and utilize the Idaho Environmental Guide to assist in addressing project-specific conditions that may apply. This guide can be found at: *https://www.deq.idaho.gov/public-information/assistance-and-resources/outreach-and-education/*.

The following information does not cover every aspect of this project; however, we have the following general comments to use as appropriate:

**1. AIR QUALITY**

- Please review IDAPA 58.01.01 for all rules on Air Quality, especially those regarding fugitive dust (58.01.01.651), trade waste burning (58.01.01.600-617), and odor control plans (58.01.01.776).
  For questions, contact David Luft, Air Quality Manager, at (208) 373-0550.
- IDAPA 58.01.01.201 requires an owner or operator of a facility to obtain an air quality permit to construct prior to the commencement of construction or modification of any facility that will be a source of air pollution in quantities above established levels. DEQ asks that cities and counties require a proposed facility to contact DEQ for an applicability determination on their proposal to ensure they remain in compliance with the rules.
  For questions, contact the DEQ Air Quality Permitting Hotline at 1-877-573-7648.

## 2. WASTEWATER AND RECYCLED WATER

- DEQ recommends verifying that there is adequate sewer to serve this project prior to approval. Please contact the sewer provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.16 and IDAPA 58.01.17 are the sections of Idaho rules regarding wastewater and recycled water. Please review these rules to determine whether this or future projects will require DEQ approval. IDAPA 58.01.03 is the section of Idaho rules regarding subsurface disposal of wastewater. Please review this rule to determine whether this or future projects will require permitting by the district health department.
- All projects for construction or modification of wastewater systems require preconstruction approval. Recycled water projects and subsurface disposal projects require separate permits as well.
- DEQ recommends that projects be served by existing approved wastewater collection systems or a centralized community wastewater system whenever possible. Please contact DEQ to discuss potential for development of a community treatment system along with best management practices for communities to protect ground water.
- DEQ recommends that cities and counties develop and use a comprehensive land use management plan, which includes the impacts of present and future wastewater management in this area. Please schedule a meeting with DEQ for further discussion and recommendations for plan development and implementation.

  For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

## 3. DRINKING WATER

- DEQ recommends verifying that there is adequate water to serve this project prior to approval. Please contact the water provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.08 is the section of Idaho rules regarding public drinking water systems. Please review these rules to determine whether this or future projects will require DEQ approval.
- All projects for construction or modification of public drinking water systems require preconstruction approval.
- DEQ recommends verifying if the current and/or proposed drinking water system is a regulated public drinking water system (refer to the DEQ website at: https://www.deq.idaho.gov/water-quality/drinking-water/. For non-regulated systems, DEQ recommends annual testing for total coliform bacteria, nitrate, and nitrite.
- If any private wells will be included in this project, we recommend that they be tested for total coliform bacteria, nitrate, and nitrite prior to use and retested annually thereafter.
- DEQ recommends using an existing drinking water system whenever possible or construction of a new community drinking water system. Please contact DEQ to discuss this project and to explore options to both best serve the future residents of this development and provide for protection of ground water resources.

- DEQ recommends cities and counties develop and use a comprehensive land use management plan which addresses the present and future needs of this area for adequate, safe, and sustainable drinking water. Please schedule a meeting with DEQ for further discussion and recommendations for plan development and implementation.

  For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

**4. SURFACE WATER**

- Please contact DEQ to determine whether this project will require an Idaho Pollutant Discharge Elimination System (IPDES) Permit. A Multi-Sector General Permit from DEQ may be required for facilities that have an allowable discharge of storm water or authorized non-storm water associated with the primary industrial activity and co-located industrial activity.
- For questions, contact James Craft, IPDES Compliance Supervisor, at (208) 373-0144.
- If this project is near a source of surface water, DEQ requests that projects incorporate construction best management practices (BMPs) to assist in the protection of Idaho's water resources. Additionally, please contact DEQ to identify BMP alternatives and to determine whether this project is in an area with Total Maximum Daily Load stormwater permit conditions.
- The Idaho Stream Channel Protection Act requires a permit for most stream channel alterations. Please contact the Idaho Department of Water Resources (IDWR), Western Regional Office, at 2735 Airport Way, Boise, or call (208) 334-2190 for more information. Information is also available on the IDWR website at: https://idwr.idaho.gov/streams/stream-channel-alteration-permits.html
- The Federal Clean Water Act requires a permit for filling or dredging in waters of the United States. Please contact the US Army Corps of Engineers, Boise Field Office, at 10095 Emerald Street, Boise, or call 208-345-2155 for more information regarding permits.

  For questions, contact Lance Holloway, Surface Water Manager, at (208) 373-0550.

**5. SOLID WASTE, HAZARDOUS WASTE AND GROUND WATER CONTAMINATION**

- **Solid Waste.** No trash or other solid waste shall be buried, burned, or otherwise disposed of at the project site. These disposal methods are regulated by various state regulations including Idaho's Solid Waste Management Regulations and Standards (IDAPA 58.01.06), Rules and Regulations for Hazardous Waste (IDAPA 58.01.05), and Rules and Regulations for the Prevention of Air Pollution (IDAPA 58.01.01). Inert and other approved materials are also defined in the Solid Waste Management Regulations and Standards
- **Hazardous Waste.** The types and number of requirements that must be complied with under the federal Resource Conservations and Recovery Act (RCRA) and the Idaho Rules and Standards for Hazardous Waste (IDAPA 58.01.05) are based on the quantity and type of waste generated. Every business in Idaho is required to track the volume of waste generated, determine whether each type of waste is hazardous, and ensure that all wastes are properly disposed of according to federal, state, and local requirements.

- **Water Quality Standards.** Site activities must comply with the Idaho Water Quality Standards (IDAPA 58.01.02) regarding hazardous and deleterious-materials storage, disposal, or accumulation adjacent to or in the immediate vicinity of state waters (IDAPA 58.01.02.800); and the cleanup and reporting of oil-filled electrical equipment (IDAPA 58.01.02.849); hazardous materials (IDAPA 58.01.02.850); and used-oil and petroleum releases (IDAPA 58.01.02.851 and 852). Petroleum releases must be reported to DEQ in accordance with IDAPA 58.01.02.851.01 and 04. Hazardous material releases to state waters, or to land such that there is likelihood that it will enter state waters, must be reported to DEQ in accordance with IDAPA 58.01.02.850.
- **Ground Water Contamination.** DEQ requests that this project comply with Idaho's Ground Water Quality Rules (IDAPA 58.01.11), which states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that causes a ground water quality standard to be exceeded, injures a beneficial use of ground water, or is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method."

  For questions, contact Matthew Pabich, Waste & Remediation Manager, at (208) 373-0550.

**6. ADDITIONAL NOTES**

- If an underground storage tank (UST) or an aboveground storage tank (AST) is identified at the site, the site should be evaluated to determine whether the UST is regulated by DEQ. EPA regulates ASTs. UST and AST sites should be assessed to determine whether there is potential soil and ground water contamination. Please call DEQ at (208) 373-0550, or visit the DEQ website https://www.deq.idaho.gov/waste-management-and-remediation/storage-tanks/leaking-underground-storage-tanks-in-idaho/ for assistance.
- If applicable to this project, DEQ recommends that BMPs be implemented for any of the following conditions: wash water from cleaning vehicles, fertilizers and pesticides, animal facilities, composted waste, and ponds. Please contact DEQ for more information on any of these conditions.

We look forward to working with you in a proactive manner to address potential environmental impacts that may be within our regulatory authority. If you have any questions, please contact me, or any of our technical staff at (208) 373-0550.

Sincerely,



Troy Smith
Regional Administrator

# CANYON SOIL CONSERVATION DISTRICT

2208 E. Chicago, Suite A
Caldwell, ID 83605
Phone 208-779-3443
Fax 1-877-504-6752

SUPERVISORS: Mike Swartz, Chairman; Rex Runkle, Vice Chairman; Robert McKellip, Secretary/Treasurer; Chris Gross, Supervisor, Brad McIntyre, Supervisor & Clay Erskine, Supervisor
ASSOCIATE SUPERVISORS: Tom Johnston, Rich Sims & Matt Livengood
SOIL CONSERVATION DISTRICT STAFF: Lori Kent; Administrative. Assistant & Stan Haye, Soil Conservation Technician

**April 29, 2023**

**To: Dan Lister Planner of Record**
**Canyon County Development Services**

**From: Canyon Soil Conservation District (Canyon SCD)**

**Subject: P & Z Agency Notice**

**Thank you for sending Canyon Soil Conservation District (SCD) zoning requests.**

**They are: RZ2022-0012/SD2022-0044 Penelope Constantikes, SD2022-0053 Daniel Caldwell, OR2022-0005/CR2022-0011/SD2022-0019 Steve Law, CU2023-0004 Jeff Bower/Kristen McNeill.**

**Comments from Canyon SCD:**

**The acreage amounts on the maps are an estimate. Percentages of soils are rounded to a whole number.**

**RZ2022-0012/SD2022-0044 Penelope Constantikes is 97% Class 3 and 3% Class 4. Class III have moderate limitations and appropriate management practices can make any irrigated soil productive. We do NOT recommend a land use change.**

**SD2022-0053 Daniel Caldwell is 5 acres or less. Canyon SCD has no comments, no map included.**

**OR2022-0005/CR2022-0011/SD2022-0019 Steve Law is 50% Class 4 and 50% was not rated (slope range is 12 to 25%). Canyon SCD has no comments.**

**CU2023-0004 Jeff Bower/Kristen McNeill is 1% Class 2, 30% Class 3, 54% Class 4, 11% Class 5 and 4% not rated. Canyon SCD has no comments.**

**Continued Partnership and Conservation.**

**Sincerely,**

Rich Sims acting for:

**Mike Swartz, Canyon SCD Chairman**

All programs and services of the Canyon Soil Conservation District are offered on a nondiscriminatory basis without regard to race, color, national origin, religion, sex, age, disability, marital or familial status, and political beliefs.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Canyon Area, Idaho

## RZ2022-0012/SD2022-0044
## Penelope Constantikes




April 29, 2023

# Custom Soil Resource Report
## Map—Irrigated Capability Class (RZ2022-0012/SD2022-0044)

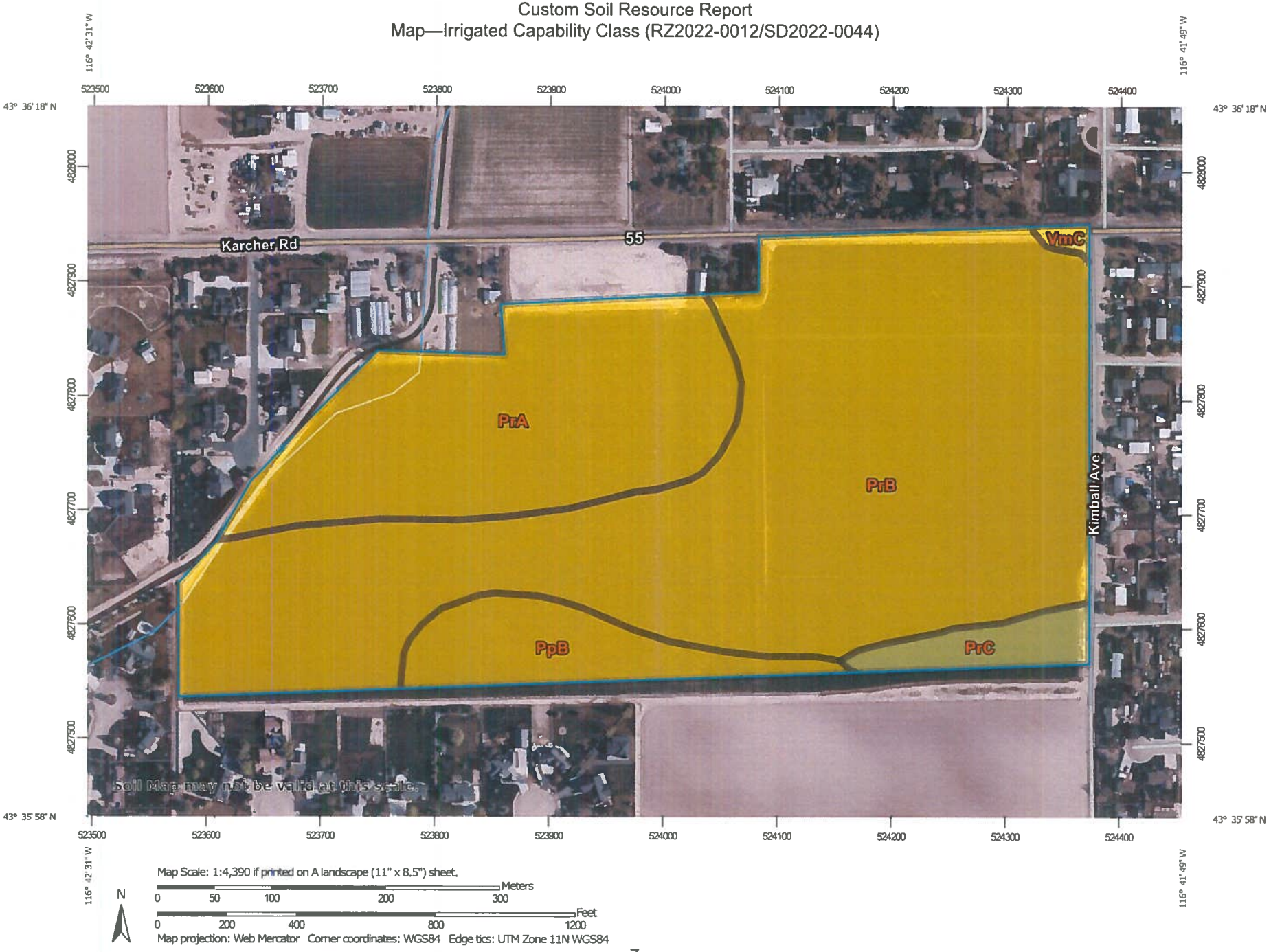





Exhibit D.7 - 3

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

**Soil Rating Lines**
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

**Soil Rating Points**
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Canyon Area, Idaho
Survey Area Data: Version 19, Sep 2, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 19, 2021—Apr 21, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Table—Irrigated Capability Class (RZ2022-0012/SD2022-0044)

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| PpB | Power-Purdam silt loams, 1 to 3 percent slopes | 3 | 4.4 | 7.0% |
| PrA | Purdam silt loam, 0 to 1 percent slopes | 3 | 15.3 | 24.2% |
| PrB | Purdam silt loam, 1 to 3 percent slopes | 3 | 41.2 | 65.4% |
| PrC | Purdam silt loam, 3 to 7 percent slopes | 4 | 1.9 | 3.0% |
| VmC | Vickery-Marsing silt loams, 3 to 7 percent slopes | 3 | 0.2 | 0.4% |
| **Totals for Area of Interest** | | | **63.1** | **100.0%** |

## Rating Options—Irrigated Capability Class (RZ2022-0012/SD2022-0044)

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

Your Safety • Your Mobility
Your Economic Opportunity

IDAHO TRANSPORTATION DEPARTMENT
P.O. Box 8028 • Boise, ID 83707-2028
(208) 334-8300 • itd.idaho.gov

February 3, 2025

Elizabeth Allen
Owner/Princepal Planner
Bristlecone Land Use Consulting
elizabeth@bristleconelanduseconsulting.com

**RE: Tillman Ridge - ITD Development Staff Report**

Dear Elizabeth,

The Idaho Transportation Department (ITD) has completed our review of the Tillman Ridge Traffic Impact Study (TIS). The proposed development abuts the southeren Right of Way of SH-55 (Karcher Road) MP 11.03, Canyone County, Idaho.

**Development Summary**

Tillman Ridge is a proposed residental development consisting of 49 single-family residential lots, estimating a 2027 build-out year. One full access approach onto SH-55 (Karcher Road) is being requested.

**ITD Staff Requirements**

ITD accepts the TIS as submitted with no further recommendation or requirements.

**Expiration of Staff Report**

In the event the proposed development has not obtained necessary permits within two years, this staff report will no longer be valid and ITD may request an updated TIS to reflect current traffic conditions.

**Notices**

- This report does not supersede or nullify any local land use requirements or legal property restrictions. Legal property restrictions include but are not limited to easements, access agreements, deed restrictions, plat restrictions, liens or other encumbrances. Removing, modifying, or establishing legal property restrictions is the responsibility of the developer.
- This report does not constitute a permit approval, or denial issued pursuant to IDAPA 29.03.42.

ITD Staff Recommendations are intended to assure that the proposed development will not place an undue burden on the existing State Highway system within the vicinity impacted by the proposed development. Maintaining safety and

IDAHO TRANSPORTATION DEPARTMENT
P.O. Box 8028 • Boise, ID 83707-2028
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mobility for Idaho's motorists is of utmost importance to ITD. We appreciate your improvements to livability in Canyon County, Idaho as we want all residents to travel safely and efficiently on the highway system.

If you have any questions, feel free to contact me at Brian.Duran@itd.idaho.gov or Niki Benyakhlef, Development Services Coordinator at (208)334-8337 or email Niki.Benyakhlef@itd.idaho.gov.

Sincerely,

Brian Duran
Development Services Manager
Idaho Transportation Department | District 3

Cc: Dan Lister, Canyon County Development Services, Principal Planner
Chris Hopper, Highway District 4, District Engineer

## Dan Lister

**From:** Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
**Sent:** Thursday, January 23, 2025 10:31 AM
**To:** Elizabeth Allen
**Cc:** Dan Lister; Brian Duran
**Subject:** [External] RE: Tillman Ridge Revised TIS

Hello Elizabeth,

Unfortunately, ITD does not want to approve a development during this phase and then not have the ability to modify our approval when the subdivision applies for plat approval. Therefore, ITD will be submitting comment to Canyon County that we will be recommending no access onto SH-55. Your client's subdivision will need to utilize the internal road network to gain access to the public road via S10th Ave.

If you and your client would like to discuss further, please feel free to reach out to me.

Thank you,

Niki Benyakhlef
*Development Services Coordinator*

**District 3 Development Services**
O: 208.334.8337 | C: 208.296.9750
Email: niki.benyakhlef@itd.idaho.gov
Website: itd.idaho.gov

---

**From:** Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>
**Sent:** Friday, January 17, 2025 1:07 PM
**To:** Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
**Subject:** Re: Tillman Ridge Revised TIS

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

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Hi,

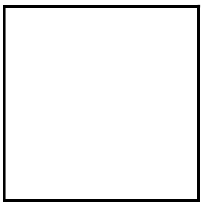
My client is hesitant to dedicate more ROW at this time.

Could whoever ends up platting the land have the option to change to provide a turn lane? Since the county wont let us proceed with platting until after the rezone is approved we still have a lot of unknowns.

Also how much additional ROW would be needed?

Thank you

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059



On Thu, Jan 16, 2025 at 12:42 PM Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov> wrote:

> Hi Elizabeth –
>
> Thank you for chatting with me today.
>
> While completing the staff report for Tillman Ridge Subdivision, I noticed two empty parcels to the south that your subdivision showed providing access to once they developed. When development occurs, they will need to take access from Ashland drive which will warrant a right turn lane out off the subdivision onto Karcher Rd. Due to this reason, ITD would like to provide you with a few option to help us plan for the future:
>
> 1. Dedicate the necessary ROW along Karcher Rd for a right turn lane. You will not be required to construct the road.
> 2. Remove access to the south so no other subdivisions will be able to use Ashland Drive to access Karcher Rd. No land will need to dedicated.
>
> Either outcome will be satisfactory to ITD, however I would like to get your input prior to finalizing comments to Canyon County. Thank you!
>
> Niki Benyakhlef
> *Development Services Coordinator*
>
> **District 3 Development Services**
> O: 208.334.8337 | C: 208.296.9750
> Email: niki.benyakhlef@itd.idaho.gov

Website: itd.idaho.gov

---

**From:** Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>
**Sent:** Tuesday, December 17, 2024 4:10 PM
**To:** Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
**Subject:** Tillman Ridge Revised TIS

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Hi Niki,

I have attached the revised TIS for Canyon County RZ2022-0012 for your review. I believe the County will be sending out additional agency notifications.

Thank you

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059

## Dan Lister

**From:** Doug Critchfield <critchfieldd@cityofnampa.us>
**Sent:** Friday, February 14, 2025 3:44 PM
**To:** Dan Lister
**Subject:** [External] RE: Legal Notice RZ2022-0012 / McGuire

Dan – Nampa has no comments on this proposal. Thanks

**Doug Critchfield, Principal Planner, ASLA**
O: 208.468.5406, F: 208.468.5439
500 12th Ave. S., Nampa, ID 83651
Planning and Zoning - Like us on Facebook
Citizen's Guide to Planning – Learn More About Planning!

NAMPA Ready

**From:** Caitlin Ross <Caitlin.Ross@canyoncounty.id.gov>
**Sent:** Friday, February 14, 2025 9:39 AM
**To:** 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'P&Z@cityofcaldwell.org' <P&Z@cityofcaldwell.org>; 'dgeyer@cityofcaldwell.org' <dgeyer@cityofcaldwell.org>; 'jdodson@cityofcaldwell.org' <jdodson@cityofcaldwell.org>; 'mbessaw@cityofcaldwell.org' <mbessaw@cityofcaldwell.org>; 'amy@civildynamics.net' <amy@civildynamics.net>; 'alicep@cityofhomedale.org' <alicep@cityofhomedale.org>; 'jgreen@marsingcity.com' <jgreen@marsingcity.com>; 'mayor@cityofmelba.org' <mayor@cityofmelba.org>; 'cityclerk@cityofmelba.org' <cityclerk@cityofmelba.org>; 'jhutchison@middletoncity.org' <jhutchison@middletoncity.org>; 'jreynolds@middletoncity.org' <jreynolds@middletoncity.org>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.org' <rstewart@middletoncity.org>; Robyn Sellers <sellersr@cityofnampa.us>; Kristi Watkins <watkinsk@cityofnampa.us>; Daniel Badger <BadgerD@cityofnampa.us>; Addressing <Addressing@cityofnampa.us>; Doug Critchfield <critchfieldd@cityofnampa.us>; Clerks <clerks@cityofnampa.us>; Char Tim <timc@cityofnampa.us>; 'notuscityclerk@gmail.com' <notuscityclerk@gmail.com>; 'clerk@cityofparmaidaho.org' <clerk@cityofparmaidaho.org>; 'mayor@cityofparmaidaho.org' <mayor@cityofparmaidaho.org>; 'publicworks@cityofparmaidaho.org' <publicworks@cityofparmaidaho.org>; 'cityhalladmin@cityofparmaidaho.org' <cityhalladmin@cityofparmaidaho.org>; 'snickel@staridaho.org' <snickel@staridaho.org>; 'wsevery@cityofwilder.org' <wsevery@cityofwilder.org>; 'casanderson@caldwellschools.org' <casanderson@caldwellschools.org>; 'nicmiller@cwi.edu' <nicmiller@cwi.edu>; 'ddenney@homedaleschools.org' <ddenney@homedaleschools.org>; 'bgraves@kunaschools.org' <bgraves@kunaschools.org>; 'tejensen@kunaschools.org' <tejensen@kunaschools.org>; 'nstewart@marsingschools.org' <nstewart@marsingschools.org>; 'sadams@melbaschools.org' <sadams@melbaschools.org>; 'Horner.Marci@westada.org' <Horner.Marci@westada.org>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'cstauffer@nsd131.org' <cstauffer@nsd131.org>; 'dleon@nsd131.org' <dleon@nsd131.org>; 'krantza@notusschools.org' <krantza@notusschools.org>; 'tkelly@parmaschools.org' <tkelly@parmaschools.org>; 'jenny.titus@vallivue.org' <jenny.titus@vallivue.org>; lisa.boyd <lisa.boyd@vallivue.org>; 'joseph.palmer@vallivue.org' <joseph.palmer@vallivue.org>; 'jdillon@wilderschools.org' <jdillon@wilderschools.org>; 'lrichard@cityofcaldwell.org' <lrichard@cityofcaldwell.org>; 'aperry@cityofcaldwell.org' <aperry@cityofcaldwell.org>; 'homedalefd@gmail.com' <homedalefd@gmail.com>; 'tlawrence@kunafire.com' <tlawrence@kunafire.com>; 'khinkle@kunafire.com' <khinkle@kunafire.com>; 'marsingfiredistrict@yahoo.com' <marsingfiredistrict@yahoo.com>; 'marsingruralfire@gmail.com' <marsingruralfire@gmail.com>; 'brian.mccormack@melbafire.id.gov' <brian.mccormack@melbafire.id.gov>; 'kenny.hoagland@melbafire.id.gov' <kenny.hoagland@melbafire.id.gov>; 'vislas@starfirerescue.org' <vislas@starfirerescue.org>;

## Dan Lister

**From:** O'Shea, Maureen <Maureen.OShea@idwr.idaho.gov>
**Sent:** Tuesday, February 18, 2025 10:53 AM
**To:** Dan Lister
**Cc:** Dalia Alnajjar
**Subject:** [External] re: Legal Notice RZ2022-0012 / McGuire - 15453 Karcher Rd, Caldwell
**Attachments:** NEW - P&Z Rezone full political agency notice.pdf

Dan,

The project at 15453 Karcher Road in Caldwell is not in the Special Flood Hazard Area (SFHA), therefore I have no comments.

*I am working part-time & generally available from 9:00 a.m. to noon Monday through Thursday.*

Thank you,
Maureen O'Shea, CFM
Floodplain Specialist
Idaho Dept. of Water Resources
322 E. Front Street, PO Box 83720,
Boise, ID 83720-0098
Office # 208-287-4928
Cell # 208-830-4174
Maureen.OShea@idwr.idaho.gov
https://www.idwr.idaho.gov/floods/

---

**From:** Caitlin Ross <Caitlin.Ross@canyoncounty.id.gov>
**Sent:** Friday, February 14, 2025 9:39 AM
**To:** Jackson, Peter <Peter.Jackson@idwr.idaho.gov>; O'Shea, Maureen <Maureen.OShea@idwr.idaho.gov>;
**Subject:** Legal Notice RZ2022-0012 / McGuire

Dear Agencies,

Your agency is being notified pursuant to the Local Land Use Planning Act, Idaho Code 67-6509, to all political subdivisions providing services within the planning jurisdiction of Canyon County, including school districts and media.

No response is required from your agency unless you have input on the proposed project.

Contact the planner of record, **Dan Lister** at daniel.lister@canyoncounty.id.gov with any questions or additional agency comments or concerns if applicable.

Thank you,

**Caitlin Ross**
Hearing Specialist

HIGHWAY DISTRICT No.4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208.454.8135
FAX 208.454.2008

January 14, 2025

Canyon County Commissioners, P&Z
Commission, & Development Services
111 N. 11th Ave Suite 140
Caldwell, Idaho 83605
Attention: Dan Lister

Bristlecone Land Use
Consulting

Attention: Elizabeth Allen-*Via email*

**RE: Tillman Ridge Subdivision**
**Revised TIS- Review**

Dear Commissioners:

Highway District No. 4 (HD4) has received the agency notice for rezone and revised TIS for Tillman Ridge Subdivision, approximately 69 acres lying south of SH 55 (Karcher Rd) in the N ½ Section 16, T4N R3W, and provides the following comments:

**General**
The subject property has approximately 1,700-feet of frontage on SH 55 along the north boundary, and approximately 1,320-feet of frontage along Kimball Ave on the east boundary. SH 55 is classified as a principal arterial on the functional classification maps adopted by HD4 and Canyon County, and is under jurisdiction of Idaho Transportation Department. The development is proposing ~50 residential lots, which are anticipated to generate approximately 572 vehicle trips/day.

Highway District No. 4 (HD4) received application for review of the revised TIS dated December 13, 2024. The TIS has been reviewed for compliance with HD4's development standards and offers the following comments;

**TIS Comments**

1. If the Ashland access is approved as a full access, verify with ITD if either acceleration or deceleration lanes are necessary at the subdivision approach. I realize the turn warrants don't identify right turn lanes, however in ITD's design drawing *(sheet 72, 74)* they provided a right turn (deceleration) lane to Ashland (north leg) what are the traffic counts to the subdivision on the north side of HWY 55, are the right turns are similar to Tillman sub Ashland Dr approach? The design speed of 55mph may show a benefit to provide eastbound acceleration lane out of the Ashland approach.

Please feel free to contact me with any questions on these comments or HD4 development standards.

Respectfully,

Kraig Wartman
Senior Engineering Tech.
Highway District No. 4

CC Chris Hopper, District Engineer,
ITD-Niki Benyakhlef

**CANYON HIGHWAY DISTRICT No. 4**
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208/454-8135
FAX 208/454-2008

May 23, 2023

Canyon County P&Z Commission and
County Commissioners
111 N. 11th Ave Suite 140
Caldwell, Idaho 83605
Attention: Samantha Hammond, Planner

William McGuire & Glen Eaton, Applicants

**RE: RZ2022-0012/SD2022-0044 Tillman Ridge Subdivision**
**Parcels R36862 & R32862010 aka 15453 Karcher Rd**

Dear Commissioners:

Canyon Highway District No. 4 (CHD4) has received the agency notice for rezone and preliminary plat for Tillman Ridge Subdivision, approximately 69 acres lying south of SH 55 (Karcher Rd) in the N ½ Section 16, T4N R3W, and provides the following comments:

**General**
The subject property has approximately 1,700-feet of frontage on SH 55 along the north boundary, and approximately 1,320-feet of frontage along Kimball Ave on the east boundary. SH 55 is classified as a principal arterial on the functional classification maps adopted by CHD4 and Canyon County, and is under jurisdiction of Idaho Transportation Department. Kimball Ave is a local road under CHD4 jurisdiction. Existing right-of-way width for Kimball Ave is a 30-foot half width created by plat of Vanal Heights Subdivision in 1960. Ultimate right-of-way width for a local road is 60-feet total. The development is proposing 54 residential lots, which are anticipated to generate approximately 572 vehicle trips/day.

**Access**
Access to the subject property was discussed in preparation of the Traffic Impact Study (TIS) prepared to support the application in February 2022. ITD and CHD4 developed a strategy to minimize impacts to the SH 55 corridor which include:

- Single access to SH 55 located opposite existing Ashland Drive. This access will be a full access (allowing both right- and left-turns) initially, but will be converted to a right-in-right-out access upon completion of the SH 55 widening project in 2026-28.
- As part of the SH 55 widening project, the existing Kimball Ave approach to SH 55 will be removed.
- Internal local road connection to existing Vista Ave on the east boundary will provide access to the signal at 10th Ave/SH 55 for left turn movements.
- Future connection to the south will connect to Orchard Ave via Norse Landing Subdivision.

The access configuration shown on the preliminary plat dated 8/26/22 appears generally consistent with the approved TIS and the CHD4/ITD intent.

**Traffic Impacts**
As stated above, a TIS was completed for the project in Feburary 2022, and has been approved by CHD4 and ITD. Aside from the access restrictions provided above, the project is not anticipated to significantly degrade Levell of Service (LOS) at nearby intersections or roadways after the SH 55 corridor has been widened to 5 lanes. This project is under design, and funding for construction has been established by ITD. Other traffic impacts from the development will be mitigated through dedication of public right-of-way, frontage improvements to Kimball Ave, and traffic impact fees if they are in effect for the area at the time of access permit issuance.

**Preliminary Plat**
Canyon Highway District No. 4 (CHD4) received application for review of the preliminary plat on March 7, 2023. At this time, the plat has not been reviewed for compliance with CHD4's development standards. Review is estimated to take place within 8-12 weeks at the current pace of applications.

A cursory review of the preliminary plat layout provided with the agency notice shows that the access configuration is generally consistent with direction from CHD4 and ITD, and the lot and street configuration appear to generally meet the right-of-way widths and geometric requirements for public local streets. It is anticipated that this plat may be amended (if necessary) to meet CHD4 development standards without significant changes to lot count, access locations, and street alignment. A complete review of the preliminary plat will be made when the application reaches priority, and comments will be provided to the applicant and/or the plat scheduled for consideration by the CHD4 Board.

CHD4 recommends the plat be updated to reflect the following items prior to review:

- The plat should be amended to show drainage patterns and location/size of storm drain disposal areas
- Verify centerline radius of public streets is a minimum of 200-feet (25 mph design speed)
- Show typical local street section and typical section for Kimball Ave
- Review and confirm the plat meets all requirements of HSDP Manual Section 2130.021 for Preliminary Plats prior to re-submittal.

Provided a revised plat is submitted prior to commencing review, the plat will keep its current place in the review line.

All other platting and improvement requirements to be in accordance with the Highway Standards and Development Procedures Manual (HSDP Manual) available on at https://www.canyonhd4.org/resources/forms-and-maps .

CHD4 appreciates the opportunity to provide comment on this proposed development, and requests the Commission make all comments above conditions of approval for the project. Please feel free to contact me with any questions on this request.

Respectfully,

Chris Hopper, P.E.
District Engineer

File: SH 55 Karcher Rd- Tillman Ridge Subdivision

Exhibit 3

**EXHIBIT E**

**Public Comments Received by: March 10, 2025**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: March 20, 2025

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

RECEIVED
MAR 10 2025
RECEIVED

March 10, 2025

Canyon County Planning and Zoning
Development Services
111 N 11th Avenue
Caldwell, ID 83605

Re: Tillman Ridge Development

Sir:

We have enclosed "Petitions" signed by 102 Homeowners/Residents of El Rancho Heights subdivision in which we express our collective concerns about the proposed Tillman Ridge Development. While we recognize that growth is inevitable in our area, it is our strong opinion that the proposed growth should not adversely affect the quality of life in surrounding subdivisions that were previously developed. Our subdivision was opened during the 1970's and completed in the early 1980s.

We are concerned that the available water in the local Aquaifer may not be adequate to support the proposed subdivision while also maintaining the level of water needed to support existing subdivisions. Therefore, we require that an adequate study be completed to provide reasonable assurance that adequate water is available to support existing subdivisions as well as the proposed development.

We are concerned that supportive infrastructure is not available. For example, access to and exit from State Highway 55, to Tillman Ridge are not clearly delineated. While the highway is being widened access to the Interstate Highway 84, is already at four lanes and is very congested. The widening of Highway 55, will not improve that situation. The extra traffic resulting from this development will make matters worse.

Finally we are adamantly opposed to the potential that either Fiesta Way or Castle Way be opened to through traffic to provide access to the proposed Tillman Ridge subdivision.

Sincerely,

Tom Whittemore,
President

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

To: Canyon County Planning and Zoning

Re: Proposed Tilman Ridge Development

We the residents/home owners residing in El Rancho Heights Subdivision wish to register our concerns about the proposed Tillman Ridge Development. Our subdivision is located so that it touches the South East corner of the proposed Development. Therefore, we are concerned about the following potentially adverse effects of the proposal.

1) We are concerned about the environmental impact; particularly relating to pumping water from the same aquifer(s) that our subdivision relies on to provide water to our residents. We have long term well established, Water Rights and request studies be completed that provide assurance that our water system will not be impacted by the proposed development. We are opposed to the development if this assurance cannot be provided.

2) There appears to only be one inlet/outlet from the subdivision onto State High Way 55. That connection is an uncontrolled intersection (South Kimball and High Way 55). The additional traffic created would exacerbate an already dangerous situation at that intersection.

3) We are adamantly opposed to the proposed development potentially connecting with Fiesta Way and/or Castle Way to gain another means of egress. Our roads are narrow, have vehicles parked on them and there is a park/playground to which children travel to play and as well as aged adults walking who would be in increased danger with additional traffic.

| Name/Signature: | Address: |
|---|---|
| | 15220 Castle Way |
| Jacobo Regalado | 15234 Castle Way |
| Kiesra Regalado | 15234 Castle Way |
| Chad Wilson | 15225 Castle Way |
| Wendi Wilson | 15225 Castle Way |
| Michael Woodmore | 15233 Castle Way |
| Sandy Woodmore | 15233 Castle Way |
| Sorsha Gibson | 15191 Castle Way |
| Heidi Stark | 15169 CASTLE WAY |
| Mark Peterson | 15149 CASTLE WAY |
| | 15129 Castle Way |
| | 15129 Castle Way |
| | 15063 Castle Way |
| | 15037 Castle Way |
| Gubine Lynn | 15022 Castle Way |
| Steven C Fredricks | 15023 Castle Way |
| Cheryle Fredricks | 15023 Castle Way |
| Victor Jim | 15090 CASTLE WAY |

# El Rancho Heights

Home Owner's Association
PO Box 817
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February 27, 2025

To: Canyon County Planning and Zoning

Re: Proposed Tilman Ridge Development

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| Name/Signature: | Address: |
|---|---|
| Anita L. Lyng | 15090 Castle Way |
| [illegible] | 15132 CASTLE WAY |
| [illegible] | 15156 Castle Way |
| Hilda Nichols | 15156 Castle Way |
| James O. Kelly | 15200 CASTLE WAY |
| Sally Bellows | 15200 Castle Way |
| Linda Whittemore | 15220 Castle Way |
| [illegible] | 15142 Horseshoe Dr. Caldwell |
| [illegible] | 15121 Horseshoe Dr. |
| [illegible] | 15121 Horseshoe Dr. |
| Gary Kuehn | 15079 Horseshoe Dr. |
| Jeanne T. Kuehn | 15079 Horshoe Dr. |
| Kathryn Bennett | 15594 Chaparral Ave |
| [illegible] | 15600 Chaparral Ave |
| Ben Kaye | 15620 Chaparral Ave |
| Connie J. Payne | |
| [illegible] | 15103 Castle Way |
| Jana Bockenstette | 15194 Horseshoe Drive |

**Exhibit E.1 - 3**

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

To: Canyon County Planning and Zoning

Re: Proposed Tilman Ridge Development

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| Name/Signature: | Address: |
|---|---|
| Lois McMillan | 15040 Fiesta Way |
| Linda M. Hewson | 15054 Fiesta Way |
| Mark S Lawson | 15054 Fiesta Way |
| Alfredo Brown | 15170 Chaparral Ave. |
| Ronald Brown | 15620 Chaparral Ave |
| Rusencio Rangel | 15073 Fiesta Way |
| Teresa Calderon | 15073 Fiesta Way |
| Michael Staton | 15080 Fiesta Way |
| Derick Robertson | 15080 Fiesta Way |
| Jose A Zaragoza O. | 15021 Fiesta Way |
| Pamela D. Haynes | 15091 Fiesta Way |
| Wayne Haynes | 15091 Fiesta Way |
| Deborah Cook | 15096 Fiesta |
| Ronald Karpauskas | 15135 Fiesta Way |
| Lynda Karpauskas | 15135 Fiesta Way |
| Christy Schild | 15151 Fiesta Way |
| | 15196 Fiesta Way |
| Alicia Coyne | 15196 Fiesta Way |

# El Rancho Heights

Home Owner's Association
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February 27, 2025

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| Name/Signature: | Address: |
|---|---|
| Jace Thompson | 15165 Horse Shoe Dr. |
| Lindsay Thompson | 15165 Horseshoe Dr. |
| Jason & Ann D[illegible] | 15166 Horse Shoe Dr. |
| RODOLFO ARREDONDO. | 15189 HORSESHOE DR. |
| Maria elena Ruaze | 15189 Horseshoe Dr |
| Mark Bu[illegible] | 15640 Chaparral Ave. |
| Linda Bu[illegible] | 15640 Chaparral Ave. |
| Dain Johnson | 15186 Horseshoe Dr. |
| David C Brasley | 15184 Horse Shoe Dr Caldwell ID |
| Becky Fowler | 15180 Horseshoe Dr Caldwell ID |
| Mike | 15180 Horseshoe Dr Caldwell ID |
| Nest Inlham | 15180 Horseshoe Dr Caldwell |
| Elizabeth Lane Elizabeth Lane | 15176 Horseshoe Dr Caldwell, ID 83607 |
| Robert Lane Robert Lane | 15176 Horseshoe Dr. Caldwell, ID 83607 |
| Sean Hoges | 15172 Horseshoe Dr Caldwell 83607 |
| Aaron Stock | 15169 Horseshoe Dr Caldwell 83607 |
| S. Christiansen | 15167 Horseshoe Dr. Caldwell, ID 83607 |
| Joe Christensen | 15167 Horseshoe Dr. Caldwell ID 83607 |

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

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| Name/Signature: | Address: |
|---|---|
| Barbara Waller | 15575 Longhorn Dr Caldwell ID |
| Janet Danielson | 15623 Longhorn Dr Caldwell, Id |
| Susan L. Haueter | 15657 LONGHORN Dr Caldwell, ID 83607 |
| Melissa Lynch | 15659 LONGHORN Dr Caldwell ID 83607 |
| Leandra Jones | 15646 Longhorn Dr Caldwell Id 83607 |
| CHUCK HOAST | 15686 LONGHORN DR CALDWELL ID 83607 |
| Jan Ericson | 15666 longhorn Dr Caldwell ID 83607 |
| Molly Travis | 15610 Longhorn Dr. Caldwell ID 83607 |
| [illegible] | 15544 Longhorn Dr Caldwell ID 83607 |
| [illegible] | 15671 Longhorn Dr Caldwell Id 83607 |
| [illegible] | 15593 Longhorn Dr Caldwell Id 83607 |
| [illegible] | 15593 Longhorn DR Caldwell ID 83607 |
| Stan Robinson | 15160 Fiesta Way Caldwell ID 83607 |
| Bob SHETLER | 15152 Fiesta Way CALDWELL ID 83607 |

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

To: Canyon County Planning and Zoning

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| Name/Signature: | Address: |
|---|---|
| Cheryl Smith | 15214 Fiesta Way |
| Ken Gentry | 15231 " " |
| Megan Gentry | 15231 Fiesta Way |
| Eric Boyum | 15232 Fiesta Way |
| Sonda Boyum | 15232 Fiesta Way |
| Alan Kennedy | 15213 Fiesta Way |
| Makayla Cox | 15213 Fiesta Way |
| David Vinciotti | 15159 Fiesta Way |
| Anne Vinciotti | 15159 Fiesta Way |

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

To: Canyon County Planning and Zoning

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| Name/Signature: | Address: |
|---|---|
| Rebecca L Collins | 15650 Chaparral Ave |
| Walter Harrell | 15120 Fiesta Way |
| Janet L Collins | 15660 Chaparral Ave. |
| Sharon Chance | 15021 Fiesta Way |
| Rita J. Collins | 15650 Chaparral Ave |

# El Rancho Heights

Home Owner's Association
PO Box 817
Caldwell, ID 83607

February 27, 2025

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| Name/Signature: | Address: |
|---|---|
| Kailee Gibson | 15167 Horseshoe Dr. Caldwell ID 83607 |
| Mark Gibson | 15191 Castle Way Caldwell ID 83607 |

Exhibit 3

**EXHIBIT F**

**Revised Application**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: June 12, 2025

# ZONING AMENDMENT
## PUBLIC HEARING - CHECKLIST

**Zoning Amendment/Conditional Rezone CCZO Section 07-06-05/07-06-07**

**Check the applicable application type:**

☐Rezone

☒Conditional Rezone with Development Agreement

THE FOLLOWING ITEMS MUST BE SUBMITTED WITH THIS APPLICATION TO BE DEEMED COMPLETE (PLEASE CHECK OFF THE ITEMS REQUIRED):

| Description | Applicant | Staff |
|---|---|---|
| Master Application completed and signed. | X | |
| Letter of Intent (see standards on next page) | X | |
| Land Use Worksheet | X | |
| Neighborhood Meeting form was completed and signed | see RZ2022-0012 | |
| Completed Agency Acknowledgement form including: | see RZ2022-0012 | |
| Southwest District Health | | |
| Irrigation District | | |
| Fire District | | |
| Highway District/Idaho Transportation Dept | | |
| Area of City Impact (If applicable) | | |
| Conditional Rezone: | X | |
| Proposed conditions of approval and/or Concept Plan (can be a draft survey/draft preliminary plat/drawing) | | |
| Deed or evidence of property interest to the subject property | see RZ2022-0012 | |
| Fee: **Rezone: Per Adopted Fee Schedule**<br>**Conditional Rezone: Per Adopted Fee Schedule**<br>**Text Amendment: Per Adopted Fee Schedule** | X | |
| **Fees are non-refundable** | | |

*DISCLAIMER: The subject property shall be in compliance with the public nuisance ordinance, the building code and the zoning code before the Director can accept the application.

**REZONE OPTION:**

When considering a zoning map amendment (rezone) of a property, a conditional rezone is recommended when considering conceptual site plan and/or addressing potential impacts through mitigation strategies and measures such as restricting uses, limiting the area to be rezoned to retain agricultural uses, and agricultural preservation methods such as buffers and disclosures. Without a conditional rezone, no conditions can be considered as part of the rezone application.

**The applicant/owner and DSD Planner must sign (below) if the conditional rezone option was discussed and the applicant/owner declined the option.**

Applicant/Owner: Elizabeth Allen _____ Date March 30, 2025

DSD Planner: _____ Date _____

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**
111 North 11th Avenue, #310, Caldwell, ID 83605
zoninginfo@canyoncounty.id.gov - Phone: 208-402-4164
*Revised 3/29/23*

# SUBMITTAL STANDARDS

| LETTER OF INTENT STANDARDS |
|---|
| Description of proposed use: expand on the Land Use Worksheet |
| Description of the existing use. |
| Expected impacts and traffic of future development. |
| Explanation of how the proposed rezone is consistent with the Comprehensive Plan and specific zoning criteria. |
| Conditional Rezone: |
| Explanation/Description of the Concept Plan |
| Proposed conditions of approval |

**CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT**
111 North 11th Avenue, #310, Caldwell, ID 83605
zoninginfo@canyoncounty.id.gov - Phone: 208-402-4164
*Revised 3/29/23*

# ZONING AMENDMENT
## PUBLIC HEARING - MASTER APPLICATION

4/2/2025

| | | |
|---|---|---|
| **PROPERTY OWNER** | OWNER NAME:<br>6 Point Properties LLC | |
| | MAILING ADDRESS:<br>16402 Orchard Avenue, Caldwell, Idaho 83707 | |
| | PHONE:<br>541-786-2403 | EMAIL:<br>6pointdevelopment@gmail.com |

**I consent to this application and allow DSD staff / Commissioners to enter the property for site inspections. If the owner(s) is a business entity, please include business documents, including those that indicate the person(s) who are eligible to sign.**

***Signature:*** Kristin Short 4/2/2025 ***Date:*** 4/2/25

| | | |
|---|---|---|
| **APPLICANT:** IF DIFFERING FROM THE PROPERTY OWNER | APPLICANT NAME:<br>Elizabeth Allen | |
| | COMPANY NAME:<br>Bristlecone Land Use Consulting | |
| | MAILING ADDRESS:<br>1330 Williams Lane, Nampa, Idaho 83686 | |
| | PHONE:<br>907-978-3439 | EMAIL:<br>elizabeth@bristleconelanduseconsulting.com |

4/2/2025

| | | |
|---|---|---|
| **SITE INFO** | STREET ADDRESS: | |
| | PARCEL NUMBER:<br>R3286200000 | |
| | PARCEL SIZE:<br>62.991 | |
| | **CHECK THE APPLICABLE APPLICATION TYPE:** | |
| | ☐ REZONE | ☒ CONDITIONAL REZONE WITH DEVELOPMENT AGREEMENT |
| | CURRENT ZONING:<br>A | PROPOSED ZONING:<br>CR-R1 |
| | FLOOD ZONE (YES/NO)<br>No | ZONING DISTRICT: |

**FOR DSD STAFF COMPLETION ONLY:**

| | | |
|---|---|---|
| CASE NUMBER | DATE RECEIVED: | |
| RECEIVED BY: | APPLICATION FEE: | CK MO CC CASH |

# LAND USE WORKSHEET

**PLEASE CHECK ALL THAT APPLY TO YOUR REQUEST:**

## GENERAL INFORMATION

**1. DOMESTIC WATER:** ☒ Individual Domestic Well ○ Centralized Public Water System ○ City

○ N/A – Explain why this is not applicable: _____

☒ How many Individual Domestic Wells are proposed? 48

**2. SEWER (Wastewater)** ☒ Individual Septic ○ Centralized Sewer system

○ N/A – Explain why this is not applicable: _____

**3. IRRIGATION WATER PROVIDED VIA:**

○ Surface ☒ Irrigation Well ○ None

**4. IF IRRIGATED, PROPOSED IRRIGATION:**

☒ Pressurized ○ Gravity

**5. ACCESS:**

☒ Frontage ○ Easement Easement width_____Inst. # _____

**6. INTERNAL ROADS**:

☒ Public ○ Private Road User's Maintenance Agreement Inst #_____

**7. FENCING** ○ Fencing will be provided (Please show location on site plan)

Type: _____ Height: _____

**8. STORMWATER**: ☒ Retained on site ☒ Swales ○ Ponds ☒ Borrow Ditches

○ Other: _____

**9. SOURCES OF SURFACE WATER ON OR NEARBY PROPERTY**: (i.e. creeks, ditches, canals, lake)

Forest Canal

Exhibit F

## RESIDENTIAL USES

**1. NUMBER OF LOTS REQUESTED**:

☒ Residential 48 ____ o Commercial _____ o Industrial _____

☒ Common 2 ____ o Non-Buildable _____

**2. FIRE SUPPRESSION:**

☒ Water supply source: Well or tank _____

**3. INCLUDED IN YOUR PROPOSED PLAN?**

o Sidewalks o Curbs o Gutters o Street Lights ☒ None

## NON-RESIDENTIAL USES

**1. SPECIFIC USE**: _____

**2. DAYS AND HOURS OF OPERATION**:

o Monday _____ to _____

o Tuesday _____ to _____

o Wednesday _____ to _____

o Thursday _____ to _____

o Friday _____ to _____

o Saturday _____ to _____

o Sunday _____ to _____

**3. WILL YOU HAVE EMPLOYEES?** o Yes If so, how many? _____ o No

**4. WILL YOU HAVE A SIGN?** o Yes o No o Lighted o Non-Lighted

Height: _____ ft Width: _____ ft. Height above ground: _____ ft

What type of sign: _____Wall _____ Freestanding _____ Other

**5. PARKING AND LOADING:**

How many parking spaces? _____

Is there is a loading or unloading area? _____

## ANIMAL CARE-RELATED USES

**1. MAXIMUM NUMBER OF ANIMALS:** _____

**2. HOW WILL ANIMALS BE HOUSED AT THE LOCATION?**

o Building o Kennel o Individual Housing o Other _____

**3. HOW DO YOU PROPOSE TO MITIGATE NOISE?**

o Building o Enclosure o Barrier/Berm o Bark Collars

**4. ANIMAL WASTE DISPOSAL**

o Individual Domestic Septic System o Animal Waste Only Septic System

o Other: _____

Bristlecone
LAND USE CONSULTING

April 2, 2025

Canyon County
Development Services Department
111 N. 11th Avenue, Room 310
Caldwell, Idaho 83605

**RE: TILLMAN RIDGE CONDITIONAL REZONE LETTER OF INTENT**

Dear Mr. Lister,

On behalf of the property owner, we are pleased to submit this letter of intent for the Tillman Ridge Conditional Rezone. We propose a Conditional Rezone from A (Agriculture) to R-1 (Single Family Residential) for Parcel R3286200000. The approximately 63-acre parcel is located at the southwest corner of Karcher Road/HWY 55 and Kimball Avenue. A preliminary plat consisting of 50 lots (48 residential lots and two (2) common lots) with an average lot size of one (1) acre is forthcoming after the approval of this request. This request was presented before the Planning and Zoning Commission on March 13, 2025 as a rezone. The hearing was continued at the request of the Commission to revise the application to be a conditional rezone.

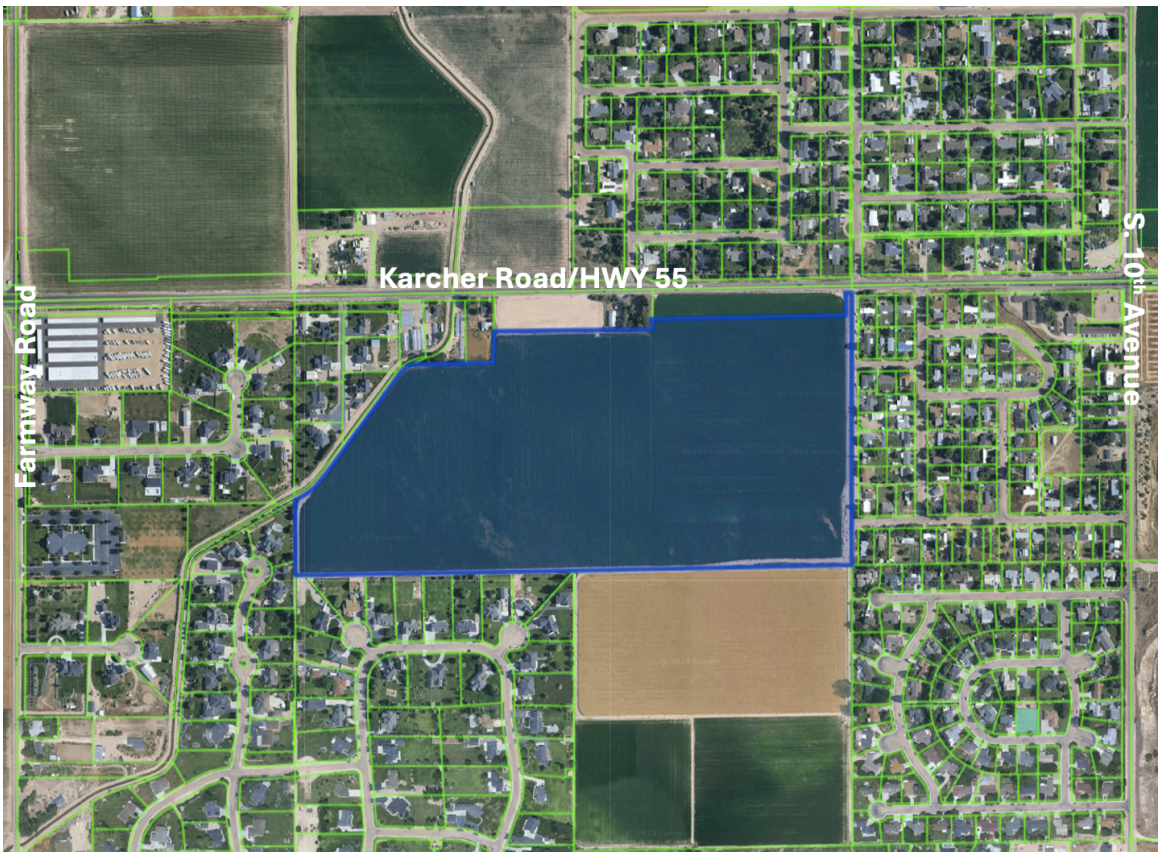



*Image 1. Aerial image of the subject parcel and surrounding area.*

**Conceptual Development Plan Details**

As shown in Exhibit A, the Tillman Ridge Subdivision will be a 50-lot subdivision consisting of 48 buildable lots for custom single-family homes and four unbuildable lots for stormwater retention. Each lot will be served by individual wells, individual septic, and pressurized irrigation. Fire suppression will be available via an additional well or alternative method of water supply in accordance with the International Fire Code. A public street will provide internal connectivity. Access to the subdivision will be provided on Highway 55 on the north. On the east side, the subdivision will connect to the Kimball Avenue and Vista Drive intersection, which provides a connection to 10th Avenue. A stub street on the south side of the subdivision will offer future connectivity to the south.

**Conditional Rezone Criteria Analysis**

The information below provides an analysis of the conditional rezone criteria and the agency comments that the Development Services Department has received in response to the agency notice.

1. **Is the proposed conditional rezone change generally consistent with the comprehensive plan?**

**Response:**

The proposed conditional rezone to R-1 is consistent with Canyon County 2020 Comprehensive Plan ("Plan"), which designates the future land use of the subject property and the properties to the north, south, east, and west as Residential. In addition to aligning with the future land use map, the proposed zone change aligns with the following goals and policies:

*Property Rights Policy 8. Promote orderly development that benefits the public good and protects the individual with a minimum of conflict.*

*Population Goal 1. Consider population growth trends when making land use decisions.*

*Population Policy 3. Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses.*

*Economic Development Policy 6. Encourage commercial and residential development in a controlled, planned, and constructive manner, which will enhance, not destroy, the existing lifestyle and environmental beauty of Canyon County.*

*Chapter 4 Economic Development Policy 7. Canyon County should identify areas of the county suitable for commercial, industrial and residential development. New development should be located in close proximity to existing infrastructure and in areas where agricultural uses are not diminished.*

*Land Use Goal 1. To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.*

*Land Use Goal 2. To provide for the orderly growth and accompanying development of the resources within the county that is compatible with the surrounding area.*

*Land Use Goal 4. To encourage development in those areas of the county which provide the most favorable conditions for future community services.*

*Chapter 4 Land Use Residential Policy 2. Encourage residential development in areas where agricultural uses are not viable.*



Exhibit F

*Chapter 4 Land Use Residential Policy 3. Encourage compatible residential areas or zones within the county so that public services and facilities may be extended and provided in the most economical and efficient manner.*

*Chapter 11 Housing Goal 1. Encourage opportunities for a diversity of housing choices in Canyon County.*

As discussed in Chapter 2 of the Plan, based on COMPASS projections, the population in Canyon County in 2025 was anticipated to be 255,796. The current population of Canyon County, based on U.S. Census data, is estimated at 257,674. To help accommodate the growth in population, the proposed conditional rezone, and forthcoming preliminary plat will provide 48 buildable lots for single-family homes. Providing housing within this area of Canyon County will help reduce the need to provide housing in rural areas that are not anticipated to be annexed into city limits.

In a letter dated January 4, 2024, provided to the Development Services Department, the City of Caldwell commented on this proposal as the subject property is within the Area of City Impact. Although the Idaho Local Land Use Planning Act now requires that the County Comprehensive Plan apply to areas of city impact, we evaluated the City of Caldwell's Comprehensive Plan. The subject property's future land use designation is Residential Estates in the City of Caldwell's existing Comprehensive Plan. In their update to their Comprehensive Plan (not yet adopted at the time of application submittal), the future land use of the subject property may change to Highway Corridor, which would support a mixed land use with high-density residential with commercial services. High-density residential and commercial development for the subject property would not be compatible with the existing built environment as it is surrounded by established single-family residential uses with average minimum lot sizes ranging from 0.29 to 2.30 acres. The subject property does not currently have a path of annexation.

**2. When considering the surrounding land uses, is the proposed conditional rezone more appropriate than the current zoning designation?**

An R-1 zoning designation is more appropriate than the existing Agriculture zoning designation. As shown in Image 3, the subject property is immediately adjacent to RR (Rural Residential) zoning on the north and east and is primarily surrounded by single-family residential subdivisions on all sides. A property just south of the subject property, shown in yellow at the bottom of Image 2, was Conditionally Rezoned to Single Family Residential (CR-R1) and is currently in the process of being platted with 34 residential lots, two common lots, and one irrigation control

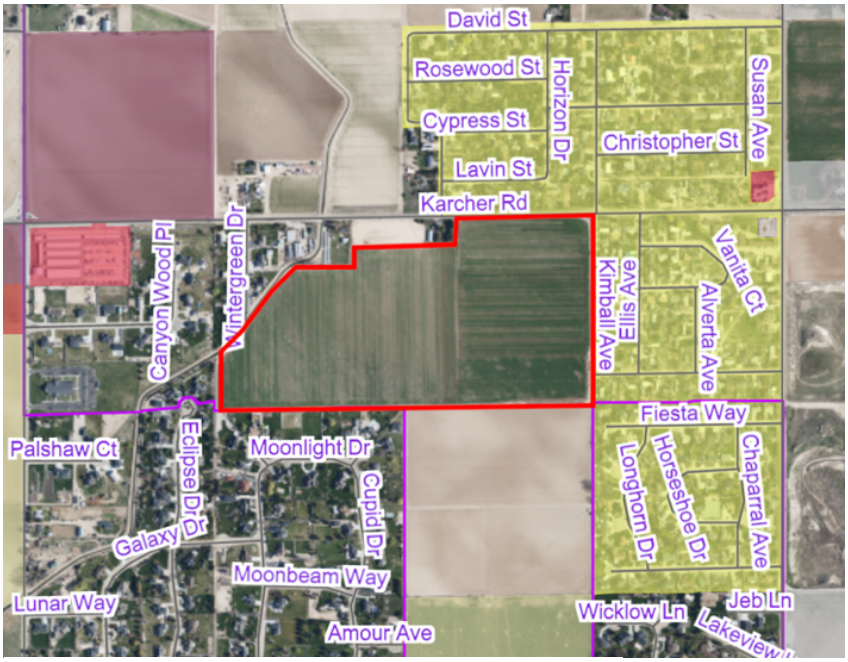


*Image 2. Zoning Map.*



Exhibit F

lot (Norse Landing Subdivision). One parcel sits between the Norse Landing Subdivision and the subject property.

We recognize that the soils of the subject property are identified as Prime Farmland as explained in a letter to DSD from Canyon Soil Conservation District dated April 29, 2023, but due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/HWY 55, and the forthcoming subdivision to the south (Norse Landing), the subject property has become too fragmented for farming and the number of residences in the area makes the movement of farm equipment challenging. As the subject property is within an area of city impact, rezoning the subject property will provide the opportunity to develop single-family homes to provide housing in an area where growth is planned instead of parcels outside of areas of city impact where agriculture is the primary use.

**3. Is the proposed conditional rezone compatible with surrounding land uses;**

As explained in Criteria 2 and 4, the primary surrounding land use is single-family residential. The proposal is compatible with the surrounding residential uses and will fill a gap between the adjacent residential subdivisions.

**4. Will the proposed conditional rezone negatively affect the character of the area? What measures will be implemented to mitigate impacts?**

As explained under Criteria 1 and 2, the immediate surrounding area is primarily single-family residential and will not be negatively affected by a conditional rezone to R-1 (Single Family Residential). The forthcoming preliminary plat proposes 48 single-family residential lots with an average lot size of 1 acre that will provide uses consistent with the area's existing residential character. As shown in the Exhibit B, the subject property is surrounded by residential subdivisions. The average lot size of these subdivisions ranges from 0.29 to 2.30 acres, as outlined in Exhibit B. An R-1 zoning designation requires an average minimum lot size of 1.00 acre, which will provide a residential development compatible with the area's single-family character.

To mitigate concerns about compatibility, we propose the following condition: *The subdivision shall maintain an average lot size of 1 acre with no more than 48 buildable lots.*

During the first public hearing with the Planning and Zoning Commission, a member of the public raised concerns about the potential decrease in the number of geese as the property develops. The subject property is not situated within the boundaries of the Deer Flat National Wildlife Refuge, nor is it classified as a sensitive area for conservation. The proposed conditional rezone will not impact the Deer Flat National Wildlife Refuge or nearby protected areas for geese (shown in Image 4 on the east side of 10$^{th}$ Avenue).

**5. Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed conditional rezone?**

Adequate services facilities and services will be provided to accommodate zoning map amendment to R-1 (Single Family Residential) as outlined below:

Sewer: The lots will be served by individual septic systems.

Water: Individual wells will serve each residential lot. A community water system was explored and discussed with Idaho Department of Water Resources. While a community water system can be constructed, it was illuminated as an option since it would require a higher density development due to the cost of the system. In addition, the lot sizes would need to decrease from 1 acre to at least 0.5

acres, which would double the number of housing units. Based on the built environment of the area, this increase in density is not appropriate and would increase the amount of water needed to serve the subdivision.

Drainage: All stormwater will be retained on-site with swales.

Irrigation: Each residential lot and common lot will utilized pressurized irrigation via a priority right irrigation well.

Utilities: The area is served by Idaho Power and Intermountain Gas. Utility easements will be provided at the time of platting.

6. **Does the proposed conditional rezone require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts?**

***Response:***

A Traffic Impact Study ("TIS")(Attachment 2) has been completed and reviewed by the Idaho Transportation Department (ITD) and Highway District 4. ITD has plans to widen Karcher Road/Highway 55 to five lanes. To accommodate ITD's planned improvements, the property owner has dedicated the required amount of right-of-way to ITD (approximately six (6) acres). ITD has reviewed and accepted the TIS with the access proposed on Highway 55 and had no additional recommendations or requirements at this time (Attachment 2)

CHD#4 provided two comments to DSD dated May 23, 2023, and August 9, 2023. In response to the May 23, 2023 comment letter, the revised TIS has been submitted, ROW has been dedicated, and specific improvements will be addressed at the time of platting.

7. **Does legal access to the subject property for the conditional rezone exist or will it exist at the time of development?**

**Response:**

Legal access to the subject property exists and will be provided at the time of development. Access will be provided via Highway 55, which has been reviewed and deemed appropriate by the Idaho Transportation Department. The subdivision will connect to Vista Drive, a public local road that provides access to 10th Avenue. An additional stub connection will be provided on the south side of the subdivision for future connectivity. No connections will be made to Devon Drive, Fiesta Way, Castle Way, or any other private roads located in adjacent subdivisions.

8. **Will the proposed conditional rezone impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts?**

**Response:**

The conditional rezone will not significantly impact essential public services and facilities.

Schools—The area is served by the Vallivue School District. Census Bureau data has found that there is approximately one public school child for every three housing units. For single-family attached homes, the average child per unit is 0.39. This would equate to 18 children in a subdivision with 48

residences[1]. Assuming that not all 18 children are the same age, the impact on the school district would be negligible.

Based on a letter dated February 25, 2025, from Vallivue School District, students residing in the subdivision would attend West Canyon Elementary School, Vallivue Middle School, and Vallivue High School.

Fire – Caldwell Fire Department serves the area. Based on discussions with the Caldwell Fire Department, fire hydrants will be required to be installed in the subdivision at the time of development. The hydrants can be connected to a well, tank, or an alternative method of water supply in accordance with the International Fire Code. (Attachment 2)

To mitigate the concern about fire suppression, we propose the following condition:

*The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.*

Police – Canyon County Sheriff's Department serves the area.

**Conclusion**

As explained above, the requested zoning designation of R-1 is compatible with the existing character of the area, aligns with the Comprehensive Plan, and fulfills the criteria for rezoning. We have proposed the following conditions to mitigate concerns and we thank you for your time and consideration.

1. *The subdivision shall maintain an average lot size of 1 acre with no more than 48 buildable lots.*
2. *The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.*

Please do not hesitate to contact me if you have any questions.

Sincerely,

Elizabeth Allen
Bristlecone Land Use Consulting
Principal

Attachments:

1. Traffic Impact Study
2. ITD Development Staff Report
3. Correspondence with Caldwell Fire Department

[1] https://eyeonhousing.org/2020/05/one-public-school-child-for-every-three-homes/

# Exhibit A
# Tillman Ridge Conceptual Layout

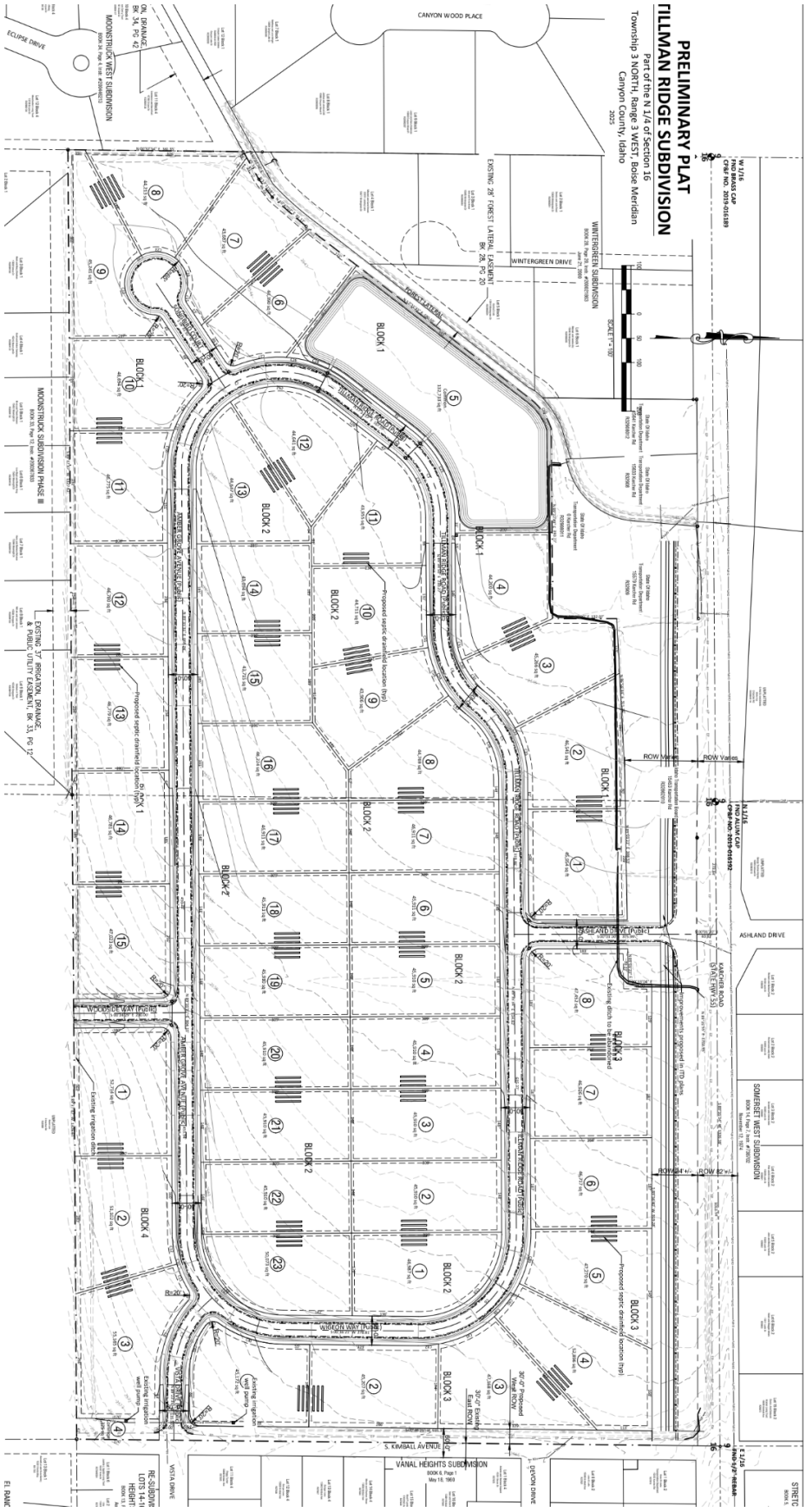
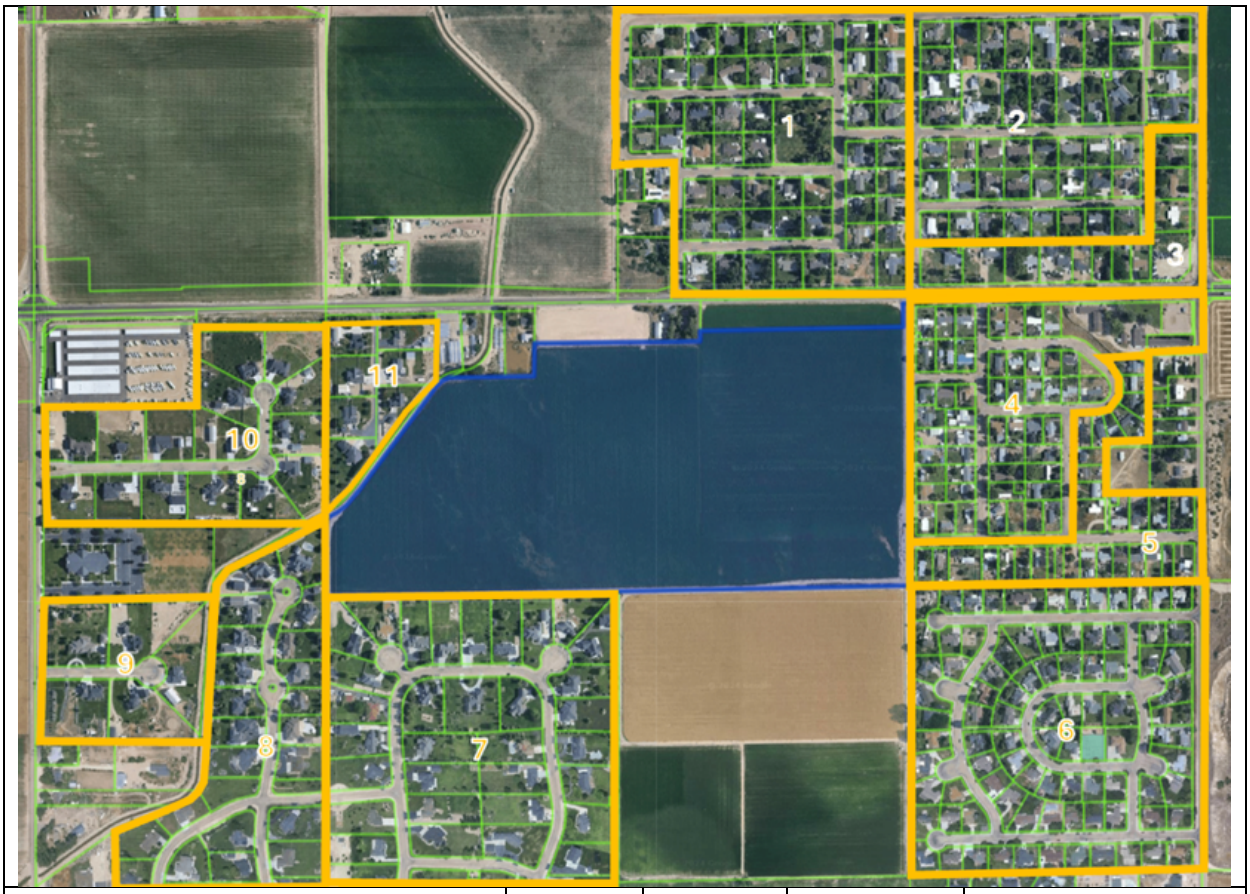
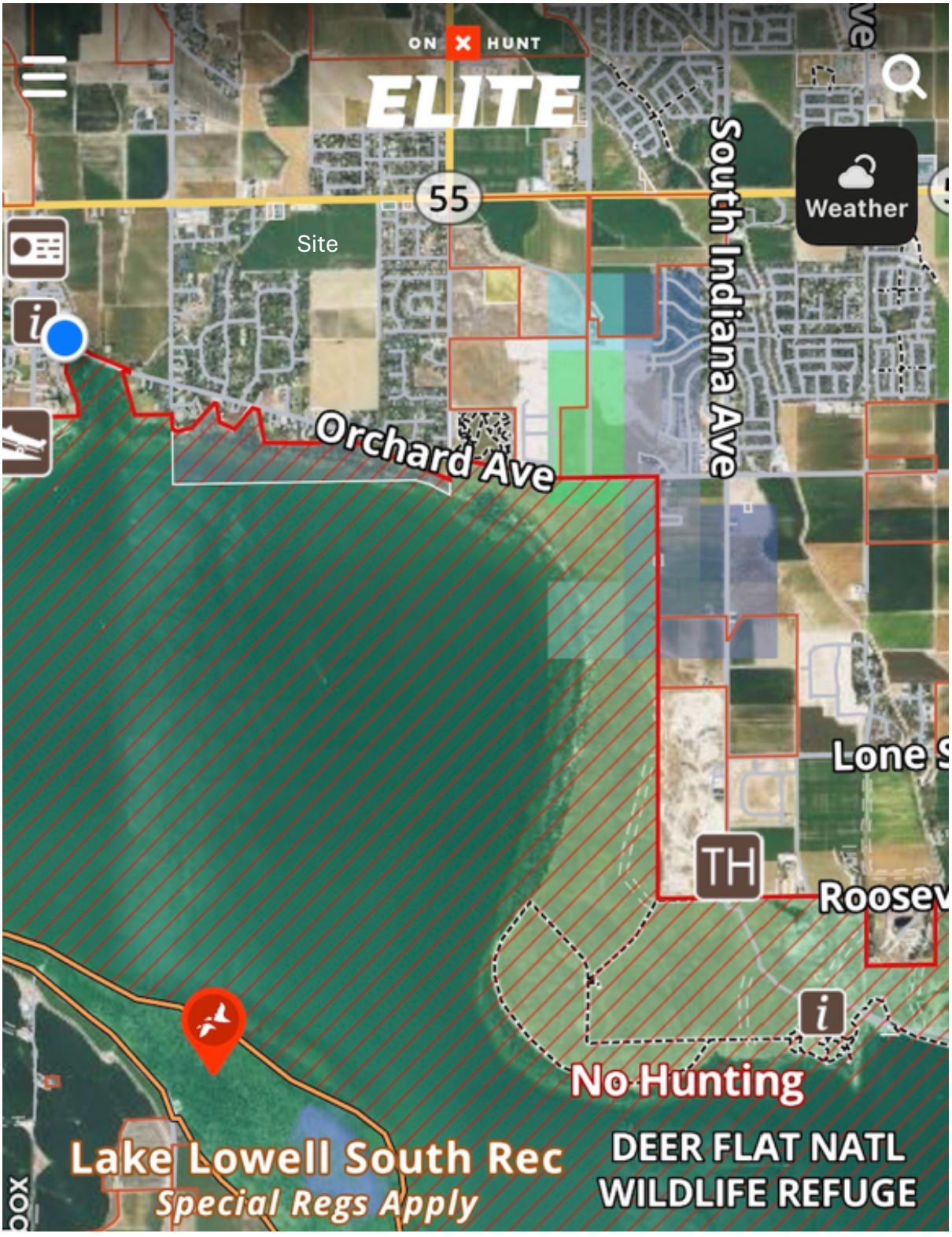


**Exhibit B**
**Surrounding Subdivisions**




| Subdivision Name | Label | Acres | No. of Lots | Average Lot Size |
|---|---|---|---|---|
| Somerset West | 1 | 36.89 | 57 | 0.65 |
| Stecher Sub-Amended | 2 | 30.27 | 49 | 0.62 |
| Stecher | 3 | 10.07 | 14 | 0.72 |
| Vanal Heights | 4 | 28.60 | 70 | 0.41 |
| Vanal Heights Re-Subdivision | 5 | 6.08 | 21 | 0.29 |
| El Rancho Heights | 6 | 40.00 | 96 | 0.32 |
| Moonstruck PH 3 | 7 | 11.98 | 11 | 1.09 |
| Moonstruck PH 2 | | 25.75 | 27 | 0.95 |
| Moonstruck West | 8 | 44.44 | 56 | 0.79 |
| Autumn Falls | 9 | 11.49 | 5 | 2.30 |
| Canyon Lake Estates PH 1 | 10 | 22.94 | 19 | 1.21 |
| Wintergreen | 11 | 7.26 | 7 | 1.04 |

**Exhibit C**
**Hunting Areas**



# Attachment 1
# Traffic Impact Study

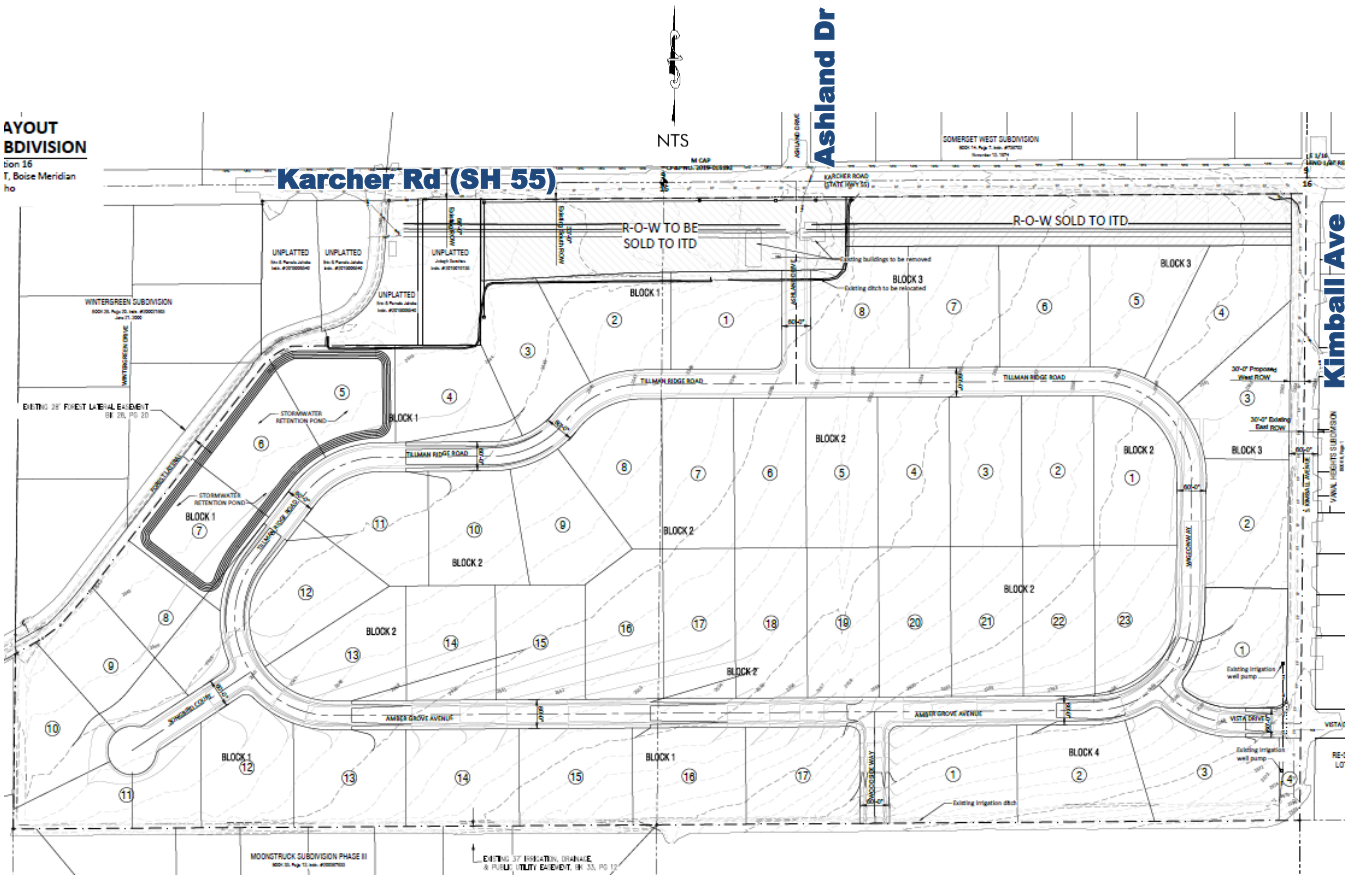
# TRAFFIC IMPACT STUDY UPDATE

# TILLMAN RIDGE SUBDIVISION

Caldwell, Idaho

July 15, 2022

*Updated December 13, 2024*




**Prepared For:**

## Dr. William McGuire

**Prepared By:**


GR ENGINEERING, INC.

181 East 50th Street
Garden City, ID 83714
(208) 841-4996


*S:\projects\24-39 Tillman Ridge Subdivision\doc\Tillman Ridge Subdivision TIS.docx*

Exhibit F

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# EXECUTIVE SUMMARY

Tillman Ridge Subdivision is a proposed residential development located southwest of the Kimball Avenue and Karcher Road (SH 55) intersection in Canyon County, Idaho, as shown in **Figure 1.1**. The original traffic impact study (TIS) for the proposed development was completed in July 2022. The original site plan has been revised. Additionally, the design of the SH 55 corridor project has been changed. CR Engineering, Inc. has been retained to prepare a TIS update to reflect the revised site plan, SH 55 corridor improvements, and current traffic data.

The scope of this TIS update remains the same as the original TIS, which was determined through coordination with Highway District No. 4 (HD4) and the Idaho Transportation Department (ITD). The TIS update evaluated the potential traffic impacts resulting from background traffic growth, in-process developments within the area, and the proposed development, and identified improvements to mitigate the traffic impacts if needed. Traffic impacts were evaluated under weekday AM and PM peak hour traffic conditions based on the proposed land uses and site accesses as shown in the revised preliminary site plan. **Table 1** summarizes the improvements needed to mitigate the traffic impacts for the following analysis years' traffic conditions:

- 2024 Existing traffic
- 2027 Build-out year background traffic
- 2027 Build-out year total traffic
- 2032 Horizon year background traffic
- 2032 Horizon year total traffic

**Table 1 – Intersection Improvements Summary**

| Intersection | | 2024 Existing | 2027 Build-Out Year | | 2032 Horizon Year | |
|---|---|---|---|---|---|---|
| | | | Background | Total | Background | Total |
| 1 | Kimball Ave and Karcher Rd | None | Intersection closed per SH 55 corridor improvements | | | |
| 2 | S 10th Ave and Karcher Rd | None | **SH 55 corridor improvements** | None beyond prior improvements | None beyond prior improvements | None beyond prior improvements |
| 3 | Vista Dr and S 10th Ave | None | None | None | None | None |
| 4 | Ashland Dr (Site Access) and Karcher Rd | Not analyzed | | **SH 55 corridor improvements and construct NB approach** | None beyond prior improvements | None beyond prior improvements |

## 1.0 Proposed Development

1.1 Tillman Ridge Subdivision is a proposed residential development containing 49 single-family lots with an estimated 2027 build-out year

1.2 Based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, the proposed development is estimated to generate approximately 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour at full build-out.

- All trips generated by the site were assumed to be made by personal and commercial vehicles
  - Some children residing in the development are anticipated to walk/bike to the existing/proposed schools within the vicinity of the site
- No internal capture trips or pass-by trips were assumed in the traffic analysis
- The estimated site traffic distribution patterns are:
  - 10% north of the site traveling on S 10th Avenue
  - 5% south of the site traveling on S 10th Avenue
  - 10% west of the site traveling on Karcher Road
  - 75% east of the site traveling on Karcher Road

1.3 The development is proposing two full-movement accesses, one on Karcher Road and one on Kimball Avenue:

- **Site Access on Karcher Road**
  - Located approximately 1,300 feet east of Wintergreen Drive, a private driveway, and 1,030 feet west of Kimball Avenue, aligning with Ashland Drive
    - Meets IDAPA access spacing from nearest upstream and downstream of unsignalized intersection
  - The site access intersection is anticipated to meet minimum operational thresholds under 2027 build-out year and 2032 horizon year total traffic conditions as an unsignalized intersection

- **Site Access on Kimball Avenue**
  - Located approximately 750 feet south of Devon Drive, aligning with Vista Drive to the east
    - Meets 330 feet minimum local road spacing on Kimball Avenue, a 25-mph local road
  - The site access intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road
    - Does not warrant turn lanes under 2027 build-out year or 2032 horizon year total traffic conditions based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*
    - Anticipated to meet minimum operational thresholds under 2027 build-out and 2032 horizon year total traffic conditions under all site access scenarios

## 2.0 2024 Existing Traffic Conditions

2.1 Review of the most current five-year (2019-2023) crash data at the study area intersections show no apparent safety issues:

- Kimball Avenue and Karcher Road intersection
  - Five (5) report crashes with four (4) rear-end crashes due to inattention or following too close
  - Estimated crash rate is 0.21 crashes per million entering vehicles (ACC/MEV)
- S 10th Avenue and Karcher Road intersection
  - 16 reported crashes with 11 rear-end crashes and four (4) angle crashes
  - Estimated crash rate is 0.42 ACC/MEV

- Vista Drive and S 10th Avenue intersection
  - No reported crashes

2.2 With 2024 existing traffic, all study area intersections meet HD4 and ITD minimum operational thresholds analyzed with the existing intersection control and lane configuration. Additionally, none of the unsignalized study area intersections require turn lanes based on NCHRP Report 457 or ITD turn-lane guidelines. As a result, no intersection improvements are needed to mitigate 2024 existing traffic operations

## 3.0 2027 Build-Out Year Background Traffic Conditions

3.1 The SH 55 corridor improvements are anticipated to be implemented by 2027 and are included in the background traffic condition analysis. The following improvements as outlined in the *SH-55, Farmway Road to Middleton Road Project* were included on Karcher Road within the study area:

- Widen Karcher Road to two travel lanes in each direction with a two-way left-turn lane
- Close the existing approaches of Kimball Avenue and Ellis Avenue
- **S 10th Avenue and Karcher Road intersection** – upgrade signal and widen intersection with the following lanes:
  - Karcher Road approaches – one left-turn lane two through lanes, and one right-turn lane
  - S 10th Avenue approaches – one left-turn and one shared through/right-turn lane (existing)
- **Ashland Drive and Karcher Road intersection** – widen intersection with the following lanes:
  - Eastbound approach – one left-turn lane and two through lanes
  - Westbound approach – two through lanes and one right-turn lane
  - Southbound approach – one shared lane (existing)

3.2 2027 build-out year background traffic was estimated by extrapolating the 2024 existing counts with the following annual growth rates based on the traffic forecasts from the Community Planning Association of Southwest Idaho (COMPASS) travel demand model:

- 6.0% on Karcher Road
- 2.0% on all other study area roadways

3.3 Off-site traffic from two in-process developments in the vicinity of the site was also included in the 2027 background traffic:

- Passero Ridge Subdivision – A residential development with 335 single-family lots located north of Orchard Avenue between S 10th Avenue and Montana Avenue
  - 29 lots have been constructed and occupied
- Norse Landing Subdivision – A residential development with 34 single-family lots located north of Orchard Avenue between Moonstruck Drive and Kimball Avenue

3.4 With the SH 55 corridor improvements and closures of Kimball Avenue and Ellis Avenue, existing traffic north of Karcher Road is anticipated to shift to Ashland Drive or S 10th Avenue, depending on their origin/destination. Existing traffic south of Karcher Road will be required to shift to S 10th Avenue until another connection to Karcher Road west of the Kimball Avenue location is available

3.5 With 2027 build-out year background traffic, all study area intersections are anticipated to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. As a result, no additional improvements are needed to mitigate 2027 background traffic operations:

- The S 10th Avenue and Karcher Road intersection is anticipated to meet minimum operational thresholds with and without the SH 55 corridor improvements
- The Vista Drive and S 10th Avenue intersection is not anticipated to require turn lanes based on NCHRP Report 457 turn lane guidelines

## 4.0 2027 Build-Out Year Total Traffic Conditions

4.1 With 2027 build-out year total traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to warrant turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate 2027 total traffic operations

4.2 The proposed site access on Karcher Road aligning with Ashland Drive will remain a full-movement intersection with the widening of Karcher Road to five lanes. The access on Karcher Road is needed to serve the site and reduce potential traffic impacts on the existing local roads within the adjacent neighborhood:

- With access on Karcher Road, approximately 143 vehicles per day generated by the development are anticipated to travel on Vista Drive through the existing Vanal Heights Subdivision to access the transportation system
- Without access on Karcher Road, the entirety of Tillman Ridge Subdivision (523 vehicles per day) will be required to travel on Vista Drive through the existing Vanal Heights Subdivision to access the transportation system
    - Increasing traffic on Vista Drive, a narrow local road with front-on housing, may lead to potential safety issues for schoolchildren, cyclists, and pedestrians

## 5.0 2032 Horizon Year Background Traffic Conditions

5.1 With 2032 horizon year background traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to require turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate the 2032 horizon year background traffic operations

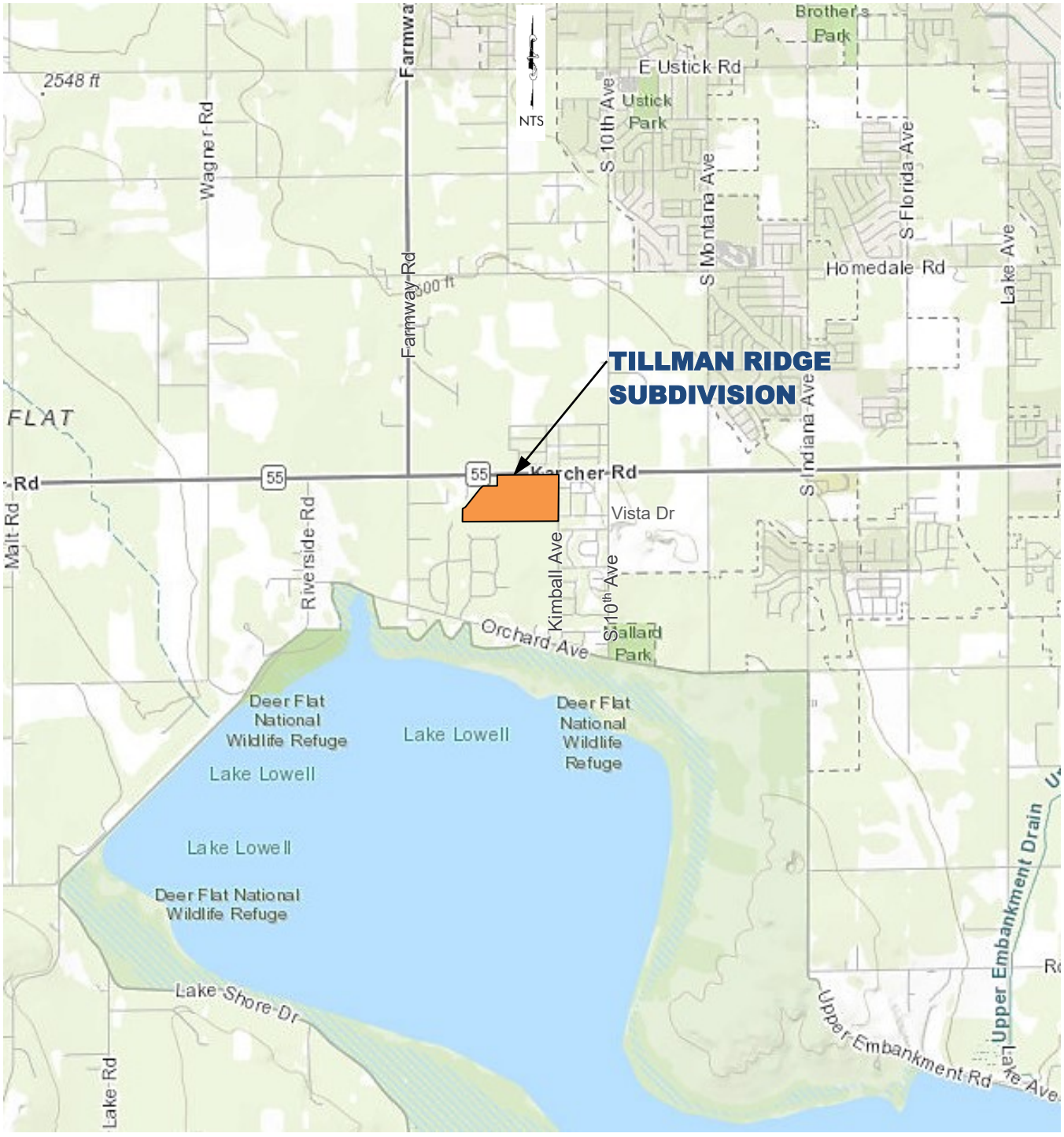
## 6.0 2032 Horizon Year Total Traffic Conditions

6.1 With 2032 horizon year total traffic, all study area intersections are anticipated to continue to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Additionally, none of the unsignalized study area intersections are anticipated to require turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional improvements are needed to mitigate the 2032 horizon year total traffic operations

# 1.0 INTRODUCTION

CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) update for the proposed Tillman Ridge Subdivision, located southwest of the Kimball Avenue and Karcher Road (SH 55) intersection in Canyon County, Idaho. **Figure 1.1** shows the site location and its vicinity. The TIS update evaluated the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed development, and identified improvements to mitigate the impacts if needed. The scope of this TIS update remains the same as the original TIS, which was determined through coordination with the Idaho Transportation Department (ITD) and Highway District No. 4 (HD4).

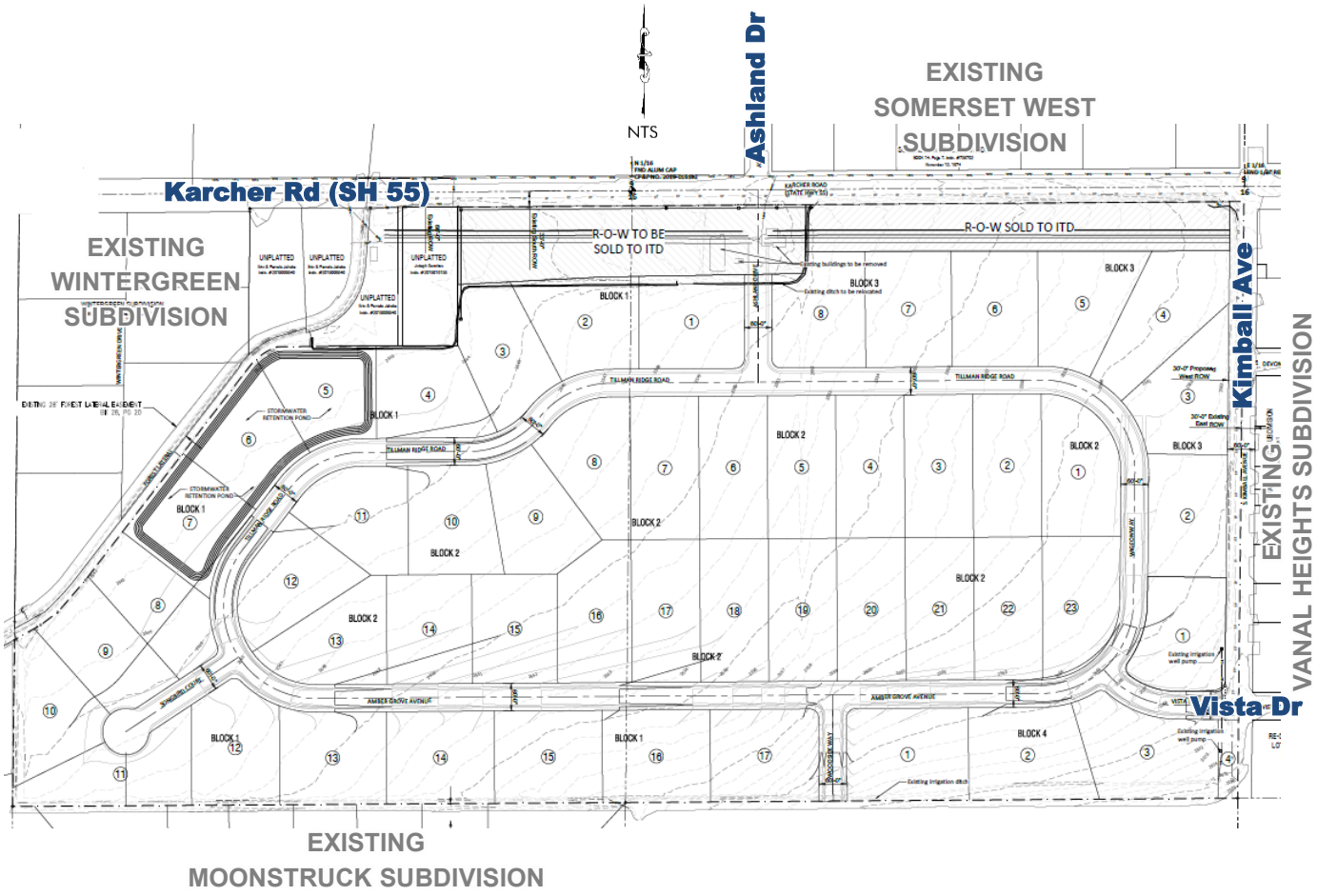
**Figure 1.1 – Site Location and Vicinity**



## 1.1 Proposed Development

**Figure 1.2** shows the preliminary site plan with the proposed site access locations. Tillman Ridge Subdivision is a proposed residential development estimated to contain 49 single-family lots. Based on the preliminary site plan, the development is proposing two full site accesses, one on Karcher Road aligning with Ashland Drive to the north and one on Kimball Avenue aligning with Vista Drive to the east. In addition, a stub road will be constructed to the south for connection for future development; no plans for development immediately south of Tillman Ridge Subdivision are known at this time. The anticipated build-out year is 2027 but this may change depending on the market conditions.

**Figure 1.2 – Preliminary Site Plan**



## 1.2 Study Approach

The TIS update was prepared following ITD *IDAPA 39.03.42 – Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way* and the *Highway Standards and Development Procedures* for the Association of Canyon County Highway District (ACCHD). The scope of this TIS update remains the same as the original TIS, which was determined through coordination with ITD and HD4.

## 1.3 Study Area

The following study area intersections were identified for the traffic impact analysis:

- Kimball Avenue and Karcher Road (SH 55) intersection
- S 10th Avenue and Karcher Road intersection
- Vista Drive and S 10th Avenue intersection
- Proposed site access intersection

## 1.4 Study Period

The analysis peak periods are the AM and PM peak hours of operation of the transportation system. The analysis years and traffic conditions are:

- 2024 Existing traffic
- 2027 Build-out year background traffic
- 2027 Build-out year total traffic
- 2032 Horizon year background traffic
- 2032 Horizon year total traffic

## 1.5 Analysis Methods and Performance Measure Thresholds

Intersection capacity analysis was performed using Synchro 12 (Version 12.2.3.12), which utilizes the HCM 7th Edition (HCM7) methodologies. All parameters used in the analysis were based on existing data when available or Synchro default values, when not available. Level of service (LOS) for intersections is based on the average delay of vehicles traveling through the intersection on a scale of A (best) to F (worst).

The study area roadways and intersections fall under the jurisdiction of HD4 and ITD. For this study, the minimum operational thresholds for HD4 intersections are LOS D with a maximum volume-to-capacity (v/c) ratio of 1.00 for any lane group. For ITD intersections, mitigation improvements are required for any individual movement either operating at LOS F or with a v/c ratio greater than 0.90 (*Memo No. 39, District 3 Operational Procedures*).

# 2.0 EXISTING CONDITIONS

## 2.1 Roadway Network, Intersection Control, and Lane Configuration

A brief description of the existing roadways within the study area is summarized in **Table 2.1** below. The roadway functional classification is based on the 2011 HD4 Functional Classification Map and the ITD iPlan OpenData ArcGIS database. **Figure 2.1** summarizes the study area intersection control and lane configuration.

**Table 2.1 – Existing Roadway Characteristics**

| Roadway | Functional Classification | Number of Lanes | Posted Speed Limit (mph) | Pedestrian Facilities |
|---|---|---|---|---|
| Karcher Rd (SH 55) | Principal Arterial (Statewide Route) | 2-3 | 55 | • No sidewalk or bicycle lanes |
| Kimball Ave | Local Road | 2 | 20 north / 25 south of Karcher Rd | • No sidewalk or bicycle lanes |
| S 10th Ave | Minor Arterial | 2 | 35 | • No sidewalk or bicycle lanes |
| Vista Dr | Local Road | 2 | 25 | • No sidewalk or bicycle lanes |
| Ashland Dr | Local Road | 2 | 20 | • No sidewalk or bicycle lanes |

## 2.2 Existing Traffic Volumes

Weekday AM and PM peak hour traffic counts were obtained at the study area intersections on November 14, 2024. The peak hour intersection turning movement counts were collected on a weekday for a 2-hour period at 15-minute intervals between 7:00 and 9:00 during the AM peak hour and between 4:00 and 6:00 PM during the PM peak hour. Existing intersection turning movement counts are included in the appendix. **Figure 2.2** summarizes the existing 2024 peak hour traffic.

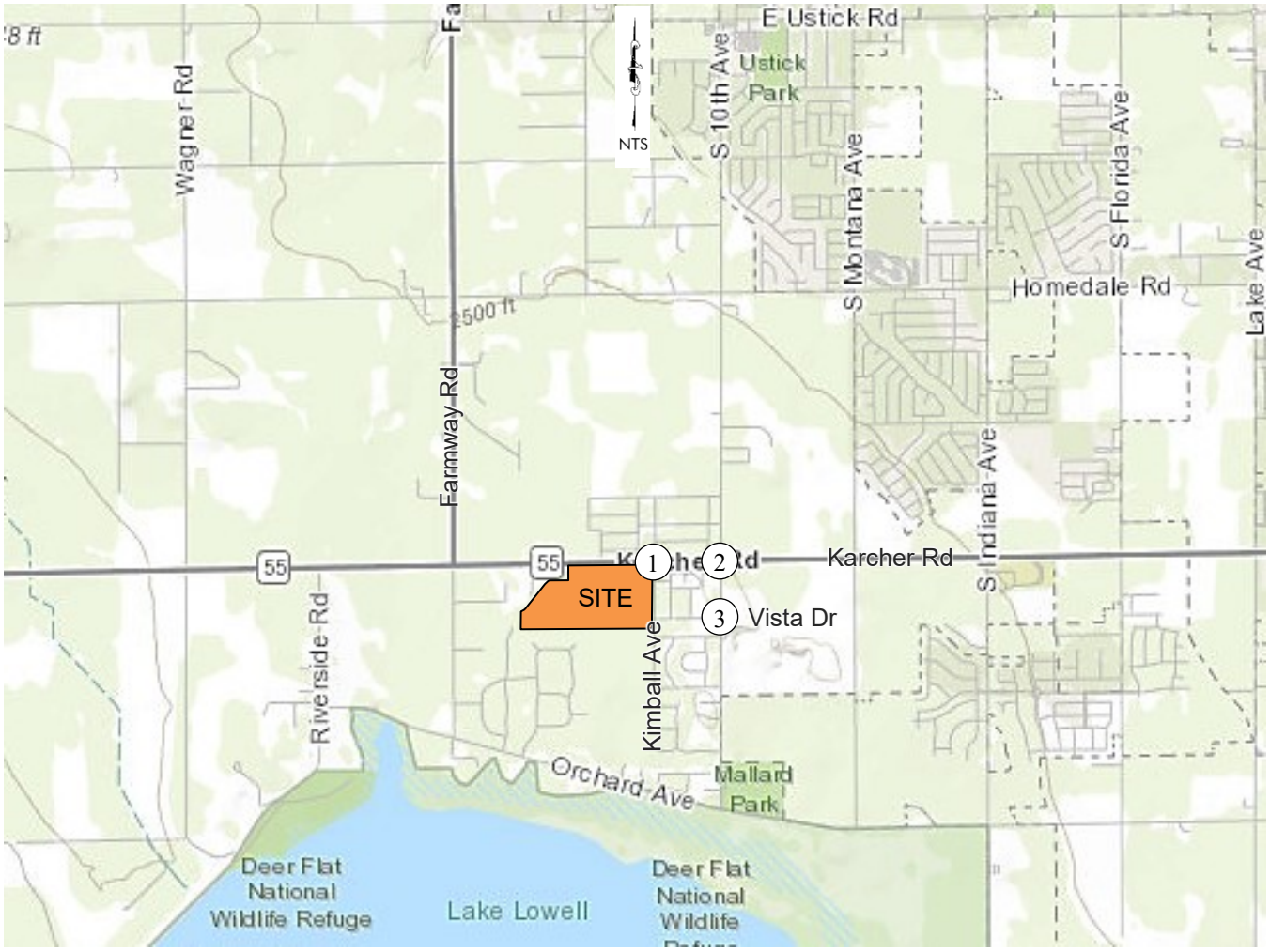
## 2.3 Intersection Crash Data

The most current five-year (2019-2023) crash data was obtained from the ITD Highway Safety website (https://itd.idaho.gov/safety). **Table 2.2** summarizes the crash data for the study area intersection. A review of the historical crash data shows no major crash patterns at the study area intersections. The study area intersection crash rates are less than 1.00 crashes per million entering vehicles (ACC/MEV)

**Table 2.2 – Intersection Crash Data (2019-2023)**

| Intersection | | Total Crashes | *Crash Severity* | | | Notes | Crash Rate (ACC/MEV) |
|---|---|---|---|---|---|---|---|
| | | | *PDO* | *Injury* | *Fatal* | | |
| (1) | Kimball Ave and Karcher Rd | 5 | 3 | 2 | 0 | • 4 rear-end crashes due to inattention or following too close | 0.21 |
| (2) | S 10th Ave and Karcher Rd | 16 | *8* | *8* | *0* | • 11 rear-end crashes, 4 angle crashes | 0.42 |
| (3) | Vista Dr and S 10th Ave | No reported crashes | | | | | |

**Figure 2.1 – 2024 Existing Intersection Control and Lane Configuration**



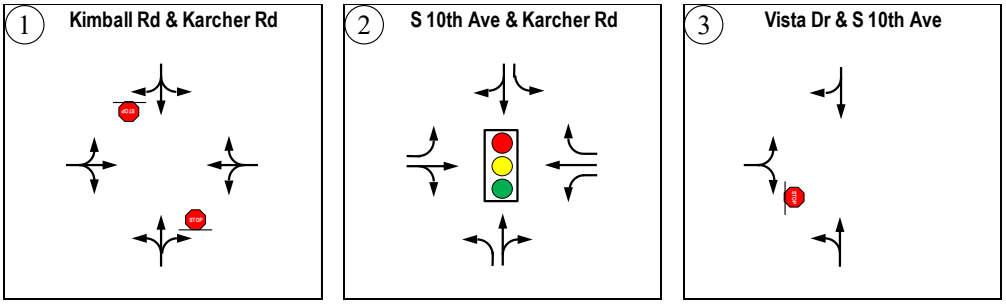
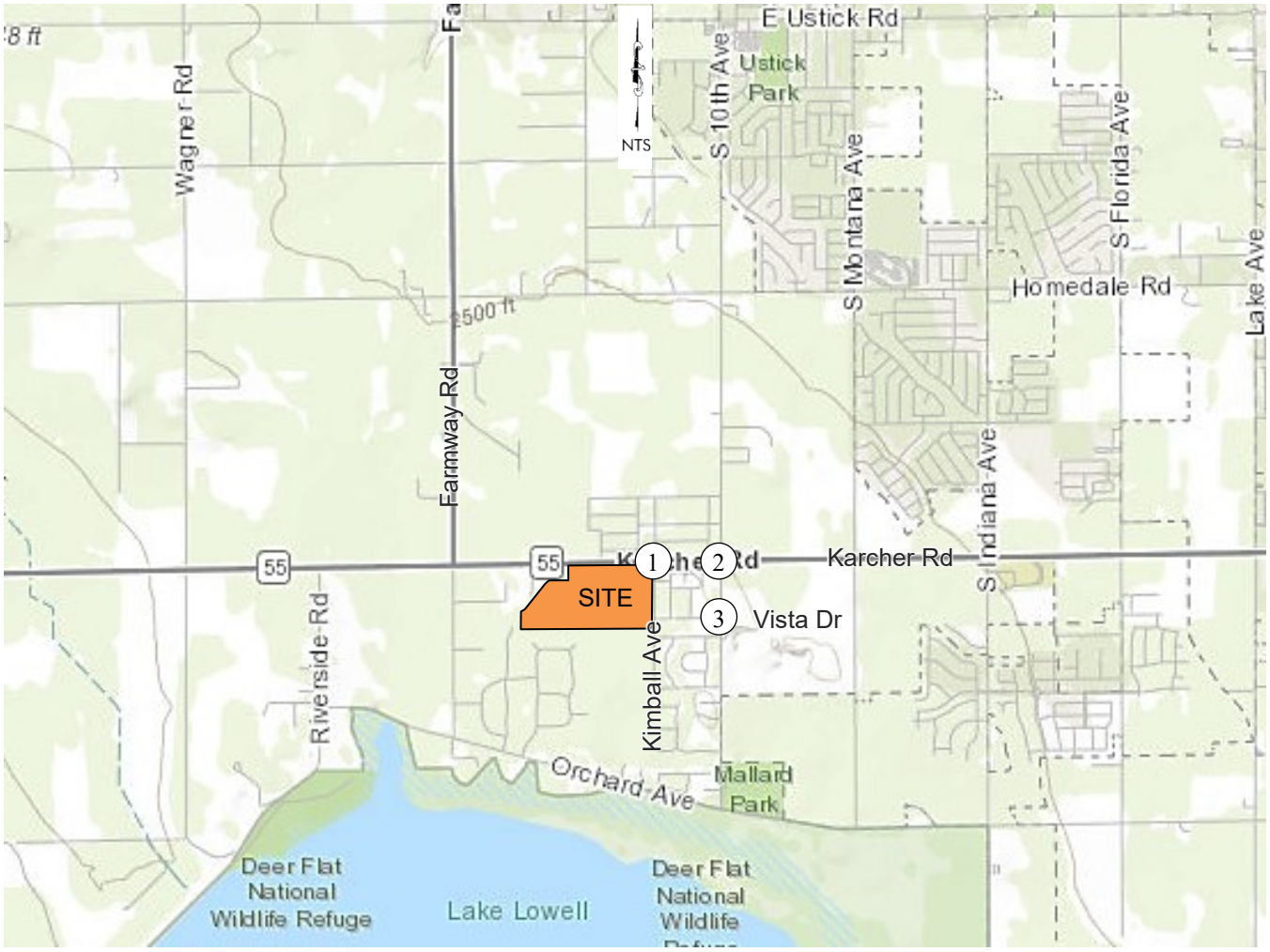
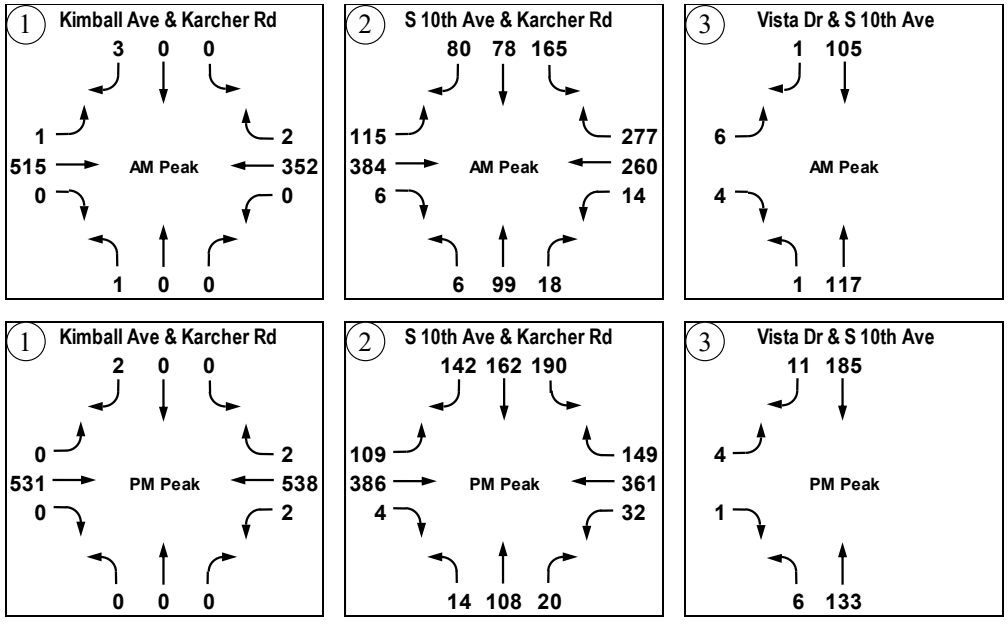



**Figure 2.2 – 2024 Existing Peak Hour Traffic**

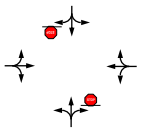
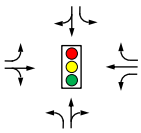
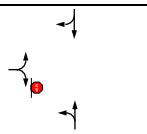


## 2.4 Intersection Operations

To determine the existing traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration and 2024 peak hour traffic. Copies of the analysis reports are included in the appendix. **Table 2.3** summarizes the intersection capacity analysis results. All study area intersections currently meet HD4 and ITD minimum operational thresholds under 2024 existing traffic conditions.

**Table 2.3 – Intersection Operations – 2024 Existing Traffic**

| Intersection | | Control / Lane | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd |  | NB | C | 21 | 0.01 | A | - | - |
| | | | EB | A | 10 | < 0.01 | A | - | - |
| | | | WB | A | - | - | A | 9 | < 0.01 |
| | | | SB | B | 11 | 0.01 | B | 12 | < 0.01 |
| 2 | S 10th Ave and Karcher Rd |  | Intersection | C | 21 | 0.65 | C | 21 | 0.69 |
| | | | EBL | C | 27 | 0.78 | C | 27 | 0.78 |
| | | | EBTR | B | 17 | 0.76 | B | 17 | 0.75 |
| | | | WBL | C | 30 | 0.46 | C | 27 | 0.51 |
| | | | WBT | B | 19 | 0.68 | B | 19 | 0.79 |
| | | | WBR | C | 21 | 0.80 | B | 16 | 0.39 |
| | | | NBL | C | 33 | 0.43 | C | 29 | 0.46 |
| | | | NBTR | C | 24 | 0.65 | C | 23 | 0.63 |
| | | | SBL | C | 33 | 0.81 | C | 29 | 0.80 |
| | | | SBTR | B | 18 | 0.44 | B | 20 | 0.76 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | A | 10 | 0.02 | B | 11 | 0.01 |
| | | | SB | - | - | - | - | - | - |

## 2.5 Intersection Mitigation

All study area intersections currently meet HD4 and ITD minimum operational thresholds. None of the unsignalized study area intersections require turn lanes based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide* or ITD turn lane guidelines. As a result, no intersection improvements are needed to mitigate 2024 existing traffic operations.

# 3.0 2027 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS

## 3.1 Roadway Network

ITD completed the study and design of the Karcher Road (SH 55) corridor improvements between Farmway Road and Middleton Road (*SH-55, Farmway Road to Middleton Road Project)*. Based on the current project design plans, the following improvements are included on Karcher Road within the study area:

- Widen Karcher Road to two travel lanes in each direction with a two-way left-turn lane
- Close the existing approaches of Kimball Avenue and Ellis Avenue
- S 10th Avenue and Karcher Road intersection – widen the intersection and upgrade the signal with the following lanes:
  - Karcher Road approaches – one left-turn lane two through lanes, and one right-turn lane
  - S 10th Avenue approaches – one left-turn and one shared through/right-turn lane (existing)
- Ashland Drive and Karcher Road intersection – widen intersection with the following lanes:
  - Eastbound approach – one left-turn lane and two through lanes
  - Westbound approach – two through lanes and one right-turn lane
  - Southbound approach – one shared lane (existing)

According to the project webpage (https://itdprojects.idaho.gov/pages/55Farmway), the improvements are under construction and are anticipated to be completed by 2027. **Figure 3.1** summarizes the intersection control and lane configuration for 2027 background traffic conditions with the SH 55 corridor improvements.

## 3.2 Background Traffic

Background traffic growth from 2024 to 2027 was estimated by extrapolating the 2024 existing traffic counts with the following annual growth rates:

- Karcher Road (SH 55) – 6.0%
- All other study area roadways – 2.0%

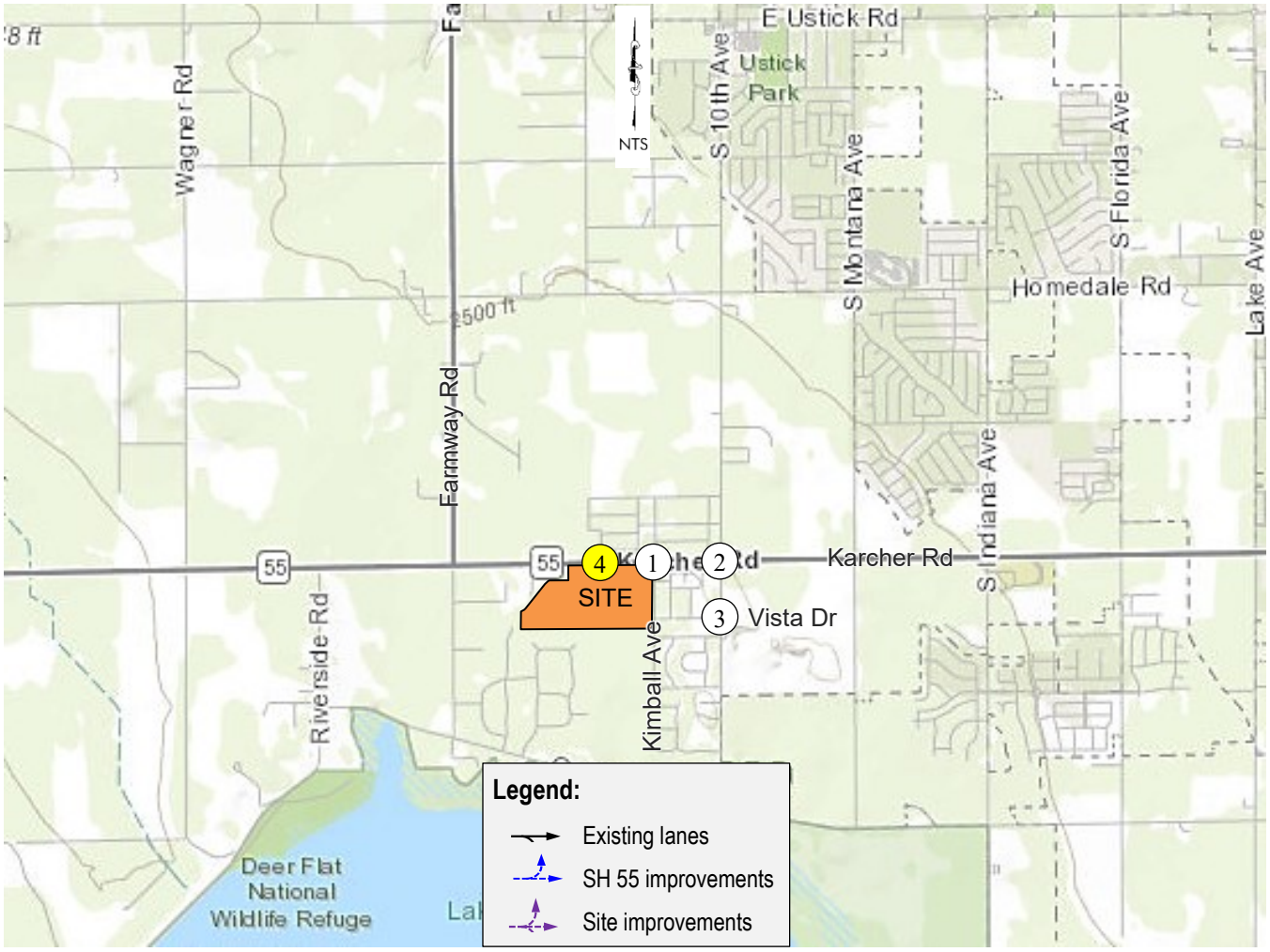
These annual traffic growth rates are based on COMPASS forecasts between 2019 and 2030 and other accepted TIS in the area. COMPASS forecasts are included in the appendix. In addition, two in-process developments in the area that are expected to contribute off-site traffic to the study area intersections were included in background traffic:

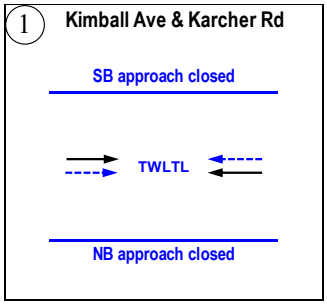
- Passero Ridge Subdivision – A residential development with 335 single-family lots located north of Orchard Avenue between S 10th Avenue and Montana Avenue with a build-out year of 2026
  - Approximately 10% (29 DU) of Passero Ridge Subdivision has been constructed/occupied
- Norse Landing Subdivision – A residential development with 34 single-family lots located north of Orchard Avenue between Moonstruck Drive and Kimball Avenue

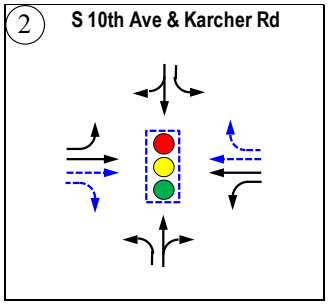
With the corridor widening and road closures as discussed above, traffic north of Karcher Road is anticipated to shift to Ashland Drive or 10th Avenue, depending on their origin/destination. Kimball Avenue traffic south of Karcher Road and Ellis Drive traffic will be required to shift to 10th Avenue until another connection to Karcher Road west of the Kimball Avenue location is available.

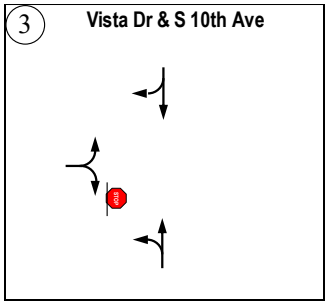
**Figure 3.2** summarizes the projected 2027 AM and PM peak hour background traffic at the study area intersections.

**Figure 3.1 – 2027 Intersection Control and Lane Configuration**



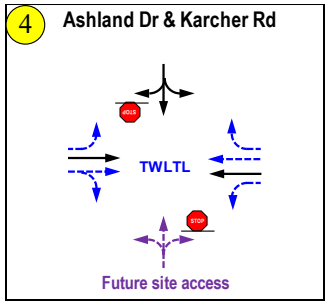
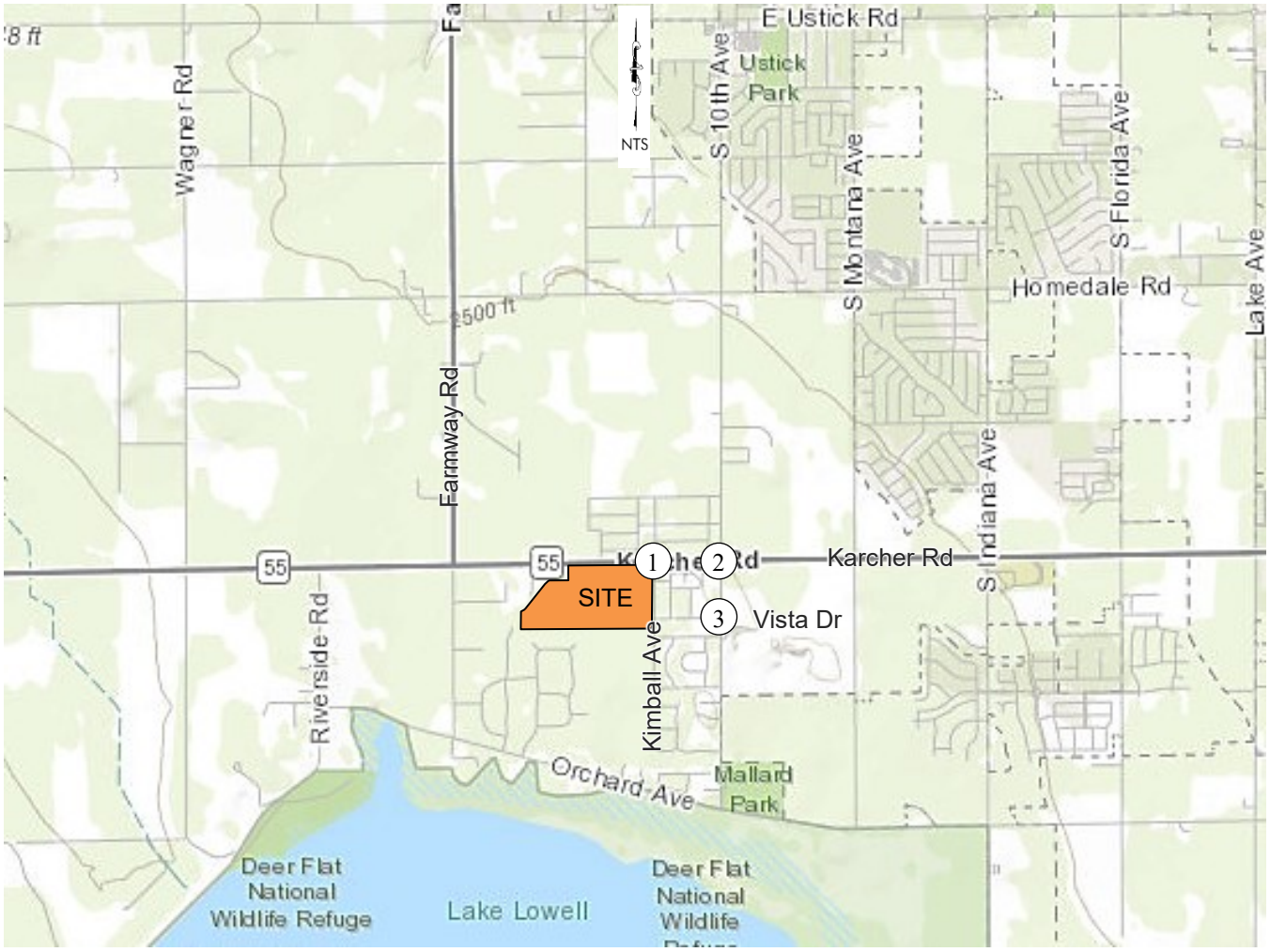
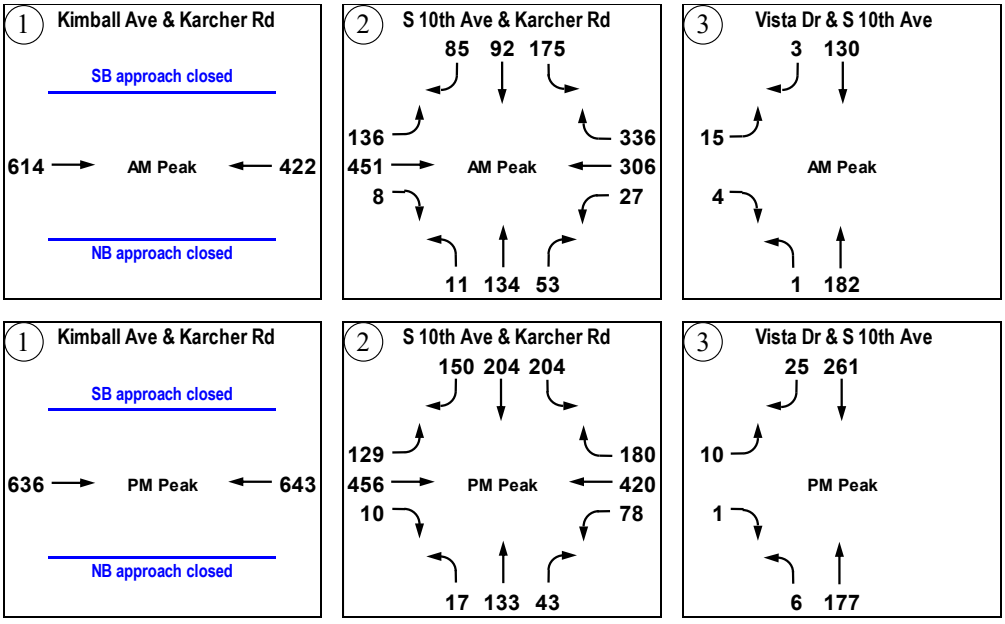



**Figure 3.2 – 2027 Build-Out Year Peak Hour Background Traffic**

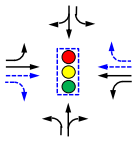


## 3.3 Intersection Operations

To determine the 2027 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 3.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, all study area intersections are anticipated to meet minimum operational thresholds under 2027 background traffic conditions.

**Table 3.1 – Intersection Operations – 2027 Build-Out Year Background Traffic**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 25 | 0.61 | C | 21 | 0.68 |
| | | | EBL | D | 38 | 0.80 | C | 26 | 0.78 |
| | | | EBT | B | 16 | 0.41 | B | 18 | 0.62 |
| | | | EBR | B | 14 | 0.02 | B | 16 | 0.03 |
| | | | WBL | C | 35 | 0.53 | C | 26 | 0.68 |
| | | | WBT | B | 19 | 0.36 | B | 20 | 0.65 |
| | | | WBR | C | 24 | 0.85 | B | 20 | 0.63 |
| | | | NBL | D | 37 | 0.45 | C | 28 | 0.48 |
| | | | NBTR | C | 29 | 0.77 | C | 22 | 0.69 |
| | | | SBL | D | 47 | 0.83 | C | 29 | 0.81 |
| | | | SBTR | B | 20 | 0.42 | B | 18 | 0.77 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.03 | B | 12 | 0.02 |
| | | | SB | - | - | - | - | - | - |

[1] Intersection meets minimum operational thresholds without SH 55 corridor improvements

## 3.4 Intersection Mitigation

All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2027 background traffic conditions. The Vista Drive and S 10th Avenue intersection is not anticipated to warrant any turn lane based on NCHRP Report 457 turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2027 build-out year background traffic operations.

# 4.0 2027 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS

## *4.1 Roadway Network*

The study area roadways and intersections are expected to remain the same as 2027 background traffic conditions as shown in Figure 3.1. The development is planning to improve Kimball Avenue and Karcher Road along the site frontages. In addition, Tillman Ridge Subdivision is proposing to construct the south leg of the Ashland Drive and Karcher Road intersection, as well as constructing the west leg of the Vista Drive and Kimball Avenue intersection for site access.

## *4.2 Site Traffic*

### 4.2.1 Trip Generation

Site trip generation is estimated using the procedures recommended in the latest edition of the *Trip Generation Manual (11th Edition)*, published by the Institute of Transportation Engineers (ITE). **Table 4.1** summarizes the site trip generation. At full build-out, Tillman Ridge Subdivision is estimated to generate 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour.

**Table 4.1 – Build-Out Site Trip Generation Summary**

| Land Use | ITE Code | Size | Unit | Period | Total Trips | Entering | | Exiting | |
|---|---|---|---|---|---|---|---|---|---|
| Single-Family Detached Housing | 210 | 49 | DU | Weekday Daily (vpd) | 523 | 50% | 261 | 50% | 262 |
| | | | | AM Peak Hour (vph) | 39 | 25% | 9 | 75% | 30 |
| | | | | PM Peak Hour (vph) | 51 | 63% | 32 | 37% | 19 |

### 4.2.2 Trip Capture

Based on ITE methodologies, the development is not expected to retain trips internally within the site. No reduction for internal trip capture was assumed in the traffic analysis.

### 4.2.3 Pass-By Trips

The development is not expected to generate pass-by trips. No pass-by trips were assumed in the traffic analysis.

### 4.2.4 Modal Split

For traffic analysis purposes, all trips generated by the development were assumed to be made by personal and commercial vehicles. Some children residing in the development are anticipated to walk/bike to the existing/proposed schools within the vicinity of the site

### 4.2.5 Trip Distribution and Assignment

Site traffic was distributed and assigned to the external roadway system based on current travel patterns, site layout, and the general location of the site within the area. **Figure 4.1** shows the estimated site traffic distribution patterns for the proposed development. **Figure 4.2** and **Figure 4.3** summarize the estimated AM and PM peak hour site traffic with the proposed accesses as shown in the site plan.

## *4.3 Total Traffic*

The 2027 site traffic is added to the 2027 background traffic as determined above to obtain the 2027 total traffic. **Figure 4.4** and **Figure 4.5** summarize the estimated 2027 peak hour total traffic at the study area intersections. **Table 4.2** summarizes the proportionate share of the site traffic at each study area intersection.

**Table 4.2 – Build-Out Site Traffic Percentage at Study Area Intersections**

| Intersection | | % Site Traffic of 2027 Total Traffic | | |
|---|---|---|---|---|
| | | AM Peak | PM Peak | Average |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | |
| 2 | S 10th Ave and Karcher Rd | 1.8% | 2.1% | 1.9% |
| 3 | Vista Dr and S 10th Ave | 3.7% | 3.0% | 3.3% |
| 4 | Ashland Dr/Access and Karcher Rd | 2.5% | 2.8% | 2.7% |

**Figure 4.1 – Estimated Site Traffic Distribution Patterns**

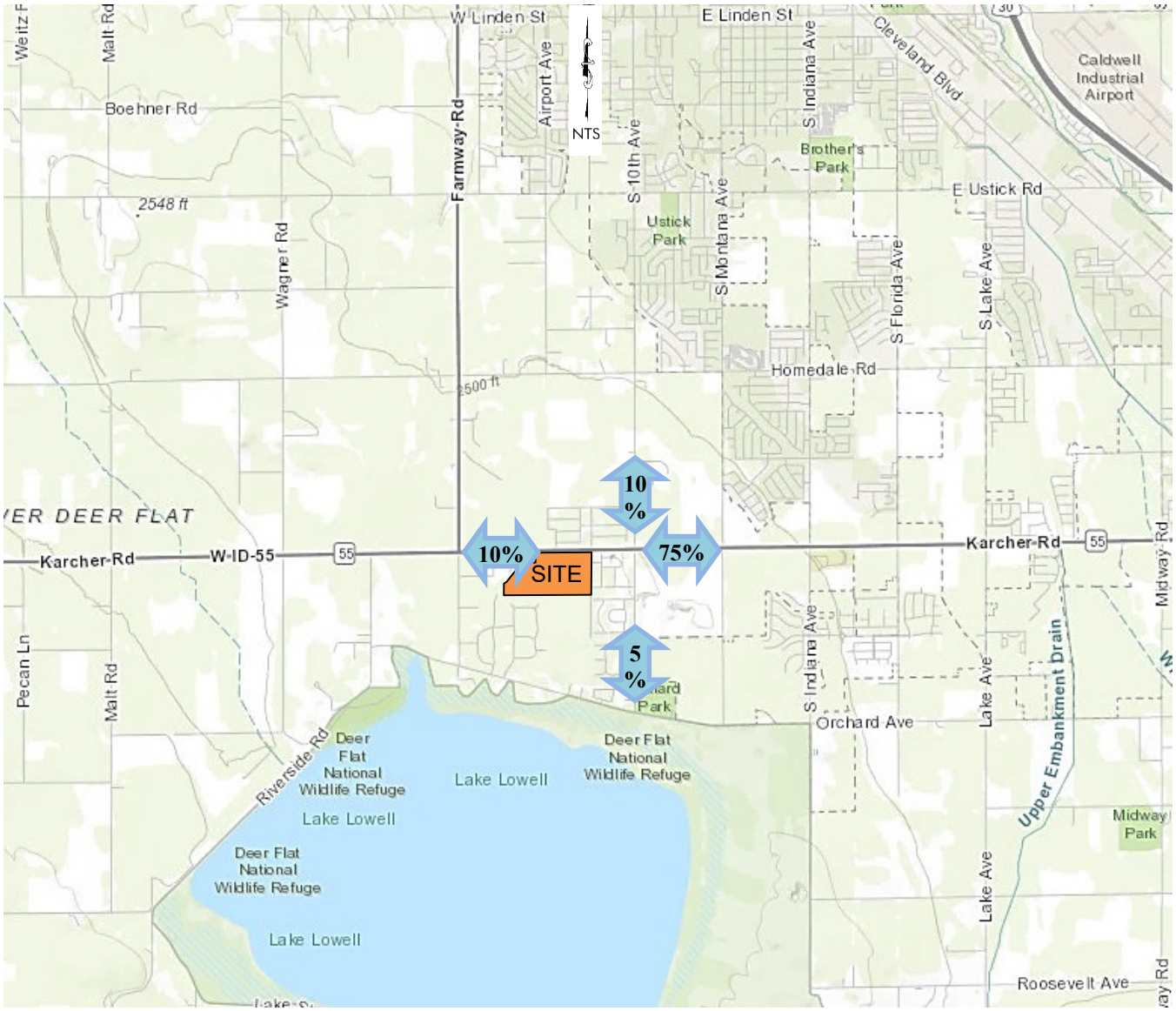
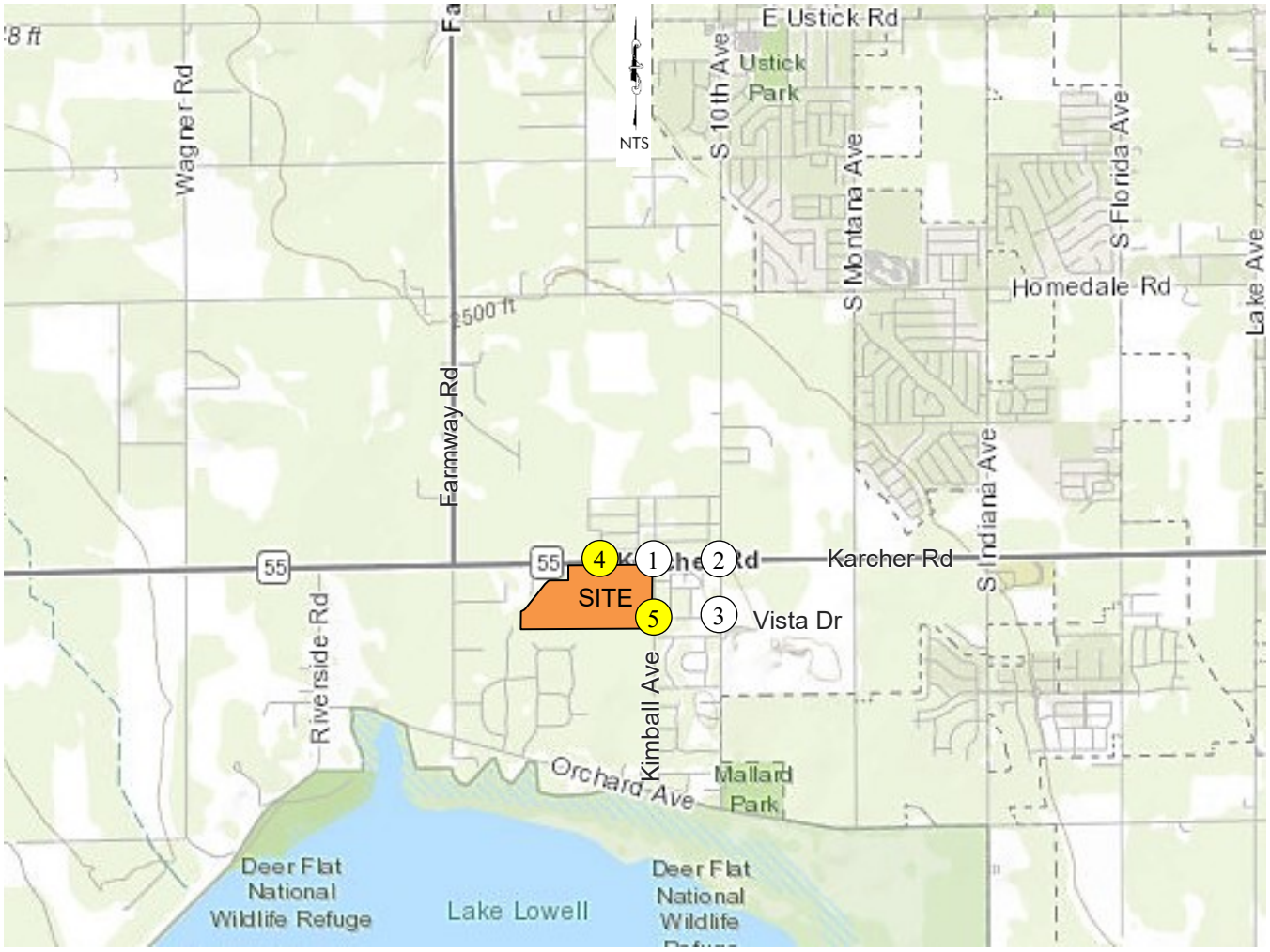


**Figure 4.2 – 2027 Build-Out Year AM Peak Hour Site Traffic**



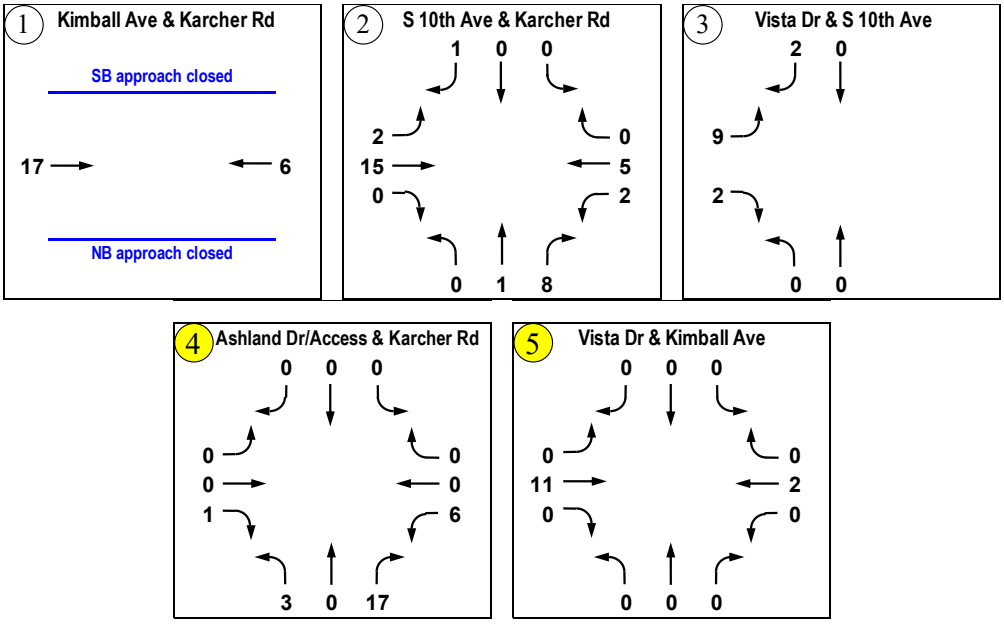
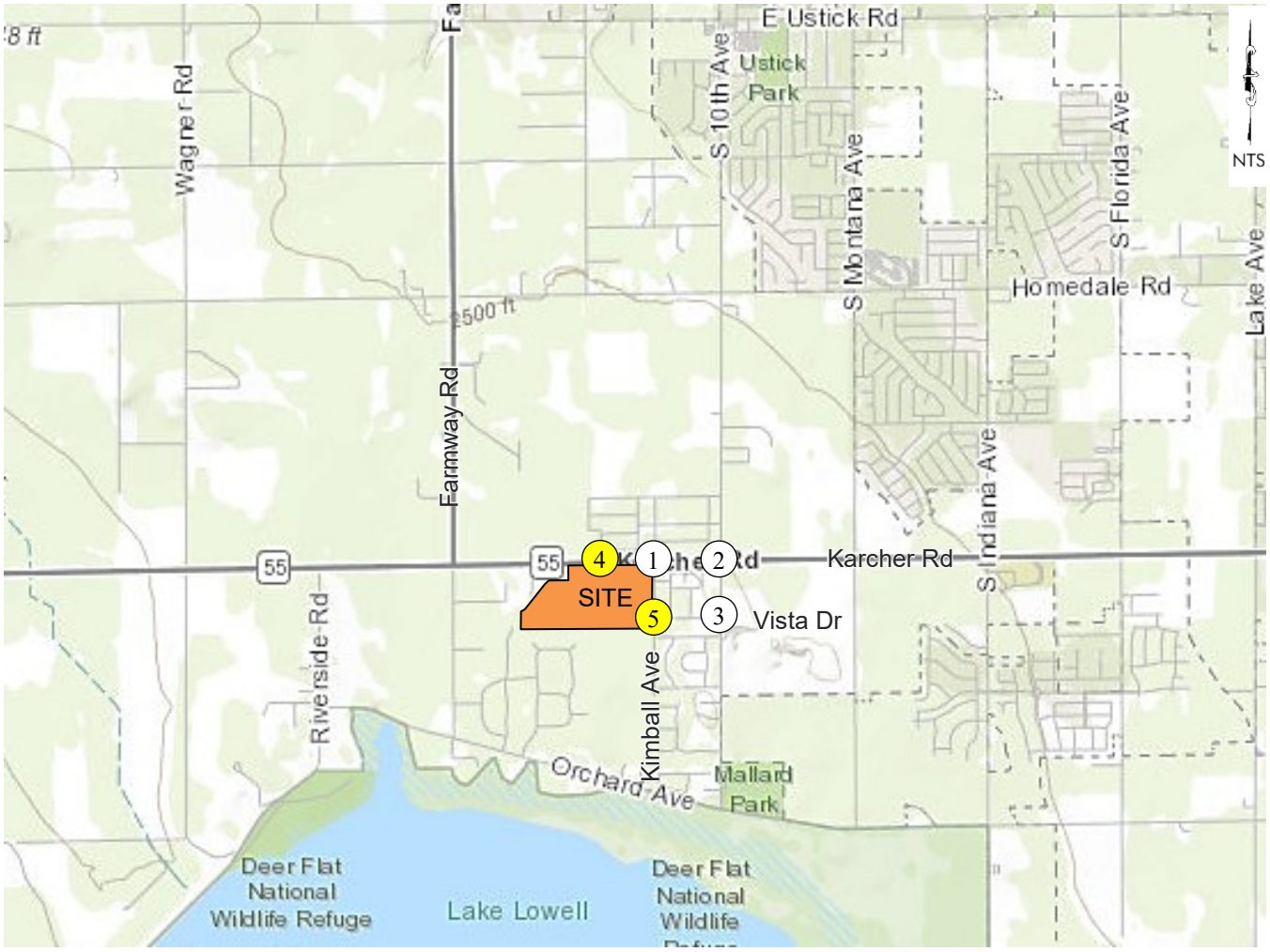



**Figure 4.3 – 2027 Build-Out Year PM Peak Hour Site Traffic**



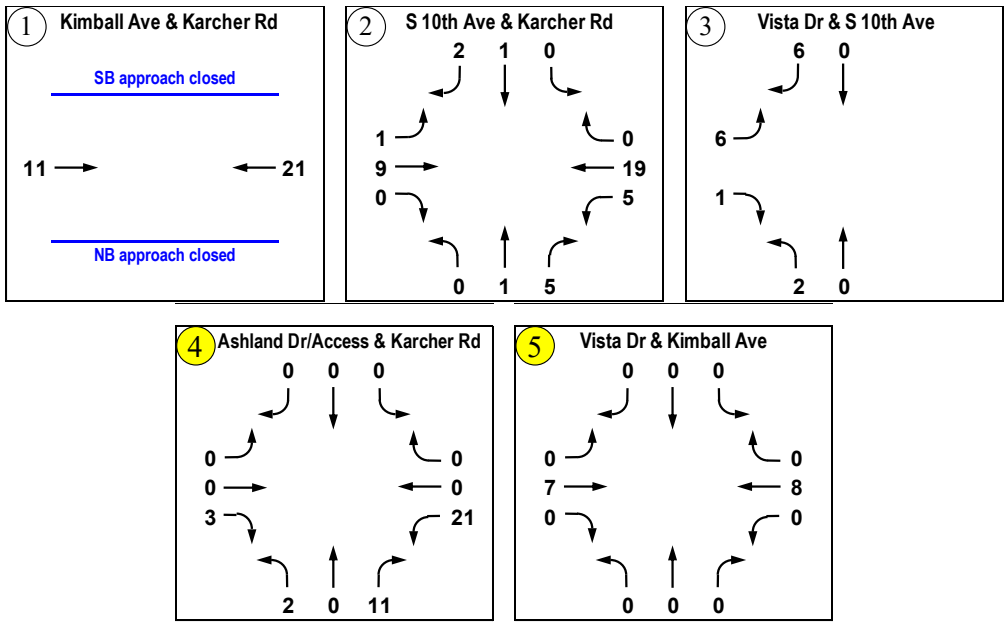
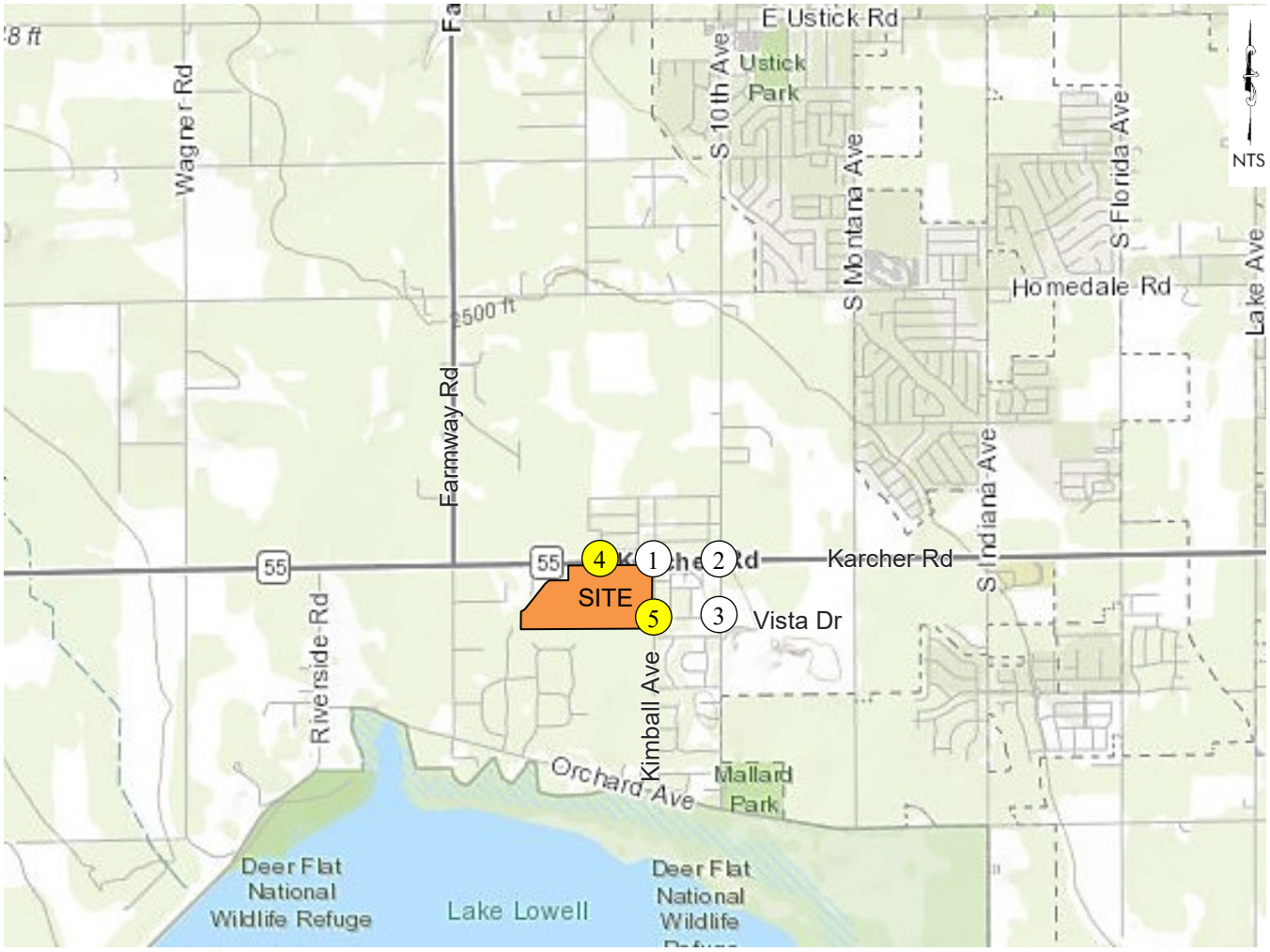



**Figure 4.4 – 2027 Build-Out Year AM Peak Hour Total Traffic**



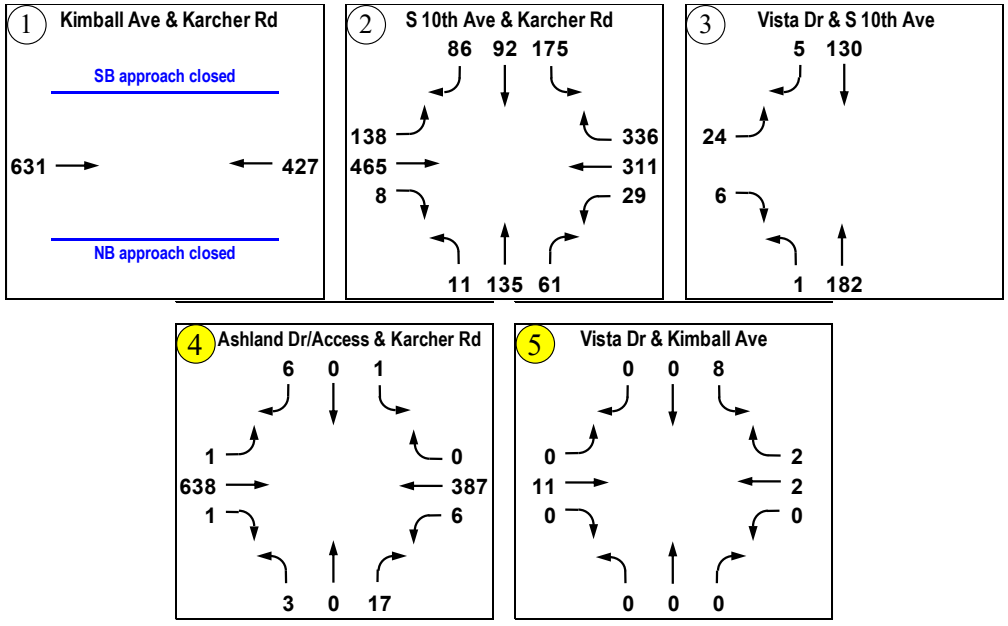
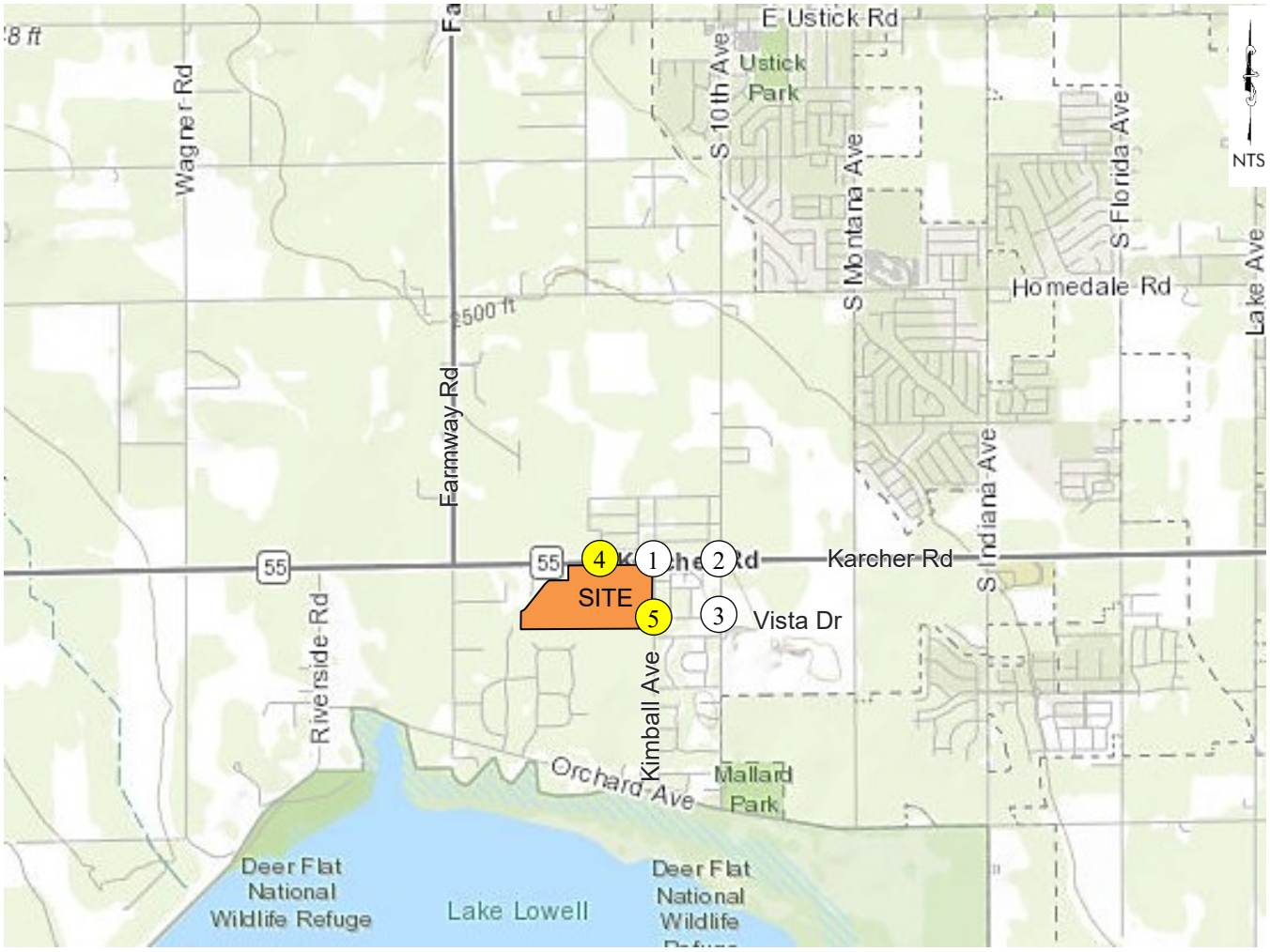
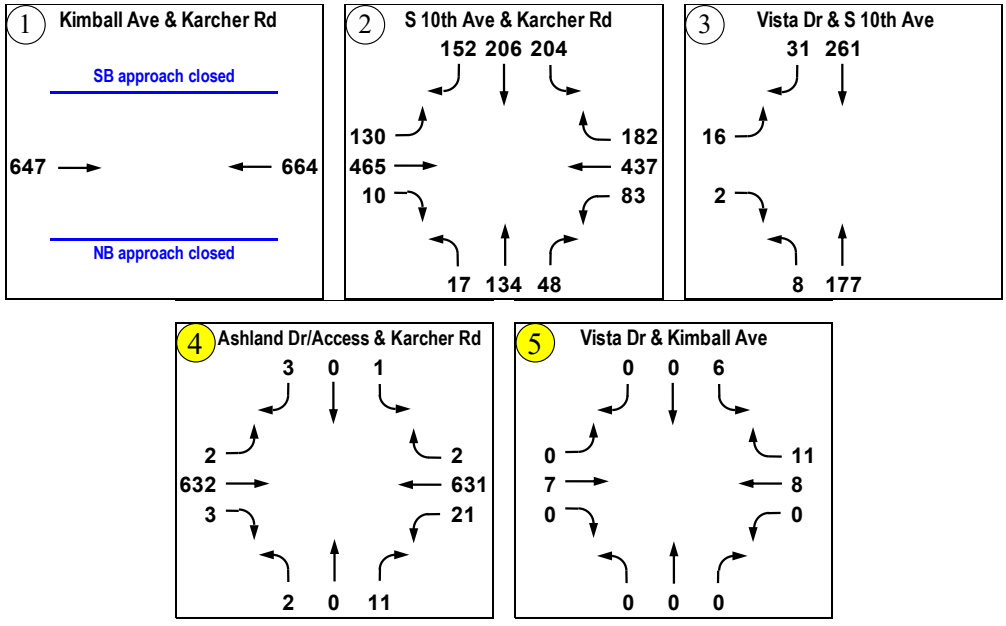



**Figure 4.5 – 2027 Build-Out Year PM Peak Hour Total Traffic**

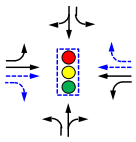
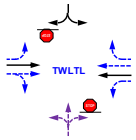


## 4.4 Intersection Operations

To determine the 2027 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 4.3** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2027 total traffic conditions.

**Table 4.3 – Intersection Operations – 2027 Build-Out Year Total Traffic**

| Intersection | | Control / Lane<br>SH 55 Improvements<br>Site Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 25 | 0.62 | C | 21 | 0.68 |
| | | | EBL | D | 40 | 0.80 | C | 26 | 0.79 |
| | | | EBT | B | 17 | 0.43 | B | 19 | 0.62 |
| | | | EBR | B | 14 | 0.02 | B | 16 | 0.03 |
| | | | WBL | D | 35 | 0.54 | C | 27 | 0.71 |
| | | | WBT | B | 20 | 0.37 | B | 20 | 0.66 |
| | | | WBR | C | 25 | 0.85 | C | 20 | 0.62 |
| | | | NBL | D | 38 | 0.45 | C | 29 | 0.48 |
| | | | NBTR | C | 29 | 0.78 | C | 22 | 0.70 |
| | | | SBL | D | 48 | 0.83 | C | 30 | 0.81 |
| | | | SBTR | C | 20 | 0.41 | B | 18 | 0.77 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.05 | B | 12 | 0.04 |
| | | | SB | - | - | - | - | - | - |
| 4 | Ashland Dr [1] and Karcher Rd |  | NB | B | 12 | 0.04 | B | 12 | 0.02 |
| | | | EBL | A | 8 | < 0.01 | A | 9 | < 0.01 |
| | | | EBT | - | - | - | - | - | - |
| | | | EBR | - | - | - | - | - | - |
| | | | WBL | A | 9 | 0.01 | A | 9 | 0.02 |
| | | | WBT | - | - | - | - | - | - |
| | | | WBR | - | - | - | - | - | - |
| | | | SB | B | 10 | 0.01 | B | 12 | 0.01 |

[1] Intersection meets minimum operational thresholds without SH 55 corridor improvements

## 4.5 Intersection Mitigation

All study area intersections are anticipated to continue to meet HD4 and ITD minimum operational thresholds under 2027 build-out total traffic conditions. The unsignalized study area intersections are not anticipated to warrant any turn lane based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2027 build-out year total traffic operations.

The Ashland Drive and Karcher Road intersection is anticipated to warrant a westbound left-turn lane if the SH 55 corridor improvements are not constructed.

The Vista Drive and Kimball Avenue intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road. The intersection is anticipated to meet minimum operational thresholds.

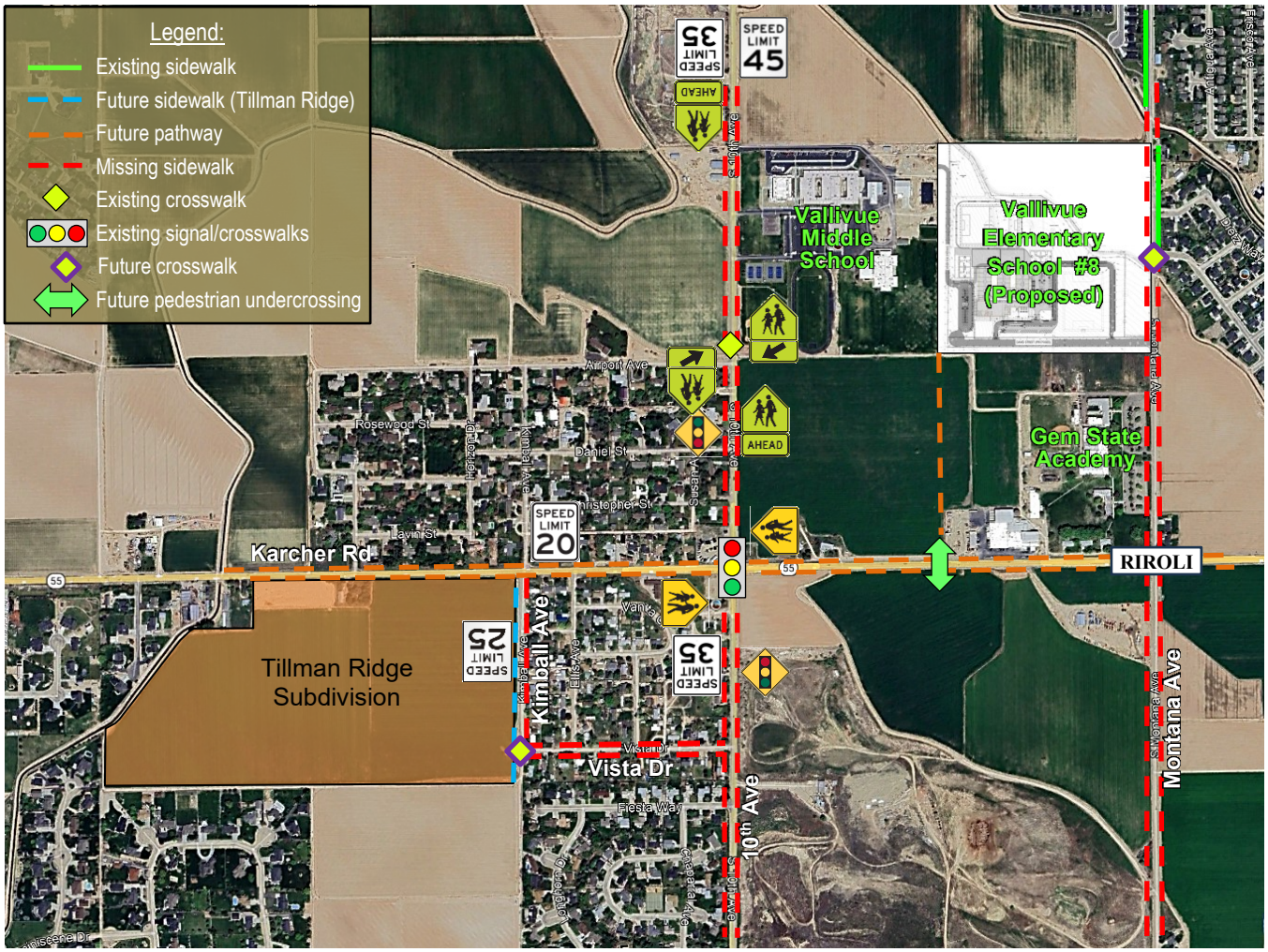
## 4.6 School Routes and Crossings

Tillman Ridge Subdivision is located approximately ½ mile southwest of the existing Vallivue Middle School and the proposed Vallivue Middle School #8. Some children residing in the development are expected to walk/bike to/from school. **Figure 4.6** summarizes the existing school facilities and potential school routes between Tillman Ridge Subdivision and the schools. No existing sidewalks were observed along the school routes. The development is expected to construct sidewalks on Kimball Avenue along the site frontages. Sidewalk on S 10th Avenue will be constructed with future development northeast of the S 10th Avenue and Karcher Road intersection or future roadway widening of S 10th Avenue. The future undercrossing and pathways along Karcher Road will be constructed with the SH 55 corridor improvements.

Based on the anticipated school routes, existing signage, and crossings, the following improvements are suggested to better accommodate schoolchildren circulation between the site and schools:

- Upgrade the existing School Crossing Assembly signs on Karcher Avenue at S 10th Avenue from traditional yellow to fluorescent yellow-green color as stated in the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD)
- Install a new crosswalk on the north side of the Kimball Avenue and Vista Drive intersection
- Install sidewalk on the east side of S 10th Avenue between Vallivue Middle School and Karcher Road
- Install sidewalk on the west side of S 10th Avenue between Karcher Road and Vista Drive
- Install sidewalk on the north side of Vista Drive

**Figure 4.6 – School Route, Crossings, and Facilities**



## 4.7 Site Access and Circulation

**Figure 4.7** shows the proposed site access locations, internal circulation, and ADT estimate. Tillman Ridge Subdivision is proposing two full accesses, one on Karcher Road to align with the existing Ashland Drive, and one on Kimball Avenue to align with the existing Vista Drive. A stub road is also proposed to the south for future connectivity with the existing vacant parcel.

Site access spacing on Kimball Avenue, a 25-mph local road along the site frontage, is governed by HD4 and is determined by the Highway Standards and Development Procedures for the Association of Canyon County Highway Districts (ACCHD). According to HD4 access spacing requirements, the minimum spacing is:

- 1/8-mile (660 feet) local road spacing on same side of roadway
- 1/16-mile (330 feet) local road spacing on opposite side of roadway
- 270 feet driveway spacing for a minor generator taking access on a local road on same side of roadway

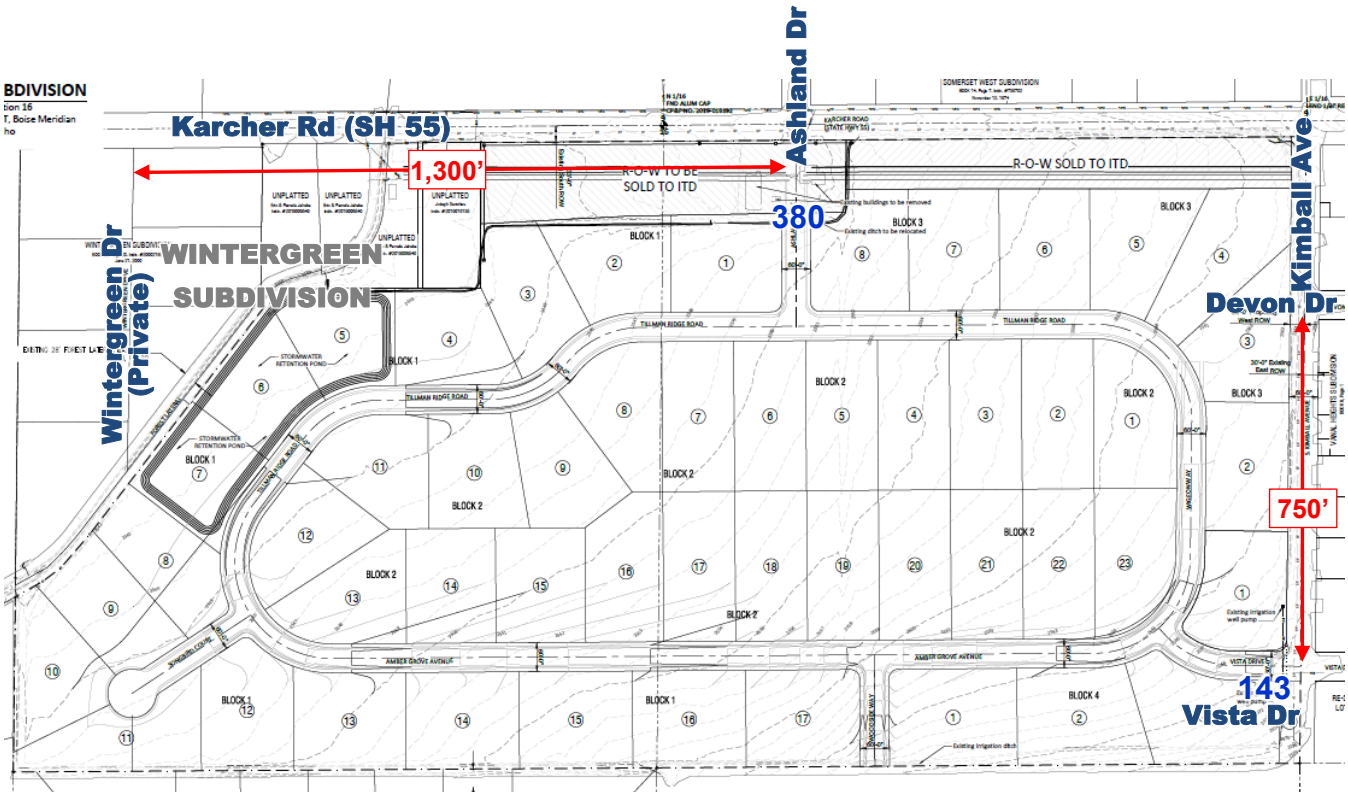
Site access spacing on Karcher Road (SH 55), a 55-mph principal arterial statewide route along the site frontage, is governed by ITD and is determined by IDAPA 39.03.42 *Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way*. The minimum spacing requirements on Karcher Road along the site frontage are:

- 1,320 feet public road spacing
- 790 feet driveway distance upstream from public road intersection
- 500 feet driveway distance downstream from unsignalized public road intersection
- 500 feet separation distance between unsignalized accesses

Both proposed site access intersections meet access spacing guidelines as full-movement accesses.

The proposed internal roadways are local streets with front-on housing. All internal local roadways are expected to carry less than 1,000 vehicles per weekday (vpd). Tillman Ridge Subdivision is forecasted to add 143 trips per weekday to Vista Drive under 2027 build-out conditions.

**Figure 4.7 – Site Access, Circulation, and ADT Estimate with Full Access on Karcher Road**

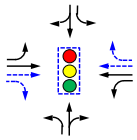


## 4.8 Alternate Site Access Scenario

HD4 requested additional traffic impact analysis without a direct site access on Karcher Road. This site access scenario will divert all site traffic onto Vista Drive and primarily impacts two study area intersections, the Vista Drive and S 10th Avenue intersection and the S 10th Avenue and Karcher Road intersection.

**Table 4.4** summarizes the intersection capacity analysis results without a direct site access on Karcher Road. The impacted intersections are anticipated to meet minimum operational thresholds. No additional improvements are needed.

**Table 4.4 – Intersection Operations – 2027 Build-Out Year Total Traffic (No Direct Access to Karcher Road)**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| ② | S 10th Ave and Karcher Rd |  | Intersection | C | 26 | 0.64 | C | 22 | 0.70 |
| | | | EBL | D | 41 | 0.80 | C | 26 | 0.78 |
| | | | EBT | B | 17 | 0.42 | B | 19 | 0.66 |
| | | | EBR | B | 15 | 0.02 | B | 16 | 0.04 |
| | | | WBL | D | 36 | 0.57 | C | 27 | 0.78 |
| | | | WBT | C | 20 | 0.37 | B | 20 | 0.65 |
| | | | WBR | C | 26 | 0.85 | C | 21 | 0.64 |
| | | | NBL | D | 38 | 0.47 | C | 28 | 0.48 |
| | | | NBTR | C | 30 | 0.79 | C | 22 | 0.71 |
| | | | SBL | D | 50 | 0.84 | C | 30 | 0.81 |
| | | | SBTR | C | 20 | 0.40 | B | 18 | 0.75 |
| ③ | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.09 | B | 13 | 0.06 |
| | | | SB | - | - | - | - | - | - |

# 5.0 2032 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS

## 5.1 Roadway Network

The study area roadways and intersections are anticipated to remain the same as 2027 background traffic conditions as shown in Figure 3.1.

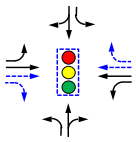
## 5.2 Background Traffic

2032 background traffic was estimated by extrapolating the 2024 existing traffic counts with the annual growth rates and including off-site traffic as discussed in Section 3.2. **Figure 5.1** summarizes the 2032 AM and PM peak hour background traffic at the study area intersections.

## 5.3 Intersection Operations

To determine the 2032 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the analysis reports are included in the appendix. **Table 5.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, all study area intersections are anticipated to continue to meet minimum operational thresholds under 2032 background traffic conditions.

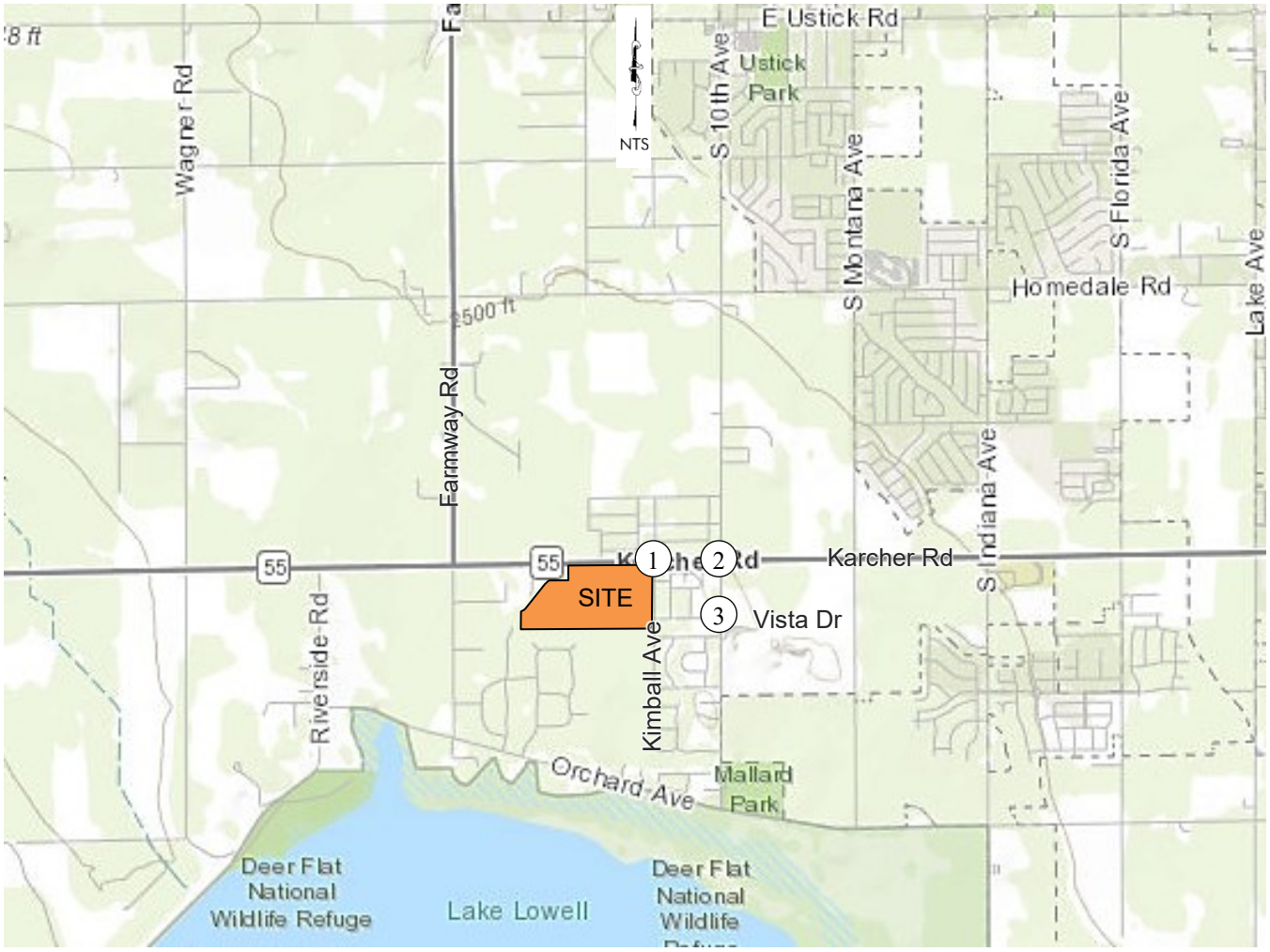
**Table 5.1 – Intersection Operations – 2032 Horizon Year Background Traffic**

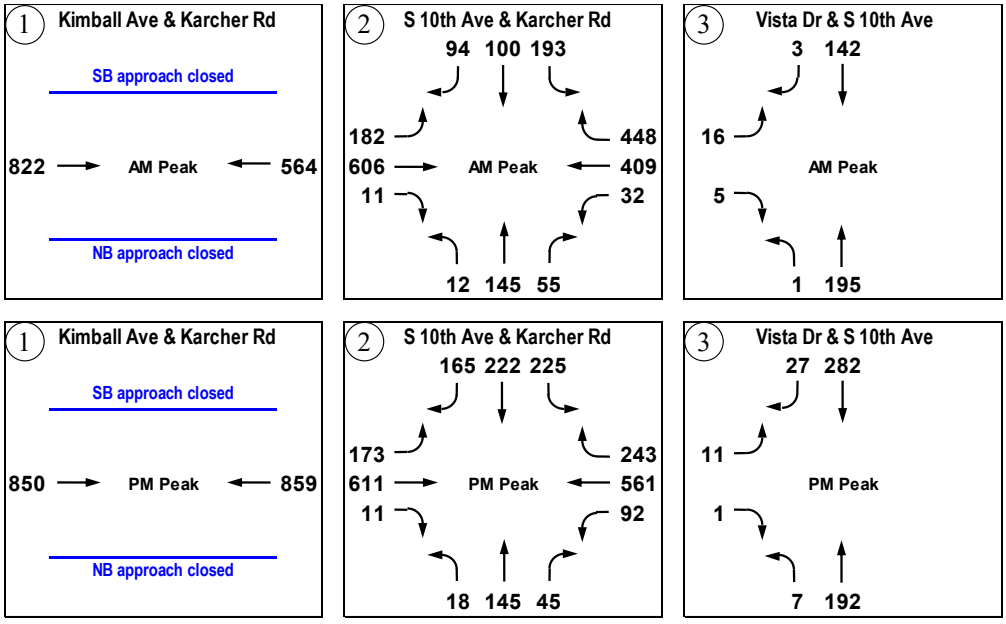
| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave and Karcher Rd |  | Intersection | C | 25 | 0.64 | C | 23 | 0.69 |
| | | | EBL | D | 38 | 0.84 | C | 29 | 0.80 |
| | | | EBT | B | 18 | 0.49 | B | 20 | 0.64 |
| | | | EBR | B | 15 | 0.02 | B | 16 | 0.02 |
| | | | WBL | D | 43 | 0.59 | C | 33 | 0.78 |
| | | | WBT | C | 24 | 0.46 | C | 23 | 0.73 |
| | | | WBR | C | 20 | 0.71 | B | 14 | 0.42 |
| | | | NBL | D | 45 | 0.47 | C | 34 | 0.49 |
| | | | NBTR | D | 36 | 0.81 | C | 27 | 0.74 |
| | | | SBL | D | 37 | 0.85 | C | 28 | 0.82 |
| | | | SBTR | C | 24 | 0.44 | C | 22 | 0.80 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.04 | B | 12 | 0.03 |
| | | | SB | - | - | - | - | - | - |

## 5.4 Intersection Mitigation

All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2032 background traffic conditions. The Vista Drive and S 10th Avenue intersection is not anticipated to warrant any turn lane based on NCHRP Report 457 turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2032 horizon year background traffic operations.

**Figure 5.1 – 2032 Horizon Year Peak Hour Background Traffic**



# 6.0 2032 HORIZON YEAR TOTAL TRAFFIC CONDITIONS

## 6.1 Roadway Network

The study area roadways and intersections are expected to remain the same as 2032 background traffic conditions. With the SH 55 corridor improvements, the proposed access on Karcher Road aligning with Ashland Drive will continue to permit all movements into and out of the development.

## 6.2 Site Traffic

Site traffic trip generation, modal split, and distribution are expected to remain the same as discussed in the previous section.

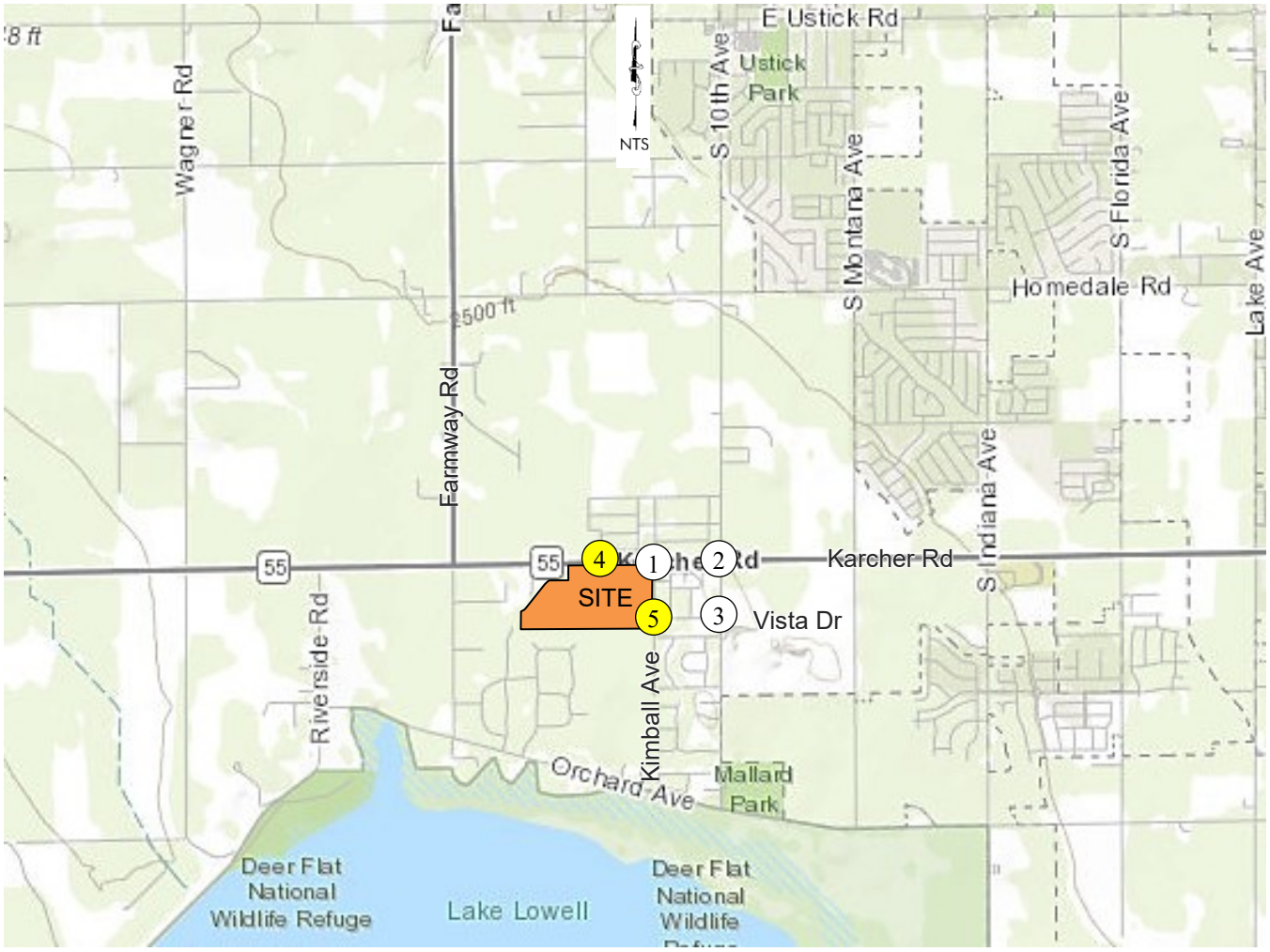
## 6.3 Total Traffic

The build-out site traffic was added to the 2032 background traffic as determined above to obtain the 2032 horizon year total traffic. **Figure 6.1** and **Figure 6.2** summarize the estimated 2032 peak hour total traffic at the study area intersections. **Table 6.1** summarizes the proportionate share of the site traffic at each study area intersection under the 2032 horizon year total traffic conditions.

**Table 6.1 – Build-Out Site Traffic Percentage at Study Area Intersections**

| Intersection | | % Site Traffic of 2032 Total Traffic | | |
|---|---|---|---|---|
| | | AM Peak | PM Peak | Average |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | |
| 2 | S 10th Ave and Karcher Rd | 1.4% | 1.7% | 1.6% |
| 3 | Vista Dr and S 10th Ave | 3.4% | 2.8% | 3.1% |
| 4 | Ashland Dr/Access and Karcher Rd | 1.9% | 2.1% | 2.0% |

**Figure 6.1 – 2032 Horizon Year AM Peak Hour Total Traffic**



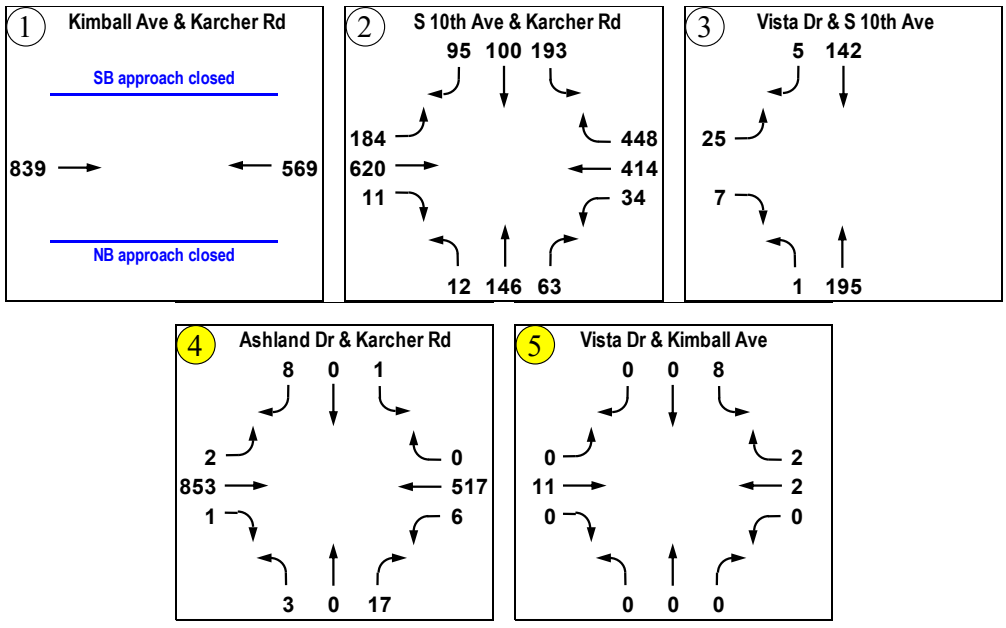
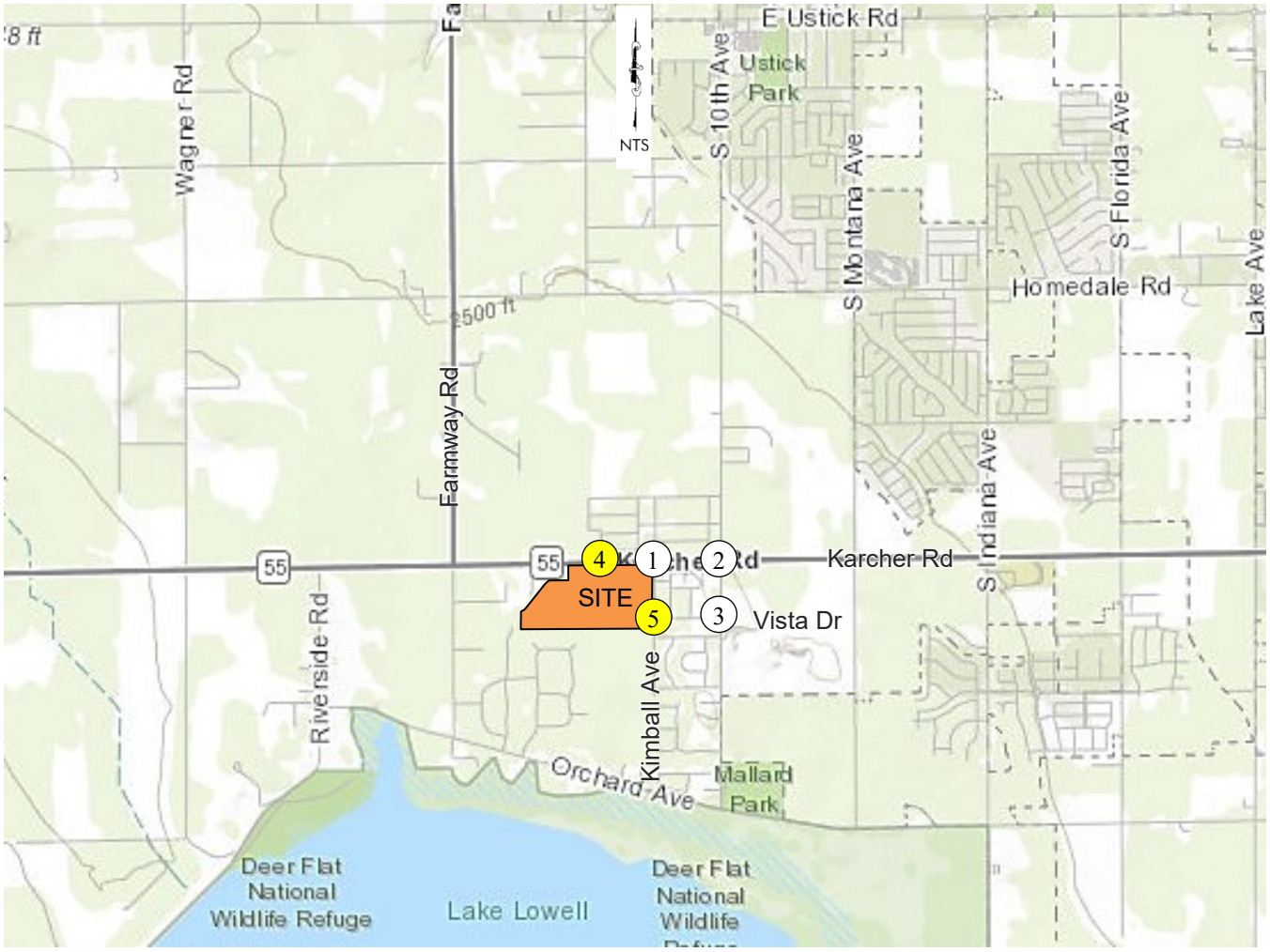
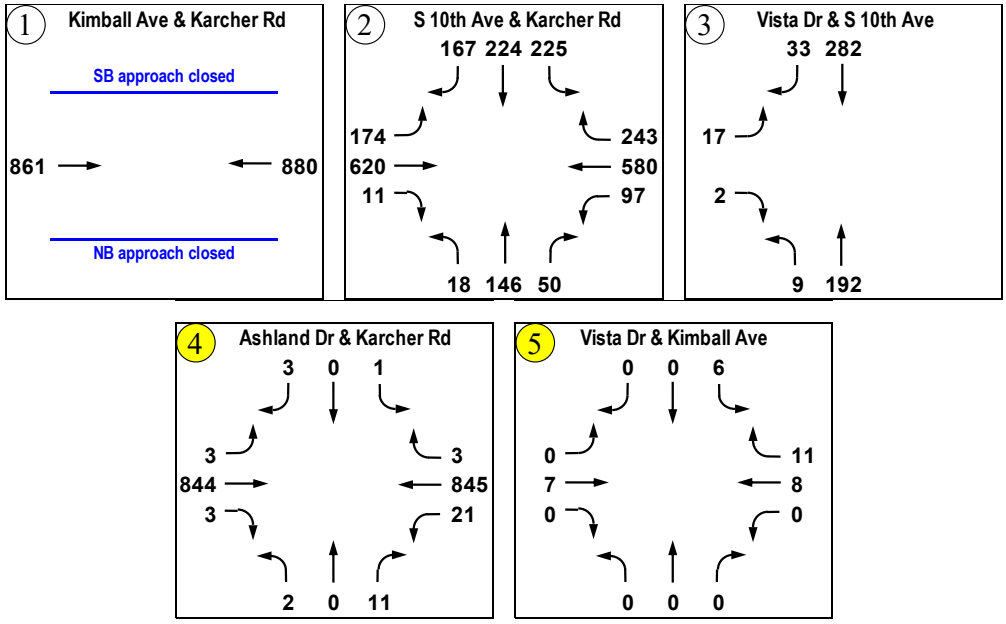



**Figure 6.2 – 2032 Horizon Year PM Peak Hour Total Traffic**

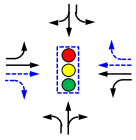
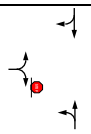
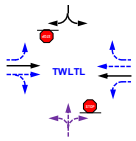


## 6.4 Intersection Operations

To determine the 2032 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the SH 55 corridor improvements. Copies of the calculations are included in the appendix. **Table 6.2** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds under 2032 horizon total traffic conditions.

**Table 6.2 – Intersection Operations – 2032 Horizon Year Total Traffic**

| Intersection | | Control / Lane<br>SH 55 Improvements<br>Site Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 1 | Kimball Ave and Karcher Rd | Intersection closed with SH 55 corridor improvements | | | | | | | |
| 2 | S 10th Ave [1] and Karcher Rd |  | Intersection | C | 26 | 0.66 | C | 23 | 0.70 |
| | | | EBL | D | 39 | 0.84 | C | 30 | 0.80 |
| | | | EBT | B | 19 | 0.49 | C | 21 | 0.65 |
| | | | EBR | B | 15 | 0.02 | B | 17 | 0.02 |
| | | | WBL | D | 45 | 0.62 | C | 33 | 0.78 |
| | | | WBT | C | 24 | 0.45 | C | 24 | 0.74 |
| | | | WBR | B | 19 | 0.70 | B | 15 | 0.41 |
| | | | NBL | D | 47 | 0.47 | C | 35 | 0.50 |
| | | | NBTR | D | 37 | 0.82 | C | 28 | 0.75 |
| | | | SBL | D | 39 | 0.85 | C | 29 | 0.82 |
| | | | SBTR | C | 25 | 0.44 | C | 22 | 0.80 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.06 | B | 13 | 0.04 |
| | | | SB | - | - | - | - | - | - |
| 4 | Ashland Dr and Karcher Rd |  | NB | B | 14 | 0.05 | B | 13 | 0.03 |
| | | | EBL | A | 9 | < 0.01 | A | 10 | < 0.01 |
| | | | EBT | - | - | - | - | - | - |
| | | | EBR | - | - | - | - | - | - |
| | | | WBL | B | 10 | 0.01 | A | 10 | 0.03 |
| | | | WBT | - | - | - | - | - | - |
| | | | WBR | - | - | - | - | - | - |
| | | | SB | B | 11 | 0.02 | B | 14 | 0.01 |

## 6.5 Intersection Mitigation

All study area intersections are anticipated to continue to meet HD4 and ITD minimum operational thresholds under 2032 horizon year total traffic conditions. The unsignalized study area intersections are not anticipated to warrant any turn lane based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no additional intersection improvements are needed to mitigate 2032 horizon year total traffic operations.

## 6.6 Site Access and Circulation

As discussed in Section 4.7, all proposed site access locations meet access spacing guidelines. All internal local roadways are expected to carry less than 1,000 vpd. The development is estimated to add 143 vpd on Vista Drive. The total average daily traffic on Vista Avenue is projected to be less than 1,000 vpd.

The proposed site access intersections are not anticipated to warrant any turn lane based on ITD and NCHRP Report 457 turn lane guidelines.

The Vista Drive and Kimball Avenue intersection is anticipated to carry minimal traffic with Kimball Avenue disconnected from Karcher Road. The intersection is anticipated to meet minimum operational thresholds.

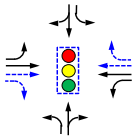
## 6.7 Alternate Site Access Scenario

HD4 has requested analysis to determine the need for Tillman Ridge Subdivision to access SH 55. In this scenario, the development only constructs the Vista Drive to access the external roadway network via S 10th Avenue. **Table 6.3** summarizes the intersection capacity analysis results with the alternate site access scenario. All study area intersections are anticipated to meet HD4 and ITD minimum operational thresholds.

With no direct access to Karcher Road and the closure of Kimball Avenue and Ellis Drive, all site traffic will utilize Vista Drive to enter and exit the site. The ADT on Vista Drive west of S 10th Avenue is anticipated to exceed 1,000 vpd but less than 2,000 vpd.

Vista Drive is a narrow local road with front-on housing. The Vista Drive segment between Kimball Avenue and S 10th Street is straight with no existing traffic calming measures in place to reduce potential speeding. Schoolchildren residing within the site and existing homes are anticipated to walk/bike on Vista Drive to/from schools within the area. Adding additional vehicular traffic onto Vista Drive may lead to potential safety issues. Therefore, direct access on Karcher Road is needed to reduce site traffic on Vista Drive.

**Table 6.3 – Intersection Operations – 2032 Horizon Year Total Traffic (No Direct Access to Karcher Road)**

| Intersection | | Control / Lane SH 55 Improvements | Intersection or Lane Group | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LOS | Delay [s/veh] | v/c Ratio | LOS | Delay [s/veh] | v/c Ratio |
| 2 | S 10th Ave and Karcher Rd |  | Intersection | C | 27 | 0.66 | C | 24 | 0.70 |
| | | | EBL | D | 41 | 0.85 | C | 30 | 0.80 |
| | | | EBT | B | 20 | 0.49 | C | 22 | 0.69 |
| | | | EBR | B | 16 | 0.02 | B | 18 | 0.03 |
| | | | WBL | D | 46 | 0.66 | C | 32 | 0.78 |
| | | | WBT | C | 25 | 0.45 | C | 24 | 0.73 |
| | | | WBR | B | 20 | 0.70 | B | 15 | 0.42 |
| | | | NBL | D | 47 | 0.49 | C | 35 | 0.50 |
| | | | NBTR | D | 38 | 0.84 | C | 28 | 0.76 |
| | | | SBL | D | 40 | 0.86 | C | 29 | 0.82 |
| | | | SBTR | C | 25 | 0.43 | C | 22 | 0.79 |
| 3 | Vista Dr and S 10th Ave |  | NB | A | 9 | < 0.01 | A | 8 | 0.01 |
| | | | EB | B | 11 | 0.09 | B | 13 | 0.07 |
| | | | SB | - | - | - | - | - | - |

# APPENDIX A: Traffic Counts

Exhibit F

## Kimball Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 1 | 1 | 1 | 0 | *3* | 0 | 0 | 74 | 1 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **193** |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 69 | 0 | 0 | *69* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 170 | 0 | 0 | *170* | **240** |
| 7:30 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 79 | 0 | 0 | *79* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 118 | 0 | 0 | *119* | **200** |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 87 | 0 | 0 | *87* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 130 | 0 | 0 | *131* | **219** |
| Hourly Total | 0 | 2 | 1 | 3 | 0 | *6* | 0 | 0 | 309 | 1 | 0 | *310* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 2 | 533 | 0 | 0 | *535* | **852** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 81 | 0 | 0 | *81* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 122 | 0 | 0 | *122* | **204** |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 2 | 0 | *102* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 142 | 0 | 0 | *142* | **244** |
| 8:30 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **207** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 83 | 1 | 0 | *84* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 117 | 0 | 0 | *117* | **202** |
| Hourly Total | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 348 | 3 | 0 | *351* | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 502 | 0 | 0 | *502* | **857** |

## Kimball Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 107 | 1 | 0 | *108* | **231** |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 151 | 1 | 0 | *153* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 0 | 0 | *133* | **287** |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 1 | 0 | *119* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 143 | 0 | 0 | *143* | **262** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 138 | 0 | 0 | *138* | **261** |
| Hourly Total | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 2 | 514 | 2 | 0 | *518* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 521 | 1 | 0 | *522* | **1041** |
| 5:00 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 147 | 0 | 0 | *147* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 117 | 0 | 0 | *117* | **265** |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 141 | 0 | 0 | *141* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 128 | 0 | 0 | *129* | **271** |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 126 | 0 | 0 | *126* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 113 | 0 | 0 | *113* | **240** |
| 5:45 PM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 137 | 0 | 0 | *137* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 0 | 0 | *100* | **239** |
| Hourly Total | 0 | 1 | 0 | 3 | 0 | *4* | 0 | 0 | 551 | 0 | 0 | *551* | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 458 | 0 | 0 | *459* | **1015** |

Exhibit F

# Kimball Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Norhtbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 87 | 0 | 0 | *87* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 130 | 0 | 0 | *131* | **219** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 81 | 0 | 0 | *81* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 122 | 0 | 0 | *122* | **204** |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 100 | 2 | 0 | *102* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 142 | 0 | 0 | *142* | **244** |
| 8:30 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **207** |
| Peak Hour Total | 0 | 0 | 0 | 3 | 0 | *3* | 0 | 0 | 352 | 2 | 0 | *354* | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 1 | 515 | 0 | 0 | *516* | **874** |
| PHF | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | *0.375* | 0.000 | 0.000 | 0.880 | 0.250 | 0.000 | *0.868* | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | *0.250* | 0.000 | 0.250 | 0.907 | 0.000 | 0.000 | *0.908* | **0.895** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 8.24% | 0.00% | 0.00% | **8.19%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 100.00% | 6.41% | 0.00% | 0.00% | **6.59%** | **7.2%** |

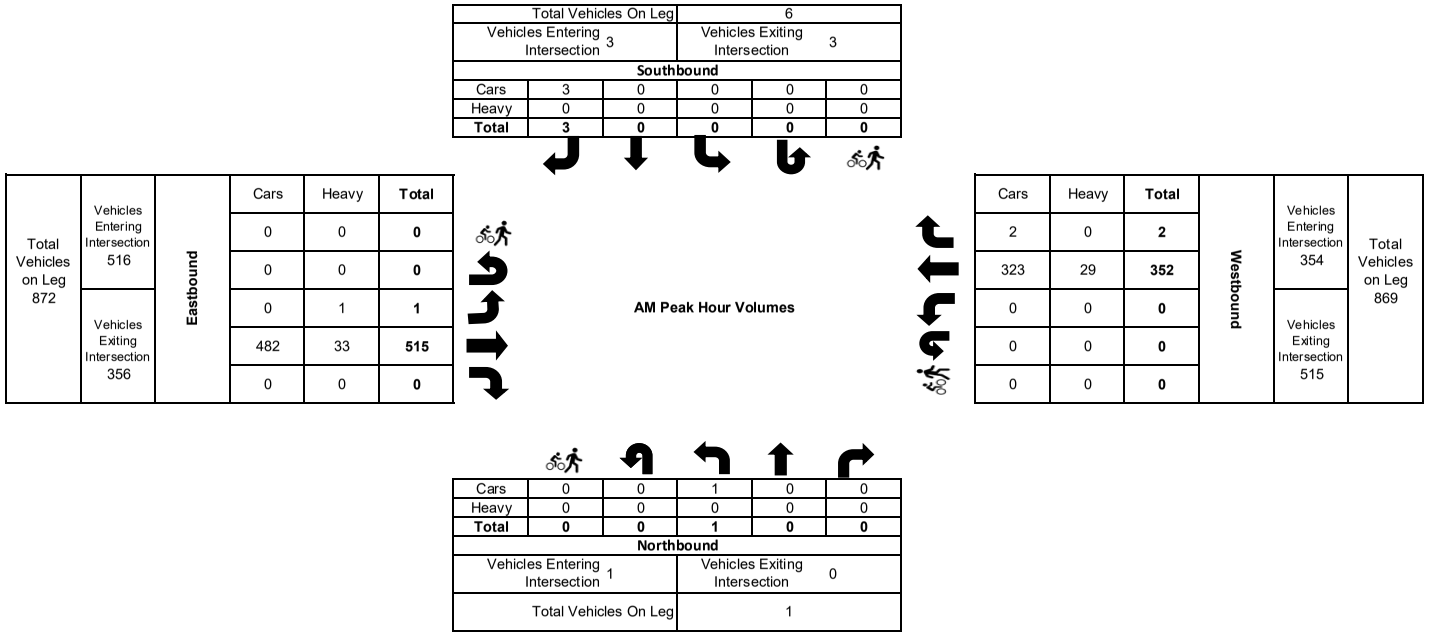


Exhibit F

# Kimball Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound Kimball Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound Kimball Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 151 | 1 | 0 | *153* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 0 | 0 | *133* | **287** |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 1 | 0 | *119* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 143 | 0 | 0 | *143* | **262** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 138 | 0 | 0 | *138* | **261** |
| 5:00 PM | 0 | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 147 | 0 | 0 | *147* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 117 | 0 | 0 | *117* | **265** |
| Peak Hour Total | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 538 | 2 | 0 | *542* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 531 | 0 | 0 | *531* | **1075** |
| PHF | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | *0.500* | 0.000 | 0.500 | 0.891 | 0.500 | 0.000 | *0.886* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.000 | 0.928 | 0.000 | 0.000 | *0.928* | **0.936** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 1.86% | 0.00% | 0.00% | **1.85%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 5.08% | 0.00% | 0.00% | **5.08%** | **3.4%** |

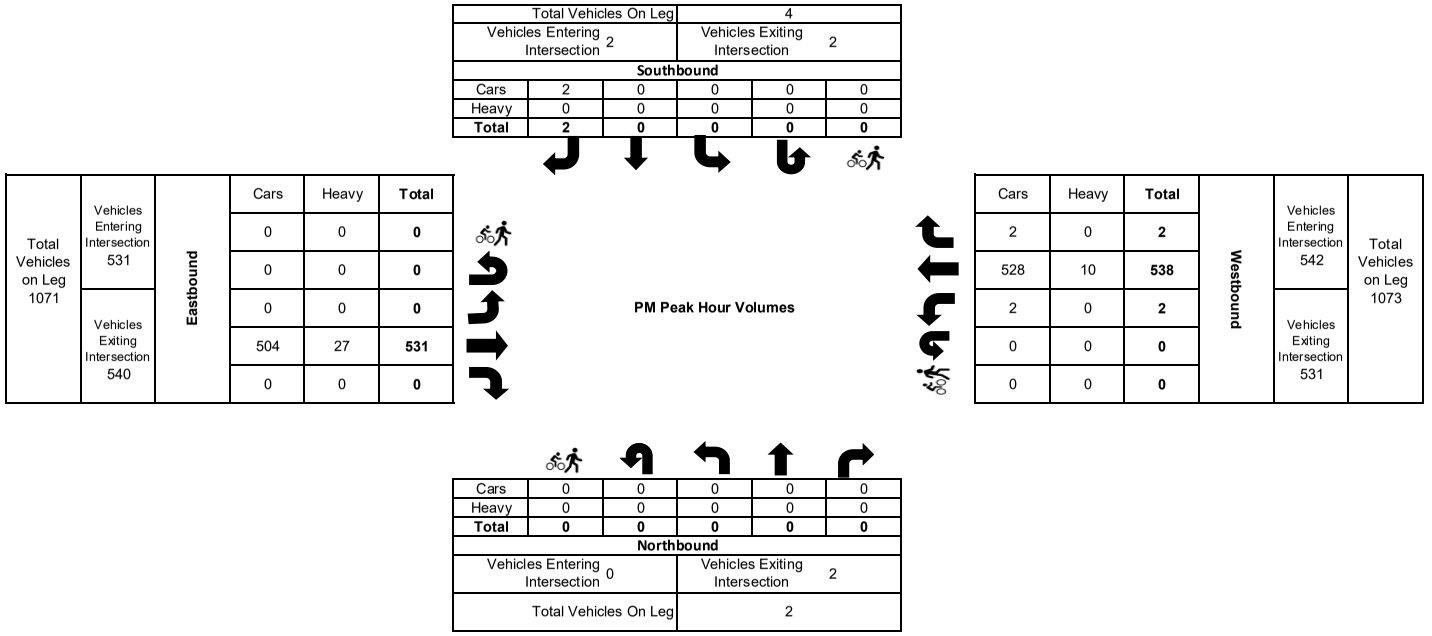


Exhibit F

## S 10th Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 24 | 8 | 10 | 0 | *42* | 0 | 2 | 59 | 26 | 0 | *87* | 0 | 4 | 16 | 3 | 0 | *23* | 0 | 17 | 93 | 4 | 0 | *114* | **266** |
| 7:15 AM | 0 | 28 | 20 | 17 | 0 | *65* | 0 | 0 | 48 | 32 | 0 | *80* | 0 | 5 | 29 | 4 | 0 | *38* | 0 | 24 | 121 | 7 | 0 | *152* | **335** |
| 7:30 AM | 0 | 30 | 14 | 14 | 0 | *58* | 0 | 2 | 68 | 54 | 0 | *124* | 0 | 2 | 24 | 3 | 0 | *29* | 0 | 24 | 99 | 2 | 0 | *125* | **336** |
| 7:45 AM | 0 | 41 | 17 | 18 | 0 | *76* | 0 | 2 | 61 | 51 | 0 | *114* | 0 | 2 | 27 | 7 | 0 | *36* | 0 | 23 | 102 | 4 | 0 | *129* | **355** |
| Hourly Total | 0 | 123 | 59 | 59 | 0 | *241* | 0 | 6 | 236 | 163 | 0 | *405* | 0 | 13 | 96 | 17 | 0 | *126* | 0 | 88 | 415 | 17 | 0 | *520* | **1292** |
| 8:00 AM | 0 | 40 | 20 | 20 | 0 | *80* | 0 | 6 | 59 | 91 | 0 | *156* | 0 | 1 | 16 | 2 | 0 | *19* | 0 | 34 | 86 | 0 | 0 | *120* | **375** |
| 8:15 AM | 0 | 54 | 27 | 28 | 0 | *109* | 0 | 4 | 72 | 81 | 0 | *157* | 0 | 1 | 32 | 6 | 0 | *39* | 0 | 34 | 97 | 0 | 0 | *131* | **436** |
| 8:30 AM | 0 | 30 | 15 | 18 | 0 | *63* | 0 | 4 | 57 | 26 | 0 | *87* | 0 | 1 | 16 | 8 | 0 | *25* | 0 | 27 | 112 | 1 | 0 | *140* | **315** |
| 8:45 AM | 0 | 23 | 18 | 17 | 0 | *58* | 0 | 1 | 63 | 32 | 0 | *96* | 0 | 3 | 13 | 4 | 0 | *20* | 0 | 21 | 84 | 0 | 0 | *105* | **279** |
| Hourly Total | 0 | 147 | 80 | 83 | 0 | *310* | 0 | 15 | 251 | 230 | 0 | *496* | 0 | 6 | 77 | 20 | 0 | *103* | 0 | 116 | 379 | 1 | 0 | *496* | **1405** |

## S 10th Ave & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 48 | 29 | 32 | 0 | *109* | 0 | 2 | 90 | 34 | 0 | *126* | 0 | 6 | 29 | 6 | 0 | *41* | 0 | 22 | 78 | 3 | 0 | *103* | **379** |
| 4:15 PM | 0 | 31 | 35 | 39 | 0 | *105* | 0 | 3 | 91 | 42 | 0 | *136* | 0 | 9 | 23 | 4 | 0 | *36* | 0 | 36 | 86 | 2 | 0 | *124* | **401** |
| 4:30 PM | 0 | 48 | 38 | 33 | 0 | *119* | 0 | 6 | 79 | 37 | 0 | *122* | 0 | 4 | 23 | 12 | 0 | *39* | 0 | 17 | 116 | 0 | 0 | *133* | **413** |
| 4:45 PM | 0 | 50 | 46 | 26 | 0 | *122* | 0 | 7 | 95 | 40 | 0 | *142* | 0 | 2 | 25 | 3 | 0 | *30* | 0 | 33 | 95 | 1 | 0 | *129* | **423** |
| Hourly Total | 0 | 177 | 148 | 130 | 0 | *455* | 0 | 18 | 355 | 153 | 0 | *526* | 0 | 21 | 100 | 25 | 0 | *146* | 0 | 108 | 375 | 6 | 0 | *489* | **1616** |
| 5:00 PM | 0 | 41 | 33 | 42 | 0 | *116* | 0 | 9 | 93 | 39 | 0 | *141* | 0 | 4 | 34 | 3 | 0 | *41* | 0 | 30 | 80 | 2 | 0 | *112* | **410** |
| 5:15 PM | 0 | 51 | 45 | 41 | 0 | *137* | 0 | 10 | 94 | 33 | 0 | *137* | 0 | 4 | 26 | 2 | 0 | *32* | 0 | 29 | 95 | 1 | 0 | *125* | **431** |
| 5:30 PM | 0 | 45 | 29 | 33 | 0 | *107* | 0 | 5 | 104 | 34 | 0 | *143* | 0 | 2 | 26 | 7 | 0 | *35* | 0 | 21 | 93 | 3 | 0 | *117* | **402** |
| 5:45 PM | 0 | 40 | 27 | 38 | 0 | *105* | 0 | 6 | 93 | 31 | 0 | *130* | 0 | 1 | 29 | 8 | 0 | *38* | 0 | 26 | 68 | 2 | 0 | *96* | **369** |
| Hourly Total | 0 | 177 | 134 | 154 | 0 | *465* | 0 | 30 | 384 | 137 | 0 | *551* | 0 | 11 | 115 | 20 | 0 | *146* | 0 | 106 | 336 | 8 | 0 | *450* | **1612** |

Exhibit F

# S 10th Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Norhtbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:30 AM | 0 | 30 | 14 | 14 | 0 | *58* | 0 | 2 | 68 | 54 | 0 | *124* | 0 | 2 | 24 | 3 | 0 | *29* | 0 | 24 | 99 | 2 | 0 | *125* | **336** |
| 7:45 AM | 0 | 41 | 17 | 18 | 0 | *76* | 0 | 2 | 61 | 51 | 0 | *114* | 0 | 2 | 27 | 7 | 0 | *36* | 0 | 23 | 102 | 4 | 0 | *129* | **355** |
| 8:00 AM | 0 | 40 | 20 | 20 | 0 | *80* | 0 | 6 | 59 | 91 | 0 | *156* | 0 | 1 | 16 | 2 | 0 | *19* | 0 | 34 | 86 | 0 | 0 | *120* | **375** |
| 8:15 AM | 0 | 54 | 27 | 28 | 0 | *109* | 0 | 4 | 72 | 81 | 0 | *157* | 0 | 1 | 32 | 6 | 0 | *39* | 0 | 34 | 97 | 0 | 0 | *131* | **436** |
| Peak Hour Total | 0 | 165 | 78 | 80 | 0 | *323* | 0 | 14 | 260 | 277 | 0 | *551* | 0 | 6 | 99 | 18 | 0 | *123* | 0 | 115 | 384 | 6 | 0 | *505* | **1502** |
| PHF | 0.000 | 0.764 | 0.722 | 0.714 | 0.000 | *0.741* | 0.000 | 0.583 | 0.903 | 0.761 | 0.000 | *0.877* | 0.000 | 0.750 | 0.773 | 0.643 | 0.000 | *0.788* | 0.000 | 0.846 | 0.941 | 0.375 | 0.000 | *0.964* | **0.861** |
| Heavy Vehicle % | 0.00% | 8.48% | 3.85% | 8.75% | 0.00% | **7.43%** | 0.00% | 0.00% | 10.77% | 3.25% | 0.00% | **6.72%** | 0.00% | 0.00% | 2.02% | 5.56% | 0.00% | **2.44%** | 0.00% | 4.35% | 7.03% | 0.00% | 0.00% | **6.34%** | **6.4%** |

| Total Vehicles On Leg | | | 814 | | |
|---|---|---|---|---|---|
| Vehicles Entering Intersection | 323 | | Vehicles Exiting Intersection | 491 | |
| **Southbound** | | | | | |
| Cars | 73 | 75 | 151 | 0 | 0 |
| Heavy | 7 | 3 | 14 | 0 | 0 |
| **Total** | **80** | **78** | **165** | **0** | **0** |

| Total Vehicles on Leg 851 | Vehicles Entering Intersection 505 | **Eastbound** | Cars | Heavy | **Total** |
|---|---|---|---|---|---|
| | | | 0 | 0 | **0** |
| | | | 0 | 0 | **0** |
| | Vehicles Exiting Intersection 346 | | 110 | 5 | **115** |
| | | | 357 | 27 | **384** |
| | | | 6 | 0 | **6** |

**AM Peak Hour Volumes**

| Cars | Heavy | **Total** | **Westbound** | Vehicles Entering Intersection 551 | Total Vehicles on Leg 1118 |
|---|---|---|---|---|---|
| 268 | 9 | **277** | | | |
| 232 | 28 | **260** | | | |
| 14 | 0 | **14** | | Vehicles Exiting Intersection 567 | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |

| | | | | | |
|---|---|---|---|---|---|
| Cars | 0 | 0 | 6 | 97 | 17 |
| Heavy | 0 | 0 | 0 | 2 | 1 |
| **Total** | **0** | **0** | **6** | **99** | **18** |
| **Northbound** | | | | | |
| Vehicles Entering Intersection | 123 | | Vehicles Exiting Intersection | 98 | |
| Total Vehicles On Leg | | | 221 | | |

Exhibit F

# S 10th Ave & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Karcher Rd | | | | | | Northbound S 10th Ave | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:30 PM | 0 | 48 | 38 | 33 | 0 | *119* | 0 | 6 | 79 | 37 | 0 | *122* | 0 | 4 | 23 | 12 | 0 | *39* | 0 | 17 | 116 | 0 | 0 | *133* | **413** |
| 4:45 PM | 0 | 50 | 46 | 26 | 0 | *122* | 0 | 7 | 95 | 40 | 0 | *142* | 0 | 2 | 25 | 3 | 0 | *30* | 0 | 33 | 95 | 1 | 0 | *129* | **423** |
| 5:00 PM | 0 | 41 | 33 | 42 | 0 | *116* | 0 | 9 | 93 | 39 | 0 | *141* | 0 | 4 | 34 | 3 | 0 | *41* | 0 | 30 | 80 | 2 | 0 | *112* | **410** |
| 5:15 PM | 0 | 51 | 45 | 41 | 0 | *137* | 0 | 10 | 94 | 33 | 0 | *137* | 0 | 4 | 26 | 2 | 0 | *32* | 0 | 29 | 95 | 1 | 0 | *125* | **431** |
| Peak Hour Total | 0 | 190 | 162 | 142 | 0 | *494* | 0 | 32 | 361 | 149 | 0 | *542* | 0 | 14 | 108 | 20 | 0 | *142* | 0 | 109 | 386 | 4 | 0 | *499* | **1677** |
| PHF | 0.000 | 0.931 | 0.880 | 0.845 | 0.000 | *0.901* | 0.000 | 0.800 | 0.950 | 0.931 | 0.000 | *0.954* | 0.000 | 0.875 | 0.794 | 0.417 | 0.000 | *0.866* | 0.000 | 0.826 | 0.832 | 0.500 | 0.000 | *0.938* | **0.973** |
| Heavy Vehicle % | 0.00% | 2.63% | 0.62% | 2.11% | 0.00% | **1.82%** | 0.00% | 0.00% | 2.22% | 3.36% | 0.00% | **2.40%** | 0.00% | 7.14% | 0.00% | 0.00% | 0.00% | **0.70%** | 0.00% | 4.59% | 5.70% | 0.00% | 0.00% | **5.41%** | **3.0%** |

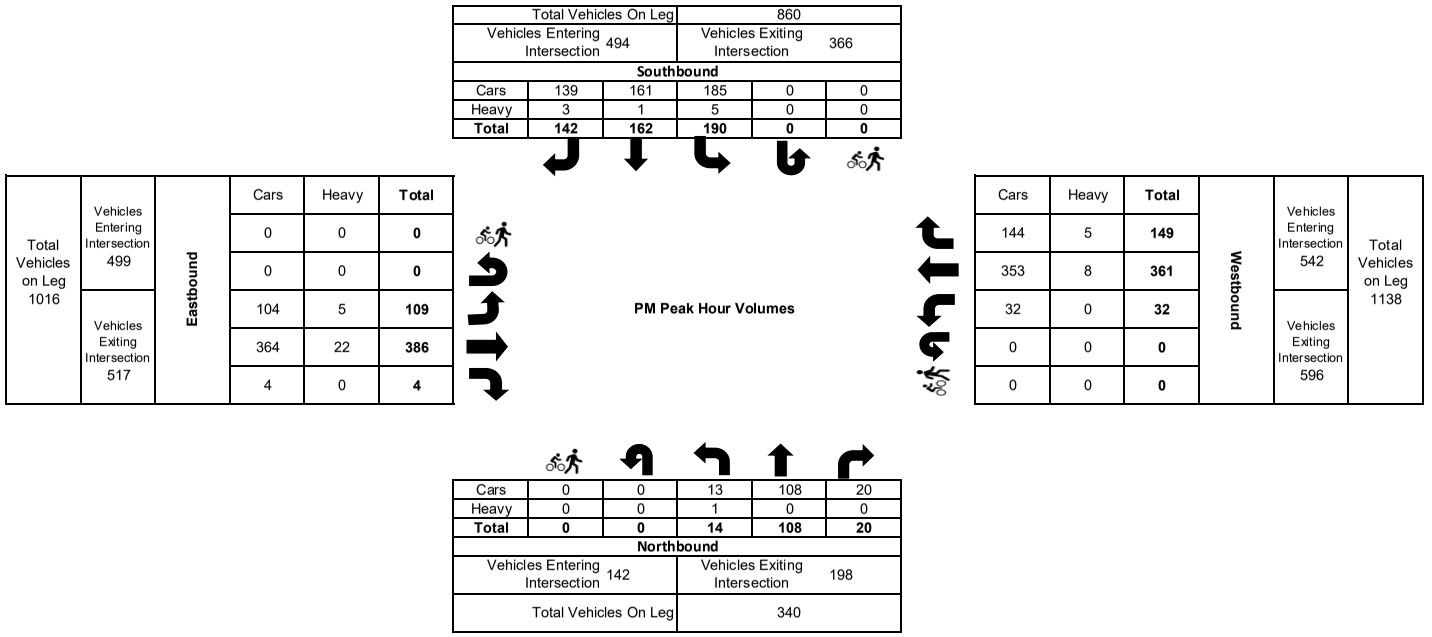


Exhibit F

## Vista Dr & S 10th Ave
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 0 | 12 | 2 | 0 | *14* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 1 | 0 | 2 | 0 | *3* | **37** |
| 7:15 AM | 0 | 0 | 32 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 1 | 0 | *3* | **71** |
| 7:30 AM | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 28 | 0 | 0 | *28* | 0 | 3 | 0 | 1 | 0 | *4* | **52** |
| 7:45 AM | 0 | 0 | 22 | 0 | 0 | *22* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 33 | 0 | 5 | *33* | 0 | 0 | 0 | 1 | 0 | *1* | **56** |
| Hourly Total | 0 | 0 | 86 | 2 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 116 | 0 | 5 | *117* | 0 | 6 | 0 | 5 | 0 | *11* | **216** |
| 8:00 AM | 0 | 0 | 31 | 1 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 1 | 0 | *2* | **55** |
| 8:15 AM | 0 | 0 | 29 | 2 | 0 | *31* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 0 | 0 | *2* | **69** |
| 8:30 AM | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 23 | 0 | 0 | *23* | 0 | 0 | 0 | 0 | 0 | *0* | **44** |
| 8:45 AM | 0 | 0 | 19 | 0 | 0 | *19* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 0 | 0 | *1* | **41** |
| Hourly Total | 0 | 0 | 100 | 3 | 0 | *103* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 100 | 0 | 0 | *101* | 0 | 4 | 0 | 1 | 0 | *5* | **209** |

## Vista Dr & S 10th Ave
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 0 | 37 | 4 | 2 | *41* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 36 | 0 | 0 | *36* | 0 | 1 | 0 | 0 | 0 | *1* | **78** |
| 4:15 PM | 0 | 0 | 39 | 3 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 37 | 0 | 0 | *39* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:30 PM | 0 | 0 | 43 | 1 | 0 | *44* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 37 | 0 | 0 | *37* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:45 PM | 0 | 0 | 46 | 4 | 0 | *50* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 31 | 0 | 0 | *33* | 0 | 0 | 0 | 0 | 0 | *0* | **83** |
| Hourly Total | 0 | 0 | 165 | 12 | 2 | *177* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 4 | 141 | 0 | 0 | *145* | 0 | 3 | 0 | 0 | 0 | *3* | **325** |
| 5:00 PM | 0 | 0 | 40 | 2 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 35 | 0 | 0 | *37* | 0 | 3 | 0 | 1 | 0 | *4* | **83** |
| 5:15 PM | 0 | 0 | 56 | 4 | 0 | *60* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 30 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | **92** |
| 5:30 PM | 0 | 0 | 36 | 5 | 0 | *41* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 37 | 0 | 0 | *39* | 0 | 2 | 0 | 0 | 0 | *2* | **82** |
| 5:45 PM | 0 | 0 | 30 | 1 | 0 | *31* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 33 | 0 | 0 | *35* | 0 | 1 | 0 | 0 | 0 | *1* | **67** |
| Hourly Total | 0 | 0 | 162 | 12 | 0 | *174* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 8 | 135 | 0 | 0 | *143* | 0 | 6 | 0 | 1 | 0 | *7* | **324** |

Exhibit F

# Vista Dr & S 10th Ave
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Norhtbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:15 AM | 0 | 0 | 32 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 35 | 0 | 0 | *36* | 0 | 2 | 0 | 1 | 0 | *3* | **71** |
| 7:30 AM | 0 | 0 | 20 | 0 | 0 | *20* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 28 | 0 | 0 | *28* | 0 | 3 | 0 | 1 | 0 | *4* | **52** |
| 7:45 AM | 0 | 0 | 22 | 0 | 0 | *22* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 33 | 0 | 5 | *33* | 0 | 0 | 0 | 1 | 0 | *1* | **56** |
| 8:00 AM | 0 | 0 | 31 | 1 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 21 | 0 | 0 | *21* | 0 | 1 | 0 | 1 | 0 | *2* | **55** |
| Peak Hour Total | 0 | 0 | 105 | 1 | 0 | *106* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 117 | 0 | 5 | *118* | 0 | 6 | 0 | 4 | 0 | *10* | **234** |
| PHF | 0.000 | 0.000 | 0.820 | 0.250 | 0.000 | *0.828* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.250 | 0.836 | 0.000 | 0.250 | *0.819* | 0.000 | 0.500 | 0.000 | 1.000 | 0.000 | *0.625* | **0.824** |
| Heavy Vehicle % | 0.00% | 0.00% | 2.86% | 0.00% | 0.00% | **2.83%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 100.00% | 2.56% | 0.00% | 0.00% | **3.39%** | 0.00% | 16.67% | 0.00% | 0.00% | 0.00% | **10.00%** | **3.4%** |

| Total Vehicles On Leg | | | 229 | | |
|---|---|---|---|---|---|
| Vehicles Entering Intersection | 106 | | Vehicles Exiting Intersection | 123 | |
| **Southbound** | | | | | |
| Cars | 1 | 102 | 0 | 0 | 0 |
| Heavy | 0 | 3 | 0 | 0 | 0 |
| **Total** | **1** | **105** | **0** | **0** | **0** |

| Total Vehicles on Leg 12 | Vehicles Entering Intersection 10 | **Eastbound** | Cars | Heavy | **Total** |
|---|---|---|---|---|---|
| | | | 0 | 0 | **0** |
| | | | 0 | 0 | **0** |
| | Vehicles Exiting Intersection 2 | | 5 | 1 | **6** |
| | | | 0 | 0 | **0** |
| | | | 4 | 0 | **4** |

**AM Peak Hour Volumes**

| Cars | Heavy | **Total** | **Westbound** | Vehicles Entering Intersection 0 | Total Vehicles on Leg 0 |
|---|---|---|---|---|---|
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | Vehicles Exiting Intersection 0 | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |

| | | | | | |
|---|---|---|---|---|---|
| Cars | 5 | 0 | 0 | 114 | 0 |
| Heavy | 0 | 0 | 1 | 3 | 0 |
| **Total** | **5** | **0** | **1** | **117** | **0** |
| **Northbound** | | | | | |
| Vehicles Entering Intersection | 118 | | Vehicles Exiting Intersection | 109 | |
| Total Vehicles On Leg | | | 227 | | |

Exhibit F

# Vista Dr & S 10th Ave
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

| Time | Southbound S 10th Ave | | | | | | Westbound Vista Dr | | | | | | Northbound S 10th Ave | | | | | | Eastbound Vista Dr | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:30 PM | 0 | 0 | 43 | 1 | 0 | *44* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 37 | 0 | 0 | *37* | 0 | 1 | 0 | 0 | 0 | *1* | **82** |
| 4:45 PM | 0 | 0 | 46 | 4 | 0 | *50* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 31 | 0 | 0 | *33* | 0 | 0 | 0 | 0 | 0 | *0* | **83** |
| 5:00 PM | 0 | 0 | 40 | 2 | 0 | *42* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 35 | 0 | 0 | *37* | 0 | 3 | 0 | 1 | 0 | *4* | **83** |
| 5:15 PM | 0 | 0 | 56 | 4 | 0 | *60* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 30 | 0 | 0 | *32* | 0 | 0 | 0 | 0 | 0 | *0* | **92** |
| Peak Hour Total | 0 | 0 | 185 | 11 | 0 | *196* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 6 | 133 | 0 | 0 | *139* | 0 | 4 | 0 | 1 | 0 | *5* | **340** |
| PHF | 0.000 | 0.000 | 0.826 | 0.688 | 0.000 | *0.817* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.750 | 0.899 | 0.000 | 0.000 | *0.939* | 0.000 | 0.333 | 0.000 | 0.250 | 0.000 | *0.313* | **0.924** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 0.75% | 0.00% | 0.00% | **0.72%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | **0.3%** |

| Total Vehicles On Leg | | | 333 | | |
|---|---|---|---|---|---|
| Vehicles Entering Intersection | 196 | | Vehicles Exiting Intersection | | 137 |
| **Southbound** | | | | | |
| Cars | 11 | 185 | 0 | 0 | 0 |
| Heavy | 0 | 0 | 0 | 0 | 0 |
| **Total** | **11** | **185** | **0** | **0** | **0** |

| Total Vehicles on Leg 22 | Vehicles Entering Intersection 5 | **Eastbound** | Cars | Heavy | **Total** |
|---|---|---|---|---|---|
| | | | 0 | 0 | **0** |
| | | | 0 | 0 | **0** |
| | Vehicles Exiting Intersection 17 | | 4 | 0 | **4** |
| | | | 0 | 0 | **0** |
| | | | 1 | 0 | **1** |

**PM Peak Hour Volumes**

| Cars | Heavy | **Total** | **Westbound** | Vehicles Entering Intersection 0 | Total Vehicles on Leg 0 |
|---|---|---|---|---|---|
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | Vehicles Exiting Intersection 0 | |
| 0 | 0 | **0** | | | |
| 0 | 0 | **0** | | | |

| Cars | 0 | 0 | 6 | 132 | 0 |
|---|---|---|---|---|---|
| Heavy | 0 | 0 | 0 | 1 | 0 |
| **Total** | **0** | **0** | **6** | **133** | **0** |
| **Northbound** | | | | | |
| Vehicles Entering Intersection | 139 | | Vehicles Exiting Intersection | | 186 |
| Total Vehicles On Leg | | | 325 | | |

Exhibit F

## Ashland Dr & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:00 AM | 0 | 2 | 0 | 2 | 0 | *4* | 0 | 0 | 69 | 0 | 0 | *69* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 112 | 0 | 0 | *112* | **185** |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 158 | 0 | 0 | *158* | **238** |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **207** |
| 7:45 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 88 | 0 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 132 | 0 | 0 | *132* | **222** |
| Hourly Total | 0 | 3 | 0 | 5 | 0 | *8* | 0 | 0 | 319 | 0 | 0 | *319* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 525 | 0 | 0 | *525* | **852** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 75 | 0 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **198** |
| 8:15 AM | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 94 | 0 | 0 | *94* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 130 | 0 | 0 | *130* | **226** |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 80 | 0 | 0 | *80* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 121 | 0 | 0 | *121* | **201** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 116 | 0 | 0 | *116* | **194** |
| Hourly Total | 0 | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 327 | 0 | 0 | *327* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 490 | 0 | 0 | *490* | **819** |

## Ashland Dr & Karcher Rd
## Caldwell, Idaho
## Thursday, November 14, 2024

| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:00 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 139 | 0 | 0 | *139* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 101 | 0 | 0 | *101* | **241** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 145 | 1 | 0 | *146* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 131 | 0 | 0 | *131* | **277** |
| 4:30 PM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 121 | 0 | 0 | *121* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 142 | 0 | 0 | *143* | **266** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 139 | 0 | 0 | *140* | **255** |
| Hourly Total | 0 | 2 | 0 | 1 | 0 | *3* | 0 | 0 | 520 | 1 | 0 | *521* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 513 | 0 | 0 | *515* | **1039** |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 149 | 1 | 0 | *150* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **265** |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 133 | 2 | 0 | *135* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 134 | 0 | 0 | *134* | **269** |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 136 | 0 | 0 | *136* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 122 | 0 | 0 | *122* | **259** |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 128 | 0 | 0 | *128* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 101 | 0 | 0 | *101* | **229** |
| Hourly Total | 0 | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 546 | 3 | 0 | *549* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 472 | 0 | 0 | *472* | **1022** |

Exhibit F

# Ashland Dr & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## AM Peak Hour

| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Norhtbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 78 | 0 | 0 | *78* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 158 | 0 | 0 | *158* | **238** |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 84 | 0 | 0 | *84* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **207** |
| 7:45 AM | 0 | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 88 | 0 | 0 | *88* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 132 | 0 | 0 | *132* | **222** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 75 | 0 | 0 | *75* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 123 | 0 | 0 | *123* | **198** |
| Peak Hour Total | 0 | 1 | 0 | 3 | 0 | *4* | 0 | 0 | 325 | 0 | 0 | *325* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 536 | 0 | 0 | *536* | **865** |
| PHF | 0.000 | 0.250 | 0.000 | 0.375 | 0.000 | *0.500* | 0.000 | 0.000 | 0.923 | 0.000 | 0.000 | *0.923* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.000 | 0.848 | 0.000 | 0.000 | *0.848* | **0.909** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 8.00% | 0.00% | 0.00% | **8.00%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 6.90% | 0.00% | 0.00% | **6.90%** | **7.3%** |

| Total Vehicles On Leg | | | | | 4 |
|---|---|---|---|---|---|
| Vehicles Entering Intersection | 4 | | Vehicles Exiting Intersection | | 0 |
| **Southbound** | | | | | |
| Cars | 3 | 0 | 1 | 0 | 0 |
| Heavy | 0 | 0 | 0 | 0 | 0 |
| **Total** | **3** | **0** | **1** | **0** | **0** |

| Total Vehicles on Leg | Vehicles Entering Intersection | Vehicles Exiting Intersection | **Eastbound** | Cars | Heavy | **Total** |
|---|---|---|---|---|---|---|
| 864 | 536 | 328 | | 0 | 0 | **0** |
| | | | | 0 | 0 | **0** |
| | | | | 0 | 0 | **0** |
| | | | | 499 | 37 | **536** |
| | | | | 0 | 0 | **0** |

**AM Peak Hour Volumes**

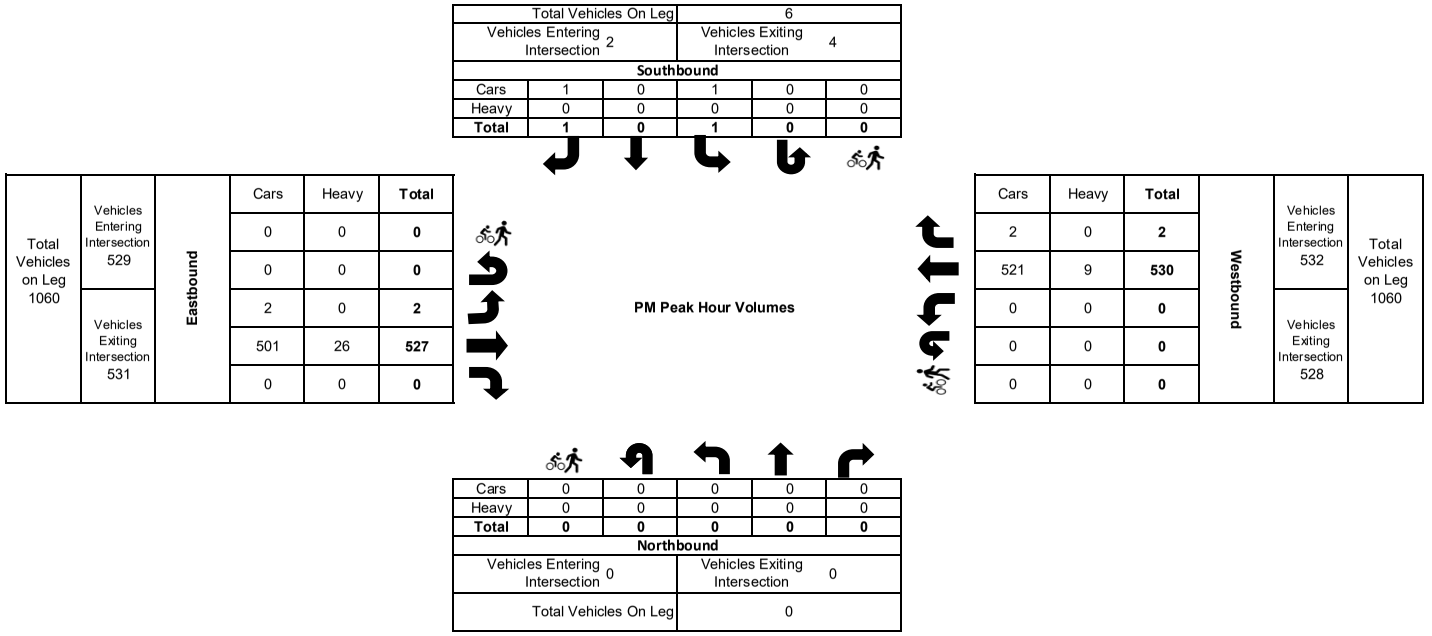
| Cars | Heavy | **Total** | **Westbound** | Vehicles Entering Intersection | Total Vehicles on Leg |
|---|---|---|---|---|---|
| 0 | 0 | **0** | | 325 | 862 |
| 299 | 26 | **325** | | | |
| 0 | 0 | **0** | | Vehicles Exiting Intersection | |
| 0 | 0 | **0** | | 537 | |
| 0 | 0 | **0** | | | |

| | | | | | |
|---|---|---|---|---|---|
| Cars | 0 | 0 | 0 | 0 | 0 |
| Heavy | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **0** | **0** | **0** | **0** |
| **Northbound** | | | | | |
| Vehicles Entering Intersection | 0 | | Vehicles Exiting Intersection | | 0 |
| Total Vehicles On Leg | | | 0 | | |

Exhibit F

# Ashland Dr & Karcher Rd
# Caldwell, Idaho
# Thursday, November 14, 2024
## PM Peak Hour

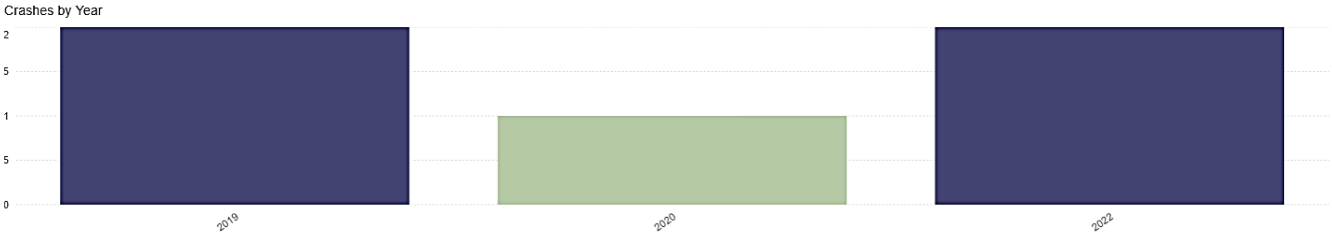
| Time | Southbound Ashland Dr | | | | | | Westbound Karcher Rd | | | | | | Northbound Ashland Dr | | | | | | Eastbound Karcher Rd | | | | | | VEHICLE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | U Turns | Left Turns | Straight Through | Right Turns | Crosswalk Crossings | *Vehicle Approach Total* | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 145 | 1 | 0 | *146* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 131 | 0 | 0 | *131* | **277** |
| 4:30 PM | 0 | 1 | 0 | 1 | 0 | *2* | 0 | 0 | 121 | 0 | 0 | *121* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 142 | 0 | 0 | *143* | **266** |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 139 | 0 | 0 | *140* | **255** |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 149 | 1 | 0 | *150* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 115 | 0 | 0 | *115* | **265** |
| Peak Hour Total | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 530 | 2 | 0 | *532* | 0 | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 527 | 0 | 0 | *529* | **1063** |
| PHF | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | *0.250* | 0.000 | 0.000 | 0.889 | 0.500 | 0.000 | *0.887* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | *0.000* | 0.000 | 0.500 | 0.928 | 0.000 | 0.000 | *0.925* | **0.959** |
| Heavy Vehicle % | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 1.70% | 0.00% | 0.00% | **1.69%** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.00%** | 0.00% | 0.00% | 4.93% | 0.00% | 0.00% | **4.91%** | **3.3%** |



# APPENDIX B: Intersection Crash Data

# Kimball Road and Karcher Road Intersection 2019-2023 Crash Data




This chart shows the total # Crashes by Year

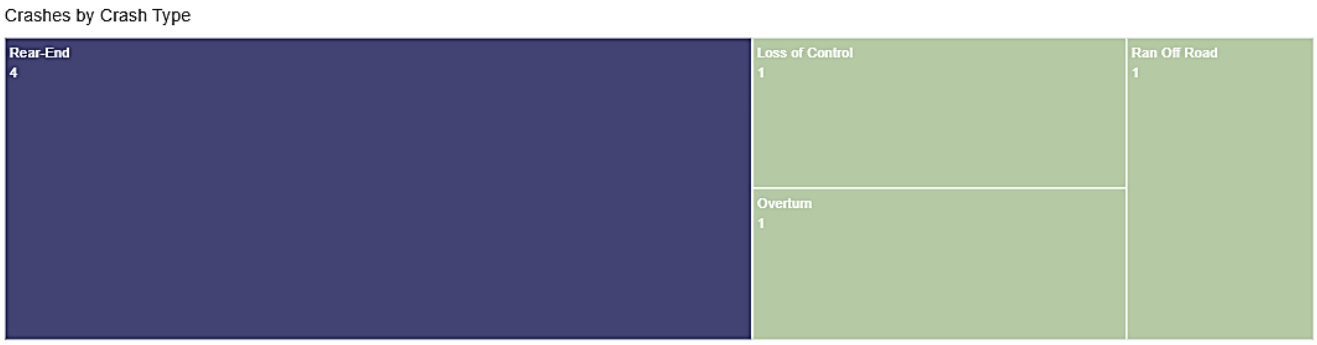
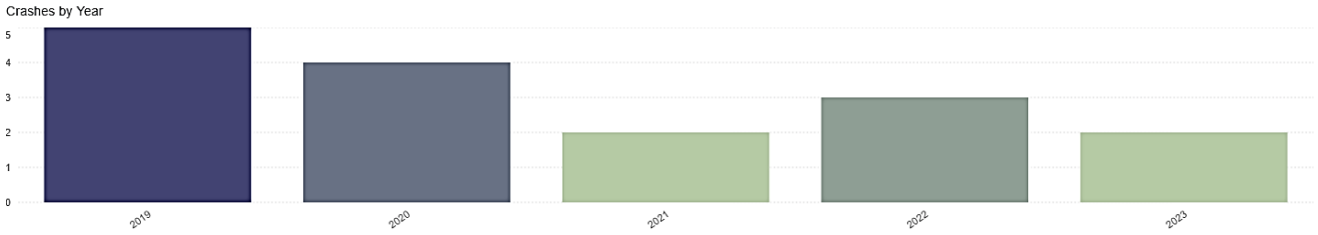



Exhibit F

| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Asleep, Drowsy, Fatigued | 1 | |
| Following Too Close | 3 | |
| Inattention | 2 | |
| None | 5 | |

# 10th Avenue and Karcher Road Intersection 2019-2023 Crash Data




This chart shows the total # Crashes by Year

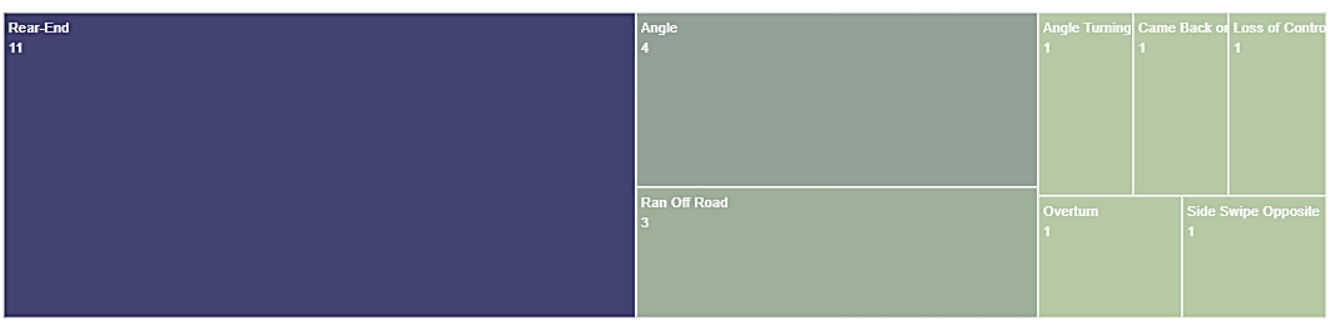
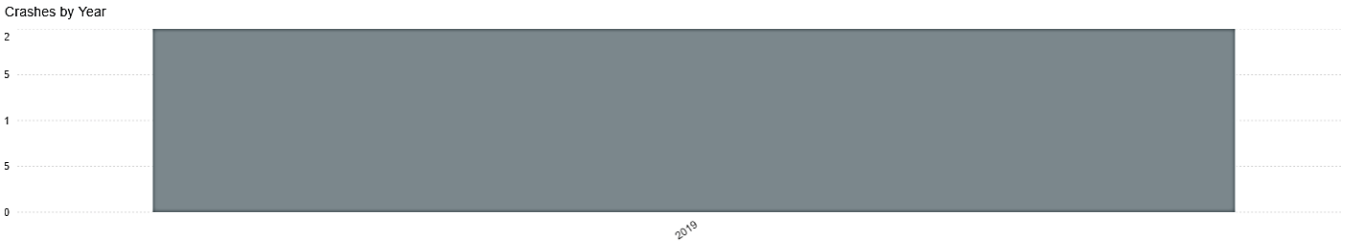



Exhibit F

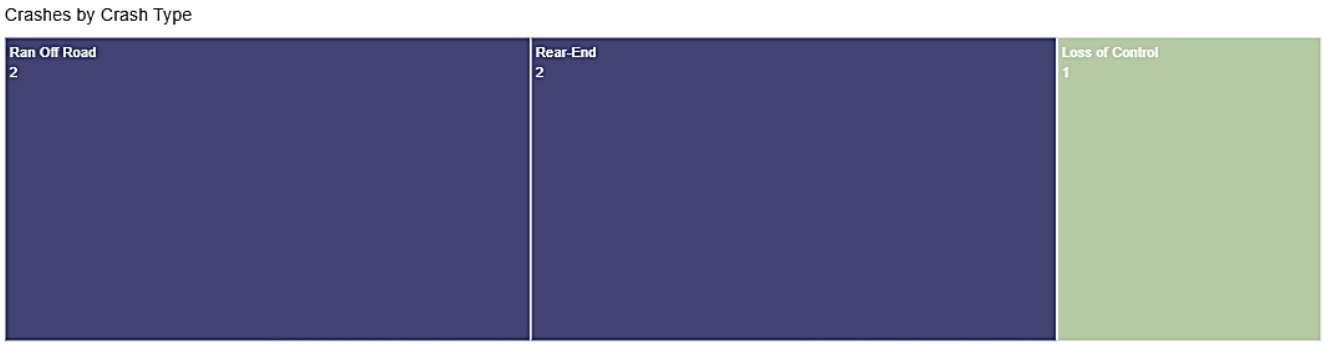
| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Alcohol Impaired | 3 | |
| Asleep, Drowsy, Fatigued | 1 | |
| Drug Impaired | 1 | |
| Emotional – Depressed, Angry, … | 1 | |
| Exceeded Posted Speed | 1 | |
| Failed to Maintain Lane | 1 | |
| Failed to Obey Signal | 4 | |
| Following Too Close | 6 | |
| Foot Slipped Off or Caught On … | 2 | |
| Improper Overtaking | 1 | |
| Improper Turn | 1 | |
| Inattention | 3 | |
| Light Defect | 1 | |
| None | 16 | |
| Speed Too Fast For Conditions | 1 | |

# Ashland Drive & Karcher Road Intersection 2019-2023 Crash Data




This chart shows the total # Crashes by Year



| Contributing Circumstances (All) | Total Crashes | |
|---|---|---|
| Following Too Close | 2 | |
| None | 2 | |

# APPENDIX C: 2024 Synchro Reports

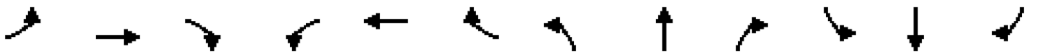
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ⇕ | | | ⇕ | | | ⇕ | | | ⇕ | |
| Traffic Vol, veh/h | 1 | 515 | 0 | 0 | 352 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |
| Future Vol, veh/h | 1 | 515 | 0 | 0 | 352 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 100 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 572 | 0 | 0 | 391 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 393 | 0 | 0 | 572 | 0 | 0 | 966 | 968 | 572 | 967 | 967 | 392 |
| Stage 1 | - | - | - | - | - | - | 574 | 574 | - | 392 | 392 | - |
| Stage 2 | - | - | - | - | - | - | 391 | 393 | - | 574 | 574 | - |
| Critical Hdwy | 5.1 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 3.1 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 784 | - | - | 1001 | - | - | 234 | 254 | 519 | 234 | 254 | 657 |
| Stage 1 | - | - | - | - | - | - | 504 | 503 | - | 632 | 606 | - |
| Stage 2 | - | - | - | - | - | - | 633 | 606 | - | 504 | 503 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 784 | - | - | 1001 | - | - | 233 | 253 | 519 | 233 | 254 | 657 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 233 | 253 | - | 233 | 254 | - |
| Stage 1 | - | - | - | - | - | - | 503 | 502 | - | 632 | 606 | - |
| Stage 2 | - | - | - | - | - | - | 630 | 606 | - | 503 | 502 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.02 | 0 | 20.56 | 10.51 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 233 | 3 | - | - | 1001 | - | - | 657 |
| HCM Lane V/C Ratio | 0.005 | 0.001 | - | - | - | - | - | 0.005 |
| HCM Control Delay (s/veh) | 20.6 | 9.6 | 0 | - | 0 | - | - | 10.5 |
| HCM Lane LOS | C | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Future Volume (veh/h) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 134 | 447 | 7 | 16 | 302 | 322 | 7 | 115 | 21 | 192 | 91 | 93 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 171 | 589 | 9 | 35 | 446 | 400 | 16 | 177 | 32 | 236 | 206 | 211 |
| Arrive On Green | 0.10 | 0.33 | 0.33 | 0.02 | 0.25 | 0.25 | 0.01 | 0.12 | 0.12 | 0.14 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1753 | 1764 | 28 | 1781 | 1752 | 1572 | 1781 | 1539 | 281 | 1697 | 834 | 853 |
| Grp Volume(v), veh/h | 134 | 0 | 454 | 16 | 302 | 322 | 7 | 0 | 136 | 192 | 0 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1820 | 1697 | 0 | 1687 |
| Q Serve(g_s), s | 4.1 | 0.0 | 12.3 | 0.5 | 8.5 | 10.5 | 0.2 | 0.0 | 3.9 | 6.0 | 0.0 | 5.0 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 12.3 | 0.5 | 8.5 | 10.5 | 0.2 | 0.0 | 3.9 | 6.0 | 0.0 | 5.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.15 | 1.00 | | 0.51 |
| Lane Grp Cap(c), veh/h | 171 | 0 | 598 | 35 | 446 | 400 | 16 | 0 | 210 | 236 | 0 | 417 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.76 | 0.46 | 0.68 | 0.80 | 0.43 | 0.00 | 0.65 | 0.81 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 311 | 0 | 1784 | 320 | 1745 | 1566 | 320 | 0 | 826 | 301 | 0 | 763 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.1 | 0.0 | 16.2 | 26.5 | 18.3 | 19.1 | 26.9 | 0.0 | 23.1 | 22.8 | 0.0 | 17.4 |
| Incr Delay (d2), s/veh | 3.0 | 0.0 | 0.8 | 3.4 | 0.7 | 1.5 | 6.4 | 0.0 | 1.3 | 9.8 | 0.0 | 0.3 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.8 | 0.0 | 6.9 | 0.4 | 4.9 | 5.6 | 0.2 | 0.0 | 2.9 | 5.0 | 0.0 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 27.1 | 0.0 | 17.0 | 29.9 | 19.0 | 20.6 | 33.3 | 0.0 | 24.4 | 32.6 | 0.0 | 17.6 |
| LnGrp LOS | C | | B | C | B | C | C | | C | C | | B |
| Approach Vol, veh/h | | 588 | | | 640 | | | 143 | | | 376 | |
| Approach Delay, s/veh | | 19.3 | | | 20.1 | | | 24.8 | | | 25.3 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.9 | 11.6 | 6.3 | 23.8 | 5.7 | 18.8 | 10.6 | 19.5 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 5.9 | 2.5 | 14.3 | 2.2 | 7.0 | 6.1 | 12.5 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.0 | 1.5 | 0.0 | 0.6 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.3 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Future Volume (vph) | 115 | 384 | 6 | 14 | 260 | 277 | 6 | 99 | 18 | 165 | 78 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.92 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1809 | | 1671 | 1648 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1809 | | 1671 | 1648 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 134 | 447 | 7 | 16 | 302 | 322 | 7 | 115 | 21 | 192 | 91 | 93 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 230 | 0 | 6 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 134 | 453 | 0 | 16 | 302 | 92 | 7 | 130 | 0 | 192 | 157 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 31.0 | | 1.1 | 22.1 | 22.1 | 0.9 | 14.2 | | 9.9 | 23.2 | |
| Effective Green, g (s) | 9.9 | 31.0 | | 1.1 | 22.1 | 22.1 | 0.9 | 14.2 | | 9.9 | 23.2 | |
| Actuated g/C Ratio | 0.13 | 0.40 | | 0.01 | 0.29 | 0.29 | 0.01 | 0.18 | | 0.13 | 0.30 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 221 | 709 | | 25 | 492 | 447 | 20 | 331 | | 213 | 493 | |
| v/s Ratio Prot | c0.08 | c0.26 | | 0.01 | 0.17 | | 0.00 | c0.07 | | c0.11 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.61 | 0.64 | | 0.64 | 0.61 | 0.21 | 0.35 | 0.39 | | 0.90 | 0.32 | |
| Uniform Delay, d1 | 32.0 | 18.7 | | 38.0 | 24.0 | 21.0 | 38.0 | 27.9 | | 33.3 | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.2 | 1.4 | | 35.0 | 1.6 | 0.1 | 3.8 | 0.3 | | 35.3 | 0.1 | |
| Delay (s) | 35.2 | 20.1 | | 73.0 | 25.6 | 21.1 | 41.8 | 28.1 | | 68.6 | 21.2 | |
| Level of Service | D | C | | E | C | C | D | C | | E | C | |
| Approach Delay (s/veh) | | 23.6 | | | 24.5 | | | 28.8 | | | 45.4 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.65 | | |
| Actuated Cycle Length (s) | 77.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 54.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 1 | 117 | 105 | 1 |
| Future Vol, veh/h | 6 | 4 | 1 | 117 | 105 | 1 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 82 | 82 | 82 | 82 | 82 | 82 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 7 | 5 | 1 | 143 | 128 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 279 | 129 | 129 | 0 | - | 0 |
| Stage 1 | 129 | - | - | - | - | - |
| Stage 2 | 150 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 682 | 921 | 1022 | - | - | - |
| Stage 1 | 864 | - | - | - | - | - |
| Stage 2 | 845 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 681 | 921 | 1022 | - | - | - |
| Mov Cap-2 Maneuver | 681 | - | - | - | - | - |
| Stage 1 | 863 | - | - | - | - | - |
| Stage 2 | 845 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.81 | 0.07 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 15 | - | 761 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.016 | - | - |
| HCM Control Delay (s/veh) | 8.5 | 0 | 9.8 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

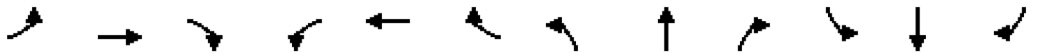
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 531 | 0 | 2 | 538 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Future Vol, veh/h | 0 | 531 | 0 | 2 | 538 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 565 | 0 | 2 | 572 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 574 | 0 | 0 | 565 | 0 | 0 | 1141 | 1144 | 565 | 1143 | 1143 | 573 |
| Stage 1 | - | - | - | - | - | - | 565 | 565 | - | 578 | 578 | - |
| Stage 2 | - | - | - | - | - | - | 577 | 579 | - | 565 | 565 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 999 | - | - | 1007 | - | - | 178 | 200 | 524 | 177 | 200 | 519 |
| Stage 1 | - | - | - | - | - | - | 510 | 508 | - | 502 | 501 | - |
| Stage 2 | - | - | - | - | - | - | 502 | 501 | - | 510 | 508 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 999 | - | - | 1007 | - | - | 176 | 199 | 524 | 177 | 200 | 519 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 176 | 199 | - | 177 | 200 | - |
| Stage 1 | - | - | - | - | - | - | 510 | 508 | - | 500 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 499 | 499 | - | 510 | 508 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.03 | 0 | 11.97 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 999 | - | - | 7 | - | - | 519 |
| HCM Lane V/C Ratio | - | - | - | - | 0.002 | - | - | 0.004 |
| HCM Control Delay (s/veh) | 0 | 0 | - | - | 8.6 | 0 | - | 12 |
| HCM Lane LOS | A | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Future Volume (veh/h) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 112 | 398 | 4 | 33 | 372 | 154 | 14 | 111 | 21 | 196 | 167 | 146 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 143 | 534 | 5 | 65 | 469 | 394 | 30 | 176 | 33 | 245 | 219 | 191 |
| Arrive On Green | 0.08 | 0.30 | 0.30 | 0.04 | 0.25 | 0.25 | 0.02 | 0.11 | 0.11 | 0.14 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1739 | 1790 | 18 | 1781 | 1870 | 1572 | 1711 | 1529 | 289 | 1767 | 921 | 805 |
| Grp Volume(v), veh/h | 112 | 0 | 402 | 33 | 372 | 154 | 14 | 0 | 132 | 196 | 0 | 313 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1808 | 1781 | 1870 | 1572 | 1711 | 0 | 1818 | 1767 | 0 | 1725 |
| Q Serve(g_s), s | 3.3 | 0.0 | 10.4 | 0.9 | 9.7 | 4.2 | 0.4 | 0.0 | 3.6 | 5.6 | 0.0 | 8.8 |
| Cycle Q Clear(g_c), s | 3.3 | 0.0 | 10.4 | 0.9 | 9.7 | 4.2 | 0.4 | 0.0 | 3.6 | 5.6 | 0.0 | 8.8 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 0.47 |
| Lane Grp Cap(c), veh/h | 143 | 0 | 539 | 65 | 469 | 394 | 30 | 0 | 209 | 245 | 0 | 410 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.75 | 0.51 | 0.79 | 0.39 | 0.46 | 0.00 | 0.63 | 0.80 | 0.00 | 0.76 |
| Avail Cap(c_a), veh/h | 325 | 0 | 1893 | 336 | 1959 | 1647 | 323 | 0 | 868 | 330 | 0 | 820 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.4 | 0.0 | 16.5 | 24.6 | 18.2 | 16.2 | 25.3 | 0.0 | 21.9 | 21.7 | 0.0 | 18.4 |
| Incr Delay (d2), s/veh | 3.5 | 0.0 | 0.8 | 2.3 | 1.2 | 0.2 | 4.1 | 0.0 | 1.2 | 7.0 | 0.0 | 1.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.2 | 0.0 | 5.9 | 0.7 | 6.0 | 2.1 | 0.3 | 0.0 | 2.6 | 4.5 | 0.0 | 5.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 26.9 | 0.0 | 17.2 | 26.8 | 19.4 | 16.4 | 29.4 | 0.0 | 23.1 | 28.6 | 0.0 | 19.6 |
| LnGrp LOS | C | | B | C | B | B | C | | C | C | | B |
| Approach Vol, veh/h | | 514 | | | 559 | | | 146 | | | 509 | |
| Approach Delay, s/veh | | 19.3 | | | 19.0 | | | 23.7 | | | 23.1 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.5 | 11.3 | 7.1 | 21.1 | 6.1 | 17.6 | 9.6 | 18.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 5.6 | 2.9 | 12.4 | 2.4 | 10.8 | 5.3 | 11.7 |
| Green Ext Time (p_c), s | 0.1 | 0.4 | 0.0 | 1.3 | 0.0 | 1.0 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 20.7 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Future Volume (vph) | 109 | 386 | 4 | 32 | 361 | 149 | 14 | 108 | 20 | 190 | 162 | 142 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1790 | | 1770 | 1863 | 1568 | 1687 | 1818 | | 1752 | 1732 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1790 | | 1770 | 1863 | 1568 | 1687 | 1818 | | 1752 | 1732 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 112 | 398 | 4 | 33 | 372 | 154 | 14 | 111 | 21 | 196 | 167 | 146 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 96 | 0 | 6 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 112 | 401 | 0 | 33 | 372 | 58 | 14 | 126 | 0 | 196 | 290 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.1 | 29.6 | | 2.5 | 22.9 | 22.9 | 1.0 | 15.1 | | 10.0 | 24.1 | |
| Effective Green, g (s) | 9.1 | 29.6 | | 2.5 | 22.9 | 22.9 | 1.0 | 15.1 | | 10.0 | 24.1 | |
| Actuated g/C Ratio | 0.12 | 0.38 | | 0.03 | 0.29 | 0.29 | 0.01 | 0.19 | | 0.13 | 0.31 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 199 | 674 | | 56 | 543 | 457 | 21 | 349 | | 223 | 531 | |
| v/s Ratio Prot | c0.07 | c0.22 | | 0.02 | c0.20 | | 0.01 | 0.07 | | c0.11 | c0.17 | |
| v/s Ratio Perm | | | | | | 0.04 | | | | | | |
| v/c Ratio | 0.56 | 0.60 | | 0.59 | 0.69 | 0.13 | 0.67 | 0.36 | | 0.88 | 0.55 | |
| Uniform Delay, d1 | 32.8 | 19.6 | | 37.5 | 24.6 | 20.4 | 38.6 | 27.5 | | 33.7 | 22.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.2 | 0.9 | | 9.8 | 2.9 | 0.0 | 47.8 | 0.2 | | 29.2 | 0.6 | |
| Delay (s) | 35.0 | 20.6 | | 47.3 | 27.5 | 20.5 | 86.4 | 27.8 | | 62.9 | 23.3 | |
| Level of Service | C | C | | D | C | C | F | C | | E | C | |
| Approach Delay (s/veh) | | 23.7 | | | 26.7 | | | 33.4 | | | 38.5 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 78.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 1 | 6 | 133 | 185 | 11 |
| Future Vol, veh/h | 4 | 1 | 6 | 133 | 185 | 11 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 1 | 7 | 145 | 201 | 12 |

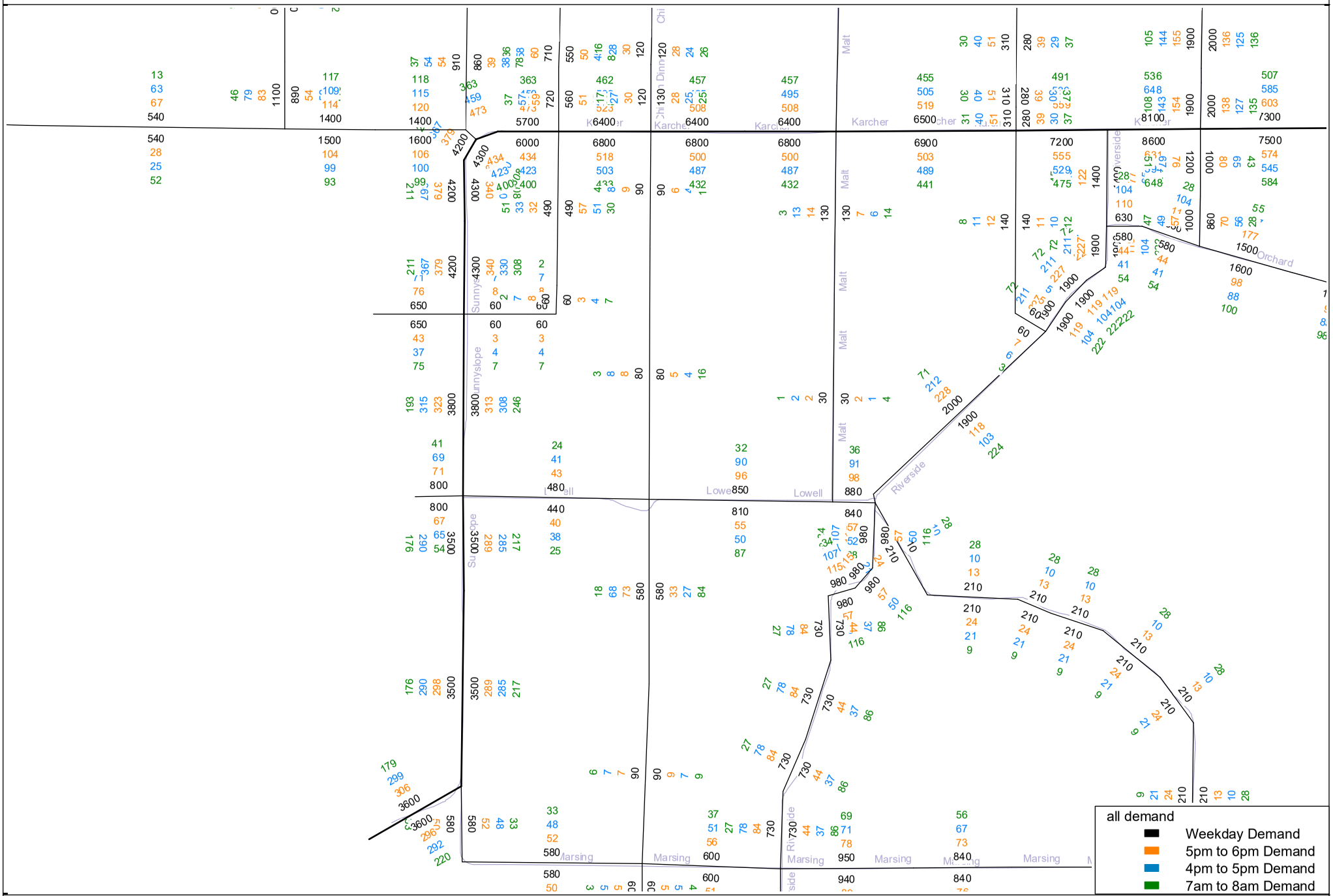
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 371 | 207 | 213 | 0 | - | 0 |
| Stage 1 | 207 | - | - | - | - | - |
| Stage 2 | 164 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 630 | 833 | 1357 | - | - | - |
| Stage 1 | 828 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 627 | 833 | 1357 | - | - | - |
| Mov Cap-2 Maneuver | 627 | - | - | - | - | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.51 | 0.33 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 659 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.008 | - | - |
| HCM Control Delay (s/veh) | 7.7 | 0 | 10.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

# APPENDIX D: COMPASS Reports

2021 Build: 2021 Demographics and 2021 Funded Network
7/20/2021




D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2021\ALLDEMAND_b2021.NET
New Regional Model calibrated to 2011/12 conditions - completed in January 2015

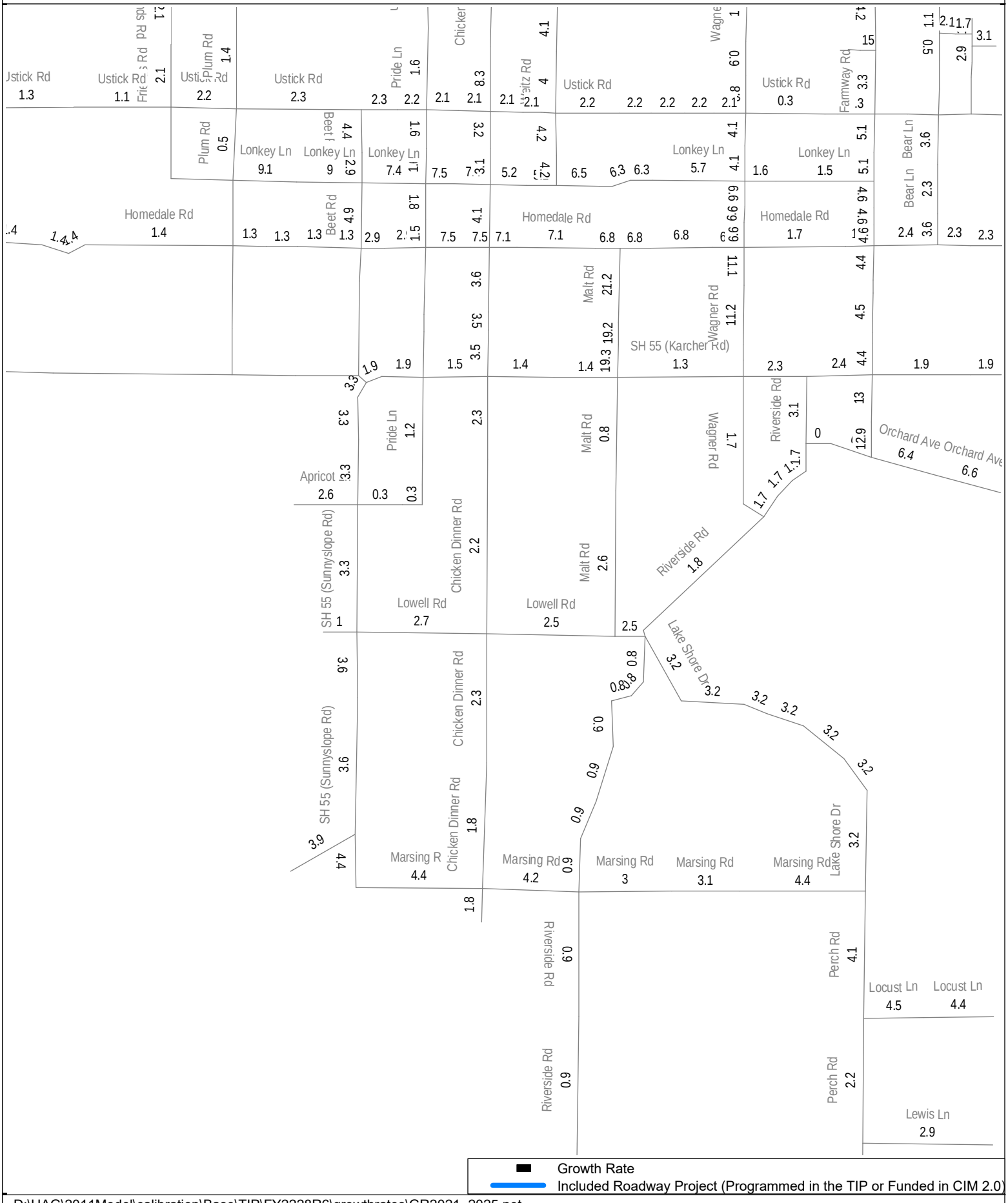
cube

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Exhibit F

# 2021 Peak Hour to 2025 Peak Hour Compounded Annual Growth Rates

7/20/2021




D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\growthrates\GR2021_2025.net

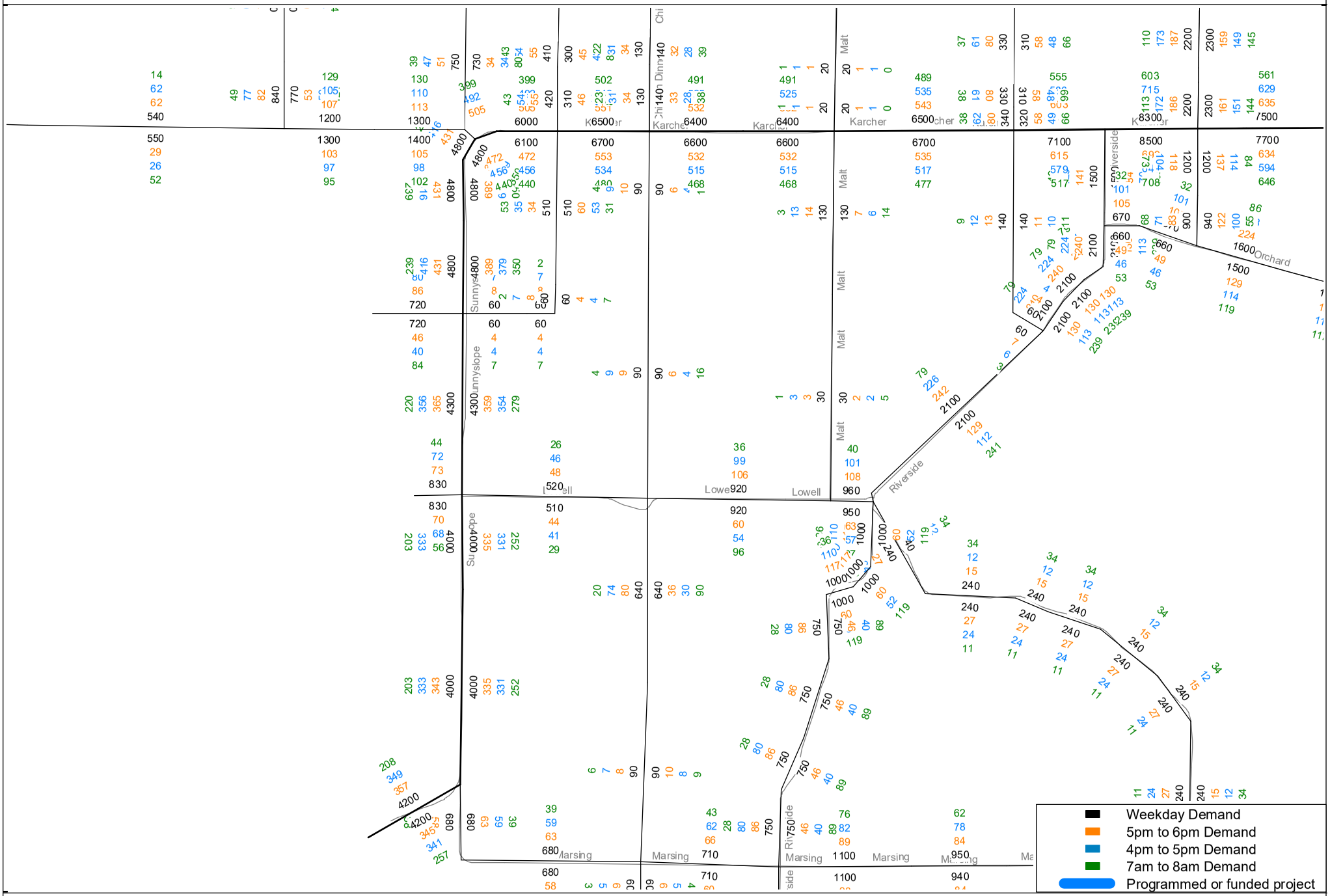
COMPASS reserves the right to rerun the model for any reason deemed necessary.

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Exhibit F

2025 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021




D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2025\ALLDEMAND_b2025.NET
New Regional Model calibrated to 2011/12 conditions - completed in January 2015

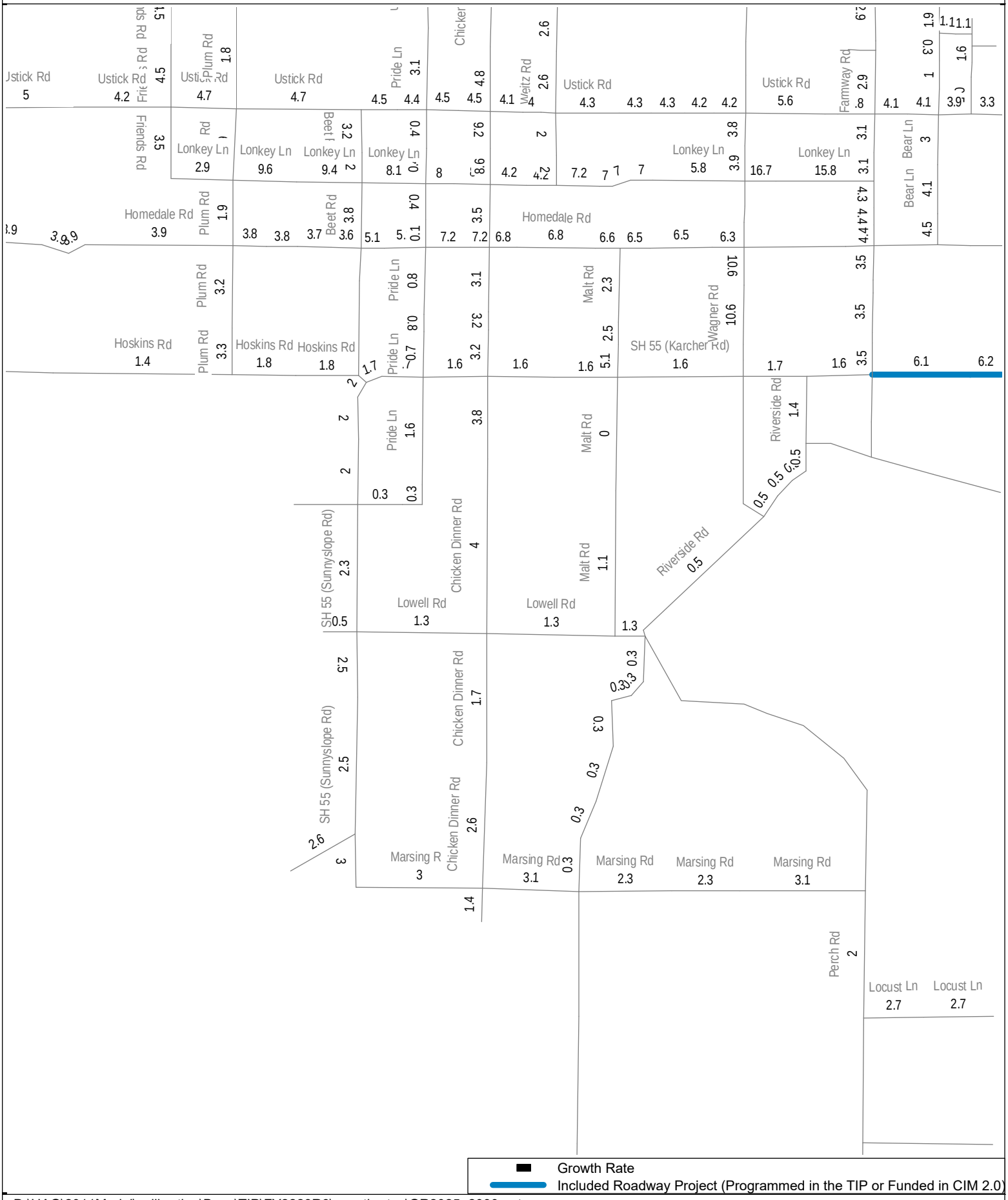
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Exhibit F

# 2025 Peak Hour to 2030 Peak Hour Compounded Annual Growth Rates

7/20/2021




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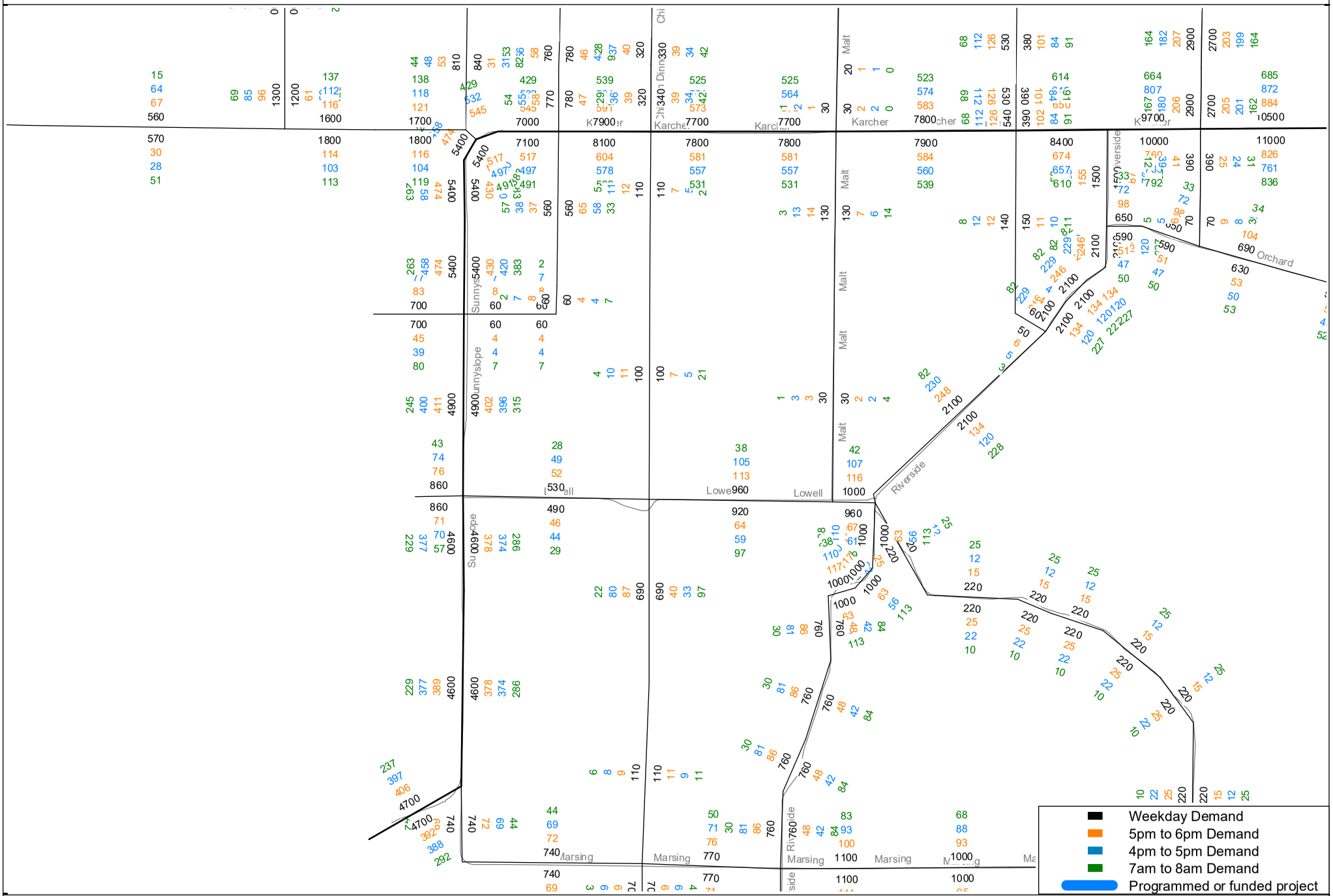
COMPASS reserves the right to rerun the model for any reason deemed necessary.

cube

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Exhibit F

2030 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021



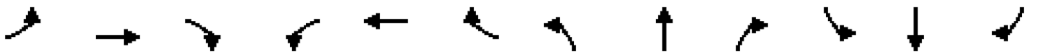

D:\UAG\2011Model\calibration\Base\TIP\FY2228R6\b2030\ALLDEMAND_b2030.NET
Roadway assumptions per CIM 2040 2.0 (Dec 2018) and reconciled demograhic data set as of April 2019

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Exhibit F

# APPENDIX E: 2027 Background Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 189 | 1220 | 567 | 57 | 933 | 441 | 27 | 194 | 77 | 233 | 244 | 225 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.15 | 0.15 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1275 | 505 | 1697 | 882 | 813 |
| Grp Volume(v), veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 0 | 208 | 194 | 0 | 196 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1780 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 5.6 | 7.4 | 0.2 | 1.1 | 5.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Cycle Q Clear(g_c), s | 5.6 | 7.4 | 0.2 | 1.1 | 5.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 189 | 1220 | 567 | 57 | 933 | 441 | 27 | 0 | 271 | 233 | 0 | 469 |
| V/C Ratio(X) | 0.80 | 0.41 | 0.02 | 0.53 | 0.36 | 0.85 | 0.45 | 0.00 | 0.77 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 255 | 2525 | 1173 | 261 | 2462 | 1163 | 261 | 0 | 794 | 246 | 0 | 754 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.1 | 16.1 | 13.9 | 31.8 | 19.3 | 22.7 | 32.6 | 0.0 | 27.2 | 28.0 | 0.0 | 19.8 |
| Incr Delay (d2), s/veh | 8.8 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 4.4 | 0.0 | 1.7 | 18.6 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 4.2 | 0.1 | 0.8 | 3.2 | 8.4 | 0.4 | 0.0 | 5.6 | 7.2 | 0.0 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.8 | 16.2 | 13.9 | 34.6 | 19.3 | 24.4 | 37.0 | 0.0 | 28.9 | 46.6 | 0.0 | 20.0 |
| LnGrp LOS | D | B | B | C | B | C | D | | C | D | | B |
| Approach Vol, veh/h | | 661 | | | 743 | | | 220 | | | 390 | |
| Approach Delay, s/veh | | 21.1 | | | 22.5 | | | 29.3 | | | 33.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.5 | 15.5 | 7.3 | 29.5 | 6.2 | 23.8 | 12.5 | 24.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 9.5 | 3.1 | 9.4 | 2.4 | 8.3 | 7.6 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 0.7 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 24.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 294 | 0 | 12 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 151 | 501 | 3 | 30 | 340 | 79 | 12 | 196 | 0 | 194 | 172 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 22.8 | 22.8 | 2.5 | 15.4 | 15.4 | 1.0 | 16.1 | | 9.8 | 24.9 | |
| Effective Green, g (s) | 9.8 | 22.8 | 22.8 | 2.5 | 15.4 | 15.4 | 1.0 | 16.1 | | 9.8 | 24.9 | |
| Actuated g/C Ratio | 0.14 | 0.31 | 0.31 | 0.03 | 0.21 | 0.21 | 0.01 | 0.22 | | 0.14 | 0.34 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 234 | 1061 | 497 | 61 | 697 | 333 | 24 | 391 | | 225 | 569 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.10 | | 0.01 | c0.11 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.65 | 0.47 | 0.01 | 0.49 | 0.49 | 0.24 | 0.50 | 0.50 | | 0.86 | 0.30 | |
| Uniform Delay, d1 | 29.7 | 20.0 | 17.1 | 34.4 | 25.1 | 23.7 | 35.5 | 24.7 | | 30.7 | 17.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.5 | 0.1 | 0.0 | 2.3 | 0.2 | 0.1 | 5.8 | 0.4 | | 26.3 | 0.1 | |
| Delay (s) | 34.2 | 20.1 | 17.1 | 36.6 | 25.3 | 23.8 | 41.3 | 25.0 | | 57.0 | 17.5 | |
| Level of Service | C | C | B | D | C | C | D | C | | E | B | |
| Approach Delay (s/veh) | | 23.3 | | | 25.0 | | | 25.9 | | | 37.2 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 72.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 54.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

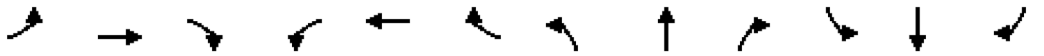
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 4 | 1 | 182 | 130 | 3 |
| Future Vol, veh/h | 15 | 4 | 1 | 182 | 130 | 3 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 17 | 4 | 1 | 202 | 144 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 356 | 146 | 148 | 0 | - | 0 |
| Stage 1 | 146 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 615 | 901 | 1003 | - | - | - |
| Stage 1 | 848 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 615 | 901 | 1003 | - | - | - |
| Mov Cap-2 Maneuver | 615 | - | - | - | - | - |
| Stage 1 | 847 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.65 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 659 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.032 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 170 | 759 | 349 | 118 | 666 | 295 | 38 | 199 | 64 | 260 | 274 | 202 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.07 | 0.19 | 0.19 | 0.02 | 0.15 | 0.15 | 0.15 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1356 | 436 | 1767 | 1000 | 738 |
| Grp Volume(v), veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 0 | 181 | 210 | 0 | 365 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1792 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 3.8 | 6.3 | 0.3 | 2.2 | 5.8 | 5.6 | 0.5 | 0.0 | 4.9 | 5.9 | 0.0 | 9.9 |
| Cycle Q Clear(g_c), s | 3.8 | 6.3 | 0.3 | 2.2 | 5.8 | 5.6 | 0.5 | 0.0 | 4.9 | 5.9 | 0.0 | 9.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 170 | 759 | 349 | 118 | 666 | 295 | 38 | 0 | 263 | 260 | 0 | 476 |
| V/C Ratio(X) | 0.78 | 0.62 | 0.03 | 0.68 | 0.65 | 0.63 | 0.48 | 0.00 | 0.69 | 0.81 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h | 330 | 3328 | 1533 | 342 | 3437 | 1521 | 328 | 0 | 1046 | 336 | 0 | 1010 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.5 | 18.0 | 15.6 | 23.3 | 19.2 | 19.1 | 24.7 | 0.0 | 20.7 | 21.1 | 0.0 | 17.0 |
| Incr Delay (d2), s/veh | 3.0 | 0.3 | 0.0 | 2.5 | 0.4 | 0.8 | 3.4 | 0.0 | 1.2 | 8.2 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.5 | 3.5 | 0.1 | 1.5 | 3.4 | 3.0 | 0.4 | 0.0 | 3.4 | 4.9 | 0.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 25.5 | 18.3 | 15.6 | 25.8 | 19.6 | 20.0 | 28.1 | 0.0 | 21.9 | 29.3 | 0.0 | 18.0 |
| LnGrp LOS | C | B | B | C | B | B | C | | C | C | | B |
| Approach Vol, veh/h | | 613 | | | 699 | | | 199 | | | 575 | |
| Approach Delay, s/veh | | 19.8 | | | 20.4 | | | 22.4 | | | 22.1 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.8 | 12.8 | 8.6 | 16.9 | 6.3 | 19.3 | 10.3 | 15.2 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 7.9 | 6.9 | 4.2 | 8.3 | 2.5 | 11.9 | 5.8 | 7.8 |
| Green Ext Time (p_c), s | 0.1 | 0.6 | 0.0 | 1.7 | 0.0 | 1.3 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 20.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 148 | 0 | 10 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 133 | 470 | 3 | 80 | 433 | 38 | 18 | 171 | 0 | 210 | 346 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 18.6 | 18.6 | 6.3 | 14.9 | 14.9 | 1.1 | 16.7 | | 9.9 | 25.5 | |
| Effective Green, g (s) | 9.9 | 18.6 | 18.6 | 6.3 | 14.9 | 14.9 | 1.1 | 16.7 | | 9.9 | 25.5 | |
| Actuated g/C Ratio | 0.14 | 0.26 | 0.26 | 0.09 | 0.20 | 0.20 | 0.02 | 0.23 | | 0.14 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 233 | 870 | 404 | 153 | 724 | 320 | 25 | 411 | | 238 | 610 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.05 | 0.12 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.02 | | | | | | |
| v/c Ratio | 0.57 | 0.54 | 0.01 | 0.52 | 0.60 | 0.12 | 0.72 | 0.42 | | 0.88 | 0.57 | |
| Uniform Delay, d1 | 29.5 | 23.4 | 20.2 | 31.8 | 26.2 | 23.6 | 35.7 | 23.9 | | 30.9 | 19.2 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.1 | 0.4 | 0.0 | 1.5 | 0.9 | 0.1 | 60.2 | 0.2 | | 28.8 | 0.7 | |
| Delay (s) | 31.6 | 23.8 | 20.2 | 33.3 | 27.1 | 23.7 | 95.8 | 24.1 | | 59.7 | 19.9 | |
| Level of Service | C | C | C | C | C | C | F | C | | E | B | |
| Approach Delay (s/veh) | | 25.4 | | | 26.9 | | | 30.6 | | | 34.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 28.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 72.8 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

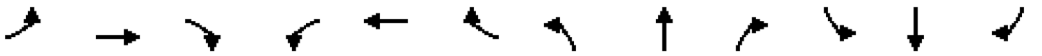
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 1 | 6 | 177 | 261 | 25 |
| Future Vol, veh/h | 10 | 1 | 6 | 177 | 261 | 25 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 1 | 7 | 192 | 284 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 509 | 297 | 311 | 0 | - | 0 |
| Stage 1 | 297 | - | - | - | - | - |
| Stage 2 | 211 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 524 | 742 | 1250 | - | - | - |
| Stage 1 | 754 | - | - | - | - | - |
| Stage 2 | 824 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 521 | 742 | 1250 | - | - | - |
| Mov Cap-2 Maneuver | 521 | - | - | - | - | - |
| Stage 1 | 749 | - | - | - | - | - |
| Stage 2 | 824 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.87 | 0.26 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 59 | - | 536 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.022 | - | - |
| HCM Control Delay (s/veh) | 7.9 | 0 | 11.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



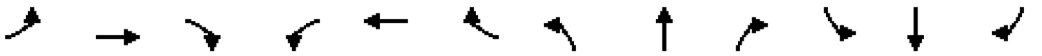
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (veh/h) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 189 | 626 | 11 | 57 | 489 | 439 | 27 | 193 | 77 | 234 | 243 | 224 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.15 | 0.15 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 1759 | 32 | 1781 | 1752 | 1572 | 1781 | 1275 | 505 | 1697 | 882 | 813 |
| Grp Volume(v), veh/h | 151 | 0 | 510 | 30 | 340 | 373 | 12 | 0 | 208 | 194 | 0 | 196 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1780 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 5.6 | 0.0 | 17.0 | 1.1 | 11.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Cycle Q Clear(g_c), s | 5.6 | 0.0 | 17.0 | 1.1 | 11.5 | 14.9 | 0.4 | 0.0 | 7.5 | 7.4 | 0.0 | 6.3 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 189 | 0 | 638 | 57 | 489 | 439 | 27 | 0 | 270 | 234 | 0 | 468 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.80 | 0.53 | 0.70 | 0.85 | 0.45 | 0.00 | 0.77 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 256 | 0 | 1468 | 263 | 1436 | 1289 | 263 | 0 | 665 | 248 | 0 | 631 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.9 | 0.0 | 19.2 | 31.6 | 21.4 | 22.6 | 32.4 | 0.0 | 27.0 | 27.9 | 0.0 | 19.7 |
| Incr Delay (d2), s/veh | 8.5 | 0.0 | 0.9 | 2.8 | 0.7 | 1.8 | 4.4 | 0.0 | 1.8 | 18.3 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 0.0 | 9.7 | 0.8 | 7.2 | 8.3 | 0.4 | 0.0 | 5.5 | 7.2 | 0.0 | 4.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.4 | 0.0 | 20.1 | 34.4 | 22.1 | 24.4 | 36.8 | 0.0 | 28.8 | 46.1 | 0.0 | 19.9 |
| LnGrp LOS | D | | C | C | C | C | D | | C | D | | B |
| Approach Vol, veh/h | | 661 | | | 743 | | | 220 | | | 390 | |
| Approach Delay, s/veh | | 24.1 | | | 23.8 | | | 29.2 | | | 32.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.4 | 15.4 | 7.3 | 29.2 | 6.2 | 23.6 | 12.4 | 24.1 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 9.5 | 3.1 | 19.0 | 2.4 | 8.3 | 7.6 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.7 | 0.0 | 0.6 | 0.0 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.2 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Future Volume (vph) | 136 | 451 | 8 | 27 | 306 | 336 | 11 | 134 | 53 | 175 | 92 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1772 | | 1770 | 1727 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1772 | | 1770 | 1727 | 1568 | 1770 | 1764 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 9 | 30 | 340 | 373 | 12 | 149 | 59 | 194 | 102 | 94 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 250 | 0 | 12 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 151 | 509 | 0 | 30 | 340 | 123 | 12 | 196 | 0 | 194 | 172 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 34.3 | | 2.5 | 26.6 | 26.6 | 1.0 | 18.3 | | 10.1 | 27.4 | |
| Effective Green, g (s) | 10.1 | 34.3 | | 2.5 | 26.6 | 26.6 | 1.0 | 18.3 | | 10.1 | 27.4 | |
| Actuated g/C Ratio | 0.12 | 0.40 | | 0.03 | 0.31 | 0.31 | 0.01 | 0.21 | | 0.12 | 0.32 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 202 | 702 | | 51 | 531 | 482 | 20 | 373 | | 195 | 524 | |
| v/s Ratio Prot | c0.09 | c0.29 | | 0.02 | 0.20 | | 0.01 | c0.11 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.08 | | | | | | |
| v/c Ratio | 0.75 | 0.73 | | 0.59 | 0.64 | 0.26 | 0.60 | 0.53 | | 0.99 | 0.33 | |
| Uniform Delay, d1 | 37.0 | 22.1 | | 41.5 | 25.8 | 22.5 | 42.6 | 30.3 | | 38.2 | 22.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 12.4 | 3.2 | | 10.7 | 2.0 | 0.1 | 30.1 | 0.6 | | 62.6 | 0.1 | |
| Delay (s) | 49.3 | 25.3 | | 52.2 | 27.8 | 22.6 | 72.6 | 30.9 | | 100.7 | 22.7 | |
| Level of Service | D | C | | D | C | C | E | C | | F | C | |
| Approach Delay (s/veh) | | 30.8 | | | 26.2 | | | 33.1 | | | 61.5 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 35.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 86.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 66.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

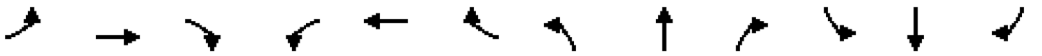
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (veh/h) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 168 | 556 | 12 | 107 | 517 | 434 | 37 | 187 | 60 | 254 | 262 | 193 |
| Arrive On Green | 0.10 | 0.31 | 0.31 | 0.06 | 0.28 | 0.28 | 0.02 | 0.14 | 0.14 | 0.14 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1739 | 1767 | 38 | 1781 | 1870 | 1572 | 1711 | 1356 | 436 | 1767 | 1000 | 738 |
| Grp Volume(v), veh/h | 133 | 0 | 480 | 80 | 433 | 186 | 18 | 0 | 181 | 210 | 0 | 365 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1804 | 1781 | 1870 | 1572 | 1711 | 0 | 1792 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 4.7 | 0.0 | 15.5 | 2.8 | 13.6 | 6.0 | 0.6 | 0.0 | 6.0 | 7.2 | 0.0 | 12.2 |
| Cycle Q Clear(g_c), s | 4.7 | 0.0 | 15.5 | 2.8 | 13.6 | 6.0 | 0.6 | 0.0 | 6.0 | 7.2 | 0.0 | 12.2 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 168 | 0 | 567 | 107 | 517 | 434 | 37 | 0 | 247 | 254 | 0 | 455 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.85 | 0.75 | 0.84 | 0.43 | 0.49 | 0.00 | 0.73 | 0.83 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 271 | 0 | 1577 | 280 | 1635 | 1374 | 269 | 0 | 714 | 275 | 0 | 690 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.5 | 0.0 | 19.9 | 28.8 | 21.2 | 18.5 | 30.1 | 0.0 | 25.7 | 25.9 | 0.0 | 21.5 |
| Incr Delay (d2), s/veh | 3.1 | 0.0 | 1.4 | 3.8 | 1.4 | 0.2 | 3.7 | 0.0 | 1.6 | 15.7 | 0.0 | 2.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.3 | 0.0 | 9.1 | 2.0 | 8.7 | 3.3 | 0.5 | 0.0 | 4.5 | 7.0 | 0.0 | 8.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 30.6 | 0.0 | 21.3 | 32.6 | 22.6 | 18.7 | 33.8 | 0.0 | 27.3 | 41.6 | 0.0 | 23.6 |
| LnGrp LOS | C | | C | C | C | B | C | | C | D | | C |
| Approach Vol, veh/h | | 613 | | | 699 | | | 199 | | | 575 | |
| Approach Delay, s/veh | | 23.3 | | | 22.7 | | | 27.9 | | | 30.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.3 | 13.9 | 8.9 | 25.2 | 6.5 | 21.6 | 11.3 | 22.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 8.0 | 4.8 | 17.5 | 2.6 | 14.2 | 6.7 | 15.6 |
| Green Ext Time (p_c), s | 0.0 | 0.5 | 0.0 | 1.5 | 0.0 | 1.1 | 0.0 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.5 |
| HCM 7th LOS | C |

**Notes**

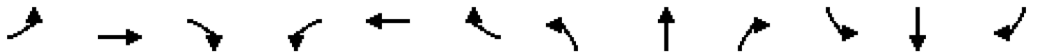
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Future Volume (vph) | 129 | 456 | 10 | 78 | 420 | 180 | 17 | 133 | 43 | 204 | 204 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1795 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 10 | 80 | 433 | 186 | 18 | 137 | 44 | 210 | 210 | 155 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 98 | 0 | 10 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 133 | 479 | 0 | 80 | 433 | 88 | 18 | 171 | 0 | 210 | 345 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 30.0 | | 6.5 | 26.3 | 26.3 | 2.2 | 17.5 | | 10.1 | 25.4 | |
| Effective Green, g (s) | 10.1 | 30.0 | | 6.5 | 26.3 | 26.3 | 2.2 | 17.5 | | 10.1 | 25.4 | |
| Actuated g/C Ratio | 0.12 | 0.35 | | 0.08 | 0.31 | 0.31 | 0.03 | 0.20 | | 0.12 | 0.30 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 203 | 628 | | 134 | 573 | 482 | 43 | 367 | | 207 | 518 | |
| v/s Ratio Prot | c0.08 | c0.27 | | 0.05 | 0.23 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.66 | 0.76 | | 0.60 | 0.76 | 0.18 | 0.42 | 0.47 | | 1.01 | 0.67 | |
| Uniform Delay, d1 | 36.0 | 24.6 | | 38.2 | 26.7 | 21.7 | 41.0 | 29.9 | | 37.7 | 26.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.7 | 4.9 | | 4.7 | 5.0 | 0.1 | 2.4 | 0.3 | | 66.4 | 2.5 | |
| Delay (s) | 41.7 | 29.5 | | 42.9 | 31.7 | 21.7 | 43.4 | 30.2 | | 104.0 | 28.8 | |
| Level of Service | D | C | | D | C | C | D | C | | F | C | |
| Approach Delay (s/veh) | | 32.1 | | | 30.3 | | | 31.4 | | | 56.3 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 38.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.4 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# APPENDIX F: 2027 Total Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 191 | 1217 | 565 | 59 | 932 | 440 | 27 | 193 | 87 | 233 | 246 | 231 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1219 | 552 | 1697 | 872 | 821 |
| Grp Volume(v), veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 0 | 218 | 194 | 0 | 198 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1771 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 5.8 | 7.8 | 0.2 | 1.2 | 5.7 | 15.2 | 0.5 | 0.0 | 8.0 | 7.6 | 0.0 | 6.5 |
| Cycle Q Clear(g_c), s | 5.8 | 7.8 | 0.2 | 1.2 | 5.7 | 15.2 | 0.5 | 0.0 | 8.0 | 7.6 | 0.0 | 6.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 191 | 1217 | 565 | 59 | 932 | 440 | 27 | 0 | 280 | 233 | 0 | 477 |
| V/C Ratio(X) | 0.80 | 0.42 | 0.02 | 0.54 | 0.37 | 0.85 | 0.45 | 0.00 | 0.78 | 0.83 | 0.00 | 0.41 |
| Avail Cap(c_a), veh/h | 250 | 2478 | 1151 | 257 | 2416 | 1142 | 257 | 0 | 776 | 242 | 0 | 739 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.6 | 16.6 | 14.2 | 32.4 | 19.7 | 23.1 | 33.2 | 0.0 | 27.5 | 28.6 | 0.0 | 19.9 |
| Incr Delay (d2), s/veh | 9.9 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 4.4 | 0.0 | 1.8 | 19.5 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.8 | 4.5 | 0.1 | 0.9 | 3.4 | 8.5 | 0.4 | 0.0 | 6.0 | 7.5 | 0.0 | 4.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.5 | 16.7 | 14.2 | 35.2 | 19.8 | 24.9 | 37.6 | 0.0 | 29.3 | 48.1 | 0.0 | 20.1 |
| LnGrp LOS | D | B | B | D | B | C | D | | C | D | | C |
| Approach Vol, veh/h | | 679 | | | 751 | | | 230 | | | 392 | |
| Approach Delay, s/veh | | 21.8 | | | 23.0 | | | 29.7 | | | 33.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

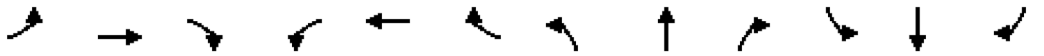
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 16.1 | 7.5 | 29.9 | 6.2 | 24.5 | 12.7 | 24.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 10.0 | 3.2 | 9.8 | 2.5 | 8.5 | 7.8 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 0.7 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.4 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 293 | 0 | 14 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 153 | 517 | 3 | 32 | 346 | 80 | 12 | 204 | 0 | 194 | 173 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 23.1 | 23.1 | 2.6 | 15.8 | 15.8 | 1.0 | 16.5 | | 9.8 | 25.3 | |
| Effective Green, g (s) | 9.8 | 23.1 | 23.1 | 2.6 | 15.8 | 15.8 | 1.0 | 16.5 | | 9.8 | 25.3 | |
| Actuated g/C Ratio | 0.13 | 0.32 | 0.32 | 0.04 | 0.22 | 0.22 | 0.01 | 0.23 | | 0.13 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 232 | 1063 | 498 | 62 | 707 | 337 | 24 | 394 | | 223 | 571 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.11 | | 0.01 | c0.12 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.66 | 0.49 | 0.01 | 0.52 | 0.49 | 0.24 | 0.50 | 0.52 | | 0.87 | 0.30 | |
| Uniform Delay, d1 | 30.2 | 20.3 | 17.2 | 34.7 | 25.2 | 23.8 | 35.9 | 24.9 | | 31.1 | 17.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.1 | 0.1 | 0.0 | 3.0 | 0.2 | 0.1 | 5.8 | 0.5 | | 27.5 | 0.1 | |
| Delay (s) | 35.3 | 20.4 | 17.2 | 37.7 | 25.4 | 23.9 | 41.7 | 25.4 | | 58.6 | 17.7 | |
| Level of Service | D | C | B | D | C | C | D | C | | E | B | |
| Approach Delay (s/veh) | | 23.7 | | | 25.2 | | | 26.2 | | | 37.9 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 27.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 73.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 55.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 24 | 6 | 1 | 182 | 130 | 5 |
| Future Vol, veh/h | 24 | 6 | 1 | 182 | 130 | 5 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 27 | 7 | 1 | 202 | 144 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 357 | 147 | 150 | 0 | - | 0 |
| Stage 1 | 147 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 614 | 900 | 1001 | - | - | - |
| Stage 1 | 847 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 614 | 900 | 1001 | - | - | - |
| Mov Cap-2 Maneuver | 614 | - | - | - | - | - |
| Stage 1 | 846 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.79 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 655 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.051 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

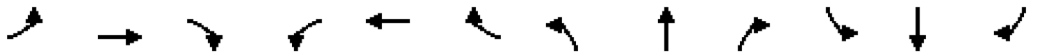
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Future Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 701 | 1 | 7 | 425 | 0 | 3 | 0 | 19 | 1 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 425 | 0 | 0 | 702 | 0 | 0 | 930 | 1142 | 351 | 791 | 1143 | 213 |
| Stage 1 | - | - | - | - | - | - | 704 | 704 | - | 438 | 438 | - |
| Stage 2 | - | - | - | - | - | - | 226 | 438 | - | 353 | 704 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 1130 | - | - | 891 | - | - | 222 | 199 | 645 | 280 | 199 | 793 |
| Stage 1 | - | - | - | - | - | - | 394 | 438 | - | 567 | 577 | - |
| Stage 2 | - | - | - | - | - | - | 756 | 577 | - | 637 | 437 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1130 | - | - | 891 | - | - | 218 | 197 | 645 | 270 | 197 | 793 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 319 | 314 | - | 390 | 311 | - |
| Stage 1 | - | - | - | - | - | - | 393 | 437 | - | 563 | 573 | - |
| Stage 2 | - | - | - | - | - | - | 744 | 573 | - | 618 | 437 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.01 | 0.14 | 11.7 | 10.27 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 559 | 1130 | - | - | 891 | - | - | 691 |
| HCM Lane V/C Ratio | 0.039 | 0.001 | - | - | 0.007 | - | - | 0.011 |
| HCM Control Delay (s/veh) | 11.7 | 8.2 | - | - | 9.1 | - | - | 10.3 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 171 | 770 | 355 | 122 | 683 | 302 | 38 | 197 | 70 | 260 | 276 | 205 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.07 | 0.19 | 0.19 | 0.02 | 0.15 | 0.15 | 0.15 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1318 | 468 | 1767 | 998 | 739 |
| Grp Volume(v), veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 0 | 187 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1786 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 3.9 | 6.5 | 0.3 | 2.5 | 6.1 | 5.7 | 0.5 | 0.0 | 5.2 | 6.0 | 0.0 | 10.2 |
| Cycle Q Clear(g_c), s | 3.9 | 6.5 | 0.3 | 2.5 | 6.1 | 5.7 | 0.5 | 0.0 | 5.2 | 6.0 | 0.0 | 10.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 171 | 770 | 355 | 122 | 683 | 302 | 38 | 0 | 267 | 260 | 0 | 481 |
| V/C Ratio(X) | 0.79 | 0.62 | 0.03 | 0.71 | 0.66 | 0.62 | 0.48 | 0.00 | 0.70 | 0.81 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h | 324 | 3264 | 1504 | 335 | 3371 | 1492 | 322 | 0 | 1022 | 329 | 0 | 991 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.9 | 18.2 | 15.8 | 23.7 | 19.5 | 19.3 | 25.2 | 0.0 | 21.0 | 21.5 | 0.0 | 17.3 |
| Incr Delay (d2), s/veh | 3.0 | 0.3 | 0.0 | 2.8 | 0.4 | 0.8 | 3.5 | 0.0 | 1.2 | 8.8 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 3.7 | 0.1 | 1.7 | 3.6 | 3.1 | 0.4 | 0.0 | 3.6 | 5.1 | 0.0 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 25.9 | 18.5 | 15.8 | 26.5 | 19.9 | 20.1 | 28.6 | 0.0 | 22.3 | 30.3 | 0.0 | 18.3 |
| LnGrp LOS | C | B | B | C | B | C | C | | C | C | | B |
| Approach Vol, veh/h | | 623 | | | 725 | | | 205 | | | 579 | |
| Approach Delay, s/veh | | 20.1 | | | 20.7 | | | 22.8 | | | 22.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.0 | 13.1 | 8.8 | 17.3 | 6.3 | 19.7 | 10.4 | 15.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 7.2 | 4.5 | 8.5 | 2.5 | 12.2 | 5.9 | 8.1 |
| Green Ext Time (p_c), s | 0.1 | 0.6 | 0.0 | 1.8 | 0.0 | 1.3 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 149 | 0 | 11 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 134 | 479 | 3 | 86 | 451 | 39 | 18 | 176 | 0 | 210 | 350 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 18.8 | 18.8 | 6.6 | 15.4 | 15.4 | 1.1 | 17.0 | | 9.9 | 25.8 | |
| Effective Green, g (s) | 9.9 | 18.8 | 18.8 | 6.6 | 15.4 | 15.4 | 1.1 | 17.0 | | 9.9 | 25.8 | |
| Actuated g/C Ratio | 0.13 | 0.26 | 0.26 | 0.09 | 0.21 | 0.21 | 0.01 | 0.23 | | 0.13 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 231 | 870 | 404 | 158 | 740 | 328 | 25 | 413 | | 235 | 611 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.05 | 0.13 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.03 | | | | | | |
| v/c Ratio | 0.58 | 0.55 | 0.01 | 0.54 | 0.61 | 0.12 | 0.72 | 0.43 | | 0.89 | 0.57 | |
| Uniform Delay, d1 | 29.9 | 23.7 | 20.4 | 32.1 | 26.4 | 23.6 | 36.1 | 24.1 | | 31.3 | 19.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.4 | 0.4 | 0.0 | 2.0 | 1.0 | 0.1 | 60.2 | 0.3 | | 31.2 | 0.8 | |
| Delay (s) | 32.3 | 24.2 | 20.4 | 34.1 | 27.4 | 23.7 | 96.2 | 24.4 | | 62.6 | 20.2 | |
| Level of Service | C | C | C | C | C | C | F | C | | E | C | |
| Approach Delay (s/veh) | | 25.9 | | | 27.2 | | | 30.7 | | | 35.6 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 73.6 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 61.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 2 | 8 | 177 | 261 | 31 |
| Future Vol, veh/h | 16 | 2 | 8 | 177 | 261 | 31 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 2 | 9 | 192 | 284 | 34 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 516 | 301 | 317 | 0 | - | 0 |
| Stage 1 | 301 | - | - | - | - | - |
| Stage 2 | 216 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 519 | 739 | 1243 | - | - | - |
| Stage 1 | 751 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 515 | 739 | 1243 | - | - | - |
| Mov Cap-2 Maneuver | 515 | - | - | - | - | - |
| Stage 1 | 745 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.01 | 0.34 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 533 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.037 | - | - |
| HCM Control Delay (s/veh) | 7.9 | 0 | 12 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

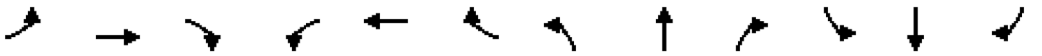
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 658 | 3 | 22 | 657 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 659 | 0 | 0 | 661 | 0 | 0 | 1036 | 1367 | 331 | 1034 | 1367 | 329 |
| Stage 1 | - | - | - | - | - | - | 664 | 664 | - | 701 | 701 | - |
| Stage 2 | - | - | - | - | - | - | 372 | 703 | - | 333 | 666 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 925 | - | - | 923 | - | - | 186 | 146 | 665 | 186 | 146 | 667 |
| Stage 1 | - | - | - | - | - | - | 416 | 456 | - | 395 | 439 | - |
| Stage 2 | - | - | - | - | - | - | 620 | 438 | - | 654 | 456 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 925 | - | - | 923 | - | - | 180 | 142 | 665 | 178 | 142 | 667 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 302 | 265 | - | 292 | 261 | - |
| Stage 1 | - | - | - | - | - | - | 415 | 455 | - | 386 | 429 | - |
| Stage 2 | - | - | - | - | - | - | 603 | 428 | - | 641 | 455 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.29 | 11.57 | 12.19 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 561 | 925 | - | - | 923 | - | - | 505 |
| HCM Lane V/C Ratio | 0.024 | 0.002 | - | - | 0.024 | - | - | 0.008 |
| HCM Control Delay (s/veh) | 11.6 | 8.9 | - | - | 9 | - | - | 12.2 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |



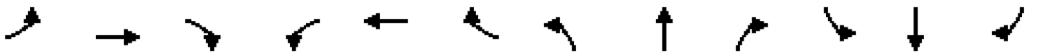
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (veh/h) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 191 | 625 | 11 | 60 | 488 | 438 | 27 | 192 | 87 | 233 | 245 | 231 |
| Arrive On Green | 0.11 | 0.36 | 0.36 | 0.03 | 0.28 | 0.28 | 0.01 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1753 | 1760 | 31 | 1781 | 1752 | 1572 | 1781 | 1219 | 552 | 1697 | 872 | 821 |
| Grp Volume(v), veh/h | 153 | 0 | 526 | 32 | 346 | 373 | 12 | 0 | 218 | 194 | 0 | 198 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 0 | 1791 | 1781 | 1752 | 1572 | 1781 | 0 | 1771 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 5.8 | 0.0 | 18.1 | 1.2 | 12.0 | 15.2 | 0.5 | 0.0 | 8.0 | 7.5 | 0.0 | 6.4 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 18.1 | 1.2 | 12.0 | 15.2 | 0.5 | 0.0 | 8.0 | 7.5 | 0.0 | 6.4 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 191 | 0 | 636 | 60 | 488 | 438 | 27 | 0 | 279 | 233 | 0 | 476 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.83 | 0.54 | 0.71 | 0.85 | 0.45 | 0.00 | 0.78 | 0.83 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 252 | 0 | 1441 | 258 | 1410 | 1265 | 258 | 0 | 650 | 243 | 0 | 619 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.4 | 0.0 | 19.9 | 32.2 | 21.9 | 23.1 | 33.0 | 0.0 | 27.4 | 28.4 | 0.0 | 19.8 |
| Incr Delay (d2), s/veh | 9.7 | 0.0 | 1.1 | 2.8 | 0.7 | 1.8 | 4.4 | 0.0 | 1.8 | 19.2 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.8 | 0.0 | 10.3 | 0.9 | 7.6 | 8.5 | 0.4 | 0.0 | 5.9 | 7.4 | 0.0 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.1 | 0.0 | 21.0 | 34.9 | 22.7 | 24.9 | 37.4 | 0.0 | 29.2 | 47.6 | 0.0 | 20.0 |
| LnGrp LOS | D | | C | C | C | C | D | | C | D | | B |
| Approach Vol, veh/h | | 679 | | | 751 | | | 230 | | | 392 | |
| Approach Delay, s/veh | | 25.0 | | | 24.3 | | | 29.6 | | | 33.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 15.9 | 7.5 | 29.6 | 6.2 | 24.3 | 12.7 | 24.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 10.0 | 3.2 | 20.1 | 2.5 | 8.4 | 7.8 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.7 | 0.0 | 0.6 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.9 |
| HCM 7th LOS | C |

**Notes**

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Future Volume (vph) | 138 | 465 | 8 | 29 | 311 | 336 | 11 | 135 | 61 | 175 | 92 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1773 | | 1770 | 1727 | 1568 | 1770 | 1754 | | 1671 | 1655 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 153 | 517 | 9 | 32 | 346 | 373 | 12 | 150 | 68 | 194 | 102 | 96 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 244 | 0 | 13 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 153 | 525 | 0 | 32 | 346 | 129 | 12 | 205 | 0 | 194 | 173 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 34.1 | | 3.8 | 27.7 | 27.7 | 1.0 | 18.9 | | 10.1 | 28.0 | |
| Effective Green, g (s) | 10.1 | 34.1 | | 3.8 | 27.7 | 27.7 | 1.0 | 18.9 | | 10.1 | 28.0 | |
| Actuated g/C Ratio | 0.11 | 0.39 | | 0.04 | 0.31 | 0.31 | 0.01 | 0.21 | | 0.11 | 0.32 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 198 | 685 | | 76 | 542 | 492 | 20 | 375 | | 191 | 525 | |
| v/s Ratio Prot | c0.09 | c0.30 | | 0.02 | 0.20 | | 0.01 | c0.12 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | | | | 0.08 | | | | | | |
| v/c Ratio | 0.77 | 0.77 | | 0.42 | 0.64 | 0.26 | 0.60 | 0.55 | | 1.02 | 0.33 | |
| Uniform Delay, d1 | 37.9 | 23.6 | | 41.1 | 26.0 | 22.6 | 43.4 | 30.8 | | 39.1 | 23.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 15.6 | 4.6 | | 1.4 | 1.8 | 0.1 | 30.1 | 0.9 | | 69.3 | 0.1 | |
| Delay (s) | 53.5 | 28.2 | | 42.5 | 27.8 | 22.7 | 73.5 | 31.7 | | 108.3 | 23.1 | |
| Level of Service | D | C | | D | C | C | E | C | | F | C | |
| Approach Delay (s/veh) | | 33.9 | | | 25.9 | | | 33.9 | | | 65.3 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 37.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 88.2 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 67.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

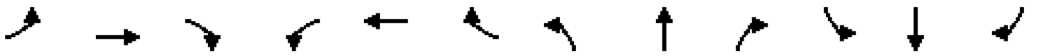
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | ↰ | ↑ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Future Vol, veh/h | 1 | 638 | 1 | 6 | 387 | 0 | 3 | 0 | 17 | 1 | 0 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 100 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 701 | 1 | 6 | 425 | 0 | 3 | 0 | 19 | 1 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 425 | 0 | 0 | 702 | 0 | 0 | 1141 | 1141 | 702 | 1141 | 1142 | 425 |
| Stage 1 | - | - | - | - | - | - | 704 | 704 | - | 437 | 437 | - |
| Stage 2 | - | - | - | - | - | - | 437 | 437 | - | 703 | 704 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1134 | - | - | 895 | - | - | 178 | 201 | 438 | 178 | 200 | 629 |
| Stage 1 | - | - | - | - | - | - | 428 | 440 | - | 598 | 579 | - |
| Stage 2 | - | - | - | - | - | - | 598 | 579 | - | 428 | 439 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1134 | - | - | 895 | - | - | 174 | 199 | 438 | 169 | 199 | 629 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 174 | 199 | - | 169 | 199 | - |
| Stage 1 | - | - | - | - | - | - | 427 | 439 | - | 594 | 575 | - |
| Stage 2 | - | - | - | - | - | - | 588 | 575 | - | 409 | 439 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.01 | 0.13 | 15.74 | 13.09 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 357 | 3 | - | - | 895 | - | - | 453 |
| HCM Lane V/C Ratio | 0.062 | 0.001 | - | - | 0.007 | - | - | 0.017 |
| HCM Control Delay (s/veh) | 15.7 | 8.2 | 0 | - | 9 | - | - | 13.1 |
| HCM Lane LOS | C | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0.1 |



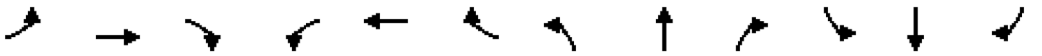
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (veh/h) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 169 | 568 | 12 | 111 | 533 | 448 | 37 | 185 | 66 | 253 | 263 | 195 |
| Arrive On Green | 0.10 | 0.32 | 0.32 | 0.06 | 0.28 | 0.28 | 0.02 | 0.14 | 0.14 | 0.14 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1739 | 1768 | 37 | 1781 | 1870 | 1572 | 1711 | 1318 | 468 | 1767 | 998 | 739 |
| Grp Volume(v), veh/h | 134 | 0 | 489 | 86 | 451 | 188 | 18 | 0 | 187 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1804 | 1781 | 1870 | 1572 | 1711 | 0 | 1786 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 4.8 | 0.0 | 16.2 | 3.1 | 14.6 | 6.2 | 0.7 | 0.0 | 6.5 | 7.4 | 0.0 | 12.8 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 16.2 | 3.1 | 14.6 | 6.2 | 0.7 | 0.0 | 6.5 | 7.4 | 0.0 | 12.8 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 169 | 0 | 580 | 111 | 533 | 448 | 37 | 0 | 250 | 253 | 0 | 458 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.84 | 0.78 | 0.85 | 0.42 | 0.49 | 0.00 | 0.75 | 0.83 | 0.00 | 0.81 |
| Avail Cap(c_a), veh/h | 262 | 0 | 1527 | 272 | 1583 | 1331 | 261 | 0 | 689 | 267 | 0 | 667 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.4 | 0.0 | 20.3 | 29.7 | 21.7 | 18.7 | 31.1 | 0.0 | 26.5 | 26.8 | 0.0 | 22.1 |
| Incr Delay (d2), s/veh | 3.9 | 0.0 | 1.3 | 4.4 | 1.5 | 0.2 | 3.8 | 0.0 | 1.7 | 17.2 | 0.0 | 2.8 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.5 | 0.0 | 9.6 | 2.3 | 9.2 | 3.4 | 0.5 | 0.0 | 4.8 | 7.4 | 0.0 | 8.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 32.3 | 0.0 | 21.6 | 34.1 | 23.1 | 18.9 | 34.9 | 0.0 | 28.2 | 43.9 | 0.0 | 24.9 |
| LnGrp LOS | C | | C | C | C | B | C | | C | D | | C |
| Approach Vol, veh/h | | 623 | | | 725 | | | 205 | | | 579 | |
| Approach Delay, s/veh | | 23.9 | | | 23.3 | | | 28.8 | | | 31.8 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.5 | 14.3 | 9.2 | 26.3 | 6.6 | 22.3 | 11.6 | 23.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 25 | 9.8 | 54.4 | 9.8 | 24.7 | 9.7 | 54.4 |
| Max Q Clear Time (g_c+I1), s | 9.4 | 8.5 | 5.1 | 18.2 | 2.7 | 14.8 | 6.8 | 16.6 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 1.6 | 0.0 | 1.1 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.3 |
| HCM 7th LOS | C |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Future Volume (vph) | 130 | 465 | 10 | 83 | 437 | 182 | 17 | 134 | 48 | 204 | 206 | 152 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 1788 | | 1770 | 1863 | 1568 | 1687 | 1790 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 134 | 479 | 10 | 86 | 451 | 188 | 18 | 138 | 49 | 210 | 212 | 157 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 94 | 0 | 10 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 134 | 488 | 0 | 86 | 451 | 94 | 18 | 177 | 0 | 210 | 349 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | |
| Actuated Green, G (s) | 10.1 | 30.8 | | 6.7 | 27.3 | 27.3 | 2.2 | 17.6 | | 10.1 | 25.5 | |
| Effective Green, g (s) | 10.1 | 30.8 | | 6.7 | 27.3 | 27.3 | 2.2 | 17.6 | | 10.1 | 25.5 | |
| Actuated g/C Ratio | 0.12 | 0.36 | | 0.08 | 0.32 | 0.32 | 0.03 | 0.20 | | 0.12 | 0.29 | |
| Clearance Time (s) | 5.3 | 5.6 | | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 200 | 636 | | 137 | 587 | 494 | 42 | 364 | | 204 | 514 | |
| v/s Ratio Prot | c0.08 | c0.27 | | 0.05 | 0.24 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | | | | 0.06 | | | | | | |
| v/c Ratio | 0.67 | 0.77 | | 0.63 | 0.77 | 0.19 | 0.43 | 0.49 | | 1.03 | 0.68 | |
| Uniform Delay, d1 | 36.6 | 24.7 | | 38.7 | 26.7 | 21.6 | 41.5 | 30.4 | | 38.2 | 26.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.7 | 5.0 | | 6.3 | 5.4 | 0.1 | 2.5 | 0.4 | | 70.9 | 2.8 | |
| Delay (s) | 43.3 | 29.7 | | 45.0 | 32.2 | 21.6 | 44.1 | 30.8 | | 109.1 | 29.7 | |
| Level of Service | D | C | | D | C | C | D | C | | F | C | |
| Approach Delay (s/veh) | | 32.6 | | | 31.0 | | | 32.0 | | | 58.5 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 39.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 86.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 72.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | ↰ | ↑ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 2 | 632 | 3 | 21 | 631 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 658 | 3 | 22 | 657 | 2 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 659 | 0 | 0 | 661 | 0 | 0 | 1365 | 1367 | 660 | 1365 | 1368 | 658 |
| Stage 1 | - | - | - | - | - | - | 664 | 664 | - | 702 | 702 | - |
| Stage 2 | - | - | - | - | - | - | 701 | 703 | - | 663 | 666 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 929 | - | - | 927 | - | - | 125 | 147 | 463 | 125 | 147 | 464 |
| Stage 1 | - | - | - | - | - | - | 450 | 458 | - | 429 | 440 | - |
| Stage 2 | - | - | - | - | - | - | 429 | 440 | - | 451 | 458 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 929 | - | - | 927 | - | - | 120 | 143 | 463 | 118 | 143 | 464 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 120 | 143 | - | 118 | 143 | - |
| Stage 1 | - | - | - | - | - | - | 448 | 457 | - | 419 | 430 | - |
| Stage 2 | - | - | - | - | - | - | 416 | 430 | - | 438 | 456 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.29 | 16.67 | 18.64 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 322 | 6 | - | - | 927 | - | - | 268 |
| HCM Lane V/C Ratio | 0.042 | 0.002 | - | - | 0.024 | - | - | 0.016 |
| HCM Control Delay (s/veh) | 16.7 | 8.9 | 0 | - | 9 | - | - | 18.6 |
| HCM Lane LOS | C | A | A | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Future Volume (veh/h) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 152 | 83 | 194 | 103 | 94 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 188 | 1194 | 555 | 67 | 928 | 438 | 34 | 191 | 105 | 232 | 255 | 233 |
| Arrive On Green | 0.11 | 0.35 | 0.35 | 0.04 | 0.28 | 0.28 | 0.02 | 0.17 | 0.17 | 0.14 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1137 | 621 | 1697 | 886 | 809 |
| Grp Volume(v), veh/h | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 0 | 235 | 194 | 0 | 197 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1759 | 1697 | 0 | 1695 |
| Q Serve(g_s), s | 5.9 | 7.8 | 0.3 | 1.5 | 5.7 | 15.6 | 0.6 | 0.0 | 8.9 | 7.8 | 0.0 | 6.5 |
| Cycle Q Clear(g_c), s | 5.9 | 7.8 | 0.3 | 1.5 | 5.7 | 15.6 | 0.6 | 0.0 | 8.9 | 7.8 | 0.0 | 6.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.35 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 188 | 1194 | 555 | 67 | 928 | 438 | 34 | 0 | 296 | 232 | 0 | 487 |
| V/C Ratio(X) | 0.80 | 0.42 | 0.02 | 0.57 | 0.37 | 0.85 | 0.47 | 0.00 | 0.79 | 0.84 | 0.00 | 0.40 |
| Avail Cap(c_a), veh/h | 244 | 2422 | 1125 | 251 | 2362 | 1116 | 251 | 0 | 753 | 236 | 0 | 723 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.4 | 17.2 | 14.8 | 32.9 | 20.2 | 23.7 | 33.8 | 0.0 | 27.8 | 29.3 | 0.0 | 20.0 |
| Incr Delay (d2), s/veh | 10.4 | 0.1 | 0.0 | 2.8 | 0.1 | 1.8 | 3.7 | 0.0 | 1.8 | 20.6 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 4.6 | 0.2 | 1.1 | 3.4 | 8.8 | 0.5 | 0.0 | 6.6 | 7.7 | 0.0 | 4.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 40.8 | 17.3 | 14.8 | 35.8 | 20.3 | 25.6 | 37.5 | 0.0 | 29.6 | 49.9 | 0.0 | 20.2 |
| LnGrp LOS | D | B | B | D | C | C | D | | C | D | | C |
| Approach Vol, veh/h | | 662 | | | 751 | | | 251 | | | 391 | |
| Approach Delay, s/veh | | 22.6 | | | 23.7 | | | 30.1 | | | 34.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

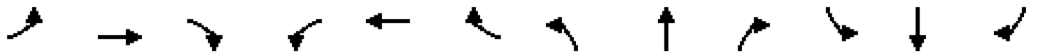
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.8 | 17.0 | 7.8 | 30.0 | 6.5 | 25.3 | 12.8 | 25.0 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 9.8 | 10.9 | 3.5 | 9.8 | 2.6 | 8.5 | 7.9 | 17.6 |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 1.9 | 0.0 | 0.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Future Volume (vph) | 136 | 451 | 9 | 34 | 306 | 336 | 14 | 137 | 75 | 175 | 93 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1740 | | 1671 | 1658 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1740 | | 1671 | 1658 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 151 | 501 | 10 | 38 | 340 | 373 | 16 | 152 | 83 | 194 | 103 | 94 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 297 | 0 | 17 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 151 | 501 | 3 | 38 | 340 | 76 | 16 | 218 | 0 | 194 | 174 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.8 | 20.8 | 20.8 | 3.9 | 14.8 | 14.8 | 1.1 | 17.3 | | 9.8 | 26.0 | |
| Effective Green, g (s) | 9.8 | 20.8 | 20.8 | 3.9 | 14.8 | 14.8 | 1.1 | 17.3 | | 9.8 | 26.0 | |
| Actuated g/C Ratio | 0.13 | 0.28 | 0.28 | 0.05 | 0.20 | 0.20 | 0.02 | 0.24 | | 0.13 | 0.36 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 232 | 960 | 450 | 94 | 664 | 317 | 26 | 411 | | 224 | 589 | |
| v/s Ratio Prot | c0.09 | c0.15 | | 0.02 | 0.10 | | 0.01 | c0.13 | | c0.12 | 0.10 | |
| v/s Ratio Perm | | | 0.00 | | | 0.05 | | | | | | |
| v/c Ratio | 0.65 | 0.52 | 0.01 | 0.40 | 0.51 | 0.24 | 0.62 | 0.53 | | 0.87 | 0.30 | |
| Uniform Delay, d1 | 30.0 | 22.0 | 18.7 | 33.5 | 25.9 | 24.4 | 35.8 | 24.4 | | 31.0 | 17.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.9 | 0.2 | 0.0 | 1.0 | 0.3 | 0.1 | 26.7 | 0.7 | | 26.9 | 0.1 | |
| Delay (s) | 34.9 | 22.2 | 18.7 | 34.5 | 26.2 | 24.6 | 62.5 | 25.0 | | 57.9 | 17.1 | |
| Level of Service | C | C | B | C | C | C | E | C | | E | B | |
| Approach Delay (s/veh) | | 25.1 | | | 25.8 | | | 27.4 | | | 37.3 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 28.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 73.1 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

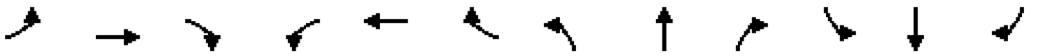
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 43 | 6 | 1 | 182 | 130 | 12 |
| Future Vol, veh/h | 43 | 6 | 1 | 182 | 130 | 12 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 48 | 7 | 1 | 202 | 144 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 361 | 151 | 158 | 0 | - | 0 |
| Stage 1 | 151 | - | - | - | - | - |
| Stage 2 | 209 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 611 | 895 | 993 | - | - | - |
| Stage 1 | 844 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 610 | 895 | 993 | - | - | - |
| Mov Cap-2 Maneuver | 610 | - | - | - | - | - |
| Stage 1 | 843 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.2 | 0.05 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 10 | - | 635 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.086 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 11.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Future Volume (veh/h) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 139 | 59 | 210 | 214 | 155 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 169 | 720 | 331 | 135 | 659 | 292 | 41 | 196 | 83 | 260 | 284 | 206 |
| Arrive On Green | 0.10 | 0.21 | 0.21 | 0.08 | 0.19 | 0.19 | 0.02 | 0.16 | 0.16 | 0.15 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1246 | 529 | 1767 | 1008 | 730 |
| Grp Volume(v), veh/h | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 0 | 198 | 210 | 0 | 369 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1775 | 1767 | 0 | 1739 |
| Q Serve(g_s), s | 3.9 | 6.5 | 0.3 | 3.0 | 5.9 | 5.8 | 0.6 | 0.0 | 5.5 | 6.0 | 0.0 | 10.1 |
| Cycle Q Clear(g_c), s | 3.9 | 6.5 | 0.3 | 3.0 | 5.9 | 5.8 | 0.6 | 0.0 | 5.5 | 6.0 | 0.0 | 10.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 169 | 720 | 331 | 135 | 659 | 292 | 41 | 0 | 279 | 260 | 0 | 490 |
| V/C Ratio(X) | 0.78 | 0.65 | 0.04 | 0.78 | 0.65 | 0.64 | 0.48 | 0.00 | 0.71 | 0.81 | 0.00 | 0.75 |
| Avail Cap(c_a), veh/h | 324 | 3264 | 1504 | 335 | 3371 | 1492 | 322 | 0 | 1016 | 329 | 0 | 992 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.0 | 18.9 | 16.4 | 23.6 | 19.7 | 19.6 | 25.1 | 0.0 | 20.8 | 21.5 | 0.0 | 17.0 |
| Incr Delay (d2), s/veh | 3.0 | 0.4 | 0.0 | 3.6 | 0.4 | 0.9 | 3.2 | 0.0 | 1.3 | 8.8 | 0.0 | 0.9 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 3.7 | 0.2 | 2.1 | 3.5 | 3.1 | 0.5 | 0.0 | 3.8 | 5.1 | 0.0 | 6.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 26.0 | 19.2 | 16.4 | 27.2 | 20.1 | 20.5 | 28.3 | 0.0 | 22.1 | 30.3 | 0.0 | 17.9 |
| LnGrp LOS | C | B | B | C | C | C | C | | C | C | | B |
| Approach Vol, veh/h | | 616 | | | 724 | | | 218 | | | 579 | |
| Approach Delay, s/veh | | 20.6 | | | 21.2 | | | 22.7 | | | 22.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

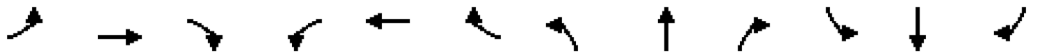
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.0 | 13.5 | 9.1 | 16.5 | 6.5 | 20.0 | 10.4 | 15.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 9.7 | * 30 | 9.8 | 49.4 | 9.8 | 29.7 | 9.7 | 49.4 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 7.5 | 5.0 | 8.5 | 2.6 | 12.1 | 5.9 | 7.9 |
| Green Ext Time (p_c), s | 0.1 | 0.7 | 0.0 | 1.7 | 0.0 | 1.3 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.5 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Future Volume (vph) | 129 | 456 | 13 | 102 | 418 | 182 | 19 | 135 | 57 | 204 | 208 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1779 | | 1752 | 1745 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1779 | | 1752 | 1745 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 133 | 470 | 13 | 105 | 431 | 188 | 20 | 139 | 59 | 210 | 214 | 155 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 152 | 0 | 13 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 133 | 470 | 3 | 105 | 431 | 36 | 20 | 185 | 0 | 210 | 350 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 9.9 | 15.4 | 15.4 | 8.5 | 13.9 | 13.9 | 2.2 | 17.5 | | 9.9 | 25.2 | |
| Effective Green, g (s) | 9.9 | 15.4 | 15.4 | 8.5 | 13.9 | 13.9 | 2.2 | 17.5 | | 9.9 | 25.2 | |
| Actuated g/C Ratio | 0.14 | 0.21 | 0.21 | 0.12 | 0.19 | 0.19 | 0.03 | 0.24 | | 0.14 | 0.35 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 234 | 722 | 335 | 207 | 677 | 300 | 51 | 428 | | 238 | 605 | |
| v/s Ratio Prot | c0.08 | c0.14 | | 0.06 | 0.12 | | 0.01 | 0.10 | | c0.12 | c0.20 | |
| v/s Ratio Perm | | | 0.00 | | | 0.02 | | | | | | |
| v/c Ratio | 0.57 | 0.65 | 0.01 | 0.51 | 0.64 | 0.12 | 0.39 | 0.43 | | 0.88 | 0.58 | |
| Uniform Delay, d1 | 29.3 | 26.1 | 22.6 | 30.1 | 27.0 | 24.3 | 34.5 | 23.3 | | 30.8 | 19.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.9 | 1.6 | 0.0 | 0.7 | 1.4 | 0.1 | 1.8 | 0.3 | | 28.8 | 0.8 | |
| Delay (s) | 31.2 | 27.8 | 22.6 | 30.8 | 28.5 | 24.4 | 36.4 | 23.6 | | 59.6 | 20.2 | |
| Level of Service | C | C | C | C | C | C | D | C | | E | C | |
| Approach Delay (s/veh) | | 28.4 | | | 27.7 | | | 24.8 | | | 34.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 29.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 72.6 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 60.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

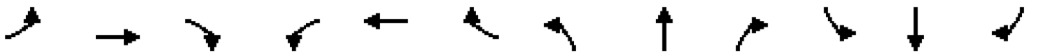
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 28 | 2 | 8 | 177 | 261 | 55 |
| Future Vol, veh/h | 28 | 2 | 8 | 177 | 261 | 55 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 30 | 2 | 9 | 192 | 284 | 60 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 529 | 314 | 343 | 0 | - | 0 |
| Stage 1 | 314 | - | - | - | - | - |
| Stage 2 | 216 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 510 | 727 | 1216 | - | - | - |
| Stage 1 | 741 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 506 | 727 | 1216 | - | - | - |
| Mov Cap-2 Maneuver | 506 | - | - | - | - | - |
| Stage 1 | 735 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.44 | 0.35 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 78 | - | 516 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.063 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.4 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

# APPENDIX G: 2032 Background Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Future Volume (veh/h) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 161 | 61 | 214 | 111 | 104 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 242 | 1379 | 640 | 61 | 995 | 705 | 28 | 199 | 76 | 253 | 253 | 237 |
| Arrive On Green | 0.14 | 0.40 | 0.40 | 0.03 | 0.30 | 0.30 | 0.02 | 0.15 | 0.15 | 0.15 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1293 | 490 | 1697 | 874 | 819 |
| Grp Volume(v), veh/h | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 0 | 222 | 214 | 0 | 215 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1782 | 1697 | 0 | 1693 |
| Q Serve(g_s), s | 9.3 | 12.1 | 0.4 | 1.6 | 9.2 | 21.2 | 0.6 | 0.0 | 10.0 | 10.2 | 0.0 | 8.6 |
| Cycle Q Clear(g_c), s | 9.3 | 12.1 | 0.4 | 1.6 | 9.2 | 21.2 | 0.6 | 0.0 | 10.0 | 10.2 | 0.0 | 8.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 242 | 1379 | 640 | 61 | 995 | 705 | 28 | 0 | 275 | 253 | 0 | 489 |
| V/C Ratio(X) | 0.84 | 0.49 | 0.02 | 0.59 | 0.46 | 0.71 | 0.47 | 0.00 | 0.81 | 0.85 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 629 | 2037 | 946 | 211 | 1183 | 793 | 211 | 0 | 857 | 609 | 0 | 1222 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.8 | 18.3 | 14.8 | 39.4 | 23.5 | 18.4 | 40.4 | 0.0 | 33.8 | 34.3 | 0.0 | 24.0 |
| Incr Delay (d2), s/veh | 2.9 | 0.1 | 0.0 | 3.4 | 0.1 | 1.9 | 4.5 | 0.0 | 2.2 | 3.0 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.8 | 7.3 | 0.2 | 1.3 | 5.8 | 10.9 | 0.5 | 0.0 | 7.7 | 7.6 | 0.0 | 5.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 37.7 | 18.4 | 14.8 | 42.8 | 23.7 | 20.4 | 44.9 | 0.0 | 36.0 | 37.3 | 0.0 | 24.2 |
| LnGrp LOS | D | B | B | D | C | C | D | | D | D | | C |
| Approach Vol, veh/h | | 887 | | | 988 | | | 235 | | | 429 | |
| Approach Delay, s/veh | | 22.7 | | | 22.7 | | | 36.5 | | | 30.7 | |
| Approach LOS | | C | | | C | | | D | | | C | |

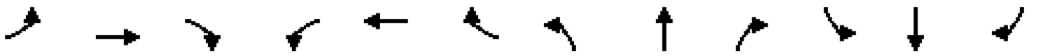
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.6 | 18.1 | 8.0 | 39.0 | 6.5 | 29.2 | 16.7 | 30.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 29.7 | * 40 | 9.8 | 49.4 | 9.8 | 59.7 | 29.7 | 29.4 |
| Max Q Clear Time (g_c+I1), s | 12.2 | 12.0 | 3.6 | 14.1 | 2.6 | 10.6 | 11.3 | 23.2 |
| Green Ext Time (p_c), s | 0.3 | 0.8 | 0.0 | 2.6 | 0.0 | 0.9 | 0.2 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.3 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Future Volume (vph) | 182 | 606 | 11 | 32 | 409 | 448 | 12 | 145 | 55 | 193 | 100 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1767 | | 1671 | 1656 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1767 | | 1671 | 1656 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 202 | 673 | 12 | 36 | 454 | 498 | 13 | 161 | 61 | 214 | 111 | 104 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 251 | 0 | 9 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 202 | 673 | 4 | 36 | 454 | 247 | 13 | 213 | 0 | 214 | 192 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.7 | 34.5 | 34.5 | 4.1 | 21.8 | 39.7 | 2.0 | 21.1 | | 17.9 | 37.0 | |
| Effective Green, g (s) | 16.7 | 34.5 | 34.5 | 4.1 | 21.8 | 39.7 | 2.0 | 21.1 | | 17.9 | 37.0 | |
| Actuated g/C Ratio | 0.17 | 0.35 | 0.35 | 0.04 | 0.22 | 0.40 | 0.02 | 0.21 | | 0.18 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 293 | 1176 | 552 | 73 | 723 | 629 | 35 | 376 | | 302 | 619 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.07 | 0.01 | c0.12 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.09 | | | | | | |
| v/c Ratio | 0.69 | 0.57 | 0.01 | 0.49 | 0.63 | 0.39 | 0.37 | 0.57 | | 0.71 | 0.31 | |
| Uniform Delay, d1 | 38.7 | 26.2 | 21.0 | 46.4 | 34.9 | 21.0 | 47.8 | 34.8 | | 38.0 | 21.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.3 | 0.4 | 0.0 | 1.9 | 1.2 | 0.1 | 2.4 | 1.2 | | 6.1 | 0.1 | |
| Delay (s) | 44.0 | 26.6 | 21.0 | 48.3 | 36.1 | 21.2 | 50.2 | 36.0 | | 44.1 | 22.0 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 30.5 | | | 29.0 | | | 36.8 | | | 33.1 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 30.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 98.9 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 62.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

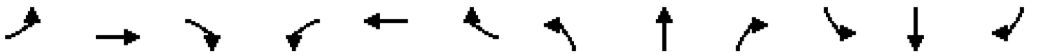
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 5 | 1 | 195 | 142 | 3 |
| Future Vol, veh/h | 16 | 5 | 1 | 195 | 142 | 3 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 18 | 6 | 1 | 217 | 158 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 383 | 159 | 161 | 0 | - | 0 |
| Stage 1 | 159 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 593 | 886 | 990 | - | - | - |
| Stage 1 | 836 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 592 | 886 | 990 | - | - | - |
| Mov Cap-2 Maneuver | 592 | - | - | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.81 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 643 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.036 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Future Volume (veh/h) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 149 | 46 | 232 | 229 | 170 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 223 | 977 | 450 | 122 | 792 | 602 | 38 | 201 | 62 | 283 | 285 | 212 |
| Arrive On Green | 0.13 | 0.28 | 0.28 | 0.07 | 0.22 | 0.22 | 0.02 | 0.15 | 0.15 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1371 | 423 | 1767 | 997 | 740 |
| Grp Volume(v), veh/h | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 0 | 195 | 232 | 0 | 399 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1794 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 6.2 | 10.1 | 0.3 | 3.3 | 9.5 | 7.4 | 0.7 | 0.0 | 6.5 | 8.0 | 0.0 | 13.4 |
| Cycle Q Clear(g_c), s | 6.2 | 10.1 | 0.3 | 3.3 | 9.5 | 7.4 | 0.7 | 0.0 | 6.5 | 8.0 | 0.0 | 13.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 223 | 977 | 450 | 122 | 792 | 602 | 38 | 0 | 263 | 283 | 0 | 497 |
| V/C Ratio(X) | 0.80 | 0.64 | 0.02 | 0.78 | 0.73 | 0.42 | 0.49 | 0.00 | 0.74 | 0.82 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 684 | 3253 | 1498 | 278 | 2511 | 1363 | 267 | 0 | 994 | 695 | 0 | 1374 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.6 | 19.7 | 16.2 | 28.8 | 22.7 | 14.2 | 30.4 | 0.0 | 25.7 | 25.5 | 0.0 | 20.8 |
| Incr Delay (d2), s/veh | 2.5 | 0.3 | 0.0 | 4.0 | 0.5 | 0.2 | 3.6 | 0.0 | 1.6 | 2.2 | 0.0 | 1.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 6.0 | 0.2 | 2.5 | 6.0 | 3.7 | 0.6 | 0.0 | 4.8 | 5.9 | 0.0 | 8.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.1 | 20.0 | 16.2 | 32.7 | 23.2 | 14.4 | 34.0 | 0.0 | 27.2 | 27.8 | 0.0 | 22.0 |
| LnGrp LOS | C | B | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 819 | | | 924 | | | 214 | | | 631 | |
| Approach Delay, s/veh | | 21.9 | | | 21.8 | | | 27.8 | | | 24.1 | |
| Approach LOS | | C | | | C | | | C | | | C | |

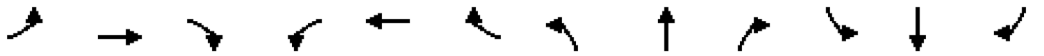
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.4 | 14.5 | 9.5 | 23.4 | 6.6 | 23.3 | 13.4 | 19.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 8.5 | 5.3 | 12.1 | 2.7 | 15.4 | 8.2 | 11.5 |
| Green Ext Time (p_c), s | 0.3 | 0.7 | 0.0 | 2.4 | 0.0 | 1.7 | 0.2 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 22.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Future Volume (vph) | 173 | 611 | 11 | 92 | 561 | 243 | 18 | 145 | 45 | 225 | 222 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1797 | | 1752 | 1744 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1797 | | 1752 | 1744 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 178 | 630 | 11 | 95 | 578 | 251 | 19 | 149 | 46 | 232 | 229 | 170 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 139 | 0 | 8 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 178 | 630 | 3 | 95 | 578 | 112 | 19 | 187 | 0 | 232 | 382 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.2 | 27.1 | 27.1 | 9.5 | 21.3 | 39.6 | 2.3 | 19.1 | | 18.3 | 35.1 | |
| Effective Green, g (s) | 15.2 | 27.1 | 27.1 | 9.5 | 21.3 | 39.6 | 2.3 | 19.1 | | 18.3 | 35.1 | |
| Actuated g/C Ratio | 0.16 | 0.28 | 0.28 | 0.10 | 0.22 | 0.42 | 0.02 | 0.20 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 274 | 968 | 450 | 176 | 790 | 651 | 40 | 360 | | 336 | 642 | |
| v/s Ratio Prot | c0.10 | c0.18 | | 0.05 | c0.16 | 0.03 | 0.01 | 0.10 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.65 | 0.65 | 0.01 | 0.54 | 0.73 | 0.17 | 0.48 | 0.52 | | 0.69 | 0.59 | |
| Uniform Delay, d1 | 37.6 | 29.9 | 24.5 | 40.8 | 34.3 | 17.5 | 45.9 | 34.0 | | 35.9 | 24.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.9 | 1.2 | 0.0 | 1.6 | 3.0 | 0.0 | 3.2 | 0.5 | | 4.9 | 1.0 | |
| Delay (s) | 41.5 | 31.1 | 24.5 | 42.4 | 37.4 | 17.6 | 49.1 | 34.5 | | 40.7 | 25.3 | |
| Level of Service | D | C | C | D | D | B | D | C | | D | C | |
| Approach Delay (s/veh) | | 33.3 | | | 32.5 | | | 35.8 | | | 31.0 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 95.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 68.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

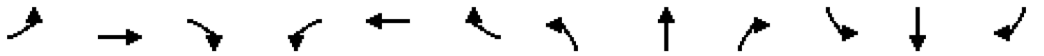
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 11 | 1 | 7 | 192 | 282 | 27 |
| Future Vol, veh/h | 11 | 1 | 7 | 192 | 282 | 27 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 1 | 8 | 209 | 307 | 29 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 551 | 321 | 336 | 0 | - | 0 |
| Stage 1 | 321 | - | - | - | - | - |
| Stage 2 | 230 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 495 | 720 | 1223 | - | - | - |
| Stage 1 | 735 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 492 | 720 | 1223 | - | - | - |
| Mov Cap-2 Maneuver | 492 | - | - | - | - | - |
| Stage 1 | 730 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.32 | 0.28 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 63 | - | 505 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | 0.026 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.3 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

# APPENDIX H: 2032 Total Synchro Reports



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Future Volume (veh/h) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 162 | 70 | 214 | 111 | 106 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 242 | 1398 | 649 | 62 | 1016 | 713 | 28 | 197 | 85 | 251 | 253 | 242 |
| Arrive On Green | 0.14 | 0.41 | 0.41 | 0.03 | 0.31 | 0.31 | 0.02 | 0.16 | 0.16 | 0.15 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1239 | 535 | 1697 | 865 | 826 |
| Grp Volume(v), veh/h | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 0 | 232 | 214 | 0 | 217 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1774 | 1697 | 0 | 1692 |
| Q Serve(g_s), s | 9.8 | 12.9 | 0.4 | 1.8 | 9.6 | 21.8 | 0.6 | 0.0 | 10.9 | 10.6 | 0.0 | 9.0 |
| Cycle Q Clear(g_c), s | 9.8 | 12.9 | 0.4 | 1.8 | 9.6 | 21.8 | 0.6 | 0.0 | 10.9 | 10.6 | 0.0 | 9.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.49 |
| Lane Grp Cap(c), veh/h | 242 | 1398 | 649 | 62 | 1016 | 713 | 28 | 0 | 282 | 251 | 0 | 495 |
| V/C Ratio(X) | 0.84 | 0.49 | 0.02 | 0.62 | 0.45 | 0.70 | 0.47 | 0.00 | 0.82 | 0.85 | 0.00 | 0.44 |
| Avail Cap(c_a), veh/h | 503 | 2355 | 1094 | 203 | 1717 | 1044 | 203 | 0 | 717 | 487 | 0 | 977 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.2 | 18.8 | 15.1 | 41.0 | 24.1 | 18.8 | 42.0 | 0.0 | 35.0 | 35.8 | 0.0 | 24.7 |
| Incr Delay (d2), s/veh | 3.1 | 0.1 | 0.0 | 3.7 | 0.1 | 0.5 | 4.6 | 0.0 | 2.3 | 3.2 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.3 | 7.8 | 0.2 | 1.4 | 6.1 | 10.9 | 0.5 | 0.0 | 8.3 | 7.9 | 0.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 39.3 | 18.9 | 15.1 | 44.6 | 24.2 | 19.3 | 46.6 | 0.0 | 37.3 | 38.9 | 0.0 | 24.9 |
| LnGrp LOS | D | B | B | D | C | B | D | | D | D | | C |
| Approach Vol, veh/h | | 905 | | | 996 | | | 245 | | | 431 | |
| Approach Delay, s/veh | | 23.4 | | | 22.5 | | | 37.8 | | | 31.9 | |
| Approach LOS | | C | | | C | | | D | | | C | |

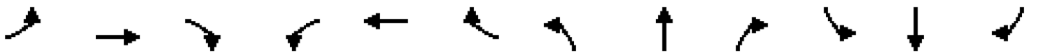
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.0 | 19.0 | 8.2 | 40.9 | 6.5 | 30.5 | 17.2 | 31.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 12.6 | 12.9 | 3.8 | 14.9 | 2.6 | 11.0 | 11.8 | 23.8 |
| Green Ext Time (p_c), s | 0.2 | 0.8 | 0.0 | 2.7 | 0.0 | 0.9 | 0.2 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.9 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Future Volume (vph) | 184 | 620 | 11 | 34 | 414 | 448 | 12 | 146 | 63 | 193 | 100 | 95 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1758 | | 1671 | 1654 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1758 | | 1671 | 1654 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 204 | 689 | 12 | 38 | 460 | 498 | 13 | 162 | 70 | 214 | 111 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 216 | 0 | 11 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 204 | 689 | 4 | 38 | 460 | 282 | 13 | 221 | 0 | 214 | 196 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.6 | 34.5 | 34.5 | 4.2 | 22.0 | 39.9 | 2.1 | 21.3 | | 17.9 | 37.1 | |
| Effective Green, g (s) | 16.6 | 34.5 | 34.5 | 4.2 | 22.0 | 39.9 | 2.1 | 21.3 | | 17.9 | 37.1 | |
| Actuated g/C Ratio | 0.17 | 0.35 | 0.35 | 0.04 | 0.22 | 0.40 | 0.02 | 0.21 | | 0.18 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 290 | 1173 | 550 | 74 | 727 | 630 | 37 | 377 | | 301 | 618 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.08 | 0.01 | c0.13 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.10 | | | | | | |
| v/c Ratio | 0.70 | 0.59 | 0.01 | 0.51 | 0.63 | 0.45 | 0.35 | 0.59 | | 0.71 | 0.32 | |
| Uniform Delay, d1 | 39.0 | 26.5 | 21.2 | 46.5 | 34.9 | 21.6 | 47.9 | 35.0 | | 38.2 | 22.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.2 | 0.5 | 0.0 | 2.5 | 1.3 | 0.2 | 2.1 | 1.5 | | 6.4 | 0.1 | |
| Delay (s) | 45.2 | 27.0 | 21.2 | 49.0 | 36.3 | 21.8 | 50.0 | 36.5 | | 44.7 | 22.2 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 31.0 | | | 29.5 | | | 37.2 | | | 33.3 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 31.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 99.2 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 62.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 7 | 1 | 195 | 142 | 5 |
| Future Vol, veh/h | 25 | 7 | 1 | 195 | 142 | 5 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 28 | 8 | 1 | 217 | 158 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 384 | 161 | 163 | 0 | - | 0 |
| Stage 1 | 161 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 592 | 884 | 988 | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 591 | 884 | 988 | - | - | - |
| Mov Cap-2 Maneuver | 591 | - | - | - | - | - |
| Stage 1 | 834 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.98 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 637 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.056 | - | - |
| HCM Control Delay (s/veh) | 8.6 | 0 | 11 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

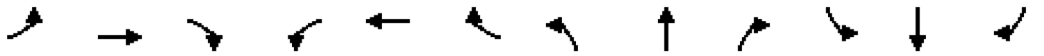
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 853 | 1 | 6 | 517 | 0 | 3 | 0 | 17 | 1 | 0 | 8 |
| Future Vol, veh/h | 2 | 853 | 1 | 6 | 517 | 0 | 3 | 0 | 17 | 1 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 937 | 1 | 7 | 568 | 0 | 3 | 0 | 19 | 1 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 568 | 0 | 0 | 938 | 0 | 0 | 1240 | 1524 | 469 | 1054 | 1524 | 284 |
| Stage 1 | - | - | - | - | - | - | 942 | 942 | - | 581 | 581 | - |
| Stage 2 | - | - | - | - | - | - | 297 | 581 | - | 473 | 943 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 1000 | - | - | 726 | - | - | 132 | 117 | 541 | 180 | 117 | 713 |
| Stage 1 | - | - | - | - | - | - | 283 | 340 | - | 466 | 498 | - |
| Stage 2 | - | - | - | - | - | - | 687 | 498 | - | 541 | 339 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1000 | - | - | 726 | - | - | 128 | 116 | 541 | 172 | 116 | 713 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 226 | 233 | - | 300 | 231 | - |
| Stage 1 | - | - | - | - | - | - | 282 | 339 | - | 462 | 493 | - |
| Stage 2 | - | - | - | - | - | - | 672 | 493 | - | 521 | 339 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.02 | 0.11 | 13.46 | 10.92 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 447 | 1000 | - | - | 726 | - | - | 618 |
| HCM Lane V/C Ratio | 0.049 | 0.002 | - | - | 0.009 | - | - | 0.016 |
| HCM Control Delay (s/veh) | 13.5 | 8.6 | - | - | 10 | - | - | 10.9 |
| HCM Lane LOS | B | A | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Future Volume (veh/h) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 151 | 52 | 232 | 231 | 172 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 223 | 982 | 452 | 129 | 809 | 609 | 38 | 201 | 69 | 282 | 288 | 215 |
| Arrive On Green | 0.13 | 0.29 | 0.29 | 0.07 | 0.23 | 0.23 | 0.02 | 0.15 | 0.15 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1330 | 458 | 1767 | 996 | 741 |
| Grp Volume(v), veh/h | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 0 | 203 | 232 | 0 | 403 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1788 | 1767 | 0 | 1737 |
| Q Serve(g_s), s | 6.4 | 10.5 | 0.3 | 3.6 | 10.1 | 7.5 | 0.7 | 0.0 | 7.0 | 8.2 | 0.0 | 13.8 |
| Cycle Q Clear(g_c), s | 6.4 | 10.5 | 0.3 | 3.6 | 10.1 | 7.5 | 0.7 | 0.0 | 7.0 | 8.2 | 0.0 | 13.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 223 | 982 | 452 | 129 | 809 | 609 | 38 | 0 | 270 | 282 | 0 | 503 |
| V/C Ratio(X) | 0.80 | 0.65 | 0.02 | 0.78 | 0.74 | 0.41 | 0.50 | 0.00 | 0.75 | 0.82 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 666 | 3170 | 1460 | 271 | 2447 | 1334 | 260 | 0 | 965 | 677 | 0 | 1339 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 20.2 | 16.6 | 29.4 | 23.1 | 14.4 | 31.2 | 0.0 | 26.2 | 26.2 | 0.0 | 21.2 |
| Incr Delay (d2), s/veh | 2.5 | 0.3 | 0.0 | 3.8 | 0.5 | 0.2 | 3.7 | 0.0 | 1.6 | 2.3 | 0.0 | 1.1 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 6.3 | 0.2 | 2.6 | 6.5 | 3.8 | 0.6 | 0.0 | 5.2 | 6.1 | 0.0 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.8 | 20.5 | 16.6 | 33.2 | 23.6 | 14.6 | 34.8 | 0.0 | 27.8 | 28.5 | 0.0 | 22.3 |
| LnGrp LOS | C | C | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 829 | | | 949 | | | 222 | | | 635 | |
| Approach Delay, s/veh | | 22.5 | | | 22.2 | | | 28.4 | | | 24.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

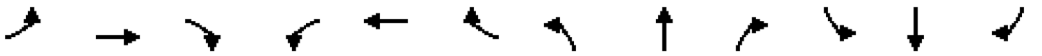
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 15.0 | 9.9 | 24.0 | 6.6 | 24.0 | 13.6 | 20.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 9.0 | 5.6 | 12.5 | 2.7 | 15.8 | 8.4 | 12.1 |
| Green Ext Time (p_c), s | 0.3 | 0.7 | 0.0 | 2.5 | 0.0 | 1.7 | 0.2 | 2.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 23.4 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Future Volume (vph) | 174 | 620 | 11 | 97 | 580 | 243 | 18 | 146 | 50 | 225 | 224 | 167 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1791 | | 1752 | 1743 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1791 | | 1752 | 1743 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 179 | 639 | 11 | 100 | 598 | 251 | 19 | 151 | 52 | 232 | 231 | 172 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 133 | 0 | 9 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 179 | 639 | 3 | 100 | 598 | 118 | 19 | 194 | 0 | 232 | 386 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.5 | 28.0 | 28.0 | 9.8 | 22.2 | 40.7 | 2.3 | 19.7 | | 18.5 | 35.9 | |
| Effective Green, g (s) | 15.5 | 28.0 | 28.0 | 9.8 | 22.2 | 40.7 | 2.3 | 19.7 | | 18.5 | 35.9 | |
| Actuated g/C Ratio | 0.16 | 0.29 | 0.29 | 0.10 | 0.23 | 0.42 | 0.02 | 0.20 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 273 | 980 | 455 | 178 | 807 | 655 | 39 | 362 | | 333 | 643 | |
| v/s Ratio Prot | c0.10 | c0.19 | | 0.06 | c0.17 | 0.03 | 0.01 | 0.11 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.66 | 0.65 | 0.01 | 0.56 | 0.74 | 0.18 | 0.49 | 0.54 | | 0.70 | 0.60 | |
| Uniform Delay, d1 | 38.4 | 30.4 | 24.7 | 41.7 | 34.9 | 17.8 | 46.9 | 34.7 | | 36.8 | 24.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.3 | 1.2 | 0.0 | 2.4 | 3.2 | 0.0 | 3.5 | 0.8 | | 5.1 | 1.1 | |
| Delay (s) | 42.7 | 31.6 | 24.7 | 44.1 | 38.1 | 17.8 | 50.4 | 35.5 | | 41.8 | 26.0 | |
| Level of Service | D | C | C | D | D | B | D | D | | D | C | |
| Approach Delay (s/veh) | | 33.9 | | | 33.4 | | | 36.8 | | | 31.8 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 33.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 97.3 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 69.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 2 | 9 | 192 | 282 | 33 |
| Future Vol, veh/h | 17 | 2 | 9 | 192 | 282 | 33 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 2 | 10 | 209 | 307 | 36 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 559 | 324 | 342 | 0 | - | 0 |
| Stage 1 | 324 | - | - | - | - | - |
| Stage 2 | 234 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 490 | 717 | 1217 | - | - | - |
| Stage 1 | 733 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 486 | 717 | 1217 | - | - | - |
| Mov Cap-2 Maneuver | 486 | - | - | - | - | - |
| Stage 1 | 726 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.46 | 0.36 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 81 | - | 503 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | 0.041 | - | - |
| HCM Control Delay (s/veh) | 8 | 0 | 12.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

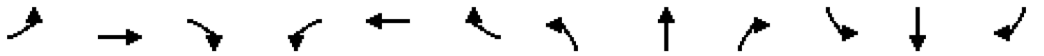
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 844 | 3 | 21 | 845 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |
| Future Vol, veh/h | 3 | 844 | 3 | 21 | 845 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 50 | - | 100 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 879 | 3 | 22 | 880 | 3 | 2 | 0 | 11 | 1 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 883 | 0 | 0 | 882 | 0 | 0 | 1371 | 1814 | 441 | 1370 | 1813 | 440 |
| Stage 1 | - | - | - | - | - | - | 887 | 887 | - | 924 | 924 | - |
| Stage 2 | - | - | - | - | - | - | 484 | 927 | - | 446 | 889 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 762 | - | - | 762 | - | - | 105 | 77 | 564 | 105 | 78 | 565 |
| Stage 1 | - | - | - | - | - | - | 305 | 360 | - | 290 | 346 | - |
| Stage 2 | - | - | - | - | - | - | 533 | 345 | - | 561 | 360 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 762 | - | - | 762 | - | - | 101 | 75 | 564 | 100 | 75 | 565 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 216 | 192 | - | 207 | 188 | - |
| Stage 1 | - | - | - | - | - | - | 304 | 359 | - | 282 | 336 | - |
| Stage 2 | - | - | - | - | - | - | 515 | 335 | - | 548 | 358 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 0.03 | 0.24 | 13.21 | 14.22 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 452 | 762 | - | - | 762 | - | - | 395 |
| HCM Lane V/C Ratio | 0.03 | 0.004 | - | - | 0.029 | - | - | 0.011 |
| HCM Control Delay (s/veh) | 13.2 | 9.7 | - | - | 9.9 | - | - | 14.2 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Future Volume (veh/h) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1841 | 1796 | 1870 | 1870 | 1752 | 1856 | 1870 | 1870 | 1811 | 1781 | 1841 | 1767 |
| Adj Flow Rate, veh/h | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 164 | 86 | 214 | 112 | 104 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 7 | 2 | 2 | 10 | 3 | 2 | 2 | 6 | 8 | 4 | 9 |
| Cap, veh/h | 239 | 1381 | 641 | 66 | 1012 | 710 | 34 | 196 | 103 | 250 | 263 | 244 |
| Arrive On Green | 0.14 | 0.40 | 0.40 | 0.04 | 0.30 | 0.30 | 0.02 | 0.17 | 0.17 | 0.15 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1753 | 3413 | 1585 | 1781 | 3328 | 1572 | 1781 | 1155 | 606 | 1697 | 878 | 816 |
| Grp Volume(v), veh/h | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 0 | 250 | 214 | 0 | 216 |
| Grp Sat Flow(s),veh/h/ln | 1753 | 1706 | 1585 | 1781 | 1664 | 1572 | 1781 | 0 | 1761 | 1697 | 0 | 1694 |
| Q Serve(g_s), s | 10.0 | 13.0 | 0.4 | 2.1 | 9.7 | 22.5 | 0.8 | 0.0 | 12.2 | 10.9 | 0.0 | 9.1 |
| Cycle Q Clear(g_c), s | 10.0 | 13.0 | 0.4 | 2.1 | 9.7 | 22.5 | 0.8 | 0.0 | 12.2 | 10.9 | 0.0 | 9.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.34 | 1.00 | | 0.48 |
| Lane Grp Cap(c), veh/h | 239 | 1381 | 641 | 66 | 1012 | 710 | 34 | 0 | 299 | 250 | 0 | 506 |
| V/C Ratio(X) | 0.85 | 0.49 | 0.02 | 0.66 | 0.45 | 0.70 | 0.49 | 0.00 | 0.84 | 0.86 | 0.00 | 0.43 |
| Avail Cap(c_a), veh/h | 488 | 2287 | 1062 | 197 | 1667 | 1019 | 197 | 0 | 691 | 473 | 0 | 950 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.4 | 19.6 | 15.8 | 42.1 | 24.9 | 19.5 | 43.0 | 0.0 | 35.6 | 36.9 | 0.0 | 25.0 |
| Incr Delay (d2), s/veh | 3.2 | 0.1 | 0.0 | 4.1 | 0.1 | 0.5 | 4.0 | 0.0 | 2.4 | 3.3 | 0.0 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.5 | 7.9 | 0.3 | 1.7 | 6.2 | 11.4 | 0.7 | 0.0 | 9.0 | 8.1 | 0.0 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 40.5 | 19.7 | 15.8 | 46.2 | 25.0 | 20.0 | 47.1 | 0.0 | 38.0 | 40.1 | 0.0 | 25.2 |
| LnGrp LOS | D | B | B | D | C | B | D | | D | D | | C |
| Approach Vol, veh/h | | 888 | | | 995 | | | 267 | | | 430 | |
| Approach Delay, s/veh | | 24.4 | | | 23.4 | | | 38.6 | | | 32.6 | |
| Approach LOS | | C | | | C | | | D | | | C | |

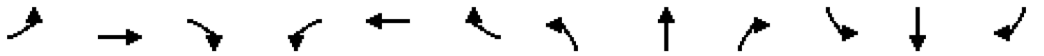
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.4 | 20.3 | 8.5 | 41.5 | 6.9 | 31.8 | 17.4 | 32.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 12.9 | 14.2 | 4.1 | 15.0 | 2.8 | 11.1 | 12.0 | 24.5 |
| Green Ext Time (p_c), s | 0.2 | 0.9 | 0.0 | 2.6 | 0.0 | 0.8 | 0.2 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 26.8 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Future Volume (vph) | 182 | 606 | 12 | 39 | 409 | 448 | 15 | 148 | 77 | 193 | 101 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1743 | | 1671 | 1657 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 3374 | 1583 | 1770 | 3282 | 1568 | 1770 | 1743 | | 1671 | 1657 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 202 | 673 | 13 | 43 | 454 | 498 | 17 | 164 | 86 | 214 | 112 | 104 |
| RTOR Reduction (vph) | 0 | 0 | 9 | 0 | 0 | 217 | 0 | 12 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 202 | 673 | 4 | 43 | 454 | 281 | 17 | 238 | 0 | 214 | 196 | 0 |
| Heavy Vehicles (%) | 4% | 7% | 2% | 2% | 10% | 3% | 2% | 2% | 6% | 8% | 4% | 9% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 16.6 | 34.3 | 34.3 | 4.4 | 22.0 | 40.0 | 2.2 | 22.4 | | 18.0 | 38.2 | |
| Effective Green, g (s) | 16.6 | 34.3 | 34.3 | 4.4 | 22.0 | 40.0 | 2.2 | 22.4 | | 18.0 | 38.2 | |
| Actuated g/C Ratio | 0.17 | 0.34 | 0.34 | 0.04 | 0.22 | 0.40 | 0.02 | 0.22 | | 0.18 | 0.38 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 287 | 1152 | 540 | 77 | 719 | 624 | 38 | 388 | | 299 | 630 | |
| v/s Ratio Prot | c0.12 | c0.20 | | 0.02 | 0.14 | 0.08 | 0.01 | c0.14 | | c0.13 | 0.12 | |
| v/s Ratio Perm | | | 0.00 | | | 0.10 | | | | | | |
| v/c Ratio | 0.70 | 0.58 | 0.01 | 0.56 | 0.63 | 0.45 | 0.45 | 0.61 | | 0.72 | 0.31 | |
| Uniform Delay, d1 | 39.6 | 27.2 | 21.8 | 47.0 | 35.5 | 22.1 | 48.5 | 35.1 | | 38.8 | 21.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.3 | 0.5 | 0.0 | 4.9 | 1.3 | 0.2 | 3.0 | 2.0 | | 6.6 | 0.1 | |
| Delay (s) | 45.8 | 27.7 | 21.8 | 52.0 | 36.9 | 22.3 | 51.5 | 37.1 | | 45.4 | 22.0 | |
| Level of Service | D | C | C | D | D | C | D | D | | D | C | |
| Approach Delay (s/veh) | | 31.7 | | | 30.2 | | | 38.0 | | | 33.6 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 100.4 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

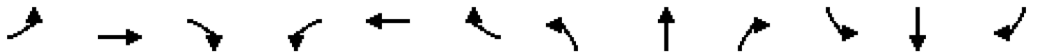
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 44 | 7 | 1 | 195 | 142 | 12 |
| Future Vol, veh/h | 44 | 7 | 1 | 195 | 142 | 12 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 16 | 2 | 100 | 3 | 2 | 3 |
| Mvmt Flow | 49 | 8 | 1 | 217 | 158 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 388 | 164 | 171 | 0 | - | 0 |
| Stage 1 | 164 | - | - | - | - | - |
| Stage 2 | 224 | - | - | - | - | - |
| Critical Hdwy | 6.56 | 6.22 | 5.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.56 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.56 | - | - | - | - | - |
| Follow-up Hdwy | 3.644 | 3.318 | 3.1 | - | - | - |
| Pot Cap-1 Maneuver | 589 | 880 | 980 | - | - | - |
| Stage 1 | 832 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 588 | 880 | 980 | - | - | - |
| Mov Cap-2 Maneuver | 588 | - | - | - | - | - |
| Stage 1 | 831 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.43 | 0.04 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 9 | - | 616 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.092 | - | - |
| HCM Control Delay (s/veh) | 8.7 | 0 | 11.4 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Future Volume (veh/h) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1811 | 1870 | 1870 | 1870 | 1856 | 1796 | 1870 | 1870 | 1856 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 152 | 61 | 232 | 233 | 170 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 5 | 6 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 3 | 2 | 2 |
| Cap, veh/h | 222 | 910 | 419 | 154 | 787 | 599 | 42 | 200 | 80 | 282 | 296 | 216 |
| Arrive On Green | 0.13 | 0.26 | 0.26 | 0.09 | 0.22 | 0.22 | 0.02 | 0.16 | 0.16 | 0.16 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1739 | 3441 | 1585 | 1781 | 3554 | 1572 | 1711 | 1269 | 509 | 1767 | 1005 | 733 |
| Grp Volume(v), veh/h | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 0 | 213 | 232 | 0 | 403 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1721 | 1585 | 1781 | 1777 | 1572 | 1711 | 0 | 1779 | 1767 | 0 | 1738 |
| Q Serve(g_s), s | 6.4 | 10.6 | 0.4 | 4.3 | 9.7 | 7.6 | 0.8 | 0.0 | 7.4 | 8.2 | 0.0 | 13.7 |
| Cycle Q Clear(g_c), s | 6.4 | 10.6 | 0.4 | 4.3 | 9.7 | 7.6 | 0.8 | 0.0 | 7.4 | 8.2 | 0.0 | 13.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 222 | 910 | 419 | 154 | 787 | 599 | 42 | 0 | 280 | 282 | 0 | 512 |
| V/C Ratio(X) | 0.80 | 0.69 | 0.03 | 0.78 | 0.73 | 0.42 | 0.50 | 0.00 | 0.76 | 0.82 | 0.00 | 0.79 |
| Avail Cap(c_a), veh/h | 667 | 3173 | 1462 | 271 | 2450 | 1335 | 260 | 0 | 961 | 678 | 0 | 1341 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 21.3 | 17.6 | 28.8 | 23.3 | 14.7 | 31.0 | 0.0 | 26.0 | 26.2 | 0.0 | 20.9 |
| Incr Delay (d2), s/veh | 2.5 | 0.4 | 0.0 | 3.2 | 0.5 | 0.2 | 3.5 | 0.0 | 1.6 | 2.3 | 0.0 | 1.0 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 6.4 | 0.2 | 3.1 | 6.3 | 3.8 | 0.6 | 0.0 | 5.4 | 6.1 | 0.0 | 8.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 29.8 | 21.7 | 17.6 | 32.1 | 23.8 | 14.9 | 34.5 | 0.0 | 27.6 | 28.5 | 0.0 | 21.9 |
| LnGrp LOS | C | C | B | C | C | B | C | | C | C | | C |
| Approach Vol, veh/h | | 822 | | | 949 | | | 234 | | | 635 | |
| Approach Delay, s/veh | | 23.4 | | | 22.5 | | | 28.2 | | | 24.3 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 15.4 | 10.8 | 22.6 | 6.8 | 24.3 | 13.5 | 19.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 5.2 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 |
| Max Green Setting (Gmax), s | 24.7 | * 35 | 9.8 | 59.4 | 9.8 | 49.7 | 24.7 | 44.4 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 9.4 | 6.3 | 12.6 | 2.8 | 15.7 | 8.4 | 11.7 |
| Green Ext Time (p_c), s | 0.3 | 0.8 | 0.0 | 2.4 | 0.0 | 1.7 | 0.2 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 23.7 |
| HCM 7th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Future Volume (vph) | 173 | 611 | 14 | 116 | 561 | 243 | 20 | 147 | 59 | 225 | 226 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1783 | | 1752 | 1745 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1719 | 3406 | 1583 | 1770 | 3539 | 1568 | 1687 | 1783 | | 1752 | 1745 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 178 | 630 | 14 | 120 | 578 | 251 | 21 | 152 | 61 | 232 | 233 | 170 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 138 | 0 | 10 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 178 | 630 | 4 | 120 | 578 | 113 | 21 | 203 | 0 | 232 | 387 | 0 |
| Heavy Vehicles (%) | 5% | 6% | 2% | 2% | 2% | 3% | 7% | 2% | 2% | 3% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | | | | |
| Actuated Green, G (s) | 15.4 | 27.4 | 27.4 | 10.3 | 22.2 | 40.6 | 2.4 | 20.1 | | 18.4 | 36.1 | |
| Effective Green, g (s) | 15.4 | 27.4 | 27.4 | 10.3 | 22.2 | 40.6 | 2.4 | 20.1 | | 18.4 | 36.1 | |
| Actuated g/C Ratio | 0.16 | 0.28 | 0.28 | 0.11 | 0.23 | 0.42 | 0.02 | 0.21 | | 0.19 | 0.37 | |
| Clearance Time (s) | 5.3 | 5.6 | 5.6 | 5.2 | 5.6 | 5.3 | 5.2 | 5.2 | | 5.3 | 5.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 271 | 957 | 444 | 186 | 805 | 652 | 41 | 367 | | 330 | 646 | |
| v/s Ratio Prot | c0.10 | c0.18 | | 0.07 | 0.16 | 0.03 | 0.01 | 0.11 | | c0.13 | c0.22 | |
| v/s Ratio Perm | | | 0.00 | | | 0.04 | | | | | | |
| v/c Ratio | 0.66 | 0.66 | 0.01 | 0.65 | 0.72 | 0.17 | 0.51 | 0.55 | | 0.70 | 0.60 | |
| Uniform Delay, d1 | 38.6 | 30.9 | 25.3 | 41.8 | 34.8 | 17.9 | 47.0 | 34.7 | | 37.0 | 24.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.3 | 1.3 | 0.0 | 5.6 | 2.6 | 0.0 | 4.4 | 1.0 | | 5.5 | 1.0 | |
| Delay (s) | 42.9 | 32.2 | 25.3 | 47.5 | 37.3 | 17.9 | 51.4 | 35.7 | | 42.5 | 25.8 | |
| Level of Service | D | C | C | D | D | B | D | D | | D | C | |
| Approach Delay (s/veh) | | 34.4 | | | 33.5 | | | 37.1 | | | 31.9 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 33.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 97.5 | Sum of lost time (s) | 21.4 |
| Intersection Capacity Utilization | 69.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 29 | 2 | 9 | 192 | 282 | 57 |
| Future Vol, veh/h | 29 | 2 | 9 | 192 | 282 | 57 |
| Conflicting Peds, #/hr | 6 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 2 | 10 | 209 | 307 | 62 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 572 | 337 | 368 | 0 | - | 0 |
| Stage 1 | 337 | - | - | - | - | - |
| Stage 2 | 234 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 482 | 705 | 1190 | - | - | - |
| Stage 1 | 723 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 477 | 705 | 1190 | - | - | - |
| Mov Cap-2 Maneuver | 477 | - | - | - | - | - |
| Stage 1 | 716 | - | - | - | - | - |
| Stage 2 | 805 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 12.93 | 0.36 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 81 | - | 487 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | 0.069 | - | - |
| HCM Control Delay (s/veh) | 8.1 | 0 | 12.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

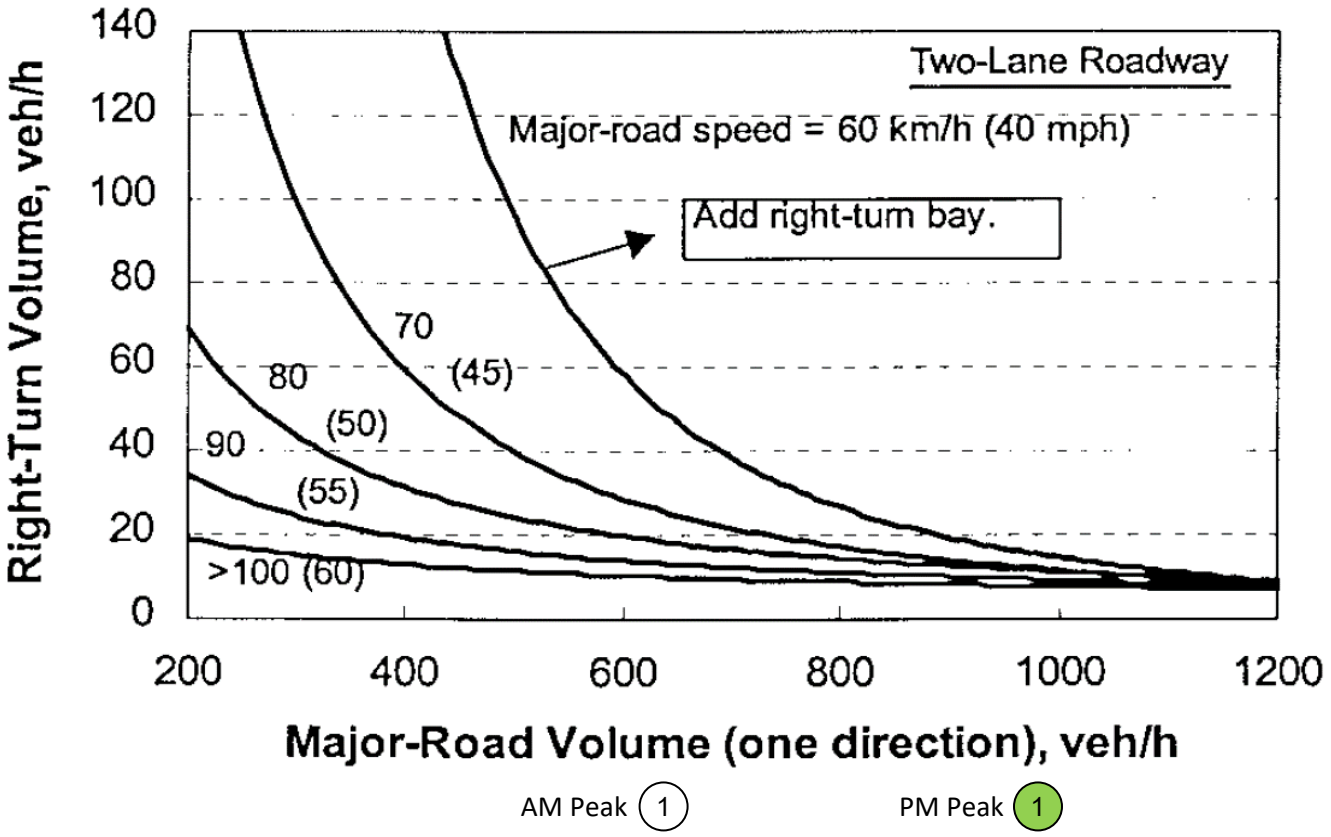
# APPENDIX I: Turn Lane Guidelines Worksheets

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2024 Existing Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 1 | 106 | No* |
| | | | | PM | 11 | 196 | No* |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

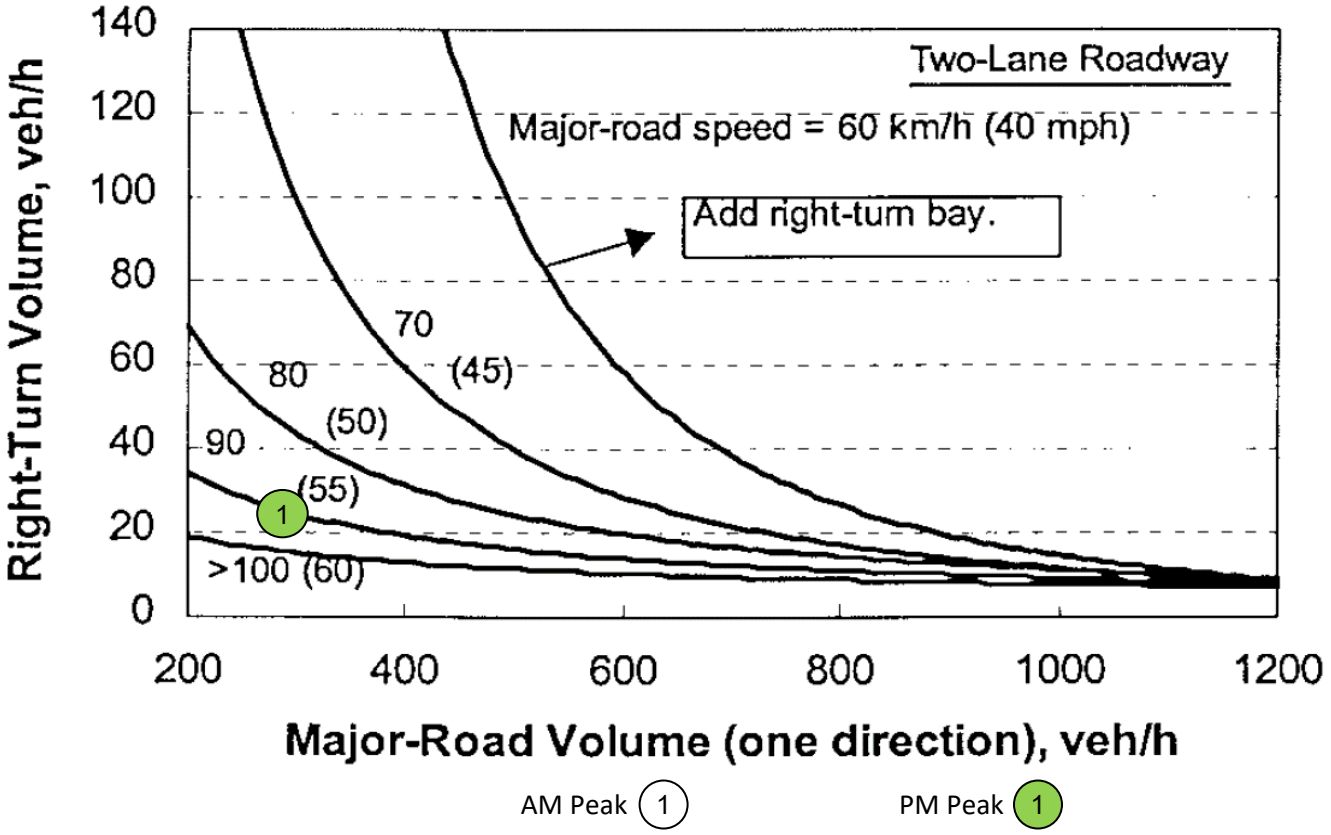


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2027 Background Traffic**

| Intersection | | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 3 | 133 | No* |
| | | | | PM | 25 | 285 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

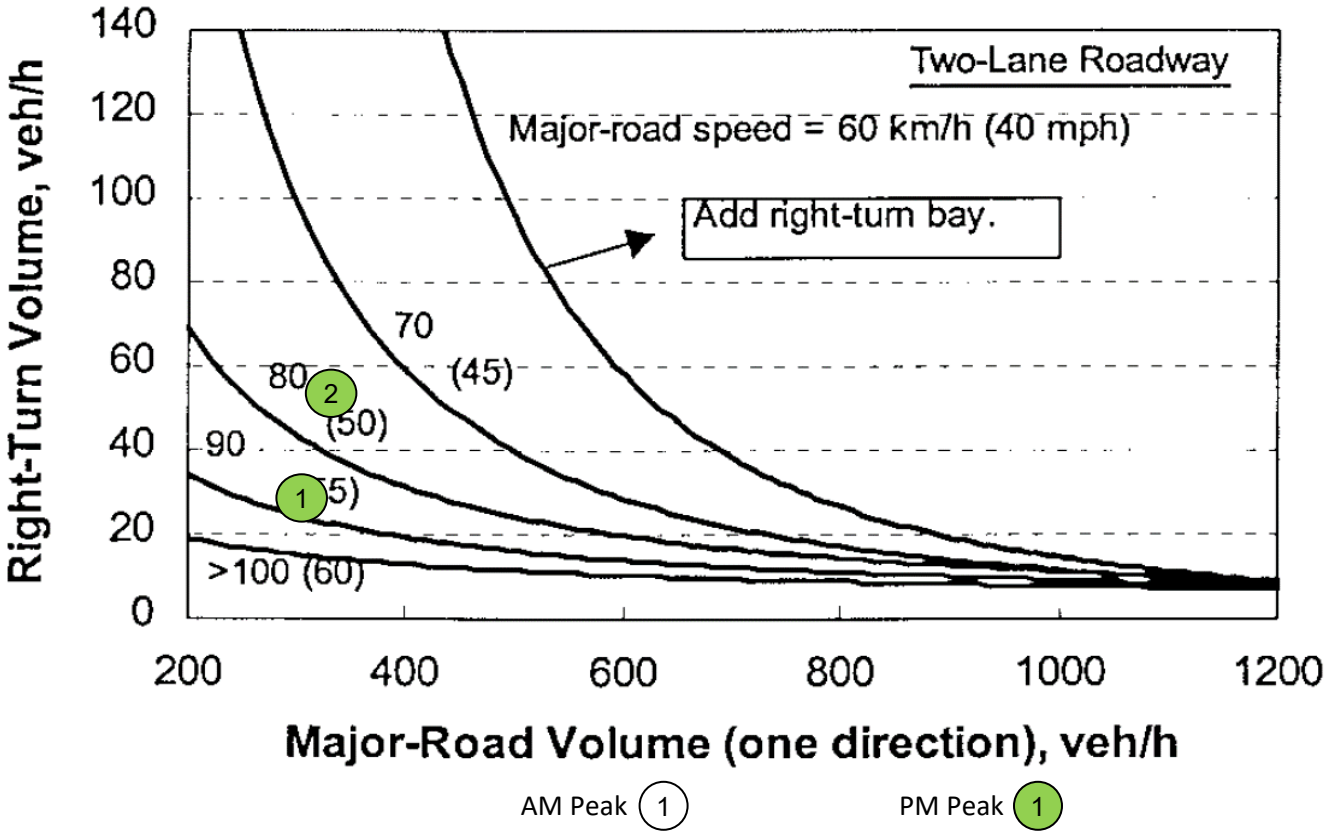


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2027 Total Traffic**

| Intersection | | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 5 | 135 | No* |
| | | | | PM | 31 | 292 | No |
| 2 | Vista Drive & S 10th Avenue (No Karcher Rd Access) | SB | 35 | AM | 12 | 142 | No* |
| | | | | PM | 55 | 316 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

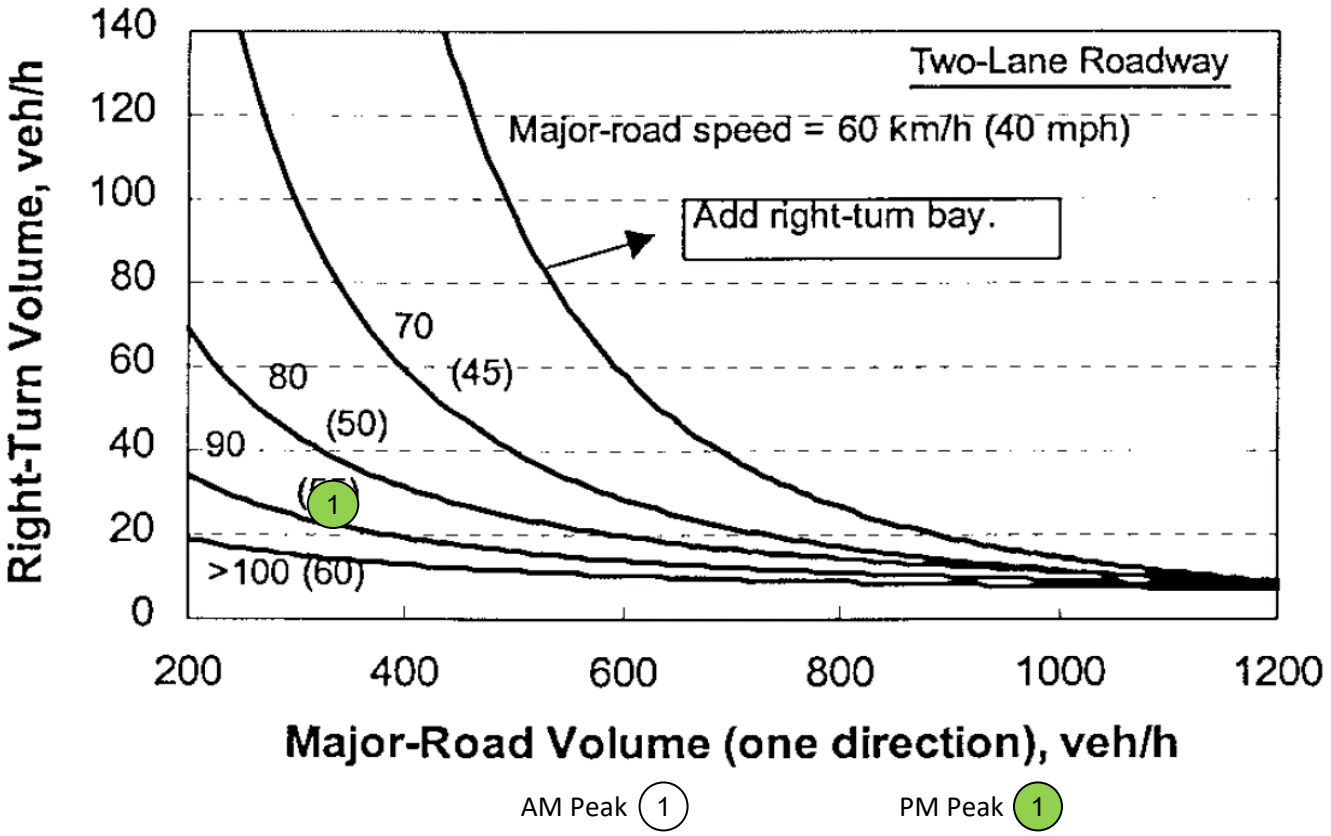


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2032 Background Traffic**

| Intersection | | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 3 | 145 | No* |
| | | | | PM | 27 | 308 | No |

* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted

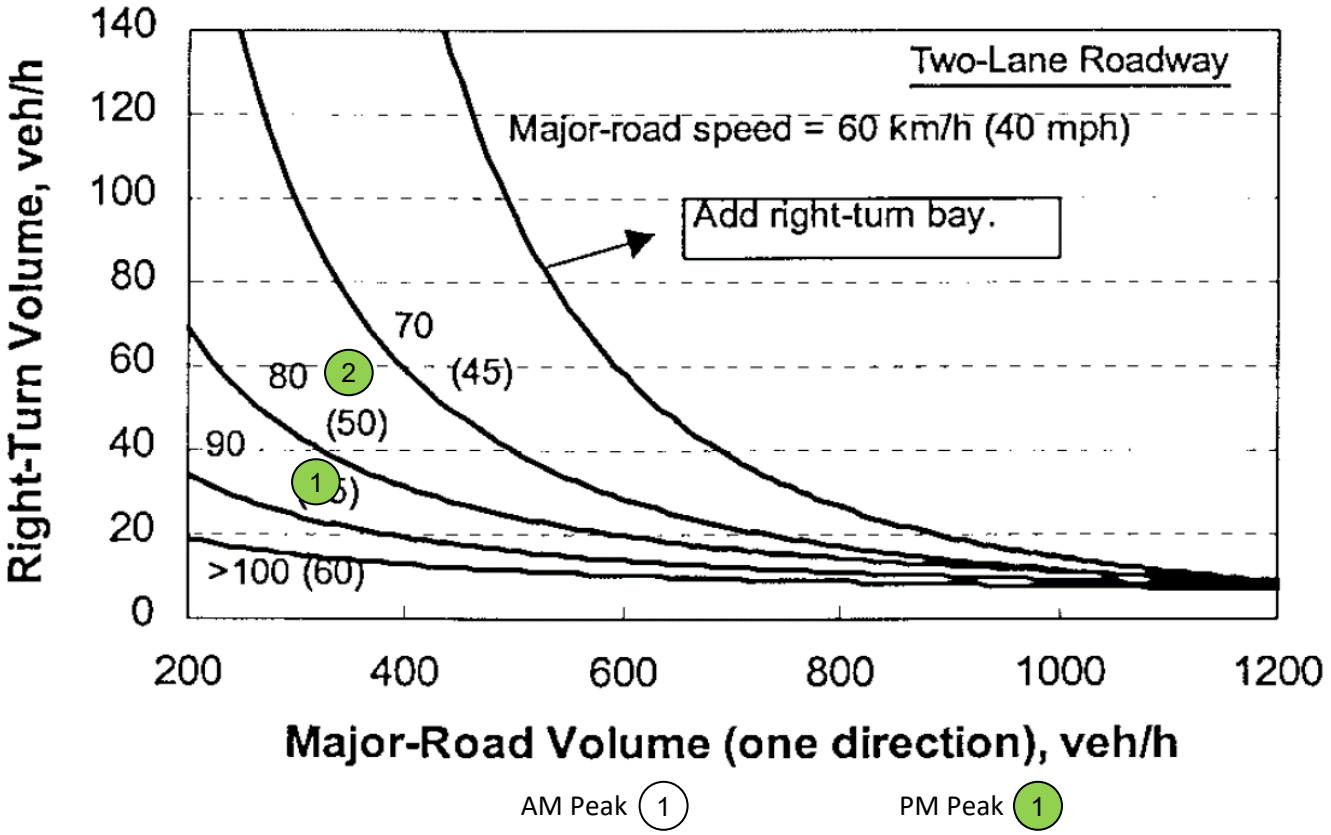


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Right-Turn Lane Analysis
**2032 Total Traffic**

| | Intersection | Approach | Speed Limit | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | SB | 35 | AM | 5 | 147 | No* |
| | | | | PM | 33 | 315 | No |
| 2 | Vista Drive & S 10th Avenue (No Karcher Rd Access) | SB | 35 | AM | 12 | 154 | No* |
| | | | | PM | 57 | 339 | No |

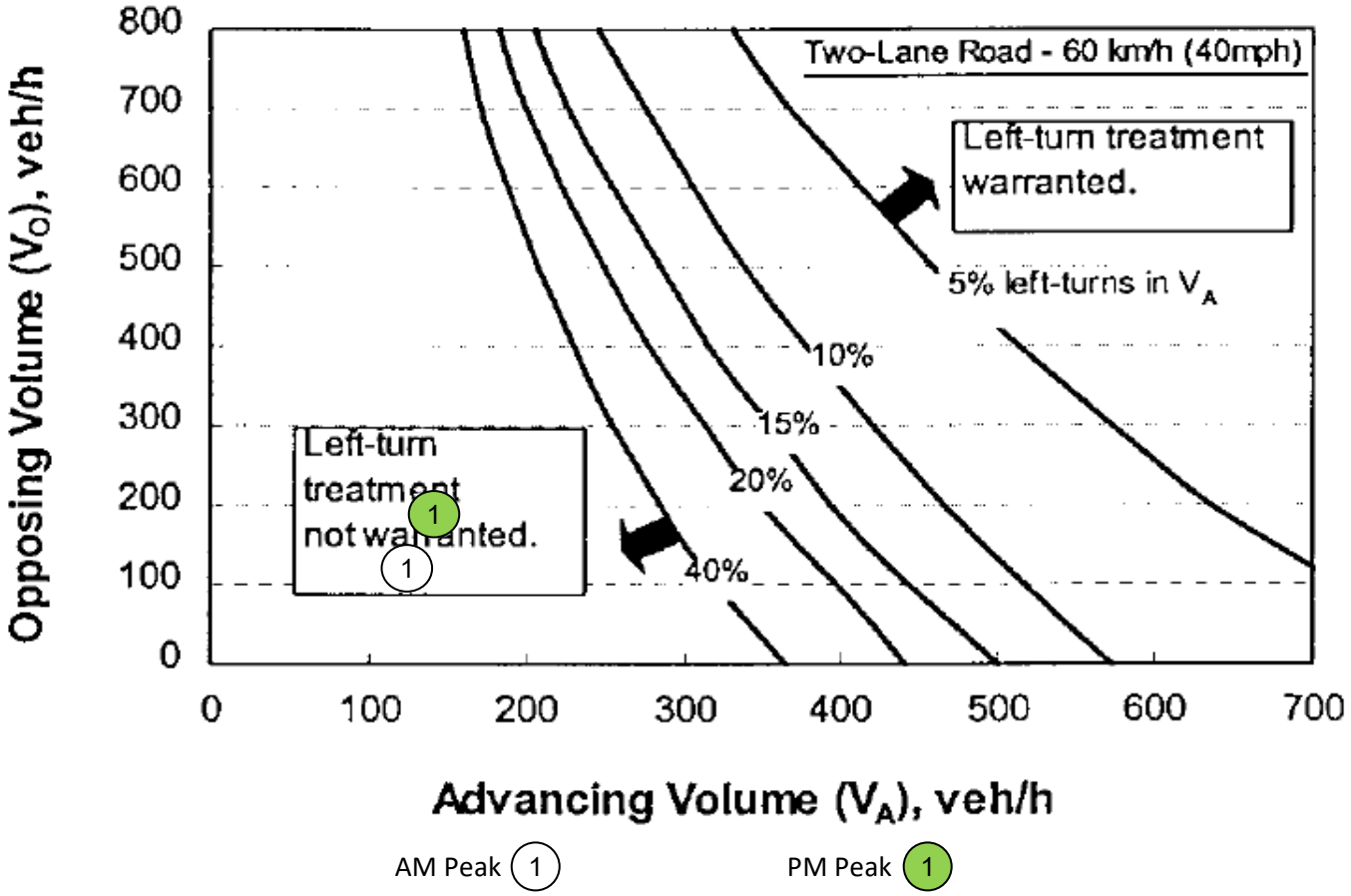
* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2024 Existing Traffic**

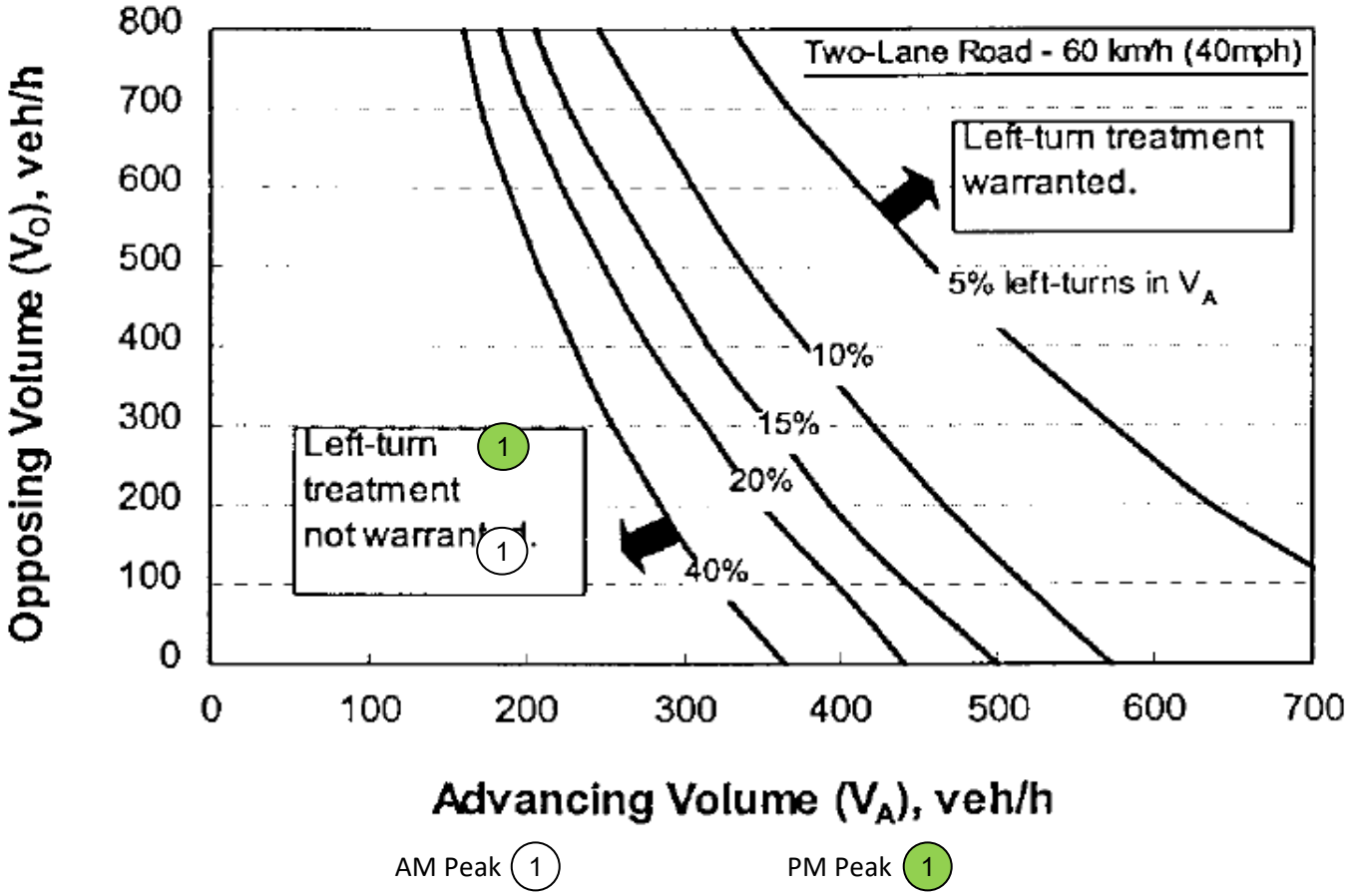
| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 118 | 106 | 0.8% | No |
| | | | | PM | 139 | 196 | 4.3% | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2027 Background Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 183 | 133 | 0.5% | No |
| | | | | PM | 183 | 285 | 3.3% | No |

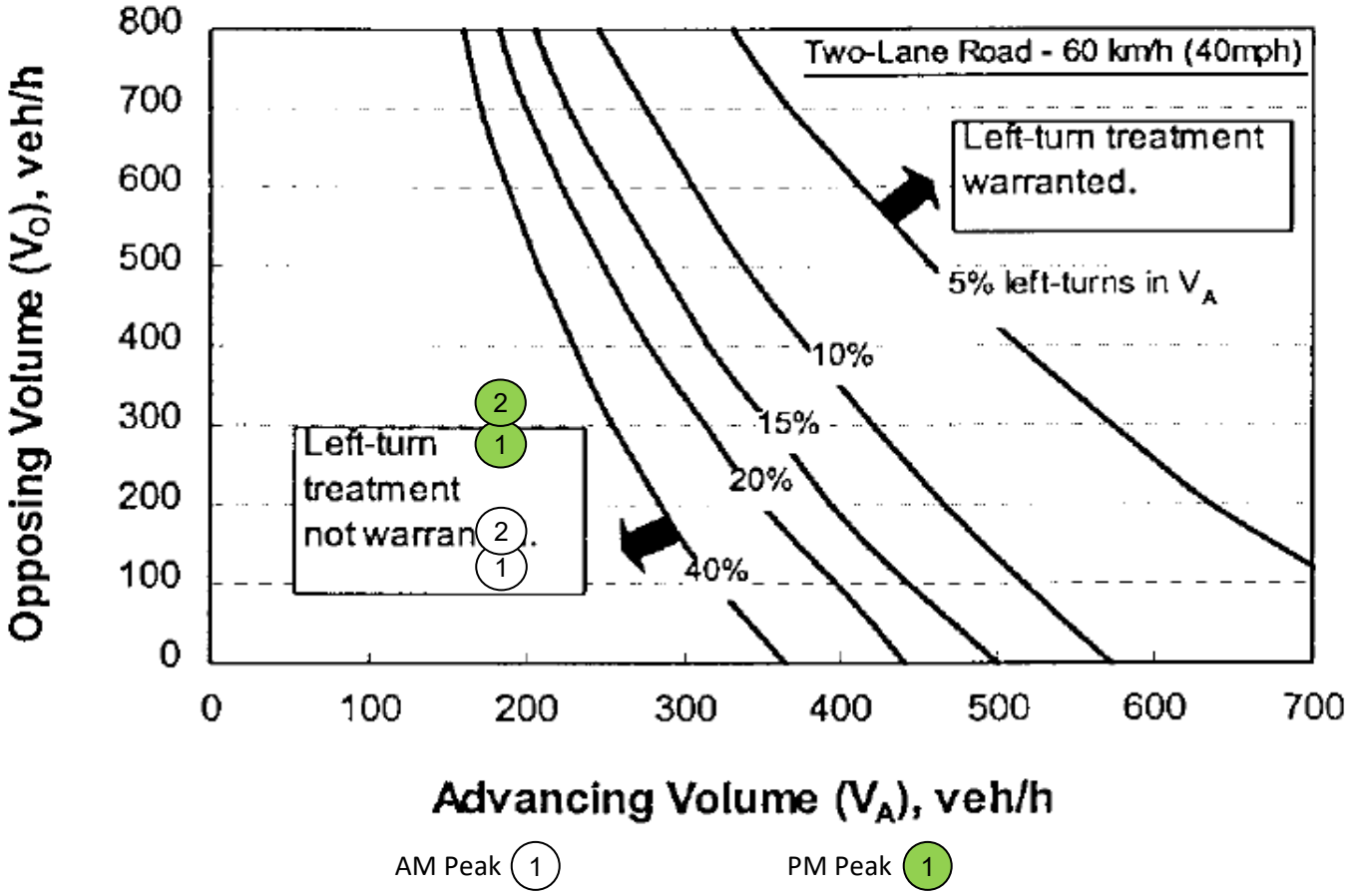



AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2027 Total Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 184 | 135 | 0.8% | No |
| | | | | PM | 185 | 292 | 4.1% | No |
| (2) | Vista Drive & S 10th Avenue (No Karcher Access) | NB | 35 | AM | 184 | 142 | 0.8% | No |
| | | | | PM | 185 | 316 | 4.1% | No |

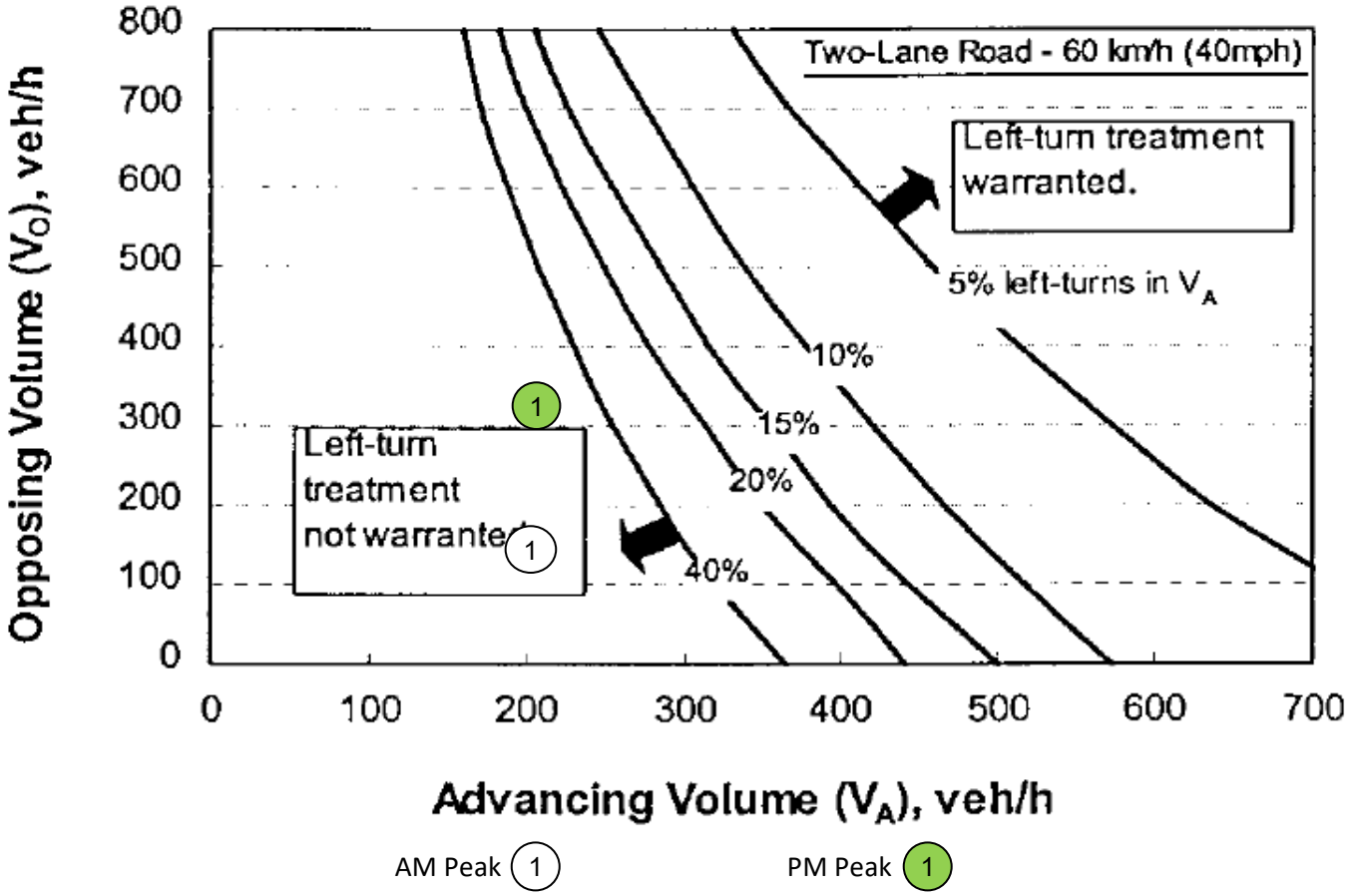



AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2032 Background Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| (1) | Vista Drive & S 10th Avenue | NB | 35 | AM | 196 | 145 | 0.5% | No |
| | | | | PM | 199 | 308 | 3.5% | No |

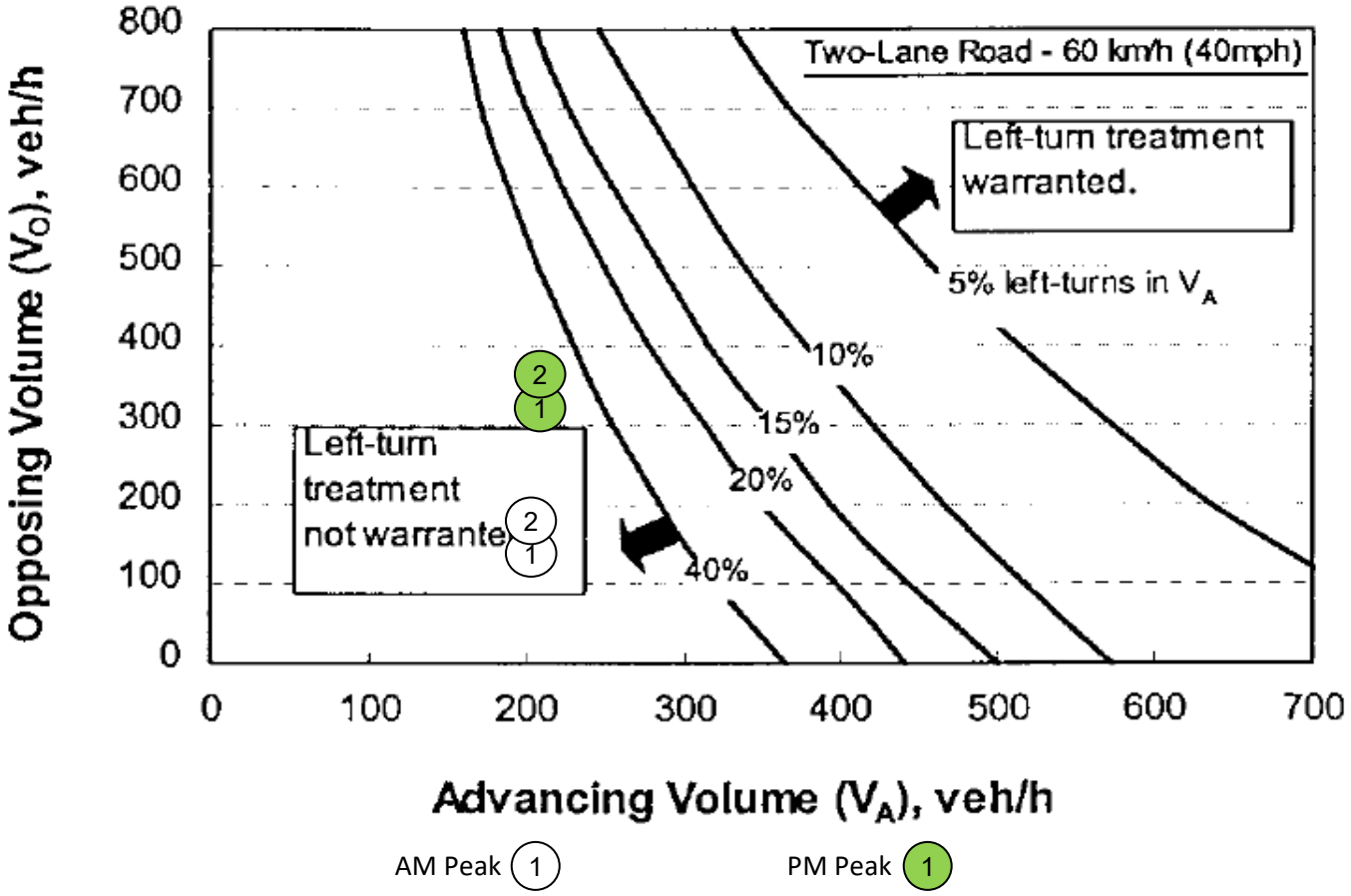



AM Peak (1) PM Peak (1)

**Tillman Ridge Subdivision**
**Canyon County, Idaho**

NCHRP 457 Left-Turn Lane Analysis
**2032 Total Traffic**

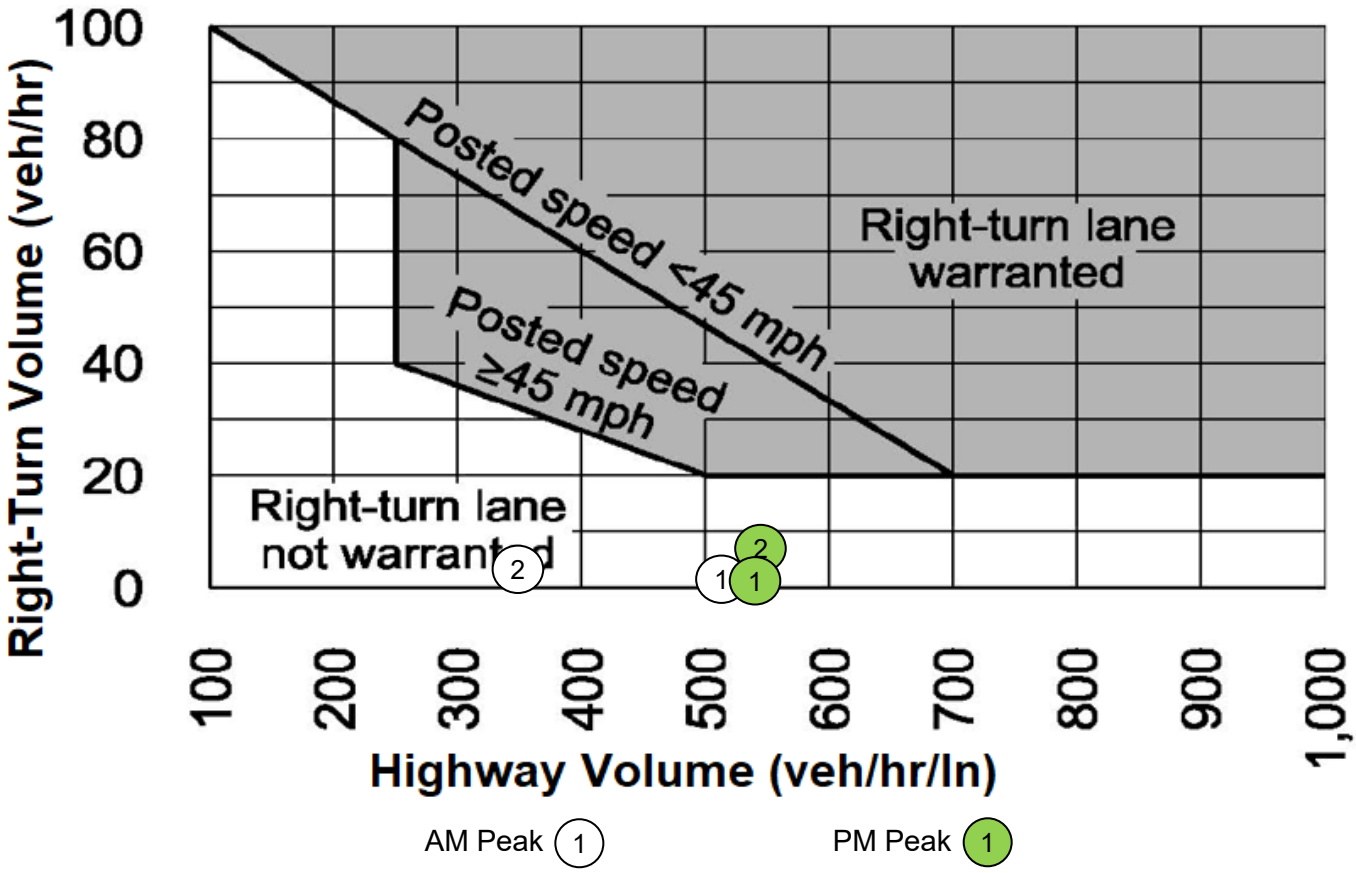
| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Advancing Volume [vph] | Opposing Volume [vph] | Left-Turn Volume (%) | Meet Warrant? |
|---|---|---|---|---|---|---|---|---|
| 1 | Vista Drive & S 10th Avenue | NB | 35 | AM | 197 | 147 | 0.7% | No |
| | | | | PM | 201 | 315 | 4.3% | No |
| 2 | Vista Drive & S 10th Avenue (No Karcher Access) | NB | 35 | AM | 197 | 154 | 0.7% | No |
| | | | | PM | 201 | 339 | 4.3% | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2024 Existing Traffic**

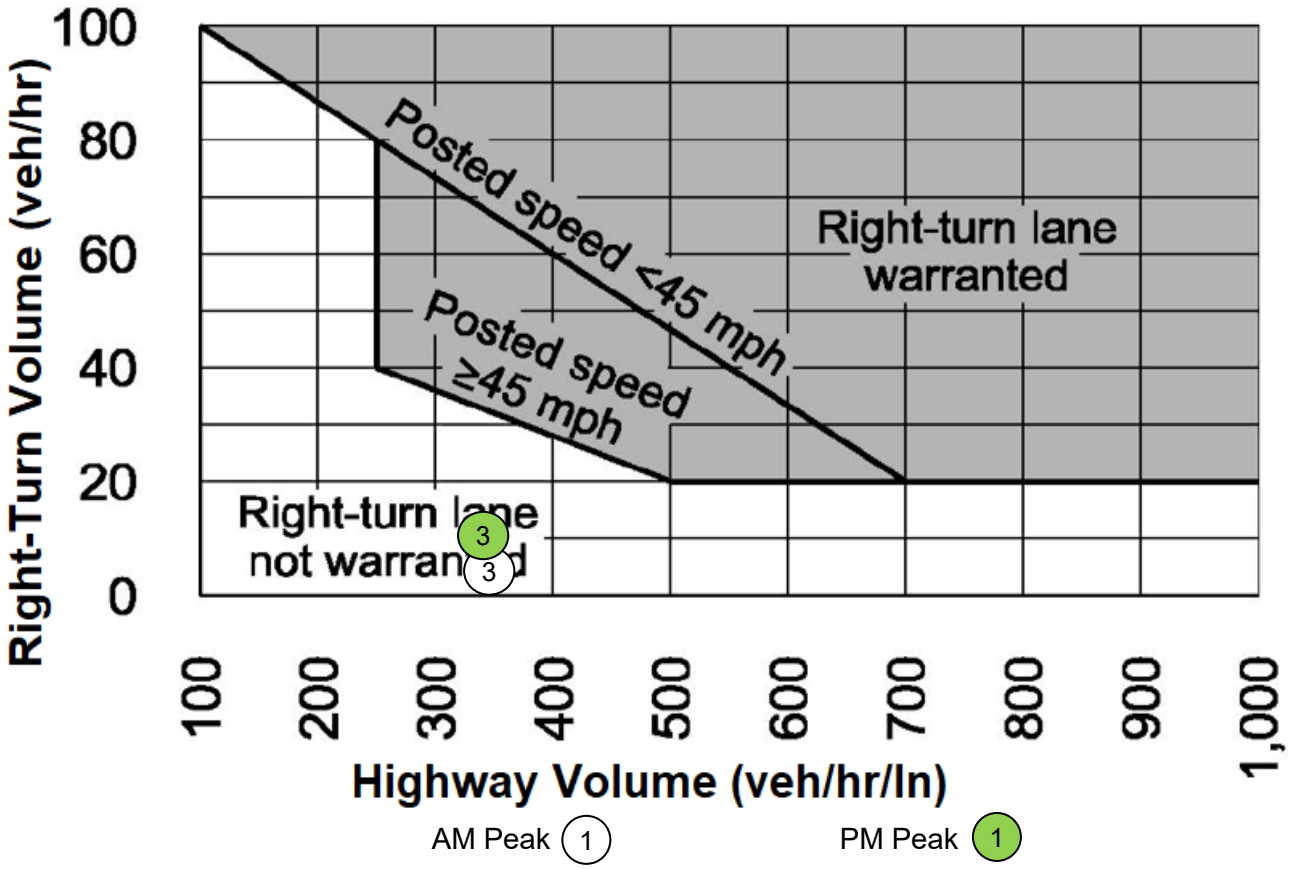
| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vph) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| (1) | Kimball Avenue & Karcher Road | EB | 55 | AM | 0 | 516 | No |
| | | | | PM | 0 | 531 | No |
| (2) | Kimball Avenue & Karcher Road | WB | 55 | AM | 2 | 354 | No |
| | | | | PM | 2 | 542 | No |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2027 Total Traffic**

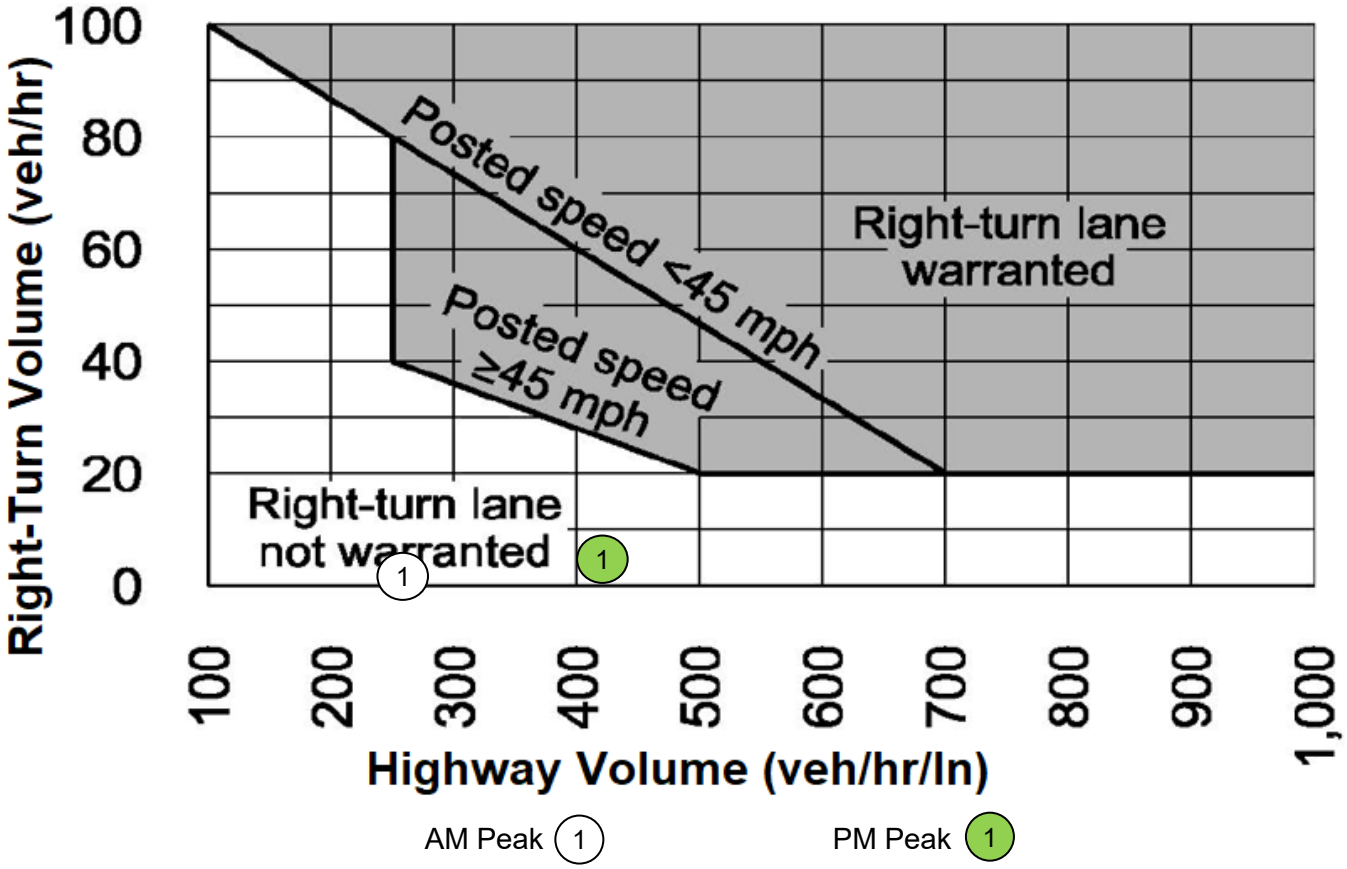
| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | Closed with SH 55 corridor improvements | | | |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | Closed with SH 55 corridor improvements | | | |
| 3 | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 320 | No |
| | | | | PM | 3 | 318 | No |
| 4 | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2027 Background Traffic**

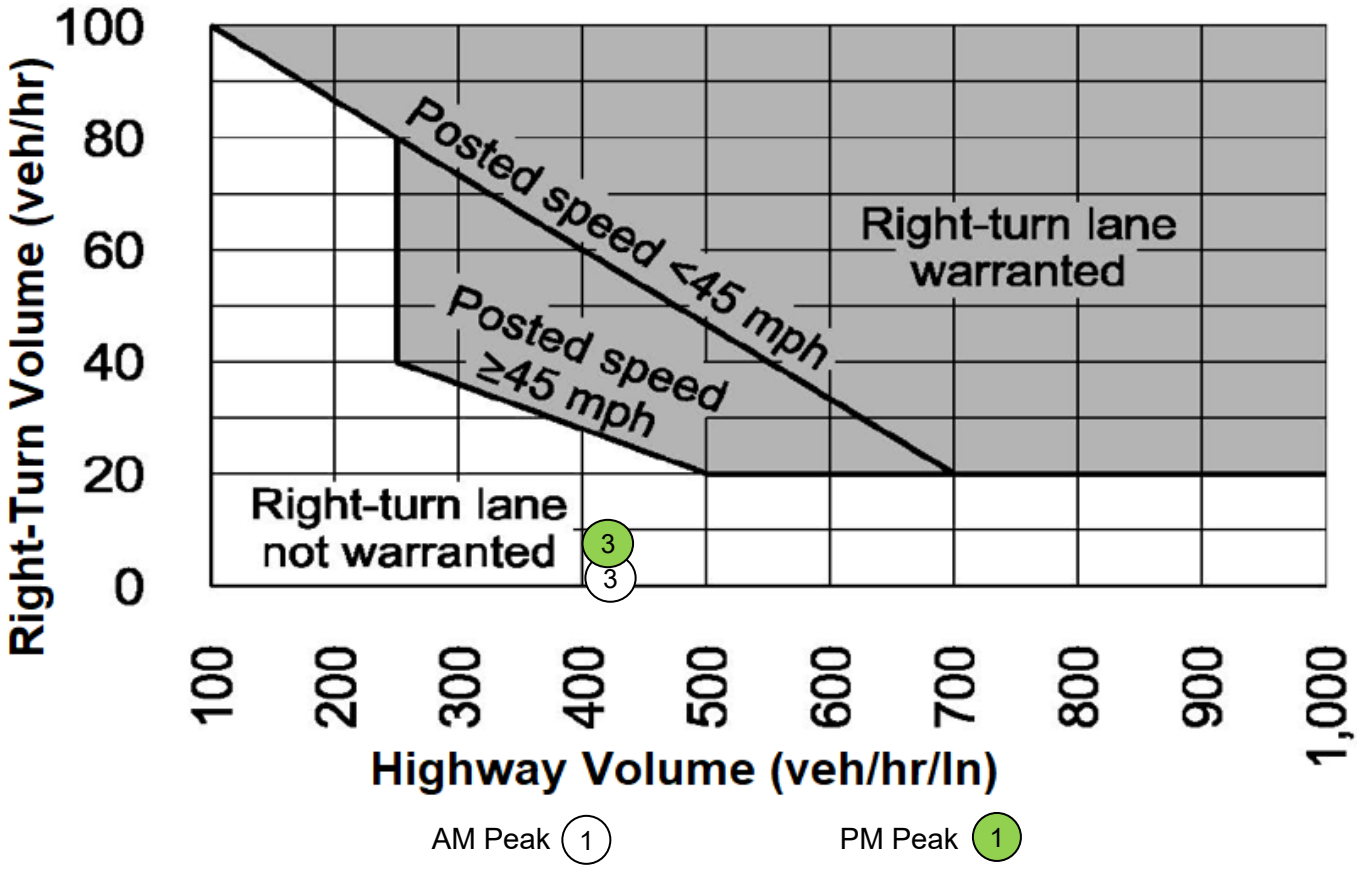
| | Intersection | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| (1) | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |



**Tillman Ridge Subdivision**
**Canyon County, Idaho**

ITD Right-Turn Lane Analysis
**2032 Total Traffic**

| Intersection | | Approach | Speed Limit (mph) | Peak Hour | Right-Turn Volume (vph) | Major Road Volume (vphpl) | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | Closed with SH 55 corridor improvements | | | |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | Closed with SH 55 corridor improvements | | | |
| 3 | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 428 | No |
| | | | | PM | 3 | 425 | No |
| 4 | Ashland Drive & Karcher Road | WB | 55 | Constructed with SH 55 corridor improvements | | | |

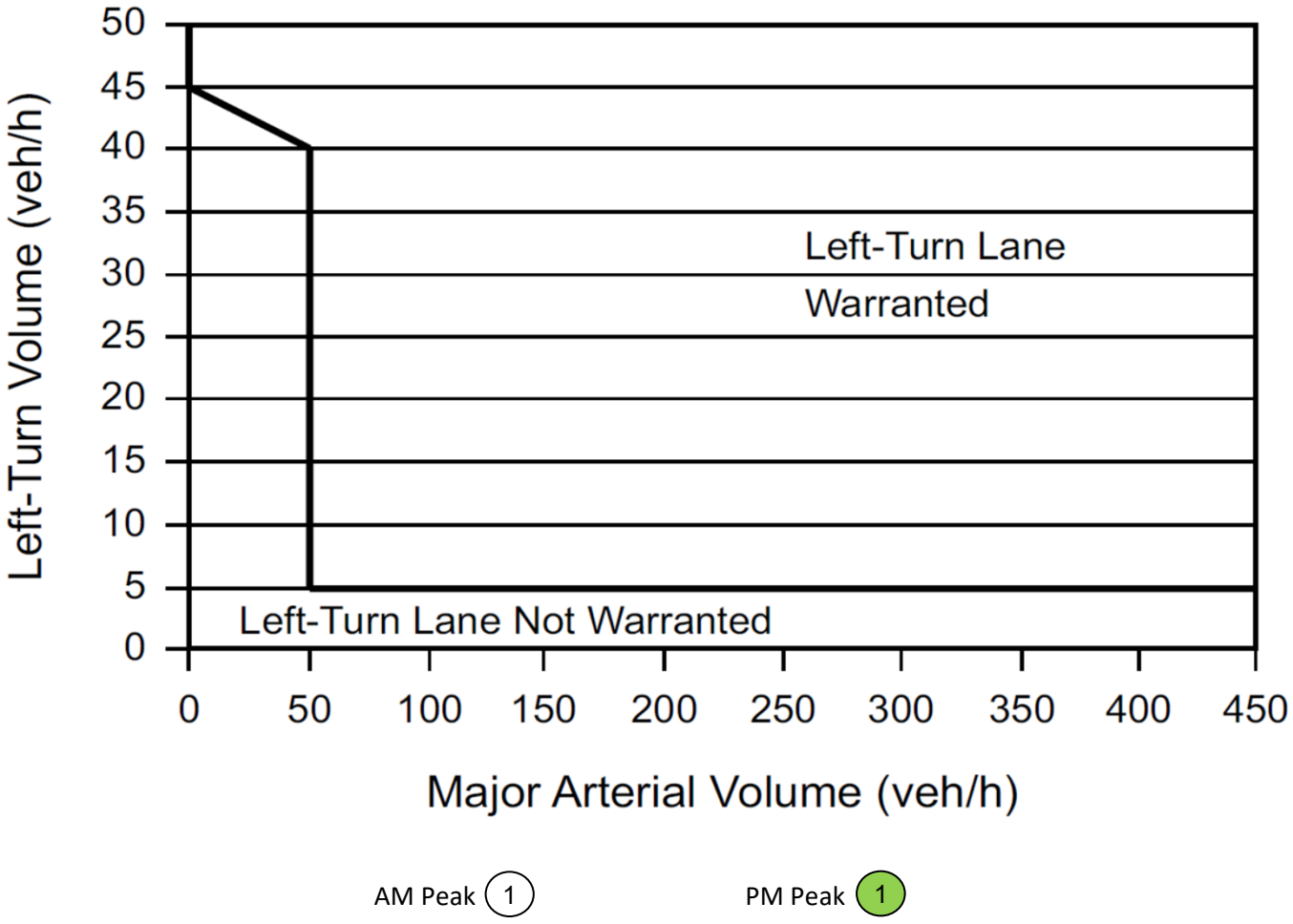


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

AASHTO Left-turn Lane Guidelines for Four-Leg Urban Intersections
**2024 Existing Traffic**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Left Turn Volume [vph] | Major Arterial Volume [vphpl] | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| 1 | Kimball Avenue & Karcher Road | EB | 55 | AM | 1 | 435 | No* |
| | | | | PM | 0 | 537 | No* |
| 2 | Kimball Avenue & Karcher Road | WB | 55 | AM | 0 | 435 | No* |
| | | | | PM | 2 | 536 | No* |

* Left-turn volume less than 5 vph - Not Warranted

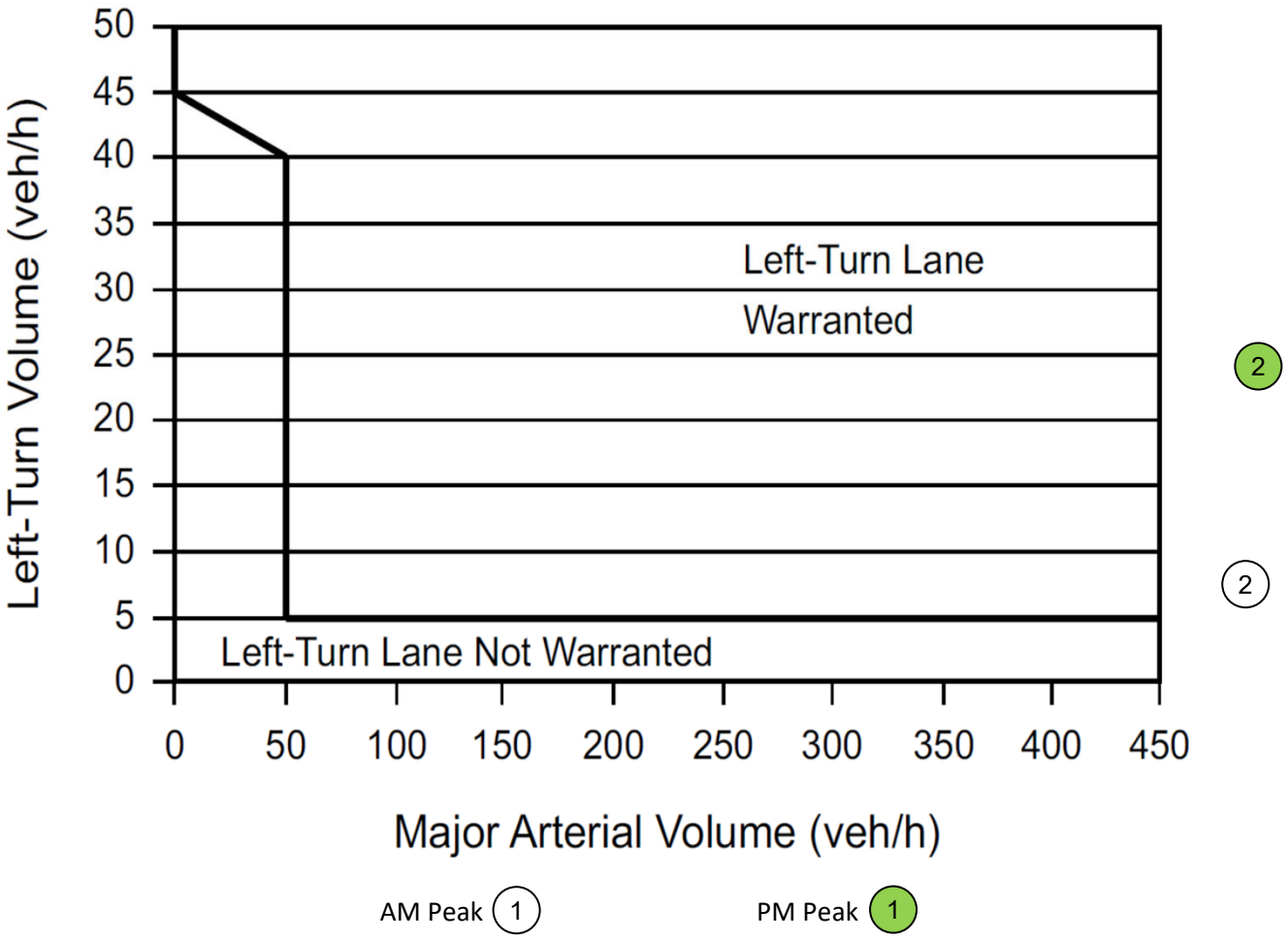


**Tillman Ridge Subdivision**
**Canyon County, Idaho**

AASHTO Left-turn Lane Guidelines for Four-Leg Urban Intersections
**2027 Total Traffic - No SH 55 Corridor Improvements**

| Intersection | | Approach | Speed Limit [mph] | Peak Hour | Left Turn Volume [vph] | Major Arterial Volume [vphpl] | Meet Warrant? |
|---|---|---|---|---|---|---|---|
| (1) | Ashland Drive & Karcher Road | EB | 55 | AM | 1 | 516 | No* |
| | | | | PM | 2 | 645 | No* |
| (2) | Ashland Drive & Karcher Road | WB | 55 | **AM** | **6** | **516** | **Yes** |
| | | | | **PM** | **21** | **645** | **Yes** |

* Left-turn volume less than 5 vph - Not Warranted



# Attachment 2
# ITD Development Staff Report

Your Safety • Your Mobility
Your Economic Opportunity

IDAHO TRANSPORTATION DEPARTMENT
P.O. Box 8028 • Boise, ID 83707-2028
(208) 334-8300 • itd.idaho.gov

February 3, 2025

Elizabeth Allen
Owner/Princepal Planner
Bristlecone Land Use Consulting
elizabeth@bristleconelanduseconsulting.com

**RE: Tillman Ridge - ITD Development Staff Report**

Dear Elizabeth,

The Idaho Transportation Department (ITD) has completed our review of the Tillman Ridge Traffic Impact Study (TIS). The proposed development abuts the southeren Right of Way of SH-55 (Karcher Road) MP 11.03, Canyone County, Idaho.

**Development Summary**

Tillman Ridge is a proposed residental development consisting of 49 single-family residential lots, estimating a 2027 build-out year. One full access approach onto SH-55 (Karcher Road) is being requested.

**ITD Staff Requirements**

ITD accepts the TIS as submitted with no further recommendation or requirements.

**Expiration of Staff Report**

In the event the proposed development has not obtained necessary permits within two years, this staff report will no longer be valid and ITD may request an updated TIS to reflect current traffic conditions.

**Notices**

- This report does not supersede or nullify any local land use requirements or legal property restrictions. Legal property restrictions include but are not limited to easements, access agreements, deed restrictions, plat restrictions, liens or other encumbrances. Removing, modifying, or establishing legal property restrictions is the responsibility of the developer.
- This report does not constitute a permit approval, or denial issued pursuant to IDAPA 29.03.42.

ITD Staff Recommendations are intended to assure that the proposed development will not place an undue burden on the existing State Highway system within the vicinity impacted by the proposed development. Maintaining safety and

IDAHO TRANSPORTATION DEPARTMENT
P.O. Box 8028 • Boise, ID 83707-2028
(208) 334-8300 • itd.idaho.gov

mobility for Idaho's motorists is of utmost importance to ITD. We appreciate your improvements to livability in Canyon County, Idaho as we want all residents to travel safely and efficiently on the highway system.

If you have any questions, feel free to contact me at Brian.Duran@itd.idaho.gov or Niki Benyakhlef, Development Services Coordinator at (208)334-8337 or email Niki.Benyakhlef@itd.idaho.gov.

Sincerely,

Brian Duran
Development Services Manager
Idaho Transportation Department | District 3

Cc: Dan Lister, Canyon County Development Services, Principal Planner
Chris Hopper, Highway District 4, District Engineer

# Attachment 3
# Correspondence with Caldwell Fire Department

**Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>**

# Tillman Rezone

3 messages

**Elizabeth Allen** <elizabeth@bristleconelanduseconsulting.com> Mon, Mar 24, 2025 at 12:15 PM

To: Aperry@cityofcaldwell.org
Cc: Six Point Development <6pointdevelopment@gmail.com>, Roger Smith <roger-j-smith@msn.com>

Hi Alan,

We are currently going through the rezone process in Canyon County followed by the platting process. We have an agency comment letter from you dated April 28, 2023. The rezone case number is RZ2022-0012. We are proposing 1 acre lots. 48 residential lots and 4 common lots with access onto Hwy 55 and 10th Avenue via Vista Drive and a stub to the south. We had our first public hearing with the Canyon County Planning Commission last week and they tabled making a decision for us to find out more information on a few items.

One item was fire services. You mentioned fire hydrants in your letter. We are not annexing into the City or connecting to City services so the development with be server via individual domestic wells or a community system. Can you walk us through what would be required at the time of development for fire?

Thank you,

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059

**Alan Perry** <aperry@cityofcaldwell.org> Mon, Mar 24, 2025 at 12:31 PM

To: Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>

Greetings,

I believe the requirement you are referring to is:

1. Fire hydrants, capable of producing the required fire flow, shall be located along approved fire lanes. Fire hydrant spacing shall meet the requirements of IFC table C105.1.1 (IFC 507.3, IFC B105.2, IFC C105).

All subdivisions regardless of annexation must meet the minimum standards of fire flow/ hydrant(s). This can be accomplished by approved wells, tanks or an alternative method for a privet water system.

Can you please provide me with a copy of what you have from this office as I cannot locate the file under Six Point Development.

[Quoted text hidden]

Exhibit F

**Elizabeth Allen** <elizabeth@bristleconelanduseconsulting.com> Mon, Mar 24, 2025 at 7:12 PM
To: Alan Perry <aperry@cityofcaldwell.org>

Of course. I have attached the comment. The ownership of parcels changed recently, previously under McGuire/Eaton.

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059

Bristlecone
LAND USE CONSULTING

[Quoted text hidden]

**4_28_23 Comment.pdf**
88K

Exhibit F

## Dan Lister

**From:** Dan Lister
**Sent:** Monday, April 7, 2025 1:50 PM
**To:** 'Six Point Development'
**Cc:** Elizabeth Allen; Roger Smith
**Subject:** RE: [External] Conditional Rezone Application

Canyon County DSD

**From:** Six Point Development <6pointdevelopment@gmail.com>
**Sent:** Monday, April 7, 2025 1:45 PM
**To:** Dan Lister <Daniel.Lister@canyoncounty.id.gov>
**Cc:** Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>; Roger Smith <roger-j-smith@msn.com>
**Subject:** Re: [External] Conditional Rezone Application

Also,

Who does the check get made

Kristin Short
Six Point Development
541.786.2403
6pointdevelopment@gmail.com

Inline image

On Mon, Apr 7, 2025 at 1:44 PM Six Point Development <6pointdevelopment@gmail.com> wrote:

> Hi Dan,
>
> Please see the attached signed affidavit. Do you want me to mail you the original or hang onto it until I see you?



Exhibit F

Canyon County Development Services
111 North 11th Avenue, #310
Caldwell, Idaho 83605
www.canyoncounty.id.gov
208-454-7458

# AFFIDAVIT OF LEGAL INTEREST

I, 6 Point Properties LLC (name), 16402 Orchard Ave (address)

Caldwell (city), ID (state), 83607 (zip code)

being first duly sworn upon oath, depose and say:

1. That I am the owner of record of the property described on the attached application and I grant my permission to

Elizabeth Allen (Bristlecone Consulting), 1330 Williams Lane Caldwell ID 83686 (name, address)

to submit the accompanying application pertaining to the subject property.

2. I agree to indemnify, defend and hold Canyon County and its employees harmless from any claims to liability resulting from any dispute as to the statements contained herein or as to the ownership of the property, which is the subject of the application.

Dated this 7 day of April, 2025.

Kristen Short (signature)

STATE OF IDAHO )
ss
COUNTY OF CANYON )

On this 7 day of April, in the year 2025, before me Jessica Frazier a notary public, personally appeared Kristen Short, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same.

JESSICA FRAZIER
COMMISSION #20203345
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 09/21/2026

Notary:

My Commission Expires: 9/21/2026

Exhibit F

Kristin Short
Six Point Development
541.786.2403
6pointdevelopment@gmail.com

Inline image

On Fri, Apr 4, 2025 at 10:48 AM Six Point Development <6pointdevelopment@gmail.com> wrote:

> Thank you, Dan !
>
> Elizabeth, I will get a signed affidavit on Monday over to Dan. I will also get a check for submittal as well.
>
> Kristin Short
> Six Point Development
> 541.786.2403
> 6pointdevelopment@gmail.com
>
> Inline image
>
> On Thu, Apr 3, 2025 at 2:58 PM Dan Lister <Daniel.Lister@canyoncounty.id.gov> wrote:
>
> > Elizabeth,
> >
> > Please make sure the updated application includes the signed and notarized affidavit of legal interest from the new owner allowing you to be the applicant for the case. The file has a notarized affidavit from the new owner for Robert Nash to be the applicant. The submittal must include the development agreement fee of $500 and renotification fee of $350 ($850 total). The adopted fees took affect on 3/28/2025 which increased the fees for development agreements and renoticing.
> >
> > The letter of intent appears to include proposed development agreement conditions. DSD has not drafted a development agreement. After the Board of County Commissioner's approval, a development agreement will be drafted with approved conditions to be signed by the Board and the property owner.
> >
> > The preliminary plat will not be reviewed until the rezone application is approved.
> >
> > Sincerely,

**Dan Lister, Planning Supervisor**

DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959

Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)

Public office hours

Monday, Tuesday, Thursday, and Friday

8 am – 5 pm

Wednesday

1 pm – 5 pm

**We will not be closed during lunch hour **

**PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and, as such, may be copied and reproduced by members of the public.**

**From:** Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>
**Sent:** Wednesday, April 2, 2025 7:48 PM
**To:** Dan Lister <Daniel.Lister@canyoncounty.id.gov>
**Cc:** Six Point Development <6pointdevelopment@gmail.com>; Roger Smith <roger-j-smith@msn.com>
**Subject:** [External] Conditional Rezone Application

Hi Dan,

I have attached the conditional rezone application and letter of intent. I think we captured everything. We have two proposed conditions of approval included in the letter of intent.

Do you have a draft DA that we can review?

As far as the preliminary plat goes, are we able to submit the revised preliminary plat, or will we need to wait?

Thank you,

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059






Exhibit F

## Dan Lister

**From:** Dan Lister
**Sent:** Thursday, April 10, 2025 9:17 AM
**To:** 'Elizabeth Allen'
**Cc:** Six Point Development
**Subject:** RE: [External] Schools

Elizabeth,

The information provided appears factual. Based on past cases, the P&Z wants evidence of communication between the applicants and the school district to identify mitigation measures that address the developments' cumulative school impacts. Example: MDC LLC (CR2022-0016) worked with the Middleton School District to donate a certain amount of landscaping to reduce landscaping costs for the school district. In the end, the developer and school district agreed to a voluntary amount per dwelling instead.

Sincerely,

**Dan Lister, Planning Supervisor**
DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959
Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)
Public office hours
Monday, Tuesday, Thursday and Friday
8 am – 5 pm
Wednesday
1 pm – 5 pm
**We will not be closed during lunch hour **

**PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and as such may be copied and reproduced by members of the public.**

**From:** Elizabeth Allen <elizabeth@bristleconelanduseconsulting.com>
**Sent:** Thursday, April 10, 2025 7:34 AM
**To:** Dan Lister <Daniel.Lister@canyoncounty.id.gov>
**Cc:** Six Point Development <6pointdevelopment@gmail.com>
**Subject:** [External] Schools

Hi Dan,

Have you had time to review the information we added about schools? Since the impact is minimal do you think that information will suffice for the commissioners?

Thank you

**Elizabeth Allen**
Owner/Principal Planner
Bristlecone Land Use Consulting
208-477-1059



Exhibit F

Exhibit 3

**EXHIBIT G**

**P&Z Minutes – 3/13/2025**

Planning & Zoning Commission

Case# RZ2022-0012

Hearing date: June 12, 2025

CANYON COUNTY PLANNING & ZONING COMMISSION
MINUTES OF REGULAR MEETING HELD
Thursday, March 20, 2025
6:30 P.M.

1ST FLOOR PUBLIC MEETING ROOM SUITE 130, CANYON COUNTY ADMINISTRATION BUILDING

| | |
|---|---|
| Commissioners Present : | Robert Sturgill, Chairman<br>Brian Sheets, Vice Chairman<br>Harold Nevill, Commission Secretary<br>Geoffrey Mathews, Commissioner<br>Matt Dorsey, Commissioner – sworn in at 9:13 p.m. |
| Staff Members Present: | Jay Gibbons, Director of Development Services<br>Dan Lister, Principal Planner<br>Michelle Barron, Principal Planner<br>Emily Bunn, Associate Planner<br>Madelyn Vander Veen, Associate Planner<br>Amber Lewter, Associate Planner<br>Caitlin Ross, Hearing Specialist |

**Chairman Sturgill** called the meeting to order at 6:33 p.m.

**Commissioner Nevill** read the testimony guidelines and proceeded to the first business item on the agenda.

**Item 1: Consent Agenda**

A. **December 19, 2024 MINUTES**
B. **January 16, 2025 MINUTES**
C. **Case No. RZ2022-0016 – Goodwin**: Approve revised FCO's
D. **Case No. CR2023-0005 – Bowery:** Approve revised FCO's
E. **Case No. CU2022-0008 – Tellez**: Approve revised FCO's

**Motion:** Commissioner Sheets moved to approve the Consent Agenda, seconded by Commissioner Mathews. Voice vote, motion carried.

**Item 2A:**

**Case CR2022-0031 - Werhane:** The applicant, William and Gena Werhane, is requesting a conditional rezone of Parcels R33590012B and R33590012C, approximately 8.93 acres, to amend the County zoning map from an "A" (Agricultural) Zone to a "CR-C-1" (Conditional Rezone – Neighborhood Commercial) Zone. The request includes a development agreement. The property is located at 0 Hwy 55, Caldwell, southeast of the Hwy 55/Sunny Slope Road and Churruca Lane intersection.

On March 20, 2025, the case was proposed to be tabled to a date certain of May 15, 2025.

**MOTION:** Commissioner Sheets moved to **continue** Case No. CR2022-0031 to a date certain of May 15, 2025, seconded by Commissioner Mathews. Voice vote, motion carried.

**Item 2B:**

**Case No. VAC2024-0001 - Thueson:** The applicant, Lance Thueson, represented by Becky Yzaguirre of Ardurra, is requesting a vacation of a fire access easement in Lot 10 Block 1 of Castleton Place Subdivision. There is now another access to the subdivision from Lewis Lane through Jack's Place Subdivision. The subject property is located at 1002 Huntington Court, also referenced as Parcel R29411109.

**Chairman Sturgill** called the applicant to testify.

**Becky Yzaguirre – (Representative) IN FAVOR – 332 Broadmore Way, Nampa, ID 83687**

Ms. Yzaguirre explained the request of a vacation of a 20-foot fire access easement located in the Castleton Place Subdivision. She further explained the accesses to the subdivision. Ms. Yzaguirre noted a letter from the Nampa Fire District stating they did not need the plat note and approved the removal of the easement.

Commissioner Nevill asked how the change would affect the average lot size. Ms. Yzaguirre explained it does not change the lot size since the plat has already been recorded, and now that the permanent secondary access has been provided, it is now buildable based on the requirements of the approved plat.

**Planner Madelyn Vander Veen** reviewed the Staff Report for the record.

Chairman Sturgill asked when the plat was approved and what the county regulations were for the size of the lots in a rural residential zone. Planner Vander Veen stated the minimum lot sizes used to be smaller, so either the plat was approved and the area was later rezoned to rural residential, or the plat was approved during a time when the rural residential zoning allowed the smaller lot sizes. Chairman Sturgill asked what the average lot size is for this subdivision, to which Planner Vander Veen did not know.

**MOTION:** Commissioner Sheets moved to close public testimony on Case No. VAC2024-0001, seconded by Commissioner Matthews. Voice vote, motion carried.

**Deliberation:**

None.

**MOTION:** Commissioner Sheets moved to **recommend approval** for Case No. VAC2024-0001, seconded by Commissioner Mathews.

**Discussion on the Motion:**

None.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**Item 2C:**

**Case No. CU2024-0003 - Garman:** Kris Garman requests a conditional use permit for a special events facility of approximately 16.15 acres in the "A" Agricultural Zone. The subject property is located at 26117 Lower Pleasant Ridge Rd, Wilder ID 83676 also referenced as Parcels R37158, R37157010, and R37157010D.

**Chairman Sturgill** called the applicant to testify.

**Kristina Garman – (Applicant) IN FAVOR – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**

Ms. Garman is requesting a conditional use permit to be able to generate income from the partially viable

agricultural area on her property. Ms. Garman explained the history of Garman Hill and their wishes to keep the area in the family in the future. She further explained she believes their property aligns with the 2030 Comprehensive Plan and does not believe there would be any negative impact or disruption on public services or nearest major roads. In working with the Wilder Fire District and Idaho Transportation Department, there did not seem to be a need for a traffic impact study. There would be sufficient utilities and parking provided based on the events, which are geared to preserve the essence of the land with shared events from the community. Their plan is to be able to run year-round, weather permitting, while providing smaller, more personal events during the "off" seasons. Ms. Garman explained that any surrounding neighbors that this would affect are all in support of this application, and went into further detail of the parking situation compared to the event area.

Ms. Garman's ten (10) minutes of testimony expired.

**MOTION:** Commissioner Sheets moved, seconded by Commissioner Mathews to give Ms. Garman three (3) minutes of additional testimony. Voice vote, motion carried.

Ms. Garman continued with addressing concerns regarding conditions 15, 16, 18, and 21-27, explaining requirements that have already been met and requesting either removal or rewording of some of these conditions.

Chairman Sturgill clarified which conditions needed further evaluation.

Commissioner Nevill asked why condition 23 should be removed. Ms. Garman explained there is plenty of space and parking to accommodate 400-600 people, and believes as a business owner, it is her responsibility to comply with the restrictions of attendees and does not believe ticketing is appropriate. Commissioner Nevill also clarified the reasoning of changing/removing conditions 24 and 25. There was also discussion regarding the hard restrictions of condition 27. Commissioner Nevill reassured the applicant and explained the reasoning behind the strictness of this condition. Commissioner Nevill asked for clarification of traffic navigating to Hwy 95 after an event, and Ms. Garman explained there would be sufficient direction as needed and an alternative, safer route to Hwy 95. Commissioner Nevill asked about emergency services. Ms. Garman stated the Nampa Fire Department Assistant Chief has written a letter of support for access on and off the property if needed.

Commissioner Sheets asked if there would ever be an issue with traffic backing up on Lower Pleasant Ridge Rd to the highway, and Ms. Garman explained the low risk of that with their plan to route any vehicles coming onto the property, and their primary goal of not letting the traffic get backed up on Lower Pleasant Ridge Rd.

Chairman Sturgill asked if the parking spaces were paved or dirt, and Ms. Garman answered it was a grass parking lot. Chairman Sturgill asked how it drains compared to elevation and if standing water was expected. Ms. Garman stated to the west, and there would not be standing water in the parking lot. Chairman Sturgill wanted to clarify why some conditions were requested to be removed as they were covered in other codes, to which Ms. Garman stated it was just her personal comment to have them removed, and it would not get it the way of her business. Chairman Sturgill clarified the distance between the applicant's property and the next nearest property and that the subdivision to the northwest is downhill from their property. He also asked about the potential issue of sound complaints, to which Ms. Garman agreed if a future owner were to bring in bigger amplifiers, then the neighbors may file a code compliance complaint at that point. Chairman Sturgill asked how the applicant would propose mitigating a high volume of traffic leaving at once after an event, and Ms. Garman gave an example of a plan.

**Planner Emily Bunn** reviewed the Staff Report for the record.

Commissioner Nevill asked for clarification on the changes to condition 20. Planner Bunn explained her conversation with Code Enforcement in wanting the condition to clearly state despite the number of events per week, the overall number of events per year has to stay at or below 59. There was also clarification on the conditional use permit being tied to the property owner, and condition 5 regarding Southwest District Health's recommendations on the number of porta-potties and frequency of pumping and maintenance. Commissioner Nevill asked about the distance of the eastern entrance to Hwy 95. Planner Bunn stated Planner Michelle Barron quoted 215 feet. There was further discussion on parking and circulation plans.

Commissioner Mathews clarified that the prior property divisions would not affect approval of the conditional use permit. Planner Bunn explained the one parcel to the west would have a residential building permit and the other to the northeast would be designated as agricultural only.

Chairman Sturgill confirmed a condition could be added regarding signage/flags. Chairman Sturgill asked about emergency services response times. Planner Bunn did not indicate any comments regarding response times from emergency services.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Nicole Keller – IN FAVOR – 9165 N Bullwinkle Ln, Eagle, ID 83616**
Ms. Keller stated she is showing support from the vendor side, explaining that her vendor in the wedding industry is very versed in helping wedding venues stay compliant with parking, noise compliance, etc.

**JoAnn Maupin – IN FAVOR – 20031 Hwy 95, Wilder, ID 83676**
Ms. Maupin lives across the road from the applicant and gives full support and has no problems with the venue.

Chairman Sturgill asked if amplified music 5 days a week until 11 pm was an issue, to which Ms. Maupin answered she had no problems with that.

**Sam Maupin – IN FAVOR – 20031 Hwy 95, Wilder, ID 83676**
Mr. Maupin agreed with the prior testimony, and stated they hear more noise from the City of Wilder than they do the applicants' property. There is easy access with no issues with people pulling in and out.

**Rose Leist – IN FAVOR – 82 N Boundary St, Nampa, ID 83651**
Ms. Leist was recently hired as the venue manager for Garman Hill and is in full support of the applicant. She believes the applicant has a good commitment with being compliant while giving an opportunity for the community to enjoy the space and the nature around it. They are not looking to have an event every day of the week, but rather wish to maintain the pristineness of the land while supporting the community.

**Shiloh Webb – IN FAVOR – 25954 Jacks Rd, Parma, ID 83660**
Mr. Webb fully supports local businesses and looks forward to having this area as a potential venue.

**Lauren Garman – IN FAVOR – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Garman is excited for her mother to have this passion project. Her goal is to bring the community together while providing a safe place for everyone to get together and have a good time. She believes this

is a great opportunity for young adults to gather rather than bars and fully supports this endeavor.

**Sherry Jetton – IN OPPOSITION – 27255 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Jetton expressed concerns regarding the lack of employees, the number of attendees and traffic concerns, the number of events per week, turnarounds for emergency services, and hours of operation.

Commissioner Nevill asked if 450 attendees was better than 600. Ms. Jetton stated that that many people for longer stretches of days is too much, aside if it were a smaller community event, and the noise and traffic flow were the highest concerns. Commissioner Nevill clarified that the concerns about the number of people and the number of events were of equal significance.

**Josh Jetton – IN OPPOSITION – 27255 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Mr. Jetton agreed with his wife's testimony, and further expressed concerns about the basement being turned into a second residence, the traffic increase heading west on Lower Pleasant Ridge Rd, and the lack of notification to some of the residence in the subdivision west of the property. He noted the fire department was voluntary and closer to 2 miles away, although the response time is quick.

**Jeff Schnell – IN OPPOSITION – 20194 Silver Spur Dr, Wilder, ID 83676**
Mr. Schnell represents and is a resident of Apple Hills Subdivision that was not contacted. He expressed concerns regarding the speed limit on Lower Pleasant Ridge Rd, access issues for emergency services, and the previous violation regarding amplified music, especially on their busier Wednesday events.

Commissioner Sheets clarified that the sound went past 10 pm on one of their Wednesday evenings, and Mr. Schnell stated he thought it was someone intoxicated discussing their life plans.

Commissioner Nevill confirmed the street people could potentially cut through to get to Batt Corner Rd off of Lower Pleasant Ridge Rd.

**Kristina Garman – (Applicant) REBUTTAL – 26117 Lower Pleasant Ridge Rd, Wilder, ID 83676**
Ms. Garman addressed the concerns regarding emergency plans and traffic flow. She is open to discussing writing out and submitting an emergency plan. She also made a note that the number of employees that was discussed did not count the hired vendors. Ms. Garman further explained the event facility does not draw from domestic water and the basement residence would not raise issues with amenities, and the only building permits that would be required would be for their shop and daylight basement. She stated there were 23 letters mailed for the neighborhood meeting, 8 of which were on Silver Spur, and concerns raised by the only 2 that attended were adapted into the overall plan of the facility. She also addressed no concerns of anyone needing to use the subdivision as access to or from the property, that there is adequate parking, and the fire station has a high response time with only being 1.3 miles away.

Commissioner Sheets brought up the domestic water statement, to which Ms. Garman stated water bottles would be provided through vendors, and it was further clarified that it would be very minimal water usage for any dust mitigation or guests staying at the Air B&B.

Commissioner Nevill asked what would happen to the land if this application was not approved. Ms. Garman answered she would have to sell it, but her goal is to look for other ways to utilize the land. Commissioner Nevill asked if this event venue would add to the agricultural way of life, to which Ms. Garman stated she believes it would because they have a very intentional business plan to support local and the community as much as possible.

Commissioner Mathews mentioned the prior testimony on moving the speed limit sign, and Ms. Garman said she would fully support that.

Chairman Sturgill asked if the applicant would be amendable to adding a condition regarding permanent direction arrows. Ms. Garman stated she would be opposed since these signs would be in her yard, but that she takes full responsibility of ensuring the area is roped off and signed when appropriate. It was agreed that the condition could state traffic signs and arrows need to be placed for every event. Chairman Sturgill asked if having the conditional use permit tied to the property rather than the applicant was a deal breaker. Ms. Garman explained that she would want to get the full investment from the property as she has spent a great deal of time and money investing on this property.

Planner Bunn confirmed the requirements for the discussions regarding water, sewer, and signage.

**MOTION:** Commissioner Sheets moved to close public testimony on Case No. CU2024-0003, seconded by Commissioner Matthews. Voice vote, motion carried.

**Deliberation:**
There were discussions on condition 5 regarding frequency of pumping and maintenance of porta-potties, condition 8 regarding building permits and certificates of occupancy, condition 13 regarding a dust mitigation plan, condition 15 regarding temporary signage for events, condition 18 regarding number of days of events per year, condition 20 regarding the number of events per week, conditions 21 and 22 regarding rental agreements, condition 23 regarding ticketing, condition 24 regarding guest counts, and condition 27 regarding the conditional use permit attached to the property owner, with an addition of condition 28 to have a written emergency plan created and submitted.

**MOTION:** Commissioner Sheets moved to **approve** Case No. CU2024-0003, adopting the FCOs that the application does meet criteria, with amendments to conditions 5, 8, 13, 15, 18, 20-22, 24, 27 and 28, seconded by Commissioner Nevill.

**Discussion on Motion:**
Commissioner Nevill commented that this was a good way to preserve the agricultural way of life. He believes the conditions are adequate in mitigating the concerns of the neighbors.

Roll call vote: 4 in favor, 0 opposed, motion passed.

**Commissioner Dorsey** was sworn in at 9:13 p.m.

Item 2D:

**Case No. RZ2022-0012 - McGuire:** The applicant, William B. McGuire, represented by Bristlecone Land Use Consulting, requests a Zoning Map Amendment (rezone) of Parcel R32862, approximately 63 acres, from an "A" (Agricultural) zone to an "R-1" (Single Family Residential) zone. The subject property is located at 15453 Karcher Rd, also referenced as Parcel R32862, R32862010.

**Chairman Sturgill** called the applicant to testify.

**Elizabeth Allen – (Representative) IN FAVOR – 1330 Williams Lane, Nampa, ID 83686**
Ms. Allen explained the purpose of their application, and mentioned the preliminary plat will be forthcoming. According to the comprehensive plan, this area has been and is identified as residential, and Canyon County has already exceeded the proposed population of 257,000, so the plan will help meet the housing goals. The surrounding land uses and character of the area are primarily residential, and the

proposed 1-acre single-family residences will blend in with the existing surrounding areas. Facilities and services, which will be further explained during the platting process, are sufficient, with individual septic and wells, and services from Idaho Power and Intermountain Gas. Legal access already exists and traffic impact studies have already been approved by Idaho Transportation Department, with a right of way dedicated for the Hwy 55 expansion. Public services are also adequate and available.

Commissioner Nevill asked for clarification on the Hwy 55 expansion. Ms. Allen explained there would be 5 lanes total, but more details would be addressed during the platting process regarding access from Hwy 55 onto the property. Commissioner Nevill asked if the property to the northwest was a land trust, to which Ms. Allen was unsure. Commissioner Nevill asked what the timeframe was for Caldwell services. Ms. Allen said there is a water line in the area, but it would take a couple of years to be able to connect to it due to infrastructure improvement, and sewer is 1.5 miles away. Commissioner Nevill clarified that future homeowners would have to agree to connect to the city services.

Chairman Sturgill read a letter from Vallivue School District regarding school capacity concerns, and asked if school services are available for this application. Ms. Allen noted that as of right now, this is just an application for a rezone, and future details would be covered during the plat, but she believes there would still be adequate services. Chairman Sturgill asked if the applicant had any conversations with the school district regarding crowding issues, and Ms. Allen did not know if they had.

**Principal Planner Dan Lister** reviewed the Staff Report for the record.

Commissioner Sheets asked if a rezone with access to city services was with 12,000 sq. ft lots. Planner Lister answered yes, 12,000 feet was the minimum unless a plan unit development, or a conditional use permit, was applied for to modify it for smaller lot sizes.

Commissioner Nevill clarified that this was a different group asking for this request than some prior that got approved subdivisions that did not go through. Commissioner Nevill inquired on the fire fighting water plans. Planner Lister mentioned that this would be discussed during the platting process, and explained what the typical requirements would be. Commissioner Nevill also got clarification on a property northwest of the applicant's property, and that it was conditionally rezoned for a community convenience area with future city connection.

Commissioner Mathews asked about the access to the platted subdivision south of the applicant that has agricultural land between each parcel. Planner Lister explained the stubs for access to each property, with the agricultural parcel's access from Kimball.

Chairman Sturgill confirmed there was no indication of response time for emergency services.

**Chairman Sturgill** affirmed the witnesses to testify.

**Testimony:**

**Tom Whittemore – IN OPPOSITION – 15220 Castle Way, Caldwell, ID 83607**

Mr. Whittemore expressed concerns regarding water usage and fire protection, the lack of plans when widening Hwy 55 for a new access into the new subdivision, per a conversation with the construction company, Knife River, and the opposition of access coming off of Castle Way or Fiesta Way.

Commissioner Mathews confirmed that the conversation with Knife River excluded any plans for access onto this property from Hwy 55.

**Howard Spry – IN OPPOSITION – 15141 Vanita Ct, Caldwell, ID 83607**
Mr. Spry also expressed concerns about the potential increase in water usage.

Commissioner Nevill asked if it would be better if there were fewer houses with individual wells, or a higher density that is connected to city water. Mr. Spry indicated he would prefer to not lose his water supply if houses came in with their own wells.

**Harry Ballance – IN OPPOSITION – 15596 Moonlight Dr, Caldwell, ID 83607**
Mr. Balance expressed concerns regarding less than 1-acre lots, water, ingress/egress through the surrounding subdivisions, and habitat being ruined. He requested not to go any smaller than 1-acre lots.

**Elizabeth Allen – (Representative) REBUTTAL – 1330 Williams Lane, Nampa, ID 83686**
Ms. Allen addressed the concerns regarding connection to the city services, the size of lots, and the additional pressure to public services if the lots were any smaller than 1-acres. She also addressed the topic of access, stating there would be access from Hwy 55 and Vista Dr, only creating access on public roads. Ms. Allen stated there has always been a concern with wells, and noted wells do need properly maintained as they get closer to the 20-30-year lifespan. She reiterated that a lot of these concerns would be addressed during the platting process, and that this is simply just the rezoning for the property.

Commissioner Nevill what the ability to farm this parcel was. Ms. Allen said the property is currently being farmed, but with challenges. Commissioner Nevill brought up the concern about the Deer Flat National Wildlife Refuge, to which Ms. Allen commented the boundary is around the lake, and this specific area shouldn't have as big of an impact.

Planner Lister clarified how many lots could become available if adhering to the 12,000 sq. ft size.

Chairman Sturgill asked if there were any conversations regarding a conditional rezone versus a straight rezone, to which Planner Lister commented on the several occasions that topic was discussed.

Commissioner Dorsey asked for clarification of accesses. Planner Lister explained the stubs and access points, which could alleviate higher traffic pressure. The applicant has been working very closely with ITD to ensure access off Hwy 55.

**MOTION:** Commissioner Sheets moved to close public testimony on Case RZ2022-0012, seconded by Commissioner Mathews. Voice vote, motion carried.

**Deliberation:**
Commissioner Mathews expressed concerns about waiting too long to receive City input, and would like to condition this application if possible.

Commissioner Sheets talked about the potential of smaller sized lots, regardless of the applicant's intent. He would also prefer a conditional rezone. Commissioner Mathews agreed.

Commissioner Nevill agreed with Commissioners Sheets and Mathews, and will not support a straight rezone. Commissioner Dorsey also agreed.

There was discussion on the benefits of denying versus continuing this case. If tabled, a revised application and re-noticing would be required.

**MOTION:** Commissioner Nevill moved to **continue** Case No. RZ2022-0012 to a date uncertain, seconded by Commissioner Sheets.

**Discussion on Motion:**
Commissioner Sheets addressed concerns on the density, water and sewer sources, and access to Hwy 55.

Commissioner Nevill added clarification on public services.

Roll call vote: 4 in favor and 1 opposed. Motion passed.

**3. DIRECTOR, PLANNER, COMMISSION COMMENTS:**
Director of Development Services Jay Gibbons announced Josh Johnson as the new Assistant Director, and talked about planner positions being filled. There was discussion on the upcoming April 3, 2025 hearing and the comp plan to prioritize ordinances with upcoming workshops.

Commissioner Dorsey asked about the rumors of administrative splits, and there was discussion on this topic.

Commissioner Sheets asked about the new Hearing Examiner. Director Jay Gibbons talked about the new Hearing Examiner and the process of the hearings that are being worked through, including which cases will go to the Hearing Examiner versus Planning & Zoning.

**4. ADJOURNMENT:**

**MOTION:** Commissioner Sheets moved to adjourn, seconded by Commissioner Nevill. Voice vote, motion carried. Hearing adjourned at 10:41 P.M

An audio recording is on file in the Development Services Departments' office.

Approved this 15th day of May, 2025

Brian Sheets, Acting Chairman

ATTEST
Caitlin Ross

Caitlin Ross, Hearing Specialist

Exhibit 3

**EXHIBIT H**

**Comments/Additional Information**

**Planning and Zoning Commission**

**Case No. RZ2022-0012**

**Hearing Date: June 12, 2025**

Vallivue School District #139

Lisa Boyd, Superintendent

5207 S. Montana Avenue
Caldwell, ID 83607
Phone (208) 454-0445
Fax (208) 454-0293

May 8, 2025

Re: Case No. RZ2022-0012

Dear Canyon County Planning and Zoning,

If the application is approved, the students would attend West Canyon Elementary, Vallivue Middle School, and Vallivue High School.

Currently, the surrounding schools can accommodate such a small development. The district's main concern is with large swaths of land approved for major developments that could compromise the district's overall capacity to provide appropriate services over the next ten years.

Sincerely,

Joseph Palmer
Assistant Superintendent

## Dan Lister

**From:** Doug Critchfield <critchfieldd@cityofnampa.us>
**Sent:** Wednesday, May 7, 2025 3:02 PM
**To:** Dan Lister
**Subject:** [External] RE: Legal Notice RZ2022-0012 / McGuire

Dan – Nampa has no comments about this proposal as it is not in the Nampa AOI. Thanks - Doug

**Doug Critchfield, Principal Planner, ASLA**
O: 208.468.5442, F: 208.468.5439
500 12th Ave. S., Nampa, ID 83651
Planning and Zoning - Like us on Facebook
Citizen's Guide to Planning – Learn More About Planning!

NAMPA Ready

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**From:** Caitlin Ross <Caitlin.Ross@canyoncounty.id.gov>
**Sent:** Thursday, May 1, 2025 11:36 AM
**To:** 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'P&Z@cityofcaldwell.org' <P&Z@cityofcaldwell.org>; 'dgeyer@cityofcaldwell.org' <dgeyer@cityofcaldwell.org>; 'jdodson@cityofcaldwell.org' <jdodson@cityofcaldwell.org>; 'mbessaw@cityofcaldwell.org' <mbessaw@cityofcaldwell.org>; 'amy@civildynamics.net' <amy@civildynamics.net>; 'alicep@cityofhomedale.org' <alicep@cityofhomedale.org>; 'jgreen@marsingcity.com' <jgreen@marsingcity.com>; 'mayor@cityofmelba.org' <mayor@cityofmelba.org>; 'cityclerk@cityofmelba.org' <cityclerk@cityofmelba.org>; 'jhutchison@middletoncity.org' <jhutchison@middletoncity.org>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.org' <rstewart@middletoncity.org>; Robyn Sellers <sellersr@cityofnampa.us>; Kristi Watkins <watkinsk@cityofnampa.us>; Daniel Badger <BadgerD@cityofnampa.us>; Addressing <Addressing@cityofnampa.us>; Doug Critchfield <critchfieldd@cityofnampa.us>; Clerks <clerks@cityofnampa.us>; Char Tim <timc@cityofnampa.us>; 'notuscityclerk@gmail.com' <notuscityclerk@gmail.com>; 'clerk@cityofparmaidaho.org' <clerk@cityofparmaidaho.org>; 'mayor@cityofparmaidaho.org' <mayor@cityofparmaidaho.org>; 'publicworks@cityofparmaidaho.org' <publicworks@cityofparmaidaho.org>; 'cityhalladmin@cityofparmaidaho.org' <cityhalladmin@cityofparmaidaho.org>; 'snickel@staridaho.org' <snickel@staridaho.org>; 'wsevery@cityofwilder.org' <wsevery@cityofwilder.org>; 'casanderson@caldwellschools.org' <casanderson@caldwellschools.org>; 'nicmiller@cwi.edu' <nicmiller@cwi.edu>; 'ddenney@homedaleschools.org' <ddenney@homedaleschools.org>; 'bgraves@kunaschools.org' <bgraves@kunaschools.org>; 'tejensen@kunaschools.org' <tejensen@kunaschools.org>; 'nstewart@marsingschools.org' <nstewart@marsingschools.org>; 'sadams@melbaschools.org' <sadams@melbaschools.org>; 'Horner.Marci@westada.org' <Horner.Marci@westada.org>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'cstauffer@nsd131.org' <cstauffer@nsd131.org>; 'dleon@nsd131.org' <dleon@nsd131.org>; 'krantza@notusschools.org' <krantza@notusschools.org>; 'tkelly@parmaschools.org' <tkelly@parmaschools.org>; 'jenny.titus@vallivue.org' <jenny.titus@vallivue.org>; lisa.boyd <lisa.boyd@vallivue.org>; 'joseph.palmer@vallivue.org' <joseph.palmer@vallivue.org>; 'jdillon@wilderschools.org' <jdillon@wilderschools.org>; 'lrichard@cityofcaldwell.org' <lrichard@cityofcaldwell.org>; 'aperry@cityofcaldwell.org' <aperry@cityofcaldwell.org>; 'homedalefd@gmail.com' <homedalefd@gmail.com>; 'tlawrence@kunafire.com' <tlawrence@kunafire.com>; 'khinkle@kunafire.com' <khinkle@kunafire.com>; 'marsingfiredistrict@yahoo.com' <marsingfiredistrict@yahoo.com>; 'marsingruralfire@gmail.com' <marsingruralfire@gmail.com>; 'brian.mccormack@melbafire.id.gov' <brian.mccormack@melbafire.id.gov>; 'kenny.hoagland@melbafire.id.gov' <kenny.hoagland@melbafire.id.gov>; 'vislas@starfirerescue.org' <vislas@starfirerescue.org>; 'permits@starfirerescue.org' <permits@starfirerescue.org>;

## Dan Lister

**From:** O'Shea, Maureen <Maureen.OShea@idwr.idaho.gov>
**Sent:** Tuesday, May 6, 2025 2:12 PM
**To:** Dan Lister
**Subject:** [External] re: Legal Notice RZ2022-0012 / McGuire 15453 Karcher Rd, Caldwell
**Attachments:** NEW - P&Z Rezone full political agency notice 05012025.pdf

Dan,

The property located at 15453 Karcher Road, Caldwell, parcels R32862, & R32862010, approximately 63 acres, re-zone to allow a residential development to a one-acre average minimum having about 48 buildable lots, fire hydrants is not in the floodplain, therefore I have no comments.

P.S. This proposal appears to land lock parcels R32869 & R32870




*I am working part-time & generally available from 9:00 a.m. to noon Monday through Thursday.*

Thank you,
Maureen O'Shea, CFM
Floodplain Specialist
Idaho Dept. of Water Resources
322 E. Front Street, PO Box 83720,
Boise, ID 83720-0098
Office # 208-287-4928
Cell # 208-830-4174
Maureen.OShea@idwr.idaho.gov
https://www.idwr.idaho.gov/floods/

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**From:** Caitlin Ross <Caitlin.Ross@canyoncounty.id.gov>
**Sent:** Thursday, May 1, 2025 11:36 AM
**To:** 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'P&Z@cityofcaldwell.org' <P&Z@cityofcaldwell.org>;

Date 05/01/2025

Canyon County – Development Services
Re: Case Number: RZ2022-0012, Parcel: R328620, William B. McGuire

Dear, Canyon County Development Services Department

The Caldwell City Fire Department District has reviewed and can approve the application subject to compliance with all the following code requirements and conditions of approval. Any deviation from this plan is subject to Fire Department approval. Please note that unless stated otherwise, this memo represents the requirements of the 2018 International Fire Code (IFC) as adopted by the Idaho State Fire Marshal's Office.

***Details:***

- Nearest Fire Station: Station 2
- Distance: 2.8 miles
- Estimated response time: 8 minutes

***Conditions:***

1. Fire hydrants, capable of producing the required fire flow, shall be located along approved fire lanes. Fire hydrant spacing shall meet the requirements of IFC table C105.1.1 (IFC 507.3, IFC B105.2, IFC C105).
2. Roadway serving a fire hydrant shall be a minimum of 26-feet in width. (IFC D103.1)
3. Dead-end fire apparatus access roads exceeding 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus. (IFC 503.2.5)
4. Fire apparatus access roads shall extend to within 150 feet of all portions of the exterior walls of the first story of a building measured by an approved route around the exterior of the building or facility. (IFC 503.1.1)
5. Monument signage for addressing will be required at the entrance and at all intersections within the project. (IFC 505.1)

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6. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches. (IFC 503.2.1)

7. The minimum outside turning radius of a fire apparatus access road shall be 48 feet. The minimum inside turning radius shall be 28 feet. (IFC 503.2.4)

8. Fire apparatus access roads shall have an approved driving surface of asphalt, concrete or other approved driving surface and can support the imposed load of fire apparatus weighing at least 80,000 pounds. Please provide documentation the road surface meets this standard. (IFC D102.1)

9. Fire apparatus access roads shall not exceed 10 percent in grade. (IFC D103.2)

10. For streets having a width less than 33 feet back of curb to back of curb parking shall be restricted on one side; for streets having a width less than 27 feet back of curb to back of curb parking shall be restricted on both sides. A note on the face of the final plat is required noting the parking restriction prior to signing of the final plat. In addition, No Parking signs shall be installed in accordance with the requirements of the IFC. (IFC 503.8)

11. Access gates shall comply with requirements of the IFC. If gates are electronically operated, they shall be equipped with an automatic opening mechanism activated by the Opticom or eKnox System.

12. Approved secondary access roads shall be provided per section D106 of the 2018 IFC.

13. *An automatic fire sprinkler system installed per NFPA 13R may be required.*

14. A phasing plan shall be included in documentation to city at time of submittal in accordance with infrastructure 2018 IFC.

15. Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except where approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection where construction

of new roadways allows passage by vehicles in accordance with (IFC Section 505.2.

**16. MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS D106.1**

Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

**Exception:** Projects having up to 200 dwelling units shall have not fewer than one approved fire apparatus access road where all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2

17. **SECTION D107 ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS D107.1** One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads.

**Exceptions:** 1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, access from two directions shall not be required.

18. D104.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

19. When bollards are required they should be MaxiForce Collapsible Bollards

20. An Automatic Fire Detection System and Fire Alarm System may be required based on the occupancy type and evaluation of hazards with the structure. 901.4.4

21. An eKnox lock box, shall be installed on the outside of the building by the main entrance and by the sprinkler room. Additional eKnox Key boxes may be required based on occupancy and proximity of other Boxes. Each eKnox Box shall have labeled master keys to every lock within the

structure. The final number and location shall be with the approval of the Caldwell Fire Marshal or designee. 506.1

22. Private water mains shall be provided in accordance with NFPA 24 507.2.1

*General Requirement:*
Fire Department required fire hydrants, access, and street identification shall be installed prior to construction or storage of combustible materials on site. Provisions may be made for temporary access and identification measures.

Specific building construction requirements of the International Building Code, International Fire Code and City of Caldwell Code will apply. However, these provisions are best addressed by a licensed Architect at time of building permit application.

Regards,

Alan Perry
Deputy Chief
Fire Marshal
Caldwell Rural Fire Protection District
Aperry@cityofcaldwell.org

1445 N Orchard St
Boise, ID 83706 • (208) 373-0550

Brad Little, Governor
Jess Byrne, Director

May 5, 2025

Daniel Lister, Assistant Planning Manager
111 North 11th Ave.
Ste. 310
Caldwell, Idaho, 83605
Daniel.Lister@canyoncounty.id.gov

Subject: Agency Notice for RZ2022-0012 McGuire

Dear Mr. Lister:

Thank you for the opportunity to respond to your request for comment. While DEQ does not review projects on a project-specific basis, we attempt to provide the best review of the information provided. DEQ encourages agencies to review and utilize the Idaho Environmental Guide to assist in addressing project-specific conditions that may apply. This guide can be found at: *https://www.deq.idaho.gov/public-information/assistance-and-resources/outreach-and-education/*.

The following information does not cover every aspect of this project; however, we have the following general comments to use as appropriate:

**1. AIR QUALITY**

- Please review IDAPA 58.01.01 for all rules on Air Quality, especially those regarding fugitive dust (58.01.01.651), and trade waste burning (58.01.01.600-617).
- For new development projects, all property owners, developers, and their contractor(s) must ensure that reasonable controls to prevent fugitive dust from becoming airborne are utilized during all phases of construction activities per IDAPA 58.01.01.651.
- DEQ recommends the city/county require the development and submittal of a dust prevention and control plan for all construction projects prior to final plat approval. Dust prevention and control plans incorporate appropriate best management practices to control fugitive dust that may be generated at sites.
- Citizen complaints received by DEQ regarding fugitive dust from development and construction activities approved by cities or counties will be referred to the city/county to address under their ordinances.
- Per IDAPA 58.01.01.600-617, the open burning of any construction waste is prohibited. The property owner, developer, and their contractor(s) are responsible for ensuring no prohibited open burning occurs during construction.

For questions, contact David Luft, Air Quality Manager, at (208) 373-0550.

## 2. WASTEWATER AND RECYCLED WATER

- DEQ recommends verifying that there is adequate sewer to serve this project prior to approval. Please contact the sewer provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.16 and IDAPA 58.01.17 are the sections of Idaho rules regarding wastewater and recycled water. Please review these rules to determine whether this or future projects will require DEQ approval. IDAPA 58.01.03 is the section of Idaho rules regarding subsurface disposal of wastewater. Please review this rule to determine whether this or future projects will require permitting by the district health department.
- All projects for construction or modification of wastewater systems require preconstruction approval. Recycled water projects and subsurface disposal projects require separate permits as well.
- DEQ recommends that projects be served by existing approved wastewater collection systems or a centralized community wastewater system whenever possible. Please contact DEQ to discuss the potential for development of a community treatment system along with best management practices for communities to protect ground water.
- DEQ recommends that cities and counties develop and use a comprehensive land use management plan, which includes the impacts of present and future wastewater management in this area. Please schedule a meeting with DEQ for further discussion and recommendations for planning development and implementation.

For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

## 3. DRINKING WATER

- DEQ recommends verifying that there is adequate water to serve this project prior to approval. Please contact the water provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.08 is the section of Idaho rules regarding public drinking water systems. Please review these rules to determine whether this or future projects will require DEQ approval.
- All projects for construction or modification of public drinking water systems require preconstruction approval.
- DEQ recommends verifying if the current and/or proposed drinking water system is a regulated public drinking water system (refer to the DEQ website at: https://www.deq.idaho.gov/water-quality/drinking-water/. For non-regulated systems, DEQ recommends annual testing for total coliform bacteria, nitrate, and nitrite.
- If any private wells are included in this project, we recommend that they be tested for total coliform bacteria, nitrate, and nitrite prior to use and retested annually thereafter.
- DEQ recommends using an existing drinking water system whenever possible or construction of a new community drinking water system. Please contact DEQ to discuss this project and to explore options to both best serve the future residents of this development and provide for protection of groundwater resources.
- DEQ recommends cities and counties develop and use a comprehensive land use management plan which addresses the present and future needs of this area for adequate, safe, and sustainable drinking water. Please schedule a meeting with DEQ for further discussion and recommendations for planning development and implementation.

For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

## 4. SURFACE WATER

- Please contact DEQ to determine whether this project will require an Idaho Pollutant Discharge Elimination System (IPDES) Permit. A Multi-Sector General Permit from DEQ may be required for facilities that have an allowable discharge of storm water or authorized non-storm water associated with the primary industrial activity and co-located industrial activity. For questions, contact James Craft, IPDES Compliance Supervisor, at (208) 373-0144.
- If this project is near a source of surface water, DEQ requests that projects incorporate the best construction management practices (BMPs) to assist in the protection of Idaho's water resources. Additionally, please contact DEQ to identify BMP alternatives and to determine whether this project is in an area with Total Maximum Daily Load stormwater permit conditions.
- The Idaho Stream Channel Protection Act requires a permit for most stream channel alterations. Please contact the Idaho Department of Water Resources (IDWR), Western Regional Office, at 2735 Airport Way, Boise, or call (208) 334-2190 for more information. Information is also available on the IDWR website at: https://idwr.idaho.gov/streams/stream-channel-alteration-permits.html
- The Federal Clean Water Act requires a permit for filling or dredging in waters of the United States. Please contact the US Army Corps of Engineers, Boise Field Office, at 10095 Emerald Street, Boise, or call 208-345-2155 for more information regarding permits.

  For questions, contact Lance Holloway, Surface Water Manager, at (208) 373-0550.

## 5. SOLID WASTE, HAZARDOUS WASTE AND GROUND WATER CONTAMINATION

- **Solid Waste.** No trash or other solid waste shall be buried, burned, or otherwise disposed of at the project site. These disposal methods are regulated by various state regulations including Idaho's Solid Waste Management Regulations and Standards (IDAPA 58.01.06), Rules and Regulations for Hazardous Waste (IDAPA 58.01.05), and Rules and Regulations for the Prevention of Air Pollution (IDAPA 58.01.01). Inert and other approved materials are also defined in the Solid Waste Management Regulations and Standards
- **Hazardous Waste.** The types and number of requirements that must be complied with under the federal Resource Conservations and Recovery Act (RCRA) and the Idaho Rules and Standards for Hazardous Waste (IDAPA 58.01.05) are based on the quantity and type of waste generated. Every business in Idaho is required to track the volume of waste generated, determine whether each type of waste is hazardous, and ensure that all wastes are properly disposed of according to federal, state, and local requirements.
- **Water Quality Standards.** Site activities must comply with the Idaho Water Quality Standards (IDAPA 58.01.02) regarding hazardous and deleterious-materials storage, disposal, or accumulation adjacent to or in the immediate vicinity of state waters (IDAPA 58.01.02.800); and the cleanup and reporting of oil-filled electrical equipment (IDAPA 58.01.02.849); hazardous materials (IDAPA 58.01.02.850); and used-oil and petroleum releases (IDAPA 58.01.02.851 and 852). Petroleum releases must be reported to DEQ in accordance with IDAPA 58.01.02.851.01 and 04. Hazardous material released to state waters, or to land such that there is likelihood that it will enter state waters, must be reported to DEQ in accordance with IDAPA 58.01.02.850.

- **Ground Water Contamination.** DEQ requests that this project comply with Idaho's Ground Water Quality Rules (IDAPA 58.01.11), which states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that causes a ground water quality standard to be exceeded, injures a beneficial use of ground water, or is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method."

  For questions, contact Matthew Pabich, Waste & Remediation Manager, at (208) 373-0550.

**6. ADDITIONAL NOTES**

- If an underground storage tank (UST) or an aboveground storage tank (AST) is identified at the site, the site should be evaluated to determine whether the UST is regulated by DEQ. EPA regulates ASTs. UST and AST sites should be assessed to determine whether there is potential soil and ground water contamination. Please call DEQ at (208) 373-0550, or visit the DEQ website https://www.deq.idaho.gov/waste-management-and-remediation/storage-tanks/leaking-underground-storage-tanks-in-idaho/ for assistance.
- If applicable to this project, DEQ recommends that BMPs be implemented for any of the following conditions: wash water from cleaning vehicles, fertilizers and pesticides, animal facilities, composted waste, and ponds. Please contact DEQ for more information on any of these conditions.

We look forward to working with you in a proactive manner to address potential environmental impacts that may be within our regulatory authority. If you have any questions, please contact me, or any of our technical staff at (208) 373-0550.

Sincerely,



Troy Smith
Regional Administrator

bird, furbearing animal, or unprotected and predatory wildlife in the following areas:

- All National Parks and National Monuments, including National Historic Parks. **Exceptions**: The portion of Craters of the Moon National Monument within the National Preserve that was added to the Monument in November 2000 is open to hunting; the portion of Hagerman Fossil Beds National Monument within an area of fifty (50) feet in elevation above the high-water level of the Snake River, as marked by yellow fiberglass markers, is open to hunting downslope to the river.
- All state parks. **Exceptions:** Billingsley Creek Unit of Thousand Springs State Park, Castle Rock State Park, and state park lands within the City of Rocks National Reserve are open to hunting. Farragut State Park is open to hunting by archery only. Hells Gate State Park and Heyburn State Park are open to waterfowl hunting.
- Within the area bounded by State Highway 21, Warm Springs Avenue, and the New York Canal from the New York Canal Diversion Dam downstream to the Boise City limits.
- Mann's Lake in Nez Perce County and extending three hundred (300) yards beyond the Bureau of Reclamation property that encompasses the lake.
- Any other location for which a closure is established by Idaho Code, or Commission proclamation or order, or federal national wildlife refuge regulation or order.

## Areas Closed to Hunting of all Game Birds

Hunting, killing, or molesting of any game bird is prohibited in the following areas:

- Lewiston Preserve in Nez Perce County (Idaho Code 36-1908). The area along the Clearwater River from Lewiston city limits upstream to Spalding railroad bridge, between Highway 95/12 on the north side and the Camas Prairie railroad on the south side.
- Springfield Bird Preserve (Springfield Bird Haven) in Bingham County (Idaho Code 36-1911). The area beginning 1 mile west of Springfield, Idaho on State Highway 39, and running north one-quarter mile, then east one-half mile, then south to State Highway 39, then east along the north line of Highway 39, then east along the north line of Highway one-half mile, then south one-half mile to the West 850 Road, then west along this road three-fourth mile, then northwesterly in a straight diagonal line to the point of beginning.
- Roswell Marsh Wildlife Habitat Area in Canyon County in the area south of Highway 18 and west of Pebble Lane (Roswell Marsh segment). Closed on Sundays, Mondays, Tuesdays and Wednesdays from September 15 through the end of the waterfowl hunting season. Also closed to white-fronted and light goose hunting from February 1 – March 10.

## Idaho Wildlife Preserves Open to Migratory Game Bird Hunting

- David Thompson Preserve in Bonner County
- Myrtle Creek Preserve in Boundary County

## Areas Closed to Hunting of Migratory Game Birds, Except Mourning Doves

Hunting, killing, or molesting of any migratory game bird is prohibited **except** mourning dove in the following areas:

- Fort Hall Indian Reservation in Bingham, Bannock, and Power Counties within three hundred (300) yards each way of the Fort Hall Bluffs from Bigbend Boat Launch to the west boundary of the Fort Hall Indian Reservation.
- Hagerman Wildlife Management Area (WMA) in Gooding County in the area enclosed by the following boundary: Beginning at a point two hundred (200) yards west of the point at which U.S. Highway 30 crosses the south bank of Gridley Island, then northwest along a line two hundred (200) yards southwest of and parallel to U.S. Highway 30 to a point two hundred (200) yards west of the junction of U.S. Highway 30 and the WMA entrance, then west and north and east along a line two hundred (200) yards outside of the WMA boundary, which is marked by a fence, to the point at which the fence meets U.S. Highway 30, then east and south along a line five hundred (500) yards outside of the WMA boundary to the Snake River, then downstream along the north bank of the Snake River and then along the south bank of Gridley Island to the point where U.S. Highway 30 crosses the south bank of Gridley Island, then two hundred (200) yards west of U.S. Highway 30 to the point of beginning. **Exception**: Department sponsored waterfowl hunts.
- Mormon Reservoir in Camas County including the shoreline area within two hundred (200) yards of the ordinary high water line.
- Spokane River in Kootenai County from the Post Falls Dam to Lake Coeur d'Alene at the orange pilings, within two hundred (200) yards of the ordinary high water line two thousand one hundred twenty-eight (2,128) feet above sea level.

## Areas Closed to Goose Hunting

- Canyon County in the area enclosed by the following boundary and within one hundred fifty (150) feet of the exterior side of said boundary (except that the closure extends to one hundred (100) yards from the exterior side of said boundary along that section commencing at the junction of Lake Shore Drive and Rim Road, then south on Rim Road to west Lewis Lane, then east on west Lewis Lane to Lake Shore Drive, then along Lake Shore Drive to Emerald Road): Beginning approximately at the junction of State Highway 45 (12th Avenue Road) and Greenhurst Road (Nampa), then west following Greenhurst Road to its junction with Middleton Road, then north following Middleton Road to its junction with Lake Lowell Avenue, then west following Lake Lowell Avenue to its junction with Lake Avenue, then north following Lake Avenue to its junction with West Roosevelt Avenue, then west following West Roosevelt Avenue to its junction with Indiana Avenue, then north following Indiana Avenue to its junction with

State Highway 55 (Karcher Road), then west following State Highway 55 to its junction with Riverside Road, then south following Riverside Road to the Deer Flat National Wildlife Refuge boundary, then west along boundary fence below lower embankment as posted to Lake Shore Drive, then in a southeast direction following Lake Shore Drive to its junction with Marsing Road, then east and south on Lake Shore Drive to Rim Drive, then south on Rim Drive to West Lewis Lane, then east on West Lewis Lane to Lake Shore Drive, then southeast on Lake Shore Drive to State Highway 45, then north on State Highway 45 to the point of beginning.

- Hagerman Valley in Gooding and Twin Falls Counties in the area enclosed by the following boundary: Beginning at the Gridley Island Bridge on the Snake River, then south and east along the south bank to a point perpendicular to mile marker 187.5, then on a direct line east to the southern tip of Ritter Island (in the Snake River), then continuing east to the intersection of 3200 South Road and 1300 East Road, then north on the 1300 East Road to the 1200 East Road, then northwest and north on the 1200 East Road to the 3000 South Road, then west on the 3000 South Road to a point five hundred (500) yards east of the intersection of the 3000 South Road and the Hagerman National Fish Hatchery Road) (east of the Hagerman WMA boundary), then north and west five hundred (500) yards outside the Hagerman WMA boundary to U.S. Highway 30, then west and south two hundred (200) yards outside the Hagerman WMA boundary to 2900 South Road, then west on 2900 South Road to 900 East Road, then due south to a point two hundred (200) yards north of the Snake River, then west and north two hundred (200) yards outside the high water line on the east bank of the Snake River to Lower Salmon Dam, then west across the Snake River, then south, southwest and east two hundred (200) yards outside the high water line on the west bank of the Snake River (including the Idaho Power Upper Salmon Dam diversion canal) to the Gridley Bridge, the point of beginning.
- Minidoka and Cassia Counties in the area enclosed by the following boundary: Within two hundred (200) yards of the high water line of the Snake River from Milner Dam upstream to Meridian Road (north side of the Snake River) and 650 East Road (south side of the Snake River), approximately six and one-half (6 1/2) miles east of the City of Burley.

## Activities on Fish and Game Lands

Some of the activities prohibited on all lands, waters and roads under control or administration of Idaho Fish and Game include:

- Entering, using or occupying lands or waters posted against such entry, use, or occupancy.
- Constructing blinds, pits, platforms, or tree stands where the soil is disturbed, trees are cut or altered, and artificial fasteners, such as wire, rope, or nails are used. All blinds shall be available to the public on a "first-come, first-served" basis.
- Leaving decoys unattended. Decoys may not be placed earlier than two hours before official shooting hours for waterfowl. All decoys must be picked up and removed from the hunting site no later than two hours after official shooting hours for waterfowl for that particular day. Driving on Fish and Game property to place decoys is prohibited.
- Special rules relating to uses of and activities on wildlife management areas are detailed in a brochure titled "Public Use of Department Lands and Access Areas," available from Fish and Game regional offices.

## Bird Dog Training Permits

- A permit is required to train bird dogs on private/public lands (excluding licensed shooting preserves) when the release of artificially propagated upland game birds or waterfowl will be part of the training process. Permit applications are available at Fish and Game regional offices.
- A permit is required to sponsor/conduct any organized competitive dog trials/tests on private or public lands (excluding licensed shooting preserves) when artificially propagated game birds are used. The permit is required even if live birds are not used or released during the trial on Wildlife Management Area lands. Permit applications are available at Fish and Game regional offices.

## State Park Rules

Certain types of hunting are allowed on some state parks. Please contact the state park you are interested in visiting to determine hunting opportunity.

**Protection of Wildlife**: All molesting, injuring or killing of any wild creature is strictly prohibited, **except** as provided by action of the Idaho State Parks and Recreation Board and as established in board policy. Persons in possession of wildlife, which may be legally taken within state park boundaries, must comply with Idaho Fish and Game rules.

**Personal Safety:** No person may purposefully or negligently endanger the life of any person or creature within any land administered by the Department of Parks and Recreation. No person may discharge firearms or any other projectile firing devices within any lands administered by the Department of Parks and Recreation, **except** in the lawful defense of person, persons or property or in the course of lawful hunting, or for exhibition or at designated ranges as authorized by the director of the Department of Parks and Recreation.

## Other Rules

**National Wildlife Refuges:** More restrictive regulations may apply to National Wildlife Refuges. Hunters should check refuge regulations before hunting.

**Indian-owned Reservation Lands:** Federal law prohibits unauthorized trespass on Indian-owned reservation lands for hunting, fishing, or trapping purposes (18 US Code 1165).



Exhibit H.6

Exhibit H.7

# Tillman Ridge Conditional Rezone

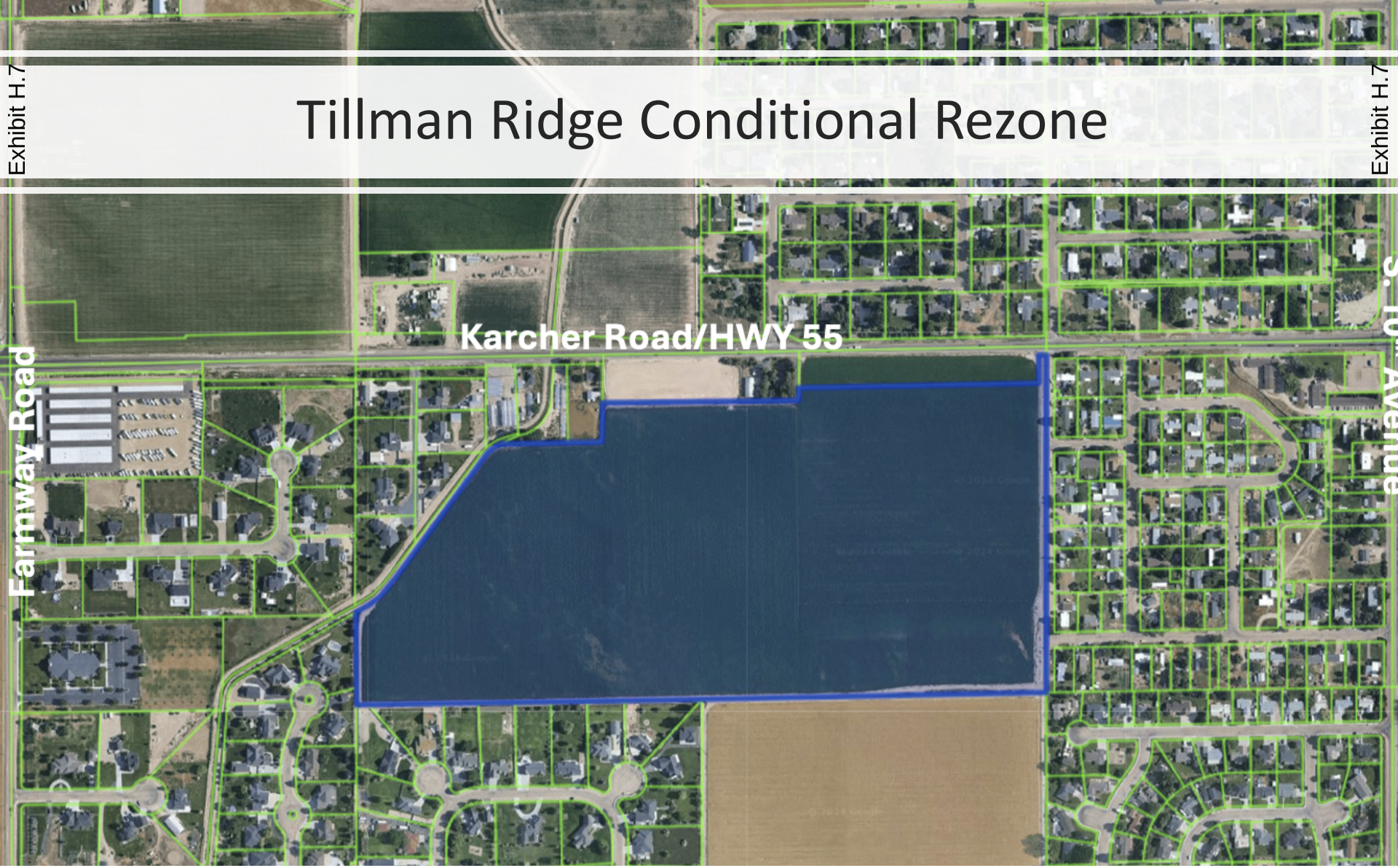



Exhibit H.7

Planning and Zoning Commission Continuation - June 5, 2025

Presented by: Elizabeth Allen, Bristlecone Land Use Consulting

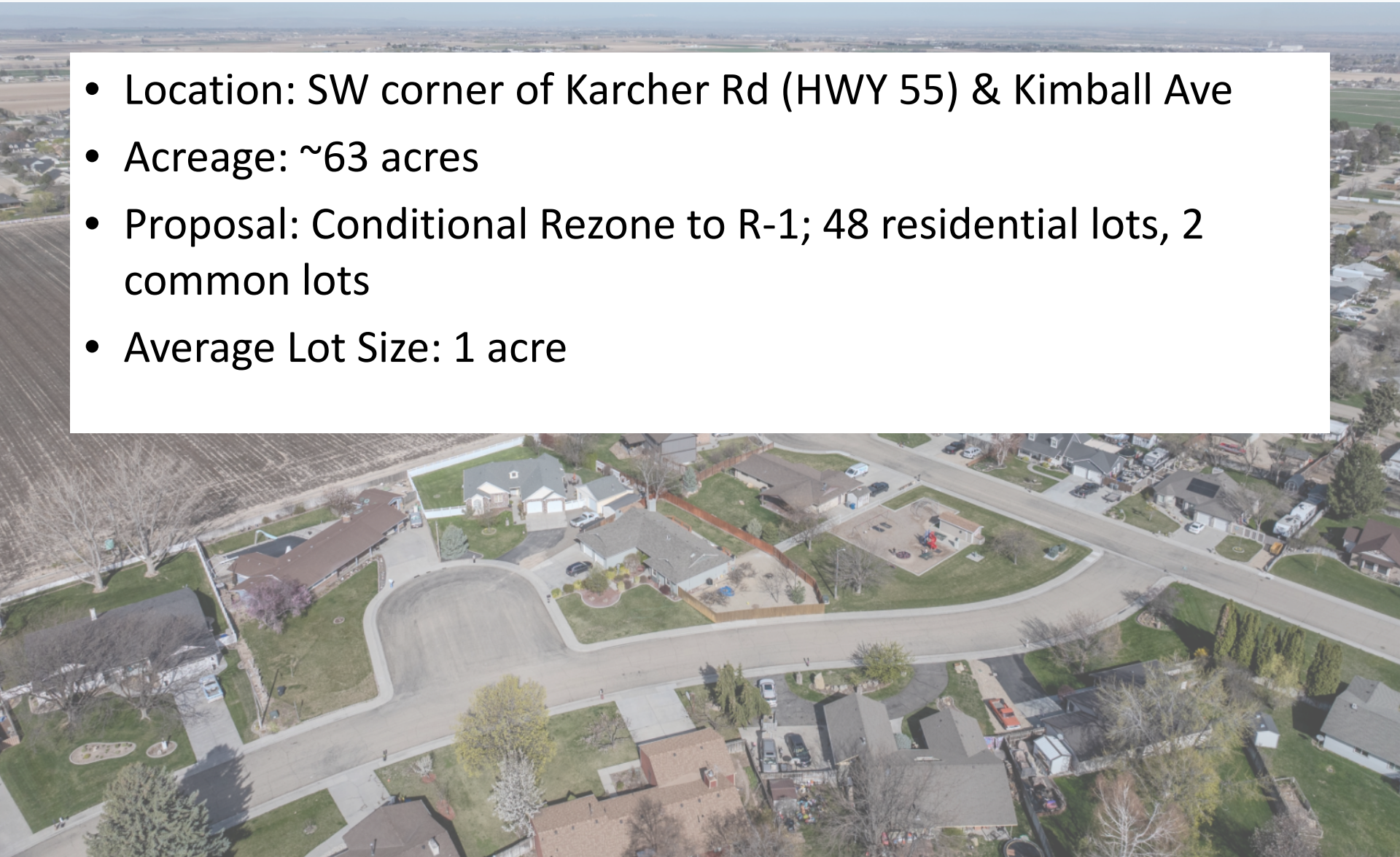



Exhibit H.7

# Project Overview

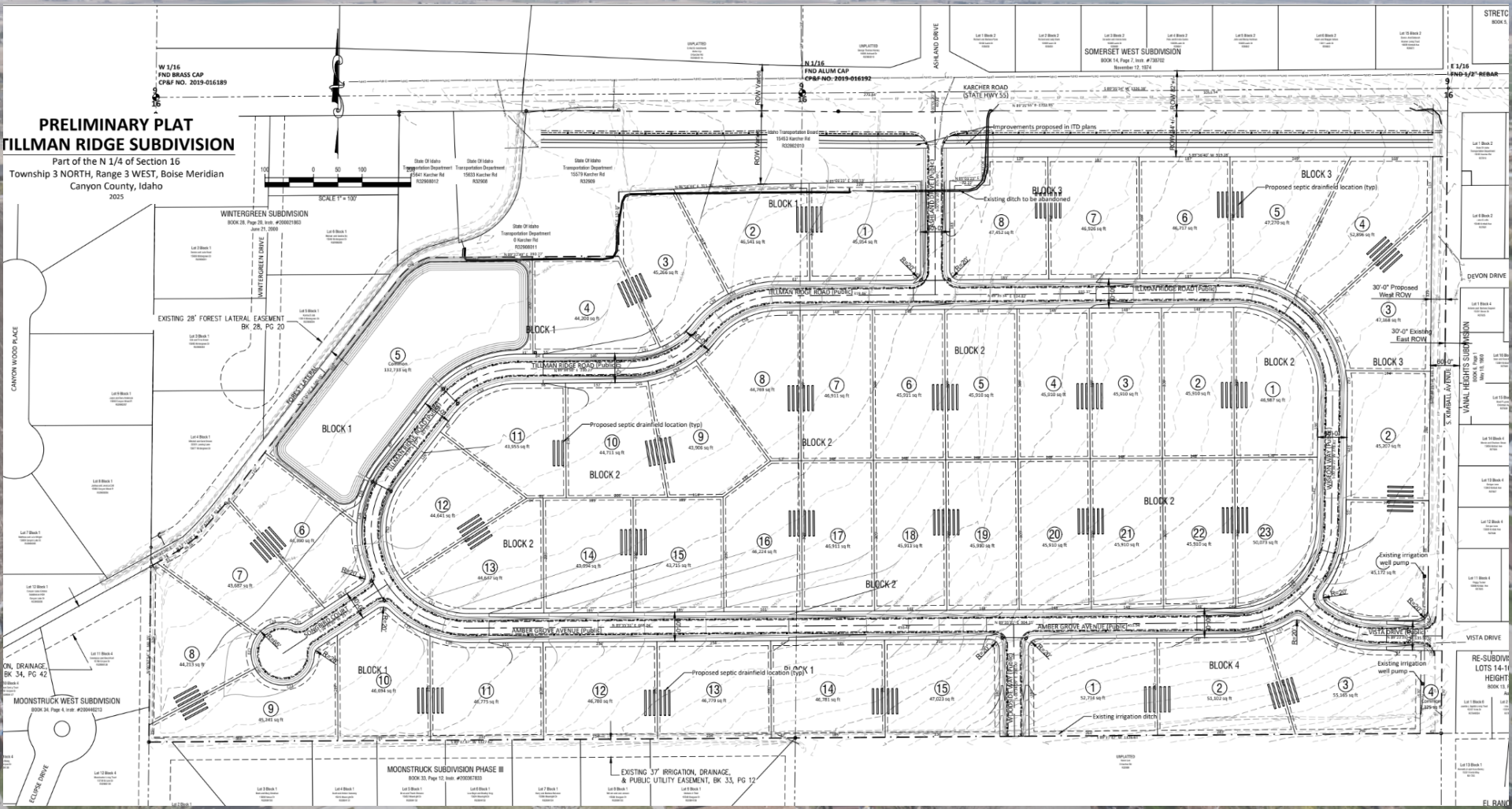
Exhibit H.7

- Location: SW corner of Karcher Rd (HWY 55) & Kimball Ave
- Acreage: ~63 acres
- Proposal: Conditional Rezone to R-1; 48 residential lots, 2 common lots
- Average Lot Size: 1 acre



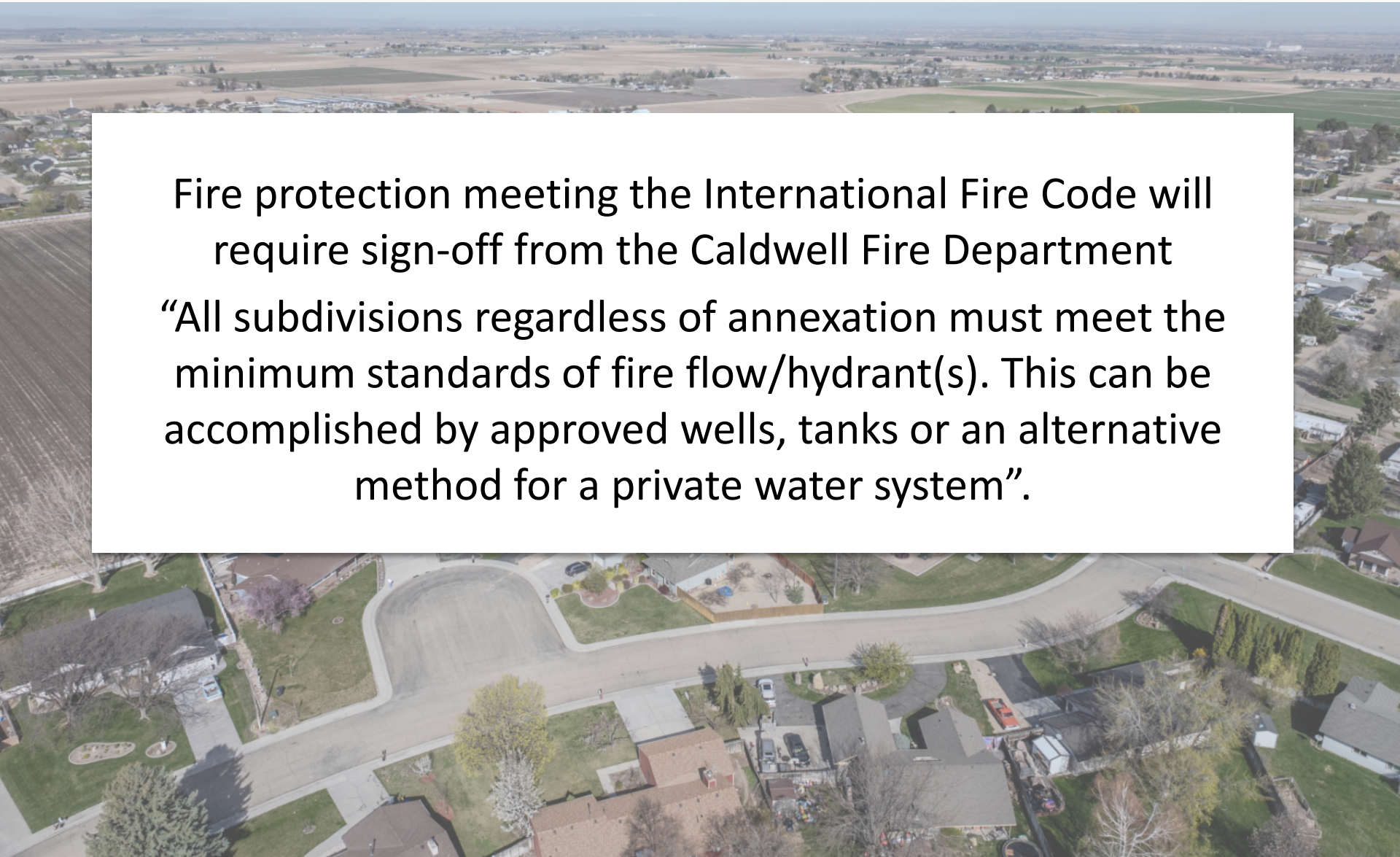
# Conceptual Plan

Exhibit H.7



# Additional Information – Caldwell Fire

Exhibit H.7



Fire protection meeting the International Fire Code will require sign-off from the Caldwell Fire Department

"All subdivisions regardless of annexation must meet the minimum standards of fire flow/hydrant(s). This can be accomplished by approved wells, tanks or an alternative method for a private water system".

# Additional Information – Water

Exhibit H.7

IDWR

"In accordance with Idaho Code 42-111, this proposal qualifies for preapproval to drill individual domestic wells on each lot, as long as the water usage does not exceed 13,000 gallons per day per lot".

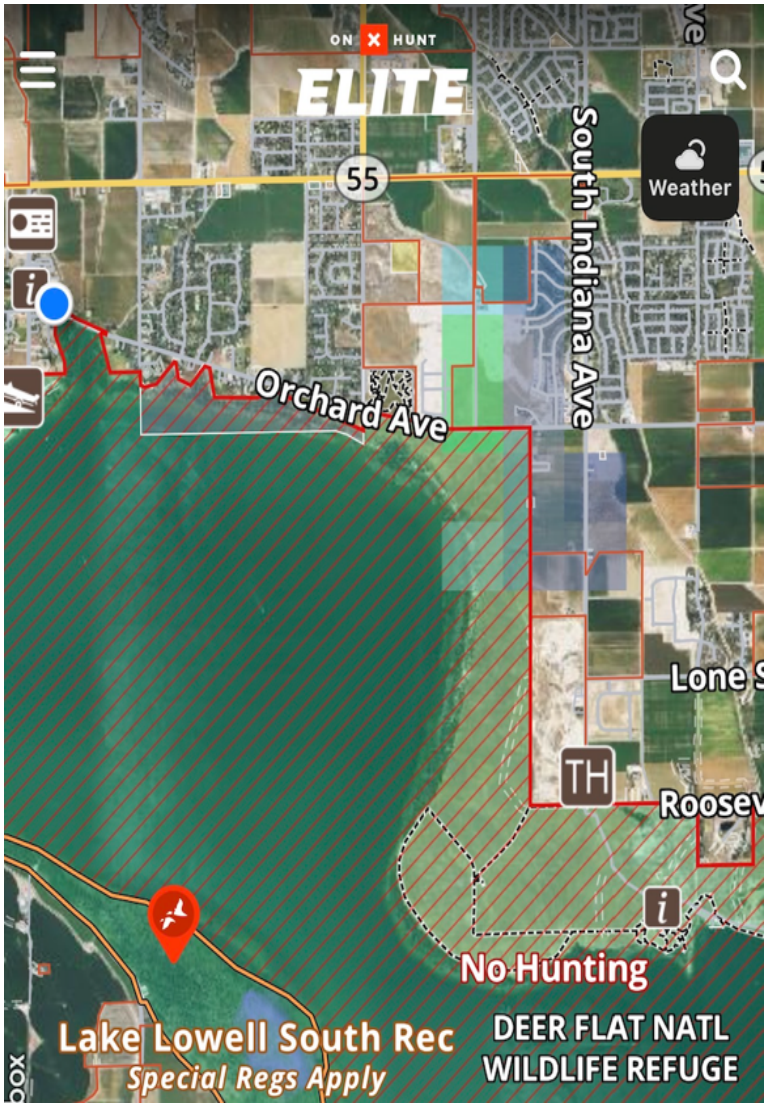
As outlined by the statute, this volume falls within the allowable threshold for domestic uses without requiring a water right. Therefore, we are moving forward under the assumption that each well will adhere to these limits and will be constructed in compliance with applicable state and local regulations.

# Additional Information - Wildlife

Exhibit H.7

The property is not in or adjacent to the Deer Flat National Wildlife Refuge, wildlife conservation areas, or lands designated for hunting.





# Additional Information - Farming

Exhibit H.7

- The subject property and neighboring property is leased by Rodell Farms who is supportive of the land being developed.
- The land will continue to be farmed as the site develops.
- The existing access to the subject property will remain until the land develops and the existing access to the neighboring property will be preserved.

# Additional Information - Schools

Exhibit H.7

Schools: Estimated 18 students → negligible impact

- Current capacity
  - West Canyon capacity is 625. Enrollment: 415.
  - Vallivue Middle capacity is 1000. Enrollment: 685.
  - Vallivue High capacity is 1800. Enrollment: 1220.



# Conditions Proposed

Exhibit H.7

1. The subdivision shall maintain an average lot size of 1 acre with no more than 48 buildable lots.

2. The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.



# Conclusion

Exhibit H.7



The proposal aligns with the goals of the Comprehensive Plan by supporting housing diversity, offering quality living environments, and doing so in a way that minimizes environmental disturbance. We believe this development will serve as a model for how growth can occur in harmony with existing land uses and natural resources.




Exhibit H.7

# Additional Images - North

Exhibit H.7



# Additional Images - Northwest

Exhibit H.7



# Additional Images - Northeast

Exhibit H.7



# Additional Images - South

Exhibit H.7



# Additional Images - Southwest

Exhibit H.7



# Additional Images - Southeast

Exhibit H.7



# Additional Images - East

Exhibit H.7



# Additional Images - West

Exhibit H.7



Exhibit 3

**EXHIBIT I**

**DRAFT – Findings of Fact, Conclusions of Law & Order (FCOs)**

**PLANNING AND ZONING COMMISSION**

**FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER**

In the matter of the application of:
**6 Point Properties LLC – RZ2022-0012**
The Canyon County Planning and Zoning Commission considers the following:

1) Conditional Rezone of Parcel R32862 from an "A" (Agricultural) Zone to a "CR-R-1" (Conditional Rezone – Single Family Residential) Zone.
2) Development agreement limiting development to an average lot size of 1 acre, with no more than 48 buildable lots.
3) Location: The 62.97-acre parcel is located adjacent to 15453 Karcher Road (SH-55), Caldwell; also referenced as a portion of the NE¼ of Section 16, Township 3N, Range 3W, Canyon County, Idaho.

**Summary of the Record**

1. The record is comprised of the following:

   A. The record includes all testimony, the staff report, exhibits, and documents in Case File RZ2022-0012

      a. All exhibits can be found in the staff report dated March 13, 2025, and the addendum dated June 12, 2025.

**Applicable Law**

1. The following laws and ordinances apply to this decision: Canyon County Code of Ordinances (CCCO) §01-17 (Land Use/Land Division Hearing Procedures), CCCO §07-05 (Notice, Hearing and Appeal Procedures), CCCO §07-06-01 (Initiation of Proceedings), CCCO §07-06-07 (Conditional Rezones), CCCO §07-10-27 (Land Use Regulations (Matrix)), Idaho Code §67-6511 (Zoning Map Amendments and Procedures), and CCCO §09-01-21 (Area of City Impact Agreement).

   a. Notice of the public hearing was provided per CCCO §07-05-01 and Idaho Code §67-6509.

   b. The presiding party may establish conditions, stipulations, restrictions, or limitations which restrict and limit the use of the rezoned property to less than the full use allowed under the requested zone and which impose specific property improvement and maintenance requirements upon the requested land use. Such conditions, stipulations, restrictions, or limitations may be imposed to promote the public health, safety, and welfare, or to reduce any potential damage, hazard, nuisance, or other detriment to persons or property in the vicinity, to make the land use more compatible with neighboring land uses. *See* CCCO §07-06-07(1).

   c. All conditional rezones for land use shall commence within two (2) years of the approval of the board. If the conditional rezone has not commenced within the stated time requirement, the application for a conditional rezone shall lapse and become void. *See* CCCO §07-05-01

2. The commission has the authority to exercise powers granted to it by the Idaho Local Land Use and Planning Act ("LLUPA") and can establish its own ordinances regarding land use, including subdivision permits. *See* I.C. §67-6504, §67-6511.

3. The commission shall have those powers and perform those duties assigned by the board that are provided for in the local land use planning act, Idaho Code, title 67, chapter 65, and county ordinances. CCCO §07-03-01, 07-06-05.

4. The burden of persuasion is upon the applicant to prove that all criteria are satisfied. CCCO §7-05-03.

5. Idaho Code §67-6535(2) requires the following: The approval or denial of any application required or authorized pursuant to this chapter shall be in writing and accompanied by a reasoned statement that explains the criteria and standards considered relevant, states the relevant contested facts relied upon, and explains the rationale for the decision based on the applicable provisions of the comprehensive plan, relevant ordinance and statutory provisions, pertinent constitutional principles and factual information contained in the record. The County's hearing procedures, adopted per Idaho Code §67-6534, require that final decisions be in the form of written findings, conclusions, and orders. CCCO §07-05-03(1)(I).

**The application, RZ2022-0012, was presented at a public hearing before the Canyon County Planning and Zoning Commission on June 12, 2025. Having considered all the written and documentary evidence, the record, the staff report, oral testimony, and other evidence provided, including the conditions of approval and project plans, the Planning and Zoning Commission decides as follows:**

**CONDITIONAL REZONE CRITERIA – CCCO §07-06-07(6)**

**1. Is the proposed conditional rezone generally consistent with the comprehensive plan?**

**Conclusion:** The request is generally consistent with the 2020 Canyon County Comprehensive Plan.

**Findings:** (1) The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c).

"The residential designation is a zone specifically set aside for residential development. A minimum lot size is established in order to accommodate a septic system and a well on the same parcel. In areas where soils are not adequate to support septic systems, development alternatives must be considered. Residential development should be within areas that demonstrate a development pattern or residential land uses" (Page 12 of the 2020 Comp. Plan).

(2) The subject parcel is located in the Caldwell Area of City Impact. The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d). The "Residential Estates" classification includes land that is "suitable for low-density residential uses of a semi-rural character. This classification is intended to protect and enhance single-family living areas that are rural in character or otherwise transitional in relationship to more urbanized residential areas of higher density. Such areas may not necessarily have a full range of urban utilities and services contingent upon topography, density, lot size, and development designs. The residential density range shall not exceed two (2) dwelling units per gross acre" (Page 44 of the 2040 Caldwell Comprehensive Plan).

(3) Based on population projection by COMPASS for Caldwell and Canyon County, the applicant finds the request addresses housing needs by providing residential development, which "will help reduce the need to provide housing in rural areas that are not anticipated to be annexed into city limits" (Exhibit A.2).

(4) The request aligns with many goals and policies of the 2020 Comprehensive plan, including, but not limited to:

- ***Property Rights Goal 1:*** *Canyon County will ensure that land use policies, restrictions, conditions, and fees do not violate private property rights or create unnecessary technical limitations on the use of property.*
- ***Population Policy 2:*** *Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses.*

- ***Economic Development Policy 6:*** *Encourage commercial and residential development in a controlled, planned, and constructive manner, which will enhance, not destroy, the existing lifestyle and environmental beauty of Canyon County.*
- ***Land Use Goal 1****: To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.*
- ***Land Use Policy 1:*** *Review all residential, commercial, and industrial development proposals to determine the land use compatibility and impact to surrounding areas.*
- ***Land Use Residential Policy 1:*** *Encourage high density development in areas of city impact.*
- ***Natural Resources Policy 4:*** *Use appropriate zoning designations and other strategies to minimize adverse impacts of development on natural resource areas.*
- ***Hazardous Areas Policy 2:*** *Discourage development in or near natural hazardous areas, such as airports, power line corridors, electrical substations, flood plains, unstable soil areas and steep slopes, high velocity wind and storm prone areas, except for industries, which may require these conditions.*
- ***Public Services, Facilities and Utilities Goal 1:*** *Canyon County will endeavor to provide public services and facilities related to solid waste management, emergency medical service, development review, law enforcement, community health, and other services for which it is responsible in a fair, efficient, and professional manner.*
- **Transportation Goal 1.** *Coordinate with and assist Canyon County Highway Districts, the Idaho Transportation Department (ITD), Valley Regional Transit (VRT), and the Community Planning Association of Southwest Idaho (COMPASS) in developing and managing a well-planned, sustainable, multimodal transportation system that provides for the safe, efficient, cost-effective movement of people and goods and that supports the region's residential, commercial, industrial, and public development vision.*
- ***Special Areas, Sites and Recreation Goal 1:*** *To encourage the preservation of recreational, historical, archeological, and architectural landmark areas of the county for the beneficial use of future generations.*
- ***Housing Goal 1:*** *Encourage opportunities for a diversity of housing choices in Canyon County.*
- ***Agriculture Policy 3:*** *Protect agricultural operations and facilities from land use conflicts or undue interference created by existing or proposed residential, commercial, or industrial development.*

*For supporting evidence, see the findings in the subsequent criteria.*

(5) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**2. When considering the surrounding land uses, is the proposed conditional rezone more appropriate than the current zoning designation?**

**Conclusion:** In consideration of the surrounding land uses, the proposed request to an "CR-R-1" (Single-Family Residential) zone is more appropriate than the current "A" (Agricultural) zone.

**Findings:** (1) The subject parcel, approximately 62 acres, is zoned "A" (Agricultural, Exhibit B.2e). Per CCCO section 07-10-25(1): "*The purposes of the A (Agricultural) Zone are to: A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations; B. Limit urban density development to Areas of City Impact*

*in accordance with the comprehensive plan; C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65; D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan.*"

The subject parcel consists of moderately suited soils and is considered prime farmland if irrigated (Exhibit B.2h). The Canyon Soil Conservation District does not recommend the approval of the request (Exhibit D.7).

(2) Although there are still large agricultural parcels and uses in the vicinity (Exhibit B.2a & b), the applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.5d), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibit A.2).

The parcel is surrounded by residential development:

- The north boundary for the Parcel abuts Karcher Road and Somerset West Subdivision, zoned "R-R" (Rural Residential) and approved in 1974 with 57 lots (0.65-acre average lot size; Exhibit B.2g).
- The south boundary abuts a 40-acre property in agricultural use (Exhibit B.2a), and Moonstruck Subdivision Phase 3 was approved in 2003 with 11 lots (1.09-acre average lot size, Exhibit B.2g).
- The east boundary abuts Stecher Subdivision, Vanal Heights Subdivision, and El Rancho Heights, both zoned "R-R" (Rural Residential; Exhibit B.2e).
    - Stecher Subdivision was approved in 1959 with 14 lots (0.72 acres average lot size). The subdivision was amended to include 49 lots in 1968 (0.62-acre average lot size, Exhibit B.5b).
    - Vanal Heights Subdivision was approved in 1960 with 70 lots (0.41-acre average lot size; Exhibit B.5a).
    - El Rancho Heights was approved in 1977 with 79 lots (0.43-acre average lot size, Exhibit B.5c)
- The west boundary abuts Wintergreen Subdivision and Canyon Lake Estates (Exhibit B.2g).
    - Wintergreen Subdivision was approved in 2000 with 7 lots (1.04-acre average lot size).
    - Canyon Lake Estates Phase 1 was approved in 2008 with 19 lots (1.21-acre average lot size).

(3) As conditioned (Attachment A), the request for an "R-1" (Single-Family Residential) zone allows an average minimum lot size of one acre (Exhibit F). Per CCZO Section 07-10-25(3): "*The purpose of the R-1 (Single-Family Residential) Zone is to promote and enhance predominantly single-family living areas at a low-density standard.*"

The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c & d). The subject parcel is located in the Caldwell Area of City Impact. City jurisdiction is approximately 0.25 miles from the subject parcel. The

Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d).

The request matches the existing built environment and zones found in the area.

- The parcel is located near residential and commercial zones (Exhibit B.2e & f).
- Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**3. Is the proposed conditional rezone compatible with surrounding land uses?**

**Conclusion:** The request to "CR-R-1" is compatible with surrounding land uses.

**Findings:** (1) Pursuant to CCCO §07-02-03, land uses are compatible if: *a) they do not directly or indirectly interfere or conflict with or negatively impact one another, and b) they do not exclude or diminish one another's use of public and private services.*

a. The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c). The Caldwell 2040 Comprehensive Plan classifies the parcel and areas as "Residential Estates" (Exhibit B.2d).

b. The applicant finds due to the immediate surrounding built environment of residential, the planned widening of Karcher Road/SH-55, and the forthcoming subdivision south of the subject parcel approved in 2021 (Exhibit B.4), the property has become too fragmented for farming and can provide single-family housing for the growing area (Exhibits A.2 & F).

c. The request matches the existing built environment and zones found in the area.
   - The parcel is located near residential and commercial zones (Exhibit B.2e & f).
   - Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

d. Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development remains compatible with the surrounding land uses.

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**4. Will the proposed conditional rezone negatively affect the character of the area? What measures will be implemented to mitigate impacts?**

**Conclusion:** The proposed use will not negatively affect the character of the area. Any necessary measures to mitigate impacts can be addressed at the time of subdivision platting.

**Findings:** (1) The character contains a mix of agricultural, residential, and commercial uses (Exhibit B.2a, B.2e, B.2f, B.2j & C).

a. The subject parcel, two parcels to the south, and a few parcels to the north still maintain agricultural production on large agricultural parcels. Parcels R32869 and R32870 are both 40 acres and are in agricultural production (crops and livestock). Parcel R32870 was rezoned in 2019 to "CR-R-1" (RZ2019-0012, Exhibit B.4) and is currently in the platting process (Norse Landing Subdivision, Exhibit B.2g & B.5d).

b. The parcel is located near residential and commercial zones (Exhibit B.2e & f).

c. Within a one-mile radius, there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g).

d. Based on the County and City of Caldwell Comprehensive Plans, residential and commercial growth is the character promoted in the area (Exhibit B.2c & B.2d).

(2) On March 13, 2025, after hearing concerns from neighbors regarding city residential density impacts in an area that maintains a rural character (Exhibit G), the applicant agreed to table the hearing to amend the application to reduce residential density to maintain a one-acre lot size commensurate with recent land decisions in the area still within county jurisdiction (Exhibit F). *See Attachment A for conditions*.

(3) Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances) which will ensure development complies with all applicable codes and requirements and that development does not negatively impact the area.

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**5. Will adequate facilities and services, including sewer, water, drainage, irrigation, and utilities be provided to accommodate the proposed conditional rezone?**

**Conclusion:** Adequate sewer, water, drainage, irrigation, and utilities to accommodate the future development can be provided at the time of platting.

**Findings:**

(1) The applicant states the sewer will be via an individual septic system, water via individual domestic wells, drainage to be retained on-site, irrigation via pressurized irrigation through a priority right irrigation well, and utilities via Idaho Power and Intermountain Gas (Exhibits A.2, A.4 & F).

The applicant's letter of intent is based on developing one-acre lot sizes. As conditioned (Attachment A), the "R-1" zone allows an average minimum lot size of one acre. Subsequent residential development will be required to meet (1) subdivision platting requirements (Chapter 7, Article 17 of the Canyon County Code of Ordinances) and review by the City of Caldwell (Chapter 9, Article 1 of the Canyon County Code of Ordinances), which will ensure development includes adequate services and facilities.

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**6. Does the proposed conditional rezone require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns? What measures have been taken to mitigate traffic impacts?**

**Conclusion:** The subject property does have legal access. Access for residential development will be determined during the platting process.

**Findings:**

(1) The property currently has frontage along SH-55 (Karcher) and Kimball Avenue (a local public road). Access to SH-55 from Kimball has been blocked by the Idaho Transportation Department. The property currently uses Vista Drive, a public road, to S. 10th Avenue, a minor arterial public road (Exhibits A.2, A.6 & F).

(2) Future development will use SH-55, Vista Drive (local road through Vanal Heights Subdivision), and the stub road to the south parcel that will, once developed, provide additional access alternatives (Exhibits A.6 & B.5d). If the request is approved, subdivision platting is required, which requires access to meet public road and access requirements (CCCO §07-17-09).

(3) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**7. Does legal access to the subject property for the conditional rezone exist or will it exist at the time of development?**

**Conclusion:** A Traffic Impact Study was provided demonstrating that a 49-residential-lot development will not have an impact.

**Findings:**

(1) A revised Traffic Impact Study (TIS) was prepared on December 13, 2024 (Exhibits A.6 & F). The development of 49 residential lots is anticipated to create 523 trips per weekday, 39 trips during the AM peak hour, and 51 trips during the PM peak hour at full build-out. The development includes right-of-way dedication along SH-55 and internal public roads with access points from SH-55 (Ashland Drive), Kimball Avenue (Vista Drive), and a future stub to the south. With subdivision improvements, SH-55 improvements, and build-out of 2027, additional improvements/mitigation are not anticipated. As conditioned by the development agreement, development will not exceed the 48 residential lots (Attachment A).

(2) Highway District #4 reviewed the initial and revised TIS and found the request with 49 lots is not anticipated to significantly degrade the Level of Service (LOS) at nearby intersections after SH-55 is widened to five lanes. Other impacts from the development will be mitigated by right-of-way dedication, frontage improvements, and impact fees (Exhibit D.11).

(3) Idaho Transportation Department (ITD) accepts the TIS subject to right-of-way dedication for the Ashland Drive right-turn lane from SH-55 (Exhibit D.8). The dedication and improvement are necessary to support the future development of the south parcels that will be stubbed through the development on the subject parcel.

(4) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**8. Will the proposed conditional rezone amendment impact essential public services and facilities, such as schools, police, fire, and emergency medical services? What measures will be implemented to mitigate impacts?**

**Conclusion:** The request is not anticipated to impact essential public services and facilities, including, but not limited to schools, police, fire, and emergency medical services. Any necessary measures to mitigate impacts can be addressed at the time of platting.

**Findings:**

(1) Future development will be served by the Vallivue School District (Exhibit B.1). The District has concerns about the capacity of Vallivue High School. Current enrollment is approximately 1,300 students with a capacity of 1,800 students. The District states two elementary schools will open in the Fall of 2025. The letter does not oppose the request or recommend any mitigation measures (Exhibit A.2 & D.2). Per Exhibit H.1, updated letter from Vallivue School District: "Currently, the surrounding schools can accommodate such a small development. The district's main concern is with large swaths of land approved for major development that could compromise the district's overall capacity to provide appropriate services over the next ten years."

No comments were received from the Brown Bus Company or Caldwell Transportation.

(2) Served by the Canyon County Sheriff's Office. No comments were received.

(3) The property is served by the Caldwell Rural Fire Protection District (Exhibit B.1). The district can approve the request subject to compliance with code requirements and conditions of approval (Exhibits D.3 & H.4). The nearest station is Station 2. Distance: 2.8 miles. The estimated response time is 8 minutes. Conditions include fire hydrants, roadway widths, access roads, and addressing requirements. See condition no. 3 of the development agreement conditions regarding fire hydrants (Attachment A). No comment was received from Canyon County Paramedics/EMT.

(4) The United States Forest Canal that lies within the boundary of the subject parcel is operated and maintained by the Boise Project Board of Control. The Boise Project Board of Control asserts the federal easement of 25 feet northwest and 25 feet southwest of the canal's centerline. Landscaping other than gravel is not approved in the easement. Fencing, gates, and pathways may be constructed off the canal easement. Any improvements within the easement or any piping/relocation of the canal must be approved by the Bureau of Reclamation and the Boise Project Board of Control prior to construction. Any roadways and utilities crossing the canal must be approved through a crossing agreement by the Bureau of Reclamation and the Boise Project (Exhibit D.1). No comment was received from Wilder Irrigation District.

(5) Mitigation: If the request is approved, subdivision platting is required, which requires notification to affected essential services for review and comments before subdivision approval (CCCO §07-17-09).

(6) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**CCCO §09-01-21: AREA OF CITY IMPACT AGREEMENT**

**Conclusion:** The City of Caldwell submitted a letter dated January 4, 2024 (Exhibit D.4). The letter states the subject parcel is located in the City of Caldwell's Area of City Impact and within 0.25 miles of the City of Caldwell's incorporated limits. The parcel is designated as Residential Estates in the City of Caldwell's Comprehensive Plan.

The City of Caldwell is working on a comprehensive plan update. "Although this area currently is designated as Residential Estates in the City's current Comprehensive Plan, there is potential for this land use designation to change to a Highway Corridor zone in the future" (Page 2 of the letter). Zones in the Highway Corridor designation would allow for a mixed-use land-use designation that combines higher-density residential with commercial services.

The City of Caldwell is not opposed to the proposed rezone to low-density residential, but would like to see the frontage along Karcher Road preserved for commercial services at a minimum. If approved, the City of Caldwell would request that street landscape buffers along Karcher Road and Kimball Avenue be installed per the City of Caldwell's Landscaping Ordinances. This would include the requirement for all common open space, buffers between different land uses, and pathways. Any connection to City services would require a formalized Municipal Services Agreement to be entered into. If the request is approved, subdivision platting is required, which requires notification to the City of Caldwell and compliance with Caldwell's subdivision and landscaping ordinances unless waived by the County (CCCO §07-17-09 and §09-01-19).

The applicant finds that the project as requested is compatible with the existing built environment, compatible with the City's adopted comprehensive plan, and currently does not have a path to annexation (Exhibit A.2). As conditioned, the request complies with the city's residential estates designation and intent when was the future land use designation at the time of application submittal (Exhibit B.2d & G).

**Findings:** (1) See Exhibits A.2 & F (Applicant Letter of Intent/Revised Application), B.2 (Case Maps), D.4 & D.5 (City of Caldwell letters), and G (P&Z Minutes March 13, 2025).

(2) Evidence includes the application, supporting materials submitted by the applicant, public testimony, and the staff report with exhibits found in Case No. RZ2022-0012.

**Order**

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Planning and Zoning Commission recommends **approval of** Case # RZ2022-0012, a conditional rezone of Parcel R32862 from an "A" (Agricultural) Zone to a "CR-R-1" (Conditional Rezone – Single Family Residential) Zone subject to conditions of the development agreement (Attachment A).

**DATED** this _____ day of _____, 2025.

**PLANNING AND ZONING COMMISSION**
**CANYON COUNTY, IDAHO**

_____
Robert Sturgill, Chairman

State of Idaho )

SS

County of Canyon County )

On this _____day of _____, in the year 2025, before me_____, a notary public, personally appeared _____, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he (she) executed the same.

Notary: _____

My Commission Expires: _____

**ATTACHMENT A**

**DEVELOPMENT AGREEMENT CONDITIONS**

1. All development shall comply with all applicable federal, state, and county laws, ordinances, rules, and regulations that pertain to the subject property and the proposed use.
2. The subdivision of the subject parcel, R32862, shall maintain an average lot size of 1 acre, with no more than 48 buildable lots.
3. The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.
4. The developer shall comply with CCCO §07-06-07(4) Time Requirements: "All conditional rezones for a land use shall commence within two (2) years of the approval of the board."

**EXHIBIT 4**

**Comments Received by July 27, 2025**

-

Case No. RZ2022-0012

BOCC Hearing: August 6, 2025

## Dan Lister

**From:** Eddy Thiel <eddy@nampahighway1.com>
**Sent:** Thursday, May 1, 2025 12:53 PM
**To:** Dan Lister
**Subject:** [External] FW: Legal Notice RZ2022-0012 / McGuire
**Attachments:** NEW - P&Z Rezone full political agency notice 05012025.pdf

Good Afternoon Dan,

Nampa Highway District #1 has no comment.

Thank you,

Eddy

Eddy Thiel
ROW
eddy*@nampahighway1.com*
4507 12th Ave. Rd. • Nampa, id 83686
TEL 208.467.6576 • FAX 208.467.9916

**From:** Caitlin Ross <Caitlin.Ross@canyoncounty.id.gov>
**Sent:** Thursday, May 1, 2025 11:36 AM
**To:** 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'P&Z@cityofcaldwell.org' <P&Z@cityofcaldwell.org>; 'dgeyer@cityofcaldwell.org' <dgeyer@cityofcaldwell.org>; 'jdodson@cityofcaldwell.org' <jdodson@cityofcaldwell.org>; 'mbessaw@cityofcaldwell.org' <mbessaw@cityofcaldwell.org>; 'amy@civildynamics.net' <amy@civildynamics.net>; 'alicep@cityofhomedale.org' <alicep@cityofhomedale.org>; 'jgreen@marsingcity.com' <jgreen@marsingcity.com>; 'mayor@cityofmelba.org' <mayor@cityofmelba.org>; 'cityclerk@cityofmelba.org' <cityclerk@cityofmelba.org>; 'jhutchison@middletoncity.org' <jhutchison@middletoncity.org>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.org' <rstewart@middletoncity.org>; 'sellersr@cityofnampa.us' <sellersr@cityofnampa.us>; 'watkinsk@cityofnampa.us' <watkinsk@cityofnampa.us>; 'BadgerD@cityofnampa.us' <BadgerD@cityofnampa.us>; 'addressing@cityofnampa.us' <addressing@cityofnampa.us>; 'critchfieldd@cityofnampa.us' <critchfieldd@cityofnampa.us>; 'clerks@cityofnampa.us' <clerks@cityofnampa.us>; 'timc@cityofnampa.us' <timc@cityofnampa.us>; 'notuscityclerk@gmail.com' <notuscityclerk@gmail.com>; 'clerk@cityofparmaidaho.org' <clerk@cityofparmaidaho.org>; 'mayor@cityofparmaidaho.org' <mayor@cityofparmaidaho.org>; 'publicworks@cityofparmaidaho.org' <publicworks@cityofparmaidaho.org>; 'cityhalladmin@cityofparmaidaho.org' <cityhalladmin@cityofparmaidaho.org>; 'snickel@staridaho.org' <snickel@staridaho.org>; 'wsevery@cityofwilder.org' <wsevery@cityofwilder.org>; 'casanderson@caldwellschools.org' <casanderson@caldwellschools.org>; 'nicmiller@cwi.edu' <nicmiller@cwi.edu>; 'ddenney@homedaleschools.org' <ddenney@homedaleschools.org>; 'bgraves@kunaschools.org' <bgraves@kunaschools.org>; 'tejensen@kunaschools.org' <tejensen@kunaschools.org>; 'nstewart@marsingschools.org' <nstewart@marsingschools.org>; 'sadams@melbaschools.org' <sadams@melbaschools.org>; 'Horner.Marci@westada.org' <Horner.Marci@westada.org>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'cstauffer@nsd131.org' <cstauffer@nsd131.org>; 'dleon@nsd131.org' <dleon@nsd131.org>; 'krantza@notusschools.org' <krantza@notusschools.org>; 'tkelly@parmaschools.org' <tkelly@parmaschools.org>; 'jenny.titus@vallivue.org' <jenny.titus@vallivue.org>; 'lisa.boyd@vallivue.org' <lisa.boyd@vallivue.org>; 'joseph.palmer@vallivue.org' <joseph.palmer@vallivue.org>; 'jdillon@wilderschools.org' <jdillon@wilderschools.org>; 'lrichard@cityofcaldwell.org' <lrichard@cityofcaldwell.org>; 'aperry@cityofcaldwell.org'

1445 N Orchard St
Boise, ID 83706 • (208) 373-0550

Brad Little, Governor
Jess Byrne, Director

July 7, 2025

Daniel Lister, Assistant Planning Manager
111 North 11th Ave.
Ste. 310
Caldwell, Idaho, 83605
Daniel.Lister@canyoncounty.id.gov

Subject: Agency Notice RZ2022-0012 / Six Point Properties, LLC

Dear Mr. Lister:

Thank you for the opportunity to respond to your request for comment. While DEQ does not review projects on a project-specific basis, we attempt to provide the best review of the information provided. DEQ encourages agencies to review and utilize the Idaho Environmental Guide to assist in addressing project-specific conditions that may apply. This guide can be found at: *https://www.deq.idaho.gov/public-information/assistance-and-resources/outreach-and-education/*.

The following information does not cover every aspect of this project; however, we have the following general comments to use as appropriate:

**1. AIR QUALITY**

- Please review IDAPA 58.01.01 for all rules on Air Quality, especially those regarding fugitive dust (58.01.01.651), and trade waste burning (58.01.01.600-617).
- For new development projects, all property owners, developers, and their contractor(s) must ensure that reasonable controls to prevent fugitive dust from becoming airborne are utilized during all phases of construction activities per IDAPA 58.01.01.651.
- DEQ recommends the city/county require the development and submittal of a dust prevention and control plan for all construction projects prior to final plat approval. Dust prevention and control plans incorporate appropriate best management practices to control fugitive dust that may be generated at sites.
- Citizen complaints received by DEQ regarding fugitive dust from development and construction activities approved by cities or counties will be referred to the city/county to address under their ordinances.
- Per IDAPA 58.01.01.600-617, the open burning of any construction waste is prohibited. The property owner, developer, and their contractor(s) are responsible for ensuring no prohibited open burning occurs during construction.

- For questions, contact David Luft, Air Quality Manager, at (208) 373-0550.

## 2. WASTEWATER AND RECYCLED WATER

- DEQ recommends verifying that there is adequate sewer to serve this project prior to approval. Please contact the sewer provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.16 and IDAPA 58.01.17 are the sections of Idaho rules regarding wastewater and recycled water. Please review these rules to determine whether this or future projects will require DEQ approval. IDAPA 58.01.03 is the section of Idaho rules regarding subsurface disposal of wastewater. Please review this rule to determine whether this or future projects will require permitting by the district health department.
- All projects for construction or modification of wastewater systems require preconstruction approval. Recycled water projects and subsurface disposal projects require separate permits as well.
- DEQ recommends that projects be served by existing approved wastewater collection systems or a centralized community wastewater system whenever possible. Please contact DEQ to discuss the potential for development of a community treatment system along with best management practices for communities to protect ground water.
- DEQ recommends that cities and counties develop and use a comprehensive land use management plan, which includes the impacts of present and future wastewater management in this area. Please schedule a meeting with DEQ for further discussion and recommendations for planning development and implementation.

For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

## 3. DRINKING WATER

- DEQ recommends verifying that there is adequate water to serve this project prior to approval. Please contact the water provider for a capacity statement, declining balance report, and willingness to serve this project.
- IDAPA 58.01.08 is the section of Idaho rules regarding public drinking water systems. Please review these rules to determine whether this or future projects will require DEQ approval.
- All projects for construction or modification of public drinking water systems require preconstruction approval.
- DEQ recommends verifying if the current and/or proposed drinking water system is a regulated public drinking water system (refer to the DEQ website at: https://www.deq.idaho.gov/water-quality/drinking-water/. For non-regulated systems, DEQ recommends annual testing for total coliform bacteria, nitrate, and nitrite.
- If any private wells are included in this project, we recommend that they be tested for total coliform bacteria, nitrate, and nitrite prior to use and retested annually thereafter.
- DEQ recommends using an existing drinking water system whenever possible or construction of a new community drinking water system. Please contact DEQ to discuss this project and to explore options to both best serve the future residents of this development and provide for protection of groundwater resources.
- DEQ recommends cities and counties develop and use a comprehensive land use management plan which addresses the present and future needs of this area for adequate, safe, and sustainable drinking water. Please schedule a meeting with DEQ for further discussion and recommendations for planning development and implementation.

For questions, contact Valerie Greear, Water Quality Engineering Manager at (208) 373-0550.

## 4. SURFACE WATER

- Please contact DEQ to determine whether this project will require an Idaho Pollutant Discharge Elimination System (IPDES) Permit. A Multi-Sector General Permit from DEQ may be required for facilities that have an allowable discharge of storm water or authorized non-storm water associated with the primary industrial activity and co-located industrial activity. For questions, contact James Craft, IPDES Compliance Supervisor, at (208) 373-0144.
- If this project is near a source of surface water, DEQ requests that projects incorporate the best construction management practices (BMPs) to assist in the protection of Idaho's water resources. Additionally, please contact DEQ to identify BMP alternatives and to determine whether this project is in an area with Total Maximum Daily Load stormwater permit conditions.
- The Idaho Stream Channel Protection Act requires a permit for most stream channel alterations. Please contact the Idaho Department of Water Resources (IDWR), Western Regional Office, at 2735 Airport Way, Boise, or call (208) 334-2190 for more information. Information is also available on the IDWR website at: https://idwr.idaho.gov/streams/stream-channel-alteration-permits.html
- The Federal Clean Water Act requires a permit for filling or dredging in waters of the United States. Please contact the US Army Corps of Engineers, Boise Field Office, at 10095 Emerald Street, Boise, or call 208-345-2155 for more information regarding permits.

  For questions, contact Lance Holloway, Surface Water Manager, at (208) 373-0550.

## 5. SOLID WASTE, HAZARDOUS WASTE AND GROUND WATER CONTAMINATION

- **Solid Waste.** No trash or other solid waste shall be buried, burned, or otherwise disposed of at the project site. These disposal methods are regulated by various state regulations including Idaho's Solid Waste Management Regulations and Standards (IDAPA 58.01.06), Rules and Regulations for Hazardous Waste (IDAPA 58.01.05), and Rules and Regulations for the Prevention of Air Pollution (IDAPA 58.01.01). Inert and other approved materials are also defined in the Solid Waste Management Regulations and Standards
- **Hazardous Waste.** The types and number of requirements that must be complied with under the federal Resource Conservations and Recovery Act (RCRA) and the Idaho Rules and Standards for Hazardous Waste (IDAPA 58.01.05) are based on the quantity and type of waste generated. Every business in Idaho is required to track the volume of waste generated, determine whether each type of waste is hazardous, and ensure that all wastes are properly disposed of according to federal, state, and local requirements.
- **Water Quality Standards.** Site activities must comply with the Idaho Water Quality Standards (IDAPA 58.01.02) regarding hazardous and deleterious-materials storage, disposal, or accumulation adjacent to or in the immediate vicinity of state waters (IDAPA 58.01.02.800); and the cleanup and reporting of oil-filled electrical equipment (IDAPA 58.01.02.849); hazardous materials (IDAPA 58.01.02.850); and used-oil and petroleum releases (IDAPA 58.01.02.851 and 852). Petroleum releases must be reported to DEQ in accordance with IDAPA 58.01.02.851.01 and 04. Hazardous material released to state waters, or to land such that there is likelihood that it will enter state waters, must be reported to DEQ in accordance with IDAPA 58.01.02.850.

- **Ground Water Contamination.** DEQ requests that this project comply with Idaho's Ground Water Quality Rules (IDAPA 58.01.11), which states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that causes a ground water quality standard to be exceeded, injures a beneficial use of ground water, or is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method."

  For questions, contact Matthew Pabich, Waste & Remediation Manager, at (208) 373-0550.

**6. ADDITIONAL NOTES**

- If an underground storage tank (UST) or an aboveground storage tank (AST) is identified at the site, the site should be evaluated to determine whether the UST is regulated by DEQ. EPA regulates ASTs. UST and AST sites should be assessed to determine whether there is potential soil and ground water contamination. Please call DEQ at (208) 373-0550, or visit the DEQ website https://www.deq.idaho.gov/waste-management-and-remediation/storage-tanks/leaking-underground-storage-tanks-in-idaho/ for assistance.
- If applicable to this project, DEQ recommends that BMPs be implemented for any of the following conditions: wash water from cleaning vehicles, fertilizers and pesticides, animal facilities, composted waste, and ponds. Please contact DEQ for more information on any of these conditions.

We look forward to working with you in a proactive manner to address potential environmental impacts that may be within our regulatory authority. If you have any questions, please contact me, or any of our technical staff at (208) 373-0550.

Sincerely,



Troy Smith
Regional Administrator

## Dan Lister

**From:** Sue Reizenstein <caldfarm06@mail.com>
**Sent:** Wednesday, July 9, 2025 1:39 PM
**To:** Dan Lister
**Subject:** Re: RE: [External]  Case: RZ2022-0012

Thank you Dan

Sue

**Sent:** Wednesday, July 09, 2025 at 1:31 PM
**From:** "Dan Lister" <Dan.Lister@canyoncounty.id.gov>
**To:** "'Sue Reizenstein'" <caldfarm06@mail.com>
**Subject:** RE: [External] Case: RZ2022-0012

Sue,

Regarding RZ2022-0012, the applicant plans to use individual wells. However, at the time of subdivision platting, the City of Caldwell can require connection to city water (if available) unless waived by the County Commissioners.

Sincerely,

**Dan Lister, Planning Supervisor**

DSD Office: (208) 454-7458 - Direct Line: (208) 455-5959

Daniel.Lister@canyoncounty.id.gov

Development Services Department (DSD)

Public office hours

Monday, Tuesday, Thursday, and Friday

8 am – 5 pm

Wednesday

1 pm – 5 pm

**We will not be closed during lunch hour **

**PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and, as such, may be copied and reproduced by members of the public.**

**From:** Sue Reizenstein <caldfarm06@mail.com>
**Sent:** Wednesday, July 9, 2025 12:28 PM
**To:** Dan Lister <Dan.Lister@canyoncounty.id.gov>
**Subject:** [External] Case: RZ2022-0012

Good morning Dan,

I was wondering if the lots were going to have well water or city water

Can you send more information about proposed sub division

Thank you,

Sue Reizenstein

I live in Moonstruck West

Let me be more specific - individual wells or city water

Thanks,

Sue

**EXHIBIT 5**

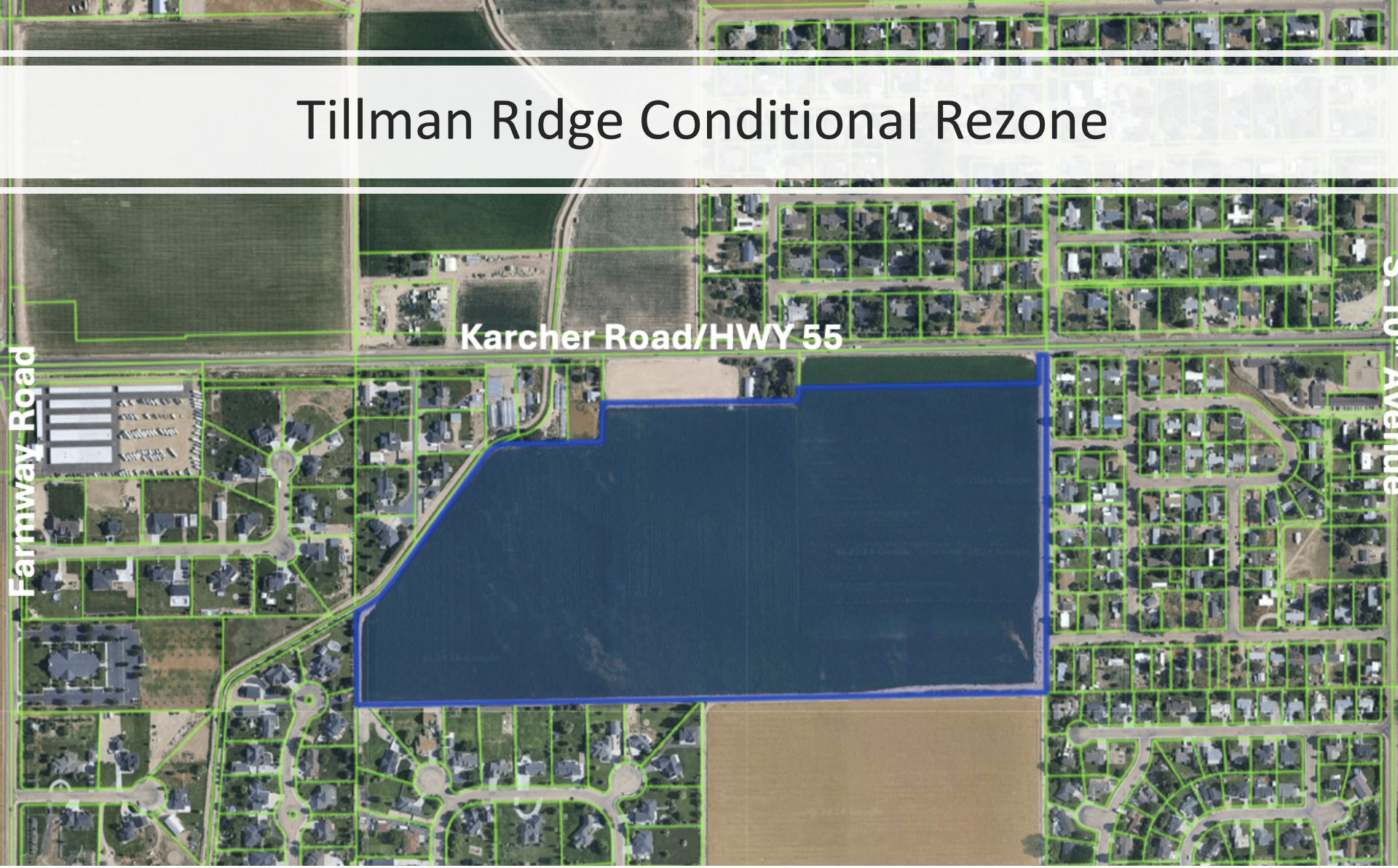
**Additional Supporting Documents Received by July 27, 2025**

-

Case No. RZ2022-0012

BOCC Hearing: August 6, 2025

# Tillman Ridge Conditional Rezone




Canyon County Board of County Commissioners – August 6, 2025

Presented by: Elizabeth Allen, Bristlecone Land Use Consulting

Exhibit 5

Exhibit 5

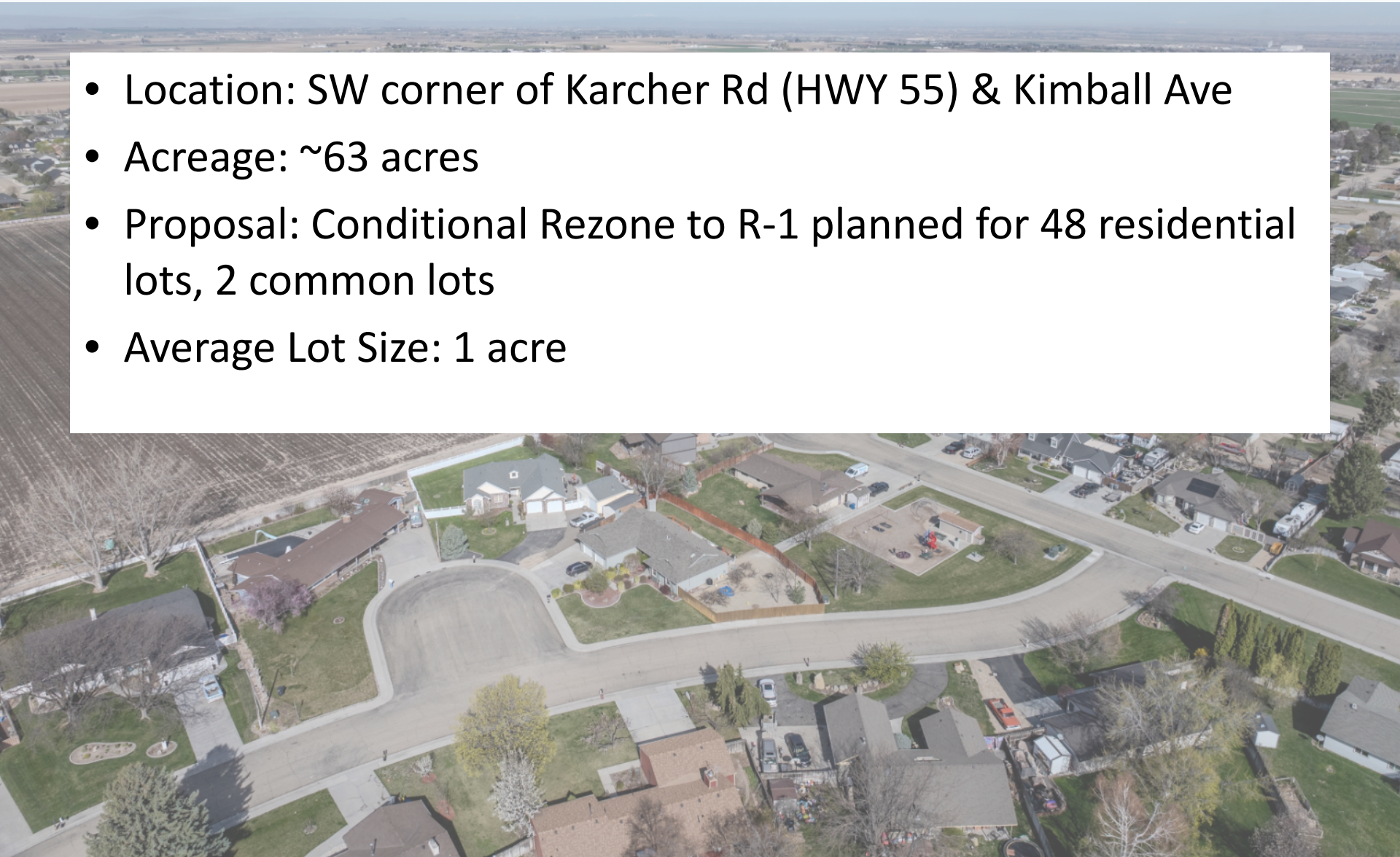
Exhibit 5



# Project Overview

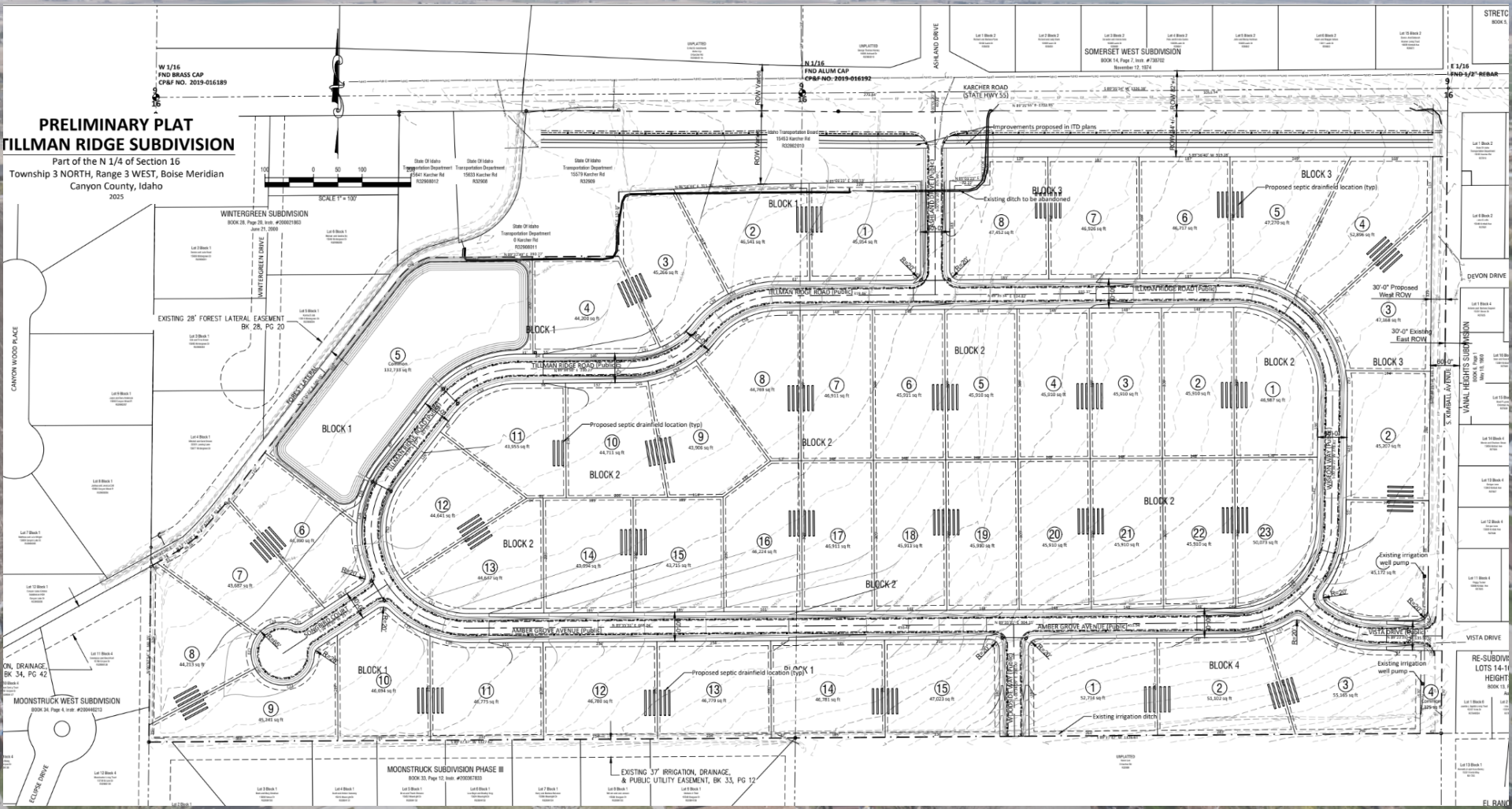
Exhibit 5

- Location: SW corner of Karcher Rd (HWY 55) & Kimball Ave
- Acreage: ~63 acres
- Proposal: Conditional Rezone to R-1 planned for 48 residential lots, 2 common lots
- Average Lot Size: 1 acre



# Conceptual Plan

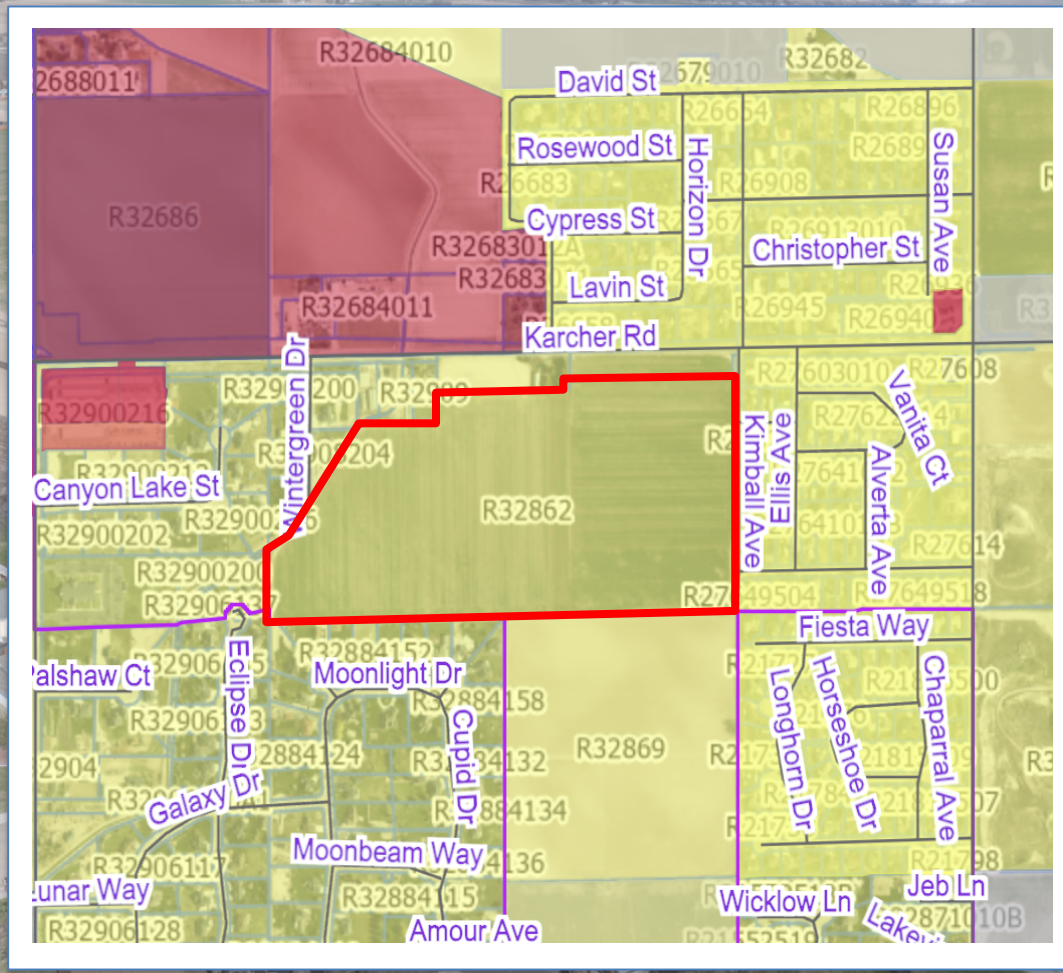
Exhibit 5



# Criteria A – Comprehensive Plan

Exhibit 5

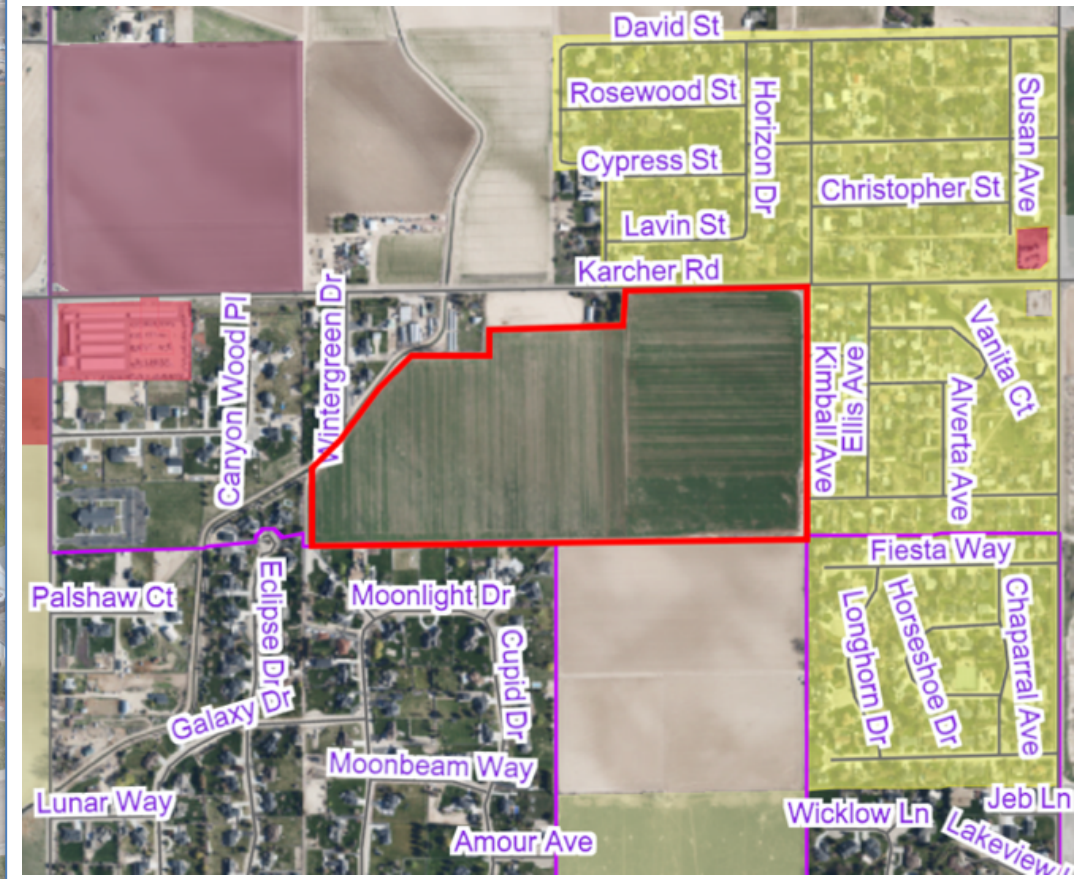
- R-1 zone is consistent with the future land use designation of residential
- Complies with 5 goals and 6 policies



# Criteria B and C - Surrounding land uses

Exhibit 5

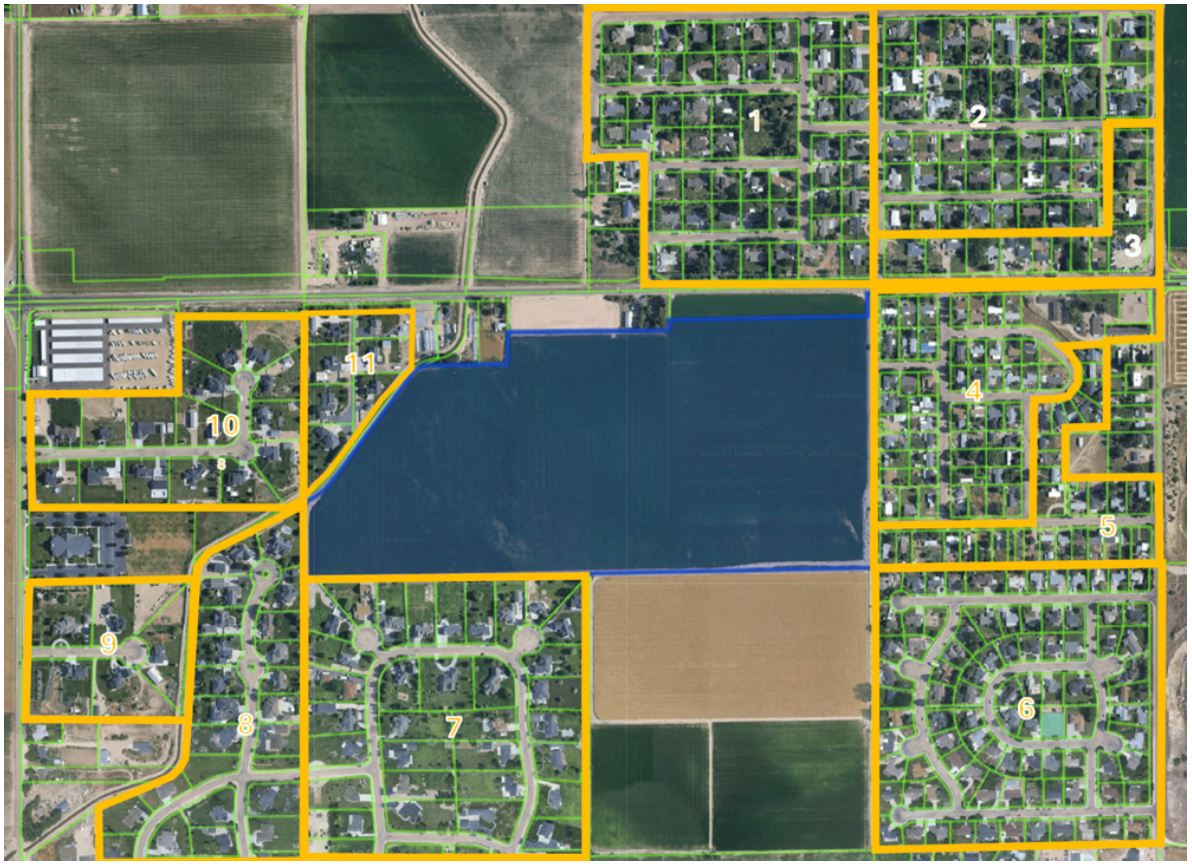
- Surrounded by existing and planned single-family residential



# Criteria D - Character of the Area

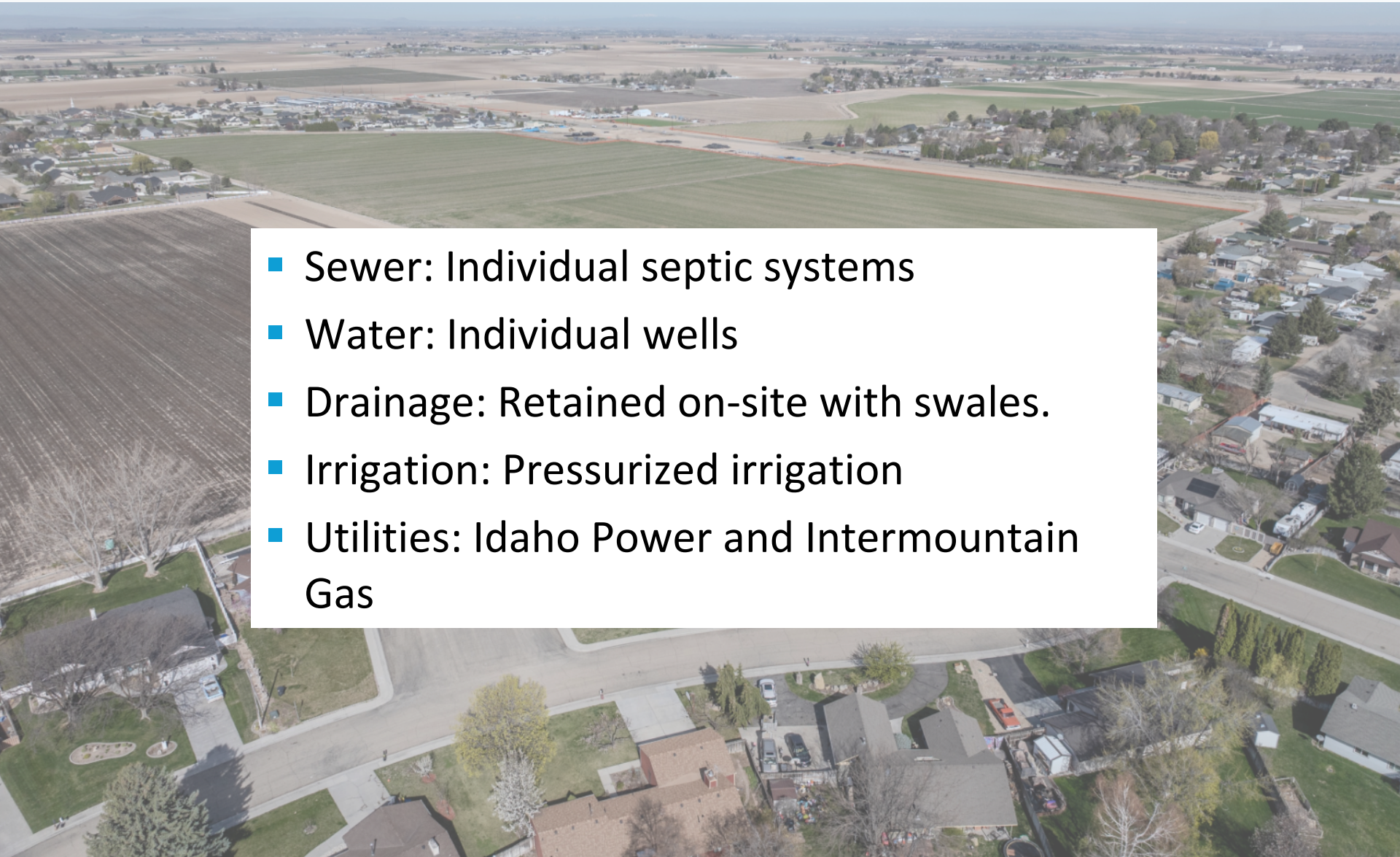
Exhibit 5

- Primarily single-family residential
- Average lot sizes of adjacent subdivisions: 0.29 to 2.30 acres



# Criteria E - Facilities and services

Exhibit 5

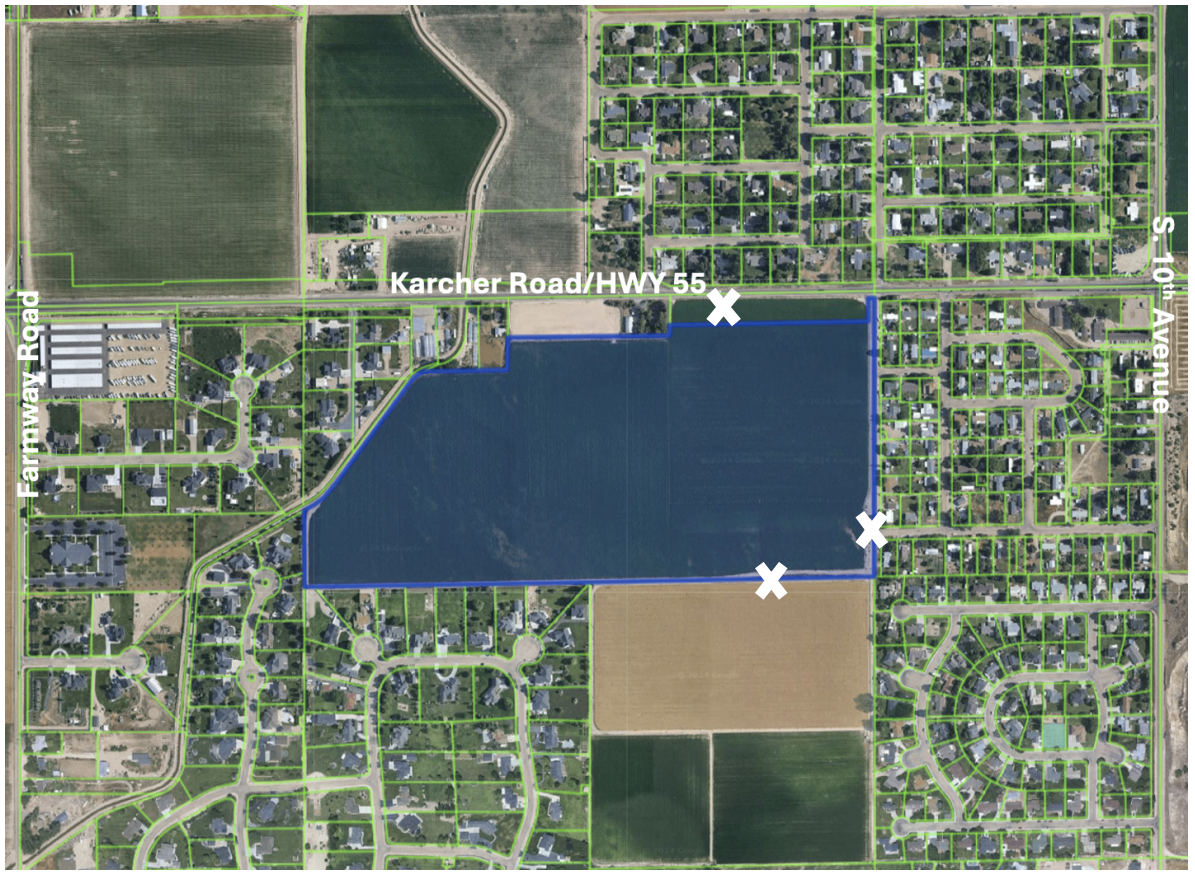


- Sewer: Individual septic systems
- Water: Individual wells
- Drainage: Retained on-site with swales.
- Irrigation: Pressurized irrigation
- Utilities: Idaho Power and Intermountain Gas

# Criteria F - Legal access

Exhibit 5

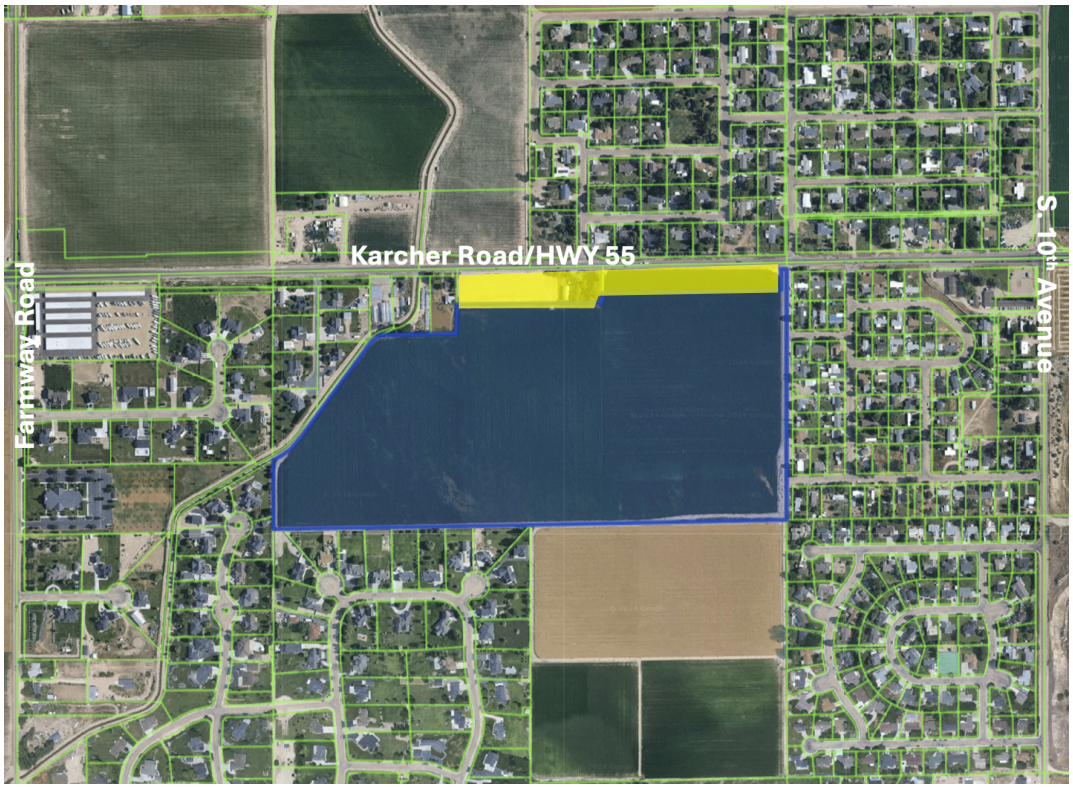
- Available and will be provided at the time of development
- Access via Vista Drive
- Access available on Karcher Road per ITD



# Criteria G - Public street improvements

Exhibit 5

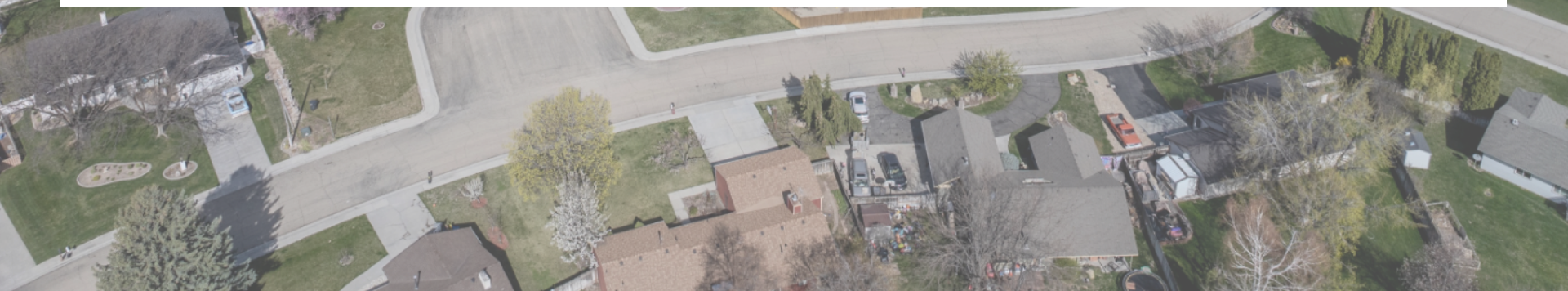
- TIS completed and reviewed by agencies
- 6 acres of ROW have been dedicated to ITD
- ITD: No additional mitigation required
- CHD#4: Any needed improvements would be addressed at the time of development



# Criteria H - Public services and facilities

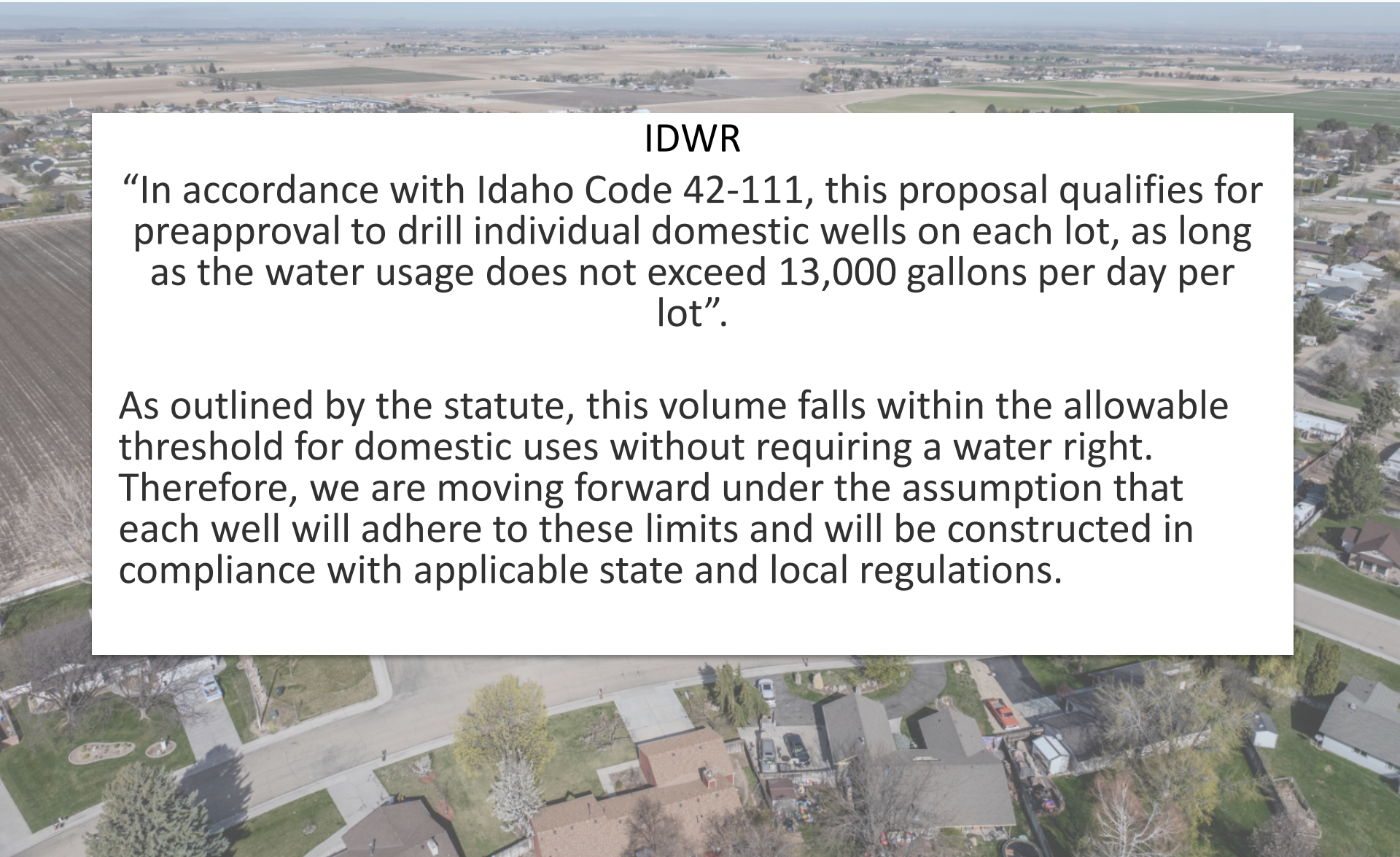
Exhibit 5

- Caldwell Fire Department: Fire protection meeting the International Fire Code will require sign-off from the Caldwell Fire Department. “All subdivisions regardless of annexation must meet the minimum standards of fire flow/hydrant(s). This can be accomplished by approved wells, tanks or an alternative method for a private water system”
- Caldwell Police Department
- Canyon County Sheriff
- Vallivue School District



# Additional Information – Water

Exhibit 5



IDWR

"In accordance with Idaho Code 42-111, this proposal qualifies for preapproval to drill individual domestic wells on each lot, as long as the water usage does not exceed 13,000 gallons per day per lot".

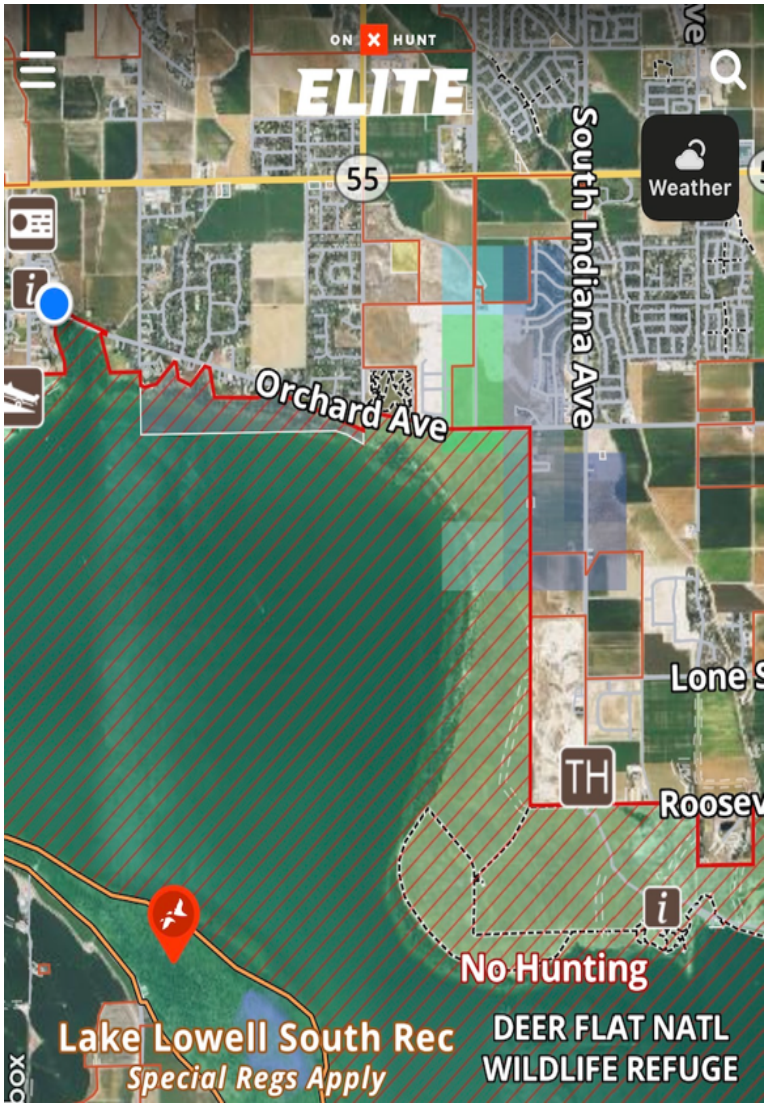
As outlined by the statute, this volume falls within the allowable threshold for domestic uses without requiring a water right. Therefore, we are moving forward under the assumption that each well will adhere to these limits and will be constructed in compliance with applicable state and local regulations.

# Additional Information - Wildlife

Exhibit 5

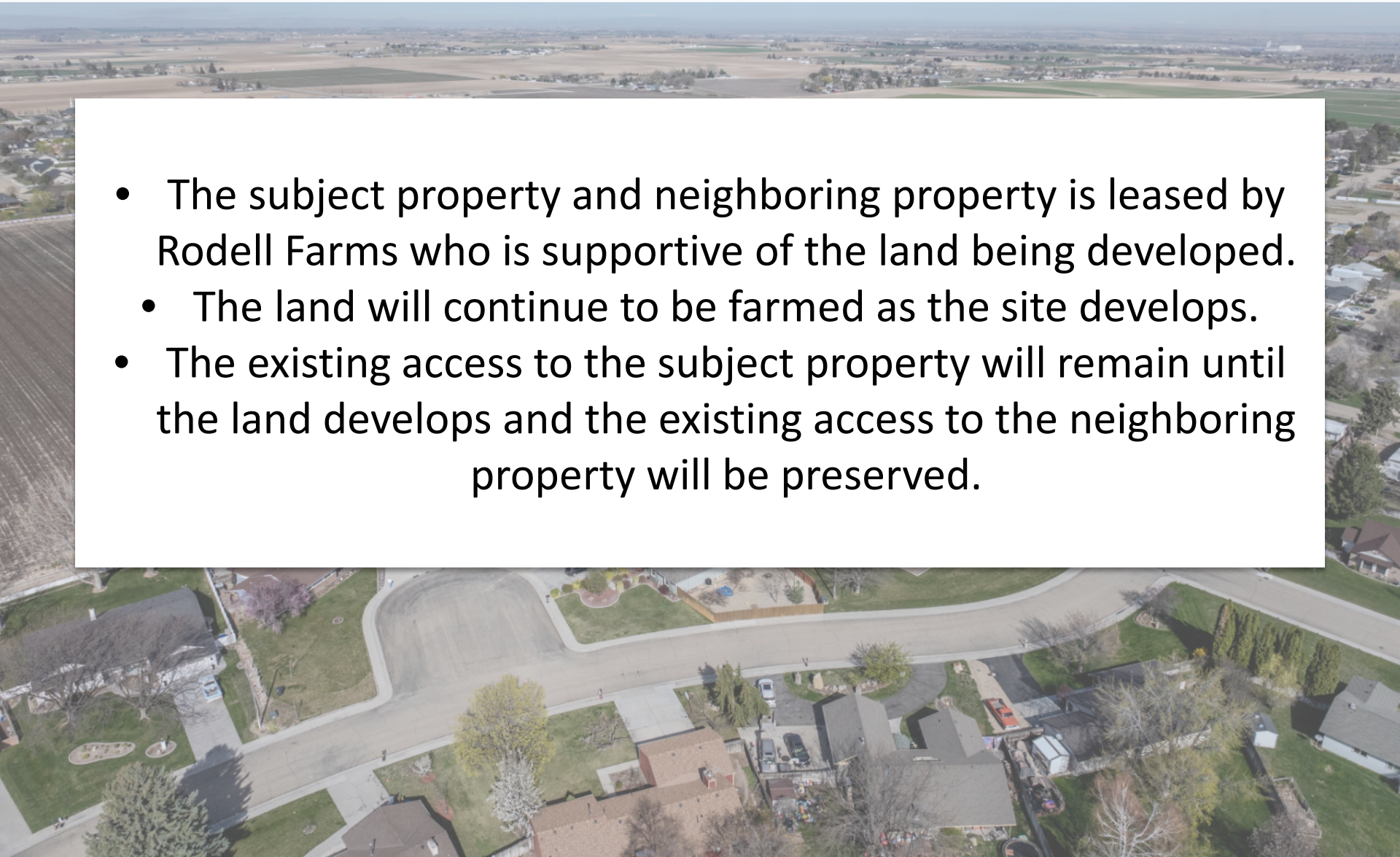
The property is not in or adjacent to the Deer Flat National Wildlife Refuge, wildlife conservation areas, or lands designated for hunting.





# Additional Information - Farming

Exhibit 5



- The subject property and neighboring property is leased by Rodell Farms who is supportive of the land being developed.
- The land will continue to be farmed as the site develops.
- The existing access to the subject property will remain until the land develops and the existing access to the neighboring property will be preserved.

# Additional Information - Schools

Exhibit 5

Schools: Estimated 18 students → negligible impact

- Current capacity
  - West Canyon capacity is 625. Enrollment: 415.
  - Vallivue Middle capacity is 1000. Enrollment: 685.
  - Vallivue High capacity is 1800. Enrollment: 1220.



# Conditions Proposed

Exhibit 5

1. The subdivision shall maintain an average lot size of 1 acre with no more than 48 buildable lots.

2. The subdivision will provide fire hydrants connected to a well, water tank, or an alternative method of water supply as deemed appropriate by the Caldwell Fire Department and in accordance with the International Fire Code.



# Conclusion

Exhibit 5



The proposal aligns with the goals of the Comprehensive Plan by supporting housing diversity, offering quality living environments, and doing so in a way that minimizes environmental disturbance. We believe this development will serve as a model for how growth can occur in harmony with existing land uses and natural resources.




Exhibit 5

# Additional Images - North

Exhibit 5



# Additional Images - Northwest

Exhibit 5



# Additional Images - Northeast

Exhibit 5



# Additional Images - South

Exhibit 5



# Additional Images - Southwest

Exhibit 5



# Additional Images - Southeast

Exhibit 5



# Additional Images - East

Exhibit 5



# Additional Images - West

Exhibit 5

