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

PLANNING DIVISION STAFF REPORT

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:

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:				
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. **Findings:** 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 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). 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). 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). 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.*
☒	☐	☐	**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. **Findings:** 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.*" 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).

				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) 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 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). 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). o Vanal Heights Subdivision was approved in 1960 with 70 lots (0.41-acre average lot size; Exhibit B.5a). o 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). o Wintergreen Subdivision was approved in 2000 with 7 lots (1.04-acre average lot size). o Canyon Lake Estates Phase 1 was approved in 2008 with 19 lots (1.21-acre average lot size). <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.*" The subject parcel is designated as "residential" in the 2020 Canyon County Comprehensive Plan's Future Land Use Plan (Exhibit B.2c & d). 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). - Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g). 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 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. **Findings:** 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.* 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). 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). 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). - Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g). 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. **Findings:** The character contains a mix of agricultural, residential, and commercial uses (Exhibit B.2a, B.2e, B.2j & C).

				- 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). - The parcel is located near residential and commercial zones (Exhibit B.2e). - Within a one-mile radius there are 35 platted subdivisions with a 0.55-acre average lot size (Exhibit B.2g). 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). 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. **Findings:** 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). 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. - Community systems will require Idaho Department of Water Quality review and approval (Exhibit D.6). - Connection to the available city services will require a pre-annexation agreement and a formalized Municipal Services Agreement (Exhibit D.4 & D.5). 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.
☒	☐	☐	**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. **Findings:** 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). 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. **Findings:** 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. 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). 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.

			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. **Findings:** 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). No comments were received from the Brown Bus Company or Caldwell Transportation. Police: Canyon County Sheriff's Office. No comments were received. 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). No comment was received from Canyon County Paramedics/EMT. 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. 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	
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. 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. 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 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

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

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

(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

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

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

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_____

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.

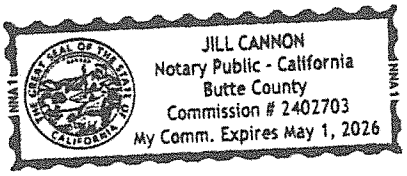
State of California)
)
County of Butte)

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.

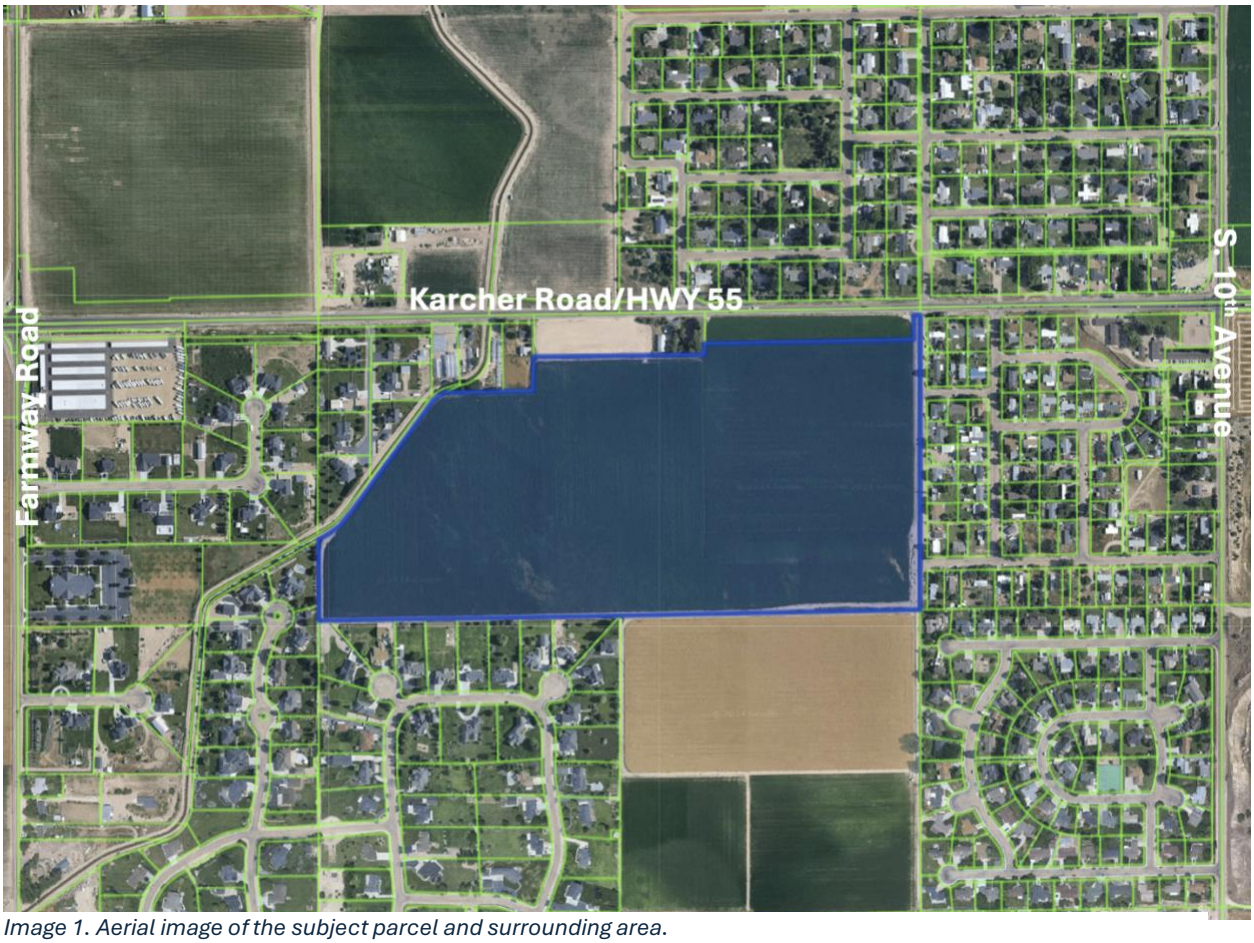


Image 1. Aerial image of the subject parcel and surrounding area.

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.

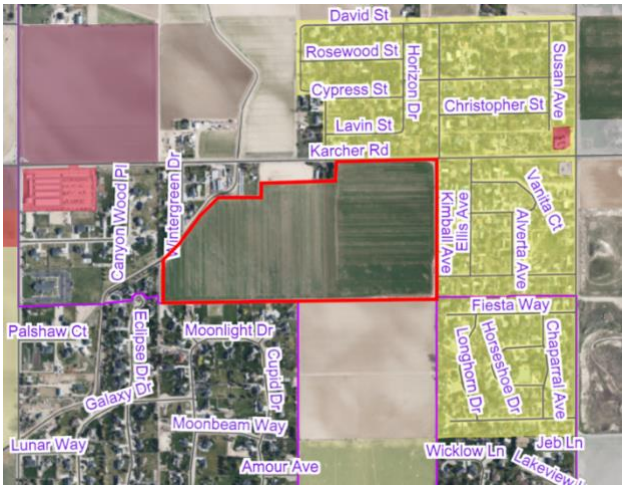


Image 2. Zoning Map.

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.

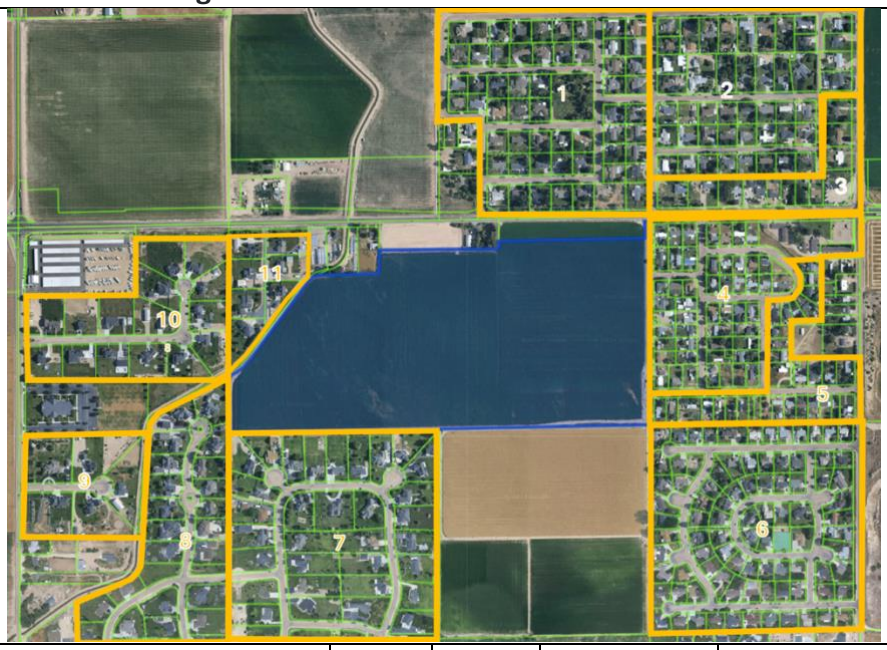
C. Is the proposed zoning map amendment compatible with surrounding land uses;

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

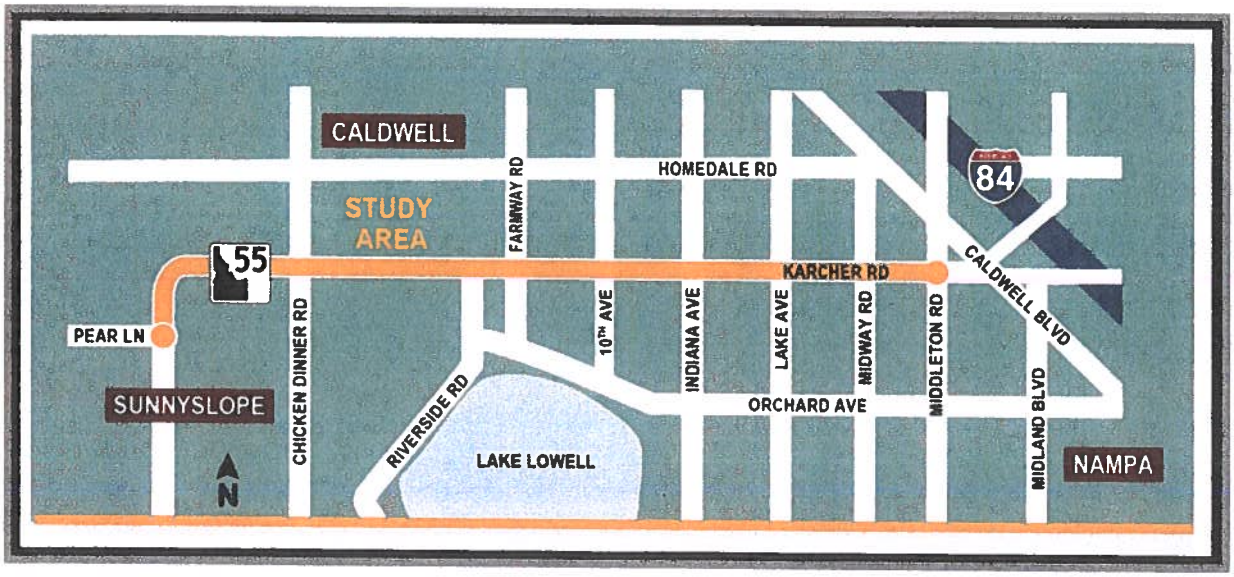
RE: TILLMAN SUBDIVISION
REZONE & PRELIMINARY PLAT APPLICATIONS
15453 KARCHER ROAD

Dear Commissioners:

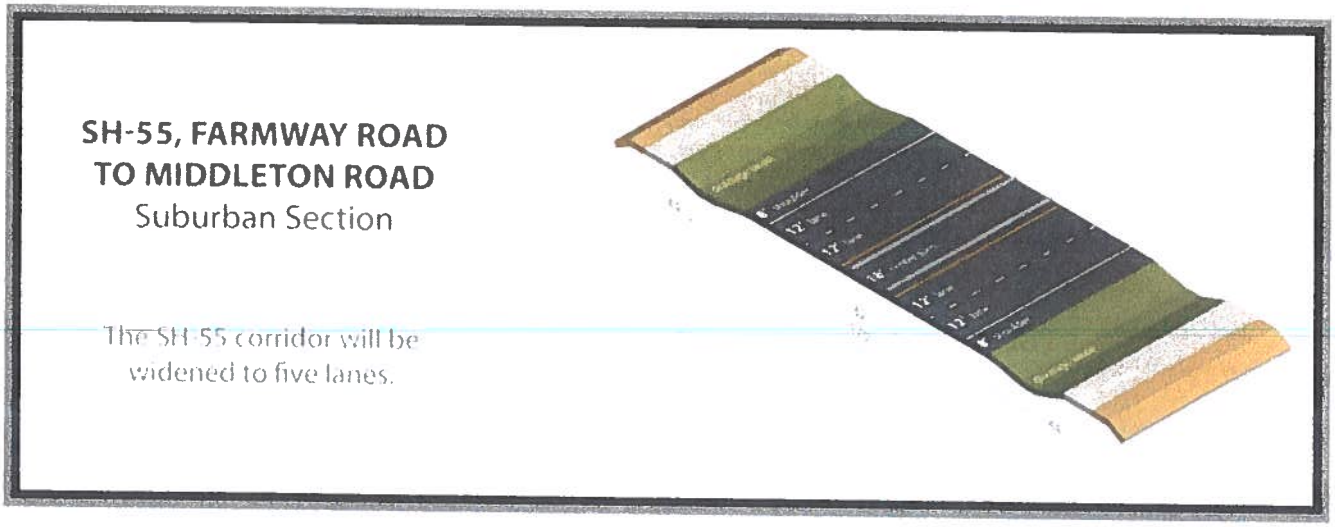
On behalf of the property owners, please accept the attached Rezone and Preliminary Plat Applications for Tillman Subdivision. The site is generally located at the southwest corner of Kimball and Karcher Road, Caldwell. This site was previously approved for a 55 lot subdivision by Canyon County in November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

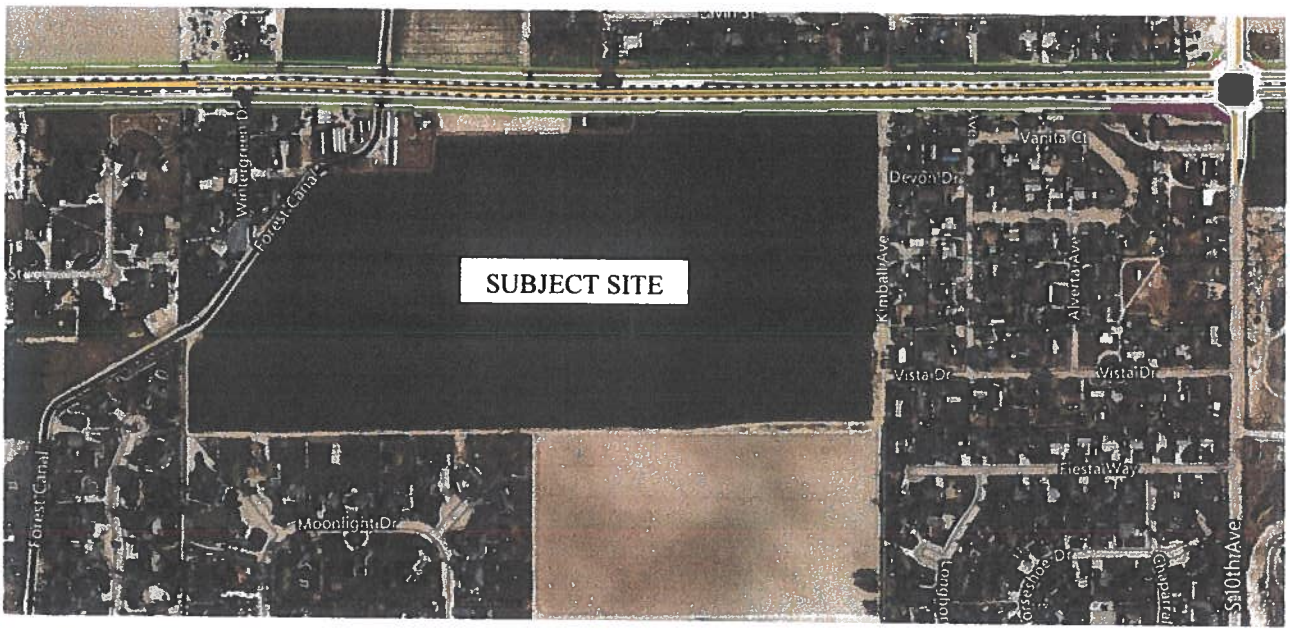
While *Idaho Statue 49-619. SLOW MOVING VEHICLES* does not explicitly prohibit operating slow moving equipment on a state highway there are criteria including prohiting vehicles that obstruct the free movement of traffic on highways. Inclusion in the City of Caldwell Area of Impact as well as the challenges 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.

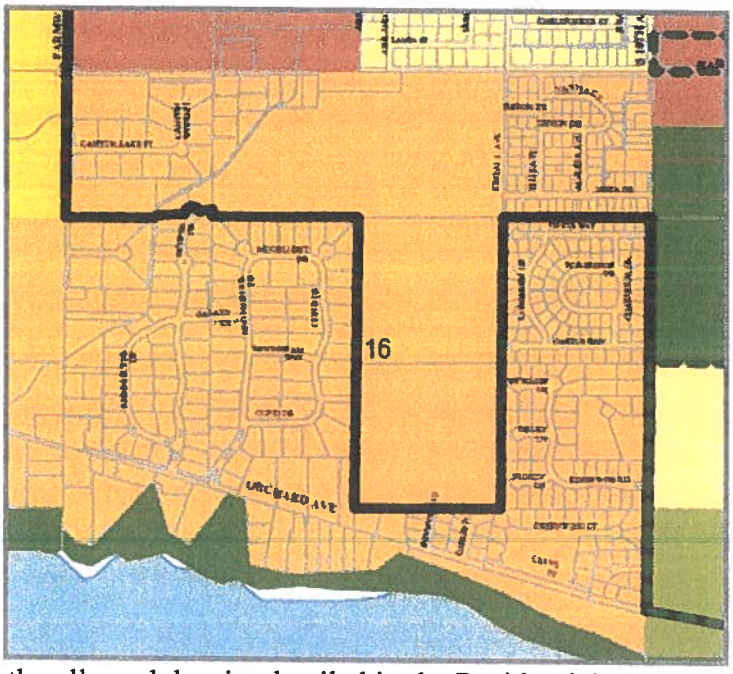


In addition to the preliminary plat application, a rezone (Zoning Map Amendment) to R-1 consistent with the Caldwell Future Land Use Map designation of Residential is requested. Based on the criteria provided by the Canyon County Code, the site location and known future conditions a conditional rezone 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.

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;

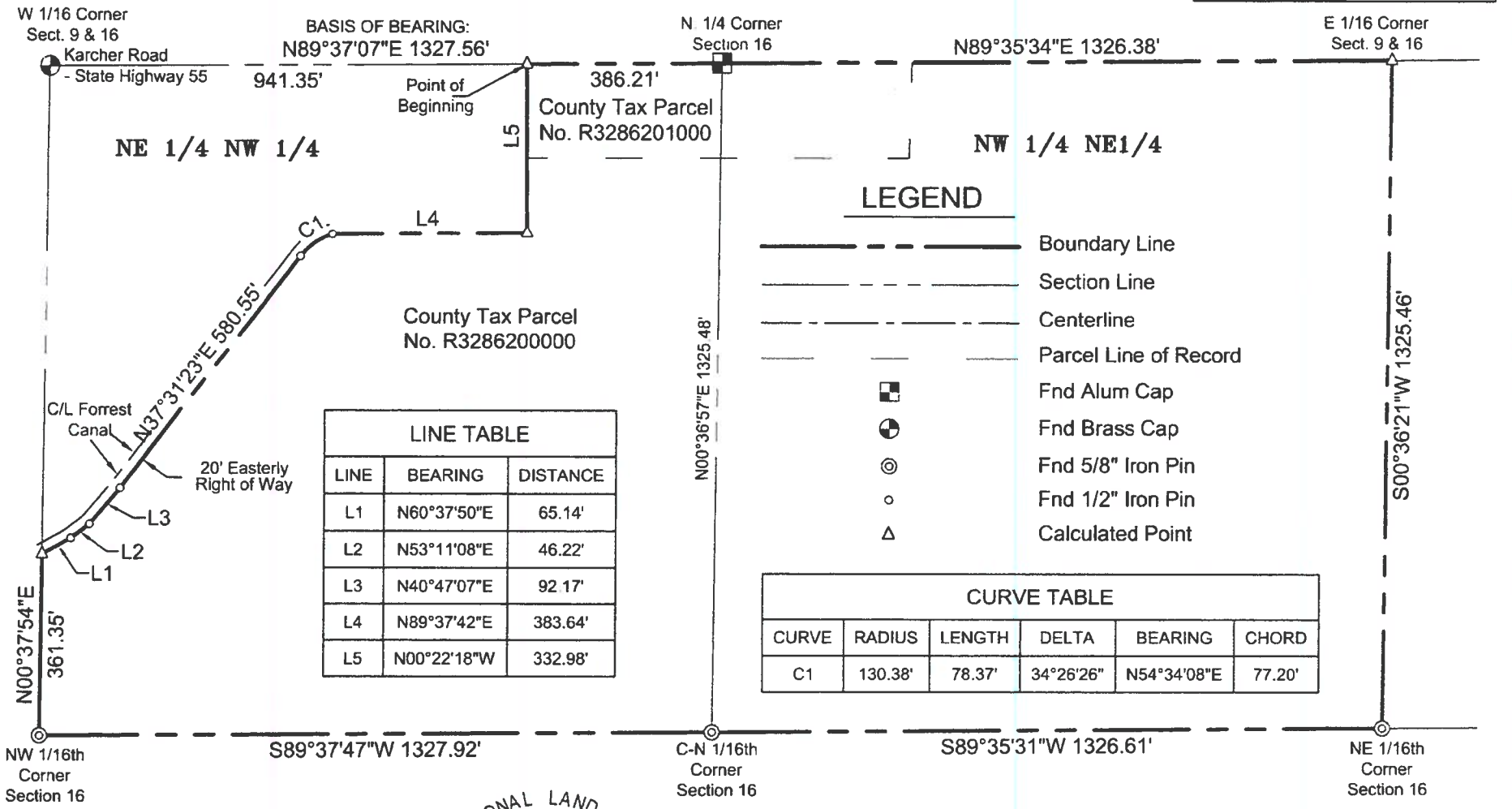
Thence, North 00°22'18" West, 332.98 feet to the **POINT OF BEGINNING:**

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

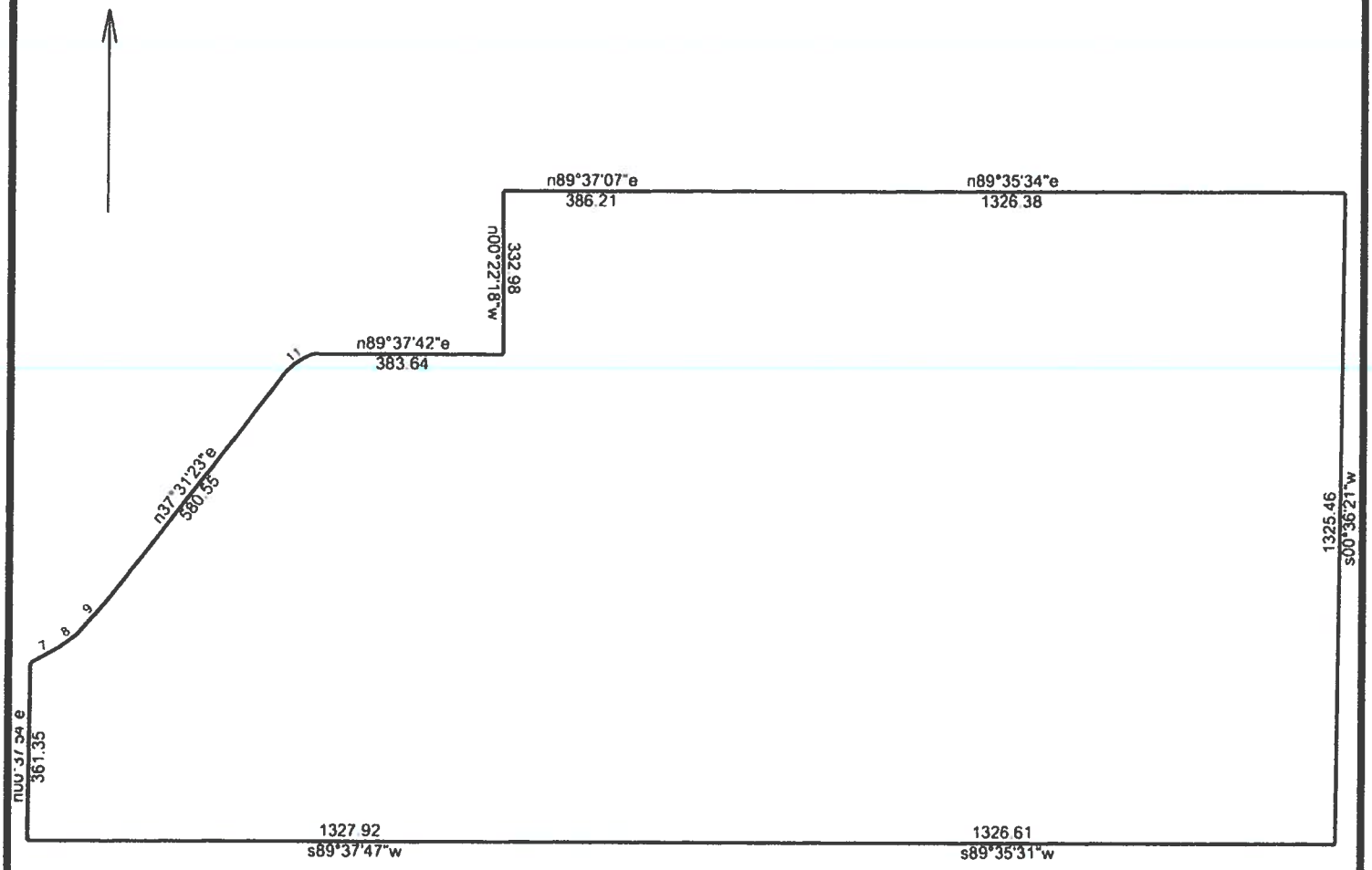
- Boundary Line
- Section Line
- Centerline
- Parcel Line of Record
- Fnd Alum Cap
- Fnd Brass Cap
- Fnd 5/8" Iron Pin
- Fnd 1/2" Iron Pin
- Calculated Point

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
STATE OF IDAHO
LAWRENCE H. KOERNER

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.		
9.		

Revised 11/25/20

10.
11.

12.
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16.
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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**

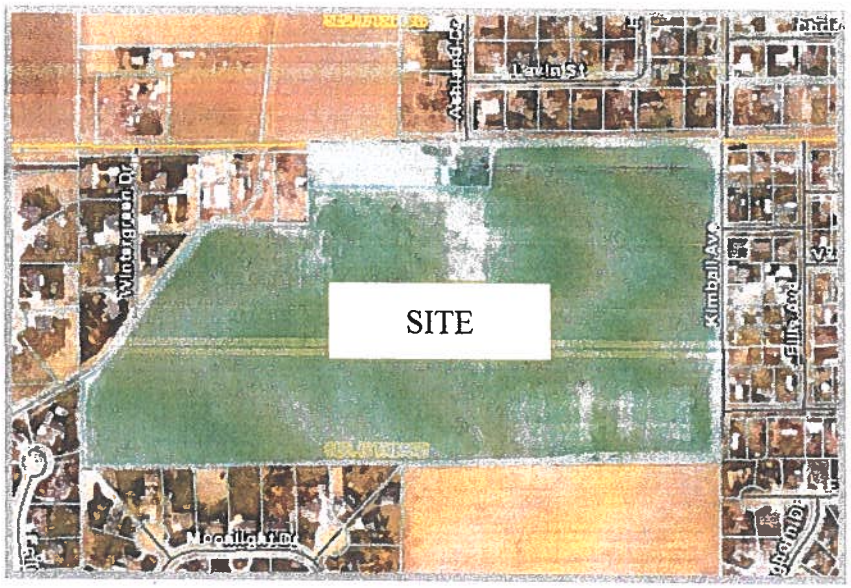
WHERE: **Caldwell Public Library, 1010 Dearborn St. in the Dean Miller Conference Room**

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
Juanita Squibb	15237 Vista Dr	
Peggy Tucker	15806 S Kimble	1dpJTbLT@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@shakubuku.me
Joe Sheehan	15698 Venus Ct	joe.sheehan@gci.net *
Angel Smith	15702 Venus Ct.	angelsmith@outlook.com

RILEY PLANNING SERVICES

P.O. Box 405
Boise, ID 83701
208.908.1609

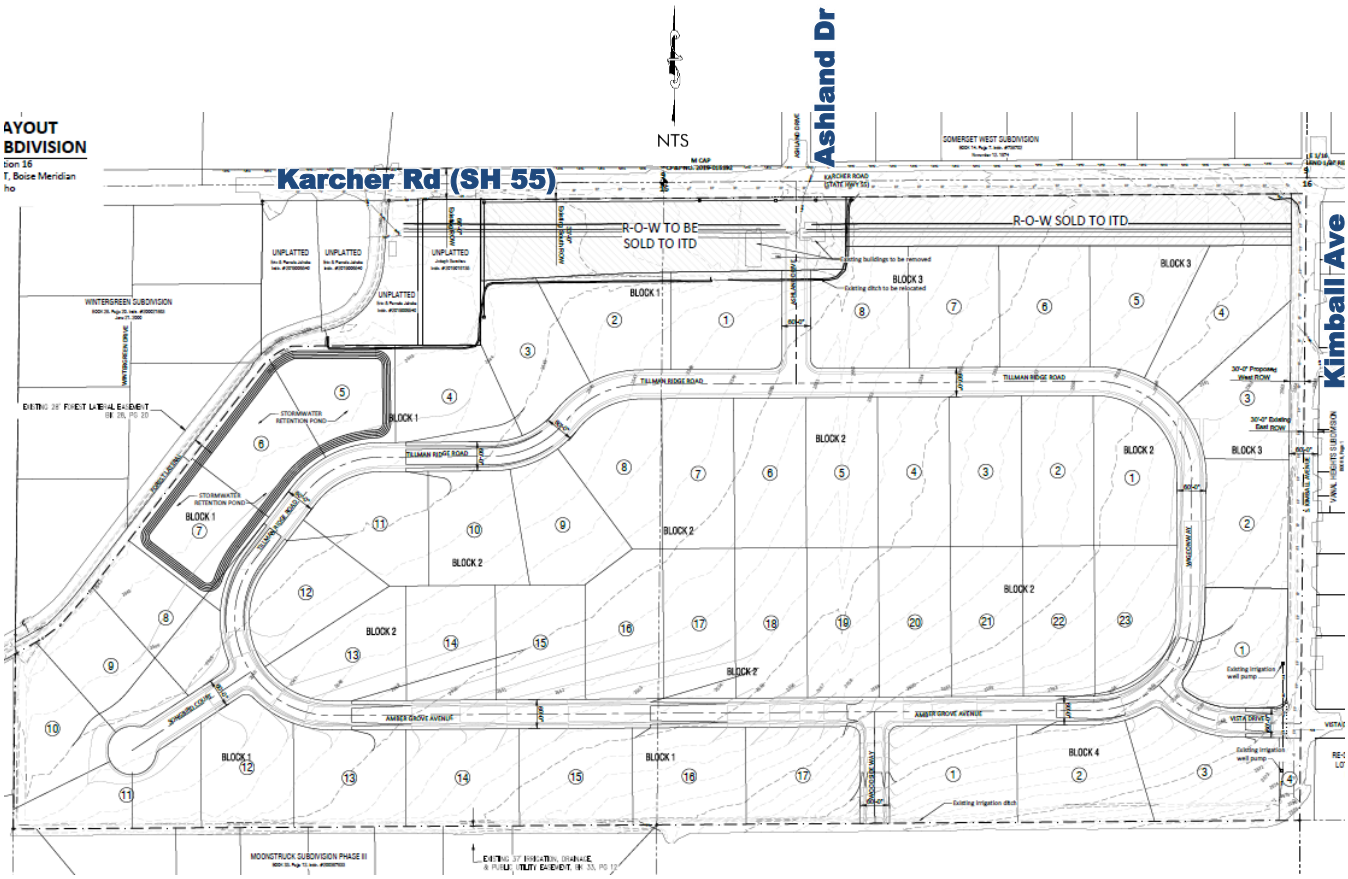
TRAFFIC IMPACT STUDY UPDATE

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

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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

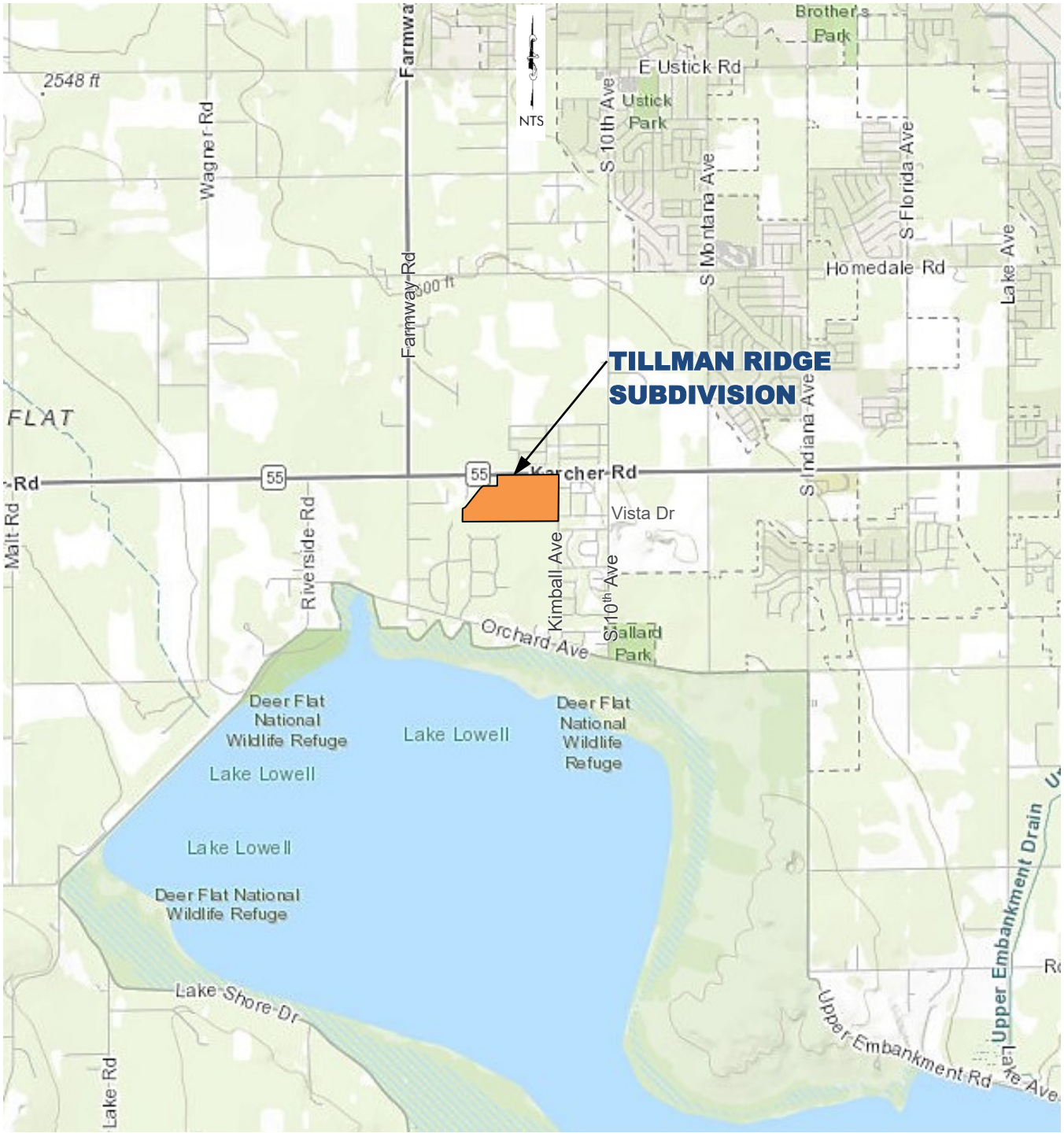
6.0 2032 Horizon Year Total Traffic Conditions

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).

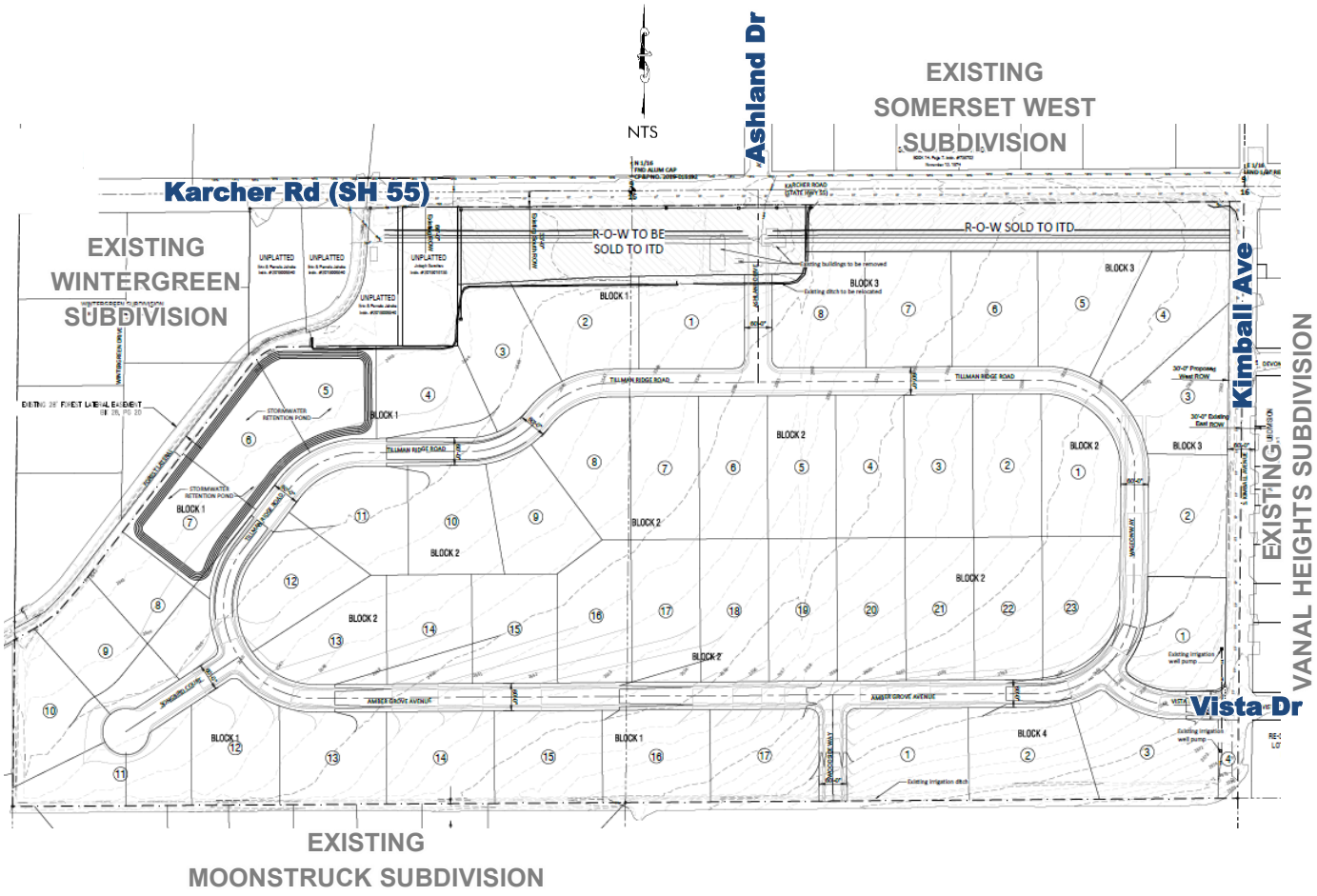
Figure 1.1 – Site Location and Vicinity



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.

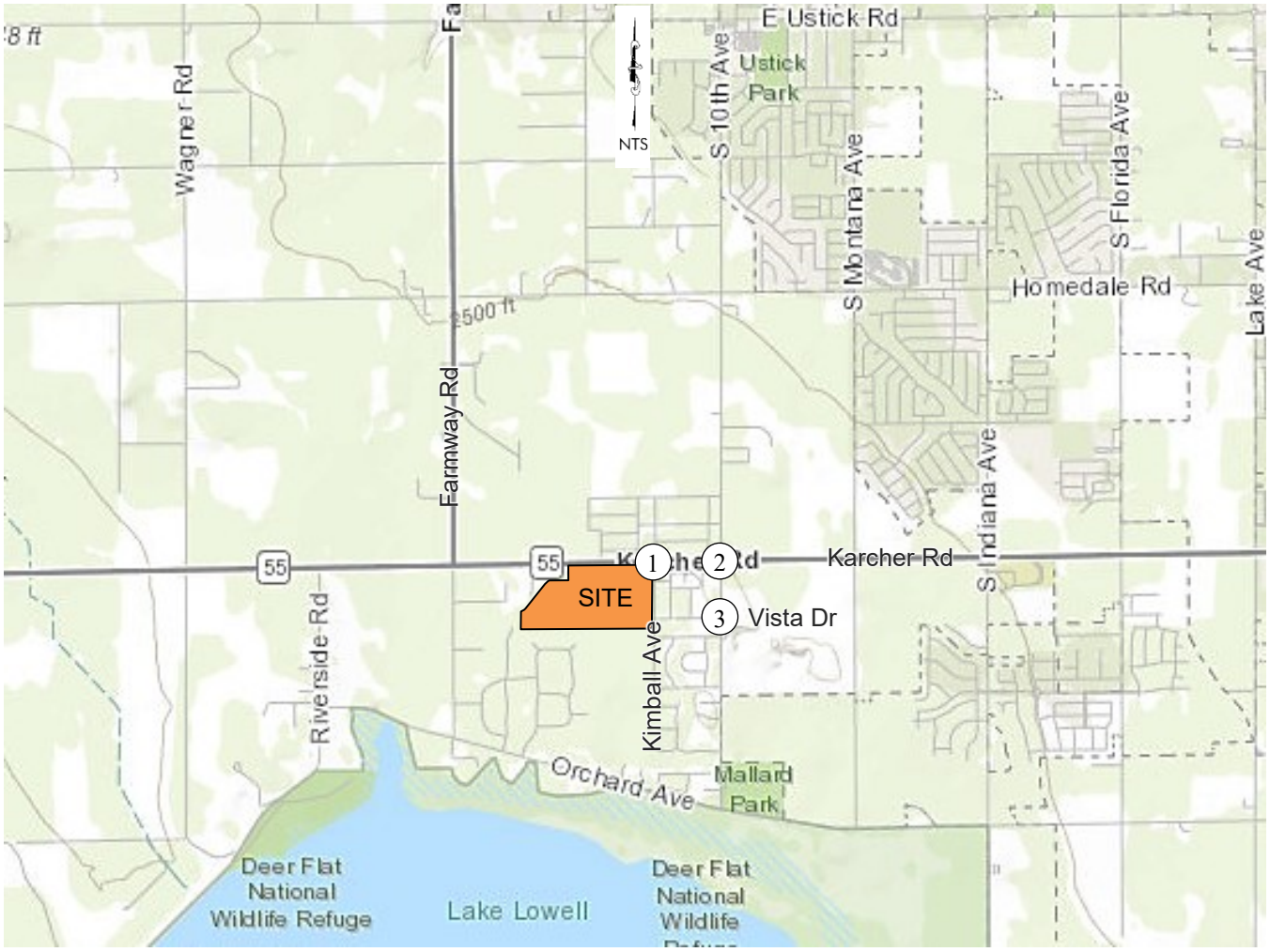
2.3 Intersection Crash Data

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



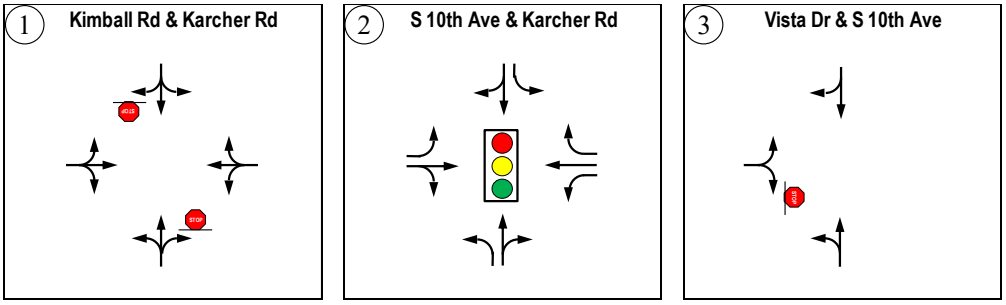
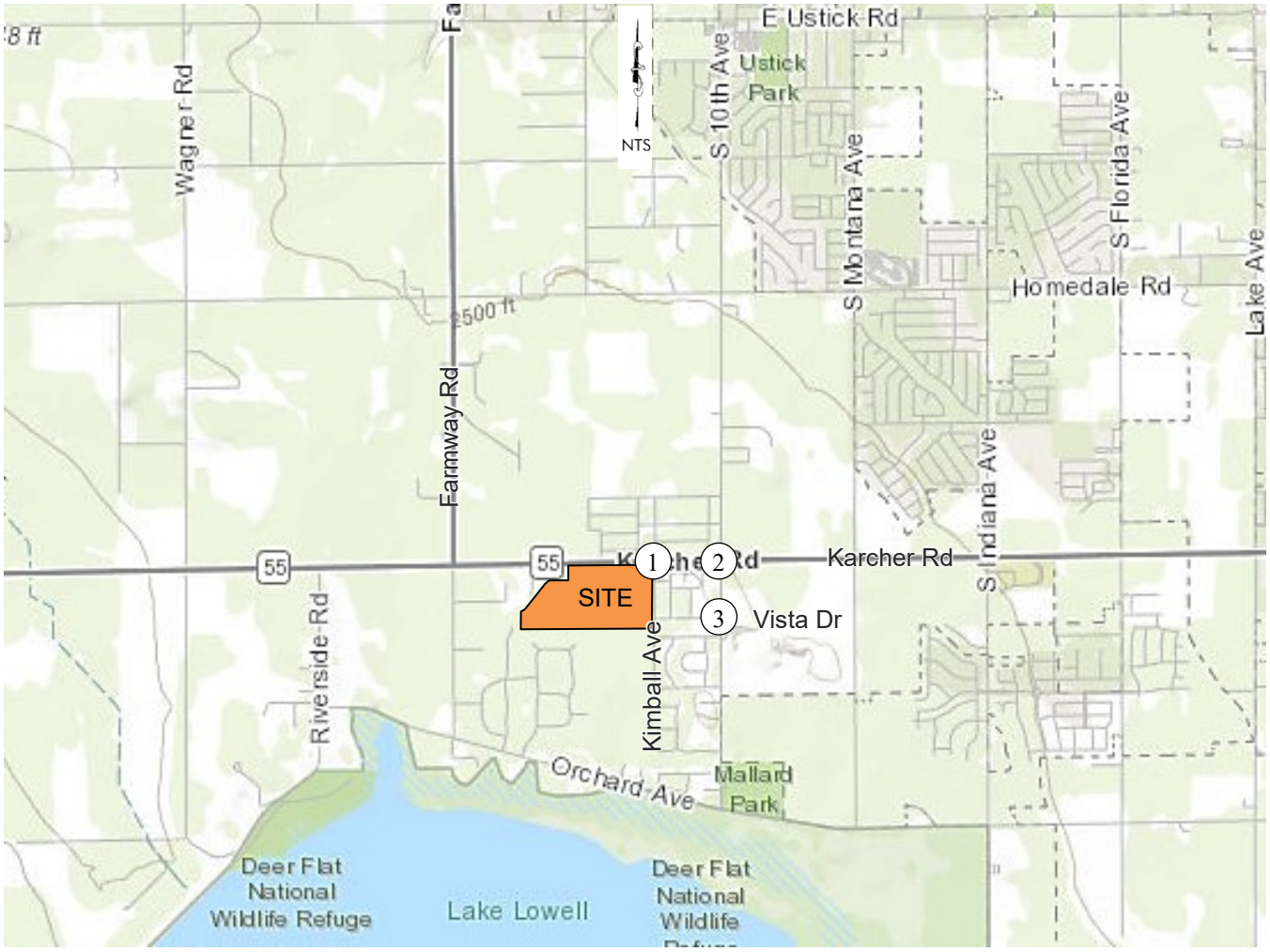
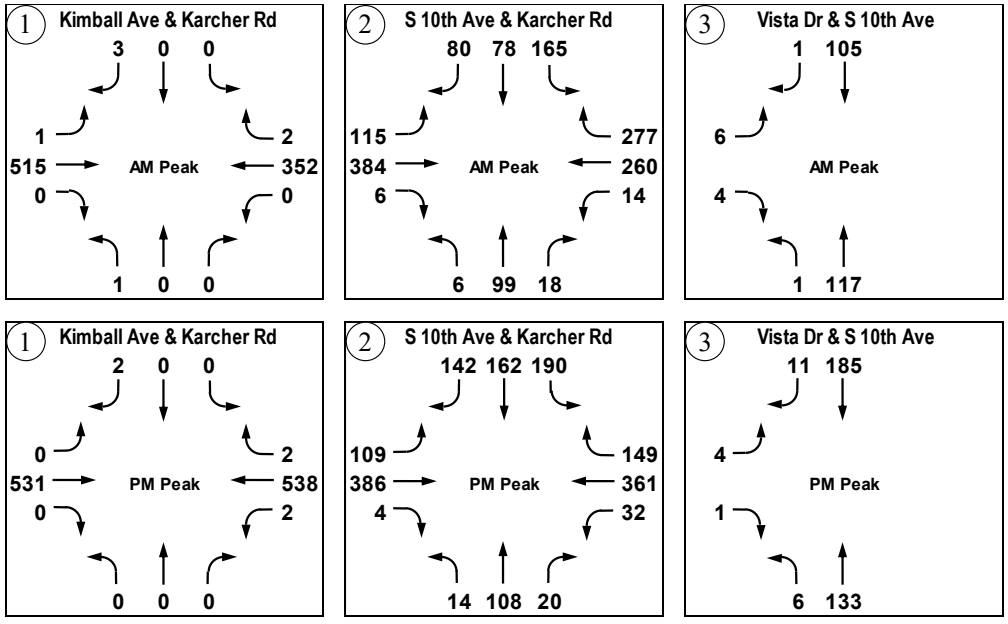


Figure 2.2 – 2024 Existing Peak Hour Traffic

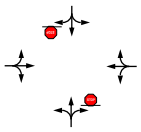
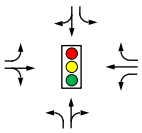




2.4 Intersection Operations

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%

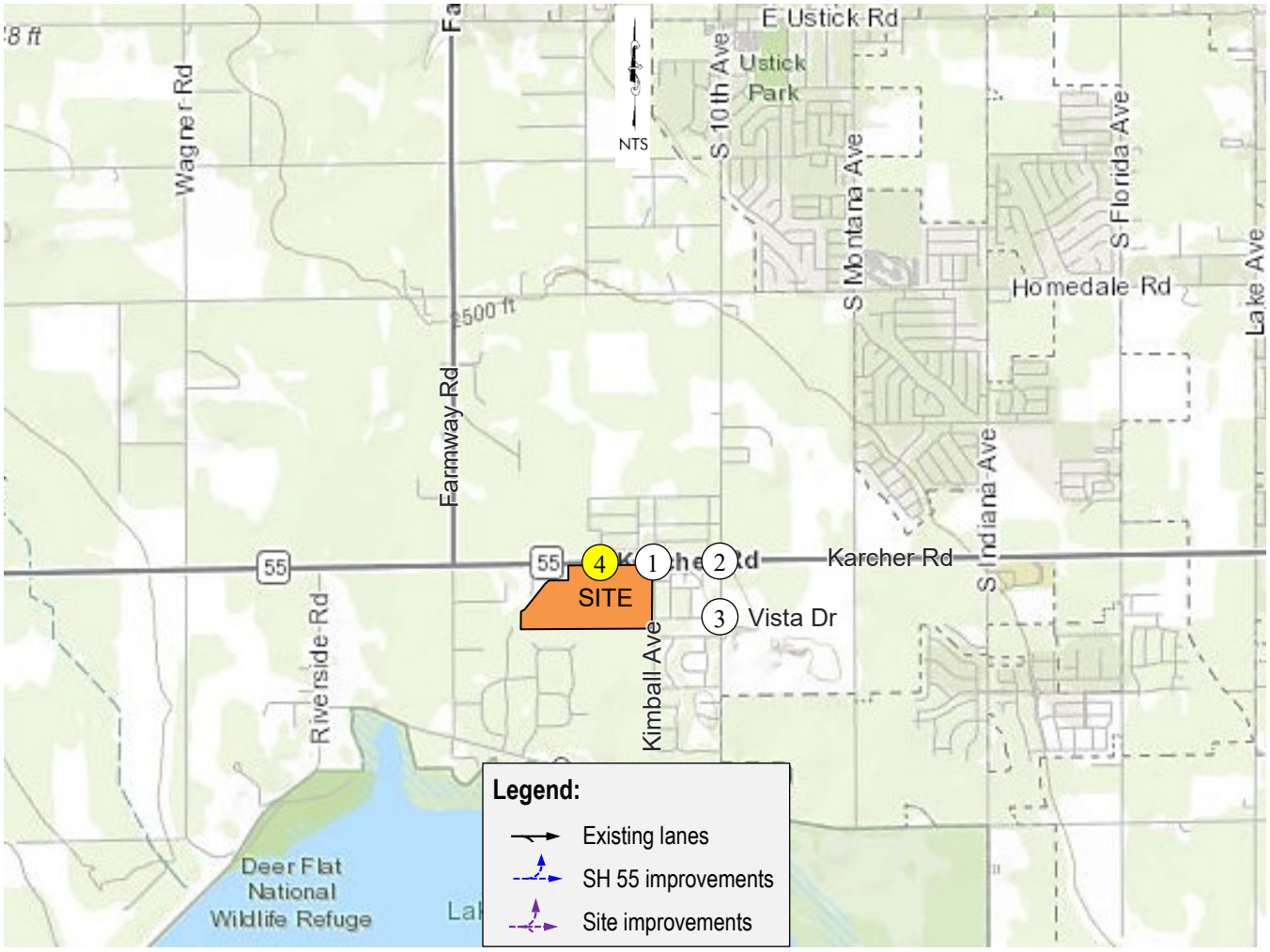
These annual traffic growth rates are based on COMPASS forecasts between 2019 and 2030 and other accepted TIS in the area. COMPASS forecasts are included in the appendix. In addition, two in-process developments in the area that are expected to contribute off-site traffic to the study area intersections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

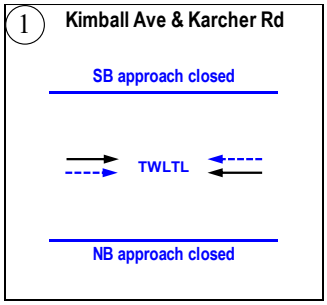
- Passero Ridge Subdivision – A residential development with 335 single-family lots located north of Orchard Avenue between S 10th Avenue and Montana Avenue with a build-out year of 2026
  - Approximately 10% (29 DU) of Passero Ridge Subdivision has been constructed/occupied
- Norse Landing Subdivision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

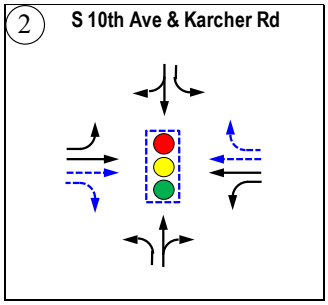
With the corridor widening and road closures as discussed above, traffic north of Karcher Road is anticipated to shift to Ashland Drive or 10th Avenue, depending on their origin/destination. Kimball Avenue traffic south of Karcher Road and Ellis Drive traffic will be required to shift to 10th Avenue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

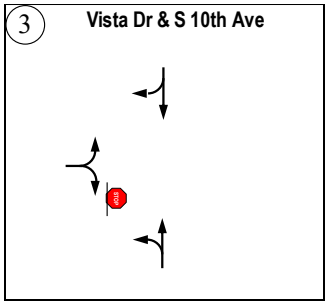
Figure 3.2 summarizes the projected 2027 AM and PM peak hour background traffic at the study area intersections.

Figure 3.1 – 2027 Intersection Control and Lane Configuration









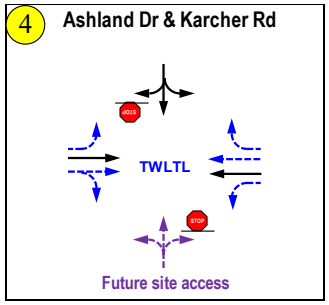
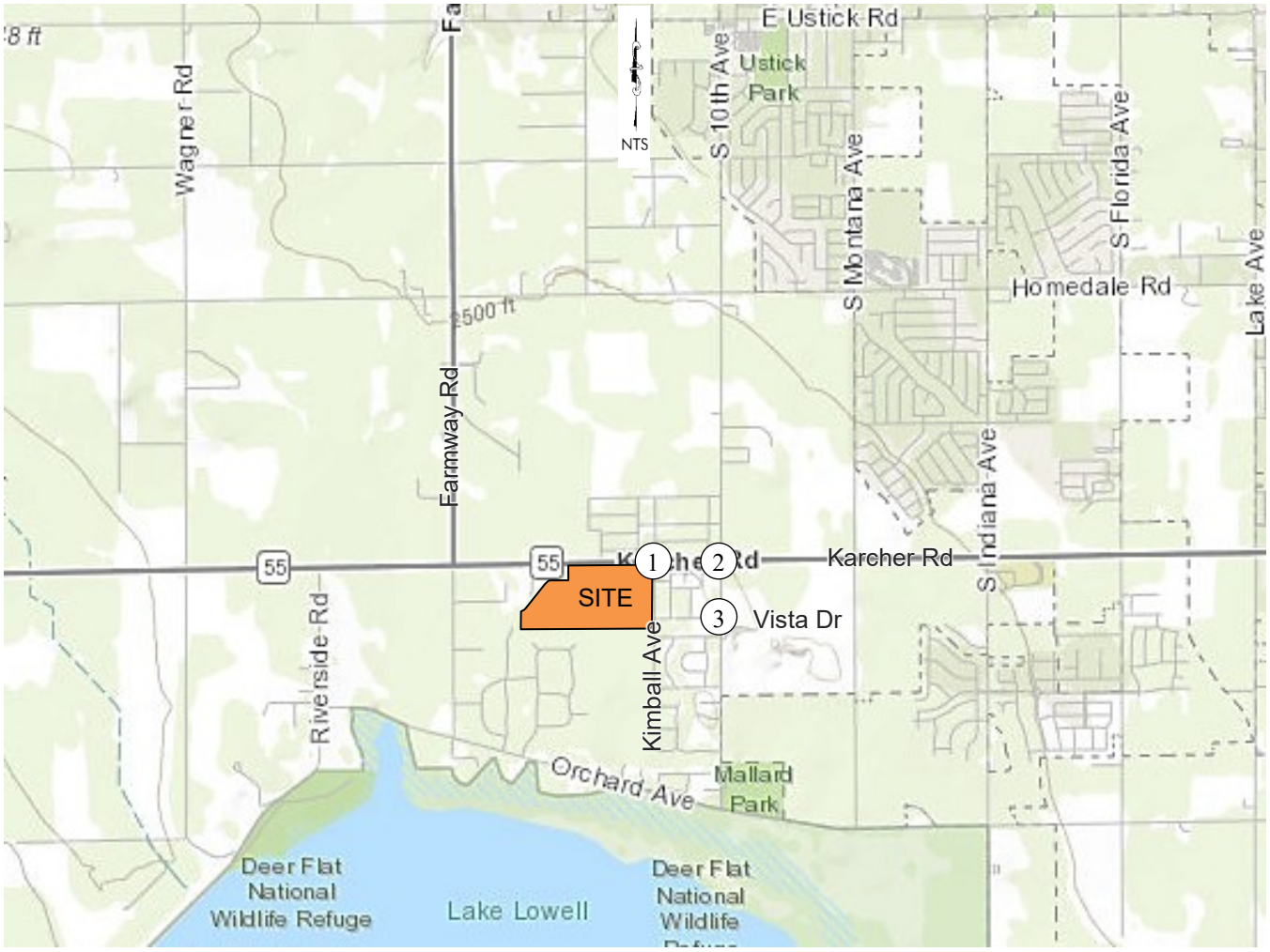
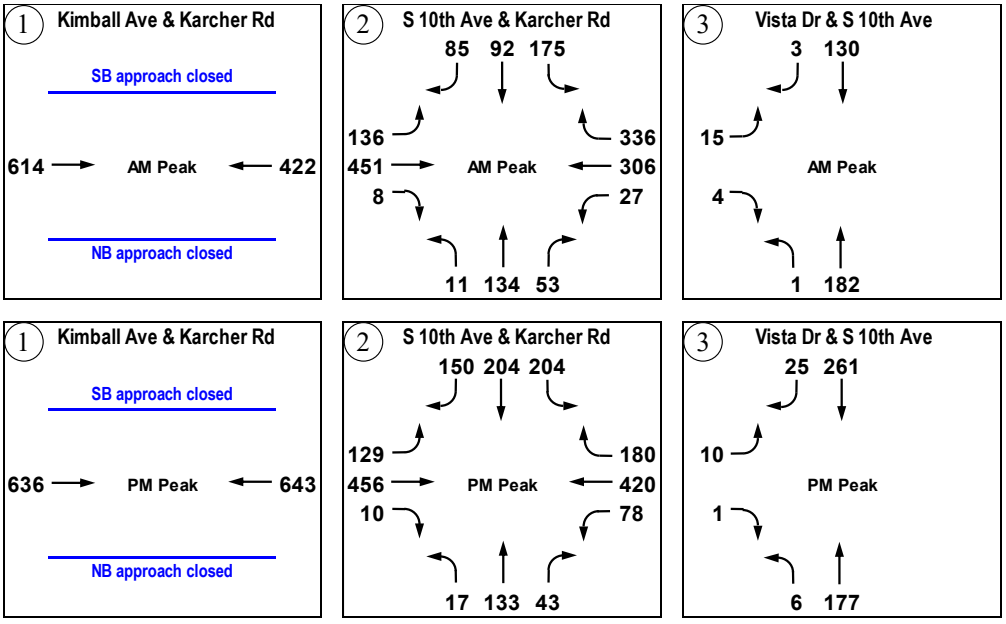


Figure 3.2 – 2027 Build-Out Year Peak Hour Background Traffic

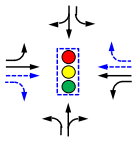




3.3 Intersection Operations

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

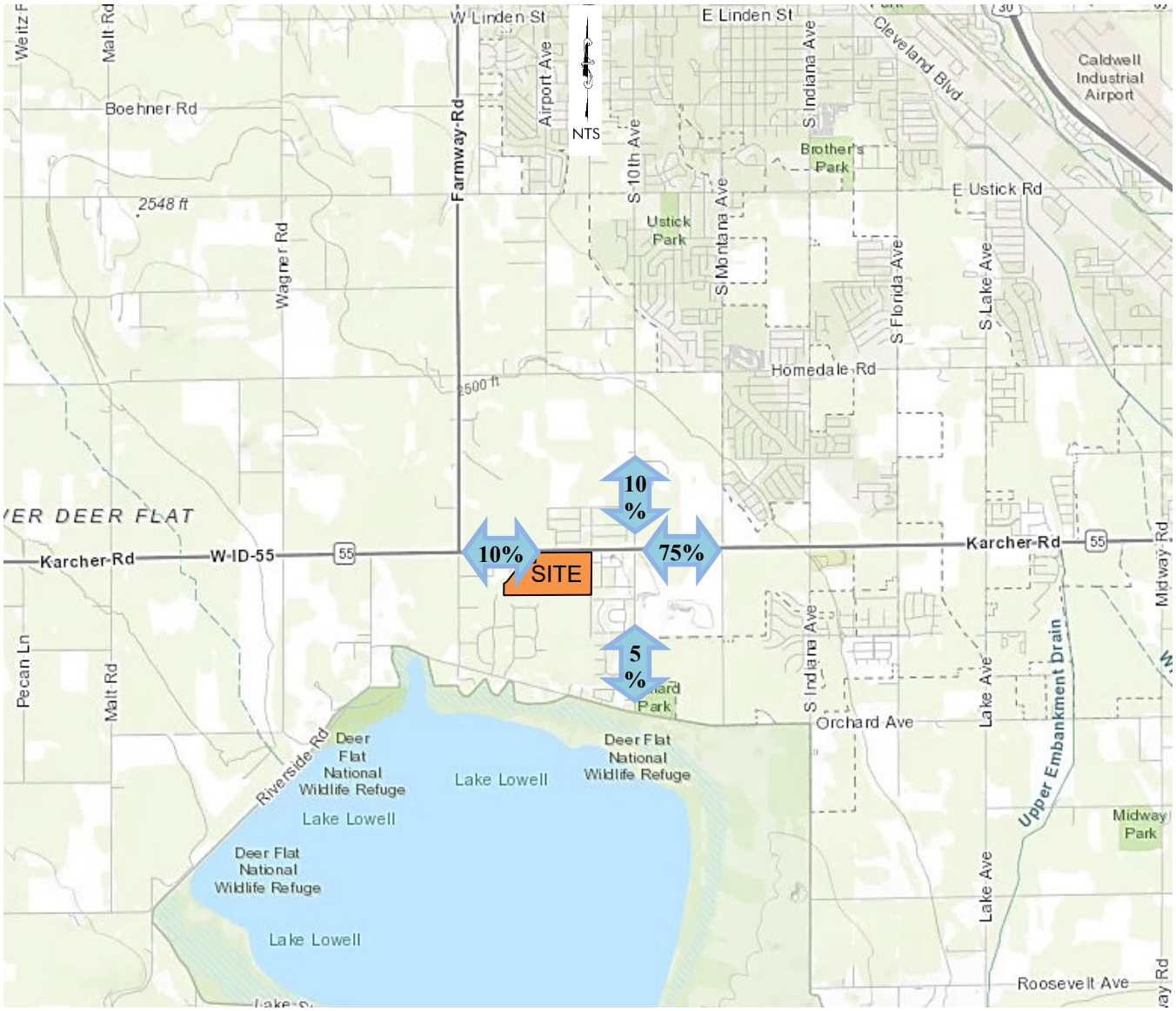
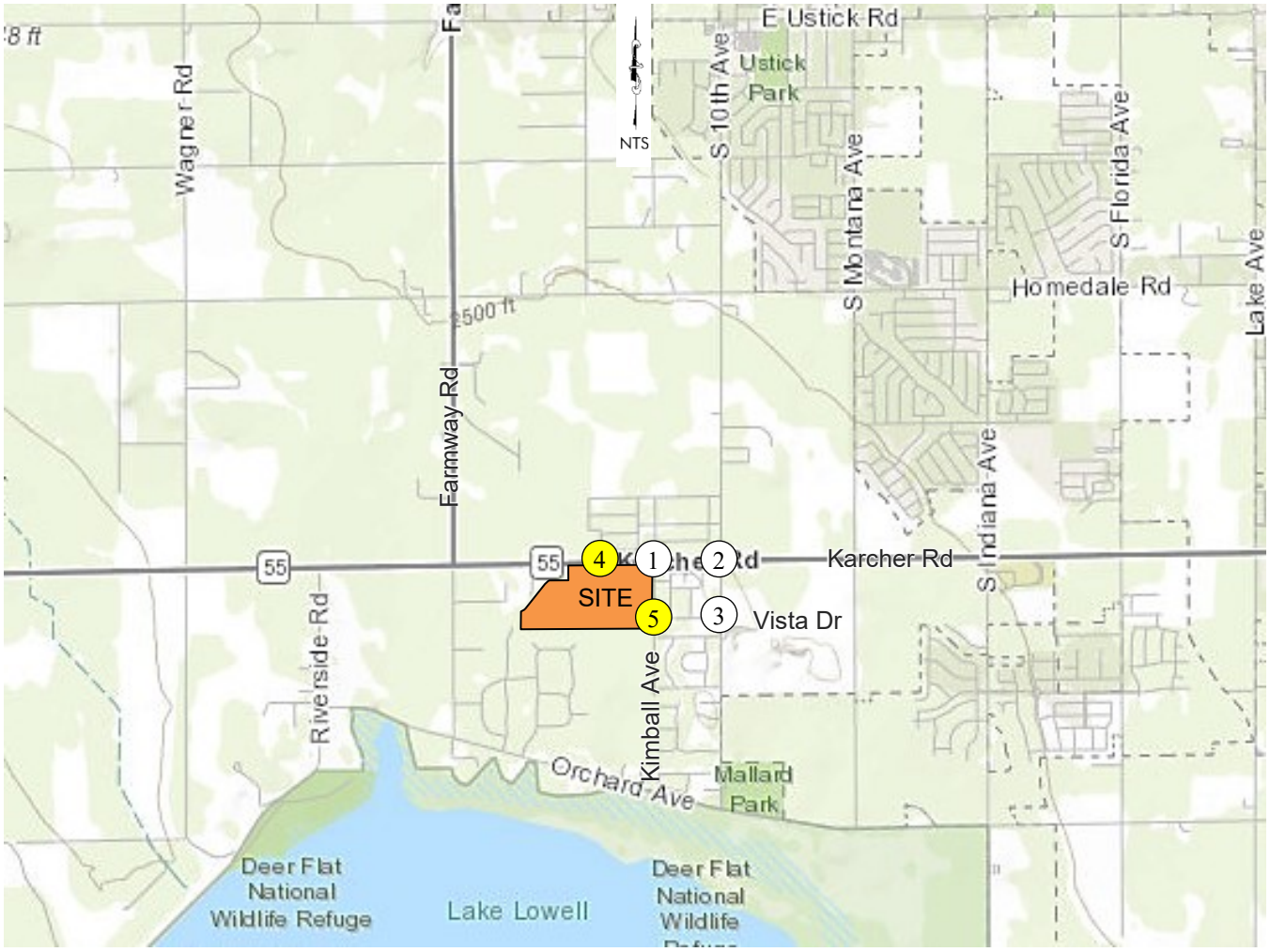


Figure 4.2 – 2027 Build-Out Year AM Peak Hour Site Traffic



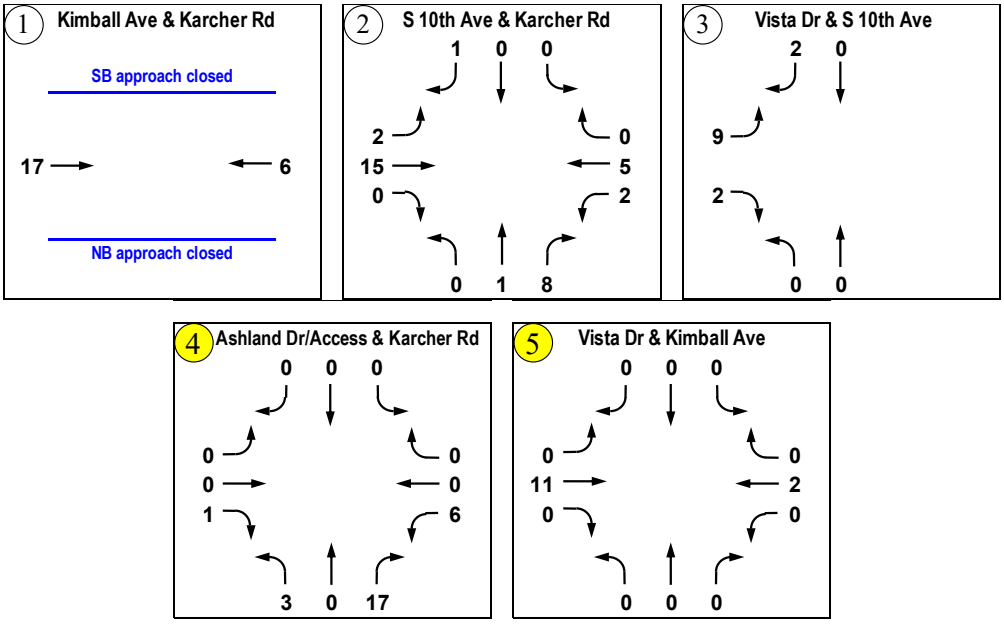
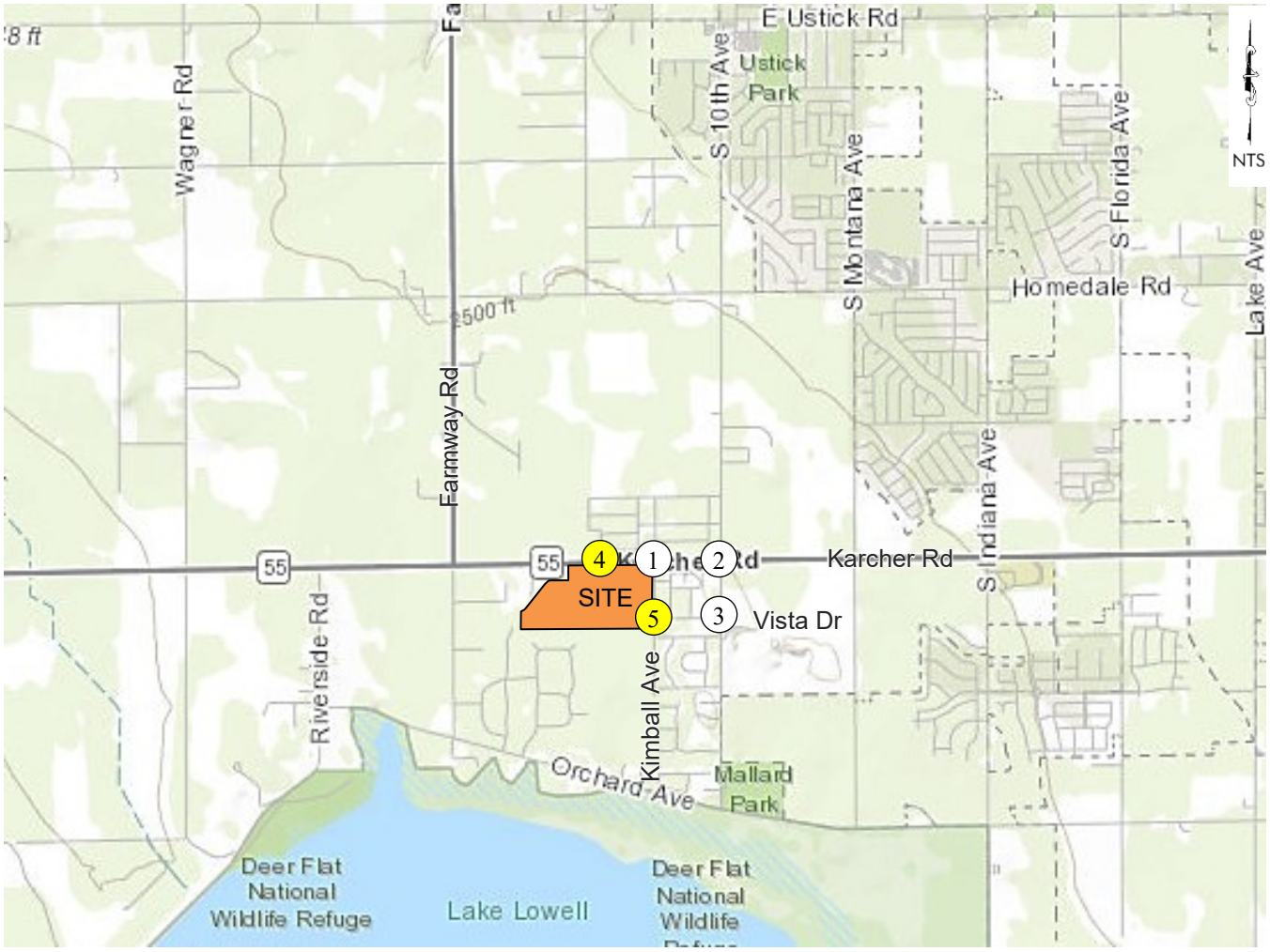


Figure 4.3 – 2027 Build-Out Year PM Peak Hour Site Traffic



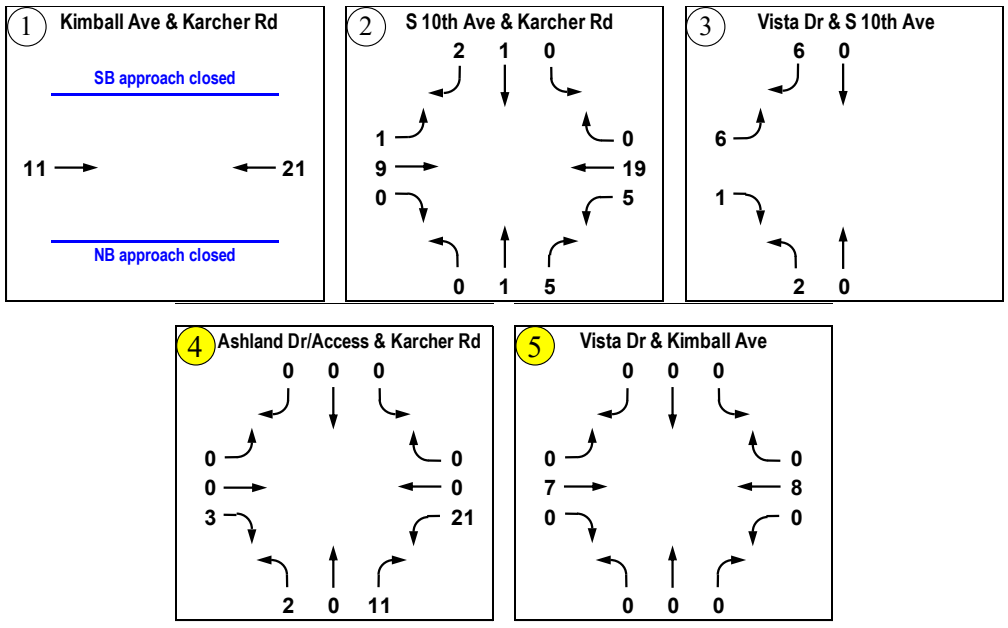
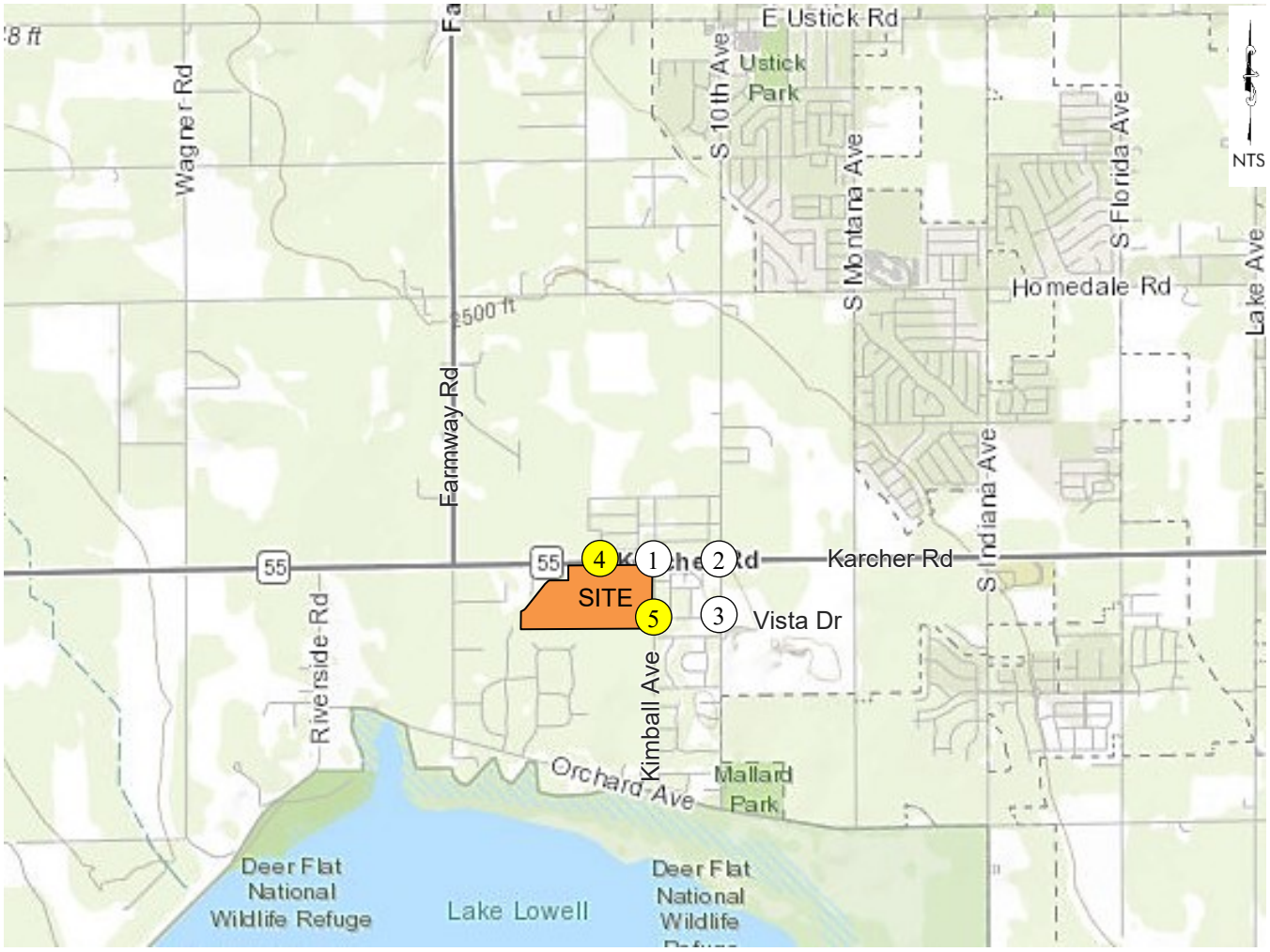


Figure 4.4 – 2027 Build-Out Year AM Peak Hour Total Traffic



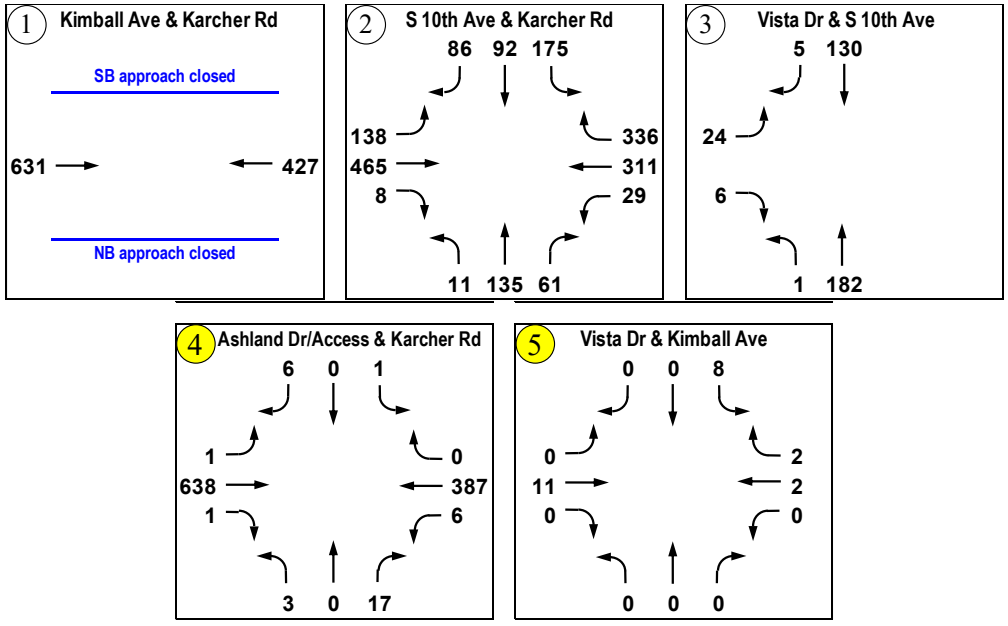
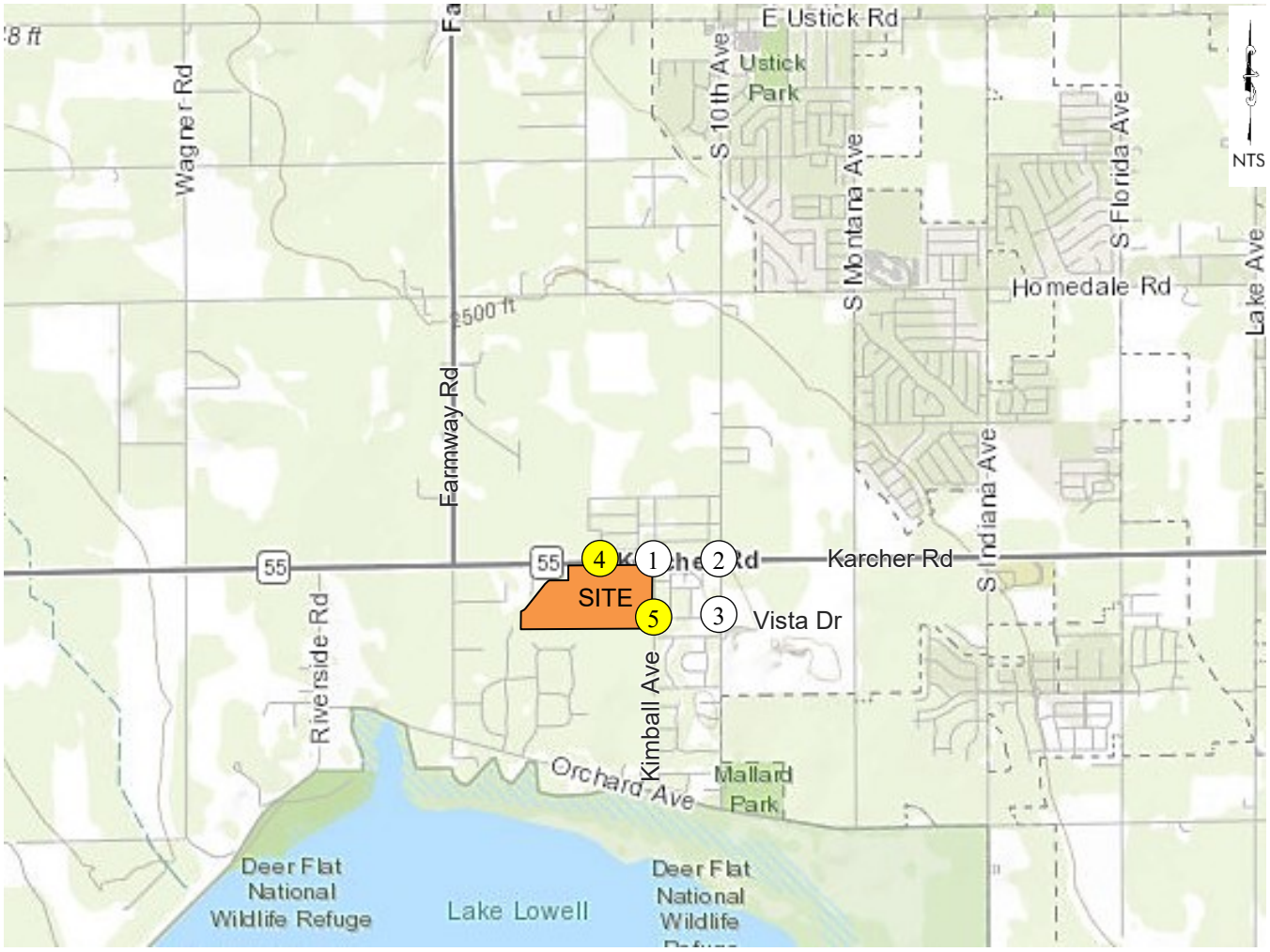
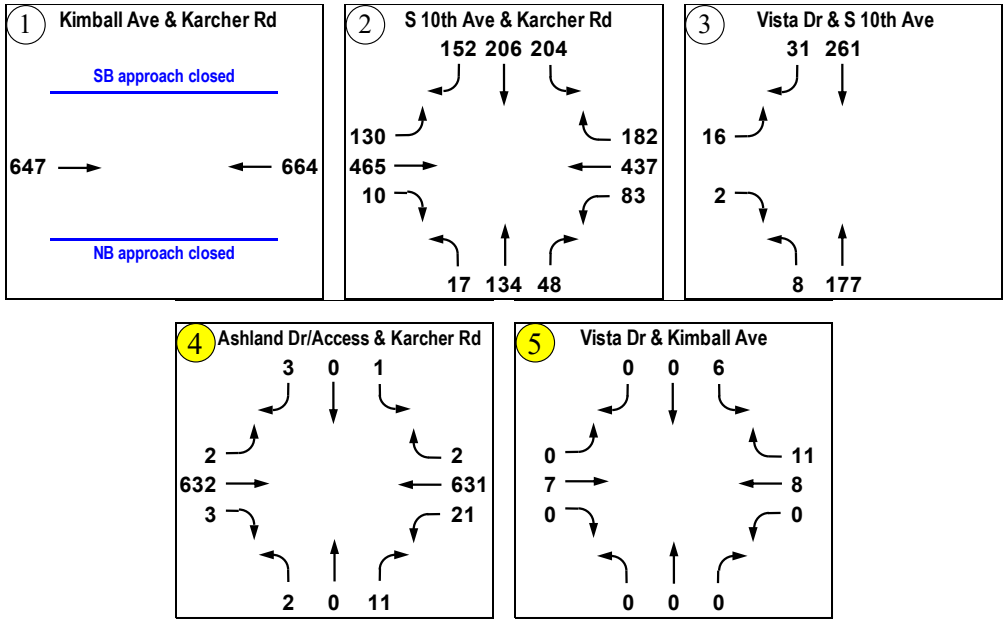


Figure 4.5 – 2027 Build-Out Year PM Peak Hour Total Traffic

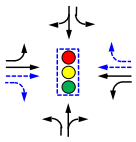
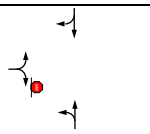
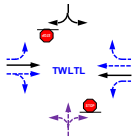




4.4 Intersection Operations

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 SH 55 Improvements 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.

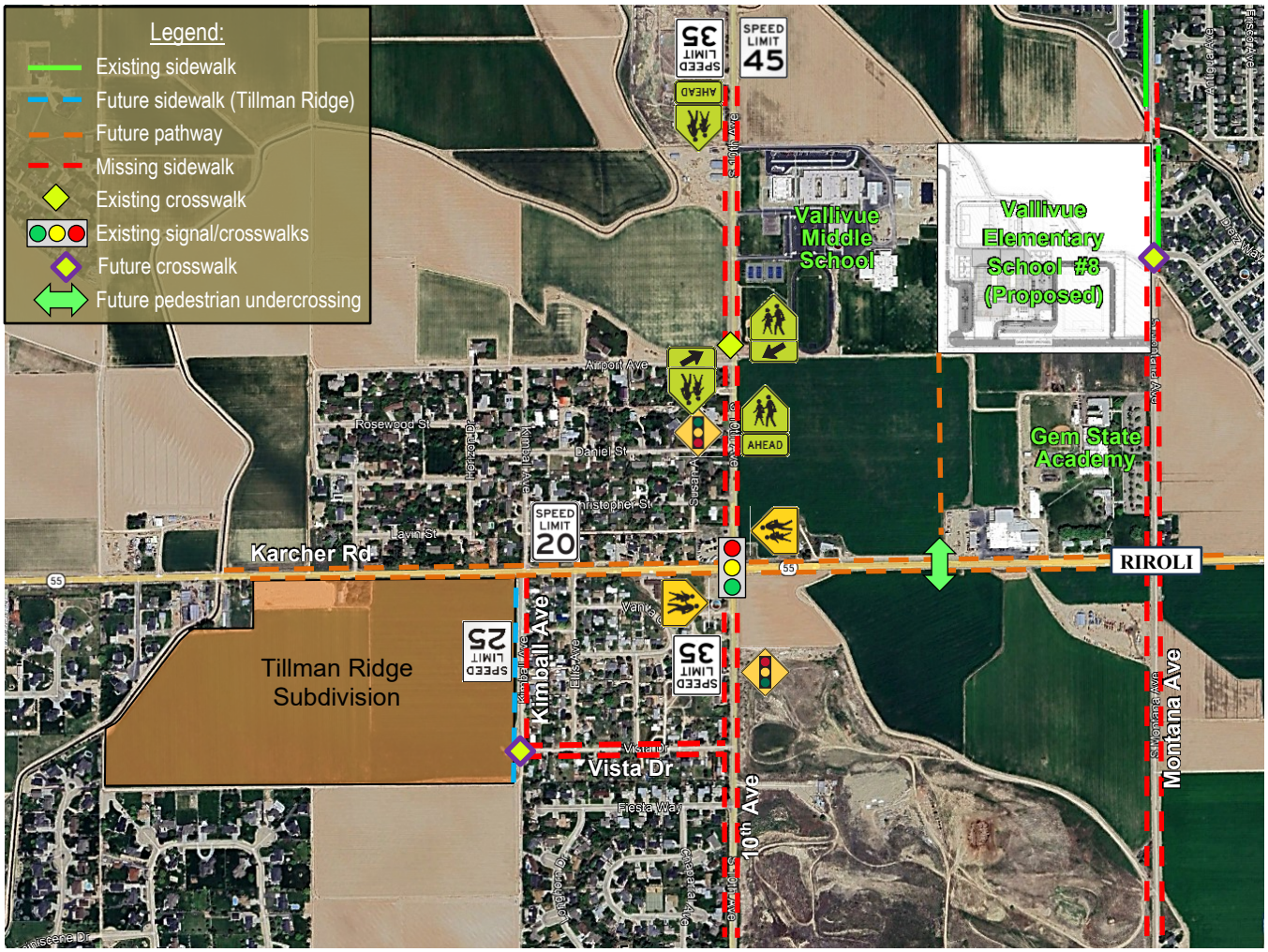
4.6 School Routes and Crossings

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

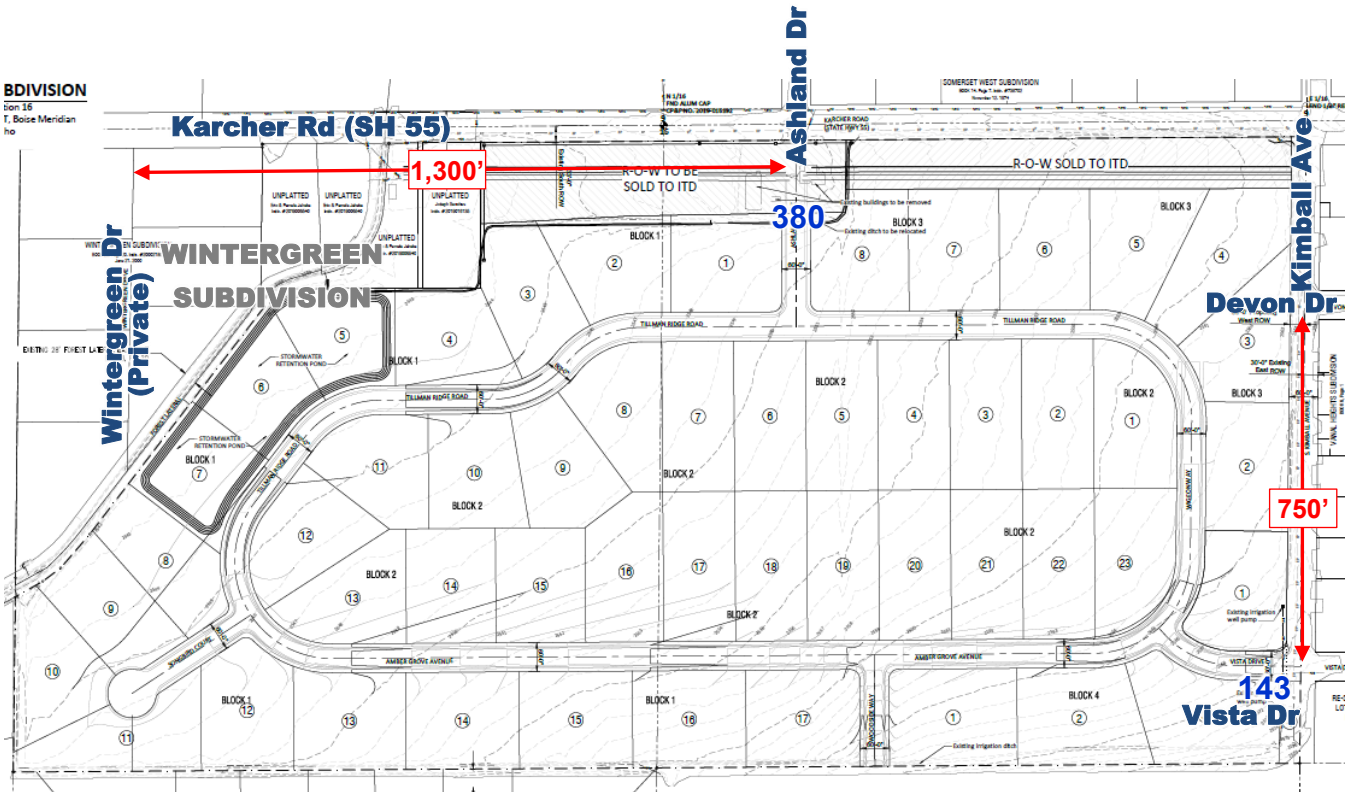
Site access spacing on Karcher Road (SH 55), a 55-mph principal arterial statewide route along the site frontage, is governed by ITD and is determined by IDAPA 39.03.42 *Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way*. The minimum spacing requirements on Karcher Road along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

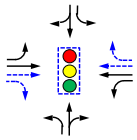


4.8 Alternate Site Access Scenario

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.

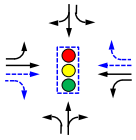
5.2 Background Traffic

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.

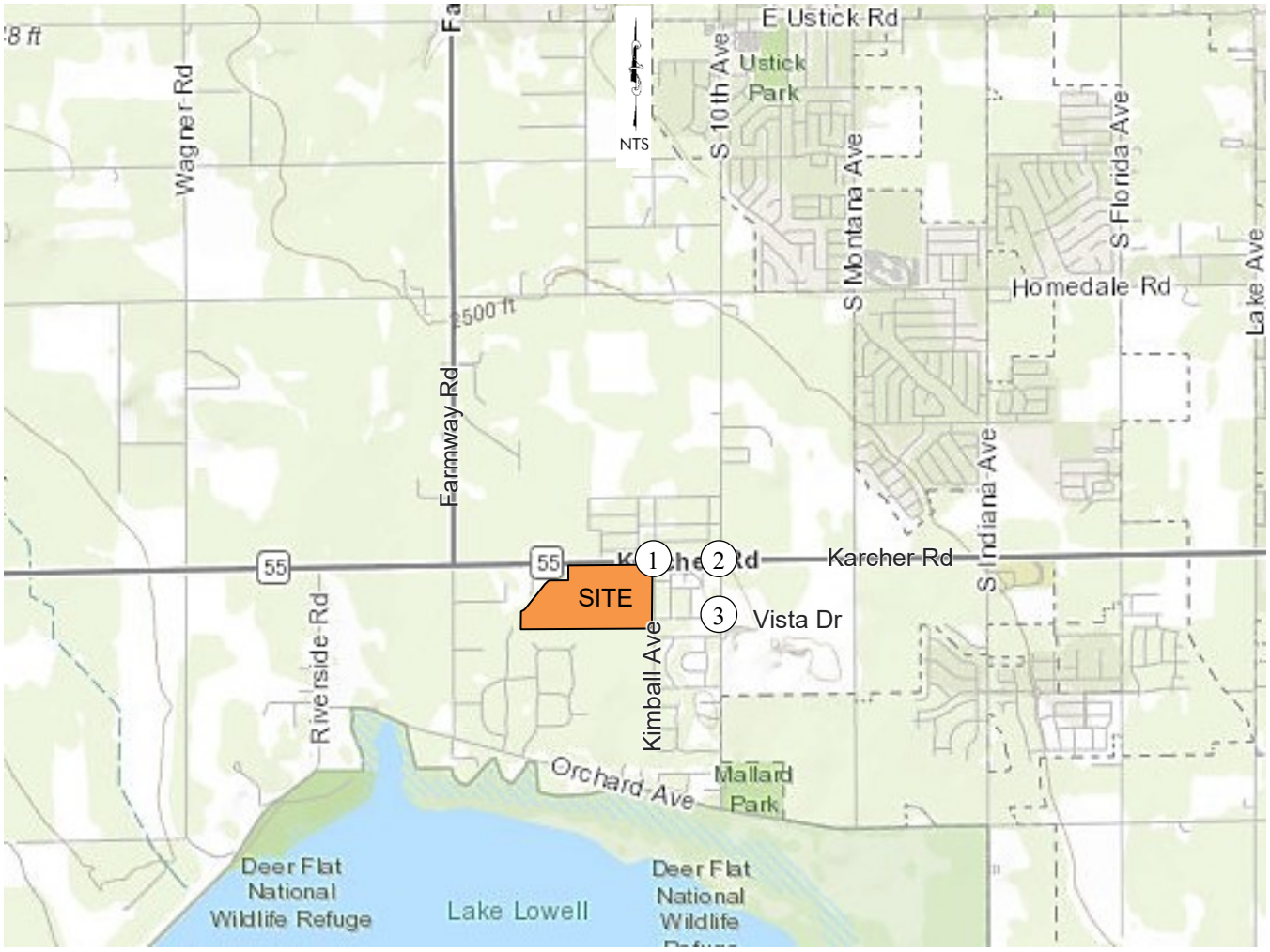
Table 5.1 – Intersection Operations – 2032 Horizon Year Background Traffic

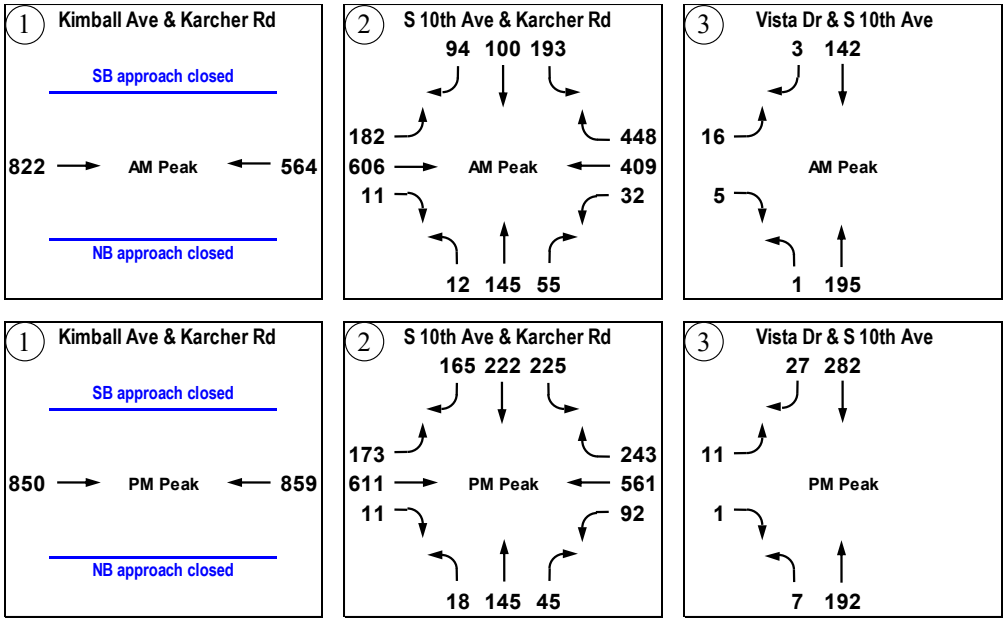
Intersection		Control / Lane SH 55 Improvements	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Kimball Ave and Karcher Rd	Intersection closed with SH 55 corridor improvements							
2	S 10th Ave and Karcher Rd		Intersection	C	25	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.

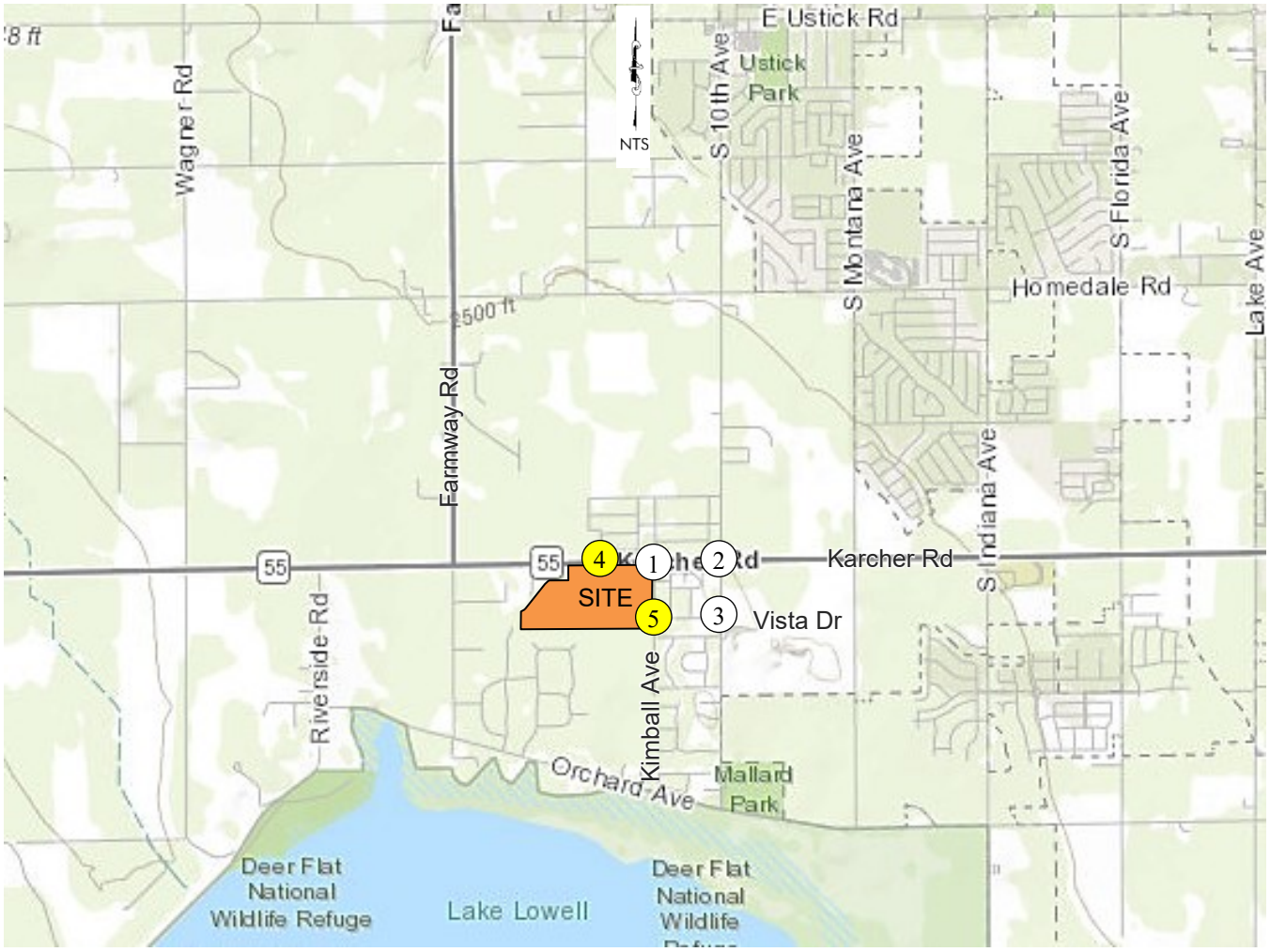
6.3 Total Traffic

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



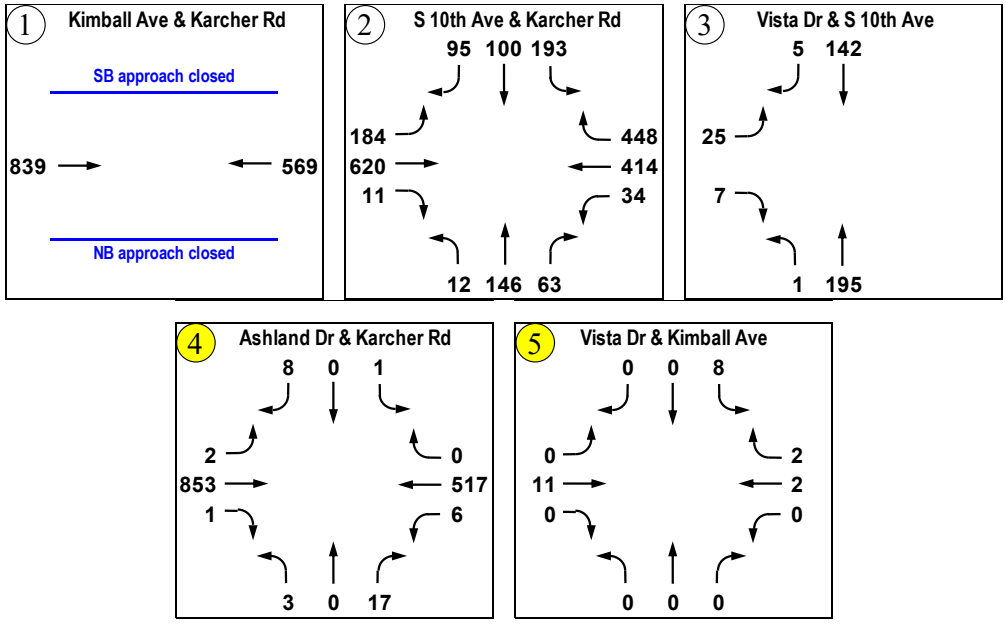
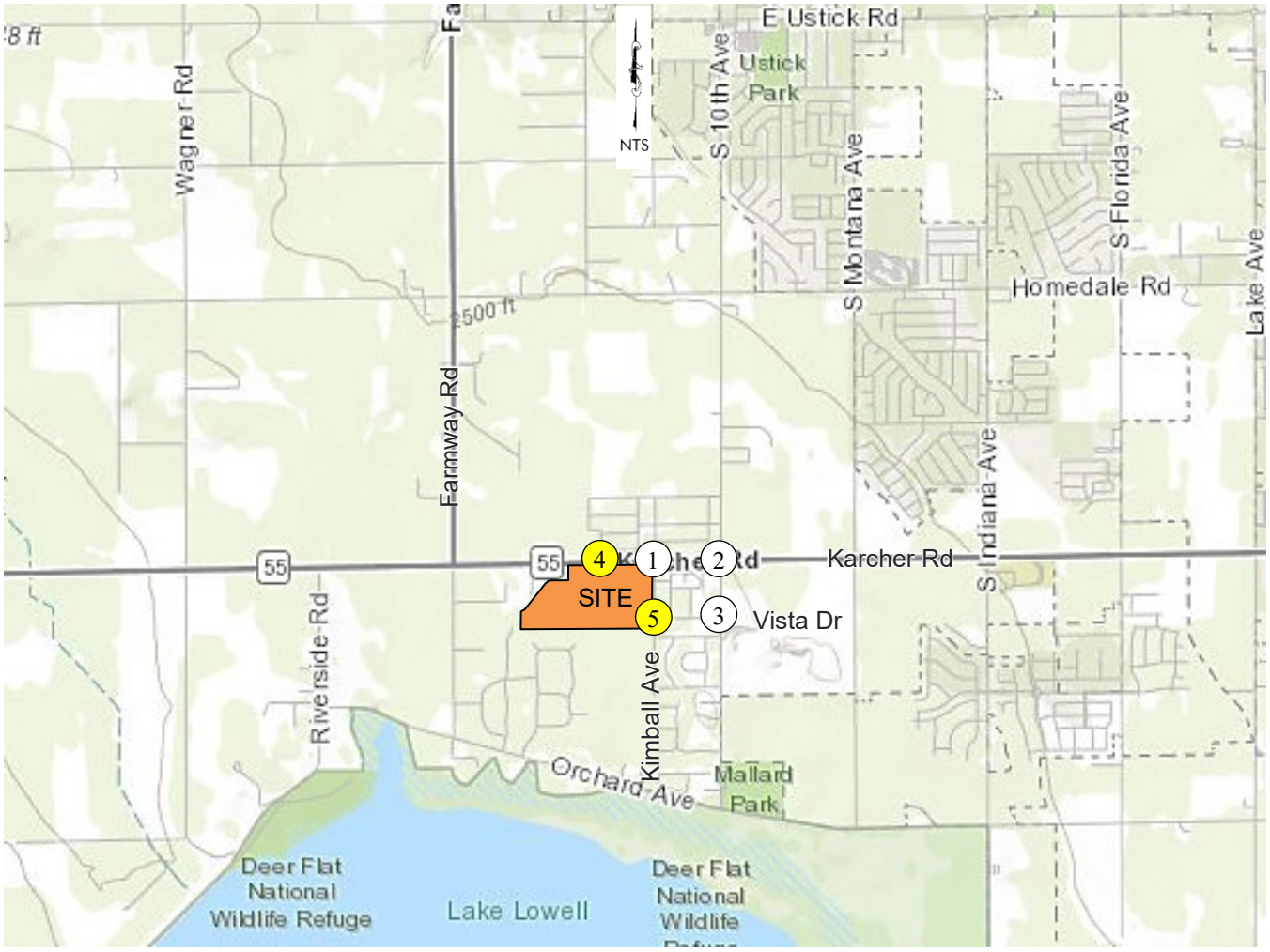
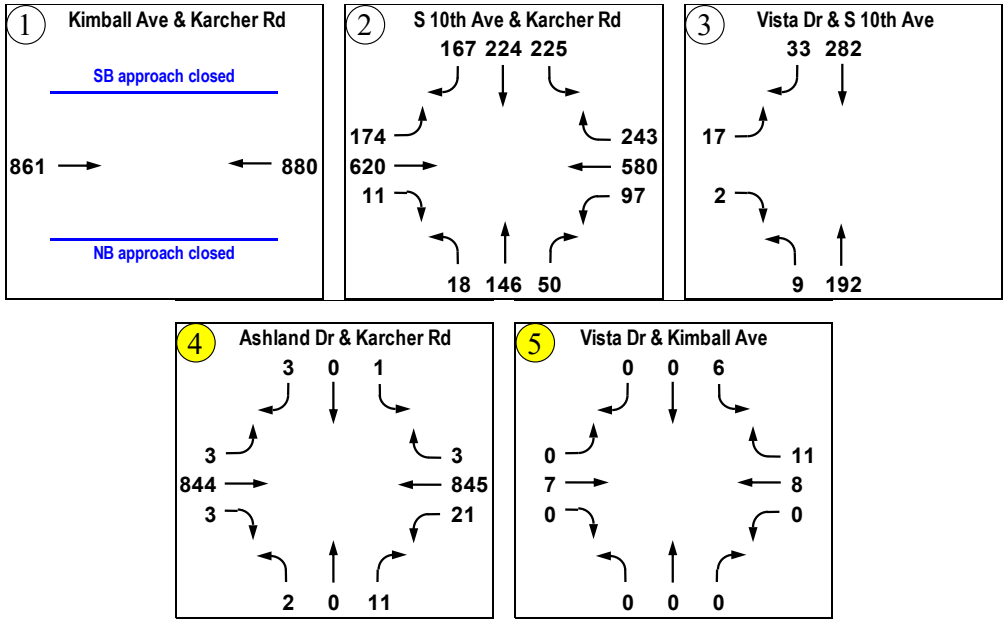


Figure 6.2 – 2032 Horizon Year PM Peak Hour Total Traffic

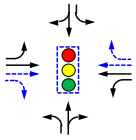
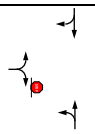
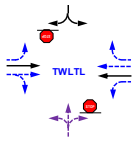




6.4 Intersection Operations

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 SH 55 Improvements 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.

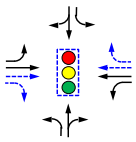
6.7 Alternate Site Access Scenario

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

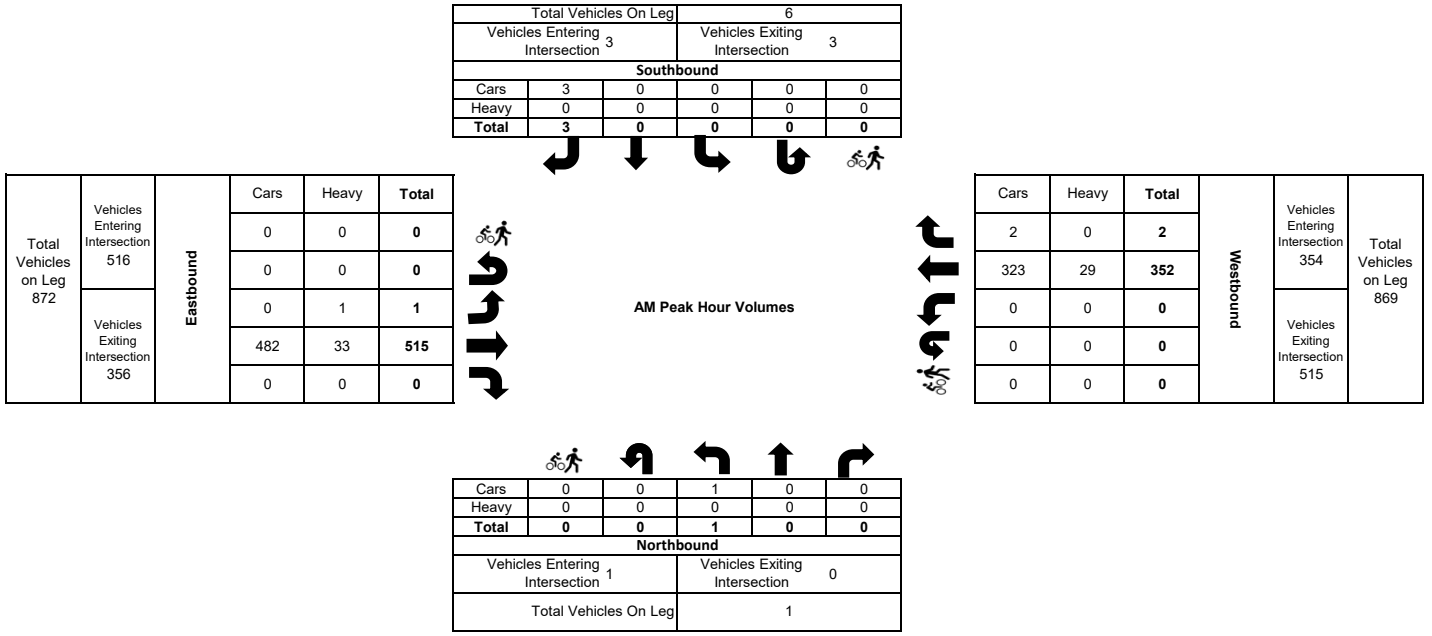
Time	Southbound Kimball Ave						Westbound Karcher Rd						Northbound Kimball Ave						Eastbound Karcher Rd						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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**

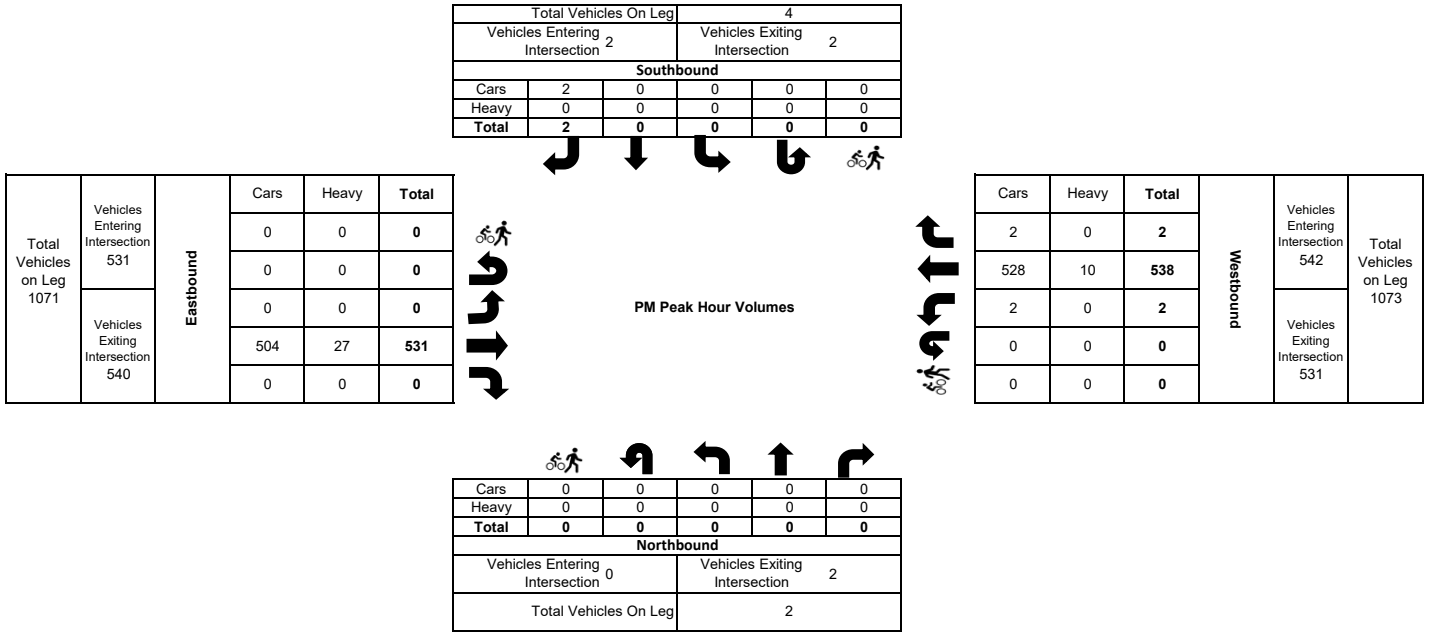
Kimball Ave & Karcher Rd
Caldwell, Idaho
Thursday, November 14, 2024
AM Peak Hour

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

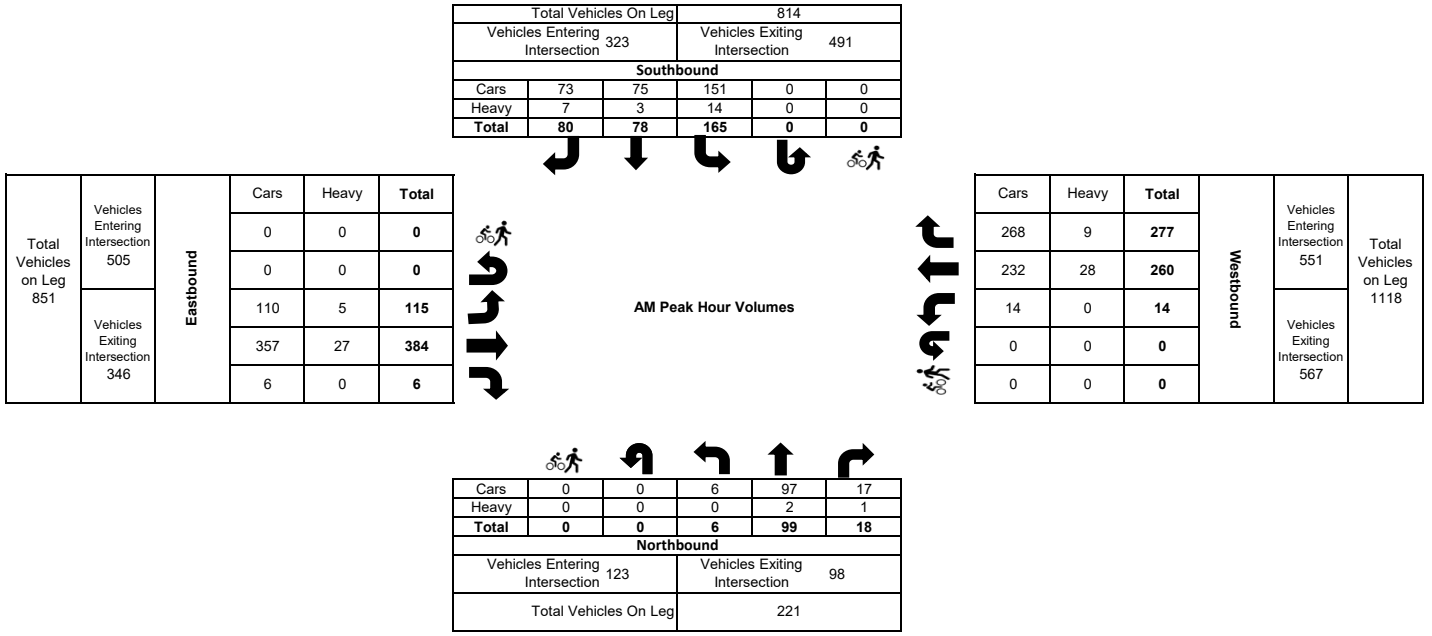
Time	Southbound S 10th Ave						Westbound Karcher Rd						Northbound S 10th Ave						Eastbound Karcher Rd						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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**

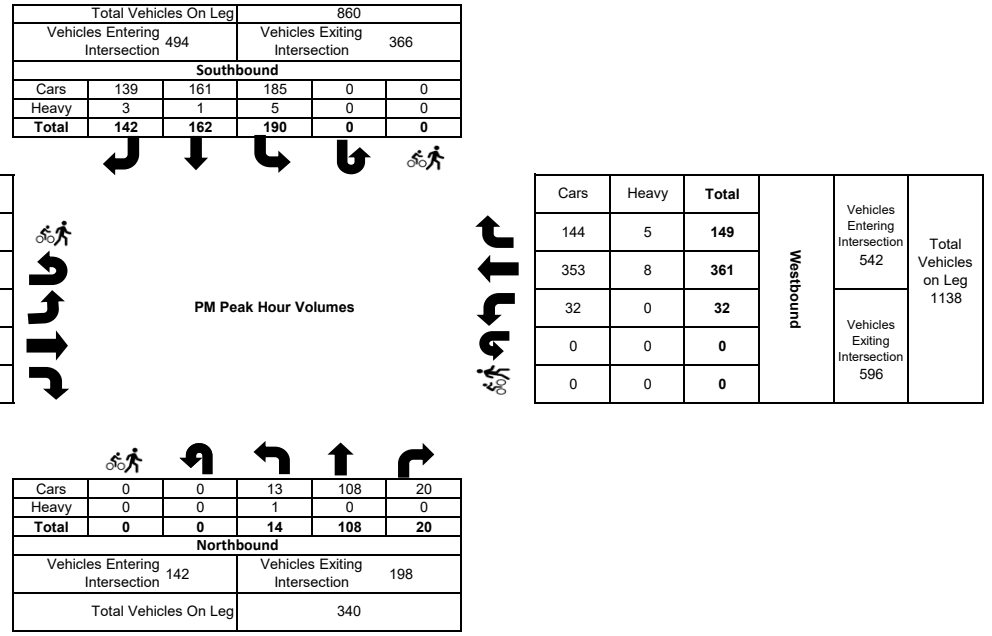
S 10th Ave & Karcher Rd
Caldwell, Idaho
Thursday, November 14, 2024
AM Peak Hour

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

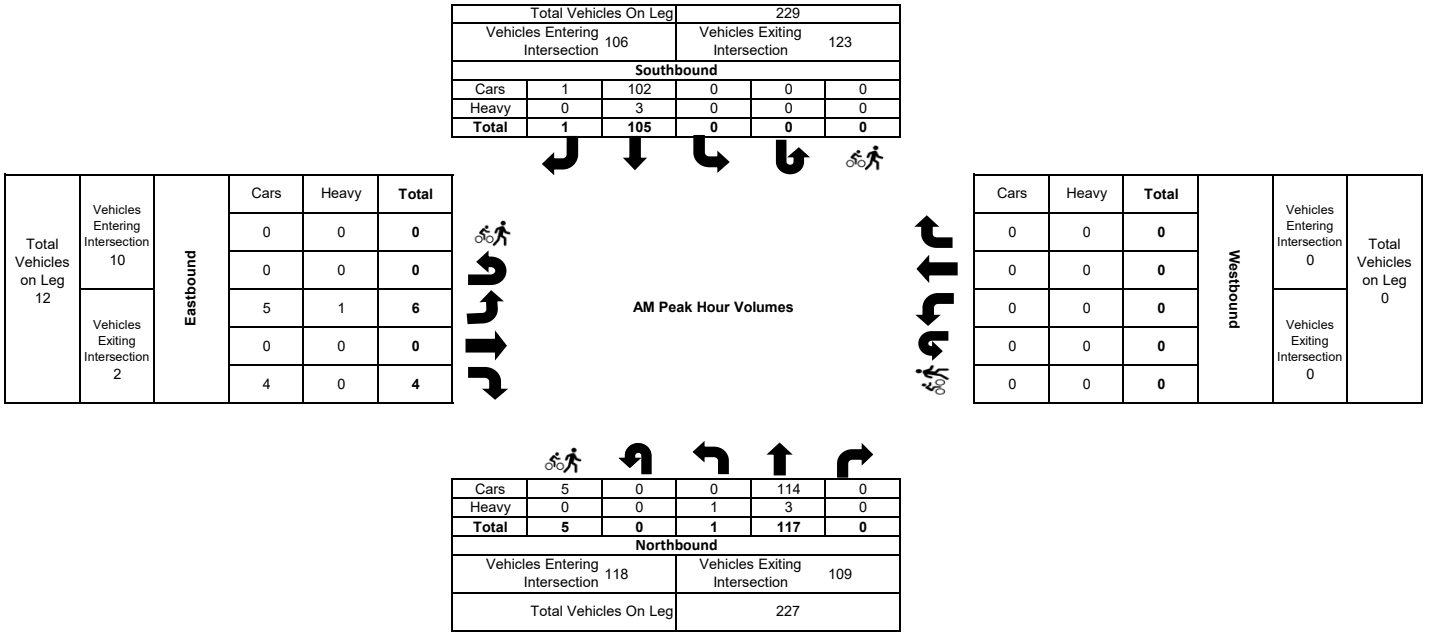
Time	Southbound S 10th Ave						Westbound Vista Dr						Northbound S 10th Ave						Eastbound Vista Dr						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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

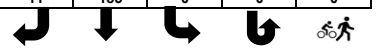
Time	Southbound S 10th Ave						Westbound Vista Dr						Norhtbound S 10th Ave						Eastbound Vista Dr						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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%**

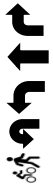
Total Vehicles On Leg			333		
Vehicles Entering Intersection	196		Vehicles Exiting Intersection	137	
Southbound					
Cars	11	185	0	0	0
Heavy	0	0	0	0	0
Total	**11**	**185**	**0**	**0**	**0**



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

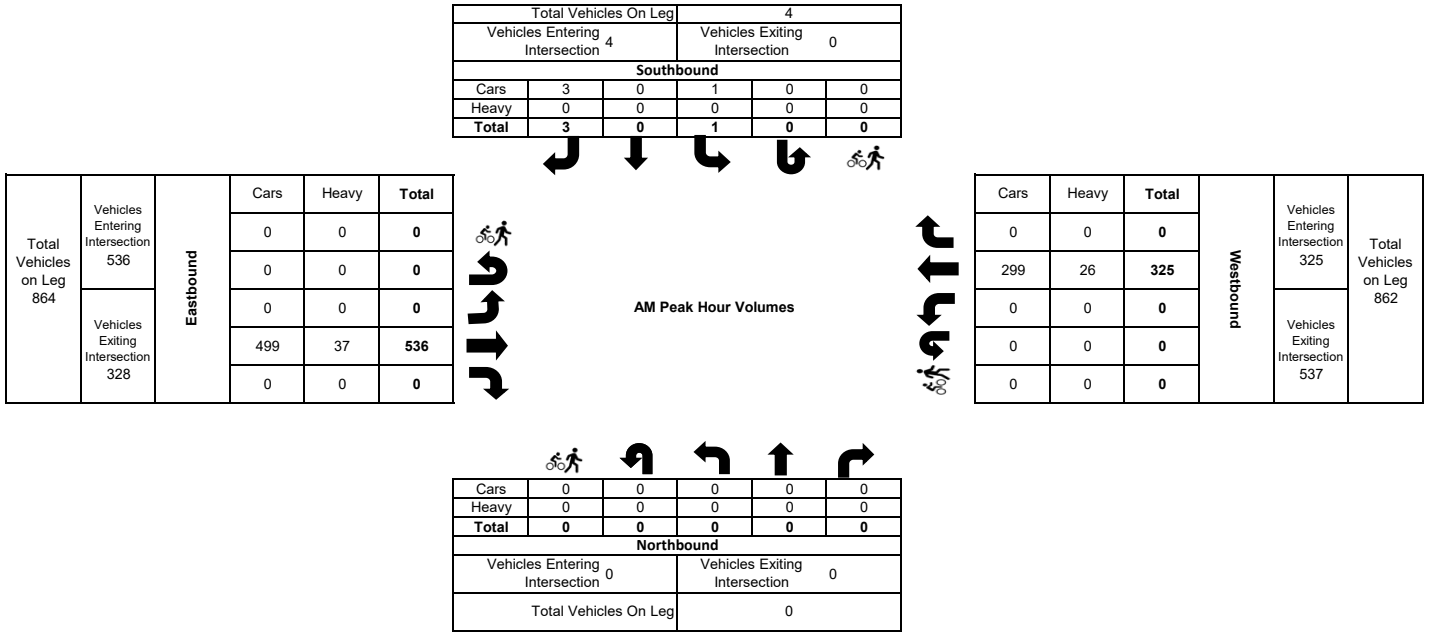
Time	Southbound Ashland Dr						Westbound Karcher Rd						Northbound Ashland Dr						Eastbound Karcher Rd						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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**

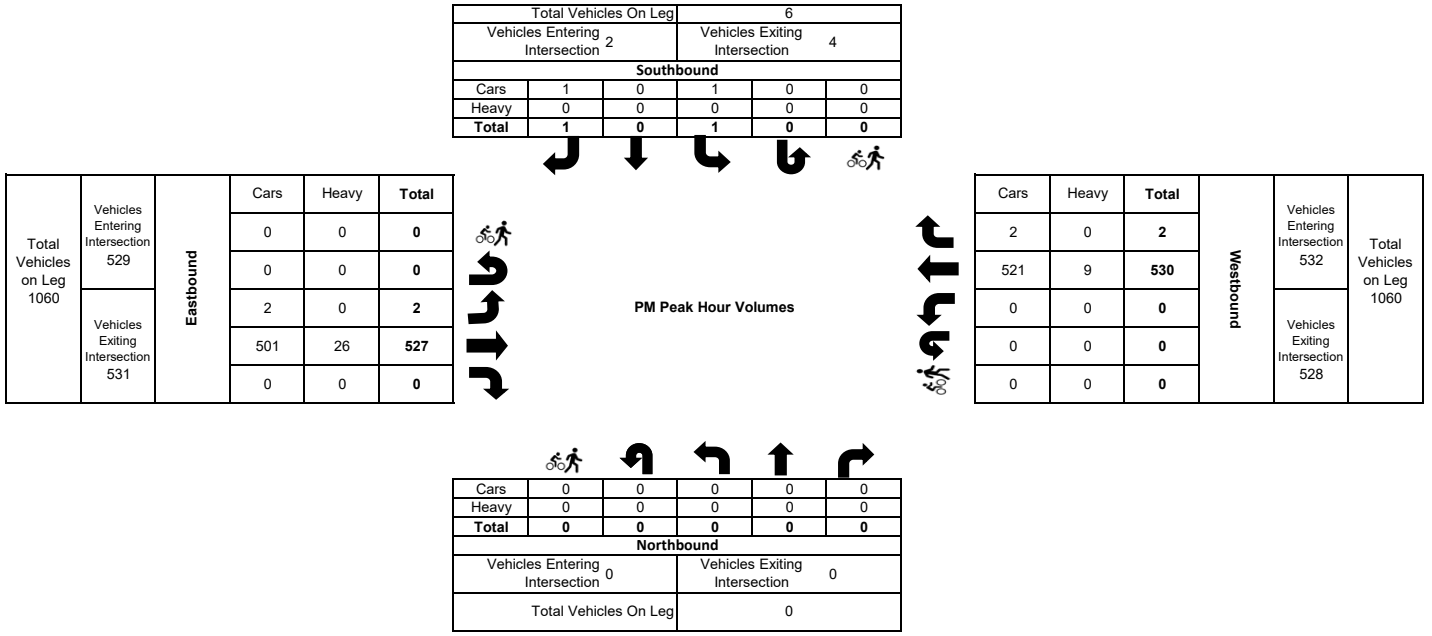
Ashland Dr & Karcher Rd
Caldwell, Idaho
Thursday, November 14, 2024
AM Peak Hour

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

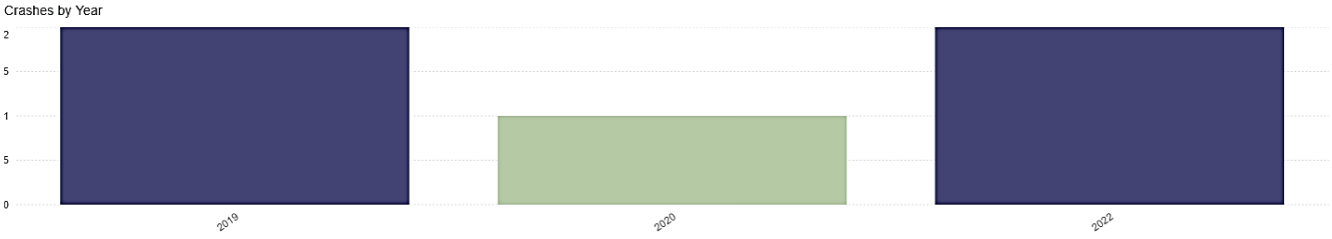
Time	Southbound Ashland Dr						Westbound Karcher Rd						Northbound Ashland Dr						Eastbound Karcher Rd						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach 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%**



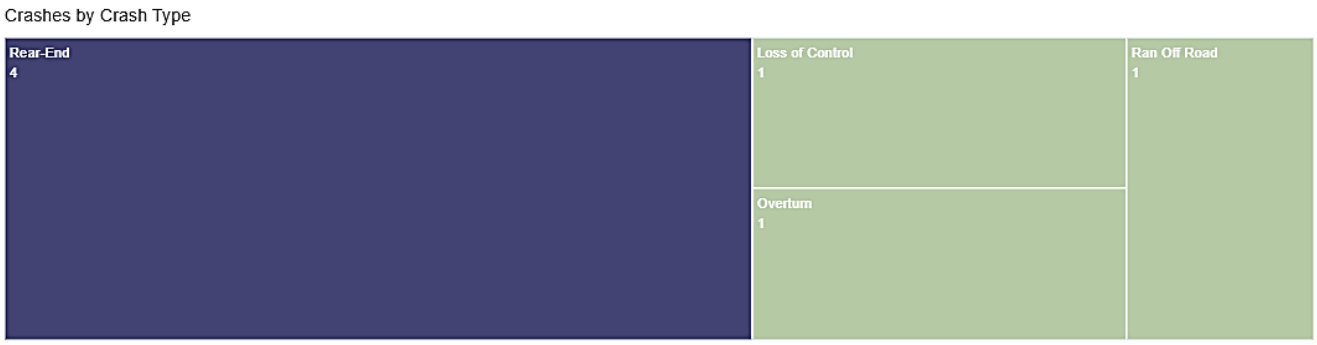
APPENDIX B: Intersection Crash Data

Kimball Road and Karcher Road Intersection 2019-2023 Crash Data





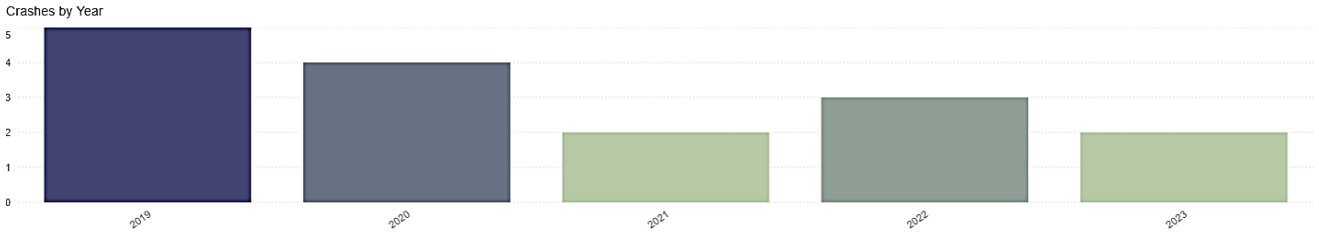
This chart shows the total # Crashes by Year



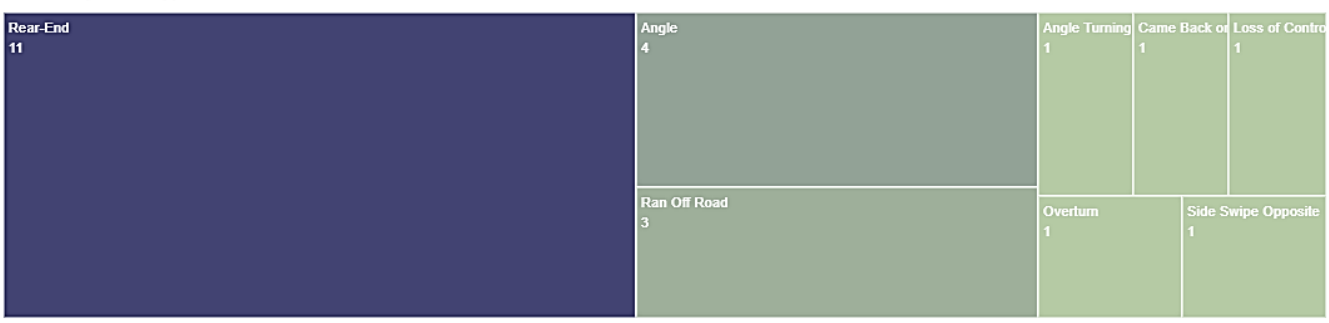
Contributing Circumstances (All)	Total Crashes	
Asleep, Drowsy, Fatigued	1	
Following Too Close	3	
Inattention	2	
None	5	

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





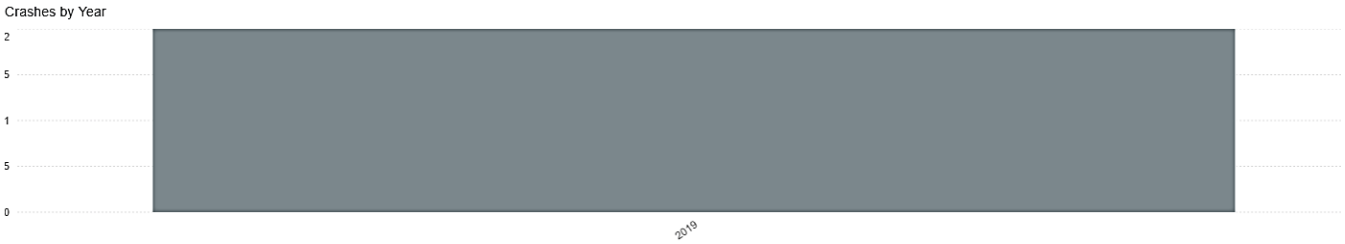
This chart shows the total # Crashes by Year



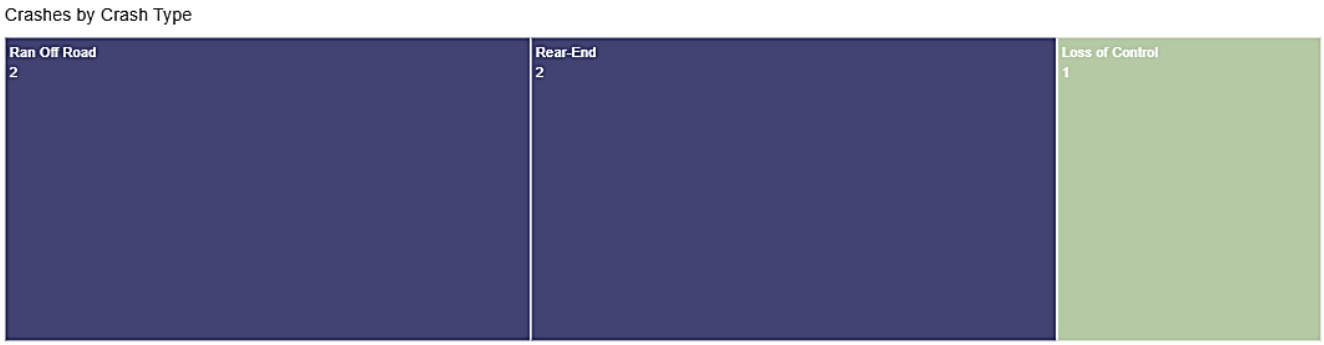
Contributing Circumstances (All)	Total Crashes	
Alcohol Impaired	3	
Asleep, Drowsy, Fatigued	1	
Drug Impaired	1	
Emotional – Depressed, Angry, …	1	
Exceeded Posted Speed	1	
Failed to Maintain Lane	1	
Failed to Obey Signal	4	
Following Too Close	6	
Foot Slipped Off or Caught On …	2	
Improper Overtaking	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	-	-

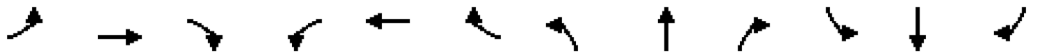
Intersection	
Int Delay, s/veh	0

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



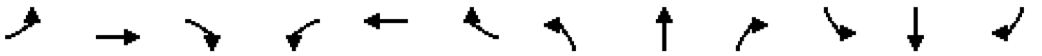
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	386	4	32	361	149	14	108	20	190	162	142
Future Volume (veh/h)	109	386	4	32	361	149	14	108	20	190	162	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	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

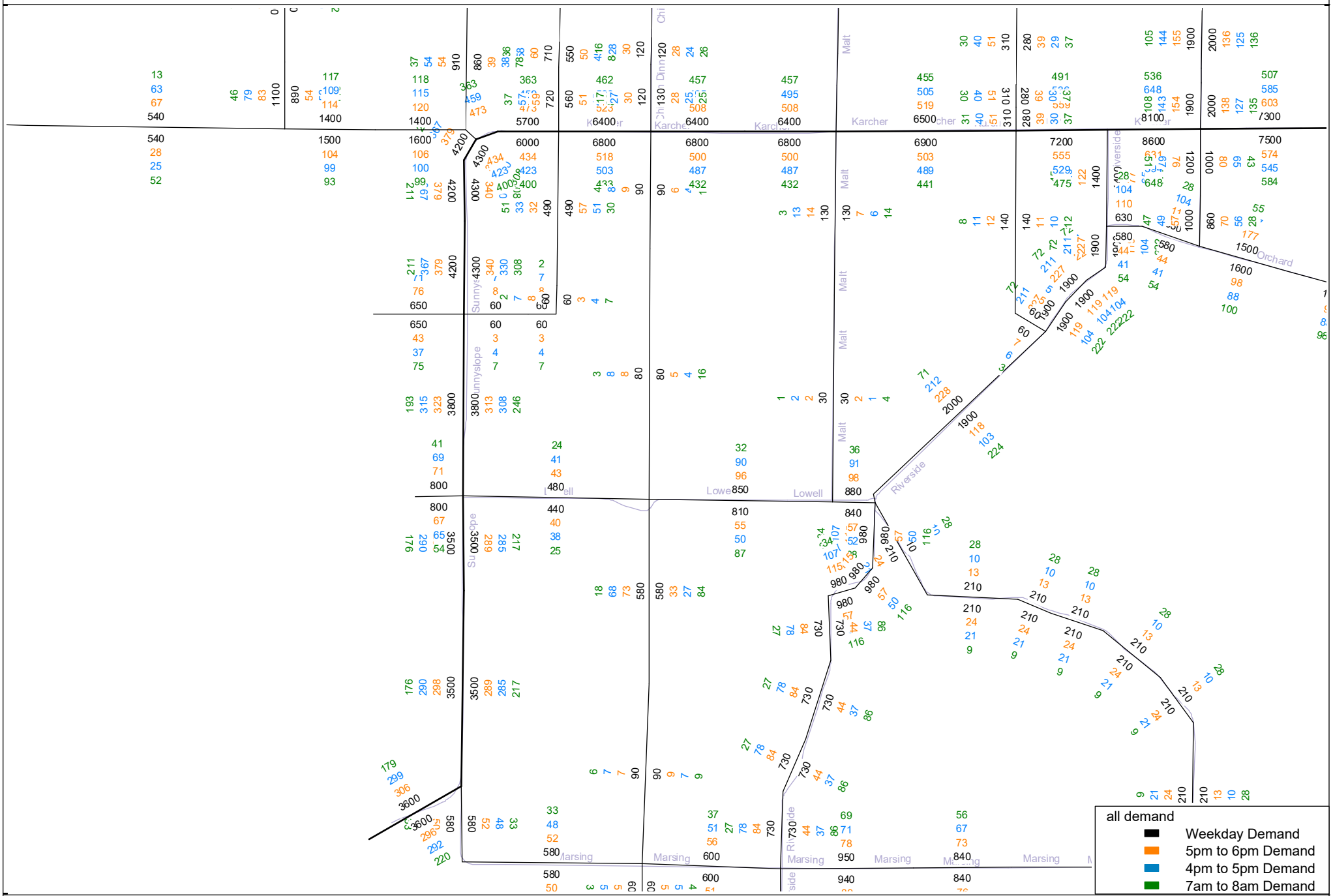
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1	6	133	185	11
Future Vol, veh/h	4	1	6	133	185	11
Conflicting Peds, #/hr	6	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	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



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New Regional Model calibrated to 2011/12 conditions - completed in January 2015

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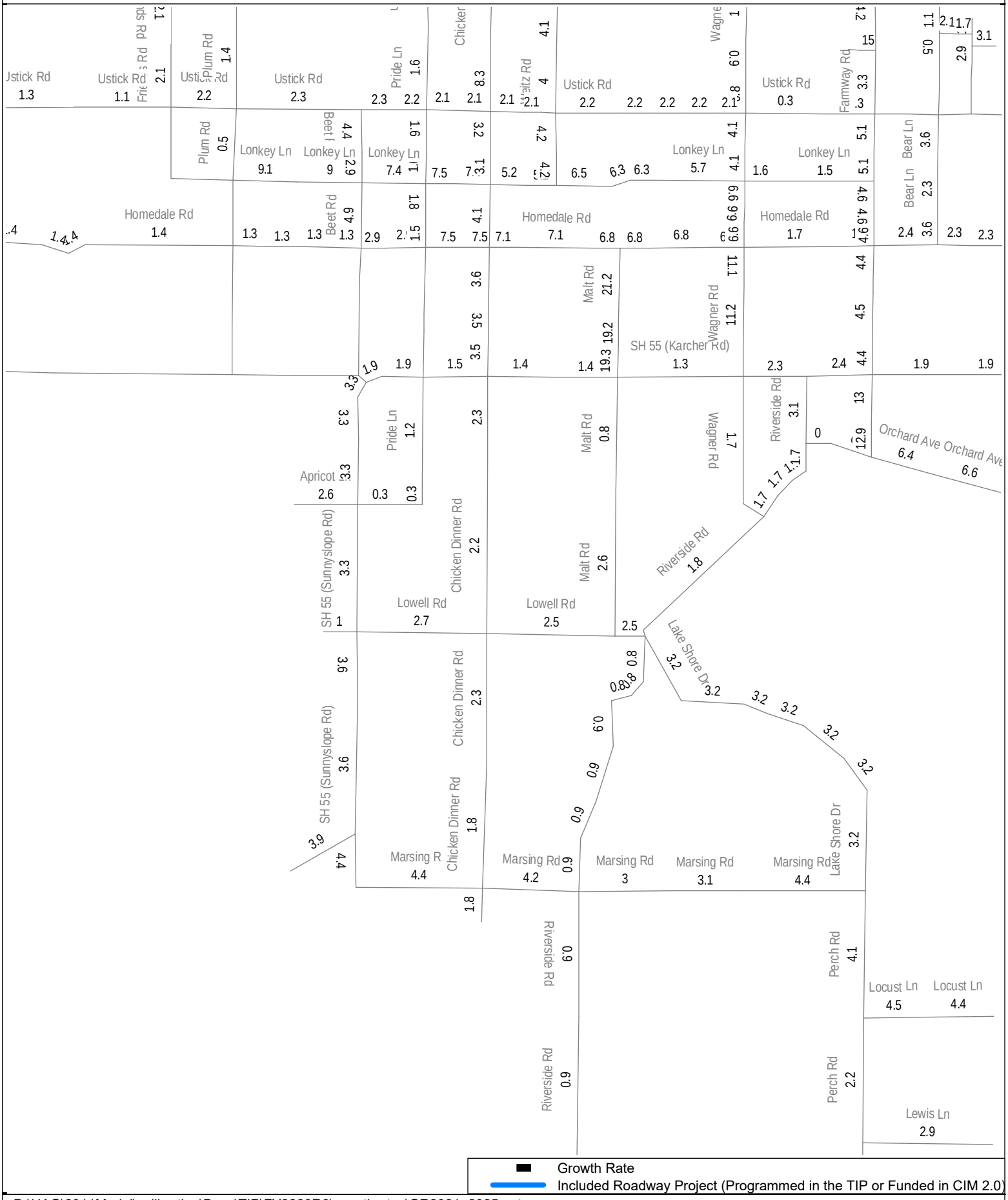
2021 Peak Hour to 2025 Peak Hour Compounded Annual Growth Rates
7/20/2021



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

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COMPASS reserves the right to rerun the model for any reason deemed necessary.

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Exhibit A.6 - 68
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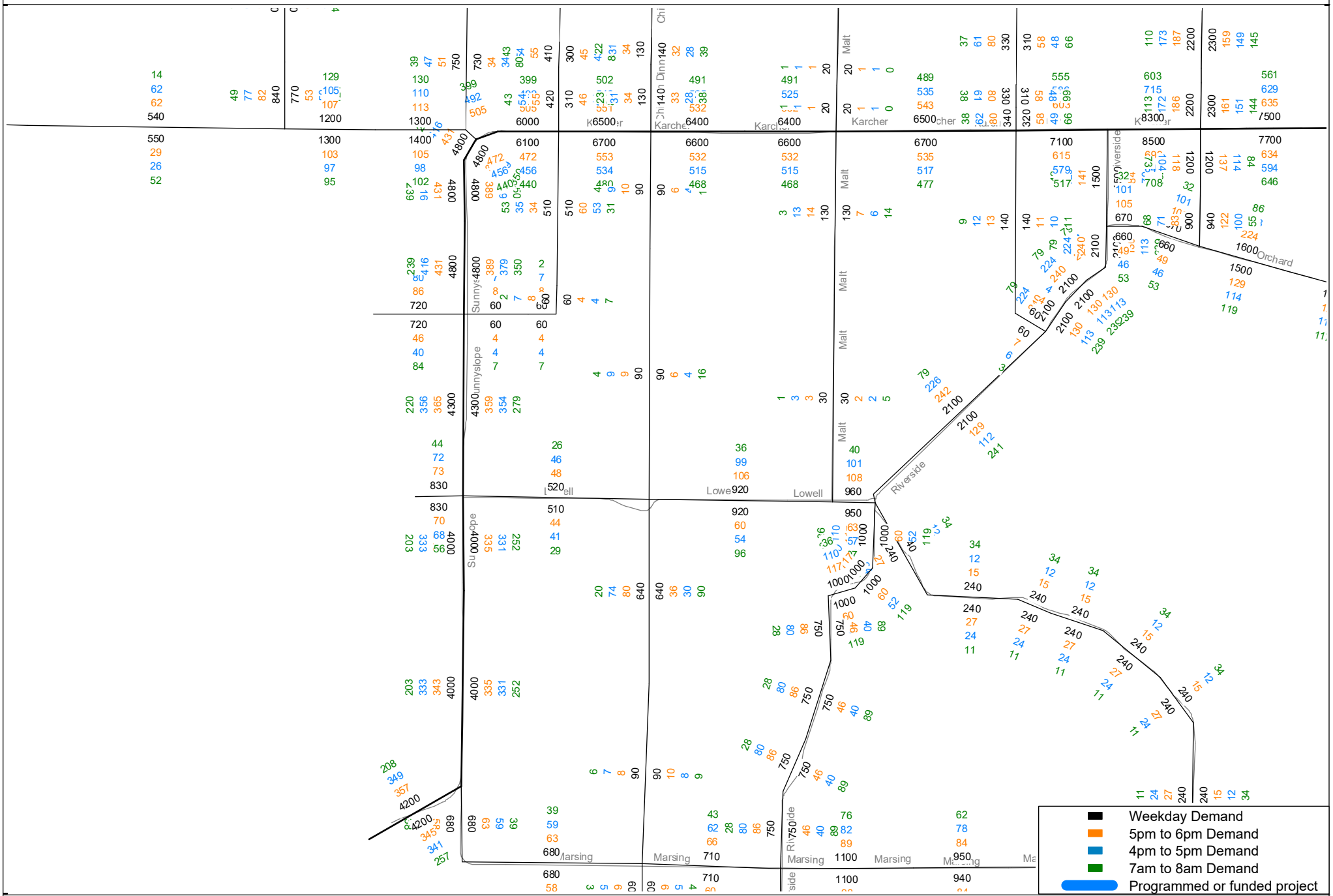
2025 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021



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New Regional Model calibrated to 2011/12 conditions - completed in January 2015

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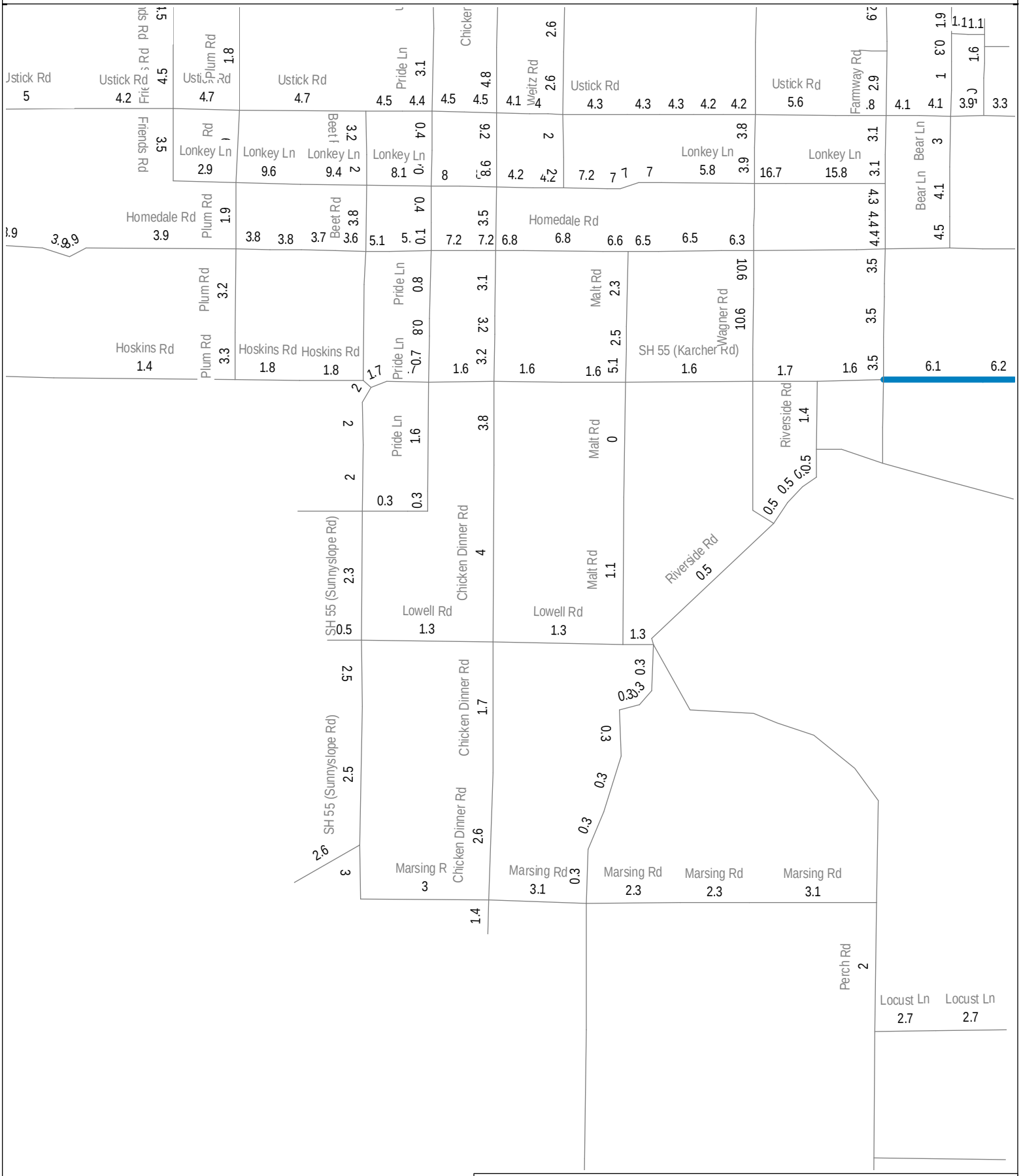
2025 Peak Hour to 2030 Peak Hour Compounded Annual Growth Rates
7/20/2021



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

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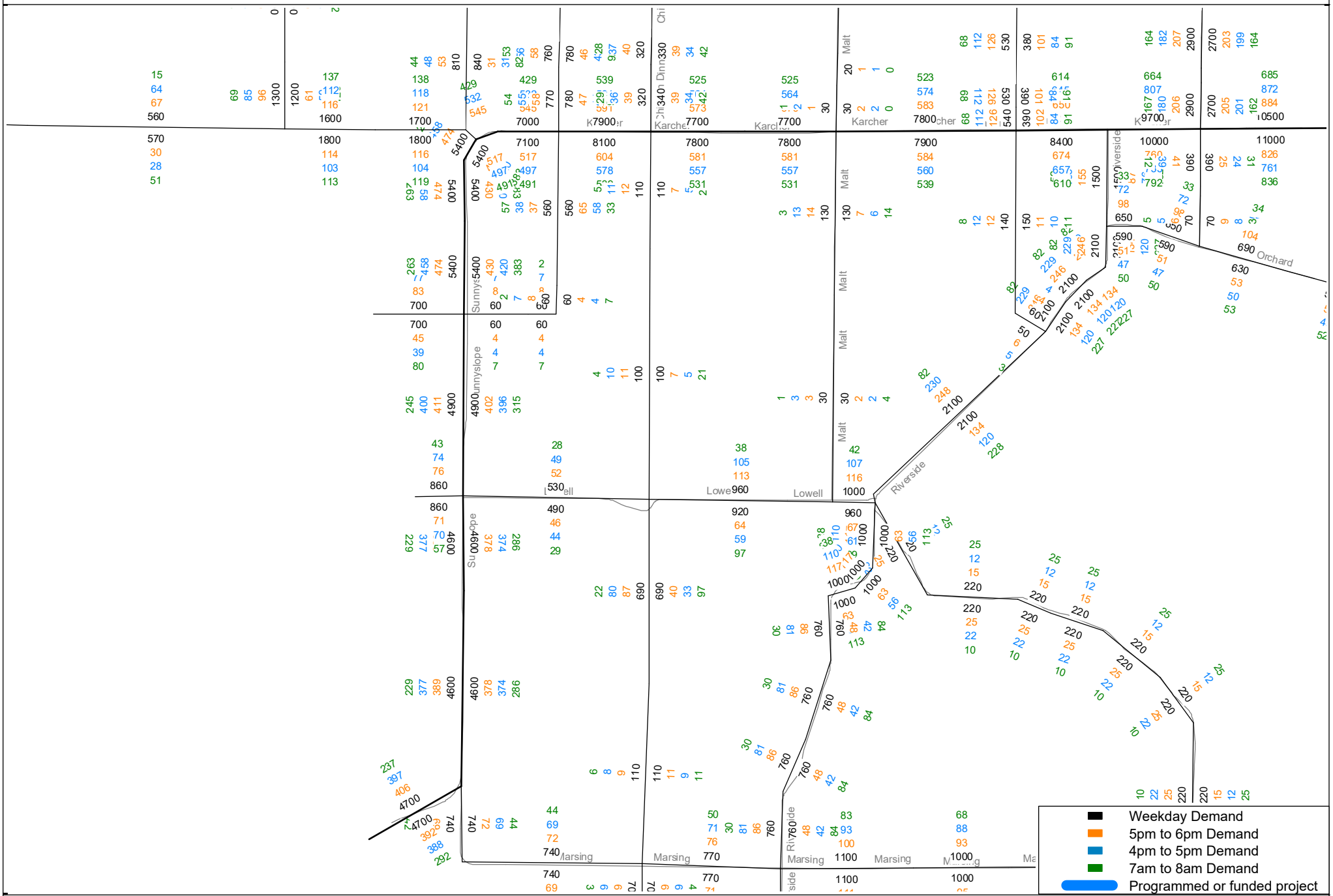
2030 Build: Daily, 5pm to 6pm Peak, 4pm to 5pm Peak and 7am to 8am Peak Demand
7/20/2021



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Roadway assumptions per CIM 2040 2.0 (Dec 2018) and reconciled demographic data set as of April 2019

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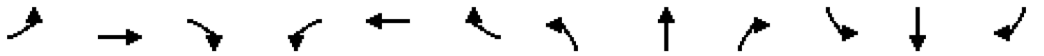
APPENDIX E: 2027 Background Synchro Reports



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			

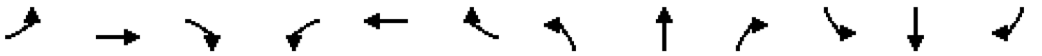
Intersection	
Int Delay, s/veh	0.6

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			

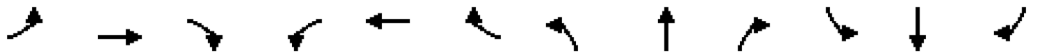
Intersection	
Int Delay, s/veh	0.4

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	-	-



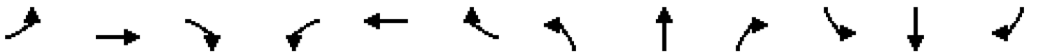
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	451	8	27	306	336	11	134	53	175	92	85
Future Volume (veh/h)	136	451	8	27	306	336	11	134	53	175	92	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	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

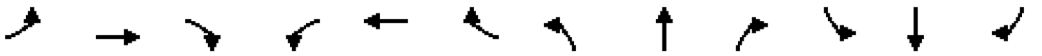
Notes

* 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

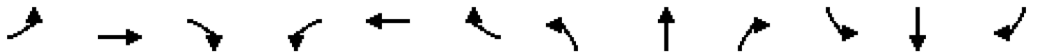
Notes

* 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	

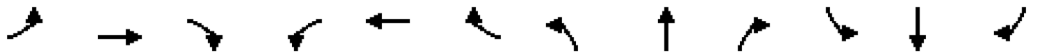
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	16.1	7.5	29.9	6.2	24.5	12.7	24.6
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	9.7	* 30	9.8	49.4	9.8	29.7	9.7	49.4
Max Q Clear Time (g_c+I1), s	9.6	10.0	3.2	9.8	2.5	8.5	7.8	17.2
Green Ext Time (p_c), 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	-	-

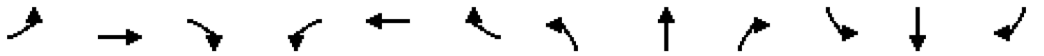
Intersection	
Int Delay, s/veh	0.3

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	

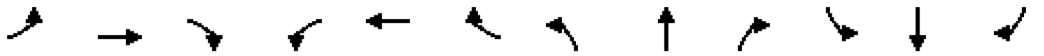
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	13.1	8.8	17.3	6.3	19.7	10.4	15.6
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	9.7	* 30	9.8	49.4	9.8	29.7	9.7	49.4
Max Q Clear Time (g_c+I1), s	8.0	7.2	4.5	8.5	2.5	12.2	5.9	8.1
Green Ext Time (p_c), 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	-	-

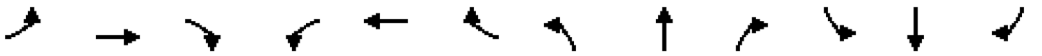
Intersection	
Int Delay, s/veh	0.3

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



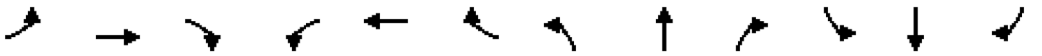
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	465	8	29	311	336	11	135	61	175	92	86
Future Volume (veh/h)	138	465	8	29	311	336	11	135	61	175	92	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	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			

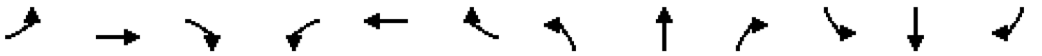
Intersection	
Int Delay, s/veh	0.4

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			

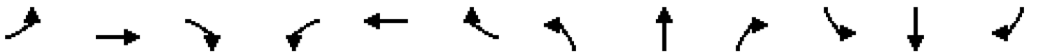
Intersection	
Int Delay, s/veh	0.4

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			

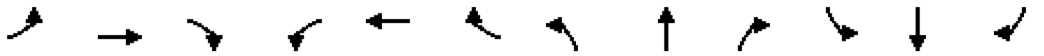
Intersection	
Int Delay, s/veh	1.5

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	

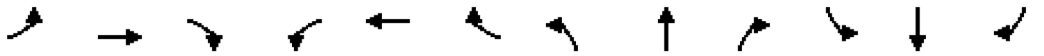
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	13.5	9.1	16.5	6.5	20.0	10.4	15.3
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	9.7	* 30	9.8	49.4	9.8	29.7	9.7	49.4
Max Q Clear Time (g_c+I1), s	8.0	7.5	5.0	8.5	2.6	12.1	5.9	7.9
Green Ext Time (p_c), 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	

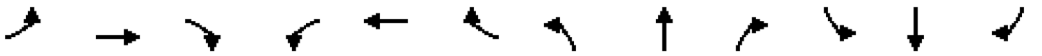
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	18.1	8.0	39.0	6.5	29.2	16.7	30.3
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	29.7	* 40	9.8	49.4	9.8	59.7	29.7	29.4
Max Q Clear Time (g_c+I1), s	12.2	12.0	3.6	14.1	2.6	10.6	11.3	23.2
Green Ext 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			

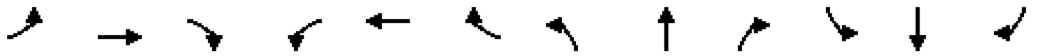
Intersection	
Int Delay, s/veh	0.7

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	

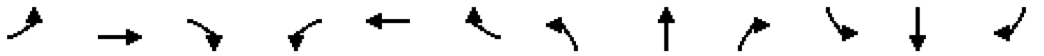
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	14.5	9.5	23.4	6.6	23.3	13.4	19.6
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	24.7	* 35	9.8	59.4	9.8	49.7	24.7	44.4
Max Q Clear Time (g_c+I1), s	10.0	8.5	5.3	12.1	2.7	15.4	8.2	11.5
Green Ext Time (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

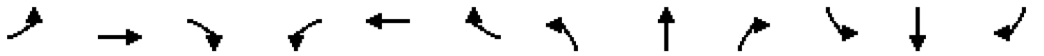
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1	7	192	282	27
Future Vol, veh/h	11	1	7	192	282	27
Conflicting Peds, #/hr	6	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	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	

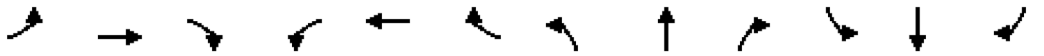
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	19.0	8.2	40.9	6.5	30.5	17.2	31.9
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	24.7	* 35	9.8	59.4	9.8	49.7	24.7	44.4
Max Q Clear Time (g_c+I1), s	12.6	12.9	3.8	14.9	2.6	11.0	11.8	23.8
Green Ext 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	-	-

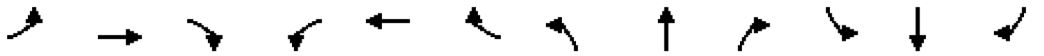
Intersection	
Int Delay, s/veh	0.3

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	

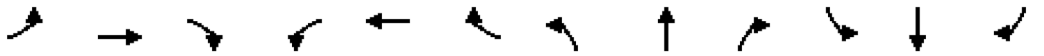
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	15.0	9.9	24.0	6.6	24.0	13.6	20.3
Change Period (Y+Rc), s	5.3	* 5.3	5.2	5.6	5.2	5.3	5.3	5.6
Max Green Setting (Gmax), s	24.7	* 35	9.8	59.4	9.8	49.7	24.7	44.4
Max Q Clear Time (g_c+I1), s	10.2	9.0	5.6	12.5	2.7	15.8	8.4	12.1
Green Ext Time (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	-	-

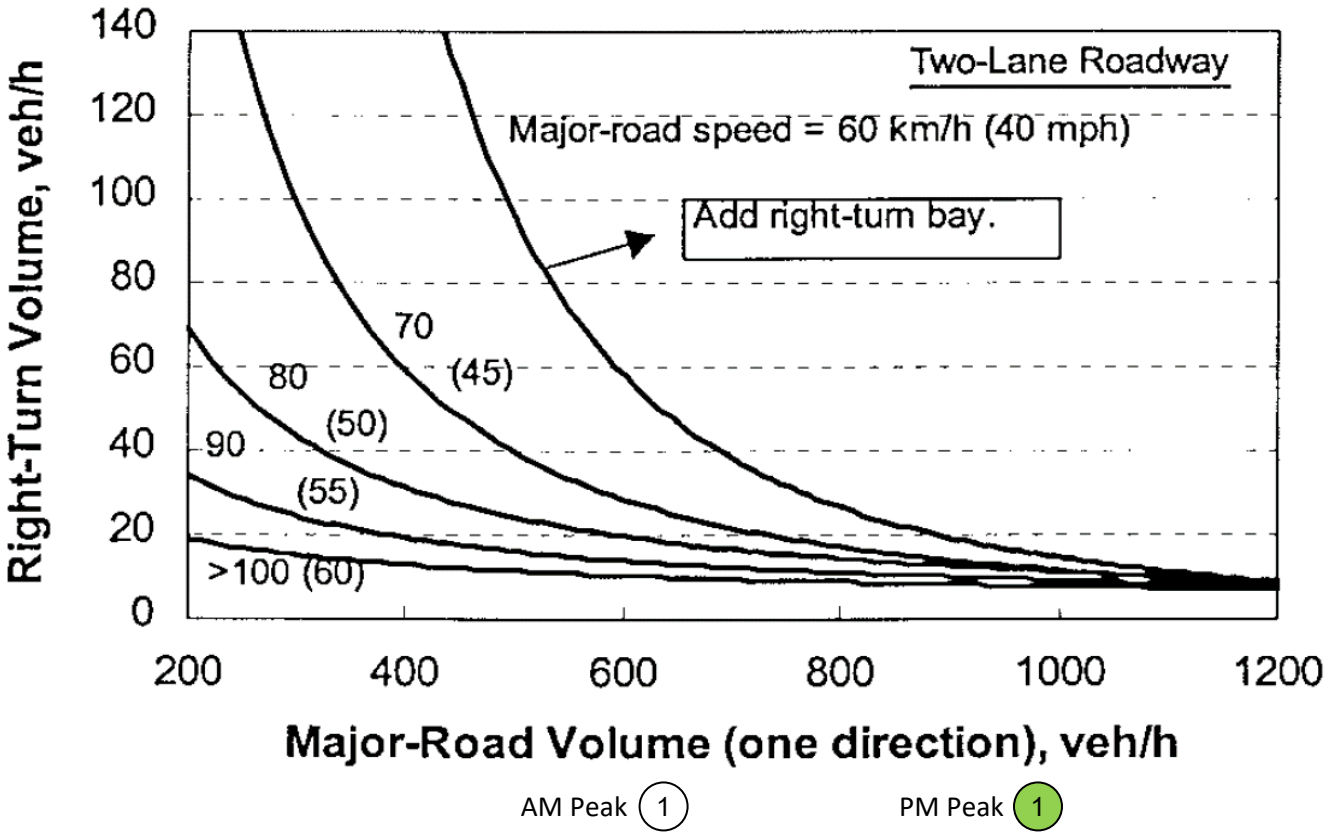
APPENDIX I: Turn Lane Guidelines Worksheets

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



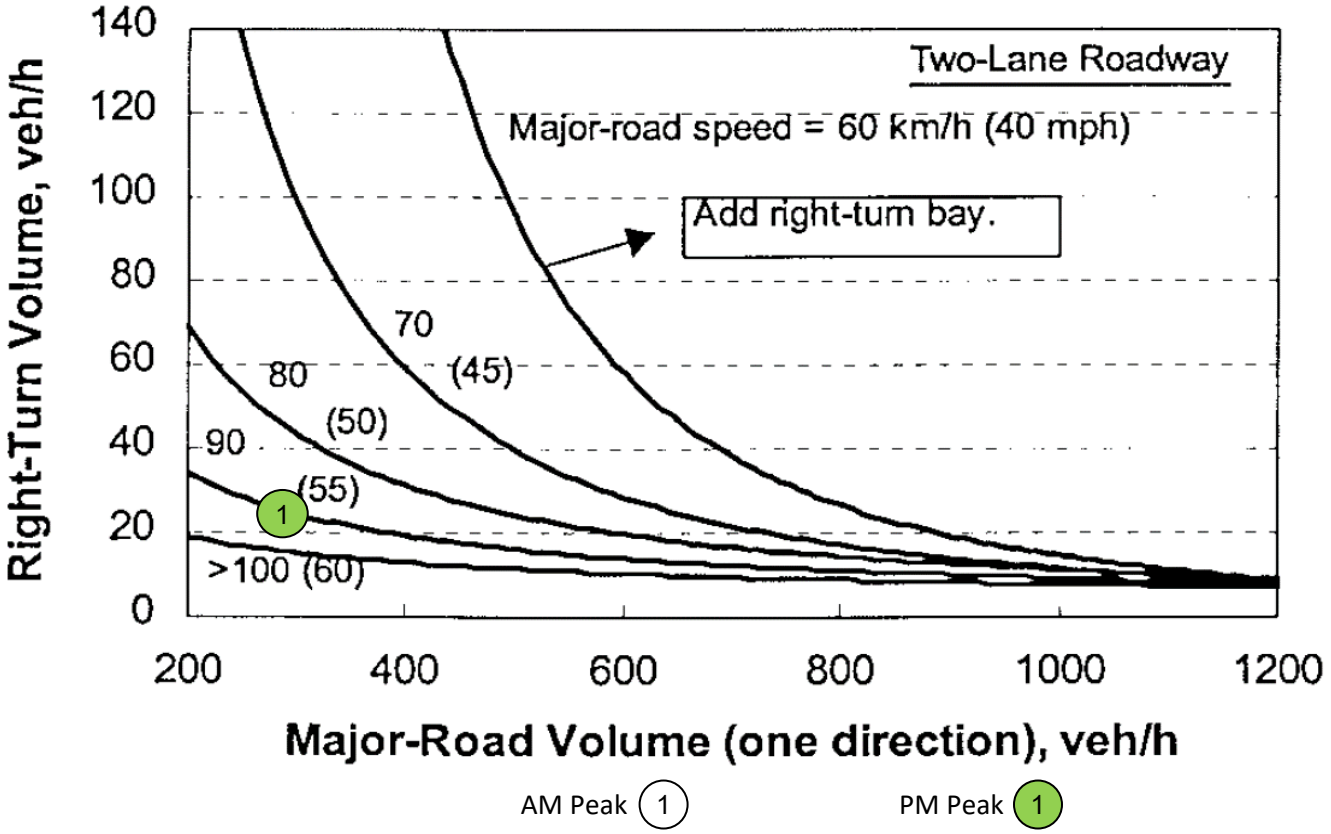
AM Peak (1) PM Peak (1)

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

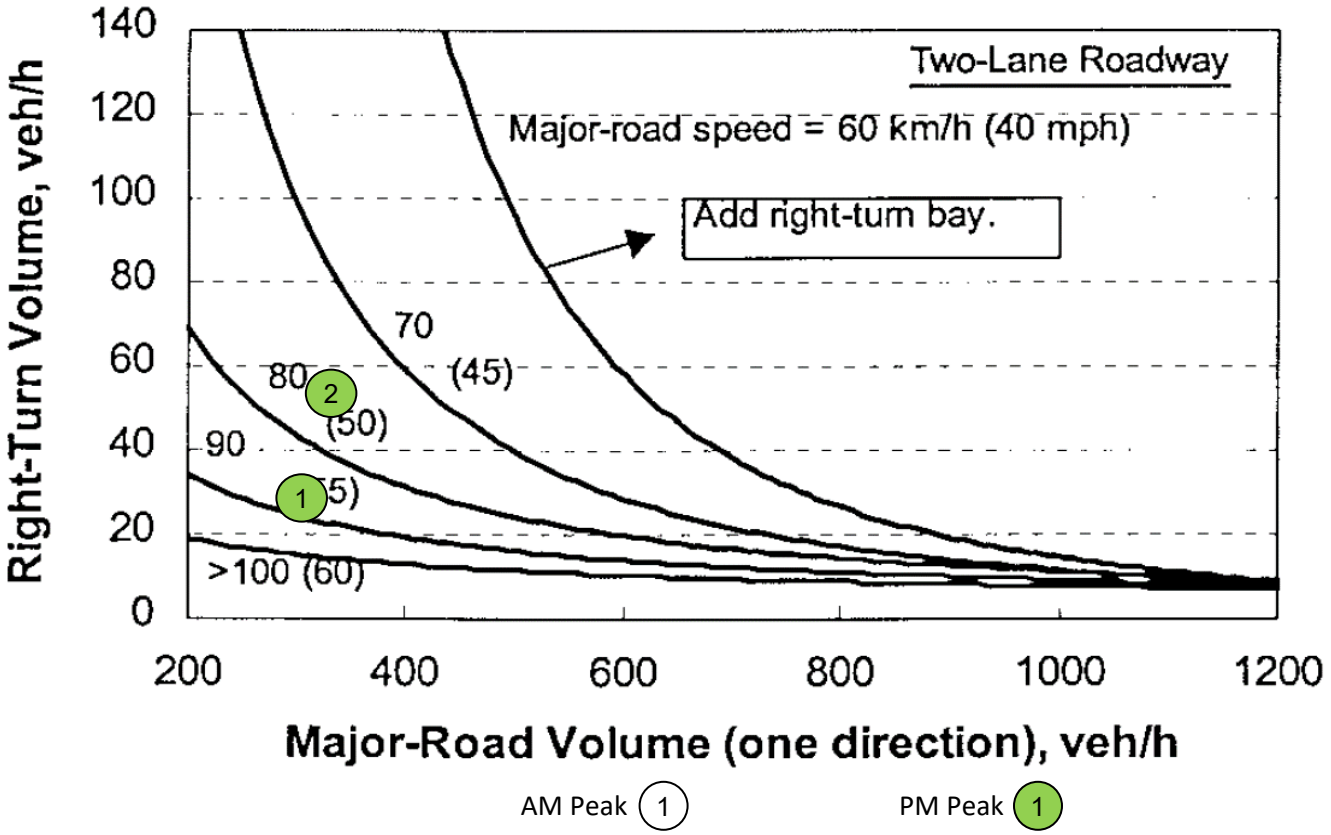


Tillman Ridge Subdivision
Canyon County, Idaho

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



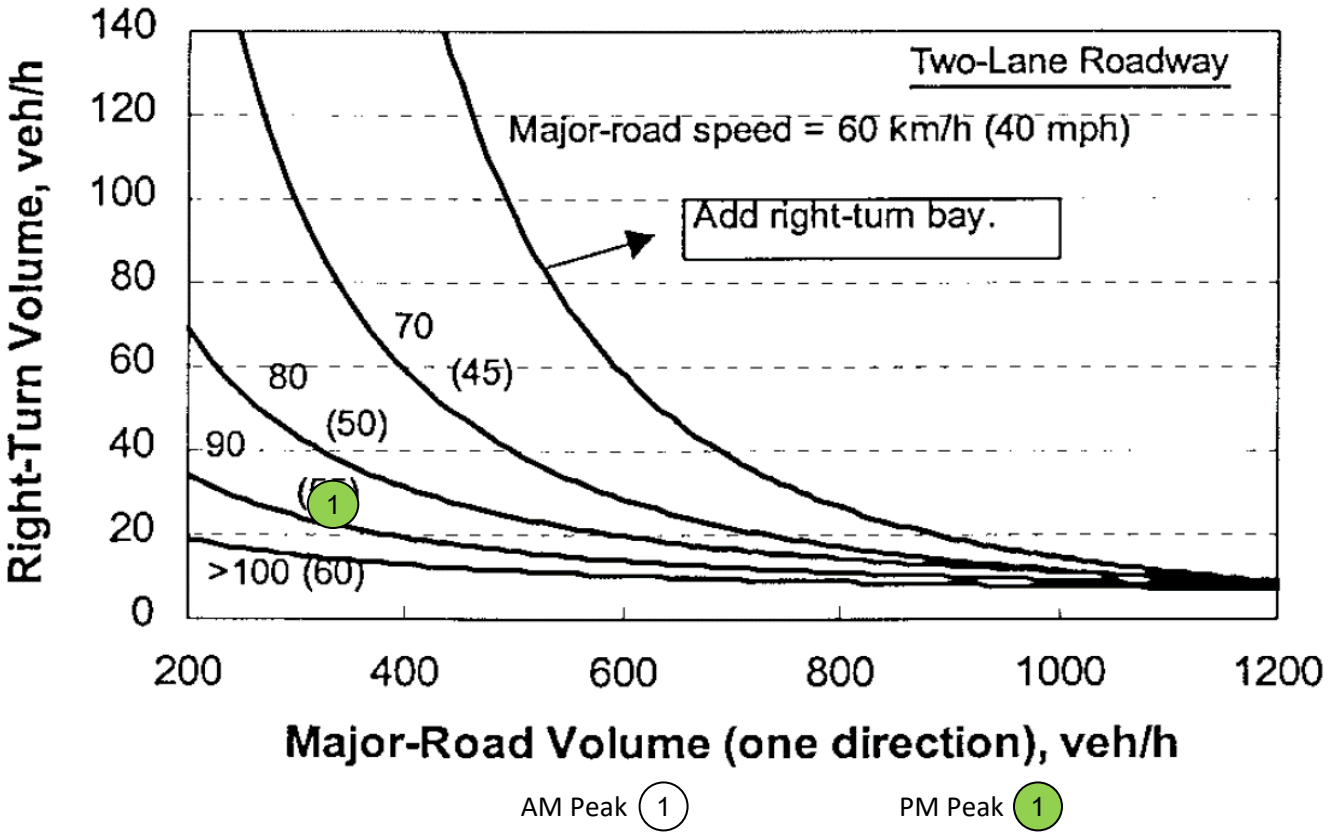
AM Peak (1) PM Peak (1)

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

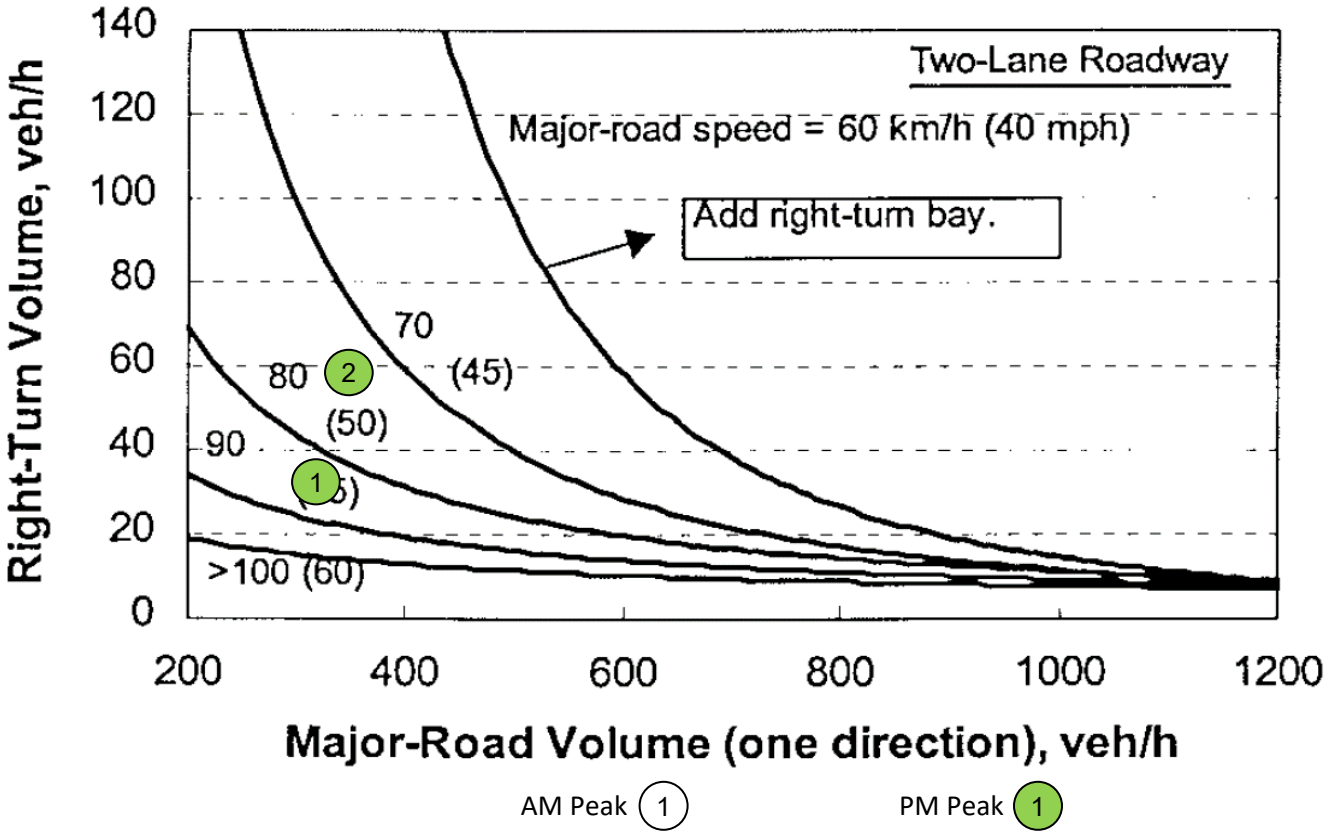


Tillman Ridge Subdivision
Canyon County, Idaho

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

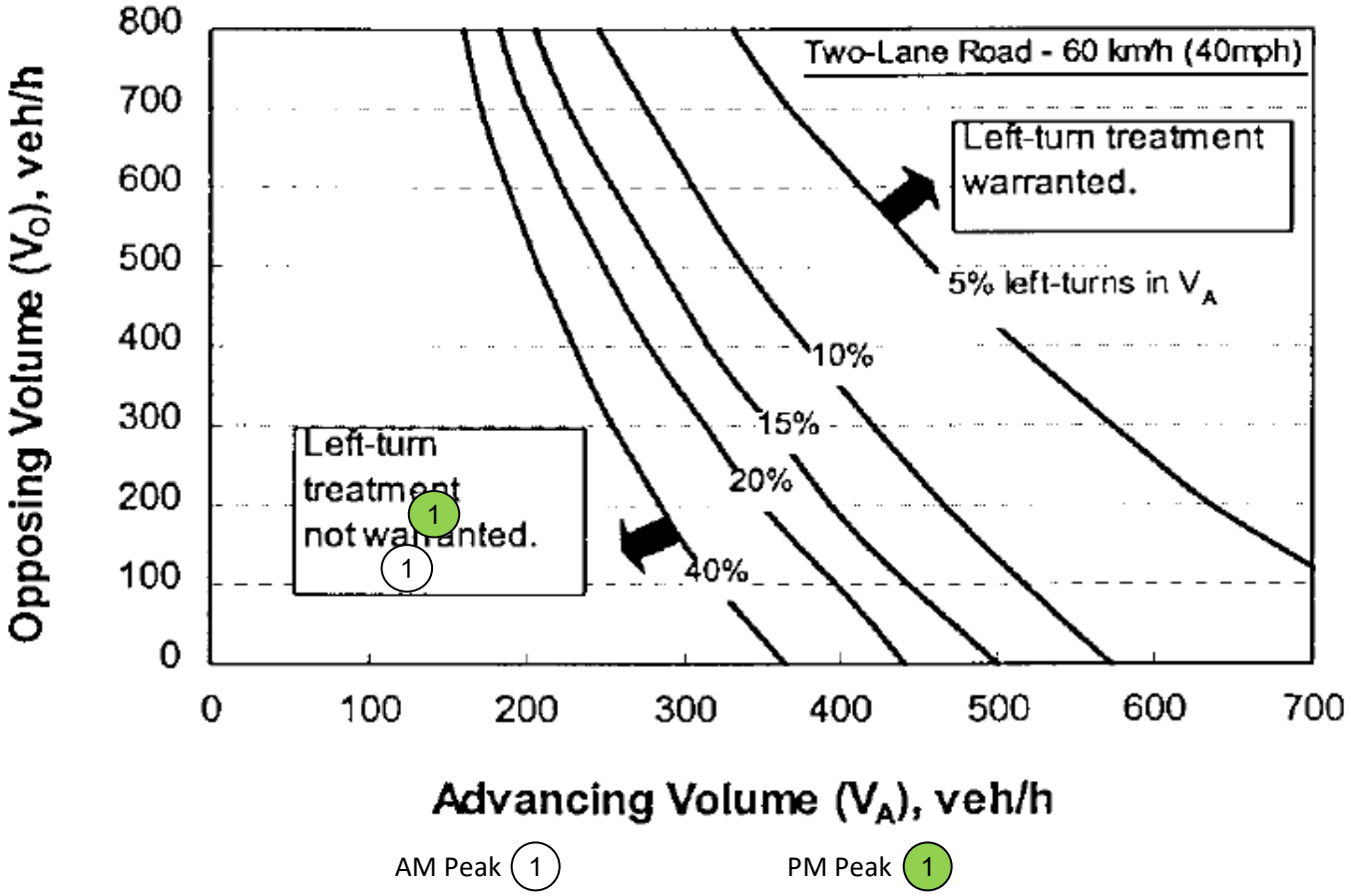
* Right-Turn Volume Less Than 10 vph or Major Road Volume Less Than 200 vph - Not Warranted



Tillman Ridge Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2024 Existing Traffic

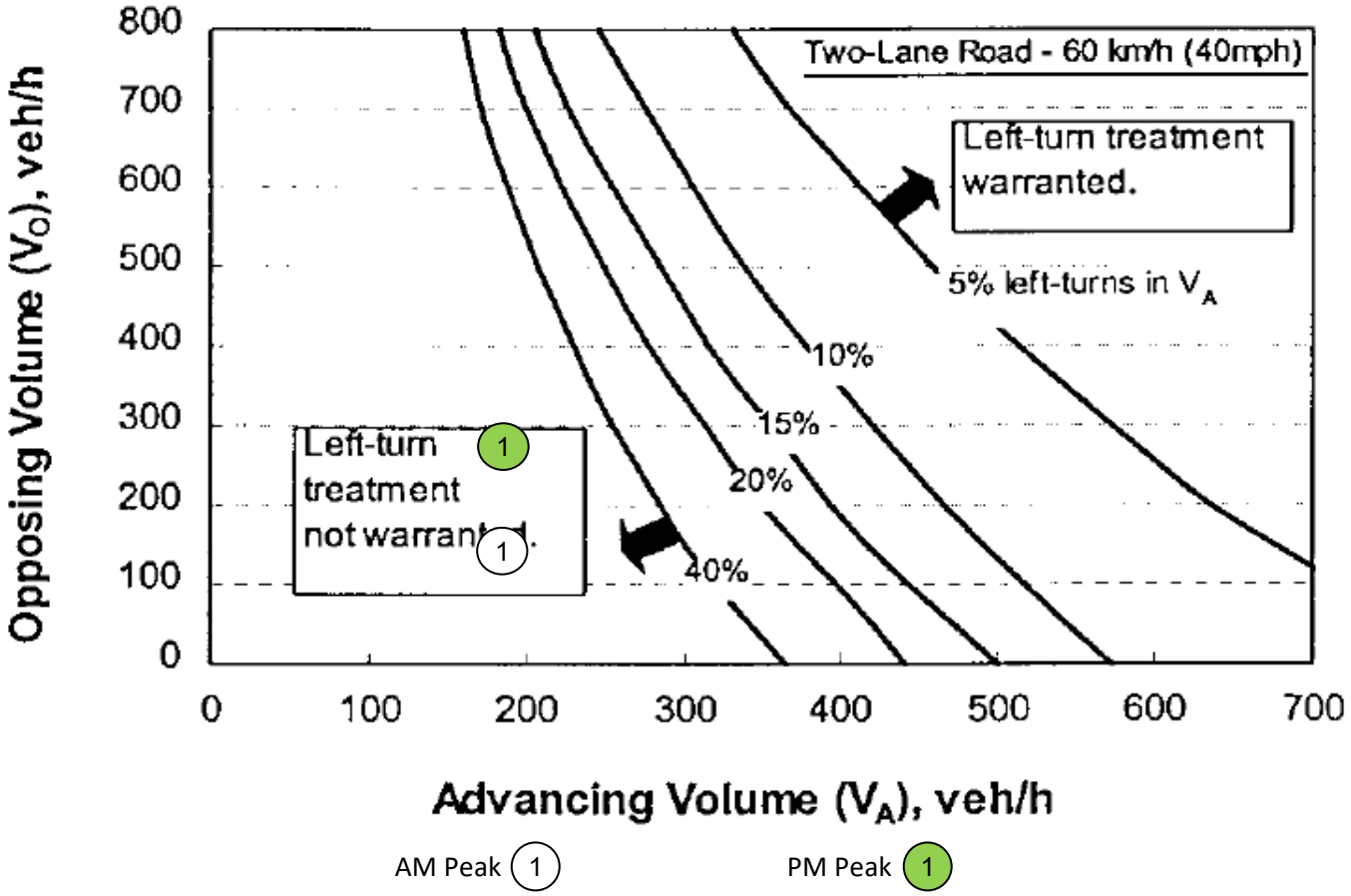
Intersection		Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
(1)	Vista Drive & S 10th Avenue	NB	35	AM	118	106	0.8%	No
				PM	139	196	4.3%	No



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

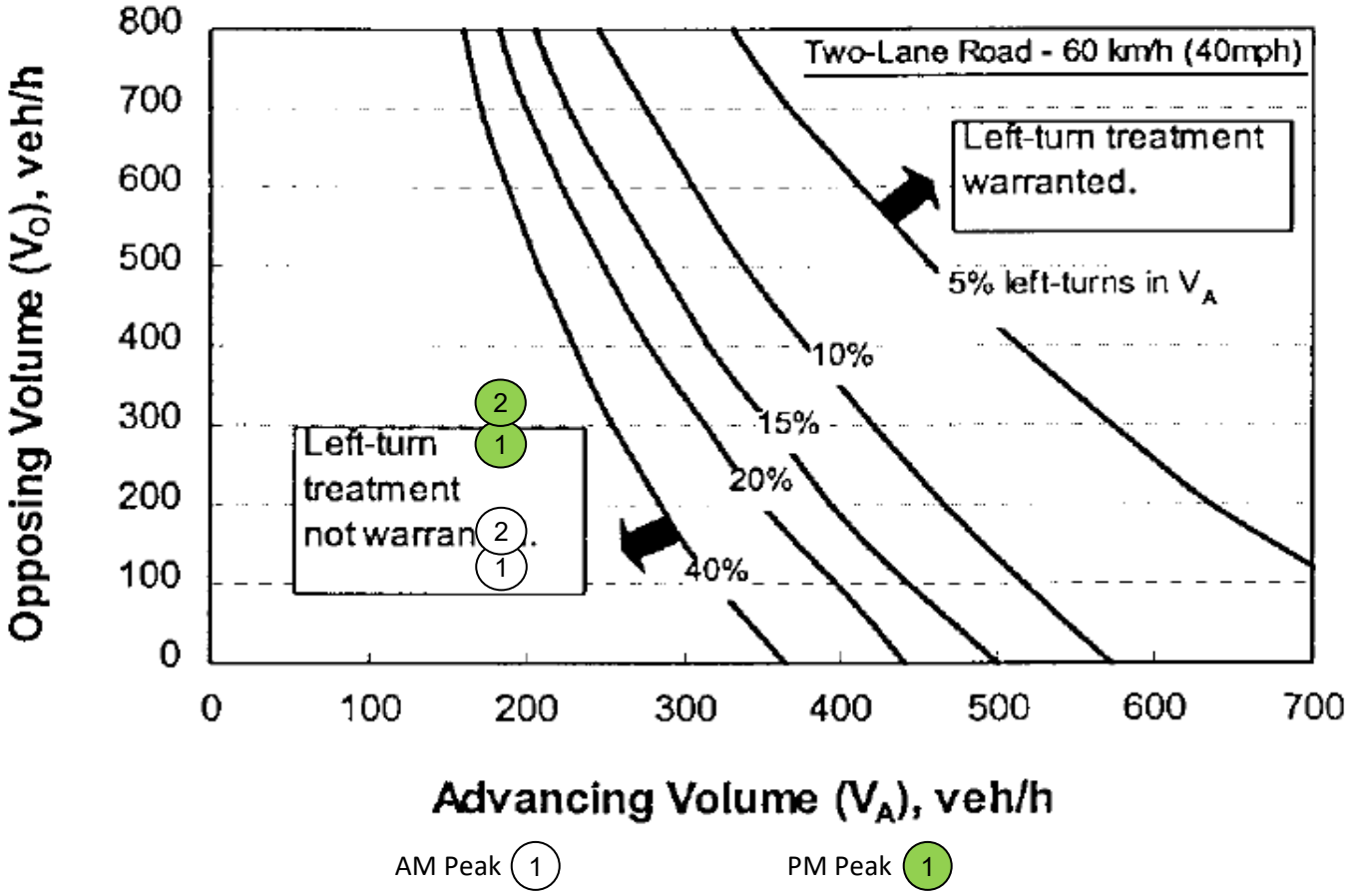


AM Peak (1) PM Peak (1)

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

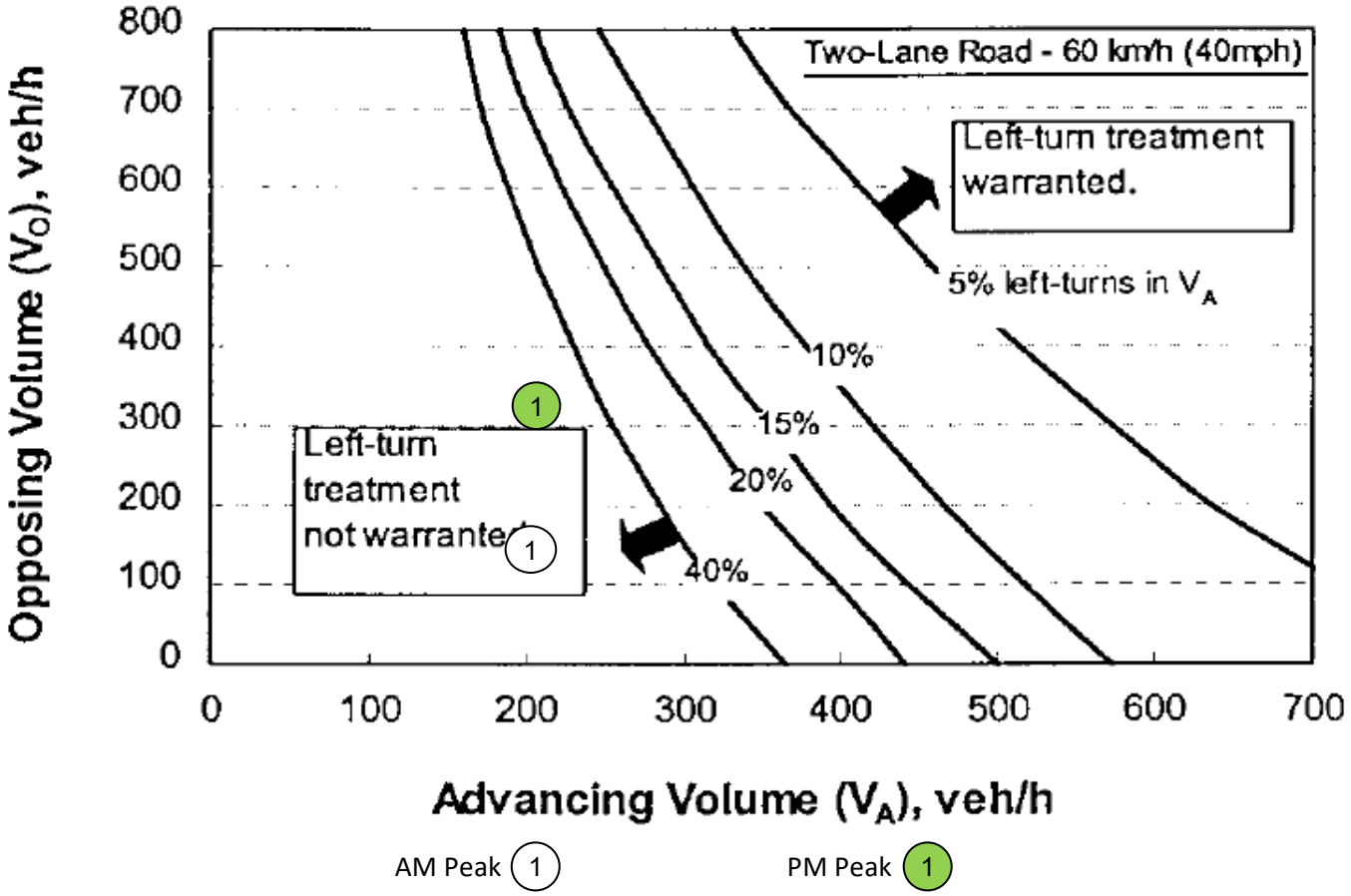


AM Peak (1) PM Peak (1)

Tillman Ridge Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2032 Background Traffic

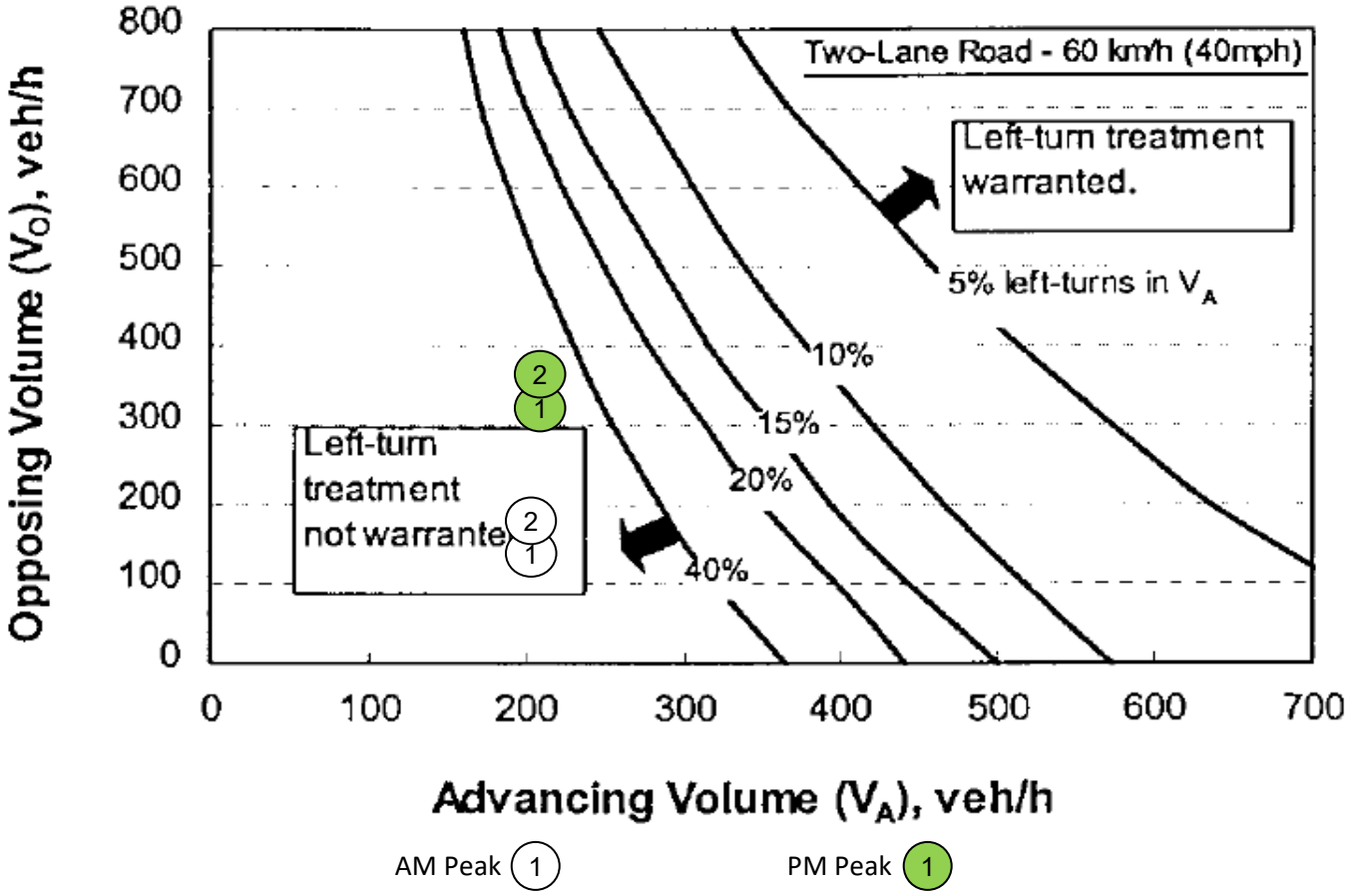
Intersection		Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
(1)	Vista Drive & S 10th Avenue	NB	35	AM	196	145	0.5%	No
				PM	199	308	3.5%	No



Tillman Ridge Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2032 Total Traffic

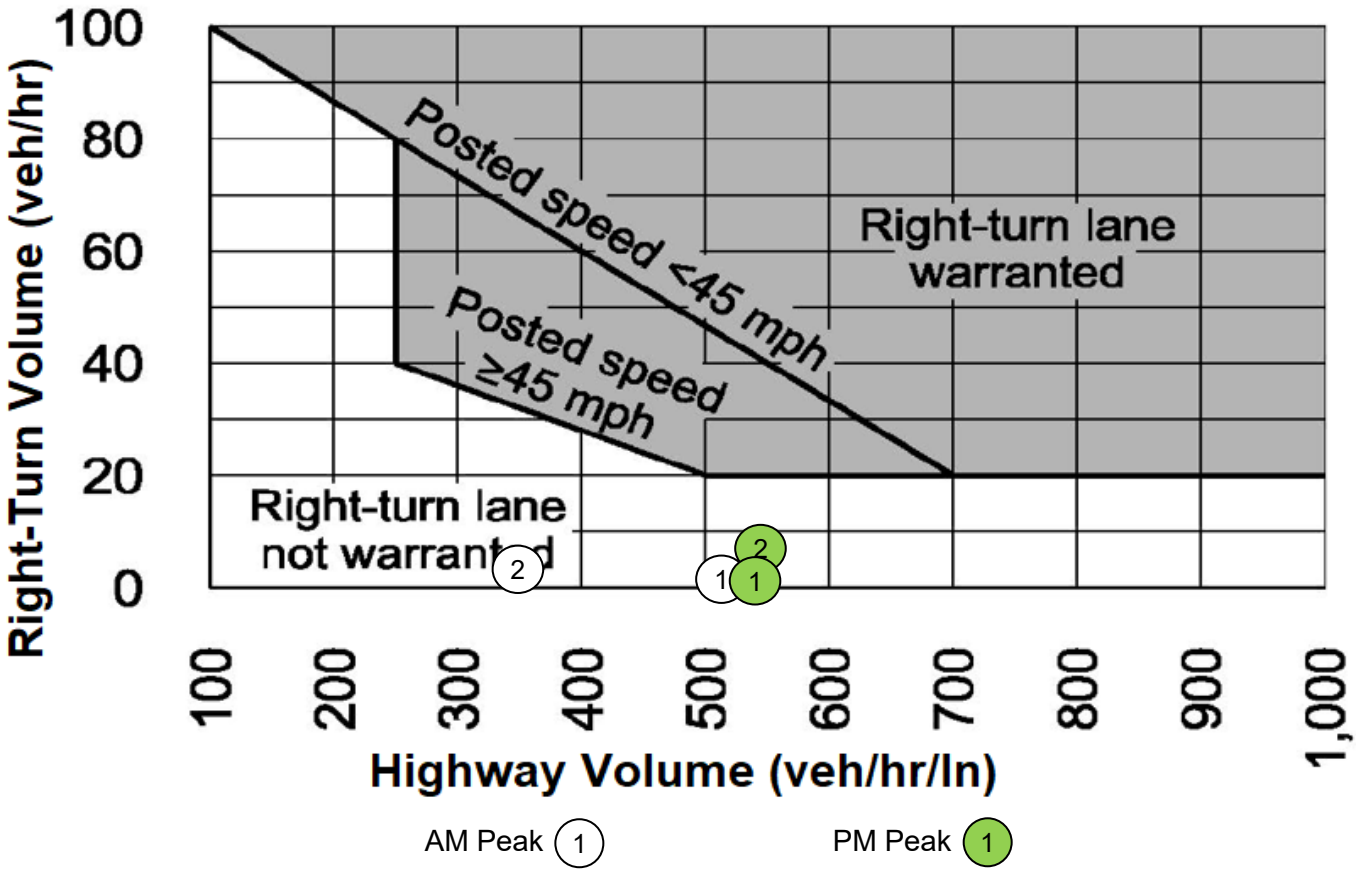
Intersection		Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
(1)	Vista Drive & S 10th Avenue	NB	35	AM	197	147	0.7%	No
				PM	201	315	4.3%	No
(2)	Vista Drive & S 10th Avenue (No Karcher Access)	NB	35	AM	197	154	0.7%	No
				PM	201	339	4.3%	No



Tillman Ridge Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2024 Existing Traffic

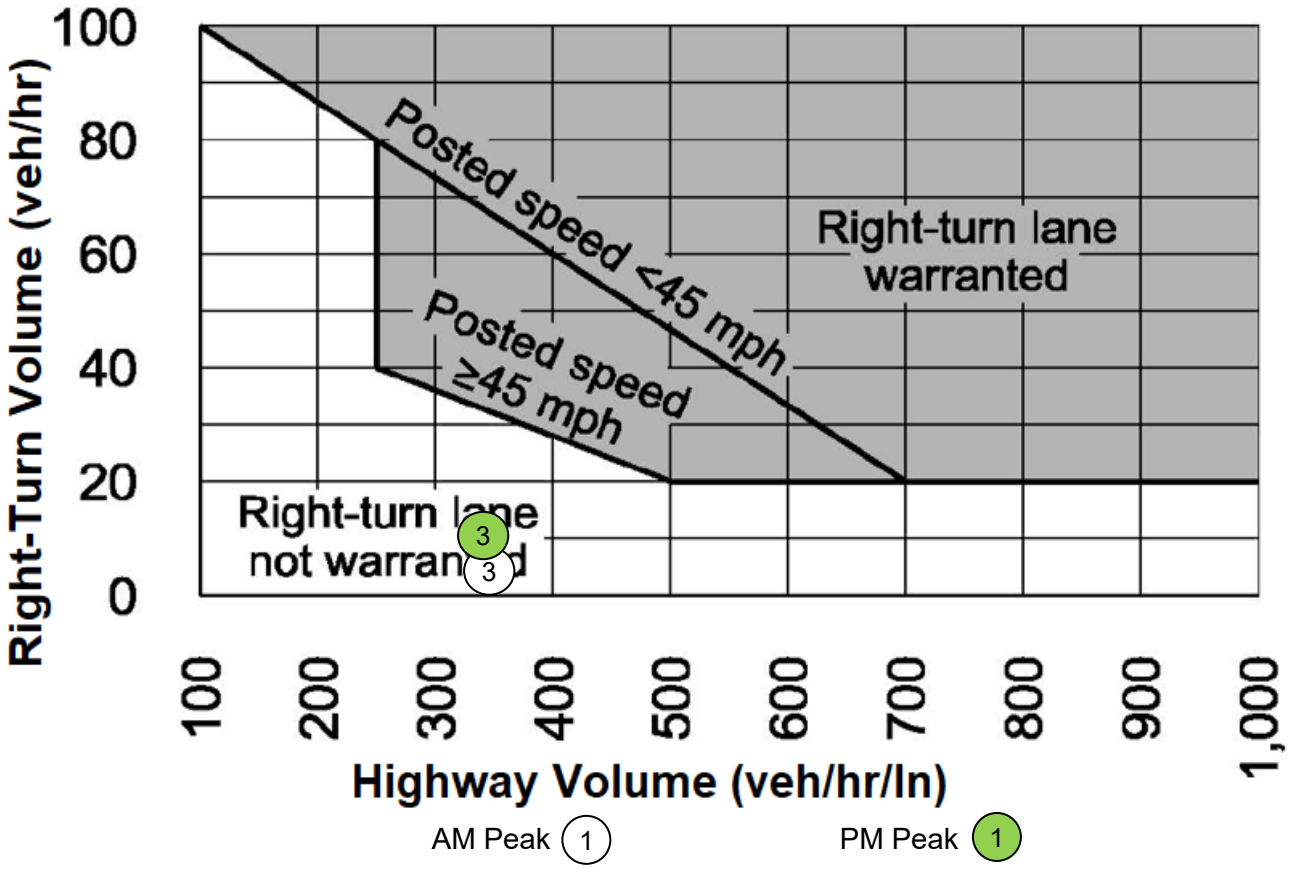
Intersection		Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vph)	Meet Warrant?
1	Kimball Avenue & Karcher Road	EB	55	AM	0	516	No
				PM	0	531	No
2	Kimball Avenue & Karcher Road	WB	55	AM	2	354	No
				PM	2	542	No



Tillman Ridge Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2027 Total Traffic

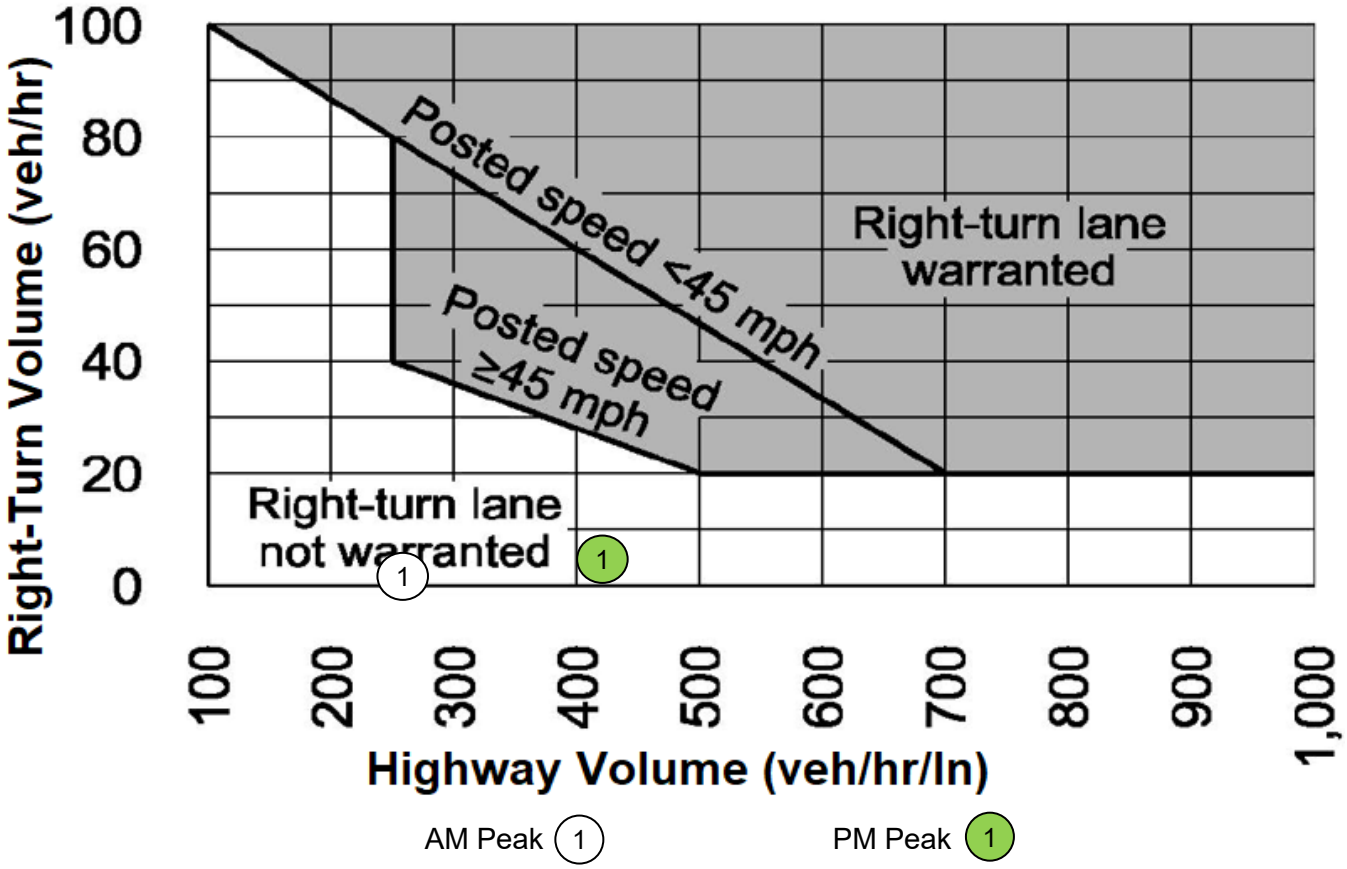
Intersection		Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
(1)	Kimball Avenue & Karcher Road	EB	55	Closed with SH 55 corridor improvements			
(2)	Kimball Avenue & Karcher Road	WB	55	Closed with SH 55 corridor improvements			
(3)	Ashland Drive & 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

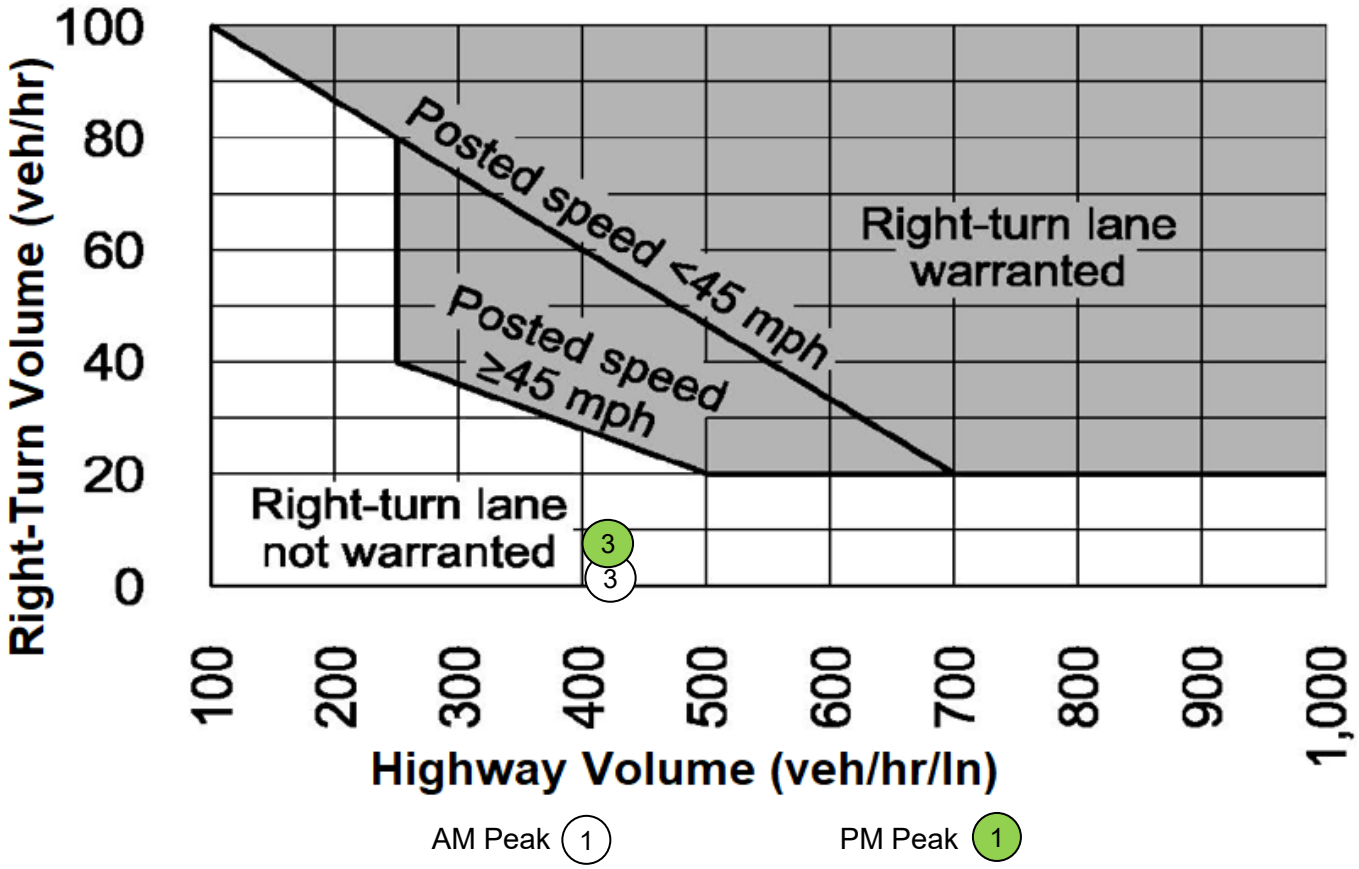
	Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1	Ashland Drive & Karcher Road	WB	55	Constructed with SH 55 corridor improvements			



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			

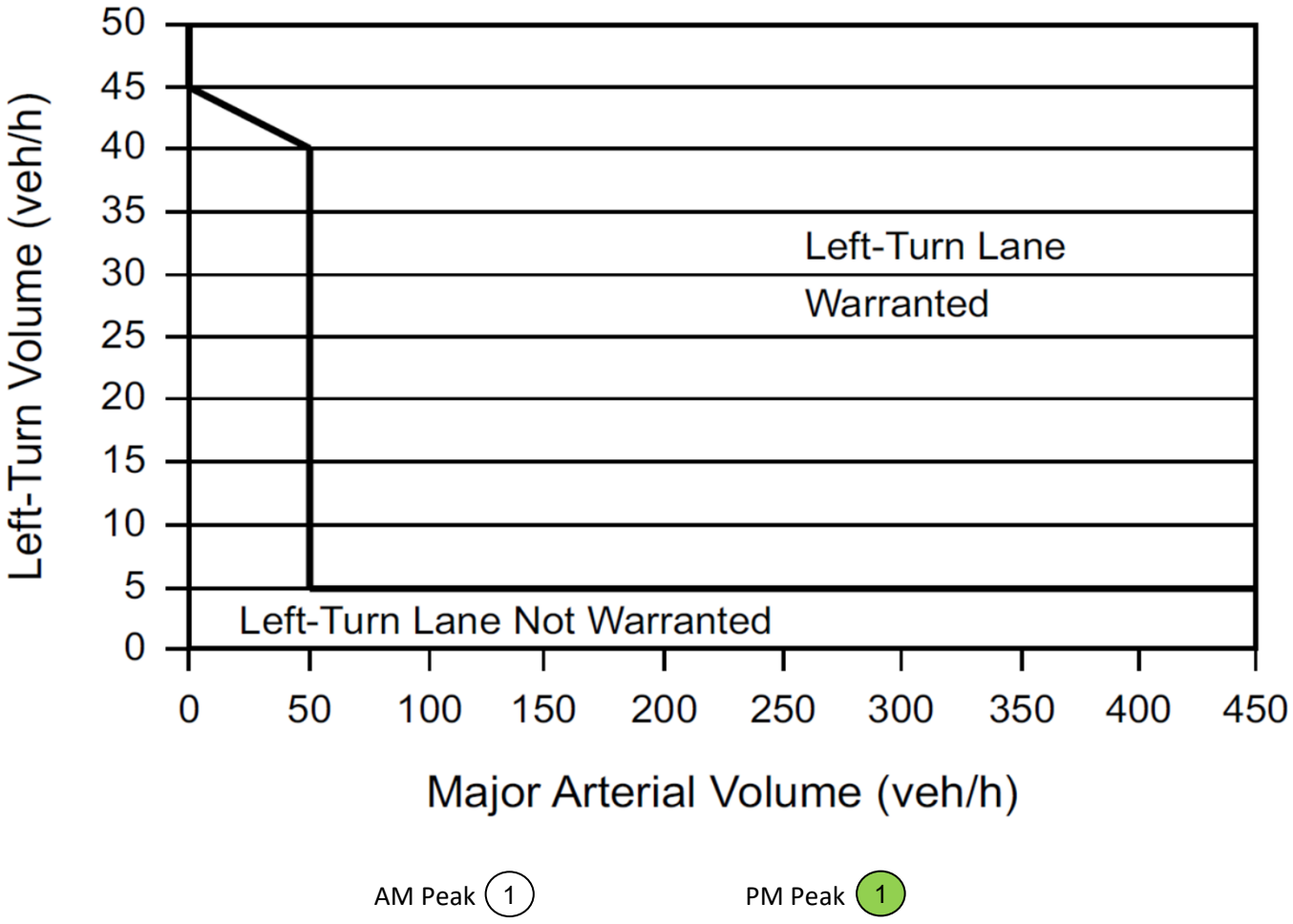


Tillman Ridge Subdivision
Canyon County, Idaho

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

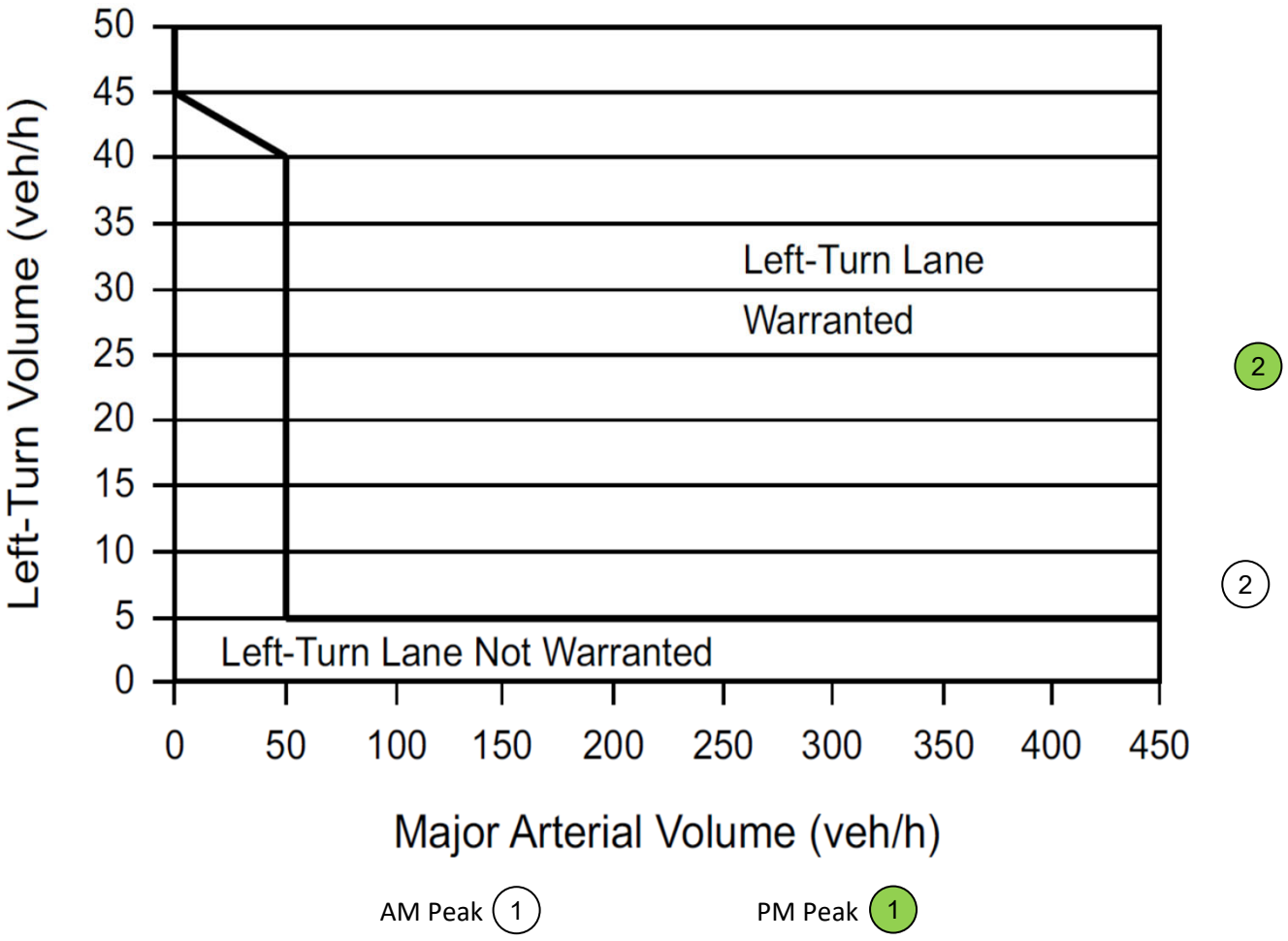


Tillman Ridge Subdivision
Canyon County, Idaho

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.

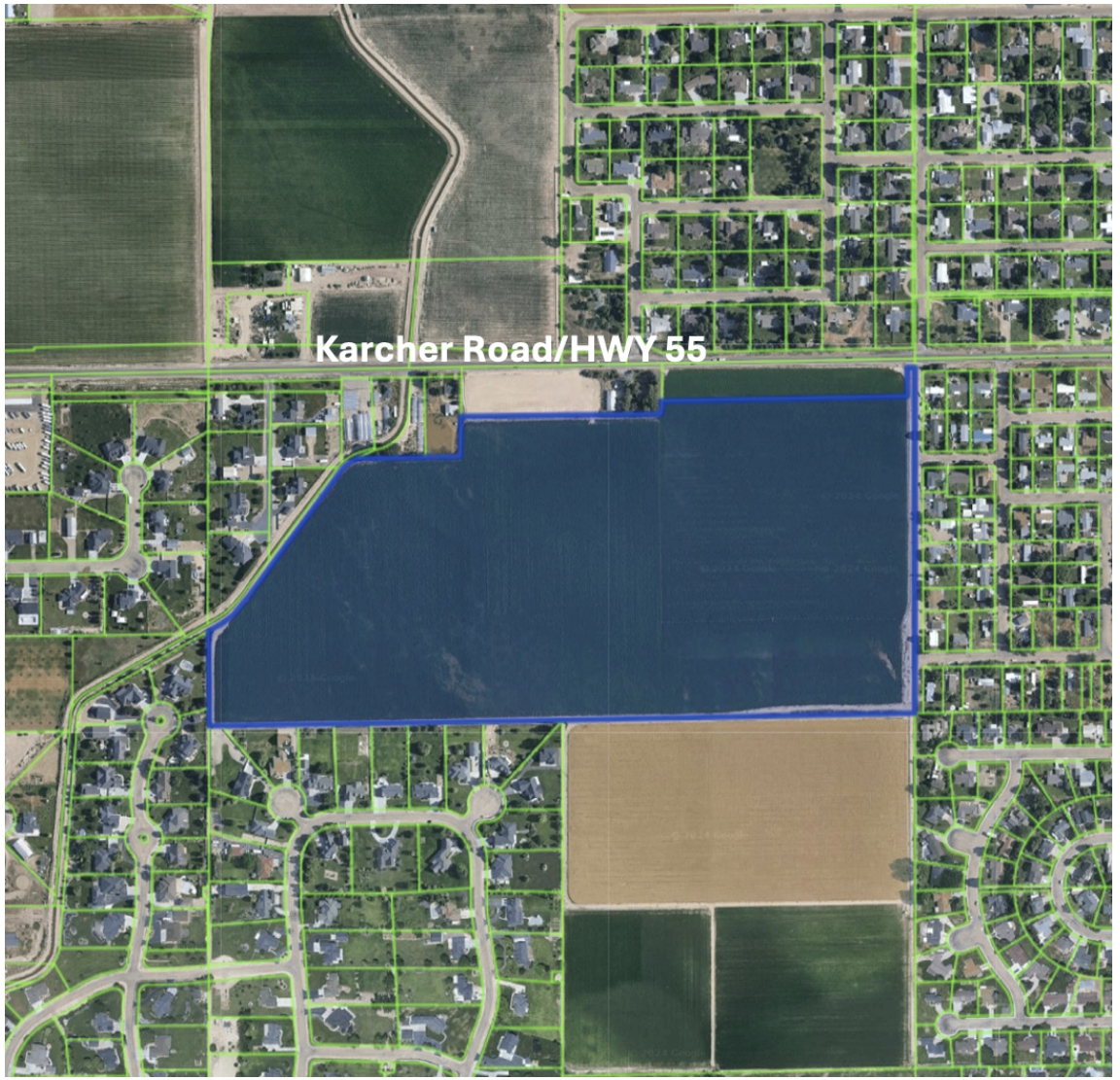


Exhibit A.7 - 2

Criteria A: Comprehensive Plan

- R-1 zone is consistent with the future land use designation of residential
- Complies with 5 goals and 6 policies

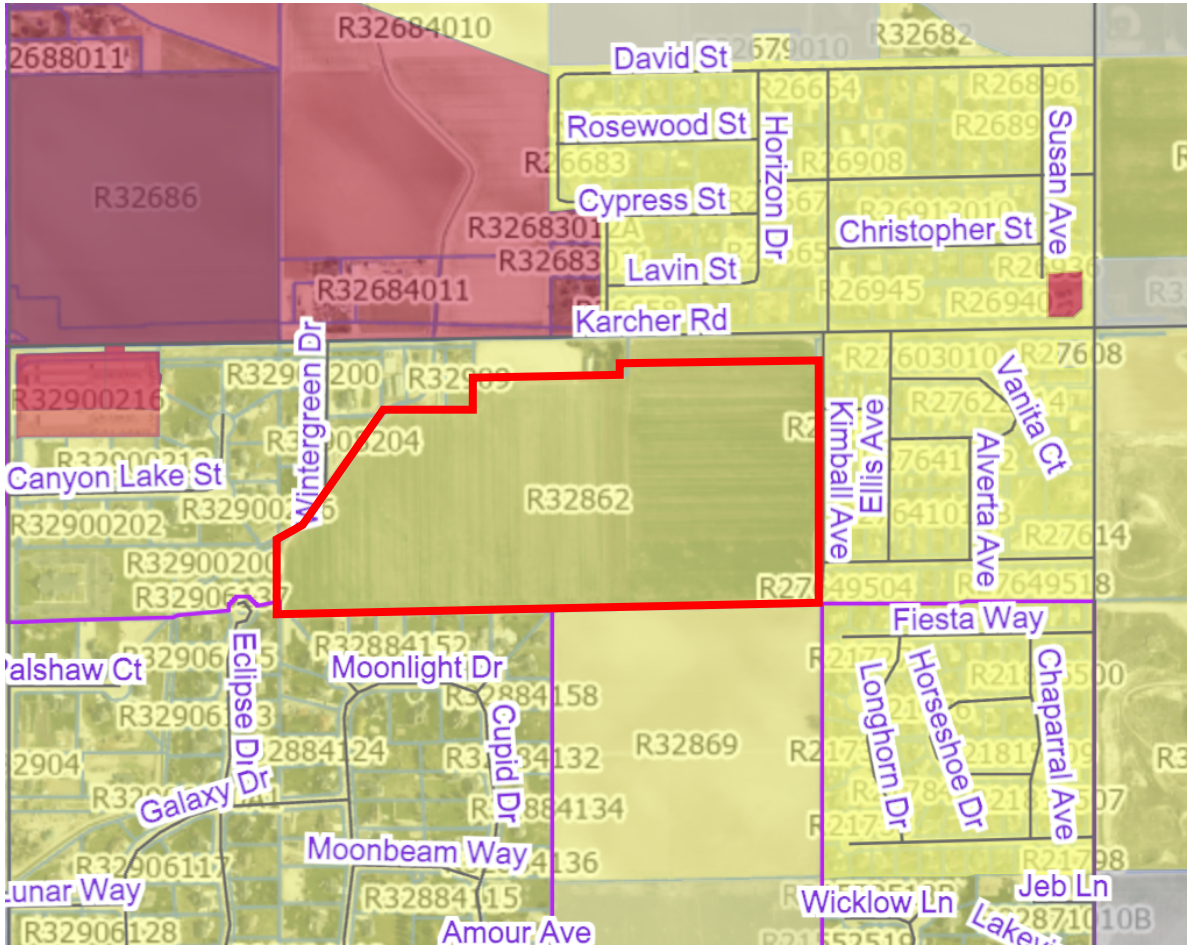


Exhibit A.7 - 3

Criteria B and C. Surrounding land uses

- Surrounded by existing and planned single family residential

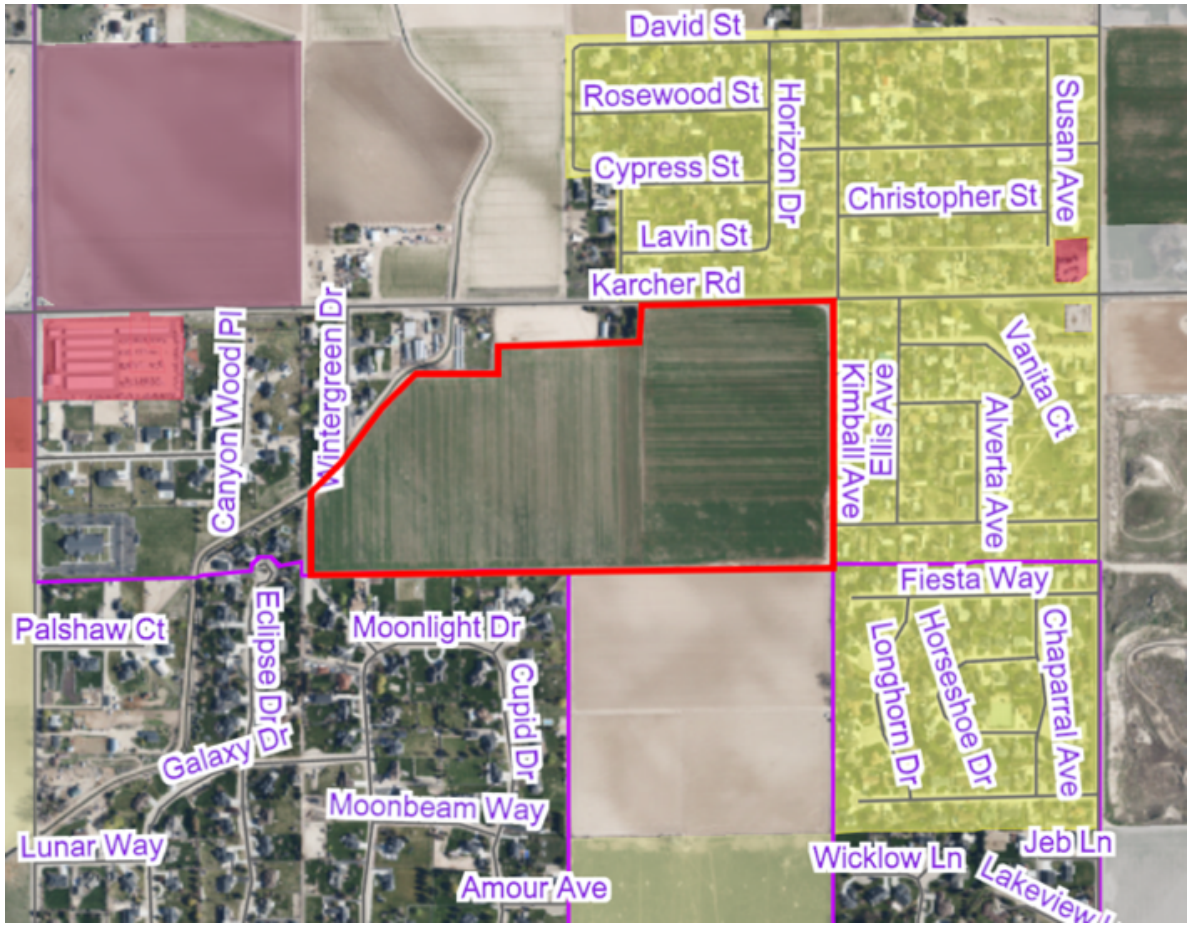


Exhibit A.7 - 4

Criteria D. Character of the Area

- Primarily single-family residential
- Average lot sizes of adjacent subdivisions: 0.29 to 2.30 acres

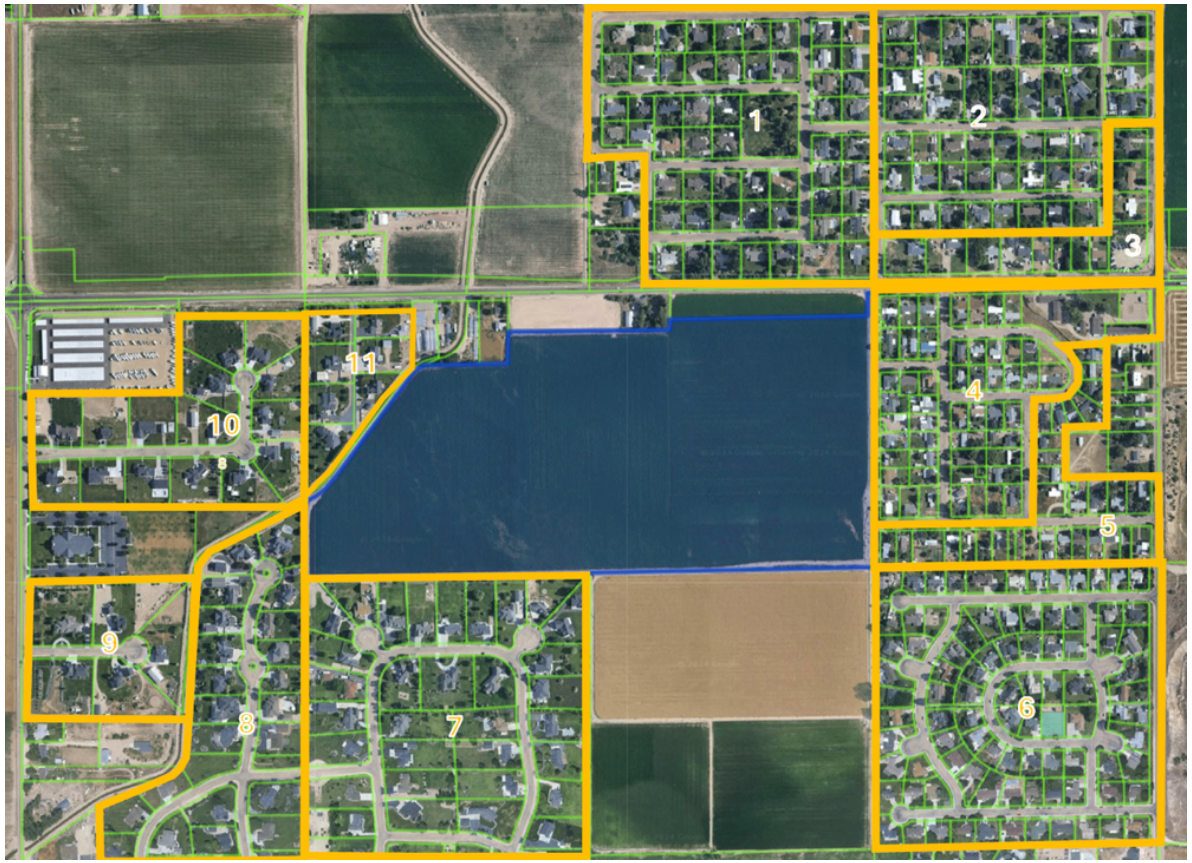
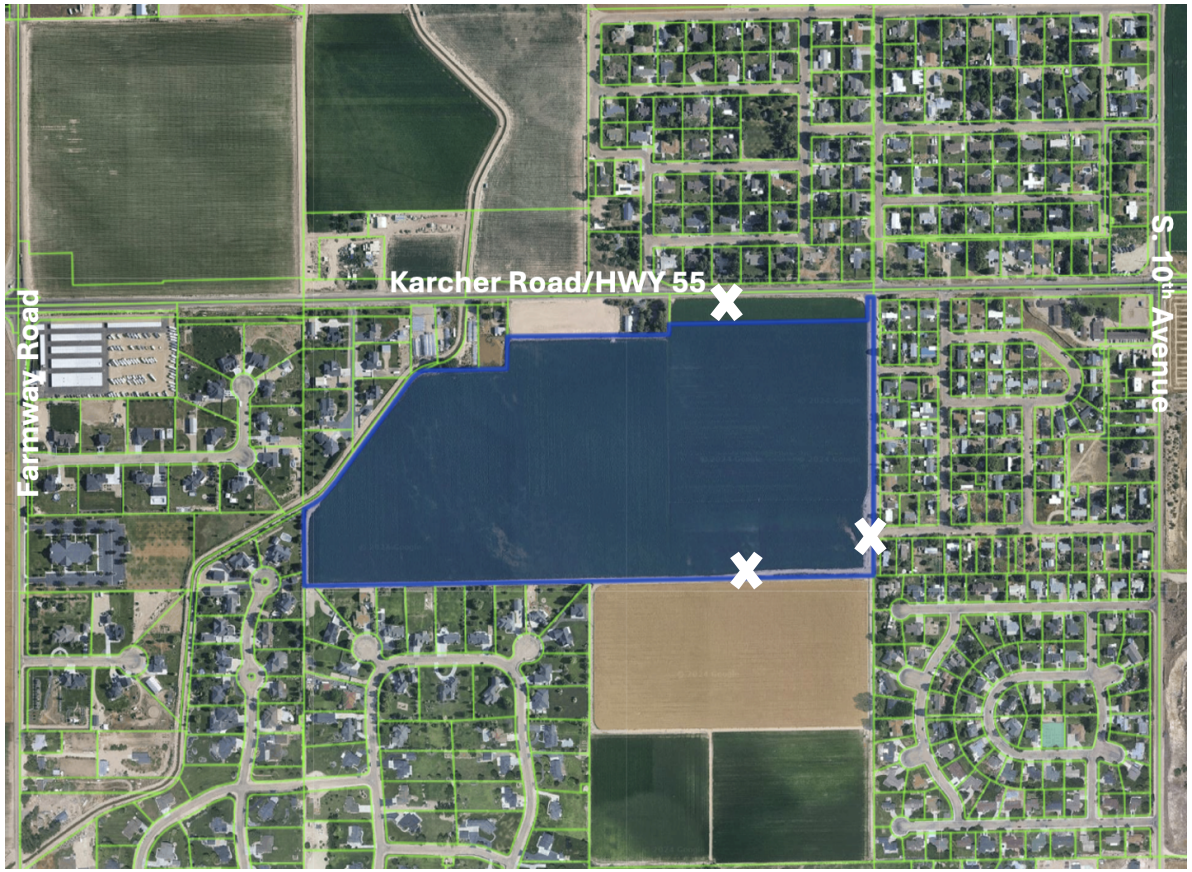


Exhibit A.7 - 5

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

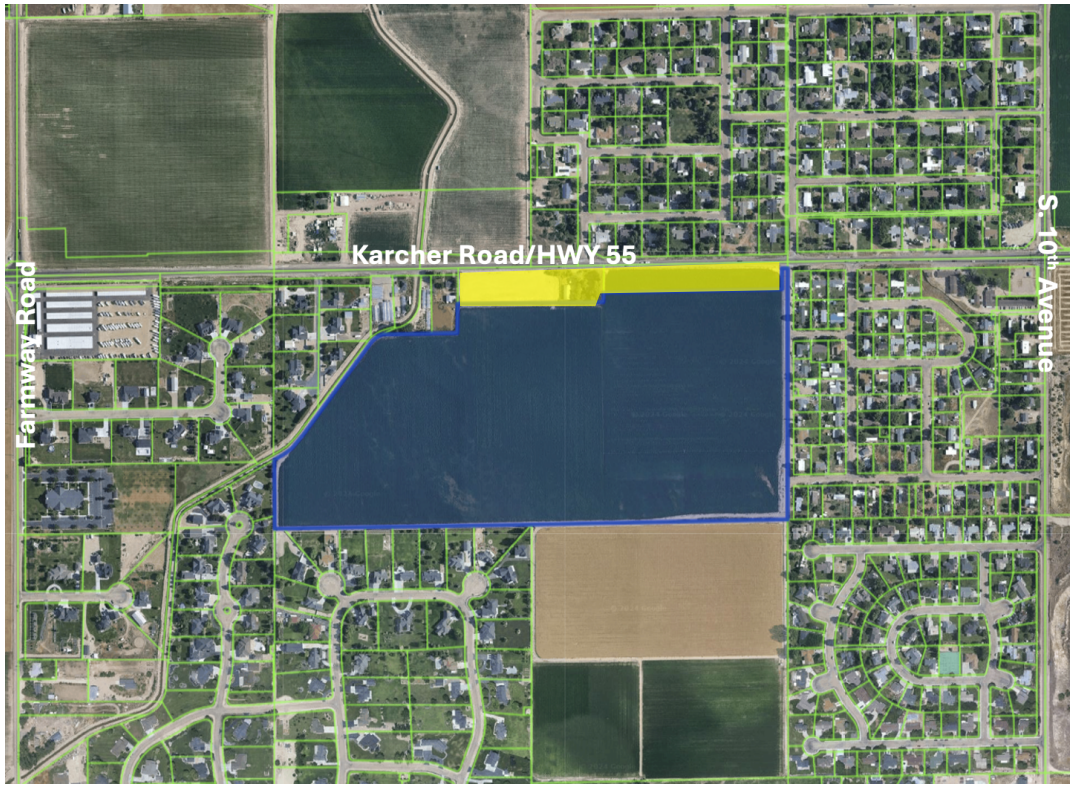
Criteria F. Legal access



- 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 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.

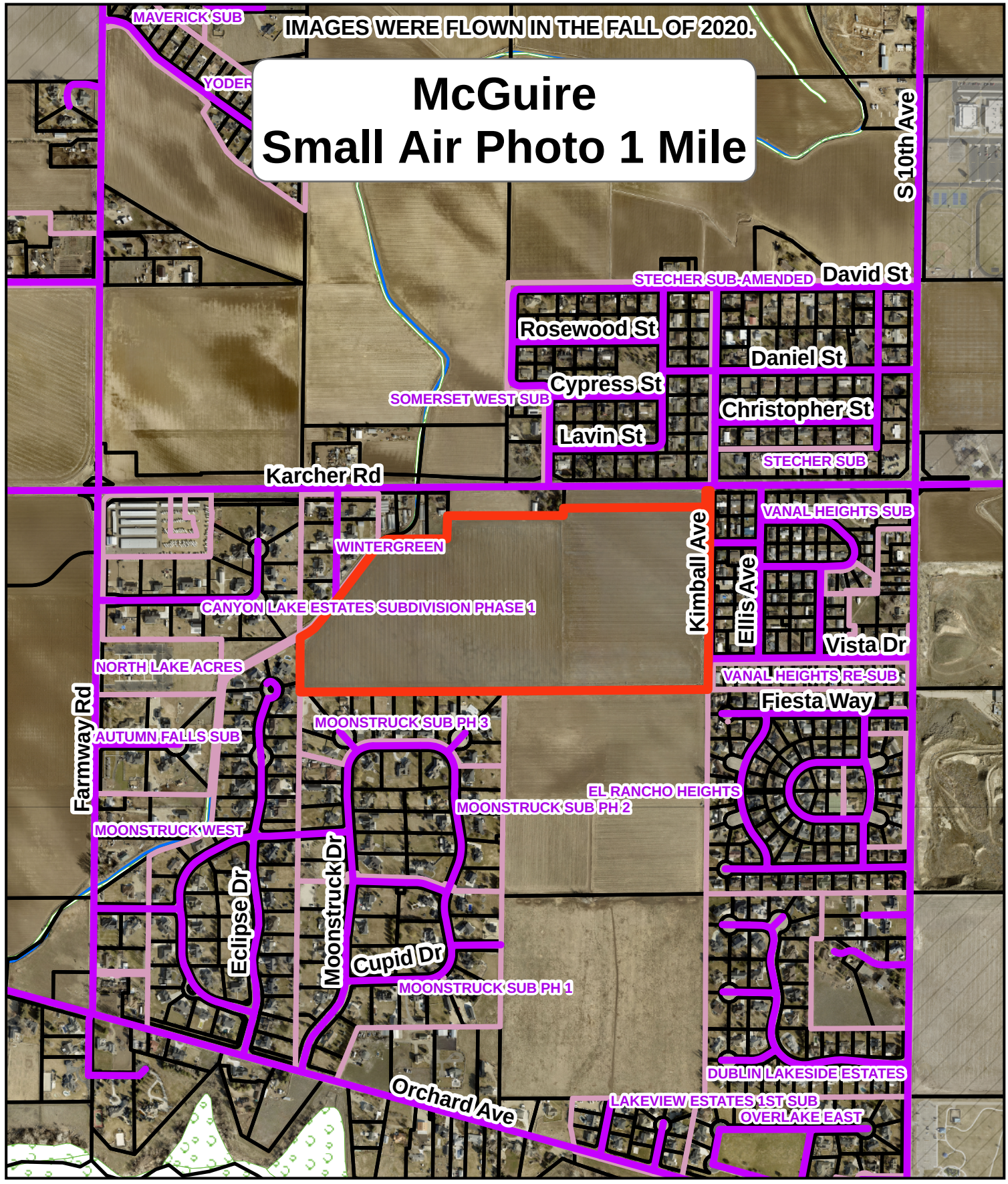
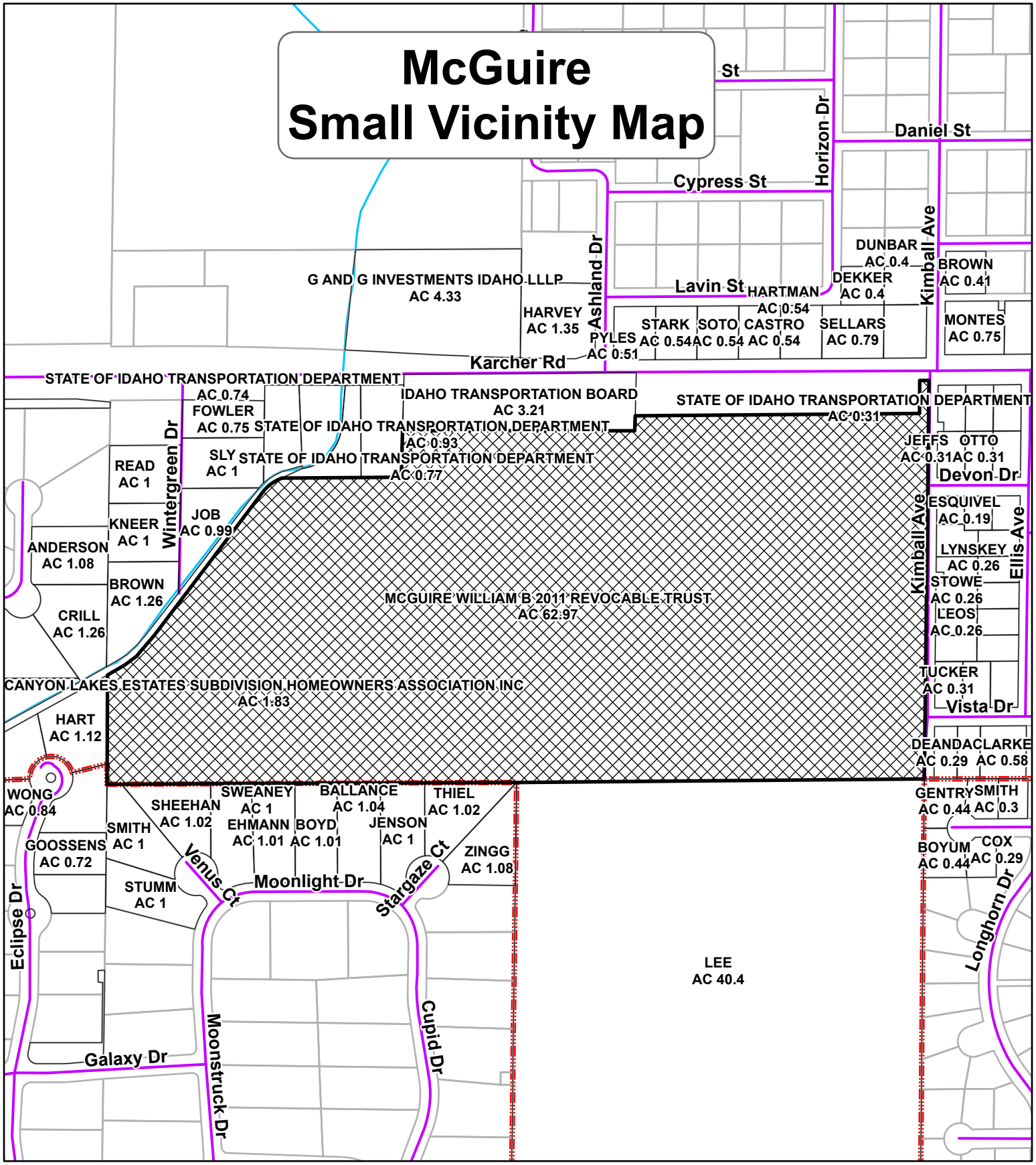
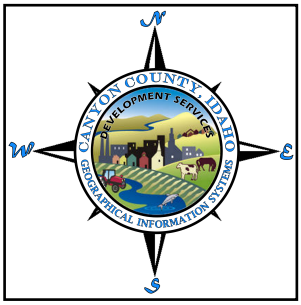

IMAGES WERE FLOWN IN THE FALL OF 2020.
McGuire
Small Air Photo 1 Mile
MAVERICK SUB
YODER
S 10th Ave
STECHER SUB-AMENDED
David St
Rosewood St
Daniel St
Cypress St
SOMERSET WEST SUB
Christopher St
Lavin St
STECHER SUB
Karcher Rd
VANAL HEIGHTS SUB
WINTERGREEN
Kimball Ave
Ellis Ave
CANYON LAKE ESTATES SUBDIVISION 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





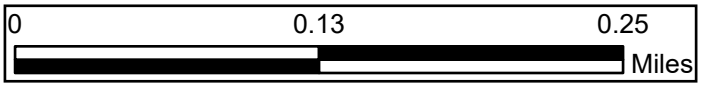
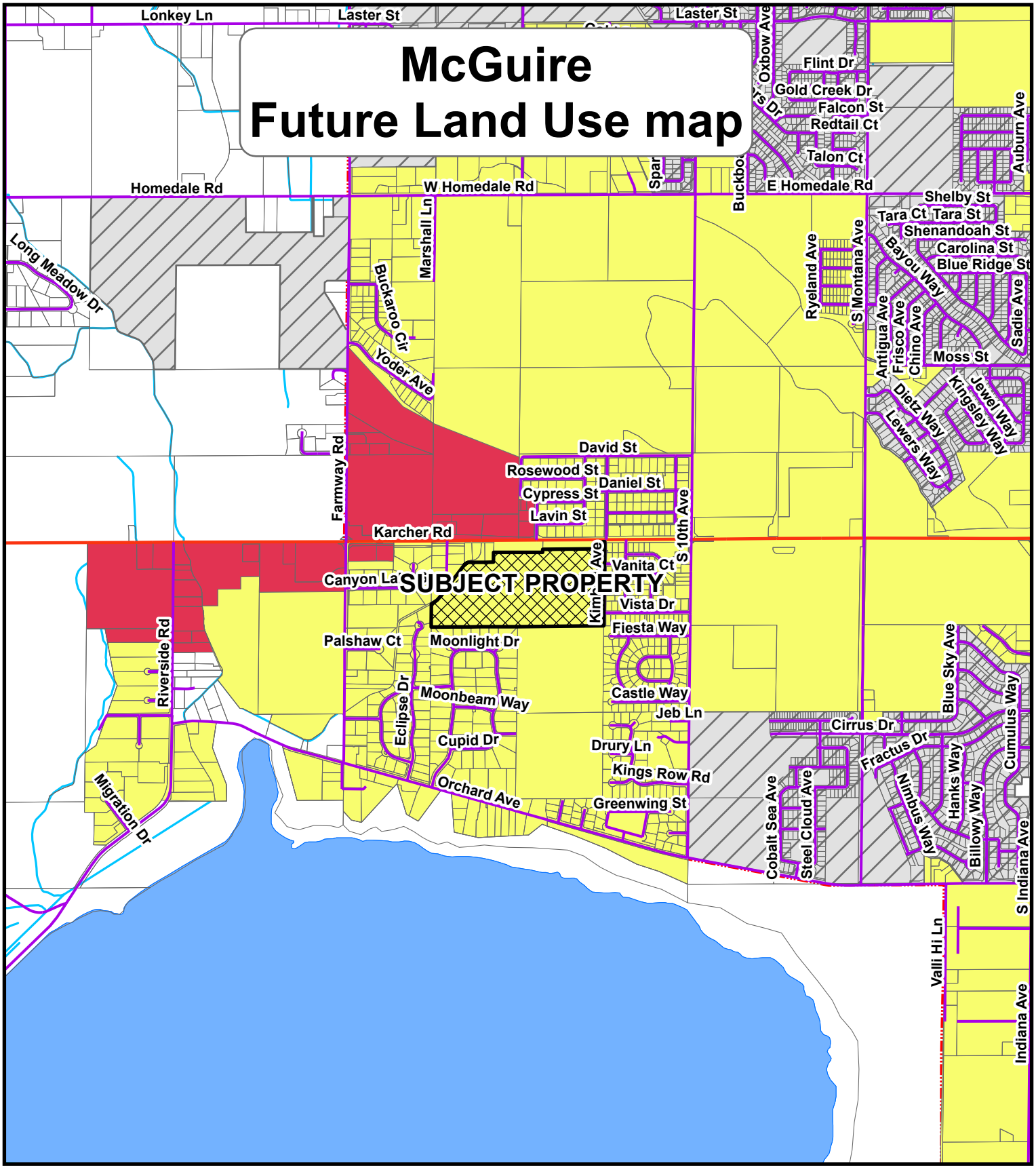


Exhibit B.2b

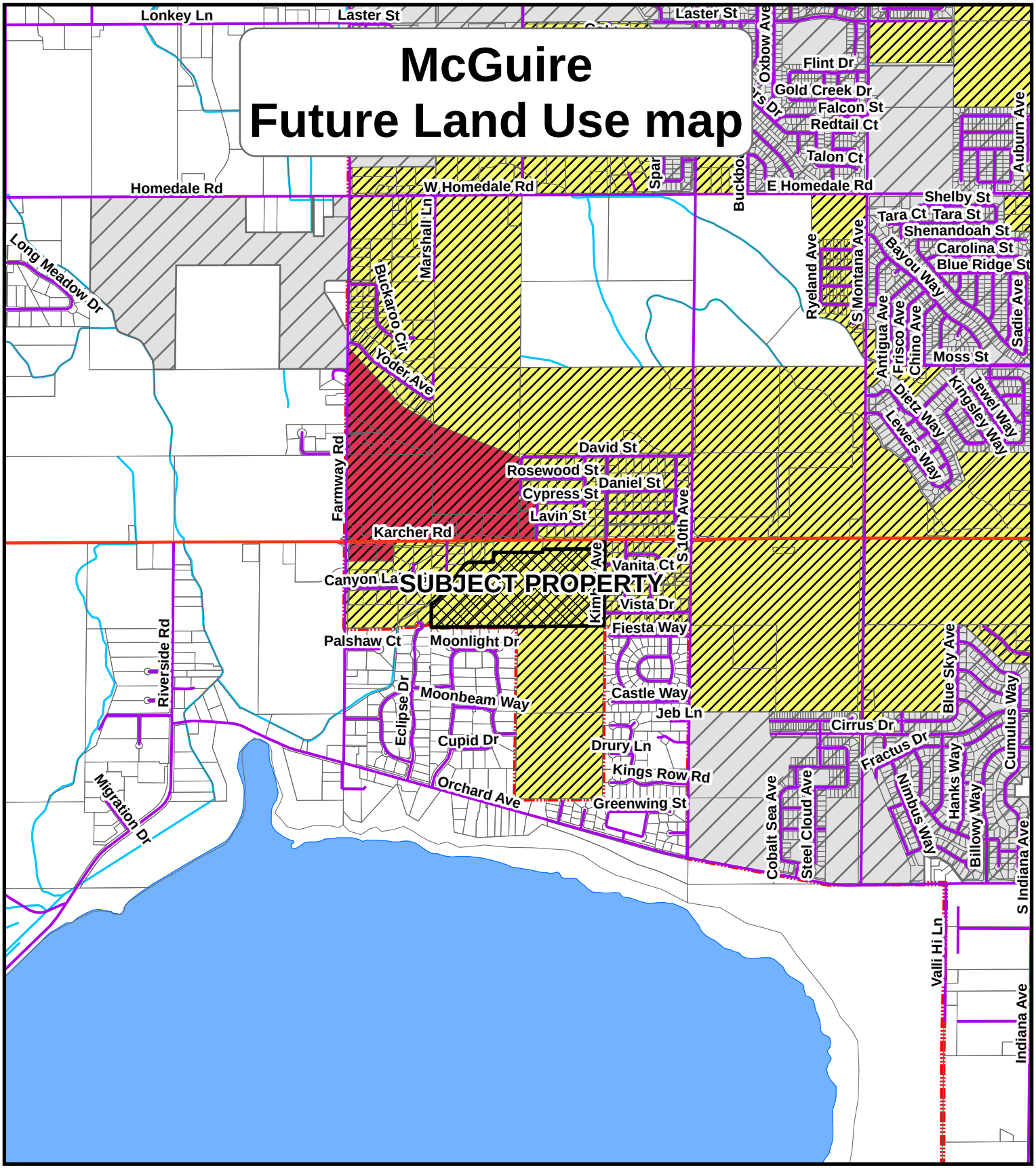


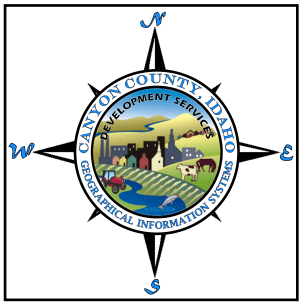
Legend

Future Land Use 2011_2022

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL

0 0.4 0.8 Miles





Legend

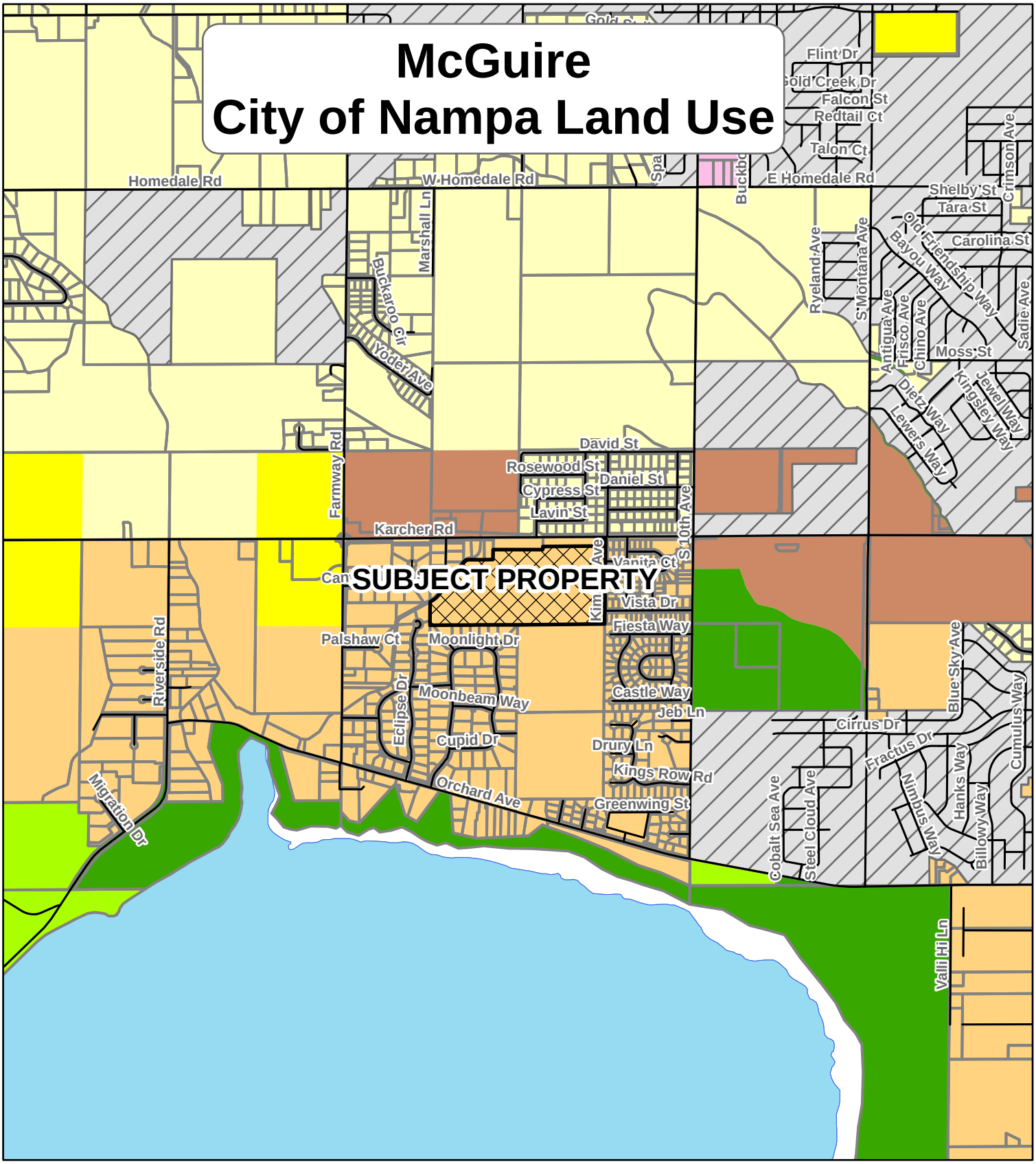
Future Land Use 2030

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL

0 0.4 0.8 Miles

Exhibit B.2c - 2

McGuire
City of Nampa Land Use



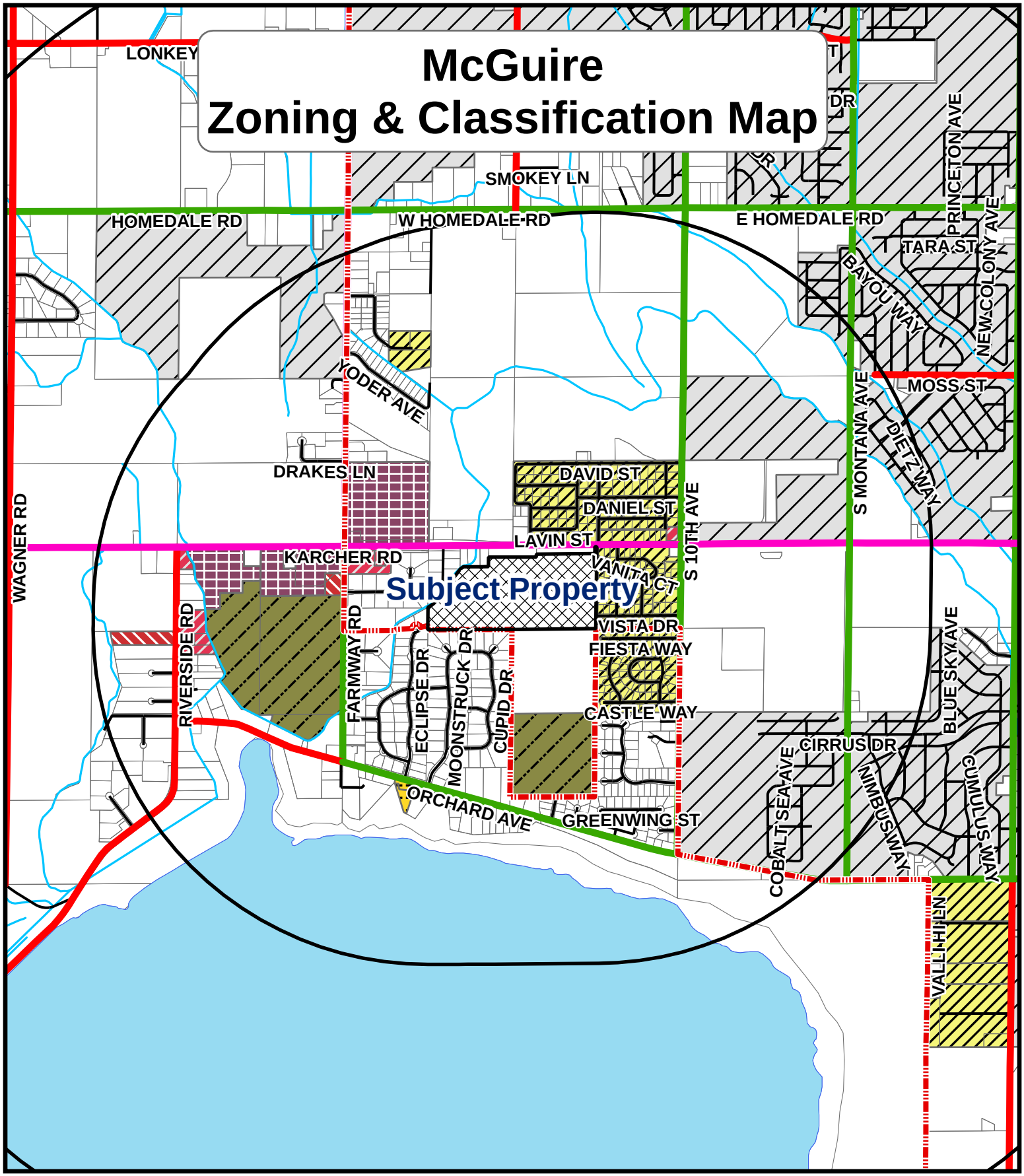
Cald Comp Plan

- 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

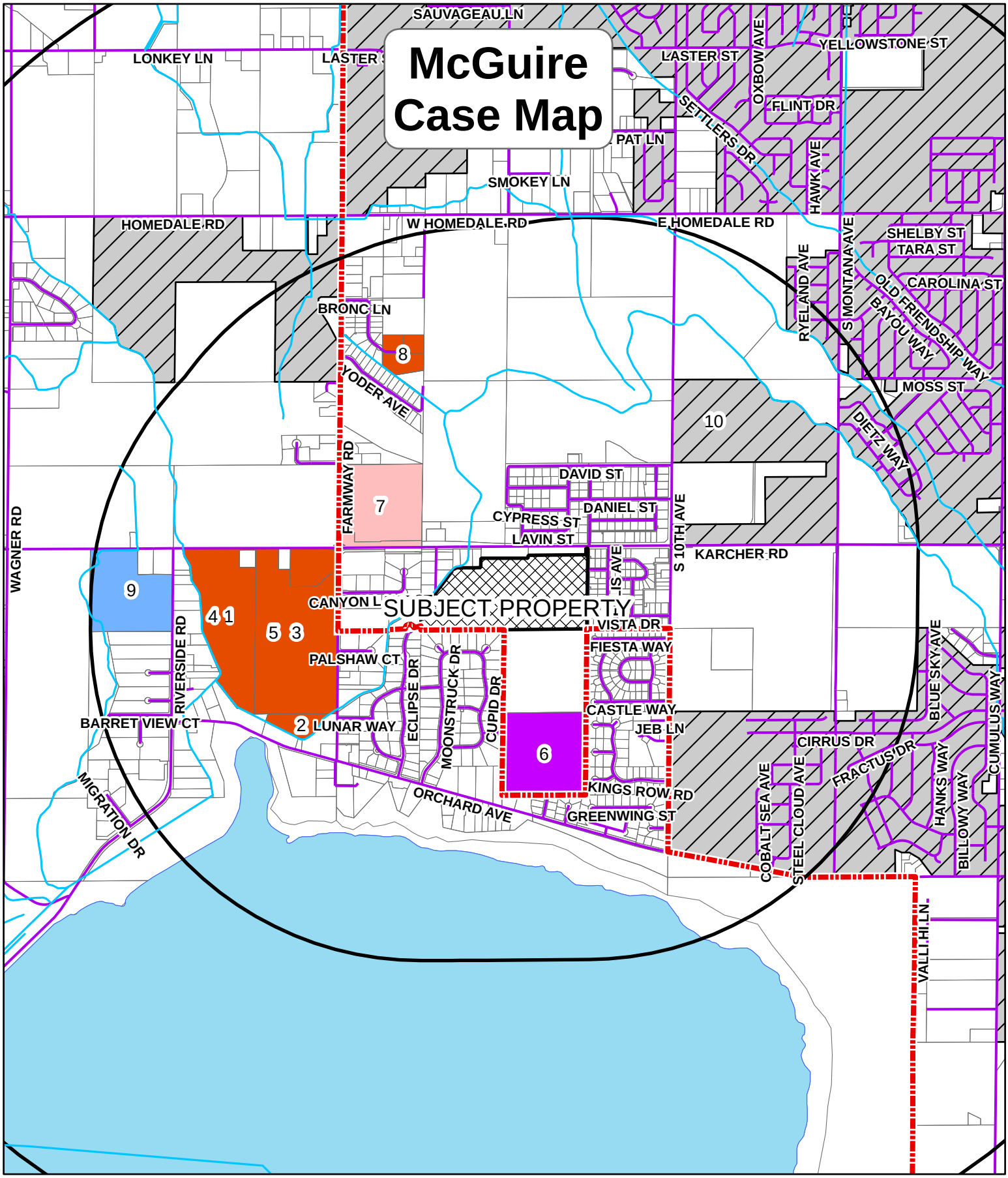
- RR
- CR-RR
- R1
- CR-R1
- R2
- C
- C1
- CR-C1
- C2
- CR-C2
- M1
- CR-M1
- M2
- AG

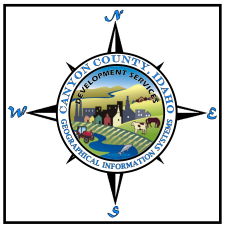
ITD Functional Classification

- 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

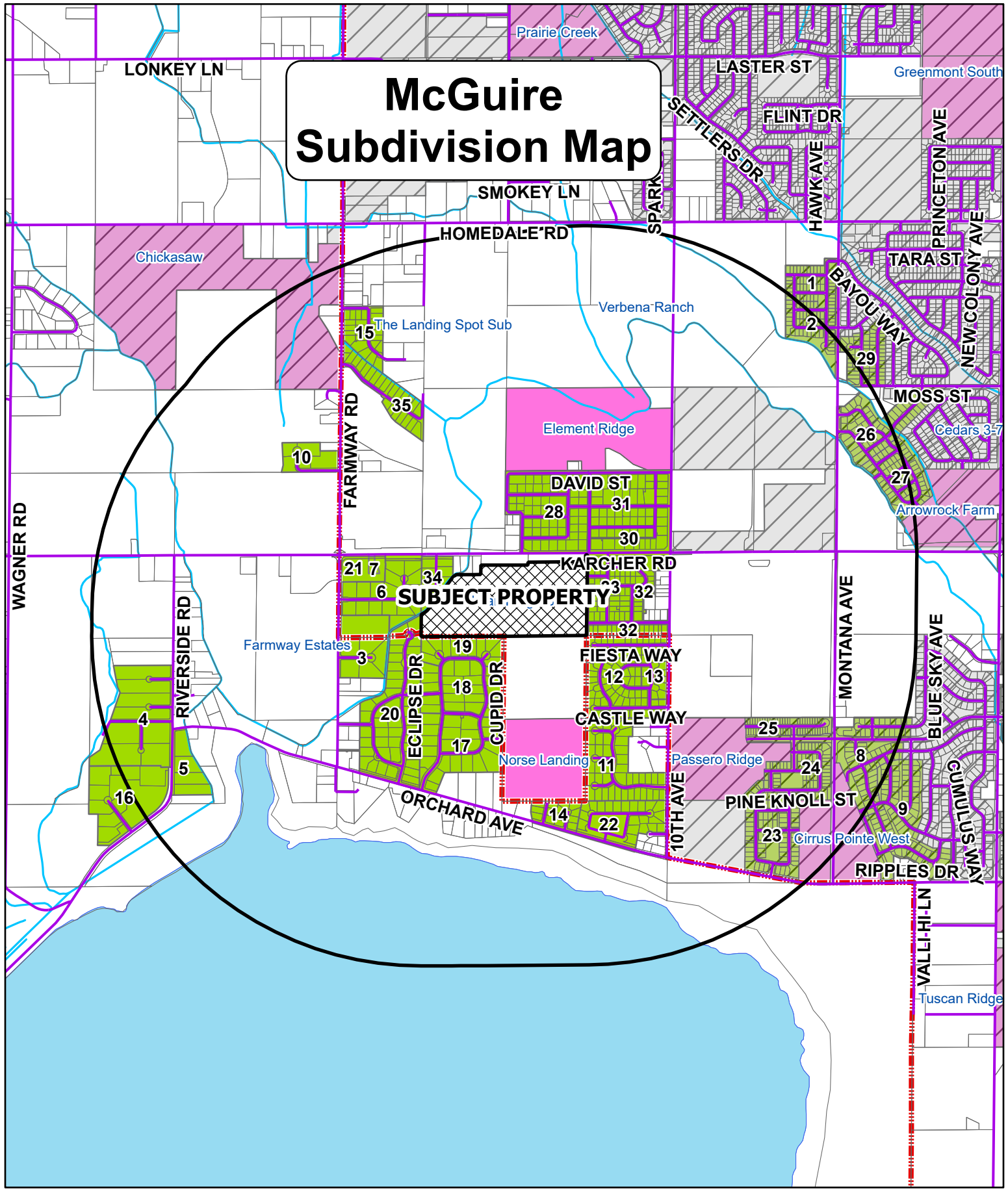
0 0.5 1 Miles

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

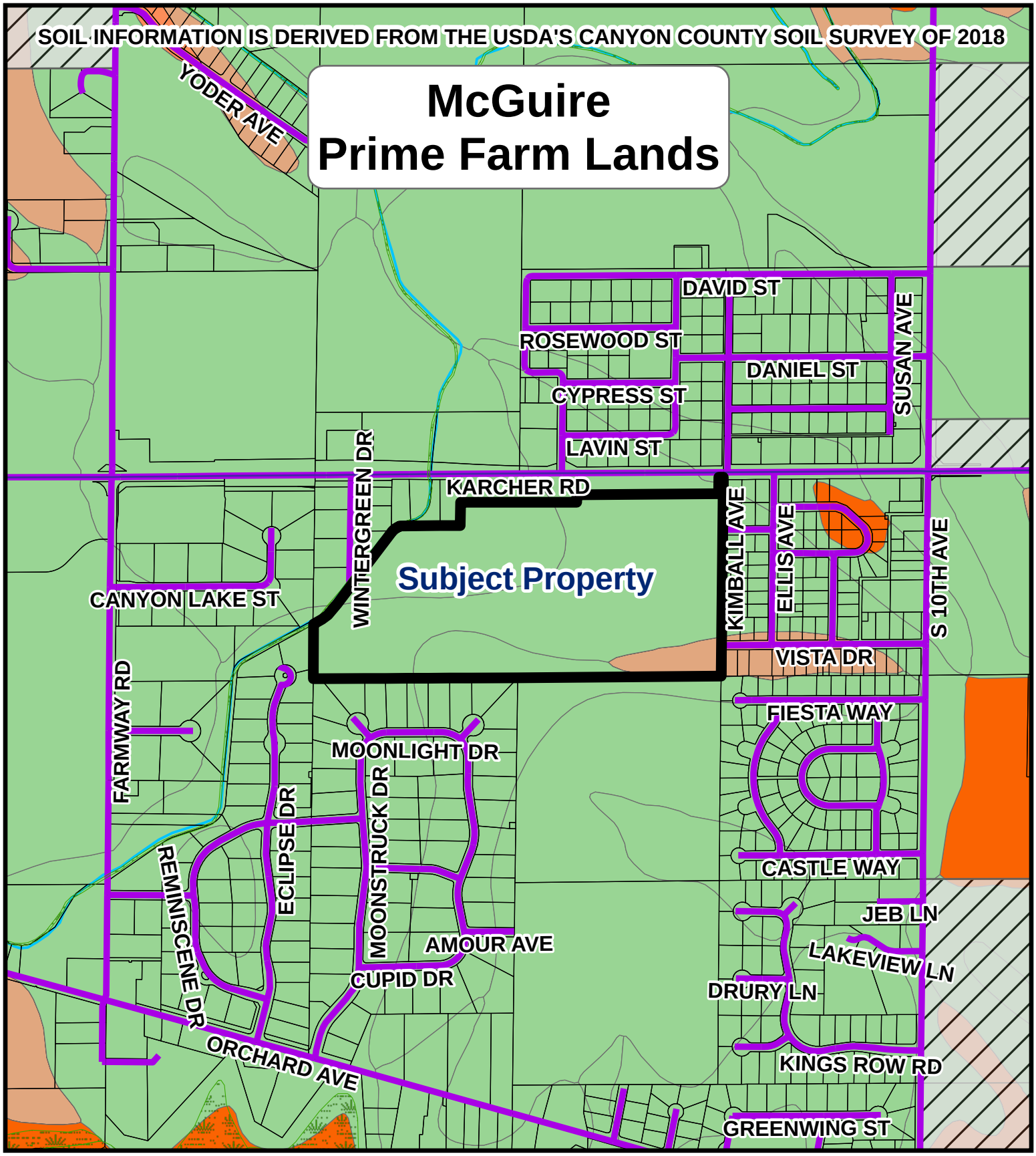
PLATTED SUBDIVISIONS

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

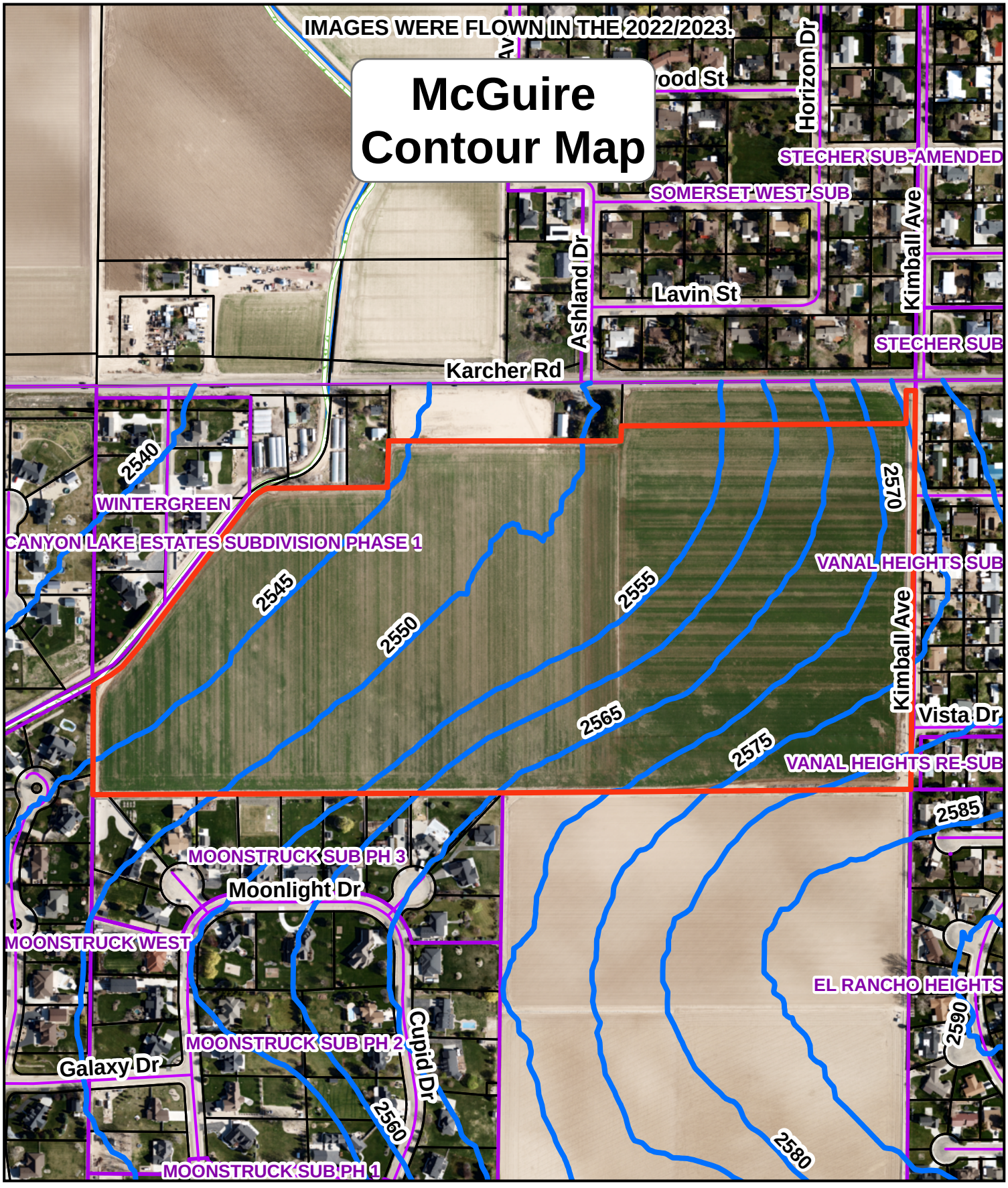
SOIL CAPABILITY CLASS	SOIL CAPABILITY	SQUARE FOOTAGE	ACREAGE	PERCENTAGE
3	MODERATELY SUITED SOIL	267890.32	6.15	9.77%
3	MODERATELY SUITED SOIL	1703804.24	39.11	62.11%
3	MODERATELY SUITED SOIL	644298.47	14.79	23.49%
3	MODERATELY SUITED SOIL	1753.00	0.04	0.06%
4	MODERATELY SUITED SOIL	125248.80	2.88	4.57%
		2742994.83	62.97	100%

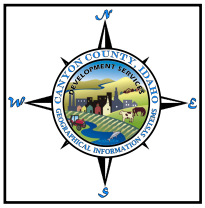
FARMLAND REPORT

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

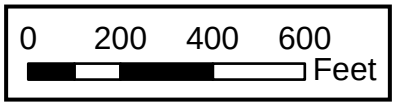
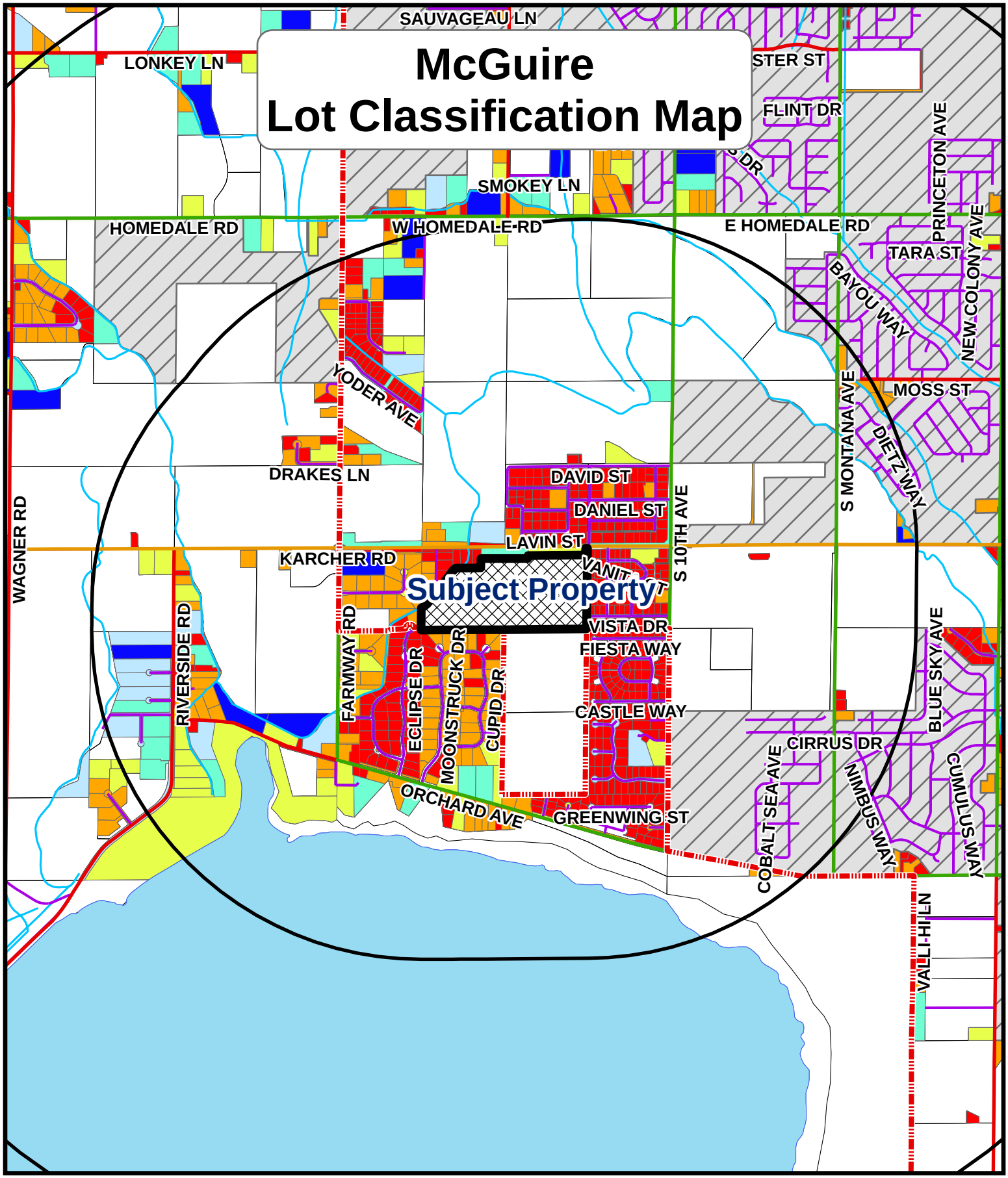

0
200
400
600
Feet

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

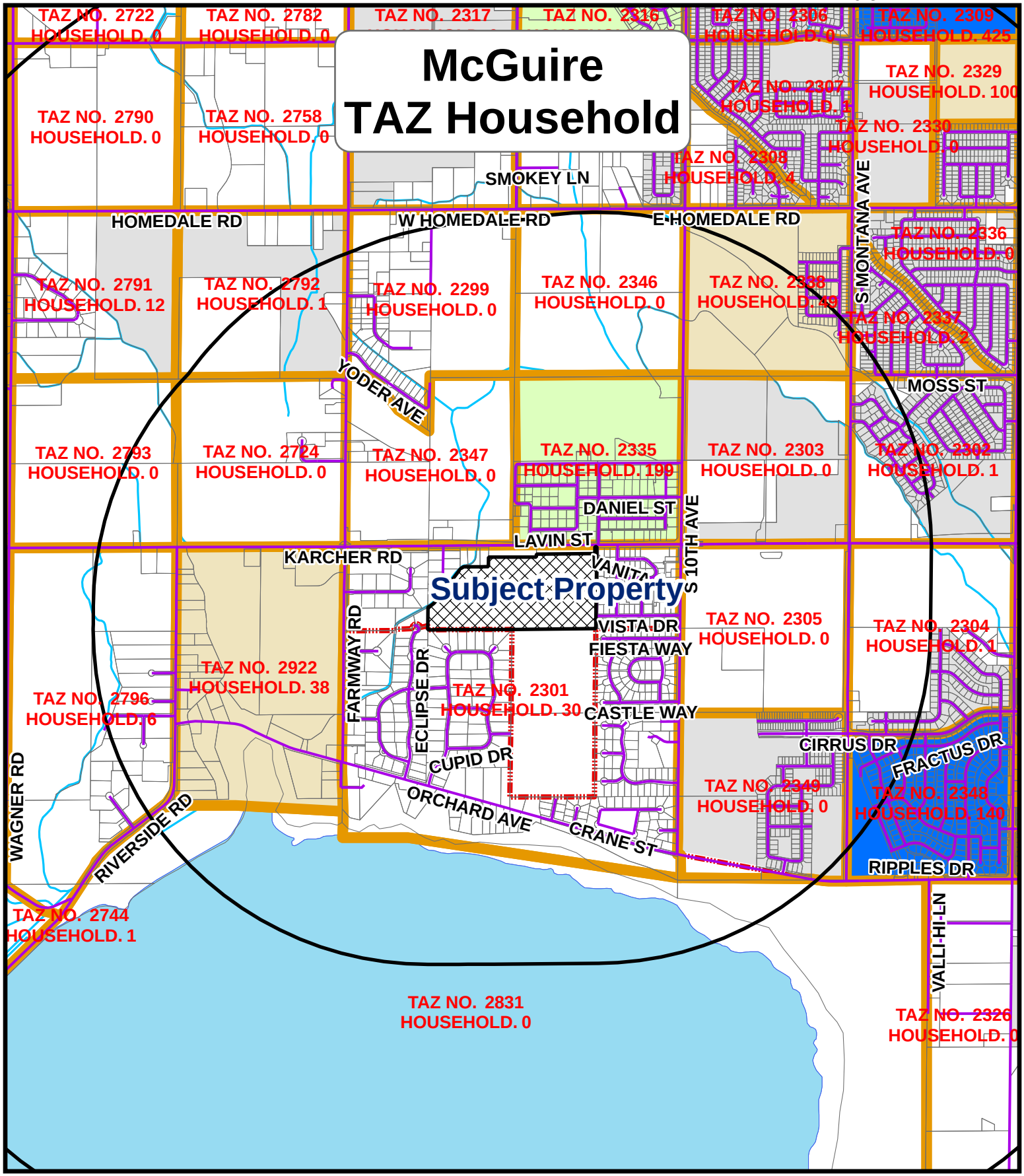
ITDFunctionalClassification

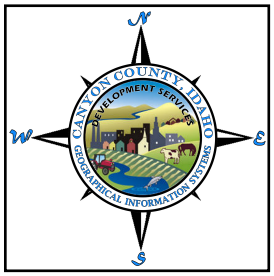
- Interstate
- Minor Arterial
- Major Collector
- Minor Collector
- Other Principal Arterials

Exhibit B.2j

0 0.5

Exhibit B.2k





House Hold 2025-2050

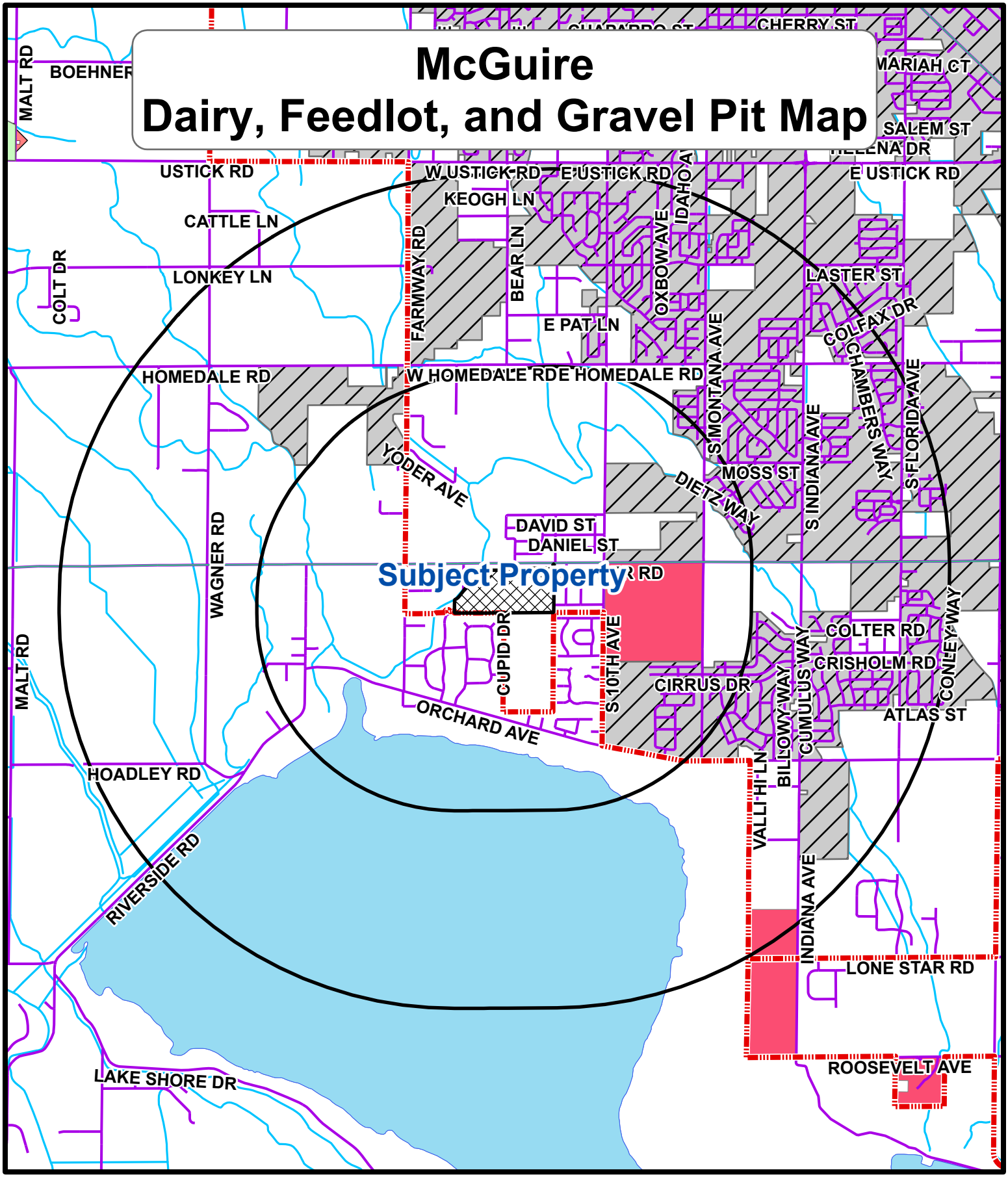
-4 - 50	251 - 500
51 - 150	501 - 750
151 - 250	751 - 1263

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:

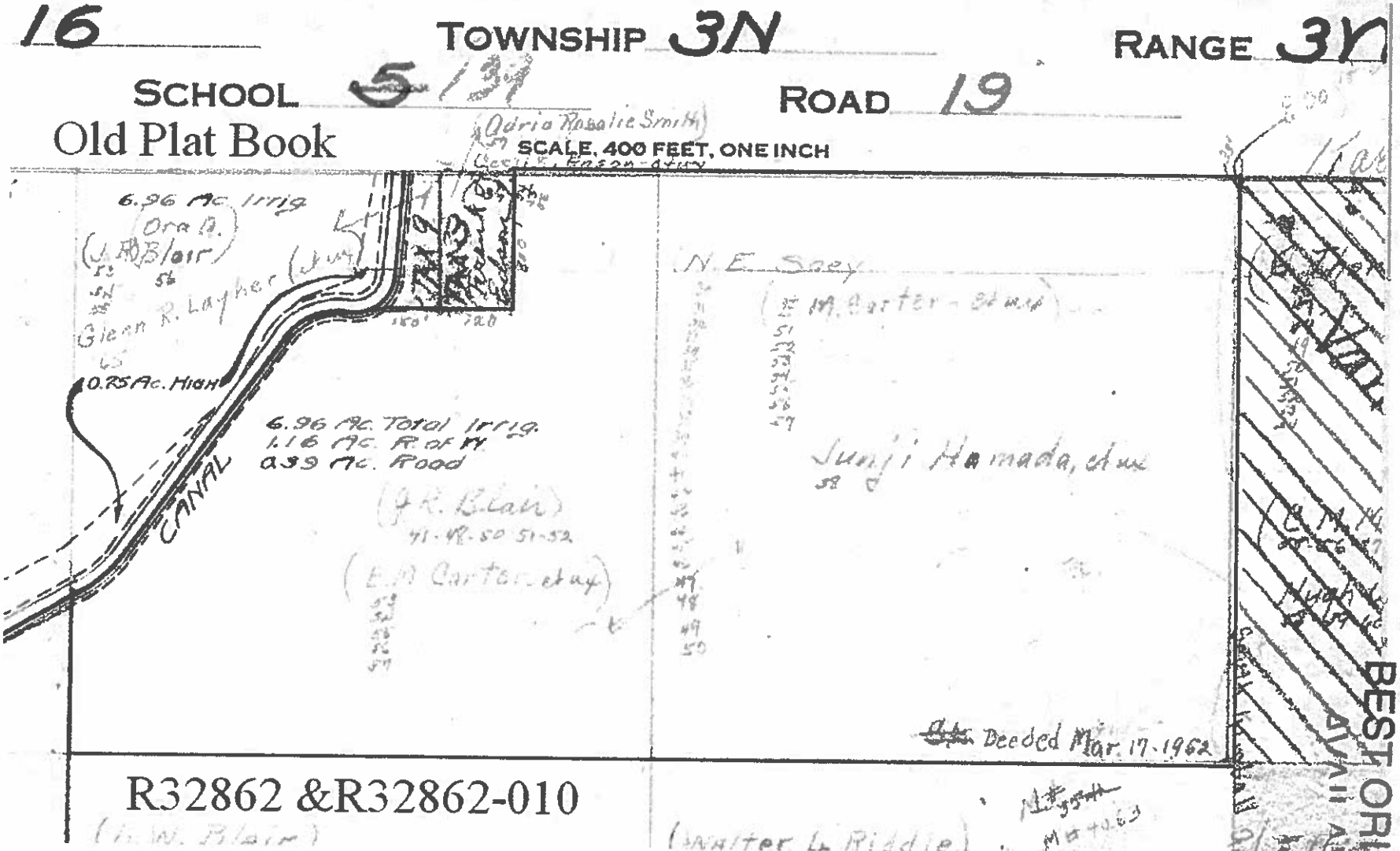
PI2019-0361

16 TOWNSHIP 3N RANGE 3W

SCHOOL 5 / 39 ROAD 19

Old Plat Book

SCALE, 400 FEET, ONE INCH



R32862 &R32862-010

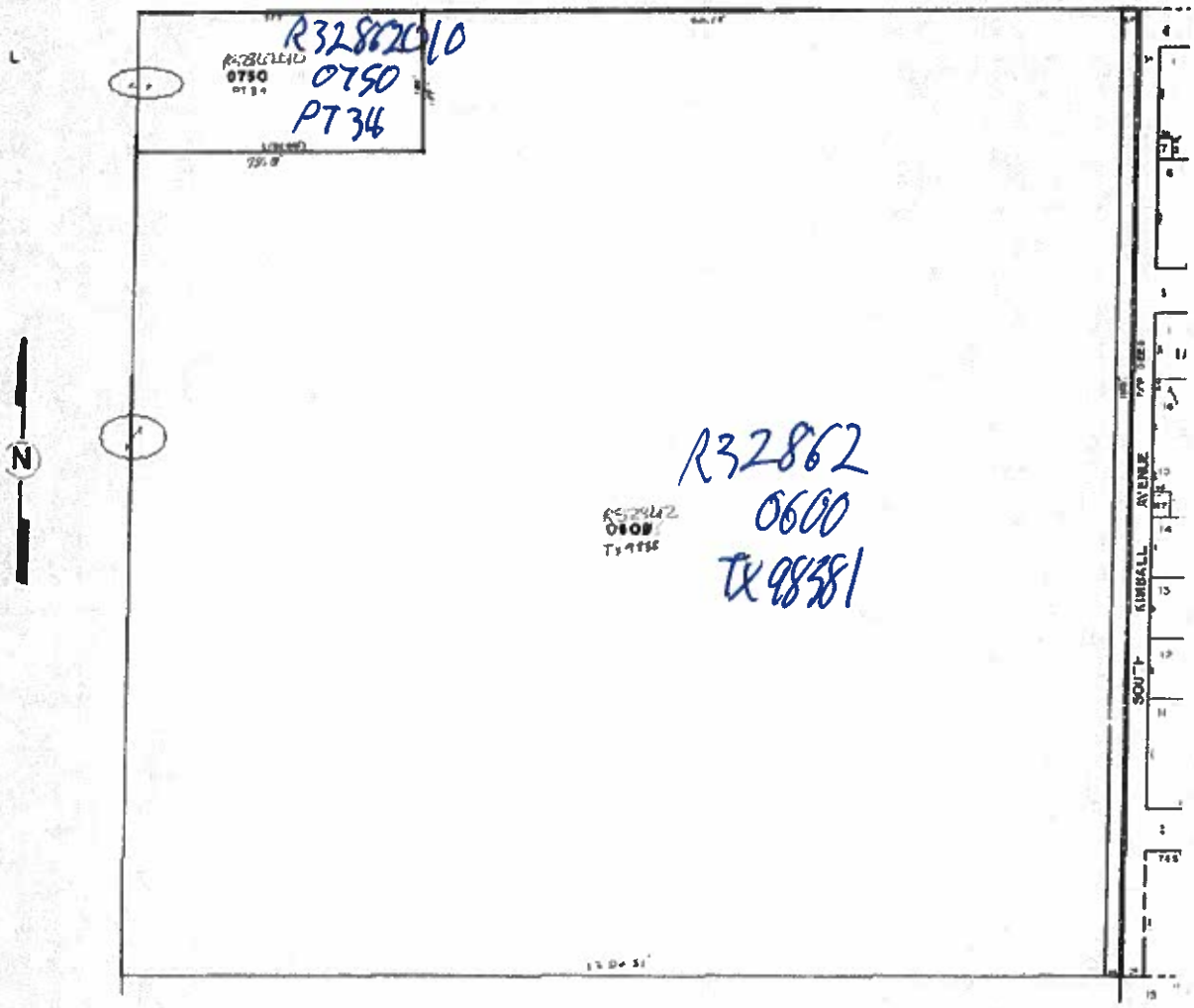
(J. W. Blair)

BEST ORIGINAL AVAILABLE

Exhibit B.3 - 3

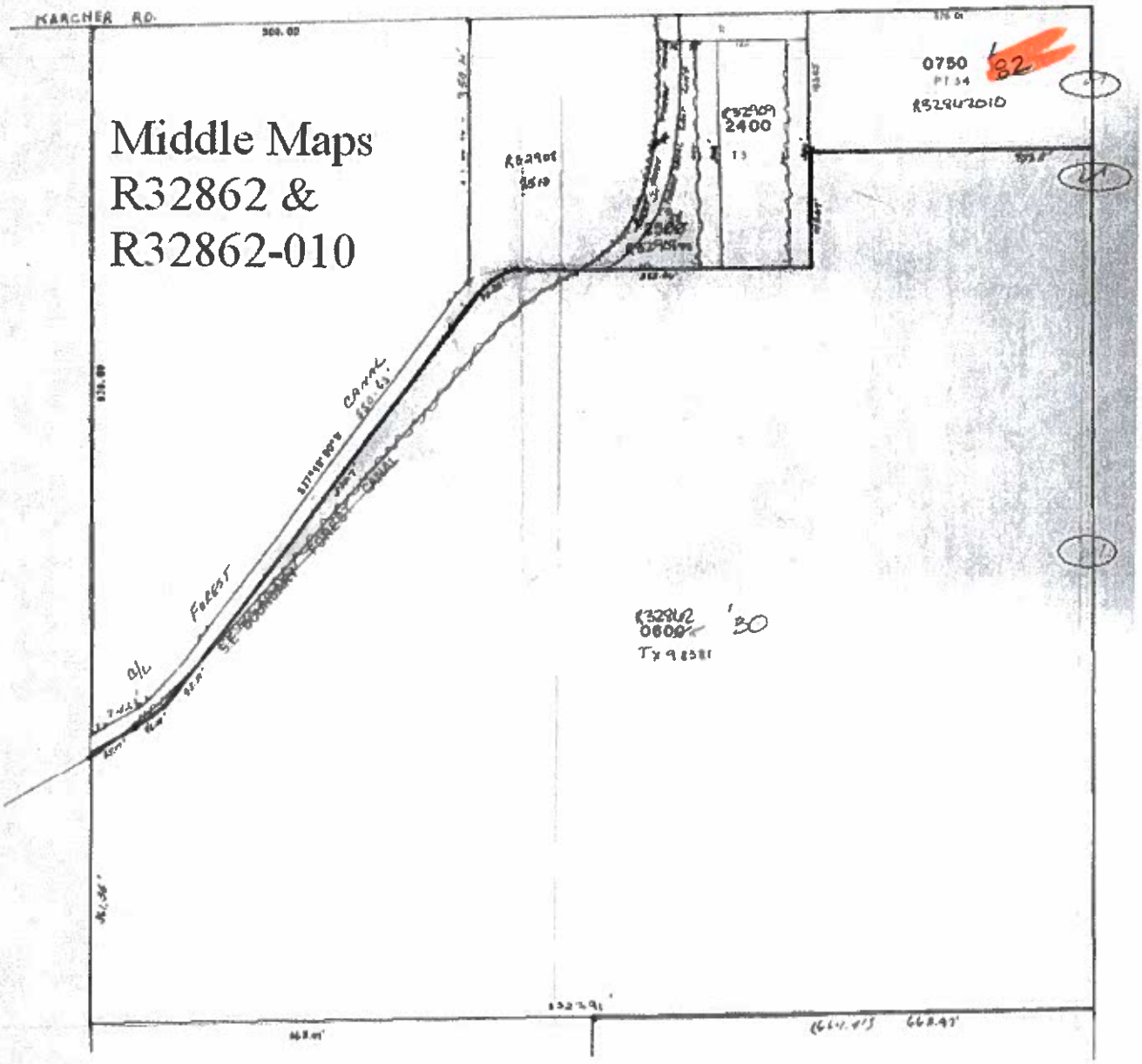
BEST ORIGINAL
AVAILABLE

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. 6200 Meeker Place Boise, Idaho 83713
REPRESENTATIVE:	Rita Earl Earl & Associates, Inc. 314 Badiola Street 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.

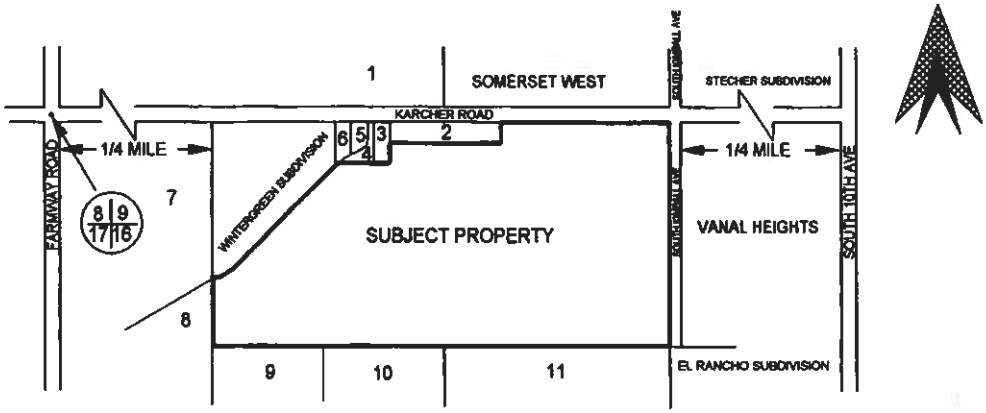
Assessor's #R32862

1/4 MILE NOTIFICATION DIST.

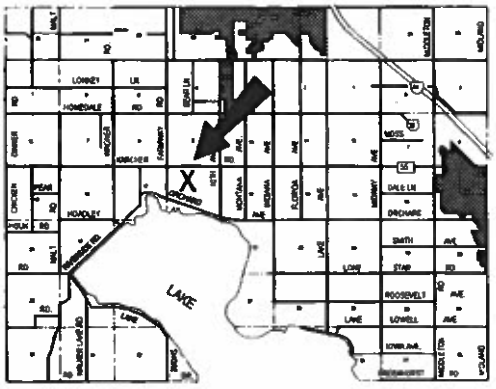
300' PROPERTY OWNERSHIP AND SUBDIVISIONS SHOWN

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:

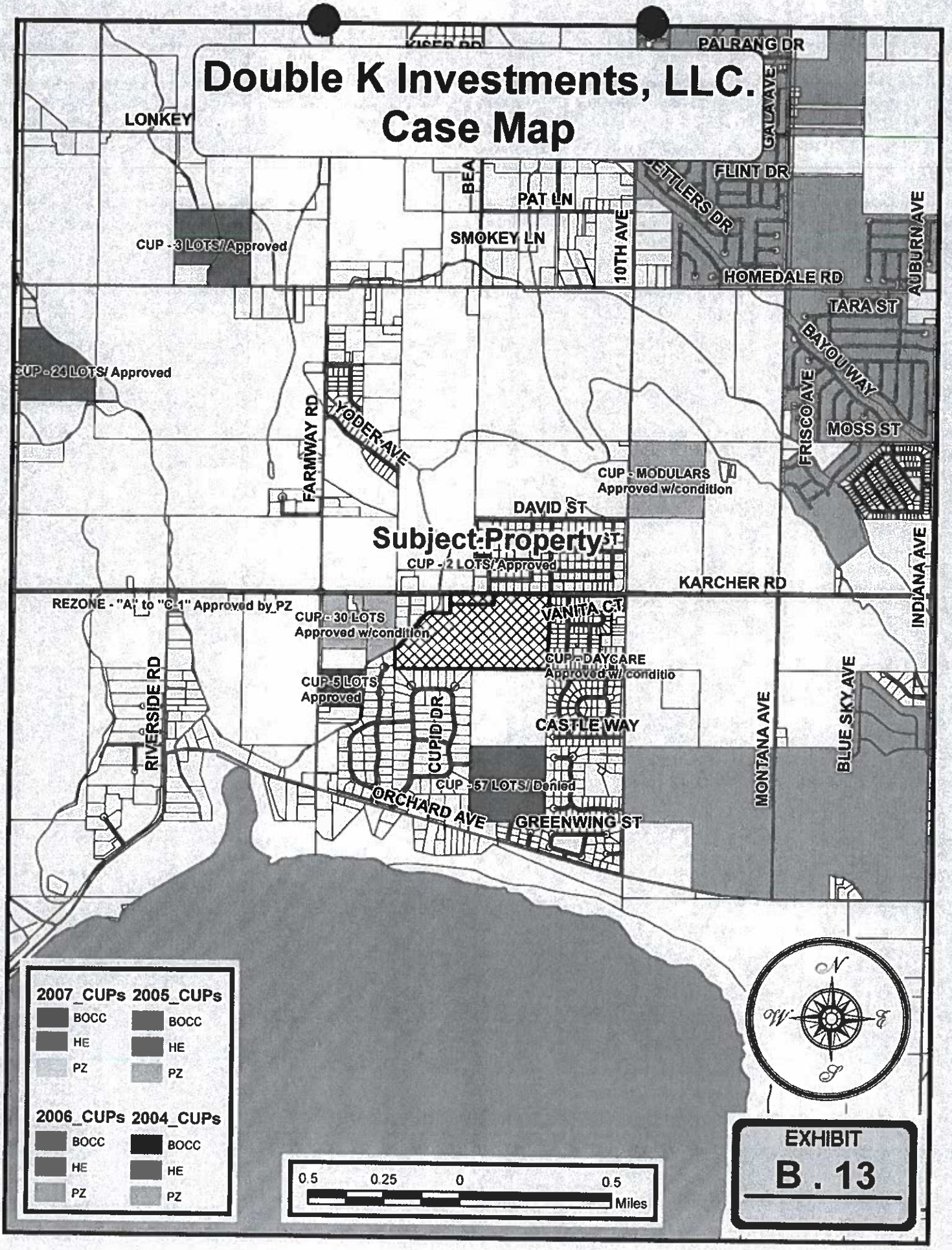
1. Length of the delay in bringing the case to a public hearing.
   Answer: One (1) year.
2. Justification for the delay.
   Answer: The City of Caldwell will not be extending city services to the subject property, thus necessitating the substantial revision of the concept plan and requested number of 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
GALA AVE
FLINT DR
PAT LN
SMOKEY LN
10TH AVE
HOMEDALE RD
AUBURN AVE
TARA ST
BAYOU WAY
CUP - 3 LOTS/ Approved
CUP - 24 LOTS/ Approved
FARMWAY RD
YODER AVE
FRISCO AVE
MOSS ST
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
BOCC
HE
PZ
2005_CUPs
BOCC
HE
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2006_CUPs
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2004_CUPs
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EXHIBIT
B . 13



Exhibit B.3 - 19

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.

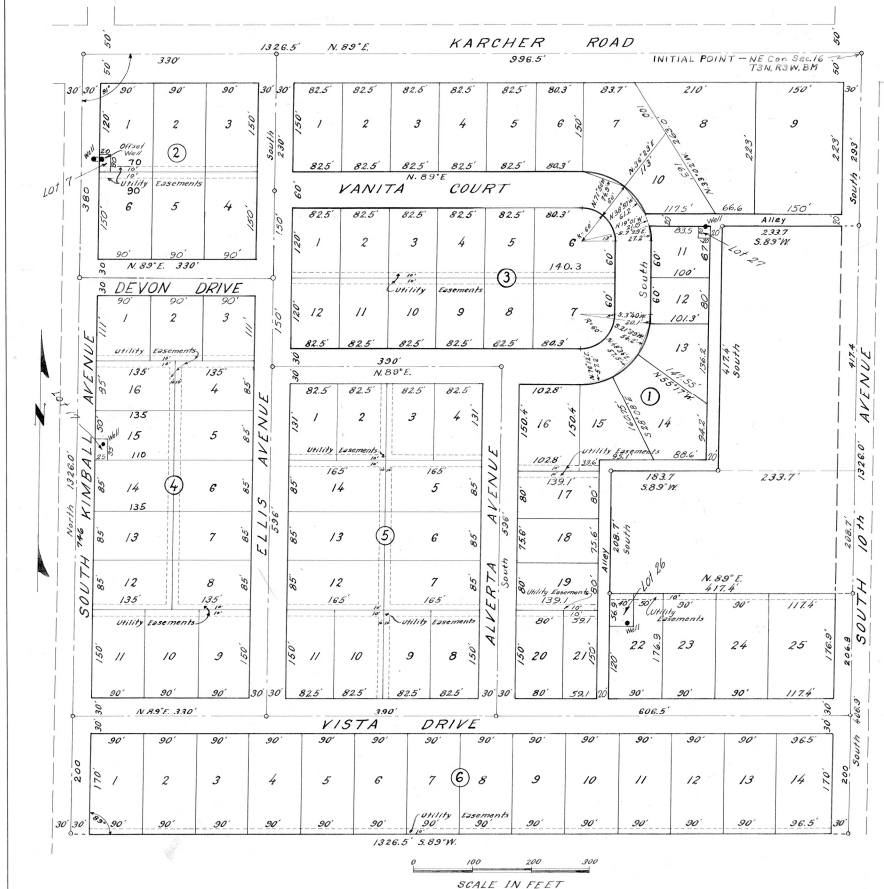
BOARD OF COUNTY COMMISSIONERS
CANYON COUNTY,

	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 }

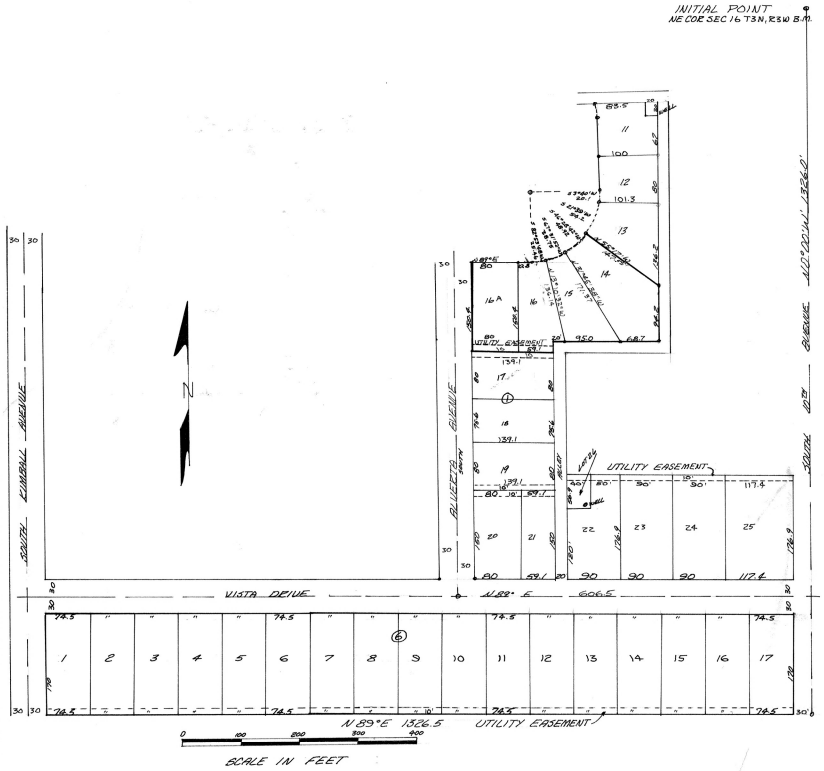
I hereby certify that this Instrument was filed for record at the request of Melvin V. Davenport at 22 minutes past 3 o'clock P.M. this 23rd day of June 1960 A.D.

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.

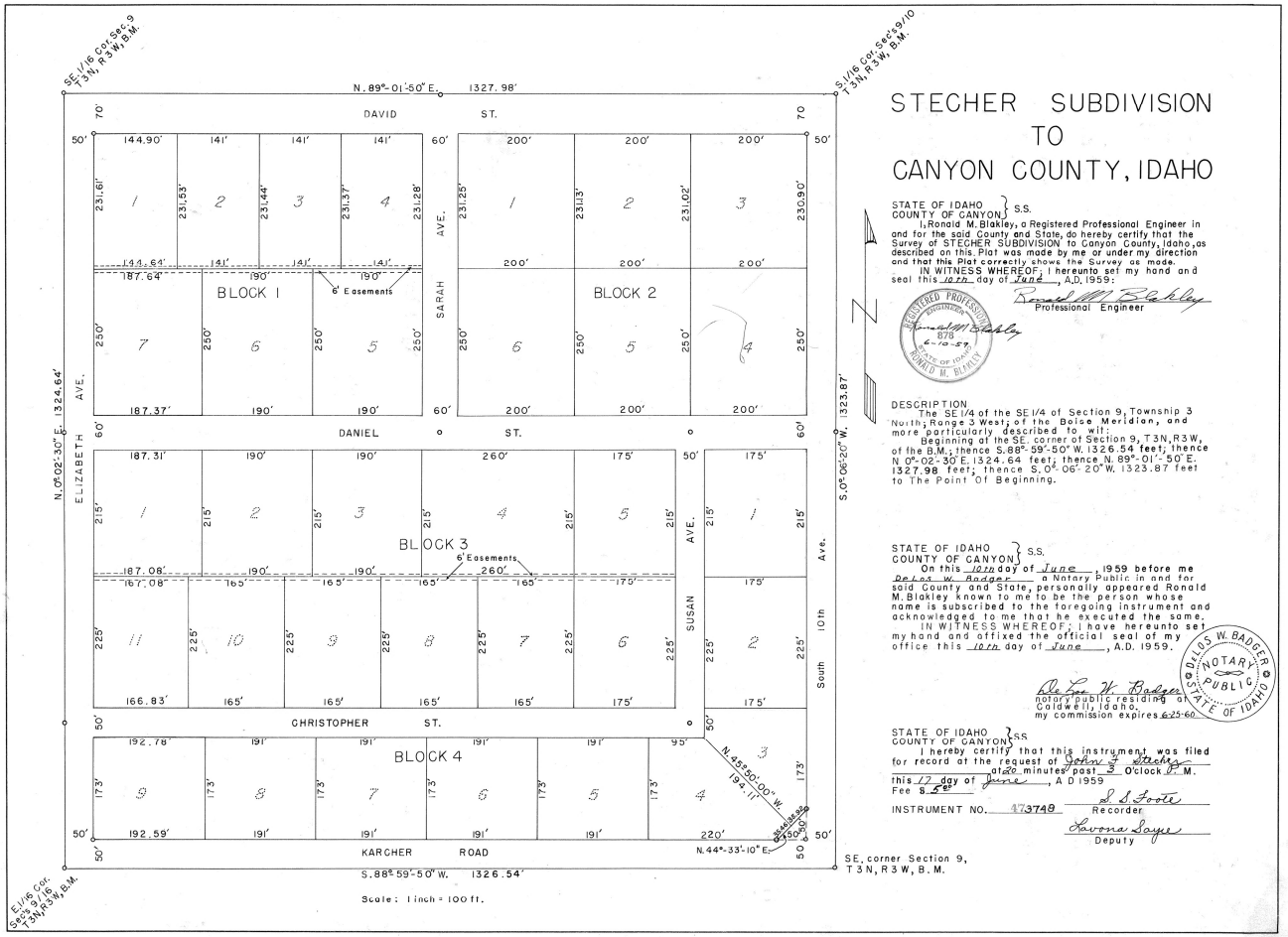
ACKNOWLEDGED BEFORE ME THIS 10 DAY OF August 1973
RESIDING AT Middleton, IDAHO

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

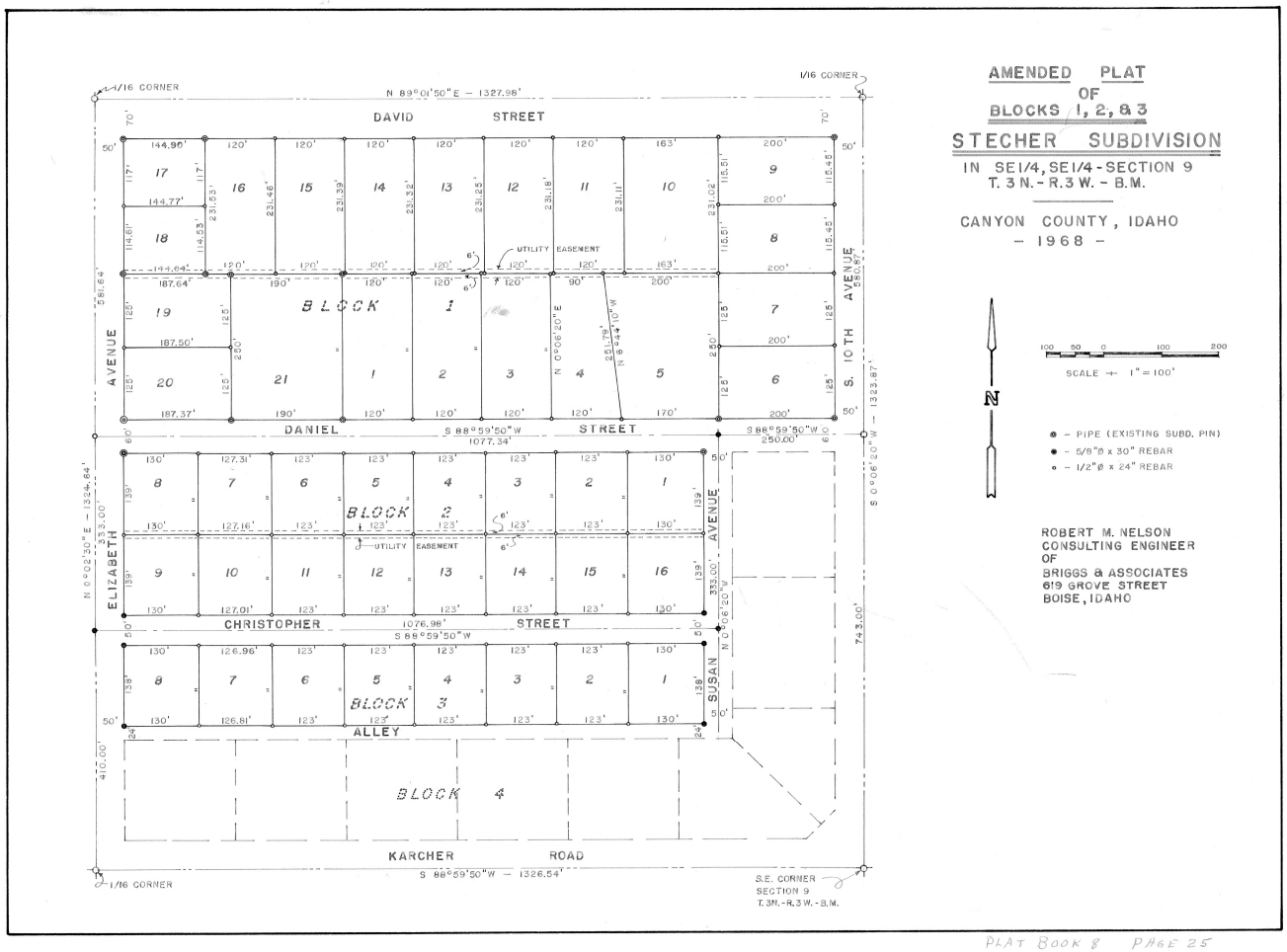
STATE OF IDAHO } S.S.
COUNTY OF CANYON }

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

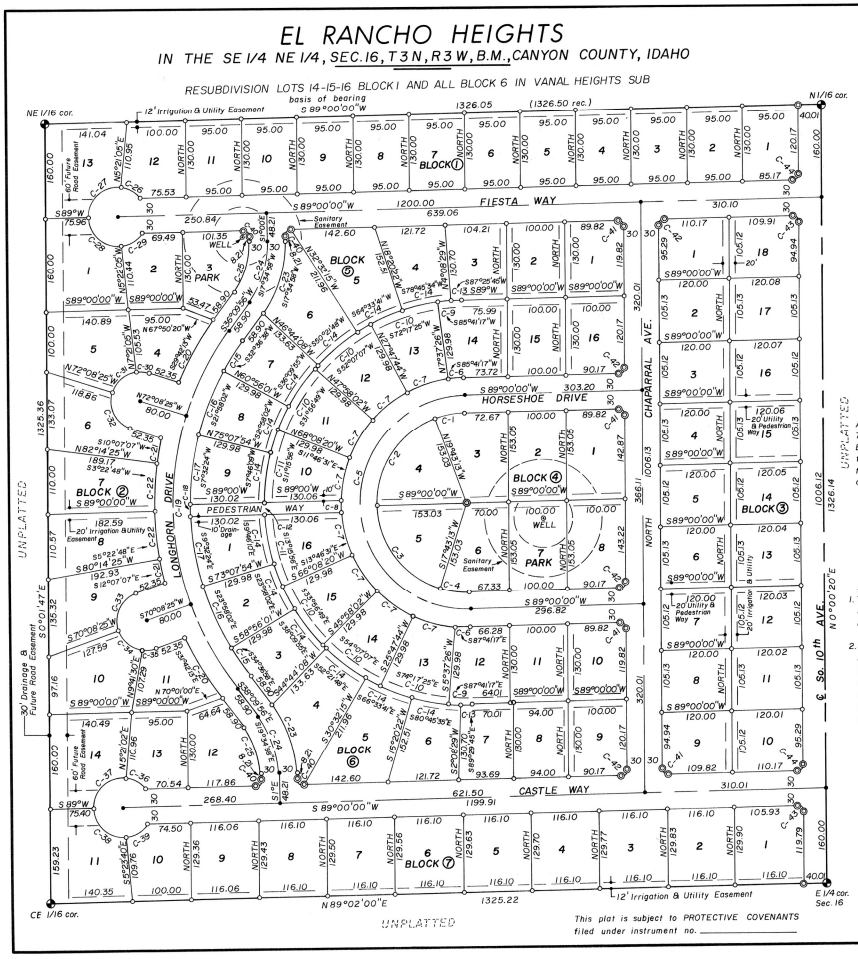
776448

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

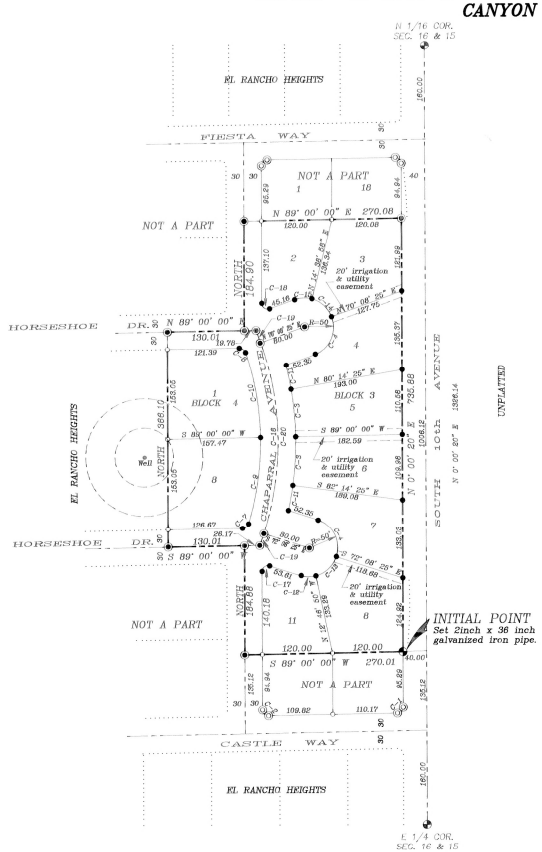
BOOK 14 PAGE 34

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
CANYON CNTY RECORDER
BY C. Leistedik



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 RECTRICTIONS 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 8714681 for EL RANCHO HEIGHTS.

CURVE TABLE

CURVE	CEN. 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"	11.04	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' 38" E
C-13	59° 21' 35"	50.00	28.50	51.80	49.52	S 47° 32' 23" W
C-14	55° 29' 27"	50.00	26.30	48.42	46.55	S 47° 36' 19" 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

Gerald L. Earl April 23, 1990

Skinner & Associates, Inc.
1002 Blaine St. Suite 202
Caldwell, Idaho

Sheet 1 of 2

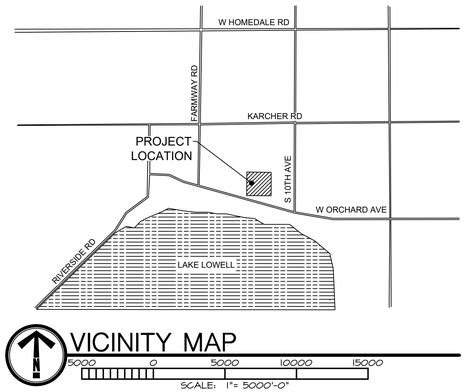
BK. 19, PG. 03

Exhibit B.5c - 2

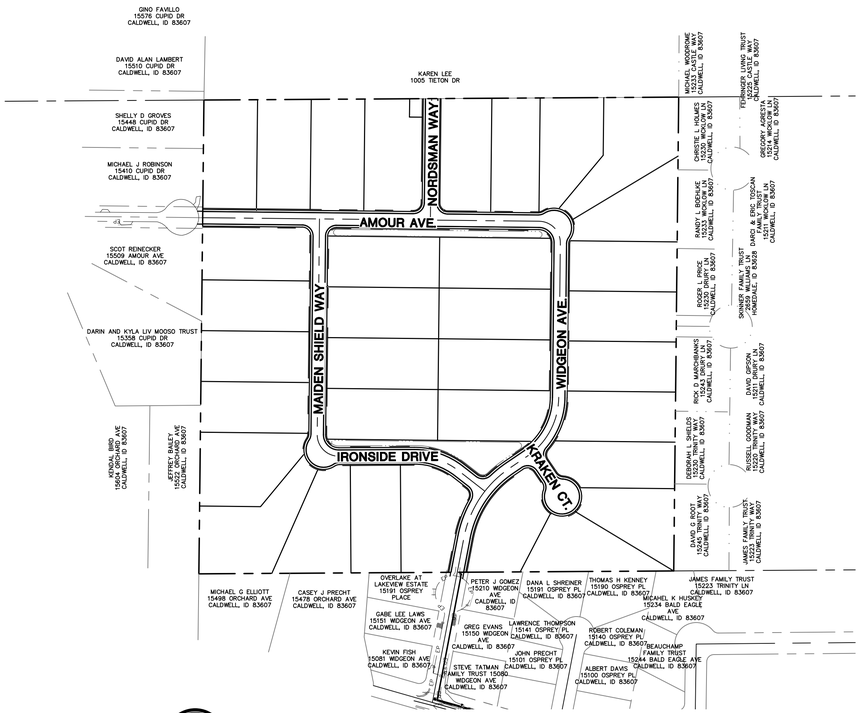
NORSE LANDING SUBDIVISION

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

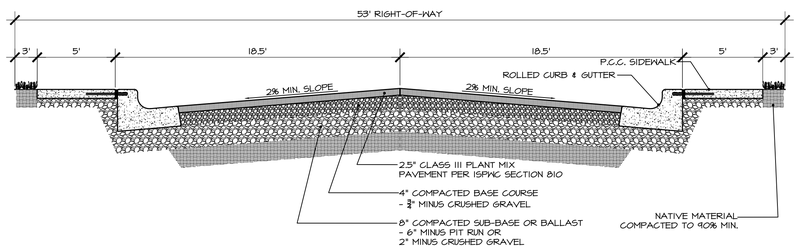
CIVIL ENGINEER:
BRECKON LAND DESIGN
CONTACT: MARY WALL
PHONE: 208-376-5153

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

PROFESSIONAL ENGINEER
REGISTERED
MARY B. WALL
12224
6-13-21
STATE OF IDAHO

• Civil Engineering
• Landscape Architecture
• Erosion & Sediment Control
• Entitlement Coordination
• Irrigation Design
• Land Planning
www.breckonlanddesign.com
Fax: 208-376-5165
Phone: 208-376-5153
6661 North Glenwood Street
Garden City, Idaho 83714

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811 Know what's below. Call before you dig.
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

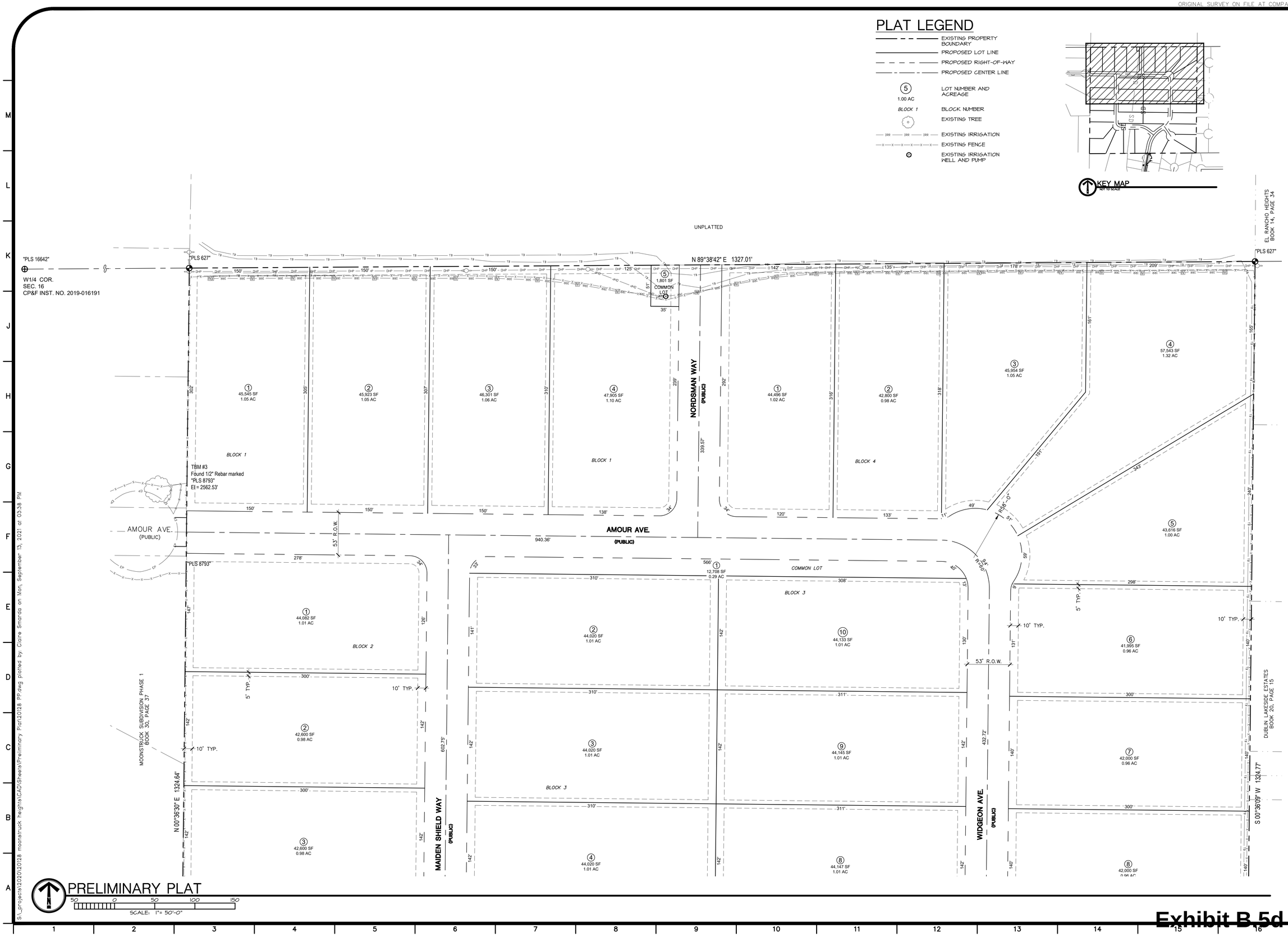
NORSE LANDING SUBDIVISION
CANYON COUNTY, ID
PRELIMINARY PLAT
COVER

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.

S:_projects\20201\20128 moonstruck heights\CAD\Sheets\Preliminary Plat\20128 PP.dwg plotted by Claire Smarda on Mon, September 13, 2021 at 03:37 PM

ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVYEING



PROFESSIONAL ENGINEER
REGISTERED
10224
09-13-21
STATE OF IDAHO
MARY B. WALL

BRECKON landdesign

- Civil Engineering
- Landscape Architecture
- Erosion & Sediment Control
- Graphic Communication
- Irrigation Design
- Land Planning

www.breckonlanddesign.com
Fax: 208-376-8528
Phone: 208-376-5153
6661 North Glenwood Street
Garden City, Idaho 83714

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NORSE LANDING SUBDIVISION
CANYON COUNTY, ID

PRELIMINARY PLAT

811 Know what's below. Call before you dig.
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
PP1.1

PRELIMINARY PLAT

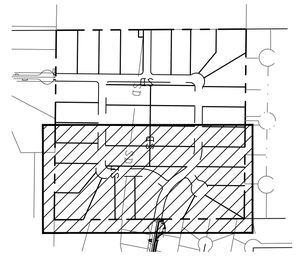
S:_projects\2020\20128 moonstruck heights\CAD\Sheets\Preliminary Plat\20128 PP.dwg plotted by: Claire Smarda on Mon, September 13, 2021 at 03:38 PM

Exhibit B.5d - 2

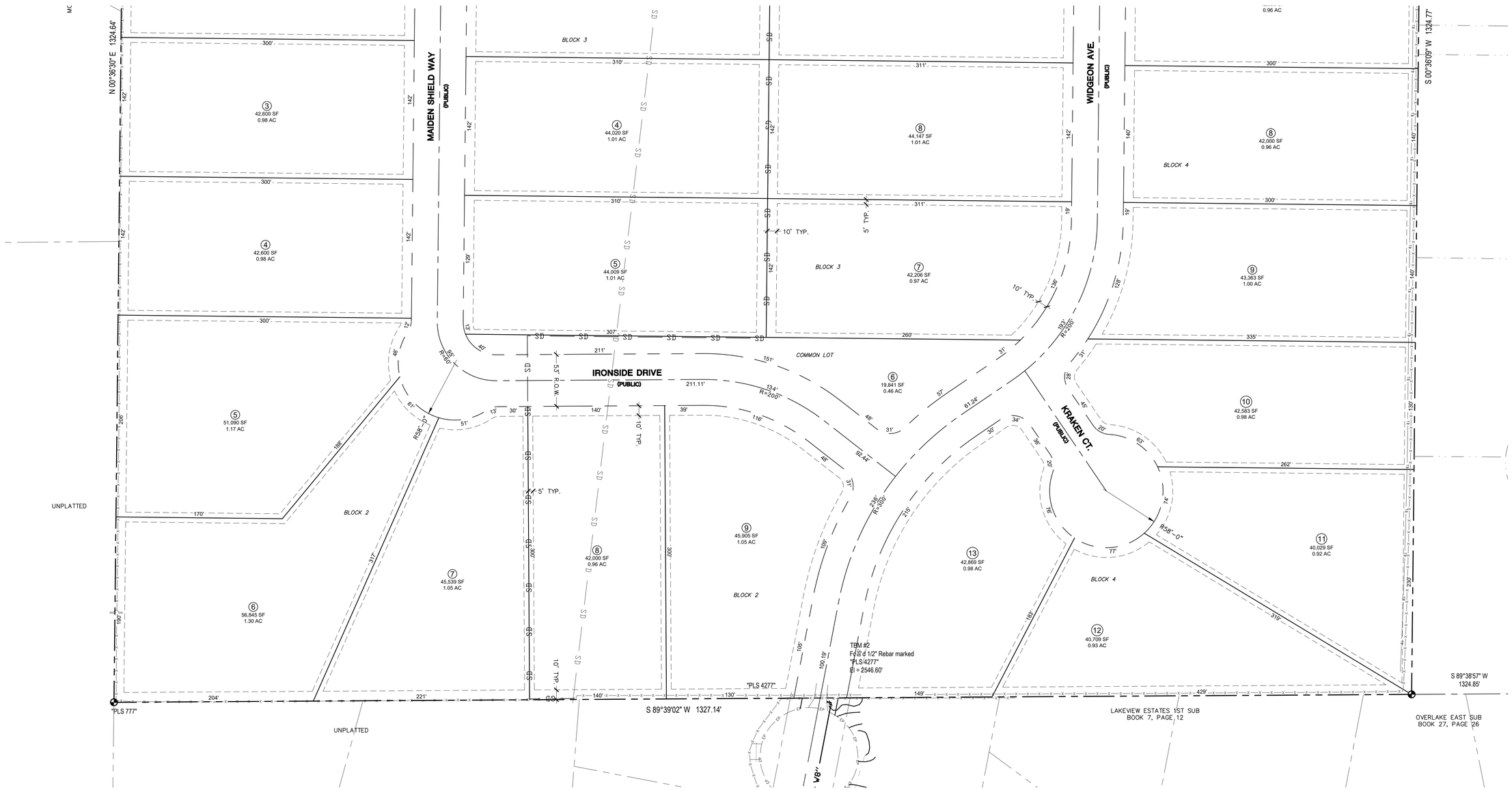
ORIGINAL SURVEY ON FILE AT COMPASS LAND SURVYEING

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



KEY MAP



PRELIMINARY PLAT

SCALE: 1"= 50'-0"

PROFESSIONAL ENGINEER REGISTERED 10224 09-13-21 STATE OF IDAHO MARY B. WALL

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• Landscape Architecture
• Erosion & Sediment Control
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NORSE LANDING SUBDIVISION
CANYON COUNTY, ID

PRELIMINARY PLAT

811 Know what's below. Call before you dig.
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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

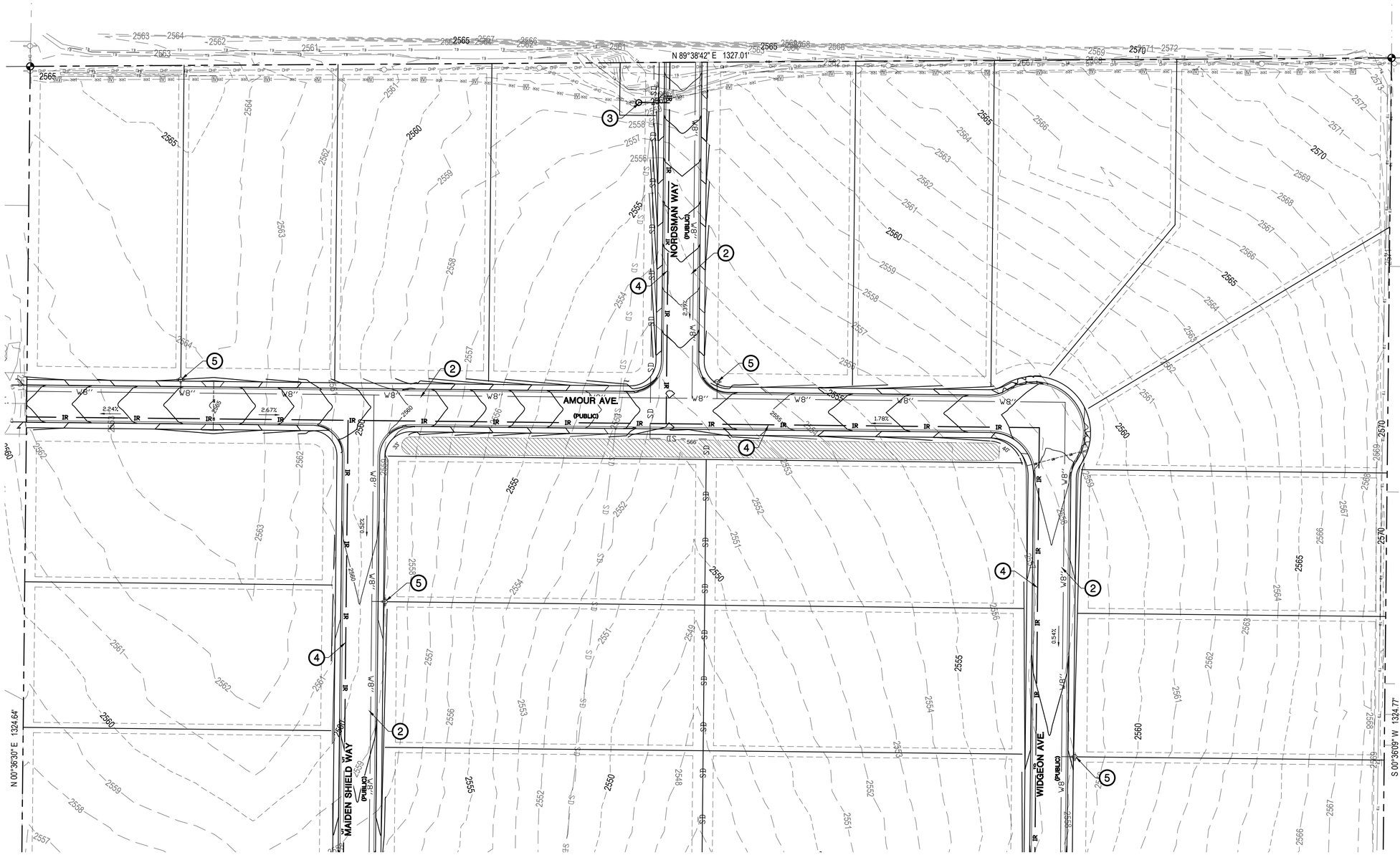
PRELIMINARY PLAT

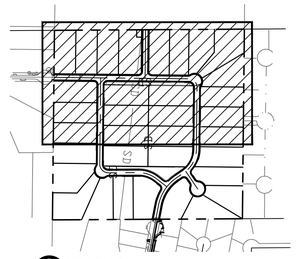
THE PROFESSIONAL SERVICES OF THE DESIGN PROFESSIONAL ARE UNDERTAKEN FOR AND ARE PERFORMED IN THE INTEREST OF THE CLIENT AND CONTRACTUAL OBLIGATION IS ASSUMED BY THE DESIGN PROFESSIONAL FOR THE BENEFIT OF ANY OTHER PERSON INVOLVED IN THE PROJECT.

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

Exhibit B.5d - 3

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
- IR — PROPOSED PRESSURE IRRIGATION
- W8" — PROPOSED DOMESTIC WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- H20 — EXISTING WATER MAIN
- EXISTING IRRIGATION WELL AND PUMP
- 1040' — PROPOSED CONTOUR
- 1050 — EXISTING CONTOUR
- 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

SCALE: 1" = 50'-0"

Exhibit B.5d - 4

PROFESSIONAL ENGINEER
REGISTERED
10224
09-13-21
STATE OF IDAHO
MARY B. WALL

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NORSE LANDING SUBDIVISION
CANYON COUNTY, ID
PRELIMINARY GRADING, DRAINAGE, & UTILTIY PLAN

811 Know what's below. Call before you dig.
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

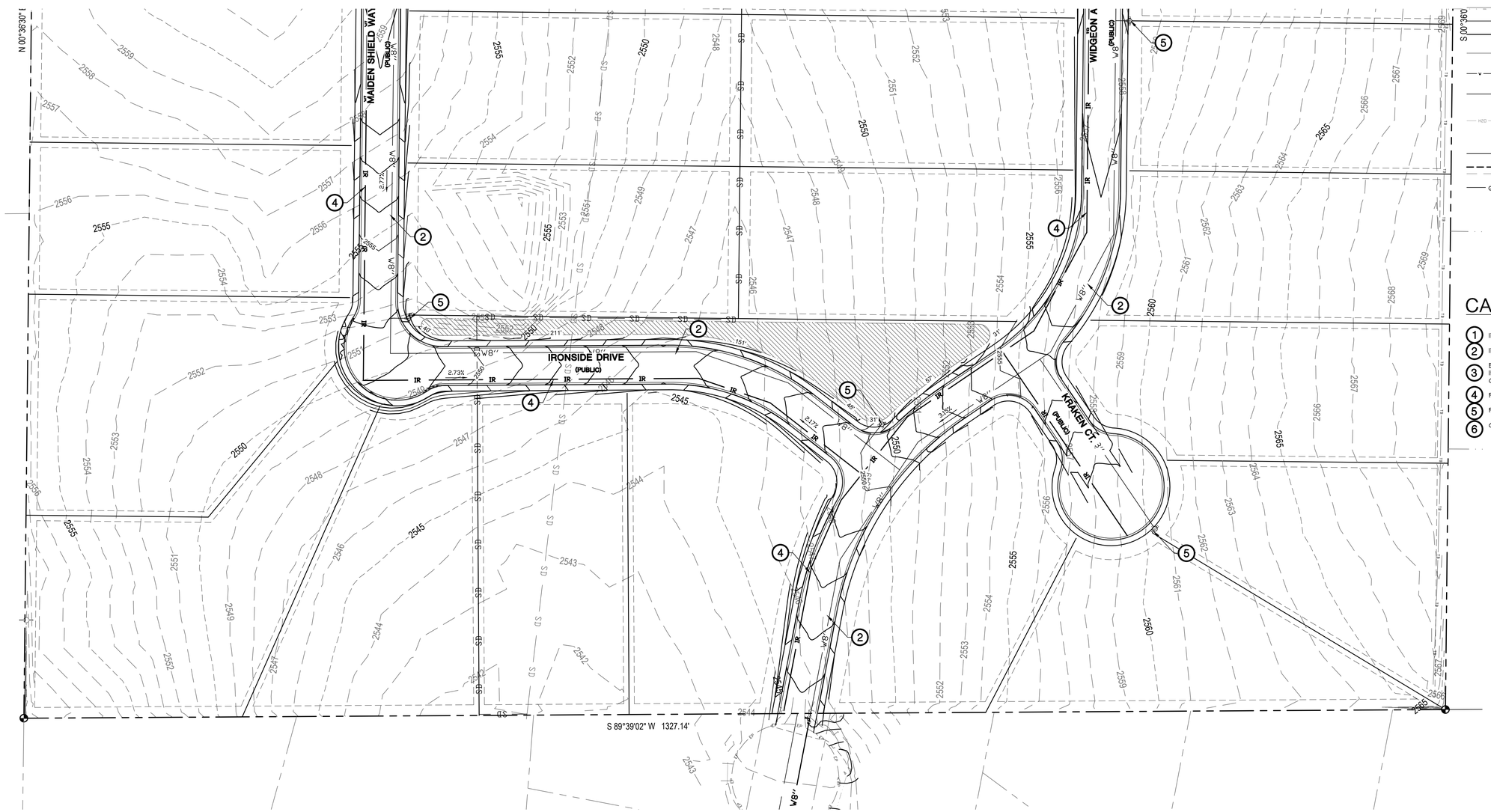
SHEET NUMBER
PP1.3

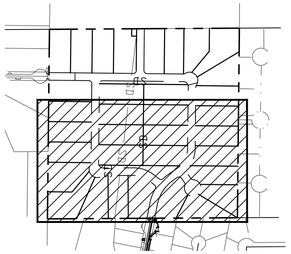
PRELIMINARY PLAT

THE PROFESSIONAL SERVICES OF THE DESIGN PROFESSIONAL ARE UNDERTAKEN FOR AND ARE PERFORMED IN THE INTEREST OF THE CLIENT NO CONTRACTUAL OBLIGATION IS ASSUMED BY THE DESIGN PROFESSIONAL FOR THE BENEFIT OF ANY OTHER PERSON INVOLVED IN THE PROJECT.

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

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

PRELIMINARY GRADING, DRAINAGE & UTILITY PLAN

SCALE: 1"= 50'-0"

Exhibit B.5d - 5

PROFESSIONAL ENGINEER
REGISTERED
10224
09-13-21
STATE OF IDAHO
MARY B. WALL

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NORSE LANDING SUBDIVISION
CANYON COUNTY, ID
PRELIMINARY GRADING, DRAINAGE, & UTILTIY 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

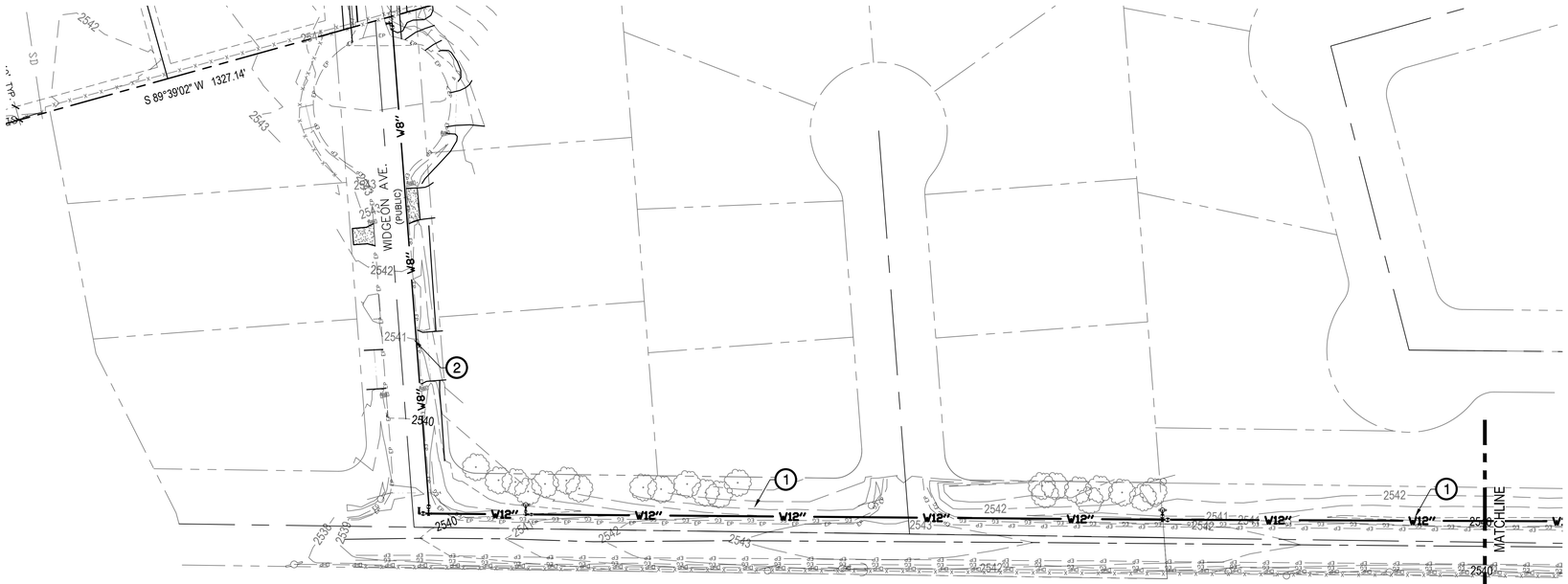
PROJECT NO.: 20128
DRAWN BY: CS
CHECKED BY: MW/JB
DATE: 02/18/21

SHEET NUMBER
PP1.4

PRELIMINARY PLAT

THE PROFESSIONAL SERVICES OF THE DESIGN PROFESSIONAL ARE, UNDERTAKEN FOR AND ARE PERFORMED IN THE INTEREST OF THE CLIENT NO CONTRACTUAL OBLIGATION IS ASSUMED BY THE DESIGN PROFESSIONAL FOR THE BENEFIT OF ANY OTHER PERSON INVOLVED IN THE PROJECT.

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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WIDGEON AVE. (PUBLIC)
ORCHARD AVE
TEAL AVE.
S. 10TH AVE.
MATCHLINE
MATCHLINE
W12"
W8"
SD
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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

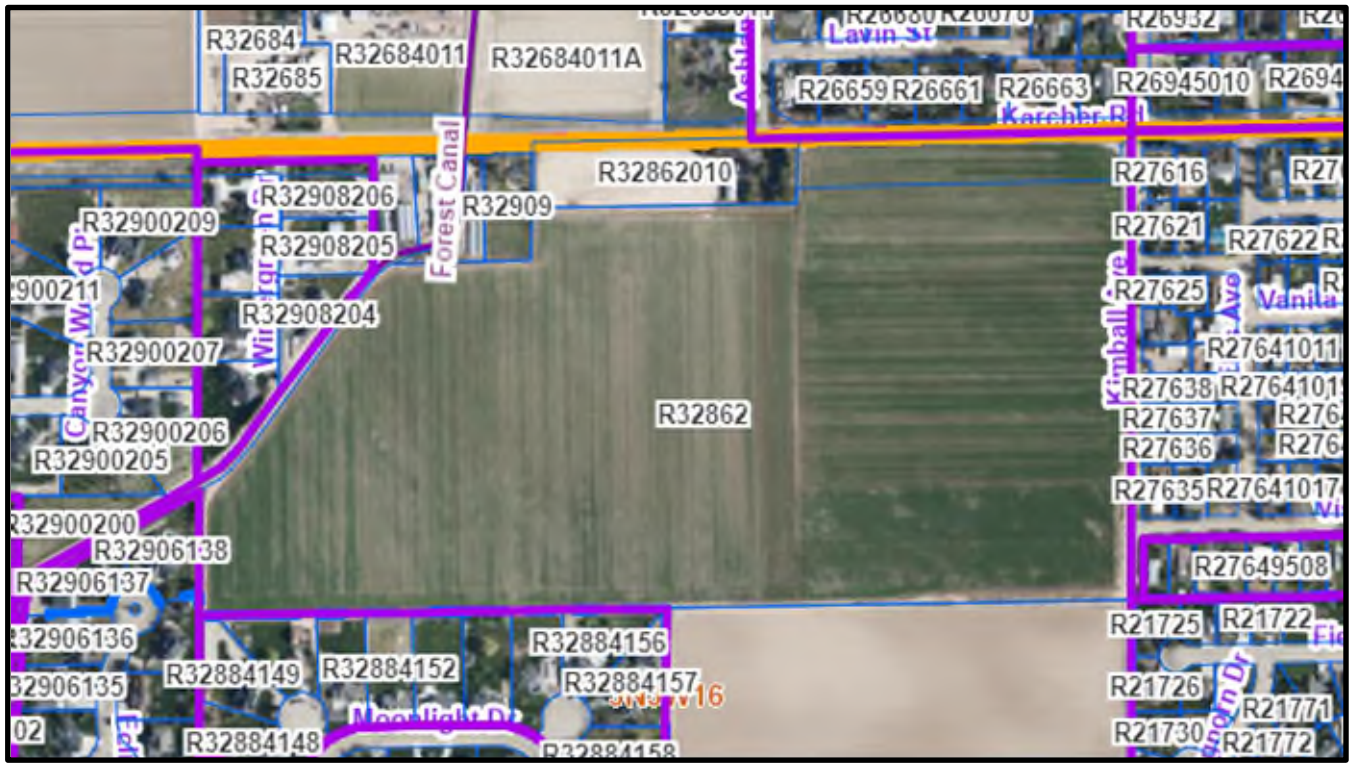


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Exhibit C.1 - 2


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Exhibit C.1 - 3


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Forest Canal

Exhibit C.1 - 4


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Exhibit C.1 - 5


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Exhibit C.1 - 6


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Forest Canal

Exhibit C.1 - 7


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Exhibit C.1 - 8


Forest Canal
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Exhibit C.1 - 9





Exhibit C.1 - 10



Exhibit C.1 - 11



Exhibit C.1 - 12



Exhibit C.1 - 13



Exhibit C.1 - 14

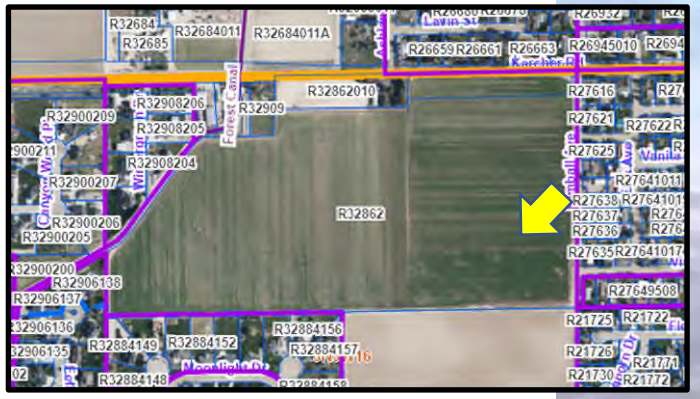

Exhibit C.1 - 15



Exhibit C.1 - 16



Exhibit C.1 - 17



Exhibit C.1 - 18


Forest Canal
R32862
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R21772

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.

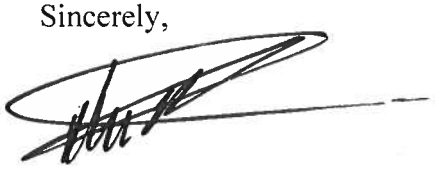
Wording on the preliminary and final recorded plat needs to state that any proposed and/or future usage of the Boise Project Board of Control facilities are subject to Idaho Statues, Title 42-1209.

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

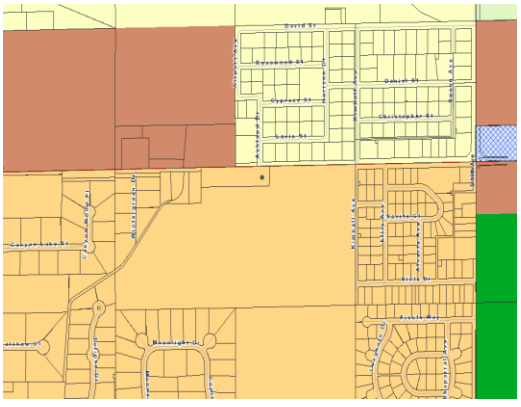
Daniel Lister
Staff Planner
Canyon County Development Services Dept.
111 North 11th Ave. Ste. 340
Caldwell, Idaho 83605

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!

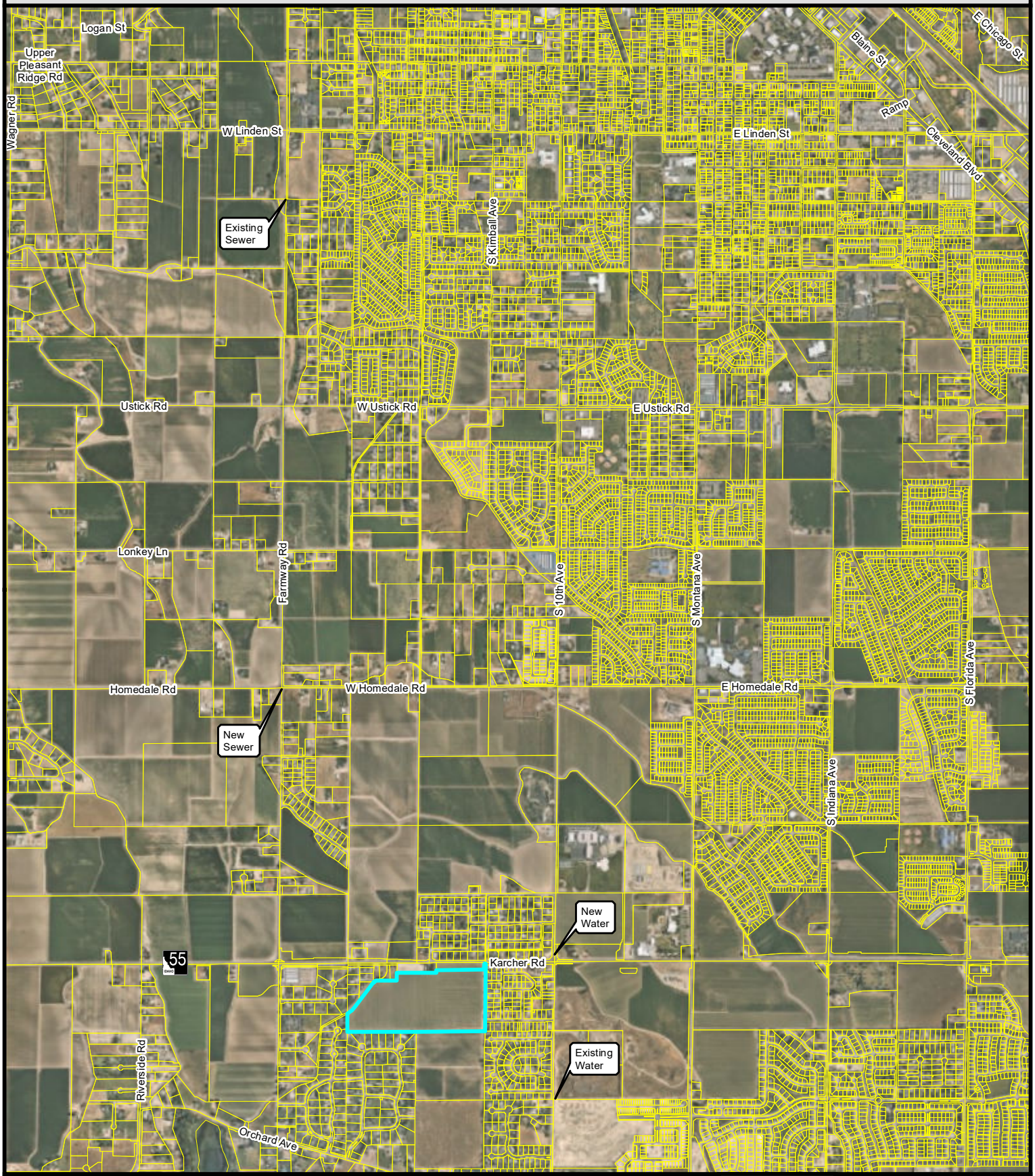
Sincerely,

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

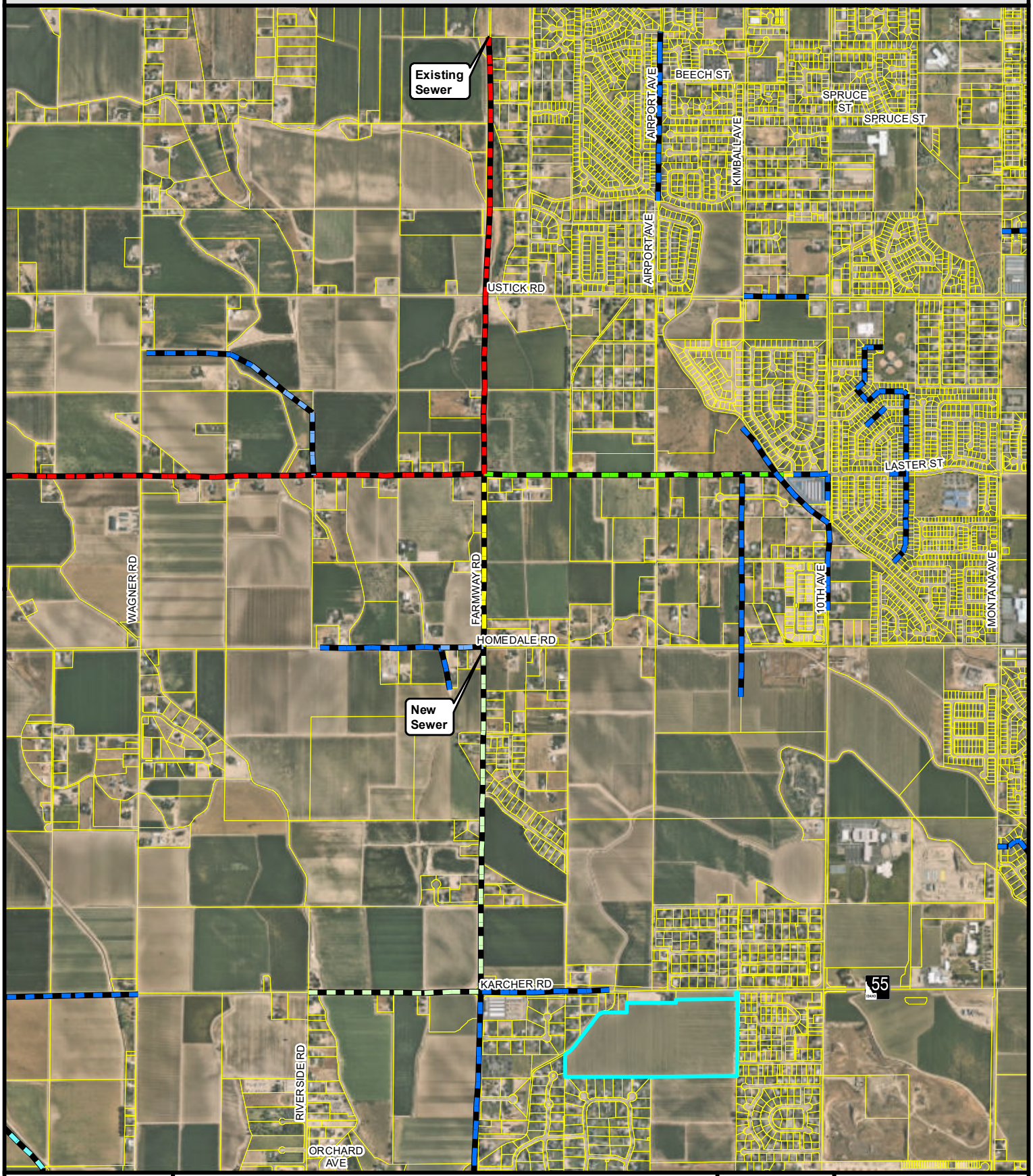
0 1,250 2,500

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

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.

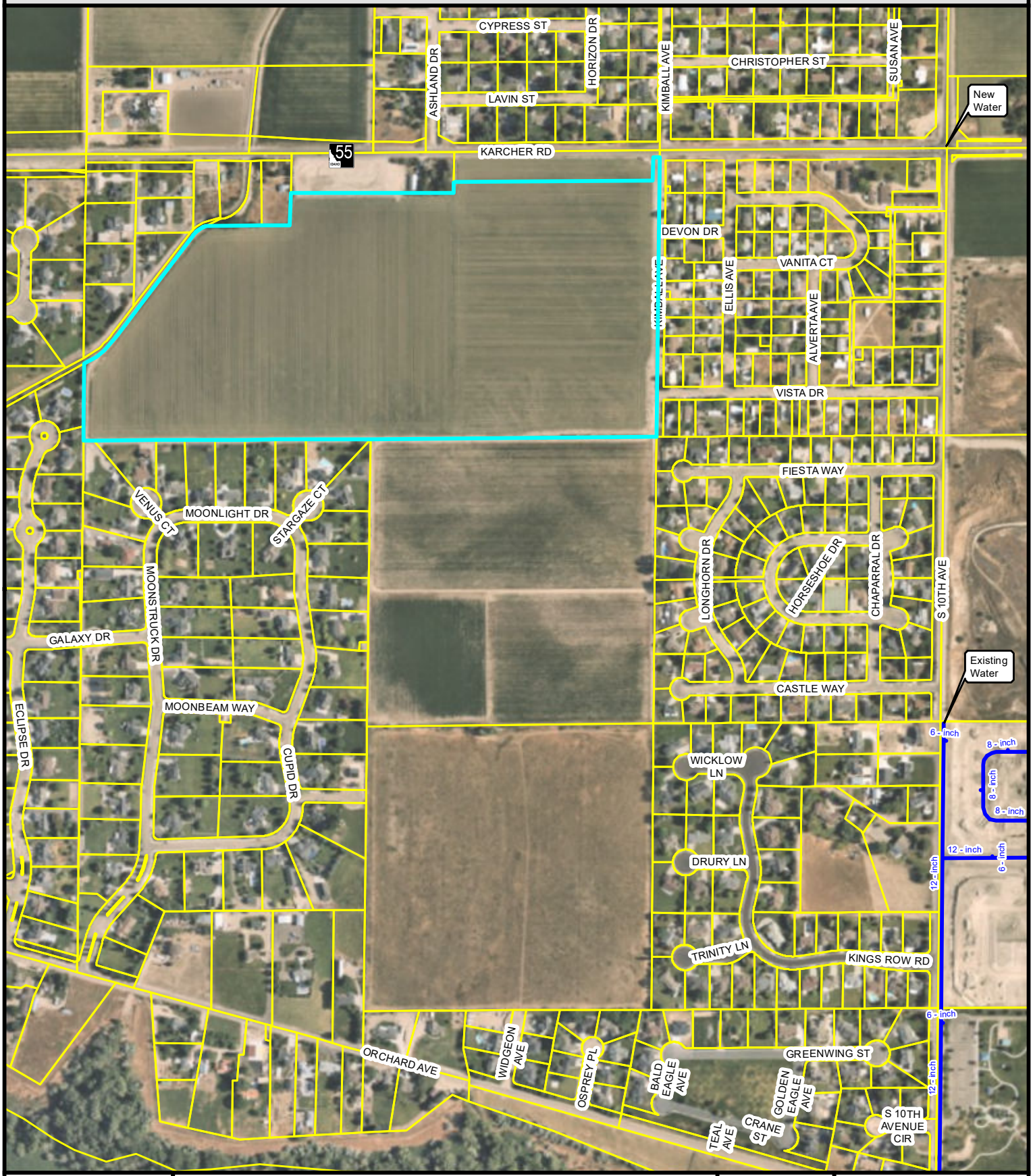
N W E S

0 1,000 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

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

0 300 600 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)

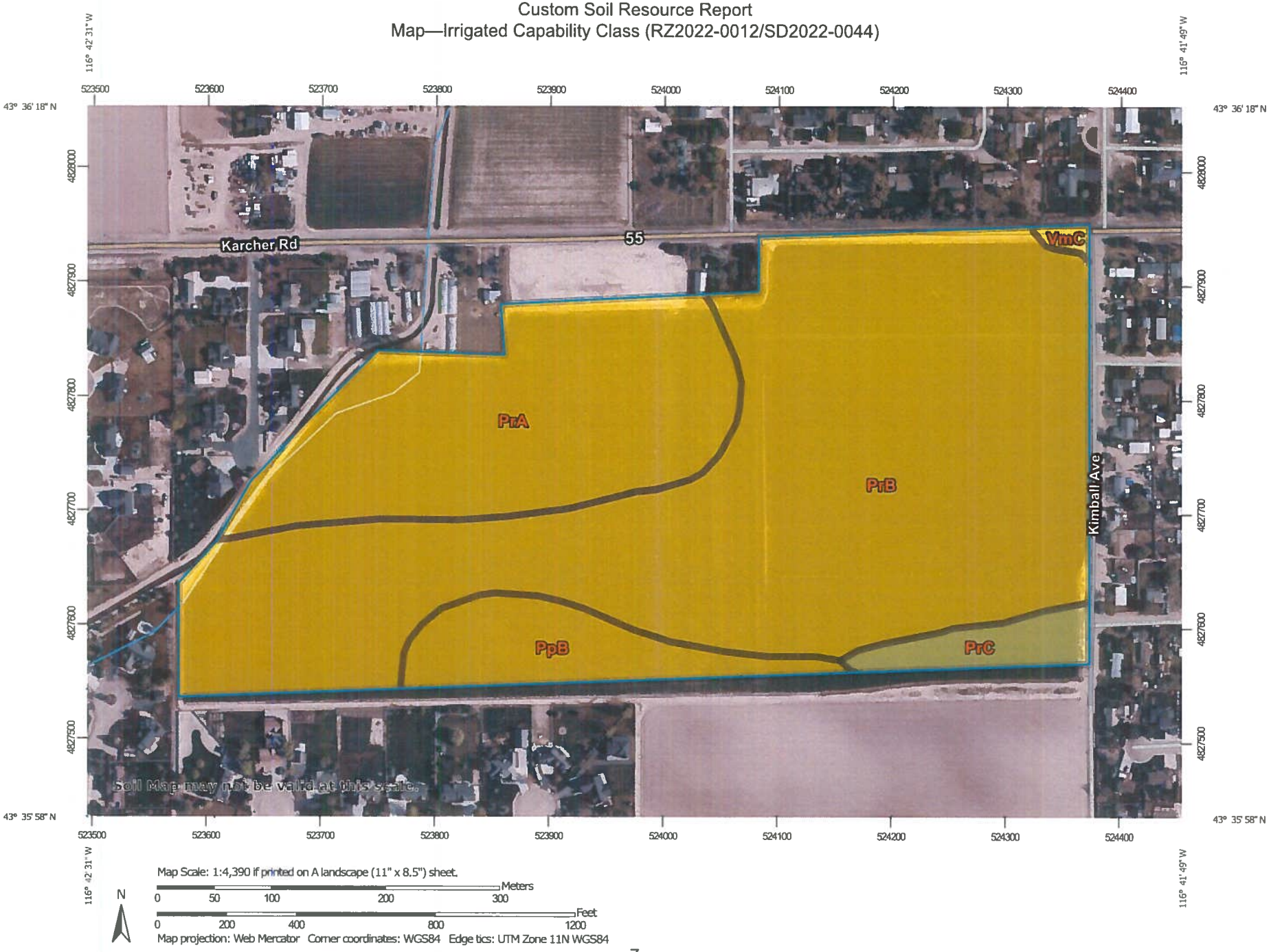


Exhibit D.7 - 3

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

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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.

Hi,

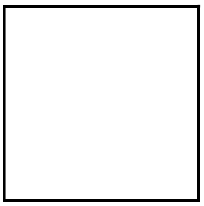
My client is hesitant to dedicate more ROW at this time.

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 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
Caldwell, ID 83607

February 27, 2025

To: Canyon County Planning and Zoning

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Name/Signature:	Address:
Anita L. Sims	15090 Castle Way
[illegible]	15132 Castle Way
[illegible]	15151 Castle Way
Hilda Nichol	15151 Castle Way
James D. Kirby	15200 Castle Way
Bob Ballard	15200 Castle Way
Linda Whittemore	15220 Castle Way
[illegible]	15142 Horseshoe Dr. Caldwell
[illegible]	15121 Horseshoe Dr
[illegible]	15121 Horseshoe Dr.
[illegible]	15079 Horseshoe Dr.
Jeane T. Kuehn	15079 Horshoe Dr.
Kathryn Dennett	15594 Chaparral Ave
[illegible]	15600 Chaparral Ave
Ben Kaye	15620 Chaparral Ave
Connie J. Payne	
[illegible]	15103 Castle Way
Jana Bockenstette	15124 Horseshoe Drive

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. Lawson	15054 Fiesta Way
Mark S Lawson	15054 Fiesta Way
Alfredo Brown	15670 Chaparral Ave
Donald Brown	15670 Chaparral Ave
Ausencio Rangel	15073 Fiesta Way
Teresa Calderon	15073 Fiesta Way
Michael Staton	15080 Fiesta Way
Denick Robertson	15080 Fiesta Way
Jose A Zaragoza O.	15021 Fiesta Way
Pamela D. Haymes	15091 Fiesta Way
[illegible]	15091 Fiesta Way
Deborah Cook	15096 Fiesta
Ronald Karpanskas	15135 Fiesta Way
Lynda Karpanskas	15135 Fiesta Way
Christy Schell	15151 Fiesta Way
[illegible]	15196 Fiesta Way
Alicia Coyne	15196 Fiesta Way

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:
Jace Thompson [signature]	15165 Horse Shoe Dr.
Lindsay Thompson Lindsay Thompson	15165 Horseshoe Dr.
Jason & Ann Dugger [signature]	15166 Horse Shoe Dr.
ADOLFO ARREDONDO.	15189 HORSESHOE DR.
Maraelena Rangel	15189 Horseshoe Dr
Mark Burr [signature]	15640 Chaparral Ave.
Linda Burr [signature]	15640 Chaparral Ave.
Dain Johnson	15186 Horseshoe Dr.
David C Beasley	15184 Horse Shoe Dr Caldwell ID
Becky Forth [signature]	15180 Horseshoe Dr Caldwell Id
[signature]	15180 Horseshoe Dr Caldwell ID
Nest Inkham	15180 Horseshoe Dr Caldwell
Elizabeth Lane Elizabeth Lane	15176 Horseshoe Dr Caldwell, ID 83607
Robert Lane R Lane	15176 Horseshoe Dr. Caldwell, ID 83607
Dean Hager	15172 Horshoe Dr Caldwell 83607
Aaron Stark	15169 HORSESHOE DR CALDWELL 83607
S. Christensen	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

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:
Barbara Waller	15575 Longhorn Dr Caldwell Id
Janet Danielson	15623 Longhorn Dr Caldwell, Id
Susan L. Haueter	15657 LONGHORN Dr Caldwell, ID. 83607
Milli Yaick	15659 LONGHORN Dr Caldwell ID 83607
Leandra Jones	15646 Longhorn Dr Caldwell Id 83607
CHUCK YOAST	15686 LONGHORN DR CALDWELL ID 83607
Ian Ericson	15665 Longhorn Dr Caldwell ID 83607
Molly Travell	15610 Longhorn Dr. Caldwell ID 83607
[illegible] Francisco	15544 Longhorn Dr Caldwell ID 83607
Richard Grimes	15641 Longhorn Dr Caldwell Id 83607
Jerome P. Cicioka	15593 Longhorn Dr Caldwell Id 83607
Joy Ciccorea	15593 Longhorn DR Caldwell ID 83607
Shari Robinson	15160 Fiesta Way Caldwell ID 83607
Bob SHETLER	15152 Fiesta Way Caldwell ID 83607

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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

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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

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Name/Signature:	Address:
Kailee Gibson	15167 Horseshoe Dr. Caldwell ID 83607
Mark Gibson	15191 Castle Way Caldwell ID 83607