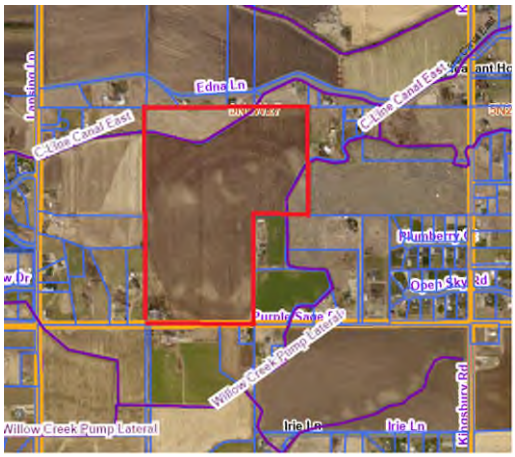
BOARD OF COUNTY COMMISSIONERS

STAFF REPORT ADDENDUM
CASE NO. RZ2022-0011 & SD2022-0034

HEARING DATE:	July 12, 2023
OWNER:	Sierra Vista Properties, Inc.
APPLICANT/REP:	Rock Solid Civil
PLANNER:	Deb Root, Planner III
CASE NUMBER:	RZ2022-0011 & SD2022-0034



EXECUTIVE SUMMARY:

RZ2022-0011 – Requesting to rezone parcel R37496, approximately 90.57 acres, from "A" (Agricultural) to "RR" (Rural Residential). The developer declined to enter into a development agreement for this proposed rezone and subdivision.

The Planning and Zoning Commission heard these cases on January 5, 2023 and signed the findings of fact, conclusions of law, and order recommending denial on January 19, 2023. Specific findings by the Planning and Zoning Commission were related to public streets and traffic impacts citing '*cumulative impacts to the existing road system not adequately addressed,*' and that essential services will be impacted citing that Middleton School District's Mill Creek Elementary is at 123% capacity (PZ FCOs Exhibit E) and would potentially have to add an additional classroom with the addition of 20-27 new students anticipated from this development. Staff completed an additional site review and noted that currently Kingsbury Road is not a through road to the state highway system. Canyon Highway District #4 indicated in an email dated 6/29/23 that "it is not funded in the Capital Improvement Plan so *(future)* development will be providing this extension." (Exhibit H6)

SD2022-0034 – Consider a preliminary plat, Mint Farm Estates, for the development of 39 residential lots on approximately 90.57 acres. The development is proposing individual well and septic systems, public streets and pressurized irrigation. The development proposes significant re-routing of irrigation structures and must comply with Black Canyon Irrigation and the Bureau of Reclamation requirements prior to removal and reconstruction of critical facilities. This property is not currently identified as a nitrate priority area on the Nitrate Priority & Wells map (PZ Staff Report Exhibit 5H); however, the county engineer, Devin Krasowski, PE, has provided additional comments regarding the proposed individual well and septic systems for this 39 lot subdivision to provide the Board information consistent with current development policies with regards to water quality and development that is occurring in the unincorporated Canyon County (Exhibit H1).

EXHIBITS:

Exhibit A: BOCC FCOs – RZ2022-0011
Exhibit B: BOCC FCOs -- SD2022-0034
Exhibit C: Planning and Zoning Staff Report
Exhibit D: Planning and Zoning Minutes – 2/2/2022
Exhibit E: Planning and Zoning FCOs – RZ2022-0011
Exhibit F: Planning and Zoning FCOs – SD2022-0034
Exhibit G: Applicant Supplemental Letter 3-3-2023
Exhibit H: Agency Comments (for BOCC hearing)
- H1- County Engineer Devin Krasowski, PE supplemental
- H2- ITD 5-25-23 email
- H3- BCID May 2023
- H4- BCID April 2023
- H5- BCID August 2022
- H6- CHD4 response Kingsbury

Exhibit I: Public Comments (for BOCC hearing, received after the P&Z hearing)
- I1 – CHD4 Mid-Star CIP 2021 submitted by Darin Taylor
- I2 - Exhibit 13 of PZ hearing record TIS-Mint Farm Estates 2021 application

Canyon County Board of Commissioners
Sierra Vista Properties, Inc. – RZ2022-0011

Findings of Fact, Conclusions of Law, and Order
Zoning Map Amendment "A" to "RR"

Findings of Fact

1. The applicant, Sierra Vista Properties, Inc., is requesting a zoning map amendment (rezone) of Parcel R37496 (± 90.57 acres) from an "A" (Agricultural) zone to a "R-R" (Rural Residential) zone. The subject property is located at 8718 Purple Sage, Rd., Caldwell; also referenced as a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
2. The rezone is being considered concurrently with a preliminary plat (including irrigation and drainage) for Mint Farm Estates. The proposed plat includes 39 residential lots (SD2022-0034).
3. The subject property is designated "Residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
4. The site is not located within an area of city impact.
5. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
6. A neighborhood meeting was conducted on June 29, 2022 pursuant to CCZO §07-10-15 (Exhibit 4 of the staff report).
7. Notice of the Planning and Zoning public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on July 18, 2022, newspaper notice was published on December 18, 2022, property owners within 600' were notified by mail on December 15, 2022, and the property was posted on December 27, 2022.
8. The Planning and Zoning Commission heard cases RZ2022-0011 and SD2022-0034 on January 5, 2023 and forwarded a recommendation of denial to the Board of County Commissioners with the FCOs signed on January 19, 2023. (Exhibit E & F BOCC Addendum)
9. Notice of the BOCC hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on May 17, 2023, newspaper notice was published on June 1, 2023, property owners within 600' were notified by mail on May 31, 2023, and the property was posted on June 8, 2023.
10. The record includes all testimony at the public hearing held on January 5, 2023 and July 12, 2023, the staff report, exhibits, and documents in Case File No. RZ2022-0011.

Conclusions of Law

For this request, the Board of County Commissioners find and conclude the following regarding the Standards of Review for a Zoning Map Amendment (CCZO §07-06-05):

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

Conclusion: The proposed zoning map amendment is generally consistent with the 2020 Canyon County Comprehensive Plan.

Finding: The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). The project aligns with the following goals and policies of the 2020 Comprehensive Plan:

Chapter 1. Property Rights
Policy 1. No person shall be deprived of private property without due process of law.
Policy 8. Promote orderly development that benefits the public good and protects the individual with a minimum of conflict.

EXHIBIT A

Chapter 2. 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.

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.

Chapter 5. Land Use
Land Use Goal 5. Achieve a land use balance, which recognizes that existing agricultural uses and non-agricultural development may occur in the same area.
Land Use Goal 6. Designate areas where rural type residential development will likely occur and recognize areas where agricultural development will likely occur.
Residential Land Use 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 8. Public Services, Facilities and Utilities
Policy 3. Encourage the establishment of new development to be located within the boundaries of a rural fire protection district.

Chapter 9. Transportation
Policy 13. Ensure that all new development is accessible to regularly maintained roads for fire protection and emergency service purposes.

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

Conclusion: The proposed zoning map amendment is more appropriate than the current zone.

Finding: The property is identified as "Residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). Although the property is active agricultural ground and near other large agricultural properties and uses, the property is also located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports a rural residential development and lifestyle. The property is adjacent to the Middleton Area of City Impact where residential development is promoted.

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

Conclusion: The proposed zoning map amendment is compatible with the surrounding land uses.

Finding: The applicant is proposing to rezone the 90.57 acre subject property to "R-R" (Rural Residential). Within a one (1) mile radius, there are 26 platted subdivisions for a total of 495 lots with a 2.35-acre average lot size (Exhibit 5e of the staff report). The following land use decisions have been made within the vicinity of the subject property:

- RZ2018-0006 – Edward Vance: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0012 – Reynolds Brothers, LLC: Denial of a zoning map amendment from an "A" Zone to a "R-1" (Single Family Residential – One-acre average minimum lot size) Zone. The Board of County Commissioner requested it be rezoned to an "R-R" Zone instead.
- RZ2021-0034 – John Cotner: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0036 – Richards/Larsen: Approval of a conditional rezone from an "A" Zone to a "CR-R-1" Zone.

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

Conclusion: The proposed zoning map amendment will not negatively affect the character of the area.

Finding: The request is located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports rural residential development and lifestyles. Therefore, the request is found to be compatible with the rural character of the area. Development mitigation will be applied at the time of platting.

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

Conclusion: Adequate sewer, drainage, and storm water drainage facilities and utility systems will be provided to accommodate the proposed use at the time of development. Platting as a residential subdivision will be required.

Finding: The request includes a preliminary plat (SD2020-0034) which demonstrates future development proposes individual septic systems and domestic wells. The property is not located within nitrate priority area. Nitrates in wells within the area appear to be low (1.1-2.2mg/L). IDEQ (Idaho Dept. of Environmental Quality) nitrate threshold is 10mg/L. (Exhibit 5h of the staff report). No comments were received from IDWR (Idaho Dept. of Water Resources) or IDEQ (Idaho Dept. of Environmental Quality). SWDH (Southwest District Health) did not express concerns with the development. Therefore, compliance with agency requirements and standards will be implemented at the time of platting.

The county engineer provided comment in favor of a community drinking water system and a central wastewater system consistent with current department policies for groundwater protection. (Exhibit G1 BOCC Addendum)

Future development will utilize surface water rights from Black Canyon Irrigation District (BCID) via a pressurized irrigation system. At the time of platting, the development shall be required to meet BCID requirements and standards. Drainage will be addressed via the subdivision plat for this development through borrow ditches and retention ponds.

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

Conclusion: The property has legal access to Purple Sage Rd., at the existing home site location.

Finding: The property has frontage on Purple Sage Rd., a public road.

Canyon Highway District No. 4 does not oppose the use of the access subject to conditions of the subdivision plat.

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?

Conclusion: Although Canyon Highway District #4 finds that traffic impacts can be addressed by requiring right-of-way dedications, frontage improvements, internal road improvements and development impact fees, <u>cumulative impacts to the existing road system are not adequately addressed</u>.

Finding: Canyon Highway District #4 finds the request does not warrant a TIS (Traffic Impact Study). Traffic impacts will be mitigated through impact fees, internal street improvements, frontage improvements, access improvements and right-of-way dedication that shall be completed prior to final plat approval.

Although, Canyon Highway District #4 finds mitigation measures through impact fees and other

subdivision improvements, it does not address the cumulative traffic impacts found in the area. Between 2018-2022, land use decisions allowed approximately 215 residential lots within a one-mile radius (Exhibit 14). This request will allow 39 residential lots within the area. The September 2021 TIS provided by the applicant (Exhibit 13) states site access and Purple Sage Road requires a stop-controlled T-intersection by 2023 and that the Lansing Lane and SH-44 intersection is anticipated to operate at LOS F during PM peak hours by 2023 if improvements such as a single-lane roundabout or traffic signal with left-turn lanes on Lansing Lane approaches are not completed. Impact fees do not guarantee improvements will be completed within the 2023 timeframe as stated in the TIS. Until cumulative impacts can be adequately addressed, this finding cannot be supported.

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?

Conclusion: Essential services will be impacted by the requested rezone.

Finding: The property is served by Middleton Fire District, Middleton School District and Canyon County Sheriffs.

Middleton School District finds the request will impact Mill Creek Elementary School which is over capacity by 123% (Exhibit 10). The development would potentially create 20-27 new students. Until the impact to the school district can be adequately addressed, this finding cannot be supported.

Order

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Board of County Commissioners DENY Case #RZ2022-0011, a zoning map amendment from an "A" (Agricultural) zone to an "R-R" (Rural Residential) zone for Parcel No. R37496 containing approximately 90.57 acres.

Pursuant to Idaho Code Section 67-6519, the following actions may be taken to obtain approval:

1. Re-apply for a zoning map amendment or conditional rezone once the following has occurred:
   a. Middleton School District capacity impacts are adequately addressed or minimized through Middleton School District-approved mitigation measures.
   b. Site Access/Purple Sage Road and Lansing Lane/SH-44 improvements are constructed and completed to adequately address cumulative impacts.

This decision is final. Pursuant to Idaho Code Section 67-6535(b), the applicant or affected person may first seek reconsideration within 14 days prior to seeking judicial review.

DENIED this _____ day of _____, 2023.

	Yes	No	Did Not Vote
_____ Commissioner Leslie Van Beek	_____	_____	_____
_____ Commissioner Brad Holton	_____	_____	_____
_____ Commissioner Zach Brooks	_____	_____	_____

Attest: Chris Yamamoto, Clerk

By: _____ Date: _____
Deputy

Findings of Fact, Conclusions of Law, and Order

Preliminary Plat: Mint Farm Estates

Findings

1. Sierra Vista Properties, Inc. is requesting approval of a Preliminary Plat, Irrigation, & Drainage plan for Mint Farm Estates Subdivision (Attachment A).
2. The plat contains a total of 39 residential lots on approximately 90.57 acres with an average residential lot size of 2.04 acres.
3. The subject property, parcel no. R37496 is located at 8718 Purple Sage, Rd., Caldwell, Idaho, in a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
4. The subject property is currently zoned "A" (Agricultural). A zoning map amendment to change the zoning of the property from "A" (Agricultural) to "R-R" (Rural Residential) was applied for concurrently with the plat (Case No. RZ2022-0011).
5. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
6. The subject property is not located within an Area of City Impact.
7. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
8. Internal public roads will provide access to the residential lots (Attachment A).
9. Pressurized irrigation is proposed for the subdivision via water right from Black Canyon Irrigation District (Attachment A & Exhibit 3 of the staff report).
10. Individual septic systems and individual domestic wells are proposed for each residential lot (Attachment A).
11. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on July 18, 2022, newspaper notice was published on December 18, 2022, property owners within 600' were notified by mail on December 15, 2022, and the property was posted on December 27, 2022.
12. The Planning and Zoning Commission heard cases RZ2022-0011 and SD2022-0034 on January 5, 2023 and forwarded a recommendation of denial to the Board of County Commissioners with the FCOs signed on January 19, 2023. (Exhibit E & F BOCC Addendum)
13. Notice of the BOCC hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on May 17, 2023, newspaper notice was published on June 1, 2023, property owners within 600' were notified by mail on May 31, 2023, and the property was posted on June 8, 2023.
14. The record includes all testimony at the public hearing held on January 5, 2022 and July 12, 2023, the staff report, exhibits, and documents in Case File No. SD2022-0034.

Conclusions of Law

Section 07-17-09(4)A of the Canyon County Zoning Ordinance (CCZO) states:

"The commission or hearing examiner shall hold a noticed public hearing on the preliminary plat. The hearing body shall recommend that the board approve, approve conditionally, modify, or deny the preliminary plat. The reasons for such action will be shown in the commission's minutes. The reasons for action taken shall specify*:*

1. The ordinance and standards used in evaluating the application;

EXHIBIT B

2. *Recommendations for conditions of approval that would minimize adverse conditions, if any;*
3. *The reasons for recommending the approval, conditional approval, modification, or denial; and*
4. *If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision.*"

The Planning and Zoning Commission recommended denial of the zoning map amendment (RZ2022-0011) for the following reasons:

- Middleton School District finds the requested development will impact Mill Creek Elementary School which is over capacity by 123% (Exhibit 10). The development would potentially create 20-27 new students.
- The development does not address the cumulative traffic impacts found in the area. Between 2018-2022, land use decisions allowed approximately 215 residential lots within a one-mile radius (Exhibit 14). The request will allow 39 residential lots. The September 2021 TIS provided by the applicant (Exhibit 13) states site access and Purple Sage Road requires a stop-controlled T-intersection by 2023 and that the Lansing Lane and SH-44 intersection is anticipated to operate at LOS F during PM peak hours by 2023 if improvements such as a single-lane roundabout or traffic signal with left-turn lanes on Lansing Lane approaches are not completed. Impact fees and site improvements such as public right-of-way dedications do not guarantee improvements will be completed within the 2023 timeframe stated in the TIS.

The Board of County Commissioners followed the Planning and Zoning Commission recommendation and DENIED case file RZ2022-0011 on July 12, 2023.

Since the rezone has been denied and the preliminary plat application was submitted concurrently, the property is remains "A" (Agricultural) which does not allow for the development of two-acre average minimum lot sizes. Therefore, the preliminary plat is inconsistent with Canyon County Code.

Order

Based upon the Findings of Fact, Conclusions of Law contained herein for Case No. SD2022-0034, the Board of County Commissioners DENY case file SD2022-0034, a Preliminary Plat (including irrigation/drainage plans) for Mint Farm Estates Subdivision.

Pursuant to Idaho Code Section 67-6519, the following actions may be taken to obtain approval:

1. Re-apply when a zoning map amendment or conditional rezone has been approved.

This decision is final. Pursuant to Idaho Code Section 67-6535(b), the applicant or affected person may first seek reconsideration within 14 days prior to seeking judicial review.

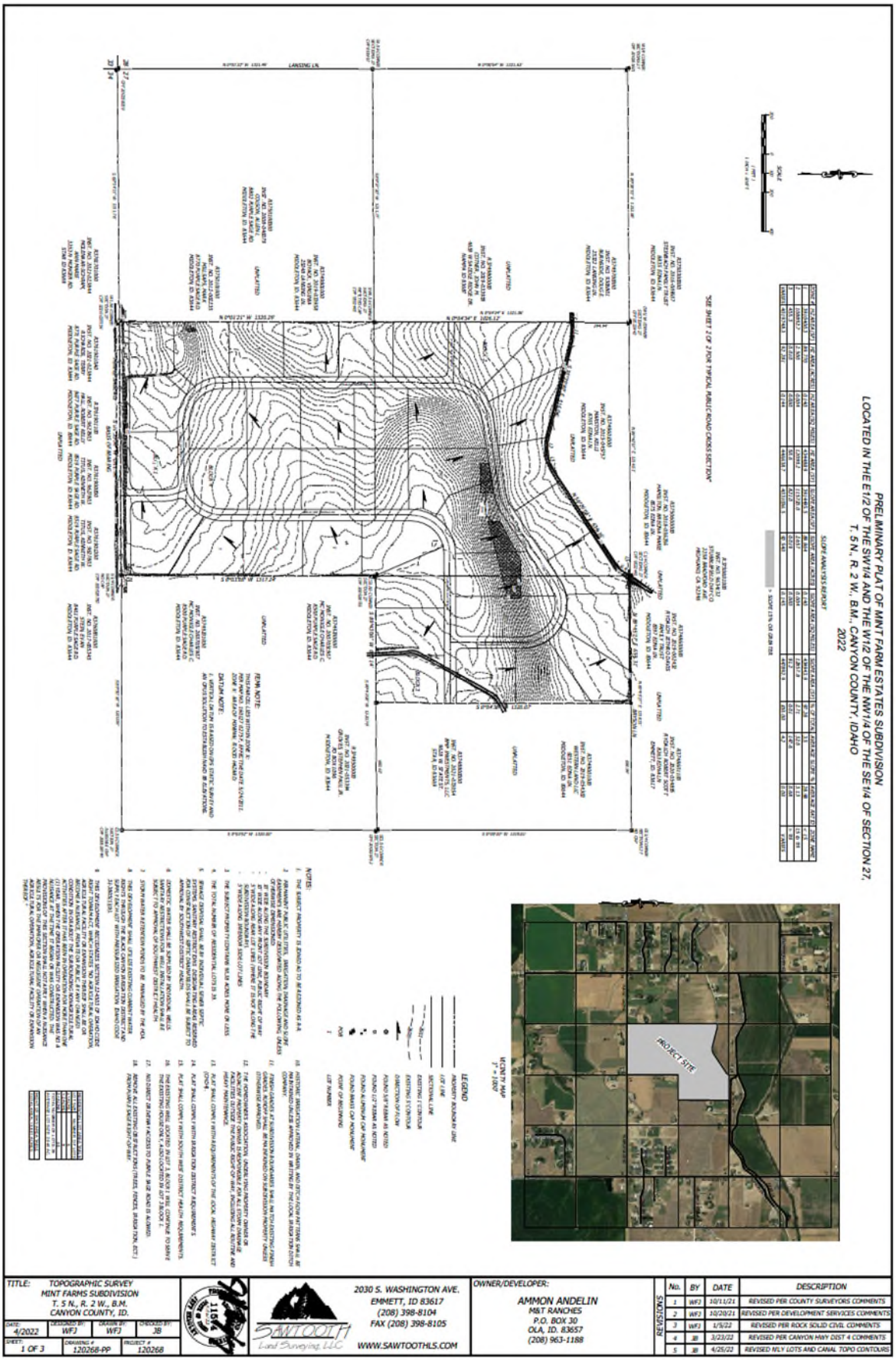
DENIED this _____ day of _____, 2023.

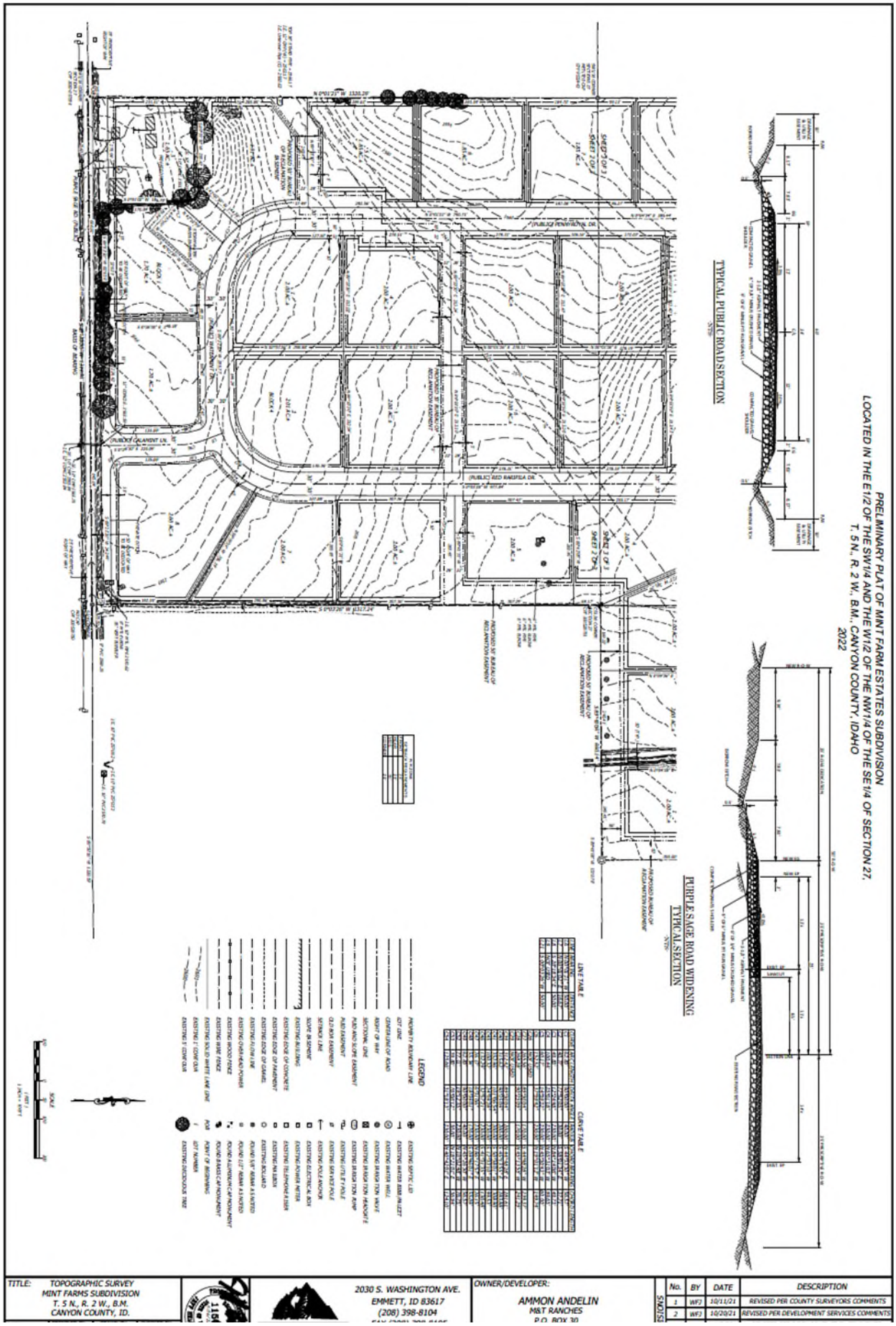
	Yes	No	Did Not Vote
_____ Commissioner Leslie Van Beek	_____	_____	_____
_____ Commissioner Brad Holton	_____	_____	_____
_____ Commissioner Zach Brooks	_____	_____	_____

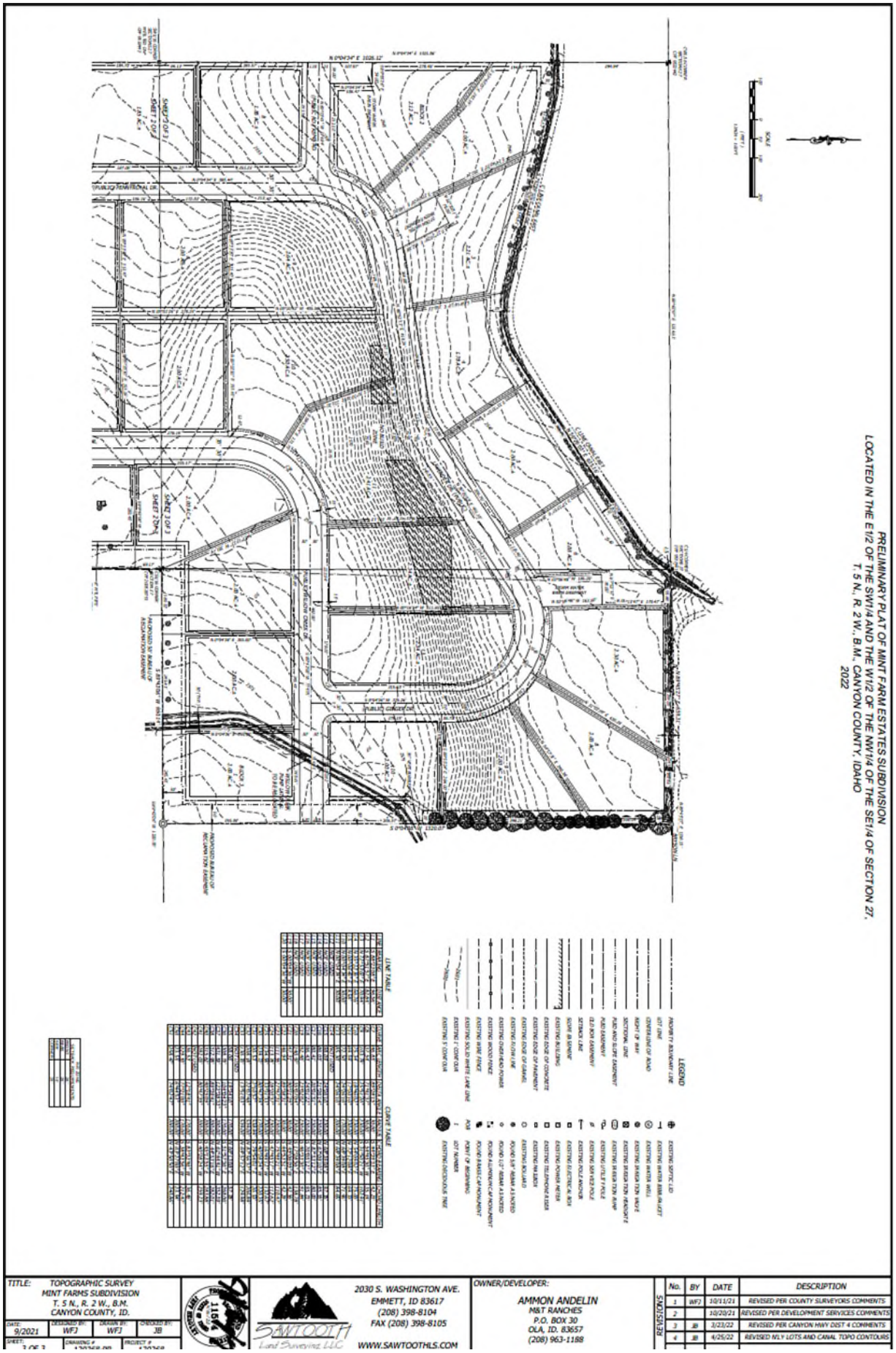
Attest: Chris Yamamoto, Clerk

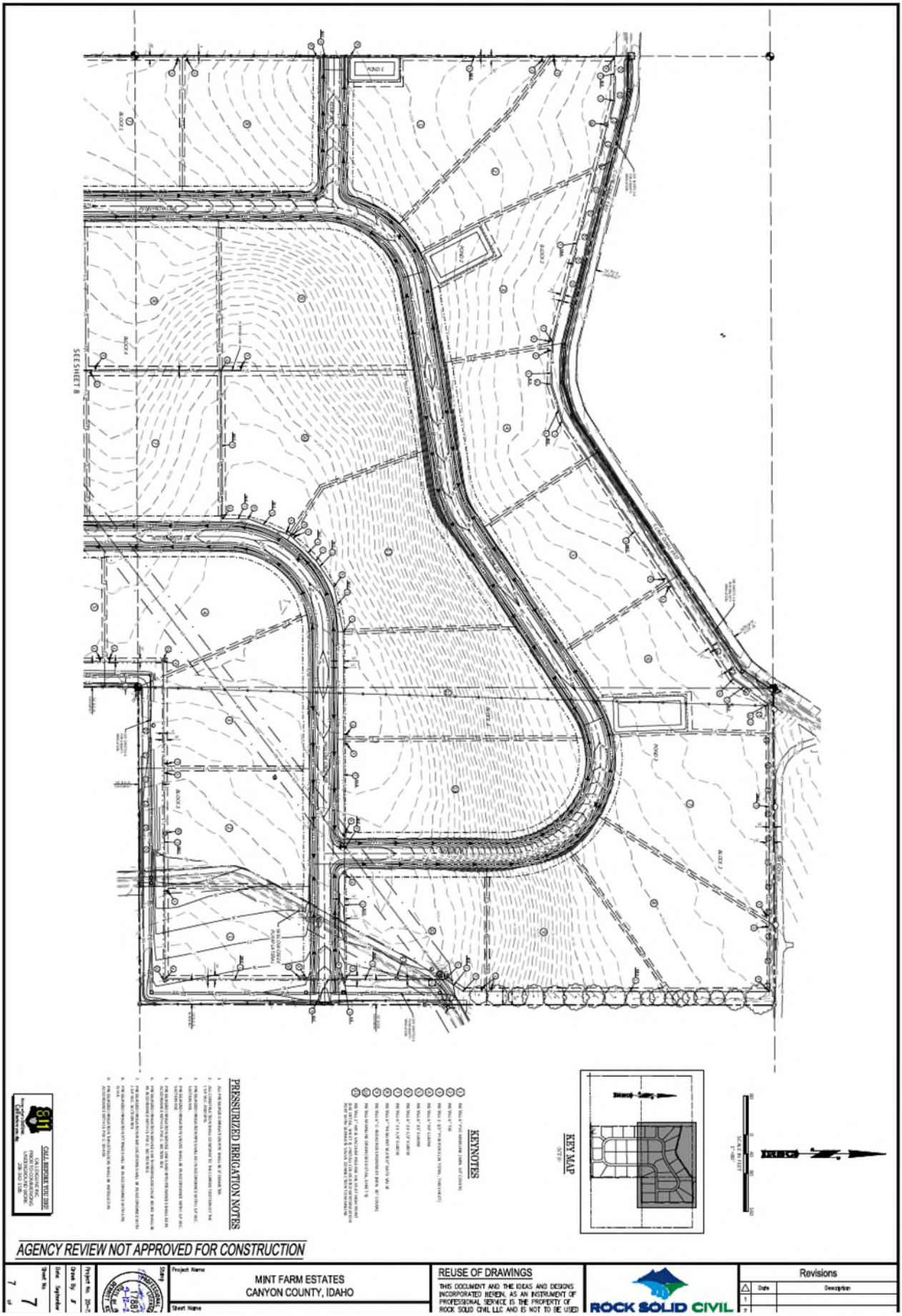
By: _____ Date: _____
Deputy

ATTACHMENT A


PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022
SCALE
SLOPE ANALYSIS REPORT
SEE SHEET 2 FOR TYPICAL PUBLIC ROAD CROSS SECTION
LANSING LN.
UNPLATTED
VICINITY MAP
1" = 1000'
PROJECT SITE
LEGEND
PROPERTY BOUNDARY LINE
LOT LINE
SECTIONAL LINE
EXISTING 1' CONTOUR
EXISTING 5' CONTOUR
DIRECTION OF FLOW
FOUND 5/8" REBAR AS NOTED
FOUND 1/2" REBAR AS NOTED
FOUND ALUMINUM CAP MONUMENT
FOUND BRASS CAP MONUMENT
POINT OF BEGINNING
LOT NUMBER
NOTES:
1. THE SUBJECT PROPERTY IS ZONED AG TO BE REZONED AS R-R.
2. 20' PRIVATE PUBLIC UTILITIES, IRRIGATION, DRAINAGE AND SLOPE EASEMENTS ARE HEREBY DESIGNATED ALONG THE FOLLOWING UNLESS OTHERWISE NOTED:
- 10' WITHIN ALONG THE SUBDIVISION BOUNDARY
- 10' WITHIN ALONG ALL LOT LINES THAT ARE 10 FEET OR LESS IN WIDTH
- 10' WITHIN ALONG ANY FRONT LOT LINE, PUBLIC RIGHT OF WAY
- 10' WITHIN ALONG ALL LOT LINES THAT ARE 10 FEET OR ALONG THE SUBDIVISION BOUNDARY
3. THE SUBJECT PROPERTY CONTAINS 16.38 ACRES MORE OR LESS
4. THE TOTAL NUMBER OF RESIDENTIAL LOTS IS 36.
5. SEWAGE DISPOSAL SHALL BE BY INDIVIDUAL SEWER SEPTIC SYSTEMS. SANITARY RESTRICTIONS DURING THE LARGE REQUIRED SANITARY RESTRICTIONS SHALL BE SUBJECT TO APPROVAL BY SOUTHWEST DISTRICT HEALTH.
6. DOMESTIC WATER SHALL BE SUPPLIED BY PROVIDING WELLS. SANITARY RESTRICTIONS FOR WELL INSTALLATION SHALL BE SUBJECT TO APPROVAL OF SOUTHWEST DISTRICT HEALTH.
7. STORM WATER RETENTION PONDS TO BE MANAGED BY THE HOA.
8. THIS DEVELOPMENT SHALL USE EXISTING CURRENT WATER RIGHTS FROM THE PAYNE ROCKWELL IRRIGATION DISTRICT. SUPPLY FOR A LOT WITH AVAILABLE IRRIGATION RIGHTS CLOSE TO 3.1 MINUTES.
9. THIS DEVELOPMENT RECEIVES SECTION 2240(1) OF IDAHO CODE AND IS EXEMPT FROM THE REQUIREMENTS OF IDAHO CODE 67-6528. ACCESS TO AN FACILITY OR EXPANSION THEREOF SHALL BE DEEMED A NUISANCE, HIGH DESIGN PUBLIC FAIRWAY OWNERS ACCESS TO AN FACILITY OR EXPANSION THEREOF SHALL BE DEEMED A NUISANCE, HIGH DESIGN PUBLIC FAIRWAY OWNERS ACTIVITIES AFTER THAT HAS BEEN IN OPERATION FOR MORE THAN ONE YEAR SHALL BE DEEMED A NUISANCE. THIS DEVELOPMENT IS NOT A NUISANCE AT THE TIME IT BEGAN OR WAS CONSTRUCTED. THE PROVISIONS OF THIS SECTION SHALL NOT APPLY WHEN A NUISANCE ARISES FROM THE NEGLIGENT OPERATION OF AN AGRICULTURAL FACILITY OR EXPANSION THEREOF.
10. HISTORIC IRRIGATION LATERAL, DRAIN, AND DITCH FLOW PATTERNS SHALL BE PRESERVED UNLESS APPROVED BY WRITING BY THE LOCAL IRRIGATION DISTRICT COMPANY.
11. THE OWNERS OF THE PROPERTY SUBJECT TO THIS PLAT SHALL NOT DISCONTINUE CANCEL, EXCEPT FINAL BY INSTRUMENT ON SUBDIVISION PROPERTY UNLESS OTHERWISE APPROVED.
12. THE HOMEOWNERS ASSOCIATION, UNDERLYING PROPERTY OWNER OR ACTIVITY DISTRICT CONTROL OVER THE ROADWAY AND ALL OTHER OWNERS OF ACTIVITY DISTRICT CONTROL OVER THE ROADWAY AND ALL OTHER OWNERS OF ROADWAY, INCLUDING ALL ROUTINE AND ROADWAY MAINTENANCE.
13. PLAT SHALL COMPLY WITH REQUIREMENTS OF THE LOCAL HIGHWAY DISTRICT (OCHD).
14. PLAT SHALL COMPLY WITH SOUTH WEST DISTRICT HEALTH REQUIREMENTS.
15. THE EXISTING WELL LOCATED ON LOT 1, BLOCK 1 WILL CONTINUE TO SERVE THE EXISTING HOUSE ON LOT 1 ABSOLUTELY ON LOT 2 BLOCK 1.
16. NO DIRECT OR DRIVEWAY ACCESS TO PURPLE SAGE ROAD IS ALLOWED.
17. REMOVE ALL EXISTING OUT BUILDINGS (TRAILS, FENCES, BARNS) FOR LOT 1 FROM PURPLE SAGE RIGHT OF WAY.
TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.
DATE: 4/2022
DESIGNED BY: WF3
DRAWN BY: WF3
CHECKED BY: JB
SHEET: 1 OF 3
DRAWING #: 120268-PP
PROJECT #: 120268
SAWTOOTH Land Surveying, LLC
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
FAX (208) 398-8105
WWW.SAWTOOTHLS.COM
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
OLA, ID. 83657
(208) 963-1188
REVISIONS
No. | BY | DATE | DESCRIPTION
1 | WF3 | 10/11/21 | REVISED PER COUNTY SURVEYORS COMMENTS
2 | WF3 | 10/20/21 | REVISED PER DEVELOPMENT SERVICES COMMENTS
3 | WF3 | 1/5/22 | REVISED PER ROCK SOLID CIVIL COMMENTS
4 | JB | 3/23/22 | REVISED PER CANYON HWY DIST 4 COMMENTS
5 | JB | 4/25/22 | REVISED NLY LOTS AND CANAL TOPO CONTOURS


PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022
TYPICAL PUBLIC ROAD SECTION
PURPLE SAGE ROAD WIDENING
TYPICAL SECTION
LEGEND
LINE TABLE
CURVE TABLE
TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
No. BY DATE DESCRIPTION
1 WFJ 10/11/21 REVISED PER COUNTY SURVEYORS COMMENTS
2 WFJ 10/20/21 REVISED PER DEVELOPMENT SERVICES COMMENTS


PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022
LEGEND
LINE TABLE
CURVE TABLE
TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.
DATE: 9/2021
DESIGNED BY: WFJ
DRAWN BY: WFJ
CHECKED BY: JB
SHEET: 3 OF 3
DRAWING #
PROJECT #
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
FAX (208) 398-8105
WWW.SAWTOOTHLS.COM
SAWTOOTH Land Surveying, LLC
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
OLA, ID. 83657
(208) 963-1188
REVISIONS
No. | BY | DATE | DESCRIPTION
1 | WFJ | 10/11/21 | REVISED PER COUNTY SURVEYORS COMMENTS
2 | | 10/20/21 | REVISED PER DEVELOPMENT SERVICES COMMENTS
3 | JB | 2/23/22 | REVISED PER CANYON HWY DIST 4 COMMENTS
4 | JB | 4/25/22 | REVISED N'LY LOTS AND CANAL TOPO CONTOURS


SEE SHEET 8
POND 1
POND 2
POND 3
POND 4
POND 5
POND 6
POND 7
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
BLOCK 6
BLOCK 7
BLOCK 8
PRESSURIZED IRRIGATION NOTES
KEYNOTES
KEY MAP
NORTH
SCALE IN FEET
CALL BEFORE YOU DIG!
AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION
Project Name
MINT FARM ESTATES
CANYON COUNTY, IDAHO
Sheet Name
REUSE OF DRAWINGS
THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF ROCK SOLID CIVIL LLC AND IS NOT TO BE USED
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Date
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Project No.
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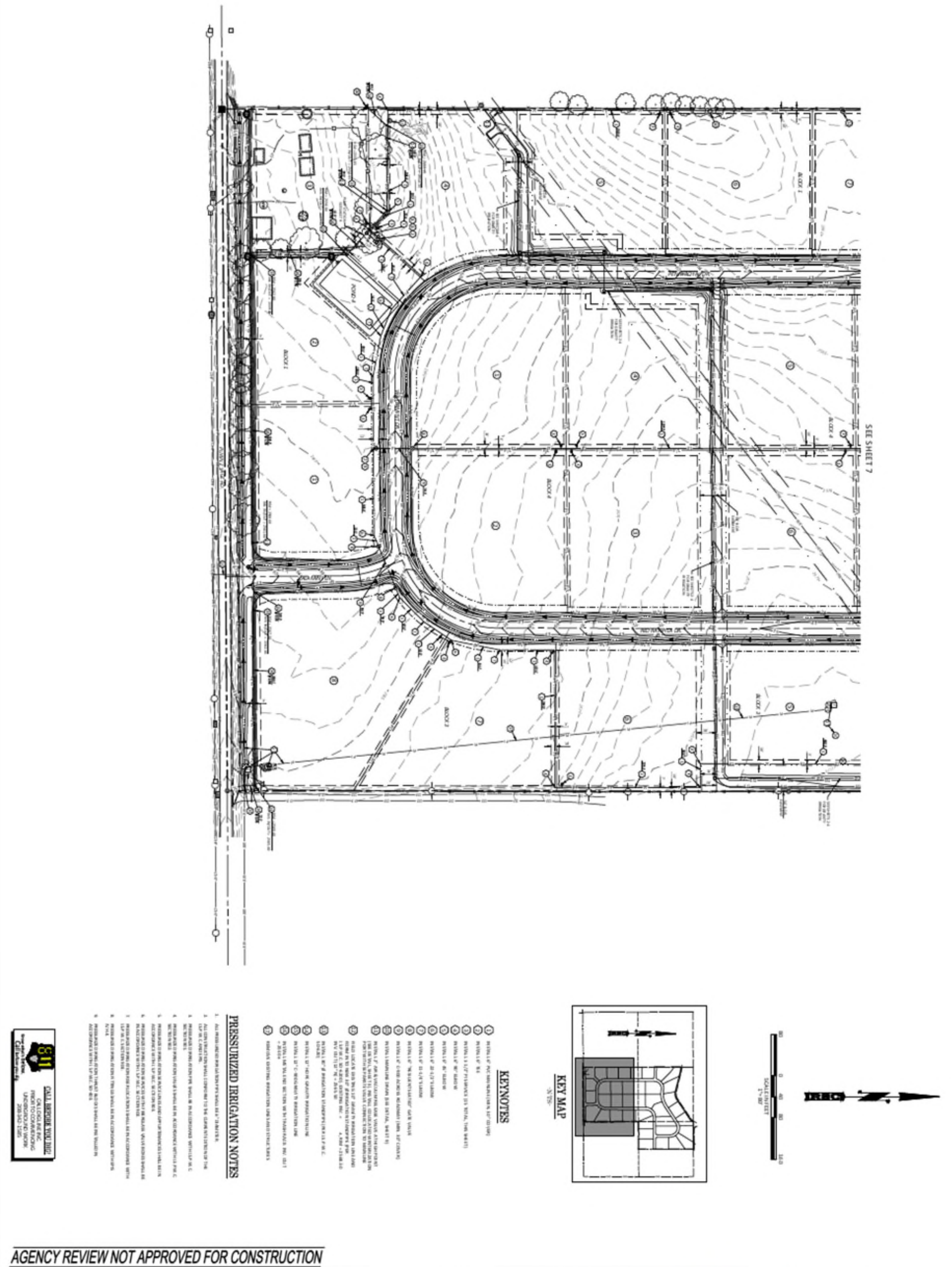

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Project Name

MINT FARM ESTATES
CANYON COUNTY, IDAHO

Sheet Name

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Revisions

Date	Description

Sheet No. 8 of 8

Planning and Zoning Commission - Staff Report

Sierra Vista Properties, Inc. /Mint Farm Estates - RZ2022-0011/SD2022-0034

Hearing Date: January 5, 2022 *Development Services Department*

Owner/Applicant:
Sierra Vista Properties, Inc.
Ammon Andelin

Engineer/Surveyor:
Rock Solid Civil

Staff:
Dan Lister, Planning Official

Lot Size
Parcel R37496: 90.36 acres

Current Zone:
"A" (Agricultural)

2020 Comprehensive Plan – Future Land Use: Residential

Area of City impact:
Not within

Applicable Zoning Land Use Regulations: §07-06-05 & §07-17-09

Notification:
- 7/18/2022: Agencies/Full Political
- 12/15/2022: Radius Notice
- 12/18/2022: Newspaper
- 12/27/2022: Posting

Exhibits:
1. Proposed FCO's (RZ2022-0011)
2. Proposed FCO's (SD2022-0034) with Attachment A: Preliminary Plat; Attachment B: Keller Associates Comments; Attachment C: BCID Letter; Attachment D: Canyon Highway District #4 letter.
3. Letter of Intent and Site Information
4. Neighborhood Meeting
5. Maps
   a. Aerial
   b. Vicinity
   c. Zoning
   d. Future Land Use
   e. Plat w/ Report
   f. Cases w/Report
   g. Soils/Prime Farmland w/Report
   h. Nitrate/Well
   i. Contours
   j. Lot Classification
6. Comments
   a. ITD – Aeronautics
   b. Canyon Soils Conservation District

Request

The applicant, Sierra Vista Properties, Inc., is requesting a zoning map amendment (rezone) of Parcel R37496 from an "A" (Agricultural) zone to a "R-R" (Rural Residential) zone. The request includes a Preliminary Plat, Irrigation, & Drainage Plan for Mint Farm Estates Subdivision, 39 residential lots. The subject property is located at 8718 Purple Sage, Rd., Caldwell; also referenced as a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.

Pursuant to CCZO Section 07-10-25(2): "*The purpose of the R-R (Rural Residential) Zone is to encourage and guide growth in areas where a rural lifestyle may be determined to be suitable.*" The "R-R" Zone has a two-acre average minimum lot size.

The request includes a preliminary plat for Mint Farm Estates Subdivision (Exhibit 2, Attachment A) with development data as follows:

- Acreage: 90.57 acres (79.61 acres with roads).
- Average lot size: 2.04 acres.
- Lots: 39 residential lots.
- Access: Internal Public Roads: Kemp Road, Water Mint Drive, Penny Royal Drive, Willow Creek Drive, Ginger Drive and Lavender Drive.
- Domestic Water: Individual Domestic Wells (Plat Note 6).
- Sanitary Services: Individual Septic Systems (Plat Note 5).
- Irrigation: Pressurized irrigation via water rights from BCID (Plat Note 8).
- Drainage: Retained on-site (Plat Note 11 & 12); Four (4) storm water basin easements (Plat Note 2 & 7).
- Hillside: Block 4, Lots 10-13 have slopes over 15%. The plat designates those areas as "no build zones".

Background

The subject property, approximately 90.36 acres, appears to be an original parcel (created prior to September 6, 1979) and is eligible for an administrative land division. In 1995, an administrative land division was denied for a total of five buildable parcels (LS2004-577). In 1996, a conditional use permit was submitted and denied for five buildable parcels (CU2004-384). In the same year, an administrative land division received pre-approval, but never obtained full approval.

On July 14, 2021, the current applicant applied for a rezone to an "R-1" (Single Family Residential) zone with preliminary plat for Mint Farm Estates, a 53-lot subdivision (RZ2021-0046 and SD2021-0038). The rezone application was amended to a conditional rezone on November 9, 2021. On January 20, 2022, the Hearing Examiner recommended denial of the request. On May 25, 2022, the Board of County Commissioners denied the conditional rezone and preliminary plat (Exhibit 8), and stated the following actions may be taken to obtain approval:

- *Consider a rezone/conditional rezone to an "R-R" (Rural Residential) zone, two-acre average minimum lot size; or*

EXHIBIT C

7. Site Visit 8. BOCC FCOs RZ2021-0046 & SD2021-0038	- *Wait until development in the area better supports low-density residential ("R-1") uses, such as Willowbrook Estates located near the intersection of Kingsbury Road and Purple Sage Road.* The applicant submitted the current application on September 7, 2022. The application includes a signed disclosure declining the conditional rezone with development agreement option (Exhibit 3). **Applicable Standards and Regulations** Zoning Amendment Criteria (CCZO §07-06-05): The amendment is required to meet the following criteria: A. *Is the proposed zone change generally consistent with the comprehensive plan;* B. *When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation;* C. *Is the proposed zoning map amendment compatible with surrounding land uses;* D. *Will the proposed zoning map amendment negatively affect the character of the area? What measures will be implemented to mitigate impacts?* E. *Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed zoning map amendment;* F. *Does legal access to the subject property for the zoning map amendment exist or will it exist at the time of development.* 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* 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?* Preliminary Plat (CCZO §07-17-09(4): A. *The commission or hearing examiner shall hold a noticed public hearing on the preliminary plat. The hearing body shall recommend that the board approve, approve conditionally, modify, or deny the preliminary plat. The reasons for such action will be shown in the commission's minutes. The reasons for action taken shall specify:* 1. *The ordinance and standards used in evaluating the application;* 2. *Recommendations for conditions of approval that would minimize adverse conditions, if any;* 3. *The reasons for recommending the approval, conditional approval, modification, or denial; and* 4. *If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision.* B. *Upon recommendation by the commission, the preliminary plat, together with the commission's recommendation, shall be transmitted to the board.* **Surrounding Area & Land Use** The subject property and area are predominantly zoned "A" (Agricultural). Pursuant to CCZO Section 07-10-25(1), the purposes of the "A" 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 property consists mostly of moderately-suited soils (83.54%) with only 16.46% being least-suited soil (Exhibit 5g). Approximately 36.16% of the property is considered prime farmland if irrigated and approximately 47.38% considered farmland of statewide importance if irrigated. USDA's Canyon County Soil Survey of 2018 defines farmland of statewide importance as: *"land that does not meet the criteria for prime or unique farmland is considered to be farmland of statewide importance. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable.*

The property has surface water rights for 90 acres from Black Canyon Irrigation District and currently has a pivot on the property (Exhibit 3). North of Edna Road are best -suited soils. South of the parcel consists of moderately-suited soils, but located within the City of Middleton Area of City Impact where city growth and annexation is anticipated.

Surrounding Land Uses and Zoning (600-foot radius)		**Zone**
North	Consists mostly of large agricultural land with some smaller parcels most likely created by land division.	"A"
South	Predominantly zoned "A" with large agricultural parcels. Parcels R37619010, 010A and 010B were approved as "CR-R-1" (Conditional Rezone – Single Family Residential) in 2022 (RZ2021-0036). Parcel R37608 (73.04 acres) is actively farmed by was rezoned to CR-R-R in 2007 (Willowbrooks CR2007-2) which is most likely expired.	"A", "CR-R-1" & "CR-R-R"
East	Consists of large agricultural land with some smaller parcels. Kingsbury Meadows Subdivision (2008) is located at the corner of Purple Sage Road and Kingsbury Road.	"A"
West	Consists of large agricultural parcels and old residential plats. In 2022, Parcel R37498 (26.84 acres and adjacent to the subject parcel include use of Kemp Road) was rezoned to "R-R". The nearest plats are Willow View Sub #2 (2006), Willow Creek Ranch #3 (2004) and Willow Creek Ranch #1 (1993).	"A" & "R-R"

Within one (1) mile radius, there are 26 platted subdivisions for a total of 495 lots and a 2.35-acre average lot size (Exhibit 5e). The nearest approved subdivisions are:

- Kingsbury Meadows Subdivision: Approved 2007 for 25 lots (1.2-acre average lot size).
- Creekside Ranch Estates: Approved in 2003 for 3 lots (5.81-acre average lot size).
- Willow Creek Ranch Estates #1: Approved in 1993 for 14 lots (2.13-acre average lot size).
- Willow Creek Ranch #3: Approved in 2004 for 22 lots (1.93-acre average lot size).

See Case Maps and report (Exhibit 5f) for land use decisions between 2018 – 2022 within a one-mile radius of the subject properties. The following land use decisions have been made within the vicinity of the subject property:

- RZ2018-0006 – Edward Vance: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0012 – Reynolds Brothers, LLC: Denial of a zoning map amendment from an "A" Zone to a "R-1" (Single Family Residential – One-acre average minimum lot size) Zone. The Board of County Commissioner requested it be rezoned to an "R-R" Zone instead.
- RZ2021-0034 – John Cotner: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0036 – Richards/Larsen: Approval of a conditional rezone from an "A" Zone to a "CR-R-1" Zone subject to 9 conditions.

Future Land Use
The 2030 Canyon County Comprehensive Plan designates the property as "Rural Residential" to provide "rural transitional areas to create a boundary between agricultural and urban areas. These areas are generally conducive to small-scale farming operations and compatible with non-agricultural uses." This designation has not been implemented by code.

However, since the application was submitted prior to the adoption of the 2030 Canyon County Comprehensive Plan, the 2020 Canyon County Comprehensive Plan must be considered. The 2020 Canyon County Future Land Use Map designates the subject properties as "residential" (Exhibit 5d).

The subject property is not located within Middleton's Area of City Impact. Purple Sage Road is the northernmost boundary of Middleton's AOCI.

Nitrate Priority Area
The property is not located within a nitrate priority area (Exhibit 5h). Nitrates in wells within the area appear to be low (1.1-2.2mg/L). IDEQ (Idaho Dept. of Environmental Quality) nitrate threshold is 10mg/L.

Service
Future development will utilize individual wells and septic systems. No comments were received from IDWR (Idaho Dept. of Water Resources), IDEQ (Idaho Dept. of Environmental Quality) or SWDH (Southwest District Health).

The property has irrigation water rights from Black Canyon Irrigation District (BCID). BCID commented requesting (Exhibit 2, Attachment C):
- All maintenance road rights-of-way, lateral rights-of-way and drainage right of ways will need to be protected.
- Any crossing agreement(s) and/or piping agreement(s) will need to be acquired from the Bureau of Reclamation once approved by BICD.
- BCID will require that the laterals affected by this proposal be piped and structures built to ensure the delivery of irrigation water to patrons.

As a condition of the preliminary plat, BCID requirements must be completed prior to final plat approval.

Access/Traffic
The property proposes access from Purple Sage Road, a minor arterial, and extension of Kemp Road, a local road. Canyon Highway District #4 finds the request does not warrant a TIS (Traffic Impact Study). Traffic impacts will be mitigated through dedication of public right-of-way, public roadway improvements, and development impact fees. Canyon Highway District #4's comment letter requires internal street improvements, frontage improvements, access and right-of-way dedication that shall be completed prior to final plat approval (Exhibit 2, Attachment D).

Essential Services
The property will be served by Middleton Fire District, Canyon County Sheriffs and Middleton School District. No comments were received.

Comprehensive Plan
The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d). The request aligns with the following goals and policies of the 2020 Comprehensive Plan:

Chapter 1. Property Rights
Policy 1. No person shall be deprived of private property without due process of law.
Policy 8. Promote orderly development that benefits the public good and protects the individual with a minimum of conflict.

Chapter 2. 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.

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.

Chapter 5. Land Use

Land Use Goal 5. Achieve a land use balance, which recognizes that existing agricultural uses and non-agricultural development may occur in the same area.

Land Use Goal 6. Designate areas where rural type residential development will likely occur and recognize areas where agricultural development will likely occur.

Residential Land Use 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 8. Public Services, Facilities and Utilities

Policy 3. Encourage the establishment of new development to be located within the boundaries of a rural fire protection district.

Chapter 9. Transportation

Policy 13. Ensure that all new development is accessible to regularly maintained roads for fire protection and emergency service purposes.

Potential Impacts

The request is located near other large active agricultural properties (Exhibit 5b). The property contains surface water rights that are currently being utilized via irrigation pivot (Exhibit 5a). The request does not allow conditions to be placed on the rezone decision. The applicant signed a disclosure refusing to consider a conditional rezone (Exhibit 3). Therefore, there is no way to mitigate potential impacts of the rezone.

The request does not align with the following goal and policies of the 2020 Canyon County Comprehensive Plan:

Chapter 2. Population
Goal 1. Consider population growth trends when making land use decisions.
Chapter 3. School Facilities
Goal 2. Strive for better connectivity, safer access, and pedestrian friendly transportation options to schools.
Chapter 4. Economic Development
Goal 2. To support the agriculture industries by encouraging the maintenance of continued agricultural land uses and related agricultural activities.
Policy 1. Canyon County should encourage the continued use of agricultural lands, land uses and recognize the economic benefits they provide to the community.
Chapter 5. Land Use
Goal 4. To encourage development in those areas of the county which provide the most favorable conditions for future community services.
Agriculture - The County's policy is to encourage the use of these lands for agriculture and agriculturally-related uses, recognizing that the intent is to protect the best agricultural lands from inappropriate and incompatible development balanced against competing development needs. The county recognizes that agricultural uses contribute to our economic base, and that the retention of agricultural land should be encouraged. Canyon County recognizes that dust, farm implement and aerial applicator noise, pesticide/herbicide, fungicide spray, and animal waste and odors associated with agricultural activities are normal and expected in agricultural areas, even when best management practices are used.
Policy 1. Encourage the protection of agricultural land for the production of food.
Residential This policy recognizes that population growth and the resulting residential development should occur where public infrastructure, services and facilities are available or where there is a development pattern already established.
Policy 2. Encourage residential development in areas where agricultural uses are not viable.
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 6. Natural Resources
Agricultural Land
Goal 1. To support the agricultural industry and preservation of agricultural land.
Chapter 13. Agriculture

Goal 2. Support and encourage the agricultural use of agricultural lands.
Policy 1. Preserve agricultural lands and zoning classifications.

Mint Farm Estates - Analysis

Standard of Review for Subdivision Plats:

A. Idaho Code, Sections 67-6513 (Subdivision);
B. Idaho Code, Sections 50-1301 through 50-1329 (Platting);
C. Idaho Code, Section 31-3805 (Irrigation);
D. Idaho Code, Section 22-4503 (Right-to-Farm Act);
E. Canyon County Zoning Ordinance, Chapter 7, Article 17 (Subdivision Regulations).

The plat was reviewed by Keller Associates (County consulting surveyor & engineer) and found to be consistent to County and state requirements subject to conditions (Exhibit 2, Attachment B).

Comments

Public Comments

At the time of drafting this report, no public comments were received.

Agency Comments

See Exhibit 6 for comments received from affected agencies.

Decision Options

- The Planning and Zoning Commission may **recommend approval** of the zoning map amendment and preliminary plat;
- The Planning and Zoning Commission may **recommend denial** of the zoning map amendment and preliminary plat; and direct staff to make findings of fact to support this decision; or
- The Planning and Zoning Commission may **continue the discussion** and request additional information on specific items to help support the required findings.

Recommendation

Staff recommends the Planning and Zoning Commission open a public hearing and discuss the two (2) requests.

Staff is **recommending approval** of the requests. Staff has provided the following for the Commission's consideration:

- Exhibit 1: Findings of fact, Conclusions of law and Order for Case No. RZ2022-0011; and
- Exhibit 2: Findings of fact, Conclusions of law and Order for Case No. SD2022-0034.

Findings of Fact, Conclusions of Law, and Order

Zoning Map Amendment - RZ2022-0011

Findings of Fact

1. The applicant, Sierra Vista Properties, Inc., is requesting a zoning map amendment (rezone) of Parcel R37496 from an "A" (Agricultural) zone to a "R-R" (Rural Residential) zone. The request includes a Preliminary Plat, Irrigation, & Drainage Plan for Mint Farm Estates Subdivision, 39 residential lots. The subject property is located at 8718 Purple Sage, Rd., Caldwell; also referenced as a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
2. The rezone is being considered concurrently with a preliminary plat (including irrigation and drainage) for Mint Farm Estates. The proposed plat includes 39 residential lots (SD2022-0034).
3. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
4. The site is not located within an area of city impact.
5. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
6. A neighborhood meeting was conducted on 6/29/2022 pursuant to CCZO §07-10-15 (Exhibit 4 of the staff report).
7. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on 7/18/22, newspaper notice was published on 12/18/22, property owners within 600' were notified by mail on 12/15/22, and the property was posted on 12/27/22.
8. The record includes all testimony at the public hearing held on January 5, 2023, the staff report, exhibits, and documents in Case File No. RZ2022-0011.

Conclusions of Law

For this request, the Planning and Zoning Commission finds and concludes the following regarding the Standards of Review for a Conditional Rezone (CCZO §07-06-05):

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

Conclusion: The proposed zoning map amendment is consistent with the 2020 Canyon County Comprehensive Plan.

Finding: The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). The project aligns with the following goals and policies of the 2020 Comprehensive Plan:

Chapter 1. Property Rights

Policy 1. No person shall be deprived of private property without due process of law.

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

Chapter 2. 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.

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.

Chapter 5. Land Use

Land Use Goal 5. Achieve a land use balance, which recognizes that existing agricultural uses and non-agricultural development may occur in the same area.

Land Use Goal 6. Designate areas where rural type residential development will likely occur and recognize areas where agricultural development will likely occur.

Residential Land Use 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 8. Public Services, Facilities and Utilities

Policy 3. Encourage the establishment of new development to be located within the boundaries of a rural fire protection district.

Chapter 9. Transportation

Policy 13. Ensure that all new development is accessible to regularly maintained roads for fire protection and emergency service purposes.

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

Conclusion: The proposed zoning map amendment is more is more appropriate than the current zone.

Finding: The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). Although the property active agricultural ground and near other large agricultural properties and uses, the property is also located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports a rural residential development and lifestyle. The property is adjacent to the Middleton Area of City Impact where residential development is promoted.

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

Conclusion: The proposed zoning map amendment is compatible with the surrounding land uses.

Finding: The applicant is proposing to rezone the subject property to "R-R" (Rural Residential). Within one (1) mile radius, there are 26 platted subdivisions for a total of 495 lots and a 2.35-acre average lot size (Exhibit 5e of the staff report). The following land use decisions have been made within the vicinity of the subject property:

- RZ2018-0006 – Edward Vance: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0012 – Reynolds Brothers, LLC: Denial of a zoning map amendment from an "A" Zone to a "R-1" (Single Family Residential – One-acre average minimum lot size) Zone. The Board of County Commissioner requested it be rezoned to an "R-R" Zone instead.
- RZ2021-0034 – John Cotner: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0036 – Richards/Larsen: Approval of a conditional rezone from an "A" Zone to a "CR-R-1" Zone.

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

Conclusion: The proposed zoning map amendment will not negatively affect the character of the area.

Finding: The request is located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports a rural residential development and lifestyle. Therefore, the request will be compatible with the rural character of the area. Development mitigation will be applied at the time of subdivision platting.

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

Conclusion: Adequate sewer, drainage, and storm water drainage facilities and utility systems will be provided to accommodate the proposed use at the time of development. Platting as a residential subdivision will be required.

Finding: The request includes a preliminary plat (SD2020-0034) which demonstrates future development will utilize individual septic systems and domestic wells. The property is not located within nitrate priority area. Nitrates in wells within the area appear to be low (1.1-2.2mg/L). IDEQ (Idaho Dept. of Environmental Quality) nitrate threshold is 10mg/L. (Exhibit 5h of the staff report). No comments were received from IDWR (Idaho Dept. of Water Resources), IDEQ (Idaho Dept. of Environmental Quality) or SWDH (Southwest District Health). Therefore, compliance with agency requirements and standards will be implemented at the time of platting.

Future development will utilize surface water rights from Black Canyon Irrigation District (BCID) via a pressurized irrigation system. At the time of platting, the development will be required to meet BCID requirements and standards (Exhibit 2, Attachment C of the staff report). Drainage will be addressed via the subdivision plat for this development through borrow ditches and retention ponds.

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

Conclusion: The property has legal access to Purple Sage Rd., at the existing home site location.

Finding: The property has frontage on Purple Sage Rd., a public road.

Canyon Highway District No. 4 does not oppose the use of the access subject to conditions of the subdivision plat (Exhibit 2, Attachment D of the staff report).

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?

Conclusion: The request does not require a traffic impact study. Mitigation measures will be applied through right-of-way dedications, frontage improvements, internal road improvements and development impact fees.

Finding: Canyon Highway District #4 finds the request does not warrant a TIS (Traffic Impact Study). Traffic impacts will be mitigated through dedication of public right-of-way, public roadway improvements, and development impact fees. Canyon Highway District #4's comment letter requires internal street improvements, frontage improvements, access and right-of-way dedication that shall be completed prior to final plat approval (Exhibit 2, Attachment D of the staff report).

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?

Conclusion: Essential services will be provided to accommodate the use. No mitigation is proposed at this time.

Finding: The property is served by Middleton Fire District, Middleton School District and Canyon County Sheriffs. No evidence has been provided that the proposed request will require additional public funding to meet the needs created by the requested use and police, fire, and emergency medical services will be provided to the properties.

Order

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Planning and Zoning Commission **recommends approval** of Case #RZ2022-0011, a zoning map amendment from an "A" zone (Agricultural) to an "R-R" (Rural Residential) zone for Parcel No. R37496.

APPROVED this _____ day of _____, 2023.

PLANNING AND ZONING COMMISSION
CANYON COUNTY, IDAHO

_____
Robert Sturgill, Chairman

State of Idaho)
SS
County of Canyon County)

On this _____ day of _____, in the year 2023 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: _____

Findings of Fact, Conclusions of Law, and Order

Preliminary Plat – SD2022-0034

Findings

1. Sierra Vista Properties, Inc. is requesting approval of a Preliminary Plat, irrigation, & drainage plan for Mint Farm Estates Subdivision (Attachment A).
2. The plat contains a total of 39 residential lots.
3. The subject property, parcel no. R37496 is located at 8718 Purple Sage, Rd., Caldwell, Idaho, in a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
4. The subject property is currently zoned "A" (Agricultural). A zoning map amendment to change the zoning of the property from "A" (Agricultural) to "R-R" (Rural Residential) was applied for concurrently with the plat (Case No. RZ2022-0011).
5. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
6. The subject property is not located within an Area of City Impact.
7. The subject property is located within Canyon Highway District No. 4 (Attachment D), Middleton Fire District, Middleton School District and Black Canyon Irrigation District (Attachment C).
8. Internal public roads will provide access to the residential lots (Attachment A).
9. Pressurized irrigation is proposed for the subdivision via water right from Black Canyon Irrigation District (Attachment A & Exhibit 3 of the staff report).
10. Individual septic systems and individual domestic wells will be utilized for each residential lot (Attachment A).
11. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on 7/18/22, newspaper notice was published on 12/18/22, property owners within 600' were notified by mail on 12/15/22, and the property was posted on 12/27/22.
12. The record includes all testimony at the public hearing held on January 5, 2022, the staff report, exhibits, and documents in Case File No. SD2022-0034.

Conclusions of Law

Section 07-17-09(4)A of the Canyon County Zoning Ordinance (CCZO) states:

"The commission or hearing examiner shall hold a noticed public hearing on the preliminary plat. The hearing body shall recommend that the board approve, approve conditionally, modify, or deny the preliminary plat. The reasons for such action will be shown in the commission's minutes. The reasons for action taken shall specify:

1. *The ordinance and standards used in evaluating the application;*
2. *Recommendations for conditions of approval that would minimize adverse conditions, if any;*
3. *The reasons for recommending the approval, conditional approval, modification, or denial; and*
4. *If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision.*"

Standard of Review for Subdivision Plats:

A. Idaho Code, Sections 67-6513 (Subdivision);
B. Idaho Code, Sections 50-1301 through 50-1329 (Platting);
C. Idaho Code, Section 31-3805 (Irrigation);

D. Idaho Code, Section 22-4503 (Right-to-Farm Act);
E. Canyon County Zoning Ordinance, Chapter 7, Article 17 (Subdivision Regulations).

The plat was reviewed by Keller Associates (County consulting surveyor & engineer) and found to be consistent to County and state requirements subject to conditions (Attachment B).

Conditions of Approval

1. All subdivision improvements (public roads, grading, irrigation and drainage swales/ponds) and amenities shall be bonded or completed prior to final plat approval.
   a. Prior to installation of improvements, a construction plan must be reviewed and approved by the County engineer.
2. Historic irrigation lateral, drain and ditch flow patterns shall be maintained and protected. Modification shall be approved in writing by Black Canyon Irrigation District and Bureau of Reclamation (Attachment C). Prior to final plat approval of each phases, the development shall comply with Black Canyon Irrigation District requirements (Attachment C).
   a. A Water User's Maintenance Agreement for all properties within the development shall be recorded with the County Recorder's office prior to final plat approval.
3. Finish grades at subdivision boundaries shall match existing finish grades. Stormwater runoff shall be maintained on the subject property (Attachment B).
4. The development shall iComply with Southwest District Health requirements (Attachment B).
5. The development shall comply with all requirements and conditions requested by Canyon Highway District #4 (Attachment D).

Order

Based upon the Findings of Fact, Conclusions of Law contained herein for Case No. SD2022-0034, the Planning and Zoning Commissioners **recommend approval** of the Preliminary Plat (including irrigation/drainage) for Mint Farm Estates Subdivision subject to conditions of approval.

APPROVED this _____ day of _____, 2023.

PLANNING AND ZONING COMMISSION
CANYON COUNTY, IDAHO

_____
Robert Sturgill, Chairman

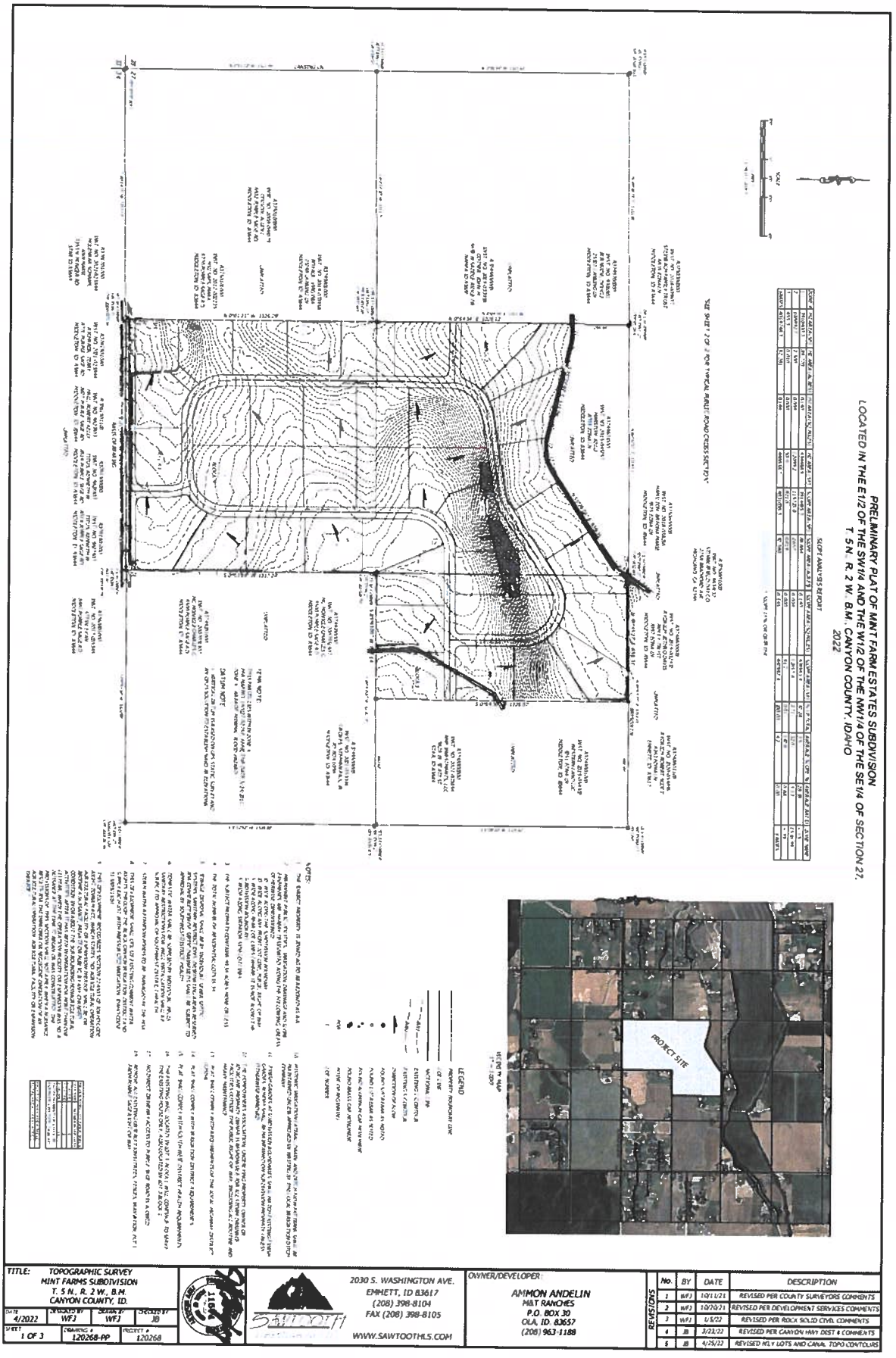
State of Idaho)
SS
County of Canyon County)

On this _____ day of _____, in the year 2023 before me _____, a notary public, personally appeared _____, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he(she) executed the same.

Notary: _____

My Commission Expires: _____

ATTACHMENT A



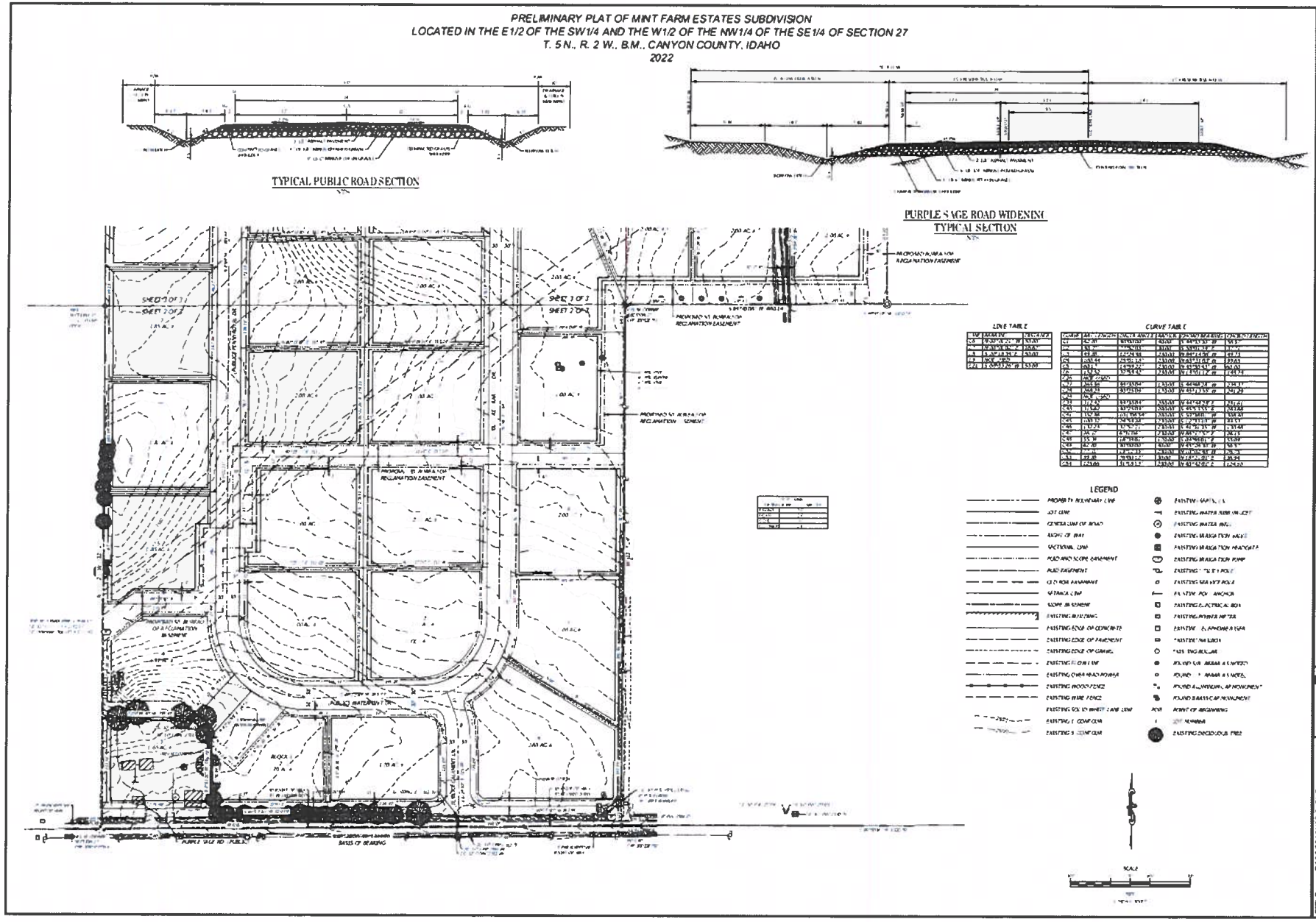
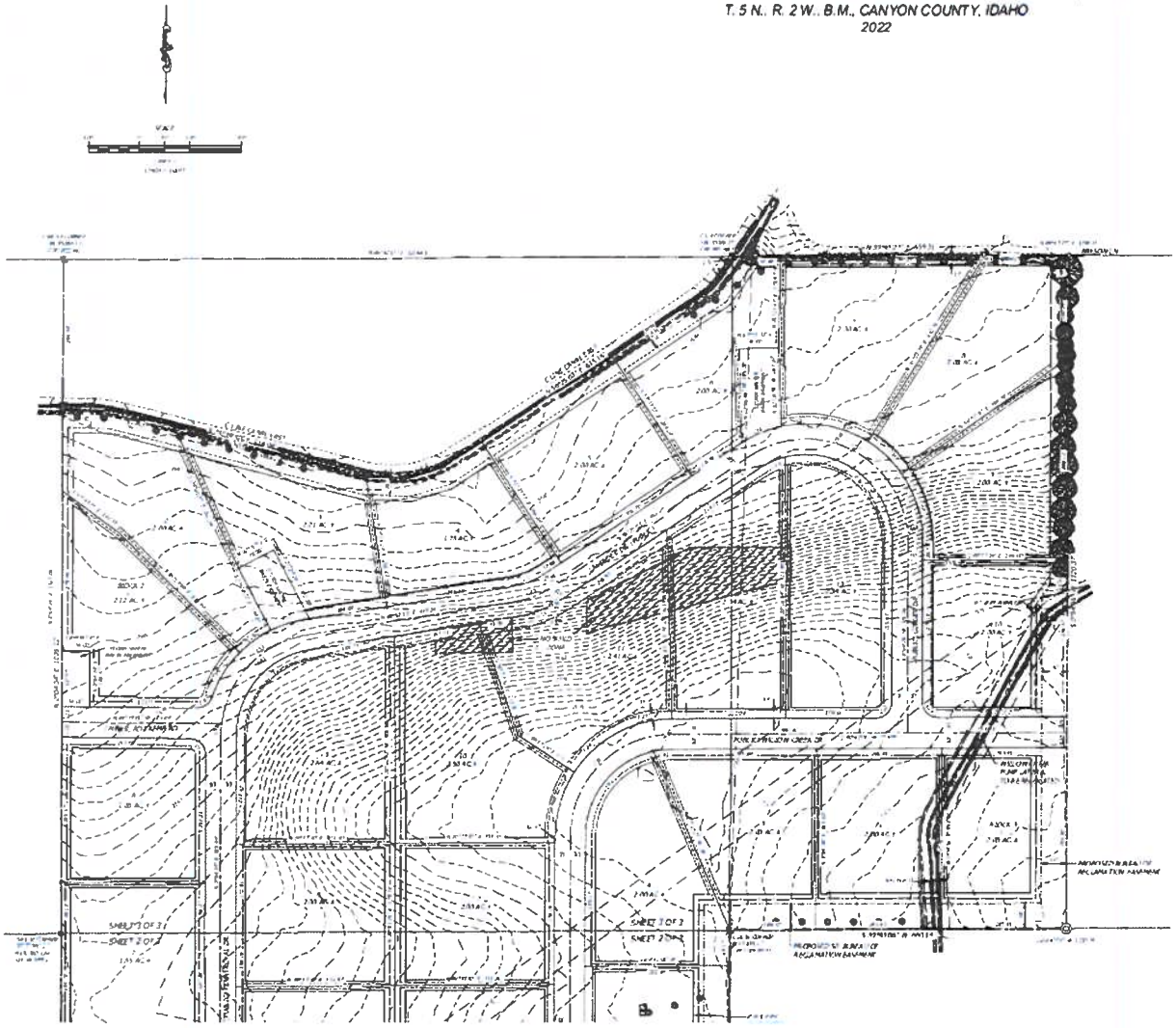

PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022
TYPICAL PUBLIC ROAD SECTION
PURPLE SAGE ROAD WIDENING
TYPICAL SECTION
LINE TABLE
CURVE TABLE
LEGEND
SCALE
BASIS OF BEARING
PURPLE SAGE RD (PUBLIC)
PROPOSED IRRIGATION RECLAMATION EASEMENT
PUBLIC WATERWAY
BLOCK 1
TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
No. BY DATE DESCRIPTION
1 MFJ 09/1/21 REVISED PER COUNTY SURVEYORS COMMENTS
2 MFJ 10/20/21 REVISED PER DEVELOPMENT SERVICES COMMENTS
SHEET 1 OF 3
SHEET 2 OF 3
SHEET 3 OF 3

EXHIBIT 2

PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022



LEGEND

LINE TABLE

CURVE TABLE

REVISIONS			DESCRIPTION
No.	BY	DATE	
1	WFJ	10.11.21	REVISED PER LOCALITY SURVEYORS COMMENTS
2		1.12.2021	REVISED PER DEVELOPMENT SERVICES COMMENTS
3	JB	2.22.22	REVISED PER CANYON HWY DIST. 4 COMMENTS
4	JB	4.25.22	REVISED PER NMID AND CANAL TOPO CONTOURS

OWNER/DEVELOPER
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
OLA, ID. 83657
(208) 963-1188

2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
FAX (208) 398-8105
WWW.SAWTOOTHLS.COM

TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.

DATE	DRAWN BY	CHECKED BY	PROJECT #
9/2021	WFJ	JB	1116.00
SHEET 1 OF 1	DRAWING 1116.00		

EXHIBIT 2 | Page 5

SITE SHEET 8
PRESSURIZED IRRIGATION NOTES
KEYNOTES
KEY MAP
CALL BEFORE YOU DIG!
AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION
MINT FARM ESTATES
CANYON COUNTY, IDAHO
REUSE OF DRAWINGS
THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF ROCK SOLID CIVIL LLC AND IS NOT TO BE USED
ROCK SOLID CIVIL
Revisions
Date
Description

KEYNOTES

KEY MAP

PRESSURIZED IRRIGATION NOTES

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Project No. 20-	Project Name: MINT FARM ESTATES CANYON COUNTY, IDAHO	REUSE OF DRAWINGS THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF ROCK SOLID CIVIL LLC AND IS NOT TO BE USED	ROCK SOLID CIVIL
Drawn By: J			
Date: September			
Sheet No. 8 of 8	Sheet Name		

Revisions	
Date	Description

ATTACHMENT B

KELLER ASSOCIATES

100 E Bower Street, Suite
Meridian, ID 836
(208) 288-19

November 28, 2022

Mr. Devin Krasowski
Associate Engineer
Development Services Department
111 North 11th Ave. #140
Caldwell, Idaho 83605

Re: Mint Farm Estates Preliminary Plat Application

Dear Mr. Krasowski,

Keller Associates, Inc. has reviewed the Preliminary Plat for the Mint Farm Estates dated September 16, 2022. We reviewed the applicant's package for conformance with the Canyon County Code Ordinance Article 17. We have the following comments in order for the applicant to satisfy the County's requirements:

1. Label Purple Sage Road as "Public."

We recommend **approval of the Preliminary Plat with the condition noted above.** Any variance or waivers to the Canyon County standards, ordinances, or policies must be specifically approved in writing by the County. Approval of the above-referenced Preliminary Plat, when granted, does not relieve the Registered Professional Land Surveyor or the Registered Professional Engineer of those responsibilities.

If you have any questions, please do not hesitate to call Keller Associates at (208) 244-5065.

Sincerely,

KELLER ASSOCIATES, INC.

Justin Walker, P.E.
County Engineer

KELLER ASSOCIATES

Meridian, ID 83642
(208) 288-1992

July 21, 2022

Mr. Devin Krasowski
Associate Engineer
Development Services Department
111 North 11th Ave. #140
Caldwell, Idaho 83605

Re: Mint Farm Estates Preliminary Plat Application

Dear Mr. Krasowski,

Keller Associates, Inc. has reviewed the Preliminary Plat for the Mint Farm Estates dated July 5, 2022. We reviewed the applicant's package for conformance with the Canyon County Code Ordinance Article 17. We have the following comments in order for the applicant to satisfy the County's requirements:

1. Either provide all information required for Hillside development OR shift Lavender Drive out of the area that has 15% or greater slopes. Also, designate those areas as "no build zones."
2. The common lots that house the stormwater basins need to be delineated on the plat.
3. Show building envelopes for all buildable lots.
4. It appears that parcel R3748800000 along the east boundary of the project has changed ownership according to the Canyon County Assessor's Map. Please update.
5. Sheet 1, existing roads shall be labeled "Private or Public."
6. Provide confirmation that the Kemp Road stub street aligns with the development to the west.
7. Historic irrigation lateral, drain, and ditch flow patterns shall be maintained unless approved in writing by the local irrigation district or ditch company.
8. Finish grades at subdivision boundaries shall match existing finish grades. Runoff shall be maintained on subdivision property unless otherwise approved.
9. Plat shall comply with requirements of the local highway district.
10. Plat shall comply with irrigation district requirements.
11. Plat shall comply with Southwest District Health requirements.

We recommend that **conditions 1 through 6 listed above be addressed prior to approval of the Preliminary Plat.** Any variance or waivers to the Canyon County standards, ordinances, or policies must be specifically approved in writing by the County. Approval of the above-referenced Preliminary Plat, when granted, does not relieve the Registered Professional Land Surveyor or the Registered Professional Engineer of those responsibilities.

If you have any questions, please do not hesitate to call Keller Associates at (208) 244-5065.

Sincerely,

KELLER ASSOCIATES, INC.

Justin Walker, P.E.
County Engineer

ATTACHMENT C

August 5, 2022

Canyon County Development Services Department
111 North 11th Ave. Suite 140
Caldwell, ID 83605
(208) 454-7458

RE: Zoning Map Amendment. Parcels R37496
Case No. RZ2022-0011 & SD2022-0034
Applicant: Sierra Vista Properties, Inc.
Planner: Dan Lister

Parcel R37496 is located at 8718 Purple Sage Road, Caldwell Idaho.

The Black Canyon Irrigation District (District) has the following initial comments regarding this proposed land use change.

Due to the updated platting, the applicant will need to resubmit their application to the Black Canyon Irrigation District. As part of our updating development review process, please see our website for Development Intake Sheet form (www.blackcanyonirrigation.com development).

As was previously indicated, any and all **maintenance road right-of ways, lateral right-of ways and drainage right-of ways** will need to be protected (including the restriction of all encroachments). Also, any crossing agreement(s) and/or piping agreement(s) will need to be acquired from the Bureau of Reclamation (Reclamation), once approved by the District, to cross over or under any existing lateral, pipe any lateral or encroach in any way the right-of ways of the District or the Reclamation.

The District will require that the laterals affected by this proposed land change be piped and structures built to ensure the delivery of irrigation water to our patrons.

Furthermore, as long as this property has irrigation water attached to it, an irrigation system with an adequate overflow needs to be installed to ensure the delivery of irrigation water to each lot and/or parcel of land entitled to receive irrigation water.

Runoff and drainage from the proposed land splits should be addressed as well to ensure downstream users are not adversely affected by the proposed land use changes.

The District and Reclamation will require a signed agreement be in place prior to any changes being made to the sections of the W.C.P. 0.3, C.E. 21.1, and any appurtenant irrigation facilities that are affected by the proposed land changes not listed in this letter. NOTE: The District and Reclamation will require that this section be piped meeting all District and Reclamation standards. Furthermore, the District and Reclamation may require additional modifications to ensure irrigation water is made available to patrons as this proposed project proceeds.

All of the above requirements shall be met, including any others that arise during future review. Please let us know if you have any questions.

Thank You,

Donald Popoff

Donald Popoff P.E.
District Engineer
Black Canyon Irrigation District

474 ELGIN ST. – P.O. BOX 226 – NOTUS, ID 83656 – 208-459-4141 – FAX 208-459-3428

ATTACHMENT D

CANYON HIGHWAY DISTRICT No. 4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208/454-8135
FAX 208/454-2008

August 8, 2022

Canyon County Commissioners & Planning & Zoning Commission
c/o Development Services Department
111 N. 11th Street
Caldwell, Idaho 83605
Attention: Jennifer Almeida, Planner

RE: RZ2022-0011/SD2022-0034
Mint Farm Estates Subdivision Preliminary Plat
Parcel R34796

Dear Commissioners:

In the matters above Canyon Highway District No. 4 (CHD4) has reviewed the proposed application for preliminary plat Mint Farm Estates Subdivision, Parcel R34796 consisting of 39 proposed residential lots on approximately 92.3 acres. CHD4 provides the following comments:

General:
The subject property has frontage on Purple Sage Rd. a public highway under CHD4 jurisdiction. Purple Sage Rd is classified as a minor arterial on the functional classification map adopted by Canyon County and CHD4 in 2012. For purposes of development, the subject property is considered rural as it is more than one mile from city limits.

CHD4 has reviewed and provided comment on the preliminary plat several times, with the latest comments provided by letter dated June 28, 2022 (attached). These comments appear to have been generally addressed in the plat revision dated July 5, 2022 included with the agency notice. The CHD4 Board has not reviewed or approved this preliminary plat as of the date of this report. Staff will present the revised plat dated July 5, 2022 for consideration by the CHD4 Board at their August 17th regular meeting, subject to the following recommended conditions of approval:

Right-of-Way Dedication:

1. Provide and dedicate a 50-foot right-of-way for the north half of Purple Sage Rd along the project frontage as shown.
2. Provide a 40-foot radius at the intersection of the Purple Sage and Calamint Ln r/w lines.
3. Provide a 30-foot radius at the intersection of all other r/w lines at public road intersections.
4. Provide a 60-foot right-of-way for internal local streets as shown.

Access:

1. Add a note that no lot shall have direct access to Purple Sage Road.
2. Public road connection to Purple Sage Rd (Calamint Lane) as shown.
3. Stub local streets to Parcels R37488 & R37498 (east and west, respectively) as shown.

Frontage Improvements:
CHD4 standards require construction of frontage improvements for arterial and collector roadways within or adjacent to proposed development.

1. Purple Sage Rd- north half Three Lane Rural Road Section per ACCHD SD-101A.
2. Structural pavement sections to be determined by geotechnical investigation during development and review of improvement drawings at final plat.
3. Show all existing irrigation facilities and other obstructions to be removed from the public right-of-way intended for dedication.

Internal Street Improvements:

1. Construct internal public road improvements to meet ACCHD Standard Drawing SD-101 for a low-volume local road.
2. Structural pavement sections to be determined by geotechnical investigation during development and review of improvement drawings at final plat.
3. Internal local road horizontal curves to have minimum centerline radius of 200-feet to meet AASHTO standard for low speed urban curve with 25 mph design speed.
4. Provide slope easements for roadway cut/fill slopes that catch outside of the right of way.

All other platting and improvement requirements to be in accordance with the current edition of the Highway Standards and Development Procedures Manual in effect at the time of improvement drawing submittal.

Traffic Impacts:
The proposed development density does not warrant a Traffic Impact Study under current CHD4 development policy. Traffic impacts from the development will be mitigated through dedication of public right-of-way, public roadway improvements, development impact fees, or a combination of these requirements.

CHD4 respectfully requests the Canyon County Commission consider these comments, and make them a condition of approval of the proposed preliminary plat. CHD4 does not otherwise oppose or object to this request.

Please feel free to contact me at any time with questions on these comments.

Respectfully,

Chris Hopper
District Engineer

File: Purple Sage Rd- Mint Farm Estates Subdivision

June 30th, 2022

Canyon County Board of County Commissioners
Canyon County P&Z Commission
c/o Canyon County Development Services
111 N 11th Ave, Suite 140
Caldwell, ID 83605

RE: "Mint Farm Estates" subdivision & Rezone to R-R
Parcel #R3749600000

Dear Commissioners and Staff:

On behalf of Mark Andelin / Sierra Vista Properties, Inc., please accept the attached application for "Mint Farm Estates" subdivision and rezone to R-R.

Case #RZ2021-0046/SD2021-0038
On May 25th, 2022, a hearing was held with the country commissioners for this same project. In that case, we had applied for a rezone to R-1 and a plat showing a mixture of 2 and 1 acre lots, 53 total. Ultimately after 2 hearings, the commissioners declined the case, informing us in the process that R-R is a better fit for the area to be more conducive to the agriculture surrounding area. All three commissioners said they would have approved our project if the application was for a rezone from AG to R-R as that would be "a better fit for the area." As a result of this hearing, we have corrected the plat and application accordingly and are now applying for a rezone to R-R with a plat showing 2 acre lots, totaling 39.

Keller Associates has already reviewed our old plat. In their last letter to us, dated 10-15-21, they gave us two conditions, which we have since met. The only difference in the old plat and new plat is 14 fewer lots, which was a simple process of combining two 1-acre lots to become a 2-acre lot, until total lot count was reduced to 39. Their most recent conditional approval letter is attached in this application along with our response to their conditions.

Subdivision preliminary plat application
This 90-acre property lies on the north side of Purple Sage Road between Lansing and Kingsbury Road. This property is outside both the City of Middleton Area of Impact AND the high nitrate priority area, but it does fall within the future impact area for the city.

39 lots are proposed with this subdivision. Of the 39 lots, 1 has an existing home and outbuildings. This is currently on a well. 38 additional lots and wells are proposed on individual well and septic. There will be 4 storm water retention ponds in easements and 0 non-buildable lots. Lot sizes range from 1.60 to 2.60 acres. Net average lot size 2.02 acres. Gross average lot size is 2.32 acres. We are proposing public roads for lot access.

EXHIBIT
3

The engineers (Rock Solid Civil Engineering) and surveyors (Sawtooth Land Surveying) and I met with Randall Faulkner with CCDS on September 28th, 2020. In this meeting we went over processes and procedures for the rezone and subdivision, application guidelines/requirements, other agencies to talk to, and standards for the neighborhood meeting. Since then we have been in regular contact with them, with the review / approval process.

Two neighborhood meetings were held on site at 8718 Purple Sage Road. One on 6-16-2022 and the other on 6/29.2022. 8 total people arrived representing 4 households. In both meetings, there were no objections to the development. The questions were about timeframe and logistics (process for approval). One comment was made during the second meeting about the increased traffic in the area but did not directly say they were opposed to the development.

We met with Carl Hayes from Black Canyon Irrigation District on September 8th, 2020 to go over their requirements for the subdivision. We have submitted all irrigation paperwork to BCID and the Bureau of Reclamation to relocate an existing underground lateral pipe that goes through the property and its subsequent easement. We plan on moving this pipe and an appropriate 50' easement in full accordance with the BOR requirements and guidelines. Completed application was submitted Sept 20th, 2021 to BCID and BOR.

A preapplication meeting with SWDH and OneAtlas was held March 17th, 2021 to discuss their requirements and to schedule a time for the test holes to be dug. Test holes were dug on site April 5-6 in accordance with SWDH, with Geotech company OneAtlas and SWDH on site, to perform Geotech report/analysis.

I contacted the City of Middleton via email May 14th, 2021 inquiring the nearest location of city services to project site as grounds to consider pulling city services, but as they distance was very great, we are proceeding with this application for individual well and septic systems. This site will have landscaping done along Purple Sage Road.

Rezone application

We are proposing this site be rezoned to R-R. We will enter into a development agreement. This rezone falls in line with the Canyon County future land use map. As this is surrounded by both farmed agriculture land and subdivisions on wells and septic systems, a rezone to R-R is a great fit. We feel this proposed density is in line with neighboring lots as the proposed density will reflect a rural/country lifestyle. There is a large shortage of homes in the Treasure Valley due to increased demand of the country seeing how wonderful Idaho is. With this shortage there seems to be a fine line of providing more homes for the growing demand and keeping the rural lifestyle. Rather than develop and proposing a high-density subdivision to accommodate as many homes as possible, we feel a plat with 2 acre lots is a better fit for the surrounding ag zoning. The nearest neighboring lot sizes range from 86 acres down to .97 acres.

The proposed change is consistent with the City of Middleton Future land use map. As is the case with any new subdivision, the number of cars on the road will increase. Other than this increase, we do not anticipate any negative affect on surrounding uses.

SCANNED

A traffic impact study was produced by CR Engineering, Inc. based on 53 lots. They found the increased traffic impact was within the already planned growth of the area. Therefore, no offsite improvements were anticipated. In addition, we reduced our lot count from 53 (as originally applied for) to 39, which will decrease the traffic impact of the project. With 39 lots, this project now falls outside the threshold for subdivisions requiring a traffic impact study.

As coordinated with the Canyon Highway District in the preapplication meeting, there will be three paved and public access points, two of which are stub roads to neighboring subdivisions.

All ROW's purposed are in accordance with requirements of CHD #4. The proposed lots are sized to accommodate septic and well. Pressurized irrigation will be provided to each lot using existing surface water rights.

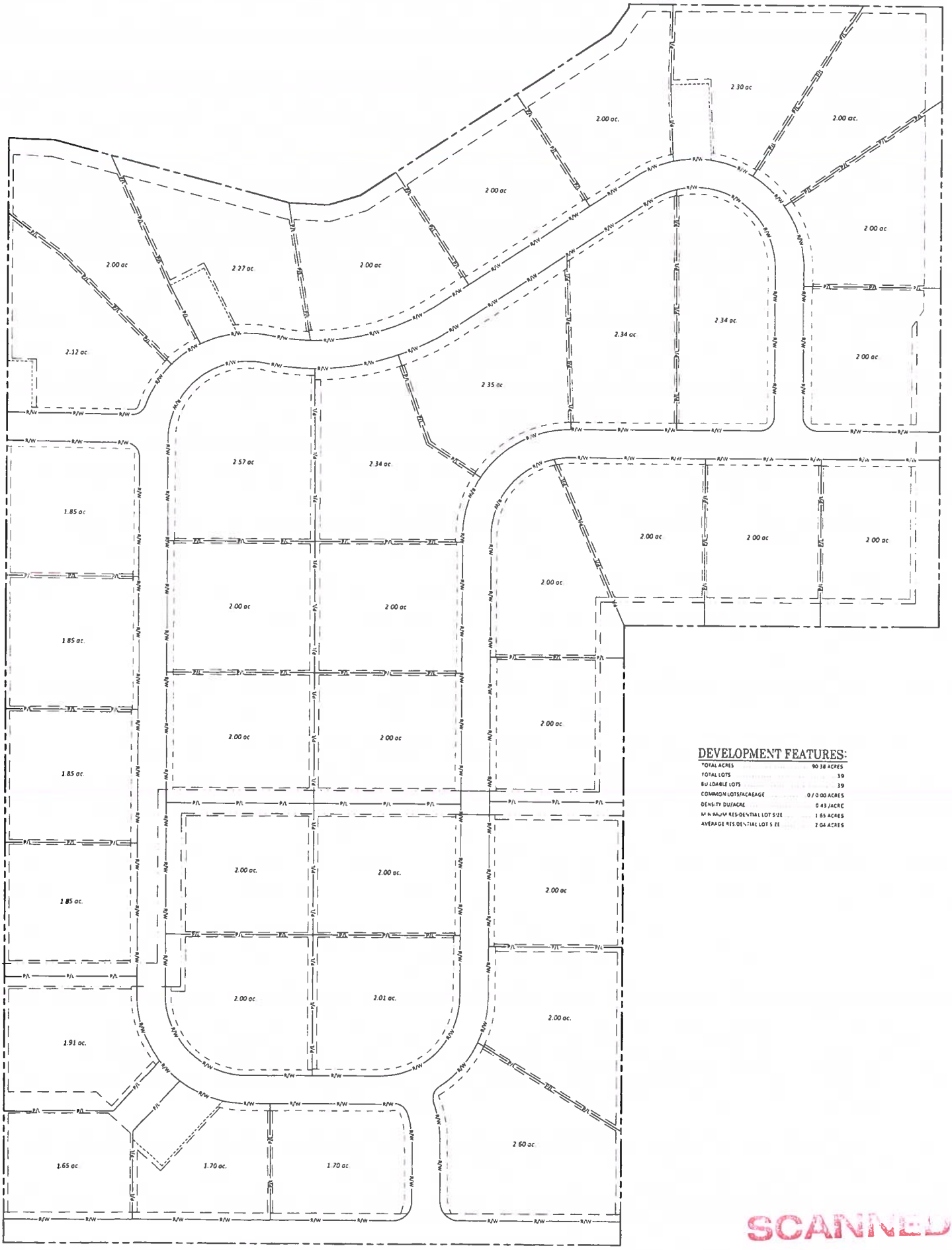
As stated above, in working with Black Canyon Irrigation District and Bureau of Reclamation, we are following their specific approval/application process to ensure all downstream irrigation water be continued. The irrigation changes will improve downstream user's usage. All changes to the existing irrigation system will be done with the approval of BCID and Bureau of Reclamation.

The applicant and project team believe the proposed preliminary plat and rezone meet all standards such as setbacks, roadways, and provision of necessary services. We feel this application is consistent with current and future comprehensive planning for the area.

Please contact me with any questions. I look forward to hearing back from you on this application and project.

Ammon Andelin
Planner
208.963.1188
[illegible]

SCANNED



DEVELOPMENT FEATURES:

TOTAL ACRES	90.38 ACRES
TOTAL LOTS	39
BUILDABLE LOTS	39
COMMON LOTS/ACREAGE	0 / 0.00 ACRES
DENSITY DU/ACRE	0.43 /ACRE
MINIMUM RESIDENTIAL LOT SIZE	1.65 ACRES
AVERAGE RESIDENTIAL LOT SIZE	2.04 ACRES

SCANNED

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? 39

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)

DITCHES

SCANNED

RESIDENTIAL USES

1. NUMBER OF LOTS REQUESTED:

☒ Residential 39 ☐ Commercial NA ☐ Industrial NA

☒ Common 0 ☒ Non-Buildable 0

2. FIRE SUPPRESSION:

☐ Water supply source: WATER TRUCK / FIRE TRUCK

3. INCLUDED IN YOUR PROPOSED PLAN?

☐ Sidewalks ☐ Curbs ☐ Gutters ☐ Street Lights ☒ None

NON-RESIDENTIAL USES

1. SPECIFIC USE: _____

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? _____

SCANNED

IRRIGATION PLAN 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

Applicant(s)

SIERRA VISTA PROPERTIES INC. 208·630·3264

Name Daytime Telephone Number

PO BOX 30 OLA ID 83657

Street Address City, State Zip

Representative Name

AMMON ANDELIN 208·963·1188 AMMONANDELIN@U FINANCIALGUIDE.C

Daytime Telephone Number / E-mail Address

2195 CHERRY LANE EMMETT, ID 83617

Street Address City, State Zip

Location of Subject Property: 8718 Purple Sage Rd MIDDLETON

Two Nearest Cross Streets or Property Address City

Assessor's Account Number(s): R 3749600000 Section 27 Township 5N Range 2W

This land:

- [x] Has water rights available to it.
- [ ] Is dry and has no water rights available to it. If dry, please sign this document and return to the Development Services Department representative from whom you received it.

Idaho Code 31-3805 states that when all or part of a subdivision is "located within the boundaries of an existing irrigation district or canal company, ditch association, or like irrigation water delivery entity ... **no subdivision plat or amendment to a subdivision plat or any other plat or may recognized by the city or county for the division of land will be accepted, approved, and recorded unless**:"

a. The appropriate water rights and assessment of those water rights have been transferred from said lands or excluded from an irrigation entity by the owner; or

b. The owner, person, firm, or corporation filing the subdivision plat or amendment to a subdivision plat or map has provided underground tile or conduit for lots of one (1) acre or less, or a suitable system for lots of more than one (1) acre which will deliver water to those land owners within the subdivision who are also within the irrigation entity with the appropriate approvals:

1. For proposed subdivisions located within negotiated area of city impact, both city and county zoning authorities must approve such irrigation system in accordance with Idaho Code Section 50-1306. In addition, the irrigation entity charged with the delivery of water to said lands must be advised regarding the irrigation system.

SCANNED

2. For proposed subdivisions outside of negotiated areas of city impact, the delivery system must be approved by the Planning and Zoning Commission and the Board of County Commissioners with the advice of the irrigation entity charged with the delivery of water to said lands.

To better understand your irrigation request, we need to ask you a few questions. A list of the map requirements follows the short questionnaire. **Any information missing information may result in the delay of your request before the Planning and Zoning Commission and ultimately the approval of your irrigation plan by the Board of County Commissioners.**

1. Are you within an area of negotiated City Impact? _____ Yes X No
   If yes, please include a copy of approvals by the City Planning & Zoning Commission and City Council of your Irrigation Plan.

2. What is the name of the irrigation and drainage entities servicing the property?

   Irrigation: BCID

   Drainage: CHD #4

3. How many acres is the property being subdivided? 90

4. What percentage of this property has water? 100%

5. How many inches of water are available to the property? 90

6. How is the land currently irrigated? ☒ Surface ☐ Irrigation Well ☒ Sprinkler ☐ Above Ground Pipe ☐ Underground Pipe

7. How is the land to be irrigated after it is subdivided? ☒ Surface ☐ Irrigation Well ☐ Sprinkler ☐ Above Ground Pipe ☒ Underground Pipe

8. Please describe how the head gate/pump connects to the canal and irrigated land and where ditches and/or pipes go.
   SURFACE IRRIGATION DELIVERED ALONG NORTHSIDE OF PURPLE SAGE Rd.
   WATER DELIVERY WILL BE PIPED THROUGH DEVELOPMENT TO ON SITE PRESSURIZED IRR. SYSTEM

9. Are there irrigation easement(s) on the property? ☒ Yes ☐ No

10. How do you plan to retain storm and excess water on each lot?
    4 INFILTRATION PONDS AND PERIMETER INDIVIDUAL LOT SWELLS

11. How do you plan to remove the storm water /excess irrigation water prior to it entering the established drainage system? (i.e. oil, grease, contaminated aggregates)
    CONVEYED VIA BORROW DITCHES WITH ENERGY DISPATCHING
    RIP - RAP AND TREATED THROUGH SAND WINDOW

SCANNED

========== **Applicant Acknowledgement** ==========

I, the undersigned, agree that prior to the Development Services Department accepting this application I am responsible to have all of the required information and site plans.

I further acknowledge that the irrigation system, as approved by the Planning and Zoning Commission and ultimately the Board of County Commissioners, must be bonded and/or installed prior the Board's signature on the final plat.

Signed: _____ Date: 7 / 5 / 22
Property Owner (Application Submitted)

Signed: _____ Date: 7 / 5 / 2022
Applicant/Representative (if not property owner) (Application Submitted)

Accepted By: _____ Date: 7 / 7 / 22
Director / Staff

Revised 1/7/2021

SCANNED

NOTE:

1. Conditional rezones require a development agreement between the applicant and County that outlines applicable conditions of approval and/or restrictions.
2. Additional studies (such as traffic, water, biological, historical, etc.) and information may be required by DSD and/or hearing body to fully understand potential impacts.

CONDITIONAL REZONE OPTION:

When considering a zoning map amendment (rezone) of a property, a conditional rezone is recommended when considering conceptual site plan and/or addressing potential impacts through mitigation strategies and measures such as restricting uses, limiting the area to be rezoned to retain agricultural uses, and agricultural preservation methods such as buffers and disclosures. Without a conditional rezone, no conditions can be considered as part of the rezone application. Please discuss the conditional rezone option with a DSD Planner prior to application submittal.

The applicant/owner and DSD Planner must sign (below) if the conditional rezone option was discussed and the applicant/owner declined the option.

Applicant/Owner: _____

DSD Planner: _____

Associated Case No: RZ2022-0011
SD2022-0046

SCANNED

June 6th, 2022

Dear Neighbor,

The purpose of this letter is to inform you of a proposed subdivision development and rezone. One of the requirements to applying to Canyon County is to hold a neighborhood meeting and provide information to surrounding neighbors. We invite you, if you so choose, to come to the neighborhood meeting to obtain information and provide feedback. This is **NOT** a public hearing before a governing body of the county.

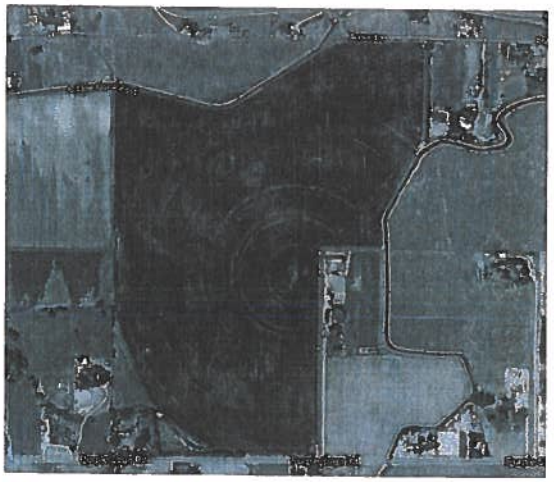
The vicinity map below shows the location of the site and a copy of the concept plat is included with this letter.

Neighborhood meeting details:
DATE: Tuesday June 16th
TIME: 7:00 pm – 7:30 pm
Location: 8718 Purple Sage Road Middleton, ID

Mint Farm Estates is a 39-lot subdivision with two (2) acre lots located on the north side of Purple Sage Rd between Lansing Ln and Kingsbury Rd. Access will be provided, as shown on the plat, to Purple Sage Road and additional future access to adjacent parcels is included in the subdivision layout. The streets will be public and water rights will be provided to each lot using the existing parcel surface water rights. The application at Canyon County requiring this neighborhood meeting is for a rezone of the parcel to R-R.

For questions prior to the meeting, please contact me via phone at 208.963.1188 or via email at ammonandelin@financialguide.com. Note – As this is a **PRE-APPLICATION** requirement, please do NOT call Canyon County Development Services for more information. They will not have any information on this meeting.

This project may sound/look familiar to some of you. This same project recently had a public hearing on May 25th with the county commissioners. In that hearing, we requested a zone change from AG to R-1 with a plat reflecting both 1 and two acre lots. However, the commissioners informed us at that hearing that a zone change from AG to R-R with 2 acre lots would be approved as it would be a better fit for the area. We are thereby reapplying with the county for a zone change to R-R with an amended plat showing 2 acre lots.



Best regards,

Ammon Andelin

EXHIBIT
4

June 13, 2022

Dear Neighbor,

Last week I mailed a notice regarding a neighborhood meeting for a plat and rezone. I mailed the wrong day. This notice is to provide the correct date of the neighborhood meeting.

Neighborhood meeting details:
DATE: **THURSDAY** June 16th
TIME: 7:00 pm – 7:30 pm
Location: 8718 Purple Sage Road Middleton, ID

Best regards,

Ammon Andelin
208.963.1188
ammonandelin@financialguide.com

SCANNED

June 15th, 2022

Dear Neighbor,

To be a good neighbor and to give all to chance to participate, I will hold a second neighborhood meeting for this development. Because my first notice had a mistake in the date and to give ample notice to all neighbors, it was decided to hold a SECOND meeting. No new information will be presented at the second meeting.

One of the requirements to applying to Canyon County is to hold a neighborhood meeting and provide information to surrounding neighbors. We invite you, if you so choose, to come to the second neighborhood meeting to obtain information and provide feedback. This is **NOT** a public hearing before a governing body of the county.

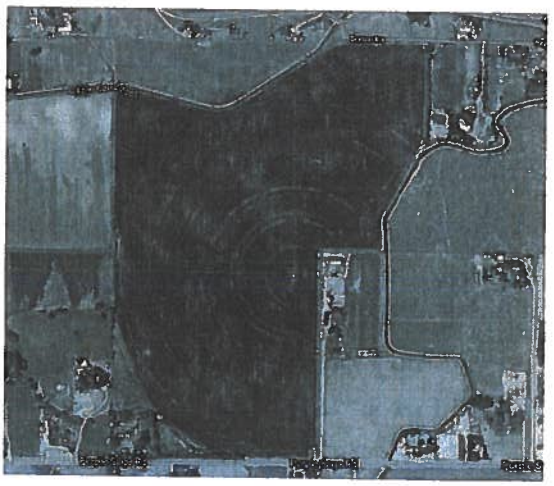
The vicinity map below shows the location of the site and a copy of the concept plat is included with this letter.

Neighborhood meeting details:
DATE: June 29th
TIME: 7:00 pm – 7:30 pm
Location: 8718 Purple Sage Road Middleton, ID

Mint Farm Estates is a 39-lot subdivision with two (2) acre lots located on the north side of Purple Sage Rd between Lansing Ln and Kingsbury Rd. Access will be provided, as shown on the plat, to Purple Sage Road and additional future access to adjacent parcels is included in the subdivision layout. The streets will be public and water rights will be provided to each lot using the existing parcel surface water rights. The application at Canyon County requiring this neighborhood meeting is for a rezone of the parcel to R-R.

For questions prior to the meeting, please contact me via phone at 208.963.1188 or via email at ammonandelin@financialguide.com. Note – As this is a **PRE-APPLICATION** requirement, please do NOT call Canyon County Development Services for more information. They will not have any information on this meeting.

This project may sound/look familiar to some of you. This same project recently had a public hearing on May 25th with the county commissioners. In that hearing, we requested a zone change from AG to R-1 with a plat reflecting both 1 and two acre lots. However, the commissioners informed us at that hearing that a zone change from AG to R-R with 2 acre lots would be approved as it would be a better fit for the area. We are thereby reapplying with the county for a zone change to R-R with an amended plat showing 2 acre lots.



Best regards,

Ammon Andelin

SCANNED

NEIGHBORHOOD MEETING SIGN-UP

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

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: 8718 Purple Sage Rd	Parcel Number: R3749600000		
City: Middleton	State: Idaho	ZIP Code: 83644	
Notices Mailed Date: 6.6.22	Number of Acres: 93	Current Zoning: AG	
Description of the Request: Rezone to R-R and Plat			

APPLICANT / REPRESENTATIVE INFORMATION

Contact Name: Ammon Andelin		
Company Name:		
Current address: - 2195 Cherry Lane		
City: Emmett	State: ID	ZIP Code: 83617
Phone: 208.963.1188	Cell: 208.963.1188	Fax:
Email: Ammon Andelin@Financial Guide.com		

MEETING INFORMATION

DATE OF MEETING: 6.16.2022	MEETING LOCATION: 8718 Purple Sage Rd
MEETING START TIME: 7:00	MEETING END TIME: 7:30

ATTENDEES:

NAME (PLEASE PRINT)	SIGNATURE:	ADDRESS:
1. R. Kelly Hall DVM	RK Hall DVM	8677 Purple Sage
2. Allen Colson	Allen Colson	8802 Purple Sage
3. Mark M. Ilsapp	MMI	8770 Purple Sage Rd
4.		
5.		
6.		
7.		
8.		
9.		

SCANNED

Revised 6/9/

10.
11.

12.
13.
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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):

AMMON ANDELIN

APPLICANT/REPRESENTATIVE (Signature):

DATE: 6 / 16 / 2022

SCANNED

NEIGHBORHOOD MEETING SIGN-UP

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

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 text amendment, or other requests requiring a public hearing.

SITE INFORMATION

Site Address: 8718 Purple Sage Rd
Parcel Number: R 3749600000
City: MIDDLETON
State: ID
ZIP Code: 83644
Notices Mailed Date: 6-15-22
Number of Acres: 43
Current Zoning: A6
Description of the Request: PLAT AND REZONE TO R-R

APPLICANT / REPRESENTATIVE INFORMATION

Contact Name: Ammon Andelin
Company Name:
Current address: 2195 CHERRY LANE
City: EMMETT
State: ID
ZIP Code: 83617
Phone: 208-963-1188
Cell: 208-963-1188
Fax:
Email: AMMON ANDELIN @ FINANCIALGUIDE.COM

MEETING INFORMATION

DATE OF MEETING: 6-29-22	MEETING LOCATION: 8718 Purple Sage Rd MIDDLETON
MEETING START TIME: 7:00	MEETING END TIME: 7:30

ATTENDEES:

NAME (PLEASE PRINT)	SIGNATURE:	ADDRESS:
1. Shannon Colson	Shannon Colson	8802 Purple Sage Rd.
2. ALLEN COLSON	Al Colson	8802 PURPLE SAGE RD
3.		
4.		
5.		
6.		
7.		
8.		
9.		

SCANNED

Revised 6/9/22

10.
11.

12.
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14.
15.
16.
17.
18.
19.
20.

NEIGHBORHOOD MEETING CERTIFICATION:

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

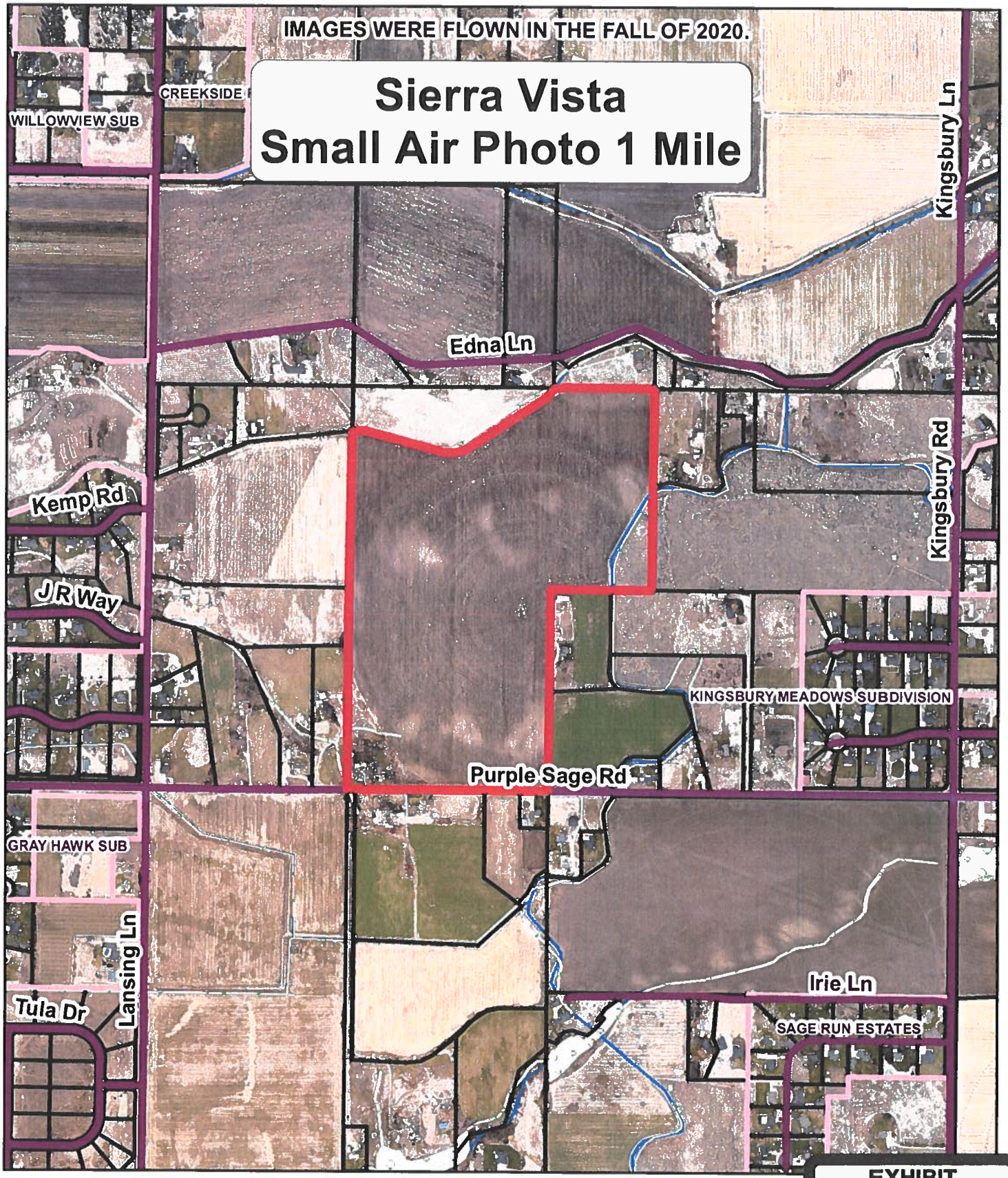
APPLICANT/REPRESENTATIVE (Please print):

Amanda Andelin

APPLICANT/REPRESENTATIVE (Signature): _____

DATE: 6 / 29 / 22

SCANNED



EXHIBIT

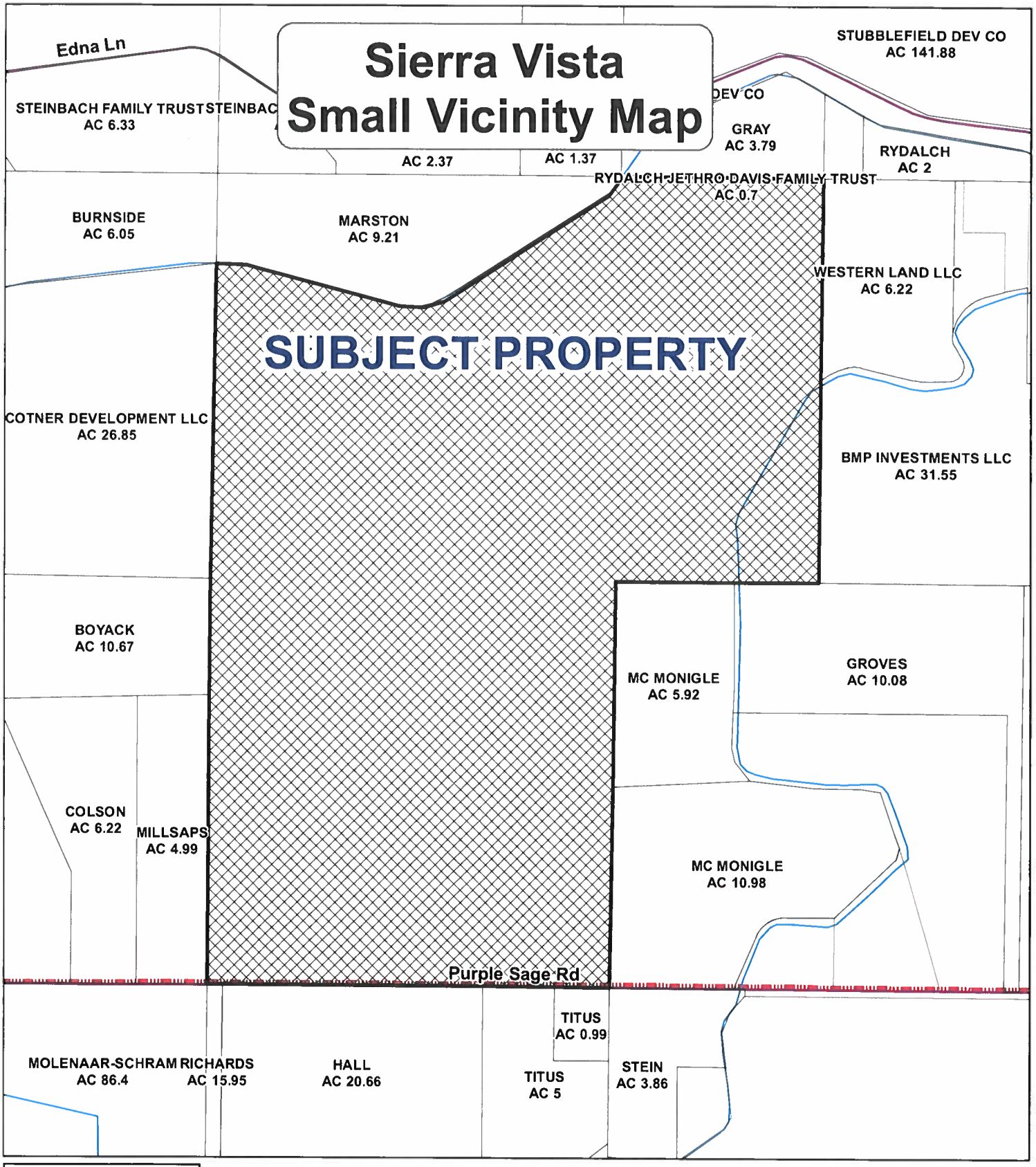
5a

City_Limits

Wetlands

0 0.3 0.6 Miles

Sierra Vista Small Vicinity Map



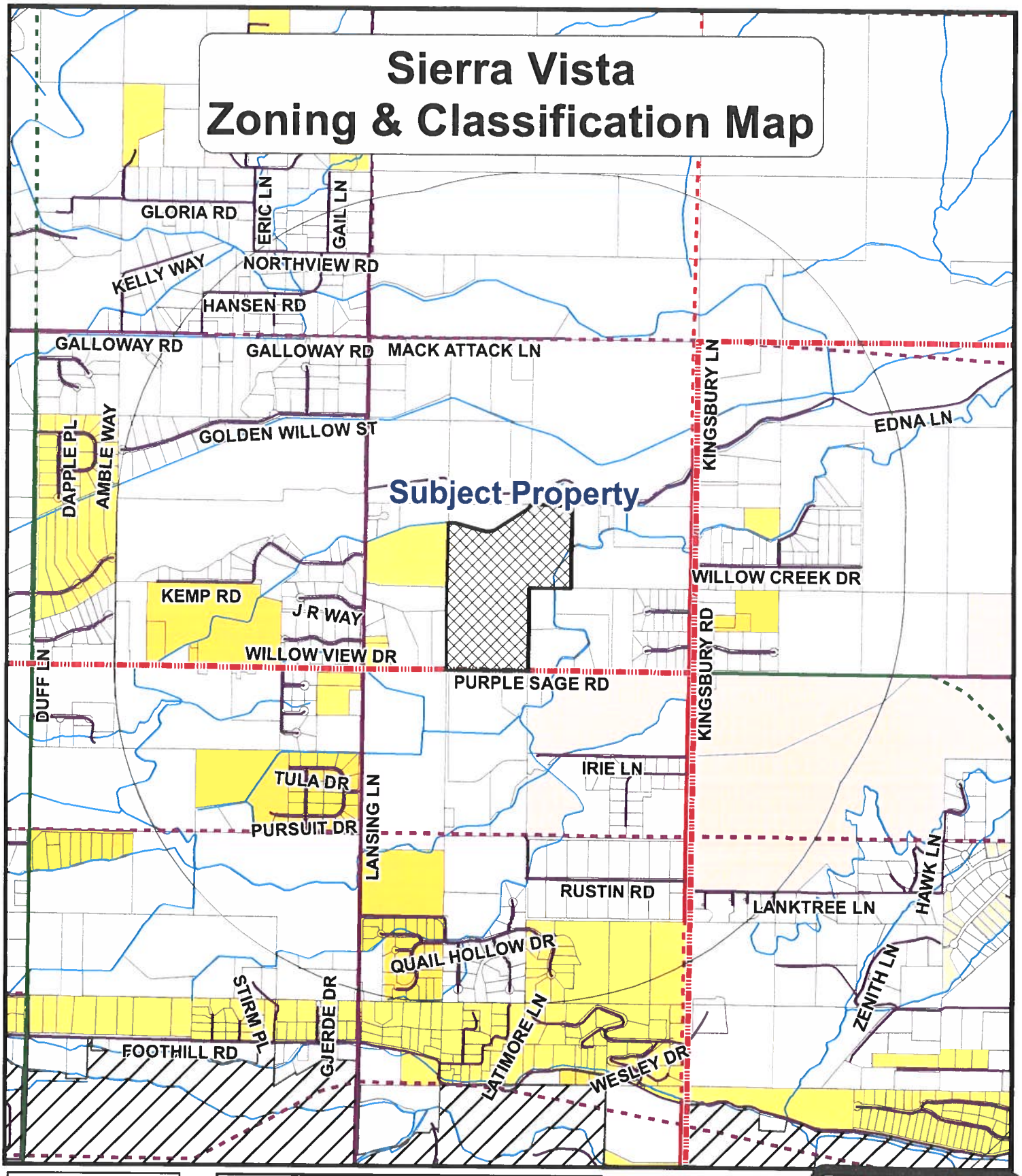
N
W
E
S

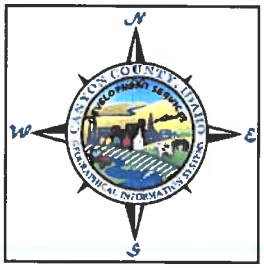
0 0.125 0.25 Miles

EXHIBIT

5b

Sierra Vista
Zoning & Classification Map





ZONING

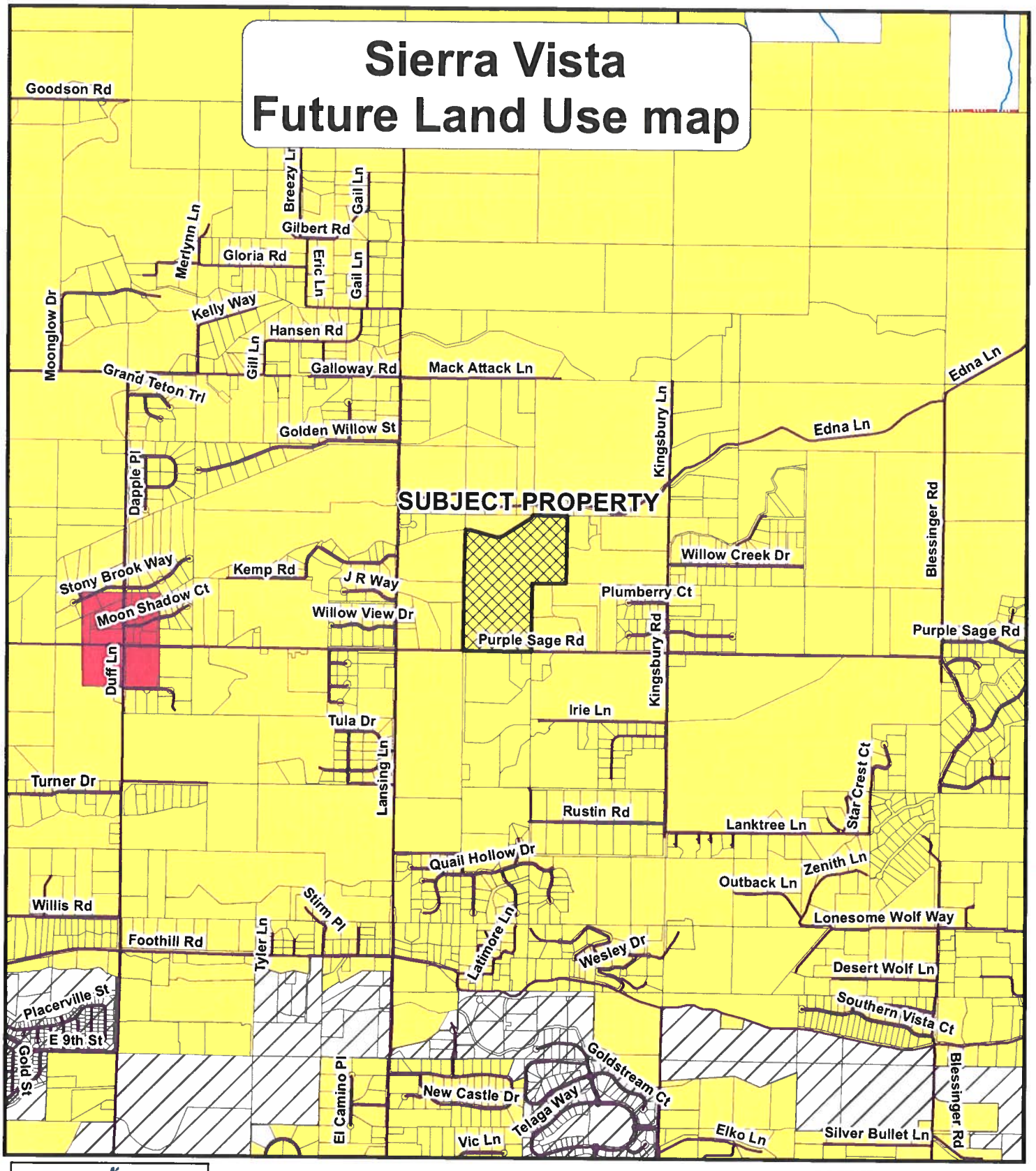
RR	R2	CR-C2	C
CR-RR	C1	M1	AG
R1	CR-C1	CR-M1	
CR-R1	C2	M2	

EXHIBIT

5c

0 0.5 1 Miles

Sierra Vista
Future Land Use map

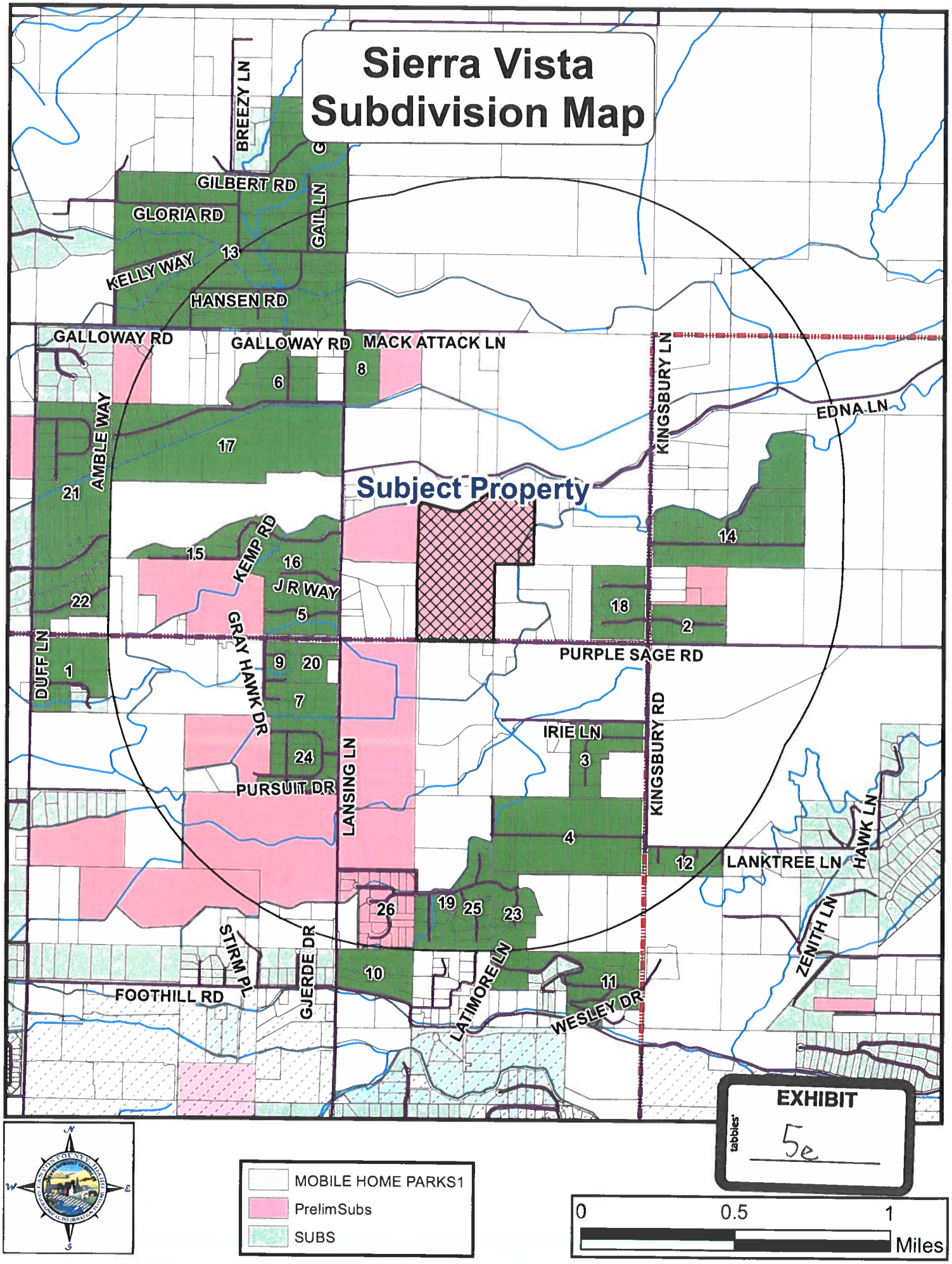


Legend
- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- Scenic_Byway

0 0.5 1 Miles

EXHIBIT
5d

Sierra Vista Subdivision Map



EXHIBIT

5e

SUBDIVISION & LOT REPORT

NUMBER OF SUBS	ACRES IN SUB	NUMBER OF LOTS	AVERAGE LOT SIZE
26	1164.13	495	2.35

NUMBER OF SUBS IN PLATTING	ACRES IN SUB	NUMBER OF LOTS	AVERAGE LOT SIZE
12	557.74	245	2.28

NUMBER OF LOTS WITH SIZE	AVERAGE	MEDIAN	MINIMUM	MAXIMUM
37	18.05	6.22	0.70	141.88

NUMBER OF MOBILE HOME PARKS	ACRES IN MHP	NUMBER OF SITES	AVG HOMES PER ACRE	MAXIMUM

PLATTED SUBDIVISIONS

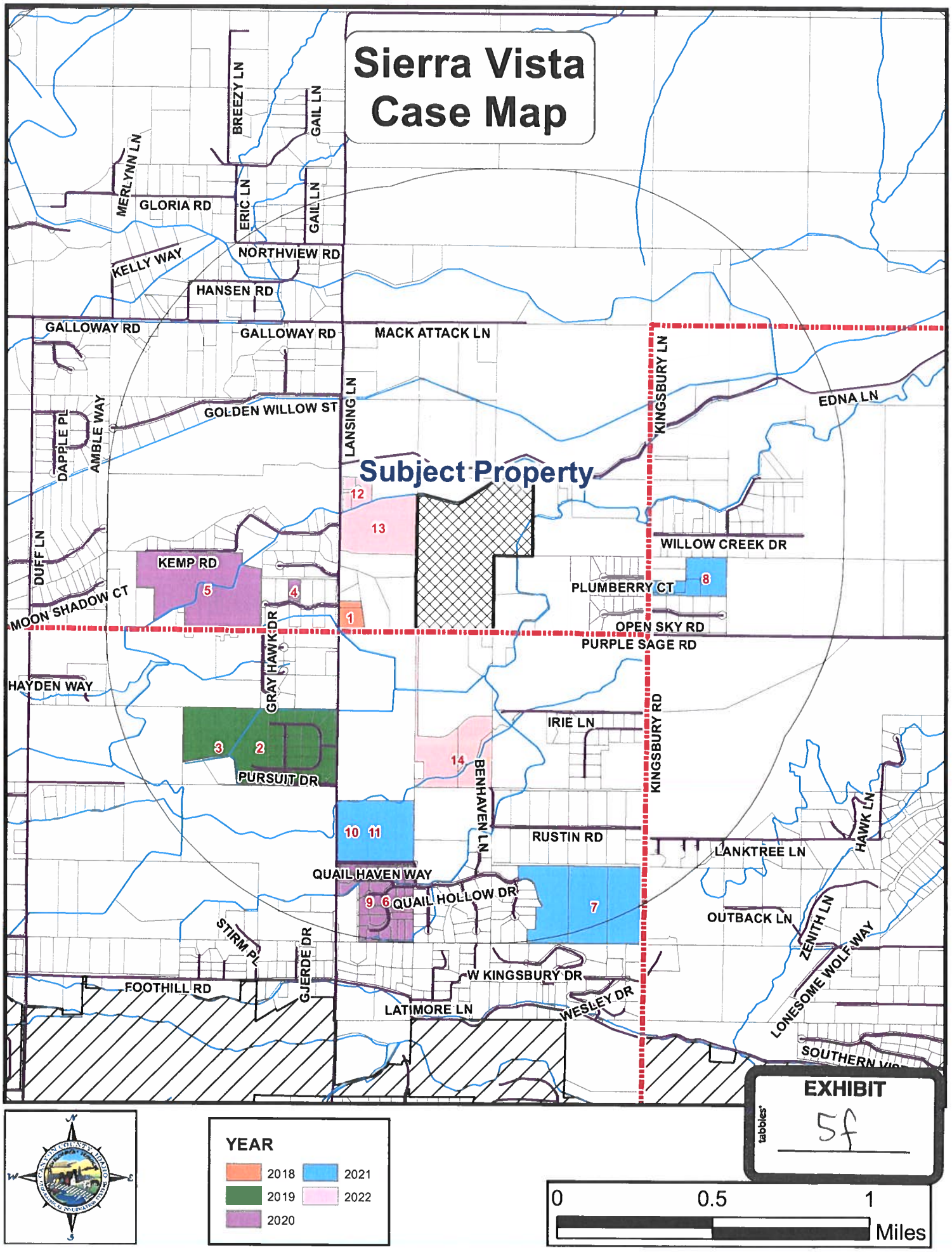
SUBDIVISION NAME	Label	LOCATION	ACRES	NO. OF LOTS	AVERAGE LOT SIZE	CITY OF...	Year
PORT OF CHANCE SUBDIVISION	1	5N2W33	35.01	6	5.83	COUNTY (Canyon)	2001
PURPLE SKY RANCH	2	5N2W26	20.11	10	2.01	COUNTY (Canyon)	2004
SAGE RUN ESTATES	3	5N2W34	26.02	21	1.24	COUNTY (Canyon)	2001
SLOVIACZEK SUB	4	5N2W34	80.06	17	4.71	0	1971
WILLOW CRK RCH ESTATES #1	5	5N2W28	26.90	16	1.68	COUNTY (Canyon)	1993
WILLOWVIEW SUB	6	5N2W28	29.88	14	2.13	COUNTY (Canyon)	2005
BLACKMON ACRES	7	5N2W33	16.84	5	3.37	COUNTY (Canyon)	2004
CREEKSIDE RANCH ESTATES	8	5N2W27	17.42	3	5.81	COUNTY (Canyon)	2003
GRAY HAWK SUB	9	5N2W33	10.01	9	1.11	COUNTY (Canyon)	2003
HUNTER'S RIDGE SUB	10	4N2W03	23.64	16	1.48	0	1986
KINGSBURY ESTATES	11	4N2W03	46.32	17	2.72	0	1972
LANKTREE ESTATES	12	5N2W35	15.01	7	2.14	0	1998
LANSING HEIGHTS ESTATES	13	5N2W21	280.80	89	3.16	COUNTY (Canyon)	1973
MILLS WILLOW CREEK	14	5N2W26	82.79	38	2.18	COUNTY (Canyon)	1987
WILLOW CRK RCH ESTATES #2	15	5N2W28	11.94	8	1.49	COUNTY (Canyon)	1998
WILLOW CRK RCH ESTATES #3	16	5N2W28	42.38	22	1.93	COUNTY (Canyon)	2004
WILLOWVIEW SUB #2	17	5N2W28	113.75	16	7.11	COUNTY (Canyon)	2006
KINGSBURY MEADOWS SUBDIVISION	18	5N2W27	30.00	25	1.20	COUNTY (Canyon)	2007
RE-PLAT OF LOT 14, THE RIDGE AT QUAIL HOLLOW	19	5N2W34	1.00	1	1.00	0	2019
REPLAT OF PONY MEADOW SUBDIVISION	20	5N2W33	9.26	2	4.63	COUNTY (Canyon)	2021
THOROUGHBRED ESTATES SUBDIVISION	21	5N2W28	91.62	40	2.29	COUNTY (Canyon)	2014
MOON SHADOW ESTATES	22	5N2W33	21.33	18	1.18	COUNTY (Canyon)	2007
WYATT'S HOLLOW SUBDIVISION NO. 1	23	5N2W34	20.77	13	1.60	COUNTY (Canyon)	2014
CASCADE HILLS SUBDIVISION NO. 1	24	5N2W33	36.68	26	1.41	COUNTY (Canyon)	2021
THE RIDGE AT QUAIL HOLLOW	25	5N2W34	41.58	26	1.60	COUNTY (Canyon)	2007
C3 SUBDIVISION	26	5N2W34	33.03	30	1.10	COUNTY (Canyon)	2021

SUBDIVISIONS IN PLATTING

SUBDIVISION NAME	ACRES	NO. OF LOTS	AVERAGE LOT SIZE
Hawk View Estates	26.75	12	2.23
Farmington Hills	186.65	339	0.55
C4 Sub	31.43	24	1.31
Hidden Valley	17.42	4	4.35
Eagle Cap Sub	2.54	13	0.20
Eagle Cap Sub	8.85	13	0.68
C3 Sub	32.23	26	1.24
Mint Farms Estate	90.57	57	1.59
Casecade Hills Sub No.2	0.00	26	0.00
Easy Flyer	20.00	13	1.54
Oaklee Estates	54.90	36	1.53
C-5 Sub	86.41	34	2.54

MOBILE HOME & RV PARKS

Sierra Vista Case Map



EXHIBIT

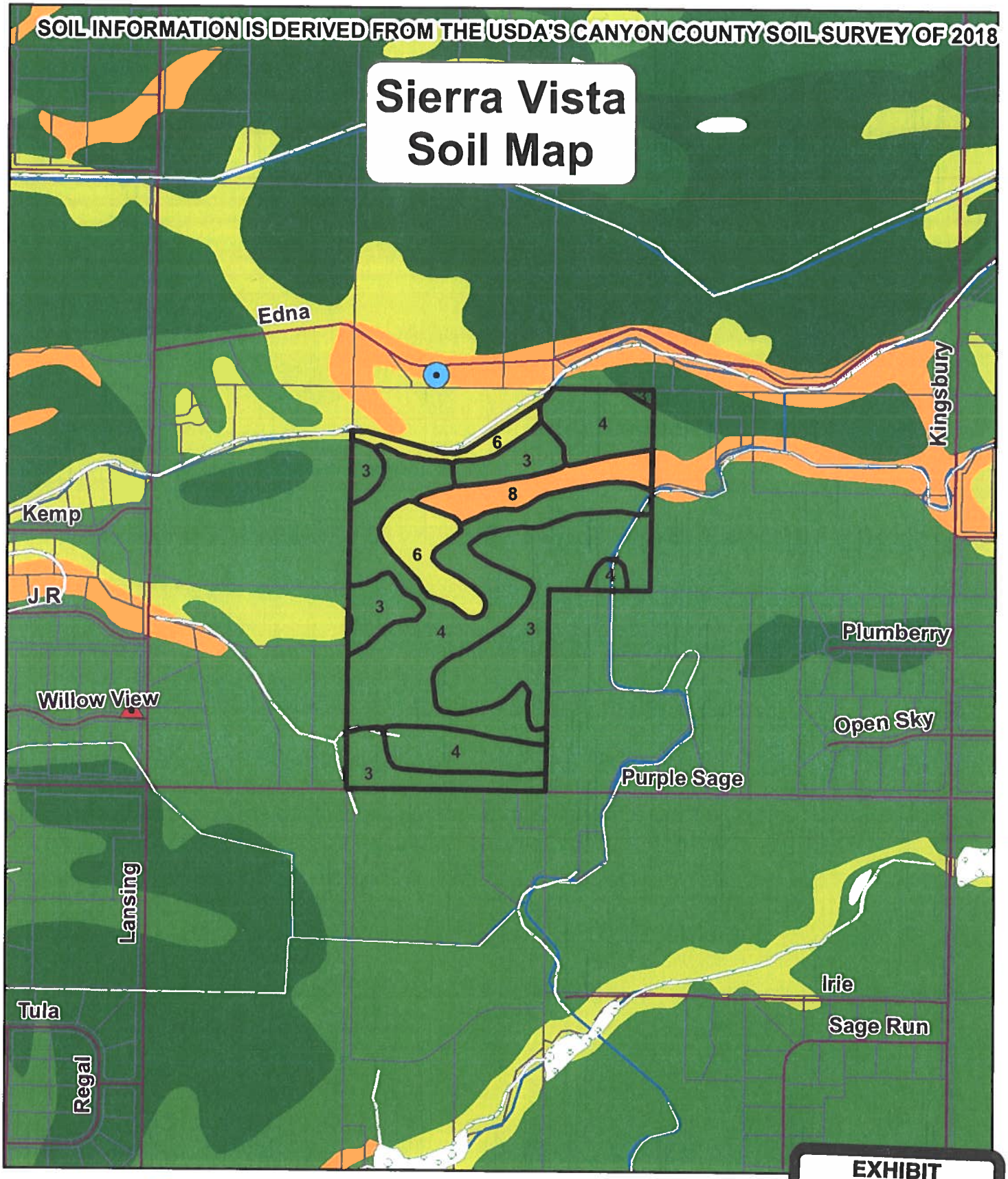
5f

CASE SUMMARY

ID	CASENUM	REQUEST	CASENAME	FINALDECIS
1	Rz2018-0006	AG to RR	Edward Vence	APPROVED
2	RZ2018-0026	Rezone RR to R1	Lansing Investments Partners, LLC	APPROVED
3	SD2019-0025	Cascade Hill Sub	Cascase Hills Sub	APPROVED
4	CU2019-0025	CUP Special Events Facility	CU2019-0025	APPROVED
5	SD2020-0003	Oaklee Estates Sub	Oaklee Estates Sub	APPROVED
6	C3	Preliminary Plat - C3	C3	APPROVED
7	SD2019-0039	Plat - Watt's Hollow Sub	Watt's Hollow Sub	APPROVED
8	RZ2020-0024	Rezone AG to R1	Spohn	APPROVED
9	RZ0020-0006	Rezone AG to R1	Callister LLC	APPROVED
10	SD2021-0008	Plat - C4 sub	C4 Callister, LLC	APPROVED
11	CR2021-0010	Rezone AG to R1	Callister, LLC	APPROVED
12	RZ2021-0012	Rezone AG to R1	Reynolds Brothers, LLC	DENIED
13	RZ2021-0034	Rezone A to RR	Cotner John	APPROVED
14	RZ2021-0036	Rezone AG to CR-R1	Richards/ Larsen	APPROVED

SOIL INFORMATION IS DERIVED FROM THE USDA'S CANYON COUNTY SOIL SURVEY OF 2018

Sierra Vista Soil Map



0.005000 - 2.000000

2.000001 - 5.000000

5.000001 - 10.000000

10.000001 - 49.800000

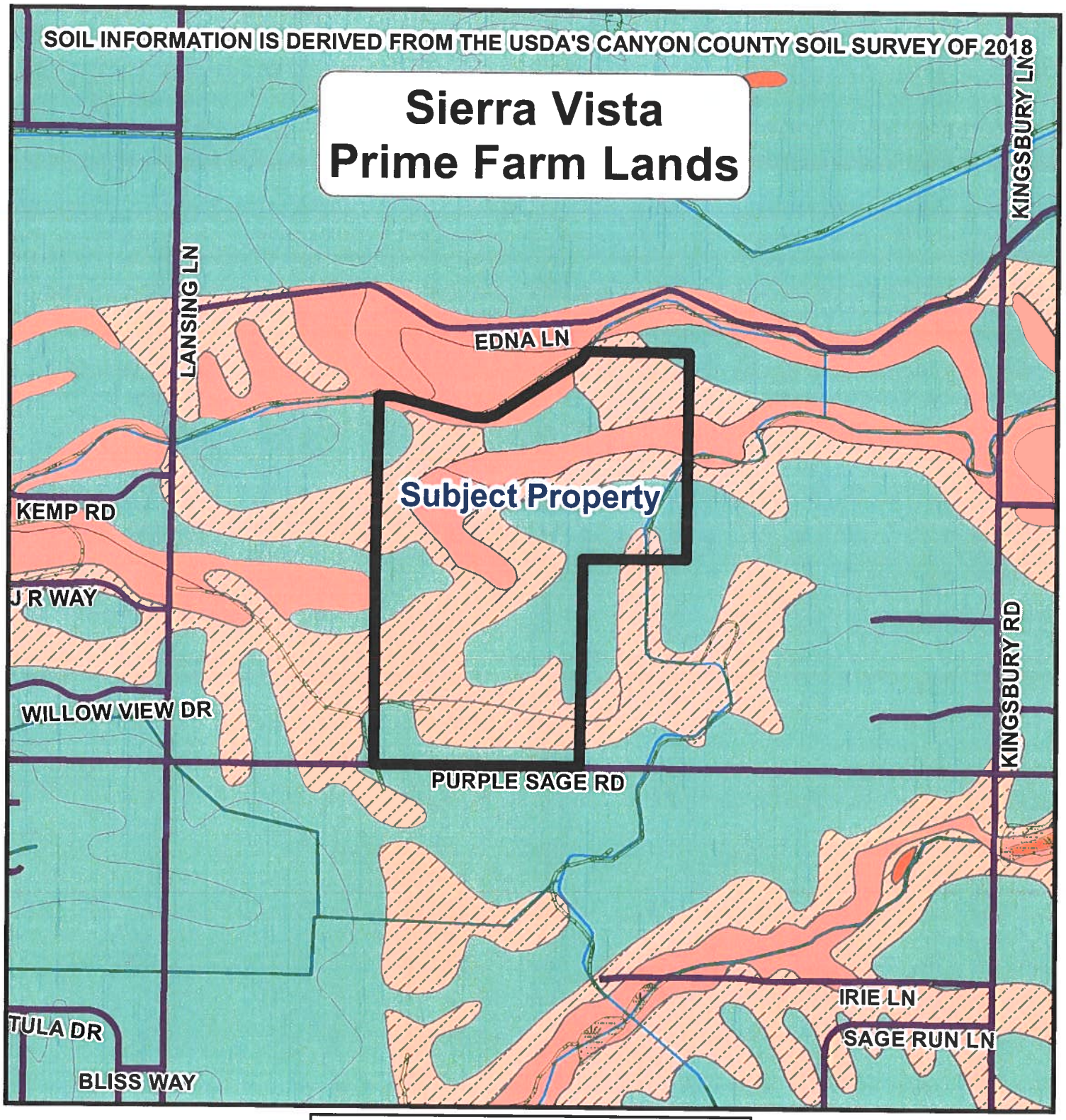
GEO-THERMAL LOCATIONS

Wetlands

0 0.25 0.5 Miles

EXHIBIT

5g



SOILS

- Farmland of statewide importance
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if irrigated and reclaimed
- 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

- TAXLOTS
- City_Limits
- WETLANDS
- 2C_Hydro

0 0.125 0.25 Miles

SOIL REPORT

SOIL CAPABILITY CLASS	SOIL CAPABILITY	SQUARE FOOTAGE	ACREAGE	PERCENTAGE
6	LEAST SUITED SOIL	124625.16	2.86	3.16%
3	MODERATELY SUITED SOIL	157120.92	3.61	3.98%
4	MODERATELY SUITED SOIL	307272.24	7.05	7.79%
6	LEAST SUITED SOIL	1960.20	0.05	0.05%
3	MODERATELY SUITED SOIL	12240.36	0.28	0.31%
4	MODERATELY SUITED SOIL	285361.56	6.55	7.23%
4	MODERATELY SUITED SOIL	1276743.60	29.31	32.36%
3	MODERATELY SUITED SOIL	66516.12	1.53	1.69%
8	LEAST SUITED SOIL	278784.00	6.40	7.07%
3	MODERATELY SUITED SOIL	149977.08	3.44	3.80%
6	LEAST SUITED SOIL	243892.44	5.60	6.18%
3	MODERATELY SUITED SOIL	1040691.96	23.89	26.38%
		3945185.64	90.57	100%

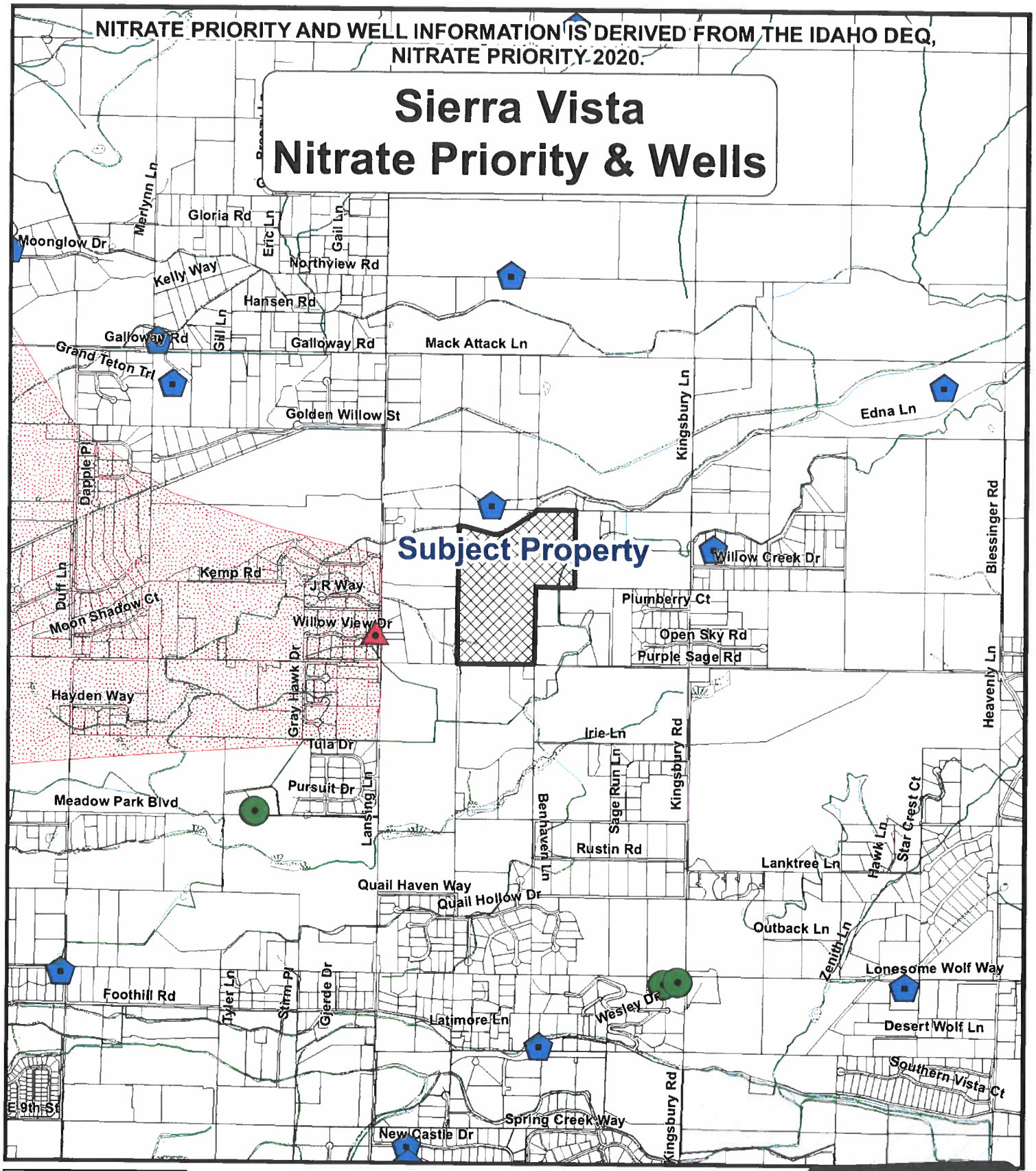
FARMLAND REPORT

SOIL NAME	FARMLAND TYPE	SQUARE FOOTAGE	ACREAGE	PERCENTAGE
EvD	Not prime farmland	124625.16	2.86	3.16%
EsB	Prime farmland if irrigated	157120.92	3.61	3.98%
PhC	Farmland of statewide importance, if irrigated	307272.24	7.05	7.79%
EvD	Not prime farmland	1960.20	0.05	0.05%
PhB	Prime farmland if irrigated	12240.36	0.28	0.31%
EvC	Farmland of statewide importance, if irrigated	285361.56	6.55	7.23%
EvC	Farmland of statewide importance, if irrigated	1276743.60	29.31	32.36%
EsB	Prime farmland if irrigated	66516.12	1.53	1.69%
LhE	Not prime farmland	278784.00	6.40	7.07%
EsB	Prime farmland if irrigated	149977.08	3.44	3.80%
EvD	Not prime farmland	243892.44	5.60	6.18%
EsB	Prime farmland if irrigated	1040691.96	23.89	26.38%
		3945185.64	90.57	100%

SOIL INFORMATION IS DERIVED FROM THE USDA's CANYON COUNTY SOIL SURVEY OF 2018

NITRATE PRIORITY AND WELL INFORMATION IS DERIVED FROM THE IDAHO DEQ, NITRATE PRIORITY 2020.

Sierra Vista Nitrate Priority & Wells



GEO-THERMAL LOCATIONS

WETLANDS

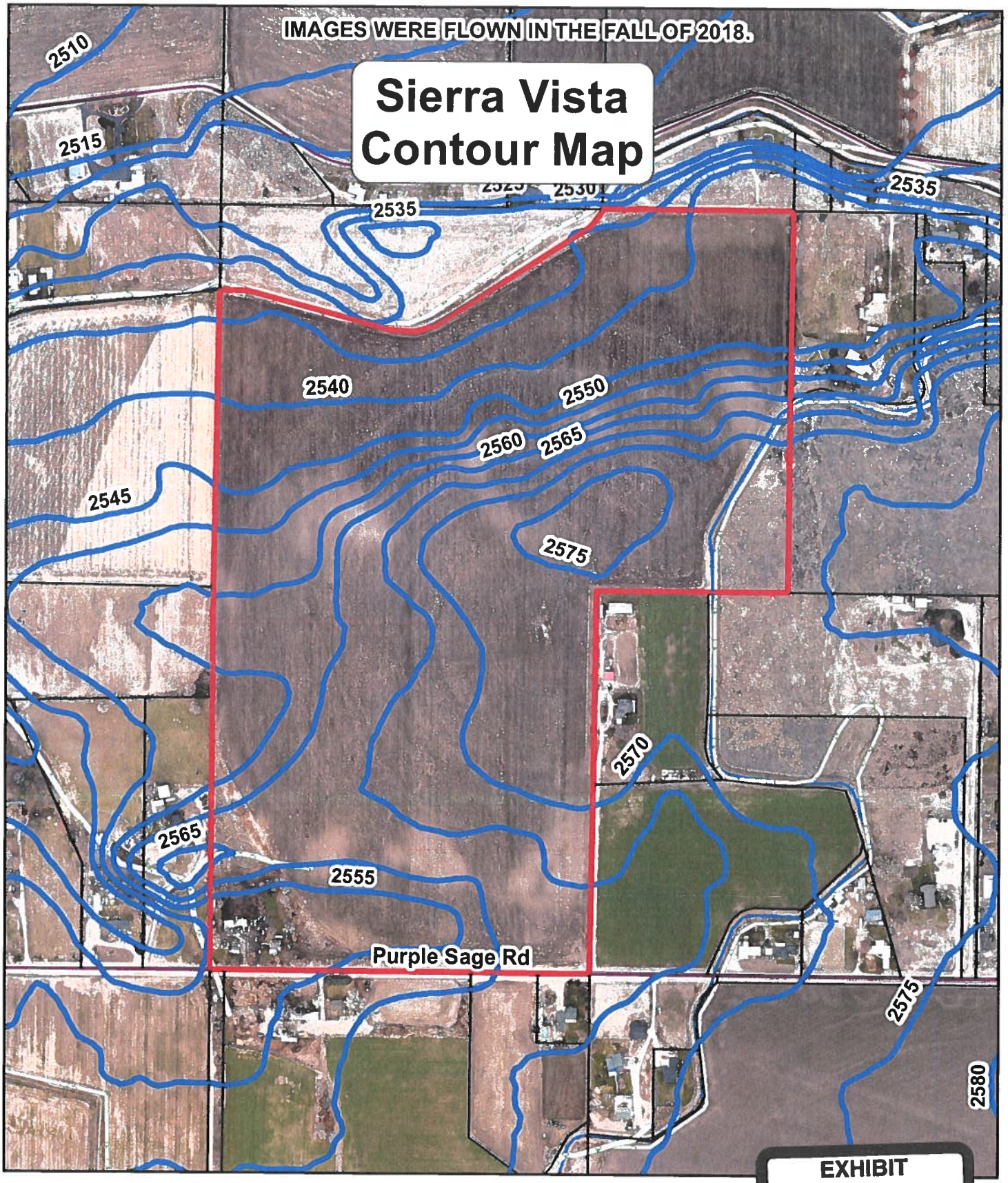
NITRATE_PRIORITY

DEQ WELLS
N03_MGL

- 0.005 - 2.00
- 2.00 - 5.00
- 5.00 - 10.00
- 10.00 - 49.80

0 0.5 1 Miles

EXHIBIT
5h



EXHIBIT

5i

Legend

SUBJECT_PROPERTY

TaxParcels

SectionContours

Wetlands

0 200 400 600 Feet

Sierra Vista
Lot Classification Map

BREEZY LN
GLORIA RD
ERIC LN
GAIL LN
KELLY WAY
NORTHVIEW RD
HANSEN RD
GALLOWAY RD
GALLOWAY RD
MACK ATTACK LN
KINGSBURY LN
EDNA LN
DAPPLE PL
AMBLE WAY
GOLDEN WILLOW ST
Subject Property
WILLOW CREEK DR
KEMP RD
J R WAY
WILLOW VIEW DR
KINGSBURY RD
PURPLE SAGE RD
DUFF LN
IRIE LN
TULA DR
PURSUIT DR
LANSING LN
RUSTIN RD
LANKTREE LN
HAWK LN
QUAIL HOLLOW DR
ZENITH LN
STIRM PL
GJERDE DR
LATIMORE LN
FOOTHILL RD
WESLEY DR

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

- Interstate
- Expressway
- Proposed Expressway
- Principal Arterial
- Proposed Principal Arterial
- Minor Arterial
- Proposed Minor Arterial
- Collector
- Proposed Collector

0 0.5 1 Miles

EXHIBIT 5

tabbies

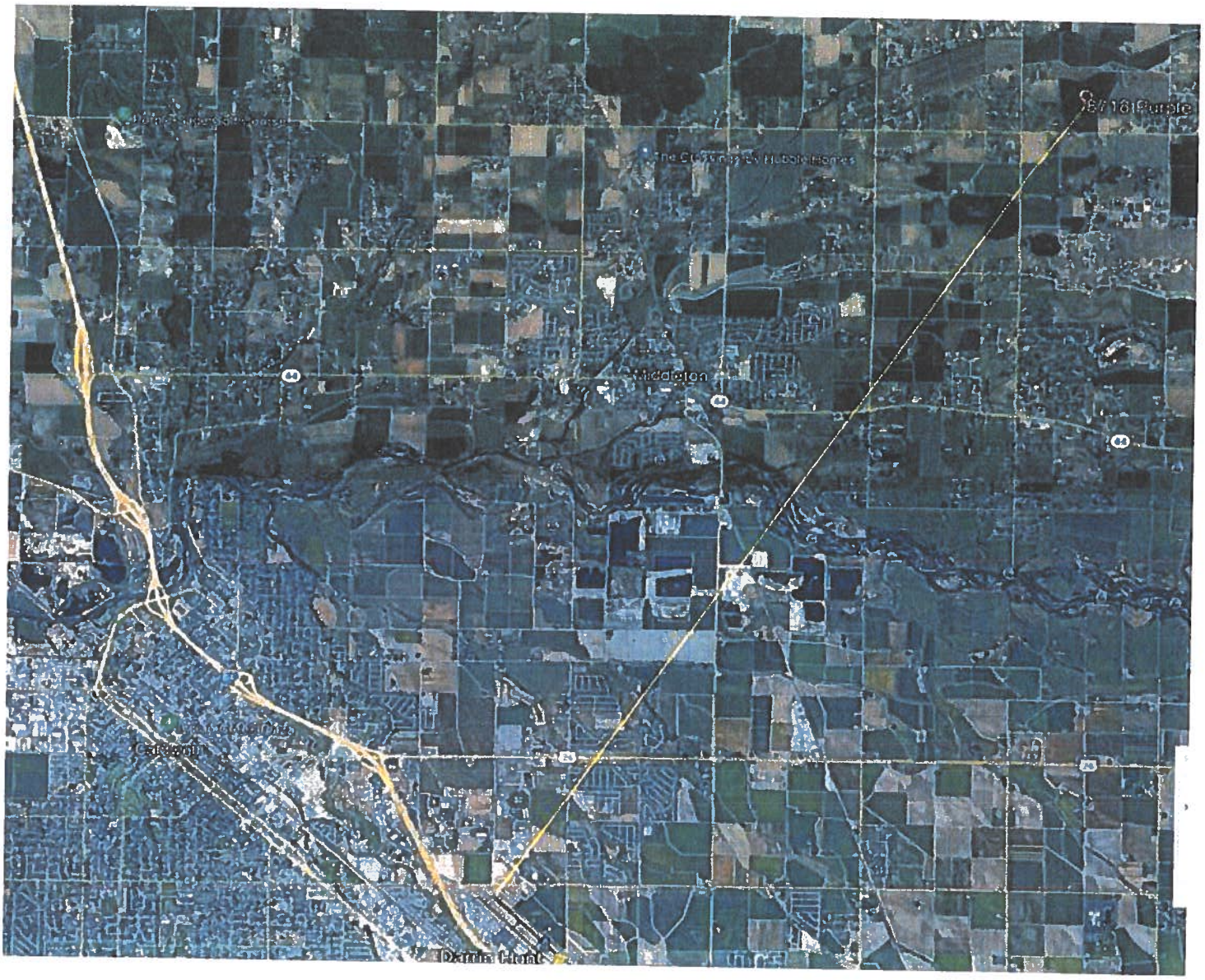
Dan Lister

From: Flo Ghighina <Flo.Ghighina@itd.idaho.gov>
Sent: Thursday, July 21, 2022 10:09 AM
To: Dan Lister
Subject: [External] Sierra Vista Properties - Case No. RZ2021-0011 & SD 2022-0034

Hello Dan,

I received the email from Bonnie Puleo in reference to Case No. RZ2021-0011 & SD 2022-0034. Under the authority of the Idaho Code 21-513 through 21-520 and Idaho Transportation Rule No. 39.04.08, the Division of Aeronautics has performed an aeronautical study/obstruction evaluation for the proposed Sierra Vista Properties project located at 8718 W Purple Sage Rd, Caldwell, ID. Based on the current information provided, this aeronautical study revealed that the re-zoning of the parcel R37496 as requested, would have no impact or adverse effect on the safe and efficient utilization of the navigable airspace or on the operation of aircraft and airport facilities in the immediate Nampa-Caldwell-Emmett area. Therefore, the Idaho Division of Aeronautics does not object to the proposed project. Thank you for the opportunity to comment. Have a great day.

EXHIBIT
tabbies
6a



Flo Ghighina

Flo Ghighina
Airport Inspector/Obstructions Evaluator
Idaho Division of Aeronautics
1390 West Gowen Rd.
Boise, ID 83705
Office: 208-334-8895
Fax: 208-334-8789

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; Robert McKellip Vice Chairman;
Dave Dixon, Secretary/Treasurer; Mike Somerville, Supervisor; & Rex Runkle, Supervisor
ASSOCIATE SUPERVISORS: Tom Johnston, Rich Sims & Matt Livengood
SOIL CONSERVATION DISTRICT STAFF: Lori Kent; Administrative Assistant & Stan Haye, Soil Conservation Technician

August 12, 2022

To: Dan Lister Planner of Record
Canyon County Development Services

From: Canyon Soil Conservation District (Canyon SCD)

Subject: Notification to Canyon pursuant to the local use Planning Act

Thank you for sending Canyon Soil Conservation District (SCD) several zoning request. They are: CU2022-0007, /Symms Fruit Ranch, Inc. / Todd Lakey, CU2022-0034, Bill LeClerc/Todd Lakey, CR2022-0018, Mireya Fleix, RZ2022-0010/SD2022-0033, Marvil Smith/Mike Engebritson, RZ2022-0011/SD2022-0034, Sierra Vista Properties Inc, CR2022-0022/SD2022-0032 Bonnie Vance Vermaas, CR2022-0016 MDC LLC/Joseph Carter, CR2022-0020 Jeremy Eells Juli McCoy

Comments from Canyon County SCD:
The acreage amounts on the maps are an estimate. Percentages of soils are round to a whole number.
We are including and used the Soil Capability Class definitions as written in the draft Comprehensive Plan 2030.

CU2022-0007, /Symms Fruit Ranch, Inc. / Todd Lakey-88% of the soils are class III and 12% are class IV. Class III soils have moderate limitation and appropriate management practices can make any irrigated soil productive. We do NOT recommend a land use change.

CU2022-0034, Bill LeClerc/Todd Lakey-100% of the soils are class III. Class III soils have moderate limitation and appropriate management practices can make any irrigated soil productive. We do NOT recommend a land use change.

CR2022-0018, Mireya Fleix- no comments

RZ2022-0010/SD2022-0033, Marvil Smith/Mike Engebritson- 86% of the soils are Class IV and 14% of the soils are not rated.

RZ2022-0011/SD2022-0034, Sierra Vista Properties Inc, -35% of the soils are Class III, 47% of the soils are Class IV, 11% of the soils are Class VI and 7% is not rated.

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.

EXHIBIT
6b

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; Robert McKellip Vice Chairman;
Dave Dixon, Secretary/Treasurer; Mike Somerville, Supervisor; & Rex Runkle, Supervisor
ASSOCIATE SUPERVISORS: Tom Johnston, Rich Sims & Matt Livengood
SOIL CONSERVATION DISTRICT STAFF: Lori Kent; Administrative Assistant & Stan Haye, Soil Conservation Technician

CR2022-0022/SD2022-0032 Bonnie Vance Vermaas- 42% of the soils are Class III, 23% of the soils are Class IV, 13% of the soils are Class VI and 22% of the soils are not rated.

CR2022-0016 MDC LLC/Joseph Carter-78% of the soils are Class II, 14% of the soils are Class III and 1% is Class VI. Class II soils are best suited for production and Class III soils have moderate limitation and appropriate management practices can make any irrigated soil productive. We do NOT recommend a land use change.

CR2022-0020 Jeremy Eells Juli McCoy-95% of the soils are Class III, 1% of the soils are Class IV and 4% of the soils are Class VI. Class III soils have moderate limitation and appropriate management practices can make any irrigated soil productive. We do NOT recommend a land use change.

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.

Soil Capability Classes definitions

Information derived from Draft Comprehensive Plan 2030, Conservation Practices provided by United States Department of Agruculture-Natural Resources Conservation Service

Soil Capability Classes shows in a general way, the suitability for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management.

Class I/Best Suited: Best suited for intensive production and have few limitations that restrict their use.

Class II/Best Suited: Suited for production. It may have some limitations that reduce the choice of plants or require moderate conservation practices. Some conservation practices that could be used are: Reduced or No Till tillage, Irrigation Water Management (applying water according to soil type and crop need), Nutrient Management (applying fertilizer according to plant needs, take soil samples) and crop rotation (alternating crops on a yearly basis). Irrigation improvements (sprinkler irrigation, drip systems, improved flood irrigation systems).

Class III/:Moderately Suited: Limitation that reduce the choice of plants require special conservation practices or both. Some conservation practices that could be used are: Reduced or No Till tillage, Irrigation Water Management (applying water according to soil type and crop need), Nutrient Management (applying fertilizer according to plant needs, take soil samples) and crop rotation (alternating crops on a yearly basis). Irrigation improvements (sprinkler irrigation, drip systems, improved flood irrigation systems). crop rotation (alternating crops on a yearly basis), contour farming on slopes.

Class IV:/Moderately suited: Very severe limitations that restrict the choice of plants and require very careful management or both. Some conservation practices that could be used are: Reduced or No Till tillage, Irrigation Water Management (applying water according to soil type and crop need), Nutrient Management (applying fertilizer according to plant needs, take soil samples) and crop rotation (alternating crops on a yearly basis). Irrigation improvements (sprinkler irrigation, drip systems, improved flood irrigation systems), crop rotation (small grains with 4 to 5 years of grass/legumes), contour farming on slopes.

Class V/Least-Suited: Little or no erosion hazard but have other limitations impractical to remove that limit their use primarily to pasture, range, woodland or wildlife food and cover.

Class VI/Least-Suited: Severe limitations make them generally unsuited to cultivation and limit their use primarily to pasture or range, woodland, or wildlife food and cover.

Class VII/Least-Suited: Very severe limitations make them unsuited to cultivation and restrict their use mainly to grazing, woodland, or wildlife.

Class VIII:/Least-Suited: Limitations preclude their use for commercial plant production and restrict their use to recreation, wildlife, water supply or aesthetic purposes. Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposed, wildlife habitat, watershed, or aesthetic purposes.

Custom Soil Resource Report

Map—Irrigated Capability Class (Sierra Vista Properties Inc RZ2022-0011/SD2022-0034)

Map Scale: 1:4,730 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

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 18, Sep 9, 2021

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 (Sierra Vista Properties Inc RZ2022-0011/SD2022-0034)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EsB	Elijah-Chilcott silt loams, 1 to 3 percent slopes	3	31.7	34.9%
EvC	Elijah-Vickery silt loams, 3 to 7 percent slopes	4	35.8	39.5%
EvD	Elijah-Vickery silt loams, 7 to 12 percent slopes	6	9.5	10.5%
LhE	Lankbush-Power complex, 12 to 30 percent slopes		6.4	7.0%
PhB	Power silt loam, 1 to 3 percent slopes	3	0.3	0.3%
PhC	Power silt loam, 3 to 7 percent slopes	4	7.1	7.9%
Totals for Area of Interest			**90.8**	**100.0%**

Rating Options—Irrigated Capability Class (Sierra Vista Properties Inc RZ2022-0011/SD2022-0034)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

tabbies

EXHIBIT

7

Purple Sage Rd

Purple Sage Rd

Purple Sage Rd

Purple Sage Rd
KIN

Purple Sage Rd

Board of County Commissioners
Sierra Vista Properties, Inc. – Conditional Rezone - RZ2021-0046

Findings of Fact, Conclusions of Law, and Order
Conditional Rezone – RZ2021-0046

Findings of Fact

1. Sierra Vista Properties, Inc. is requesting approval of a **Conditional Rezone** of approximately 90 acres from an "A" (Agricultural) zone to a "CR-R-1" (Conditional Rezone Single Family Residential) zone including a **Development Agreement.**
2. The conditional rezone is being considered concurrently with a preliminary plat (including irrigation and drainage) for Mint Farm Estates. The proposed plat includes 53 residential lots.
3. The subject property, parcel no. R37496 is located at 8718 Purple Sage, Rd., Caldwell, Idaho, in a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
4. The subject property is currently zoned "A" (Agricultural).
5. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map.
6. The site is not located within an area of city impact.
7. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
8. A neighborhood meeting was conducted on 7/13/21 pursuant to CCZO §07-10-15.
9. The Canyon County Hearing Examiner recommended denial of the Conditional Rezone/Development Agreement on 1/20/22.
10. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on 2/9/22, newspaper notice was published on 2/20/22, property owners within 600' were notified by mail on 2/18/22, and the property was posted on (or before) 2/28/22.
11. The record includes all testimony at the public hearing held on 1/20/22, 3/9/22 and 5/25/2022, the staff report, exhibits, and documents in Case File No. RZ2021-0046.

Conclusions of Law

For this request, the Board of County Commissioners find and conclude the following regarding the Standards of Review for a Conditional Rezone (CCZO §07-06-07(6)):

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

Conclusion: The proposed conditional rezone is inconsistent with the 2020 Canyon County Comprehensive Plan.

Finding: The property is identified as "residential" on the Canyon County Future Land Use Map; However, the project does not align with the following goals and policies of the 2020 Comprehensive Plan:

Chapter 1. Property Rights

- **Policy 11.** Property owners shall not use their property in a manner that negatively impacts upon the surrounding neighbors or neighborhoods.

Chapter 2. Population

EXHIBIT
8

- **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.

Chapter 4. Economic Development

- **Goal 2:** To support the agriculture industries by encouraging the maintenance of continued agricultural land uses and agricultural activities.
- **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.

Chapter 5. Land Use

- **Land Use Goal 2.** To provide for 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.
- **Agriculture Land Use Policy 1.** Encourage the protection of agricultural land for the production of food.
- **Residential Land Use Policy 2.** Encourage residential development in areas where agricultural uses are not viable.

Chapter 6. Natural Resources

- **Natural Resources Agricultural Land Goal 1.** To support the agricultural industry and preservation of agricultural land.
- **Natural Resources Agricultural Land Policy 1.** Protect agricultural activities from land use conflicts or undue interference created by non-agricultural development.
- **Natural Resources Agricultural Land Policy 3.** Protect agricultural activities from land use conflicts or undue interference created by existing or proposed residential, commercial or industrial development.

Chapter 13. Agriculture

- **Goal 2.** Support and encourage the agricultural use of agricultural lands.
- **Goal 3.** Protect agricultural lands and land uses from incompatible development.
- **Policy 3.** Protect agricultural operations and facilities from land uses conflicts or undue interference created by existing or proposed residential, commercial or industrial development.

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

Conclusion: The proposed conditional rezone is not more appropriate than the current zone.

Finding: The proposed conditional rezone, when considering the surrounding land uses and zoning, is not more appropriate than the current agricultural zoning designation. The subject property is utilized for agriculture and located in an area that is primarily agricultural in nature.

- Approximately 36% of the subject property is considered prime farmland and approximately 47% is considered farmland of statewide importance. Aerial views of the property show it has a pivot line and has actively been farmed.
- The average lot size within the vicinity of the subject property is 18.55 acres with the largest parcel within the vicinity being 141.88 acres.

The "R-R" zone (two-acre average minimum lot size) is a designation that is more supported in areas where agricultural is transitioning into residential near city impact areas. Recent land use decisions within the area supports "R-R" (Rural Residential) zone which encourages and guides "growth in areas where a rural lifestyle may be determined to be suitable" (CCZO Section 07-10-25). The "R-R" zone supports lots sizes that is in character with the rural lifestyle found in the area and supports uses similar to the "A" Zone.

The "R-1" Zone may be supported once low-density development is bettered supported in the area, such as the completed development of Willowbrook Estates located near the intersection of Kingsbury Road and Purple Sage Road.

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

Conclusion: The proposed conditional rezone is not compatible with the surrounding land uses.

Finding: The property is currently zoned "A" (Agriculture). The applicant is proposing to rezone the subject property to "R 1" (Single Family Residential). The minimum average lot size in the "R 1" zone is one (1) acre. Within one (1) mile of the site, the average platted lot size is 2.43 acres. Within 600 ft. the average parcel size is 18.55 acres and the median is 6.28 acres (Exhibit 9e). The proposed single-family residential zone is not compatible with the area and its corresponding lot and parcel sizes.

The nearest R-1 zoned property is approximately 2631 ft. west of the site.

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

Conclusion: The proposed conditional rezone will negatively affect the character of the area.

Finding: The request to rezone to "R 1" (Single Family Residential) will have a negative impact to the agricultural and rural character of the area by introducing single family residential zoning, which has the potential to encourage further encroachment of residential uses and fragmentation of active farmland to the east of Lansing Ln.

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

Conclusion: Adequate sewer, drainage, and storm water drainage facilities and utility systems will be provided to accommodate the proposed use at the time of development. Platting as a residential subdivision will be required.

Finding: Individual septic systems and domestic wells are proposed for the project. Pressurized irrigation is proposed. Drainage will be addressed via the subdivision plat for this development.

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

Conclusion: The property has frontage on Purple Sage Rd., a public road. Public street improvements may be required.

Finding: The property has frontage on Purple Sage Rd., a public road.

Canyon Highway District No. 4 supplied comment in Exhibit 10a. The district provided several items that will need to be corrected on the preliminary plat. In Exhibit 10d, CHD4 responded to an inquiry by staff in regard to a Traffic Impact Study, in which they note they have received the TIS, however, they have not yet approved it. Public street improvements maybe required, dependent CHD4 review of the plat and TIS.

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

Conclusion: The property has legal access to Purple Sage Rd., at the existing home site location. Any additional access locations to the public road system must be approved by Canyon Highway District No. 4.

Finding: The property currently accesses the public road system via Purple Sage Rd., at the existing home site location. Any additional access locations must be approved by Canyon Highway District No. 4. CHD4 requirements must be met throughout the platting and development of the site, the district is also a signatory on the final plat.

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

Conclusion: No evidence or mitigation was provided by the applicant demonstrating essential services can be provided to accommodate future development of the subject property.

Finding: Although comments from affected agencies were not received regarding potential essential services impacts, the County has received information from Middleton School District and Canyon County Sheriffs stating the schools and jails are over capacity. No mitigation was provided demonstrating how future development on the parcel could be mitigated to a less than significant impact.

Order

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Canyon County Board of County Commissioners **deny** Case #RZ2021-0046, a conditional rezone development agreement from an "A" zone (Agricultural) to an "R-1" (Single Family Residential) zone for Parcel No. R37496.

Pursuant to Idaho Code Section 6-6519, the following actions may be taken to obtain approval:

- Consider a rezone conditional rezone to an "R-R" (Rural Residential) zone, two-acre average minimum lot size; or
- Wait until development in the area better supports low-density residential uses, such as the development of Willowbrook Estates located near the intersection of Kingsbury Road and Purple Sage Road.

DENIED this 25 day of May, 2022.

BOARD OF COUNTY COMMISSIONERS
CANYON COUNTY,

	Yes	No	Did Not Vote
Commissioner Leslie Van Beek			
Commissioner Keri Smith			
Commissioner Pamela White			

Attest: Chris Yamamoto, Clerk

By: Monica Reeves

Date: 5-26-22

FINDINGS, CONCLUSIONS, CONDITIONS, ORDER

Preliminary Plat SD2021-0038

Findings

1. Sierra Vista Properties, Inc. is requesting approval of a Preliminary Plat, irrigation, & drainage plan for Mint Farm Estates Subdivision.
2. The plat contains a total of 53 residential lots.
3. The subject property, parcel no. R37496 is located at 8718 Purple Sage, Rd., Caldwell, Idaho, in a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
4. The subject property is currently zoned "A" (Agricultural). A conditional rezone/development agreement to change the zoning of the property from "A" (Agricultural) to "R-1"(Single Family Residential) was applied for concurrently with the plat [Case No. RZ2021-0046]
5. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map.
6. The subject property is not located within an Area of City Impact.
7. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
8. Internal public roads will provide access to the residential lots.
9. Pressurized irrigation is proposed for the subdivision.
10. Individual septic systems and individual domestic wells will be utilized for each residential lot.
11. The Canyon County Hearing Examiner recommended denial of the preliminary plat on January 20, 2022.
12. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on 2/9/22, newspaper notice was published on 2/20/22, property owners within 600' were notified by mail on 2/18/22, and the property was posted on (or before) 2/28/22.
13. The record includes all testimony at the public hearing held on 1/18/22, 3/9/22 and 5/25/2022, the staff report, exhibits, and documents in Case File No. SD2021-0038.

Conclusions of Law

Section 07-17-09(4)B of the Canyon County Zoning Ordinance (CCZO) states:

A. The board shall consider the commission's recommendation at a noticed public hearing.

B. The board shall base its findings upon the evidence presented at the board's public hearing, and within thirty (30) calendar days declare its findings. It may sustain, modify or reject the recommendations of the commission and make such findings as are consistent with the provisions of this chapter and the Idaho Code. The findings shall specify:

1. *The ordinance and standards used in evaluating the application;*
2. *The reasons for approval or denial; and*
3. *If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision.*

Standard of Review for Subdivision Plat

A. Idaho Code, Sections 67-6512, 6509 and 6535 (Subdivisions, Hearings, Decisions);
B. Idaho Code, Sections 50-1301 through 50-1329 (Platting);
C. Idaho Code, Section 31-3805 (Irrigation);
D. Canyon County Zoning Ordinance, Chapter 7, Article 17 (Subdivision Regulations)

Order

Based upon the Findings of Fact, Conclusions of Law contained herein: for Case No. SD2021-0038, the Board of County Commissioners **deny** the Preliminary Plat (including irrigation/drainage) for Mint Farm Estates Subdivision

If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision."

- *Receive approval of a Zoning Map Amendment (Rezone) of the property that would allow for residential development of the site.*
- *Timing: The property is not located within an area of city impact where growth is expected and planned.*

DENIED on this 30 day of [illegible], 2022

BOARD OF COUNTY COMMISSIONERS
CANYON COUNTY,

	Yes	No	Did Not Vote
Commissioner Leslie Van Beek			
Commissioner Keri Smith			
Commissioner Pamela White			

Attest: Chris Yamamoto, Clerk

By [illegible] Date [illegible]

Deputy

Dan Lister

From: Bonnie Puleo
Sent: Tuesday, January 3, 2023 8:14 AM
To: 'shan-shan@rocketmail.com'; Dan Lister
Subject: FW: [External] Mint Estates
Attachments: IMG_20221227_124407.jpg

Dear Shannon:

I show that a sign was posted at the property (8718 Purple Sage Rd) on 12/27/22. Here is a photo of where the sign is. Please let me know if you don't see the sign at the property or if (by chance) it was posted in the wrong location. If you know the location well, you might recognize where the sign is posted better than me.

Thank you!

Bonnie Puleo
Hearing Specialist
Canyon County Development Services
111 No 11th Ave. Suite 310
Caldwell, ID 83605
bonnie.puleo@canyoncounty.id.gov
(208) 454-6631 *direct*
NEW public office hours **effective January 3, 2023**
Monday, Tuesday, Thursday and Friday
8 am – 5 pm
Wednesday
1 pm – 5 pm
We will not be closed during lunch hour

IMPORTANT: The contents of this email and any attachments are confidential. They are intended for the named recipient(s) only. If you have received this email by mistake, please notify the sender immediately and do not disclose the contents to anyone or make copies thereof.

From: Shannon Colson <shan-shan@rocketmail.com>
Sent: Thursday, December 29, 2022 11:37 AM
To: Jennifer Almeida
Subject: [External] Mint Estates

Hi Jennifer,

I'm not sure who to inform so I will start with you and please advise if this needs to go to someone else

EXHIBIT 9

regarding the hearing for Mint Farm Estates, paper work indicates posting was put up on site 12/27, we live next door and there is NO posting, also for one of the Exhibits from Black Canyon it indicates that applicant was supposed to resubmit their application this is dated August 5 and I do not see any other attachment from them that this was done
Please advise

respectfully

Shannon Colson

PUBLIC HEARING
NOTICE
CANYON COUNTY IDAHO
1892
CANYON COUNTY
PLANNING and ZONING
Development Service Dept.
111 N. 11th Avenue #140
Caldwell, Idaho 83605
Phone: 208-454-7458
Fax: 208-454-6633
www.canyoncounty.org/dsd
TAKE ONE
12:44:07 PM

Middleton School District #134

Every Child Learning Every Day

Middleton School District #134

City of Middleton--Public Hearing Notice Response

General Response for New Development

Middleton School District is currently experiencing significant growth in its student population. **Currently Middleton School District has 2 of our 3 elementary schools over capacity. Heights Elementary is at 134% of capacity with three portable units. Mill Creek Elementary is at 123% of capacity with 4 portable classroom units totaling 8 classrooms.** We are nearing capacity, but have not superseded at this point, at our high school (91%) and middle school (85%). As it stands now there is an immediate need for additional facilities in our school district, primarily at the elementary grades. However, we have significant concerns of the continued growth and our ability to meet the future facility needs of our district at the secondary level (Middleton Middle School and Middleton High School).

We have completed demographic study performed for our school district boundaries and data suggests that for every new home we could expect between 0.5 and 0.7 (with an average of .569) students to come to our schools. That is the factor/rate we use to make our projection of student impact for each development.

Sierra Vista Properties/Mint Farm Estates Subdivision

Elementary students living in the subdivision as planned would be in the attendance zone for Mill Creek Elementary School, which, as state above, is already well above capacity. With the 39 proposed lots we anticipate approximately 20-27 students will need educational services provided by our district. This equates roughly to a new classroom of students as a result of this development.

In addition to the increase in student population and its impact on facilities, bussing would be provided for all students. As such, it would be important that the developer include plans for appropriate spacing for bus stops as well as safe routes to those stops.

As a school district we would as that Canyon County Planning and Zoning commission take these factors into consideration as you make your decision. Any questions regarding this response should be directed to Marc Gee at the contact information shared below.

Marc C. Gee, Superintendent

January 4, 2023

Date

Middleton School District Office: ***5 S. Viking Ave, Middleton, ID 83644*** ***Phone: 208-585-***

Marc C. Gee, Superintendent mgee@msd134.org

Lisa Pennington, Asst. Superintendent lpennington@msd134.org

Alicia Krantz, Busines akrantz@msd13

EXHIBIT 18

Sierra Vista, Mint Farm; RZ2022-0011, SD2022-0034 8718 Purple Sage Rd

Wednesday, January 4, 2023

I am opposed to this rezone and therefore the Preliminary Plat.

Agricultural land that is situated miles from any services does not seem to be the appropriate place for developing land. The increased traffic on Purple Sage is a concern, particularly for the existing farmers left in the area. Moving tractors and farm implements on the road is becoming increasingly problematic. When larger parcels of agricultural land continue to be developed, existing farmers will not have any reason to stay in this area.

We have always been concerned about multiple wells being drilled for this development and will be closely monitoring any change in our own well water level.

How is this proposal development beneficial or how does it enhance the existing neighborhood? I am hard pressed to think how this will benefit me and my neighbors. Fragmenting development amongst agricultural land seems ripe for conflict between neighbors. Lost will be wildlife habitat, open space, and the character of this area. If we wanted to live next to 39 homes, we would move to town for that experience. A view of plastic fences and multiple rooftops is not enhancing. Nor is the prospect of increased neighbors, noise, pets, and yes, even fireworks, which are already occurring from previously approved developments.

If part of the intent of the development is to provide a country experience, it seems ironic that the developer has not included any green space in the development. It has been our observation, that residents seek that experience by walking along the road and irrigation ditchbank roads to enjoy their time in the country. The first being unsafe along an increasingly busy Purple Sage Road and the second being trespassing on private property.

Instead of these new residents having open space, they may soon find themselves in the midst of more developments looking like the one they will be living in. Was that their original expectation of moving to a development like this?

I ask for your thoughtful consideration of this rezone and preliminary plat.

Sincerely,

Cecile McMonigle

EXHIBIT
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Dan Lister

From: Rob Sturgill <rob_sturgill@yahoo.com>
Sent: Wednesday, January 4, 2023 11:09 AM
To: Dan Lister
Cc: Bonnie Puleo
Subject: [External] RZ2022-0011/SD2022-0034

Hi Dan,

Happy New Year!

In the past, we've discussed the challenges of incremental growth in this area. To wit, each subdivision doesn't warrant a TIS, but the aggregate impact of the growth would certainly justify a closer look at traffic impacts.

Are you able to quantify the amount of authorized, but unbuilt, properties in this area? How many new residential dwellings have already been approved within 1 or 2 miles of this property?

Thanks!

Rob

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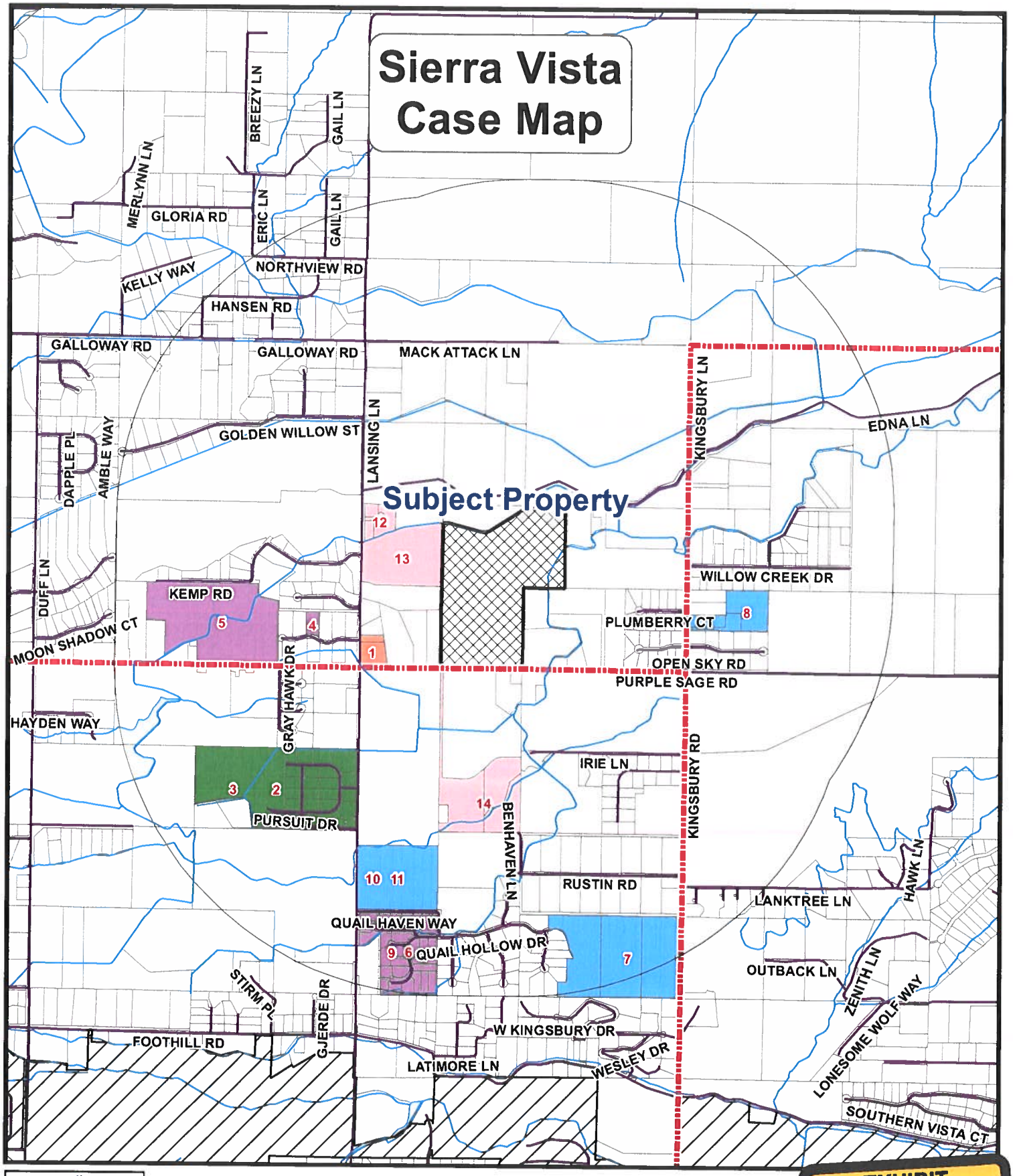
Sierra Vista Case Map



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Case Summary – Potential Number of Residential Lots				
ID	Case #	Request	Case Name	# of Lots
1	RZ2018-0006	Rezone: A to "R-R	Edward Vance	2
2 & 3	RZ2018-0026 SD2019-0025	Rezone: R-R to R-1/Cascade Hill Sub 1 &2	Lansing Investments	51
4	CU2019-0025	Special Events Facility	Goetz	Limited to 100 per event
5	SD2020-0003	Preliminary Plat	Oaklee Estates Sub.	36
6 & 9	RZ2020-0006 SD2020-0011	Rezone/Preliminary Plat	Callister/C3	24
7	SD2019-0039	Preliminary Plat	Wyatt's Hollow	35
8	RZ2020-0024	Rezone: A to R-1	Spohn	14
10 & 11	RZ2021-0010 SD2021-0008	Rezone: A to R-1	Callister/C4	24
13	RZ2021-0034	Rezone: A to R-R	Cotner	12
14	RZ2021-0036	Cond. Rezone: A to R-1	Richards/Larsen	17

CANYON COUNTY PLANNING & ZONING COMMISSION
MINUTES OF REGULAR MEETING HELD
Thursday, January 5, 2023
6:30 P.M.

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

Commissioners Present : Robert Sturgill, Chairman
Patrick Williamson, Vice Chairman
Brian Sheets, Commissioner
Ron Amarel, Commissioner
Harold Nevill, Commissioner
Miguel Villafana, Commissioner

Staff Members Present: Dan Lister, Planning Official
Samantha Hammond, Planner
Bonnie Puleo, Recording Secretary

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

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

- **Case No. CU2022-0004/Michael Rawden**: The applicant, Michael Rawdan, is requesting a conditional use permit to allow a contractor shop on parcel R22694. The property is zoned "A" (Agricultural). The property is located at 4541 Hemlock Way, Nampa, Idaho; also referenced as a portion of the NW¼ of Section 8, T3N, R1W, Canyon County, Idaho.

Planner Samantha Hammond reviewed the Staff report for the record.

Chairman Robert Sturgill affirmed the witnesses to testify.

Commissioner Sheets was absent during this case/portion of the hearing.

Testimony:

****No one had signed up as applicant/in favor of project****

Kevin Werlinger – IN OPPOSITION – 4573 Hemlock Way Nampa ID 83687
Mr. Werlinger wanted to bring up some of his concerns. He is worried about the safety of his family due to the high traffic volume from employees and delivery trucks constantly speeding down the road. He is also concerned about his quality of life as he feels he can't enjoy his own yard without hearing back up alarms or the fear that his son may be hit by one of the cars while riding his bike in the cul-de-sac. There is a blind curve coming out of one side of their driveway. This business is supplying equipment to other HVAC businesses who also speed in and out of the property. They are bringing in other people from other businesses and not just their employees. Mr. Werlinger said they are starting at 7:00 am and he knows

EXHIBIT D

this because he and his son were awakened by a loud car radio from one of the workers arriving. He has talked to them about it a couple of times and nothing has changed. They can't control the drivers of the delivery trucks and how they speed in and out. He said no one has lived at the property since they moved in. There is also a sheet metal employee who works onsite and they are doing manufacturing out of that property for other businesses as well. There are other businesses on the street but the owners all live there and respect the neighborhood by driving the speed limit and improving their properties. He said this property looks like a junk yard. Commissioner Nevill asked Mr. Werlinger how firefighting water is provided to the neighborhood. Mr. Werlinger replied as far as he knows there is none, other than the fire trucks that show up. There are no hydrants in the neighborhood. Commissioner Nevill asked if he knew what products are stored on the site and if they were flammable. Mr. Werlinger replied that they have HVAC machines that have freon in them on the property but he didn't know about flammables. Commissioner Amarel asked what size are the trucks that come in and out. Mr. Werlinger answered that they are 26-foot box trucks delivering sheet metal. Commissioner Amarel asked if there was room for the trucks to turn around and Mr. Werlinger said 'no' and one of the trucks damaged some reflectors on his property when turning around. He also said the garbage truck emptying the metal bin on the property completely blocks the street when it's dumping the bin and that's typical. He said there were 1 to 2 delivery trucks every day. Commissioner Nevill asked about the trash truck for the (scrap) metal bin. Mr. Werlinger said they must have two bins because one is for recycling metal waste. Throwing the scraps in the bin also makes a lot of noise. Commissioner Williamson asked Mr. Welinger to show where his house was on the map and asked if there was any signage on the north entrance where people were supposed to entering and exiting. Mr. Werlinger showed where his house was and said there were no signs, and he didn't want any signs outside his window. He said he had also heard they also wanted to expand and rent the property across the street. He is sure they aren't going to tell anybody they want to do that. He said he submitted a complaint to Code Enforcement along with someone else. He said there was a whole list of non-compliance issues but the prosecutor dropped it. They were issued a cease and desist order but that didn't stop them. Mr. Werlinger said maybe he doesn't understand the (Code Enforcement) process. His Code Enforcement complaint was issued in 2019 and was about the speeding, the noise and that they don't maintain the property. They never shovel their snow.

Trina Patterson – IN OPPOSITION – 4545 Hemlock Way Nampa ID 83687

Ms. Patterson is impacted the most by this business as she lives right next door to them. She believes she is the one who took the complaint to Canyon County in March 2019. She worked with Eric in Code Enforcement who reached out to the owner, warned them (multiple times) and filed the cease and desist order. Eric told her the cease and desist order was dismissed by the Prosecutor's office because their remedy was to file for this conditional use permit. The property has never been occupied: the person who owns the business does not own the house. She said they don't maintain the property. Property trucks are in and out of there and they don't use the northside entrance. It is not enclosed by a 6-foot privacy fence as shown by the photos which shows her backyard. There are overgrown weeds and overgrown trees. Ms. Patterson asked Kelly, the owner of the business and the drivers to slow down. They have delivery trucks blocking both the street and her driveway and they can't get out until the truck is finished unloading. They have the north entrance and don't use it. She has tried to work with them and they have not been cooperative at all. It is a safety issue with the big trucks coming in and out. She said there is a tent city in their driveway they use to store items contrary to what is stated in the application which says all materials will be stored in an enclosed contractor's shop. Commissioner Nevill said he doesn't see another entrance (besides the north entrance) and asked how they get material onto the property. Ms. Patterson said they come in through the cul-de-sac, using their driveway which is next to her driveway. She showed the cul-de-sac entrance on the aerial map. She talked about how overgrown the trees were which hides the entrance to the property in the cul-de-sac. She said they have to back out of their driveway very slowly to be sure none of the business employees are coming into the cul-de-sac to go into that

entrance. She also showed where the sheet metal employee works on the property and where delivery trucks pull up. Commissioner Villafana asked how many tents were there. Ms. Patterson said there was one big tent. She said they have taken PVC piping and created a large tent by covering it with tarps. Commissioner Villafana confirmed with Ms. Patterson that the property owner does not own the business. Commissioner Williamson asked Ms. Patterson if they had talked to the Highway District and asked them to come out and say something to the business owner about the trees. Ms. Patterson responded that she didn't know she could do that. Planning Official Dan Lister clarified that the Code Enforcement violation would be sent to the property owner, not the business owner as it is the property owner's violation.

Planner Samantha Hammond told Chairman Sturgill that the business owner and his agent were present at the hearing. They did not sign in to speak because they thought only the property owner was allowed to speak. They did not sign in but want to testify. Chairman Sturgill stated they would finish testimony in opposition and then give the business owner and agent time to testify.

David Diffenbach – IN OPPOSITION – 4553 Hemlock Way Nampa ID 83687

Mr. Diffenbach said that Hillcreek Subdivision consists of 80 homes. All the homes are occupied by families except for one; the one in question. Hemlock Way is the subdivision's road. There are a few small home businesses that operate in the subdivision but none as big as EZ Heating. They have three pickup trucks, three trailers, a commercial van and a commercial vehicle they use. The intended purpose of the residence is for living; for a family. He said this is a light industrial business and doesn't seem like it fits at all. Commissioner Williamson asked about another business which used to be located across the street. Mr. Diffenbach said it used to be a concrete business but they shut down last year. He thinks that property is the one EZ Heating wants to rent for expansion.

Ron Crumb – IN OPPOSITION – 4545 Hemlock Way Nampa ID 83687

Mr. Crumb began testifying and said he had pictures that he wanted to show. Chairman Sturgill suggested that he send the photos to Samantha and delay his testimony until she can display the photos on the monitors and he can speak about them.

Kraig Wartman – IN OPPOSITION – 4668 Hemlock Way Nampa ID 83687

Mr. Wartman said he has only lived in this subdivision for 2 years but it has been two years that they have been operating EZ Heating and Air. He said it looks like the application is to bring them into compliance; it was his opinion they are essentially asking for forgiveness because they got caught when they should have been asking for permission initially. They didn't always operate under the proposed conditions of approval, but since the neighborhood made complaints, they are playing nice. He said if approved, they will go back to doing whatever they want because they (the business owners) don't live in the area; it's only a job, leaving the residents to suffer the consequences. The initial neighborhood meeting was February 1st and at a crazy time and after the meeting, four of the residents were talking in the cul-de-sac and almost got run over by one of their truck and trailers. Mr. Wartman said deliveries are coming from big trucks as well as for pick up and drop off of the trash. He said the application says there are only 4 – 5 parked cars but that's only since October because they knew the application was coming. Employees speed down the road. He asked what kind of chemicals are they storing? They solder and weld on site and are using freon. He asked are there gas, solvents and soldering materials and is that appropriate for a residential subdivision? He said tonight the Commission has heard from residents and homeowners who value the serenity of the residential subdivision. He said the Commissioners are there to represent and protect the legal voting residents, not the applicant or business interests. Everyone has seen a huge increase in the tax values and he prays they defend the residents of the area/subdivision. He reminded the Commission that the applicant doesn't live there, nor does the business owner.

Commissioner Amaral asked Mr. Wartman if there were only four people at the neighborhood meeting.

Mr. Wartman said yes, the four people they have heard from tonight. The meeting was held at a difficult time and he felt it was a checkbox for the applicant. There was no information given; there was a sign in sheet and they said they were doing it just so they can operate the business.

Kevin Vink – IN OPPOSITION – 16526 Mahogany Drive Nampa ID 83687

Mr. Vink said he and his wife have lived in the neighborhood for over 47 years. He said this started as a small neighborhood and he is not going to deny that there were businesses that were operated by homeowners out of the neighborhood for years. Some of the businesses are gone now but the residents are still there, but the homeowners themselves were operating the businesses. He said those homeowners took a portion of their money every year and reinvested that back into their properties which improved the neighborhood. This business doesn't do that; they don't care what that place looks like. All they want to do is operate it as a business and that's not fair to them as property owners. Mr. Vink said the impact of their trucks has an adverse effect on the neighborhood. Their property doesn't look like a neighborhood lot anymore. It used to be all grass with picnic tables in the backyard but now it's just one large parking lot. He said they don't have any interest in what goes on in the neighborhood; they are just there to make money. That isn't fair to the homeowners.

Ron Crumb – IN OPPOSITION – 4545 Hemlock Way Nampa ID 83687

Mr. Crumb discussed the photos he has on his phone of the property (which he was unable to display). He said on numerous times he has shoveled snow from the business' driveway so it won't melt into his driveway. When they did have a major snowfall a few years ago, no one came out to shovel. He called Kelly to clear his driveway which he did with a Bobcat. He pushed all the snow against the Crumb's fence and bent it. Last night with the heavy wind, the tent city, with the tarp flapping in the wind, sounded like a 50 caliber machine gun going off. He said they have made it a little nicer but in years past, it was an eyesore. He has worked in a sheet metal machine shop and knows there is a press break and a bead roller there.

Chairman Robert Sturgill had the applicants sign in and swore them in to give testimony.

Kelly Martin – Applicant (Representative) – IN FAVOR – 9296 Chelan Ave. Garden City ID 83714

Mr. Martin requested staff pull up a map of the property and expanded the view. He said they were mostly correct on a lot of facts; they mostly come in on Hemlock in the morning, the employees come in through the narrow driveway through the cul-de-sac but it mainly used for employee access in the morning and at night to drop the trailers. All deliveries come in from the north; they poured a concrete pad in that area because they were having a difficult time pulling through. They do hear back up alarms because the trucks back up to their delivery door. The structure was not an improved structure when he first moved in and he did a lot of work to frame it and box it in. He was not sure where they were getting the 3-foot tall grass as he has receipts from companies doing the landscaping and picking up the recycling and debris every week. They have a family picnic for employees at the property two times a year and there is a big grass area on the property (which he showed on the map). Mr. Martin said no one lives in the house; it is an office and a meeting room. He doesn't live on the property and never intended to live on the property. He showed where the trash bin was and said it is picked up every Friday but if they are overloaded, they will come twice a week. He said employees used to unload the trailer into the garbage bin early in the morning but he changed that. It could happen every once in a while as he is not there every day but for the most part, it is happening between 8:00 am and no later than 4:00 or 5:00 pm. He has 13 – 14 company vehicles which are not stored on site. They are all 'drive home' vehicles. Most of his employees don't even come onsite; they are out in the field. He explained which employees come onto the property and what their schedules are. There is a total of 5 job trucks that will come in every day in the morning and leave at night. There might be a meeting once a quarter that he has everyone attend but they all park in the yard

and not on the street. Mr. Martin addressed the tent city; he said he doesn't like it either but they had to erect the tent to protect $8-$10,000 worth of sheet metal. There are worse (sights) than their one tent in the neighborhood. Nobody works in the tent; they may pull and rip a piece of sheet metal really quickly and then it goes into the shop where the work is done. He does bend sheet metal for other people and will deliver it to them but the majority of the sheet metal work he does are for his projects. The overgrown trees were there when he moved in to the location. He did get the call from the neighbor about the snow and cleaned it up by pushing it to the back of the property but he doesn't know how he could have damaged the neighbor's fence as there was a 2-foot dirt berm along that fence line at that time. He said it looks like a home with a shop and they do park in there but it is clean and it is not a neighborhood eyesore.

Commissioner Williamson asked how early employees arrive to pick up trailers. Mr. Martin replied he has workers that pull in there early but he doesn't like them to arrive earlier than 6:45 am. They get there and stand around and talk but don't go into the office until 7:00 am. He gets there at 7:00 am. Commissioner Williamson asked if he was aware that 8:00 am is the start time on the conditional use permit. Mr. Martin said he would prefer it changed to be 7:00 am. They don't really work until 7:30 am and the employees get on the road at 8:00 am. Commissioner Williamson said he counted 8 cars in the photos that were taken at about noon. Mr. Martin went through the cars shown in the photos and talked about the cars that could be moved off the site. He does not work out of this office full time and just goes there to pay bills. Commissioner Williamson asked about storing chemicals onsite. Mr. Martin said he has a couple of bottles of R410A refrigeration (chemical) that they keep and are used to restock the trailers in the morning; they are recycled on a daily or every other day basis. He said R410A is not a chemical that leaches in to the ground: it is a gas and they have an EPA license for it. He mentioned the neighbor who works from his home tearing apart HVAC units and the possible oils that could leach into the ground from his work. Mr. Martin has to reclaim all his refrigeration; they have to account for it, report it and he could be fined. He said his neighbor doesn't have an EPA license that he knows of, to do that work. Mr. Martin has a license for all the work he does. They walk in their recycled metal as the bin has a swinging door as they want to stack it. He said they have expensive silver sticks that they use to braise and the trailers have small bottles of oxygen and acetylene torches. They are not liquid chemicals that can fall onto the ground and they are not large tanks. If they don't secure it properly on the trucks or store it properly, they can be fined.

Commissioner Nevill asked about the fire fighting system in the neighborhood; it doesn't sound like the community has one. He asked, if there is a fire, what is their plan? Mr. Martin said they have fire extinguishers in all their vehicles and in every buildings. If there was a fire, they would do what everybody else would and call 911. They aren't causing any arcing and don't weld onsite. They don't do any braising on this property. They don't keep material onsite for long periods of time and he explained about why he had to buy extra material during a supply shortage and how he stored it. Commissioner Nevill said staff recommended 7 conditions of approval and asked if Mr. Martin had seen them. Mr. Martin said they don't work on the weekend and when asked about the 8 am start time, Mr. Martin replied that 7:00 to 7:30 am time period is about paperwork and he wants everyone to be out by 8:00 am. He asked if they could change that condition. They provide 24-hour service but not out of that location.

Commissioner Amarel clarified that Mr. Martin is the business operator and not the property owner. Commissioner Amarel asked when he was notified of the (code enforcement) violation in 2019. Mr. Martin said he put $30,000 into the property to improve it because it wasn't in good position for any use. If anything, he has improved it. He found out about the non-compliance when they got the letter from Michael Rawden and then he started the conditional use permit process. Commissioner Amarel brought up the hours of operations and confirmed that there are no office hours after 5:00 pm.

Commissioner Williamson asked if he was aware of the cease and desist letter. Mr. Martin replied that when he received the letter, he contacted Michael (Rawden) and said there was a problem. He acknowledged that there were some employees who sped through the neighborhood and played loud

music early in the morning but he addressed that with them.
In response to Chairman Sturgill's question he said they began operations in 2018 - 2019 and at that time, it was his understanding that no additional permits were required to operate there. Mr. Martin said at that time, a concrete company had been running their business across the street for 40 years. He confirmed that they are looking at renting the land across the street and moving their recycling bin and storage shop there. That would be the staging area for him. He has not filed for a conditional use permit nor has he done any work on the property across the street.

Chris Carpenter – Applicant (Representative) – REBUTTAL – 10173 W. Virginia City St., Star ID 83669
Mr. Carpenter is the real estate agent from Michael Rawden. He said Mr. Rawdan did not own the property in 2019 when the original cease and desist order came out. He purchased the property in June or July of 2020. Upon purchasing it and upon review of the CC&R's which Mr. Carpenter said haven't been enforced in years, he didn't see any issues with owning the property and allowing Mr. Martin to remain a tenant on the property. Mr. Rawden saw other businesses were being run in the neighborhood. When the complaint was issued, Mr. Rawden sent the information to his attorney who spoke to the County office and was told to apply for the conditional use permit. He applied for the conditional use permit in October 2020 and it has taken them this long to get here.
Chairman Sturgill asked Mr. Carpenter if the conditional use permit was denied, what will happen with the property? Mr. Carpenter said the property would probably be sold or rented to another tenant which probably wouldn't be a business.
Commissioner Amarel confirmed that the process to obtain the conditional use permit started in October 2020. Commissioner Williamson asked Mr. Carpenter about Condition #5, the non-transferability of the conditional use permit. Mr. Carpenter said they were aware of the terms of the conditional use permit and it seemed prudent to wait to see how this process went before moving to another step.

MOTION: Commissioner Nevill moved to close public testimony on Case Number CU2022-0004 seconded by Commissioner Amarel. Voice vote, motion carried.

DELIBERATION:
Commissioner Nevill said he disagrees with staff. He doesn't think this is an appropriate use for the area. This is an agricultural area but is certainly residential. He said they can split hairs and say that this type of use is allowed in an ag zone but this isn't agriculture anymore. He said he knows there are some efforts to look at what is zoned in the County because there are a lot of conditional use permits out there but if the county made it R-R to match or the city made it residential, light industrial is not appropriate for either one of those. In order to avoid a big problem in the future, the most appropriate thing to do is to deny.
Commissioner Amarel agreed this is not agricultural anymore and we have a business that is a misfit they are not in compliance with code or neighbors. He disagrees with staff as well.
Chairman Sturgill reminded the Commissioners that if they were going to rule against staff's recommendations, they were going to need to help direct staff to change their findings.
Commissioner Nevill stated for this case, he moved to deny the conditional use permit and suggested the following changes: while it is allowed in an ag zone, he argued that this is no longer an ag zone and would be not be compatible if the area was re-zoned in the future; it is injurious to the area; the legal access is questionable as they don't use the north entrance; there is interference with traffic with the loading and unloading of trucks. Planning Official Dan Lister said he thought item one, the zoning argument can't be made as it is currently zoned Agriculture.
Commissioner Williamson said that Commissioner Nevill made the argument when they are annexed in to the City of Nampa but they don't have any evidence when Nampa will annex that area into the city.

Commissioner Villafana asked if they deny the conditional use permit, how long does the business has to vacate the property. Planning Official Dan Lister said if the conditional use permit is denied they could appeal, but if the appeal is denied, violations would begin to be sent out again. Commissioner Villafana is sympathetic to the business owner and the employees and was concerned how this would impact their business with layoffs and the recession.
Commissioner Williamson asked Staff if the Commission could add a condition to give them some time to vacate the property. Planning Official Dan Lister said that was up to the Code Enforcement officer but also reminded the Commissioners state law states they have to give the applicant ways to obtain approval for the conditional use permit. Suggestions included demonstrating how it was more consistent with the area, demonstrating adequate access and how they would mitigate traffic impacts.

MOTION: Commissioner Nevill moved to deny Case CU2022-0004 including modified Findings of Facts, Conclusions of Law and Conditions of Approval. Motion seconded by Commissioner Amarel. Roll call vote: 3 in favor 2 opposed, motion passed.

Chairman Sturgill swore in Commissioner Sheets at 8:29 pm.

- **Case No. RZ2022-0011 & SD2022-0034/Sierra Vista Properties-Mint Farm Estates**: The applicant, Sierra Vista Properties, Inc., is requesting a zoning map amendment (rezone) of Parcel R37496 from an "A" (Agricultural) zone to a "R-R" (Rural Residential) zone. The request includes a Preliminary Plat, Irrigation, & Drainage Plan for Mint Farm Estates Subdivision, 39 residential lots. The subject property is located at 8718 Purple Sage, Rd., Caldwell; also referenced as a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.

Planning Official Dan Lister reviewed the Staff report for the record including late exhibits.

Chairman Robert Sturgill entered the late exhibits into the record and affirmed the witnesses to testify.

Testimony:

Ammon Andelin – Applicant (Representative) – IN FAVOR – 2195 Cherry Lane Emmett ID 83617
Mr. Andelin is representing the applicant. In 2021, they applied for an R-1 rezone. They tried to put together a careful, clean project. They met with all the districts and parties and it was consistent with the 2020 Comprehensive Plan and the future land use map. The Board of County Commissioners denied their rezone and plat and said they would approve it with R-R zoning as it was more compatible with the area. They have corrected their rezone and plat to R-R zoning and they are fine with all conditions of approval. Commissioner Nevill asked if Mr. Andelin had read through the conditions of approval and are they okay with them. Mr. Andelin said 'yes'. Commissioner Nevill said there seemed to be a pivot at one time and asked how productive was the farmland. Mr. Andelin said it is being farmed now and he believes it is productive. Commissioner Nevill asked how is this a more appropriate use than agriculture? Mr. Andelin said with people moving to Idaho, there is a shortage of homes. Rather than putting in high density housing in city limits, there is a great appeal to having large 2-acre lots. Mr. Andelin admitted that demand has decreased in 2022, although it is still there. He said the owners have decided to sell the ag land. Commissioner Nevill asked if other testimony says there are a lot of empty lots, that might counter his contention that there is a heavy demand for this type of lot. Mr. Andelin clarified what Commissioner Nevill was saying and said he could see his point. Commissioner Williamson said they have received a letter of opposition which cites the rural lifestyle and people on ditch banks and the loss of green spaces. He said there is no designated green space in this proposal; was green space or a trail loop considered?

Mr. Andelin said they are not trying to squeeze in as many homes as they can and proof of that is their prior application for R-1 zoning didn't have only 1-acre lots. Commissioner Williamson asked Mr. Andelin if he intended on putting in fencing along the ditch banks. Mr. Andelin said they are working with Black Canyon Irrigation District on their ditch and they will either pipe it or fence it. Commissioner Williamson said they will still need to provide an easement and Mr. Andelin agreed. Commissioner Amarel asked if Mr. Andelin knew when the center pivot was put on the property. Mr. Andelin said he did not. Commissioner Amarel asked if the current owner put the pivot on the property. Mr. Andelin said he did not know. Commissioner Villafana said recently local television station had a news story about the disappearance of farm ground in the Treasure Valley and how it is difficult for farmers to move their equipment, etc. He said when you look at the aerial view (photograph), there is a lot of farm ground in there and asked Mr. Andelin how a new residential subdivision with the people, children and cars, taking over this 90-acre piece of farm ground is going to be compatible the area. Mr. Andelin answered that growth is good and bad. Growth and change can be good. In terms of this area, the future land use is residential both for the 2020 Comprehensive Plan and the 2030 Comprehensive Plan. Both is deemed residential and growth is happening. Commissioner Sheets said one of the things they are trying to evaluate are the impacts and how to mitigate those. They got a letter from the school district that says some places are pretty overcrowded. He is pretty sure the last bond measure failed and there is another development already approved for R-1 zoning directly south which looks to be double the acreage of Mr. Andelin's proposal. There are also some impacts to the intersection of Lansing Lane and Purple Sage. Commissioner Sheets clarified if development impact fees would be charged for this development and asked Mr. Andeline how was going to mitigate the impacts to the school. Mr. Andelin said those are heavy topics and the Engineer can address the bus stop and adequate spacing there. Mr. Andelin said he lives in Emmett and it has a similar situation with the need for increased funding for their school district and a recent bond that didn't pass. He said growth can help that by bringing in more people who care about the schools. The opposite could be true also. He said development is happening and hopefully more funding will be approved in the future with bonds. Commissioner Williamson said this property has 90 acres of surface water irrigation rights. He said when 11 acres becomes a road, what will happen with those water rights? Mr. Andelin said he didn't know the answer and the engineer could answer that. Chairman Sturgill asked Mr. Andelin what his relationship to the project. Mr. Andelin said he is the son of the property owner and the owner asked him to be the planner on this project. He is not from an engineering company.

Derritt Kerner – IN FAVOR – 9175 W. Black Eagle Drive Boise ID 83705

Mr. Kerner is the civil engineer on the project and has been working on it since the beginning. He said the last project went in front of the Hearing Examiner. He worked with staff the first time on the conditional rezone and felt it was a good project. He reviewed the past project and said staff told them they wanted an R-R zone. The property was planned residential on the maps and the roads were going to be connected to the subdivision to the west and the east and then out to the road according to what the Highway District requested. After the denial, they started over again. Mr. Kerner said Black Canyon Irrigation restricts the water rights and will only give a certain amount and reserve the rest for other people. They will have a convenient spot for the bus stop which will be by the mailbox cluster.

MOTION: Commissioner Sheets motioned to grant 3 more minutes of testimony to Derritt Kerner, seconded by Commissioner Williamson. Voice vote, motion carried.

Mr. Kerner continued: He said they will be piping in pressurized irrigation with a pump station located in the southwest corner along with direct access to the road for one existing residence. They will provide one driveway/access to the road for rest of the subdivision. He showed the laterals on the map. They would like to relocate one large lateral on the property with Black Canyon Irrigation District's approval and the other straddles the property line. They would like to pipe both. However, the Irrigation District's policy is that although they want the lateral that straddles the property line piped, Mr. Kerner's project

will have to design and pay for 60% of the costs. When the land is developed on the other side, those funds will be used to help pay for the piping of the lateral. He thinks the pivot existed before this owner bought the property. Mr. Kerner said the property owner would sell the property to anyone for a certain price but the decision to develop would generate more revenue than someone using it for Ag would pay. It is steep terrain but the pivot flexes over the terrain. The area with over 15% slope has been blocked out from development.
Commissioner Williamson asked about irrigation rights versus the annual water allotment that can vary according to snowfall and rainfall. There was discussion about the Irrigation District changing the amount of their water rights. Mr. Kerner believes the Irrigation District would take the water rights back for the road acreage. Planning Official Dan Lister clarified that State Law requires them to determine water supply and at the time of platting, they have to show how they are using it or if they are giving it up. Because of the change in land use, the Irrigation District can change the amount of water rights they provide.

DECLARATION: Chairman Sturgill asked Commissioner Williamson if he had a relationship with the prior witness (Mr. Kerner). Commissioner Williamson said they were in high school together and they had not spoken for a long time. Commissioner Williamson said they have not spoken about the case and his personal relationship with Mr. Kerner would not influence his ability to make an unbiased decision in this case.

Jill Jenkins – IN OPPOSITION – 8251 Edna Lane Middleton ID 83644

Ms. Jenkins is a member of Western Land LLC with her son and owns a small ranch in the northeast corner next to this development. Their small ranch is irrigated with agricultural ground water rights and BCI has an easement through their property for the Willowcreek pump lateral which will be hard piped. They don't have surface water rights from the canal but she said it is necessary to keep the irrigation water running in an open ditch to recharge the ground water which they rely on. The irrigation of this agricultural property of 90 acres also contributes to the recharge of the ground water. She believes the sprinklers running on the individual lots would not be enough to recharge the system. Having groundwater rights allows them to start their irrigation season about a month sooner than the Black Canyon Irrigation ditch users can and she thinks residents may think they can use their household use wells for irrigation further depleting the ground water. She said the Canyon County Commissioners recently asked for a deeper community well in a development south of Lake Lowell because of concerns of groundwater resources and wells drying up. That is a similar story she is hearing regarding other developments around the valley and should be cause for great concern. She is also concerned about cross contamination from the sewer leach fields. She discussed minimum lot size versus average lot size. Ms. Jenkins discussed Middle Creek Elementary school overcrowding and their lack of classroom space. She said the Commissioners were previously notified about the school overcrowding issue. The traffic has also become impossible between Star and Middleton because of all the housing developments with no infrastructure improvements. The developer's family bought the property knowing it was zoned for agricultural use. The reason she and all her neighbors bought their properties was because they were zoned for agricultural use, not rural residential or residential. She said plan growth in areas that have little agricultural uses and are close to infrastructure and city services. Eventually, she said, we will have no more land that is able can sustain or support agricultural uses. Then we will all lose. She also expressed concerns that they have no sidewalks or places for children except the entire back of her property which is a canal easement.

Allen Colson – IN OPPOSITION – 8802 Purple Sage Road Middleton ID 83644

Mr. Colson lives in the southwest corner and is not right on the edge of the property. He has been there for 20 years and he stated the pivot was there before he was there. He said it is prime agricultural land and has been farmed every year since he has been there. They grow quite a harvest off of it all the time.

It was his understanding that in the last hearing, the County Commissioners asked for a minimum of 2 acre lots, not an average. During the community meeting, it was brought up if the applicant would increase the lots (size), we might be amenable to it, The applicant said they also could do high density and then what would you get? He felt like that was a threat. Ag land use is a big issue right now. Mr. Colson said you take out these 90 acres and that corn goes to dairies to feed livestock. He raises horses and his 30-foot horse trailer has come close to being hit on Purple Sage Road trying to get into his own driveway because of the traffic that is already there. They are talking about a nice school bus stop for their development; what about the bus stop for his 6 year old who is down the road (from the development)? They did have community meetings but he said they never asked if we were for or against the project. When they claimed there was no opposition, Mr. Colson said they were never asked if they were for or against the project; they just went to the meetings and gathered the information. With regards to the Black Canyon Irrigation District change, he tried to contact the Black Canyon Irrigation District and they would not confirm or deny that the change was resubmitted.

Debbie Millsaps – IN OPPOSITION – 8770 Purple Sage Road Middleton ID 83644

Ms. Millsaps lives on the property just west of the line and she wanted to discuss infrastructure. She is also an employee of the school district. She described the overcrowding in the schools and how classrooms have taken over all available space including the staff lounge and the library. The computer teacher and music teacher push carts around because they have lost their rooms to classrooms. She has a microwave in her office so employees can heat up their lunches there. They still don't have another school. She said the statement was if we bring more people in, maybe we will get a bond passed but even if a bond is passed, that is many years out. As the registrar for the school, she knows that many of the families who are coming into the area are from out of state: California, Oregon and Washington. The majority of these homes will be occupied by families with children entering our schools. She said at 134% over capacity now, we don't have the infrastructure to support what we need to provide to the families who are moving here. Ms. Millsaps said the pivot was there before 2001 when she moved into her home. She is also concerned about homes with wells going in by her home; a number of the wells in the area have been re-dug because of the water table.

Commissioner Nevill brought up that a recent school bond measure on the ballot which failed and asked will the school district try again? She believes they will but does not know when. She said local election turnout was very low last time.

Shannon Colson – IN OPPOSITION – 8802 Purple Sage Road Middleton ID 83644

Ms. Colson spoke about her daughter having to stand out at the bus stop when it is pitch dark and cars are racing by. She is glad the proposed development will have a safe bus stop; she wishes they did. She said there was discussion about a traffic intersection with a grade of "F"; she assumes that is the intersection of Purple Sage and Lansing Lane. There have been at least 3 fatal accidents at that intersection in the last two years. She said Mr. Andelin said there was a shortage of homes: that morning there were currently 216 homes for sale in Middleton so she didn't see how that was a shortage. She said Ms. Millsaps forgot to mention there is no more library at the elementary school: the library comes around the school on a cart. She didn't think that these would be affordable homes, as homes on 2 acres right now are selling for over a million dollars. There are already a number of empty lots waiting (for development) and are going to end up attending Mill Creek Elementary. She listed some developments in the area that were currently in the process of being developed.

Derritt Kerner – Applicant (Representative) – REBUTTAL – 9175 W. Black Eagle Drive Boise ID 83705

Mr. Kerner is the civil engineer on this project. He spoke about open pipe vs. open ditch for the canal. They are required to pipe ditches and he is guessing it is because of less liability and less loss of water. He acknowledged that charging the aquifer is a concern but they want it piped because they don't want to

lose that water. They are not in a nitrate priority area and as long as they can demonstrate wells can be 100 feet apart from neighbors' as well as your own, it is approvable. 2-acre lots are not a problem because there is plenty of room. There will be no sidewalks because people will want the rural feel with a 2-acre lot. He expects people to have enough room on their own with 2-acres and won't want a city park in the subdivision. Most of the lots are 2-acres; the smallest lot is 1.65 acres which is an existing residence. They are above the 2-acre average minimum lot size which is what the code says. Mr. Kerner said they are dedicating 50 feet of right of way to the Highway District. Mr. Kerner said development is the only way the Highway District can get free land dedications. It means the Highway District doesn't have to buy land and it will allow them to build roads wider in the future. He said the Highway District is not planning on building anything in the near future. Bonds need to be passed for schools and that is a bigger issue than one project. The Legislature needs to help out with bonds. He said rural lots are very desirable and are getting harder and harder to find. Cities only have the smaller lots and the only way you can get 1 or 2-acre lot is in the County setting. 2-acre lots are going to cost more than a 1-acre lot. Commissioner Williamson asked about the 40-foot pull out for the bus stop and putting it in a different location. Will there be a sidewalk or an enclosure? Mr. Kerner said right now it is just a large concrete pull out by the mailbox cluster and it works well where they have it. He thinks an enclosure is a good idea. Commissioner Nevill confirmed that the bus stop is going to be inside the subdivision and said most buses will not go inside a subdivision unless some very specific conditions are met. He said the bus is going to want to stop in a pull out on Purple Sage. Mr. Kerner said he will have to work with the school on that issue.

MOTION: Commissioner Nevill moved to close public testimony on Case RZ2022-0011 & SD2022-0034 seconded by Commissioner Williamson. Voice vote, motion carried.

DELIBERATION:

Commissioner Nevill said he thinks they still have problems with this. He understands that the Board of County Commissioners said come back with a rezone and it might be considered but they aren't bound to that. Commissioner Nevill said with regards to Finding of Fact B: is this a more appropriate use? The folks in the area say no; agriculture is the more appropriate use. Finding of Facts C: is this compatible with the area? Testimony from those in the area say it is not compatible with their lifestyles. Finding of Facts H is a significant one: Essential Services. They received a letter from the Middleton School District saying Mill Creek is over capacity already. He believes this is an okay plan but this development is ahead of its time and other impacted entities aren't ready for this growth. He would say they have to wait.
Commissioner Williamson asked Planning Official Dan Lister about Finding of Facts H: to get approval they would have to work with the school district to mitigate the issue; maybe push the school to for bond? How would they phrase that? Planning Official Dan Lister said they would put on the denial to work with that agency to see if they can find a solution or wait for the area to change. Commissioner Williamson said Condition C says other people's lifestyles are impacted but he believes they have to find a balance between what the property owners can do and what the neighbors want. He can see it on the map as a transition area.
Commissioner Nevill said bringing in more people isn't the solution. More expensive homes bring in people without kids in school and they don't pass bonds. Commissioner Williamson agreed with Commissioner Nevill's statements.
Commissioner Sheets brought up Finding of Fact G: traffic impacts to the area. He agrees that Canyon Highway District #4 doesn't require a traffic impact study because of the number of lots but stated that traffic impact fees won't go directly to the deficient intersection in the area. He felt that mitigation is questionable as to when and if it is going to happen. He feels that finding would not be met.
Commissioner Villafana stated he believes it will be inevitable that the surroundings will be residential at some point but the country roads are becoming increasingly dangerous, especially from March to

October when there is a lot of farming is going on. The roads weren't built to handle a lot of traffic. They are narrow. He does feel it is their responsibility to look at that and ask if the infrastructure is there yet and it's absolutely not. He doesn't feel it's right, being in favor of something like this, knowing the current conditions out there. The school is important but the infrastructure can't handle the additional traffic. Commissioner Sheets offered the following changes to gain approval: when the traffic facilities are adequate to handle these impacts and the school facilities are able to accept additional students and not be over capacity.

MOTION: Commissioner Williamson moved to deny Case RZ2022-0011, including modified Findings of Facts, Conclusions of Law and Conditions of Approval, forwarding the recommendation to the Board of Canyon County Commissioners. Motion seconded by Commissioner Nevill. Roll call vote: 6 in favor 0 opposed, motion passed.

MOTION: Commissioner Nevill moved to deny Case SD2022-0034 including modified Findings of Facts, Conclusions of Law and Conditions of Approval, forwarding the recommendation to the Board of Canyon County Commissioners. Motion seconded by Commissioner Williamson. Roll call vote: 6 in favor, 0 opposed, motion passed.

APPROVAL OF MINUTES:

MOTION: Commissioner Nevill moved to approve the minutes from 12/1/2022, seconded by Commissioner Amarel. Voice vote, motion carried.

ELECTION OF PLANNING AND ZONING COMMISSION OFFICERS:

MOTION: Commissioner Nevill nominated Robert Sturgill for Chairman. Chairman Sturgill accepted the nomination. Roll call vote: 6 in favor, 0 in opposition. Chairman Sturgill was voted Commission Chairman.

MOTION: Commissioner Williamson nominated himself for Vice Chairman.

MOTION: Commissioner Sheets nominated himself for Vice Chairman.

Roll call vote: 4 votes in favor of Commissioner Sheets, 2 votes in favor of Commissioner Williamson. Commissioner Sheets was voted Commission Vice Chairman.

MOTION: Commissioner Nevill nominated Commissioner Williamson for Secretary. Commissioner Williamson refused the nomination.

MOTION: Commissioner Nevill nominated Commissioner Villafana for Secretary. Commissioner Villafana accepted the nomination.

MOTION: Commissioner Williamson nominated Commissioner Amarel for Secretary. Commissioner Amarel refused the nomination.

MOTION: Commissioner Sheets nominated Commissioner Nevill for Secretary. Commissioner Nevill refused the nomination.

Roll call vote for Commissioner Villafana as Secretary: 6 in favor, 0 in opposition. Commissioner Villafana was voted Commission Secretary.

DIRECTOR, PLANNER, COMMISSION COMMENTS:

Planning Official Dan Lister thanked the Commissioners for training suggestions and said they would continue to accept any ideas if the Commissioners had them. There was discussion about the meeting held by the Idaho Department of Water Resources and training items that may come out of that

meeting. There is also a training being planned for the Commission by the Canyon Highway District #4.

ADJOURNMENT:

MOTION: Commissioner Sheets moved to adjourn, seconded by Commissioner Williamson. Voice vote, motion carried. Hearing adjourned at 10:22 pm.

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

Approved this 2nd day of February, 2023

Brian Sheets, Acting Chairman

ATTEST

Bonnie Puleo

Bonnie Puleo, Recording Secretary

CANYON COUNTY PLANNING & ZONING COMMISSION
MINUTES OF REGULAR MEETING HELD
Thursday, January 19, 2023
6:30 P.M.

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

Commissioners Present :

Robert Sturgill, Chairman
Brian Sheets, Vice Chairman
Patrick Williamson, Commissioner
Ron Amarel, Commissioner
Harold Nevill, Commissioner
Miguel Villafana, Commissioner

Staff Members Present:

Sabrina Minshall, Director of Development Services
Dan Lister, Planning Official
Samantha Hammond, Planner
Madelyn Vander Veen, Planner
Michelle Barron, Planner
Bonnie Puleo, Recording Secretary

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

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

MOTION: Commissioner Nevill moved to approve & sign the revised Findings of Facts, Conclusions of Law and Conditions of Approval for Case CU2022-0004/Michael Rawden. Motion seconded by Commissioner Sheets. Voice vote, motion carried.

MOTION: Commissioner Nevill moved to approve & sign the revised Findings of Facts, Conclusions of Law and Conditions of Approval for Case RZ2022-0011 & SD2022-0034/Sierra Vista Properties-Mint Farms Estates. Motion seconded by Commissioner Williamson. Voice vote, motion carried.

- **Case No. CR2022-0026/Stacy Woodruff**: The applicant, Stacy Woodruff, is requesting a Conditional Rezone of parcel R38194010, approximately 3.98 acres, from an "A" (Agricultural) zone to a CR-R-1 (Conditional Rezone - Single-Family Residential) zone with the intent to split the lot into three residential lots. The subject property is located at 24822 Harvey Rd, Caldwell, ID; also referenced as a portion of the NW¼ of Section 35, T5N, R3W, Canyon County, Idaho.

Declaration: Commissioner Amarel disclosed that he knew the applicant, Stacy Woodruff and has worked with him in the past but has not discussed this case with him. When asked by Commissioner Sheets if his relationship with the applicant would prevent him from making an unbiased decision in this case, he said no.

Planner Samantha Hammond reviewed the Staff report for the record.

Chairman Robert Sturgill affirmed the witnesses to testify.

Testimony:

Stacy Woodruff – Applicant (Representative) – IN FAVOR – 24856 Harvey Road Caldwell ID 83607
Mr. Woodruff wanted to provide his personal story behind the parcel of land. Mr. Woodruff, his two daughters and their husbands bought the parcel together after looking at the 2020 and 2030 Comprehensive Plan, anticipating they could split it into a total of three parcels. The house on the property was built in 1971 which they have remodeled and he said their intentions are in line with what the planner stated. They will follow all agency requirements. Their neighborhood meeting did not have a big turnout but he personally went around to most of the neighbors to get to know them. Most of the neighbors have been appreciative as the property was a wreck when they purchased it and they have spent time cleaning it up. He wanted to clarify that they were not part of that prior parcel split; they bought the parcel as the 3.9 acre parcel. Commissioner Villafana asked about the small triangle of land at the top of the parcel and if he maintained it. Mr. Woodruff stated they thought of approaching the landowner of that piece and offering to buy it; there is no easement for it. Mr. Woodruff said it is kind of 'no man's land' and the person who owned it before used it for pasture/grazing. Commissioner Villafana said if they don't want to sell it, it would be important to maintain it as it could be a fire hazard. Commissioner Williamson asked why the land was considered "not farmable". Mr. Woodruff said that "unfarmable" might be a bit of an overstatement; he clarified that they wouldn't be able to make any money off it. Commissioner Nevill asked about the piping of the ditch and if they had talked to the Irrigation District about it. Mr. Woodruff said no, they hadn't but they will. He said it is a 3-foot wide canal that runs through the south of the property with an easement on both sides of it. He thinks the Irrigation District may be more concerned about the canal where it goes under Harvey Road. Commissioner Nevill felt they might be more concerned about piping the ditch to protect it and so that kids don't fall in. Commissioner Nevill asked about the firefighting plan for the three houses. Mr. Woodruff said before they can get a building permit, they will have to talk to the Fire Department and see what is required. He doesn't know what they will want but will align with them on it. Mr. Woodruff said they will also have plenty of space on the third parcel for a fire truck to be able to turn around. When asked, Mr. Woodruff said they do not have any surface water rights but they do have an irrigation well with ground water rights for the parcels. They will make sure they have an agreement in place to handle those water rights. The land will be used primarily for pasture for animals.

MOTION: Commissioner Nevill moved to close public testimony on Case CR2022-0026 seconded by Commissioner Sheets. Voice vote, motion carried.

DELIBERATION:
Commissioner Sheets said after reviewing the application and hearing the testimony, he thinks the real issue is will two additional homes on that property be more appropriate? Based on the code, the Comprehensive Plan and the character of the surrounding area, he is not opposed to having two additional homes on that parcel.
Commissioner Nevill said when he initially heard the staff report, because he has seen too many of these, it is an area that should be platted because it is going into the middle of what will become a future residential area. But after hearing testimony from the applicant, he believes Mr. Woodruff has thought it through and has plans for everything Commissioner Nevill would be concerned about so he is in support of the case.

MOTION: Commissioner Williamson moved to approve Case CR2022-0026 including the Findings of Facts, Conclusions of Law and Conditions of Approval, forwarding the recommendation to the Board of

Canyon County Commissioners. Motion seconded by Commissioner Villafana. Roll call vote: 6 in favor, 0 opposed, motion passed.

- **Case No. CU2022-0038/Manuel Gutierrez**: The applicant, Manuel Gutierrez, is requesting a conditional use permit for a Staging Area located on parcel R30792. The requested use includes storage of landscaping materials and equipment for use off-site. The applicant has proposed 8 employees. The parcel is zoned "A" (Agricultural). The subject property is located at 17087 N Franklin Blvd, Nampa; also referenced as a portion of the SE¼ of Section 5, Township 2N, Range 1W; BM; Canyon County, Idaho.

Planner Madelyn Vander Veen reviewed the Staff report for the record including one late exhibits.

Chairman Robert Sturgill entered the late exhibit into the record and affirmed the witnesses to testify.

Testimony:

Manuel Gutierrez – Applicant (Representative) – IN FAVOR – 17087 N. Franklin Blvd Nampa ID 83688
Mr. Gutierrez is the owner of the property and is also the son of the owner of the business. He is there on behalf of the business and said he is hoping to be able to stage in that location. This is not a place of business, it is a place of storage. The employees show up in the morning and go. They store their plants and trees for the (landscaping) business in the back of the property and they try to keep it neat and respectful to neighbors and traffic passing by. The property is covered by trees. They have some small machinery; mini excavators and skid-steers. Regarding the pallets, Mr. Gutierrez said they come and go. They are not there anymore. They use them for the landscaping business to move blocks and plants. He said usually there aren't that many. They haven't had any complaints from their neighbors and have even done landscaping work and snow removal for them. They have also repaired Amy Lane, the road they all use and have filled the divots with road mix to keep it clean and level as a favor to their neighbors. Commissioner Sheets clarified with the applicant that he owns the property. Commissioner Nevill said staff proposed eight conditions and asked if he agreed with all eight. Mr. Gutierrez replied, yes. He was asked if this conditional use permit was not approved, would it shut down the business. Mr. Gutierrez said no, but they would need to find another place to use as a staging area. He said he hopes they don't have to. Commissioner Williamson said he wanted to propose a condition to Mr. Gutierrez: if there is a change in the owner of the business, is he okay with having the conditional use permit expire? Mr. Gutierrez said yes, if they sold the property or business, he would agree that it should expire. He said they moved there at the end of 2020. He was asked if he has trucks delivering materials there and Mr. Gutierrez said they go out and get the materials; there are no deliveries to the property. Chairman Sturgill asked Mr. Gutierrez about some items in the photographs and if they are used for the business. Mr. Gutierrez said yes, they were used for the business and explained what the items were. Commissioner Amarel asked about the pallets. He asked if Mr. Gutierrez had a plan for tidiness of the property? Mr. Gutierrez said that pallets come and go; some are rented and the business returns those. The pots shown in the photographs are used for their plants.

Elbia Gomez – IN FAVOR – 17083 Amy Lane Nampa ID 83687
Ms. Gomez lives next door to Mr. Gutierrez. She said she has never had any problems with them. She is thankful for them, especially when it snows. She has a small car and they plow her driveway and all the other neighbors' driveways with their trucks and are very helpful. She said that is why she is in favor of this; when driving in and out, it gets pretty bad and they fix it with their equipment. She reiterated that she is right next door and has had no problems with them as her neighbors.

Bill Plumb – IN OPPOSITION – 17154 N. Lochsa Nampa ID 83087

Mr. Plumb showed where his house was on the map. He said he is inside the city limits of Nampa and not in the County. He said contrary to how this goes, he wants Mr. Gutierrez to be successful. When this started, the Fire Department sent out a notice in June of 2022, about the staging area and 8 employees. The hours will be 7 am to 7 pm. He said what they started out with is not what they ended up with now; it's something totally different. He had taken some photos of the property and provided those as an exhibit for staff. The photo was taken a little back on Franklin. He said the pallets come and go. His significant concern is for the community. The Sheriff's Department has been called at least 5 times on that property; four times by Mr. Plumb himself because of the noise. Most of the time the noise is loud music; it starts in the morning and goes all day long. It is so loud he can't close his doors and drown it out. He would like to solve the noise issue so they can sit out on their back patio and maybe/maybe not hear the music. He began documenting the number of times he has asked them to turn it down. He said there is no noise ordinance in Canyon County. He said you have until 11:00 pm to make all the noise you want. In the City of Nampa, it is 10 pm. The total lack of concern for the surrounding community is a concern; if the business is allowed to come in now there are employees and equipment. He said his last option is to say he doesn't want it (the staging business). He wants the noise to stop. He said the noise is generally after work hours and is not related to the business per say but it is the business. If they have no respect, up until a few days ago, with this permit approval process coming up and they weren't taking into consideration their neighbors, he has a concern how this will play out in the future. He understands Mr. Gutierrez is a great neighbor and he said we need people like that but he has a right to peace and quiet and the business is disrupting it badly. Mr. Plumb spoke to Mr. Gutierrez the first time in May of last year and has left several messages since then. He no longer bothers and now calls the Sheriff. They can't do anything unless he was willing to charge a misdemeanor and he is not willing to do that, but something has to give. He said it is just music from their garage. There are times when it is the equipment on the weekends. He said if this passes without something to protect the neighborhood, then they don't have to worry about making noise. They can run anything they want from 7 am to 7 pm and there is no recourse. If it is a business, it shouldn't disrupt the neighborhood. When asked about the operating hours for the conditional use permit, he said it would be more acceptable to end it at 5 pm for the overall equipment noise. Commissioner Nevill said this is a staging area, not a repair yard. They have to apply for something different for a repair shop; it is just supposed to be for parking. Planning Official Dan Lister clarified that the code allows vehicle maintenance of the homeowner's or immediate family members' own vehicles and explained the difference between a contractor shop and a staging area. Because it is an Ag area, the landscaping business is allowed. They do not have any definition in the code for a landscaping business. Chairman Sturgill clarified with Mr. Lister that they can craft the conditions of approval for the staging area only not the landscaping business or the single family residence. Commissioner Villafana said the landscaping business can run 7 days a week; the change to the hours of operation would only apply to the staging area. The landscaping business can run until they start using it for other uses (example: retail) and then it would require a conditional use permit. A landscaping business required a conditional use permit before 2012 but now it is an allowed use. Chairman Sturgill asked if there were any other concerns about the use of the property and Mr. Plumb requested that they clean up the property a little bit or organize it better.

Manuel Gutierrez – Applicant (Representative) – REBUTTAL – 17087 N. Franklin Blvd Nampa ID 83688

Mr. Gutierrez said he understood where Mr. Plumb was coming from but he felt like the noise complaint was irrelevant to what they were speaking about that night. The music could be coming from other people in the house or anywhere else. He said that Mr. Plumb was correct; the police have come multiple times to the property. They have spoken to the police and they are fine with the music. The police agreed that there is nothing wrong with it and they are free to express noise as long as it is not after 10 or 10:30 pm.

They have not broken that rule. They listen to music in their backyard. There have been times that the police have come and the noise has not been coming them; their neighbors play music as well. They live in an agricultural area and there is animal noise and people mowing lawns. They do sometimes operate their machinery and move trees on the weekend but they do it at a respectful time; not early in the morning or late at night. They are not trying to cause a disturbance. He agrees with Mr. Plumb on the music; they are not trying to be disrespectful. It is not disrespectful music. It's a big area and sounds echo. Mr. Gutierrez feels it is irrelevant to the business. He said they do work on equipment in the garage; it is him or his father replacing tires or working on a lawnmower. They don't contract with outside people and it is a very small space. He feels they are keeping the property organized; their trucks and trees are in line. They have fencing all around the property and it is lined with tall trees. It is distant from the road. Even their pile of wood is stacked. They try to keep it up and make it presentable. Commissioner Nevill asked if the music was related to the business or to the family living there. Mr. Gutierrez said it is related to the people who are living in the home. He and the employees are gone during the day. No employees live there. Commissioner Nevill said one of the suggestions was to end the day at 5 pm. Mr. Gutierrez said changing the hours to 5 pm would be would be hard to do because it would be a much earlier end to the day for them. Even compromising at 6 pm, it would be hard during the summer because it doesn't get dark until 10 pm. He agrees with 7 pm because that is the hours for their employees. Commissioner Williamson asked if this would be the only staging area and Mr. Gutierrez said yes. There was some discussion about the definition of the staging area versus what the normal landscaping business would allow. Mr. Gutierrez said he understood that they couldn't stage trees or plants over the weekend in the staging area. Mr. Gutierrez, in response to some of the photos shown, said the property looks different now. He said the complaints were only about the music and it was only one person filing the complaints. It was the same police officer who came to their property to discuss the issue most times and he said if they had to lower it by law, they would. But the police officer said he was just delivering the message that they received the complaint and there was nothing he could do. It is something they have always done (playing the music) and they have never had any complaints in the past. It's nothing obnoxious and it echoes. The music is coming from the household: they have someone living with them who loves music. He said again that he feels like the music has nothing to do with the business.

MOTION: Commissioner Williamson moved to close public testimony on Case CU2022-0038 seconded by Commissioner Nevill. Voice vote, motion carried.

DELIBERATION:

Commissioner Nevill's concern was that he didn't want to put them out of business but he doesn't know what to do about this. He said he doesn't think they can do anything about the noise as it was not related to the business, it was from the family. He doesn't think they can put conditions on the noise, as it is from a single family dwelling. They could condition the hours of operation for things related to the staging area. He said he thinks they should decide whether they are going to add the condition that once the business is sold, the conditional use permit expires. On condition #4, he would be willing to change the time.

Commissioner Villafana would be willing to change the hours on condition #4 but would want it to be seasonal. Winter and Spring would be 7 am – 6 pm; Summer and Fall would be 7 am to 7 pm.

Commissioner Amarel said he understands they can't limit personal music; but the business says they want to be friendly and a good neighbor but they aren't willing to turn down the music. That doesn't seem to be an option.

Commissioner Sheets said this is a unique piece of the county. It is an enclave and directly abutting a residential area. When he looks at the code he asks if it would it be injurious to the other property in the immediate vicinity or negatively change the character of the area. The code is not asking if it would only injurious to the County area. They could impose some conditions to remedy some of those injuries. He

understands the music issue and that it's a private residence. If the music is related to the business or being played by employees, they can condition that. If it is related to the residence, that would be a nuisance claim. He would be in support of reducing some of the injuries by reducing the hours and limiting the music related to the business. He would have to think about how to phrase that. Planning Official Dan Lister reminded the Commissioners that they are talking about the staging area; they can't condition the landscaping business or the house. It would only be applicable to the staging area. There was discussion about decibel levels, what would be measurable and how that would be enforced. Commissioner Villafana suggested Nov 1 – March 1: 7 am to 6 pm and March 1 to November 1, 7 am to 7 pm. There was discussion about using daylight savings time versus specific months. Commissioner Williamson said he agreed with Commissioner Amarel. The applicant is being an exceptional neighbor with those he shares the street with, but when a neighbor asks to turn the music down, how that is not possible. He does think they should add a condition #9; if the ownership of the property or business changes, the conditional use permit would expire. He also agreed on the changes to condition #4 (hours of operation). There was extensive discussion regarding the conditions imposed on the staging area and how that overlaps with the running of an allowed business in an agricultural zone which also has a residence onsite. Chairman Sturgill said based on the existing authorized uses, it was already having a negative impact on the immediate vicinity. There is an ongoing compliance issue with the existing uses and the applicant has indicated not granting the conditional use permit would not destroy the business. Under those circumstances, he is not inclined to increase the uses and create any future negative impact on the immediate vicinity.

MOTION: Commissioner Nevill moved to approve Case CU2022-0038 including modified Findings of Facts, Conclusions of Law and Conditions of Approval. Motion seconded by Commissioner Villafana. Roll call vote: 3 in favor, 3 opposed, motion failed.

MOTION: Commissioner Sheets made a motion to table this item for conclusion after the last agenda item. Seconded by Commissioner Nevill. Voice vote, motion passed.

- **Case No. CU2022-0037/Kevin Roberts**: The applicant, Kevin Roberts, is requesting a Conditional Use Permit to allow a Dog Kennel Use within an "A" (agricultural) zone. The dog kennel will have the ability to house a maximum of 30 dogs at a time. The subject property is located at 15368 Mink Rd., Caldwell, ID; also referenced as a portion of the NE¼ of Section 04, T4N, R3W, Canyon County, Idaho.

Planner Samantha Hammond reviewed the Staff report for the record.

Chairman Robert Sturgill affirmed the witnesses to testify.

Testimony:

Kevin Roberts – Applicant (Representative) – IN FAVOR – 15368 Mink Road Caldwell ID 83605
Mr. Roberts and his wife both grew up in the Middleton and Caldwell area. He was excited when they got the property for a dog boarding facility. They dropped down from 40 to 30 dogs because they felt the 3-foot by 10-foot kennels weren't enough so they amended it to 30 dogs and are using 4-foot by 12-foot kennels. The dog runs have guillotine-style doors on a pulley system so the dogs can go in and out. He went door to door to speak to all the neighbors about this project. When they talked to the neighbors, the main concern was dogs barking so the foam was an idea to mitigate the noise. The property is only

about 50 feet from the freeway. They are starting with R21 spray foam or padded insulation which should reduce the noise, especially with the freeway noise. If there is a noise issue after that, they will get additional studio foam and put that in the kennels. The kennel floors will be sloped concrete with a trough system that runs through it. That trough system will lead to a separate animal waste septic system at it will be pressure washed twice a day. Any other waste found will be picked up. He showed an aerial photo of the property and indicated where the kennel would be located. He said they may put slats in the back fence to mitigate the view of the neighbor behind them. They want the business to look professional. When asked what the need for a kennel was, he said they also train personal protection and police dogs so they have always been around dogs and in that world. When they moved to this property, he couldn't find a place to board his dogs in Canyon County and all boarding facilities were booked out 6 months. They saw the need. He said this is for people going on vacation, moving or who have visitors allergic to dogs. Commissioner Nevill asked if he had reviewed the conditions of approval; Mr. Roberts said he read them and had a question about condition 9. There was discussion about condition 9 and if the conditional use permit could be transferrable if someone wanted to buy the property and the business. Commissioner Sheets asked if there would be any dog breeding and Mr. Roberts said no. They might add dog training but there will be no dog breeding. Commissioner Williamson asked about the insulation and if would be the same in the walls and the ceiling. Mr. Roberts said he was not the builder but he believed the insulation would be in both the walls and the ceiling. He also said that there would be a separate heating and air conditioning system so the kennel would be a temperature controlled environment. Mr. Roberts said they don't anticipate that the freeway noise will disturb the dogs. The hours of operation would be 10 am to 5 pm for drop off and pick up. The 24 hour operation is so he and his wife can clean up and taking care of the dogs after hours. The dogs will be inside by 10 pm. Commissioner Nevill about the hours of operation if there is an emergency: should they add some verbiage to the conditions regarding that? Mr. Roberts said that he felt that scenario was covered by the fact that it stated employees would be on call 24/7. Commissioner Nevill felt putting language that limited customers to only 10 am to 5 pm could pose a problem if customers come with an emergency drop off. Commissioner Sheets asked if the 6-foot fence alongside the property and the freeway would be tall enough. Mr. Roberts said he believed so as not many dogs can jump a 6-foot fence. They will be having clients fill out questionnaires and if the dog is one that jumps fences, they will be brought outside with an employee. Mr. Roberts showed the photo of the property and showed how the 6 foot fencing will be around the part of the property that houses the dogs. Commissioner Amarel asked about the number of employees Mr. Roberts would have. Mr. Roberts said at first, there will just be him and his wife, but they plan on hiring more people as they bring in more dogs. Commissioner Amarel asked if there was an existing fence separating the property from the freeway and Mr. Roberts confirmed that there was a 6-foot fence in a ditch next to the freeway.

MOTION: Commissioner Sheets moved to close public testimony on Case CU2022-0037 seconded by Commissioner Williamson. Voice vote, motion carried.

DELIBERATION: Commissioner Nevill suggested they change condition #4 to "all fencing around the facility" and condition #6 add "except in an emergency". On condition #9, he suggested they strike "individual" from the condition. Commissioner Williamson said he thought they would need to come in for an amendment to the conditional use permit if it was sold. Commissioner Sheets said he found that this area was more conducive for a dog kennel as it is next to a freeway.

MOTION: Commissioner Nevill moved to approve Case CU2022-0037 including modified Findings of Facts, Conclusions of Law and Conditions of Approval. Motion seconded by Commissioner Williamson. Roll call vote: 6 in favor, 0 opposed, motion passed.

REOPENED: CASE CU2022-0038 / Manual Gutierrez

Chairman Sturgill opened up the floor for further discussion on this item. Commissioner Sheets asked how this could be potentially injurious to the area. Chairman Sturgill explained his concern was that when the applicant was told that existing uses were injurious to the neighbors, he expressed very little consideration to make modifications to the behavior under the existing uses to accommodate the neighbors' concerns. By increasing the scope of the allowed uses, they might be potentially pushing the envelope and increase the impact on adjacent properties. Commissioner Nevill asked staff, given the enforcement concerns expressed by the Director of Development Services, does it help to give the intent about why he is changing the condition? Director Minshall said the definitions written in the code is what makes it challenging. She said giving intent is always helpful in creating the record as long as they stick to what they can use to make decision criteria. Intent isn't going to help for enforcement purposes because it has to be whatever is specifically in the code but it can help as part of the findings for the decision if there is an appeal to the Board. There was additional discussion with Planning Official Dan Lister about the mitigation of impacts and adding special conditions. He said the focus should be on the conditional use permit; not the landscaping business or the single family dwelling playing the music. Commissioner Nevill said he didn't think they could mitigate the possible damage. Any of the ways they were crafting conditions for this conditional use permit would not provide protection for the neighbors because they can't do anything about the landscaping business, and single family residence was not in their purview. He was not sure he was able to vote to approve it.

Commissioner Sheets said he would have liked to see the code complaint because he felt it could have helped inform his decision to see what the issues were. He feels the overlay between the landscaping business and the staging area is razor thin. What part of the activity is related to the landscaping business and what is part is the staging business is so fuzzy that it can't be enforced. Without an enforcement mechanism, it has convinced him to change his vote.

Commissioner Amarel said the only thing they can do is limit the time, but the time is for the business and doesn't have anything to do with the staging. He clarified that he meant they could limit the time for access to the facility. Planning Official Dan Lister said the original complaint was in reference to two sheds that were built on the property without building permits and from that, they found the staging area issue.

Commissioner Villafana outlined the difficulties with separating the differences between the business storing items versus the items contained in a staging area.

Planning Official Dan Lister gave some examples of what staging areas have been in past hearings.

Commissioner Williamson wanted to state that it might have been proven that complaints were being made about noise but it wasn't proven that the business associated with the property was making the noise.

Commissioner Villafana wanted to state that even though the business hadn't been operating out of the property for very long, it is an agricultural area. The residential area approached the agricultural area; the Ag zone was there first and the landscaping business is allowed. Even though the residential area has moved in and it is injurious to them, they are operating a business that is allowed. The residential area moved into the Ag area and he felt they needed to think about that more. It is injurious to the Ag zone when residential areas move in and try to change the Agricultural area to try to suit them.

Commissioner Amarel agreed with what Commissioner Villafana said but he felt it didn't fit this case.

Commissioner Sheets felt the applicant didn't need this and without mechanisms to enforce it, he didn't feel it was necessary.

MOTION: Commissioner Nevill moved to deny Case CU2022-0038 including revised Findings of Facts, Conclusions of Law and Conditions of Approval. Motion seconded by Commissioner Amarel. Roll call vote: 5 in favor, 1 opposed, motion passed.

APPROVAL OF MINUTES:

MOTION: Commissioner Nevill moved to approve the minutes from 12/15/2022, seconded by Commissioner Villafana. Voice vote, motion carried.

DIRECTOR, PLANNER, COMMISSION COMMENTS:

Director Minshall discussed the first workshop she had with the Board of County Commissioners. The first thing the Board is interested in is the schedule and process for land use applications and hearings. They discussed concerns, solutions and using the Planning and Zoning Commission at a higher level as a screening body. She will be meeting with the new Chief Operation Officer to find out if they are going to formalize those procedures with the Legal Department and when the processes will change. She said the Development Services Department has already made some internal process changes. They had some good discussions with the Highway District staff about staff report information and turnaround time for comments. There was discussion on the time frame of posting applications online for the public and the possibilities of late exhibits during the hearing itself.

She discussed scheduling joint meetings or workshops between the Planning and Zoning Commissioners and the Board of County Commissioners and the topics of interest that could be covered including standardized conditions of approval to help the Commissioners.

Planning Official Dan Lister provided a personnel update for the Department of Development Services.

ADJOURNMENT:

MOTION: Commissioner Sheets moved to adjourn, seconded by Commissioner Williamson. Voice vote, motion carried. Hearing adjourned at 10:12 pm.

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

Approved this 16TH day of February, 2023

Robert Sturgill, Chairman

ATTEST

Bonnie Puleo

Bonnie Puleo, Recording Secretary

Findings of Fact, Conclusions of Law, and Order

Zoning Map Amendment

Findings of Fact

1. The applicant, Sierra Vista Properties, Inc., is requesting a zoning map amendment (rezone) of Parcel R37496 from an "A" (Agricultural) zone to a "R-R" (Rural Residential) zone. The subject property is located at 8718 Purple Sage, Rd., Caldwell; also referenced as a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
2. The rezone is being considered concurrently with a preliminary plat (including irrigation and drainage) for Mint Farm Estates. The proposed plat includes 39 residential lots (SD2022-0034).
3. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
4. The site is not located within an area of city impact.
5. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
6. A neighborhood meeting was conducted on June 29, 2022 pursuant to CCZO §07-10-15 (Exhibit 4 of the staff report).
7. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on July 18, 2022, newspaper notice was published on December 18, 2022, property owners within 600' were notified by mail on December 15, 2022, and the property was posted on December 27, 2022.
8. The record includes all testimony at the public hearing held on January 5, 2023, the staff report, exhibits, and documents in Case File No. RZ2022-0011.

Conclusions of Law

For this request, the Planning and Zoning Commission finds and concludes the following regarding the Standards of Review for a Zoning Map Amendment (CCZO §07-06-05):

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

Conclusion: The proposed zoning map amendment is generally consistent with the 2020 Canyon County Comprehensive Plan.

Finding: The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). The project aligns with the following goals and policies of the 2020 Comprehensive Plan:

Chapter 1. Property Rights

Policy 1. No person shall be deprived of private property without due process of law.

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

Chapter 2. 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.

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.

Chapter 5. Land Use

Land Use Goal 5. Achieve a land use balance, which recognizes that existing agricultural uses and non-agricultural development may occur in the same area.

Land Use Goal 6. Designate areas where rural type residential development will likely occur and recognize areas where agricultural development will likely occur.

Residential Land Use 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 8. Public Services, Facilities and Utilities

Policy 3. Encourage the establishment of new development to be located within the boundaries of a rural fire protection district.

Chapter 9. Transportation

Policy 13. Ensure that all new development is accessible to regularly maintained roads for fire protection and emergency service purposes.

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

Conclusion: The proposed zoning map amendment is more appropriate than the current zone.

Finding: The property is identified as "residential" on the 2020 Canyon County Comprehensive Plan - Future Land Use Map (Exhibit 5d of the staff report). Although the property is active agricultural ground and near other large agricultural properties and uses, the property is also located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports a rural residential development and lifestyle. The property is adjacent to the Middleton Area of City Impact where residential development is promoted.

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

Conclusion: The proposed zoning map amendment is compatible with the surrounding land uses.

Finding: The applicant is proposing to rezone the subject property to "R-R" (Rural Residential). Within a one (1) mile radius, there are 26 platted subdivisions for a total of 495 lots with a 2.35-acre average lot size (Exhibit 5e of the staff report). The following land use decisions have been made within the vicinity of the subject property:

- RZ2018-0006 – Edward Vance: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0012 – Reynolds Brothers, LLC: Denial of a zoning map amendment from an "A" Zone to a "R-1" (Single Family Residential – One-acre average minimum lot size) Zone. The Board of County Commissioner requested it be rezoned to an "R-R" Zone instead.
- RZ2021-0034 – John Cotner: Approval of a zoning map amendment from an "A" Zone to a "R-R" Zone.
- RZ2021-0036 – Richards/Larsen: Approval of a conditional rezone from an "A" Zone to a "CR-R-1" Zone.

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

Conclusion: The proposed zoning map amendment will not negatively affect the character of the area.

Finding: The request is located near existing residential subdivisions (Exhibit 5e of the staff report) and similar zones (Exhibit 5f of the staff report) which supports rural residential development and lifestyles. Therefore, the request is found to be compatible with the rural character of the area. Development mitigation will be applied at the time of platting.

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

Conclusion: Adequate sewer, drainage, and storm water drainage facilities and utility systems will be provided to accommodate the proposed use at the time of development. Platting as a residential subdivision will be required.

Finding: The request includes a preliminary plat (SD2020-0034) which demonstrates future development will utilize individual septic systems and domestic wells. The property is not located within nitrate priority area. Nitrates in wells within the area appear to be low (1.1-2.2mg/L). IDEQ (Idaho Dept. of Environmental Quality) nitrate threshold is 10mg/L. (Exhibit 5h of the staff report). No comments were received from IDWR (Idaho Dept. of Water Resources) or IDEQ (Idaho Dept. of Environmental Quality). SWDH (Southwest District Health) had no issues. Therefore, compliance with agency requirements and standards will be implemented at the time of platting.

Future development will utilize surface water rights from Black Canyon Irrigation District (BCID) via a pressurized irrigation system. At the time of platting, the development will be required to meet BCID requirements and standards. Drainage will be addressed via the subdivision plat for this development through borrow ditches and retention ponds.

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

Conclusion: The property has legal access to Purple Sage Rd., at the existing home site location.

Finding: The property has frontage on Purple Sage Rd., a public road.

Canyon Highway District No. 4 does not oppose the use of the access subject to conditions of the subdivision plat.

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?

Conclusion: Although Canyon Highway District #4 finds that traffic impacts can be addressed by requiring right-of-way dedications, frontage improvements, internal road improvements and development impact fees, cumulative impacts to the existing road system are not adequately addressed.

Finding: Canyon Highway District #4 finds the request does not warrant a TIS (Traffic Impact Study). Traffic impacts will be mitigated through impact fees, internal street improvements, frontage improvements, access improvements and right-of-way dedication that shall be completed prior to final plat approval.

Although, Canyon Highway District #4 finds mitigation measures through impact fees and other subdivision improvements, it does address the cumulative traffic impacts found in the area. Between 2018-2022, land use decisions allowed approximately 215 residential lots within a one-mile radius (Exhibit 14). This request will allow 39 residential lots within the area. The September 2021 TIS provided by the applicant (Exhibit 13) states site access and Purple Sage Road requires a stop-controlled T-intersection by 2023 and that the Lansing Lane and SH-44 intersection is anticipated to operate at LOS F during PM peak hours by 2023 if improvements such as a single-lane roundabout or traffic signal with left-turn lanes on Lansing Lane approaches are not completed. Impact fees do not guarantee improvements will be completed within the 2023 timeframe as stated in the TIS. Until cumulative impacts can be adequately addressed, this finding cannot be supported.

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?

Conclusion: Essential services will be impacted by the requested rezone.

Finding: The property is served by Middleton Fire District, Middleton School District and Canyon County Sheriffs.

Middleton School District finds the request will impact Mill Creek Elementary School which is over capacity by 123% (Exhibit 10). The development would potentially create 20-27 new students. Until the impact to the school district can be adequately addressed, this finding cannot be supported.

Order

Based upon the Findings of Fact, Conclusions of Law and Order contained herein, the Planning and Zoning Commission **recommends denial** of Case #RZ2022-0011, a zoning map amendment from an "A" zone (Agricultural) to an "R-R" (Rural Residential) zone for Parcel No. R37496.

Pursuant to Idaho Code Section 67-6519, the following actions may be taken to obtain approval:

1. Re-apply for a zoning map amendment or conditional rezone once the following has occurred:
   a. Middleton School District capacity impacts are adequately addressed or minimized through Middleton School District-approved mitigation measures.
   b. Site Access/Purple Sage Road and Lansing Lane/SH-44 improvements are constructed and completed to adequately address cumulative impacts.

DENIED this 19 day of January, 2023.

BONNIE C PULEO
COMMISSION #20215954
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 12/10/2027

PLANNING AND ZONING COMMISSION
CANYON COUNTY, IDAHO

Robert Sturgill, Chairman

State of Idaho)
SS
County of Canyon County)

On this 19th day of January, in the year 2023 before me Bonnie Puleo, a notary public, personally appeared Robert Sturgill, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he(she) executed the same.

Notary: Bonnie C. Puleo

My Commission Expires: 12/10/2027

Planning and Zoning Commission
Mint Farm Estates Subdivision - SD2022-0034

Findings of Fact, Conclusions of Law, and Order
Preliminary Plat

Findings

1. Sierra Vista Properties, Inc. is requesting approval of a Preliminary Plat, irrigation, & drainage plan for Mint Farm Estates Subdivision (Attachment A).
2. The plat contains a total of 39 residential lots.
3. The subject property, parcel no. R37496 is located at 8718 Purple Sage, Rd., Caldwell, Idaho, in a portion of the SW¼ of Section 27, T5N, R2W, BM, Canyon County, Idaho.
4. The subject property is currently zoned "A" (Agricultural). A zoning map amendment to change the zoning of the property from "A" (Agricultural) to "R-R" (Rural Residential) was applied for concurrently with the plat (Case No. RZ2022-0011).
5. The subject property is designated "residential" on the Canyon County Comprehensive Plan Future Land Use Map (Exhibit 5d of the staff report).
6. The subject property is not located within an Area of City Impact.
7. The subject property is located within Canyon Highway District No. 4, Middleton Fire District, Middleton School District and Black Canyon Irrigation District.
8. Internal public roads will provide access to the residential lots (Attachment A).
9. Pressurized irrigation is proposed for the subdivision via water right from Black Canyon Irrigation District (Attachment A & Exhibit 3 of the staff report).
10. Individual septic systems and individual domestic wells will be utilized for each residential lot (Attachment A).
11. Notice of the public hearing was provided in accordance with CCZO §07-05-01. Agency notice was provided on July 18, 2022, newspaper notice was published on December 18, 2022, property owners within 600' were notified by mail on December 15, 2022, and the property was posted on December 27, 2022.
12. The record includes all testimony at the public hearing held on January 5, 2022, the staff report, exhibits, and documents in Case File No. SD2022-0034.

Conclusions of Law

Section 07-17-09(4)A of the Canyon County Zoning Ordinance (CCZO) states:

"The commission or hearing examiner shall hold a noticed public hearing on the preliminary plat. The hearing body shall recommend that the board approve, approve conditionally, modify, or deny the preliminary plat. The reasons for such action will be shown in the commission's minutes. The reasons for action taken shall specify:

1. *The ordinance and standards used in evaluating the application;*
2. *Recommendations for conditions of approval that would minimize adverse conditions, if any;*
3. *The reasons for recommending the approval, conditional approval, modification, or denial; and*
4. *If denied, the actions, if any, that the applicant could take to gain approval of the proposed subdivision.*"

The Planning and Zoning Commissions recommended denial of the zoning map amendment (RZ2022-0011) for the following reasons:

- Middleton School District finds the requested development will impact Mill Creek Elementary School which is over capacity by 123% (Exhibit 10). The development would potentially create 20-27 new students.

EXHIBIT F

- The development does not address the cumulative traffic impacts found in the area. Between 2018-2022, land use decisions allowed approximately 215 residential lots within a one-mile radius (Exhibit 14). The request will allow 39 residential lots. The September 2021 TIS provided by the applicant (Exhibit 13) states site access and Purple Sage Road requires a stop-controlled T-intersection by 2023 and that the Lansing Lane and SH-44 intersection is anticipated to operate at LOS F during PM peak hours by 2023 if improvements such as a single-lane roundabout or traffic signal with left-turn lanes on Lansing Lane approaches are not completed. Impact fees and site improvements such as public right-of-way dedications do not guarantee improvements will be completed within the 2023 timeframe stated in the TIS.

Since the rezone has been denied and the preliminary plat application was submitted concurrently, the property is still zoned "A" (Agricultural) which does not allow two-acre average minimum lot sizes. Therefore, the preliminary plat is inconsistent with Canyon County Code.

Order

Based upon the Findings of Fact, Conclusions of Law contained herein for Case No. SD2022-0034, the Planning and Zoning Commissioners **recommend denial** of the Preliminary Plat (including irrigation/drainage) for Mint Farm Estates Subdivision subject to conditions of approval.

Pursuant to Idaho Code Section 67-6519, the following actions may be taken to obtain approval:

1. Re-apply when a zoning map amendment or conditional rezone has been approved.

DENIED this 19 day of January, 2023.

BONNIE C PULEO
COMMISSION #20215954
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 12/10/2027

PLANNING AND ZONING COMMISSION
CANYON COUNTY, IDAHO

Robert Sturgill, Chairman

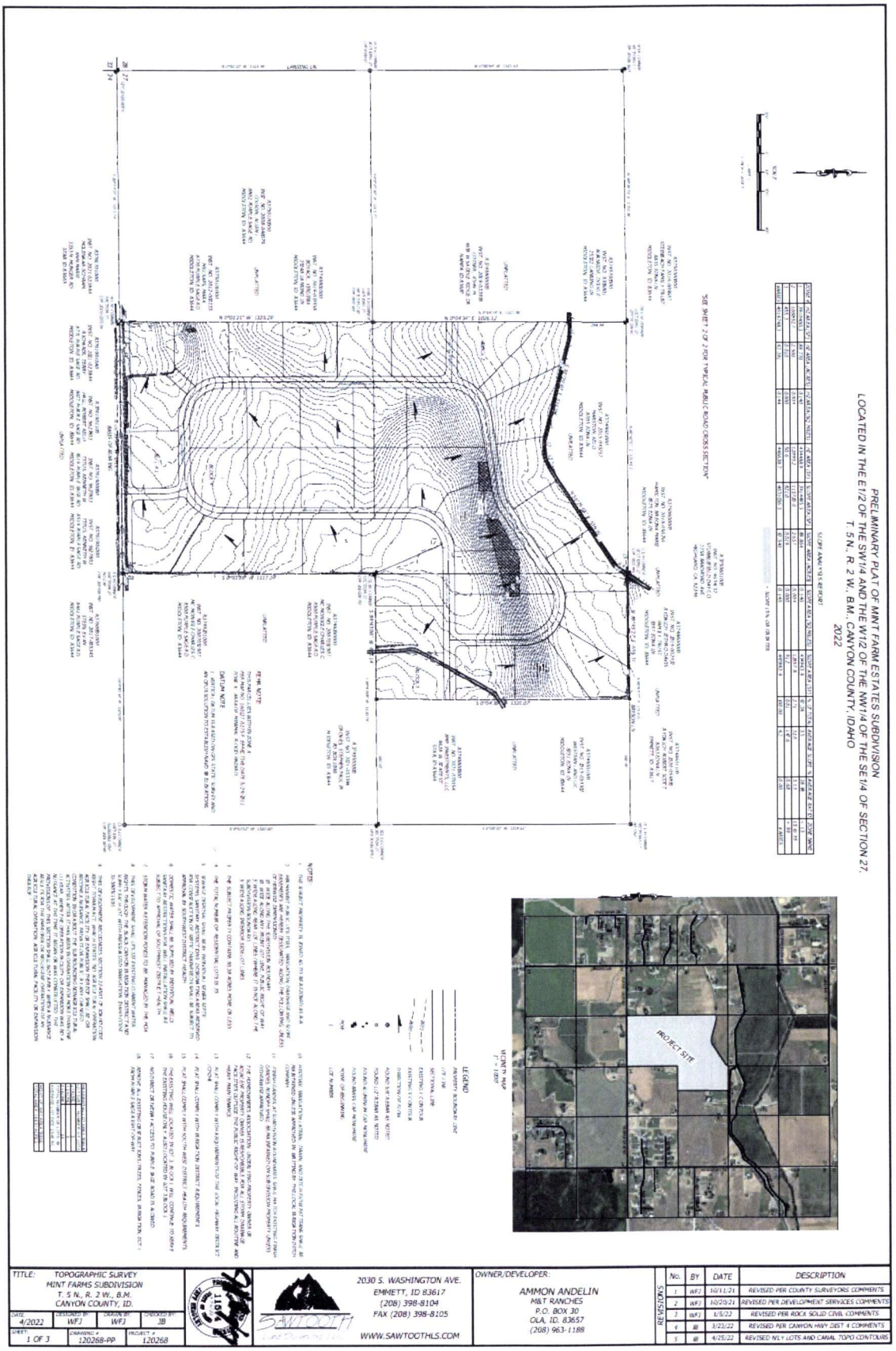
State of Idaho)
SS
County of Canyon County)

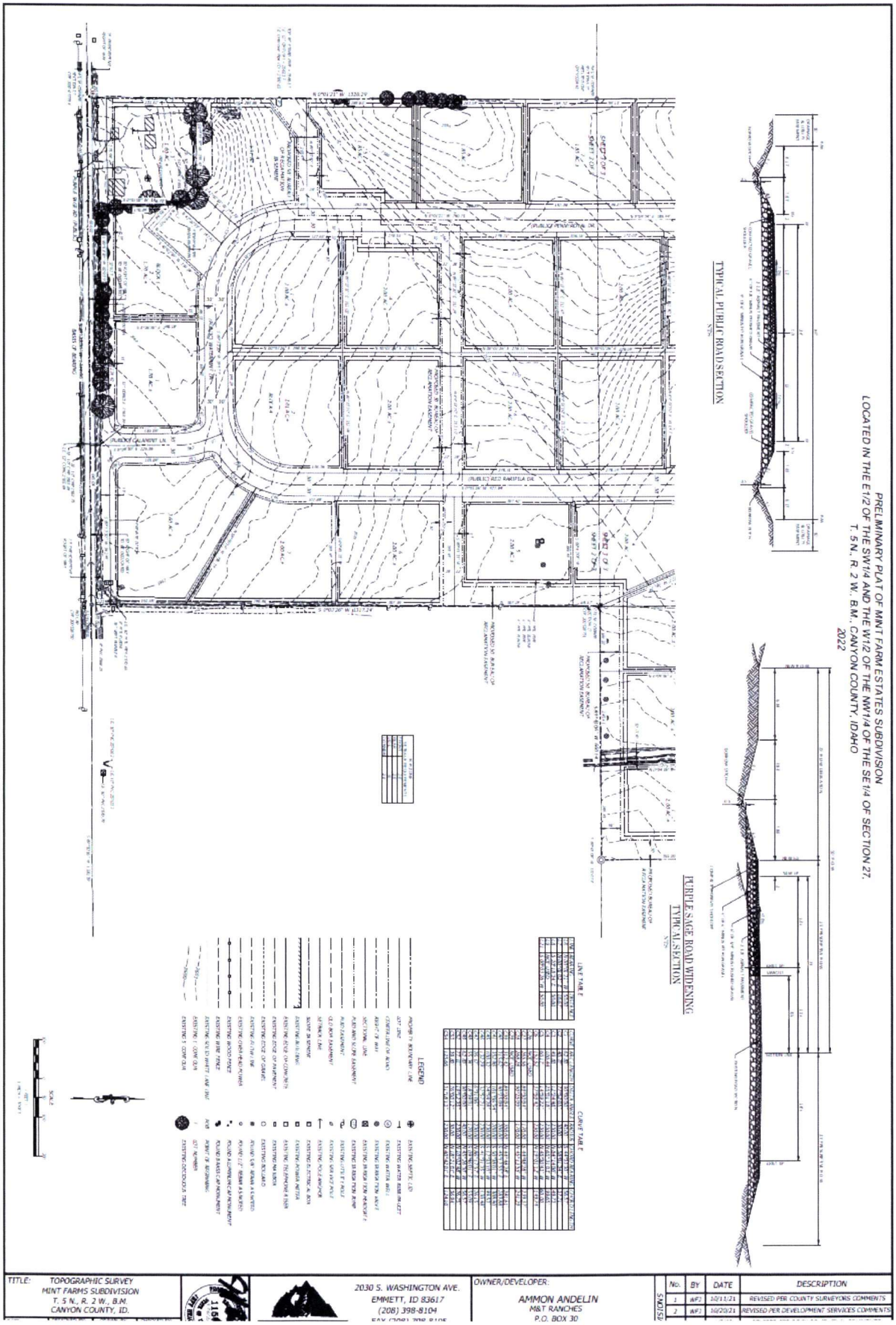
On this 19th day of January, in the year 2023 before me Bonnie Puleo, a notary public, personally appeared Robert Sturgill, personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he(she) executed the same.

Notary: Bonnie C. Puleo

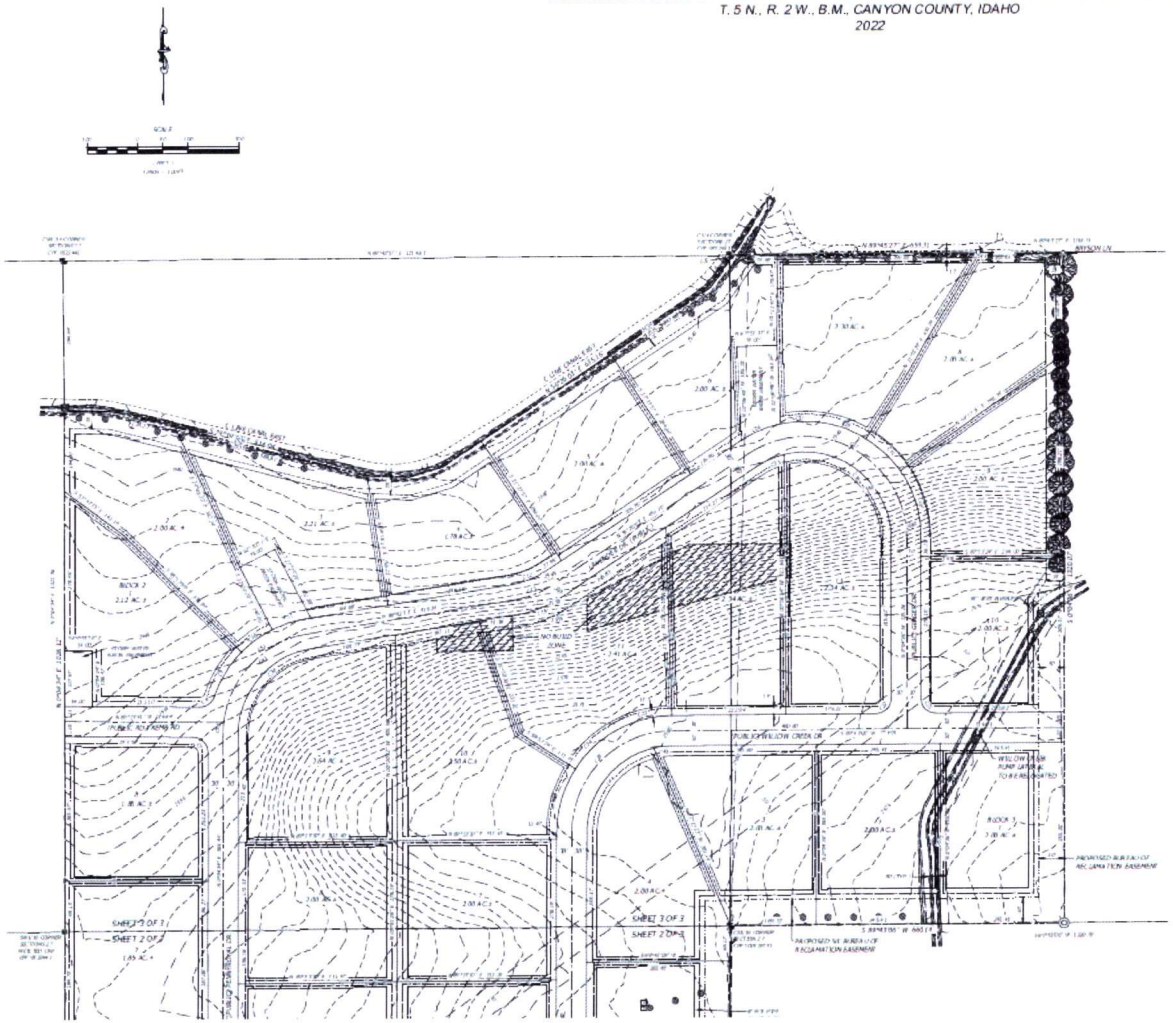
My Commission Expires: 12/10/2027

ATTACHMENT A




PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022
TYPICAL PUBLIC ROAD SECTION
PURPLE SAGE ROAD WIDENING
TYPICAL SECTION
LEGEND
LINE TABLE
CURVE TABLE
TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
No. BY DATE DESCRIPTION
1 AFJ 10/11/21 REVISED PER COUNTY SURVEYORS COMMENTS
2 AFJ 10/20/21 REVISED PER DEVELOPMENT SERVICES COMMENTS

PRELIMINARY PLAT OF MINT FARM ESTATES SUBDIVISION
LOCATED IN THE E1/2 OF THE SW1/4 AND THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2022



LEGEND

PROPERTY BOUNDARY LINE	EXISTING SEPTIC LID
LOT LINE	EXISTING WATER BARRIER VALVE
CENTER LINE OF ROAD	EXISTING WATER WELL
RIGHT OF WAY	EXISTING IRRIGATION VALVE
SECTIONAL LINE	EXISTING IRRIGATION HEADGATE
POND AND SLOPE EASEMENT	EXISTING IRRIGATION PUMP
POND EASEMENT	EXISTING UTILITY POLE
OLD ROW EASEMENT	EXISTING SERVICE POLE
SETBACK LINE	EXISTING POLE ANCHOR
SEWER EASEMENT	EXISTING ELECTRICAL BOX
EXISTING BUILDING	EXISTING POWER METER
EXISTING EDGE OF CONCRETE	EXISTING TELEPHONE RISER
EXISTING EDGE OF PAVEMENT	EXISTING MAILBOX
EXISTING EDGE OF GRAVEL	EXISTING BOLLARD
EXISTING FLOW LINE	ROUND 5/8" REBAR AS NOTED
EXISTING OVER HEAD POWER	ROUND 1/2" REBAR AS NOTED
EXISTING WOOD FENCE	ROUND ALUMINUM CAP MONUMENT
EXISTING WIRE FENCE	ROUND BRASS CAP MONUMENT
EXISTING SOLID WHITE LANE LINE	POINT OF BEGINNING
EXISTING 1' CONFIGUR	LOT NUMBER
EXISTING 5' CONFIGUR	EXISTING DECIDUOUS TREE

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 89°17'58" E	38.50
L2	S 87°05'37" E	32.61
L3	N 71°17'13" E	33.54
L4	N 31°07'38" E	66.39
L5	N 59°06'46" E	33.00
L6	N 30°07'19" E	33.07
L7	N 30°04'36" E	33.07
L8	NOT USED	
L9	NOT USED	
L10	NOT USED	
L11	NOT USED	
L12	NOT USED	
L13	NOT USED	
L14	S 31°19'35" W	33.03
L15	S 31°19'35" W	33.03

CURVE TABLE

CURVE	ARC LENGTH	DELTA ANGLE	RADIUS	CHORD BEARING	CHORD LENGTH
C1	46.43'	89°28'13"	30.00'	S 44°31'32" E	41.92'
C2	47.12'	90°00'00"	30.00'	S 44°30'30" W	42.42'
C3	157.78'	45°05'00"	200.00'	S 71°05'07" W	153.71'
C4	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C5	25.14'	90°00'00"	16.00'	N 75°17'58" E	22.63'
C6	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C7	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C8	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C9	NOT USED				
C10	46.43'	89°28'13"	30.00'	N 44°31'32" E	41.92'
C11	46.43'	89°28'13"	30.00'	N 44°30'12" E	41.92'
C12	46.43'	89°28'13"	30.00'	N 44°31'32" E	41.92'
C13	46.43'	89°28'13"	30.00'	N 44°30'12" E	41.92'
C14	23.46'	22°00'00"	61.00'	N 59°55'59" W	23.32'
C15	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C16	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C17	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C18	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C19	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C20	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C21	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C22	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C23	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C24	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C25	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C26	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C27	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C28	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C29	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C30	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C31	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C32	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C33	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C34	NOT USED				
C35	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C36	104.72'	300°00'00"	20.00'	N 30°04'01" E	28.28'
C37	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C38	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C39	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C40	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C41	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C42	NOT USED				
C43	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C44	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C45	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C46	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C47	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C48	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C49	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C50	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C51	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C52	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C53	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C54	NOT USED				
C55	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C56	104.72'	300°00'00"	20.00'	N 30°04'01" E	28.28'
C57	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C58	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C59	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C60	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C61	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C62	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C63	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C64	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C65	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C66	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C67	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C68	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C69	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C70	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C71	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C72	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C73	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C74	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C75	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C76	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C77	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C78	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C79	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'
C80	31.42'	90°00'00"	20.00'	N 30°04'01" E	28.28'
C81	31.42'	90°00'00"	20.00'	N 59°55'59" W	28.28'

TOTAL	
NUMBER OF BUILDABLE LOTS	26
BLOCK	3
LOTS	26
TRACTS	0

No.	BY	DATE	DESCRIPTION
1	WF	10/11/21	REVISED PER COUNTY SURVEYORS COMMENTS
2		10/20/21	REVISED PER DEVELOPMENT SERVICES COMMENTS
3	JB	3/23/22	REVISED PER CANYON HWY DIST 4 COMMENTS
4	JB	4/25/22	REVISED W/ 4 LOTS AND CANAL, TOPO CONTOURS

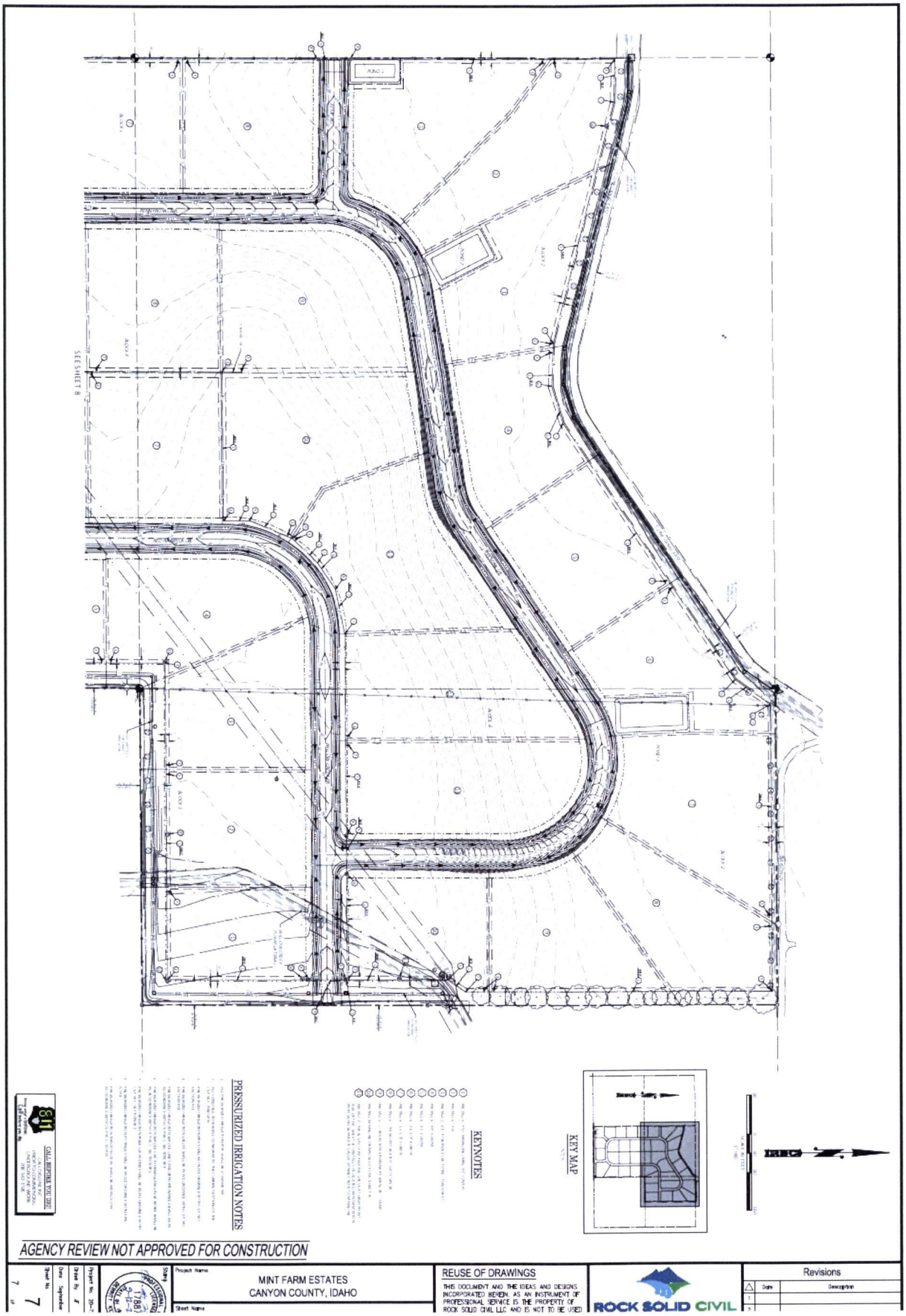
REVISIONS

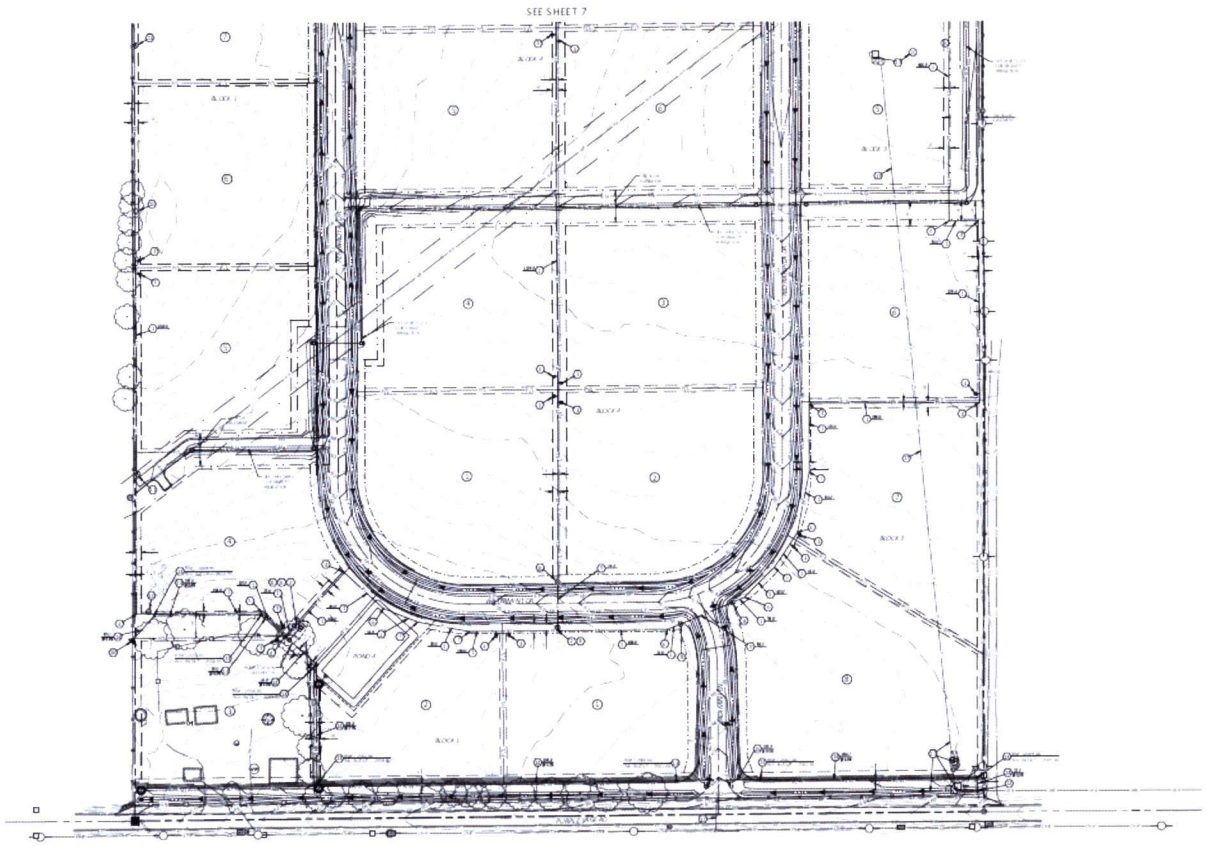
OWNER/DEVELOPER:
AMMON ANDELIN
M&T RANCHES
P.O. BOX 30
OLA, ID. 83657
(208) 963-1188

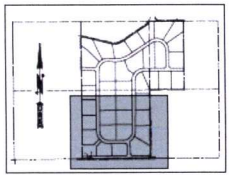
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104
FAX (208) 398-8105
WWW.SAWTOOTHLS.COM

TITLE: TOPOGRAPHIC SURVEY
MINT FARMS SUBDIVISION
T. 5 N., R. 2 W., B.M.
CANYON COUNTY, ID.

DATE	SURVEYED BY	DRAWN BY	PROJECT #
9/2021	WF	WF	18
SHEET 1 OF 1	DRAWING # 1-MTFMS.DWG	SCALE 1"=70'-0"	


SEE SHEET 8
PRESSURIZED IRRIGATION NOTES
KEYNOTES
KEY MAP
CALL BEFORE YOU DIG!
AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION
MINT FARM ESTATES
CANYON COUNTY, IDAHO
REUSE OF DRAWINGS
THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF ROCK SOLID CIVIL LLC AND IS NOT TO BE USED
ROCK SOLID CIVIL
Revisions
Date
Description
Project No.
Sheet No.
Date
Project Name
Sheet Name
7





KEY MAP

KEYNOTES

PRESSURIZED IRRIGATION NOTES

CALL BEFORE YOU DIG!

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Revisions

No.	Date	Description
1		

ROCK SOLID CIVIL

REUSE OF DRAWINGS

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MINT FARM ESTATES
CANYON COUNTY, IDAHO

Project Name

Sheet Name

Stamp

Project No. 20-

Drawn By: JF

Date: September

Sheet No. 8

8 of

DAVID EVANS
AND ASSOCIATES INC.

March 3, 2023

Dan Lister, Planning Official
Canyon County Development Services
111 North 11th Ave
Caldwell, ID 83605

SUBJECT: Mint Farm Estates

Dear Dan & Commissioners,

As you know, this project was denied by the Board at a hearing last May, they provided steps that could be taken to gain approval which included direction to switch our application from R-1 to R-R zoning (with no variance), reduce the lot count, and increase our average lot size to two acres. We invested our time, money, and energy to comply with these directions from the board and reapplied with the R-R zoning. Staff reviewed our new layout and recommended the new layout to P&Z for approval, giving us further evidence and confidence, we were on the right track. At the most recent planning and zoning hearing, the commissioners seemed to disregard the compliance with the boards previous direction to gain approval and added a number of issues that had not been part of any previous discussions. Their recommendation for denial caught us by surprise. The new issues include; too much traffic, schools too full, roads aren't big enough for farm equipment, no bus stop planned, poor reason for developing, etc.

Below I will outline the two main reasons we received a recommendation for denial, what we have done to address them, and respectfully request Board approval of the new 2-acre layout for Mint Farm Estates.

In the FCO's we are told *"the following actions may be taken to obtain approval:*

1. *Re-apply for a zoning map amendment or conditional rezone once the following has occurred:*
    a. *Middleton School district capacity impacts are adequately addressed or minimized through Middleton School District-approved mitigation measures.*
    b. *Site Access/Purple Sage Road and Lansing Lane/SH-44 improvements are constructed and completed to adequately address cumulative impacts."*

2. <u>Schools</u> – We met with Marc Gee in February about our project to discuss growth of Middleton and what challenges the School District is facing. First off, he made it clear to us that his letter was neutral in that he wasn't stating his reasons for rejection but rather to keep these things in mind (current school capacity and adequately plan for a bus stop). They have plans now to vote for another levy. They just put more modules outside the Mill Creek school to house more students. Modules are a good way to add more classrooms, but they do have their long-term limitations. Although they add more classrooms, it doesn't increase the size of the gym or library or bathrooms. He taught us how schools were funded (state, federal, local). We learned a lot. More students result in more state and federal funding for lunches and staff. More homes do increase the tax base, however schools ask the taxpayers only for what they need, which is usually a bond payment plus maintenance needs. Effectively, more homes equate to less tax burden felt by each property owner. Impact Fees will never cover the cost of the new school and have possible negative consequences on the passing of bonds and levies. Bond and levies remain the only mechanism for sufficient funding to build a new school. Expansion of existing schools (a.k.a over-capacity) is the technique to handle growth until a bond is passed. You have

EXHIBIT G

to be over capacity in order to ask the people to pass a bond for a new school. The best time to pass a new bond is usually when a previous one expires. In Summary, the funding of and the over-capacity of schools is a complex issue and not one that a single rural subdivision can solve. Thus, this cannot be (and has not been) a specific reason for denial of development.
Marc did help us determine the most ideal place for a bus stop for our subdivision along Purple Sage. We will incorporate this into the design as an approved mitigation measure.

3. Traffic – This item can be fully addressed with clarification and steps taken to mitigate concern. With fewer and larger lots, this current application does not require any traffic impact study (TIS). We were very surprised to hear that our "extra credit" in providing a non-necessary TIS (which we used to help our case on the old application (R-1, 53 lots)) was now being used against us. There was indeed confusion over the content of the TIS, what it meant, and how it could be applied to our application. According to the findings of the TIS, the existing roads were under capacity and would remain so with the addition of our project. The planned road improvements along Purple Sage/Lansing and Lansing/SH-44 were already in motion to be constructed at some point to help with traffic regardless of our subdivision. Our subdivision has been approved by the local highway district, we are following their master road plan, we are dedicating the necessary right-of-way, and widening Purple Sage along our frontage. This culmination should be seen as acceptable mitigation of the P&Z traffic concerns.

With the above clarifications, we hope the Board will approve this application having addressed both the previous boards' direction for approval and the more recent P&Z commissions concerns. Thanks so much,

Sincerely,

DAVID EVANS AND ASSOCIATES, INC.

Derritt Kerner

Derritt Kerner. P.E.
Project Manager

Copies: 1
Attachments/Enclosures: none
Project Number: MTRA00002072

Debbie Root

From: Devin Krasowski
Sent: Thursday, June 29, 2023 9:44 AM
To: Debbie Root
Subject: Mint Farm Estates (SD2022-0034 & RZ2022-0011)

Deb,
If approved I would recommend residential development on this parcel at the proposed density be served by a new public drinking water system or by the extension of an existing one. Public health and our groundwater resources would be best protected if development was also served by a central wastewater system. The applicant should discuss the plans for water/wastewater with DEQ.

Available data from nearby (within a mile) wells shows generally good water quality, especially when the wells are completed at depths greater than 200 ft. Available sample results from one shallow well approximately 1,500 ft to the west (downgradient) show nitrate levels above safe drinking water levels (as determined by the EPA).

Public drinking water systems offer the following benefits (among other things):

- The public water system would need to obtain a water right via the water right application process, as opposed to exempt domestic wells. This would require IDWR to declare that the waters of the state can support the development.
- The planning, engineering, construction, testing, and operation of the system would be carried out by licensed professionals and reviewed by state agencies to help ensure the water supply system at least starts out on the right foot
- Water quality standards would be enforced
- Less holes in the ground = less pathways for contaminants to enter the aquifer
- Less interaction with subsurface sewage disposal

A central wastewater system would have similar benefits over individual septic systems due to regulations on centralized systems. Subsurface wastewater disposal at the proposed density, especially if standard individual septic systems are allowed, will likely have a negative impact on groundwater quality. The extent of which depends on several factors, including groundwater velocity, depth to water, soil characteristics, and nutrient loading from the lots. Consider 1997 research published in the Journal of Environmental Quality titled Agriculture and Nitrate Concentrations in Maryland Community Water System Wells. That research indicates the conversation of crop land to residential uses may result in a **net** increase in groundwater nitrate concentrations, even at lower densities like currently proposed. There are several County developments (totaling over 100 lots) directly downgradient served by individual domestic wells susceptible to compromised groundwater quality. IC 39-102 3a: "It is the policy of the state to prevent contamination of ground water from any source to the maximum extent practical".

Please let me know if you have any questions.

--

Devin T. Krasowski, PE
County Engineer
Canyon County Development Services
Office: (208) 455-5958

EXHIBIT
H 1

Jenna Petroll

From: Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
Sent: Thursday, May 25, 2023 11:32 AM
To: Jenna Petroll
Cc: Bonnie Puleo
Subject: [External] RE: Agency Notice Mint Farms / RZ2022-0011-SD2022-0034

Hello Jenna –

I don't see that we have previously commented on this application. If I have, I'm sorry I'm causing you additional comments to review.

After careful review of the transmittal submitted to ITD on May 17, 2023 regarding Mint Farms / RZ2022-001-SD2022-0034, the Department has no comments or concerns to make at this time. This parcel is approximately 2.5 miles away from SH-44, therefore minimal impact is anticipated.

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: Bonnie Puleo <Bonnie.Puleo@canyoncounty.id.gov>
Sent: Wednesday, May 17, 2023 3:53 PM
To: 'srule@middletoncity.com' <srule@middletoncity.com>; 'jreynolds@middletoncity.com' <jreynolds@middletoncity.com>; 'rstewart@middletoncity.com' <rstewart@middletoncity.com>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; Marc Gee <mgee@msd134.org>; 'mitch.kiester@phd3.idaho.gov' <mitch.kiester@phd3.idaho.gov>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'CHOPPER@CANYONHD4.ORG' <CHOPPER@CANYONHD4.ORG>; Idaho Power <easements@idahopower.com>; Megan Kelly <mkelly@idahopower.com>; 'JESSICA.MANSELL@INTGAS.COM' <JESSICA.MANSELL@INTGAS.COM>; 'MONICA.TAYLOR@INTGAS.COM' <MONICA.TAYLOR@INTGAS.COM>; 'brandy.walker@centurylink.com' <brandy.walker@centurylink.com>; 'shayne.watterud@ziply.com' <shayne.watterud@ziply.com>; 'CARL@BLACKCANYONIRRIGATION.COM' <CARL@BLACKCANYONIRRIGATION.COM>; dpopoff@rh2.com; D3 Development Services <D3Development.Services@itd.idaho.gov>; COMPASS <gis@compassidaho.org>; 'middletoncemdist13@gmail.com' <middletoncemdist13@gmail.com>; Brian Crawforth <Brian.Crawforth@canyoncounty.id.gov>; 'mstowell@ccparamedics.com' <mstowell@ccparamedics.com>; Assessor Website <2cAsr@canyoncounty.id.gov>; 'Kent, Lori - NRCS-CD, Caldwell, ID' <Lori.Kent@id.nacdnet.net>; 'BRO.Admin@deq.idaho.gov' <BRO.Admin@deq.idaho.gov>; 'westerninfo@idwr.idaho.gov' <westerninfo@idwr.idaho.gov>; 'stevie.harris@isda.idaho.gov' <stevie.harris@isda.idaho.gov>; 'tate.walters@id.usda.gov' <tate.walters@id.usda.gov>; ID Agricultural Aviation Assn <idahoaaa@gmail.com>
Subject: Agency Notice Mint Farms / RZ2022-0011-SD2022-0034

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you clic if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

EXHIBIT
H 2

May 19th, 2023

Canyon County Development Services Department
111 North 11th Ave. Suite 140
Caldwell, ID 83605
(208) 454-7458

RE: Zoning Map Amendment. Parcels R37496
Case No. RZ2022-0011 & SD2022-0034
Applicant: Sierra Vista Properties, Inc.
Planner: Dan Lister

Parcel R37496 is located at 8718 Purple Sage Road, Caldwell Idaho.

Comments from the Black Canyon Irrigation District (District) were responded to regarding this re-zoning map amendment in August of 2022. These comments still pertain.

Since August, the District has been providing development review comments on the proposed gravity irrigation design plans within this subdivision. The design review comments pertain to the District's and Bureau of Reclamation right of way and infrastructure.

The latest set of comments was provided in April of 2023. The developer must address those comments prior to construction drawing approval by the District.

Please let us know if you have any questions.

Thank You,

Donald Popoff

Donald Popoff P.E.
District Engineer
Black Canyon Irrigation District

EXHIBIT
H 3

60,000 IRRIGABLE ACRES
ORGANIZED IN 1910
BLACK CANYON IRRIGATION DISTRICT
NOTUS, IDAHO

August 5, 2022

Canyon County Development Services Department
111 North 11th Ave. Suite 140
Caldwell, ID 83605
(208) 454-7458

RE: Zoning Map Amendment. Parcels R37496
Case No. RZ2022-0011 & SD2022-0034
Applicant: Sierra Vista Properties, Inc.
Planner: Dan Lister

Parcel R37496 is located at 8718 Purple Sage Road, Caldwell Idaho.

The Black Canyon Irrigation District (District) has the following initial comments regarding this proposed land use change.

Due to the updated platting, the applicant will need to resubmit their application to the Black Canyon Irrigation District. As part of our updating development review process, please see our website for Development Intake Sheet form (www.blackcanyonirrigation.com/development).

As was previously indicated, any and all **maintenance road right-of ways, lateral right-of ways and drainage right-of ways** will need to be protected (including the restriction of all encroachments). Also, any crossing agreement(s) and/or piping agreement(s) will need to be acquired from the Bureau of Reclamation (Reclamation), once approved by the District, to cross over or under any existing lateral, pipe any lateral or encroach in any way the right-of ways of the District or the Reclamation.

The District will require that the laterals affected by this proposed land change be piped and structures built to ensure the delivery of irrigation water to our patrons.

Furthermore, as long as this property has irrigation water attached to it, an irrigation system with an adequate overflow needs to be installed to ensure the delivery of irrigation water to each lot and/or parcel of land entitled to receive irrigation water.

Runoff and drainage from the proposed land splits should be addressed as well to ensure downstream users are not adversely affected by the proposed land use changes.

The District and Reclamation will require a signed agreement be in place prior to any changes being made to the sections of the W.C.P. 0.3, C.E. 21.1, and any appurtenant irrigation facilities that are affected by the proposed land changes not listed in this letter. NOTE: The District and Reclamation will require that this section be piped meeting all District and Reclamation standards. Furthermore, the District and Reclamation may require additional modifications to ensure irrigation water is made available to patrons as this proposed project proceeds.

All of the above requirements shall be met, including any others that arise during future review. Please let us know if you have any questions.

Thank You,

Donald Popoff

Donald Popoff P.E.
District Engineer
Black Canyon Irrigation District

EXHIBIT
H 4

RH2 ENGINEERING
Nampa
16150 N High Desert Street, Suite 201
Nampa, ID 83687
1.800.720.8052 / rh2.com

April 18, 2023

Mr. Carl Hayes
District Manager
Black Canyon Irrigation District
PO Box 226
Notus, ID 83656

Sent via: *Email*

Subject: **Sierra Vista Mint Farm Estates – Second Review (R2)**

Dear Mr. Hayes:

RH2 Engineering, Inc. (RH2) has reviewed the gravity irrigation design plan sheets (9 plan sheets, Sheets 1 through 9), dated September 9, 2022, prepared by Rock Solid Civil for Mint Farm Estates Subdivision. RH2 has the following comments for the owner/developer:

Note that these listed comments are truncated and brief – they correspond to comments on the plans. If after looking at both comments, please do not hesitate to call and request clarification if unclear.

General Comments:

1. Please note, 400 feet is the maximum pipe length between two structures.
2. All expended metal lids shall have a flat ribbon around the edge.
3. Pressure irrigation design was not evaluated (Pages 7-9).
4. Provide more information or a section detail about the Bureau of Reclamation (BOR) 12' wide access road. What kind of surfacing? Depth? Slope?
5. BOR's legal existing and proposed easement were provided. However, the irrigation layout on page 4 of the design plans did not match what was presented in the easement document. In addition, sheet 2 was missing some easement lines by first inlet structure. Please make sure that all easement lines on the design plans are shown, readable, and match legal documents provide. If the BOR easement has been revised, please provide updated legal documents.

WASHINGTON LOCATIONS
Bellingham
Bothell (Corporate)
East Wenatchee
Issaquah
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

IDAHO LOCATIONS
Nampa

EXHIBIT
H 5

Sheet 1:

1. Gravity irrigation note 8 states that the structures shall be constructed without sumps. All gravity irrigation structures need to have a sump of six inches. Irrigation boxes shall be cast-in-place. In addition, your details on pages 4 and page 6 show 12 inch sump. Please correct this note as well as those details.

Sheet 2:

1. As was stated in general notes, it is unclear where the BOR's easement located at the beginning of Willow Creek Pump Lateral by first inlet structure A-1. Please verify that it matches the legal document.
2. Will the existing headgate be removed? Clarify.
3. Please double check with BOR about easement width. Some records showed existing easement to be 80 ft wide.
4. Please show BCID access road on the other side of the new irrigation gravity main.
5. Is this existing or proposed fence? If existing, please remove. The new fence should be located where shown. See next comment.
6. Please install new 6 feet tall chain link fence along BOR easement per District standard.
7. No outside valves or utilities allowed within BOR easement.
8. Please label new irrigation laterals. The pipe leaving irrigation box A-7 will be: W.C.P. 0.3.
9. Install headwall per ITD Standard drawings.
10. HGL and EG linetypes are very similar. Suggest changing one to make it easier to differentiate them.
11. Where did you get the high water mark elevation by inlet structure A-1? Need to verify this operates as shown.

Sheet 3:

1. There are two (2) right of way lines shown along the Pennyroyal Dr. Why two? Clarify.
2. Unknown linetype. Include in the legend.
3. The plan view is missing irrigation easement lines.
4. Show utility easement lines.
5. Missing match lines.
6. There are some power poles along the property line within BOR easement. Will they remain in place? If so, please coordinate with the power utility and BOR about allowing them to remain in place within BOR easement, or relocate them. Need to address.
7. Please show access road on the other side of the new irrigation main.
8. Please indicated whether or not the irrigation line is to be removed.
9. Revision 1 comments stated that easements cannot overlap right of way. Please fix.
10. 400 LF is the maximum length between structures. Consider adding a structure where pipe flow transitions from full to open channel.

Sheet 4:

1. Please double check proposed BOR easement. This sheet doesn't match easement document provided.
2. Per revision 1 comments, show irrigation lines as sketched on the plan.
3. Provide a detail or more information for note No. 2: "outlet to existing ditch". How is it to be connected?
4. Change inlet structure A-1 to be headwall per ITDs standards. Include trash rack. Minimum member spacing is 8 inches, maximum is 10 inches.
5. Double check HGL.
6. Please check and fix units on some callouts.
7. Please add water surface elevation in the structure. Check crest elevation. Appears too low.
8. Show water elevation in the boxes and tables.
9. All expanded metal lids required a flat edge ribbon around exposed edges. Lid on box A-6 will require a cutout for the headgate.

Sheet 5:

1. Point leader to the structure.
2. Please show 12' wide access gravel road on the south side of the irrigation pipe and within BOR's easement.
3. No utilities should be located within BOR easement. Please move.
4. Install 6 foot tall chain link fence along BOR easement.
5. A recorded easement document will be required, prior to final plat. Submit exhibit and legal description of the easement to the District (District attorney will provide easement on District easement document).
6. 400 feet is the maximum distance between structures.
7. Please provide high water mark. How did you determine HGL?

Sheet 6:

1. Install headwall per ITD's standard drawings.
2. 400 feet is the maximum distance between structures.
3. Minimum spacing between pipes in the trash rack is 8 inches; maximum is 10 inches.
4. All metal lids shall have a flat ribbon around the edge.
5. Is A-1 structure detail meant for B-1 structure as well? Update the detail name. Change structures A-1, B-1 to be headwall, per ITD standards, with trash rack.
6. Change sump to be 6".

Sincerely,

Don Popoff, PE

Nampa Office Manager
RH2 Engineering

CC: Tyler Chamberlain – Black Canyon Irrigation District
Derritt Kerner P.E. – Rock Solid Civil

Enclosures or Attachments: RH2 R2_Mint Farm Estates (with RH2 Comments pages 1 - 6)
BOR Easement (with RH2 Comments)

DEVELOPMENT PLANS FOR
MINT FARM ESTATES

LOCATED IN THE E 1/2 OF THE SW 1/4 AND THE
W 1/2 OF THE NW 1/4 OF THE SE 1/4 OF SECTION 27
T.5N., R.2W., B.M., CANYON COUNTY, IDAHO
2022

1. Reference Black Canyon Irrigation District standards.

GENERAL

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (I.S.P.W.C.), THE CITY OF MIDDLETON (SEWER & WATER ONLY), THE CANYON HIGHWAY DISTRICT NO. 4 STANDARDS AND DEVELOPMENT PROCEDURES (FOR HIGHWAY DISTRICT ROADS), AND THE GEOTECHNICAL ENGINEERING REPORT. NO EXCEPTIONS TO THESE REQUIREMENTS WILL BE ALLOWED UNLESS SPECIFICALLY AND PREVIOUSLY APPROVED IN WRITING.
2. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT SHALL MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCY OR AS SET FORTH IN THE PROJECT PLANS AND SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.
3. THE CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START OF ANY WORK. ALL CONTRACTORS, SUB-CONTRACTORS, UTILITY COMPANIES, THE ENGINEER AND A REPRESENTATIVE FROM CANYON HIGHWAY DISTRICT NO. 4 SHOULD BE PRESENT.
4. THE CONTRACTOR IS REQUIRED TO OBTAIN A PERMIT FROM CANYON HIGHWAY DISTRICT NO. 4 A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION WITHIN THE RIGHT-OF-WAY.
5. A LICENSED PUBLIC WORKS CONTRACTOR SHALL PERFORM ALL CONSTRUCTION OF ANY FACILITIES THAT ARE BEING CONSTRUCTED WITHIN THE PUBLIC RIGHT-OF-WAY OR TO BE DEDICATED TO CANYON HIGHWAY DISTRICT NO. 4 OR THE CITY OF MIDDLETON.
6. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVICES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
7. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN CONFORMING TO MUTCD TO THE CANYON HIGHWAY DISTRICT NO. 4 PRIOR TO CONSTRUCTION. ALL CONTRACTORS WORKING WITHIN THE PUBLIC ROAD RIGHT-OF-WAY ARE REQUIRED TO SECURE A RIGHT-OF-WAY CONSTRUCTION PERMIT AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.
8. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL STRUCTURES AND FACILITIES BEFORE COMMENCING WORK AND SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY CONFLICTS NOT SHOWN ON PLANS. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL STRUCTURES AND FACILITIES. IN THE EVENT ANY STRUCTURE OR FACILITY IS DAMAGED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS FULLY RESPONSIBLE AND SHALL RESTORE SAID STRUCTURE OR FACILITY TO AN EQUAL OR BETTER CONDITION AT THE CONTRACTORS OWN EXPENSE. CALL DIG-LINE 1-800-342-1585.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND PAYING FOR ALL COSTS ASSOCIATED WITH ALL TESTING REQUIRED BY THE PROJECT SPECIFICATIONS. ALL TESTS SHALL BE PERFORMED BY A CERTIFIED TESTING LABORATORY AND CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE OWNER'S ENGINEER AND THE HIGHWAY DISTRICT. WORK PERFORMED WITHOUT CERTIFIED TEST RESULTS SHALL NOT BE ACCEPTED.
10. ALL COSTS OF RETESTING FOR PREVIOUSLY FAILED TESTS SHALL BE BACKCHARGED TO THE CONTRACTOR BY THE OWNER.
11. ANY WORK THAT DOES NOT CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE REJECTED. ALL COSTS TO CORRECT DEFICIENT WORK AND/OR DEFICIENT MATERIALS SHALL BE AT THE CONTRACTOR'S EXPENSE.
12. ONLY PLAN SETS STAMPED "APPROVED FOR CONSTRUCTION" AND SIGNED BY THE ENGINEER SHALL BE USED FOR PROJECT CONSTRUCTION. USE OF PLANS NOT STAMPED "APPROVED FOR CONSTRUCTION" SHALL BE GROUNDS FOR ISSUANCE OF A STOP WORK ORDER.
13. ALL CONTRACTORS PERFORMING ANY WORK DEPICTED ON THESE PLANS SHALL HAVE IN THEIR POSSESSION AND ON THE JOB SITE AN APPROVED SET OF PLANS WHICH HAVE BEEN STAMPED AND SIGNED.
14. ALL LOT DIMENSIONS, EASEMENTS AND CERTAIN OFF-SITE EASEMENTS ARE TO BE TAKEN FROM THE FINAL PLAT OF THIS SUBDIVISION. ALL MONUMENTS SHOWN ON THE ORIGINAL RECORDED PLAT SHALL BE SET BY AN IDAHO LICENSED L.S. ANY REQUIRED ROS SHALL BE FILED BY THE L.S.
15. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.
16. RETAIN AND PROTECT EXISTING IRRIGATION AND DRAINAGE PIPE CROSSINGS. EXCEPT WHERE NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ENGINEER FOR THE INSPECTION OF ANY EXPOSED IRRIGATION AND/OR DRAINAGE PIPE CROSSINGS. THE PIPE WILL BE REPLACED AS NECESSARY BY THE CONTRACTOR.
17. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE CLEAN WATER ACT AS IT RELATES TO STORM WATER RUNOFF FROM CONSTRUCTION ACTIVITIES. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY NECESSARY NPDES PERMITS, FILING ANY NOI'S, AND PREPARING A POLLUTION PREVENTION PLAN (PPP) IN ACCORDANCE WITH DEQ. A SHORT TERM ACTIVITY EXEMPTION FOR DEWATERING SHALL BE OBTAINED IN ACCORDANCE WITH DEQ REQUIREMENTS. CONTACT DEQ AT (208) 373-0557. SAID PERMIT SHALL BE PRESENTED TO THE ENGINEER AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION. CONTRACTOR SHALL SUBMIT SWPPP PLAN TO THE CANYON HIGHWAY DISTRICT NO. 4 FOR APPROVAL.
18. THE ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR PROVIDING THE FOLLOWING: CONSTRUCTION OBSERVATIONS AT SUFFICIENT INTERVALS TO INSURE THAT ALL CONSTRUCTION HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS, AND THE CURRENT EDITION OF THE I.S.P.W.C.
19. THE CONTRACTOR(S) SHALL REMOVE ALL OBSTRUCTIONS, BOTH ABOVE AND BELOW GROUND, AS REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS SHALL INCLUDE CLEARING AND GRUBBING WHICH CONSISTS OF CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS OR WEEDS, FENCES, STRUCTURES, DEBRIS, RUBBISH, AND SUCH MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOR THE FOUNDATION OF PAVEMENTS. ALL MATERIAL NOT SUITABLE FOR FUTURE USE ON SITE SHALL BE DISPOSED OF OFF SITE.
20. SURVEY CONTROL POINTS WHICH ARE CRITICAL TO THE CONSTRUCTION OF THE PROJECT ARE LOCATED WITHIN THE LIMITS OF WORK. THE CONTRACTOR SHALL TAKE PRECAUTION TO PROTECT THE POINTS IN PLACE.
21. EXISTING ASPHALT PAVEMENT SHALL BE CUT TO A NEAT STRAIGHT LINE PARALLEL OR PERPENDICULAR TO THE STREET CENTERLINE AND THE EXPOSED EDGE SHALL BE TACKED WITH EMULSION PRIOR TO PAVING.
22. ALL CONSTRUCTION OBSERVATION SHALL BE PER SECTION 5000 OF THE ACCHD STANDARDS MANUAL AND THE CITY OF MIDDLETON (SEWER & WATER ONLY).
23. CONTRACTOR TO UTILIZE SLOPE TRACKING AS TEMPORARY STABILIZATION DURING CONSTRUCTION AND HYDRO SEED WITH NATIVE VEGETATION FOR ULTIMATE SLOPE STABILIZATION IN CUT AND FILL AREAS WITHIN THE ROAD CORRIDOR.
24. WORK IS SUBJECT TO APPROVAL BY THE ENGINEER OF RECORD OR THE PROJECT GEOTECHNICAL ENGINEER AND MUST BE APPROVED PRIOR TO: (A) BACKFILLING TRENCHES FOR PIPE; (B) PLACING OF AGGREGATE BASE; AND (C) PLACING OF ASPHALT PAVING.
25. FOLLOWING ACCEPTANCE BY THE ENGINEER, THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR IF GRANULAR IMPORT BACKFILL IS USED OR TWO YEARS IF NATIVE BACKFILL IS USED. WORK DONE WITHOUT SUCH APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PERFORMING THE WORK IN AN ACCEPTABLE MANNER.
26. NO PIT RUN, BALLAST OR SUBBASE AGGREGATE SHALL BE PLACED ON ANY ROAD OR STREET UNTIL THE SUBGRADE HAS BEEN APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER AND BY THE CANYON HIGHWAY DISTRICT NO. 4. TESTING SHALL BE PER SECTION 5000 OF THE ACCHD STANDARDS.
27. THE CONTRACTOR OR HIS/HER REPRESENTATIVE SHALL CONTACT THE ENGINEER OF RECORD OR THE GEOTECHNICAL ENGINEER 48 HOURS PRIOR TO ROADWAY CONSTRUCTION TO ARRANGE FOR INSPECTION.
28. ALL STORM DRAINAGE FACILITIES ARE REQUIRED TO BE BUILT TO CANYON HIGHWAY DISTRICT NO. 4 STANDARDS.
29. ALL STEEL CULVERTS INSTALLED UNDER PUBLIC ROAD SHALL BE ALUMINIZED OR POLYMER COATED.
30. CALL BEFORE YOU DIG: DIG LINE, INC. (800) 342-1585.

PAVING

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), THE HIGHWAY STANDARDS AND DEVELOPMENT PROCEDURES FOR THE CANYON COUNTY HIGHWAY DISTRICTS AND THE PROJECT SPECIFICATIONS.
2. ALL CONTRACTORS, SUB-CONTRACTORS AND UTILITY CONTRACTORS SHALL ATTEND A PRE-CONSTRUCTION CONFERENCE A MINIMUM OF TWO (2) DAYS PRIOR TO COMMENCING ANY CONSTRUCTION ON THE PROJECT.
3. ONLY PLAN SETS STAMPED "APPROVED FOR CONSTRUCTION" AND SIGNED BY THE ENGINEER SHALL BE USED FOR PROJECT CONSTRUCTION. USE OF PLANS NOT STAMPED "APPROVED FOR CONSTRUCTION" SHALL BE GROUNDS FOR THE ISSUANCE OF A STOP WORK ORDER.
4. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT SHALL MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCY OR AS SET FORTH IN THE PROJECT PLANS AND SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE. CONTRACTOR SHALL FURNISH PROOF THAT ALL MATERIALS MEET THE REQUIREMENTS AT THE REQUEST OF THE OWNER OR ENGINEER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND PAYING FOR ALL COSTS ASSOCIATED WITH ALL TESTING REQUIRED BY THE PROJECT SPECIFICATIONS. ALL TESTS SHALL BE PERFORMED BY A CERTIFIED TESTING LABORATORY AND CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE OWNER'S ENGINEER. WORK PERFORMED WITHOUT CERTIFIED TEST RESULTS SHALL NOT BE ACCEPTED.
6. PLANT MIX PAVEMENT SHALL BE CLASS SP-2 WITH A NOMINAL MAXIMUM AGGREGATE SIZE OF 1/2". PG 64-28 (PERFORMANCE GRADED ASPHALT BINDER) SHALL BE USED. A MINIMUM OF 0.5% ANTI-STRIPPING ADDITIVE IS SPECIFIED.

SEWER

1. ALL INDIVIDUAL SEPTIC DRAIN FIELDS SHALL BE PER THE SUBDIVISION ENGINEERING REPORT AND PER THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY (IDEQ) TECHNICAL GUIDANCE MANUAL (TGM).
2. INDIVIDUAL SEPTIC PERMITS ARE REQUIRED FOR EACH LOT THROUGH SOUTHWEST DISTRICT HEALTH (SWDH).

WATER

1. ALL INDIVIDUAL WATER SYSTEMS SHALL BE CONSTRUCTED TO CONFORM WITH THE STANDARDS SET FORTH IN THE "IDAHO RULES FOR PUBLIC DRINKING WATER SYSTEMS: (I.R.P.D.W.S.), AND/OR IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY (IDEQ) STANDARDS.
2. INDIVIDUAL WELL PERMITS ARE REQUIRED FOR EACH LOT THROUGH IDAHO DEPARTMENT OF WATER RESOURCES (IDWR).

PRESSURE IRRIGATION

1. ALL MATERIALS, CONSTRUCTION, TESTING AND INSPECTION SHALL BE IN ACCORDANCE TO THE CURRENT EDITION OF THE I.S.P.W.C. NO EXCEPTIONS TO THE I.S.P.W.C. SHALL BE ALLOWED UNLESS SPECIFICALLY AND PREVIOUSLY APPROVED.
2. DISTRIBUTION PIPELINE SHALL BE PVC PRESSURE-RATED PIPE ASTM D 2241 CLASS 200, SDR 21 OR BETTER. PIPE SHALL USE GASKETED PUSH ON JOINTS.
3. PIPE FITTINGS SHALL BE SLIP ON OR MECHANICAL JOINT CLASS 200. FITTINGS LARGER THAN 6 INCHES SHALL BE DUCTILE OR CAST IRON OR OTHER MATERIAL PRESSURE RATED TO CLASS 200 OR BETTER. CAST IRON SHALL MEET THE CURRENT AWWA C 110 REQUIREMENTS.
4. THRUST BLOCKS ARE REQUIRED AT TEES, VALVES, BENDS, AND DEAD ENDS ON ALL PIPE AND FITTINGS WITH GASKETED JOINTS, EXCEPT TEES LEADING TO SINGLE SERVICE RISERS. THRUST BLOCKS ARE ALSO REQUIRED AT ELBOWS AND TEES LOCATED BEFORE AND AFTER ANY GASKETED TYPE JOINT. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH REQUIREMENT OF 2,500 PSI AND PLACEMENT PER SD-403.
5. PIPE LOCATING WIRE SHALL BE ONE NO. 12 AWG COPPER WITH PVC INSULATION. PIPE IDENTIFICATION TAPE SHALL BE 2-INCH WIDE AND CLEARLY MARKED "CAUTION - BURIED IRRIGATION WATER LINE" WITH 1-1/2" LETTERS. TAPE SHALL BE PURPLE IN COLOR.
6. MECHANICAL COUPLINGS SHALL BE ROCKWELL OMNI SYSTEM 413, ROMAC, OR APPROVED EQUAL.
7. SERVICE CONNECTIONS SHALL BE PVC TEES OR TAPPING SADDLES PER I.S.P.W.C. SECTION 903.
8. ALL DISTRIBUTION PIPE SHALL BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THE I.S.P.W.C. SECTION 901.
9. SEPARATION OF PRESSURE IRRIGATION LINES AND POTABLE WATER LINES SHALL BE DONE IN ACCORDANCE OF SECTION 400 OF THE I.S.P.W.C. AND IDEQ REGULATIONS. TEN FEET OF HORIZONTAL SEPARATION IS REQUIRED AND 18" OF VERTICAL SEPARATION AT ANY CROSSINGS SHALL BE MAINTAINED.
10. ALL PIPELINES SHALL HAVE A MINIMUM OF 30" OF COVER. TRENCH EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE OF SECTION 301 AND SECTION 305 OF THE I.S.P.W.C.. TRENCH COMPACTION TEST IS REQUIRED IN ACCORDANCE WITH THE CURRENT EDITION OF THE I.S.P.W.C.
11. PIPELINE CROSSINGS WITHIN STREET RIGHT-OF-WAY SHALL BE PER CHD4 SECTION HSDP 3066.
12. THE COMPLETED DISTRIBUTION SYSTEM SHALL BE FLUSHED OF DIRT AND FOREIGN MATERIAL, AND ALL AIR SHALL BE VENTED FROM ANY HIGH POINTS PRIOR TO PLACING IN OPERATION. IRRIGATION DRAINS SHALL BE LOCATED AND CONSTRUCTED PER PLANS.
13. VALVES 4" AND SMALLER SHALL BE GATE VALVES. VALVES LARGER THAN 4" SHALL BE BUTTERFLY TYPE. BUTTERFLY VALVES SHALL MEET REQUIREMENTS OF SECTION 902 OF THE I.S.P.W.C.
14. STEEL COMPANION FLANGES SHALL BE AWWA CLASS D STEEL RING FLANGES. THREADED OR SLIP ON TYPE AS REQUIRED.
15. VALVE BOXES FOR DISTRIBUTION PIPELINE SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE I.S.P.W.C. AND SD-406. IN NON-PAVED AREAS, AN 8" DIAMETER CLASS 200 PIPE SECTION, NOTCHED FOR THE IRRIGATION MAIN WITH A 10" ROUND BOX LID IS ACCEPTABLE.
16. IRRIGATION VALVE BOX AND SERVICE LINE SHALL BE A MINIMUM OF 1.5" IN DIAMETER PIPE IN ACCORDANCE WITH SD-902. FIBERGLASS VALVE BOXES SHALL HAVE MINIMUM DIMENSIONS 13"x18"x12" IN DEPTH.
17. A HYDROSTATIC PRESSURE TEST AND LEAKAGE TEST ARE REQUIRED FOR THE IRRIGATION MAINLINES. TESTS SHALL CONFORM TO CURRENT EDITION OF THE I.S.P.W.C.

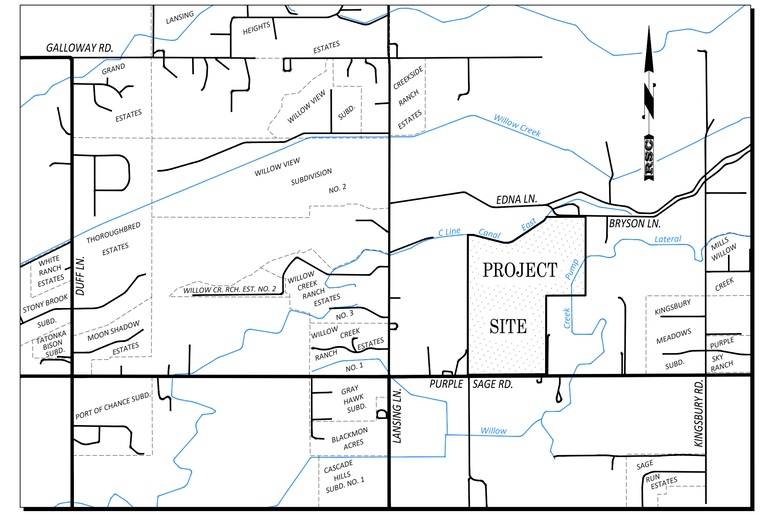
GRAVITY IRRIGATION

1. ALL PIPE SHALL BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON THE PROJECT ENGINEERING PLANS/DRAWINGS. ALL GRAVITY IRRIGATION MAINS SHALL BE INSTALLED WITH THE BELL END UPSTREAM AND SPIGOT END DOWNSTREAM.
2. PIPE JOINTS SHALL BE WIPED CLEAN OF ALL DIRT, GREASE, AND FOREIGN MATTER. WHEN WORK IS HALTED, ALL OPEN ENDS OF THE INSTALLED PIPE SHALL BE SEALED TO PREVENT MATERIAL FROM ENTERING THE PIPE.
3. FIELD CUT PIPE ENDS SHALL BE BEVELED TO MATCH FACTORY-FINISHED BEVELED PIPE ENDS.
4. WHEN ASSEMBLING GASKETED PVC PIPE, CLEAN AND INSPECT GASKETS, PIPE BELLS, AND SPIGOTS THOROUGHLY. USE ONLY LUBRICANT FURNISHED OR SPECIFIED BY THE PIPE MANUFACTURER AND APPLY AS SPECIFIED BY THE MANUFACTURER.
5. UTILITIES ENCOUNTERED WITHIN THE PIPE ZONE SHALL BE RELOCATED BELOW THE PIPE ZONE. TOPSOIL SHALL BE STOCKPILED AND USED FOR THE TOP LAYER DURING BACKFILL. THE PIPE ZONE SHALL BE DEFINED AS ANY AREA WITHIN 12 INCHES OF THE OUTSIDE EDGE OR BELL OF THE PIPE.
6. ALL WORK INSIDE STREET RIGHTS-OF-WAY SHALL MEET THESE SPECIFICATIONS, THE SPECIFICATIONS OF CHD4 AND THE CURRENT I.S.P.W.C. SPECIFICATIONS. IF SPECIFICATIONS DIFFER OR CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
7. WATERMAN C-10 CANAL GATES OR APPROVED EQUAL SHALL BE USED. GATES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. CANAL GATE WHEEL HEIGHT SHALL BE A MINIMUM OF 2-7/8 INCHES ABOVE STRUCTURE AND A MAXIMUM OF 6 INCHES ABOVE STRUCTURE.
8. PIPES SHALL BE INSTALLED FLUSH WITH THE INSIDE CONCRETE WALL. STRUCTURES SHALL BE CONSTRUCTED WITHOUT SUMPS. WATER STOP SHALL BE INSTALLED AT ALL COLD JOINTS. BENTONITE ROPE SHALL BE PLACED AROUND ALL PIPE PENETRATIONS PRIOR TO CONCRETE PLACEMENT. STRUCTURE TOP SHALL BE A MINIMUM OF 1 FOOT ABOVE AND A MAXIMUM OF 4-FEET ABOVE FINISHED GRADE. POLYPROPYLENE COATED MANHOLE STEPS MAY BE REQUIRED AND, IF REQUIRED, SHALL BE INSTALLED ON THE UPSTREAM SIDE OF THE GRAVITY IRRIGATION STRUCTURES.
9. ALL JOINTS SHALL BE WATERTIGHT AND BACKFILL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR AS DETERMINED BY AASHTO T99 METHOD A. COMPACTION EFFORT SHALL MEET THE REQUIREMENTS OF I.S.P.W.C. DIVISION 200 SECTION 202 CLASS A COMPACTION. SOIL BACKFILL MATERIALS SHALL MEET THE REQUIREMENTS OF I.S.P.W.C. DIVISION 200 SECTION 203 - SOIL MATERIALS SUBSOIL TYPES S3 OR S4. PREFERABLY S4 IF IT IS AVAILABLE ON-SITE. MATERIALS SHALL BE PLACED AND COMPACTED IN 6-INCH LIFTS.
10. NATIVE TRENCH MATERIALS FREE FROM CINDERS, ASHES, REFUSE, ORGANIC AND FROZEN MATERIALS, COBBLES OR ROCKS NOT LARGER THAN SIX (6) INCHES MAY BE USED. TRENCH BACKFILL ABOVE THAT REQUIRED TO PROTECT THE PIPE SHALL BE PLACED IN TWO (2) LIFTS AND COMPACTED SUFFICIENTLY TO PRECLUDE SETTLEMENT. MECHANICAL COMPACTION AND/OR WATER SETTLING SHALL BE USED TO COMPACT BACKFILL. TOPSOIL SHALL THEN BE PLACED, COMPACTED AND GRADED.
11. SILT OR BENTONITE BACKFILL MATERIALS MAY BE REQUIRED WITHIN THE TRENCH BACKFILL ABOVE THE PIPE ZONE TO PREVENT WATER MIGRATION INTO THE PIPE BEDDING ADJACENT TO HEADWALLS AND IN CRITICAL OPEN CHANNEL LOCATIONS.
12. PIPE BEDDING AND ZONE MATERIAL SHALL BE INCLUDED IN THE FULL WIDTH OF THE TRENCH FROM FOUR (4) INCHES BELOW THE BOTTOM OF THE PIPE TO SIX (6) INCHES ABOVE THE TOP OF THE PIPE. PIPE BEDDING SYSTEM SHALL BE CLASS A-1 WITHIN PUBLIC RIGHT-OF-WAY, WHICH INCLUDES TYPE I BEDDING MATERIALS IN THE UPPER AND LOWER BEDDING ZONES. PIPE BEDDING SYSTEM SHALL BE CLASS A-2 FOR ALL AREAS OUTSIDE OF RIGHTS-OF-WAY, WHICH INCLUDES TYPE I BEDDING MATERIALS IN THE LOWER BEDDING ZONE AND TYPE II OR III BEDDING MATERIALS IN THE UPPER PIPE ZONE. SEE DIVISION 300 OF THE I.S.P.W.C. FOR PIPE BEDDING SYSTEM REQUIREMENTS.
13. ALL BENTONITE BACKFILL MATERIALS SHALL BE 50% BENTONITE WITH 50% FINE GRAINED NATIVE MATERIALS. IF NATIVE MATERIALS ARE SANDS AND GRAVELS, FINE GRAINED MATERIALS SHALL BE IMPORTED FROM OFF SITE AND BE MIXED TO THE PERCENTAGE ABOVE.

UTILITY

1. CONTRACTOR TO COORDINATE LOCATION OF THE JOINT TRENCH AND SUBMIT PLANS TO THE ENGINEER AND CHD4 FOR APPROVALS.

2. Details on page 6 show 12" sump. PID standards say all gravity irrigation structure need to have a 6" sump. Irrigation Box shall be cast-in-place.Please correct.



VICINITY MAP

1" = 1200'±

LEGEND

EXISTING		PROPOSED	
	SECTION LINE	R/W — R/W	RIGHT OF WAY LINE
	1/4 SECTION LINE		CENTERLINE
	1/16 SECTION LINE	P/L — P/L	LOT LINE
	PROPERTY BOUNDARY		EASEMENT LINE
	BRASS CAP		SETBACK LINE
	ALUMINUM CAP	1 BLOCK 1	LOT NUMBER
	5/8" REBAR		BLOCK NUMBER
	1/2" REBAR	IRR — IRR	GRAVITY IRRIGATION PIPE
EP — EP	EDGE OF PAVEMENT	IR	GRAVITY IRRIGATION MANHOLE
EG — EG	EDGE OF GRAVEL	IR	GRAVITY IRRIGATION BOX
	FOG LINE	PI — PI	PRESSURE IRRIGATION LINE
SL	SEPTIC LID		PRESSURE IRRIGATION SERVICE
IRR — IRR	GRAVITY IRRIGATION LINE	D	MAINLINE DRAIN
IR	IRRIGATION VALVE	A	AIR & VACUUM VALVE
HG	IRRIGATION HEADGATE		SAW CUT LINE
IP	IRRIGATION PUMP	EP — EP	EDGE OF PAVEMENT
IP	IRRIGATION PUMP		BORROW DITCH
OHP — OHP	OVERHEAD POWER LINE		SIDE / REAR YARD SWALE
	GUY ANCHOR	SD — SD	STORM DRAIN LINE
	UTILITY POLE	SD	STORM DRAIN MANHOLE
E	ELECTRICAL BOX		STORM DRAIN DROP INLET
PM	POWER METER	1.45%	DESIGN SLOPE
T	TELEPHONE RISER	2+75.25 18' LT	STATION AND OFFSET ALONG MARKED ALIGNMENT
	WIRE FENCE		SIGN
	WOOD FENCE		TYPE II BARRICADE
	VINYL FENCE		TYPE III BARRICADE
2576	1' CONTOUR		
2575	5' CONTOUR		
	TOE OF SLOPE		
	TOP OF BANK		
	DECIDUOUS TREE		
	BUILDING		
BOL	BOLLARD		
TP-	TEST PIT		
TBM#	TEMPORARY BENCHMARK		

DEFINITIONS	
SC	SAWCUT LINE
TA	TOP OF ASPHALT
TC	TOP OF CONCRETE
LP	LOW POINT
HP	HIGH POINT
GB	GRADE BREAK
TG	TOP OF GRATE
RIM	RIM ELEVATION
INV.	INVERT ELEVATION
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PVC	POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY

SHEET INDEX

1. COVER SHEET, INDEX, & NOTES
2. B.O.R. IRRIGATION PLAN & PROFILE
3. B.O.R. IRRIGATION PLAN & PROFILE
4. B.O.R. IRRIGATION P & P AND DETAILS
5. B.O.R. IRRIGATION PLAN & PROFILE
6. B.O.R. IRRIGATION P & P AND DETAILS
7. PRESSURE IRRIGATION PLAN
8. PRESSURE IRRIGATION PLAN
9. PRESSURE IRRIGATION DETAILS
10. FRONTAGE PLAN & PROFILE
11. FRONTAGE PLAN & PROFILE
12. FRONTAGE PLAN & PROFILE
13. ROADWAY PLAN & PROFILE
14. ROADWAY PLAN & PROFILE
15. ROADWAY PLAN & PROFILE
16. ROADWAY PLAN & PROFILE
17. ROADWAY PLAN & PROFILE
18. ROADWAY PLAN & PROFILE
19. ROADWAY PLAN & PROFILE
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24. ROADWAY PLAN & PROFILE
25. ROADWAY PLAN & PROFILE
26. ROADWAY PLAN & PROFILE
27. ROADWAY PLAN & PROFILE
28. ROADWAY PLAN & PROFILE
29. DETAILS
30. OVERALL GRADING PLAN
31. OVERALL GRADING PLAN

OWNER
MARK & AMMON ANDELIN
M & T RANCHES, LLC
P.O. BOX 30
OLA, ID 83657
(208) 963-1188

SURVEYOR
JEFF BEAGLEY, P.L.S.
SAWTOOTH LAND SURVEYING, LLC
2030 S. WASHINGTON AVE.
EMMETT, ID 83617
(208) 398-8104

CIVIL ENGINEER
DERRITT KERNER, P.E.
ROCK SOLID CIVIL LLC
270 N. 27TH STREET SUITE 100
BOISE, ID 83702
(208) 342-3277

UTILITY REPRESENTATIVES

UTILITY	REPRESENTATIVE	PHONE
NATURAL GAS	INTERMOUNTAIN GAS	(208) 377-6839
ELECTRICITY	IDAHO POWER	(208) 388-6320
TELEPHONE	CENTURYLINK	(208) 385-2440
CABLE TV	CABLE ONE	(208) 375-8288
SEWER	SOUTHWEST DISTRICT HEALTH DEPT.	(208) 455-5300
WATER	IDAHO DEPT. OF WATER RESOURCES	(208) 287-4800
ROADS	CANYON HIGHWAY DISTRICT NO. 4	(208) 454-8135
IRRIGATION	BLACK CANYON IRRIGATION DISTRICT	(208) 459-4141
FIRE	MIDDLETON RURAL FIRE DISTRICT	(209) 585-6650

BENCH MARKS DATUM NAVD 88

TBM#1	2559.07	ALLUMINUM CAP IN CENTER OF PURPLE SAGE ROAD MARKING THE W 1/16 CORNER OF SECTION 27 AND THE SOUTHWEST CORNER OF THE SUBDIVISION
TBM#2	2578.74	BRASS CAP MARKING THE CS 1/16 CORNER OF SECTION 27, A SUBDIVISION ANGLE POINT IN THE NORTHEAST PORTION
TBM#2	2539.22	BRASS CAP MARKING THE CENTER OF SECTION 27, A SUBDIVISION ANGLE POINT IN THE NORTHEAST PORTION OF THE SUBDIVISION ALONG BRYSON LN.

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AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Revisions

	Date	Description
1		
2		
3		
4		

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270 North 27th Street, Boise, ID 83702
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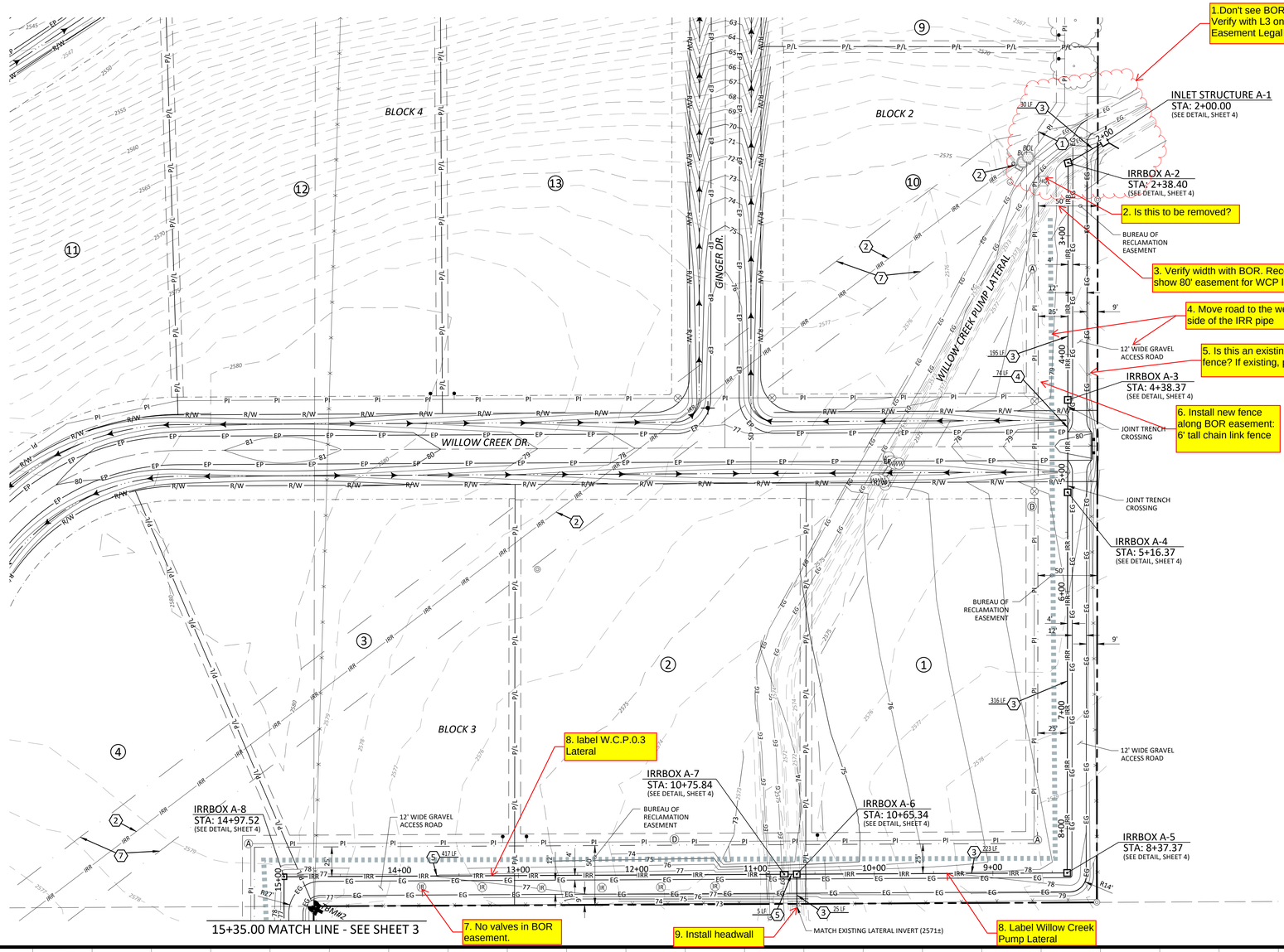
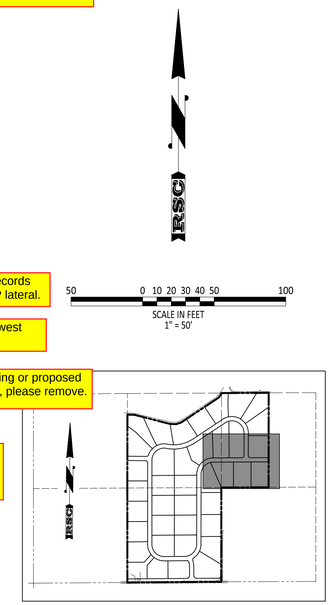
Project Name: MINT FARM ESTATES CANYON COUNTY, IDAHO

Sheet Name: COVER SHEET, INDEX, & NOTES

Stamp: PROFESSIONAL ENGINEER LICENSED 17887 PRELIM. STATE OF IDAHO DERRITT KERNER

Project No. 20-72
Drawn By: JF
Date: June 22, 2022
Sheet No. 1





KEY MAP
-NTS-

KEYNOTES

1. MATCH INTO EXISTING BUREAU OF RECLAMATION EASEMENT
2. REMOVE EXISTING 10" GIRR. BACKFILL AND COMPACT WITH APPROVED NATIVE MATERIAL. DECONSTRUCT AND REMOVE EXISTING INLET
3. INSTALL 42" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
4. INSTALL 42" C-900 GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
5. INSTALL 12" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
6. INSTALL 12" C-900 GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
7. EXISTING BUREAU OF RECLAMATION EASEMENT

IRRIGATION NOTES

1. ALL BUREAU OF RECLAMATION GRAVITY IRRIGATION PIPE TO BE HDPE (UNLESS SPECIFIED OTHERWISE) WITH A MINIMUM OF 2.5' COVER.
2. ALL TRENCHING AND PIPE BEDDING TO COMPLY WITH I.S.P.W.C. STANDARDS.

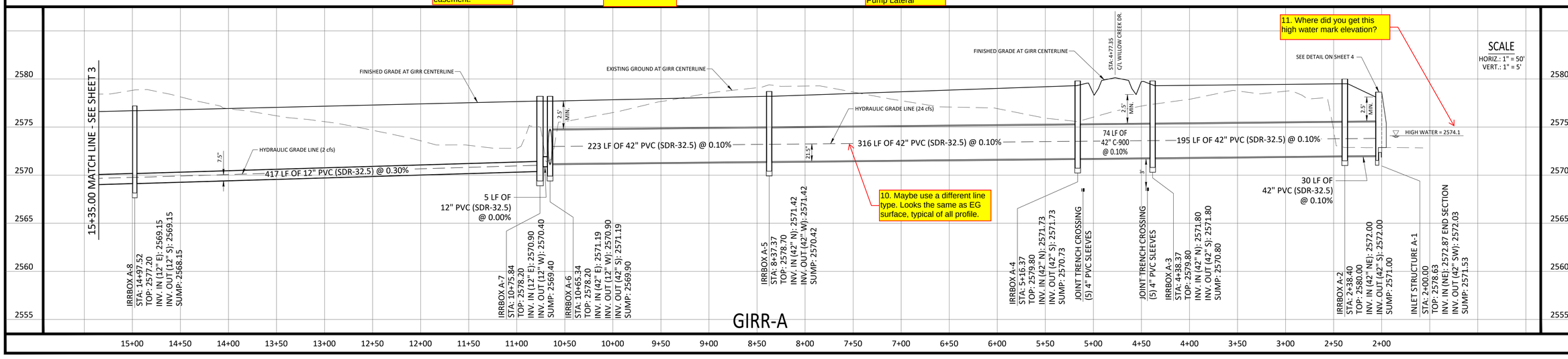
LEGEND

EXISTING

SECTION LINE
1/4 SECTION LINE
1/16 SECTION LINE
PROPERTY BOUNDARY
BRASS CAP
ALUMINUM CAP
5/8" REBAR
1/2" REBAR
EP — EP EDGE OF PAVEMENT
EG — EG EDGE OF GRAVEL
FOG LINE
SEPTIC LID
IRR — IRR GRAVITY IRRIGATION LINE
IRRIGATION VALVE
IRRIGATION HEADGATE
IRRIGATION PUMP
IRRIGATION STANDPIPE
OHP — OHP OVERHEAD POWER LINE
GUY ANCHOR
UTILITY POLE
ELECTRICAL BOX
POWER METER
TELEPHONE RISER
WIRE FENCE
WOOD FENCE
VINYL FENCE
2576 1' CONTOUR
2575 5' CONTOUR
TOE OF SLOPE
TOP OF BANK
DECIDUOUS TREE
BUILDING
BOLLARD
TEST PIT
TBM# TEMPORARY BENCHMARK

PROPOSED

R/W — R/W RIGHT OF WAY LINE
CENTERLINE
P/L — P/L LOT LINE
UTILITY EASEMENT LINE
B.O.R. EASEMENT LINE
1 LOT NUMBER
BLOCK 1 BLOCK NUMBER
IRR — IRR GRAVITY IRRIGATION PIPE



Revisions

	Date	Description
1		
2		
3		
4		

ROCK SOLID CIVIL
Civil Engineering and Land Development Consulting
270 North 27th Street, Boise, ID 83702
Office Phone: 208.342.3277
www.rocksolidcivil.com

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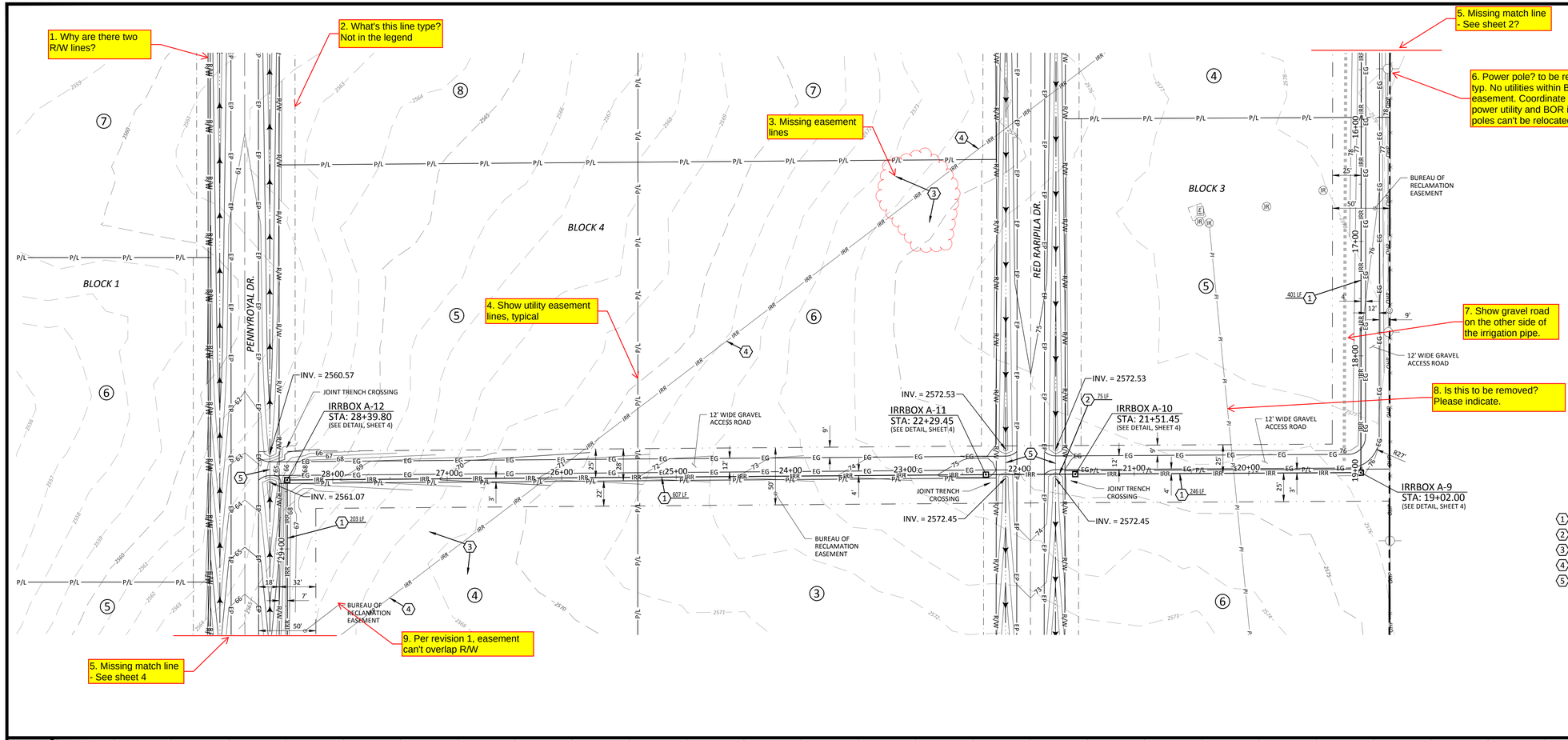
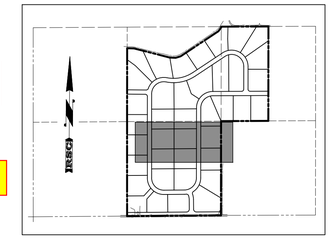
Project Name
MINT FARM ESTATES
CANYON COUNTY, IDAHO

Sheet Name
BUREAU OF RECLAMATION
IRRIGATION PLAN & PROFILE

Stamp
PROFESSIONAL ENGINEER LICENSED 17887 9-9-22 STATE OF IDAHO DERRITT KERNER

Project No. 20-72
Drawn By: JF
Date: September 9, 2022
Sheet No. 2





KEY MAP

-NTS-

KEYNOTES

1. INSTALL 12" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
2. INSTALL 12" C-900 GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
3. EXISTING BUREAU OF RECLAMATION EASEMENT
4. REMOVE EXISTING 10" GIRR. BACKFILL AND COMPACT WITH APPROVED NATIVE MATERIAL
5. INSTALL 25 LF 12" CMP

IRRIGATION NOTES

1. ALL BUREAU OF RECLAMATION GRAVITY IRRIGATION PIPE TO BE HDPE (UNLESS SPECIFIED OTHERWISE) WITH A MINIMUM OF 2.5' COVER.
2. ALL TRENCHING AND PIPE BEDDING TO COMPLY WITH I.S.P.W.C. STANDARDS.

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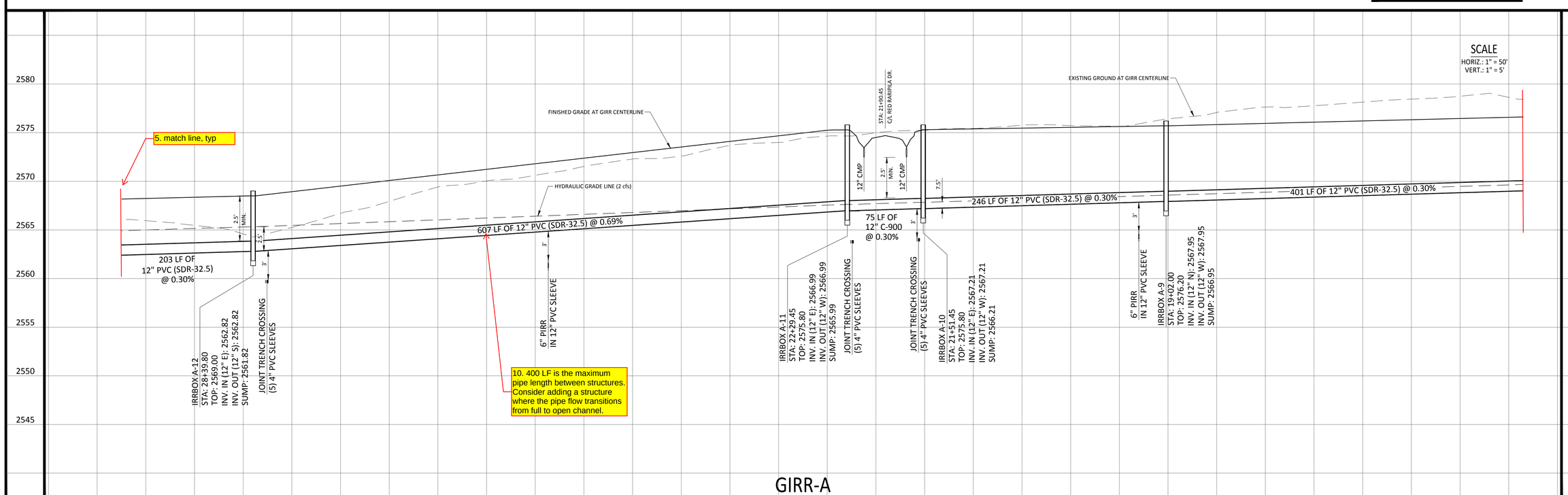

GIRR-A

Revisions

	Date	Description
1		
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Project Name: MINT FARM ESTATES CANYON COUNTY, IDAHO

Sheet Name: BUREAU OF RECLAMATION IRRIGATION PLAN & PROFILE

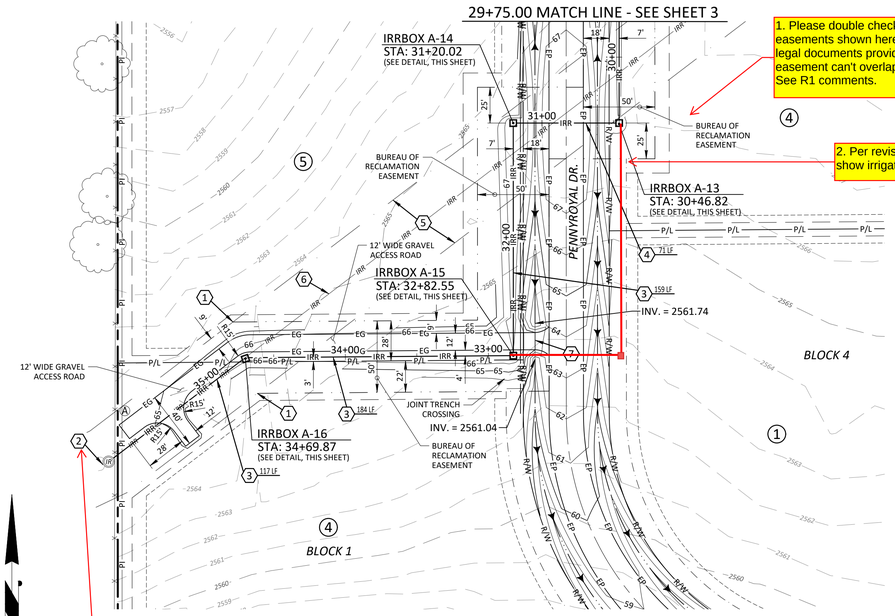
Stamp: PROFESSIONAL ENGINEER LICENSED 17887 9-9-22 STATE OF IDAHO DERRITT KERNER

Project No. 20-72

Drawn By: JF

Date: September 9, 2022

Sheet No. 3



1. Please double check that BOR easements shown here match the legal documents provided. BOR easement can't overlap public R/W. See R1 comments.

2. Per revision 1 comments, show irrigation line like this.

3. Provide a detail or more information. How will this be connected?

50 0 10 20 30 40 50 100
SCALE IN FEET
1" = 50'

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KEYNOTES

1. MATCH INTO EXISTING BUREAU OF RECLAMATION EASEMENT
2. OUTLET TO EXISTING DITCH
3. INSTALL 12" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
4. INSTALL 12" C-900 GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
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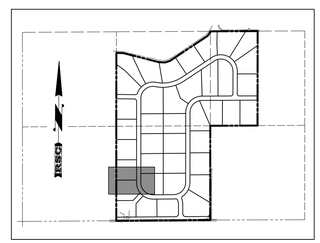
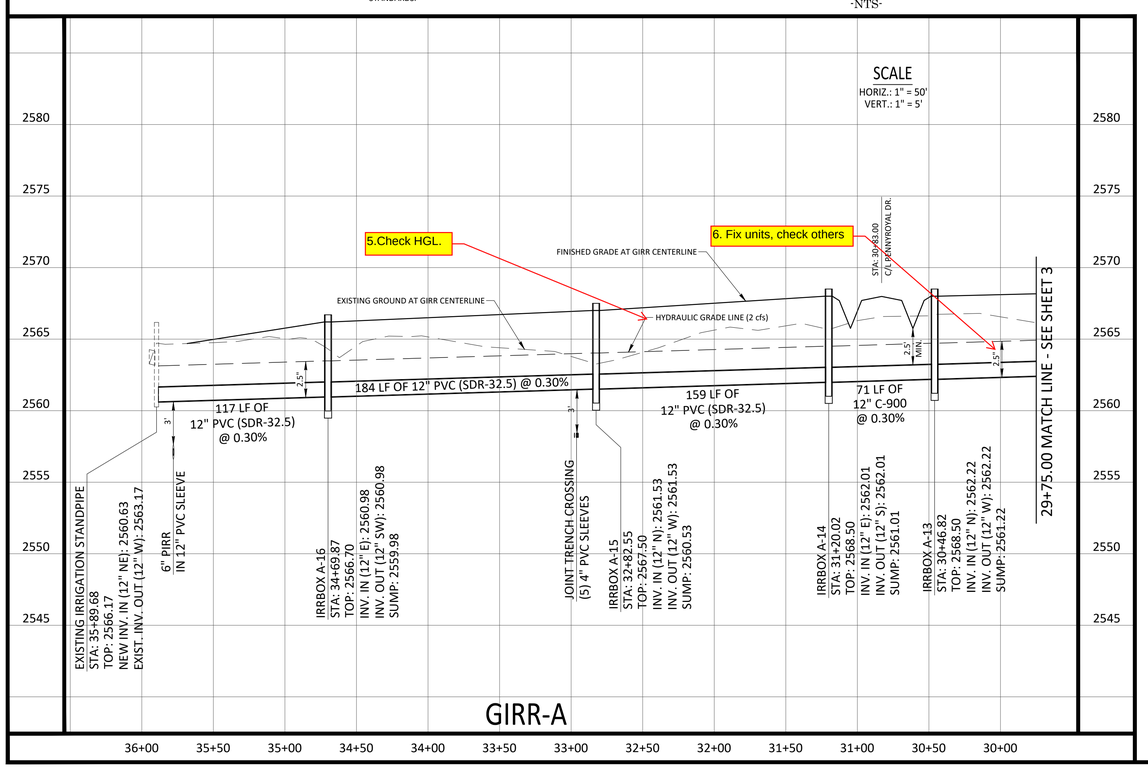
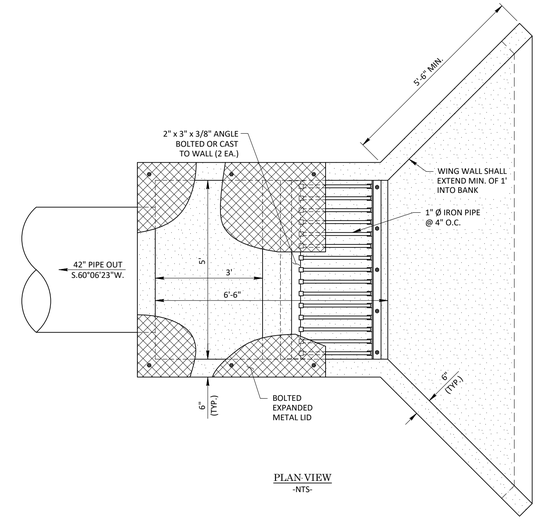
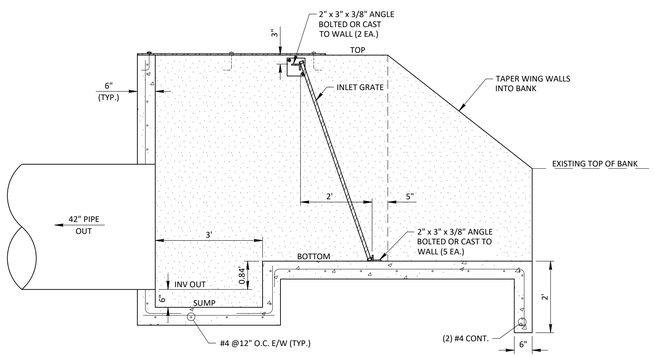


KEY MAP
-NTS-





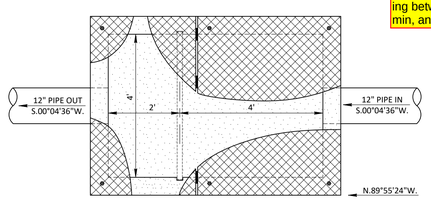
PLAN VIEW
-NTS-



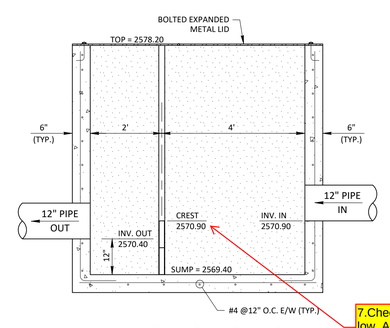
NO.	TOP	BOTTOM	INV. OUT	SUMP
A-1	2578.63	2572.87 (NE)	2572.03 (SW)	2571.53

INLET STRUCTURE A-1
-NTS-

4. Change structure to be just a headwall per ITD/ BCID standards. Include trash rack. Maximum spacing between members is 8" min, and 10" max.

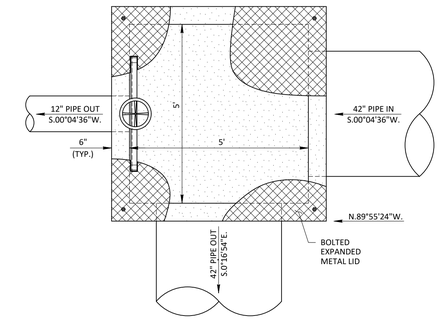


PLAN VIEW
-NTS-

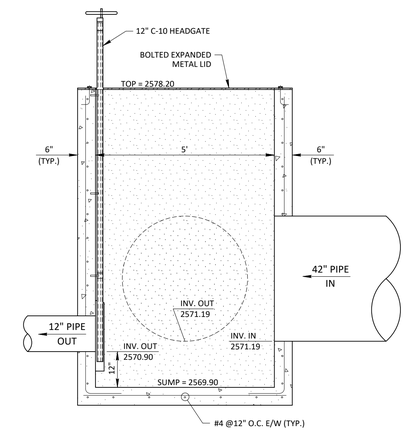


7.Check crest elevation. Too low. Add water surface elevation in the structure

IRRIGATION BOX A-7
-NTS-

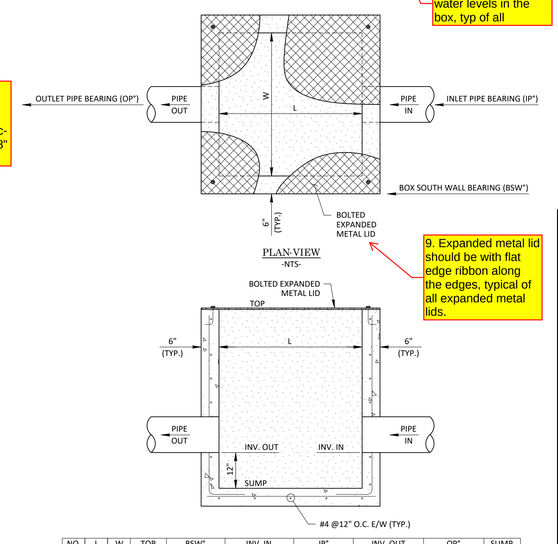


PLAN VIEW
-NTS-



IRRIGATION BOX A-6
-NTS-

8. Show or callout water levels in the box, typ of all



9. Expanded metal lid should be with flat edge ribbon along the edges, typical of all expanded metal lids.

NO.	L	W	TOP	BSW"	INV. IN	IP"	INV. OUT	OP"	SUMP
A-2	5'	5'	2580.00	S.75°05'29"W.	2572.00 (42" NE)	S.60°06'23"W.	2572.00 (42" S)	S.00°04'36"W.	2571.00
A-3	5'	5'	2579.60	N.89°55'24"W.	2571.82 (42" N)	S.00°04'36"W.	2571.82 (42" S)	S.00°04'36"W.	2570.82
A-4	5'	5'	2579.60	N.89°55'24"W.	2571.74 (42" N)	S.00°04'36"W.	2571.74 (42" S)	S.00°04'36"W.	2570.74
A-5	5'	5'	2578.70	S.89°43'06"W.	2571.42 (42" N)	S.00°04'36"W.	2571.42 (42" W)	S.89°43'06"W.	2570.42
A-8	4'	4'	2577.20	S.89°53'16"W.	2569.15 (12" E)	S.00°04'36"W.	2569.15 (12" S)	S.00°03'26"W.	2568.15
A-9	4'	4'	2576.20	S.89°52'29"W.	2567.95 (12" N)	S.00°03'26"W.	2567.95 (12" W)	S.89°41'31"W.	2566.95
A-10	4'	4'	2575.80	S.89°41'29"W.	2567.20 (12" E)	S.89°41'31"W.	2567.20 (12" W)	S.89°41'26"W.	2566.20
A-11	4'	4'	2575.80	S.89°37'28"W.	2567.00 (12" E)	S.89°41'26"W.	2567.00 (12" W)	S.89°33'30"W.	2566.00
A-12	4'	4'	2568.20	S.89°46'05"W.	2562.82 (12" E)	S.89°33'30"W.	2562.82 (12" S)	S.00°01'21"E.	2561.82
A-13	4'	4'	2567.80	S.89°58'39"W.	2562.22 (12" N)	S.00°01'21"E.	2562.22 (12" W)	S.89°58'39"W.	2561.22
A-14	4'	4'	2567.80	S.89°58'39"W.	2562.01 (12" E)	S.89°58'39"W.	2562.01 (12" S)	S.00°01'21"E.	2561.01
A-15	4'	4'	2567.10	S.89°33'30"W.	2561.53 (12" N)	S.00°01'21"E.	2561.53 (12" W)	S.89°33'30"W.	2560.53
A-16	4'	4'	2566.70	S.70°52'10"W.	2560.98 (12" E)	S.89°33'30"W.	2560.98 (12" SW)	S.52°41'35"W.	2559.98

STANDARD IRRIGATION BOX
(NO's A-2 thru A-5 & A-8 thru A-15)
-NTS-

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Revisions

	Date	Description
1		
2		
3		
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ROCK SOLID CIVIL
Civil Engineering and Land Development Consulting
270 North 27th Street, Boise, ID 83702
Office Phone: 208.342.3277
www.rocksolidcivil.com

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Project Name: MINT FARM ESTATES CANYON COUNTY, IDAHO

Sheet Name: BUREAU OF RECLAMATION IRRIGATION PLAN & PROFILE

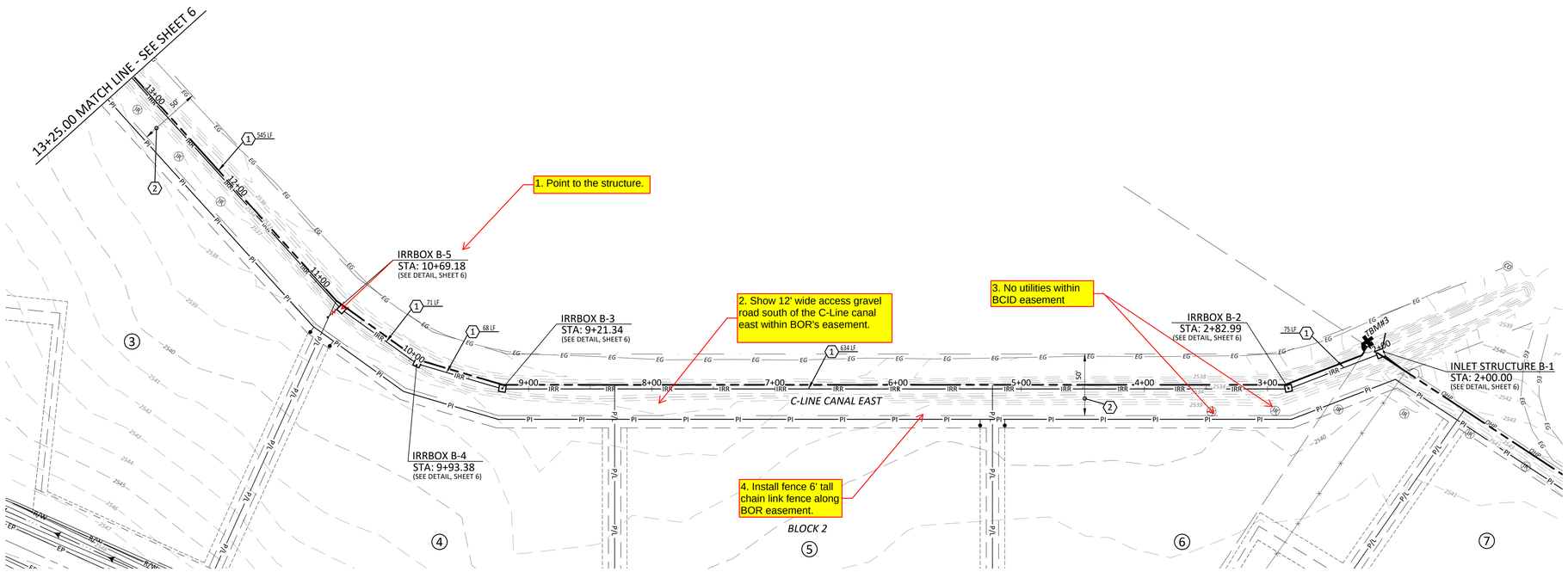
Stamp: PROFESSIONAL ENGINEER LICENSED 17887 9-9-22 STATE OF IDAHO DERRITT KERNER

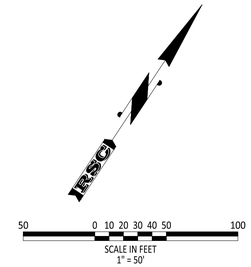
Project No. 20-72

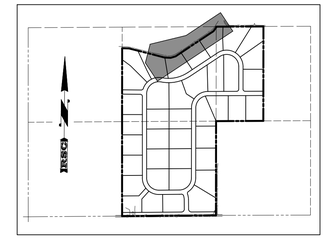
Drawn By: JF

Date: September 9, 2022

Sheet No. 4







KEY MAP

-NTS-

KEYNOTES

1. INSTALL 42" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
2. EXISTING BUREAU OF RECLAMATION EASEMENT

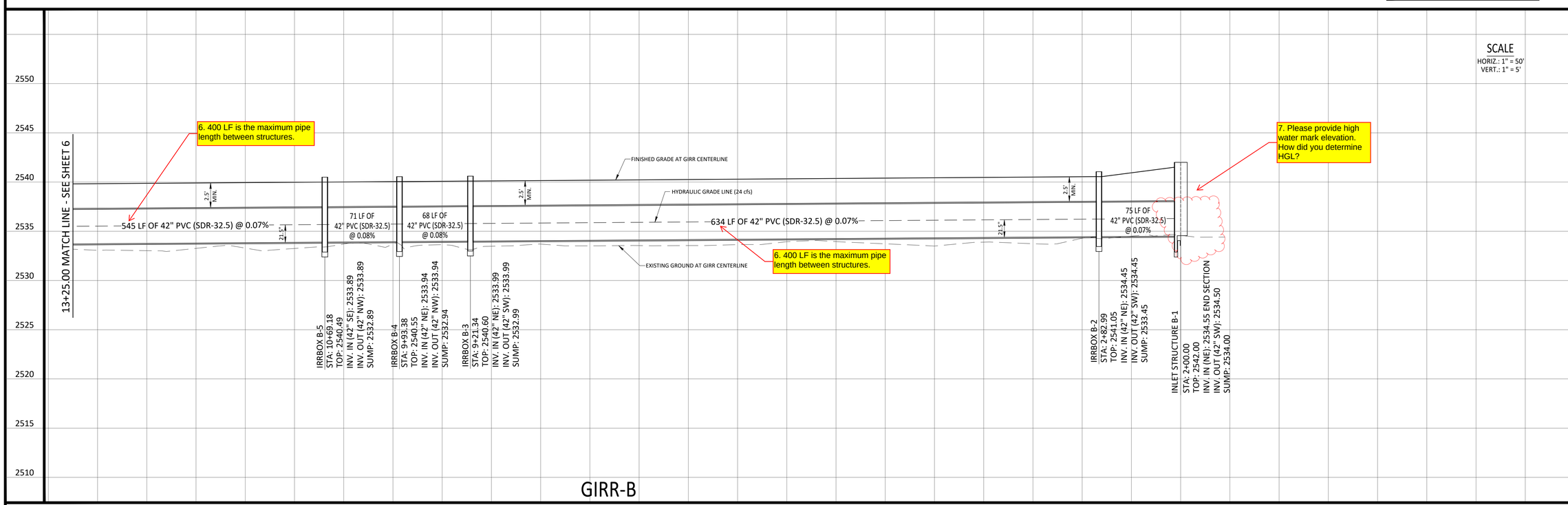
IRRIGATION NOTES

1. ALL BUREAU OF RECLAMATION GRAVITY IRRIGATION PIPE TO BE HDPE (UNLESS SPECIFIED OTHERWISE) WITH A MINIMUM OF 2.5' COVER.
2. ALL TRENCHING AND PIPE BEDDING TO COMPLY WITH I.S.P.W.C. STANDARDS.

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

CALL BEFORE YOU DIG!
CALL DIGLINE INC.
PRIOR TO COMMENCING
UNDERGROUND WORK
208-342-1585

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION



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www.rocksolidcivil.com

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Project Name: MINT FARM ESTATES CANYON COUNTY, IDAHO

Sheet Name: BUREAU OF RECLAMATION IRRIGATION PLAN & PROFILE

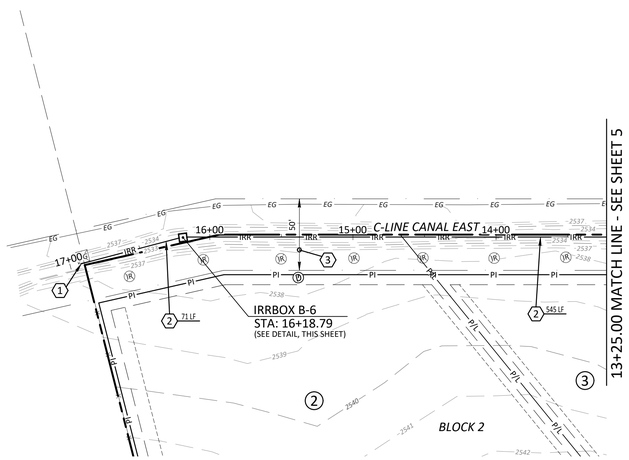
Stamp: PROFESSIONAL ENGINEER LICENSED 17887 9-9-22 STATE OF IDAHO DERRITT KERNER

Project No. 20-72

Drawn By: JF

Date: September 9, 2022

Sheet No. 5



1. Install headwall per ITD's standard drawings.

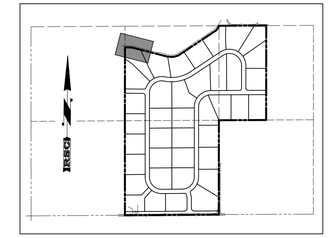
KEYNOTES

1. OUTLET TO EXISTING CANAL
2. INSTALL 42" PVC (SDR-32.5) GRAVITY IRRIGATION LINE (PROVIDE 2.5' MIN. COVER)
3. EXISTING BUREAU OF RECLAMATION EASEMENT

IRRIGATION NOTES

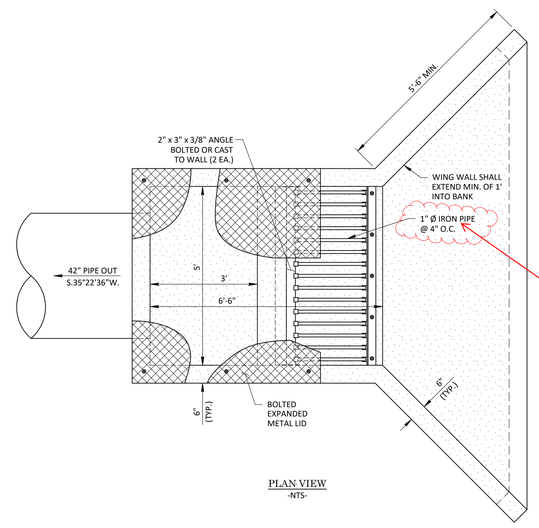
1. ALL BUREAU OF RECLAMATION GRAVITY IRRIGATION PIPE TO BE HDPE (UNLESS SPECIFIED OTHERWISE) WITH A MINIMUM OF 2.5' COVER.
2. ALL TRENCHING AND PIPE BEDDING TO COMPLY WITH I.S.P.W.C. STANDARDS.

50 0 10 20 30 40 50 100
SCALE IN FEET
1" = 50'



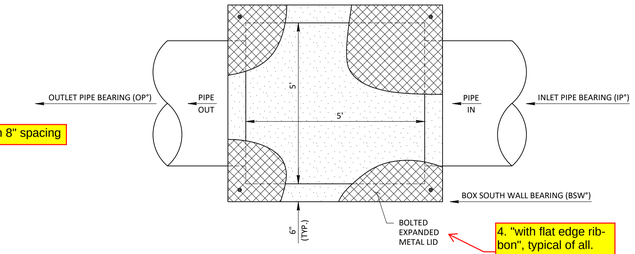
KEY MAP
-NTS-

CALL BEFORE YOU DIG!
CALL DIGLINE INC.
PRIOR TO COMMENCING
UNDERGROUND WORK
208-342-1585



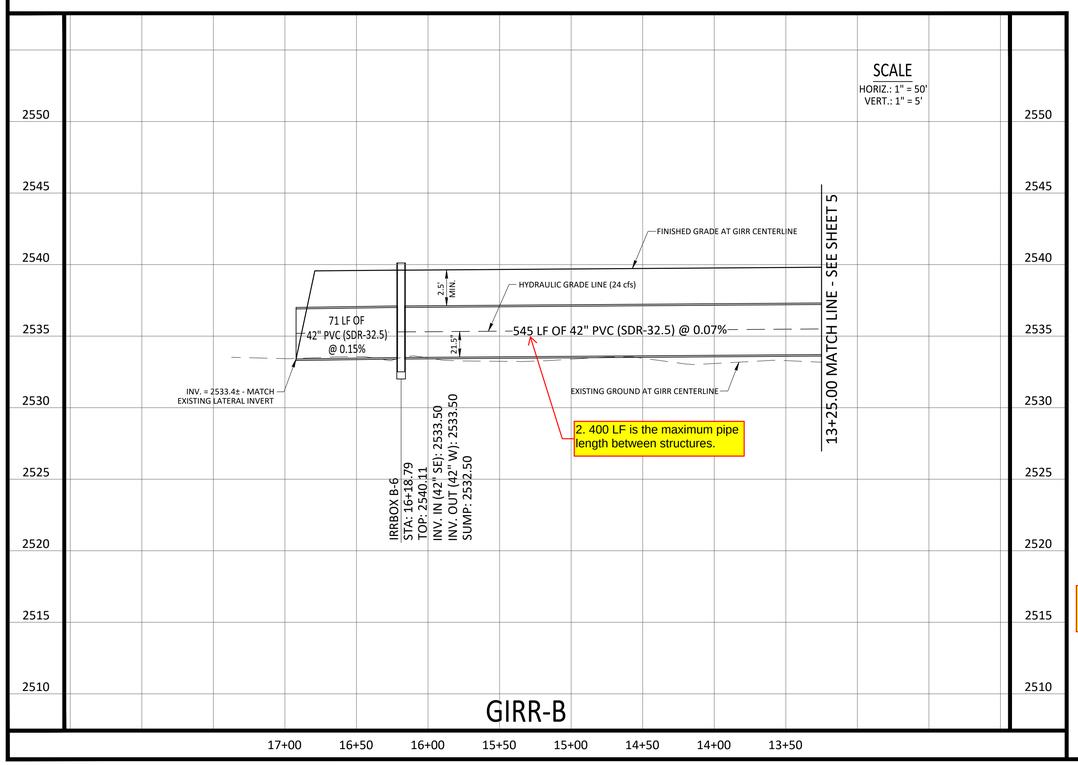
3. Min 8" spacing

PLAN VIEW
-NTS-

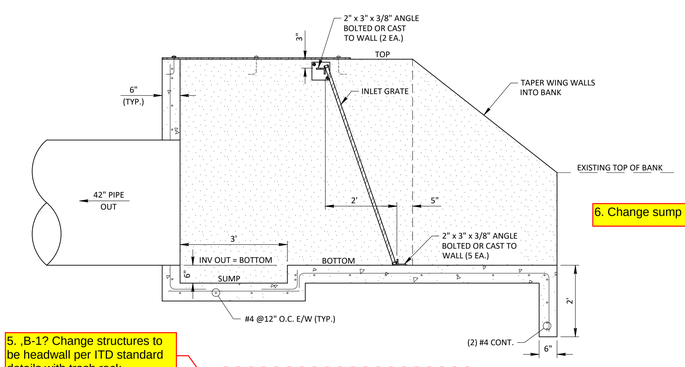


4. "with flat edge rib-bon", typical of all. BCID to provide draft detail.

PLAN VIEW
-NTS-



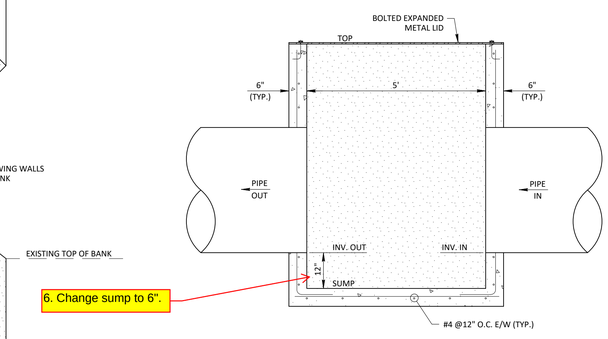
2. 400 LF is the maximum pipe length between structures.



5. ,B-1? Change structures to be headwall per ITD standard details with trash rack.

NO.	TOP	BOTTOM	INV. OUT	SUMP
B-1	2542.00	2534.50 (NE)	2534.50 (SW)	2534.00

INLET STRUCTURE A-1
-NTS-



6. Change sump to 6".

NO.	TOP	BSW"	INV. IN	IP"	INV. OUT	OP"	SUMP
B-2	2541.05	S.45°54'53"W.	2534.45 (42" NE)	S.35°22'36"W.	2534.45 (42" SW)	S.56°26'03"W.	2533.45
B-3	2540.60	S.64°39'33"W.	2533.99 (42" NE)	S.56°26'03"W.	2533.99 (42" SW)	S.72°53'02"W.	2532.99
B-4	2540.55	S.82°30'32"W.	2533.94 (42" NE)	S.72°53'02"W.	2533.94 (42" NW)	N.87°51'57"W.	2532.94
B-5	2540.49	N.81°45'48"W.	2533.89 (42" SE)	N.87°51'57"W.	2533.89 (42" NW)	N.75°39'40"W.	2532.89
B-6	2540.11	N.83°02'36"W.	2533.50 (42" SE)	N.75°39'40"W.	2533.50 (42" W)	S.89°36'28"W.	2532.50

STANDARD IRRIGATION BOX
(NO's B-2 thru B-6)
-NTS-

AGENCY REVIEW NOT APPROVED FOR CONSTRUCTION

Revisions

	Date	Description
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Civil Engineering and Land Development Consulting
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Project Name
MINT FARM ESTATES
CANYON COUNTY, IDAHO

Sheet Name
BUREAU OF RECLAMATION
IRRIGATION PLAN & PROFILE

Stamp
PROFESSIONAL ENGINEER LICENSED 17887 9-9-22 STATE OF IDAHO DERRITT KERNER

Project No. 20-72
Drawn By: JF
Date: September 9, 2022
Sheet No. 6
6 of 31

Sawtooth Land Surveying, LLC
P: (208) 398-8104 F: (208) 398-8105
2030 S. Washington Ave., Emmett, ID 83617

Existing BOR Easement Legal Description

BASIS OF BEARING for this description is S. 89°33'30" W., between a 5/8" rebar "no cap" marking the S1/4 corner of Section 27 and an aluminum cap marking the W1/16 corner of Sections 27, both in T. 5 N., R. 2 W., B.M., Canyon County, Idaho.

A strip of land located in the S1/2 of Section 27, T. 5 N., R. 2 W., B.M., Canyon County, Idaho more particularly described as follows:

COMMENCING at an aluminum cap marking the W1/16 corner of Section 27;

Thence N. 0°01'21" W., coincident with the west line of the SE1/4 of the SW1/4 of said Section 27, a distance of 539.48 feet to the **POINT OF BEGINNING.**

Thence continuing N. 0°01'21" W., coincident with said west line, 61.79 feet;

Thence leaving said west line, N. 53°59'21" E., 2334.73 feet;

Thence N. 79°12'04" E., 68.00 feet:

Thence N. 60°06'41" E., 22.06 feet;

Thence S. 0°04'36" W., 58.98 feet;

Thence S. 53°55'43" W., 18.34 feet;

Thence S. 34°15'36" W., 28.88 feet;

Thence S. 29°05'13" W., 414.42 feet;

Thence S. 8°56'09" E., 40.74 feet;

Thence S. 3°10'49" E., 172.43 feet;

Thence S. 89°43'06" W., 50.07 feet;

Thence N. 3°10'49" W., 175.19 feet;

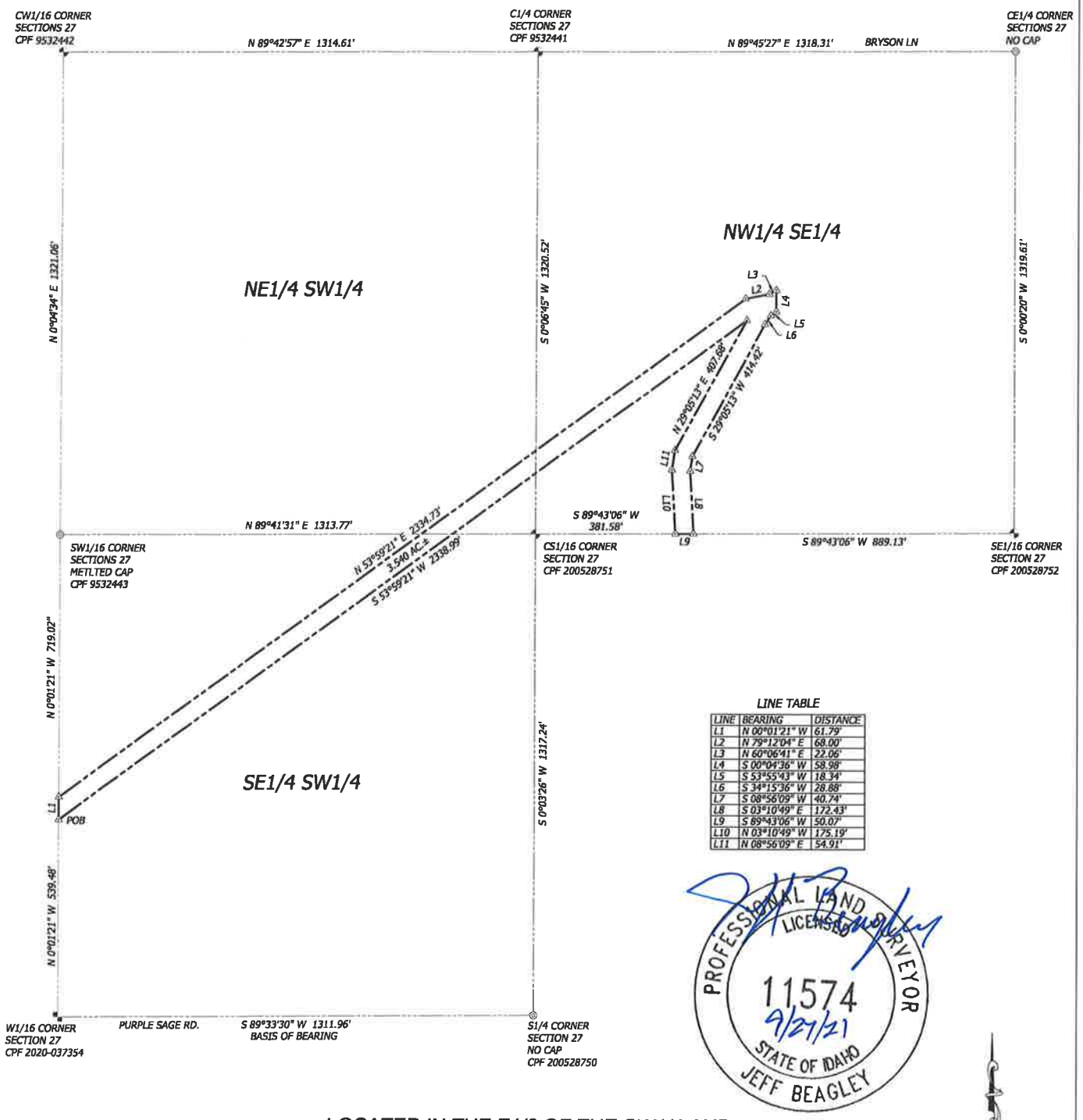
Thence N. 8°56'`09" E., 54.91 feet;

Thence N. 29°05'13" E, 407.68 feet;

Thence S. 53°59'21" W., 2338.99 feet to the **POINT OF BEGINNING.**

The above described parcel contains 3.540 acres more or less.

PROFESSIONAL LAND SURVEYOR
LICENSED
11574
9/27/21
STATE OF IDAHO
JEFF BEAGLEY



LINE TABLE

LINE	BEARING	DISTANCE
L1	N 00°01'21" W	61.79'
L2	N 79°12'04" E	68.00'
L3	N 60°06'41" E	22.06'
L4	S 00°04'36" W	58.98'
L5	S 53°55'43" W	18.34'
L6	S 34°15'36" W	28.88'
L7	S 08°56'09" W	40.74'
L8	S 03°10'49" E	172.43'
L9	S 89°43'06" W	50.07'
L10	N 03°10'49" W	175.19'
L11	N 08°56'09" E	54.91'

LOCATED IN THE E1/2 OF THE SW1/4 AND
THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2021

PROJECT:	OWNER/DEVELOPER:		DWG #
EXISTING BUREAU OF RECLAMATION EASEMENT	AMMON ANDELIN (208) 963-1188	SAWTOOTH Land Surveying, LLC — 2030 S. WASHINGTON AVE. EMMETT, ID 83617 P: (208) 398-8104 F: (208) 398-8105 WWW.SAWTOOTHLS.COM	EXHIBIT
			PROJECT# 120268
	DATE: 9/2021		SHEET 1 OF 1

Sawtooth Land Surveying, LLC

P: (208) 398-8104 F: (208) 398-8105
2030 S. Washington Ave., Emmett, ID 83617

Relocated BOR Easement Legal Description

BASIS OF BEARING for this description is S. 89°33'30" W., between a 5/8" rebar "no cap" marking the S1/4 corner of Section 27 and an aluminum cap marking the W1/16 corner of Sections 27, both in T. 5 N., R. 2 W., B.M., Canyon County, Idaho.

A 50-foot wide strip of land located in the S1/2 of Section 27, T. 5 N., R. 2 W., B.M., Canyon County, Idaho more particularly described as follows:

COMMENCING at an aluminum cap marking the W1/16 corner of Section 27;

Thence N. 0°01'21" W., coincident with the west line of the SE1/4 of the SW1/4 of said Section 27, a distance of 540.36 feet to the **POINT OF BEGINNING.**

Thence continuing N. 0°01'21" W., coincident with said west line, 50.00 feet;

Thence leaving said west line, N. 89°33'30" E., 269.32 feet;

Thence N. 41°11'14" E., 100.37 feet:

Thence N. 0°01'21" W., 293.19 feet;

Thence N. 89°33'30" E., 629.96 feet;

Thence N. 89°41'31" E., 297.87 feet;

Thence N. 0°03'26" E., 409.49 feet;

Thence N. 89°43'06" E., 660.16 feet;

Thence N. 0°04'36" E., 602.59 feet;

Thence N. 34°15'36" E., 88.99 feet;

Thence S. 0°04'36" W., 725.89 feet;

Thence S. 89°43'06" W., 660.14 feet;

Thence S. 0°03'26" W., 409.47 feet;

Thence S. 89°41'31" W, 347.49 feet;

Thence S. 89°33'30" W., 580.27 feet;

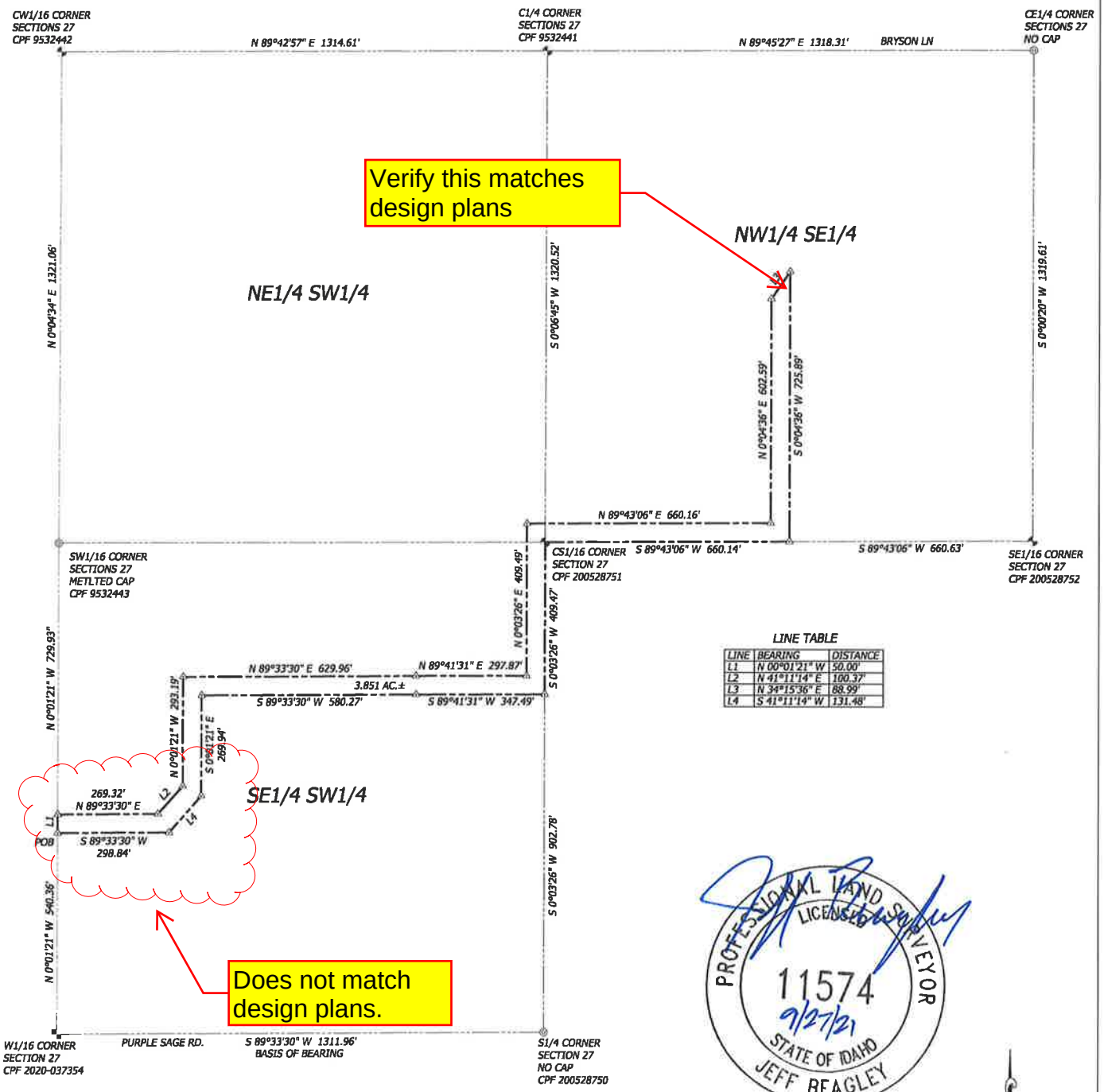
Thence S. 0°01'21" E., 269.94 feet;

Thence S. 41°11'14" W., 131.48 feet;

Thence S. 89°33'30" W., 298.84 feet to the **POINT OF BEGINNING.**

The above described parcel contains 3.851 acres more or less.

PROFESSIONAL LAND SURVEYOR
LICENSED
11574
9/21/21
STATE OF IDAHO
JEFF BEAGLEY

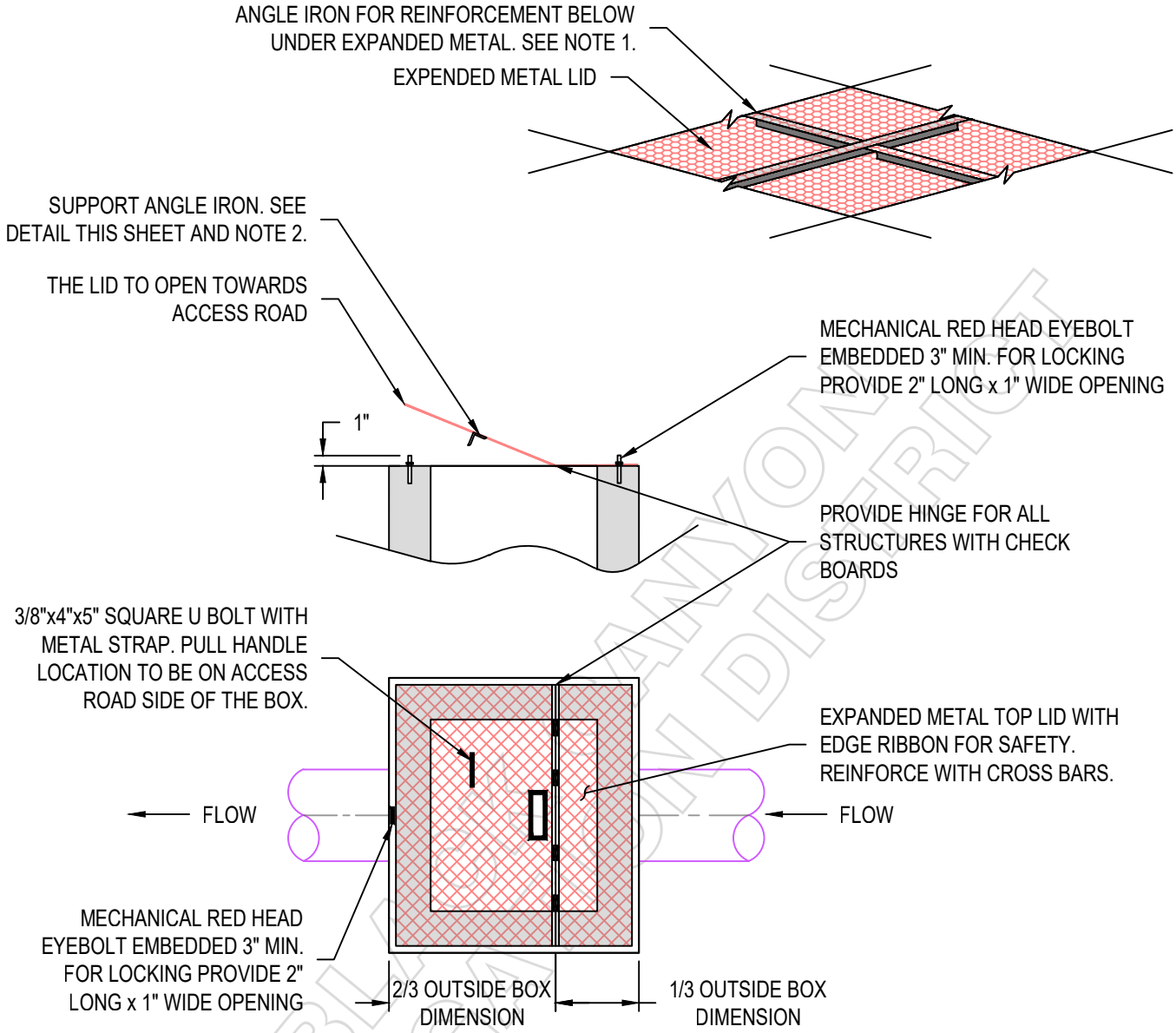


LINE TABLE

LINE	BEARING	DISTANCE
L1	N 00°01'21" W	50.00'
L2	N 41°11'14" E	100.37'
L3	N 34°15'36" E	88.99'
L4	S 41°11'14" W	131.48'

LOCATED IN THE E1/2 OF THE SW1/4 AND
THE W1/2 OF THE NW1/4 OF THE SE1/4 OF SECTION 27,
T. 5 N., R. 2 W., B.M., CANYON COUNTY, IDAHO
2021

PROJECT:	OWNER/DEVELOPER:		DWG # EXHIBIT
RELOCATED BUREAU OF RECLAMATION EASEMENT	AMMON ANDELIN (208) 963-1188	SAWTOOTH Land Surveying, LLC — 2030 S. WASHINGTON AVE. EMMETT, ID 83617 P: (208) 398-8104 F: (208) 398-8105 WWW.SAWTOOTHLS.COM	PROJECT# 120268
	DATE: 9/2021		SHEET 1 OF 1



BLACK CANYON IRRIGATION DISTRICT

NOTES:

1. STRUCTURE LIDS IN RIGHT OF WAY SHALL BE HS-25 WHEEL LOAD RATED. STRUCTURE LIDS OUTSIDE OF RIGHT OF WAYS SHALL BE DESIGNED TO WITHSTAND A 300 LB POINT LOAD WITH A MAXIMUM DEFLECTION OF 1/2 INCH AT CENTER SPAN AND IN ACCORDANCE WITH IBC.
2. ALL EXPANDED METAL TOPS SHALL BE REINFORCED WITH STEEL ANGLE IRON OR OTHER WITH A MAXIMUM CLEAR OF 6 SQUARE FEET. ANGLE IRON REINFORCEMENT: 2" X 2" X 1/4"
3. ALL EDGES OF EXPANDED METAL TOP (INCLUDING INTERNAL EDGES) SHALL HAVE 2" x 1/8" STEEL FLAT BAR RIBBON WELDED FOR SAFETY.
4. LIDS SHALL HAVE A CHAIN RING NEAR CANAL GATES TO SECURE GATES WITH A CHAIN. BOLTS AND CHAIN SHALL BE CAST IN PLACE. CANAL GATES SHALL BE ACCESSIBLE WITHOUT OPENING LID. ALL LIDS SHALL HAVE A LOCKING MECHANISM APPROVED BY THE DISTRICT.

IRRIGATION SYSTEM STANDARD DETAIL

TYPICAL EXPANDED METAL LID DETAIL

DRAFT

FILE: BCID-D-METALLID.DWG	REVISED: 04/18/2023	DWG NO. GIR07

BLACK CANYON IRRIGATION DISTRICT

Debbie Root

From: Lenny Riccio <LRiccio@canyonhd4.org>
Sent: Thursday, June 29, 2023 1:44 PM
To: Debbie Root
Subject: [External] RE: Kingsbury Road?

Not with Wyatt's Hollow; however, Cloud 9 Subdivision comes to mind. They had plans to extend it as a part of development. CHD4 does not have this as a part of the Capital Improvement Plan so development will be providing this extension.

Lenny Riccio, P.E.
Transportation Planner
Assistant District Engineer
Canyon Highway District No. 4
canyonhd4.org
15435 Hwy 44
Caldwell, ID 83607
Phone: (208) 454-8135
Fax: (208) 454-2008

From: Debbie Root <Debbie.Root@canyoncounty.id.gov>
Sent: Thursday, June 29, 2023 1:41 PM
To: Lenny Riccio <LRiccio@canyonhd4.org>
Subject: Kingsbury Road?

Lenny,

Are there plans, now or in the future to complete Kingsbury Road from Lanktree to Foothill? Seems like there was some expectation of build out when Wyatt's Hollow prelim plat was approved.

Deb Root, MBA
Canyon County Development Services
debbie.root@canyoncounty.id.gov
208-455-6034

Development Services Department (DSD)
NEW public office hours
Effective Jan. 3, 2023
Monday, Tuesday, Thursday and Friday
8am – 5pm
Wednesday
1pm – 5pm
****We will not be closed during lunch hour ****

EXHIBIT
H 6

CANYON HIGHWAY DISTRICT NO. 4

Mid-Star Service Area Capital Improvements Plan

Prepared by Kittelson & Associates, Inc.
May 7, 2021

Prepared for:

Canyon Highway District No. 4
City of Star, Idaho
City of Middleton, Idaho

EXHIBIT
I 1

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INTRODUCTION

Canyon Highway District No. 4 (CHD4) has prepared this Middleton-Star Capital Improvements Plan (herein referred to as "Mid-Star Service Area CIP") to identify, plan and prioritize transportation projects through the year 2040 within the CHD4 Subdistrict No. 1 planning area. Improvements were identified based on an analysis of the existing and future transportation system, utilizing the Community Planning Association of Southwest Idaho's (COMPASS) travel demand model. CHD4, Canyon County, City of Middleton and City of Star were all involved in the CIP development for joint use in adopting transportation impact fees to fund improvements to the highway system, to serve new growth and development, and to protect the health, safety, and general welfare of the citizens of these communities.

A Traffic Impact Fee program (TIF) (*Reference 1*) was developed in conjunction with this CIP so that impact-fee eligible projects from the CIP could be funded through development impact fees in accordance with Idaho Code 67-82 (Idaho Development Impact Fee Act). Development Impact Fee Advisory Committees from Canyon County, City of Star, and City of Middleton (DIFAC) were engaged for the development of the CIP and TIF Program. The joint DIFAC met four times (June 3, 2020; September 15, 2020; November 10, 2020; January 13, 2021) to review materials and provide comments on development of the CIP and TIF. *Meeting materials and summary notes are included in Appendix A. Appendix B contains the requirements laid out in the Idaho code and a general description of how each is addressed in this CIP.*

In order to meet the requirements set forth in Idaho Code 67-8208 (1) (b)- "Commitment for non-Impact Fee revenues to cure Existing System Deficiencies", CHD4, the City of Star, and the City of Middleton commits to using revenue sources other than development impact fees to cure existing system deficiencies, where practical, with the adoption of this Capital Improvement Plan.

Service Area & Service Network

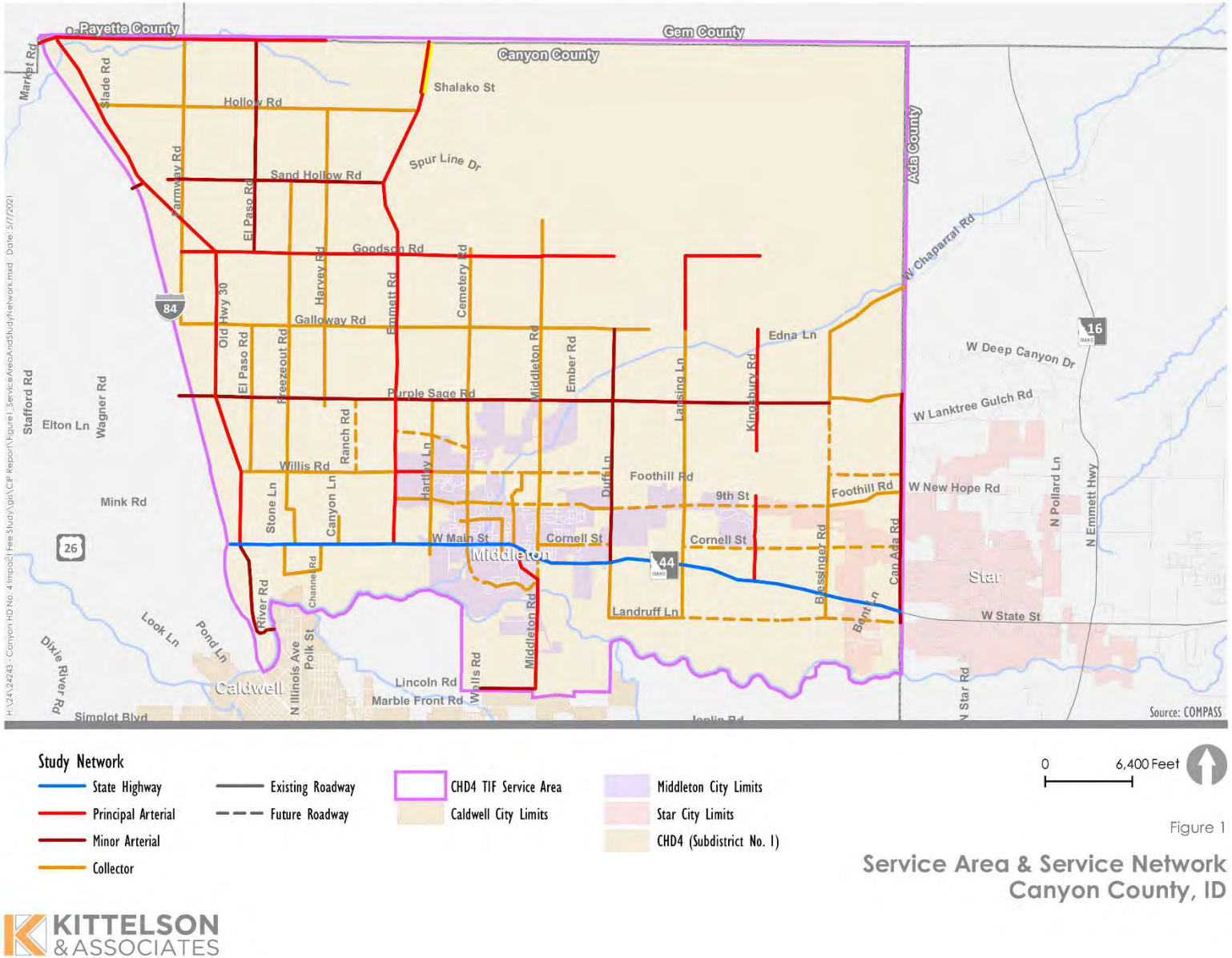
The service area for this CIP and for CHD4's Traffic Impact Fee program include multiple jurisdictions: City of Middleton, the western portion of the City of Star, unincorporated Canyon County and CHD4. The City of Caldwell also has a small park in the southwest corner of the service area but does not have jurisdiction over or maintain any public roadways in the service area. The service area is bounded to the north by Gem County and Payette County, to the south by the Boise River and Lincoln Road, to the west by I-84, and to the east by Ada County. The service area also includes the City of Middleton Area of Impact south of the Boise River, described as the lands east of KCID Road, north of Lincoln Road, and west of Midland Boulevard.

Arterial and certain collector roadways within the service area were identified as the service network for this CIP. These roadways are typically eligible for traffic impact fees as they are utilized by trips of significant length within or through the service area. Those collector roadways deemed regionally significant are generally located on section lines at one-mile intervals, and are likely to develop into a minor arterial function as urban growth expands within the service area. Local roadways and some minor collectors are excluded from this study, as their principal purpose is to distribute trips to and from the regional arterial/collector network. State Highway 44 is maintained by the Idaho Transportation Department (ITD) and is included in this analysis to

evaluate the CHD4-maintained roadway intersections with the highway, and may require improvements due to new growth and development. Improvements to the state highway system maintained by ITD are not included in this CIP and are not eligible for impact fee funding; however, improvements to the local road approaches to the state highway system and the local share of the cost of traffic signal equipment at these intersections are impact fee eligible, and are included in this plan.

Figure 1 shows the boundaries of the service area and arterial and collector roadways included in the service network. *Appendix E includes Technical Memorandum #1B, which provides additional discussion on service area demographics and roadway facilities in the study area.*

Figure 1. Service Area & Service Network



Existing Service Network

There are three separate roadway jurisdictions within the Mid-Star service area: Canyon Highway District No. 4 (CHD4), City of Middleton, and City of Star. By agreement[1] with City of Star, CHD4 acts as the highway jurisdiction for those portions of Star within Canyon County, and receives from Star the roadway-related tax revenues generated within city limits in Canyon County. City of Middleton has a functioning street department and has jurisdiction over all roadways within its city limits.

There are three existing improved intersections in the service area, consisting of two dual-lane roundabouts on Emmett Road adjacent to Middleton High School, and the existing signalized intersection at SH 44 and Middleton Road in downtown Middleton. All other intersections within the service area are stop controlled (two-way or all-way). All highways included in the service network are two lane rural roads, except at isolated locations where development-related frontage improvements have been constructed.

The existing and anticipated year 2040 service network is described in Table 1, and consists of approximately 116 miles of existing highways:

Table 1. 2020 and 2040 Service Network Mileage by Functional Classification

	2020 Network	2040 Network
Total Network Mileage	116.2	138.2
State Highway	9.4 (8.1%)	9.4 (6.8%)
Principal Arterial	28.5 (24.5%)	28.6 (20.7%)
Minor Arterial	23.8 (20.5%)	23.8 (17.2%)
Collector	54.5 (46.9%)	76.5 (55.3%)

Note: Values represent directional mileage of study network roadways (excludes local roadways)
Source: COMPASS

Existing system deficiencies are described in detail beginning on page 20 of this document.

CIP Process

The following transportation plans, capital improvement plans, and corridor studies were reviewed to identify transportation projects within the service area. These projects were reviewed and considered for inclusion in the CIP to ensure consistency between previous planning efforts.

- CHD4 Transportation Master Plan *(Reference 2)*
- City of Middleton Capital Improvements Plan *(Reference 3)*
- City of Star Comprehensive Plan *(Reference 4)*

[1] Canyon 4/Star Public Agency Coordination Agreement, June 6, 2007.

- SH-44, I-84 to Eagle, Corridor Study *(Reference 5)*
- Middleton Road Corridor Plan *(Reference 6)*

Projects included in this CIP were selected through a planning-level traffic operations analysis. Analyses were completed to identify corridors and intersections with existing (2020) and future (2040) capacity-related deficiencies. The CIP development process is briefly outlined below.

- The COMPASS Travel Demand Model was updated to include current residential land use, and population and employment forecasts for 2040.
- COMPASS model output (existing and future traffic volumes) was used to identify existing and future deficiencies through a planning level traffic operations analysis.
- CIP projects and cost estimates were developed from the list of deficient roadways and intersections.
- TIF-eligibility and other funding mechanisms were determined through discussions with partner agencies, review of funding sources for transportation projects by jurisdiction, and a review of the Idaho Development Impact Fee Act.

METHODOLOGY & ASSUMPTIONS

Land Use

Existing and future roadway and intersection deficiencies were identified using output from the COMPASS Travel Demand Model. COMPASS provided existing and future year traffic volumes for roadways, based on the existing and projected future year demographic data in the Traffic Analysis Zones (TAZ). The COMPASS network includes arterial and collector roadways within the service area. Figure 1 shows the roadways included in the COMPASS model and considered in development of this CIP.

For purposes of this study, the 2040 COMPASS Travel Demand Model was used as a basis for the demographic and land use assumptions in the service area. The current year 2020 demographics from the baseline COMPASS model were adjusted to quantify the existing residential population using aerial photography commissioned by COMPASS in 2019 to identify total existing residential development for each TAZ. Future year 2040 demographics were also modified from the base COMPASS travel demand model to reflect recent and expected development trends in the service area, based on current and planned growth patterns identified in the Canyon County, City of Middleton, and City of Star Comprehensive Plans (References 7, 8, and 9). Table 2 summarizes the year 2020 and year 2040 demographics for the service area. Figure 2 and Figure 3 show the year 2040 population and employment estimates by TAZ. *Appendix C includes figures showing year 2020 population and employment by TAZ.*

Table 2. Year 2020 and Year 2040 Demographics in Mid-Star Service Area

	Population				Employment			
Jurisdiction	2020	2040	Change	Percent	2020	2040	Change	Percent
City of Middleton	9,710	27,342	+17,632	+182%	1,521	3,952	+2,431	+160%
City of Star (in Canyon County)	150	12,646	+12,496	+8,331%	20	361	+341	+1,705%
Unincorporated Canyon County	10,544	4,287	-6,257	-59%	801	600	-201	-25%
Total Service Area	**20,414**	**44,315**	**+23,901**	**+117%**	**2,342**	**4,939**	**+2,597**	**+111%**

Additional coordination occurred with COMPASS and relevant agencies to identify new arterial and collector roadway alignments that are likely to be constructed by year 2040 for inclusion in the model. These roadway alignments were primarily in areas that are expected to experience high population and employment growth by the year 2040.

Service Units by Land Use Category

Traffic impact fees must be developed through use of service units to be consistent with the Idaho Development Impact Fee Act. Service units, or the measure of system demand associated with each new development, are measured in Vehicle Miles Traveled (VMT) on the service network during the PM peak hour. The total amount of PM peak hour trips are used to estimate VMT generated by different land use types. Table 3 shows the estimated growth in PM peak hour trips and in employment by different land-use types as assumed in the COMPASS demographic forecasts.

Table 3. Year 2020 and Year 2040 Demographics in Mid-Star Service Area – Land-Use Categories

Year	P.M. Peak Hour Trips	Population	Employment					
			Retail	Office	Industrial	Government	Agriculture	Education
2020	3,252	20,414	427	757	460	79	107	512
2040	7,384	44,315	1,246	1,946	924	135	83	669

Figure 2. Year 2040 Population by Traffic Analysis Zone

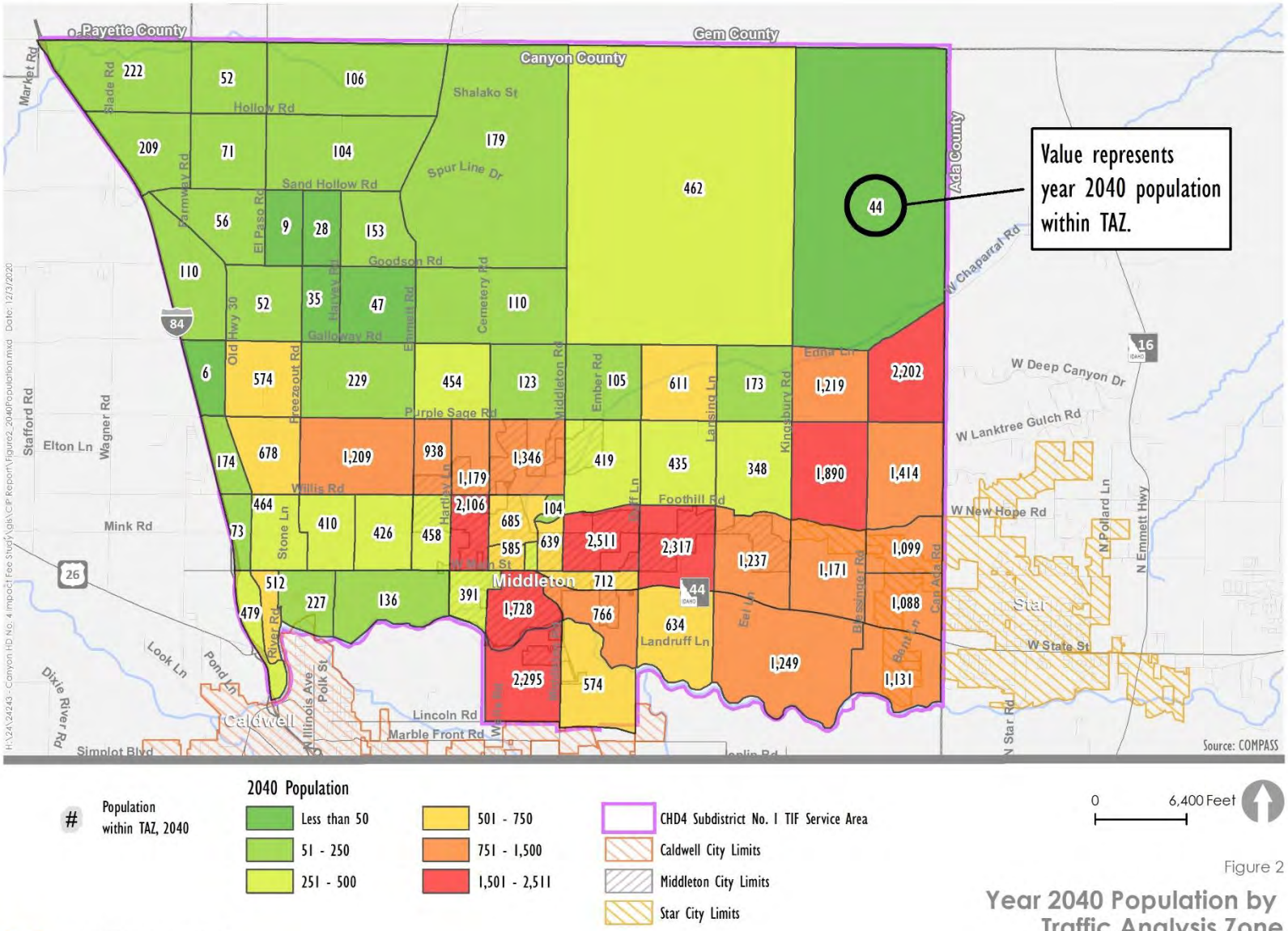


Figure 2

Year 2040 Population by Traffic Analysis Zone Canyon County, ID

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Figure 3. Year 2040 Employment by Traffic Analysis Zone

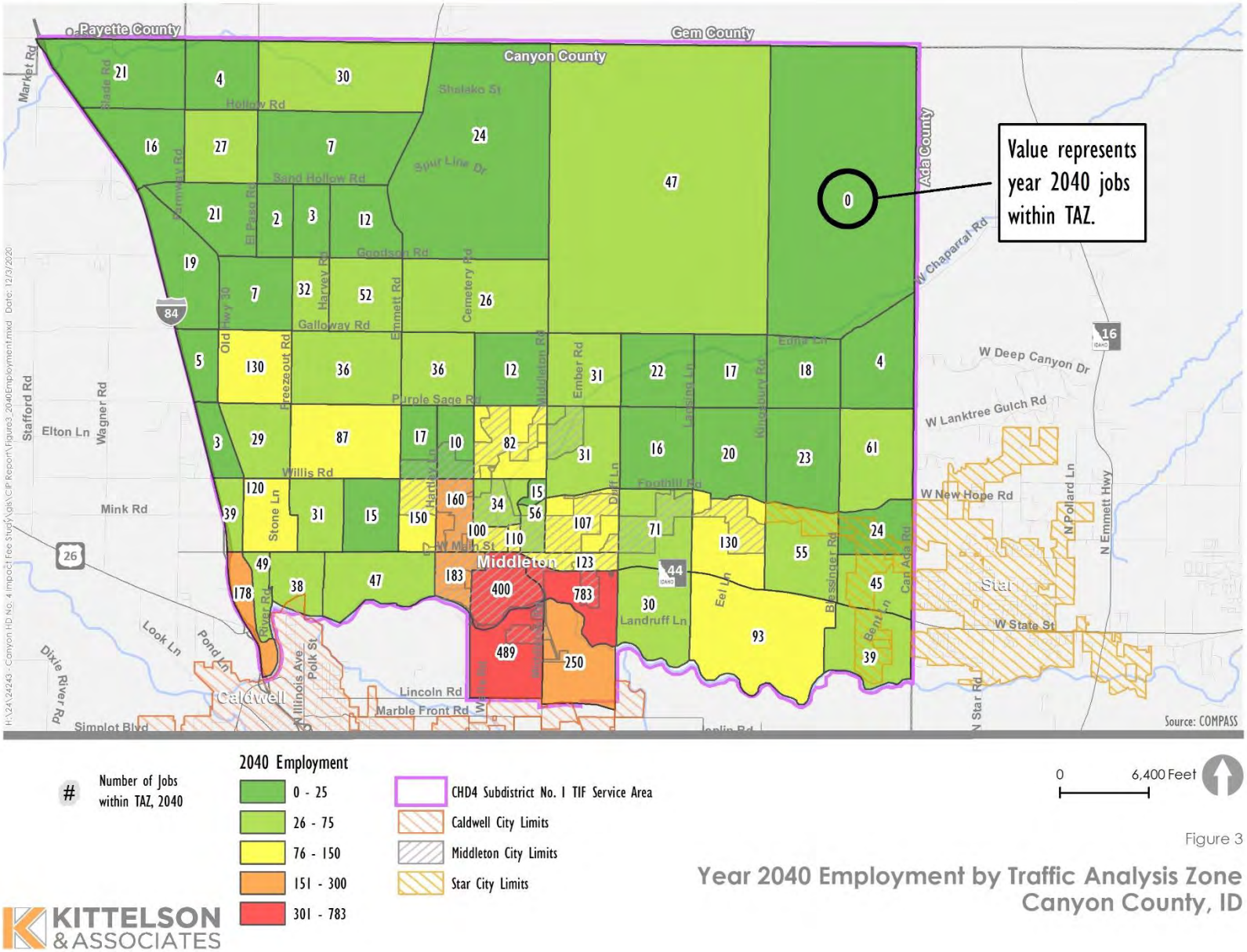


Figure 3

Year 2040 Employment by Traffic Analysis Zone
Canyon County, ID

Performance Measures & Traffic Operations

A traffic operations analysis was conducted for existing and future roadways and intersections within the service area. The following section outlines the methodologies and processes used in the analysis, as well as the performance measure used to determine deficient segments and intersections. *Appendix D includes Technical Memorandum #1A, which includes additional discussion on traffic operations methodology and performance measures.*

Performance Measure

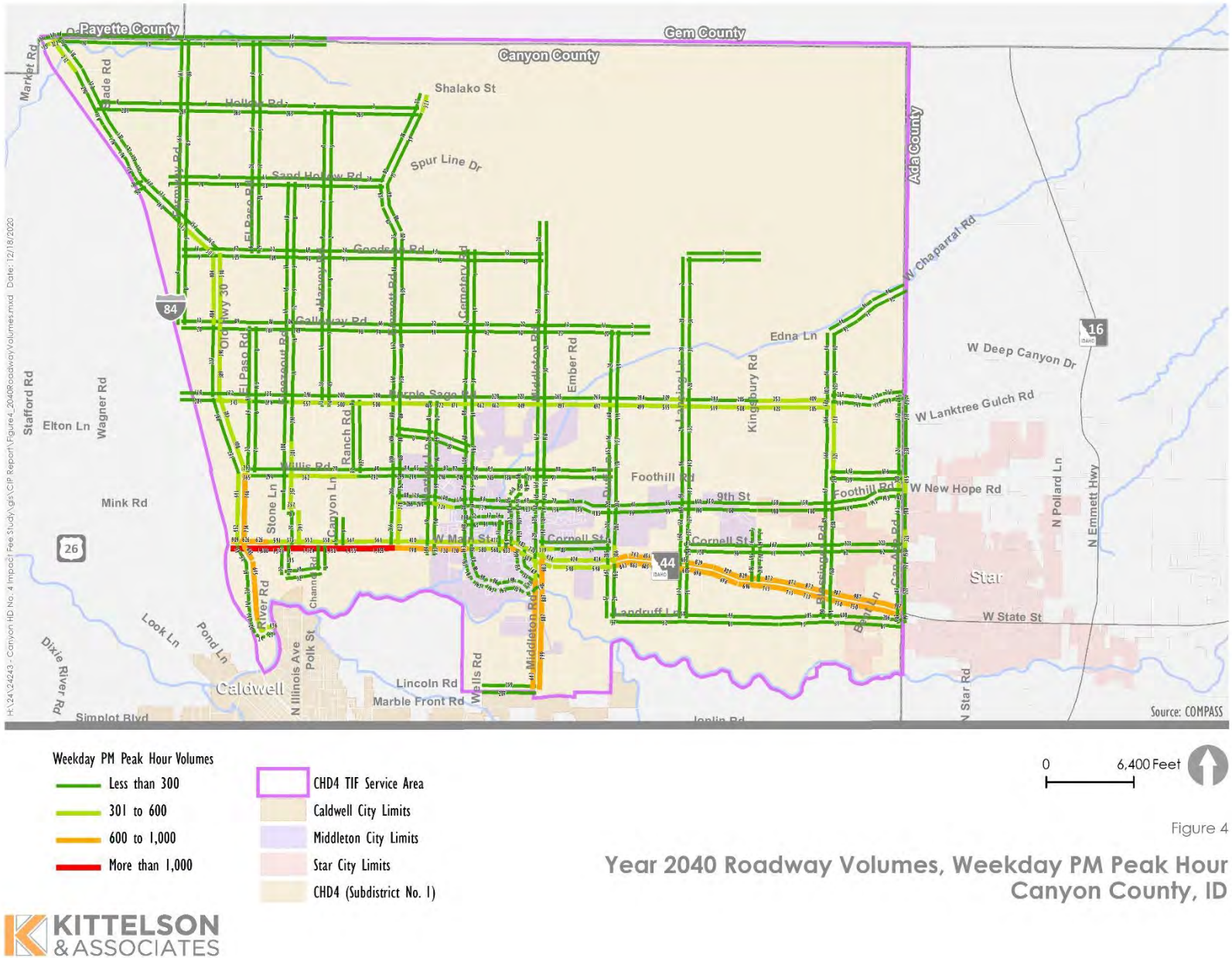
The traffic operations analysis performed in this CIP utilized a performance measure of **level of service (LOS) D** for roadway segments and intersections, based on the following characteristics:

- Goals and objectives for the service area.
- Consistent with current practice by CHD4 and City of Star.
- Consistent with other transportation agencies in the Treasure Valley.
- The measure is tied to the capacity of the roadway segments and intersections consistent with the Idaho Code 67-82.
- The measure can be calculated via HCM methodology.

Roadway Volumes

The revised year 2040 land use assumptions embedded in the COMPASS travel demand model were used to develop future roadway volumes for the study network. COMPASS provided daily volumes as well as PM peak hour, directional volumes for year 2020 and 2040 analysis years. Figure 4 shows weekday PM peak hour roadway volumes for year 2040.

Figure 4. Year 2040 Roadway Volumes, Weekday PM Peak Hour



Roadway Methodology

Roadway operations were evaluated within the service area using service volume thresholds based on methodologies from the Highway Capacity Manual (HCM), 6th Edition. The specific values used in this analysis were developed using the Florida Department of Transportation's (FDOT) 2020 generalized service volume tables. *For more information regarding this process and other service volume tables, see Technical Memorandum #2 in Appendix F.*

Table 4 provides two distinct sets of service volumes for different roadway classifications, lane configurations, and the presence of turn lanes, center turn-lane, or median. These sets include:

- CHD4 Service Volumes: Urbanized Areas – developed using 2020 FDOT "Urbanized Area" service volume table
- CHD4 Service Volumes: Transitioning Areas – developed using 2020 FDOT "Transitioning and Areas Over 5,000 Not in Urbanized Areas" service volume table

The context of each roadway was categorized as follows: "urbanized area" for roadways within an incorporated city and "transitioning area" for roadways within an unincorporated area of the county. The following describes the methodology for evaluating roadway segments:

Step 1: COMPASS Regional Travel Demand Model output was obtained. Existing (2020) and future (2040) peak-hour directional volumes (weekday PM peak hour) for each roadway were provided from COMPASS model link volumes.

Step 2: Each roadway segment was evaluated by comparing the peak-hour directional volumes calculated in Step 1 with the selected thresholds outlined in Table 4 (on the next page). Using LOS D as the threshold, roadways that require capacity improvements were identified, and project types were recommended for each roadway to meet this performance measure.

Step 3: The list of recommended projects was presented to partner agencies. The project list was refined based on input from partner agencies and incorporated into the CIP. The Freezeout Rd- SH 44 to Willis Rd roadway project exceeded the LOS D threshold. It was removed by observation as it would not logically function as arterial or major collector components to the network.

Table 4. Roadway Service Volume Thresholds

Functional Classification	Characteristics	Number of Lanes per Direction of Travel	Directional Peak Hour Volume Level of Service Planning Thresholds			
			Urbanized Areas		Transitioning Areas	
			LOS D	LOS E	LOS D	LOS E
Principal Arterial	Undivided; No left turn lanes at intersections	1	620	**	560	**
	Undivided; Left turn lanes at intersections	1	790	**	720	**
		2	1,700	**	1,550	**
		3	2,570	**	2,330	**
	Divided (Continuous center left turn lane or median); Left turn lanes at intersections	1	840	**	760	**
		2	1,800	**	1,640	**
		3	2,720	**	2,470	**
Minor Arterial	Undivided; No left turn lanes at intersections	1	530	560	480	500
	Undivided; Left turn lanes at intersections	1	680	720	610	650
		2	1,390	1,450	1,240	1,360
		3	2,140	2,180	1,940	2,060
	Divided (Continuous center left turn lane or median); Left turn lanes at intersections	1	710	760	650	680
		2	1,470	1,530	1,310	1,440
		3	2,270	2,300	2,050	2,180
Collector	Undivided; No left turn lanes at intersections	1	340	360	310	320
	Undivided; Left turn lanes at intersections	1	490	520	440	470
		2	980	1,020	880	960
		3	1,510	1,540	1,370	1,450
	Divided (Continuous center left turn lane or median); Left turn lanes at intersections	1	530	560	480	500
		2	1,060	1,110	950	1,040

Intersection Methodology

Intersection operations were evaluated using methodologies outlined in the HCM and the National Cooperative Highway Research Program (NCHRP) *Report 825: Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual* (Reference 10). The methodology required the following data:

- Year 2020 and 2040 peak hour traffic volume projections on all service area roadways
- Year 2020 and 2040 peak hour intersection turning movement volume projections on certain service area intersections
- Existing peak hour traffic volumes on service area roadways and intersections (not a requirement, but preferred where data is available)

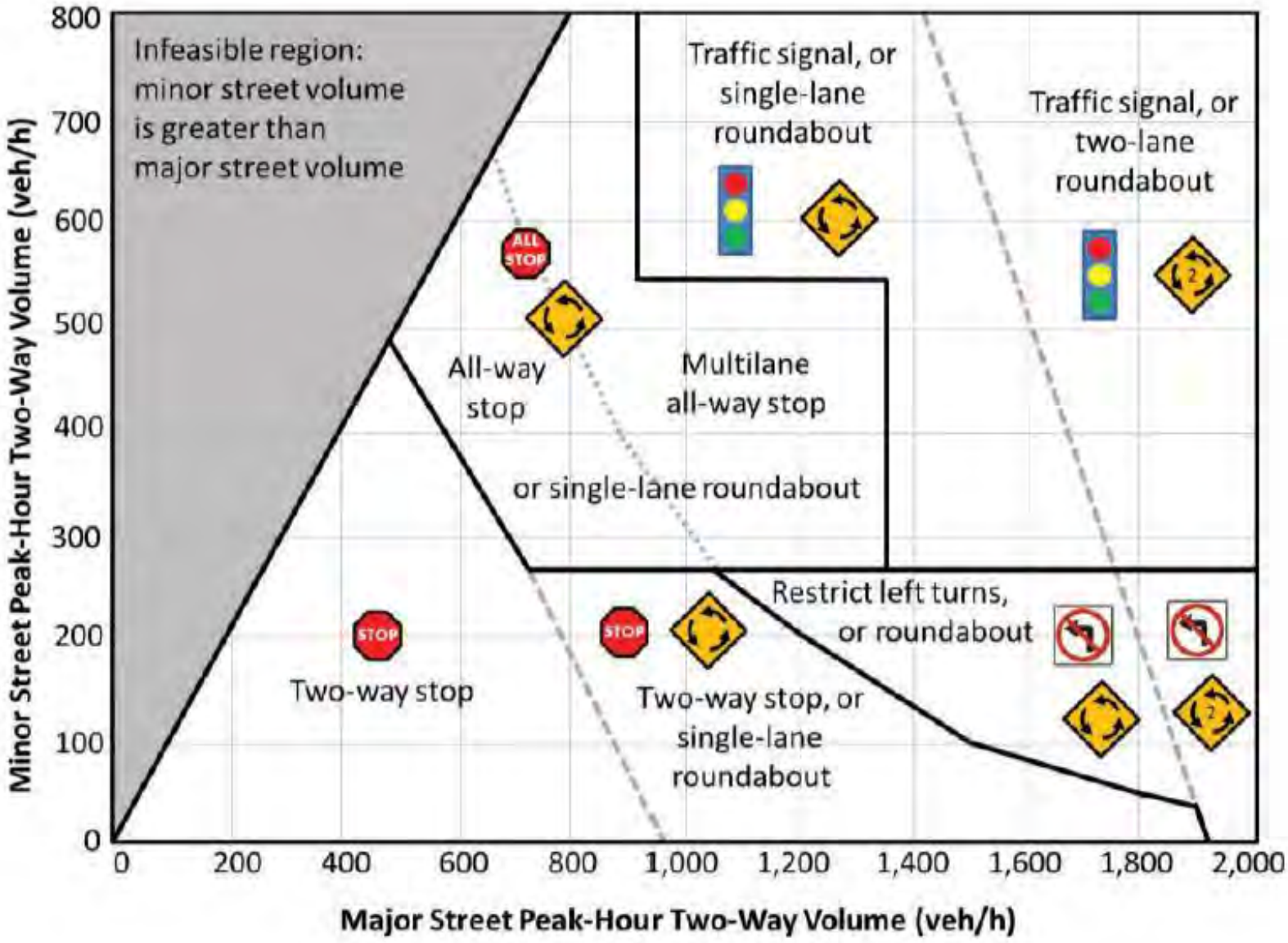
This methodology led to identifying deficiencies and improvements, such as converting a two-way stop-control intersection to an all-way stop-control, roundabout or traffic signal at the intersections. The following steps outline the methodology used for intersection operations analysis.

Step 1: Each intersection within the service area was evaluated under year 2020 and 2040 traffic conditions (weekday PM peak hour) using Exhibit 17 from NCHRP Report 825 (Reference 10), as shown in Figure 5 and Figure 6. This exhibit is based on methodologies of the 6th Edition of the HCM and identifies intersections that warrant a different intersection control type (e. g. stop control, all-way stop, roundabout, signal), based on future traffic volumes on the roadway approaches. This step resulted in a list of intersections in the service area that may warrant an improvement.

Step 2: The compiled list of intersections and preliminary recommendations for intersection control types (created in Step 1) was sent to partner agencies and the DIFAC for review and comment. Based on feedback from partner agencies and the DIFAC, a refined list of intersections and respective control types was developed for inclusion into the CIP.

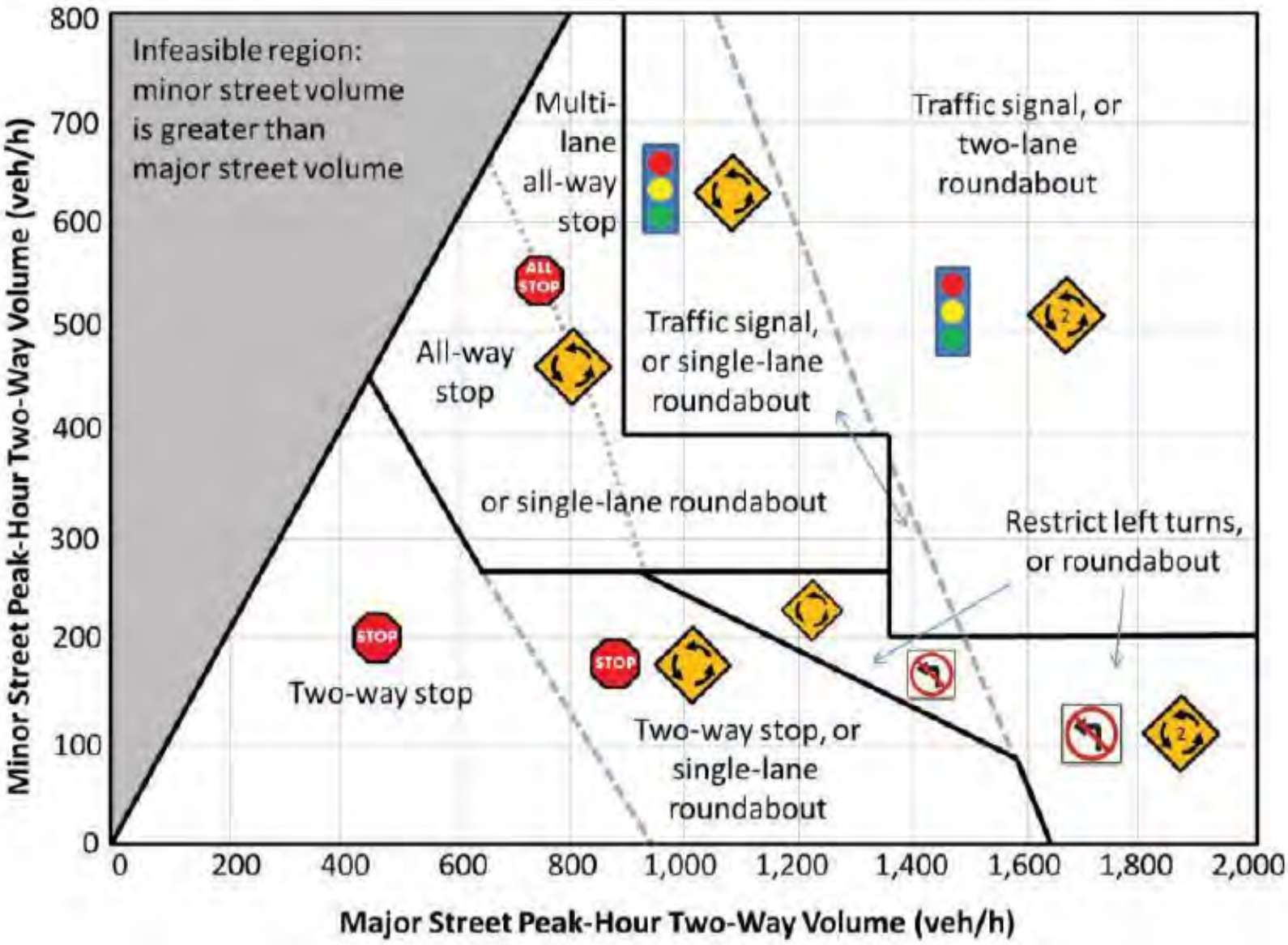
Step 3: Some intersections are identified for further analysis to determine appropriate control type. Previous planning documents for the service area were reviewed for consistency with intersection needs and control types.

Figure 5. Intersection Control Type by Peak Hour Volume – 50/50 Volume Distribution



Source: National Cooperative Highway Research Program (NCHRP) Report 825 (Exhibit 17a)

Figure 6. Intersection Control Type by Peak Hour Volume – 67/33 Volume Distribution



Source: National Cooperative Highway Research Program (NCHRP) Report 825 (Exhibit 17b)

ROADWAY & INTERSECTION DEFICIENCIES

Existing Capacity & Deficiencies

This section identifies the existing capacity and deficiencies of the transportation system as required by Idaho Code 67-82. Five intersections and two roadway segments have traffic demand that exceeds current year 2020 service capacity. All five of the intersections are along SH 44, and all are currently two-way stop-controlled intersections. The critical movement(s) of these intersections are expected to operate over-capacity during the PM peak hour which corresponds with a performance measure of LOS E or worse. The two roadway segments currently operate at LOS E or worse during the PM peak hour and include a small segment of SH 44, less than 1,000 feet from I-84 to Old Highway 30 and a segment of Middleton Road, about 1.5 miles from Lincoln Road to Sawtooth Lake Drive. Capacity improvements that address existing deficiencies are not eligible for TIF funding. Table 5 and Figure 7 identify the existing system deficiencies. The total estimated cost to address existing system deficiencies is $6,312,500, as shown in Table 5.

Table 5. Deficient Intersections & Roadways (Year 2020, Existing System)

Intersection	Existing Control Type	Improvement Needed to Address Existing Deficiency	Cost
SH 44 & Middleton Road[1]	Two-Way Stop	3x5 Traffic Signal	$962,500
SH 44 & Emmett Road[1]	Two-Way Stop	3x5 Traffic Signal	$362,500
SH 44 & Lansing Lane[1]	Two-Way Stop	3x5 Traffic Signal	$1,262,500
SH 44 & Old Highway 30[1]	Two-Way Stop	3x5 Traffic Signal	$1,262,500
SH 44 & Can Ada Road[1]	Two-Way Stop	3x5 Traffic Signal	$1,262,500

Roadway	Threshold	Peak Hour Volume	Existing Configuration	Improvement Needed to Address Existing Deficiency	Cost
SH 44[2] *I-84 to Old Highway 30*	720	923	2 Lanes	Widen to 3 Lanes	$0 (ITD only)
Middleton Road[3] *Lincoln Road to Sawtooth Lake Drive*	560 to 620	676 to 682	3 Lanes	Widen to 3 Lanes	$1,200,000

[1]Mitigation requires traffic signal or roundabout; [2]Mitigation requires two travel lanes in each direction; [3]Mitigation requires turn lanes at intersections

Figure 7. Existing Deficiencies (2020)

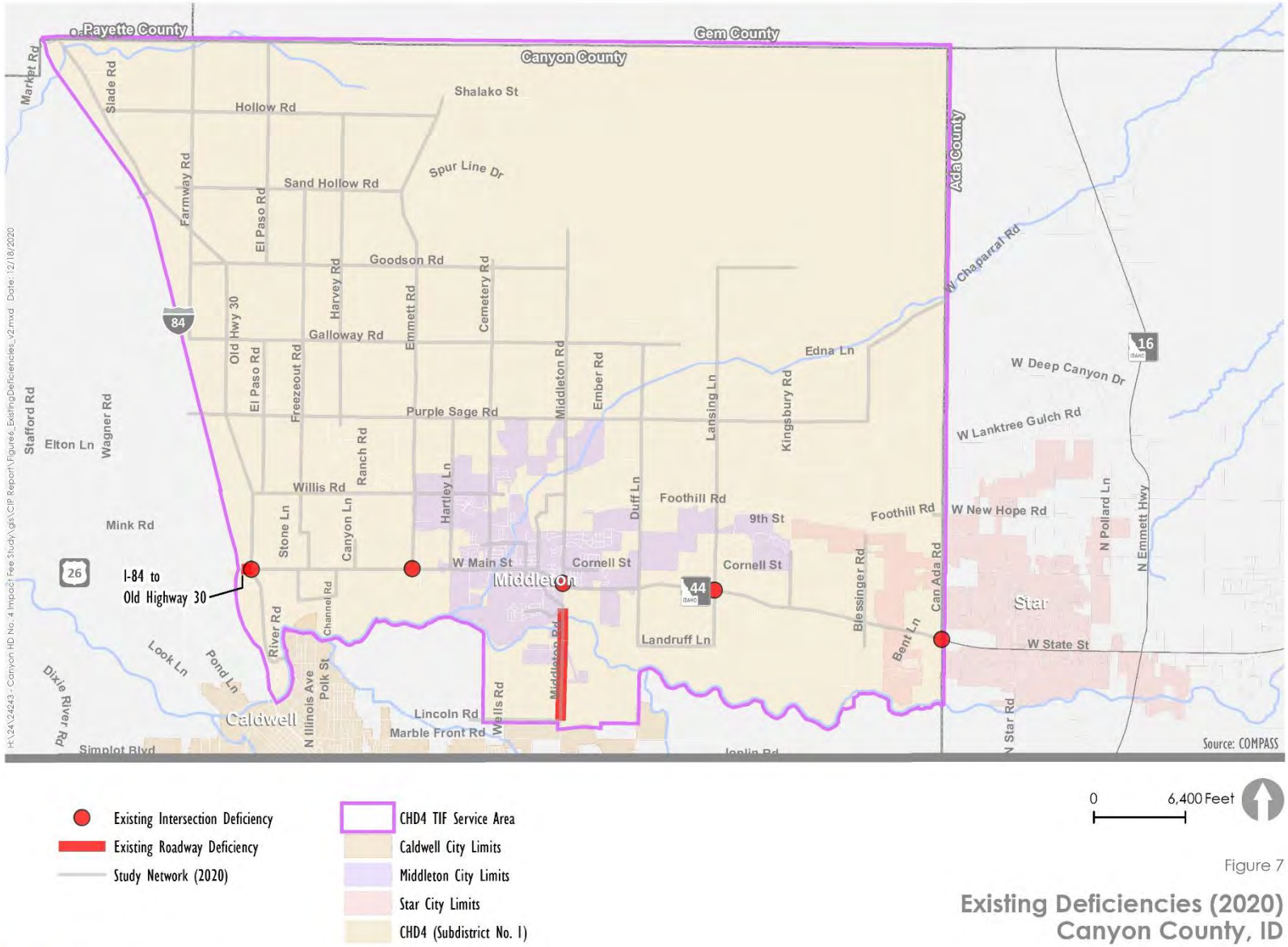


Figure 7

Existing Deficiencies (2020)
Canyon County, ID

2040 Capacity & Deficiencies

Future travel demand estimates for the Mid-Star service area are based on the land use and growth assumptions described above and are developed through output from the COMPASS travel demand model. The model forecasts the PM peak hour vehicle trips for 2040 horizon year based on the growth assumptions (size, type, and location of new developments), and assigns these trips to roadway segments in the service network.

Service units, or the measure of system demand associated with each new development, are measured in Vehicle Miles Traveled (VMT) on the service network during the PM peak hour. The additional demand attributable to the estimated new growth and development during the 2020 to 2040 planning horizon is 23,280 VMT as shown in Table 6.

Table 6. Change in Vehicle Miles Traveled (Year 2020 to Year 2040)

	Total Service Area VMT
Year 2020	11,743
Year 2040	35,023
Net New System VMT (Change in VMT from New Development)	23,280

The service network was evaluated using the COMPASS travel demand model for the projected 2040 total demand, with 23,280 additional PM peak hour vehicle miles traveled (VMT). Those improvements needed to return the service network intersections and roadway corridors to a LOS D (excluding any 2020 existing deficiencies) are considered the proportionate share of improvements attributable to new growth and development.

Projected traffic demand is expected to exceed service capacity on thirty-two intersections and eleven roadway segments by 2040. Most of the deficient intersections are located along a few major roadways within the service area:

- Sixteen along SH 44 (50%),
- Eight along Purple Sage Road (25%) and
- Four along Old Highway 30 (12.5%).

Five of the thirty-two identified intersections have existing deficiencies in the 2020 year. The portions of projects that address these existing deficiencies are not impact fee eligible, and are excluded from the impact fee-eligible costs in the CIP.

The majority of SH 44 within the service area exceeds service capacity thresholds in year 2040, except for the segment within the City of Middleton. These segments are under the jurisdiction of ITD and therefore are not impact-fee eligible. Other deficient segments in the year 2040 include:

- Purple Sage Road between Freezeout Road and Emmett Road and between Middleton Road and Kingsbury Road, and
- Portions of Old Highway 30, Freezeout Road, Middleton Road, Blessinger Road, Can Ada Road, and Willis Road.

Table 7, Table 8, and Figure 8 illustrate intersection and roadway deficiencies in the year 2040.

Table 7. Deficient Intersections (Year 2040)

Intersection	Existing Deficiency	Existing Control Type
Old Highway 30 & Galloway Road	No	Two-Way Stop
Old Highway 30 & Purple Sage Road	No	Two-Way Stop
Old Highway 30 & Willis Road	No	Two-Way Stop
Purple Sage Road & Middleton Road	No	Two-Way Stop
Purple Sage Road & Duff Lane	No	Two-Way Stop
Purple Sage Road & Lansing Lane	No	Two-Way Stop
Purple Sage Road & Emmett Road	No	Two-Way Stop
Purple Sage Road & Harvey Road	No	Two-Way Stop
Purple Sage Road & Freezeout Road	No	Two-Way Stop
Purple Sage Road & Blessinger Road	No	Two-Way Stop
Freezeout Road & Willis Road	No	Two-Way Stop
SH 44 & Middleton Road	Yes	Two-Way Stop
SH 44 & Dewey Avenue	No	Two-Way Stop
SH 44 & Hawthorne Drive	No	Two-Way Stop
SH 44 & Cemetery Road	No	Two-Way Stop
SH 44 & Hartley Road	No	Two-Way Stop
SH 44 & Emmett Road	Yes	Two-Way Stop
SH 44 & Duff Lane	No	Two-Way Stop
SH 44 & Canyon Lane	No	Two-Way Stop
SH 44 & Channel Road	No	Two-Way Stop
SH 44 & Lansing Lane	Yes	Two-Way Stop
SH 44 & River Road	No	Two-Way Stop
SH 44 & Freezeout Road	No	Two-Way Stop
SH 44 & Old Highway 30	Yes	Two-Way Stop
SH 44 & Kingsbury Lane	No	Two-Way Stop
SH 44 & Blessinger Road	No	Two-Way Stop
SH 44 & Can Ada Road	Yes	Two-Way Stop
Middleton Road & Sawtooth Lake Drive	No	Two-Way Stop
Middleton Road & Lincoln Road	No	Two-Way Stop
Middleton Road & Cornell Street	No	All-Way Stop
Can Ada Road & Willis Road	No	Two-Way Stop[1]
Can Ada Road & Foothill Road	No	All-Way Stop

1. *Future intersection – TWSC assumed for all future intersections in this analysis*

Table 8. Deficient Roadway Segments (2040)

Roadway	Threshold[1]	Peak Hour Volume
Blessinger Road *Willis Road to Purple Sage Road*	310	321
Can Ada Road *New Hope Road to Willis Road*	480	495
Middleton Road *Lincoln Road to SH 44*	490 to 620	533 to 887
Old Highway 30 *US 26 to Willis Road*	480 to 560	645 to 754
Purple Sage Road *Freezeout Road to Emmett Road*	480	500 to 557
Purple Sage Road *Middleton Road to Kingsbury Road*	480	497 to 519
SH 44 *Old Highway 30 to Rainbow Ridge*	1,550	1,600
SH 44 *Canyon Lane to Hartley Lane*	720	798 to 1,135
SH 44 *Duff Lane to Can Ada Road*	720	742 to 987
Willis Road *Old Highway 30 to El Paso Road*	310	365
Willis Road *Freezeout Road to Ranch Road*	310	362

1. *See Table 4 for service volume threshold definitions*

Figure 8. Future Deficiencies (2040)

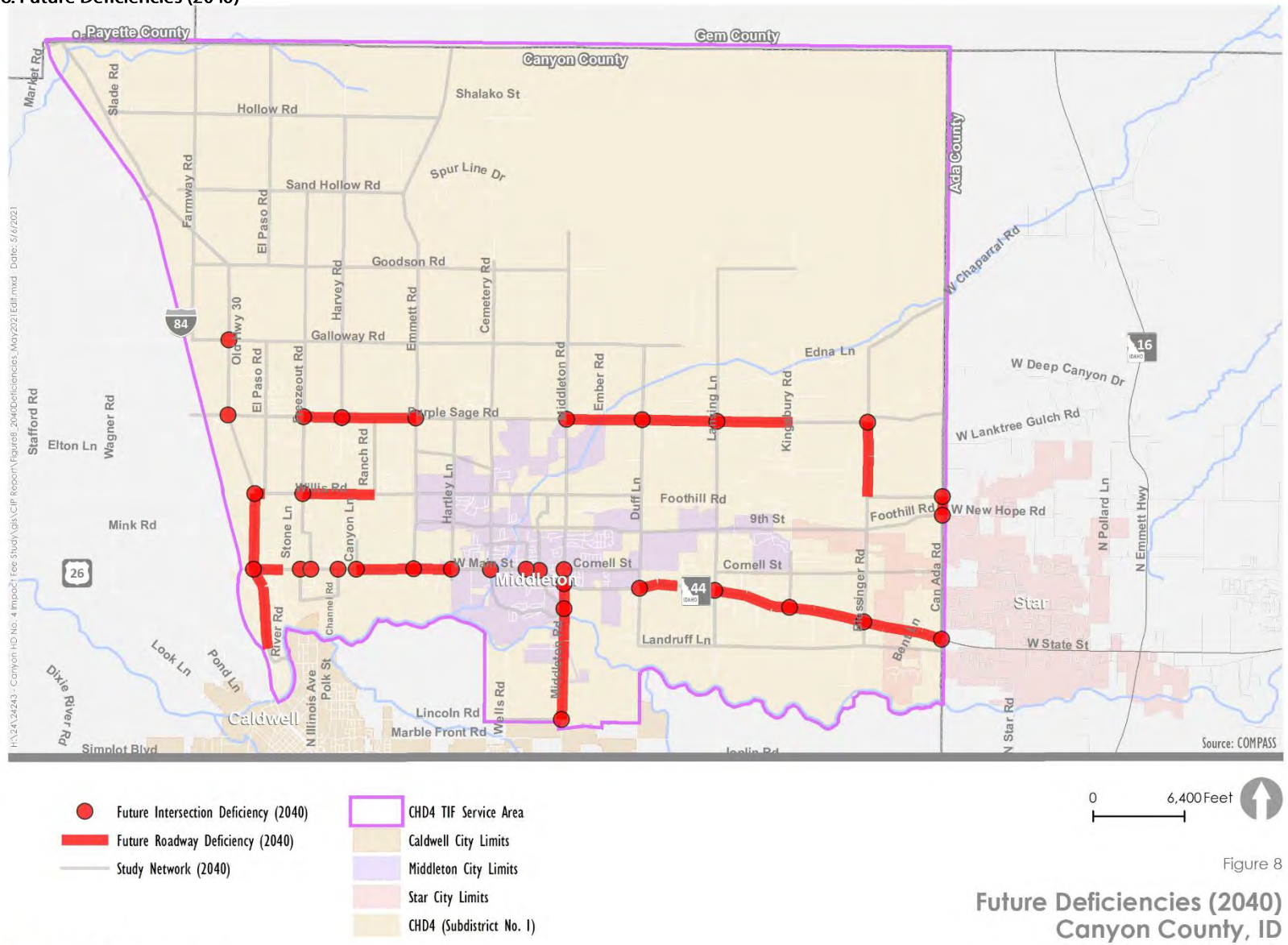


Figure 8

Future Deficiencies (2040)
Canyon County, ID

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CIP PROJECTS

This section presents the proposed CIP projects to address the intersection and roadway deficiencies identified in year 2020 and 2040.

Cost Estimates

The total cost of each project in the CIP was estimated at the planning-level. Table 9 shows unit costs for different project types that were used as a baseline for project costs. The project unit costs were developed based on recent cost estimates for similar projects in the region and collaboration with CHD4. The final CIP project costs were adjusted from the baseline costs shown in Table 9 to account for right-of-way (ROW) impacts, topography challenges, bridges or large culverts, and other potential constraints or design considerations (i.e., number of turn lanes required).

ROW costs are included in the intersection project unit costs. ROW costs for roadway projects were determined on a case-by-case basis using available parcel data and a unit cost of $2.50 per square feet. The unit cost was based on recent project costs in the region. It was assumed that a ROW width of 74 feet is required for two-three lane roadways and that a ROW width of 94 feet is required for four-five lane roadways.

Bridge and/or culvert costs were added for significant waterway crossings using $400 per square foot for design and construction costs. A contingency factor was applied to each project unit cost on a case-by-case basis to account for topographic features and other potential constraints.

Table 9. Cost Estimates - Unit Costs

Project Type	Project Unit Cost	Notes
Single-Lane Roundabout	$2,000,000 per intersection	Cost includes bicycle and pedestrian facilities and limited ROW impacts.
Multi-Lane Roundabout	$3,000,000 per intersection	
Traffic Signal (3x3)[1]	$325,000 per intersection	Cost does not include widening of roadway. Costs associated with turn-lanes added based on need to widen roadway approaches. Cost includes limited ROW impacts and bicycle and pedestrian facilities.
Traffic Signal (5x5)[2]	$400,000 per intersection	
Roadway Widening	$1,500,000 per lane per mile	ROW not included and determined on a case-by-case basis. Assumes cross-section with 12′ travel lanes, 14′ center-turn lanes, sidewalks, bike lanes, and/or multi-use path.
New Roadway	$1,300,000 per lane per mile	ROW not included and determined on a case-by-case basis assuming a unit cost of $2.50 per square foot. Assumes cross-section with 12′ travel lanes, 14′ center-turn lanes, sidewalks, bike lanes, and/or multi-use path.
Turn-Lane Improvement	$300,000 per turn lane	Assumes cost of $75 per square foot. Project unit cost is for 250′ turn lane with 150′ taper.
Bridge or Major Culvert	$400 per square foot	From ITD planning level estimates.

1. 3x3 assumes one through lane, one left-turn lane, and one through lane on each approach.
2. 5x5 assumes two through lanes, one left-turn lane, and two through lanes on each approach.

Impact Fee Eligibility

The overall cost of impact fee eligible projects is used to determine the final impact fee schedule. The proportion of impact fee eligible costs was calculated for each CIP project. Impact fee eligibility is based on the requirements in Idaho Code 67-82 which states that impact fee funding should meet the following criteria:

- *Address deficiencies in capacity*
- *Address deficiencies that are attributable to future development (not existing deficiencies)*
- *Are included in the CIP (requiring updating every five years)*

Intersection projects on SH 44 (ITD facility) should be jointly funded by ITD and CHD4, the City of Star, or the City of Middleton. Only those portions of the SH 44 intersection projects that are outside of the ITD right-of-way (excluding the local share of signal equipment costs) are considered impact fee eligible. Projects, or portions of projects, that address existing deficiencies are not impact fee eligible.

Certain other projects that lie on the boundaries of the service area (for example, Can Ada Road, or the Middleton Road /Lincoln Road intersection), are only partially eligible for impact fee funds collected within the Mid-Star service area. Those projects costs are estimated as a percentage of the total cost, as portions of the total project cost will be borne by the adjacent jurisdiction or service area. The percentage varies with the specific project location and configuration.

In accordance with Idaho Code 67-82, development impact fees may not charge growth and development more than their proportionate share of the system improvements required to serve that growth. Portions of the CIP project costs are fully impact fee eligible to serve this new demand, including right-of-way costs, storm drain facilities, traffic signals, curbs and gutters, intersection approaches, and additional travel lanes. Other project costs do not serve the demand created by new growth, and are not impact fee eligible. These components include re-construction of existing travel lanes, bicycle lanes, sidewalks, irrigation to serve landscaping, landscaping amenities, and street lighting. The percent of each project cost that is attributable to these non-eligible components was determined based on regional project cost estimates and used to create a series of impact fee eligible adjustment factors. The adjustment factors represent the percent of each project's cost estimate that is not impact fee eligible due to the project components. The impact fee eligible project cost adjustment factors are as follows:

- Bicycle and Pedestrian Facilities:
  - Intersection Projects – 4% of total cost
  - New Roadway and Roadway Widening Projects – 10% of total cost
- Re-Construction of Existing Travel Lanes
  - Intersection Projects – 0% of total cost
    - *Roundabout projects planned for use throughout the service area change intersection configuration and do not utilize existing intersection capacity. Traffic signal intersections improvements on the SH-44 corridor are assumed to utilize the existing travel lanes on the minor public road approaches, and can be improved by addition of turn lanes added to the existing roadway.*
  - Roadway Widening Projects – 3% of total cost

- *Roadway widening unit costs assume minimal re-construction of existing travel lanes – re-construction of existing travel lanes is limited to sawcut, fog seal, and striping.*

Landscaping and irrigation are also assumed to be non-impact fee eligible, but the costs associated with landscaping and irrigation were assumed to be negligible (less than 1% of total project costs). The costs associated with ROW acquisition services, utility re-location, engineering design and engineering inspection were assumed to be impact fee eligible, and are calculated as 20% of the construction cost of the project.

Certain future collector and arterial roadways within the service area were included in the year 2040 deficiencies analysis to provide a more realistic distribution of year 2040 traffic volumes. The project costs associated with these roadways were considered for impact fee eligibility if the roadways were expected to serve significant amounts of regional traffic. Future roadways shown on the map but not included in the CIP project list are principally for local property access, are not impact fee eligible, and will be constructed by development. These future roadways may be added to subsequent capital improvement plans for this service area if their function becomes more regionally significant as the area develops.

Project List

The final CIP project list is shown in Table 10. , and project locations are displayed in Figure 9. Projects include roadways and intersections with existing and future deficiencies, as well as previously planned future roadways and intersections. Table 10. includes the project cost estimates, TIF eligible costs, and estimated project timeframe.

Figure 9. Mid-Star Service Area Capital Improvement Projects

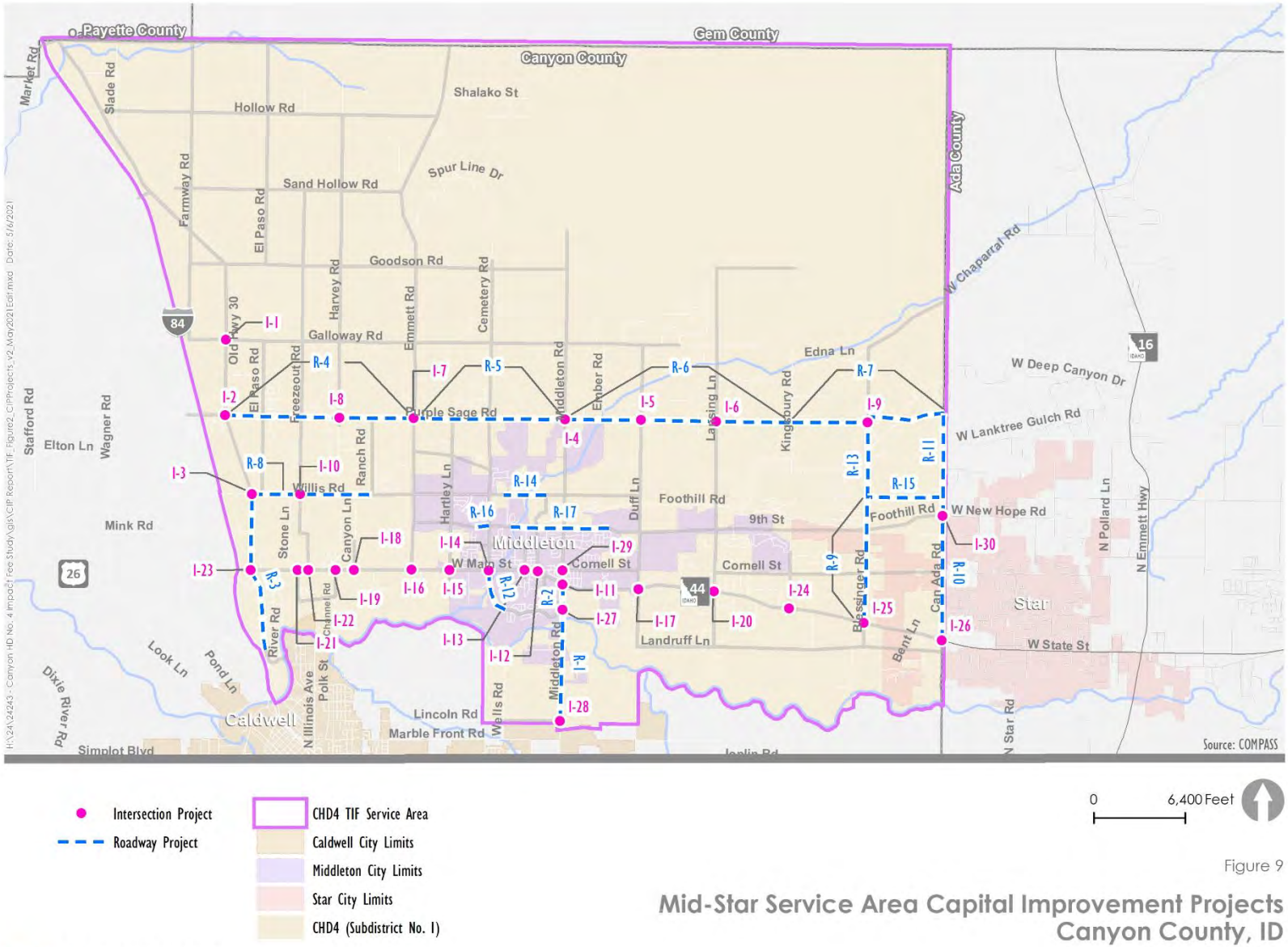


Figure 9

Mid-Star Service Area Capital Improvement Projects
Canyon County, ID

KITTELSON & ASSOCIATES

Table 10. Mid-Star Service Area CIP Projects

Project ID	Intersection	Existing Deficiency	Project Description	Project Cost Estimate	TIF-Eligible Cost	Timeframe
I-1	Old Highway 30 & Galloway Road	No	Single-Lane Roundabout	$1,600,000	$1,536,000	2035-2040
I-2	Old Highway 30 & Purple Sage Road	No	Single-Lane Roundabout	$2,000,000	$1,920,000	2025-2030
I-3	Old Highway 30 & Willis Road[2]	No	Single-Lane Roundabout	$2,200,000	$2,112,000	2035-2040
I-4	Purple Sage Road & Middleton Road	No	Single-Lane Roundabout	$2,000,000	$1,920,000	2035-2040
I-5	Purple Sage Road & Duff Lane	No	Single-Lane Roundabout	$1,800,000	$1,728,000	2035-2040
I-6	Purple Sage Road & Lansing Lane[3]	No	Single-Lane Roundabout	$2,400,000	$2,304,000	2035-2040
I-7	Purple Sage Road & Emmett Road[2]	No	Single-Lane Roundabout	$2,000,000	$1,920,000	2035-2040
I-8	Purple Sage Road & Harvey Road	No	Single-Lane Roundabout	$1,900,000	$1,824,000	2035-2040
I-9	Purple Sage Road & Blessinger Road	No	Single-Lane Roundabout	$2,400,000	$2,304,000	2025-2030
I-10	Freezeout Road & Willis Road	No	Single-Lane Roundabout	$2,000,000	$1,920,000	2035-2040
I-11	SH 44 & Middleton Road	Yes	Traffic Signal	$962,500	$0	2020-2025
I-12	SH 44 & Dewey Avenue	No	Traffic Signal	$362,500	$166,750	2020-2025
I-13	SH 44 & Hawthorne Drive	No	Traffic Signal	$362,500	$166,750	2020-2025
I-14	SH 44 & Cemetery Road	No	Traffic Signal	$1,262,500	$730,750	2020-2025
I-15	SH 44 & Hartley Road[4]	No	Traffic Signal	$1,562,500	$718,750	2025-2030
I-16	SH 44 & Emmett Road[2]	Yes	Traffic Signal	$362,500	$0	2035-2040
I-17	SH 44 & Duff Lane	No	Traffic Signal	$962,500	$742,750	2020-2025
I-18	SH 44 & Canyon Lane	No	Restricted Left Turn	N.A.[1]	N.A.[1]	2035-2040
I-19	SH 44 & Channel Road[2]	No	Restricted Left Turn	N.A.[1]	N.A.[1]	2035-2040
I-20	SH 44 & Lansing Lane	Yes	Traffic Signal	$1,262,500	$0	2020-2025
I-21	SH 44 & River Road[2]	No	Restricted Left Turn	N.A.[1]	N.A.[1]	2035-2040

I-22	SH 44 & Freezeout Road[2]	No	Traffic Signal	$1,262,500	$430,750	2035-2040
I-23	SH 44 & Old Highway 30[2]	Yes	Traffic Signal	$1,262,500	$0	2035-2040
I-24	SH 44 & Kingsbury Lane	No	Traffic Signal	$1,262,500	$430,750	2020-2025
I-25	SH 44 & Blessinger Road	No	Traffic Signal	$1,562,500	$718,750	2030-2035
I-26	SH 44 & Can Ada Road	Yes	Traffic Signal	$1,262,500	$0	2020-2025
I-27	Middleton Road & Sawtooth Lake Drive	No	Multi-Lane Roundabout[5]	$3,000,000	$2,880,000	2020-2025
I-28	Middleton Road & Lincoln Road[7]	No	Multi-Lane Roundabout[5]	$4,200,000	$2,016,000	2020-2025
I-29	Middleton Road & Cornell Street	No	Single-Lane Roundabout	$2,000,000	$1,920,000	2025-2030
I-30	Can Ada Road & Foothill Road[6]	No	Single-Lane Roundabout	$2,000,000	$1,440,000	2025-2030

Project ID	Roadway	Existing Deficiency	Project Description	Project Cost Estimate	TIF-Eligible Cost	Timeframe
R-1	Middleton Road[2] *Lincoln Road to Sawtooth Lake Drive*	Partial – Existing Deficiency Mitigated by Turn Lanes at Intersections	Widen to 5 Lanes (Lincoln Road to Bass Lane); Add Continuous Left Turn Lane (Bass Lane to Middleton Rd) (3.2 lane miles)	$12,569,545	$9,735,505	2020-2025
R-2	Middleton Road Alignment[2,4] *Sawtooth Lake Drive to SH 44*	Future Roadway	Construct a 4-5 Lane Roadway connecting Sawtooth Lake Drive to SH 44 at the N Middleton Road Alignment	$2,665,909	$2,399,318	2025-2030
R-3	Old Highway 30[2] *US 26 to Willis Road*	No	Widen to 4 Lanes and Add Left Turn Lanes at Intersections (where absent)	$3,705,000	$3,223,350	2035-2040
R-4	Purple Sage Road *Old Hwy 30 to Emmett Road*	No	Add Left Turn Lanes at Intersections (4 turn lanes)	$1,296,000	$1,257,120	2030-2035
R-5	Purple Sage Road[3] *Emmett Road to Middleton Road*	No	Add Left Turn Lanes at Intersections (4 turn lanes)	$1,296,000	$1,257,120	2035-2040

R-6	Purple Sage Road[3] *Middleton Road to Kingsbury Road*	No	Add Left Turn Lanes at Intersections (5 turn lanes)	$1,620,000	$1,571,400	2035-2040
R-7	Purple Sage Road[3] *Kingsbury Road to Can Ada Road*	No	Add Left Turn Lanes at Intersections (5 turn lanes)	$648,000	$628,560	2035-2040
R-8	Willis Road *Old Highway 30 to Ranch Road*	No	Add Left Turn Lanes at Intersections (2 turn lanes)	$768,000	$744,960	2030-2035
R-9	Blessinger Road[3] *SH 44 to Willis Road*	No	Add Left Turn Lanes at Intersections (4 turn lanes)	$1,296,000	$1,257,120	2035-2040
R-10	Can Ada Road[6] *SH 44 to Willis Road*	No	Add Left Turn Lanes at Intersections (3 turn lanes)	$972,000	$471,420	2025-2030
R-11	Can Ada Road[6] *Willis Road to Purple Sage Road*	No	Add Left Turn Lanes at Intersections (2 turn lanes)	$648,000	$471,420	2030-2035
R-12	Cemetery Road[4] *Sawtooth Lake Drive to SH 44*	Future Roadway	Construct Two Lane Roadway	$2,749,242	$2,474,318	2020-2025
R-13	Blessinger Road[3] *Willis Road to Purple Sage Road*	Future Roadway	Construct Two Lane Roadway with Left Turn Lanes at Intersections (4 turn lanes)	$1,552,400	$1,200,000	2035-2040
R-14	Willis Road *Wanda Way to Old Middleton Road*	Future Roadway	Construct Two Lane Roadway (0.74 lane miles)	$2,150,821	$1,935,739	2035-2040
R-15	Willis Road *Blessinger Road to Can Ada Road*	Future Roadway	Construct Two Lane Roadway (1.3 lane miles)	$2,423,300	$2,180,970	2030-2035
R-16	9th Street *Connection west of Cemetery Road*	Future Roadway	Construct Two Lane Roadway (0.2 lane miles)	$256,061	$230,455	2030-2035
R-17	9th Street *Willow Drive to Magic Ave*	Future Roadway	Construct Two Lane Roadway (2.4 lane miles)	$4,708,800	$4,237,920	2030-2035
Total Cost				**$86,537,579**	**$67,126,695**	

1. Negligible capital costs
2. Previously Identified in CHD4 Transportation Master Plan
3. Previously identified in City of Star Comprehensive Plan
4. Previously Identified in City of Middleton CIP
5. Minor roadway will have single-lane entry/exit
6. Reduced TIF Eligible costs due to anticipated participation by ACHD
7. Reduced TIF Eligible costs due to anticipated participation by new service area south of Mid-Star.

FUNDING SOURCES

There are three separate roadway jurisdictions within the Mid-Star service area: CHD4, City of Middleton, and City of Star. By agreement[2] with City of Star, CHD4 acts as this highway jurisdiction for those city streets located within Canyon County, similar to the role of Ada County Highway District for Star within Ada County.

Each of these agencies receives, or is eligible to receive, funding for transportation improvements from a variety of sources:

- Property taxes
- Highway User Fund taxes (fuel taxes)
- Vehicle Registration Fees
- Federal Aid or State grant programs
- Traffic Impact Fees (currently City of Middleton only)

Over the 2015-2019 period, total transportation revenues as described in the Annual Road and Streets Report for each agency is shown in Table 11.

Table 11. Annual Transportation Revenues by Agency ($1,000)

Year	CHD4	City of Middleton	City of Star
2019	9,439	1,614	0.587
2018	8,402	1,639	0.598
2017	8,019	1,331	0.553
2016	7,422	1,694	0.541
2015	6,336	2,344	0.528

Note: City of Star collects only 50% of property tax revenue allocated for Road & Bridge construction over a small (< 660 acres) portion of Canyon County. It submits this revenue to CHD4 for use in road maintenance.

Average annual transportation revenues for the service area during the previous 5 reported years is approximately $9.65 M. Assuming a 5% annual growth rate in funding (historical average for CHD4), total transportation revenues for the 2021-2040 CIP horizon can be estimated to be $319,013,000. Historically, capital improvement expenditures have accounted for 5% or less of CHD4 and Middleton's transportation budget, as maintenance and operation of the existing system has been the principal focus for small urban and rural areas. The projected $19,411,000 non-impact fee eligible cost for the CIP projects is equivalent to 6.14% of the estimated total revenue over the 20-year CIP. The agencies participating in funding the CIP will need to account for a moderate additional increment of annual expenditures on capital improvements, which is consistent with the current recognized needs.

[2] Canyon 4/Star Public Agency Coordination Agreement, June 6, 2007.

INTERGOVERMENTAL AGREEMENTS

The land use and transportation agencies active within the Mid-Star service area will enter into intergovernmental agreements to fund and construct the multi-jurisdictional transportation improvement projects. Those intergovernmental agreements will detail the proportionate share of funding for each agency based on contributing trips from each jurisdiction, location with each jurisdiction, and anticipated new growth within each jurisdiction.

REFERENCES

1. Kittelson & Associates. CHD4 Traffic Impact Fee Program. 2020.
2. Canyon Highway District No. 4. Transportation Master Plan. 2020.
3. City of Middleton. Transportation Study and Capital Improvement Plan 2017 Update. 2017.
4. City of Star. City of Star Comprehensive Plan. 2019.
5. Idaho Transportation Department, District 3. SH-44, I-84 to Eagle, Corridor Study. 2019.
6. Kittelson & Associates. Middleton Road Corridor Plan. 2016.
7. Canyon County. Canyon County 2020 Comprehensive Plan. 2016.
8. City of Middleton. City of Middleton Comprehensive Plan. 2016.
9. City of Star. City of Star Comprehensive Plan. 2019.
10. National Cooperative Highway Research Program. NCHRP Report 825: Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual. 2016.

APPENDIX A:

Meeting Materials & Summary Notes

DATE **6/3/2020**

CHD4 SUBDISTRICT NO.1 TRAFFIC IMPACT FEE STUDY

PROJECT BACKGROUND, SCOPE OF WORK AND SERVICE AREA

Development Impact Fee Advisory Committee Meeting #1

KITTELSON & ASSOCIATES

Meeting Purpose and Agenda

- Purpose
  - Introduce Partner Agencies and Development Impact Fee Advisory Committee to the Study
  - Understand and Confirm Service Area
  - Discuss Next Steps
- Agenda
  - Study Background
  - Study Overview
  - Service Area
  - Next Steps

Study Objectives

- Establish a Traffic Impact Fee Program for CHD4 Subdistrict No. 1 to meet requirements in Idaho Code 67-82
- Facilitate a collaborative decision-making process between Star, Middleton, Canyon County, and the Development Impact Fee Advisory Committee (DIFAC)

STUDY BACKGROUND

Study Background

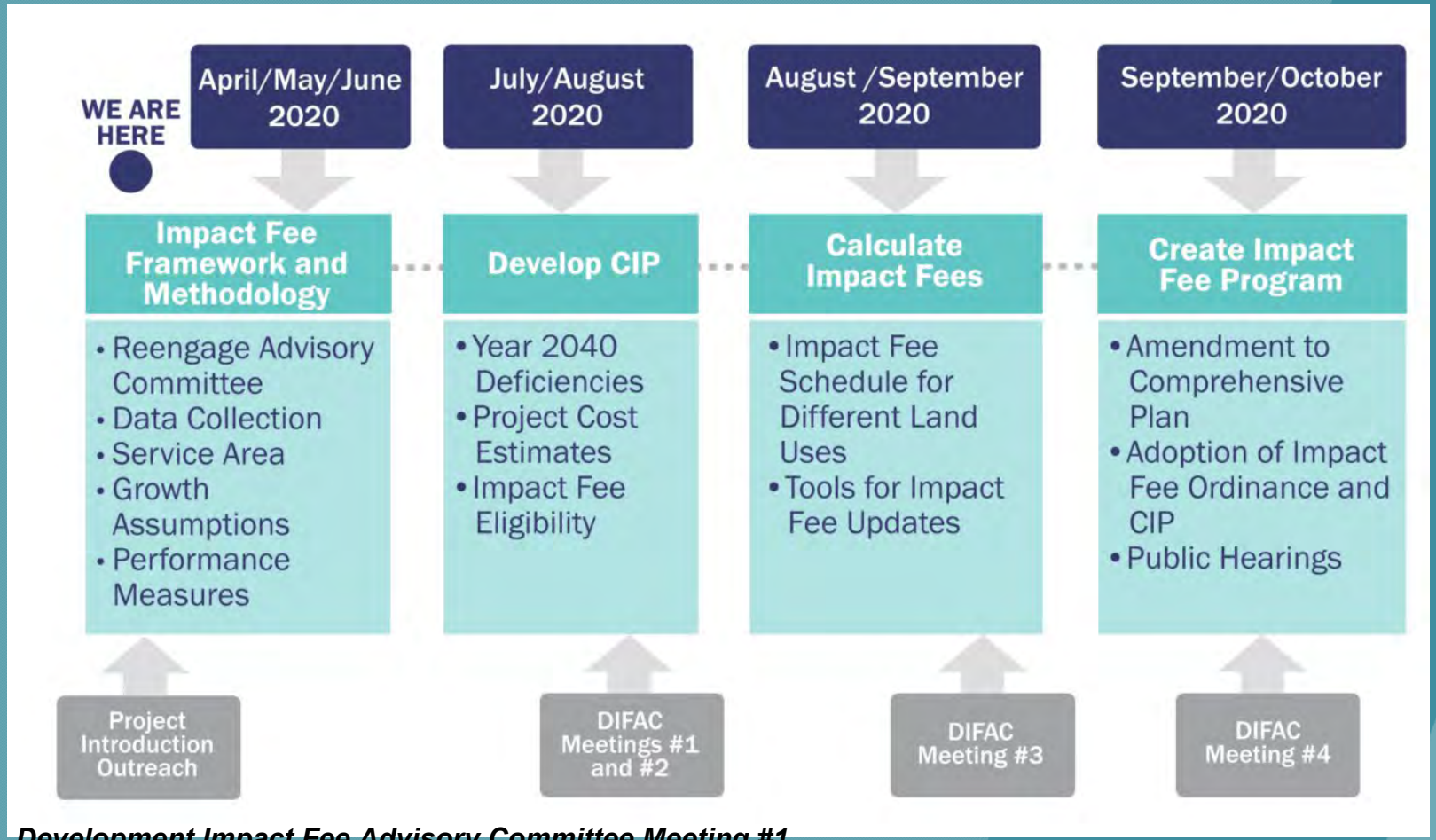
- New development growth results in the need for roadway capacity improvements now and over the next 20 years.
- CHD4 is unable to collect traffic impact fees from new developments by law and must partner with Canyon County.
- CHD4 has intergovernmental agreements with City of Star and City of Middleton regarding roadways.
- Traffic Impact Fee (TIF) Feasibility Study was completed in January 2020.

TIF Feasibility Study

- Examined what is required and what should be considered in a traffic impact fee program
- Key findings:
  - Create one service area with CHD4, the City of Middleton, and the City of Star
  - Develop capital improvement plan (CIP) for entire service area
  - Utilize COMPASS travel demand model data
  - Calculate impact fees using average vehicle-miles-traveled (VMT) methodology, similar to ACHD

STUDY OVERVIEW

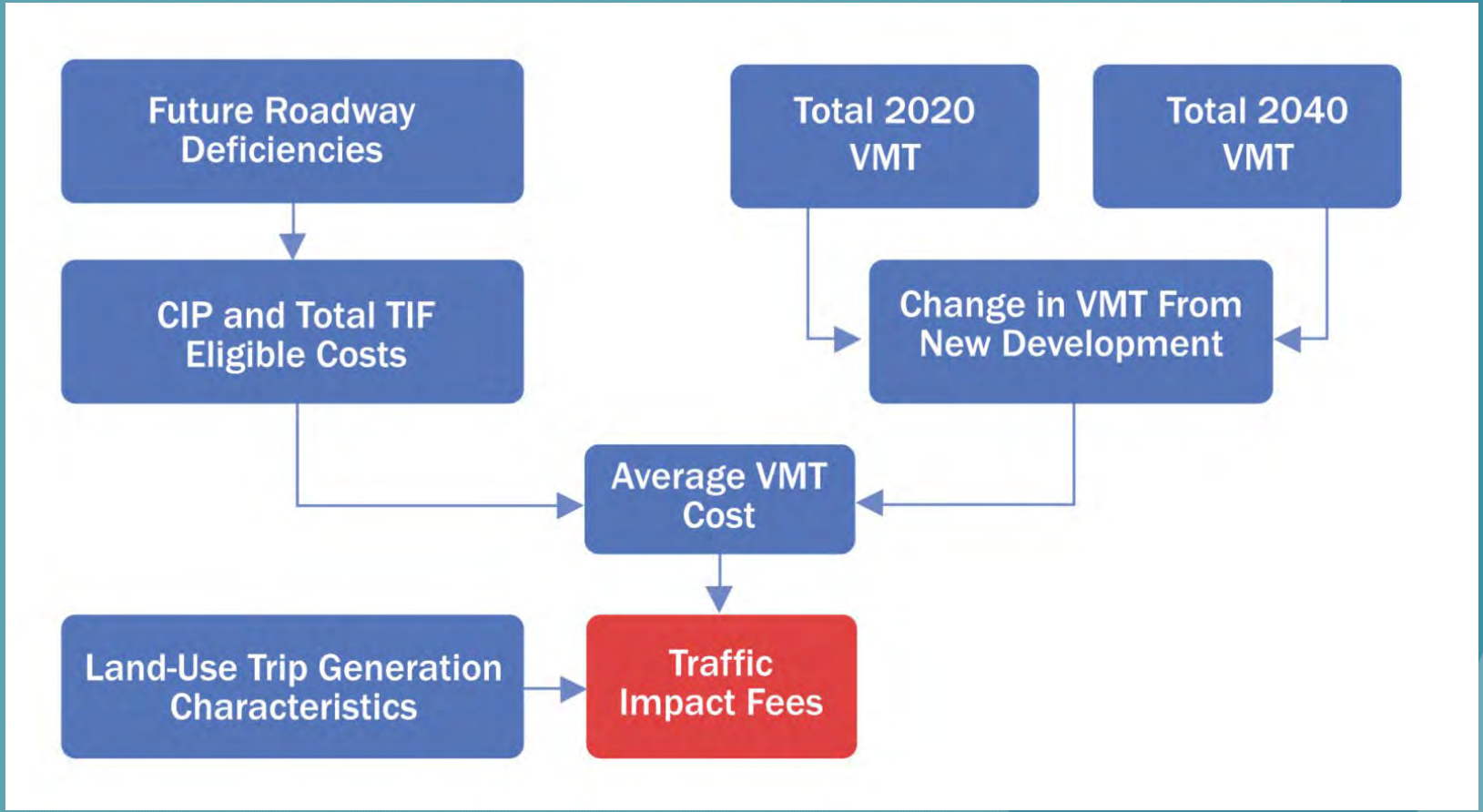
Schedule


WE ARE HERE
April/May/June 2020
July/August 2020
August /September 2020
September/October 2020
Impact Fee Framework and Methodology
• Reengage Advisory Committee
• Data Collection
• Service Area
• Growth Assumptions
• Performance Measures
Develop CIP
• Year 2040 Deficiencies
• Project Cost Estimates
• Impact Fee Eligibility
Calculate Impact Fees
• Impact Fee Schedule for Different Land Uses
• Tools for Impact Fee Updates
Create Impact Fee Program
• Amendment to Comprehensive Plan
• Adoption of Impact Fee Ordinance and CIP
• Public Hearings
Project Introduction Outreach
DIFAC Meetings #1 and #2
DIFAC Meeting #3
DIFAC Meeting #4

Key Terms

- VMT = Vehicle-Miles-Traveled
  - A measure of how much the average person drives
  - Common measure used in impact fees
- Land-Use Trip Generation Characteristics
  - Different land-uses generate different amounts of daily vehicle trips and vehicle trips of different lengths
    - Retail (shopping center, gas station, restaurants, etc.)
    - Industrial (warehouse, manufacturing, distribution, etc.)
    - Residential (single-family, apartments, etc.)

Traffic Impact Fee Calculation Process



Example Traffic Impact Fee Calculations

Example Traffic Impact Fee Calculations for Single Family Housing		
Project Costs		
Total TIF Eligible Costs:	$ 50,000,000	*Includes all TIF Eligible Costs for 2040 Capital Improvement Projects.*
VMT Estimates (PM Peak Hour)		
2020 Total VMT	10,000	*PM peak hour VMT in service area on arterial and collector roadways.*
2050 Total VMT	20,000	*Can be determined via COMPASS model output for Link-Based VMT.*
Change in VMT	10,000	*= 2050 Link Based VMT - 2020 Link Based VMT*
VMT Cost		
VMT Cost	$ 5,000	*= Total TIF Eligible Costs / Change in VMT*
Impact Fee Schedule Factors		
Peak Hour Trip Gen Rate	0.445	*Single Family Housing (210) ITE 10th Edition - One-Way Trip*
New Trip Factor	1	*Factor can be used to account for pass-by trips*
Average Trip Length (miles)	10.0	*Average trip length within Service Area. Can be determined via COMPASS model output.*
Network Adjustment Factor	0.250	*Proportion of average trip lengths occuring on non-ITD facilities.*
Impact Fee for Residential (Single Family Housing)		
Residential Impact Fee	$ 5,563	*=VMT Cost x Peak Hour Trip Gen Rate x New Trip Factor x Avg. Trip Length x Network Adjustment Factor*

How Are Impact Fees Collected?

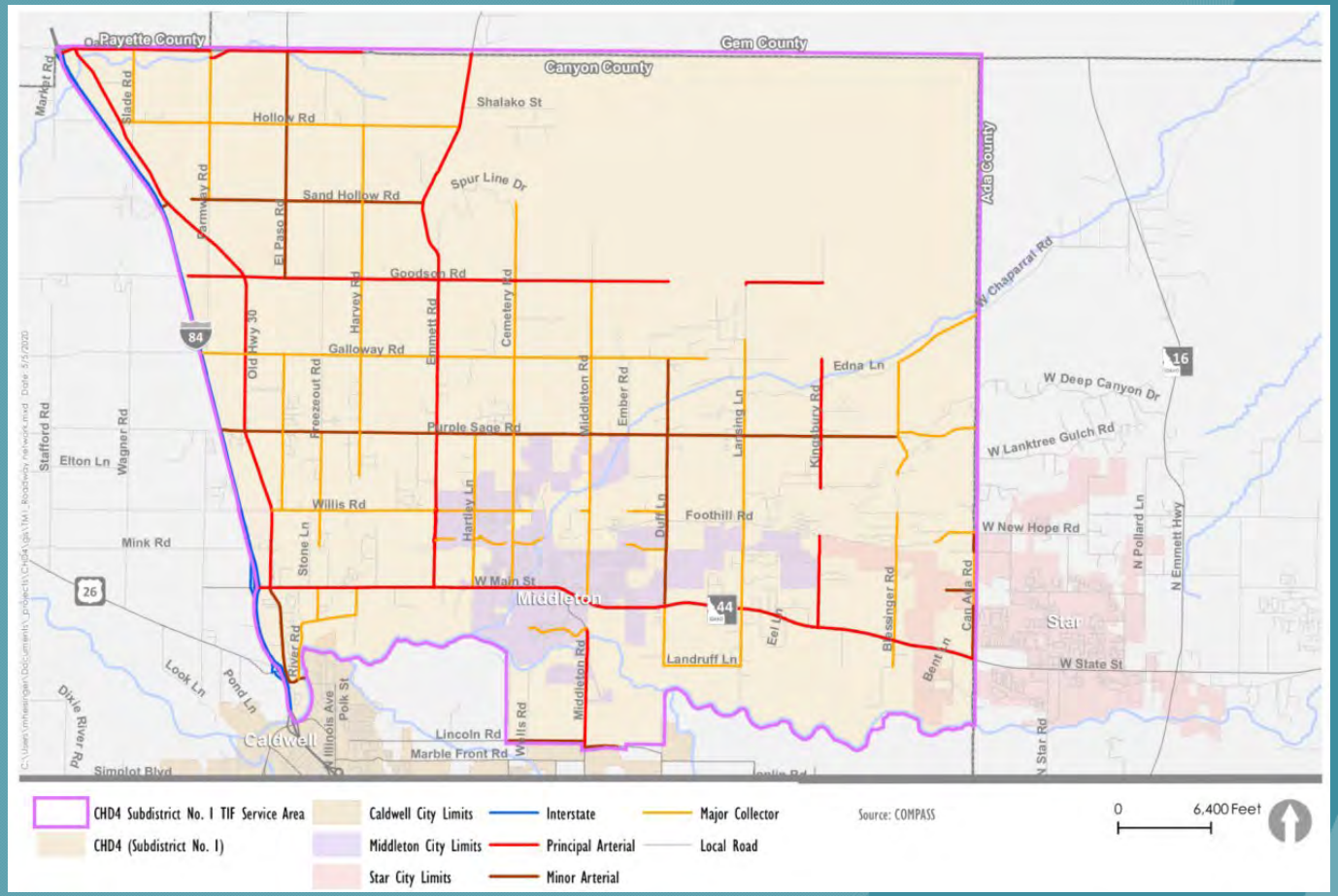
- Step 1: New development comes into service area.
- Step 2: Developer applies for building permit and pays impact fees to subject agency (Star, Middleton, or Canyon County).
- Step 3: Partner agencies will undertake individual or joint projects based on proportionate share (determined as part of the CIP).

Key Study Deliverables

- Traffic Impact Fee Program - Final Report
  - Capital Improvement Plan for Service Area
  - Impact Fee Schedule
- Excel Database
  - CIP Analysis
  - Updates to Impact Fees
- CIP Online GIS Platform

SERVICE AREA

Service Area and Existing Roadway Functional Classification



Service Area Demographics

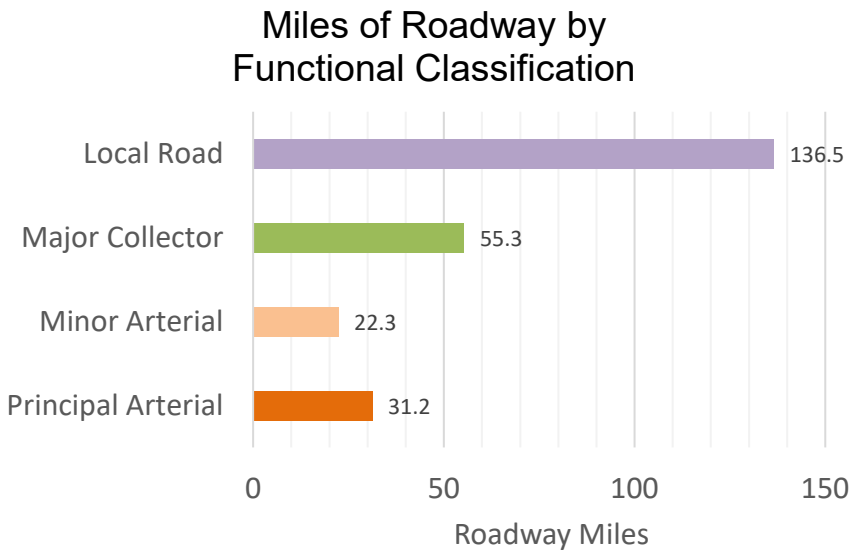
Jurisdiction	2020 Population	Estimated 2040 Population	2020 Jobs	Estimated 2040 Jobs
City of Middleton	9,780	19,596	1,521	3,333
City of Star (within Canyon County)	150	521	20	73
Unincorporated Canyon County	10,544	8,769	801	705
Total Service Area	**20,414**	**28,886**	**2,342**	**4,111**

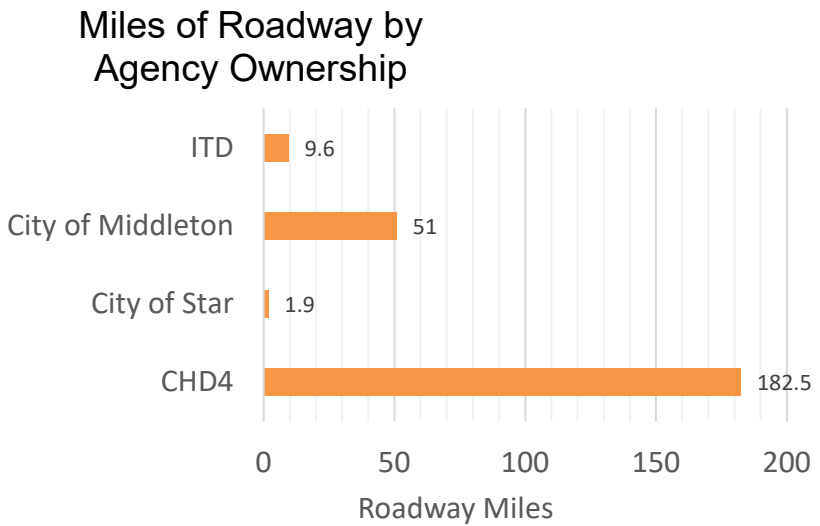
Source: COMPASS

Population Growth Rates

- COMPASS Communities in Motion 2.0 (2020-2040)
  - 1.8%
- CHD4 Draft Transportation Plan (2018-2040)
  - 2.8%
- City of Middleton Transportation Plan (2015-2035)
  - 5.0%

Service Area Roadway Facilities





Source: COMPASS

NEXT STEPS

Next DIFAC Meeting

- Impact Fee Methodology Assumptions
  - COMPASS Data
  - Performance Measures
  - Proportionate Share
  - Background on CIP

DATE **9/15/2020**

CHD4 SUBDISTRICT NO.1 TRAFFIC IMPACT FEE STUDY

DEVELOPMENT IMPACT FEE ADVISORY COMMITTEE - MEETING #2:
TRAFFIC IMPACT FEE PROGRAM METHODOLOGY AND ASSUMPTIONS

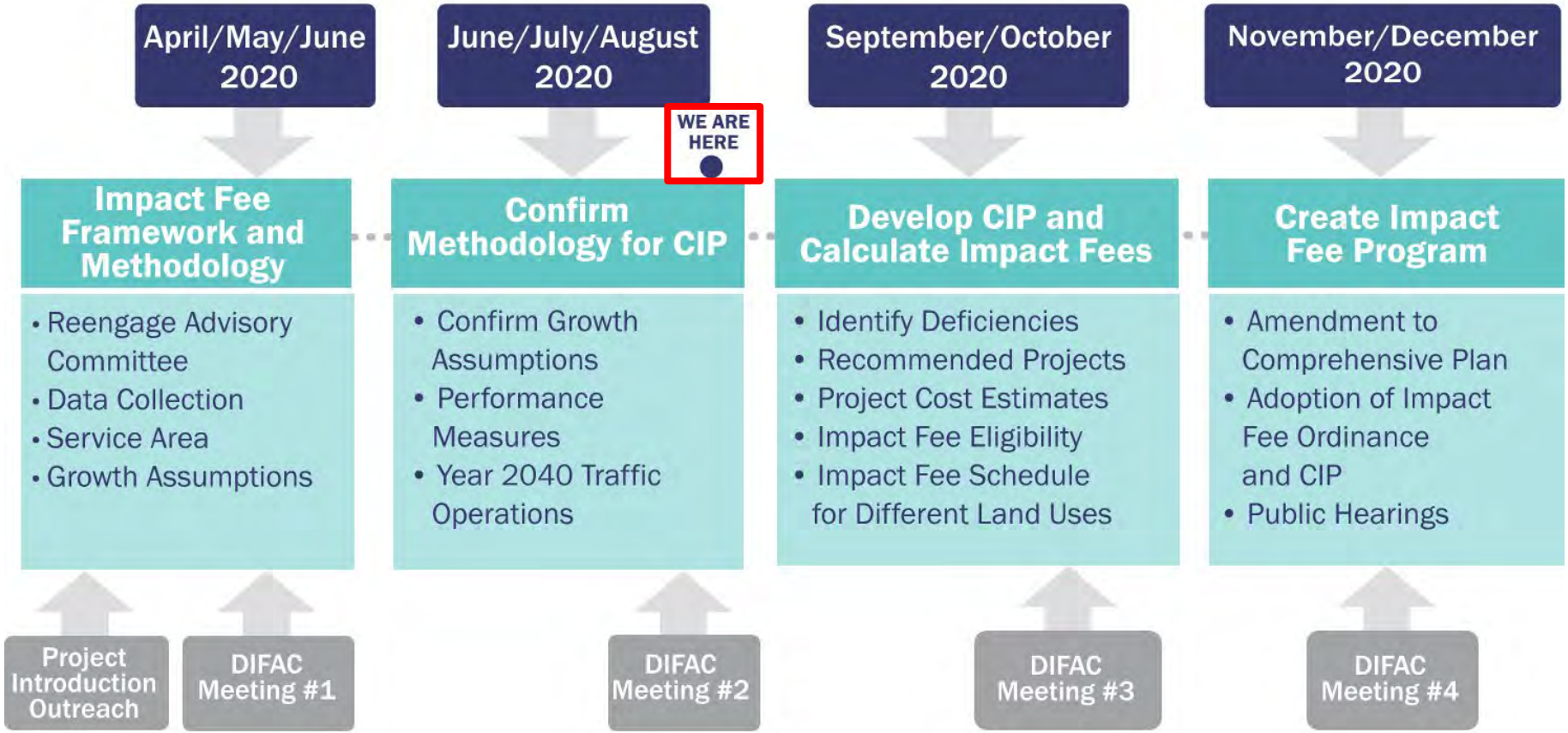
KITTELSON & ASSOCIATES

Meeting Purpose and Agenda

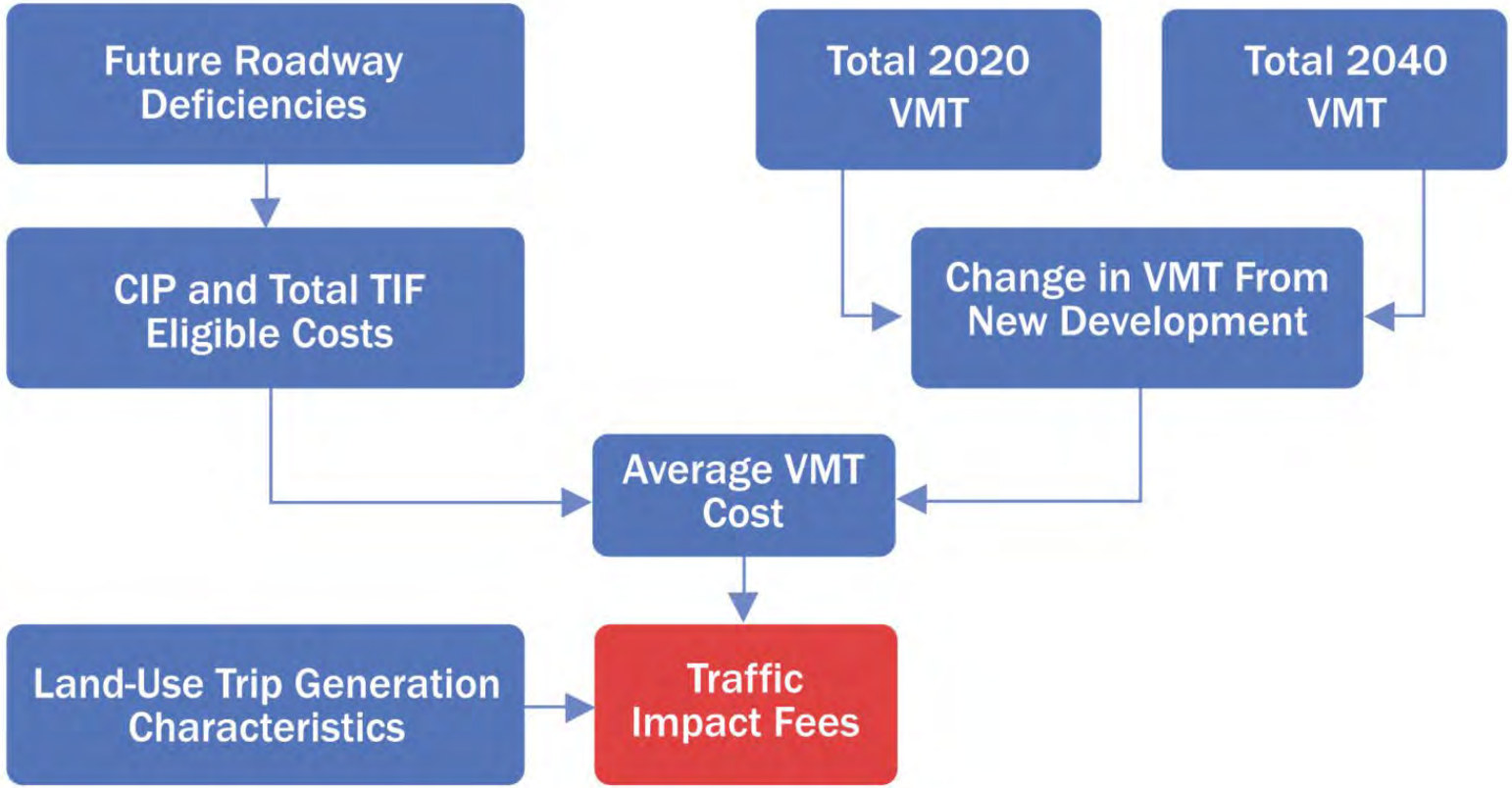
- Purpose
  - Review and Confirm
    - Year 2040 Demographic Projections
    - Performance Measures
    - Traffic Operations Methodology
  - Discuss Agency Proportionate Share

- Agenda
  - Study Schedule
  - Traffic Impact Fee Calculation Process
  - Year 2040 Demographics
  - Performance Measures
  - Traffic Operations Methodology
  - Proportionate Share
  - Next Steps

Study Schedule



Traffic Impact Fee Calculation Process



YEAR 2040 DEMOGRAPHICS

Year 2040 Demographics

- Why are they important?
  - Year 2040 demographics inform projected traffic volumes.
  - Traffic volumes are used to analyze traffic operations and identify roadway and intersection capacity projects.

- Year 2040 COMPASS demographics were used as a baseline and revised based on input from Canyon County, Star, and Middleton.

Year 2040 Demographics

Jurisdiction	COMPASS 2020 Population	Estimated 2040 Population		COMPASS 2020 Jobs	Estimated 2040 Jobs	
		COMPASS Model	*Proposed*		*COMPASS Model*	*Proposed*
City of Middleton	9,780	19,189	27,528	1,521	3,270	4,003
City of Star (within Canyon County)	150	5,701	12,463	20	241	361
Unincorporated Canyon County	10,554	3,996	4,324	801	600	639
Total Service Area	**20,414**	**28,886**	**44,315**	**2,342**	**4,111**	**5,004**

117% Increase from 2020

4% annual growth rate

110% Increase from 2020

3.9% annual growth rate

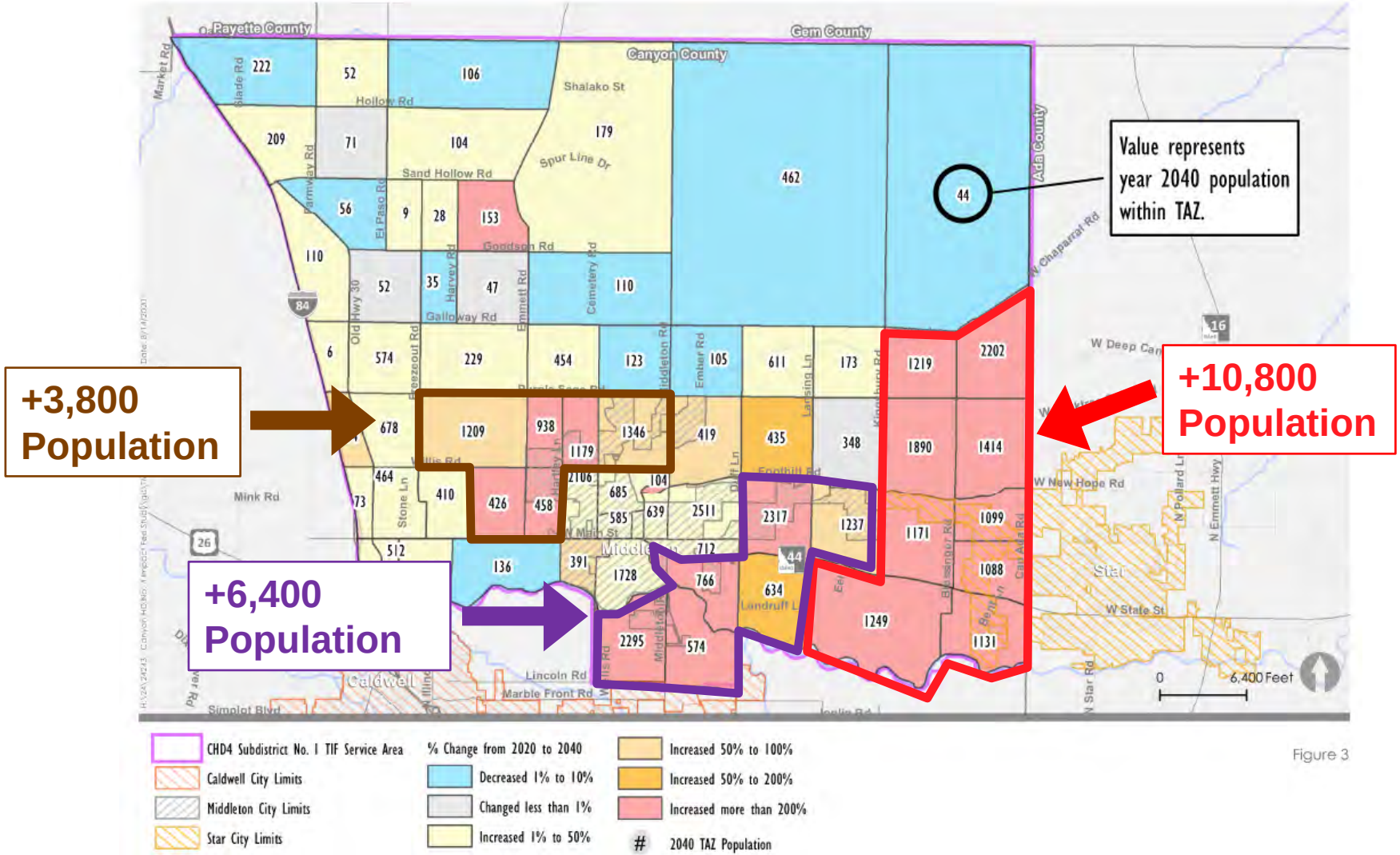


Figure 3

Year 2020 to 2040 Population Change by TAZ
Canyon County, ID

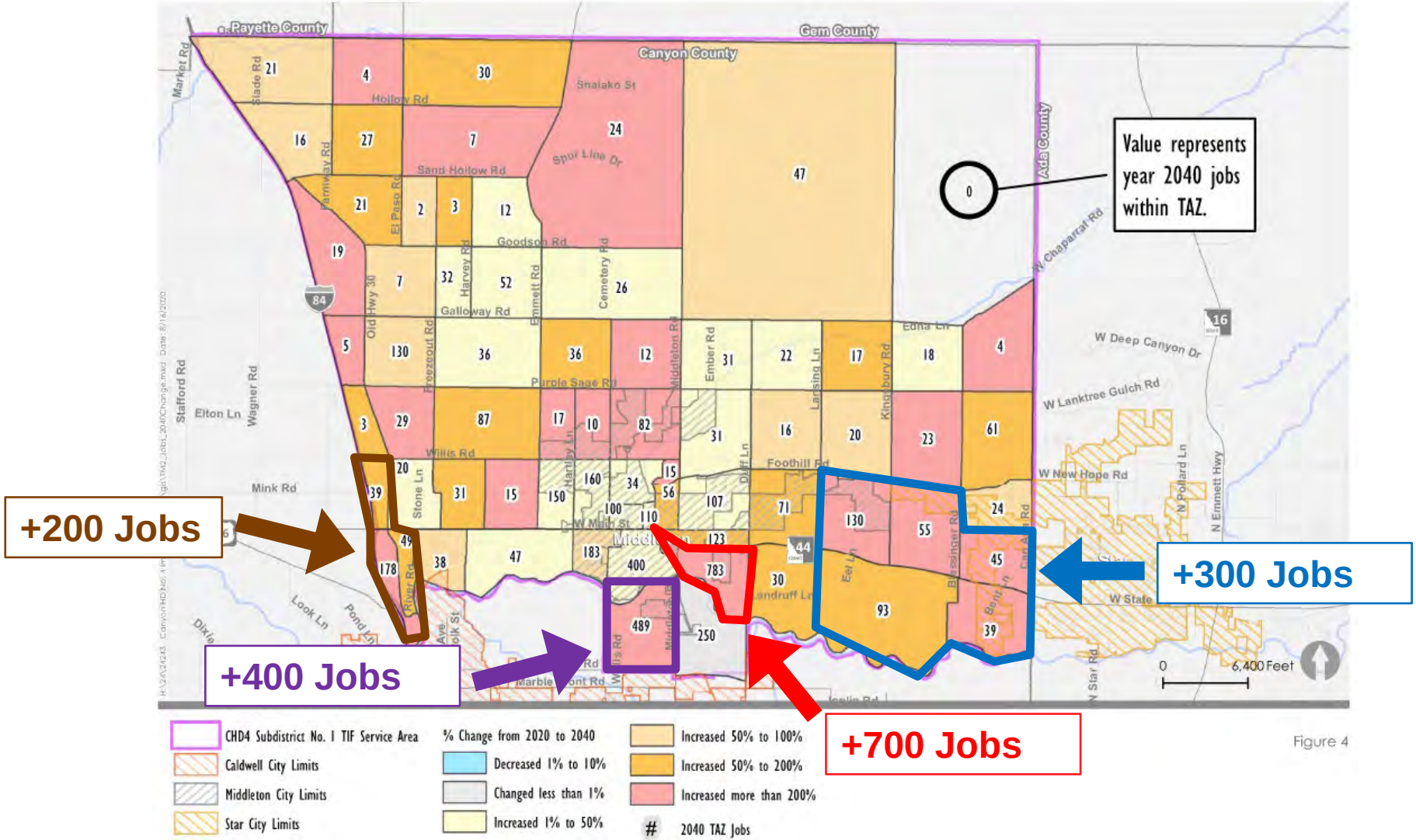

Payette County
Gem County
Canyon County
Ada County
Value represents year 2040 jobs within TAZ.
+200 Jobs
+400 Jobs
+700 Jobs
+300 Jobs
0
6,400 Feet
CHD4 Subdistrict No. 1 TIF Service Area
Caldwell City Limits
Middleton City Limits
Star City Limits
% Change from 2020 to 2040
Decreased 1% to 10%
Changed less than 1%
Increased 1% to 50%
Increased 50% to 100%
Increased 50% to 200%
Increased more than 200%
2040 TAZ Jobs

Figure 4

PERFORMANCE MEASURES

Performance Measures

- Why are they important?
  - Used to monitor traffic operations and identify roadway facilities that require capacity improvements

- Level-of-Service (LOS)
  - Delay-based (average)
  - If the average driver waits at a stop sign for < 10 seconds, the intersection would be LOS “A”. If the average driver waits at a stop sign for > 1 minute, the intersection would be LOS “F”.

Performance Measures

Agency	Performance Measure
Canyon Highway District No. 4	**LOS D**
City of Middleton	LOS C
City of Star	**LOS D**
Ada County Highway District (ACHD)	LOS E (Roadways), **LOS D (Intersections)**
City of Nampa	**LOS D**
City of Caldwell	**LOS D**
Idaho Transportation Department (ITD)	**LOS D**

Performance Measures

- LOS D recommended
  - Consistent with current practice by CHD4 and Star
  - Consistent with other agencies in the Treasure Valley
  - Appropriate for rural area trending towards suburban
  - The measure can be calculated via Highway Capacity Manual (HCM) methodology

TRAFFIC OPERATIONS METHODOLOGY

Traffic Operations Methodology

- Analysis is used to identify roadway and intersection improvement projects in service area.
  - Created separate methodologies for roadways and intersections
  - Perform initial screening followed by detailed analysis
- Projects are incorporated in the Capital Improvement Plan (CIP).

Proposed Methodology for Roadways

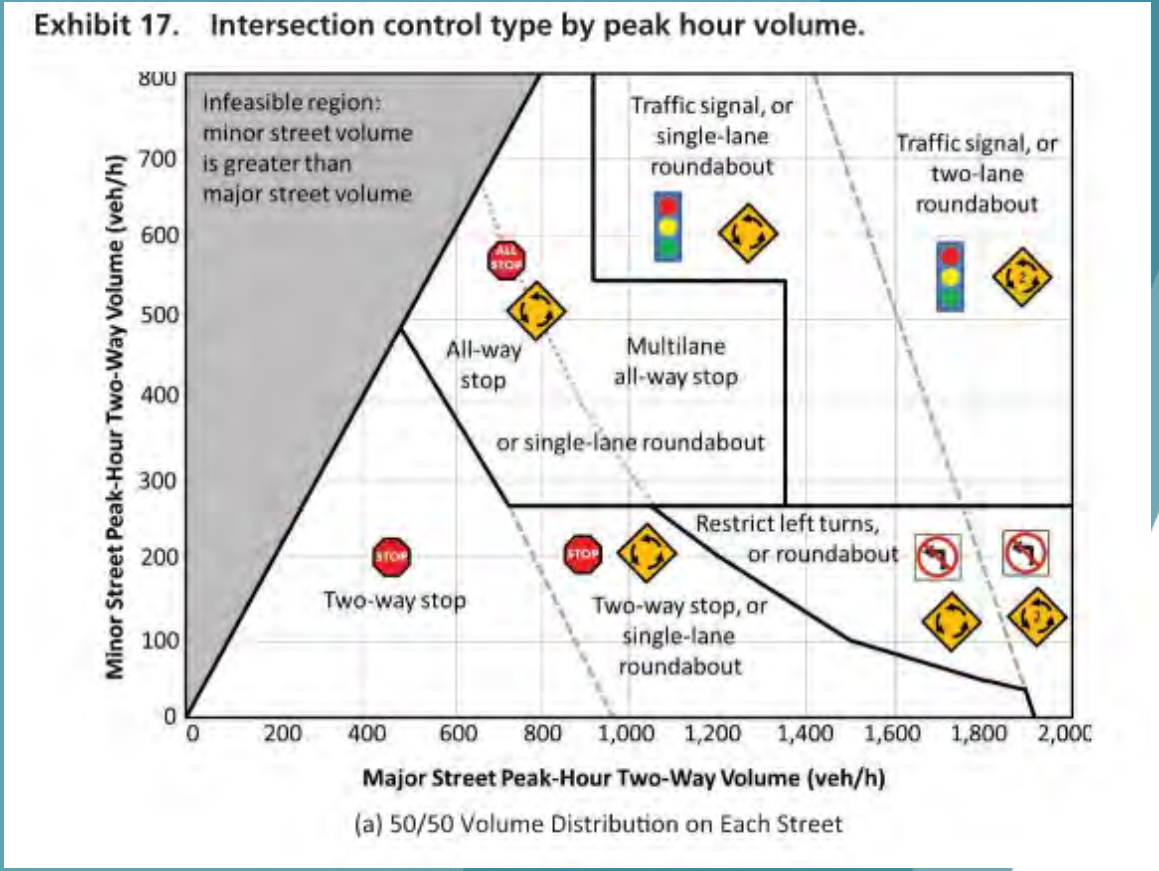
- **Step 1**: Determine peak-hour, directional roadway volumes (refer to table on next slide)
- **Step 2**: Compare roadway volumes with select thresholds (i.e., LOS D) and identify which roadways require widening
- **Step 3**: Develop list of roadway projects for inclusion in CIP

Proposed Roadway Volume Thresholds (Urbanized or Transitioning Areas)

Classification	Characteristics	# of Lanes per Direction	Directional Peak Hour Volume Thresholds	
			Urbanized Areas	Transitioning Areas
			LOS D	LOS D
Principal Arterial	Undivided with no LTL's	1	620	560
	Undivided with LTL's	1	790	720
		2	1,700	1,550
	Divided (Continuous LTL or Median)	1	840	760
		2	1,800	1,640
Minor Arterial	Undivided with no LTL's	1	530	480
	Undivided with LTL's	1	680	610
		2	1,390	1,240
	Divided (Continuous LTL or Median)	1	710	650
		2	1,470	1,310
Collectors	Undivided with no LTL's	1	340	310
	Undivided with LTL's	1	490	440
		2	980	880
	Divided (Continuous LTL or Median)	1	530	480
		2	1,060	950

Proposed Methodology for Intersections

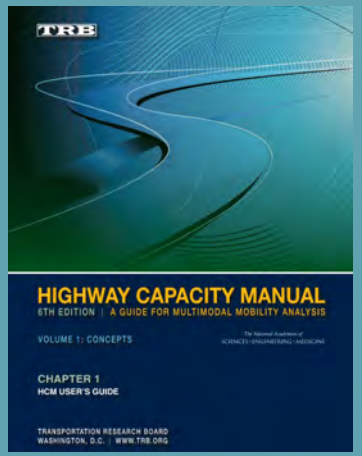
- **Step 1**: Initial screening of service area intersections with roadway volumes

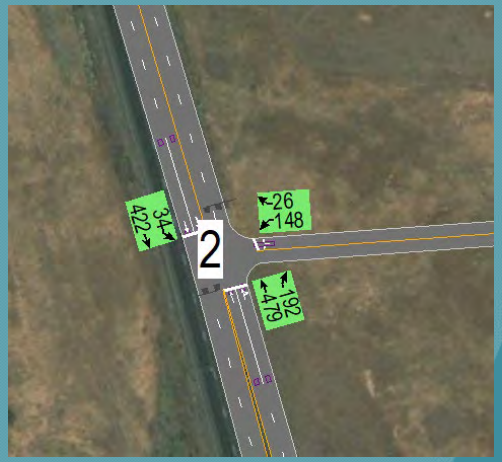


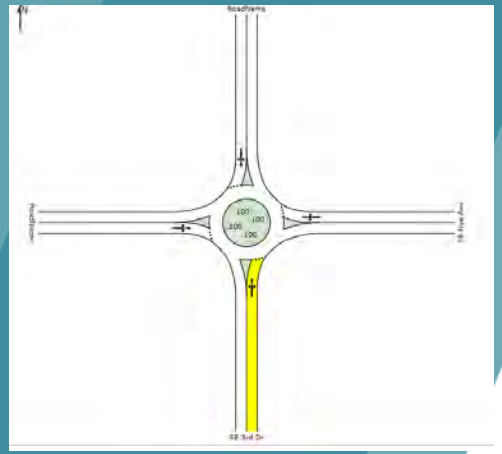
Source: Exhibit 17 from NCHRP Report 825

Proposed Methodology for Intersections

- **Step 2**: Identify intersections for further evaluation
- **Step 3**: Detailed evaluation of select intersections







- **Step 4:** Develop list of intersection projects for inclusion in CIP

PROPORTIONATE SHARE

Agency Proportionate Share

- Partner agencies collect TIFs for development in boundaries.
- Fees are put into separate accounts for Middleton, Star, and Canyon County.
- Fees are spent on projects by agencies within their jurisdictions based on prioritization.

- Advantages
  - Agencies have direct control on how fees are spent within their jurisdiction.
- Challenges
  - Agency may need to delay projects due to lack of funding within the agency impact fee fund.

NEXT STEPS

Next DIFAC Meeting

- Traffic Operations Findings
- Draft Project List for CIP
- Traffic Impact Fee Elements
  - Project Costs
  - Impact Fee Eligibility
  - Impact Fee Schedule

DATE **11/10/2020**

CHD4 SUBDISTRICT NO.1 TRAFFIC IMPACT FEE STUDY

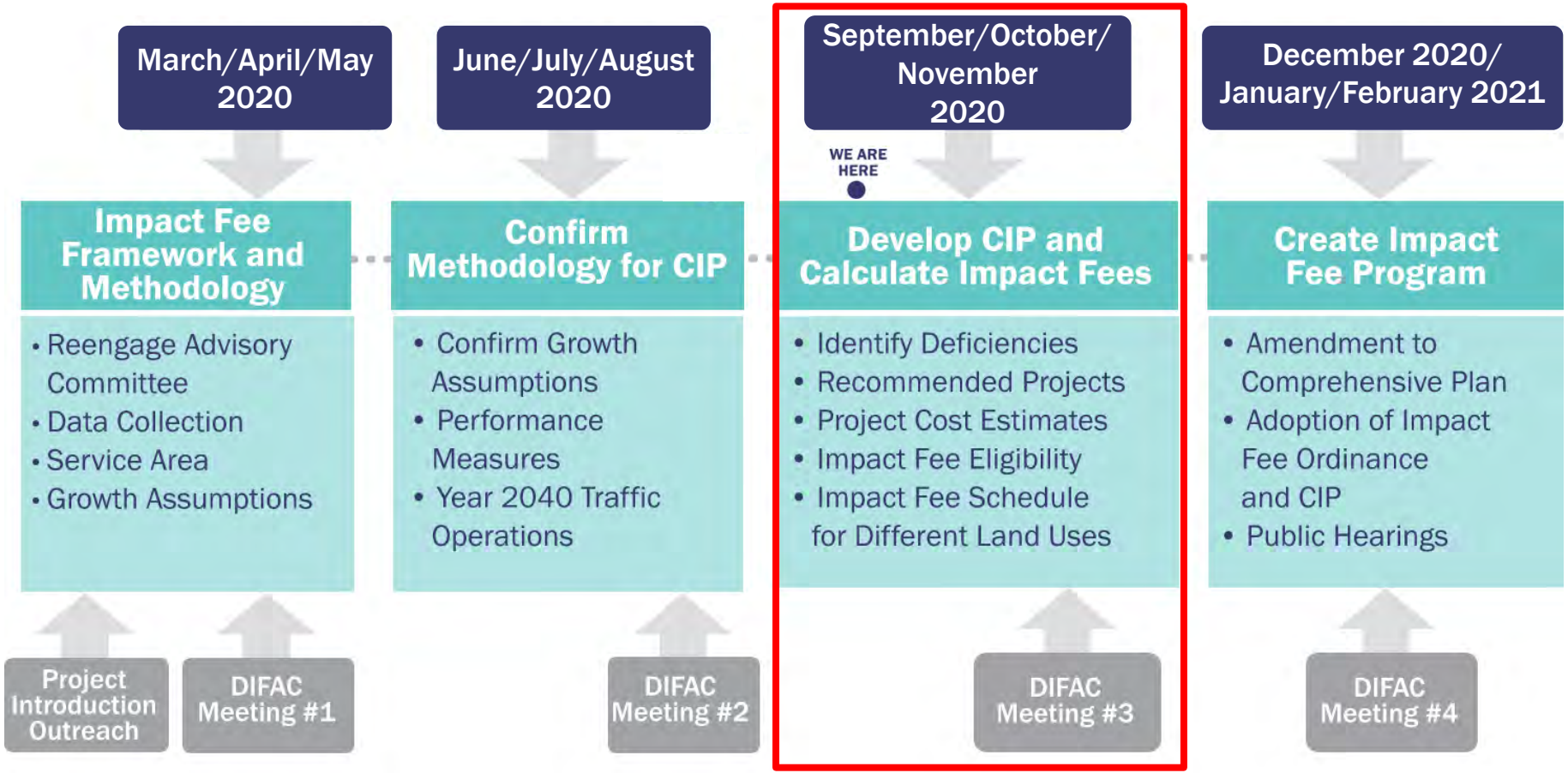
DEVELOPMENT IMPACT FEE ADVISORY COMMITTEE
MEETING #3: PRELIMINARY FINDINGS FOR CAPITAL IMPROVEMENT PLAN (CIP)

KITTELSON & ASSOCIATES

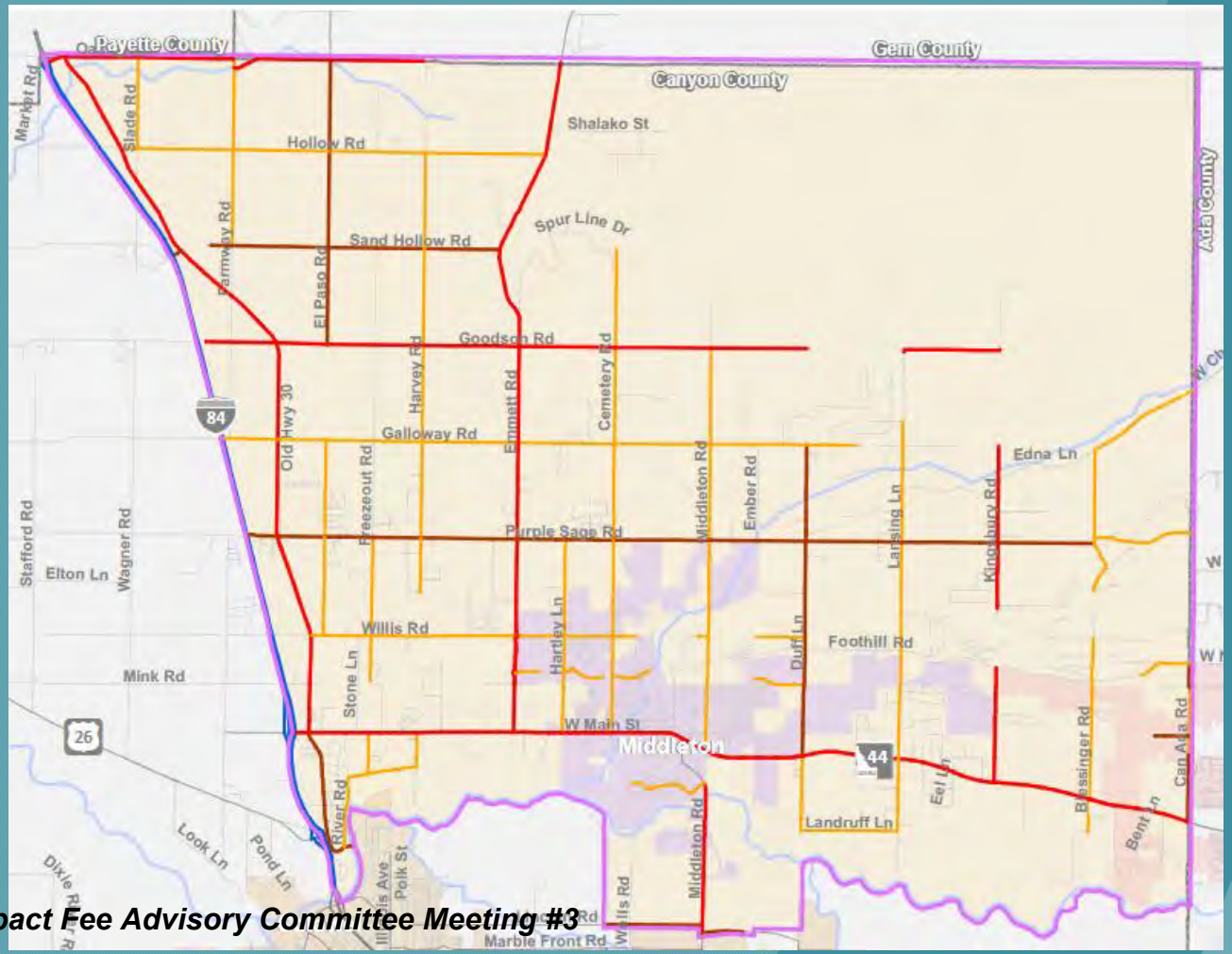
Meeting Purpose and Agenda

- Purpose
  - Review preliminary findings for Capital Improvement Plan (CIP)
  - Address questions from DIFAC
- Agenda
  - Study Schedule and Progress
  - Preliminary Findings for CIP
    - Traffic Operations Results
    - Draft Project List for CIP

Study Schedule



Service Area



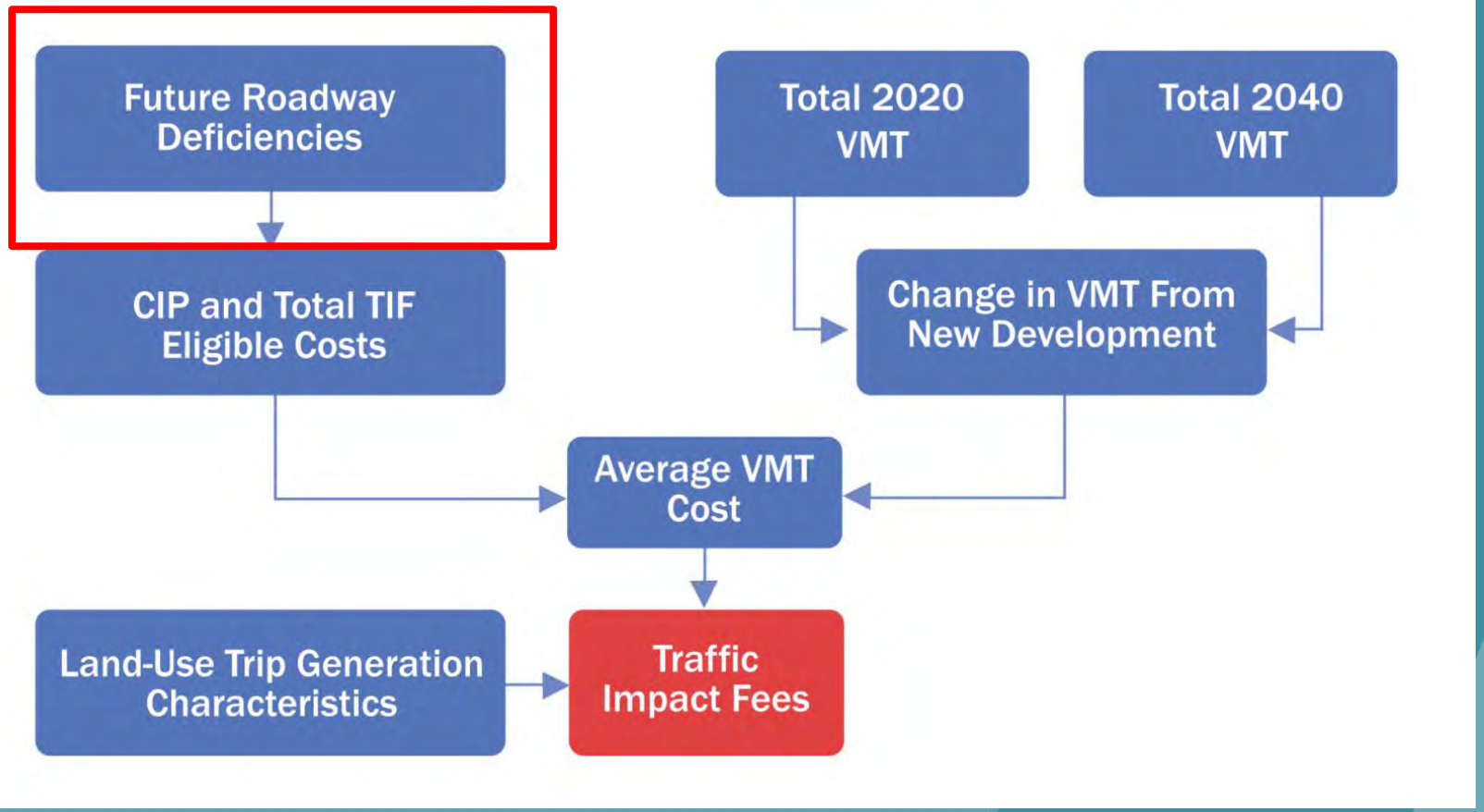
Refresher on Key Assumptions

- Population and Employment Estimate used in COMPASS Model

Jurisdiction	2040 Population	2040 Jobs
City of Middleton	27,528	4,003
City of Star (within Canyon County)	12,463	361
Unincorporated Canyon County	4,324	639
Total Service Area	**44,315 (117% from 2020)**	**5,004 (110% from 2020)**

- Performance Measure
  - **LOS D** for intersections and roadways
- Traffic Operations Analysis Approach
  - Applied roadway thresholds for LOS
  - Assessed intersection operations (initial screening -> detailed operations as needed)

Traffic Impact Fee Calculation Process



PRELIMINARY FINDINGS FOR CAPITAL IMPROVEMENT PLAN (CIP)

Development Impact Fee Advisory Committee Meeting #3

KITTELSON & ASSOCIATES

Methodology for Roadways

- **Step 1**: Determine peak-hour, directional roadway volumes (refer to table on next slide)
- **Step 2**: Compare roadway volumes with select thresholds (i.e., LOS D) and identify which roadways require widening
- **Step 3**: Develop list of roadway projects to address capacity deficiencies and to include in CIP

Step 1: Determine peak-hour, directional roadway volumes

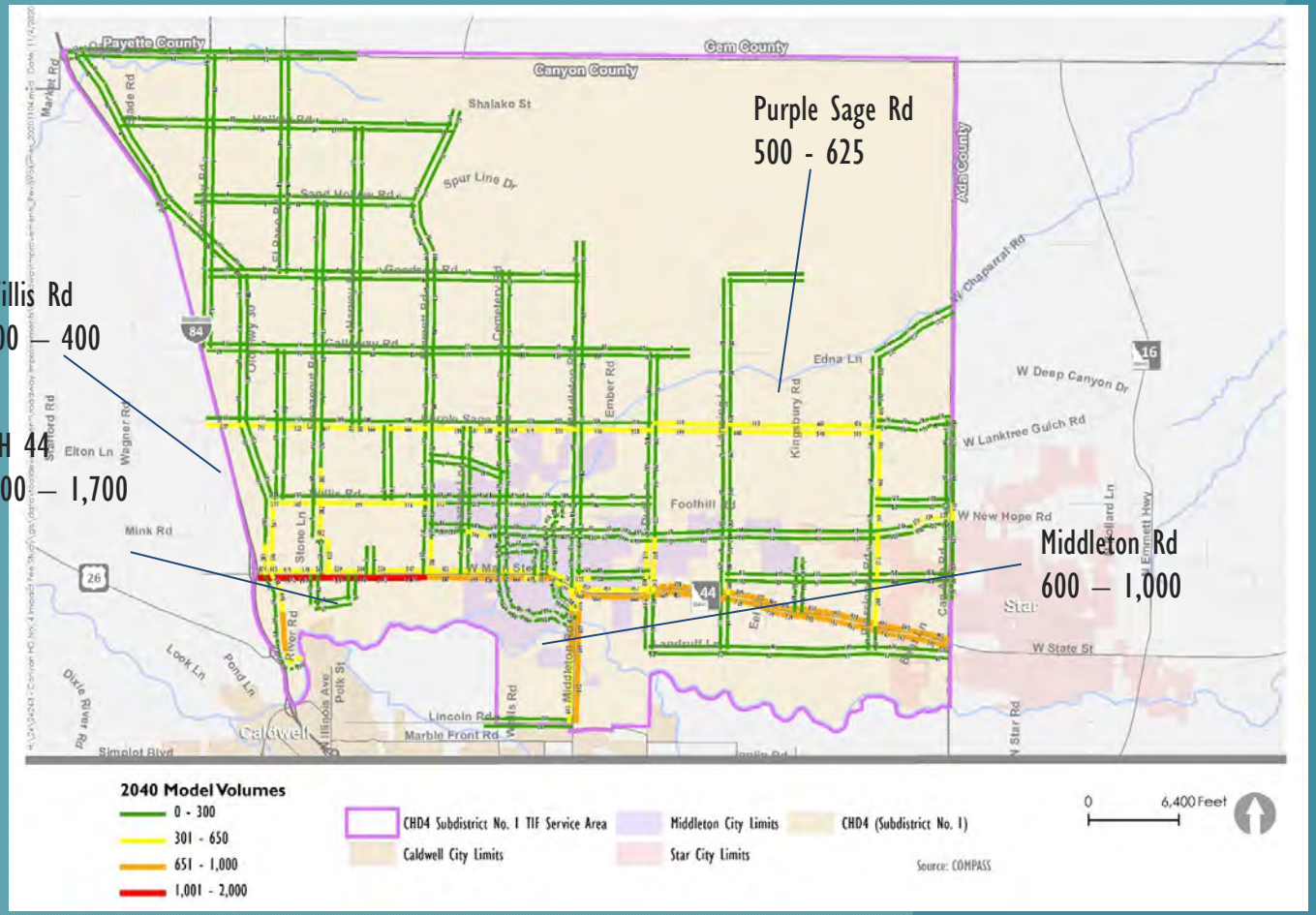
- COMPASS travel demand model output
  - Includes updated socioeconomics
  - Includes updated roadway network

CHD4_Peak40_Rev3

OBJECTID *	Shape *	A	B	DISTANCE	SPEED	COUNTY	FTYPE	DIRECTION	THRULANES	TTLLANES	ROAD	ROADDIR	PM_ID	STATE	HWYDIST	IMPACTFEE	V_1	VT_1	Shape_Length
2951	Polyline	376	5755	0.4318	25	2	14	2	1	2	Blessinger Rd	S	Ble1000015	0	2	21	35.66105	267.7825	2298.81437
2952	Polyline	376	6052	0.4019	25	2	14	2	1	2	Chaparral Rd	N	C41500001001	0	2	21	232.12144	267.7825	2096.349608
5628	Polyline	470	5688	0.6314	35	2	14	2	1	2	El Paso Rd	N	El 100005	0	2	21	70.62675	102.69737	3335.872176
5629	Polyline	470	5694	0.1288	40	2	14	2	1	2	Willis Rd	W	Wil100006	0	2	21	189.43236	566.65894	680.575767
5630	Polyline	470	10090	0.50764	40	2	14	2	1	2	Willis Rd	E	Wil100007	0	2	21	306.59982	463.96155	2682.485222
6421	Polyline	512	5129	0.5103	55	2	6	2	1	2	SH 44	W	SH440213011c	1	4	21	992.40381	1734.63367	2695.627327
6422	Polyline	512	7091	0.281	55	2	6	2	1	2	SH 44	E	SH440213011c	1	4	21	742.22992	1734.63367	1484.537612
6423	Polyline	512	5128	0.5103	55	2	6	2	1	2	SH 44	E	SH440213011c	1	4	21	742.22992	1734.63367	2695.627327
6424	Polyline	512	5130	0.2653	55	2	6	2	1	2	SH 44	W	SH440213011c	1	4	21	992.40381	1734.63367	1401.307103
6425	Polyline	513	5129	0.2653	55	2	6	2	1	2	SH 44	E	SH440213011c	1	4	21	742.22992	1734.63367	1401.307103
6426	Polyline	513	7301	0.3279	55	2	6	2	1	2	SH 44	W	SH440213011b	1	4	21	921.81665	1675.04077	1732.163133
6427	Polyline	513	10977	0.3193	45	2	18	2	1	2	Blessinger	S	Ble100001	0	2	21	76.30397	172.95465	1686.725772
6428	Polyline	513	11165	0.65357	45	2	11	2	1	2	Blessinger	N	Ble100002	0	2	21	367.59	633.25189	3453.05916
6429	Polyline	513	5132	0.3238	55	2	6	2	1	2	SH 44	W	SH440213011b	1	4	21	921.81665	1675.04077	1710.473823
6430	Polyline	513	7301	0.3573	55	2	6	2	1	2	SH 44	E	SH440213011b	1	4	21	753.22412	1675.04077	1887.390374
6431	Polyline	513	5131	0.3238	55	2	6	2	1	2	SH 44	E	SH440213011b	1	4	21	753.22412	1675.04077	1710.473823
6432	Polyline	513	5133	0.2329	55	2	6	2	1	2	SH 44	W	SH440213011a	1	4	21	845.05145	1569.37683	1230.59554

1 (0 out of 712 Selected)

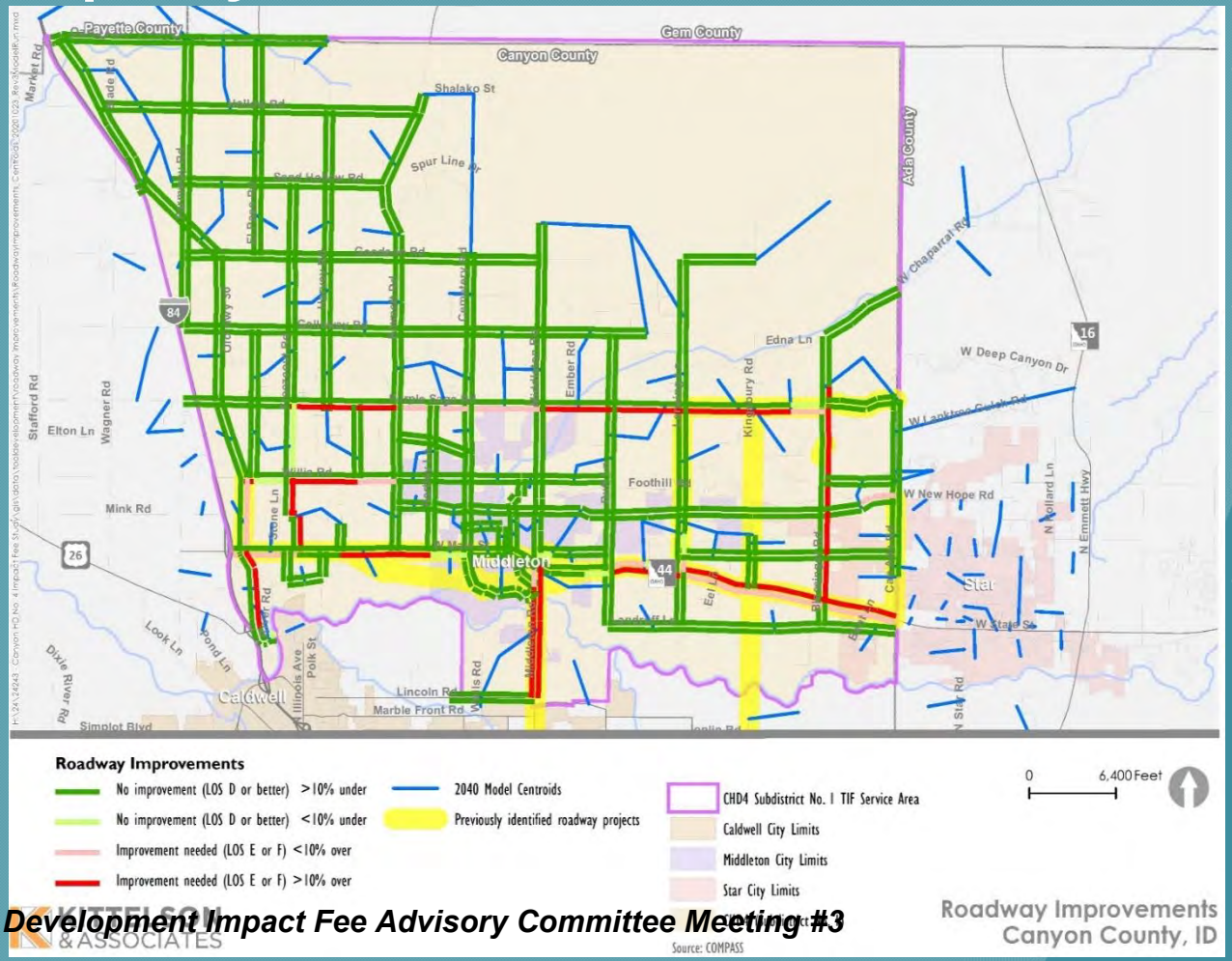
Roadway Segment Volumes
(Year 2040 Weekday PM Peak Hour)



Step 2: Compare roadway volumes with select thresholds (i.e., LOS D) and identify which roadways require widening

Classification	Characteristics	# of Lanes per Direction	Directional Peak Hour Volume Thresholds	
			Urbanized Areas	*Transitioning Areas*
Principal Arterial	Undivided with no LTL's	1	620	560
	Undivided with LTL's	1	790	720
		2	1,700	1,550
	Divided (Continuous LTL or Median)	1	840	760
		2	1,800	1,640
Minor Arterial	Undivided with no LTL's	1	530	480
	Undivided with LTL's	1	680	610
		2	1,390	1,240
	Divided (Continuous LTL or Median)	1	710	650
		2	1,470	1,310
Collectors	Undivided with no LTL's	1	340	310
	Undivided with LTL's	1	490	440
		2	980	880
	Divided (Continuous LTL or Median)	1	530	480
		2	1,060	950

Step 3: Develop list of roadway projects to address capacity deficiencies and to include in CIP



- East-West Roadways (LOS E/F)
  - Purple Sage Road
  - Willis Road
  - Foothill Road
  - SH 44 (ITD facility)
- North-South Roadways (LOS E/F)
  - Old Highway 30
  - Freezeout Road
  - Middleton Road
  - Lansing Lane
  - Blessinger Road
- New Roadway Connections
  - 9th Street
  - Cornell Road
  - Willis Road
  - Blessinger Road
  - Cemetery-Sawtooth
  - Ranch Road
  - Meadow Park
  - Landruff Lane

Road	From	To	Analysis Improvement	Previously Identified Project	Volume Range and Threshold	Notes
Identified in Current Analysis + Previously Identified Projects						
Middleton Rd	Lincoln Rd	SH44	Widen to 4 lanes; either LTLs at intersections or divided	Widen to 4 lanes, divided (Ustick Rd to SH44)	Vol. Range: 527 – 899 Threshold Range: 490 – 620	Widening to 3 lanes would almost increase threshold (840 meet PM peak hour volume (899).
Lansing Ln	SH44	Cornell St	Add turn lanes at intersections	Widen to 5 lanes (SH44 to Purple Sage Rd)	Volume: 340 Threshold: 310	Volume is close to turn lane threshold (<10%) between Co and 9th St. Consider extending project north to 9th St .
Old Highway 30	SH44	Willis Rd	Add turn lanes at intersections or continuous left turn lane	Add continuous left turn lane	Vol. Range: 561 – 570 Threshold: 560	Widening to 3 lanes would almost increase threshold (840 PM peak hour volume (873).
Purple Sage Rd	Lansing Ln	Blessinger Rd	Add turn lanes at intersections or continuous left turn lane	Widen to 5 lanes (Lansing Ln to Can Ada Rd)	Vol. Range: 515 – 608 Threshold: 480	
Identified in Current Analysis (NOT previously identified)						
Blessinger Rd	SH44	North of Purple Sage Rd	Add continuous left turn lane or widen to 4 lanes with turn lanes at intersections	---	Vol. Range: 368 – 466 Threshold: 310	
Foothill Rd	West of Can Ada Rd	Can Ada Rd	Add turn lanes at intersections	---	Volume: 324 Threshold: 310	PM peak hour volume (324) just above threshold (310) for segment. Likely needs turn lane at 1or 2 intersections.
Freezeout Rd	SH44	Willis Rd	Add turn lanes at intersections or continuous left turn lane	---	Vol. Range: 382 – 422 Threshold: 310	
Willis Rd	Old Highway 30	Emmett Rd	Add turn lanes at intersections or continuous left turn lane	---	Vol. Range: 307 – 399 Threshold: 310	
Old Highway 30	Highway 26	SH44	Widen to 4 lanes; either LTLs at intersections or divided	---	Vol. Range: 648 – 709 Threshold: 480	
Purple Sage Rd	Freezeout Rd	Lansing Ln	Add turn lanes at intersections or continuous left turn lane	---	Vol. Range: 500 – 611 Threshold: 480	Adding turn lanes at intersections will provide enough capa since this seems to serve as the primary E-W connector, w consider widening to 3 lanes
Previously Identified (NOT Identified in Current Analysis)						
Lansing Ln	9th Street	Purple Sage Road	---	Widen to 5 lanes	Vol. Range: 79 – 284 Threshold Range: 310 – 340	PM Peak Hour volume is 210. Threshold for turn lanes at intersections is 440
Kingsbury Rd	SH 44	Purple Sage Road	---	Widen to 5 lanes	Vol. Range: 3 – 196 Threshold: 560	PM Peak Hour volume is 196. Threshold for turn lanes at intersections is 440.
Can Ada Rd	SH 44	New Hope Rd	---	Add turn lanes	Vol. Range: 81 – 289 Threshold: 530	PM Peak Hour volume is 289. Threshold for turn lanes at intersections is 440
Purple Sage Rd	Blessinger Rd	Can Ada Rd	---	Widen to 5 lanes	Vol. Range: 24 – 34 Threshold: 310	PM Peak Hour volume is 34. Threshold for turn lanes at intersections is 440. PM Peak Hour volume likely low.

Notes:

All roads are currently one lane in each direction

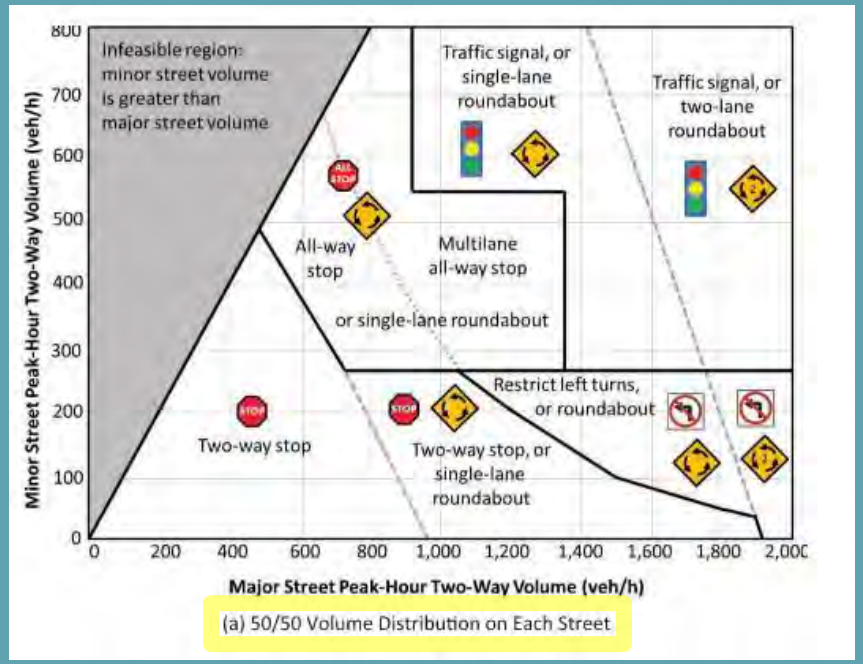
SH44 is previously identified for widening; portions are also identified in current analysis but are not included in this table

Methodology for Intersection Analysis

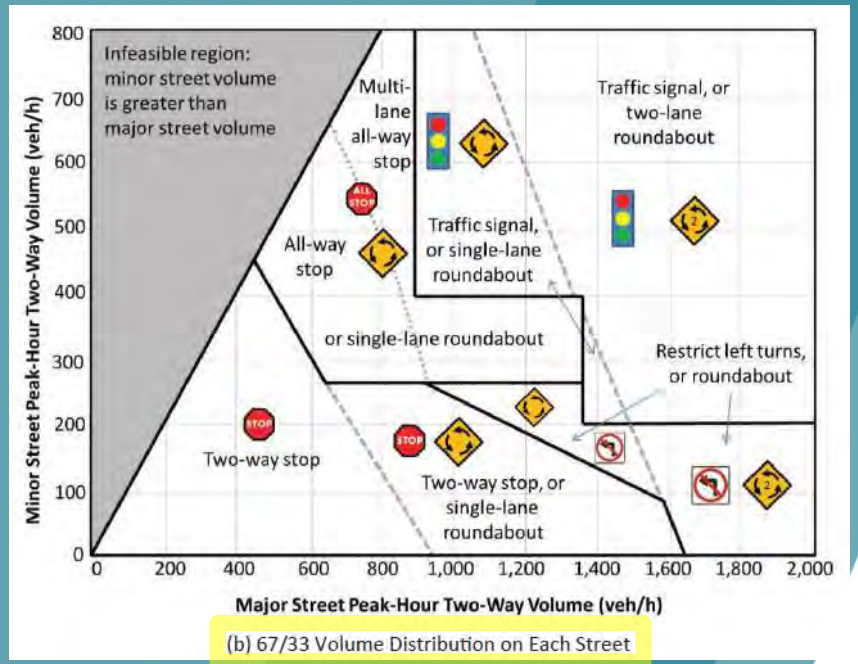
- **Step 1**: Initial screening of service area intersections with roadway volumes
- **Step 2**: Identify intersections for further evaluation

- **Step 3**: Detailed evaluation of select intersections
- **Step 4**: Develop list of intersection projects for inclusion in CIP

Step 1: Initial screening of service area intersections with roadway volumes



(a) 50/50 Volume Distribution on Each Street



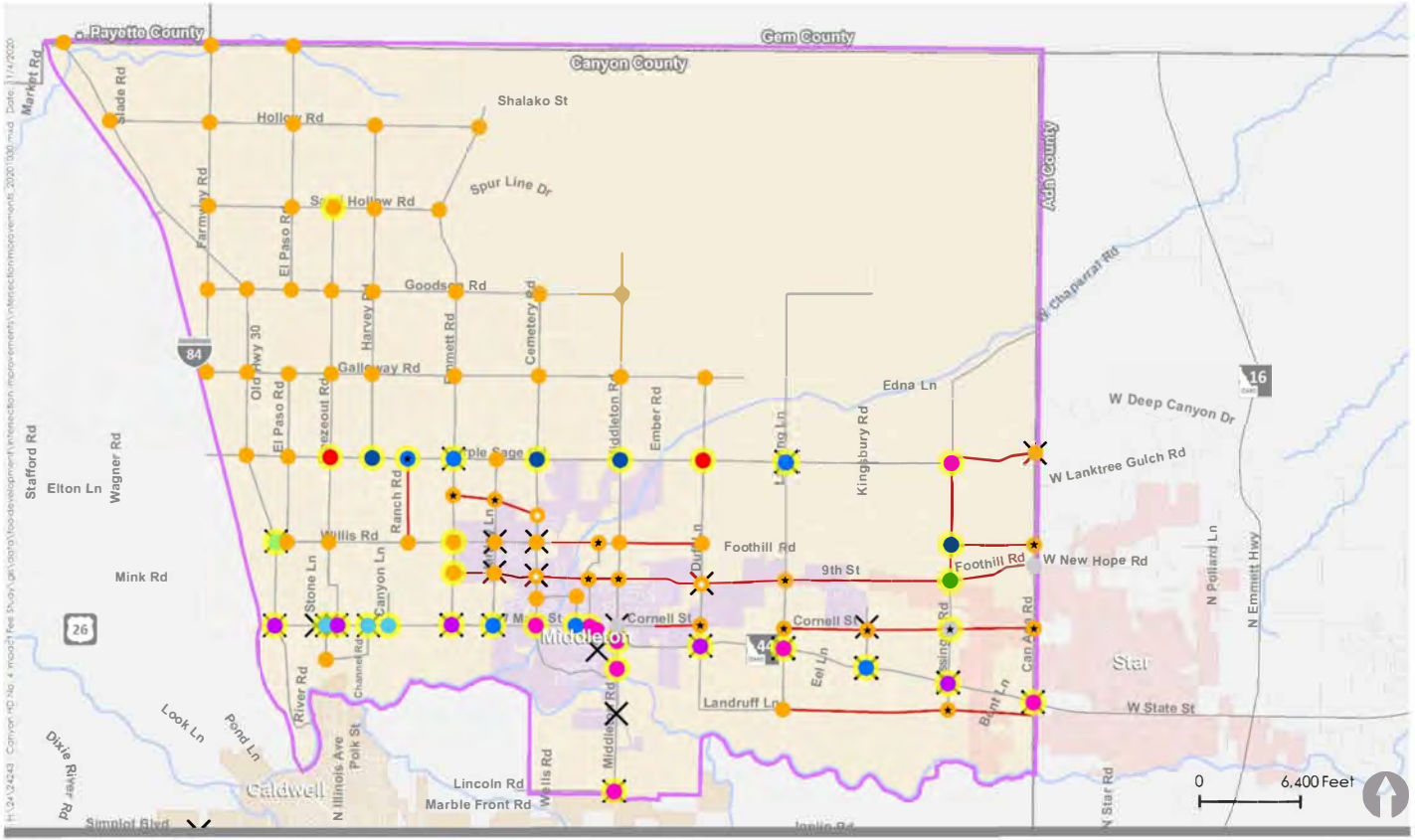
(b) 67/33 Volume Distribution on Each Street

Source: Exhibit 17. Intersection Control Type by Peak Hour Volume from National Cooperative Highway Research Program (NCHRP) Report 825

Step 1: Initial screening of service area intersections with roadway volumes (cont.)

- Identified 97 intersections for screening
  - 92 two-way stop control (TWSC)
  - 2 all-way stop control (AWSC)
  - 2 multi-lane roundabouts
  - 1 signal

- 31 of 97 intersections require a change from TWSC.
  - 3 future intersections
  - 16 intersections along SH44 (ITD facility)



Source: COMPASS

Required Control Types

- Two-Way Stop Control
- All-Way Stop Control
- Multi-Lane All-Way Stop Control
- Two-Way Stop Control or Single-Lane Roundabout
- All-Way Stop Control or Single-Lane Roundabout
- Multilane All-Way Stop Control or Single-Lane Roundabout
- Restricted Left Turn or Roundabout
- Single-Lane Roundabout
- Single-Lane Roundabout or Signal
- Restricted Left Turn or Two-Lane Roundabout (None)
- Signal or Two-Lane Roundabout
- Future Intersection
- Future Leg
- Change in Control Type
- Previously Identified Intersection Project
- COMPASS Network Additions
- COMPASS Network
- CHD4 TIF Service Area
- Caldwell City Limits
- Middleton City Limits
- Star City Limits
- CHD4 (Subdistrict No. 1)

High Level Intersection Screening
Canyon County, ID

Intersection	Existing Control Type	Required Control Type (Current Analysis)	Previously Identified Improvement	Total Entering Volume	Further Analysis	Comments
Identified in Current Analysis + Previously Identified Projects						
Lansing Ln & Purple Sage Rd	Two-Way Stop Control	Single-Lane Roundabout	Unknown	1,149	NO	
Old Hwy 30 & Willis Rd	Two-Way Stop Control	Multi-Lane All-Way Stop Control	Signal/Roundabout	861	YES	Approaching threshold for traffic signal or single-lane roundabout
Old Hwy 30 & SH 44	Two-Way Stop Control	Traffic Signal or Two-Lane Roundabout	Signal	3,169	YES	Close proximity to I-84 ramp intersections
River Rd & SH 44	Two-Way Stop Control	Restricted Left Turn or Roundabout	RCUT	2,195	YES	Low minor street volume (50 vehicles/hour)
Freezeout Rd & SH 44	Two-Way Stop Control	Traffic Signal or Two-Lane Roundabout	RCUT	2,148	YES	
Channel Rd & SH 44	Two-Way Stop Control	Restricted Left Turn or Roundabout	Unknown	1,715	YES	Low minor street volume (<50 vehicles/hour)
Emmett Rd & SH 44	Two-Way Stop Control	Traffic Signal or Two-Lane Roundabout	Unknown	1,770	YES	
Hartley Rd & SH 44	Two-Way Stop Control	Single-Lane Roundabout	Add left turn lane	1,384	YES	
Duff Ln & SH 44	Two-Way Stop Control	Traffic Signal or Two-Lane Roundabout	RCUT	1,930	YES	
Lansing Ln & SH 44	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	RCUT	1,864	YES	
Kingsbury Ln & SH 44	Two-Way Stop Control	Single-Lane Roundabout	RCUT	1,794	YES	Approaching threshold for two-lane roundabout or traffic signal
Blessinger Rd & SH 44	Two-Way Stop Control	Traffic Signal or Two-Lane Roundabout	RCUT	2,108	YES	
Can Ada Rd & SH 44	Two-Way Stop Control	Single-Lane Roundabout or Traffic Signal	RCUT (CHD4); Signal (City of Star)	867	YES	
Middleton Rd & Lincoln Rd	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	Roundabout	954	NO	
Emmett Rd & Purple Sage Rd	Two-Way Stop Control	Single-Lane Roundabout	Signal/Roundabout	835	NO	Volumes manually adjusted to match existing volumes

Intersection	Existing Control Type	Required Control Type (Current Analysis)	Previously Identified Improvement	Total Entering Volume	Further Analysis	Comments
Identified in Current Analysis (NOT previously identified)						
Freezeout Rd & Purple Sage Rd	Two-Way Stop Control	Multi-Lane All-Way Stop Control or Single-Lane Roundabout	---	911	NO	
Harvey Rd & Purple Sage Rd	Two-Way Stop Control	Two-Way Stop Control or Single-Lane Roundabout	---	895	YES	
Ranch Rd & Purple Sage Rd[1]	Two-Way Stop Control	Single-Lane Roundabout	---	775	NO	
Cemetery Rd & Purple Sage Rd	Two-Way Stop Control	Two-Way Stop Control or Single-Lane Roundabout	---	851	YES	
Middleton Rd & Purple Sage Rd	Two-Way Stop Control	Two-Way Stop Control or Single-Lane Roundabout	---	892	YES	
Duff Ln & Purple Sage Rd	Two-Way Stop Control	Multi-Lane All-Way Stop Control or Single-Lane Roundabout	---	1,161	NO	
Blessinger Rd & Purple Sage Rd	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	---	806	NO	
Blessinger Rd & Willis Rd[1]	Two-Way Stop Control	Two-Way Stop Control or Single-Lane Roundabout	---	777	YES	Potential topographical constraints for roundabout
Blessinger Rd & Foothill Rd	Two-Way Stop Control	All-Way Stop Control or Single-Lane Roundabout	---	589	NO	Potential topographical constraints for roundabout
Canyon Ln & SH 44	Two-Way Stop Control	Restricted Left Turn or Roundabout	---	1,729	YES	Low minor street volume (<50 vehicles/hour)
Cemetery Rd & SH 44	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	---	1,544	YES	
Hawthorne Dr & SH 44	Two-Way Stop Control	Single-Lane Roundabout	---	1,267	YES	
Dewey Ave & SH 44	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	---	1,366	YES	
Middleton Rd & SH 44	Two-Way Stop Control	Single-Lane Roundabout or Traffic Signal	---	1,965	NO	
Blessinger Rd & Cornell St[1]	Two-Way Stop Control	All-Way Stop Control	---	932	NO	
Middleton Rd & Sawtooth Lake Dr	Two-Way Stop Control	Traffic Signal or Single-Lane Roundabout	---	1,692	NO	

Intersection	Existing Control Type	Required Control Type (Current Analysis)	Previously Identified Improvement	Total Entering Volume	Further Analysis	Comments
Previously Identified Projects (NOT identified in current analysis)						
Can Ada Rd & Purple Sage Rd	Two-Way Stop Control	Two-Way Stop Control	Unknown	140	NO	
Hartley Ln & Willis Rd	Two-Way Stop Control	Two-Way Stop Control	Roundabout	103	NO	
Cemetery Rd & Willis Rd	Two-Way Stop Control	Two-Way Stop Control	Roundabout	283	NO	
Hartley Ln & 9th St	Two-Way Stop Control	Two-Way Stop Control	Roundabout	349	NO	
Cemetery Rd & 9th St	Two-Way Stop Control	Two-Way Stop Control	Roundabout	292	NO	
Duff Ln & 9th St	Two-Way Stop Control	Two-Way Stop Control	Roundabout	665	NO	
Middleton Rd & Cornell St	All-Way Stop Control	All-Way Stop Control	Roundabout	702	NO	
Kingsbury Rd & Cornell St	Two-Way Stop Control	Two-Way Stop Control	Roundabout	509	NO	
Stone Ln & SH44[2]	Two-Way Stop Control	---	RCUT	N/A	NO	
Middleton Rd & River St[2]	---	---	Roundabout	N/A	NO	
Middleton Rd & Bass Ln[2]	Two-Way Stop Control	---	Roundabout	N/A	NO	
Intersections approaching improvement thresholds (NOT previously identified or identified in current analysis)						
Can Ada Rd & Cornell St	Two-Way Stop Control	Two-Way Stop Control	---	550	NO	Approaching threshold for all-way stop control
Freezeout Rd & Willis Rd	Two-Way Stop Control	Two-Way Stop Control	---	868	NO	Approaching threshold for all-way stop control

[1] Future intersection

[2] Intersection not in analysis

Step 2: Identify intersections for further evaluation

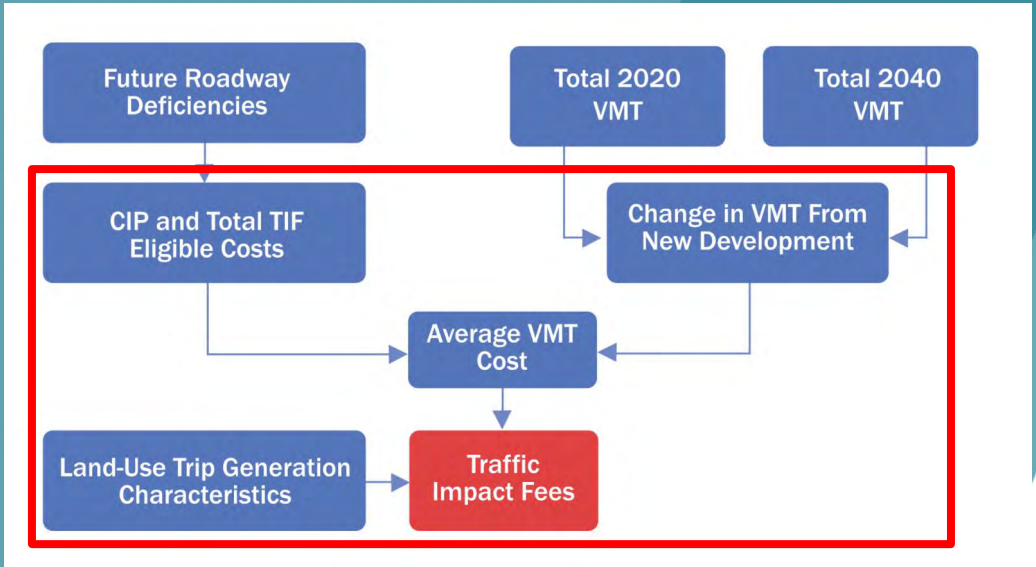
- Intersections for detailed analysis
  - Old Hwy 30 & Willis Rd
  - Old Hwy 30 & SH 44
  - River Rd & SH 44
  - Freezeout Rd & SH 44
  - Channel Rd & SH 44
  - Emmett Rd & SH 44
  - Hartley Rd & SH 44
  - Duff Ln & SH 44
  - Lansing Ln & SH 44
  - Kingsbury Ln & SH 44
  - Blessinger Rd & SH 44
  - Can Ada Rd & SH 44
  - Canyon Ln & SH 44
  - Cemetery Rd & SH 44
  - Hawthorne Dr & SH 44
  - Dewey Ave & SH 44
  - Harvey Rd & Purple Sage Rd
  - Cemetery Rd and Purple Sage Rd
  - Middleton Rd and Purple Sage Rd
  - Blessinger Rd & Willis Rd

- Items for further evaluation?
  1. Intersection control types (Signal, roundabout, RCUT, or other) for SH 44
     - Checking with ITD and agency partners
  2. Active design projects at any of the intersections
     - Checking with agency partners
  3. Intersection control type preference between signal and roundabout?
     - Roundabout is the default per agency partner discussion.

NEXT STEPS

Next DIFAC Meeting (~Jan 2021)

- Prepare draft CIP
  - Refine project list
  - Develop cost estimates
  - Identify impact-fee eligibility criteria



- Prepare TIF program
  - Document methodology
  - Summarize traffic impact fees by land use

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Canyon Highway District No. 4 Traffic Impact Fee Study

DIFAC Meeting #3 – Preliminary CIP Findings

November 10, 2020 – 3:00-4:30 PM

Virtual Meeting

DRAFT MEETING NOTES

In Attendance: Chris Hopper, CHD4
Bruce Bayne, City of Middleton
Michael Keyes, City of Star
Tricia Nilsson, Canyon County
Andy Daleiden, KAI
Mark Heisinger, KAI
Andrew McIntyre, KAI
Brett Bishop
John Carpenter
John Tensen
Jon Turnipseed
Spencer Kofoed
Trevor Chadwick
Zach Wesley

Action items are highlighted in **bold text**.

SCHEDULE

- January Goal: Present recommended CIP and impact fee schedule to DIFAC

PRELIMINARY CIP FINDINGS

- Roadway map shows which roadway volumes are above the threshold for LOS D and require improvements (widening or turn lanes at intersections)
- Intersection map represents minimum control type at intersections - determined by an initial screening
  - Intersections that have different options for control type (i.e., could function as signal or roundabout), or are close to the threshold for requiring a different control type, will be evaluated further
- Canyon County: Are new roadways represented on functional classification map?
  - Chris: Yes, most of them
- Would widening of state highways in the model make a difference?

        - Not necessarily - model volumes are using roadways like Purple Sage to travel to SH 44 and other regional highways
    - How did we determine SH 44 intersections, any direction from ITD?
        - We are still looking into this and coordinating with partner agency - traffic signals will be default
        - We will consider restricting right-turns at some intersections on SH 44
    - City of Star intention is to connect Floating Feather to where we show Cornell
        - Star and Middleton/CHD4 to connect internally
    - CHD4 to send a follow-up after meeting regarding protocol and deadline for comments
        - **Comments by 11/24 would be most helpful**
    - Next meeting will be first or second week of January
    - - Do our plans fit ITD's construction plans?
        - One of our action items is to understand intersection control and SH 44 assumptions, including ITD's schedule
    - What are ramifications between roundabouts and traffic signals?
        - Roundabouts have much higher safety benefits, and can also have operations benefits, depending on traffic volumes
        - The more info about traffic signals vs. roundabout would be great
    - Alternate route beyond Middleton could also affect this section of SH 44
    - CIP will be given to COMPASS after adoption

NEXT STEPS

- January Goal: Present recommended CIP and impact fee schedule to DIFAC
- **Kittelson to look into COMPASS model issues and update findings**
    - Purple Sage (Can Ada to Blessinger)
        - Existing volume is 1410/day, model is showing ~400/day
    - CHD4 has identified 14 segments that are mostly lower than existing data
        - More vehicles utilizing Blessinger than Can Ada
            - Blessinger speed is too high
        - Model is showing main connection from Canyon to Gem through Farmway, Emmett is probably main connection
        - Goodson Road volumes are low, especially west of Emmett
        - Old Hwy 30 is low, especially between purple sage and willis

ACTION ITEMS

- **Kittelson to look into COMPASS model issues and update findings**
- **CHD4 to reach out to ITD and see if they have updated plans for SH 44 intersection treatments**
- **DIFAC to provide comments on preliminary CIP findings and send to CHD4 by 11/24**

APPENDIX B:

Capital Improvement Plan Requirements

Table B-1. CIP Requirements

Requirement	How the Requirement is Addressed in the CIP
(a) A general description of all existing public facilities and their existing deficiencies within the service area or areas of the governmental entity and a reasonable estimate of all costs and a plan to develop the funding resources related to curing the existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding or replacing of such facilities to meet existing needs and usage;	Existing roadway facilities are described in the Existing Service Network. Existing roadway and intersection deficiencies were identified in a capacity analysis and discussed in Existing Capacity & Deficiencies. Costs and revenue sources are discussed on page 35.
(b) A commitment by the governmental entity to use other available sources of revenue to cure existing system deficiencies where practical;	CHD4, Star, and Middleton by adoption of this Capital Improvement Plan commit to using revenue sources other than development impact fees to cure existing system deficiencies, where practical. See page 4.
(c) An analysis of the total capacity, the level of current usage, and commitments for usage of capacity of existing capital improvements, which shall be prepared by a qualified professional planner or by a qualified engineer licensed to perform engineering services in this state;	Total capacity on roadway and intersections in the service area was analyzed for existing and year 2040 conditions. Traffic volumes for existing and year 2040 conditions were developed via the COMPASS travel demand model. The analysis methodology is explained in Performance Measures & Traffic Operations, and the results are summarized in Existing Capacity and Deficiencies.
(d) A description of the land use assumptions by the government entity;	Land use assumptions were reviewed with the Development Impact Fee Advisory Committee and developed in coordination with COMPASS to appropriately reflect existing and future transportation conditions. A detailed discussion of land use assumptions is included in the section on Land Use.
(e) A definitive table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural and industrial;	This analysis uses a performance measure of LOS D for roadways and intersections. Definitions of the level of service performance measure and traffic operations methodology are discussed in Performance Measures beginning on page 13.
(f) A description of all system improvements and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, to provide a level of service not to exceed the level of service adopted in the development impact fee ordinance;	Future deficiencies attributable to new development were identified through the traffic operations analysis on roadways and intersection within the service area. Projects necessary to address the deficiencies created by new growth and development are detailed in the Project List.

(g) The total number of service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;	Traffic volumes on service area roadway facilities were calculated for existing and year 2040 conditions based on land use assumptions approved by the DIFAC. The change in traffic volumes between existing and year 2040 conditions reflects traffic volumes attributable to new development. See 2040 Capacity & Deficiencies.
(h) The projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty (20) years;	Level of service was determined for each roadway and intersection using methodologies outlined in the HCM and NCHRP reports. Features that exceeded the performance measure of LOS D were identified as deficient. Traffic operations methodology is discussed in the Performance Measures section beginning on page 13; Existing and future deficiencies are identified in the Roadway & Intersection Deficiencies section beginning on page 20.
(i) Identification of all sources and levels of funding available to the governmental entity for the financing of the system improvements;	See Funding Sources.
(j) If the proposed system improvements include the improvement of public facilities under the jurisdiction of the state of Idaho or another governmental entity, then an agreement between governmental entities shall specify the reasonable share of funding by each unit, provided the governmental entity authorized to impose development impact fees shall not assume more than its reasonable share of funding joint improvements, nor shall the agreement permit expenditure of development impact fees by a governmental entity which is not authorized to impose development impact fees unless such expenditure is pursuant to a developer agreement under section 67-8214, Idaho Code; and	See Intergovernmental Agreements.
(k) A schedule setting forth estimated dates for commencing and completing construction of all improvements identified in the capital improvements plan.	The CIP Project list (page 32 to 34) assigns 5-year timeframes to each project based on project priority and funding availability.

APPENDIX C:

Population and Employment Maps (2020)

Figure C-1. Year 2020 Population by Traffic Analysis Zone

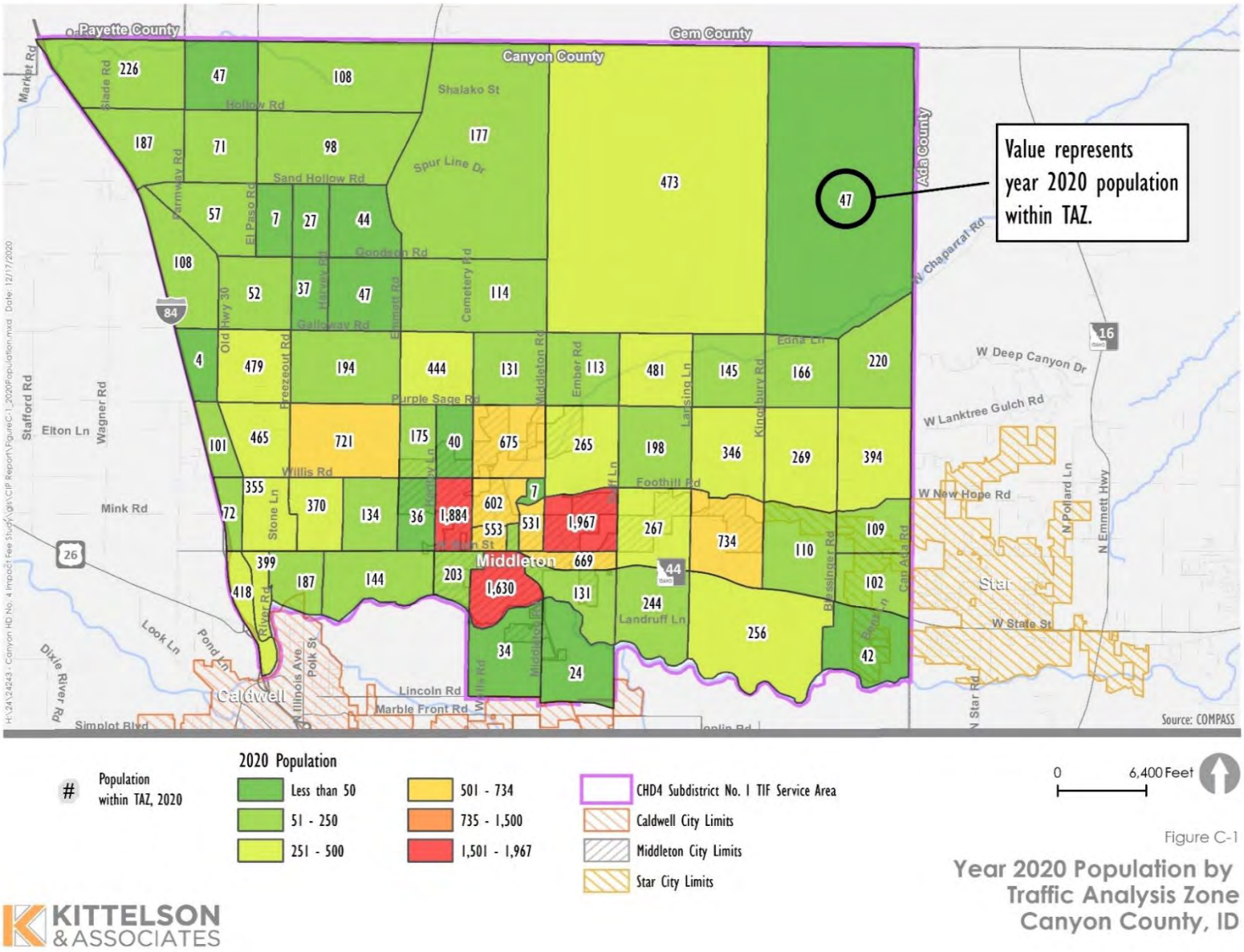

Figure C-2. Year 2020 Employment by Traffic Analysis Zone

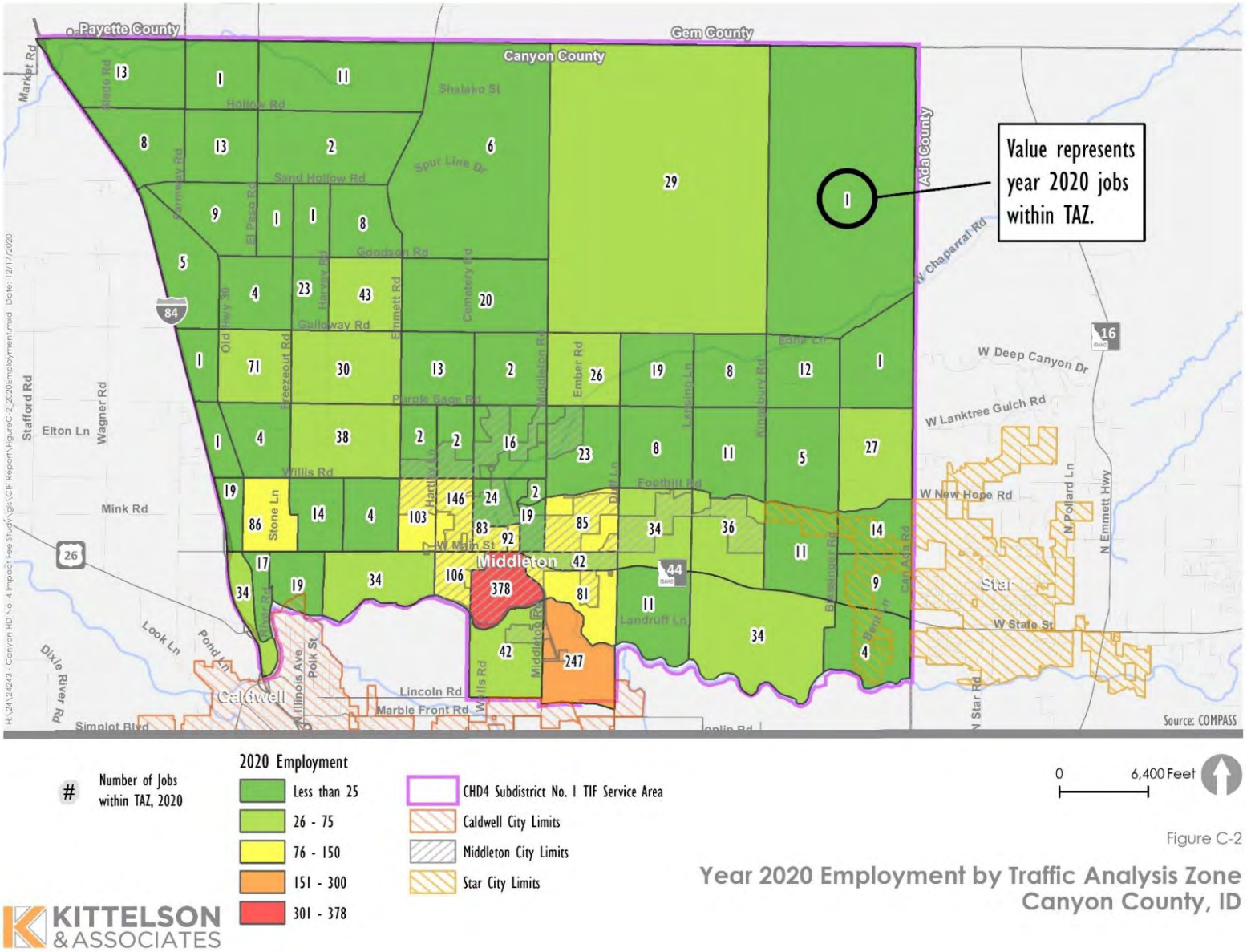

Figure C-2

Year 2020 Employment by Traffic Analysis Zone
Canyon County, ID

APPENDIX D:

Technical Memorandum #1A

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TECHNICAL MEMORANDUM #1A

CHD4 Subdistrict No. 4 Traffic Impact Fee Study - Phase 2

Technical Memorandum #1A - Overview of Scope of Work, Methodology and Assumptions

Date:	May 13, 2020	Project #: 24243
To:	Chris Hopper, PE	
From:	Mark Heisinger, EIT and Andy Daleiden, PE	

INTRODUCTION

This is the first technical memorandum for Phase 2 of the Canyon Highway District No. 4 (CHD4) Traffic Impact Fee (TIF) Study, herein referred as "study". This technical memorandum was made concurrently with *Technical Memorandum 1B – Service Area for CHD4 Subdistrict No. 1 TIF Program*. This memorandum provides a background to the study, summarizes the findings from Phase 1 of the study and describes key components of the Phase 2 scope of work of the study.

PROJECT BACKGROUND

CHD4 initiated Phase 1 of the study, a TIF Feasibility Study, in 2019 to determine the feasibility of establishing traffic impact fees for CHD4 Subdistrict No. 1. Phase 1 reviewed Idaho Code 67-82, the Idaho Development Impact Fee Act, which provides the legal framework associated with impact fees in the State of Idaho. Phase 1 also reviewed local agency studies, policies and ordinances and identified the basic requirements for establishing an impact fee program for CHD4. The TIF Feasibility Study identified a series of tasks for establishing a TIF program for the CHD4 Subdistrict No. 1, which would serve as the basis for Phase 2 of the study.

TIF Feasibility Study

Impact fee programs in Idaho must meet the requirements set forth in Idaho Code 67-82. There are several key assumptions that contribute to the development of an impact fee program regarding methodology factors and data sources, each with potential advantages and disadvantages. The TIF Feasibility Study examined what is required and what should be considered in the development of an impact fee program within the CHD4 service area.

The TIF Feasibility Study identified the following assumptions for use in developing TIF Program.

- **Service Area**: One service area will be established within CHD4 Subdistrict No.1 and include the City of Middleton, Canyon County, and the City of Star (within Canyon County).
- **Forecast Year and Growth Assumptions:** Use Community Planning Association of Southwest Idaho (COMPASS) travel demand model for growth assumptions and future traffic volumes within the service area. The current approved model is associated with Communities in Motion 2040 2.0 Plan. The current COMPASS traffic demand model will be updated and calibrated to better reflect growth projections and traffic volumes within the service area.
- **Capital Improvement Plan (CIP):** Develop a service area-wide CIP using a consistent set of performance measures and leveraging existing CIP's within the service area.
- **Traffic Impact Fee Calculations**: Calculate traffic impact fees based on average vehicle-miles-traveled (VMT) cost and vehicle trip characteristics, similarly to the Ada County Highway District (ACHD) impact fee calculation methodology. The goal will be to have a single traffic impact fee schedule for Star, Middleton, and unincorporated Canyon County within the service area.

TIF PROGRAM STUDY OVERVIEW

The study will develop the framework, methodology and implementation details of establishing a TIF process and ordinance for CHD4 Subdistrict No. 1 that meets the requirements set forth in Idaho Code 67-82. Figure 1 shows a schedule for the study.

Figure 1 Study Schedule

Impact Fee Framework and Methodology

This task includes reengaging the development impact fee advisory committee and developing the impact fee study methodology for CHD4 Subdistrict No. 1.

Service Area

Figure 2 shows the service area for the proposed CHD4 Subdistrict No. 1 TIF Program. The service area includes multiple jurisdictions: City of Middleton, the western portion of the City of Star, unincorporated-Canyon County and CHD4. The service area is bounded to the north by Gem County, to the south by the Boise River and Lincoln Road, to the west by I-84, and to the east by Ada County.

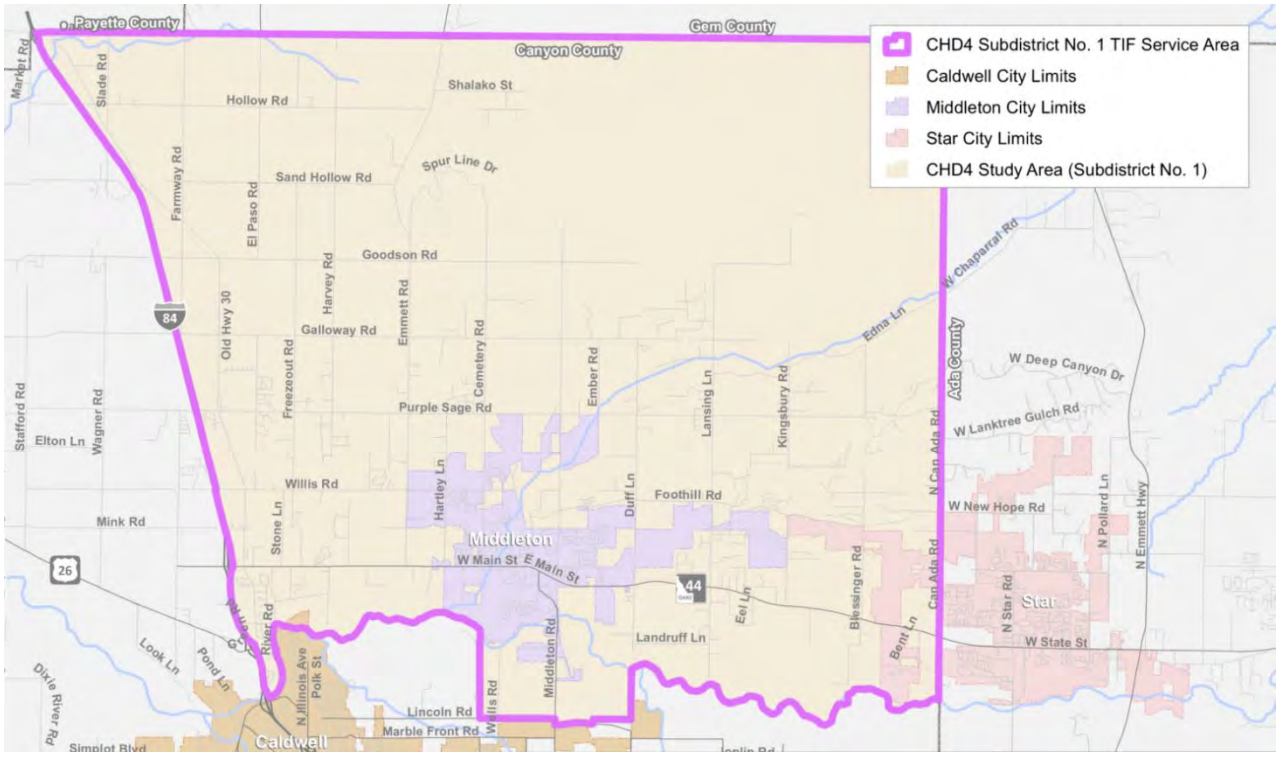

Figure 2 Subdistrict No. 1 Traffic Impact Fee Service Area

CHD4 identified the initial service area boundary as Subdistrict No. 1. The service area was confirmed through the TIF Feasibility Study, as it captures the City of Middleton Area of Impact and the City of Star within Canyon County. The intent of this study is to create a TIF program for Subdistrict No.1 and use as TIF program pilot, with the possibility of expanding to other parts of CHD4 in the future.

The service area is described in greater detail in *Technical Memorandum #1B - Service Area for CHD4 Subdistrict No. 1 TIF Program*.

Development Impact Fee Advisory Committee

The establishment of a development impact fee advisory committee is a requirement of the Idaho Code 67-82. Development impact advisory committees have already been formed within the service area and this task will engage those committees for the development of the study. Engaging partner agencies in the development of the study allows for input and collaboration, and is critical for the establishment of an impact fee program. The primary roles and responsibilities of the development impact fee advisory committee as per Idaho Code 67-82 is as follows:

- Assist in adopting and updating land use assumptions
- Monitor the development and implementation of the CIP
- Report any perceived inequities in the TIF program

TIF Methodology and Assumptions

This task includes developing the TIF methodology and assumptions, including the framework for the CHD4 Subdistrict No. 1 CIP. The major components of this task are as follows:

- **Data Collection**: Collect and consolidate traffic volume and analysis data within the service area, including COMPASS travel demand model data.
- **Land-Use and Growth:** Review and establish year 2040 land use and demographic assumptions within service area.
- **TIF Methodology Assumptions**: Establish performance measures for identifying future deficiencies on roadways and intersections in the CIP (e.g., what capacity-improvement projects will be required as a result of new development in the year 2040?) and proportionate share assumptions as required by Idaho Code 67-82. Examples of performance measures include level-of-service (LOS) or volume-to-capacity (v/c) ratios that can be applied to roadway corridors or intersections.

Develop Capital Improvement Plan (CIP)

This task includes the development of a CIP for CHD4 Subdistrict No. 1. A CIP is a long-range transportation plan that identifies future roadway network deficiencies as a result of expected future development and growth. The CIP includes roadway and/or intersection capacity-improvement projects to address the future deficiencies. Typical CIP projects include traffic signals, roundabouts and/or roadway widening projects.

This task will include a high-level traffic analysis of roadways and intersections within the service area to identify future roadway network deficiencies. Cost estimates and impact fee eligibility will then be developed for each individual project to create the CIP. The total cost of the CIP projects will be used to calculate impact fees for CHD4 Subdistrict No. 1.

Calculate Traffic Impact Fee (TIF) Schedule

This task includes the calculation of the TIFs and development of the TIF implementation guide. TIFs will be calculated for different land uses (i.e., residential, commercial, industrial) based on their trip generation characteristics using an average vehicle-miles-traveled (VMT) cost. The COMPASS travel demand model will be used to calculate total VMT within the service area for year 2020 and year 2040. The change in VMT over that 20-year period can be attributed to new development in the region. Figure 3 illustrates the process used to calculate TIFs.

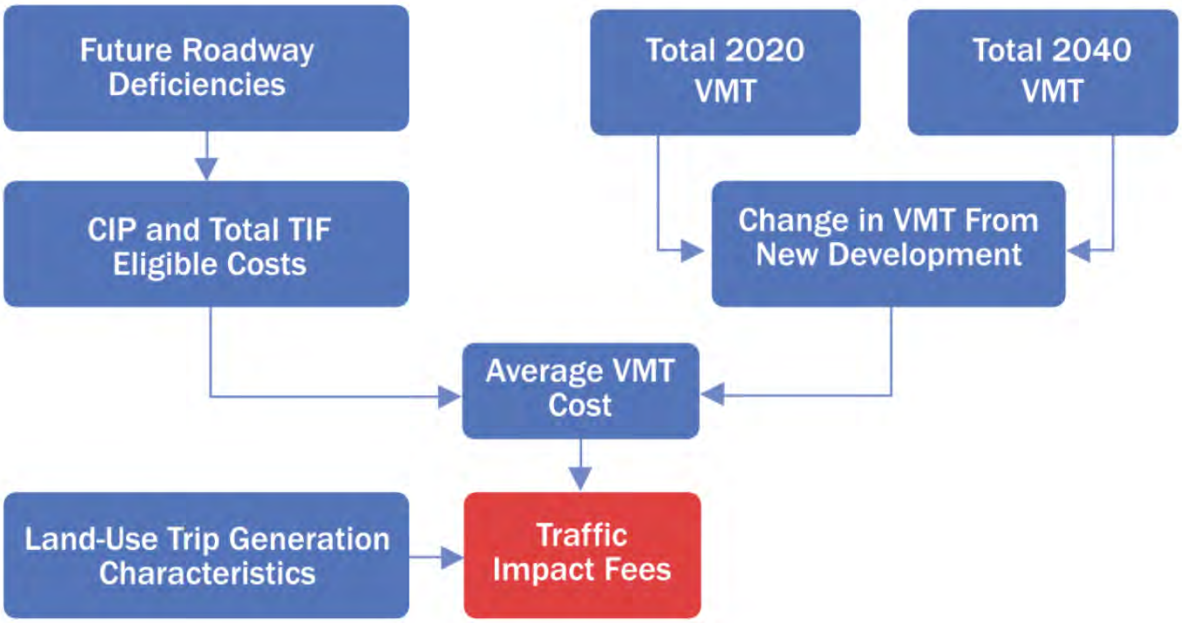

Figure 3 TIF Calculation Process

Develop CIP and Impact Fee Calculation Tools

This study will create spreadsheet and GIS tools that will allow the TIF program to be updated on a continual basis as new data is available. This study will develop the following tools:

- **Excel Database for CIP Analysis:** Spreadsheet tool that identifies capacity improvement projects based on high-level traffic analysis of roadways and intersections. Includes a high-level cost estimate tool.
- **Excel Database for Impact Fee Calculation**: Spreadsheet tool that calculates impact fees for different land uses.
- **CIP Online GIS Platform**: Online GIS web map application to host and display the CIP project locations and project information.

COMPASS is expected to develop year 2050 demographic estimates as part of Communities in Motion 2050 updates. The TIFs developed for this study can be updated with this new data when it becomes available. The year 2050 demographic data is anticipated to be complete by December 2020 followed by updates to the COMPASS travel demand model to reflect year 2050 conditions.

NEXT STEPS

Questions or comments on this memorandum should be directed to Andy Daleiden at adaleiden@kittelson.com. This memorandum will serve as a baseline for the development of the impact fee methodology and CIP.

Technical Memoranda #1A and #2B are the initial deliverables to the development impact fee advisory committee for the CHD4 TIF Study. CHD4 is currently coordinating with partner agencies to schedule the first development impact fee advisory committee meeting. The first development impact fee advisory committee meeting will be used to discuss initial land use, demographic, and roadway network assumptions and other Technical Memoranda 1A and 2B findings.

APPENDIX E:

Technical Memorandum #1B

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TECHNICAL MEMORANDUM #1B

CHD4 Subdistrict No. 4 Traffic Impact Fee Study - Phase 2

Technical Memorandum #1B - Service Area for CHD4 Subdistrict No. 1 TIF Program

Date:	May 13, 2020	Project #: 24243
To:	Chris Hopper, PE	
From:	Mark Heisinger, EIT and Andy Daleiden, PE	

INTRODUCTION

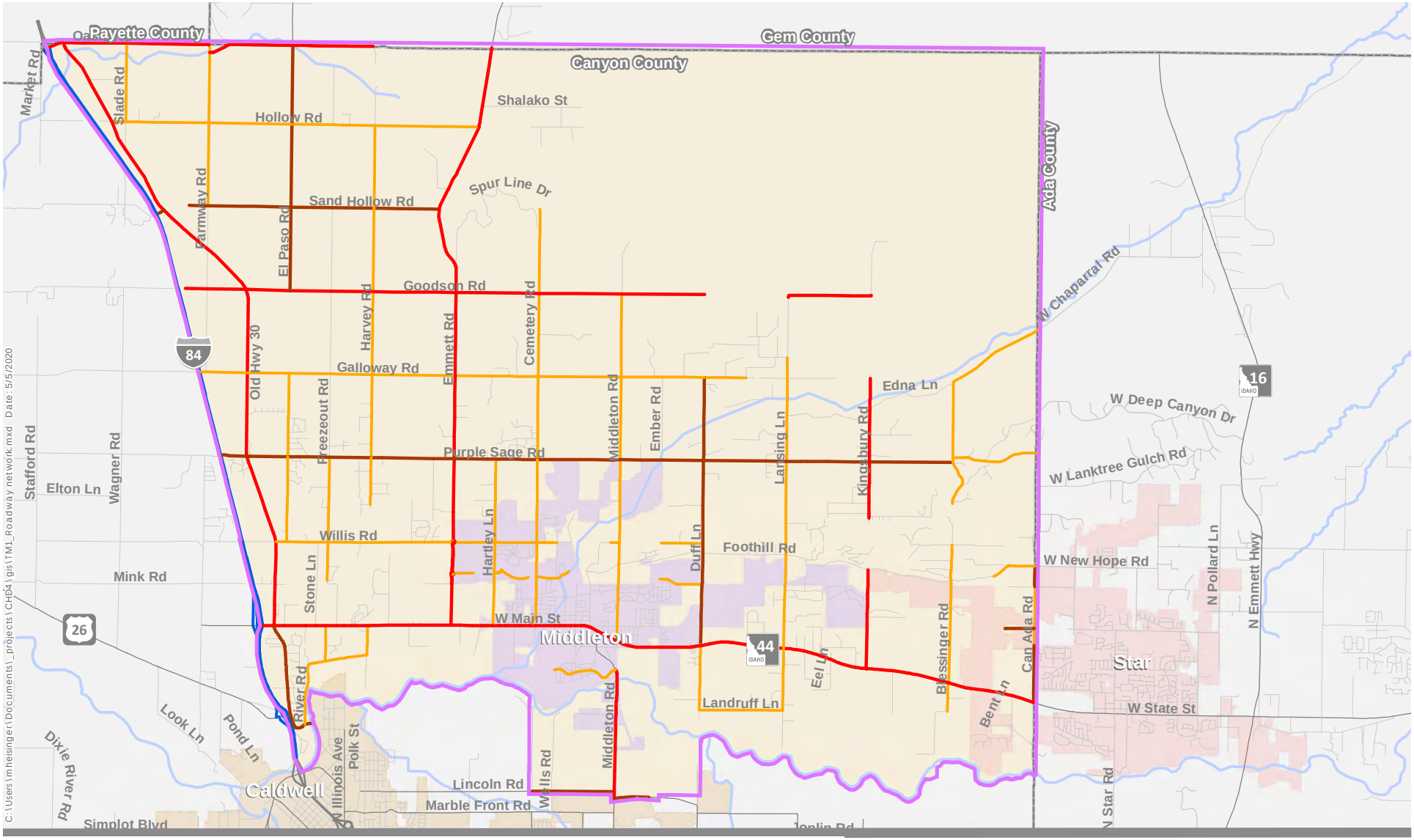
This is the second technical memorandum for Phase 2 of the Canyon Highway District No. 4 (CHD4) Traffic Impact Fee (TIF) Study, herein referred as "study". This technical memorandum was made concurrently with *Technical Memorandum 1A – Overview of Scope of Work, Methodology and Assumptions*. This memorandum describes the study service area, including service area demographics and roadway facilities in the service area.

SERVICE AREA CHARACTERISTICS

One of the first steps to creating a TIF program is establishing a service area. Service areas are required with the establishment of an impact fee program. Service areas are defined in Idaho Code 67-82 as "geographic areas identified by a governmental entity or by intergovernmental agreement in which the public facilities provide service to development within the area". Impact fees collected from a development in a service area must be spent on facilities within that service area. Figure 1 shows the service area for the proposed CHD4 Subdistrict No. 1 TIF program.

The service area includes multiple jurisdictions: City of Middleton, the western portion of the City of Star, unincorporated-Canyon County and CHD4. The City of Caldwell also has a small park in the southwest corner of the service area. The service area is bounded to the north by Gem County, to the south by the Boise River and Lincoln Road, to the west by I-84, and to the east by Ada County.

CHD4 identified the initial service area boundary as Subdistrict No. 1. The service area was confirmed through the TIF Feasibility Study, as it captures the City of Middleton Area of Impact and the City of Star within Canyon County. The intent of this study is to create TIF program for Subdistrict No.1 and use as TIF program pilot, with the possibility of expanding to other parts of CHD4 in the future.



CHD4 Subdistrict No. 1 TIF Service Area
CHD4 (Subdistrict No. 1)
Caldwell City Limits
Middleton City Limits
Star City Limits
Interstate
Principal Arterial
Minor Arterial
Major Collector
Local Road

Source: COMPASS

0 6,400 Feet

Figure 1

KITTELSON & ASSOCIATES

Service Area and Existing Roadway Functional Classification
Canyon County, ID

Service Area Demographics

Table 1 shows the demographics of the service area broken out by governing jurisdictions. The demographics are based on data from Community Planning Association of Southwest Idaho (COMPASS) Traffic Analysis Zones (TAZs) and COMPASS City Limit Population Estimates.

Table 1 Service Area Demographics[1]

Jurisdiction	Year 2020 Population	Estimated Year 2040 Population	Year 2020 Jobs	Estimated Year 2040 Jobs
City of Middleton[2]	9,710	19,596	1,521	3,333
City of Star (in Canyon County)[3]	150	521	20	73
Unincorporated Canyon County	10,554	8,769	801	705
Total Service Area	**20,414**	**28,886**	**2,342**	**4,111**

[1] Source: COMPASS TAZ Demographics Data. [2]Year 2040 data assumes Middleton Area of Impact (excluding areas that Star has already annexed). [3]The City of Star data is approximate. COMPASS TAZ boundaries do not align exactly with Middleton and Star city boundaries.

As shown in Table 1, COMPASS projects that the population of the service area will grow by an average annual growth rate of 1.8%, resulting in 42% total growth between year 2020 and year 2040. Jobs within the service area are expected to grow by approximately 76% between year 2020 and year 2040.

The City of Middleton Transportation Plan assumes that the City of Middleton population will grow by an annual average growth rate of 5% between year 2015 and year 2035. The CHD4 Draft Transportation Plan assumes that the population within the CHD4 jurisdiction will grow by an average annual growth rate of 2.8% between year 2018 and year 2040. CHD4 historical traffic count data shown 3.3% annual traffic growth on CHD4 roads in the service area.

The COMPASS population projections within the service area are significantly less than the City of Middleton's projections. Year 2040 demographics in the service area will be evaluated further in later stages of the study. It should be noted that COMPASS is currently revising its demographic projections as part of the Communities in Motion 2050 update.

Service Area Roadway Facilities

Roadway facilities within the service area and their COMPASS functional classification are shown in Figure 1. Roadways classified as arterials or collectors provide regional connections and are typically eligible for impact fees. Local roadways are used to access arterials or collectors and are typically not eligible for impact fees as they are built as part of a development project.

There are approximately 240 miles of roadway within the service area. The miles of roadways for each functional classification within the service area is shown in Figure 2. As shown in Figure 2, most roads within the service area, approximately 70%, are classified as local roads. Approximately 19% and 11% of roads within the service area are classified as collectors and arterials, respectively.

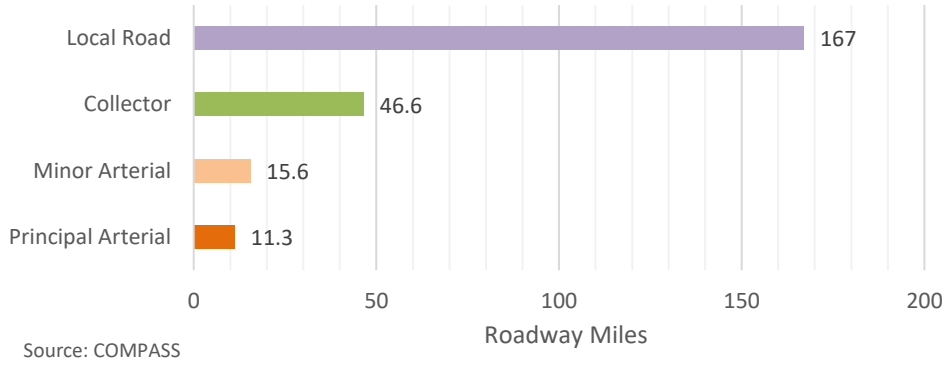


Figure 2 Miles of Roadway in Service Area by Functional Classification

Roadways within the service area are owned and maintained by four different governmental agencies, which is described below:

- CHD4 owns and maintains the roadways within unincorporated Canyon County.
- The City of Middleton owns and maintains the roadways within their city limits.
    - By Agreement, CHD4 and Middleton divide jurisdiction of jointly owned roadways by ½ mile segments or logical boundaries.
- The City of Star owns the roadways within their city limits. CHD4 maintains the roadways within the City of Star as per an intergovernmental agreement.
- ITD owns and maintains state highways within the service area. SH 44 is the only state highway in the service area, as Interstate 84 is located outside the western boundary of the service area.

Figure 3 shows the estimated roadway miles within the service area that are maintained by each governmental agency. Most roadways within the service area, approximately 75%, are owned and maintained by CHD4. Middleton owns and maintains approximately 21% of roadways within the service area and ITD owns and maintains approximately 4% of the roadways within the service area. Star owns approximately 2 miles of mostly local roads within the service area.

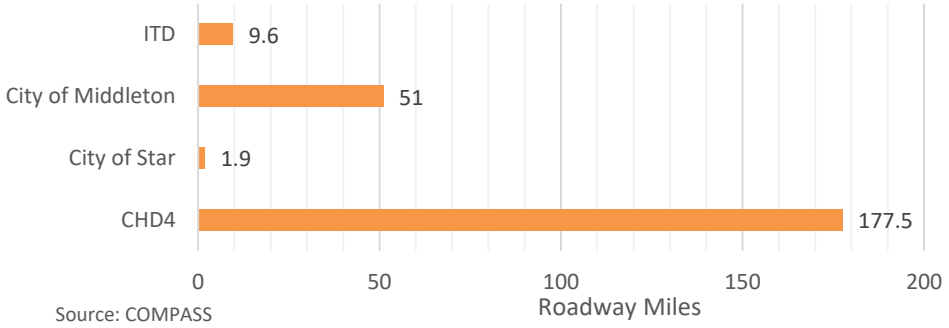


Figure 3 Miles of Roadway in Service Area by Agency Ownership

NEXT STEPS

Questions or comments on this memorandum should be directed to Andy Daleiden at adaleiden@kittelson.com. The service area presented in this memorandum will serve as a baseline for the development of the CHD4 Subdistrict No. 1 TIF Program. We will continue to have agencies review the service area and data presented in this memorandum, including roadway functional classifications, land use assumptions, and growth projections.

Technical Memoranda #1A and #2B are the initial deliverables to the development impact fee advisory committee for the CHD4 TIF Study. CHD4 is currently coordinating with partner agencies to schedule the first development impact fee advisory committee meeting. The first development impact fee advisory committee meeting will be used to discuss initial land use, demographic, and roadway network assumptions and other Technical Memoranda 1A and 2B findings.

APPENDIX F:

Technical Memorandum #2

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TECHNICAL MEMORANDUM #2

CHD4 Subdistrict No. 4 Traffic Impact Fee Study - Phase 2

Traffic Impact Fee Program Methodology and Assumptions

Date:	August 14, 2020	Project #: 24243
To:	Chris Hopper, PE	
From:	Mark Heisinger, EIT, Andrew McIntyre, and Andy Daleiden, PE	

INTRODUCTION

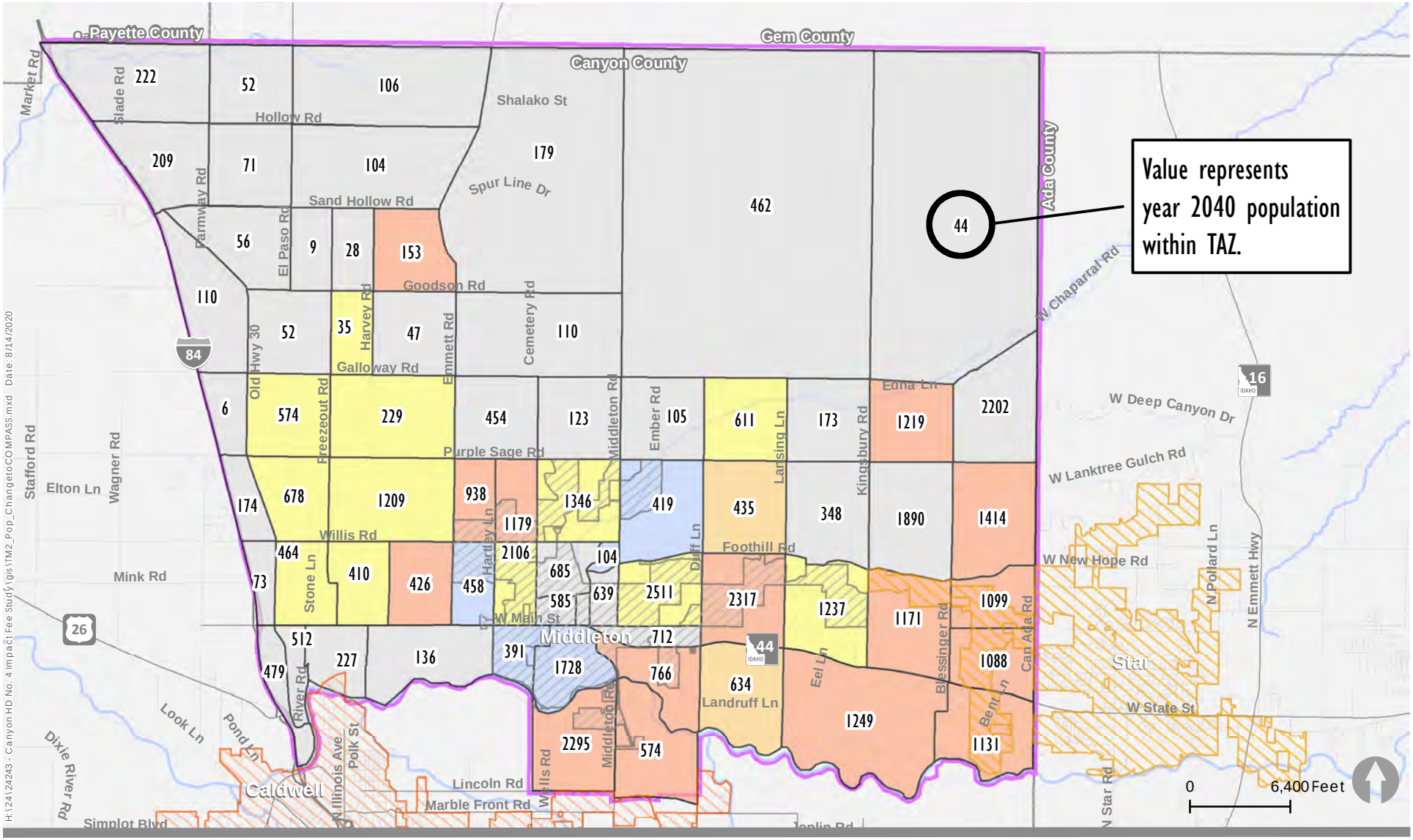
This is the second technical memorandum for Phase 2 of the Canyon Highway District No. 4 (CHD4) Traffic Impact Fee (TIF) Study, herein referred as "study". This memorandum summarizes the proposed methodology and assumptions that will be used to develop the Capital Improvement Plan (CIP) and traffic impact fee program. This memorandum is organized as follows:

- COMPASS Regional Travel Demand Model
- Performance Measures
- Traffic Operations Methodology
- Proportionate Share
- Next Steps

COMPASS REGIONAL TRAVEL DEMAND MODEL

The traffic impact fee program will rely on demographic and traffic data from the Community Planning Association of Southwest Idaho (COMPASS). COMPASS provides existing and future year traffic volumes for roadways, based on the existing and projected future year demographic data in Traffic Analysis Zones (TAZ's).

Kittelson worked with CHD4, Canyon County, the City of Star and the City of Middleton, to modify the year 2040 demographics in certain TAZs within the service area. The modifications were identified to better reflect expected development in the service area. Table 1 summarizes the 2040 demographics prior to and after refinement of the TAZs. Figure 1 shows the 2040 population by TAZ and changes within the service area. Figure 2 shows the 2040 employment by TAZ and changes within the service area. Additional figures showing the total growth in population and employment from 2020 to 2040 by TAZ are shown in Attachment A.



CHD4 Subdistrict No. 1 TIF Service Area

Caldwell City Limits

Middleton City Limits

Star City Limits

% Change to COMPASS 2040 Population

Decreased 1% to 50%

Changed less than 1%

Increased 1% to 50%

Increased 50% to 100%

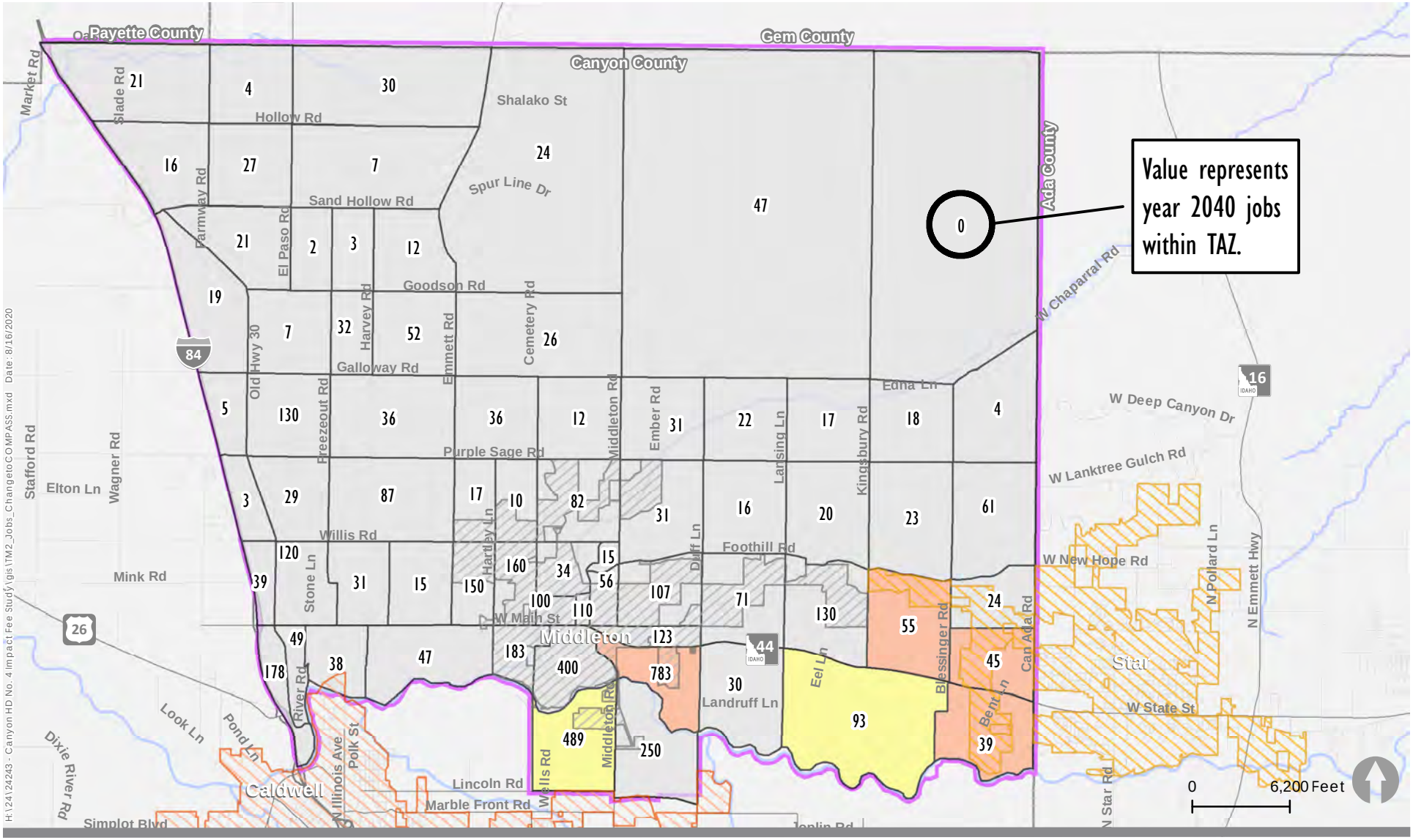
Increased more than 100%

TAZ Population

Figure 1

KITTELSON & ASSOCIATES

2040 Population by TAZ & Changes to COMPASS Demographics Canyon County, ID



CHD4 Subdistrict No. 1 TIF Service Area

Caldwell City Limits

Middleton City Limits

Star City Limits

% Change to COMPASS 2040 Jobs

Changed less than 1%

Increased 1% to 50%

Increased 50% to 100%

Increased more than 100%

TAZ Jobs

Figure 2

KITTELSON & ASSOCIATES

2040 Employment by TAZ & Changes to COMPASS Demographics
Canyon County, ID

Table 1 Revised Service Area Demographics[1]

Jurisdiction	Year 2020 Population	Estimated Year 2040 Population		Year 2020 Jobs	Estimated Year 2040 Jobs	
		COMPASS Model	Revised		COMPASS Model	Revised
City of Middleton[2]	9,780	19,189	27,528	1,521	3,270	4,003
City of Star (in Canyon County)[3]	150	5,701	12,463	20	241	361
Unincorporated Canyon County	10,554	3,996	4,324	801	600	639
Total Service Area	**20,414**	**28,886**	**44,315**	**2,342**	**4,111**	**5,004**

[1] Source: COMPASS TAZ Demographics Data (Reference 1). [2]Year 2040 data assumes Middleton Area of Impact (excluding areas that Star has already annexed or is expected to annex). [3]The City of Star data is approximate. COMPASS TAZ boundaries do not align exactly with Middleton and Star city boundaries.

The revised year 2040 demographics increase the total service area population by approximately 53 percent and the total number of jobs in the service area by 22 percent. The revised service area population correlates with a 4.0 percent annual growth rate between year 2020 and year 2040. The largest year 2040 population revisions were increases in the City of Star (in Canyon County) and in the south and east portions of the City of Middleton. The largest employment revision was an increase of approximately 600 jobs in the TAZ to the south-east of the Middleton Road and SH 44 intersection.

We will use the revised demographics, shown in Table 1 and on Figures 1 and 2, in developing year 2040 traffic volumes. We will coordinate with COMPASS to run the regional travel demand model with the revised demographic data. COMPASS will provide us with the year 2040 traffic volumes (e.g. daily, PM peak hour link volumes) in the service area. We will use the year 2040 traffic volumes for the traffic operations analysis, as described in the Traffic Operations Methodology section later in this memorandum.

PERFORMANCE MEASURES

Performance measures are criteria that can be used to monitor traffic operations and identify roadway facilities that require capacity improvements. Common performance measures for traffic operations

- **Level of Service (LOS)** is a delay-based performance measure. A letter-grade is used for LOS that indicates the amount of delay that a user experiences at a roadway or intersection, typically during the weekday AM or PM peak hour of traffic congestion.
    - **Example**: If a driver approaches an intersection with a stop sign and waits less than 10 seconds before turning onto a road, the intersection is assigned a letter grade of “A” and it would be reported as LOS “A”. If the driver waits more than 50 seconds before turning onto a road, the intersection would be reported as LOS “F”.
- **Volume-to-Capacity (V/C) Ratio** is a capacity-based performance measure. The expected volume demand is compared to the total available capacity on a roadway or intersection, typically during the weekday AM or PM peak hour of traffic congestion.

- **Example**: 1,000 cars travel through an intersection during the peak hour of traffic congestion. The intersection's capacity would allow up to 2,000 cars to travel through it in an hour. The V/C ratio would be 0.5 (1,000 divided by 2,000).

PERFORMANCE MEASURES USED IN TREASURE VALLEY

The performance measures used by agencies in the service area and in Treasure Valley are summarized in Table 2.

Table 2 Agency Performance Measures

Agency	Performance Measure	Source
Canyon Highway District No. 4	LOS D	CHD4 Draft Transportation Plan (In-Progress)
City of Middleton	LOS C	City of Middleton Transportation Plan (2016)
City of Star	LOS D	City of Star Comprehensive Plan – Traffic Analysis Memorandum (2019)
Ada County Highway District (ACHD)	LOS E (Roadways), LOS D (Overall Intersection[1]), LOS E (Intersection Lane Group[1])	ACHD Capital Improvements Plan – Exhibit C (2016)
City of Nampa	LOS D	City of Nampa Transportation Plan (2019)
City of Caldwell	LOS D	*Correspondence with City staff (2020)*
Idaho Transportation Department (ITD)	LOS D (Overall Intersection), V/C ≤ 0.90 (Intersection Lane Group)	*Correspondence with ITD staff (2020)*
COMPASS	Vehicles miles traveled (VMT), Congested VMT, Vehicle Hours of Delay	Communities in Motion 2040 2.0 (2018)

[1]Assumes that V/C of 0.9 = LOS D and V/C of 1.0 = LOS E

As shown in Table 2, agencies in the Treasure Valley primarily use a LOS performance measure. To maintain consistency with partner agencies and other agencies in the Treasure Valley, it is recommended that this study use a LOS performance measure.

POTENTIAL OUTCOMES OF A SELECTED PERFORMANCE MEASURE

The Highway Capacity Manual (HCM) 6th Edition (Reference 2) provides criteria for calculating and defining LOS. The HCM recommends that roadways be designed to provide a LOS that balances roadway user's desires and financial resources. The HCM recommends that roadways not be designed to LOS A for cost, environmental impact, and other reasons. The performance measures used for the study should be selected by the land-use characteristics of the service area, the roadway user's desires, and the financial resources of the agencies within the service area.

A more aggressive performance measure (e.g., one that requires a higher quality of service such as LOS C or LOS D) will trigger more capacity-improvement projects then a less aggressive performance measure (LOS E). If LOS C is selected as the performance measure, the service area should anticipate more roadway widening and intersection capacity improvement projects than LOS D or LOS E.

A more aggressive performance measure is typically more appropriate for rural settings. Roadway users in rural settings typically have higher expectations for quality of service (i.e., delay at intersections or congestion on roadways) and roadways in rural settings can experience significant safety benefits with higher levels of service. A less aggressive performance measure is more appropriate for urban settings. Drivers in urban settings have lower expectations for quality of service and capacity improvement projects in urban areas can have a diminishing rate of return, primarily due to the high cost of urban projects.

The service area for this study has predominantly suburban and rural characteristics. Since the rural areas of the service area are trending towards suburban, it is recommended that the performance measure for this study reflect a service area that is primarily suburban.

RECOMMENDED PERFORMANCE MEASURE

We recommend using a performance measure of LOS D for all roadway segments and intersections based on the following:

- Goals and objectives for the service area.
- Consistent with current practice by CHD4 and City of Star.
- Consistent with other transportation agencies in the Treasure Valley.
- The measure can be calculated via HCM methodology.

TRAFFIC OPERATIONS METHODOLOGY

The traffic operations analysis will identify existing and future deficiencies on roadways and intersections within the service area. The goal is to develop a traffic operations methodology with the following characteristics:

- Incorporates national guidance for traffic operations
- Provides efficiency and results that are re-producible
- Utilizes a specific performance measure, such as LOS
- Allows the user to identify deficiencies on the roadways and at intersections
- Provides the ability to distinguish between different intersection and roadway improvements for inclusion in the CIP

PROPOSED METHODOLOGY FOR INTERSECTIONS

This section outlines the proposed methodology for evaluating intersection operations in the service area. This methodology requires the following data:

- Year 2040 peak hour traffic volume projections on all service area roadways
- Year 2040 peak hour intersection turning movement volume projections on certain service area intersections
- Existing peak hour traffic volumes on service area roadways and intersections (not a requirement, but preferred where data is available)

Step 1: Each intersection within the service area will be evaluated under year 2040 traffic conditions (weekday PM peak hour) using Exhibit 17 from National Cooperative Highway Research Program (NCHRP) Report 825 (Reference 3), as shown in Figure 3. This exhibit identifies intersections that warrant a different intersection control type (e.g. stop control, all-way stop, roundabout, signal), based on their existing control type and by the traffic volumes on the roadway approaches. This exhibit is based on the methodologies of the 6th Edition of the Highway Capacity Manual (HCM). The year 2040 traffic volumes on the roadway approaches will be based on COMPASS 2040 travel demand model data and the use of NCHRP Report 765 (Reference 4).

The results of this Step 1 would be a list of intersections in the service area that may warrant different intersection control types, based on Exhibit 17 from NCHRP 825.

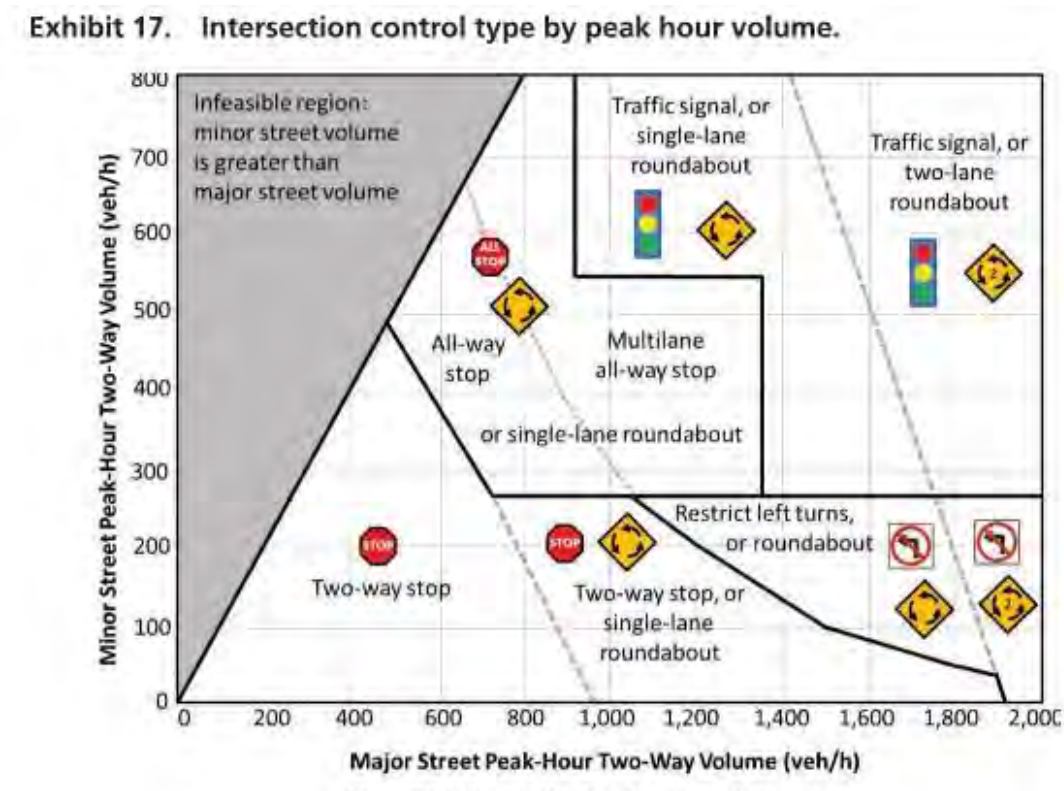


Figure 3 Intersection Control Type by Volume (Exhibit 17 from NCHRP Report 825)

Step 2: The compiled list of intersections and preliminary recommendations for intersection control types (created in Step 1) would be sent to partner agencies for review and comment. Based on feedback

from partner agencies and further discussion, a refined list of intersections and respective control types would be developed for further evaluation.

The results of this Step 2 would be a refined list of intersections for further evaluation.

Step 3: The intersections identified in Step 2 would be analyzed using software that implements the 6th Edition of the HCM (i.e., Highway Capacity Software, Synchro and/or SIDRA). Year 2040 PM peak hour turning movement volumes would be developed at all intersections identified for further evaluation. These intersections would be evaluated based on the defined performance measure (e.g. LOS D). Project types would be recommended for each intersection so that they meet the performance measure. Project types would include traffic control modifications (i.e., converting a stop-controlled intersection to a roundabout or traffic signal) and minor lane geometry modifications (i.e., adding a turn-lane on the major street or minor street roadway of a stop-controlled intersection).

Step 3 will require existing and future year turning movement volumes at each intersection. Where existing turning movements have been counted (e.g. obtain from CHD4, Middleton, Star or other source), future year turning movement volumes would be developed using COMPASS link volumes via the methods presented in NCHRP Report 765. Where existing turning movement counts have not been counted, future year turning movement volumes should be based on the intersection turning movement volume outputs from the COMPASS travel demand model.

The results of this Step 3 would be a detailed intersection operations analysis and recommended list of intersection projects for inclusion in the CIP.

Step 4: The list of recommended projects would be sent to partner agencies. The project list would be refined based on input from partner agencies and incorporated into the CIP.

The results of this Step 4 would be a final list of intersection projects for inclusion in the CIP.

Other Tools and Resources

Attachment A discusses other intersection operation tools and resources that were examined in the development of the proposed methodology.

PROPOSED METHODOLOGY FOR ROADWAYS

This section outlines the proposed methodology for evaluating roadway operations in the service area. The thresholds used in this study are based on methodologies in the HCM - the specific values identified in Table 3 (shown on page 10) were developed using the Florida Department of Transportation's (FDOT) 2020 generalized service volume tables (Reference 5). The process used to calculate the service volumes is similar to the one used by ACHD to develop its Street Service Capacity Guidelines (Reference 6) but utilizes the latest base volumes from the HCM and FDOT. For more information regarding this process and other service volume tables, see Attachment B. Other Tools and Resources

Attachment B discusses other roadway service volume tables and their relationships to the one proposed here, as well as a description of the process used to calculate the proposed volumes.

Table 3 provides three distinct sets of service volumes for different roadway classifications and lane configurations. These sets include:

- *ACHD Service Capacity Guidelines* – developed using 2009 FDOT "Urbanized Area" service volume table (with local adjustment factors)
- *Proposed CHD4 Service Volumes: Urbanized Areas* – developed using 2020 FDOT "Urbanized Area" service volume table
- *Proposed CHD4 Service Volumes: Transitioning Areas* – developed using 2020 FDOT "Transitioning and Areas Over 5,000 Not in Urbanized Areas" service volume table

One of the two proposed sets of service volumes will be selected for use in developing the CIP. Given CHD4's population growth and development projections, utilizing service volumes applicable to urban areas may be more appropriate over the lifespan of the CIP. Using service volumes applicable to "transitioning areas", however, may be more appropriate given CHD4's present conditions. It also represents a more conservative approach.

The following describes the proposed methodology for evaluating roadway segments:

Step 1: COMPASS Regional Travel Demand Model output will be obtained. Future peak-hour directional volumes (weekday PM peak hour) for each roadway will be calculated in accordance with NCHRP 765, using the 2020 and 2040 model link volumes and existing counts. Where existing counts are not available, 2040 model link volumes will be used without calibration.

Step 2: Each roadway segment will be evaluated by comparing the peak-hour directional volumes calculated in Step 1 with the selected thresholds outlined in Table 3 (on the next page). Using LOS D as the threshold, roadways that require capacity improvements will be identified, and project types will be recommended for each roadway to meet this performance measure.

Step 3: The list of recommended projects will be sent to partner agencies. The project list will be refined based on input from partner agencies and incorporated into the CIP

Other Tools and Resources

Attachment B discusses other roadway service volume tables and their relationships to the one proposed here, as well as a description of the process used to calculate the proposed volumes.

Table 3 Proposed Service Volumes

Classification	Characteristics	Number of lanes per direction of travel	Directional Peak Hour Volume Level of Service Planning Thresholds					
			ACHD Service Capacity Guidelines[1]		Proposed CHD4 Service Volumes – Urbanized Areas[2]		Proposed CHD4 Service Volumes – Transitioning Areas[2]	
			LOS D	LOS E	LOS D	LOS E	LOS D	LOS E
Principal Arterial	Undivided; No Left Turn Lanes at Intersections	1	600	690	620	**	560	**
	Undivided; Left Turn Lanes at Intersections	1	-	-	790	**	720	**
		2	-	-	1,700	**	1,550	**
		3	-	-	2,570	**	2,330	**
	Divided (Continuous Center Left Turn Lane or Median); Left Turn Lanes at Intersections	1	770	880	840	**	760	**
		2	1,680	1,780	1,800	**	1,640	**
		3	2,560	2,720	2,720	**	2,470	**
Minor Arterial	Undivided; No Left Turn Lanes at Intersections	1	540	575	530	560	480	500
	Undivided; Left Turn Lanes at Intersections	1	-	-	680	720	610	650
		2	-	-	1,390	1,450	1,240	1,360
		3	-	-	2,140	2,180	1,940	2,060
	Divided (Continuous Center Left Turn Lane or Median); Left Turn Lanes at Intersections	1	675	720	710	760	650	680
		2	1,395	1,540	1,470	1,530	1,310	1,440
		3	2,155	2,370	2,270	2,300	2,050	2,180
Collectors	Undivided; No Left Turn Lanes at Intersections	1	425[3]	525[3]	340	360	310	320
	Undivided; Left Turn Lanes at Intersections	1	-	-	490	520	440	470
		2	-	-	980	1020	880	960
		3	-	-	1,510	1,540	1,370	1,450
	Divided (Continuous Center Left Turn Lane or Median); Left Turn Lanes at Intersections	1	530[3]	660[3]	530	560	480	500
		2	1,080[3]	1,250[3]	1,060	1,110	950	1,040

[1] Developed using FDOT 2009 Generalized Service Volume Tables and localized adjustment factors – In reviewing ACHD Service Capacity Guidelines, we were not able to recreate these values by applying local adjustment factors per the FDOT methodology.
[2] Developed using FDOT 2020 Generalized Service Volume Tables
[3] ACHD does not this include Collector roadways in their CIP. In ACHD's Policy Manual, these values are identified in the traffic impact study guidelines, so reported here for comparison purposes. (Ada County Highway District Policy Manual, 7106.4.1)

PROPORTIONATE SHARE

The impact fee program should be developed using a proportionate share concept. The proportionate share concept means that, a.) impact fees do not charge development more than their proportionate share for roadway facility improvement and that b.) all partner agencies are contributing their proportionate share to projects in the CIP.

DEVELOPMENT PROPORTIONATE SHARE

Idaho Code 67-82 has several items related to development proportionate share. Notably, it states that the development impact fees will not exceed the proportionate share of the cost of roadway facility improvements attributable to growth and development in the service area. The vehicle-miles-traveled (VMT) methodology will be used to calculate the impact fees and will take into consideration the unique impacts that different development types have on roadway facility capacity. The impact fee study will also identify existing capacity deficiencies in the roadway network to ensure that projects that address existing deficiencies are not charged to development.

This overall CHD4 TIF study will develop a methodology that accounts for development proportionate share. The VMT methodology accounts for the specific impacts of development on roadway facilities and the CIP will specify the impact fee eligibility of each project. Additional details regarding development proportionate share will be included in the CIP and final CHD4 TIF program.

AGENCY PROPORTIONATE SHARE

CHD4, the City of Middleton, and the City of Star will need to agree on how to collect and allocate traffic impact fees so that they are all contributing their proportionate share to CIP projects. It is recommended that traffic impact fees are collected and allocated through separate accounts for the City of Middleton, the City of Star, and Canyon County. This method would give agencies direct control on how fees are spent within their jurisdiction and ensure that fees are collected and spent in the same jurisdiction. The following steps should be taken to ensure that partner agencies contribute their proportionate share, and receive proportionate benefits, from the impact fee program:

Step 1: Partner agencies collect development impact fees for developments within jurisdictional boundary.

Step 2: All development impact fees collected in the service area are put into separate accounts for the City of Middleton, the City of Star, and Canyon County.

Step 3: The fees collected are spent on projects by agencies within their jurisdiction based on prioritization.

Project prioritization will be primarily based on when the project is expected to be required (based on the traffic operations analysis) and input from partner agencies. Project prioritization is also contingent

on when and where development occurs within the service area and will be re-established when the impact fee program is updated every four to five years. The initial project prioritization will be established in the development of the CIP.

The cost estimates for each project in the CIP will include the proportion of the cost that is impact fee eligible and the proportion of the cost that each agency is responsible for. Impact eligibility will be based on the requirements in Idaho Code 67-82. Generally, only the proportion of project costs that are associated with capacity improvements will be impact fee eligible (i.e., if a three lane roadway is expanded to five lanes, only the costs associated with the two new lanes are impact fee eligible). The details regarding impact fee eligibility will be established in the development of the CIP. Partner agencies will be responsible for the costs of projects within their jurisdictional boundaries that are not impact fee eligible.

NEXT STEPS

This memorandum provides the methodology for the development of the CIP and impact fee program. Further discussion on this memorandum will occur at upcoming meetings August/September with CHD4, Star, Middleton and Canyon County, and the Development Impact Fee Advisory Committee (DIFAC). Questions or comments on this memorandum should be directed to Andy Daleiden at adaleiden@kittelson.com.

ATTACHMENTS

A – 2020 to 2040 Growth by TAZ Figures

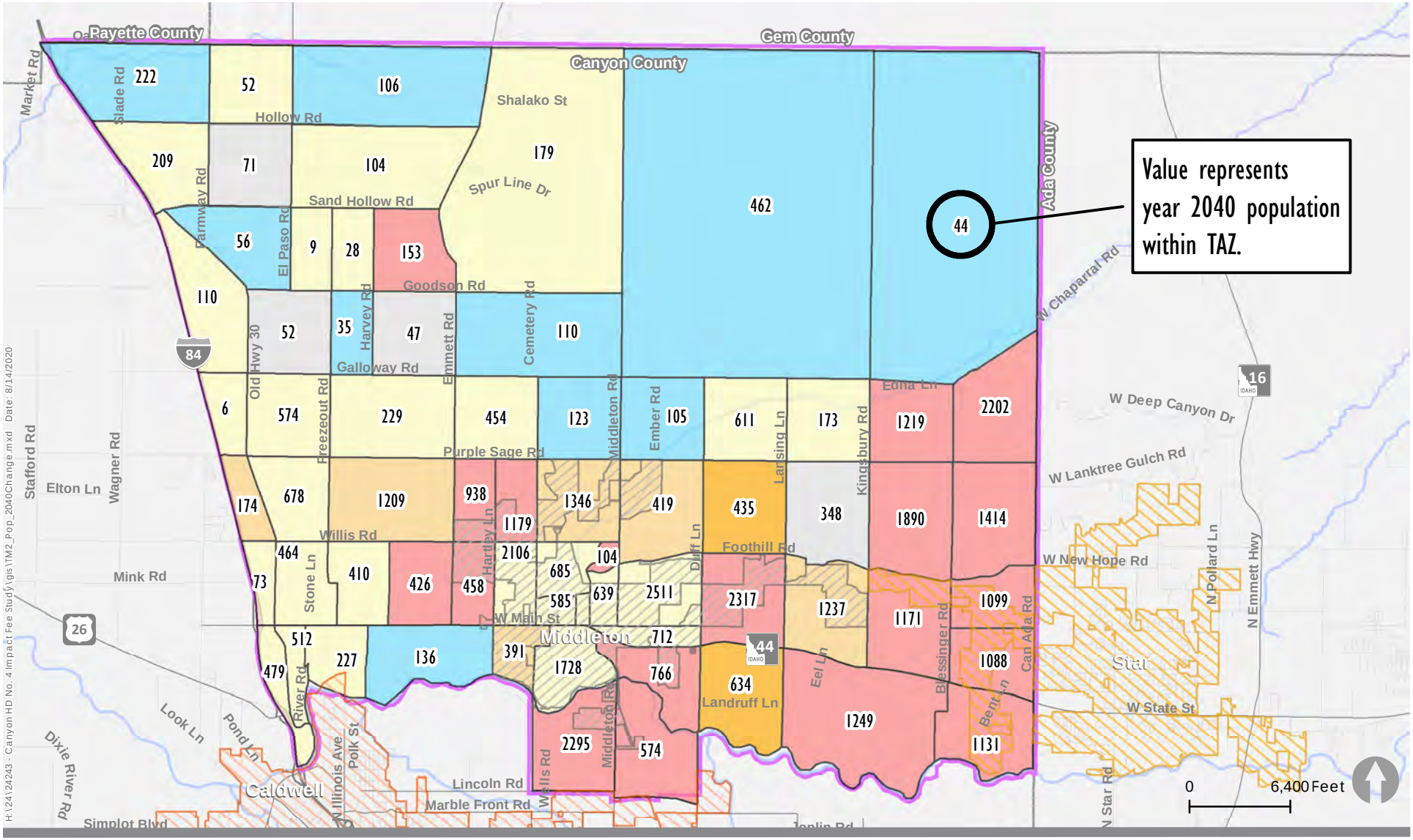
B - Intersection Operations Supplemental Tools and Resources

C - Roadway Operations Supplemental Tools and Resources

REFERENCES

1. Community Planning Association of Southwest Idaho. Communities in Motion 2040 2.0. 2018.
2. Transportation Research Board. *Highway Capacity Manual 6th Edition*. 2016.
3. National Cooperative Highway Research Program. *Report 825 - Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual.* 2016.
4. National Cooperative Highway Research Program. *Report 765 - Analytical Travel Forecasting Approaches for Project-Level Planning and Design*. 2016.
5. Florida Department of Transportation. *Quality/Level of Service Handbook*. 2020.
6. Ada County Highway District. *Capital Improvement Plan – Exhibit C*. 2016.

Attachment A
2020 to 2040 Growth by TAZ
Figures



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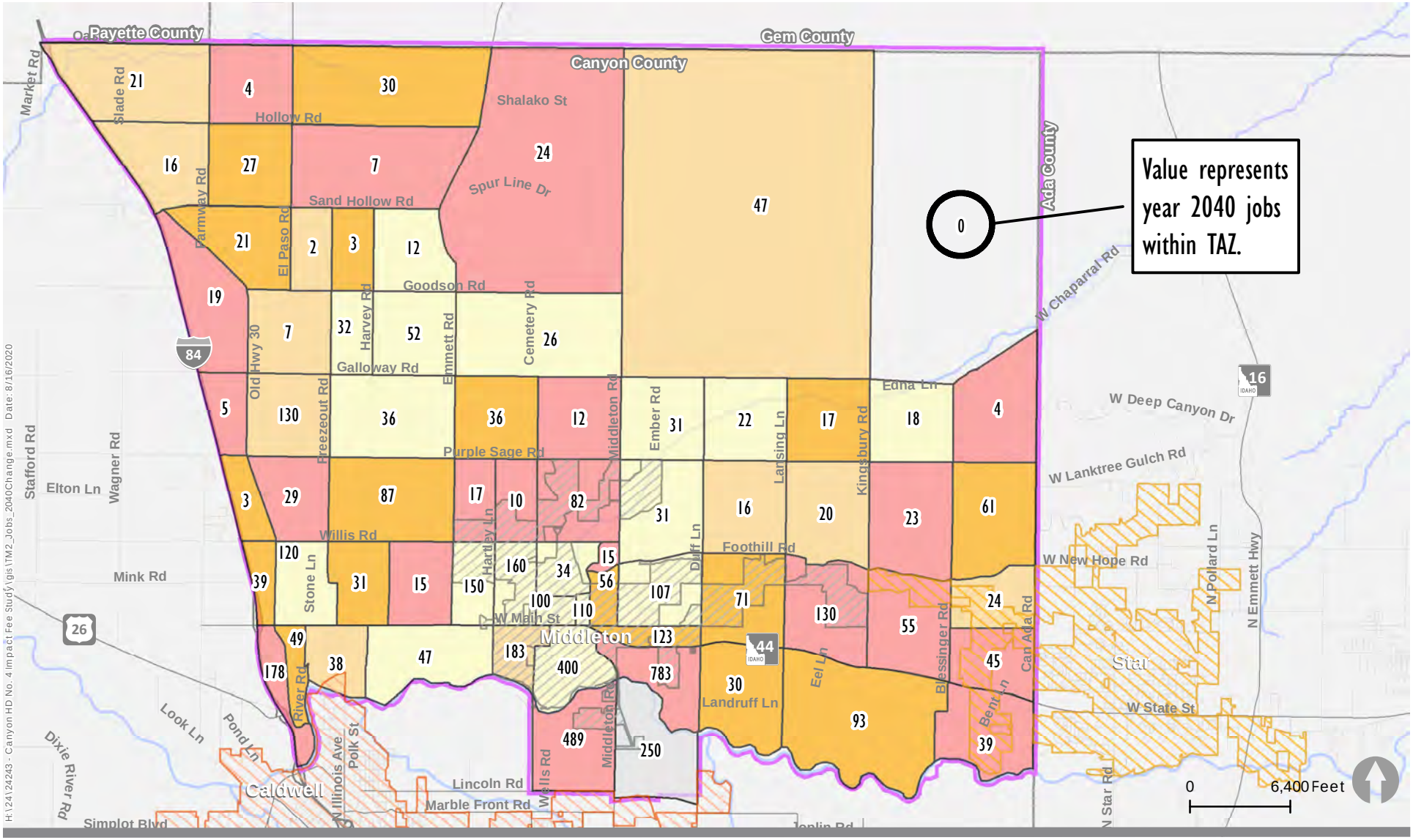
CHD4 Subdistrict No. 1 TIF Service Area
Caldwell City Limits
Middleton City Limits
Star City Limits

% Change from 2020 to 2040
Decreased 1% to 10%
Changed less than 1%
Increased 1% to 50%
Increased 50% to 100%
Increased 50% to 200%
Increased more than 200%
2040 TAZ Population

Figure 3

KITTELSON & ASSOCIATES

Year 2020 to 2040 Population Change by TAZ
Canyon County, ID



CHD4 Subdistrict No. 1 TIF Service Area
Caldwell City Limits
Middleton City Limits
Star City Limits

% Change from 2020 to 2040
Decreased 1% to 10%
Changed less than 1%
Increased 1% to 50%
Increased 50% to 100%
Increased 50% to 200%
Increased more than 200%
2040 TAZ Jobs

Figure 4

KITTELSON & ASSOCIATES

Year 2020 to 2040 Employment Change by TAZ
Canyon County, ID

Attachment B
Intersection Operations Supplemental Tools and Resources

ATTACHMENT B – Intersection Operations Supplemental Tools and Resources

This document discusses intersection operation methodologies that were examined in the development of the proposed methodology presented in Technical Memorandum #2. This document describes different tools, resources, and methodologies, including potential pros and cons

SERVICE VOLUME TABLE METHODOLOGY

Potential Strategy For All Intersection Types

Description: Create service volume thresholds with dummy HCS, Synchro, or Sidra files. Thresholds would be calculated by measuring the performance of certain intersection types based on different vehicle volume levels (assuming a default volume distribution).

Pros: Easy to implement in excel tool. Can customize thresholds.

Cons: Provides approximate analysis results. Requires time to develop. Results of analysis are not exact enough of an analysis to identify minor geometry improvements (like turn lanes).

Potential Strategy For Two-Way Stop Controlled Intersections

Description: Exhibit 10-29 of HCM 2000 (shown at the end of this document) provides a general service volume table that identifies LOS based on major and minor street peak hour volumes

Pros: Low level of effort to analyze intersections (tool is fully developed, easy to implement in excel tool). Applicable to most intersections in the service area.

Cons: Does not use most recent HCM methodology. Results of analysis are not exact enough of an analysis to identify minor geometry improvements (like turn lanes).

Potential Strategy For All-Way Stop Controlled Intersections

Description: Exhibit 77 from NCHRP 825 provides a general service volume graph, which identifies the critical movement delay based on major and minor street peak hour volumes.

Pros: Low level of effort to analyze intersections (tool is fully developed, easy to implement in excel tool). Uses most recent HCM 6th Edition methodology.

Cons: Results of analysis are not exact enough of an analysis to identify minor geometry improvements (like turn lanes). Limited number of AWSC intersections in service area.

OTHER TOOLS AND RESOURCES

Capacity Analysis for Planning of Junctions (CAP-X) Tool

Description: CAP-X is an excel tool that can be used to evaluate selected types of intersection/interchange designs using peak hour turning movement volumes. The intersections and interchanges are evaluated using the method of critical lane volume summation to provide planning capacity assessment (e.g., v/c ratio) for each intersection/interchange type. The tool implements HCM methodology. Example inputs and outputs are shown at the end of this document.

Pros: Free to use. Relatively low level of effort (approximately 30 minutes per intersection). Provides a moderate level of detail and comparison of intersection alternatives.

Cons: Does not provide LOS results. Limited ability to analyze the effect of minor geometric changes (like added turn lanes) on intersection operations.

SERVICE VOLUME TABLE EXAMPLES

EXHIBIT 10-29. EXAMPLE OF MINOR STREET SERVICE VOLUMES FOR FOUR-LEG INTERSECTION, TWO-WAY STOP
(SEE FOOTNOTE FOR ASSUMED VALUES)

Major Street 2-Way Volume (veh/h)	LOS				
	A	B	C	D	E
Minor Street Approach Service Volumes (veh/h), Major Street = 1 Lane Plus Turn Pockets, Minor Street = 1 Lane, No Turn Pockets					
500	N/A	90	220	260	300
1000	N/A	N/A	30	70	100
1500	N/A	N/A	N/A	N/A	N/A
Minor Street Approach Service Volumes (veh/h), Major Street = 1 Lane Plus Turn Pockets, Minor Street = 1 Lane, Plus Turn Pockets					
500	N/A	170	370	420	470
1000	N/A	N/A	60	130	180
1500	N/A	N/A	N/A	N/A	10
Minor Street Approach Service Volumes (veh/h), Major Street = 2 Lane Plus Turn Pockets, Minor Street = 1 Lane, No Turn Pockets					
500	N/A	120	240	300	340
1000	N/A	N/A	40	100	130
1500	N/A	N/A	N/A	N/A	20
Minor Street Approach Service Volumes (veh/h), Major Street = 2 Lane Plus Turn Pockets, Minor Street = 1 Lane, Plus Turn Pockets					
500	N/A	240	440	500	550
1000	N/A	N/A	110	180	230
1500	N/A	N/A	N/A	N/A	40

Figure 1 Exhibit 10-29 from HCM 2000

Exhibit 77. AWSC intersection planning method, street 1 delay, 20% turns, one-lane approaches.

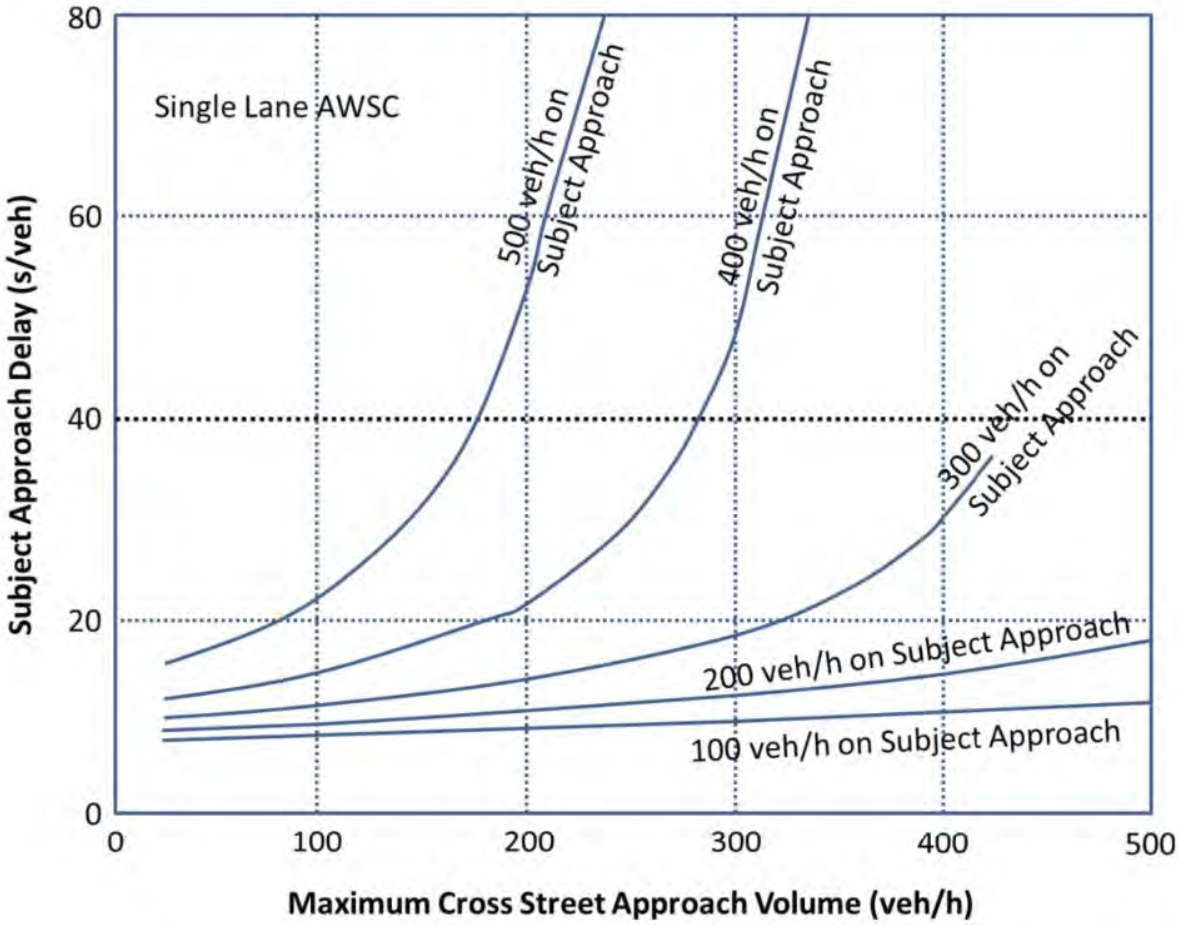


Figure 2 Exhibit 77 from NCHRP 825

CAP-X INPUT AND OUTPUT EXAMPLES

Traffic Volume Demand						
	Volume (Veh/hr)				Percent (%)	
	U-Turn	Left	Thru	Right	Heavy Vehicles	Volume Growth
Eastbound	0	30	200	50	2.00%	0.00%
Westbound	0	30	200	50	2.00%	0.00%
Southbound	0	30	200	50	2.00%	0.00%
Northbound	0	100	500	200	2.00%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	**0.80**	**0.95**		**0.85**		
Truck to PCE Factor				**Suggested = 2.00**	2.00	
Multimodal Activity Level		**Low**		**Multimodal Ped**	**Multimodal Bike**	
Critical Lane Volume Sum Limit	2-phase signal	**Suggested = 1800 (Urban), 1650 (Rural)**			**1800**	
	3-phase signal	**Suggested = 1750 (Urban), 1600 (Rural)**			**1750**	
	4-phase signal	**Suggested = 1700 (Urban), 1550 (Rural)**			**1700**	

Equivalent Passenger Car Volume				
	Volume (Veh/hr)			
	U-Turn	Left	Thru	Right
Eastbound	0	31	204	51
Westbound	0	31	204	51
Southbound	0	31	204	51
Northbound	0	102	510	204

Figure 3 CAP-X Example Input

Number of Lanes for Non-roundabout Intersections																	
TYPE OF INTERSECTION	Sheet	Northbound				Southbound				Eastbound				Westbound			
		U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Traffic Signal	FULL		1	1	1		1	1	1		1	1	1		1	1	1
Two-Way Stop Control	N-S		1	1	1		1	1	1		1	1	1		1	1	1
	E-W		1	1	1		1	1	1		1	1	1		1	1	1
All-Way Stop Control	FULL		0	1	0		0	1	0		0	1	0		0	1	0
Continuous Green T	W		1	1				2	1		1		1				
	N						1		1		1	2				2	1
	E			2	1		1	2							1		1
	S		1		1							2	1		1	2	
Quadrant Roadway	S-W	Use the respective intersection tab(s) to specify the # of lanes inputs.															
	N-E																
	S-E																
	N-W																
Partial Displaced Left Turn	N-S		1	1	1		1	1	1		1	2	1		1	2	1
	E-W		1	2	1		1	2	1		1	1	1		1	1	1
Displaced Left Turn	FULL		1	2	1		1	2	1		1	2	1		1	2	1
Signalized Restricted Crossing U-Turn	N-S	1	1	2	1	1	1	2	1				1				1
	E-W				1				1	1	1	2	1	1	1	2	1
Unsignalized Restricted Crossing U-Turn	N-S	1	1	2	1	1	1	2	1				1				1
	E-W				1				1	1	1	2	1	1	1	2	1
Median U-Turn	N-S	1		2	1	1		2	1			2	1			2	1
	E-W			2	1			2	1	1		2	1	1		2	1
Partial Median U-Turn	N-S	1		2	1	1		2	1		1	2	1		1	2	1
	E-W		1	2	1		1	2	1	1		2	1	1		2	1
Bowtie	N-S			1	1			1	1			1	1			1	1
	E-W			1	1			1	1			1	1			1	1

Figure 4 CAP-X Example Input

Attachment C
Roadway Operations Supplemental Tools and Resources

ATTACHMENT C – Roadway Service Volume Tables and Process Used to Calculate Proposed Volumes

This attachment describes service volume tables and outlines the process of defining thresholds for CHD4's CIP/TIF.

DESCRIPTIONS OF OTHER SERVICE VOLUME TABLES

Highway Capacity Manual Generalized Daily Service Volume Tables

The HCM provides generalized daily service volumes for several facility types, including urban streets, two-lane highways, multi-lane highways, and basic freeway segments. Volume thresholds for each facility type are provided for different combinations of roadway characteristics, including number of lanes, posted speed limit, highway class (class I; class II), terrain (level; rolling), roadway context (urban; rural), and K- (peaking) and D- (directional) factors.

Florida Department of Transportation (FDOT) Generalized Service Volume Tables

The Florida Department of Transportation (FDOT) has developed generalized service volume tables based on the HCM methodology as part of its Quality/Level of Service Handbook (Q/LOS Handbook). These tables are recognized as the most extensively researched in the country and are used broadly at the planning level to provide high-level LOS analysis, including for initial identification of deficiencies and needs. FDOT provides daily, peak hour two-way, and peak hour directional service volumes for arterials, highways, and freeways in urbanized areas, transitioning/urban areas, and rural areas. FDOT released its 2020 Q/LOS Handbook to reflect changes stemming from the release of the HCM, 6th Edition.

Ada County Highway District's Street Service Capacity Guidelines

Ada County Highway District established LOS planning thresholds for its arterial streets by customizing the 2009 FDOT tables with local parameters. The ACHD service capacity guidelines provide peak hour volume LOS planning thresholds for different combinations of arterial type (principal arterials, minor arterials, PA/MA in Central Business District), roadway characteristics (continuous center left turn lane, median control, etc.), and number of lanes. These thresholds are embedded in the COMPASS Regional Travel Demand Model for Ada County to analyze future roadway operations.

DEVELOPING CHD4 SERVICE VOLUMES

Technical Memorandum #2 proposes service volumes developed using FDOT's 2020 service volume tables.

The study team spoke with current and former ACHD staff regarding the development of their CIP and corresponding service capacity guidelines to assess whether it was appropriate to utilize ACHD's existing guidelines. The team was able to learn that ACHD utilized the 2009 FDOT tables as a base, applying FDOT-provided adjustments and customizing parameters to better reflect local conditions. A spreadsheet was obtained that provided an early draft version of the tables, showing various adjustments to FDOT's raw values. However, we were unable to identify the specific adjustment factors to achieve the final values included in ACHD's service volume tables.

Considering this information, the study team decided to use a similar process to develop updated service volumes that reflect the 2020 FDOT tables and include values for facility types applicable to CHD4. Adjustments were applied to the base volumes depending on roadway characteristics, including facility type (state signalized roadway), number of lanes, presence of left turn lanes, etc. These adjustments are all based on FDOT recommendations.

The following assumptions were used to develop the proposed service volumes:

- Principal arterials are considered Class I arterials (as defined by FDOT).
- Minor arterials are considered Class II arterials (as defined by FDOT).
- Collectors are considered Class II arterials (as defined by FDOT). An additional 35% reduction from the raw values was applied per FDOT's 2009 Q/LOS adjustment for "Other Signalized Roadways".
- All roadway types are considered "Non-State Signalized Roadways" and values were reduced 10% accordingly.

The final service volumes are included in Table 3 in the memorandum.

OTHER SERVICE VOLUME TABLES

Highway Capacity Manual Generalized Daily Service Volume Tables[1]

Table 1 HCM Generalized Daily Service Volumes for Urban Street Facilities

K-Factor	*D*-Factor	Daily Service Volume by Lanes, LOS, and Speed (1,000 veh/day)											
		Two-Lane Streets				Four-Lane Streets				Six-Lane Streets			
		LOS B	LOS C	LOS D	LOS E	LOS B	LOS C	LOS D	LOS E	LOS B	LOS C	LOS D	LOS E
Posted Speed = 30 mi/h													
0.09	0.55	NA	1.7	11.8	17.8	NA	2.2	24.7	35.8	NA	2.6	38.7	54.0
	0.60	NA	1.6	10.8	16.4	NA	2.0	22.7	32.8	NA	2.4	35.6	49.5
0.10	0.55	NA	1.6	10.7	16.1	NA	2.0	22.3	32.2	NA	2.4	34.9	48.6
	0.60	NA	1.4	9.8	14.7	NA	1.8	20.4	29.5	NA	2.2	32.0	44.5
0.11	0.55	NA	1.4	9.7	14.6	NA	1.8	20.3	29.3	NA	2.1	31.7	44.1
	0.60	NA	1.3	8.9	13.4	NA	1.7	18.6	26.9	NA	2.0	29.1	40.5
Posted Speed = 45 mi/h													
0.09	0.55	NA	7.7	15.9	18.3	NA	16.5	33.6	36.8	NA	25.4	51.7	55.3
	0.60	NA	7.1	14.5	16.8	NA	15.1	30.8	33.7	NA	23.4	47.4	50.7
0.10	0.55	NA	7.0	14.3	16.5	NA	14.9	30.2	33.1	NA	23.0	46.5	49.7
	0.60	NA	6.4	13.1	15.1	NA	13.6	27.7	30.3	NA	21.0	42.7	45.6
0.11	0.55	NA	6.3	13.0	15.0	NA	13.5	27.5	30.1	NA	20.9	42.3	45.2
	0.60	NA	5.8	11.9	13.8	NA	12.4	25.2	27.6	NA	19.1	38.8	41.5

Notes: NA = not applicable; LOS cannot be achieved with the stated assumptions.
General assumptions include no roundabouts or all-way STOP-controlled intersections along the facility; coordinated, semiactuated traffic signals; Arrival Type 4; 120-s cycle time; protected left-turn phases; 0.45 weighted average *g/C* ratio; exclusive left-turn lanes with adequate queue storage provided at traffic signals; no exclusive right-turn lanes provided; no restrictive median; 2-mi facility length; 10% of traffic turns left and 10% turns right at each traffic signal; peak hour factor = 0.92; and base saturation flow rate = 1,900 pc/h/ln.
Additional assumptions for 30-mi/h facilities: signal spacing = 1,050 ft and 20 access points/mi.
Additional assumptions for 45-mi/h facilities: signal spacing = 1,500 ft and 10 access points/mi.

[1] Source: Highway Capacity Manual, 6th Edition (2016). Chapter 16. Exhibit 16-16.

Florida Department of Transportation Generalized Service Volume Tables[2]

Table 2 FDOT Generalized Peak Hour Directional Volumes for Urbanized Areas

2009

STATE SIGNALIZED ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	510	820	880	***
2	Divided	1,560	1,890	1,960	***
3	Divided	2,400	2,860	2,940	***
4	Divided	3,240	3,830	3,940	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	**	560	810	860
2	Divided	**	1,330	1,770	1,870
3	Divided	**	2,080	2,680	2,830
4	Divided	**	2,830	3,590	3,780

Class III/IV (more than 4.50 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	**	270	630	790
2	Divided	**	670	1,500	1,700
3	Divided	**	1,050	2,330	2,570
4	Divided	**	1,440	3,170	3,450

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)

Major City/County Roadways - 10%
Other Signalized Roadways - 35%

2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding directional volumes in this table by 1.2

[2] Source: Florida Department of Transportation. *Quality/Level of Service Handbook* (2009 & 2020).

Table 3 FDOT (2012) Generalized Peak Hour Directional Volumes for Transitioning and Areas Over 5,000 Not in Urbanized Areas

2009

STATE SIGNALIZED ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	470	750	800	***
2	Divided	1,430	1,710	1,800	***
3	Divided	2,210	2,590	2,720	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	**	500	730	780
2	Divided	**	1,210	1,600	1,690
3	Divided	**	1,900	2,420	2,550

Class III (more than 4.50 signalized intersections per mile)

Lanes	Median	B	C	D	E
1	Undivided	**	250	570	710
2	Divided	**	610	1,360	1,540
3	Divided	**	960	2,120	2,340

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)

Major City/County Roadways - 10%
Other Signalized Roadways - 35%

2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	710	800	**
2	Divided	*	1,740	1,820	**
3	Divided	*	2,670	2,740	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	330	680	720
2	Divided	*	500	1,460	1,600
3	Divided	*	810	2,280	2,420

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding directional volumes in this table by 1.2

Ada County Highway District Street Service Capacity Guidelines

Table 4 ACHD Street Service Capacity Guidelines[3]

Principal Arterials (PA)	# of Lanes per Direction of Travel	Peak Hour Volume Level of Service Planning Thresholds D	E
No Left Turn Lane			
	1	600	690
Continuous Center Left Turn Lane			
	1	770	880
	2	1680	1780
	3	2560	2720
Median Control, Channelized Left Turn Lanes at Major Intersections			
	1	850	920
	2	1860	1960
	3	2800	3000
Minor Arterials (MA)	# Lanes	D	E
No Left Turn Lane			
	1	540	575
Continuous Center Left Turn Lane			
	1	675	720
	2	1395	1540
	3	2155	2370
Median Control, Channelized Left Turn Lanes at Major Intersections			
	1	710	770
	2	1465	1670
	3	2270	2530
PA/MA in Central Business District	# Lanes	D	E
One Way Street	1	680	850
	2	1360	1700
	3	2040	2550
	4	2720	3400

[3] Source: Ada County Highway District Capital Improvements Plan (2016).

Table 5 ACHD Level of Service Planning Thresholds for Roadway Segments (Peak Hour Volume)[4]

Functional Classification	Lanes	LOS D	LOS E
Principal Arterials			
No Left-Turn Lanes			
	1	600	690
Continuous Center Left-Turn Lane			
	1	770	880
	2	1680	1780
	3	2560	2720
Median-Control, Channelized Left-Turn Lanes @ Major Intersections			
	1	850	920
	2	1860	1960
	3	2800	3000
Minor Arterials			
No Left-Turn Lane			
	1	540	575
Unrestricted Median, Continuous Left-Turn Lane			
	1	675	720
	2	1395	1540
	3	2155	2370
Median-Control, Channelized Left-Turn Lanes @ Major Intersections			
	1	710	770
	2	1465	1670
	3	2270	2530
Collectors			
No Left-Turn Lanes			
	1	425	525
Unrestricted Median, Continuous Left-Turn Lane			
	1	530	660
	2	1080	1250

[4] Source: Ada County Highway District Policy Manual, 7106.4.1

KITTELSON
& ASSOCIATES

TRAFFIC IMPACT STUDY

MINT FARM SUBDIVISION

Canyon County, Idaho

September 1, 2021

Prepared For:

M&T RANCHES

Prepared By:

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EXHIBIT
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(PZ HEARING EXH 13)

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EXECUTIVE SUMMARY

M&T Ranches is planning to develop Mint Farm Subdivision located north of Purple Sage Road between Lansing Lane and Kingsbury Road in Canyon County, Idaho, as shown in **Figure 1.1**. CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) for the proposed development. The TIS was prepared in accordance with the Canyon Highway District No. 4 (CHD4) guidelines provided in the Highway Standards and Development Procedures, Section 3120.

The TIS evaluates the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed development, and identifies improvements needed to mitigate the impacts. Traffic impacts were evaluated under weekday AM and PM peak hour traffic conditions. **Table 1** summarizes the improvements needed to mitigate the traffic impacts for the following analysis years traffic conditions:

- 2021 Existing traffic
- 2023 Build-out year background traffic
- 2023 Build-out year total traffic
- 2028 Horizon year background traffic
- 2028 Horizon year total traffic

Table 1 – Intersection Improvements Summary

Intersection		2021 Existing	2023 Build-Out Year Traffic		2028 Horizon Year Traffic	
			Background	Total	Background	Total
Prior mitigation improvements included in the analysis		NA	2021 Existing	2021 Existing 2023 Background	2021 Existing 2023 Background	2021 Existing 2023 Background 2023 Total 2028 Background
1	Lansing Ln and Purple Sage Rd	None	None	None	None	None
2	Kingsbury Rd and Purple Sage Rd	None	None	None	None	None
3	Lansing Ln and SH 44	None	**Single-lane roundabout or signal**	None beyond [1] prior improvements	None beyond [1] prior improvements	None beyond [1] prior improvements
4	Site Access and Purple Sage Rd	NA	NA	**Stop-controlled T-intersection**	NA	None beyond prior improvements

[1] Exceeds minimum operational thresholds without prior mitigation improvements

1.0 Proposed Development

1.1 Mint Farm Subdivision is a proposed residential development estimated to contain 54 single-family dwelling units with an estimated build-out year of 2023 that may change based on market conditions.

1.2 Based on the procedures outlined in the *Trip Generation Handbook, 3rd Edition* and the *Trip Generation Manual, 10th Edition,* both published by the Institute of Transportation Engineers (ITE), the proposed development is estimated to generate approximately 590 trips per weekday with 43 trips during the AM peak hour and 56 trips during the PM peak hour.

- All trips generated by the site were assumed to be made by personal and commercial vehicles
- No internal capture trips or pass-by trips were assumed in the traffic analysis
- The estimated site traffic distribution patterns are:
  - 15% west of the site on Purple Sage Road
  - 20% east of the site to Purple Sage Road
  - 25% west of the site on SH 44
  - 40% east of the site on SH 44

1.3 Mint Farm Subdivision is planning to construct one full-movement approach on Purple Sage Road for site access:

- Located approximately 1,930 feet east of Lansing Lane and 3,320 feet west of Kingsbury Road
  - New direct local or private road access on arterial roadways is generally prohibited by CHD4 according to the *2017 Highway Standards and Development Procedures Manual*. However, an exception is recommended as the development only has frontage on Purple Sage Road and is located at ⅜-mile spacing.
- Based on field review, the proposed site access intersection has adequate sight distance for a 50-mph posted speed limit on Purple Sage Road
  - Landscape design should not obstruct intersection sight distance
- Not expected to require turn lanes based on NCHRP Report 457 turn-lane guidelines under 2023 and 2028 total traffic conditions
- Expected to meet minimum operational thresholds as a stop-controlled T-intersection with one shared one on all approaches under 2023 and 2028 total traffic conditions

2.0 2021 Existing Traffic Conditions

2.1 Traffic counts were collected on April 28 and August 10, 2021. These traffic counts were compared to available historical volumes to determine if the 2021 volumes needed any adjustments due to the COVID-19 pandemic. No significant traffic decreases were observed from the pre-COVID volumes compared to the April and August 2021 volumes. As a result, no adjustments were made to the 2021 traffic counts.

2.2 Historical crash data (2015-2019) for each study area intersection was obtained from the Local Highway Technical Assistance Council (LHTAC) website and reviewed to identify potential safety issues:

- Lansing Lane and Purple Sage Road intersection : 3 crashes
- Kingsbury Road and Purple Sage Road intersection : 1 crash
- Lansing Lane and SH 44 intersection : 15 crashes
  - 1 fatal crash due to alcohol-impaired driving
  - 12 of the 15 crashes were angle crashes

2.3 With 2021 existing traffic, all study area intersections currently meet minimum operational thresholds analyzed with the existing intersection control and lane configuration. In addition, no study area intersection meets NCHRP Report 457 or ITD turn lane guidelines. As a result, no improvements are needed to mitigate 2021 existing traffic operations.

3.0 2023 Build-Out Year Background Traffic Conditions

3.1 Future traffic growth for the study area intersections was estimated by extrapolating the 2021 existing traffic counts by the following annual growth rates:

- SH 44 – 2.0%
- Lansing Lane and Kingsbury Road – 3.3%
- Purple Sage Road – 6.9%

3.2 In addition to the annual traffic growth, off-site traffic generated by the proposed Edna Lane Gravel Mine located northeast of the site was also included in the background traffic.

3.3 With 2023 background traffic, one study area intersection is anticipated to exceed minimum operational thresholds analyzed with the existing intersection control and lane configuration. The intersection and improvements proposed to mitigate 2023 build-out year background traffic operations are:

- Lansing Lane and SH 44 intersection (two options)
  - Option 1 – Single-lane roundabout
  - Option 2 – Add a traffic signal and construct left-turn lanes on the Lansing Lane approaches

  According to ITD's transportation plans, there are no funded improvements programmed at the intersection. The intersection is planned to be reconstructed as a restricted crossing U-turn (RCUT) intersection in the long term according to the SH 44 corridor plan.

3.4 Based on NCHRP Report 457 turn lane guidelines, no other study area intersections are anticipated to require turn lanes under 2023 build-out year background traffic conditions.

4.0 2023 Build-Out Year Total Traffic Conditions

4.1 With 2023 total traffic, all study area intersections are anticipated to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the mitigation improvements needed under 2023 background traffic conditions. In addition, none of the study area intersections are anticipated to require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2023 total traffic operations.

4.2 The estimated build-out site traffic percentage of 2023 build-out year total traffic at the study area intersections are:

- Lansing Lane and Purple Sage Road : AM Peak = 8.8%, PM Peak = 11.8%
- Kingsbury Road and Purple Sage Road : AM Peak = 5.1%, PM Peak = 4.7%
- Lansing Lane and SH 44 : AM Peak = 2.2%, PM Peak = 2.5%

5.0 2028 Horizon Year Background Traffic Conditions

5.1 With 2028 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 mitigation improvements needed under 2023 background traffic conditions. In addition, none of the study area

intersections are anticipated to require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2028 background traffic operations.

6.0 2028 Horizon Year Total Traffic Conditions

6.1 With 2028 total traffic, all study area intersections are anticipated to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the mitigation improvements needed under 2023 background traffic conditions. In addition, none of the study area intersections are anticipated to require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2028 total traffic operations.

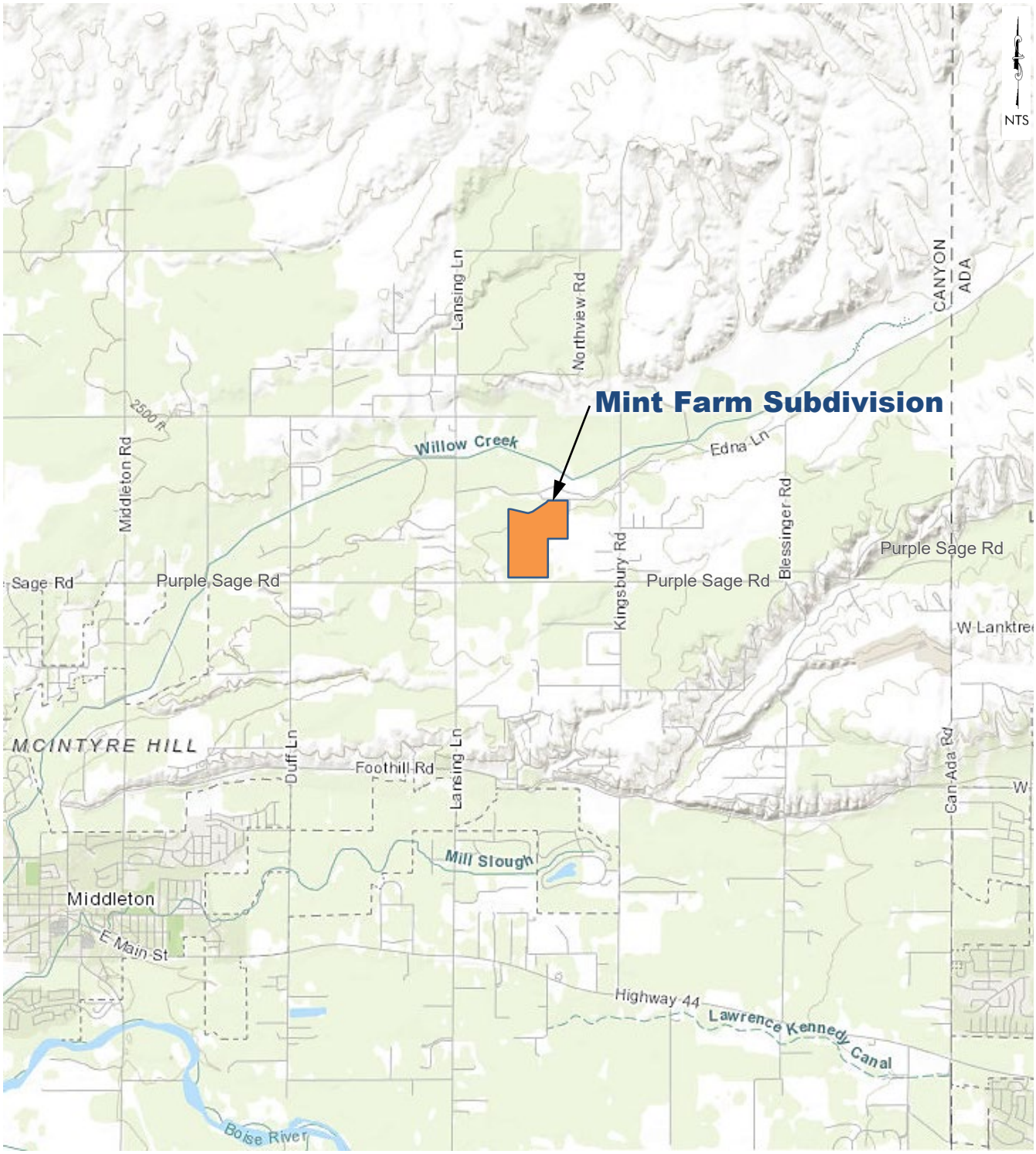
6.2 The estimated build-out site traffic percentage of 2028 horizon year total traffic at the study area intersections are:

- Lansing Lane and Purple Sage Road : AM Peak = 6.8%, PM Peak = 9.3%
- Kingsbury Road and Purple Sage Road : AM Peak = 3.9%, PM Peak = 3.5%
- Lansing Lane and SH 44 : AM Peak = 2.0%, PM Peak = 2.2%

1.0 INTRODUCTION

CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) for the proposed Mint Farm Subdivision located north of Purple Sage Road between Lansing Lane and Kingsbury Road in Canyon County, Idaho. **Figure 1.1** shows the site location and vicinity. The TIS evaluates the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed development, and identifies improvements to mitigate the development impacts if needed.

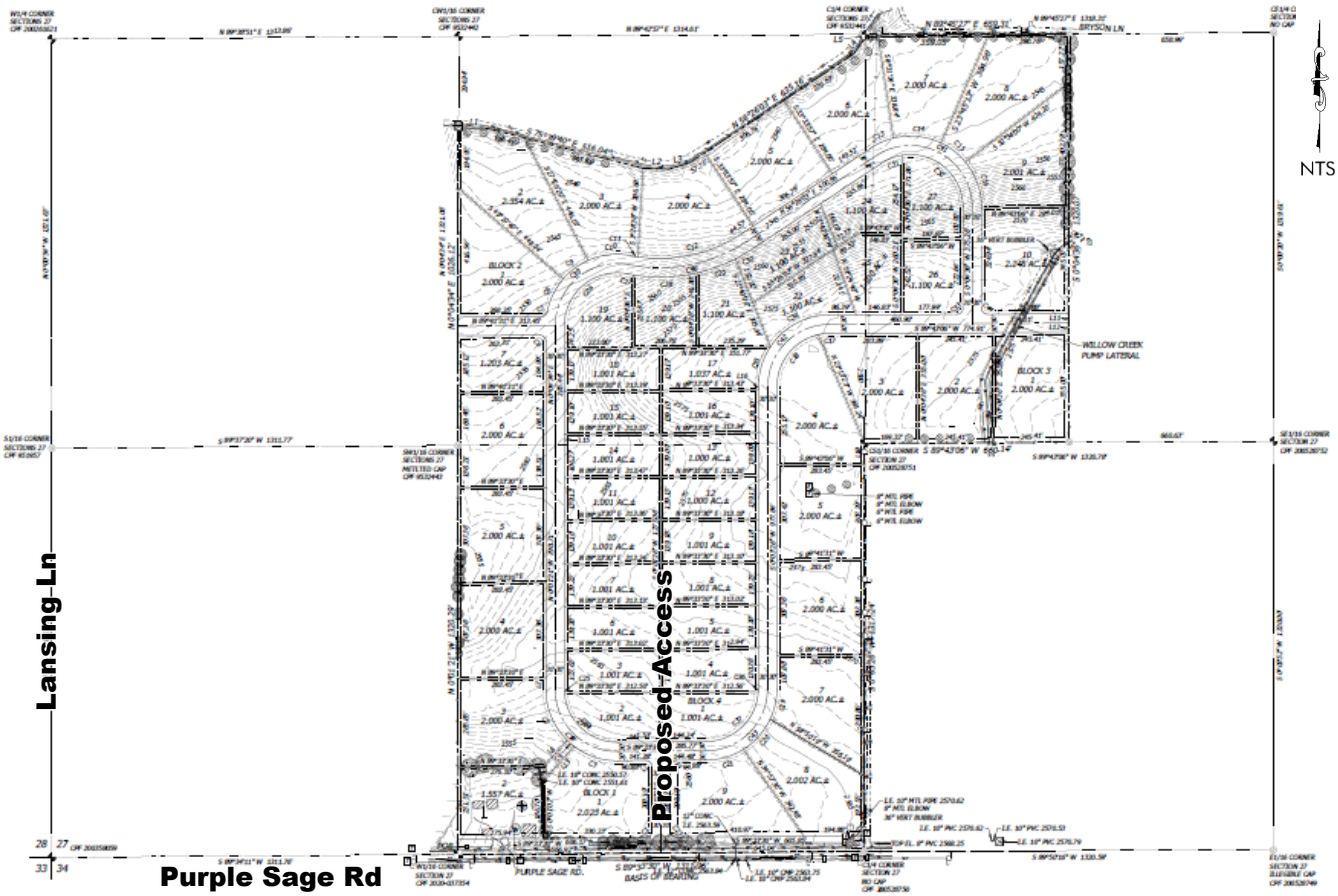
Figure 1.1 – Site Location and Vicinity



1.1 Proposed Development

Figure 1.2 shows the preliminary site plan. Mint Farm Subdivision is a proposed residential development containing 54 single-family lots. The estimated build-out year is 2023 but may change depending on the market conditions. The development is proposing one approach on Purple Sage Road for site access.

Figure 1.2 – Preliminary Site Plan



1.2 Study Approach

This study follows the Canyon Highway District #4 (CHD4) guidelines for transportation impact studies in accordance with Section 3120 of the Highway Standards and Development Procedures.

Mint Farm Subdivision is estimated to generate less than 100 peak hour trips, which is below the Idaho Transportation Department (ITD) threshold for a full TIS.

1.3 Study Area

The study area included collector/arterial intersections within ½ mile of the development boundary:

- Lansing Lane and Purple Sage Road intersection
- Kingsbury Road and Purple Sage Road intersection
- SH 44 and Lansing Lane intersection
  - The intersection is located beyond ½ mile of the site but was included in the TIS to provide traffic data for ITD to determine the proportionate share of the impacts on the state highway system

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:

- 2021 Existing traffic
- 2023 Build-out year background traffic
- 2023 Build-out year total traffic
- 2028 Horizon year background traffic
- 2028 Horizon year total traffic

1.5 Analysis Methods and Performance Measure Thresholds

Intersection capacity analysis was performed using the Synchro 10 (Version 10.3.151.0), which utilizes the HCM 6th Edition (HCM6) 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 CHD4 and the Idaho Transportation Department (ITD). For this study, the minimum operational thresholds for intersections under CHD4's jurisdiction are LOS C for rural areas and LOS D for suburban areas. ITD's minimum operational threshold for signalized intersections is LOS D with a v/c of 0.90 for the overall intersection. For ITD unsignalized intersections, mitigation improvements are required for any individual movement either operating at LOS F or with a v/c 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 Canyon County Functional Classification Map. **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
Purple Sage Rd	Minor Arterial west / Local Road east of Blessinger Rd	2	50 west / 35 east of Blessinger Rd	• No sidewalk or bicycle lanes
Lansing Ln	Collector	2	35-50	• No sidewalk or bicycle lanes
Kingsbury Rd	Principal Arterial	2	45	• No sidewalk or bicycle lanes
SH 44	Principal Arterial Statewide Route	2-3	55	• No sidewalk or bicycle lanes

2.2 Existing Traffic Volumes

Weekday AM and PM peak hour intersection turning movement traffic counts were obtained on April 28 and August 10, 2021. 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 turning movement counts are included in the appendix. **Figure 2.2** summarizes the existing peak hour traffic volumes.

April and August 2021 traffic counts used in this TIS were collected during the COVID-19 pandemic and were reviewed and compared to historical counts to determine if adjustments were needed to account for a potential reduction in travel demand. Based on available historical counts, there were no significant differences between the historical counts and 2021 counts. As a result, no adjustments were made to the 2021 counts.

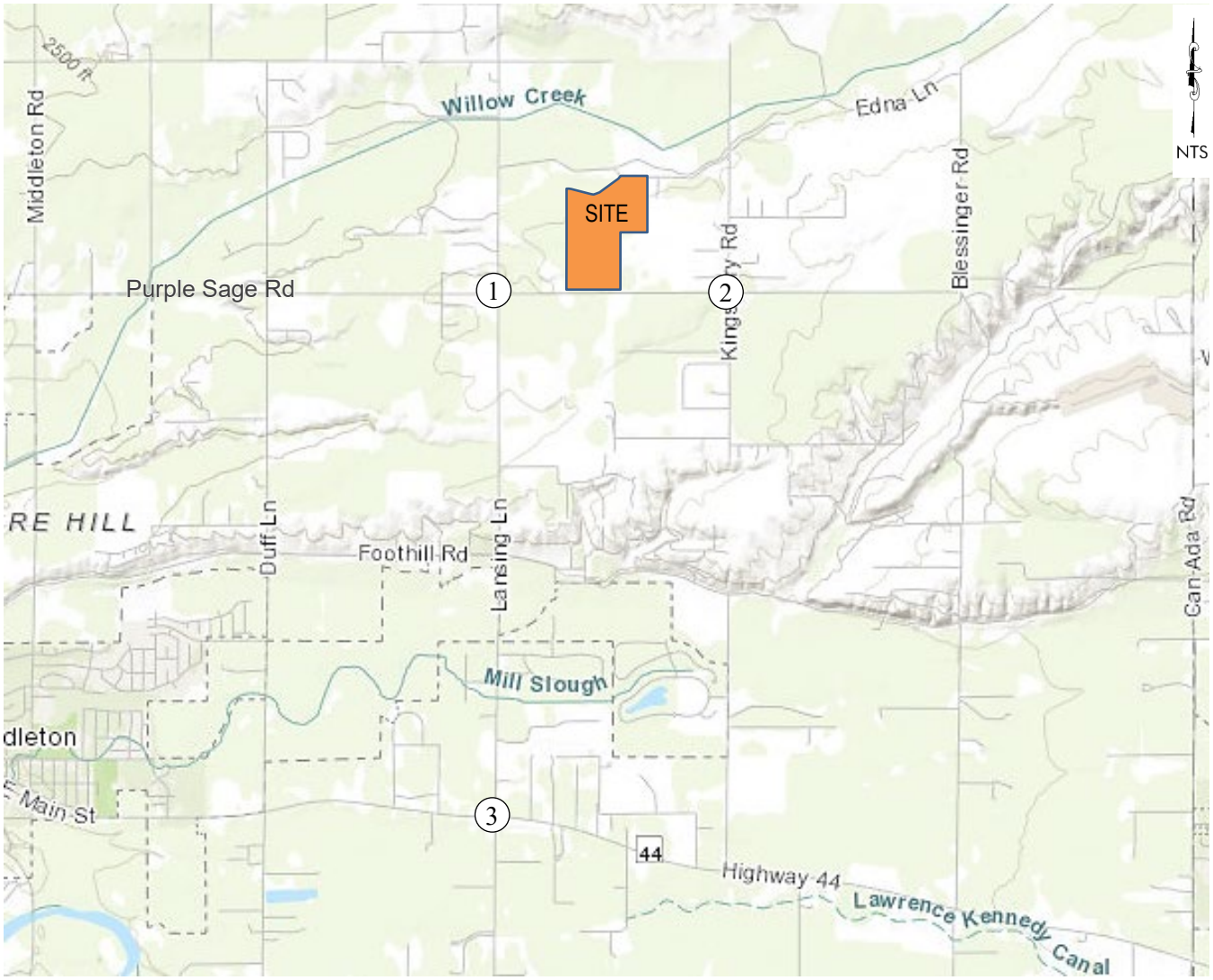
2.3 Intersection Crash Data

The most current five-year crash data (2015-2019) was obtained from the Local Highway Technical Assistance Council (LHTAC) website (http://gis.lhtac.org/safety/). **Table 2.2** summarizes the crash data for the study area intersection. A review of the historical crash data showed no apparent safety issues. The fatal crash reported at the Lansing Lane and SH 44 intersection was an angle-turning crash due to driving under the influence of alcohol.

Table 2.2 – Intersection Crash Data (2015-2019)

Intersection		Total Crashes	*Crash Severity*			Notes
			PDO	*Injury*	*Fatal*	
1	Lansing Ln and Purple Sage Rd	3	*3*	*0*	*0*	• All crashes due to failure to yield/maintain lane • 2 angle-turning crash, 1 lane departure crash • 2 crashes in wet conditions
2	Kingsbury Rd and Purple Sage Rd	1	*1*	*0*	*0*	• Angle-turning crash in snowy conditions
3	Lansing Ln and SH 44	15	*9*	*5*	***1***	• 12 (80%) crashes were angle crashes • 8 (53%) crashes due to failure to yield/stop • 8 crashes in SB direction, 7 of 8 angle crashes

Figure 2.1 – Existing Intersection Control and Lane Configuration



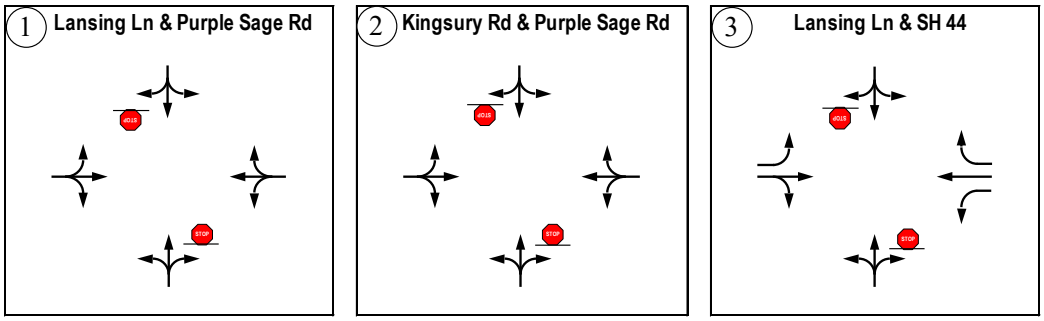
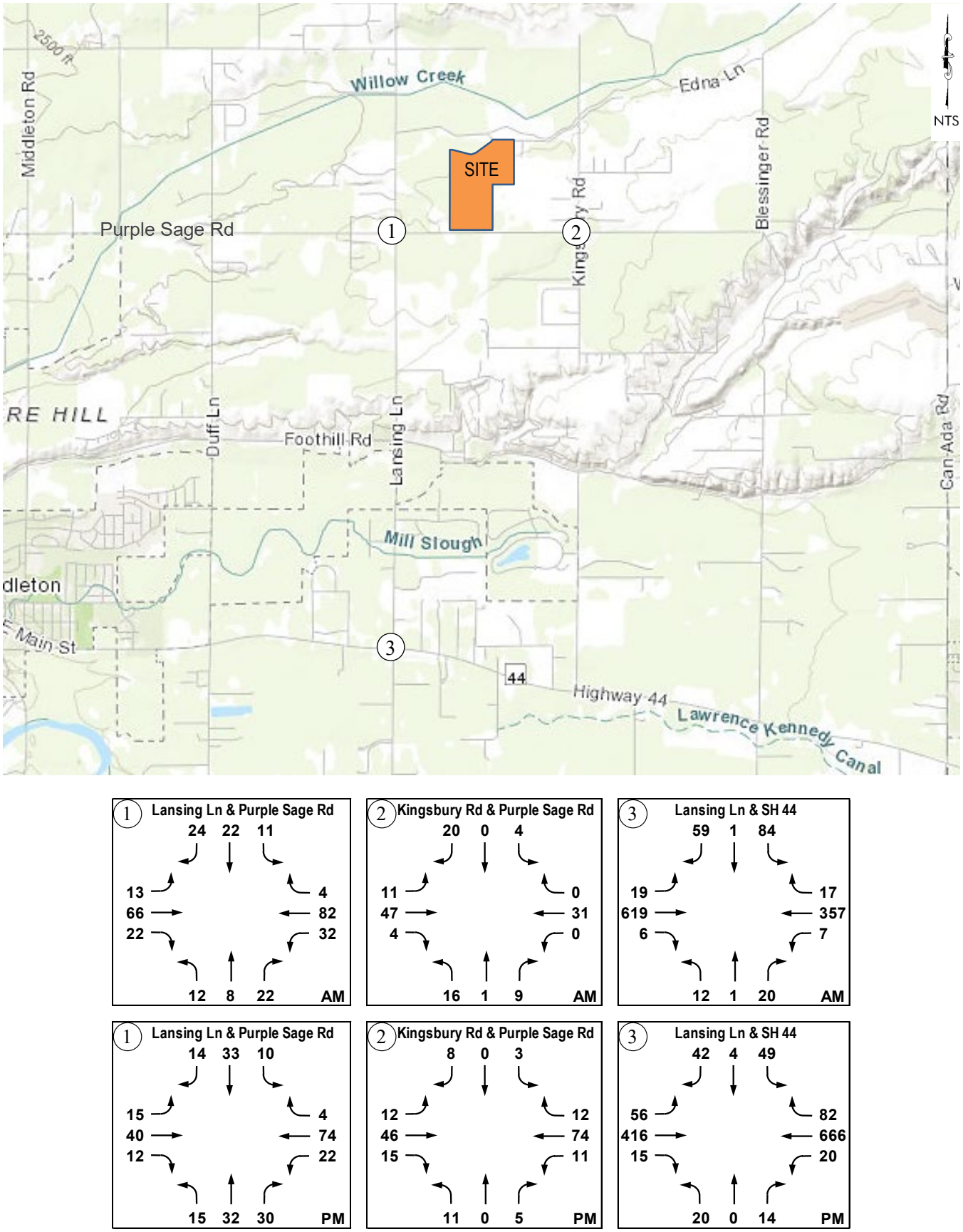


Figure 2.2 – 2021 Existing Peak Hour Traffic



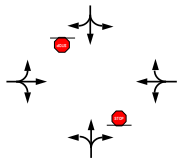
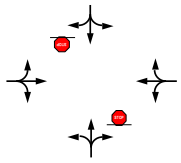
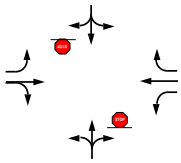
2.4 Intersection Operations

To determine the existing traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration and 2021 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 minimum operational thresholds under 2021 existing traffic conditions.

2.5 Intersection Mitigation

All study area intersection currently meets minimum operational thresholds under 2021 existing traffic conditions. In addition, no turn lanes are warranted based on NCHRP Report 457 or ITD turn lane guidelines. As a result, no improvements are needed to mitigate 2021 existing traffic operations.

Table 2.3 – Intersection Operations – 2021 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	Lansing Ln and Purple Sage Rd		EB	A	7	0.01	A	7	0.01
			WB	A	8	0.03	A	7	0.01
			NB	B	10	0.07	B	10	0.10
			SB	B	11	0.10	B	10	0.08
2	Kingsbury Rd and Purple Sage Rd		EB	A	7	0.01	A	8	0.01
			WB	-	-	-	A	7	0.01
			NB	A	9	0.03	A	10	0.03
			SB	A	9	0.03	A	9	0.02
3	Lansing Ln and SH 44		EBL	A	8	0.02	A	10	0.07
			EBTR	-	-	-	-	-	-
			WBL	A	9	0.01	A	8	0.02
			WBT	-	-	-	-	-	-
			WBR	-	-	-	-	-	-
			NB	C	21	0.13	D	34	0.22
			SB	E	38	0.59	E	44	0.53

3.0 2023 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS

3.1 Roadway Network

The study area roadways and intersections are expected to remain the same as existing conditions. There are no programmed projects within the study area in the FY20 City of Middleton Capital Improvements Plan, CHD4 Current Projects list, or the ITD 2021-2027 Idaho Transportation Investment Program.

3.2 Background Traffic

Future traffic growth for the study area intersections was estimated by extrapolating the 2021 existing traffic counts by the following annual growth rates:

- SH 44 – 2.0%
- Lansing Lane and Kingsbury Road – 3.3%
- Purple Sage Road – 6.9%

In addition, one in-process development is anticipated to contribute off-site traffic to the study area intersections and was included in the background traffic forecasts. The Edna Lane Gravel Mine is anticipated to be under full operation later in 2021. **Figure 3.1** summarizes the 2023 build-out year peak hour background traffic.

3.3 Intersection Operations

To determine the 2023 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration 2023 peak hour background traffic volumes. Copies of the analysis reports are included in the appendix. **Table 3.1** summarizes the intersection capacity analysis results. One study area intersection is anticipated to exceed minimum operational thresholds under 2023 background traffic conditions:

- Lansing Lane and SH 44 intersection

3.4 Intersection Mitigation

The Lansing Lane and SH 44 intersection is anticipated to exceed ITD's minimum operational thresholds. The critical southbound approach is anticipated to operate at LOS F during the PM peak hour. According to ITD's transportation plans, there are no funded improvements programmed at the intersection. In the 2045 long-term, the intersection is planned to be reconstructed as a restricted crossing U-turn (RCUT) intersection. Two interim improvement options proposed to mitigate 2023 background traffic operations:

- Option 1 – Single-lane roundabout
- Option 2 – Traffic signal with left-turn lanes on Lansing Lane approaches

Table 3.2 summarizes the mitigation analysis results. Both improvement options are expected to mitigate the intersection operations to meet ITD minimum operational thresholds.

None of the other study area intersections are anticipated to require turn lanes based on NCHRP Report 457 or ITD turn lane guidelines. The intersection, operational deficiencies, and mitigation improvements are summarized below.

Figure 3.1 – 2023 Build-Out Year Peak Hour Background Traffic

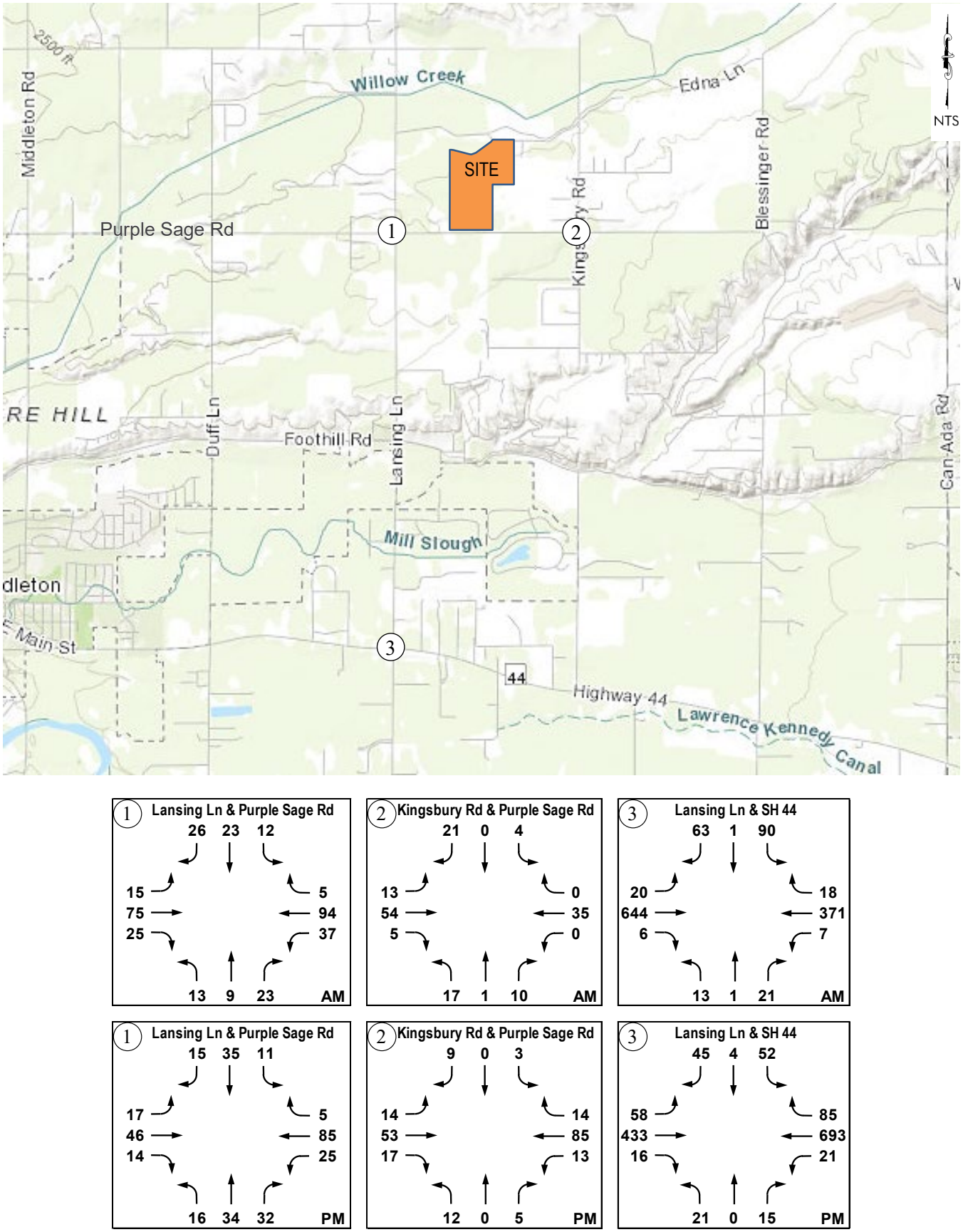


Table 3.1 – Intersection Operations – 2023 Build-Out Year Background Traffic

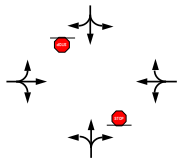
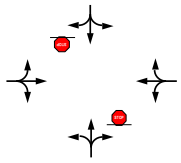
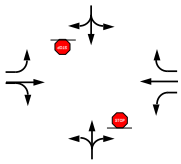
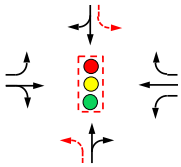
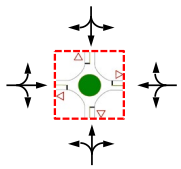
Intersection		Control / Lane	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Lansing Ln and Purple Sage Rd		EB	A	8	0.01	A	7	0.01
			WB	A	8	0.03	A	7	0.02
			NB	B	11	0.07	B	10	0.11
			SB	B	11	0.10	B	11	0.09
2	Kingsbury Rd and Purple Sage Rd		EB	A	7	0.01	A	8	0.01
			WB	-	-	-	A	7	0.01
			NB	A	9	0.04	B	10	0.03
			SB	A	9	0.03	A	9	0.02
3	Lansing Ln and SH 44		EBL	A	8	0.02	A	10	0.07
			EBTR	-	-	-	-	-	-
			WBL	A	9	0.01	A	8	0.02
			WBT	-	-	-	-	-	-
			WBR	-	-	-	-	-	-
			NB	C	23	0.15	E	39	0.26
			SB	E	47	0.68	F	54	0.61

Table 3.2 – Lansing Lane and SH 44 Intersection – 2023 Build-Out Year Background Traffic Mitigation

Intersection		Control / Lane Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
3	Lansing Ln and SH 44		Intersection	B	19	0.67	B	19	0.63
			EBL	B	11	0.05	B	15	0.24
			EBTR	B	20	0.86	B	15	0.54
			WBL	B	14	0.04	B	12	0.06
			WBT	B	15	0.51	C	22	0.87
			WBR	B	11	0.03	B	12	0.13
			NBL	C	24	0.05	C	28	0.07
			NBTR	C	35	0.50	C	29	0.09
			SBL	C	23	0.30	C	26	0.15
			SBTR	C	24	0.24	C	27	0.20
			Intersection	A	8	-	A	10	-
			EB	B	10	0.59	A	7	0.42
			WB	A	6	0.33	B	12	0.67
			NB	A	7	0.07	A	5	0.05
			SB	A	6	0.19	A	8	0.17

4.0 2023 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS

4.1 Site Traffic

4.1.1 Trip Generation

Site trip generation is estimated using the procedures recommended in the latest edition of the Trip Generation Manual (10th edition), published by the Institute of Transportation Engineers. **Table 4.1** summarizes the build-out site trip generation. Mint Farm Subdivision is estimated to generate approximately 590 trips per weekday, 43 trips during the AM peak hour, and 56 trips during the PM peak hour.

Table 4.1 – Build-Out Year Site Trip Generation Summary

Land Use	ITE Code	Size	Unit	Period	Total Trips	Entering		Exiting	
Single-Family Residential	210	54	DU	Weekday Daily (vpd)	590	50%	295	50%	295
				AM Peak Hour (vph)	43	25%	11	75%	32
				PM Peak Hour (vph)	56	63%	35	37%	21

4.1.2 Trip Capture

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

4.1.3 Pass-By Trips

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

4.1.4 Modal Split

For traffic analysis purposes, all trips were assumed to be personal and commercial vehicles.

4.1.5 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** summarizes the estimated site distribution patterns. **Figure 4.2** summarizes the estimated AM and PM peak hour site traffic at the study area intersections.

4.2 Total Traffic

The build-out site traffic is added to the 2023 background traffic as determined above to obtain the 2023 total traffic. **Figure 4.3** summarizes the estimated 2023 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 of 2023 Total Traffic

Intersection		% Site Traffic of 2023 Total Traffic		
		AM Peak	PM Peak	Average
1	Lansing Ln and Purple Sage Rd	8.8%	11.8%	10.3%
2	Kingsbury Rd and Purple Sage Rd	5.1%	4.7%	4.9%
3	Lansing Ln and SH 44	2.2%	2.5%	2.3%

Figure 4.1 – Estimated Site Traffic Distribution Patterns

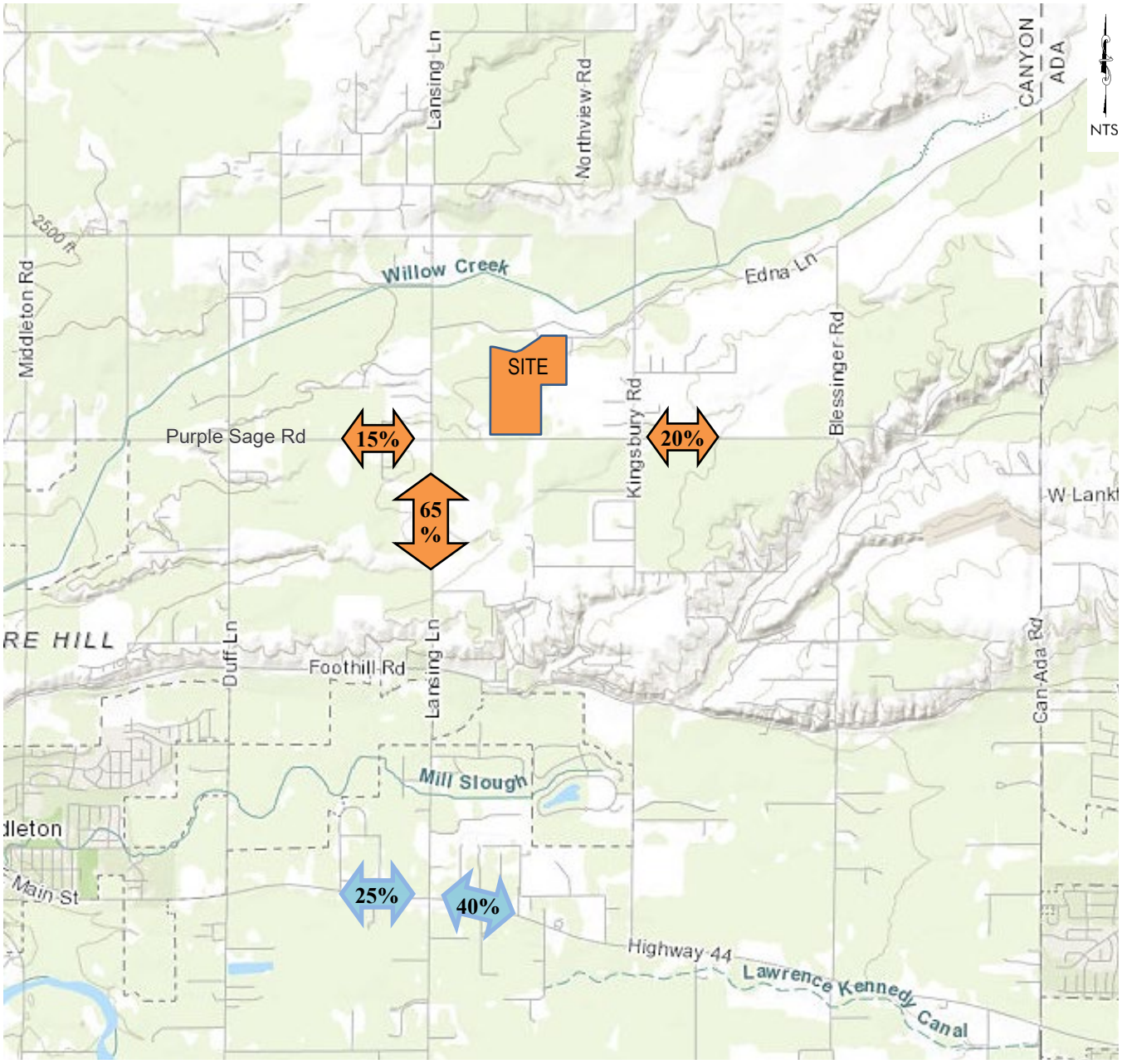
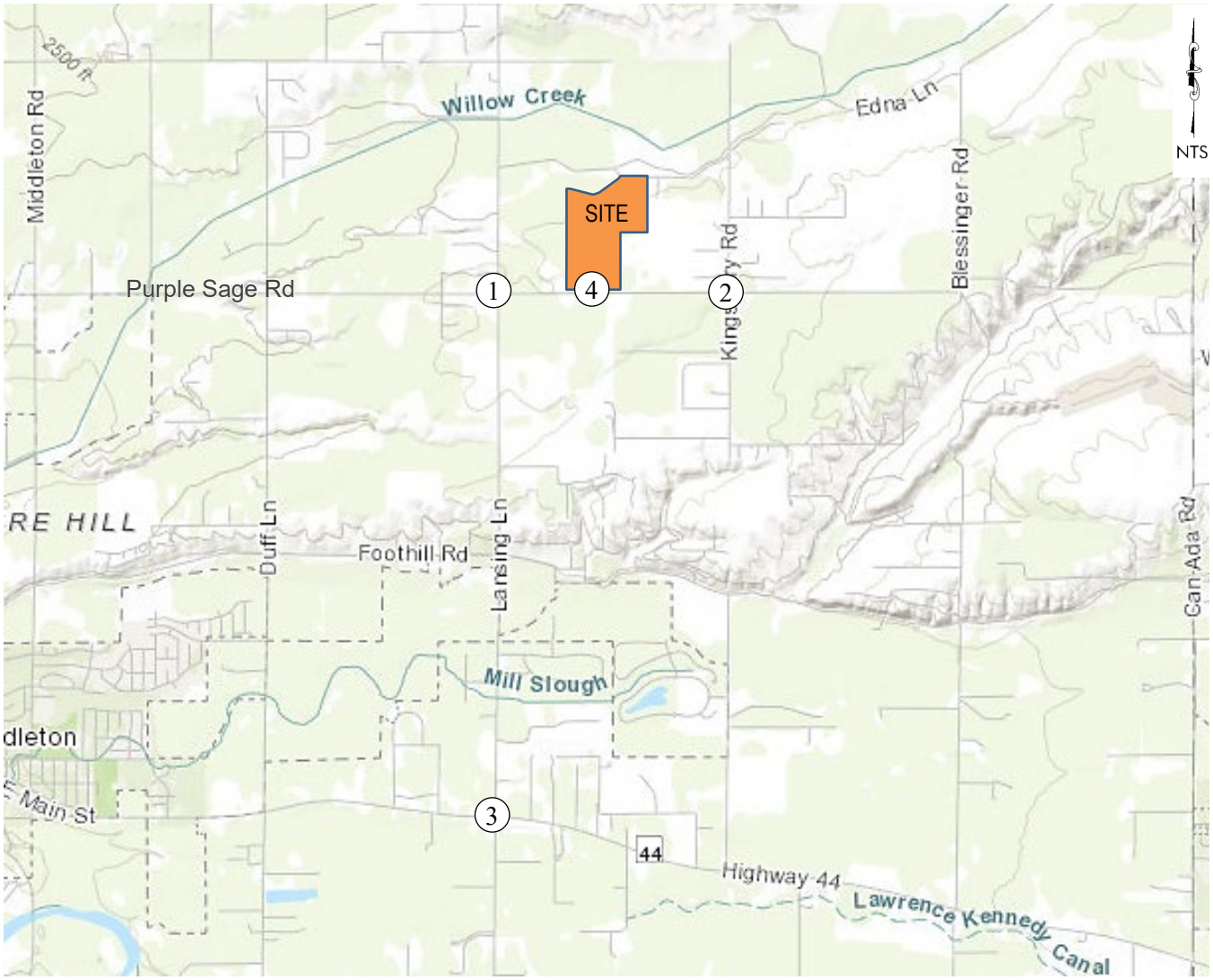


Figure 4.2 – Build-Out Year Peak Hour Site Traffic



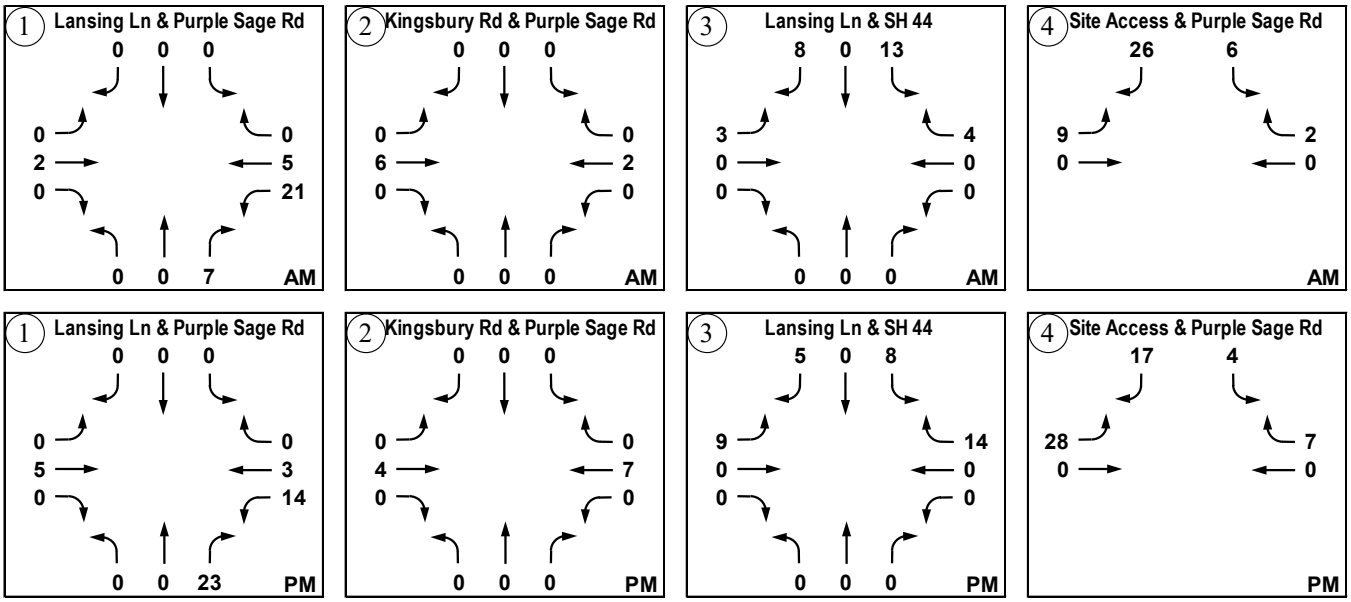
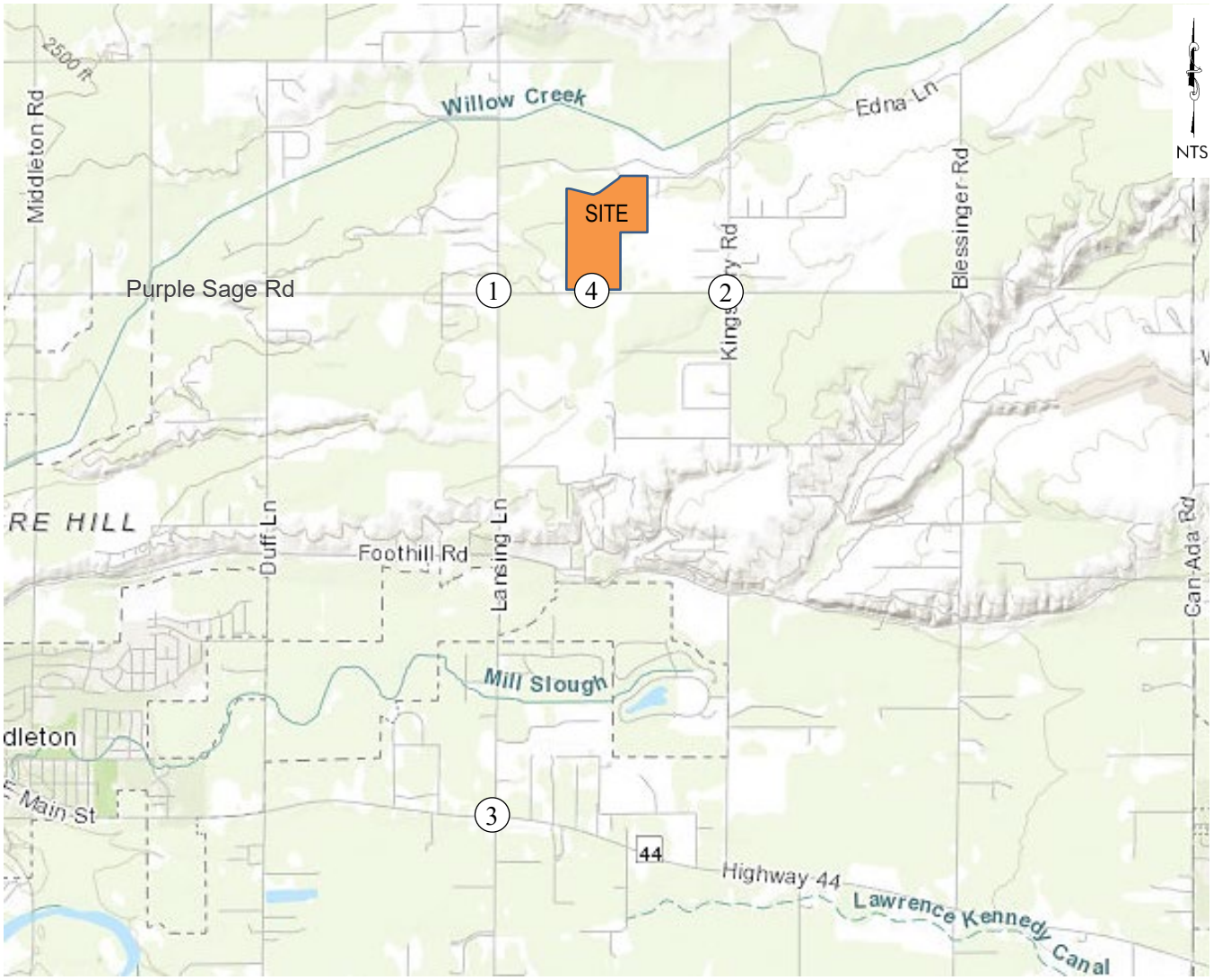
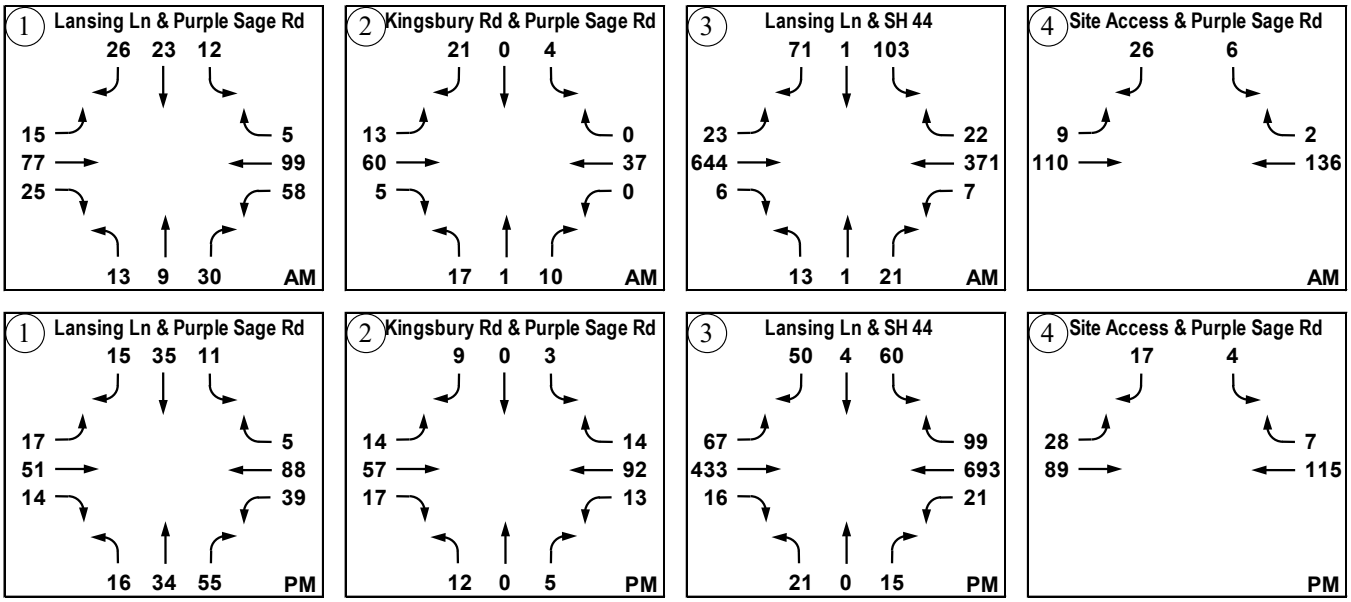


Figure 4.3 – 2023 Build-Out Year Peak Hour Total Traffic





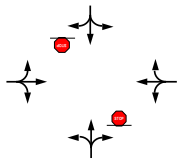
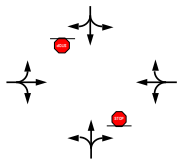
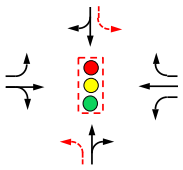
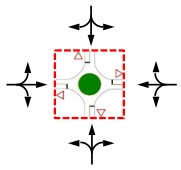
4.3 Intersection Operations

To determine the 2023 build-out total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the improvements needed under 2023 background traffic conditions. Copies of the calculations are included in the appendix. **Table 4.2** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet minimum operational thresholds under 2023 total traffic conditions if improvements needed under 2023 background traffic are constructed. The Lansing Lane and SH 44 intersection is anticipated to continue to exceed minimum operational thresholds with no-build.

4.4 Intersection Mitigation

All study area intersections are anticipated to meet minimum operational thresholds. In addition, none of the study area intersections are anticipated to require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2023 total traffic operations.

Table 4.3 – Intersection Operations – 2023 Build-Out Year Total 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	Lansing Ln and Purple Sage Rd		EB	A	8	0.01	A	7	0.01
			WB	A	8	0.05	A	7	0.03
			NB	B	11	0.09	B	11	0.14
			SB	B	12	0.12	B	11	0.10
2	Kingsbury Rd and Purple Sage Rd		EB	A	7	0.01	A	8	0.01
			WB	-	-	-	A	7	0.01
			NB	A	9	0.04	B	10	0.03
			SB	A	9	0.03	A	9	0.02
3	Lansing Ln [1] and SH 44		Intersection	B	19	0.69	B	19	0.64
			EBL	B	12	0.06	B	16	0.28
			EBTR	C	20	0.86	B	15	0.54
			WBL	B	15	0.04	B	12	0.05
			WBT	B	15	0.51	C	23	0.87
			WBR	B	12	0.04	B	12	0.15
			NBL	C	25	0.05	C	28	0.07
			NBTR	C	35	0.49	C	30	0.09
			SBL	C	23	0.32	C	26	0.17
			SBTR	C	24	0.26	C	28	0.22
			Intersection	A	9	-	B	10	-
			EB	B	11	0.60	A	7	0.44
			WB	A	6	0.33	B	13	0.69
			NB	A	8	0.07	A	5	0.05
			SB	A	6	0.21	A	8	0.19

[1] Exceeds minimum operational thresholds with no-build

4.5 Site Access and Circulation

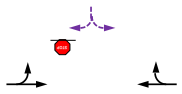
Mint Farm Subdivision is planning to access the transportation system via one access on Purple Sage Road. The access is located approximately 1,930 feet east of Lansing Lane and approximately 3,320 feet west of Kingsbury Road. The nearest driveway is south of Purple Sage Road located approximately 210 feet west of the proposed access. With Purple Sage Road being classified as a minor arterial, no direct access via local roads or driveways is generally permitted per the Association of Canyon County Highway Districts *Highway Standards and Development Procedures Manual.* An exception to the policy is recommended as the site does not have frontage on any other roadway and is located at ⅜-mile spacing.

The site frontage along Purple Sage Road is generally flat and straight. With a 50-mph posted speed limit, the minimum intersection sight distance on Purple Sage Road is 555 feet. Landscape design should not obstruct intersection sight distance.

Turn lane warrant analysis was conducted at the proposed site access intersection based on NCHRP Report 457 turn lane guidelines; no turn lanes are anticipated to be warranted at the proposed site access intersection. **Table 4.3** summarizes the site access intersection operations as a stop-controlled T-intersection. The intersection is expected to meet minimal operational thresholds under 2023 build-out year total traffic conditions.

All internal roadways are anticipated to carry less than 1,000 vehicles per day. All internal roadways have front-on housing and could be classified as local streets.

Table 4.4 – Site Access Intersection Operations – 2023 Build-Out Year Total Traffic

Intersection		Control / Lane + 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
4	Site Access and Purple Sage Rd		EB	A	8	0.01	A	8	0.02
			WB	-	-	-	-	-	-
			SB	A	9	0.04	A	9	0.03

5.0 2028 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS

5.1 Roadway Network

The study area roadways and intersections are expected to remain the same as existing conditions. There are no programmed projects within the study area in the FY20 City of Middleton Capital Improvements Plan, CHD4 Current Projects list, or the ITD 2021-2027 Idaho Transportation Investment Program.

5.2 Background Traffic

2028 background traffic included traffic growth and off-site traffic, both of which were estimated based on the same methodologies as discussed in the previous section. **Figure 5.1** summarizes the 2028 horizon year background traffic for the AM and PM peak hours at the study area intersections.

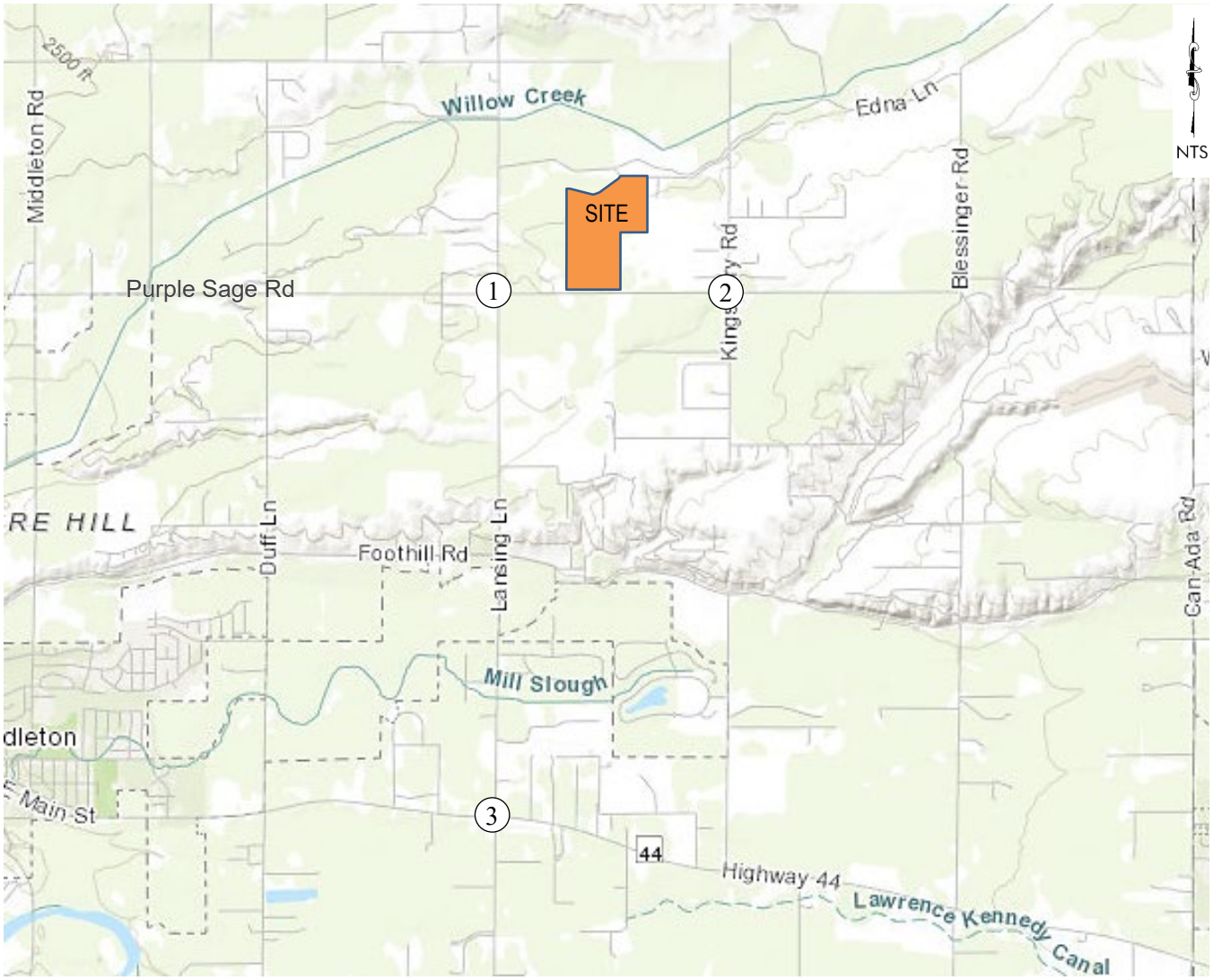
5.3 Intersection Operations

To determine the 2028 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the improvements needed under 2023 background traffic conditions. Copies of the analysis reports are included in the appendix. **Table 5.1** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet minimum operational thresholds under 2028 background traffic conditions.

5.4 Intersection Mitigation

All study area intersections are anticipated to meet minimum operational thresholds under 2028 background traffic conditions. None of the study area intersections require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2028 background traffic operations.

Figure 5.1 – 2028 Horizon Year Peak Hour Background Traffic



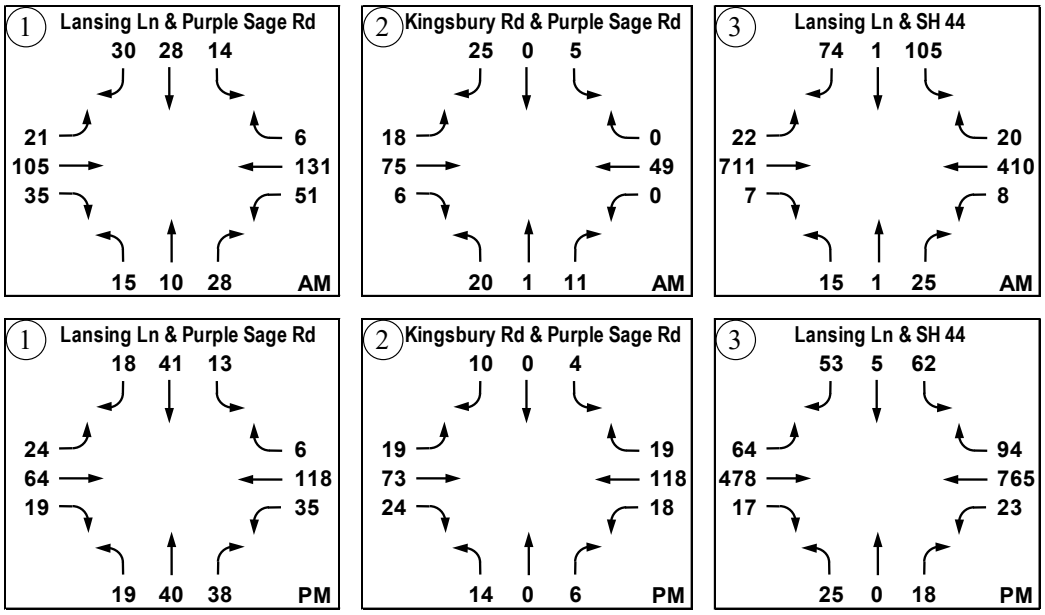
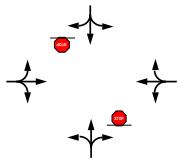
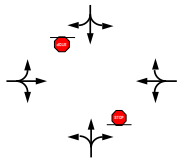
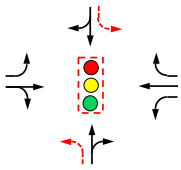
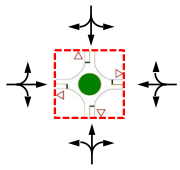


Table 5.1 – Intersection Operations – 2028 Horizon Year Background Traffic

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	Lansing Ln and Purple Sage Rd		EB	A	8	0.02	A	8	0.02
			WB	A	8	0.04	A	7	0.02
			NB	B	12	0.11	B	11	0.15
			SB	B	13	0.16	B	12	0.12
2	Kingsbury Rd and Purple Sage Rd		EB	A	7	0.01	A	8	0.02
			WB	-	-	-	A	8	0.02
			NB	A	10	0.04	B	11	0.04
			SB	A	9	0.04	A	10	0.03
3	Lansing Ln [1] and SH 44		Intersection	C	21	0.71	C	21	0.66
			EBL	B	11	0.06	B	17	0.29
			EBTR	C	22	0.88	B	14	0.55
			WBL	B	16	0.05	B	11	0.06
			WBT	B	15	0.52	C	25	0.89
			WBR	B	11	0.03	B	12	0.13
			NBL	C	27	0.06	C	30	0.09
			NBTR	D	43	0.61	C	32	0.11
			SBL	C	26	0.37	C	29	0.19
			SBTR	C	27	0.28	C	31	0.25
			Intersection	A	10	-	B	12	-
			EB	B	12	0.67	A	8	0.48
			WB	A	6	0.36	B	15	0.75
			NB	A	8	0.09	A	6	0.06
			SB	A	7	0.23	A	9	0.22

[1] Exceeds minimum operational thresholds with no-build

6.0 2028 HORIZON YEAR TOTAL TRAFFIC CONDITIONS

6.1 Site Traffic

Site traffic under 2028 horizon year conditions is expected to remain the same as discussed in Section 4.2 and summarized in **Figure 4.1** and **Figure 4.2**.

6.2 Total Traffic

The build-out site traffic is added to the 2028 background traffic as determined above to obtain the 2028 horizon year total traffic. **Figure 6.1** summarizes the estimated 2028 peak hour total traffic at the study area intersections. **Table 6.1** summarizes the site traffic contribution as a percentage of the 2028 horizon year total traffic at the study area intersections.

Table 6.1 – Build-Out Site Traffic Percentage of 2028 Total Traffic

Intersection		% Site Traffic of 2028 Total Traffic		
		AM Peak	PM Peak	Average
1	Lansing Ln and Purple Sage Rd	6.8%	9.3%	8.1%
2	Kingsbury Rd and Purple Sage Rd	3.9%	3.5%	3.7%
3	Lansing Ln and SH 44	2.0%	2.2%	2.1%

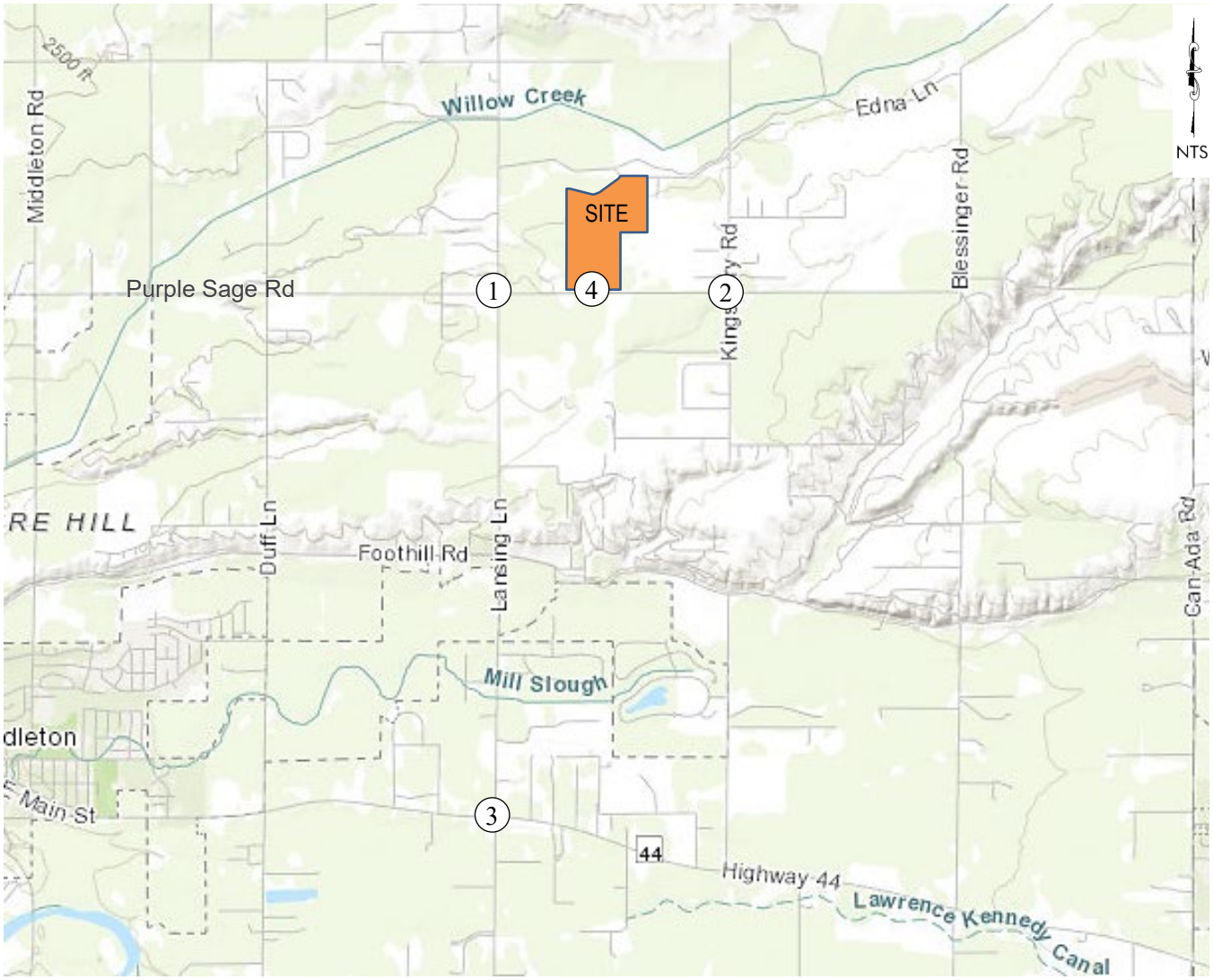
6.3 Intersection Operations

To determine the 2028 horizon year total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the improvements needed under 2023 background traffic conditions. 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 minimum operational thresholds under 2028 total traffic conditions if improvements needed under 2023 background traffic are constructed. The Lansing Lane and SH 44 intersection is anticipated to continue to exceed minimum operational thresholds with no-build.

6.4 Intersection Mitigation

No additional study area intersections are expected to exceed minimum operational thresholds under 2028 horizon year total traffic conditions beyond those exceeding under 2023 background traffic operations. In addition, no additional turn lanes are warranted under 2028 total traffic conditions. As a result, no additional intersection control or capacity improvements are needed to mitigate 2028 total traffic operations.

Figure 6.1 – 2028 Horizon Year Peak Hour Total Traffic



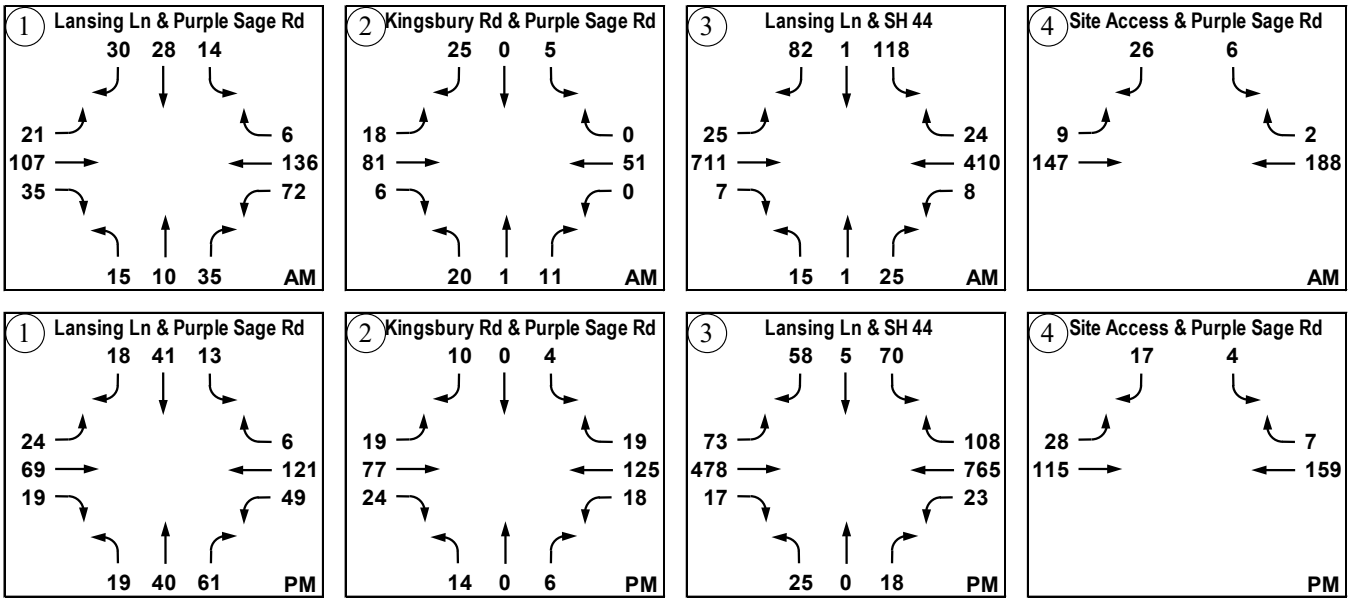
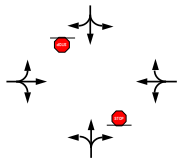
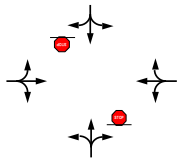
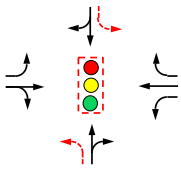
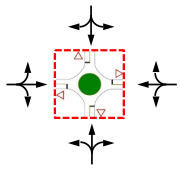
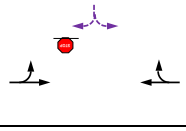


Table 6.2 – Intersection Operations – 2028 Horizon Year Total Traffic

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	Lansing Ln and Purple Sage Rd		EB	A	8	0.02	A	8	0.02
			WB	A	8	0.06	A	8	0.03
			NB	B	12	0.13	B	11	0.18
			SB	B	14	0.17	B	12	0.13
2	Kingsbury Rd and Purple Sage Rd		EB	A	7	0.01	A	8	0.02
			WB	-	-	-	A	8	0.02
			NB	A	10	0.04	B	11	0.04
			SB	A	9	0.04	B	10	0.03
3	Lansing Ln and SH 44		Intersection	C	21	0.72	C	21	0.67
			EBL	B	12	0.07	B	17	0.32
			EBTR	C	23	0.89	B	14	0.55
			WBL	B	16	0.05	B	11	0.06
			WBT	B	16	0.53	C	26	0.89
			WBR	B	12	0.04	B	12	0.15
			NBL	C	28	0.06	C	31	0.09
			NBTR	D	44	0.61	C	33	0.11
			SBL	C	26	0.40	C	29	0.21
			SBTR	C	27	0.29	C	32	0.27
			Intersection	A	10	-	B	12	-
			EB	B	13	0.68	A	8	0.49
			WB	A	6	0.37	C	16	0.77
			NB	A	8	0.09	A	6	0.07
			SB	A	7	0.25	A	10	0.25
4	Site Access and Purple Sage Rd		EB	A	8	0.01	A	8	0.02
			WB	-	-	-	-	-	-
			SB	A	10	0.05	A	10	0.03

APPENDIX A: Traffic Counts

Purple Sage Rd & Lansing Ln
Middleton Idaho
28 April, 2021

Time	Southbound Lansing Lane						Westbound Purple Sage Road						Northbound Lansing Lane						Eastbound Purple Sage Road						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*	
12:00 AM	0	0	0	0	0	*0*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**2**
12:15 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	1	1	0	*2*	0	0	0	0	0	*0*	**3**
12:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**2**
12:45 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**2**
Hourly Total	0	0	0	0	0	*0*	0	0	4	0	0	*4*	0	0	2	1	0	*3*	0	0	2	0	0	*2*	**9**
1:00 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**3**
1:15 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	1	1	0	*2*	**3**
1:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**1**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**1**
Hourly Total	0	0	0	0	0	*0*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	5	1	0	*6*	**8**
2:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 AM	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**2**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**2**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 AM	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**2**
3:30 AM	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**2**
3:45 AM	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**1**
Hourly Total	0	0	4	0	0	*4*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**5**
4:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	1	0	*1*	**1**
4:15 AM	0	0	0	0	0	*0*	0	1	0	0	0	*1*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**2**
4:30 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	1	0	*1*	**2**
4:45 AM	0	0	2	0	0	*2*	0	1	1	0	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**4**
Hourly Total	0	0	2	0	0	*2*	0	2	2	0	0	*4*	0	0	0	0	0	*0*	0	0	1	2	0	*3*	**9**
5:00 AM	0	0	1	1	0	*2*	0	0	2	0	0	*2*	0	0	0	1	0	*1*	0	0	0	0	0	*0*	**5**
5:15 AM	0	0	0	0	0	*0*	0	4	3	0	0	*7*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**7**
5:30 AM	0	1	3	0	0	*4*	0	1	5	0	0	*6*	0	0	1	0	0	*1*	0	0	1	0	0	*1*	**12**
5:45 AM	0	0	2	0	0	*2*	0	1	3	0	0	*4*	0	1	0	0	0	*1*	0	0	1	2	0	*3*	**10**
Hourly Total	0	1	6	1	0	*8*	0	6	13	0	0	*19*	0	1	1	1	0	*3*	0	0	2	2	0	*4*	**34**
6:00 AM	0	0	4	1	0	*5*	0	2	7	0	0	*9*	0	0	0	1	0	*1*	0	0	5	6	0	*11*	**26**
6:15 AM	0	1	7	2	0	*10*	0	5	5	0	0	*10*	0	0	0	1	0	*1*	0	1	4	0	0	*5*	**26**
6:30 AM	0	0	8	2	0	*10*	0	0	10	0	0	*10*	0	0	0	0	0	*0*	0	1	8	0	0	*9*	**29**
6:45 AM	0	1	8	0	0	*9*	0	3	4	0	0	*7*	0	1	1	2	0	*4*	0	1	8	4	0	*13*	**33**
Hourly Total	0	2	27	5	0	*34*	0	10	26	0	0	*36*	0	1	1	4	0	*6*	0	3	25	10	0	*38*	**114**
7:00 AM	0	1	12	1	0	*14*	0	3	11	1	0	*15*	0	0	1	1	0	*2*	0	1	7	3	0	*11*	**42**
7:15 AM	0	3	7	7	0	*17*	0	7	37	2	0	*46*	0	3	0	1	0	*4*	0	2	10	6	0	*18*	**85**
7:30 AM	0	7	8	12	0	*27*	0	13	28	1	0	*42*	0	3	3	3	0	*9*	0	0	16	1	0	*17*	**95**
7:45 AM	0	1	2	4	0	*7*	0	7	14	0	0	*21*	0	3	1	5	0	*9*	0	2	25	10	0	*37*	**74**
Hourly Total	0	12	29	24	0	*65*	0	30	90	4	0	*124*	0	9	5	10	0	*24*	0	5	58	20	0	*83*	**296**

Purple Sage Rd & Lansing Ln
Middleton Idaho
28 April, 2021

Time	Southbound Lansing Lane						Westbound Purple Sage Road						Northbound Lansing Lane						Eastbound Purple Sage Road						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*	
8:00 AM	0	0	5	1	0	*6*	0	5	3	1	0	*9*	0	3	4	13	0	*20*	0	9	15	5	0	*29*	**64**
8:15 AM	0	1	6	2	0	*9*	0	2	11	0	0	*13*	0	2	3	6	0	*11*	0	1	8	6	0	*15*	**48**
8:30 AM	0	1	8	3	0	*12*	0	3	13	1	0	*17*	0	1	4	5	0	*10*	0	1	18	1	0	*20*	**59**
8:45 AM	0	3	7	1	0	*11*	0	7	7	1	0	*15*	0	0	2	4	0	*6*	0	0	9	2	0	*11*	**43**
Hourly Total	0	5	26	7	0	*38*	0	17	34	3	0	*54*	0	6	13	28	0	*47*	0	11	50	14	0	*75*	**214**
9:00 AM	0	1	11	1	0	*13*	0	3	10	2	0	*15*	0	0	2	6	0	*8*	0	0	7	2	0	*9*	**45**
9:15 AM	0	2	5	1	0	*8*	0	0	12	0	0	*12*	0	6	2	2	0	*10*	0	0	10	3	0	*13*	**43**
9:30 AM	0	1	5	6	0	*12*	0	6	9	0	1	*15*	0	0	3	3	0	*6*	0	0	7	7	0	*14*	**47**
9:45 AM	0	0	4	2	0	*6*	0	4	7	2	0	*13*	0	0	5	5	1	*10*	0	0	8	1	0	*9*	**38**
Hourly Total	0	4	25	10	0	*39*	0	13	38	4	1	*55*	0	6	12	16	1	*34*	0	0	32	13	0	*45*	**173**
10:00 AM	0	1	5	2	0	*8*	0	6	7	0	0	*13*	0	2	3	6	0	*11*	0	2	4	2	0	*8*	**40**
10:15 AM	0	2	7	2	0	*11*	0	4	6	1	0	*11*	0	4	3	2	0	*9*	0	1	5	2	0	*8*	**39**
10:30 AM	0	1	5	2	0	*8*	0	1	7	1	0	*9*	0	2	2	4	0	*8*	0	0	8	1	0	*9*	**34**
10:45 AM	0	1	5	0	0	*6*	0	3	9	0	0	*12*	0	1	2	5	0	*8*	0	1	8	5	0	*14*	**40**
Hourly Total	0	5	22	6	0	*33*	0	14	29	2	0	*45*	0	9	10	17	0	*36*	0	4	25	10	0	*39*	**153**
11:00 AM	0	3	7	0	0	*10*	0	3	7	0	0	*10*	0	1	4	6	0	*11*	0	1	7	3	0	*11*	**42**
11:15 AM	0	4	6	1	0	*11*	0	4	11	0	2	*15*	0	2	6	4	0	*12*	0	2	12	5	0	*19*	**57**
11:30 AM	0	1	3	0	0	*4*	0	5	10	1	0	*16*	0	4	4	3	0	*11*	0	2	8	1	0	*11*	**42**
11:45 AM	0	1	4	1	0	*6*	0	4	14	2	0	*20*	0	5	6	5	0	*16*	0	0	4	0	0	*4*	**46**
Hourly Total	0	9	20	2	0	*31*	0	16	42	3	2	*61*	0	12	20	18	0	*50*	0	5	31	9	0	*45*	**187**
12:00 PM	0	0	8	2	0	*10*	0	7	14	2	0	*23*	0	2	5	5	0	*12*	0	1	8	1	0	*10*	**55**
12:15 PM	0	1	5	1	0	*7*	0	7	10	0	0	*17*	0	1	2	6	0	*9*	0	0	7	3	0	*10*	**43**
12:30 PM	0	0	4	1	0	*5*	0	4	11	0	0	*15*	0	2	2	3	0	*7*	0	2	7	2	0	*11*	**38**
12:45 PM	0	0	5	1	0	*6*	0	6	6	0	0	*12*	0	4	8	3	0	*15*	0	2	8	0	0	*10*	**43**
Hourly Total	0	1	22	5	0	*28*	0	24	41	2	0	*67*	0	9	17	17	0	*43*	0	5	30	6	0	*41*	**179**
1:00 PM	0	2	4	0	0	*6*	0	8	16	2	0	*26*	0	5	4	7	0	*16*	0	1	6	3	0	*10*	**58**
1:15 PM	0	0	4	0	0	*4*	0	1	8	0	2	*9*	0	2	4	6	0	*12*	0	0	12	2	0	*14*	**39**
1:30 PM	0	1	7	1	0	*9*	0	3	5	0	0	*8*	0	5	7	7	0	*19*	0	0	4	5	0	*9*	**45**
1:45 PM	0	1	6	1	0	*8*	0	3	14	2	0	*19*	0	2	5	6	0	*13*	0	4	11	0	0	*15*	**55**
Hourly Total	0	4	21	2	0	*27*	0	15	43	4	2	*62*	0	14	20	26	0	*60*	0	5	33	10	0	*48*	**197**
2:00 PM	0	0	3	0	0	*3*	0	4	9	0	0	*13*	0	5	5	3	0	*13*	1	3	4	0	0	*8*	**37**
2:15 PM	0	2	2	1	0	*5*	0	0	6	0	0	*6*	0	3	7	4	0	*14*	0	0	6	1	0	*7*	**32**
2:30 PM	0	1	5	1	0	*7*	0	2	7	3	0	*12*	0	0	2	0	0	*2*	0	1	8	0	0	*9*	**30**
2:45 PM	0	0	5	4	0	*9*	0	4	15	0	0	*19*	0	2	7	10	0	*19*	0	3	17	1	0	*21*	**68**
Hourly Total	0	3	15	6	0	*24*	0	10	37	3	0	*50*	0	10	21	17	0	*48*	1	7	35	2	0	*45*	**167**
3:00 PM	0	1	4	0	0	*5*	0	4	13	1	0	*18*	0	0	6	6	0	*12*	0	0	15	6	0	*21*	**56**
3:15 PM	0	3	6	2	0	*11*	0	5	14	1	0	*20*	0	3	6	11	0	*20*	0	1	8	0	0	*9*	**60**
3:30 PM	0	1	9	9	0	*19*	0	6	20	2	0	*28*	0	1	11	9	0	*21*	0	5	12	1	0	*18*	**86**
3:45 PM	0	1	3	2	0	*6*	0	5	28	1	0	*34*	0	6	14	7	0	*27*	0	2	11	2	0	*15*	**82**
Hourly Total	0	6	22	13	0	*41*	0	20	75	5	0	*100*	0	10	37	33	0	*80*	0	8	46	9	0	*63*	**284**

Purple Sage Rd & Lansing Ln
Middleton Idaho
28 April, 2021

	Southbound Lansing Lane						Westbound Purple Sage Road						Northbound Lansing Lane						Eastbound Purple Sage Road						
Time	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*	VEHICLE TOTAL
4:00 PM	0	4	7	2	0	*13*	0	5	15	2	0	*22*	0	4	6	7	0	*17*	0	6	30	5	0	*41*	**93**
4:15 PM	0	2	4	2	0	*8*	0	4	15	3	0	*22*	0	1	7	11	0	*19*	0	2	23	4	0	*29*	**78**
4:30 PM	0	0	8	4	0	*12*	0	3	22	1	0	*26*	0	2	8	3	0	*13*	0	3	13	2	0	*18*	**69**
4:45 PM	0	1	3	2	0	*6*	0	4	18	1	0	*23*	0	2	10	3	0	*15*	0	4	11	1	0	*16*	**60**
Hourly Total	0	7	22	10	0	*39*	0	16	70	7	0	*93*	0	9	31	24	0	*64*	0	15	77	12	0	*104*	**300**
5:00 PM	0	1	4	3	0	*8*	0	7	17	3	0	*27*	0	5	10	7	0	*22*	0	1	10	4	0	*15*	**72**
5:15 PM	0	2	9	3	0	*14*	0	8	21	1	0	*30*	0	3	8	6	0	*17*	0	2	10	4	0	*16*	**77**
5:30 PM	0	6	14	3	0	*23*	0	3	18	0	0	*21*	0	3	6	5	0	*14*	0	3	12	3	0	*18*	**76**
5:45 PM	0	1	6	5	0	*12*	0	4	18	0	0	*22*	0	4	8	12	0	*24*	0	9	8	1	0	*18*	**76**
Hourly Total	0	10	33	14	0	*57*	0	22	74	4	0	*100*	0	15	32	30	0	*77*	0	15	40	12	0	*67*	**301**
6:00 PM	0	0	2	1	0	*3*	0	2	18	1	0	*21*	0	5	6	4	0	*15*	0	1	5	4	0	*10*	**49**
6:15 PM	0	2	3	4	0	*9*	0	2	16	0	0	*18*	0	6	9	3	0	*18*	0	4	13	3	0	*20*	**65**
6:30 PM	0	1	4	5	0	*10*	0	6	15	1	0	*22*	0	5	9	7	0	*21*	0	0	13	3	0	*16*	**69**
6:45 PM	0	0	5	1	0	*6*	0	12	12	0	0	*24*	0	3	12	6	0	*21*	0	1	18	4	0	*23*	**74**
Hourly Total	0	3	14	11	0	*28*	0	22	61	2	0	*85*	0	19	36	20	0	*75*	0	6	49	14	0	*69*	**257**
7:00 PM	0	1	2	1	0	*4*	0	4	7	1	0	*12*	1	3	4	6	0	*14*	0	4	11	1	0	*16*	**46**
7:15 PM	0	0	6	2	0	*8*	0	3	6	0	0	*9*	0	3	11	3	0	*17*	0	3	10	1	0	*14*	**48**
7:30 PM	0	0	3	1	0	*4*	0	1	10	0	0	*11*	0	3	4	5	0	*12*	0	1	7	3	0	*11*	**38**
7:45 PM	0	1	0	1	0	*2*	0	2	4	1	0	*7*	0	2	10	3	0	*15*	0	2	10	0	0	*12*	**36**
Hourly Total	0	2	11	5	0	*18*	0	10	27	2	0	*39*	1	11	29	17	0	*58*	0	10	38	5	0	*53*	**168**
8:00 PM	0	1	0	2	0	*3*	0	6	11	0	0	*17*	0	3	3	1	0	*7*	0	2	7	0	0	*9*	**36**
8:15 PM	0	0	3	0	0	*3*	0	2	7	0	0	*9*	0	2	6	13	0	*21*	0	0	7	0	0	*7*	**40**
8:30 PM	0	0	2	1	0	*3*	0	4	12	1	0	*17*	0	2	4	6	0	*12*	0	3	7	0	0	*10*	**42**
8:45 PM	0	3	2	2	0	*7*	0	3	7	1	0	*11*	0	1	9	5	0	*15*	0	4	10	0	0	*14*	**47**
Hourly Total	0	4	7	5	0	*16*	0	15	37	2	0	*54*	0	8	22	25	0	*55*	0	9	31	0	0	*40*	**165**
9:00 PM	0	5	1	1	0	*7*	0	1	6	2	0	*9*	0	3	6	4	0	*13*	0	8	7	1	0	*16*	**45**
9:15 PM	0	0	1	1	0	*2*	0	1	8	0	0	*9*	0	1	4	2	0	*7*	0	0	6	1	0	*7*	**25**
9:30 PM	0	0	0	2	0	*2*	0	0	5	0	0	*5*	0	1	3	1	0	*5*	0	0	7	1	0	*8*	**20**
9:45 PM	0	0	4	4	0	*8*	0	0	2	1	0	*3*	0	0	3	1	0	*4*	0	1	2	1	0	*4*	**19**
Hourly Total	0	5	6	8	0	*19*	0	2	21	3	0	*26*	0	5	16	8	0	*29*	0	9	22	4	0	*35*	**109**
10:00 PM	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	2	1	0	*3*	0	2	3	0	0	*5*	**10**
10:15 PM	0	0	1	1	0	*2*	0	1	1	1	0	*3*	0	0	2	0	0	*2*	0	0	2	2	0	*4*	**11**
10:30 PM	0	0	1	0	0	*1*	0	0	1	0	0	*1*	0	1	2	1	0	*4*	0	0	0	0	0	*0*	**6**
10:45 PM	0	0	0	0	0	*0*	0	0	2	0	0	*2*	0	0	1	0	0	*1*	0	1	2	0	0	*3*	**6**
Hourly Total	0	0	4	1	0	*5*	0	1	4	1	0	*6*	0	1	7	2	0	*10*	0	3	7	2	0	*12*	**33**
11:00 PM	0	0	0	1	0	*1*	0	0	2	1	0	*3*	0	0	1	1	0	*2*	0	1	2	0	0	*3*	**9**
11:15 PM	0	0	0	1	0	*1*	0	0	4	0	0	*4*	0	0	1	0	0	*1*	0	0	2	0	0	*2*	**8**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	1	0	*2*	0	0	2	0	0	*2*	**4**
11:45 PM	0	0	0	1	0	*1*	0	0	1	0	0	*1*	0	0	0	3	0	*3*	0	0	0	0	0	*0*	**5**
Hourly Total	0	0	0	3	0	*3*	0	0	7	1	0	*8*	0	0	3	5	0	*8*	0	1	6	0	0	*7*	**26**
DAILY TOTAL	**0**	**83**	**338**	**138**	**0**	***559***	**0**	**265**	**777**	**53**	**5**	***1095***	**1**	**155**	**336**	**319**	**1**	***811***	**1**	**121**	**646**	**157**	**0**	***925***	**3390**
Cars	0	82	333	132	0	*547*	0	257	758	49	5	*1064*	1	152	327	308	1	*788*	1	119	617	154	0	*891*	**3290**
Heavy Vehicles	0	1	5	6	0	*12*	0	8	19	4	0	*31*	0	3	9	11	0	*23*	0	2	29	3	0	*34*	**100**
Heavy Vehicle %	0.00%	1.20%	1.48%	4.35%	0.00%	*2.15%*	0.00%	3.02%	2.45%	7.55%	0.00%	*2.83%*	0.00%	1.94%	2.68%	3.45%	0.00%	*2.84%*	0.00%	1.65%	4.49%	1.91%	0.00%	*3.68%*	**2.95%**

Purple Sage Rd & Lansing Ln
Middleton Idaho
28 April, 2021

AM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	*Southbound Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	*Westbound Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	*Northbound Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	*Eastbound Vehicle Approach Total*	VEHICLE TOTAL
7:15 AM	0	3	7	7	0	*17*	0	7	37	2	0	*46*	0	3	0	1	0	*4*	0	2	10	6	0	*18*	**85**
7:30 AM	0	7	8	12	0	*27*	0	13	28	1	0	*42*	0	3	3	3	0	*9*	0	0	16	1	0	*17*	**95**
7:45 AM	0	1	2	4	0	*7*	0	7	14	0	0	*21*	0	3	1	5	0	*9*	0	2	25	10	0	*37*	**74**
8:00 AM	0	0	5	1	0	*6*	0	5	3	1	0	*9*	0	3	4	13	0	*20*	0	9	15	5	0	*29*	**64**
Peak Hour Total	0	11	22	24	0	*57*	0	32	82	4	0	*118*	0	12	8	22	0	*42*	0	13	66	22	0	*101*	**318**
PHF	0.000	0.393	0.688	0.500	0.000	*0.528*	0.000	0.615	0.554	0.500	0.000	*0.641*	0.000	1.000	0.500	0.423	0.000	*0.525*	0.000	0.361	0.660	0.550	0.000	*0.682*	**0.837**
Heavy Vehicle %	0.00%	0.00%	0.00%	4.17%	0.00%	**1.8%**	0.00%	3.13%	0.00%	25.00%	0.00%	**1.7%**	0.00%	8.33%	0.00%	0.00%	0.00%	**2.4%**	0.00%	0.00%	4.55%	0.00%	0.00%	**3.0%**	**2.20%**

PM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	*Southbound Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	*Westbound Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	*Northbound Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	*Eastbound Vehicle Approach Total*	VEHICLE TOTAL
5:00 PM	0	1	4	3	0	*8*	0	7	17	3	0	*27*	0	5	10	7	0	*22*	0	1	10	4	0	*15*	**72**
5:15 PM	0	2	9	3	0	*14*	0	8	21	1	0	*30*	0	3	8	6	0	*17*	0	2	10	4	0	*16*	**77**
5:30 PM	0	6	14	3	0	*23*	0	3	18	0	0	*21*	0	3	6	5	0	*14*	0	3	12	3	0	*18*	**76**
5:45 PM	0	1	6	5	0	*12*	0	4	18	0	0	*22*	0	4	8	12	0	*24*	0	9	8	1	0	*18*	**76**
Peak Hour Total	0	10	33	14	0	*57*	0	22	74	4	0	*100*	0	15	32	30	0	*77*	0	15	40	12	0	*67*	**301**
PHF	0.000	0.417	0.589	0.700	0.000	*0.620*	0.000	0.688	0.881	0.333	0.000	*0.833*	0.000	0.750	0.800	0.625	0.000	*0.802*	0.000	0.417	0.833	0.750	0.000	*0.931*	**0.977**
Heavy Vehicle %	0.00%	0.00%	3.03%	7.14%	0.00%	**3.5%**	0.00%	0.00%	1.35%	0.00%	0.00%	**1.0%**	0.00%	0.00%	3.13%	0.00%	0.00%	**1.3%**	0.00%	0.00%	5.00%	0.00%	0.00%	**3.0%**	**1.99%**

Total Vehicles On Leg			1069		
Vehicles Entering Intersection	559		Vehicles Exiting Intersection	510	
Southbound					
Cars	132	333	82	0	0
Heavy	6	5	1	0	0
Total	**138**	**338**	**83**	**0**	**0**

Total Vehicles on Leg 1996	Vehicles Entering Intersection 925	Vehicles Exiting Intersection 1071	**Eastbound**	Cars	Heavy	**Total**
				0	0	**0**
				1	0	**1**
				119	2	**121**
				617	29	**646**
				154	3	**157**

Daily Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 1095	Vehicles Exiting Intersection 1048	Total Vehicles on Leg 2143
49	4	**53**				
758	19	**777**				
257	8	**265**				
0	0	**0**				
5	0	**5**				

Cars	1	1	152	327	308
Heavy	0	0	3	9	11
Total	**1**	**1**	**155**	**336**	**319**
Northbound					
Vehicles Entering Intersection	811		Vehicles Exiting Intersection	761	
Total Vehicles On Leg			1572		

Purple Sage Rd & Lansing Ln
Middleton Idaho
Wednesday, April 28, 2021
AM Peak Hour

Time	Lansing Lane Southbound						Purple Sage Road Westbound						Lansing Lane Northbound						Purple Sage Road Eastbound						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	3	7	7	0	*17*	0	7	37	2	0	*46*	0	3	0	1	0	*4*	0	2	10	6	0	*18*	**85**
7:30 AM	0	7	8	12	0	*27*	0	13	28	1	0	*42*	0	3	3	3	0	*9*	0	0	16	1	0	*17*	**95**
7:45 AM	0	1	2	4	0	*7*	0	7	14	0	0	*21*	0	3	1	5	0	*9*	0	2	25	10	0	*37*	**74**
8:00 AM	0	0	5	1	0	*6*	0	5	3	1	0	*9*	0	3	4	13	0	*20*	0	9	15	5	0	*29*	**64**
Peak Hour Total	0	11	22	24	0	*57*	0	32	82	4	0	*118*	0	12	8	22	0	*42*	0	13	66	22	0	*101*	**318**
PHF	0.000	0.393	0.688	0.500	0.000	*0.528*	0.000	0.615	0.554	0.500	0.000	*0.641*	0.000	1.000	0.500	0.423	0.000	*0.525*	0.000	0.361	0.660	0.550	0.000	*0.682*	**0.837**
Heavy Vehicle %	0.00%	0.00%	0.00%	4.17%	0.00%	**1.75%**	0.00%	3.13%	0.00%	25.00%	0.00%	**1.69%**	0.00%	8.33%	0.00%	0.00%	0.00%	**2.38%**	0.00%	0.00%	4.55%	0.00%	0.00%	**2.97%**	**2.2%**

Total Vehicles On Leg			82		
Vehicles Entering Intersection	57		Vehicles Exiting Intersection	25	
Southbound					
Cars	23	22	11	0	0
Heavy	1	0	0	0	0
Total	**24**	**22**	**11**	**0**	**0**

Total Vehicles on Leg 219	Vehicles Entering Intersection 101	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			0	0	**0**
	Vehicles Exiting Intersection 118		13	0	**13**
			63	3	**66**
			22	0	**22**

AM Peak Hour Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 118	Total Vehicles on Leg 217
3	1	**4**			
82	0	**82**			
31	1	**32**		Vehicles Exiting Intersection 99	
0	0	**0**			
0	0	**0**			

Cars	0	0	11	8	22
Heavy	0	0	1	0	0
Total	**0**	**0**	**12**	**8**	**22**
Northbound					
Vehicles Entering Intersection	42		Vehicles Exiting Intersection	76	
Total Vehicles On Leg			118		

Purple Sage Rd & Lansing Ln
Middleton Idaho
Wednesday, April 28, 2021
PM Peak Hour

Time	Lansing Lane Southbound						Purple Sage Road Westbound						Lansing Lane Northbound						Purple Sage Road Eastbound						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*	
5:00 PM	0	1	4	3	0	*8*	0	7	17	3	0	*27*	0	5	10	7	0	*22*	0	1	10	4	0	*15*	**72**
5:15 PM	0	2	9	3	0	*14*	0	8	21	1	0	*30*	0	3	8	6	0	*17*	0	2	10	4	0	*16*	**77**
5:30 PM	0	6	14	3	0	*23*	0	3	18	0	0	*21*	0	3	6	5	0	*14*	0	3	12	3	0	*18*	**76**
5:45 PM	0	1	6	5	0	*12*	0	4	18	0	0	*22*	0	4	8	12	0	*24*	0	9	8	1	0	*18*	**76**
Peak Hour Total	0	10	33	14	0	*57*	0	22	74	4	0	*100*	0	15	32	30	0	*77*	0	15	40	12	0	*67*	**301**
PHF	0.000	0.417	0.589	0.700	0.000	*0.620*	0.000	0.688	0.881	0.333	0.000	*0.833*	0.000	0.750	0.800	0.625	0.000	*0.802*	0.000	0.417	0.833	0.750	0.000	*0.931*	**0.977**
Heavy Vehicle %	0.00%	0.00%	3.03%	7.14%	0.00%	**3.51%**	0.00%	0.00%	1.35%	0.00%	0.00%	**1.00%**	0.00%	0.00%	3.13%	0.00%	0.00%	**1.30%**	0.00%	0.00%	5.00%	0.00%	0.00%	**2.99%**	**2.0%**

Total Vehicles On Leg			108		
Vehicles Entering Intersection	57		Vehicles Exiting Intersection	51	
Southbound					
Cars	13	32	10	0	0
Heavy	1	1	0	0	0
Total	**14**	**33**	**10**	**0**	**0**

Total Vehicles on Leg 170	Vehicles Entering Intersection 67	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			0	0	**0**
	Vehicles Exiting Intersection 103		15	0	**15**
			38	2	**40**
			12	0	**12**

PM Peak Hour Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 100	Total Vehicles on Leg 180
4	0	**4**			
73	1	**74**			
22	0	**22**		Vehicles Exiting Intersection 80	
0	0	**0**			
0	0	**0**			

Cars	0	0	15	31	30
Heavy	0	0	0	1	0
Total	**0**	**0**	**15**	**32**	**30**
Northbound					
Vehicles Entering Intersection	77		Vehicles Exiting Intersection	67	
Total Vehicles On Leg			144		

Kingsbury Rd & Purple Sage Rd
Middleton Idaho
Tuesday, August 10, 2021

Time	Southbound Kingsbury Rd						Westbound Purple Sage Rd						Northbound Kingsbury Rd						Eastbound Purple Sage 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	3	0	*5*	0	0	5	0	0	*5*	0	3	0	1	0	*4*	0	2	8	4	0	*14*	**28**
7:15 AM	0	1	0	2	0	*3*	0	0	5	0	1	*5*	0	6	0	0	0	*6*	0	0	10	2	1	*12*	**26**
7:30 AM	0	0	0	6	0	*6*	0	0	8	0	0	*8*	0	5	0	4	0	*9*	0	0	14	2	0	*16*	**39**
7:45 AM	0	0	0	5	0	*5*	0	0	12	0	0	*12*	0	3	0	3	0	*6*	0	3	5	2	0	*10*	**33**
Hourly Total	0	3	0	16	0	*19*	0	0	30	0	1	*30*	0	17	0	8	0	*25*	0	5	37	10	1	*52*	**126**
8:00 AM	0	1	0	6	0	*7*	0	0	9	0	0	*9*	0	4	0	1	0	*5*	0	3	12	0	0	*15*	**36**
8:15 AM	0	3	0	3	0	*6*	0	0	2	0	0	*2*	0	4	1	1	0	*6*	0	5	16	0	0	*21*	**35**
8:30 AM	0	2	0	2	0	*4*	0	1	0	1	0	*2*	0	3	0	2	0	*5*	0	2	3	2	0	*7*	**18**
8:45 AM	0	4	0	2	0	*6*	0	0	7	1	0	*8*	0	1	1	0	0	*2*	0	3	7	0	0	*10*	**26**
Hourly Total	0	10	0	13	0	*23*	0	1	18	2	0	*21*	0	12	2	4	0	*18*	0	13	38	2	0	*53*	**115**

Kingsbury Rd & Purple Sage Rd
Middleton Idaho
Tuesday, August 10, 2021

Time	Southbound Kingsbury Rd						Westbound Purple Sage Rd						Northbound Kingsbury Rd						Eastbound Purple Sage 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	2	0	2	0	*4*	0	1	13	2	0	*16*	0	4	0	4	0	*8*	0	5	11	1	0	*17*	**45**
4:15 PM	0	2	0	1	0	*3*	0	3	16	2	0	*21*	0	2	0	1	0	*3*	0	3	16	5	0	*24*	**51**
4:30 PM	0	1	0	1	0	*2*	0	4	23	2	0	*29*	0	0	0	2	0	*2*	0	5	10	4	0	*19*	**52**
4:45 PM	0	0	1	3	0	*4*	0	3	13	1	0	*17*	0	1	0	1	0	*2*	0	4	19	2	0	*25*	**48**
Hourly Total	0	5	1	7	0	*13*	0	11	65	7	0	*83*	0	7	0	8	0	*15*	0	17	56	12	0	*85*	**196**
5:00 PM	0	1	0	6	0	*7*	0	3	15	1	0	*19*	0	2	0	1	0	*3*	0	2	10	4	0	*16*	**45**
5:15 PM	0	1	0	0	0	*1*	0	3	18	2	0	*23*	0	2	0	1	0	*3*	0	3	12	3	0	*18*	**45**
5:30 PM	0	1	0	1	0	*2*	0	1	13	5	0	*19*	0	3	0	1	0	*4*	0	3	7	4	0	*14*	**39**
5:45 PM	0	0	0	1	0	*1*	0	4	28	4	0	*36*	0	4	0	2	0	*6*	0	4	17	4	0	*25*	**68**
Hourly Total	0	3	0	8	0	*11*	0	11	74	12	0	*97*	0	11	0	5	0	*16*	0	12	46	15	0	*73*	**197**
DAILY TOTAL	**0**	**21**	**1**	**44**	**0**	***66***	**0**	**23**	**187**	**21**	**1**	***231***	**0**	**47**	**2**	**25**	**0**	***74***	**0**	**47**	**177**	**39**	**1**	***263***	**634**
Cars	0	21	1	42	0	*64*	0	23	187	21	1	*231*	0	47	2	25	0	*74*	0	45	174	39	1	*258*	**627**
Heavy Vehicles	0	0	0	2	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	2	3	0	0	*5*	**7**
Heavy Vehicle %	0.00%	0.00%	0.00%	4.55%	0.00%	*3.03%*	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%	4.26%	1.69%	0.00%	0.00%	*1.90%*	**1.10%**

Kingsbury Rd & Purple Sage Rd
Middleton Idaho
Tuesday, August 10, 2021

AM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						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	0	0	6	0	*6*	0	0	8	0	0	*8*	0	5	0	4	0	*9*	0	0	14	2	0	*16*	**39**
7:45 AM	0	0	0	5	0	*5*	0	0	12	0	0	*12*	0	3	0	3	0	*6*	0	3	5	2	0	*10*	**33**
8:00 AM	0	1	0	6	0	*7*	0	0	9	0	0	*9*	0	4	0	1	0	*5*	0	3	12	0	0	*15*	**36**
8:15 AM	0	3	0	3	0	*6*	0	0	2	0	0	*2*	0	4	1	1	0	*6*	0	5	16	0	0	*21*	**35**
Peak Hour Total	0	4	0	20	0	*24*	0	0	31	0	0	*31*	0	16	1	9	0	*26*	0	11	47	4	0	*62*	**143**
PHF	0.000	0.333	0.000	0.833	0.000	*0.857*	0.000	0.000	0.646	0.000	0.000	*0.646*	0.000	0.800	0.250	0.563	0.000	*0.722*	0.000	0.550	0.734	0.500	0.000	*0.738*	**0.917**
Heavy Vehicle %	0.00%	0.00%	0.00%	10.00%	0.00%	**8.3%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	9.09%	0.00%	0.00%	0.00%	**1.6%**	**2.10%**

PM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						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*	
5:00 PM	0	1	0	6	0	*7*	0	3	15	1	0	*19*	0	2	0	1	0	*3*	0	2	10	4	0	*16*	**45**
5:15 PM	0	1	0	0	0	*1*	0	3	18	2	0	*23*	0	2	0	1	0	*3*	0	3	12	3	0	*18*	**45**
5:30 PM	0	1	0	1	0	*2*	0	1	13	5	0	*19*	0	3	0	1	0	*4*	0	3	7	4	0	*14*	**39**
5:45 PM	0	0	0	1	0	*1*	0	4	28	4	0	*36*	0	4	0	2	0	*6*	0	4	17	4	0	*25*	**68**
Peak Hour Total	0	3	0	8	0	*11*	0	11	74	12	0	*97*	0	11	0	5	0	*16*	0	12	46	15	0	*73*	**197**
PHF	0.000	0.750	0.000	0.333	0.000	*0.393*	0.000	0.688	0.661	0.600	0.000	*0.674*	0.000	0.688	0.000	0.625	0.000	*0.667*	0.000	0.750	0.676	0.938	0.000	*0.730*	**0.724**
Heavy Vehicle %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	0.00%	2.17%	0.00%	0.00%	**1.4%**	**0.51%**

Kingsbury Rd & Purple Sage Rd
Middleton Idaho
Tuesday, August 10, 2021
AM Peak Hour

Time	Kingsbury Rd Southbound						Purple Sage Rd Westbound						Kingsbury Rd Northbound						Purple Sage Rd Eastbound						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	0	0	6	0	*6*	0	0	8	0	0	*8*	0	5	0	4	0	*9*	0	0	14	2	0	*16*	**39**
7:45 AM	0	0	0	5	0	*5*	0	0	12	0	0	*12*	0	3	0	3	0	*6*	0	3	5	2	0	*10*	**33**
8:00 AM	0	1	0	6	0	*7*	0	0	9	0	0	*9*	0	4	0	1	0	*5*	0	3	12	0	0	*15*	**36**
8:15 AM	0	3	0	3	0	*6*	0	0	2	0	0	*2*	0	4	1	1	0	*6*	0	5	16	0	0	*21*	**35**
Peak Hour Total	0	4	0	20	0	*24*	0	0	31	0	0	*31*	0	16	1	9	0	*26*	0	11	47	4	0	*62*	**143**
PHF	0.000	0.333	0.000	0.833	0.000	*0.857*	0.000	0.000	0.646	0.000	0.000	*0.646*	0.000	0.800	0.250	0.563	0.000	*0.722*	0.000	0.550	0.734	0.500	0.000	*0.738*	**0.917**
Heavy Vehicle %	0.00%	0.00%	0.00%	10.00%	0.00%	**8.33%**	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%	9.09%	0.00%	0.00%	0.00%	**1.61%**	**2.1%**

Total Vehicles On Leg			36		
Vehicles Entering Intersection	24		Vehicles Exiting Intersection	12	
Southbound					
Cars	18	0	4	0	0
Heavy	2	0	0	0	0
Total	**20**	**0**	**4**	**0**	**0**

Total Vehicles on Leg 129	Vehicles Entering Intersection 62	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			0	0	**0**
	Vehicles Exiting Intersection 67		10	1	**11**
			47	0	**47**
			4	0	**4**

AM Peak Hour Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 31	Total Vehicles on Leg 91
0	0	**0**			
31	0	**31**			
0	0	**0**		Vehicles Exiting Intersection 60	
0	0	**0**			
0	0	**0**			

Cars	0	0	16	1	9
Heavy	0	0	0	0	0
Total	**0**	**0**	**16**	**1**	**9**
Northbound					
Vehicles Entering Intersection	26		Vehicles Exiting Intersection	4	
Total Vehicles On Leg			30		

Kingsbury Rd & Purple Sage Rd
Middleton Idaho
Tuesday, August 10, 2021
PM Peak Hour

	Kingsbury Rd Southbound						Purple Sage Rd Westbound						Kingsbury Rd Northbound						Purple Sage Rd Eastbound						
Time	**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***	**VEHICLE TOTAL**
5:00 PM	0	1	0	6	0	*7*	0	3	15	1	0	*19*	0	2	0	1	0	*3*	0	2	10	4	0	*16*	**45**
5:15 PM	0	1	0	0	0	*1*	0	3	18	2	0	*23*	0	2	0	1	0	*3*	0	3	12	3	0	*18*	**45**
5:30 PM	0	1	0	1	0	*2*	0	1	13	5	0	*19*	0	3	0	1	0	*4*	0	3	7	4	0	*14*	**39**
5:45 PM	0	0	0	1	0	*1*	0	4	28	4	0	*36*	0	4	0	2	0	*6*	0	4	17	4	0	*25*	**68**
Peak Hour Total	0	3	0	8	0	*11*	0	11	74	12	0	*97*	0	11	0	5	0	*16*	0	12	46	15	0	*73*	**197**
PHF	0.000	0.750	0.000	0.333	0.000	*0.393*	0.000	0.688	0.661	0.600	0.000	*0.674*	0.000	0.688	0.000	0.625	0.000	*0.667*	0.000	0.750	0.676	0.938	0.000	*0.730*	**0.724**
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%	0.00%	0.00%	0.00%	**0.00%**	0.00%	0.00%	2.17%	0.00%	0.00%	**1.37%**	**0.5%**

Total Vehicles On Leg			35		
Vehicles Entering Intersection	11		Vehicles Exiting Intersection	24	
Southbound					
Cars	8	0	3	0	0
Heavy	0	0	0	0	0
Total	**8**	**0**	**3**	**0**	**0**

Total Vehicles on Leg 166	Vehicles Entering Intersection 73	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			0	0	**0**
	Vehicles Exiting Intersection 93		12	0	**12**
			45	1	**46**
			15	0	**15**

PM Peak Hour Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 97	Total Vehicles on Leg 151
12	0	**12**			
74	0	**74**			
11	0	**11**		Vehicles Exiting Intersection 54	
0	0	**0**			
0	0	**0**			

Cars	0	0	11	0	5
Heavy	0	0	0	0	0
Total	**0**	**0**	**11**	**0**	**5**
Northbound					
Vehicles Entering Intersection	16		Vehicles Exiting Intersection	26	
Total Vehicles On Leg			42		

SH 44 & Lansing Ln
Middleton Idaho
28 April, 2021

	Southbound Lansing Lane						Westbound SH 44						Northbound Lansing Lane						Eastbound SH 44						
Time	**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***	**VEHICLE TOTAL**
12:00 AM	0	0	0	1	0	*1*	0	0	7	0	0	*7*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**10**
12:15 AM	0	0	0	0	0	*0*	0	0	5	1	0	*6*	0	0	0	0	0	*0*	0	1	1	0	0	*2*	**8**
12:30 AM	0	0	0	0	0	*0*	0	0	3	0	0	*3*	0	0	0	0	0	*0*	0	1	6	0	0	*7*	**10**
12:45 AM	0	0	0	0	0	*0*	0	1	5	1	0	*7*	0	0	0	0	0	*0*	0	0	4	0	0	*4*	**11**
Hourly Total	0	0	0	1	0	*1*	0	1	20	2	0	*23*	0	0	0	0	0	*0*	0	2	13	0	0	*15*	**39**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**2**
1:15 AM	0	1	0	0	0	*1*	0	1	3	0	0	*4*	0	0	0	0	0	*0*	1	0	1	0	0	*2*	**7**
1:30 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	3	1	0	*4*	**5**
1:45 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**3**
Hourly Total	0	1	0	0	0	*1*	0	1	5	0	0	*6*	0	0	0	0	0	*0*	1	0	8	1	0	*10*	**17**
2:00 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	1	0	0	0	*1*	**2**
2:15 AM	0	0	0	0	0	*0*	0	1	2	0	0	*3*	0	0	0	0	0	*0*	0	0	4	0	0	*4*	**7**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	1	0	0	*1*	**2**
2:45 AM	0	0	0	1	0	*1*	0	0	1	0	0	*1*	0	0	0	1	0	*1*	0	0	3	0	0	*3*	**6**
Hourly Total	0	0	0	1	0	*1*	0	1	4	0	0	*5*	0	0	0	2	0	*2*	0	1	8	0	0	*9*	**17**
3:00 AM	0	1	0	0	0	*1*	0	0	3	0	0	*3*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**6**
3:15 AM	0	1	0	1	0	*2*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	**5**
3:30 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	1	0	*1*	0	0	2	0	0	*2*	**4**
3:45 AM	0	2	0	0	0	*2*	0	0	4	0	0	*4*	0	0	0	0	0	*0*	0	0	4	0	0	*4*	**10**
Hourly Total	0	4	0	1	0	*5*	0	0	9	0	0	*9*	0	0	0	1	0	*1*	0	0	10	0	0	*10*	**25**
4:00 AM	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	1	0	0	0	*1*	0	1	5	0	0	*6*	**8**
4:15 AM	0	3	0	1	0	*4*	0	0	3	0	0	*3*	0	1	0	0	0	*1*	0	0	6	0	0	*6*	**14**
4:30 AM	0	1	0	0	0	*1*	0	0	3	0	0	*3*	0	0	0	0	0	*0*	0	0	6	0	0	*6*	**10**
4:45 AM	0	5	0	1	0	*6*	0	0	6	1	0	*7*	0	0	0	0	0	*0*	0	0	9	0	0	*9*	**22**
Hourly Total	0	9	0	2	0	*11*	0	0	13	1	0	*14*	0	2	0	0	0	*2*	0	1	26	0	0	*27*	**54**
5:00 AM	0	4	0	0	0	*4*	0	0	10	0	0	*10*	0	0	0	0	0	*0*	0	1	17	0	0	*18*	**32**
5:15 AM	0	3	0	1	0	*4*	0	0	10	0	0	*10*	0	0	0	1	0	*1*	0	0	24	0	0	*24*	**39**
5:30 AM	0	7	0	4	0	*11*	0	0	9	0	0	*9*	0	1	0	2	0	*3*	0	1	31	0	0	*32*	**55**
5:45 AM	0	4	0	1	0	*5*	0	0	17	0	0	*17*	0	1	0	1	0	*2*	0	0	46	0	0	*46*	**70**
Hourly Total	0	18	0	6	0	*24*	0	0	46	0	0	*46*	0	2	0	4	0	*6*	0	2	118	0	0	*120*	**196**
6:00 AM	0	17	0	0	0	*17*	0	0	19	2	0	*21*	0	0	0	3	0	*3*	0	2	55	1	0	*58*	**99**
6:15 AM	0	12	0	6	0	*18*	0	0	38	3	0	*41*	0	1	0	5	0	*6*	0	3	78	0	0	*81*	**146**
6:30 AM	0	10	0	9	0	*19*	0	0	32	1	0	*33*	0	0	0	0	0	*0*	0	2	120	0	0	*122*	**174**
6:45 AM	0	20	0	7	0	*27*	0	0	35	2	0	*37*	0	3	0	3	0	*6*	0	7	136	1	0	*144*	**214**
Hourly Total	0	59	0	22	0	*81*	0	0	124	8	0	*132*	0	4	0	11	0	*15*	0	14	389	2	0	*405*	**633**
7:00 AM	0	25	0	3	0	*28*	0	3	60	1	0	*64*	0	2	1	5	0	*8*	0	3	180	1	0	*184*	**284**
7:15 AM	0	23	0	19	0	*42*	0	1	111	2	0	*114*	0	2	0	10	0	*12*	0	3	144	0	0	*147*	**315**
7:30 AM	0	22	0	18	0	*40*	0	1	104	5	0	*110*	0	3	0	4	0	*7*	0	5	142	1	0	*148*	**305**
7:45 AM	0	14	1	19	0	*34*	0	2	82	9	0	*93*	0	5	0	1	0	*6*	0	8	153	4	0	*165*	**298**
Hourly Total	0	84	1	59	0	*144*	0	7	357	17	0	*381*	0	12	1	20	0	*33*	0	19	619	6	0	*644*	**1202**

SH 44 & Lansing Ln
Middleton Idaho
28 April, 2021

	Southbound Lansing Lane						Westbound SH 44						Northbound Lansing Lane						Eastbound SH 44						
Time	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*	VEHICLE TOTAL
8:00 AM	0	13	0	15	0	*28*	0	1	53	8	0	*62*	0	4	0	0	0	*4*	0	17	145	3	0	*165*	**259**
8:15 AM	0	13	0	9	0	*22*	0	0	64	5	0	*69*	0	3	0	5	0	*8*	0	12	120	1	0	*133*	**232**
8:30 AM	0	16	0	10	0	*26*	0	1	64	9	0	*74*	0	5	1	3	0	*9*	0	5	113	1	0	*119*	**228**
8:45 AM	0	9	1	12	0	*22*	0	2	70	6	0	*78*	0	3	2	4	0	*9*	0	10	93	0	0	*103*	**212**
Hourly Total	0	51	1	46	0	*98*	0	4	251	28	0	*283*	0	15	3	12	0	*30*	0	44	471	5	0	*520*	**931**
9:00 AM	0	19	3	11	0	*33*	0	0	78	6	0	*84*	0	0	1	3	0	*4*	0	6	83	1	0	*90*	**211**
9:15 AM	0	12	1	7	0	*20*	0	3	79	5	0	*87*	0	2	2	2	0	*6*	0	6	76	1	0	*83*	**196**
9:30 AM	0	11	1	19	0	*31*	0	6	75	12	0	*93*	0	5	0	4	0	*9*	0	6	96	4	0	*106*	**239**
9:45 AM	0	11	1	3	0	*15*	0	2	80	7	0	*89*	0	2	2	1	0	*5*	0	7	73	9	0	*89*	**198**
Hourly Total	0	53	6	40	0	*99*	0	11	312	30	0	*353*	0	9	5	10	0	*24*	0	25	328	15	0	*368*	**844**
10:00 AM	0	13	0	9	0	*22*	0	2	70	7	0	*79*	0	6	1	4	0	*11*	0	7	82	3	0	*92*	**204**
10:15 AM	0	9	0	10	0	*19*	0	3	73	8	0	*84*	0	5	0	4	0	*9*	0	6	75	0	0	*81*	**193**
10:30 AM	0	17	0	6	0	*23*	0	2	65	7	0	*74*	0	3	2	3	0	*8*	0	6	53	4	0	*63*	**168**
10:45 AM	0	17	0	5	0	*22*	0	1	64	11	0	*76*	0	7	1	0	1	*8*	0	4	79	9	0	*92*	**198**
Hourly Total	0	56	0	30	0	*86*	0	8	272	33	0	*313*	0	21	4	11	1	*36*	0	23	289	16	0	*328*	**763**
11:00 AM	0	15	0	8	0	*23*	0	2	89	10	0	*101*	0	6	0	3	0	*9*	0	16	99	3	0	*118*	**251**
11:15 AM	0	13	0	9	0	*22*	0	2	74	13	0	*89*	0	3	0	4	0	*7*	0	11	88	1	0	*100*	**218**
11:30 AM	0	6	2	9	0	*17*	0	3	88	7	0	*98*	0	2	2	3	0	*7*	0	6	87	0	0	*93*	**215**
11:45 AM	0	10	1	9	0	*20*	0	2	94	13	0	*109*	0	1	0	2	0	*3*	0	6	81	3	0	*90*	**222**
Hourly Total	0	44	3	35	0	*82*	0	9	345	43	0	*397*	0	12	2	12	0	*26*	0	39	355	7	0	*401*	**906**
12:00 PM	0	16	0	8	0	*24*	0	2	96	10	0	*108*	0	1	2	4	0	*7*	0	15	84	6	0	*105*	**244**
12:15 PM	0	20	0	12	0	*32*	0	7	70	6	0	*83*	0	3	0	1	0	*4*	0	11	74	4	0	*89*	**208**
12:30 PM	0	10	0	13	0	*23*	0	3	97	5	0	*105*	0	3	0	1	0	*4*	0	7	91	2	0	*100*	**232**
12:45 PM	0	7	0	7	1	*14*	0	2	85	13	0	*100*	0	4	1	3	0	*8*	0	7	77	4	0	*88*	**210**
Hourly Total	0	53	0	40	1	*93*	0	14	348	34	0	*396*	0	11	3	9	0	*23*	0	40	326	16	0	*382*	**894**
1:00 PM	0	18	0	9	0	*27*	0	4	80	9	0	*93*	0	1	1	1	0	*3*	0	16	92	4	0	*112*	**235**
1:15 PM	0	11	0	2	0	*13*	0	5	89	10	0	*104*	0	2	2	3	0	*7*	0	8	90	6	0	*104*	**228**
1:30 PM	0	14	0	7	0	*21*	0	6	108	14	0	*128*	0	4	0	4	0	*8*	0	13	79	5	0	*97*	**254**
1:45 PM	0	12	0	7	0	*19*	0	6	101	15	0	*122*	0	4	0	2	0	*6*	0	10	77	2	0	*89*	**236**
Hourly Total	0	55	0	25	0	*80*	0	21	378	48	0	*447*	0	11	3	10	0	*24*	0	47	338	17	0	*402*	**953**
2:00 PM	0	7	0	12	0	*19*	0	3	99	9	0	*111*	0	3	0	4	0	*7*	0	10	77	5	0	*92*	**229**
2:15 PM	0	6	0	3	0	*9*	0	2	106	17	0	*125*	0	7	1	4	0	*12*	0	16	106	5	0	*127*	**273**
2:30 PM	0	9	0	10	0	*19*	0	4	86	8	0	*98*	0	2	0	1	0	*3*	0	5	81	5	0	*91*	**211**
2:45 PM	0	10	0	8	0	*18*	0	3	95	21	0	*119*	0	4	0	1	0	*5*	0	19	74	2	0	*95*	**237**
Hourly Total	0	32	0	33	0	*65*	0	12	386	55	0	*453*	0	16	1	10	0	*27*	0	50	338	17	0	*405*	**950**
3:00 PM	0	5	0	10	0	*15*	0	5	101	9	0	*115*	0	10	2	5	0	*17*	0	11	72	3	0	*86*	**233**
3:15 PM	0	9	0	6	0	*15*	0	2	132	17	0	*151*	0	5	1	1	0	*7*	0	15	79	2	0	*96*	**269**
3:30 PM	0	12	0	16	0	*28*	0	2	174	15	0	*191*	0	4	0	0	0	*4*	0	15	96	8	0	*119*	**342**
3:45 PM	0	10	0	9	0	*19*	0	3	127	11	0	*141*	0	5	0	3	0	*8*	0	19	106	4	0	*129*	**297**
Hourly Total	0	36	0	41	0	*77*	0	12	534	52	0	*598*	0	24	3	9	0	*36*	0	60	353	17	0	*430*	**1141**

SH 44 & Lansing Ln
Middleton Idaho
28 April, 2021

	Southbound Lansing Lane						Westbound SH 44						Northbound Lansing Lane						Eastbound SH 44						
Time	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*	VEHICLE TOTAL
4:00 PM	0	13	0	9	0	*22*	0	3	120	15	0	*138*	0	4	1	2	0	*7*	0	19	135	5	0	*159*	**326**
4:15 PM	0	9	3	9	0	*21*	0	6	130	17	0	*153*	0	1	0	3	0	*4*	0	15	135	6	0	*156*	**334**
4:30 PM	0	14	2	11	0	*27*	0	5	123	14	0	*142*	0	4	0	4	0	*8*	0	16	99	7	0	*122*	**299**
4:45 PM	0	8	0	6	0	*14*	0	7	151	13	0	*171*	0	3	1	1	0	*5*	0	14	89	2	0	*105*	**295**
Hourly Total	0	44	5	35	0	*84*	0	21	524	59	0	*604*	0	12	2	10	0	*24*	0	64	458	20	0	*542*	**1254**
5:00 PM	0	11	1	9	0	*21*	0	3	165	25	0	*193*	0	4	0	3	0	*7*	0	13	124	2	0	*139*	**360**
5:15 PM	0	13	1	9	0	*23*	0	6	173	15	0	*194*	0	6	0	5	0	*11*	0	16	104	3	0	*123*	**351**
5:30 PM	0	11	1	15	0	*27*	0	7	167	17	0	*191*	0	5	0	2	0	*7*	0	9	90	2	0	*101*	**326**
5:45 PM	0	14	1	9	0	*24*	0	4	161	25	0	*190*	0	5	0	4	0	*9*	0	18	98	8	0	*124*	**347**
Hourly Total	0	49	4	42	0	*95*	0	20	666	82	0	*768*	0	20	0	14	0	*34*	0	56	416	15	0	*487*	**1384**
6:00 PM	0	7	0	8	0	*15*	0	2	161	13	0	*176*	0	4	2	1	0	*7*	0	12	62	4	0	*78*	**276**
6:15 PM	0	5	1	4	0	*10*	0	4	142	17	0	*163*	0	4	0	1	0	*5*	0	10	78	5	0	*93*	**271**
6:30 PM	0	6	2	8	0	*16*	0	3	124	21	0	*148*	0	7	1	5	0	*13*	0	14	67	6	0	*87*	**264**
6:45 PM	0	2	9	12	0	*23*	0	5	79	17	0	*101*	0	9	1	3	0	*13*	0	11	66	17	0	*94*	**231**
Hourly Total	0	20	12	32	0	*64*	0	14	506	68	0	*588*	0	24	4	10	0	*38*	0	47	273	32	0	*352*	**1042**
7:00 PM	0	2	12	4	0	*18*	0	6	71	5	0	*82*	0	11	9	3	0	*23*	0	10	62	17	0	*89*	**212**
7:15 PM	0	4	2	7	0	*13*	0	2	65	16	0	*83*	0	1	2	1	0	*4*	0	10	61	4	0	*75*	**175**
7:30 PM	0	1	2	2	0	*5*	0	2	68	9	0	*79*	0	1	2	2	0	*5*	0	7	36	3	0	*46*	**135**
7:45 PM	0	0	1	3	0	*4*	0	1	65	15	0	*81*	0	3	0	0	0	*3*	0	5	41	2	0	*48*	**136**
Hourly Total	0	7	17	16	0	*40*	0	11	269	45	0	*325*	0	16	13	6	0	*35*	0	32	200	26	0	*258*	**658**
8:00 PM	0	2	2	3	0	*7*	0	1	51	3	0	*55*	0	1	2	1	0	*4*	0	11	52	2	0	*65*	**131**
8:15 PM	0	7	4	5	0	*16*	0	1	53	10	0	*64*	0	3	8	5	0	*16*	0	12	43	8	0	*63*	**159**
8:30 PM	0	3	3	4	0	*10*	0	1	66	9	0	*76*	0	8	5	7	0	*20*	0	4	44	2	0	*50*	**156**
8:45 PM	0	2	3	4	0	*9*	0	0	56	9	0	*65*	0	12	2	2	0	*16*	0	11	37	3	0	*51*	**141**
Hourly Total	0	14	12	16	0	*42*	0	3	226	31	0	*260*	0	24	17	15	0	*56*	0	38	176	15	0	*229*	**587**
9:00 PM	0	1	0	4	0	*5*	0	1	49	6	0	*56*	0	3	0	0	0	*3*	0	11	41	0	0	*52*	**116**
9:15 PM	0	4	0	4	0	*8*	0	2	45	12	0	*59*	0	0	1	0	0	*1*	0	11	33	4	0	*48*	**116**
9:30 PM	0	1	0	1	0	*2*	0	0	37	5	0	*42*	0	7	0	1	0	*8*	0	3	30	2	0	*35*	**87**
9:45 PM	0	1	0	4	0	*5*	0	2	31	3	0	*36*	0	3	0	1	0	*4*	0	6	17	2	0	*25*	**70**
Hourly Total	0	7	0	13	0	*20*	0	5	162	26	0	*193*	0	13	1	2	0	*16*	0	31	121	8	0	*160*	**389**
10:00 PM	0	0	0	0	0	*0*	0	0	30	2	0	*32*	0	0	0	0	0	*0*	0	3	18	1	0	*22*	**54**
10:15 PM	0	3	0	2	0	*5*	0	2	16	1	0	*19*	0	0	0	2	0	*2*	0	3	10	0	0	*13*	**39**
10:30 PM	0	1	0	2	0	*3*	0	1	12	4	0	*17*	0	0	0	0	0	*0*	0	1	4	0	0	*5*	**25**
10:45 PM	0	0	0	0	0	*0*	0	0	12	3	0	*15*	0	0	0	0	0	*0*	0	0	9	0	0	*9*	**24**
Hourly Total	0	4	0	4	0	*8*	0	3	70	10	0	*83*	0	0	0	2	0	*2*	0	7	41	1	0	*49*	**142**
11:00 PM	0	0	0	1	0	*1*	0	0	15	2	0	*17*	0	0	1	1	0	*2*	0	2	2	1	0	*5*	**25**
11:15 PM	0	0	0	1	0	*1*	0	1	10	2	0	*13*	0	0	0	1	0	*1*	0	2	5	1	0	*8*	**23**
11:30 PM	0	0	0	0	0	*0*	0	0	7	1	0	*8*	0	0	0	0	0	*0*	0	2	8	0	0	*10*	**18**
11:45 PM	0	0	0	0	0	*0*	0	0	3	0	0	*3*	0	0	0	1	0	*1*	0	5	11	0	0	*16*	**20**
Hourly Total	0	0	0	2	0	*2*	0	1	35	5	0	*41*	0	0	1	3	0	*4*	0	11	26	2	0	*39*	**86**
DAILY TOTAL	**0**	**700**	**61**	**542**	**1**	***1303***	**0**	**179**	**5862**	**677**	**0**	***6718***	**0**	**248**	**63**	**183**	**1**	***494***	**1**	**653**	**5700**	**238**	**0**	***6592***	**15107**
Cars	0	684	59	522	1	*1265*	0	166	5418	659	0	*6243*	0	229	60	176	1	*465*	1	630	5272	221	0	*6124*	**14097**
Heavy Vehicles	0	16	2	20	0	*38*	0	13	444	18	0	*475*	0	19	3	7	0	*29*	0	23	428	17	0	*468*	**1010**
Heavy Vehicle %	0.00%	2.29%	3.28%	3.69%	0.00%	*2.92%*	0.00%	7.26%	7.57%	2.66%	0.00%	*7.07%*	0.00%	7.66%	4.76%	3.83%	0.00%	*5.87%*	0.00%	3.52%	7.51%	7.14%	0.00%	*7.10%*	**6.69%**

SH 44 & Lansing Ln
Middleton Idaho
28 April, 2021

AM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						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	25	0	3	0	*28*	0	3	60	1	0	*64*	0	2	1	5	0	*8*	0	3	180	1	0	*184*	**284**
7:15 AM	0	23	0	19	0	*42*	0	1	111	2	0	*114*	0	2	0	10	0	*12*	0	3	144	0	0	*147*	**315**
7:30 AM	0	22	0	18	0	*40*	0	1	104	5	0	*110*	0	3	0	4	0	*7*	0	5	142	1	0	*148*	**305**
7:45 AM	0	14	1	19	0	*34*	0	2	82	9	0	*93*	0	5	0	1	0	*6*	0	8	153	4	0	*165*	**298**
Peak Hour Total	0	84	1	59	0	*144*	0	7	357	17	0	*381*	0	12	1	20	0	*33*	0	19	619	6	0	*644*	**1202**
PHF	0.000	0.840	0.250	0.776	0.000	*0.857*	0.000	0.583	0.804	0.472	0.000	*0.836*	0.000	0.600	0.250	0.500	0.000	*0.688*	0.000	0.594	0.860	0.375	0.000	*0.875*	**0.954**
Heavy Vehicle %	0.00%	0.00%	0.00%	3.39%	0.00%	**1.4%**	0.00%	14.29%	4.20%	0.00%	0.00%	**4.2%**	0.00%	8.33%	100.00%	5.00%	0.00%	**9.1%**	0.00%	10.53%	4.20%	0.00%	0.00%	**4.3%**	**4.08%**

PM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						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*	
5:00 PM	0	11	1	9	0	*21*	0	3	165	25	0	*193*	0	4	0	3	0	*7*	0	13	124	2	0	*139*	**360**
5:15 PM	0	13	1	9	0	*23*	0	6	173	15	0	*194*	0	6	0	5	0	*11*	0	16	104	3	0	*123*	**351**
5:30 PM	0	11	1	15	0	*27*	0	7	167	17	0	*191*	0	5	0	2	0	*7*	0	9	90	2	0	*101*	**326**
5:45 PM	0	14	1	9	0	*24*	0	4	161	25	0	*190*	0	5	0	4	0	*9*	0	18	98	8	0	*124*	**347**
Peak Hour Total	0	49	4	42	0	*95*	0	20	666	82	0	*768*	0	20	0	14	0	*34*	0	56	416	15	0	*487*	**1384**
PHF	0.000	0.875	1.000	0.700	0.000	*0.880*	0.000	0.714	0.962	0.820	0.000	*0.990*	0.000	0.833	0.000	0.700	0.000	*0.773*	0.000	0.778	0.839	0.469	0.000	*0.876*	**0.961**
Heavy Vehicle %	0.00%	2.04%	0.00%	0.00%	0.00%	**1.1%**	0.00%	5.00%	1.95%	1.22%	0.00%	**2.0%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.0%**	0.00%	1.79%	1.20%	0.00%	0.00%	**1.2%**	**1.59%**

Total Vehicles On Leg			2696		
Vehicles Entering Intersection	1303		Vehicles Exiting Intersection	1393	
Southbound					
Cars	522	59	684	0	1
Heavy	20	2	16	0	0
Total	**542**	**61**	**700**	**0**	**1**

Total Vehicles on Leg 13245	Vehicles Entering Intersection 6592	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			1	0	**1**
	Vehicles Exiting Intersection 6653		630	23	**653**
			5272	428	**5700**
			221	17	**238**

Daily Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 6718	Total Vehicles on Leg 13301
659	18	**677**			
5418	444	**5862**			
166	13	**179**		Vehicles Exiting Intersection 6583	
0	0	**0**			
0	0	**0**			

Cars	1	0	229	60	176
Heavy	0	0	19	3	7
Total	**1**	**0**	**248**	**63**	**183**
Northbound					
Vehicles Entering Intersection	494		Vehicles Exiting Intersection	478	
Total Vehicles On Leg			972		

SH 44 & Lansing Ln
Middleton Idaho
Wednesday, April 28, 2021
AM Peak Hour

Time	Lansing Lane Southbound						SH 44 Westbound						Lansing Lane Northbound						SH 44 Eastbound						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	25	0	3	0	*28*	0	3	60	1	0	*64*	0	2	1	5	0	*8*	0	3	180	1	0	*184*	**284**
7:15 AM	0	23	0	19	0	*42*	0	1	111	2	0	*114*	0	2	0	10	0	*12*	0	3	144	0	0	*147*	**315**
7:30 AM	0	22	0	18	0	*40*	0	1	104	5	0	*110*	0	3	0	4	0	*7*	0	5	142	1	0	*148*	**305**
7:45 AM	0	14	1	19	0	*34*	0	2	82	9	0	*93*	0	5	0	1	0	*6*	0	8	153	4	0	*165*	**298**
Peak Hour Total	0	84	1	59	0	*144*	0	7	357	17	0	*381*	0	12	1	20	0	*33*	0	19	619	6	0	*644*	**1202**
PHF	0.000	0.840	0.250	0.776	0.000	*0.857*	0.000	0.583	0.804	0.472	0.000	*0.836*	0.000	0.600	0.250	0.500	0.000	*0.688*	0.000	0.594	0.860	0.375	0.000	*0.875*	**0.954**
Heavy Vehicle %	0.00%	0.00%	0.00%	3.39%	0.00%	**1.39%**	0.00%	14.29%	4.20%	0.00%	0.00%	**4.20%**	0.00%	8.33%	100.00%	5.00%	0.00%	**9.09%**	0.00%	10.53%	4.20%	0.00%	0.00%	**4.35%**	**4.1%**

Total Vehicles On Leg			181		
Vehicles Entering Intersection	144		Vehicles Exiting Intersection	37	
Southbound					
Cars	57	1	84	0	0
Heavy	2	0	0	0	0
Total	**59**	**1**	**84**	**0**	**0**

Total Vehicles on Leg 1072	Vehicles Entering Intersection 644	**Eastbound**	Cars	Heavy	**Total**
			0	0	**0**
			0	0	**0**
	Vehicles Exiting Intersection 428		17	2	**19**
			593	26	**619**
			6	0	**6**

AM Peak Hour Volumes

Cars	Heavy	**Total**			
17	0	**17**	**Westbound**	Vehicles Entering Intersection 381	Total Vehicles on Leg 1104
342	15	**357**			
6	1	**7**		Vehicles Exiting Intersection 723	
0	0	**0**			
0	0	**0**			

Cars	0	0	11	0	19
Heavy	0	0	1	1	1
Total	**0**	**0**	**12**	**1**	**20**
Northbound					
Vehicles Entering Intersection	33		Vehicles Exiting Intersection	14	
Total Vehicles On Leg			47		

SH 44 & Lansing Ln
Middleton Idaho
Wednesday, April 28, 2021
PM Peak Hour

Time	Lansing Lane Southbound U Turns	Lansing Lane Southbound Left Turns	Lansing Lane Southbound Straight Through	Lansing Lane Southbound Right Turns	Lansing Lane Southbound Crosswalk Crossings	Lansing Lane Southbound *Vehicle Approach Total*	SH 44 Westbound U Turns	SH 44 Westbound Left Turns	SH 44 Westbound Straight Through	SH 44 Westbound Right Turns	SH 44 Westbound Crosswalk Crossings	SH 44 Westbound *Vehicle Approach Total*	Lansing Lane Northbound U Turns	Lansing Lane Northbound Left Turns	Lansing Lane Northbound Straight Through	Lansing Lane Northbound Right Turns	Lansing Lane Northbound Crosswalk Crossings	Lansing Lane Northbound *Vehicle Approach Total*	SH 44 Eastbound U Turns	SH 44 Eastbound Left Turns	SH 44 Eastbound Straight Through	SH 44 Eastbound Right Turns	SH 44 Eastbound Crosswalk Crossings	SH 44 Eastbound *Vehicle Approach Total*	VEHICLE TOTAL
5:00 PM	0	11	1	9	0	*21*	0	3	165	25	0	*193*	0	4	0	3	0	*7*	0	13	124	2	0	*139*	**360**
5:15 PM	0	13	1	9	0	*23*	0	6	173	15	0	*194*	0	6	0	5	0	*11*	0	16	104	3	0	*123*	**351**
5:30 PM	0	11	1	15	0	*27*	0	7	167	17	0	*191*	0	5	0	2	0	*7*	0	9	90	2	0	*101*	**326**
5:45 PM	0	14	1	9	0	*24*	0	4	161	25	0	*190*	0	5	0	4	0	*9*	0	18	98	8	0	*124*	**347**
Peak Hour Total	0	49	4	42	0	*95*	0	20	666	82	0	*768*	0	20	0	14	0	*34*	0	56	416	15	0	*487*	**1384**
PHF	0.000	0.875	1.000	0.700	0.000	*0.880*	0.000	0.714	0.962	0.820	0.000	*0.990*	0.000	0.833	0.000	0.700	0.000	*0.773*	0.000	0.778	0.839	0.469	0.000	*0.876*	**0.961**
Heavy Vehicle %	0.00%	2.04%	0.00%	0.00%	0.00%	**1.05%**	0.00%	5.00%	1.95%	1.22%	0.00%	**1.95%**	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**	0.00%	1.79%	1.20%	0.00%	0.00%	**1.23%**	**1.6%**

Total Vehicles On Leg			233		
Vehicles Entering Intersection	95		Vehicles Exiting Intersection	138	
Southbound					
Cars	42	4	48	0	0
Heavy	0	0	1	0	0
Total	**42**	**4**	**49**	**0**	**0**

Total Vehicles on Leg 1215	Vehicles Entering Intersection 487	Vehicles Exiting Intersection 728	**Eastbound**	Cars	Heavy	**Total**
				0	0	**0**
				0	0	**0**
				55	1	**56**
				411	5	**416**
				15	0	**15**

PM Peak Hour Volumes

Cars	Heavy	**Total**	**Westbound**	Vehicles Entering Intersection 768	Vehicles Exiting Intersection 479	Total Vehicles on Leg 1247
81	1	**82**				
653	13	**666**				
19	1	**20**				
0	0	**0**				
0	0	**0**				

Cars	0	0	20	0	14
Heavy	0	0	0	0	0
Total	**0**	**0**	**20**	**0**	**14**
Northbound					
Vehicles Entering Intersection	34		Vehicles Exiting Intersection	39	
Total Vehicles On Leg			73		

APPENDIX B: 2021 Existing Synchro Reports

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	66	22	32	82	4	12	8	22	11	22	24
Future Vol, veh/h	13	66	22	32	82	4	12	8	22	11	22	24
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	5	2	3	2	25	8	2	2	2	2	4
Mvmt Flow	15	79	26	38	98	5	14	10	26	13	26	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	103	0	0	105	0	0	326	301	92	317	312	101
Stage 1	-	-	-	-	-	-	122	122	-	177	177	-
Stage 2	-	-	-	-	-	-	204	179	-	140	135	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.18	6.52	6.22	7.12	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.018	3.318	3.518	4.018	3.336
Pot Cap-1 Maneuver	1489	-	-	1480	-	-	616	612	965	636	603	949
Stage 1	-	-	-	-	-	-	868	795	-	825	753	-
Stage 2	-	-	-	-	-	-	784	751	-	863	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1480	-	-	561	589	965	593	580	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	561	589	-	593	580	-
Stage 1	-	-	-	-	-	-	858	786	-	816	733	-
Stage 2	-	-	-	-	-	-	713	731	-	820	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2	10.3	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	727	1489	-	-	1480	-	-	697
HCM Lane V/C Ratio	0.069	0.01	-	-	0.026	-	-	0.097
HCM Control Delay (s)	10.3	7.4	0	-	7.5	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	47	4	0	31	0	16	1	9	4	0	20
Future Vol, veh/h	11	47	4	0	31	0	16	1	9	4	0	20
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	2	2	2	2	2	2	2	2	2	2	10
Mvmt Flow	12	51	4	0	34	0	17	1	10	4	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	55	0	0	122	111	53	117	113	34
Stage 1	-	-	-	-	-	-	77	77	-	34	34	-
Stage 2	-	-	-	-	-	-	45	34	-	83	79	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.3
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	2.29	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.39
Pot Cap-1 Maneuver	1527	-	-	1550	-	-	853	779	1014	859	777	1017
Stage 1	-	-	-	-	-	-	932	831	-	982	867	-
Stage 2	-	-	-	-	-	-	969	867	-	925	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1527	-	-	1550	-	-	830	773	1014	844	771	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	830	773	-	844	771	-
Stage 1	-	-	-	-	-	-	925	824	-	974	867	-
Stage 2	-	-	-	-	-	-	948	867	-	908	822	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	9.2	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	883	1527	-	-	1550	-	-	983
HCM Lane V/C Ratio	0.032	0.008	-	-	-	-	-	0.027
HCM Control Delay (s)	9.2	7.4	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	619	6	7	357	17	12	1	20	84	1	59
Future Vol, veh/h	19	619	6	7	357	17	12	1	20	84	1	59
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	-	-	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	11	4	2	14	4	2	8	100	5	2	2	3
Mvmt Flow	20	652	6	7	376	18	13	1	21	88	1	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	394	0	0	658	0	0	1126	1103	655	1096	1088	376
Stage 1	-	-	-	-	-	-	695	695	-	390	390	-
Stage 2	-	-	-	-	-	-	431	408	-	706	698	-
Critical Hdwy	4.21	-	-	4.24	-	-	7.18	7.5	6.25	7.12	6.52	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.326	-	-	3.572	4.9	3.345	3.518	4.018	3.327
Pot Cap-1 Maneuver	1117	-	-	875	-	-	177	143	461	191	216	668
Stage 1	-	-	-	-	-	-	423	324	-	634	608	-
Stage 2	-	-	-	-	-	-	591	458	-	427	442	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1117	-	-	875	-	-	157	139	461	178	210	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	139	-	178	210	-
Stage 1	-	-	-	-	-	-	415	318	-	623	603	-
Stage 2	-	-	-	-	-	-	531	454	-	399	434	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	21	37.9
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	1117	-	-	875	-	-	255
HCM Lane V/C Ratio	0.134	0.018	-	-	0.008	-	-	0.594
HCM Control Delay (s)	21	8.3	-	-	9.1	-	-	37.9
HCM Lane LOS	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	3.5

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	40	12	22	74	4	15	32	30	10	33	14
Future Vol, veh/h	15	40	12	22	74	4	15	32	30	10	33	14
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	5	2	2	2	2	2	3	2	2	3	7
Mvmt Flow	15	41	12	22	76	4	15	33	31	10	34	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	53	0	0	223	201	47	231	205	78
Stage 1	-	-	-	-	-	-	77	77	-	122	122	-
Stage 2	-	-	-	-	-	-	146	124	-	109	83	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.53	6.22	7.12	6.53	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.027	3.318	3.518	4.027	3.363
Pot Cap-1 Maneuver	1518	-	-	1553	-	-	733	693	1022	724	690	969
Stage 1	-	-	-	-	-	-	932	829	-	882	793	-
Stage 2	-	-	-	-	-	-	857	791	-	896	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1553	-	-	682	676	1022	664	673	969
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	676	-	664	673	-
Stage 1	-	-	-	-	-	-	923	821	-	873	781	-
Stage 2	-	-	-	-	-	-	796	779	-	826	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	1.6	10.1	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	780	1518	-	-	1553	-	-	726
HCM Lane V/C Ratio	0.101	0.01	-	-	0.014	-	-	0.08
HCM Control Delay (s)	10.1	7.4	0	-	7.4	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	46	15	11	74	12	11	0	5	3	0	8
Future Vol, veh/h	12	46	15	11	74	12	11	0	5	3	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	64	21	15	103	17	15	0	7	4	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	85	0	0	256	259	75	254	261	112
Stage 1	-	-	-	-	-	-	109	109	-	142	142	-
Stage 2	-	-	-	-	-	-	147	150	-	112	119	-
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	1468	-	-	1512	-	-	697	645	986	699	644	941
Stage 1	-	-	-	-	-	-	896	805	-	861	779	-
Stage 2	-	-	-	-	-	-	856	773	-	893	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1512	-	-	677	630	986	682	629	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	677	630	-	682	629	-
Stage 1	-	-	-	-	-	-	885	795	-	851	770	-
Stage 2	-	-	-	-	-	-	837	764	-	876	787	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.8	9.9	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	750	1468	-	-	1512	-	-	853
HCM Lane V/C Ratio	0.03	0.011	-	-	0.01	-	-	0.018
HCM Control Delay (s)	9.9	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	416	15	20	666	82	20	0	14	49	4	42
Future Vol, veh/h	56	416	15	20	666	82	20	0	14	49	4	42
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	-	-	100	-	200	-	-	-	-	-	-
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	2	2	5	2	2	2	2	2	2	2	2
Mvmt Flow	58	433	16	21	694	85	21	0	15	51	4	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	779	0	0	449	0	0	1360	1378	441	1301	1301	694
Stage 1	-	-	-	-	-	-	557	557	-	736	736	-
Stage 2	-	-	-	-	-	-	803	821	-	565	565	-
Critical Hdwy	4.12	-	-	4.15	-	-	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	-	-	2.245	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	838	-	-	1096	-	-	126	145	616	138	161	443
Stage 1	-	-	-	-	-	-	515	512	-	411	425	-
Stage 2	-	-	-	-	-	-	377	389	-	510	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	838	-	-	1096	-	-	104	132	616	126	147	443
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	132	-	126	147	-
Stage 1	-	-	-	-	-	-	479	477	-	383	417	-
Stage 2	-	-	-	-	-	-	330	382	-	463	473	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.2	34.2	44.4
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	158	838	-	-	1096	-	-	186
HCM Lane V/C Ratio	0.224	0.07	-	-	0.019	-	-	0.532
HCM Control Delay (s)	34.2	9.6	-	-	8.3	-	-	44.4
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	2.7

APPENDIX C: 2023 Background Synchro Reports

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	75	25	37	94	5	13	9	23	12	23	26
Future Vol, veh/h	15	75	25	37	94	5	13	9	23	12	23	26
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, %	2	5	2	3	2	25	8	2	2	2	2	4
Mvmt Flow	17	83	28	41	104	6	14	10	26	13	26	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	111	0	0	348	323	97	338	334	107
Stage 1	-	-	-	-	-	-	131	131	-	189	189	-
Stage 2	-	-	-	-	-	-	217	192	-	149	145	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.18	6.52	6.22	7.12	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.018	3.318	3.518	4.018	3.336
Pot Cap-1 Maneuver	1480	-	-	1473	-	-	595	595	959	616	586	942
Stage 1	-	-	-	-	-	-	858	788	-	813	744	-
Stage 2	-	-	-	-	-	-	772	742	-	854	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1473	-	-	539	570	959	573	561	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	539	570	-	573	561	-
Stage 1	-	-	-	-	-	-	848	779	-	803	722	-
Stage 2	-	-	-	-	-	-	700	720	-	811	768	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2	10.5	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	704	1480	-	-	1473	-	-	681
HCM Lane V/C Ratio	0.071	0.011	-	-	0.028	-	-	0.1
HCM Control Delay (s)	10.5	7.5	0	-	7.5	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	54	5	0	35	0	17	1	10	4	0	21
Future Vol, veh/h	13	54	5	0	35	0	17	1	10	4	0	21
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	2	2	2	2	2	2	2	2	2	2	10
Mvmt Flow	14	59	5	0	38	0	18	1	11	4	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	38	0	0	64	0	0	140	128	62	134	130	38
Stage 1	-	-	-	-	-	-	90	90	-	38	38	-
Stage 2	-	-	-	-	-	-	50	38	-	96	92	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.3
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	2.29	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.39
Pot Cap-1 Maneuver	1522	-	-	1538	-	-	830	763	1003	838	761	1012
Stage 1	-	-	-	-	-	-	917	820	-	977	863	-
Stage 2	-	-	-	-	-	-	963	863	-	911	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1538	-	-	805	755	1003	822	753	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	755	-	822	753	-
Stage 1	-	-	-	-	-	-	908	812	-	967	863	-
Stage 2	-	-	-	-	-	-	941	863	-	891	811	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	9.3	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	864	1522	-	-	1538	-	-	976
HCM Lane V/C Ratio	0.035	0.009	-	-	-	-	-	0.028
HCM Control Delay (s)	9.3	7.4	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	644	6	7	371	18	13	1	21	90	1	63
Future Vol, veh/h	20	644	6	7	371	18	13	1	21	90	1	63
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	-	-	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	11	4	2	14	4	2	8	100	5	2	2	3
Mvmt Flow	21	678	6	7	391	19	14	1	22	95	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	684	0	0	1171	1147	681	1140	1131	391
Stage 1	-	-	-	-	-	-	723	723	-	405	405	-
Stage 2	-	-	-	-	-	-	448	424	-	735	726	-
Critical Hdwy	4.21	-	-	4.24	-	-	7.18	7.5	6.25	7.12	6.52	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.326	-	-	3.572	4.9	3.345	3.518	4.018	3.327
Pot Cap-1 Maneuver	1102	-	-	856	-	-	165	133	445	178	203	655
Stage 1	-	-	-	-	-	-	408	313	-	622	598	-
Stage 2	-	-	-	-	-	-	579	450	-	411	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1102	-	-	856	-	-	145	129	445	165	198	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	129	-	165	198	-
Stage 1	-	-	-	-	-	-	400	307	-	610	593	-
Stage 2	-	-	-	-	-	-	515	446	-	382	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	22.5	47.3
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	1102	-	-	856	-	-	238
HCM Lane V/C Ratio	0.152	0.019	-	-	0.009	-	-	0.681
HCM Control Delay (s)	22.5	8.3	-	-	9.2	-	-	47.3
HCM Lane LOS	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	4.4

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	46	14	25	85	5	16	34	32	11	35	15
Future Vol, veh/h	17	46	14	25	85	5	16	34	32	11	35	15
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	5	2	2	2	2	2	3	2	2	3	7
Mvmt Flow	17	47	14	26	87	5	16	35	33	11	36	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	92	0	0	61	0	0	255	232	54	264	237	90
Stage 1	-	-	-	-	-	-	88	88	-	142	142	-
Stage 2	-	-	-	-	-	-	167	144	-	122	95	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.53	6.22	7.12	6.53	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.027	3.318	3.518	4.027	3.363
Pot Cap-1 Maneuver	1503	-	-	1542	-	-	698	666	1013	689	662	954
Stage 1	-	-	-	-	-	-	920	820	-	861	777	-
Stage 2	-	-	-	-	-	-	835	776	-	882	814	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1503	-	-	1542	-	-	643	646	1013	625	642	954
Mov Cap-2 Maneuver	-	-	-	-	-	-	643	646	-	625	642	-
Stage 1	-	-	-	-	-	-	909	810	-	851	763	-
Stage 2	-	-	-	-	-	-	769	762	-	807	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.6	10.4	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	752	1503	-	-	1542	-	-	694
HCM Lane V/C Ratio	0.111	0.012	-	-	0.017	-	-	0.09
HCM Control Delay (s)	10.4	7.4	0	-	7.4	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	53	17	13	85	14	12	0	5	3	0	9
Future Vol, veh/h	14	53	17	13	85	14	12	0	5	3	0	9
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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	71	23	17	113	19	16	0	7	4	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	94	0	0	284	287	83	281	289	123
Stage 1	-	-	-	-	-	-	121	121	-	157	157	-
Stage 2	-	-	-	-	-	-	163	166	-	124	132	-
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	1453	-	-	1500	-	-	668	623	976	671	621	928
Stage 1	-	-	-	-	-	-	883	796	-	845	768	-
Stage 2	-	-	-	-	-	-	839	761	-	880	787	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1453	-	-	1500	-	-	647	607	976	654	605	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	647	607	-	654	605	-
Stage 1	-	-	-	-	-	-	871	785	-	833	759	-
Stage 2	-	-	-	-	-	-	818	752	-	862	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.9	10.2	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	718	1453	-	-	1500	-	-	840
HCM Lane V/C Ratio	0.032	0.013	-	-	0.012	-	-	0.019
HCM Control Delay (s)	10.2	7.5	0	-	7.4	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	433	16	21	693	85	21	0	15	52	4	45
Future Vol, veh/h	58	433	16	21	693	85	21	0	15	52	4	45
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	-	-	100	-	200	-	-	-	-	-	-
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	2	2	5	2	2	2	2	2	2	2	2
Mvmt Flow	60	451	17	22	722	89	22	0	16	54	4	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	811	0	0	468	0	0	1416	1435	460	1354	1354	722
Stage 1	-	-	-	-	-	-	580	580	-	766	766	-
Stage 2	-	-	-	-	-	-	836	855	-	588	588	-
Critical Hdwy	4.12	-	-	4.15	-	-	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	-	-	2.245	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	815	-	-	1078	-	-	115	134	601	127	150	427
Stage 1	-	-	-	-	-	-	500	500	-	395	412	-
Stage 2	-	-	-	-	-	-	362	375	-	495	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	815	-	-	1078	-	-	93	122	601	115	136	427
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	122	-	115	136	-
Stage 1	-	-	-	-	-	-	463	463	-	366	404	-
Stage 2	-	-	-	-	-	-	312	368	-	447	459	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.2	38.6	54.3
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	144	815	-	-	1078	-	-	172
HCM Lane V/C Ratio	0.26	0.074	-	-	0.02	-	-	0.612
HCM Control Delay (s)	38.6	9.8	-	-	8.4	-	-	54.3
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-	-	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	644	6	7	371	18	13	1	21	90	1	63
Future Volume (veh/h)	20	644	6	7	371	18	13	1	21	90	1	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1737	1841	1841	1693	1841	1870	1781	418	418	1870	1870	1870
Adj Flow Rate, veh/h	21	678	6	7	391	19	14	1	22	95	1	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	4	4	14	4	2	8	100	100	2	2	2
Cap, veh/h	385	788	7	190	768	661	303	2	44	319	4	275
Arrive On Green	0.02	0.43	0.43	0.01	0.42	0.42	0.02	0.13	0.13	0.06	0.18	0.18
Sat Flow, veh/h	1654	1822	16	1612	1841	1585	1697	16	341	1781	24	1565
Grp Volume(v), veh/h	21	0	684	7	391	19	14	0	23	95	0	67
Grp Sat Flow(s),veh/h/ln	1654	0	1838	1612	1841	1585	1697	0	357	1781	0	1589
Q Serve(g_s), s	0.5	0.0	22.1	0.2	10.3	0.5	0.5	0.0	3.9	3.0	0.0	2.4
Cycle Q Clear(g_c), s	0.5	0.0	22.1	0.2	10.3	0.5	0.5	0.0	3.9	3.0	0.0	2.4
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.96	1.00		0.99
Lane Grp Cap(c), veh/h	385	0	795	190	768	661	303	0	46	319	0	279
V/C Ratio(X)	0.05	0.00	0.86	0.04	0.51	0.03	0.05	0.00	0.50	0.30	0.00	0.24
Avail Cap(c_a), veh/h	572	0	1512	396	1515	1304	507	0	130	451	0	581
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	11.2	0.0	16.8	14.3	14.1	11.3	24.1	0.0	26.6	22.7	0.0	23.3
Incr Delay (d2), s/veh	0.1	0.0	2.9	0.1	0.5	0.0	0.1	0.0	8.1	0.5	0.0	0.4
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	0.2	0.0	12.0	0.1	6.1	0.3	0.3	0.0	0.8	2.1	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	0.0	19.7	14.3	14.7	11.3	24.2	0.0	34.6	23.2	0.0	23.7
LnGrp LOS	B	A	B	B	B	B	C	A	C	C	A	C
Approach Vol, veh/h		705			417			37			162	
Approach Delay, s/veh		19.5			14.5			30.7			23.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	33.4	7.1	17.5	6.6	34.4	10.2	14.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	2.5	12.3	2.5	4.4	2.2	24.1	5.0	5.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.2	0.0	4.3	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	644	6	7	371	18	13	1	21	90	1	63
Future Volume (vph)	20	644	6	7	371	18	13	1	21	90	1	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
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	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1825		1583	1827	1583	1671	1491		1770	1572	
Flt Permitted	0.45	1.00		0.22	1.00	1.00	1.00	1.00		0.41	1.00	
Satd. Flow (perm)	766	1825		365	1827	1583	1759	1491		760	1572	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	678	6	7	391	19	14	1	22	95	1	66
RTOR Reduction (vph)	0	0	0	0	0	10	0	21	0	0	56	0
Lane Group Flow (vph)	21	684	0	7	391	9	14	2	0	95	11	0
Heavy Vehicles (%)	11%	4%	2%	14%	4%	2%	8%	100%	5%	2%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	36.4	34.6		34.4	33.6	33.6	4.7	3.8		17.8	10.9	
Effective Green, g (s)	36.4	34.6		34.4	33.6	33.6	4.7	3.8		17.8	10.9	
Actuated g/C Ratio	0.51	0.49		0.48	0.47	0.47	0.07	0.05		0.25	0.15	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	413	886		190	862	747	115	79		303	240	
v/s Ratio Prot	c0.00	c0.37		0.00	0.21		0.00	0.00		c0.04	0.01	
v/s Ratio Perm	0.02			0.02		0.01	0.01			c0.04		
v/c Ratio	0.05	0.77		0.04	0.45	0.01	0.12	0.03		0.31	0.05	
Uniform Delay, d1	8.8	15.1		11.2	12.6	10.0	31.3	31.9		21.4	25.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.2		0.1	0.4	0.0	0.5	0.1		0.6	0.1	
Delay (s)	8.9	19.3		11.3	13.0	10.0	31.8	32.1		22.0	25.8	
Level of Service	A	B		B	B	A	C	C		C	C	
Approach Delay (s)		19.0			12.8			32.0			23.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	705	417	37	162
Demand Flow Rate, veh/h	734	434	40	166
Vehicles Circulating, veh/h	106	40	825	430
Vehicles Exiting, veh/h	490	825	15	44
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.3	5.8	7.3	6.0
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	734	434	40	166
Cap Entry Lane, veh/h	1238	1325	595	890
Entry HV Adj Factor	0.960	0.962	0.925	0.976
Flow Entry, veh/h	705	417	37	162
Cap Entry, veh/h	1189	1274	550	868
V/C Ratio	0.593	0.328	0.067	0.187
Control Delay, s/veh	10.3	5.8	7.3	6.0
LOS	B	A	A	A
95th %tile Queue, veh	4	1	0	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	433	16	21	693	85	21	0	15	52	4	45
Future Volume (veh/h)	58	433	16	21	693	85	21	0	15	52	4	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	451	17	22	722	89	22	0	16	54	4	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	5	2	2	2	2	2	2	2	2
Cap, veh/h	246	835	31	400	829	702	296	0	181	366	20	233
Arrive On Green	0.05	0.47	0.47	0.02	0.44	0.44	0.02	0.00	0.11	0.07	0.16	0.16
Sat Flow, veh/h	1781	1791	67	1739	1870	1585	1781	0	1585	1781	126	1478
Grp Volume(v), veh/h	60	0	468	22	722	89	22	0	16	54	0	51
Grp Sat Flow(s),veh/h/ln	1781	0	1858	1739	1870	1585	1781	0	1585	1781	0	1604
Q Serve(g_s), s	1.3	0.0	13.2	0.5	25.7	2.4	0.8	0.0	0.7	1.9	0.0	2.0
Cycle Q Clear(g_c), s	1.3	0.0	13.2	0.5	25.7	2.4	0.8	0.0	0.7	1.9	0.0	2.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	246	0	867	400	829	702	296	0	181	366	0	253
V/C Ratio(X)	0.24	0.00	0.54	0.06	0.87	0.13	0.07	0.00	0.09	0.15	0.00	0.20
Avail Cap(c_a), veh/h	379	0	1366	570	1375	1166	471	0	518	463	0	524
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	14.8	0.0	14.0	11.5	18.6	12.1	27.6	0.0	29.1	25.3	0.0	26.9
Incr Delay (d2), s/veh	0.5	0.0	0.5	0.1	3.5	0.1	0.1	0.0	0.2	0.2	0.0	0.4
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	0.8	0.0	7.9	0.3	14.5	1.4	0.6	0.0	0.5	1.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	0.0	14.5	11.5	22.1	12.1	27.7	0.0	29.3	25.5	0.0	27.3
LnGrp LOS	B	A	B	B	C	B	C	A	C	C	A	C
Approach Vol, veh/h		528			833			38			105	
Approach Delay, s/veh		14.6			20.7			28.4			26.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	38.5	7.8	17.6	7.8	40.3	11.0	14.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	3.3	27.7	2.8	4.0	2.5	15.2	3.9	2.7
Green Ext Time (p_c), s	0.0	4.8	0.0	0.2	0.0	2.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	433	16	21	693	85	21	0	15	52	4	45
Future Volume (vph)	58	433	16	21	693	85	21	0	15	52	4	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1853		1719	1863	1583	1770	1583		1770	1605	
Flt Permitted	0.15	1.00		0.43	1.00	1.00	1.00	1.00		0.45	1.00	
Satd. Flow (perm)	274	1853		780	1863	1583	1863	1583		837	1605	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	60	451	17	22	722	89	22	0	16	54	4	47
RTOR Reduction (vph)	0	1	0	0	0	47	0	15	0	0	40	0
Lane Group Flow (vph)	60	467	0	22	722	42	22	1	0	54	11	0
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	46.5	41.5		40.3	38.4	38.4	5.1	2.9		20.0	11.8	
Effective Green, g (s)	46.5	41.5		40.3	38.4	38.4	5.1	2.9		20.0	11.8	
Actuated g/C Ratio	0.57	0.51		0.50	0.47	0.47	0.06	0.04		0.25	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	248	944		408	878	746	114	56		332	232	
v/s Ratio Prot	c0.01	c0.25		0.00	c0.39		0.01	0.00		c0.02	0.01	
v/s Ratio Perm	0.12			0.03		0.03	0.01			c0.02		
v/c Ratio	0.24	0.49		0.05	0.82	0.06	0.19	0.01		0.16	0.05	
Uniform Delay, d1	12.2	13.1		10.7	18.6	11.7	36.2	37.9		24.0	30.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.4		0.1	6.3	0.0	0.8	0.1		0.2	0.1	
Delay (s)	12.7	13.5		10.7	24.8	11.7	37.0	37.9		24.3	30.0	
Level of Service	B	B		B	C	B	D	D		C	C	
Approach Delay (s)		13.4			23.0			37.4			27.1	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	528	833	38	105
Demand Flow Rate, veh/h	538	850	38	107
Vehicles Circulating, veh/h	82	83	576	781
Vehicles Exiting, veh/h	806	531	44	152
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	11.9	5.2	8.0
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	538	850	38	107
Cap Entry Lane, veh/h	1269	1268	767	622
Entry HV Adj Factor	0.981	0.979	1.000	0.981
Flow Entry, veh/h	528	833	38	105
Cap Entry, veh/h	1246	1242	767	610
V/C Ratio	0.424	0.670	0.050	0.172
Control Delay, s/veh	7.1	11.9	5.2	8.0
LOS	A	B	A	A
95th %tile Queue, veh	2	6	0	1

APPENDIX D: 2023 Total Synchro Reports

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	77	25	58	99	5	13	9	30	12	23	26
Future Vol, veh/h	15	77	25	58	99	5	13	9	30	12	23	26
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	5	2	3	2	25	8	2	2	2	2	4
Mvmt Flow	18	92	30	69	118	6	15	11	36	14	27	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	122	0	0	431	405	107	426	417	121
Stage 1	-	-	-	-	-	-	143	143	-	259	259	-
Stage 2	-	-	-	-	-	-	288	262	-	167	158	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.18	6.52	6.22	7.12	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.018	3.318	3.518	4.018	3.336
Pot Cap-1 Maneuver	1463	-	-	1459	-	-	524	535	947	539	527	925
Stage 1	-	-	-	-	-	-	846	779	-	746	694	-
Stage 2	-	-	-	-	-	-	707	691	-	835	767	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1459	-	-	462	501	947	486	494	925
Mov Cap-2 Maneuver	-	-	-	-	-	-	462	501	-	486	494	-
Stage 1	-	-	-	-	-	-	835	769	-	736	659	-
Stage 2	-	-	-	-	-	-	622	656	-	782	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2.7	10.9	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	669	1463	-	-	1459	-	-	614
HCM Lane V/C Ratio	0.093	0.012	-	-	0.047	-	-	0.118
HCM Control Delay (s)	10.9	7.5	0	-	7.6	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	60	5	0	37	0	17	1	10	4	0	21
Future Vol, veh/h	13	60	5	0	37	0	17	1	10	4	0	21
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	2	2	2	2	2	2	2	2	2	2	10
Mvmt Flow	14	65	5	0	40	0	18	1	11	4	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	70	0	0	148	136	68	142	138	40
Stage 1	-	-	-	-	-	-	96	96	-	40	40	-
Stage 2	-	-	-	-	-	-	52	40	-	102	98	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.3
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	2.29	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.39
Pot Cap-1 Maneuver	1520	-	-	1531	-	-	820	755	995	828	753	1009
Stage 1	-	-	-	-	-	-	911	815	-	975	862	-
Stage 2	-	-	-	-	-	-	961	862	-	904	814	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1531	-	-	795	747	995	811	745	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	795	747	-	811	745	-
Stage 1	-	-	-	-	-	-	902	807	-	965	862	-
Stage 2	-	-	-	-	-	-	939	862	-	884	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	9.4	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	854	1520	-	-	1531	-	-	971
HCM Lane V/C Ratio	0.036	0.009	-	-	-	-	-	0.028
HCM Control Delay (s)	9.4	7.4	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	644	6	7	371	22	13	1	21	103	1	71
Future Volume (veh/h)	23	644	6	7	371	22	13	1	21	103	1	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1737	1841	1841	1693	1841	1870	1781	418	418	1870	1870	1870
Adj Flow Rate, veh/h	24	678	6	7	391	23	14	1	22	108	1	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	4	4	14	4	2	8	100	100	2	2	2
Cap, veh/h	382	785	7	186	760	655	301	2	45	333	4	290
Arrive On Green	0.03	0.43	0.43	0.01	0.41	0.41	0.02	0.13	0.13	0.07	0.19	0.19
Sat Flow, veh/h	1654	1822	16	1612	1841	1585	1697	16	341	1781	21	1567
Grp Volume(v), veh/h	24	0	684	7	391	23	14	0	23	108	0	76
Grp Sat Flow(s),veh/h/ln	1654	0	1838	1612	1841	1585	1697	0	357	1781	0	1588
Q Serve(g_s), s	0.6	0.0	22.6	0.2	10.6	0.6	0.5	0.0	4.0	3.5	0.0	2.7
Cycle Q Clear(g_c), s	0.6	0.0	22.6	0.2	10.6	0.6	0.5	0.0	4.0	3.5	0.0	2.7
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.96	1.00		0.99
Lane Grp Cap(c), veh/h	382	0	792	186	760	655	301	0	47	333	0	294
V/C Ratio(X)	0.06	0.00	0.86	0.04	0.51	0.04	0.05	0.00	0.49	0.32	0.00	0.26
Avail Cap(c_a), veh/h	559	0	1479	388	1482	1276	500	0	128	445	0	568
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	11.5	0.0	17.3	14.7	14.7	11.7	24.5	0.0	27.1	22.9	0.0	23.4
Incr Delay (d2), s/veh	0.1	0.0	3.0	0.1	0.5	0.0	0.1	0.0	7.8	0.6	0.0	0.5
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	0.3	0.0	12.4	0.1	6.4	0.3	0.3	0.0	0.8	2.4	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	0.0	20.3	14.8	15.2	11.7	24.6	0.0	34.9	23.4	0.0	23.9
LnGrp LOS	B	A	C	B	B	B	C	A	C	C	A	C
Approach Vol, veh/h		708			421			37			184	
Approach Delay, s/veh		20.0			15.0			31.0			23.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	33.7	7.1	18.4	6.6	34.9	10.8	14.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	2.6	12.6	2.5	4.7	2.2	24.6	5.5	6.0
Green Ext Time (p_c), s	0.0	2.2	0.0	0.3	0.0	4.3	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	644	6	7	371	22	13	1	21	103	1	71
Future Volume (vph)	23	644	6	7	371	22	13	1	21	103	1	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
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	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1825		1583	1827	1583	1671	1491		1770	1572	
Flt Permitted	0.45	1.00		0.21	1.00	1.00	1.00	1.00		0.41	1.00	
Satd. Flow (perm)	762	1825		357	1827	1583	1759	1491		760	1572	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	678	6	7	391	23	14	1	22	108	1	75
RTOR Reduction (vph)	0	0	0	0	0	12	0	21	0	0	63	0
Lane Group Flow (vph)	24	684	0	7	391	11	14	2	0	108	13	0
Heavy Vehicles (%)	11%	4%	2%	14%	4%	2%	8%	100%	5%	2%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	35.7	33.9		33.7	32.9	32.9	4.7	3.8		17.9	11.0	
Effective Green, g (s)	35.7	33.9		33.7	32.9	32.9	4.7	3.8		17.9	11.0	
Actuated g/C Ratio	0.51	0.48		0.48	0.47	0.47	0.07	0.05		0.25	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	407	876		184	851	737	115	80		308	244	
v/s Ratio Prot	c0.00	c0.37		0.00	0.21		0.00	0.00		c0.04	0.01	
v/s Ratio Perm	0.03			0.02		0.01	0.01			c0.05		
v/c Ratio	0.06	0.78		0.04	0.46	0.01	0.12	0.03		0.35	0.05	
Uniform Delay, d1	9.0	15.3		11.4	12.8	10.1	31.0	31.6		21.2	25.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.6		0.1	0.4	0.0	0.5	0.1		0.7	0.1	
Delay (s)	9.0	19.8		11.5	13.2	10.1	31.5	31.8		21.9	25.5	
Level of Service	A	B		B	B	B	C	C		C	C	
Approach Delay (s)		19.5			13.0			31.7			23.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	708	421	37	184
Demand Flow Rate, veh/h	738	438	40	188
Vehicles Circulating, veh/h	119	44	842	430
Vehicles Exiting, veh/h	499	838	15	52
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.7	5.9	7.5	6.3
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	738	438	40	188
Cap Entry Lane, veh/h	1222	1319	585	890
Entry HV Adj Factor	0.959	0.962	0.925	0.979
Flow Entry, veh/h	708	421	37	184
Cap Entry, veh/h	1172	1269	541	871
V/C Ratio	0.604	0.332	0.068	0.211
Control Delay, s/veh	10.7	5.9	7.5	6.3
LOS	B	A	A	A
95th %tile Queue, veh	4	1	0	1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	51	14	39	88	5	16	34	55	11	35	15
Future Vol, veh/h	17	51	14	39	88	5	16	34	55	11	35	15
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	5	2	2	2	2	2	3	2	2	3	7
Mvmt Flow	17	52	14	40	90	5	16	35	56	11	36	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	95	0	0	66	0	0	291	268	59	312	273	93
Stage 1	-	-	-	-	-	-	93	93	-	173	173	-
Stage 2	-	-	-	-	-	-	198	175	-	139	100	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.53	6.22	7.12	6.53	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.027	3.318	3.518	4.027	3.363
Pot Cap-1 Maneuver	1499	-	-	1536	-	-	661	636	1007	641	632	951
Stage 1	-	-	-	-	-	-	914	816	-	829	754	-
Stage 2	-	-	-	-	-	-	804	752	-	864	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1536	-	-	602	611	1007	562	607	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	602	611	-	562	607	-
Stage 1	-	-	-	-	-	-	903	806	-	819	733	-
Stage 2	-	-	-	-	-	-	731	731	-	771	800	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	2.2	10.5	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	767	1499	-	-	1536	-	-	656
HCM Lane V/C Ratio	0.14	0.012	-	-	0.026	-	-	0.095
HCM Control Delay (s)	10.5	7.4	0	-	7.4	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	57	17	13	92	14	12	0	5	3	0	9
Future Vol, veh/h	14	57	17	13	92	14	12	0	5	3	0	9
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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	76	23	17	123	19	16	0	7	4	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	99	0	0	299	302	88	296	304	133
Stage 1	-	-	-	-	-	-	126	126	-	167	167	-
Stage 2	-	-	-	-	-	-	173	176	-	129	137	-
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	1441	-	-	1494	-	-	653	611	970	656	609	916
Stage 1	-	-	-	-	-	-	878	792	-	835	760	-
Stage 2	-	-	-	-	-	-	829	753	-	875	783	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1441	-	-	1494	-	-	631	595	970	639	593	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	631	595	-	639	593	-
Stage 1	-	-	-	-	-	-	866	781	-	823	751	-
Stage 2	-	-	-	-	-	-	808	744	-	857	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.8	10.3	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	703	1441	-	-	1494	-	-	826
HCM Lane V/C Ratio	0.032	0.013	-	-	0.012	-	-	0.019
HCM Control Delay (s)	10.3	7.5	0	-	7.4	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	433	16	21	693	99	21	0	15	60	4	50
Future Volume (veh/h)	67	433	16	21	693	99	21	0	15	60	4	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	451	17	22	722	103	22	0	16	62	4	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	5	2	2	2	2	2	2	2	2
Cap, veh/h	250	841	32	402	828	702	296	0	183	365	18	235
Arrive On Green	0.05	0.47	0.47	0.02	0.44	0.44	0.02	0.00	0.12	0.07	0.16	0.16
Sat Flow, veh/h	1781	1791	67	1739	1870	1585	1781	0	1585	1781	114	1488
Grp Volume(v), veh/h	70	0	468	22	722	103	22	0	16	62	0	56
Grp Sat Flow(s),veh/h/ln	1781	0	1858	1739	1870	1585	1781	0	1585	1781	0	1603
Q Serve(g_s), s	1.5	0.0	13.3	0.5	26.0	2.9	0.8	0.0	0.7	2.2	0.0	2.3
Cycle Q Clear(g_c), s	1.5	0.0	13.3	0.5	26.0	2.9	0.8	0.0	0.7	2.2	0.0	2.3
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	250	0	873	402	828	702	296	0	183	365	0	253
V/C Ratio(X)	0.28	0.00	0.54	0.05	0.87	0.15	0.07	0.00	0.09	0.17	0.00	0.22
Avail Cap(c_a), veh/h	374	0	1351	571	1360	1153	468	0	512	461	0	518
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	15.0	0.0	14.0	11.5	18.8	12.3	27.8	0.0	29.4	25.7	0.0	27.3
Incr Delay (d2), s/veh	0.6	0.0	0.5	0.1	3.7	0.1	0.1	0.0	0.2	0.2	0.0	0.4
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	0.9	0.0	7.9	0.3	14.7	1.7	0.6	0.0	0.5	1.6	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	0.0	14.5	11.6	22.5	12.4	27.9	0.0	29.6	25.9	0.0	27.7
LnGrp LOS	B	A	B	B	C	B	C	A	C	C	A	C
Approach Vol, veh/h		538			847			38			118	
Approach Delay, s/veh		14.6			21.0			28.6			26.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	38.9	7.8	17.7	7.8	40.9	11.0	14.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	3.5	28.0	2.8	4.3	2.5	15.3	4.2	2.7
Green Ext Time (p_c), s	0.0	4.9	0.0	0.2	0.0	2.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	433	16	21	693	99	21	0	15	60	4	50
Future Volume (vph)	67	433	16	21	693	99	21	0	15	60	4	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1853		1719	1863	1583	1770	1583		1770	1603	
Flt Permitted	0.15	1.00		0.43	1.00	1.00	1.00	1.00		0.45	1.00	
Satd. Flow (perm)	272	1853		785	1863	1583	1863	1583		837	1603	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	70	451	17	22	722	103	22	0	16	62	4	52
RTOR Reduction (vph)	0	1	0	0	0	54	0	15	0	0	44	0
Lane Group Flow (vph)	70	467	0	22	722	49	22	1	0	63	12	0
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	47.1	41.9		40.5	38.6	38.6	5.1	2.9		20.0	11.8	
Effective Green, g (s)	47.1	41.9		40.5	38.6	38.6	5.1	2.9		20.0	11.8	
Actuated g/C Ratio	0.58	0.51		0.50	0.47	0.47	0.06	0.04		0.24	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	949		410	879	746	113	56		331	231	
v/s Ratio Prot	c0.02	c0.25		0.00	c0.39		0.01	0.00		c0.03	0.01	
v/s Ratio Perm	0.14			0.03		0.03	0.01			c0.02		
v/c Ratio	0.28	0.49		0.05	0.82	0.07	0.19	0.01		0.19	0.05	
Uniform Delay, d1	12.3	13.0		10.7	18.6	11.8	36.4	38.1		24.4	30.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.4		0.1	6.2	0.0	0.8	0.1		0.3	0.1	
Delay (s)	12.9	13.4		10.8	24.9	11.8	37.3	38.1		24.6	30.3	
Level of Service	B	B		B	C	B	D	D		C	C	
Approach Delay (s)		13.4			22.9			37.6			27.3	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	538	847	38	119
Demand Flow Rate, veh/h	548	864	38	121
Vehicles Circulating, veh/h	91	93	595	781
Vehicles Exiting, veh/h	811	540	44	176
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	12.6	5.3	8.3
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	548	864	38	121
Cap Entry Lane, veh/h	1258	1255	752	622
Entry HV Adj Factor	0.982	0.980	1.000	0.983
Flow Entry, veh/h	538	847	38	119
Cap Entry, veh/h	1235	1230	752	611
V/C Ratio	0.436	0.688	0.051	0.194
Control Delay, s/veh	7.3	12.6	5.3	8.3
LOS	A	B	A	A
95th %tile Queue, veh	2	6	0	1

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	644	6	7	371	22	13	1	21	103	1	71
Future Vol, veh/h	23	644	6	7	371	22	13	1	21	103	1	71
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	-	-	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	11	4	2	14	4	2	8	100	5	2	2	3
Mvmt Flow	24	678	6	7	391	23	14	1	22	108	1	75

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	414	0	0	684	0	0	1184	1157	681	1146	1137	391
Stage 1	-	-	-	-	-	-	729	729	-	405	405	-
Stage 2	-	-	-	-	-	-	455	428	-	741	732	-
Critical Hdwy	4.21	-	-	4.24	-	-	7.18	7.5	6.25	7.12	6.52	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.326	-	-	3.572	4.9	3.345	3.518	4.018	3.327
Pot Cap-1 Maneuver	1098	-	-	856	-	-	162	131	445	176	202	655
Stage 1	-	-	-	-	-	-	405	311	-	622	598	-
Stage 2	-	-	-	-	-	-	573	448	-	408	427	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1098	-	-	856	-	-	140	127	445	162	196	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	127	-	162	196	-
Stage 1	-	-	-	-	-	-	396	304	-	608	593	-
Stage 2	-	-	-	-	-	-	503	444	-	378	418	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	23	60.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	237	1098	-	-	856	-	-	234
HCM Lane V/C Ratio	0.155	0.022	-	-	0.009	-	-	0.787
HCM Control Delay (s)	23	8.4	-	-	9.2	-	-	60.5
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	5.8

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	433	16	21	693	99	21	0	15	60	4	50
Future Vol, veh/h	67	433	16	21	693	99	21	0	15	60	4	50
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	-	-	100	-	200	-	-	-	-	-	-
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	2	2	5	2	2	2	2	2	2	2	2
Mvmt Flow	70	451	17	22	722	103	22	0	16	63	4	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	825	0	0	468	0	0	1446	1469	460	1374	1374	722
Stage 1	-	-	-	-	-	-	600	600	-	766	766	-
Stage 2	-	-	-	-	-	-	846	869	-	608	608	-
Critical Hdwy	4.12	-	-	4.15	-	-	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	-	-	2.245	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	805	-	-	1078	-	-	109	127	601	123	145	427
Stage 1	-	-	-	-	-	-	488	490	-	395	412	-
Stage 2	-	-	-	-	-	-	357	369	-	483	486	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	805	-	-	1078	-	-	86	114	601	110	130	427
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	114	-	110	130	-
Stage 1	-	-	-	-	-	-	446	447	-	361	404	-
Stage 2	-	-	-	-	-	-	304	362	-	430	444	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	42	69.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	134	805	-	-	1078	-	-	164
HCM Lane V/C Ratio	0.28	0.087	-	-	0.02	-	-	0.724
HCM Control Delay (s)	42	9.9	-	-	8.4	-	-	69.8
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1.1	0.3	-	-	0.1	-	-	4.4

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	110	136	2	6	26
Future Vol, veh/h	9	110	136	2	6	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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, %	2	2	2	2	2	2
Mvmt Flow	10	122	151	2	7	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	153	0	-	0	294	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1428	-	-	-	697	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1428	-	-	-	691	894
Mov Cap-2 Maneuver	-	-	-	-	691	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1428	-	-	-	847
HCM Lane V/C Ratio	0.007	-	-	-	0.042
HCM Control Delay (s)	7.5	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	89	115	7	4	17
Future Vol, veh/h	28	89	115	7	4	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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, %	2	2	2	2	2	2
Mvmt Flow	31	99	128	8	4	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	136	0	-	0	293	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	161	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1448	-	-	-	698	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	868	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1448	-	-	-	682	917
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	868	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1448	-	-	-	861
HCM Lane V/C Ratio	0.021	-	-	-	0.027
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

APPENDIX E: 2028 Background Synchro Reports

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	105	35	51	131	6	15	10	28	14	28	30
Future Vol, veh/h	21	105	35	51	131	6	15	10	28	14	28	30
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	5	2	3	2	25	8	2	2	2	2	4
Mvmt Flow	25	125	42	61	156	7	18	12	33	17	33	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	167	0	0	512	481	146	501	499	160
Stage 1	-	-	-	-	-	-	196	196	-	282	282	-
Stage 2	-	-	-	-	-	-	316	285	-	219	217	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.18	6.52	6.22	7.12	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.018	3.318	3.518	4.018	3.336
Pot Cap-1 Maneuver	1416	-	-	1405	-	-	463	485	901	480	473	880
Stage 1	-	-	-	-	-	-	792	739	-	725	678	-
Stage 2	-	-	-	-	-	-	683	676	-	783	723	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1416	-	-	1405	-	-	397	453	901	430	441	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	397	453	-	430	441	-
Stage 1	-	-	-	-	-	-	776	724	-	711	645	-
Stage 2	-	-	-	-	-	-	592	644	-	727	709	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2.1	11.9	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	583	1416	-	-	1405	-	-	553
HCM Lane V/C Ratio	0.108	0.018	-	-	0.043	-	-	0.155
HCM Control Delay (s)	11.9	7.6	0	-	7.7	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	75	6	0	49	0	20	1	11	5	0	25
Future Vol, veh/h	18	75	6	0	49	0	20	1	11	5	0	25
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	2	2	2	2	2	2	2	2	2	2	10
Mvmt Flow	20	82	7	0	53	0	22	1	12	5	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	89	0	0	193	179	86	185	182	53
Stage 1	-	-	-	-	-	-	126	126	-	53	53	-
Stage 2	-	-	-	-	-	-	67	53	-	132	129	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.3
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	2.29	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.39
Pot Cap-1 Maneuver	1503	-	-	1506	-	-	767	715	973	776	712	992
Stage 1	-	-	-	-	-	-	878	792	-	960	851	-
Stage 2	-	-	-	-	-	-	943	851	-	871	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1503	-	-	1506	-	-	738	705	973	757	702	992
Mov Cap-2 Maneuver	-	-	-	-	-	-	738	705	-	757	702	-
Stage 1	-	-	-	-	-	-	866	781	-	947	851	-
Stage 2	-	-	-	-	-	-	917	851	-	847	778	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	9.7	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	804	1503	-	-	1506	-	-	943
HCM Lane V/C Ratio	0.043	0.013	-	-	-	-	-	0.035
HCM Control Delay (s)	9.7	7.4	0	-	0	-	-	9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	711	7	8	410	20	15	1	25	105	1	74
Future Volume (veh/h)	22	711	7	8	410	20	15	1	25	105	1	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1737	1841	1841	1693	1841	1870	1781	418	418	1870	1870	1870
Adj Flow Rate, veh/h	23	748	7	8	432	21	16	1	26	111	1	78
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	4	4	14	4	2	8	100	100	2	2	2
Cap, veh/h	385	847	8	174	828	713	287	2	43	301	4	280
Arrive On Green	0.03	0.47	0.47	0.01	0.45	0.45	0.02	0.12	0.12	0.07	0.18	0.18
Sat Flow, veh/h	1654	1821	17	1612	1841	1585	1697	13	343	1781	20	1568
Grp Volume(v), veh/h	23	0	755	8	432	21	16	0	27	111	0	79
Grp Sat Flow(s),veh/h/ln	1654	0	1838	1612	1841	1585	1697	0	356	1781	0	1588
Q Serve(g_s), s	0.5	0.0	27.4	0.2	12.4	0.5	0.6	0.0	5.3	3.9	0.0	3.2
Cycle Q Clear(g_c), s	0.5	0.0	27.4	0.2	12.4	0.5	0.6	0.0	5.3	3.9	0.0	3.2
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.96	1.00		0.99
Lane Grp Cap(c), veh/h	385	0	855	174	828	713	287	0	44	301	0	284
V/C Ratio(X)	0.06	0.00	0.88	0.05	0.52	0.03	0.06	0.00	0.61	0.37	0.00	0.28
Avail Cap(c_a), veh/h	546	0	1351	355	1353	1165	463	0	116	390	0	519
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	11.3	0.0	17.8	15.5	14.5	11.3	27.2	0.0	30.4	25.4	0.0	26.1
Incr Delay (d2), s/veh	0.1	0.0	4.5	0.1	0.5	0.0	0.1	0.0	12.6	0.8	0.0	0.5
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	0.3	0.0	15.1	0.1	7.5	0.3	0.4	0.0	1.1	2.8	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	0.0	22.3	15.6	15.0	11.3	27.3	0.0	43.0	26.2	0.0	26.6
LnGrp LOS	B	A	C	B	B	B	C	A	D	C	A	C
Approach Vol, veh/h		778			461			43			190	
Approach Delay, s/veh		22.0			14.9			37.2			26.3	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	39.0	7.4	19.1	6.8	40.2	11.4	15.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	2.5	14.4	2.6	5.2	2.2	29.4	5.9	7.3
Green Ext Time (p_c), s	0.0	2.5	0.0	0.3	0.0	4.8	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	711	7	8	410	20	15	1	25	105	1	74
Future Volume (vph)	22	711	7	8	410	20	15	1	25	105	1	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
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	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1825		1583	1827	1583	1671	1498		1770	1572	
Flt Permitted	0.41	1.00		0.17	1.00	1.00	1.00	1.00		0.40	1.00	
Satd. Flow (perm)	704	1825		288	1827	1583	1759	1498		745	1572	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	748	7	8	432	21	16	1	26	111	1	78
RTOR Reduction (vph)	0	0	0	0	0	11	0	25	0	0	65	0
Lane Group Flow (vph)	23	755	0	8	432	10	16	2	0	111	14	0
Heavy Vehicles (%)	11%	4%	2%	14%	4%	2%	8%	100%	5%	2%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	42.4	40.4		40.2	39.3	39.3	5.0	4.0		20.5	13.5	
Effective Green, g (s)	42.4	40.4		40.2	39.3	39.3	5.0	4.0		20.5	13.5	
Actuated g/C Ratio	0.53	0.51		0.50	0.49	0.49	0.06	0.05		0.26	0.17	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	397	923		159	899	779	109	75		326	265	
v/s Ratio Prot	c0.00	c0.41		0.00	0.24		0.00	0.00		c0.04	0.01	
v/s Ratio Perm	0.03			0.02		0.01	0.01			c0.04		
v/c Ratio	0.06	0.82		0.05	0.48	0.01	0.15	0.03		0.34	0.05	
Uniform Delay, d1	9.3	16.6		12.8	13.5	10.3	35.4	36.1		23.7	27.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	5.7		0.1	0.4	0.0	0.6	0.2		0.6	0.1	
Delay (s)	9.4	22.3		12.9	13.9	10.4	36.0	36.2		24.4	27.9	
Level of Service	A	C		B	B	B	D	D		C	C	
Approach Delay (s)		21.9			13.7			36.1			25.8	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	778	461	43	190
Demand Flow Rate, veh/h	811	479	46	194
Vehicles Circulating, veh/h	123	45	917	475
Vehicles Exiting, veh/h	546	918	17	49
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.3	6.3	8.2	6.7
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	811	479	46	194
Cap Entry Lane, veh/h	1217	1318	542	850
Entry HV Adj Factor	0.959	0.962	0.935	0.979
Flow Entry, veh/h	778	461	43	190
Cap Entry, veh/h	1168	1268	506	832
V/C Ratio	0.666	0.363	0.085	0.228
Control Delay, s/veh	12.3	6.3	8.2	6.7
LOS	B	A	A	A
95th %tile Queue, veh	5	2	0	1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	64	19	35	118	6	19	40	38	13	41	18
Future Vol, veh/h	24	64	19	35	118	6	19	40	38	13	41	18
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	5	2	2	2	2	2	3	2	2	3	7
Mvmt Flow	24	65	19	36	120	6	19	41	39	13	42	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	126	0	0	84	0	0	348	321	75	358	327	123
Stage 1	-	-	-	-	-	-	123	123	-	195	195	-
Stage 2	-	-	-	-	-	-	225	198	-	163	132	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.53	6.22	7.12	6.53	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.027	3.318	3.518	4.027	3.363
Pot Cap-1 Maneuver	1460	-	-	1513	-	-	607	594	986	597	590	915
Stage 1	-	-	-	-	-	-	881	792	-	807	737	-
Stage 2	-	-	-	-	-	-	778	735	-	839	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1460	-	-	1513	-	-	543	568	986	525	565	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	543	568	-	525	565	-
Stage 1	-	-	-	-	-	-	866	779	-	793	718	-
Stage 2	-	-	-	-	-	-	699	716	-	751	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	1.6	11.3	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1460	-	-	1513	-	-	615
HCM Lane V/C Ratio	0.147	0.017	-	-	0.024	-	-	0.119
HCM Control Delay (s)	11.3	7.5	0	-	7.4	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	73	24	18	118	19	14	0	6	4	0	10
Future Vol, veh/h	19	73	24	18	118	19	14	0	6	4	0	10
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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	97	32	24	157	25	19	0	8	5	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	129	0	0	387	393	113	385	397	170
Stage 1	-	-	-	-	-	-	163	163	-	218	218	-
Stage 2	-	-	-	-	-	-	224	230	-	167	179	-
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	1393	-	-	1457	-	-	572	543	940	573	540	874
Stage 1	-	-	-	-	-	-	839	763	-	784	723	-
Stage 2	-	-	-	-	-	-	779	714	-	835	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1393	-	-	1457	-	-	547	523	940	552	520	874
Mov Cap-2 Maneuver	-	-	-	-	-	-	547	523	-	552	520	-
Stage 1	-	-	-	-	-	-	823	749	-	769	710	-
Stage 2	-	-	-	-	-	-	753	701	-	812	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.9	11	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	625	1393	-	-	1457	-	-	749
HCM Lane V/C Ratio	0.043	0.018	-	-	0.016	-	-	0.025
HCM Control Delay (s)	11	7.6	0	-	7.5	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	478	17	23	765	94	25	0	18	62	5	53
Future Volume (veh/h)	64	478	17	23	765	94	25	0	18	62	5	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	498	18	24	797	98	26	0	19	65	5	55
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	5	2	2	2	2	2	2	2	2
Cap, veh/h	232	898	32	401	894	757	290	0	178	342	20	217
Arrive On Green	0.05	0.50	0.50	0.03	0.48	0.48	0.03	0.00	0.11	0.06	0.15	0.15
Sat Flow, veh/h	1781	1794	65	1739	1870	1585	1781	0	1585	1781	134	1472
Grp Volume(v), veh/h	67	0	516	24	797	98	26	0	19	65	0	60
Grp Sat Flow(s),veh/h/ln	1781	0	1859	1739	1870	1585	1781	0	1585	1781	0	1605
Q Serve(g_s), s	1.5	0.0	15.4	0.6	31.1	2.8	1.0	0.0	0.9	2.5	0.0	2.7
Cycle Q Clear(g_c), s	1.5	0.0	15.4	0.6	31.1	2.8	1.0	0.0	0.9	2.5	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	232	0	930	401	894	757	290	0	178	342	0	237
V/C Ratio(X)	0.29	0.00	0.55	0.06	0.89	0.13	0.09	0.00	0.11	0.19	0.00	0.25
Avail Cap(c_a), veh/h	345	0	1250	551	1258	1066	441	0	474	431	0	480
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	16.1	0.0	13.9	11.2	19.1	11.7	30.1	0.0	32.0	28.4	0.0	30.3
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.1	6.2	0.1	0.1	0.0	0.3	0.3	0.0	0.6
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	0.9	0.0	9.0	0.3	17.9	1.6	0.8	0.0	0.6	1.8	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	0.0	14.4	11.3	25.3	11.7	30.3	0.0	32.3	28.6	0.0	30.9
LnGrp LOS	B	A	B	B	C	B	C	A	C	C	A	C
Approach Vol, veh/h		583			919			45			125	
Approach Delay, s/veh		14.7			23.5			31.1			29.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	44.4	8.2	17.8	8.1	46.2	11.0	15.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	3.5	33.1	3.0	4.7	2.6	17.4	4.5	2.9
Green Ext Time (p_c), s	0.0	5.2	0.0	0.2	0.0	3.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	478	17	23	765	94	25	0	18	62	5	53
Future Volume (vph)	64	478	17	23	765	94	25	0	18	62	5	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1853		1719	1863	1583	1770	1583		1770	1607	
Flt Permitted	0.13	1.00		0.39	1.00	1.00	1.00	1.00		0.43	1.00	
Satd. Flow (perm)	233	1853		713	1863	1583	1863	1583		801	1607	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	67	498	18	24	797	98	26	0	19	65	5	55
RTOR Reduction (vph)	0	1	0	0	0	48	0	18	0	0	48	0
Lane Group Flow (vph)	67	515	0	24	797	50	26	1	0	65	12	0
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	55.7	50.5		49.5	47.4	47.4	7.1	3.3		22.2	12.4	
Effective Green, g (s)	55.7	50.5		49.5	47.4	47.4	7.1	3.3		22.2	12.4	
Actuated g/C Ratio	0.60	0.54		0.53	0.51	0.51	0.08	0.04		0.24	0.13	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	225	1008		403	951	808	138	56		326	214	
v/s Ratio Prot	c0.02	c0.28		0.00	c0.43		0.01	0.00		c0.03	0.01	
v/s Ratio Perm	0.16			0.03		0.03	0.01			c0.02		
v/c Ratio	0.30	0.51		0.06	0.84	0.06	0.19	0.01		0.20	0.06	
Uniform Delay, d1	14.3	13.4		10.6	19.4	11.5	40.2	43.2		28.0	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.4		0.1	6.5	0.0	0.7	0.1		0.3	0.1	
Delay (s)	15.0	13.8		10.7	26.0	11.5	40.8	43.3		28.3	35.2	
Level of Service	B	B		B	C	B	D	D		C	D	
Approach Delay (s)		13.9			24.0			41.9			31.6	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	583	919	45	125
Demand Flow Rate, veh/h	594	938	46	127
Vehicles Circulating, veh/h	96	95	642	865
Vehicles Exiting, veh/h	896	593	48	168
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.9	14.8	5.8	9.3
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	594	938	46	127
Cap Entry Lane, veh/h	1251	1252	717	571
Entry HV Adj Factor	0.982	0.980	0.978	0.983
Flow Entry, veh/h	583	919	45	125
Cap Entry, veh/h	1228	1227	701	562
V/C Ratio	0.475	0.749	0.064	0.222
Control Delay, s/veh	7.9	14.8	5.8	9.3
LOS	A	B	A	A
95th %tile Queue, veh	3	7	0	1

Intersection	
Int Delay, s/veh	14.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	711	7	8	410	20	15	1	25	105	1	74
Future Vol, veh/h	22	711	7	8	410	20	15	1	25	105	1	74
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	-	-	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	11	4	2	14	4	2	8	100	5	2	2	3
Mvmt Flow	23	748	7	8	432	21	16	1	26	111	1	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	453	0	0	755	0	0	1296	1267	752	1259	1249	432
Stage 1	-	-	-	-	-	-	798	798	-	448	448	-
Stage 2	-	-	-	-	-	-	498	469	-	811	801	-
Critical Hdwy	4.21	-	-	4.24	-	-	7.18	7.5	6.25	7.12	6.52	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	6.5	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.326	-	-	3.572	4.9	3.345	3.518	4.018	3.327
Pot Cap-1 Maneuver	1062	-	-	804	-	-	135	110	405	147	173	621
Stage 1	-	-	-	-	-	-	371	285	-	590	573	-
Stage 2	-	-	-	-	-	-	543	426	-	373	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1062	-	-	804	-	-	115	106	405	133	167	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	115	106	-	133	167	-
Stage 1	-	-	-	-	-	-	363	279	-	577	567	-
Stage 2	-	-	-	-	-	-	469	422	-	340	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	27.5	104
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	1062	-	-	804	-	-	197
HCM Lane V/C Ratio	0.213	0.022	-	-	0.01	-	-	0.962
HCM Control Delay (s)	27.5	8.5	-	-	9.5	-	-	104
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	8

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	478	17	23	765	94	25	0	18	62	5	53
Future Vol, veh/h	64	478	17	23	765	94	25	0	18	62	5	53
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	-	-	100	-	200	-	-	-	-	-	-
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	2	2	5	2	2	2	2	2	2	2	2
Mvmt Flow	67	498	18	24	797	98	26	0	19	65	5	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	895	0	0	516	0	0	1565	1584	507	1496	1495	797
Stage 1	-	-	-	-	-	-	641	641	-	845	845	-
Stage 2	-	-	-	-	-	-	924	943	-	651	650	-
Critical Hdwy	4.12	-	-	4.15	-	-	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	-	-	2.245	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	758	-	-	1035	-	-	90	108	566	101	123	387
Stage 1	-	-	-	-	-	-	463	469	-	357	379	-
Stage 2	-	-	-	-	-	-	323	341	-	457	465	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	758	-	-	1035	-	-	68	96	566	89	110	387
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	96	-	89	110	-
Stage 1	-	-	-	-	-	-	422	428	-	326	370	-
Stage 2	-	-	-	-	-	-	267	333	-	403	424	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	60.1	117.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	108	758	-	-	1035	-	-	137
HCM Lane V/C Ratio	0.415	0.088	-	-	0.023	-	-	0.912
HCM Control Delay (s)	60.1	10.2	-	-	8.6	-	-	117.3
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1.7	0.3	-	-	0.1	-	-	6.1

APPENDIX F: 2028 Total Synchro Reports

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	107	35	72	136	6	15	10	35	14	28	30
Future Vol, veh/h	21	107	35	72	136	6	15	10	35	14	28	30
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	5	2	3	2	25	8	2	2	2	2	4
Mvmt Flow	25	127	42	86	162	7	18	12	42	17	33	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	169	0	0	570	539	148	563	557	166
Stage 1	-	-	-	-	-	-	198	198	-	338	338	-
Stage 2	-	-	-	-	-	-	372	341	-	225	219	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.18	6.52	6.22	7.12	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.018	3.318	3.518	4.018	3.336
Pot Cap-1 Maneuver	1409	-	-	1402	-	-	423	449	899	437	439	873
Stage 1	-	-	-	-	-	-	790	737	-	676	641	-
Stage 2	-	-	-	-	-	-	636	639	-	778	722	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1409	-	-	1402	-	-	355	410	899	381	401	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	355	410	-	381	401	-
Stage 1	-	-	-	-	-	-	774	722	-	662	597	-
Stage 2	-	-	-	-	-	-	537	596	-	715	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2.6	12.2	13.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	568	1409	-	-	1402	-	-	511
HCM Lane V/C Ratio	0.126	0.018	-	-	0.061	-	-	0.168
HCM Control Delay (s)	12.2	7.6	0	-	7.7	0	-	13.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	81	6	0	51	0	20	1	11	5	0	25
Future Vol, veh/h	18	81	6	0	51	0	20	1	11	5	0	25
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	2	2	2	2	2	2	2	2	2	2	10
Mvmt Flow	20	88	7	0	55	0	22	1	12	5	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	95	0	0	201	187	92	193	190	55
Stage 1	-	-	-	-	-	-	132	132	-	55	55	-
Stage 2	-	-	-	-	-	-	69	55	-	138	135	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.3
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	2.29	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.39
Pot Cap-1 Maneuver	1500	-	-	1499	-	-	757	708	965	767	705	990
Stage 1	-	-	-	-	-	-	871	787	-	957	849	-
Stage 2	-	-	-	-	-	-	941	849	-	865	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1500	-	-	1499	-	-	728	698	965	749	695	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	728	698	-	749	695	-
Stage 1	-	-	-	-	-	-	859	776	-	944	849	-
Stage 2	-	-	-	-	-	-	915	849	-	841	774	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	9.7	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	794	1500	-	-	1499	-	-	940
HCM Lane V/C Ratio	0.044	0.013	-	-	-	-	-	0.035
HCM Control Delay (s)	9.7	7.4	0	-	0	-	-	9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	711	7	8	410	24	15	1	25	118	1	82
Future Volume (veh/h)	25	711	7	8	410	24	15	1	25	118	1	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1737	1841	1841	1693	1841	1870	1781	418	418	1870	1870	1870
Adj Flow Rate, veh/h	26	748	7	8	432	25	16	1	26	124	1	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	4	4	14	4	2	8	100	100	2	2	2
Cap, veh/h	382	845	8	171	822	707	284	2	43	312	3	292
Arrive On Green	0.03	0.46	0.46	0.01	0.45	0.45	0.02	0.12	0.12	0.08	0.19	0.19
Sat Flow, veh/h	1654	1821	17	1612	1841	1585	1697	13	343	1781	18	1570
Grp Volume(v), veh/h	26	0	755	8	432	25	16	0	27	124	0	87
Grp Sat Flow(s),veh/h/ln	1654	0	1838	1612	1841	1585	1697	0	356	1781	0	1588
Q Serve(g_s), s	0.6	0.0	27.9	0.2	12.7	0.7	0.6	0.0	5.4	4.4	0.0	3.5
Cycle Q Clear(g_c), s	0.6	0.0	27.9	0.2	12.7	0.7	0.6	0.0	5.4	4.4	0.0	3.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.96	1.00		0.99
Lane Grp Cap(c), veh/h	382	0	853	171	822	707	284	0	44	312	0	295
V/C Ratio(X)	0.07	0.00	0.89	0.05	0.53	0.04	0.06	0.00	0.61	0.40	0.00	0.29
Avail Cap(c_a), veh/h	535	0	1327	348	1330	1145	456	0	114	384	0	510
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	11.6	0.0	18.2	15.9	15.0	11.6	27.7	0.0	31.0	25.2	0.0	26.2
Incr Delay (d2), s/veh	0.1	0.0	4.8	0.1	0.5	0.0	0.1	0.0	12.6	0.8	0.0	0.6
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	0.3	0.0	15.5	0.1	7.7	0.4	0.4	0.0	1.1	3.2	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	23.1	16.0	15.5	11.7	27.8	0.0	43.6	26.0	0.0	26.8
LnGrp LOS	B	A	C	B	B	B	C	A	D	C	A	C
Approach Vol, veh/h		781			465			43			211	
Approach Delay, s/veh		22.7			15.3			37.7			26.3	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	39.4	7.4	19.9	6.8	40.7	12.0	15.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	2.6	14.7	2.6	5.5	2.2	29.9	6.4	7.4
Green Ext Time (p_c), s	0.0	2.5	0.0	0.3	0.0	4.7	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	711	7	8	410	24	15	1	25	118	1	82
Future Volume (vph)	25	711	7	8	410	24	15	1	25	118	1	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
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	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1825		1583	1827	1583	1671	1498		1770	1571	
Flt Permitted	0.41	1.00		0.17	1.00	1.00	1.00	1.00		0.40	1.00	
Satd. Flow (perm)	704	1825		288	1827	1583	1759	1498		745	1571	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	748	7	8	432	25	16	1	26	124	1	86
RTOR Reduction (vph)	0	0	0	0	0	13	0	25	0	0	71	0
Lane Group Flow (vph)	26	755	0	8	432	12	16	2	0	124	16	0
Heavy Vehicles (%)	11%	4%	2%	14%	4%	2%	8%	100%	5%	2%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	42.4	40.4		40.2	39.3	39.3	5.0	4.0		20.5	13.5	
Effective Green, g (s)	42.4	40.4		40.2	39.3	39.3	5.0	4.0		20.5	13.5	
Actuated g/C Ratio	0.53	0.51		0.50	0.49	0.49	0.06	0.05		0.26	0.17	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	397	923		159	899	779	109	75		326	265	
v/s Ratio Prot	c0.00	c0.41		0.00	0.24		0.00	0.00		c0.05	0.01	
v/s Ratio Perm	0.03			0.02		0.01	0.01			c0.05		
v/c Ratio	0.07	0.82		0.05	0.48	0.02	0.15	0.03		0.38	0.06	
Uniform Delay, d1	9.3	16.6		12.8	13.5	10.4	35.4	36.1		23.9	27.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	5.7		0.1	0.4	0.0	0.6	0.2		0.7	0.1	
Delay (s)	9.4	22.3		12.9	13.9	10.4	36.0	36.2		24.7	27.9	
Level of Service	A	C		B	B	B	D	D		C	C	
Approach Delay (s)		21.8			13.7			36.1			26.0	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	781	465	43	211
Demand Flow Rate, veh/h	814	484	46	216
Vehicles Circulating, veh/h	136	48	933	475
Vehicles Exiting, veh/h	555	931	17	56
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.8	6.3	8.3	7.1
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	814	484	46	216
Cap Entry Lane, veh/h	1201	1314	533	850
Entry HV Adj Factor	0.960	0.960	0.935	0.977
Flow Entry, veh/h	781	465	43	211
Cap Entry, veh/h	1153	1262	498	830
V/C Ratio	0.678	0.368	0.086	0.254
Control Delay, s/veh	12.8	6.3	8.3	7.1
LOS	B	A	A	A
95th %tile Queue, veh	6	2	0	1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	147	188	2	6	26
Future Vol, veh/h	9	147	188	2	6	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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, %	2	2	2	2	2	2
Mvmt Flow	10	163	209	2	7	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	211	0	-	0	393	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1360	-	-	-	611	830
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1360	-	-	-	606	830
Mov Cap-2 Maneuver	-	-	-	-	606	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1360	-	-	-	776
HCM Lane V/C Ratio	0.007	-	-	-	0.046
HCM Control Delay (s)	7.7	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	69	19	49	121	6	19	40	61	13	41	18
Future Vol, veh/h	24	69	19	49	121	6	19	40	61	13	41	18
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	5	2	2	2	2	2	3	2	2	3	7
Mvmt Flow	24	70	19	50	123	6	19	41	62	13	42	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	129	0	0	89	0	0	384	357	80	405	363	126
Stage 1	-	-	-	-	-	-	128	128	-	226	226	-
Stage 2	-	-	-	-	-	-	256	229	-	179	137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.53	6.22	7.12	6.53	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.53	-	6.12	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.027	3.318	3.518	4.027	3.363
Pot Cap-1 Maneuver	1457	-	-	1506	-	-	574	567	980	556	563	911
Stage 1	-	-	-	-	-	-	876	788	-	777	715	-
Stage 2	-	-	-	-	-	-	749	713	-	823	781	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1457	-	-	1506	-	-	508	538	980	471	534	911
Mov Cap-2 Maneuver	-	-	-	-	-	-	508	538	-	471	534	-
Stage 1	-	-	-	-	-	-	861	775	-	764	689	-
Stage 2	-	-	-	-	-	-	665	687	-	718	768	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	2.1	11.3	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1457	-	-	1506	-	-	580
HCM Lane V/C Ratio	0.177	0.017	-	-	0.033	-	-	0.127
HCM Control Delay (s)	11.3	7.5	0	-	7.5	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	77	24	18	125	19	14	0	6	4	0	10
Future Vol, veh/h	19	77	24	18	125	19	14	0	6	4	0	10
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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	103	32	24	167	25	19	0	8	5	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	192	0	0	135	0	0	403	409	119	401	413	180
Stage 1	-	-	-	-	-	-	169	169	-	228	228	-
Stage 2	-	-	-	-	-	-	234	240	-	173	185	-
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	1381	-	-	1449	-	-	558	532	933	560	529	863
Stage 1	-	-	-	-	-	-	833	759	-	775	715	-
Stage 2	-	-	-	-	-	-	769	707	-	829	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1449	-	-	533	511	933	539	508	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	511	-	539	508	-
Stage 1	-	-	-	-	-	-	816	744	-	760	701	-
Stage 2	-	-	-	-	-	-	743	694	-	805	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.8	11.2	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	612	1381	-	-	1449	-	-	737
HCM Lane V/C Ratio	0.044	0.018	-	-	0.017	-	-	0.025
HCM Control Delay (s)	11.2	7.7	0	-	7.5	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	478	17	23	765	108	25	0	18	70	5	58
Future Volume (veh/h)	73	478	17	23	765	108	25	0	18	70	5	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	498	18	24	797	112	26	0	19	73	5	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	5	2	2	2	2	2	2	2	2
Cap, veh/h	234	901	33	403	893	757	287	0	179	342	18	219
Arrive On Green	0.05	0.50	0.50	0.03	0.48	0.48	0.03	0.00	0.11	0.06	0.15	0.15
Sat Flow, veh/h	1781	1794	65	1739	1870	1585	1781	0	1585	1781	123	1480
Grp Volume(v), veh/h	76	0	516	24	797	112	26	0	19	73	0	65
Grp Sat Flow(s),veh/h/ln	1781	0	1859	1739	1870	1585	1781	0	1585	1781	0	1604
Q Serve(g_s), s	1.7	0.0	15.5	0.6	31.4	3.2	1.0	0.0	0.9	2.9	0.0	2.9
Cycle Q Clear(g_c), s	1.7	0.0	15.5	0.6	31.4	3.2	1.0	0.0	0.9	2.9	0.0	2.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	234	0	934	403	893	757	287	0	179	342	0	237
V/C Ratio(X)	0.32	0.00	0.55	0.06	0.89	0.15	0.09	0.00	0.11	0.21	0.00	0.27
Avail Cap(c_a), veh/h	342	0	1241	551	1249	1058	436	0	470	430	0	476
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	16.3	0.0	13.9	11.3	19.2	11.9	30.3	0.0	32.2	28.7	0.0	30.6
Incr Delay (d2), s/veh	0.8	0.0	0.5	0.1	6.4	0.1	0.1	0.0	0.3	0.3	0.0	0.6
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	1.0	0.0	9.0	0.3	18.1	1.9	0.8	0.0	0.6	2.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	14.4	11.3	25.6	12.0	30.5	0.0	32.5	29.0	0.0	31.2
LnGrp LOS	B	A	B	B	C	B	C	A	C	C	A	C
Approach Vol, veh/h		592			933			45			138	
Approach Delay, s/veh		14.7			23.6			31.3			30.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	44.6	8.2	17.9	8.1	46.7	11.0	15.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	54.0	9.0	24.0	9.0	54.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	3.7	33.4	3.0	4.9	2.6	17.5	4.9	2.9
Green Ext Time (p_c), s	0.1	5.3	0.0	0.2	0.0	3.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	478	17	23	765	108	25	0	18	70	5	58
Future Volume (vph)	73	478	17	23	765	108	25	0	18	70	5	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1853		1719	1863	1583	1770	1583		1770	1605	
Flt Permitted	0.12	1.00		0.40	1.00	1.00	1.00	1.00		0.43	1.00	
Satd. Flow (perm)	231	1853		717	1863	1583	1863	1583		801	1605	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	76	498	18	24	797	112	26	0	19	73	5	60
RTOR Reduction (vph)	0	1	0	0	0	55	0	18	0	0	52	0
Lane Group Flow (vph)	76	515	0	24	797	58	26	1	0	73	13	0
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	56.2	50.8		49.6	47.5	47.5	7.0	3.3		22.2	12.5	
Effective Green, g (s)	56.2	50.8		49.6	47.5	47.5	7.0	3.3		22.2	12.5	
Actuated g/C Ratio	0.60	0.55		0.53	0.51	0.51	0.08	0.04		0.24	0.13	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	1011		404	950	807	136	56		325	215	
v/s Ratio Prot	c0.02	c0.28		0.00	c0.43		0.01	0.00		c0.03	0.01	
v/s Ratio Perm	0.18			0.03		0.04	0.01			c0.02		
v/c Ratio	0.33	0.51		0.06	0.84	0.07	0.19	0.01		0.22	0.06	
Uniform Delay, d1	14.4	13.3		10.6	19.5	11.6	40.4	43.3		28.3	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.4		0.1	6.6	0.0	0.7	0.1		0.4	0.1	
Delay (s)	15.3	13.7		10.7	26.1	11.6	41.1	43.4		28.7	35.3	
Level of Service	B	B		B	C	B	D	D		C	D	
Approach Delay (s)		13.9			24.0			42.1			31.8	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	592	934	45	138
Demand Flow Rate, veh/h	604	953	46	140
Vehicles Circulating, veh/h	104	105	660	865
Vehicles Exiting, veh/h	901	601	48	193
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.2	15.9	5.9	9.7
Approach LOS	A	C	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	604	953	46	140
Cap Entry Lane, veh/h	1241	1240	704	571
Entry HV Adj Factor	0.980	0.980	0.978	0.985
Flow Entry, veh/h	592	934	45	138
Cap Entry, veh/h	1216	1215	689	563
V/C Ratio	0.487	0.769	0.065	0.245
Control Delay, s/veh	8.2	15.9	5.9	9.7
LOS	A	C	A	A
95th %tile Queue, veh	3	8	0	1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	115	159	7	4	17
Future Vol, veh/h	28	115	159	7	4	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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, %	2	2	2	2	2	2
Mvmt Flow	31	128	177	8	4	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	185	0	-	0	371	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1390	-	-	-	630	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	615	862
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	801
HCM Lane V/C Ratio	0.022	-	-	-	0.029
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

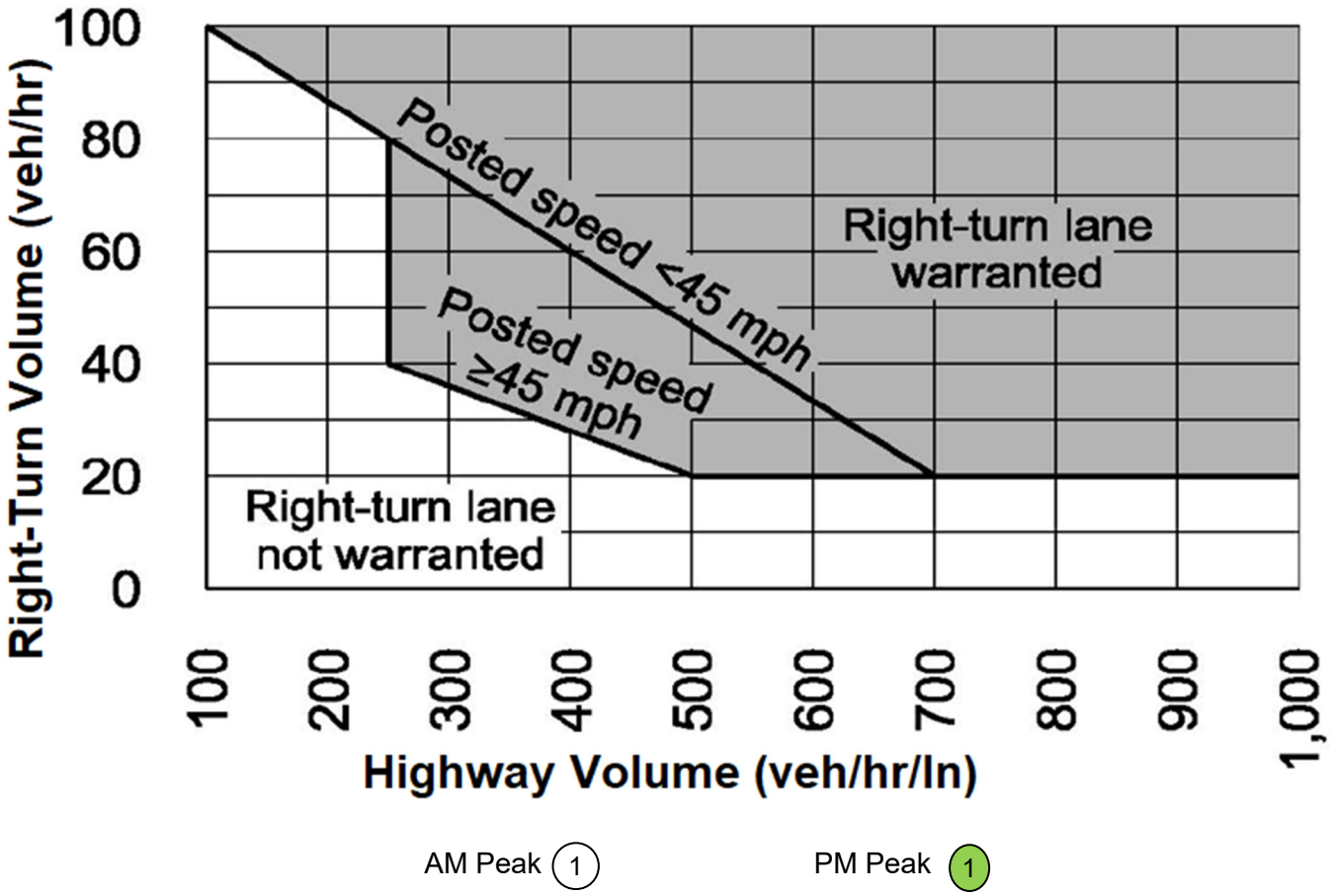
APPENDIX G: Turn Lane Analysis Worksheets

Mint Farm Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2021 Existing Traffic

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1 Lansing Lane & SH 44	EB	55	AM	6	644	No*
			PM	15	487	No*

* Right-turn volume less than 20 vph - Not Warranted



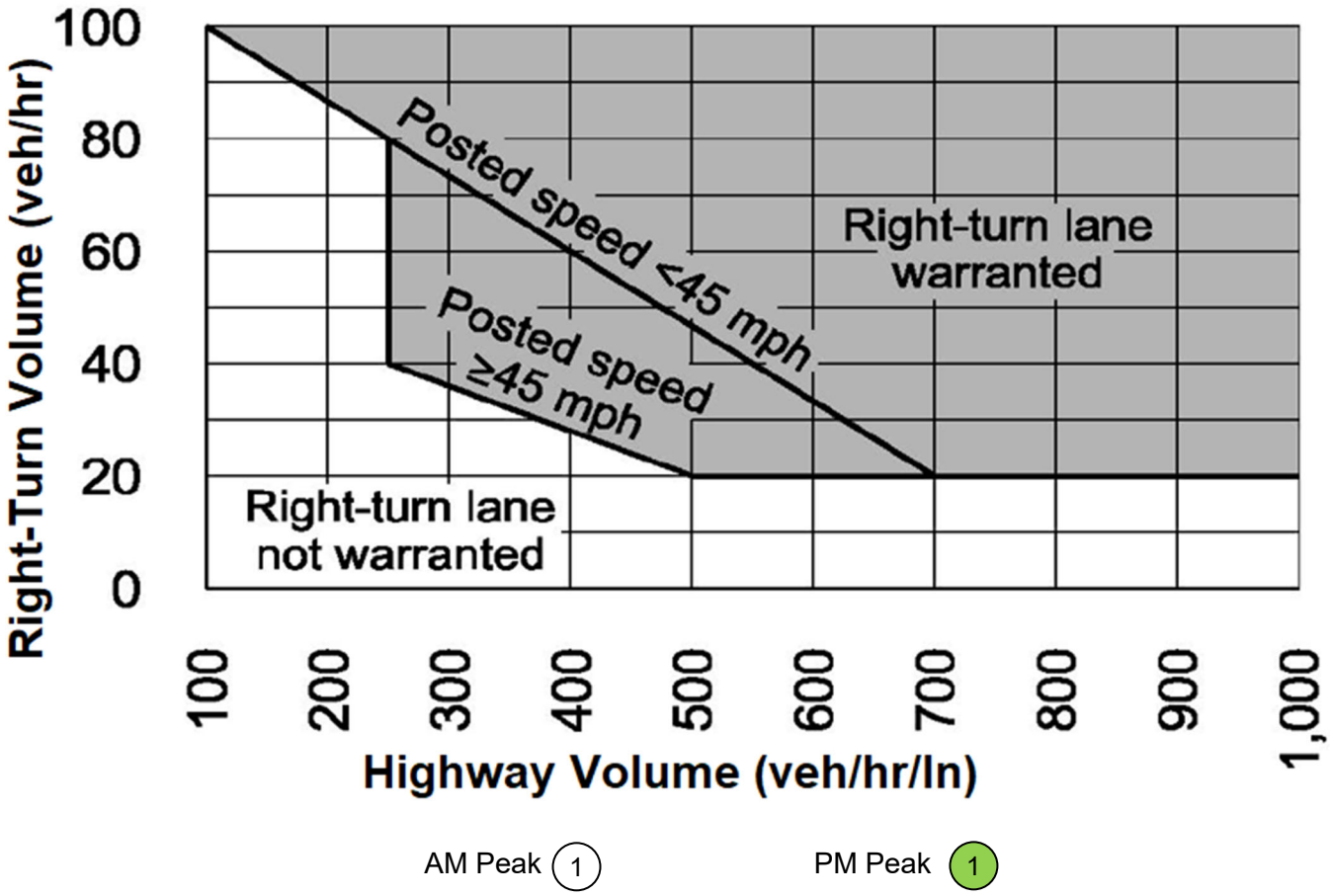
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2023 Background Traffic

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1 Lansing Lane & SH 44	EB	55	AM	6	670	No*
			PM	16	507	No*

* Right-turn volume less than 20 vph - Not Warranted



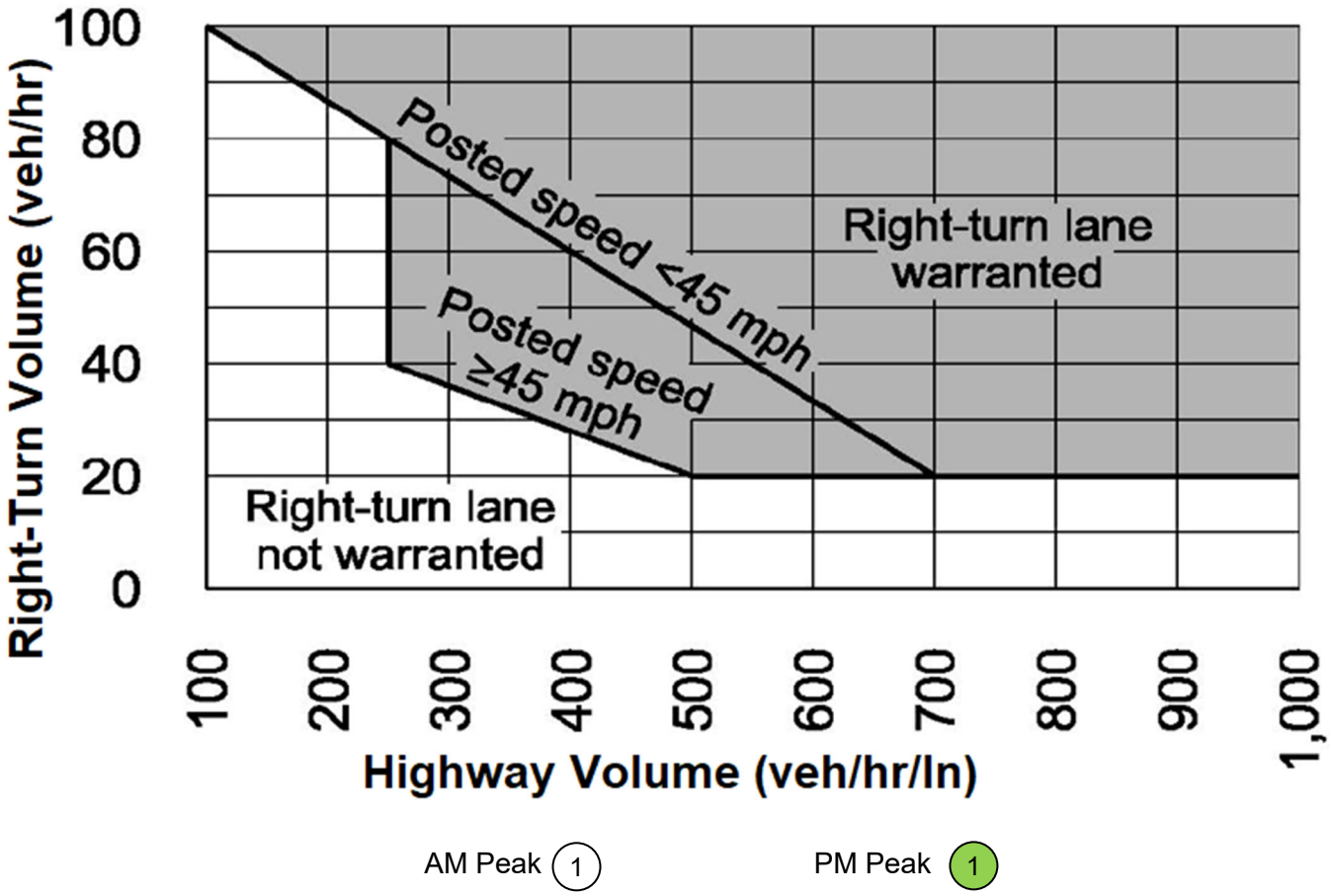
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2023 Total Traffic

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1 Lansing Lane & SH 44	EB	55	AM	6	673	No*
			PM	16	516	No*

* Right-turn volume less than 20 vph - Not Warranted



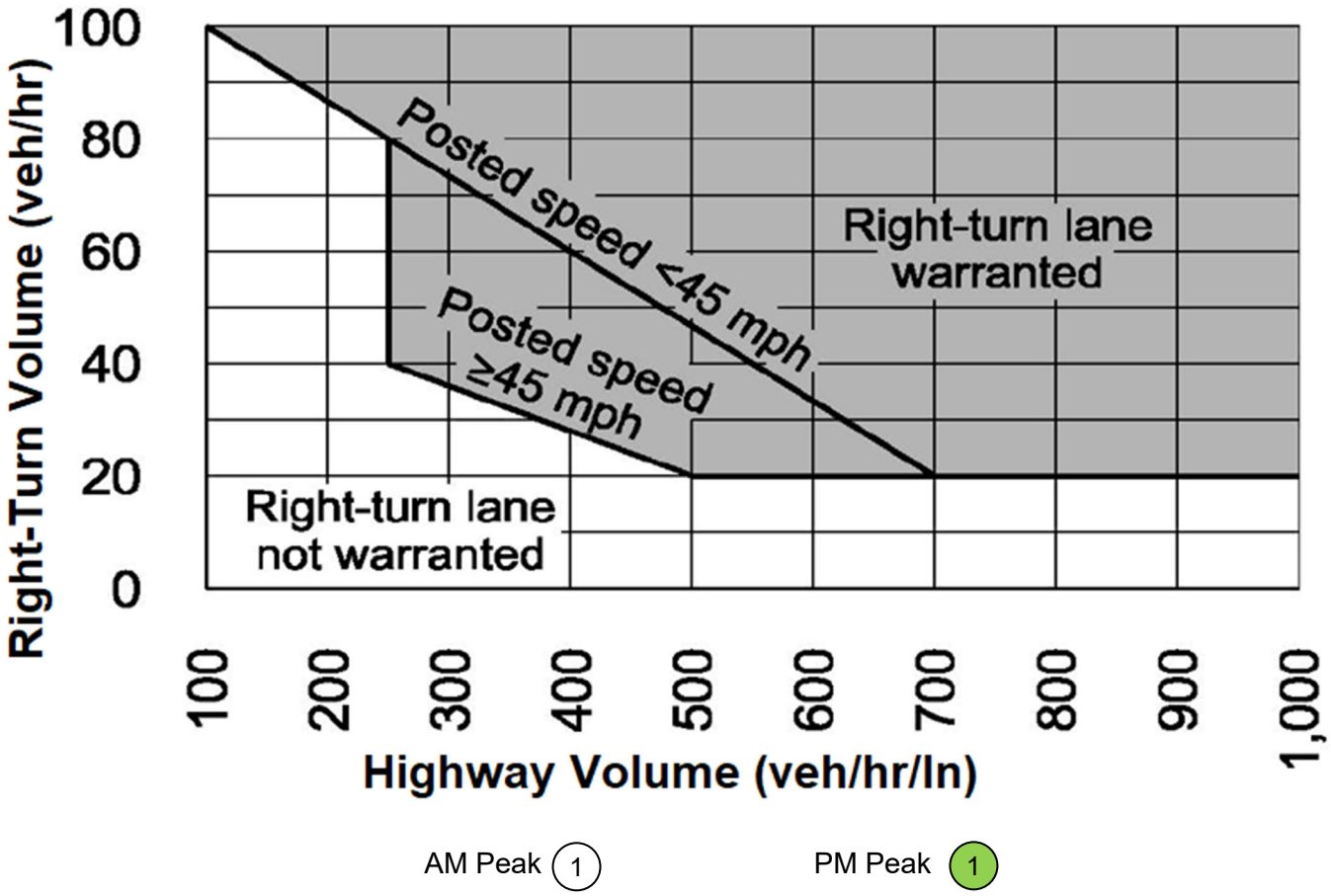
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2028 Background Traffic

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1 Lansing Lane & SH 44	EB	55	AM	7	740	No*
			PM	17	559	No*

* Right-turn volume less than 20 vph - Not Warranted



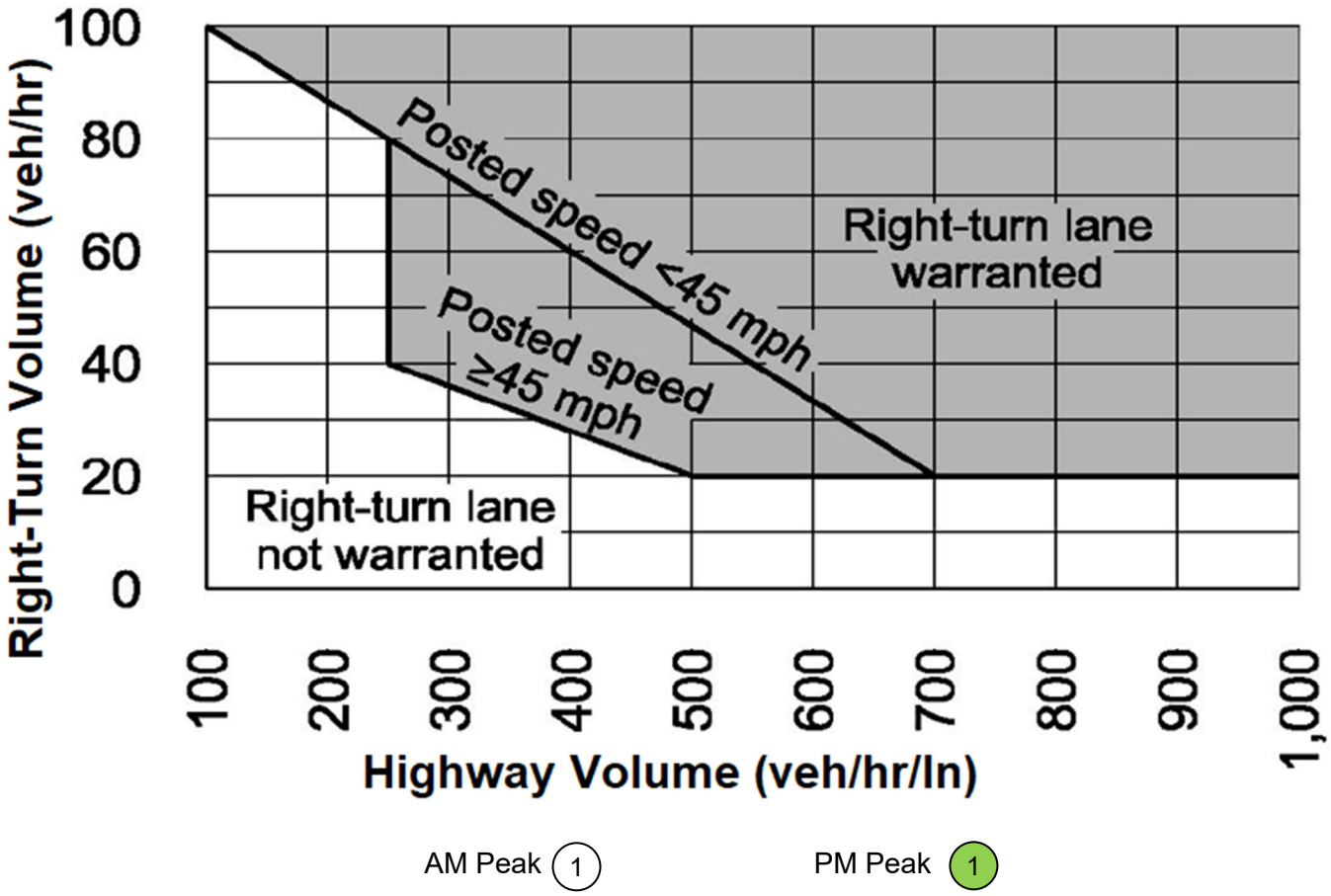
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

ITD Right-Turn Lane Analysis
2028 Total Traffic

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
1 Lansing Lane & SH 44	EB	55	AM	7	743	No*
			PM	17	568	No*

* Right-turn volume less than 20 vph - Not Warranted



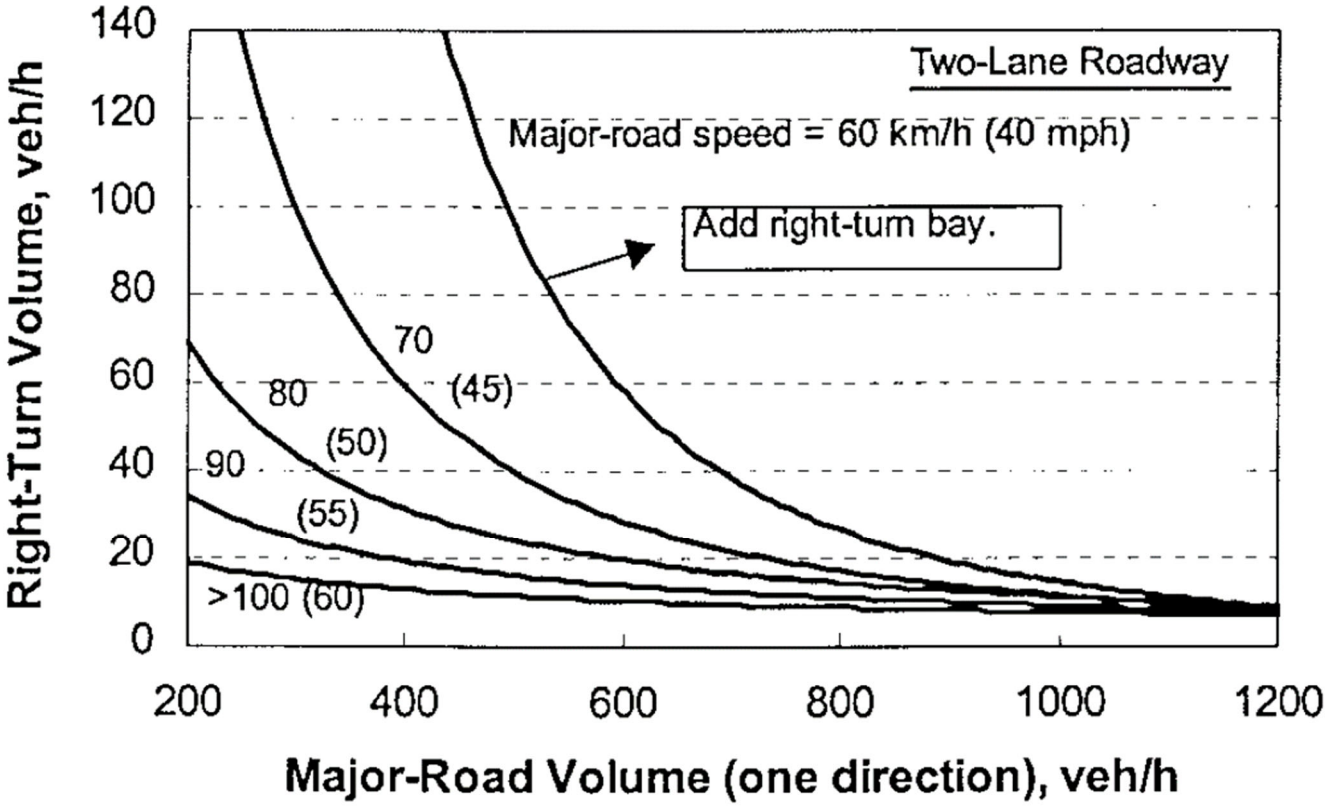
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Right-Turn Lane Analysis
2021 Existing Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	22	101	No*
			PM	12	67	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	4	118	No*
			PM	4	100	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	4	62	No*
			PM	15	73	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	0	31	No*
			PM	12	97	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



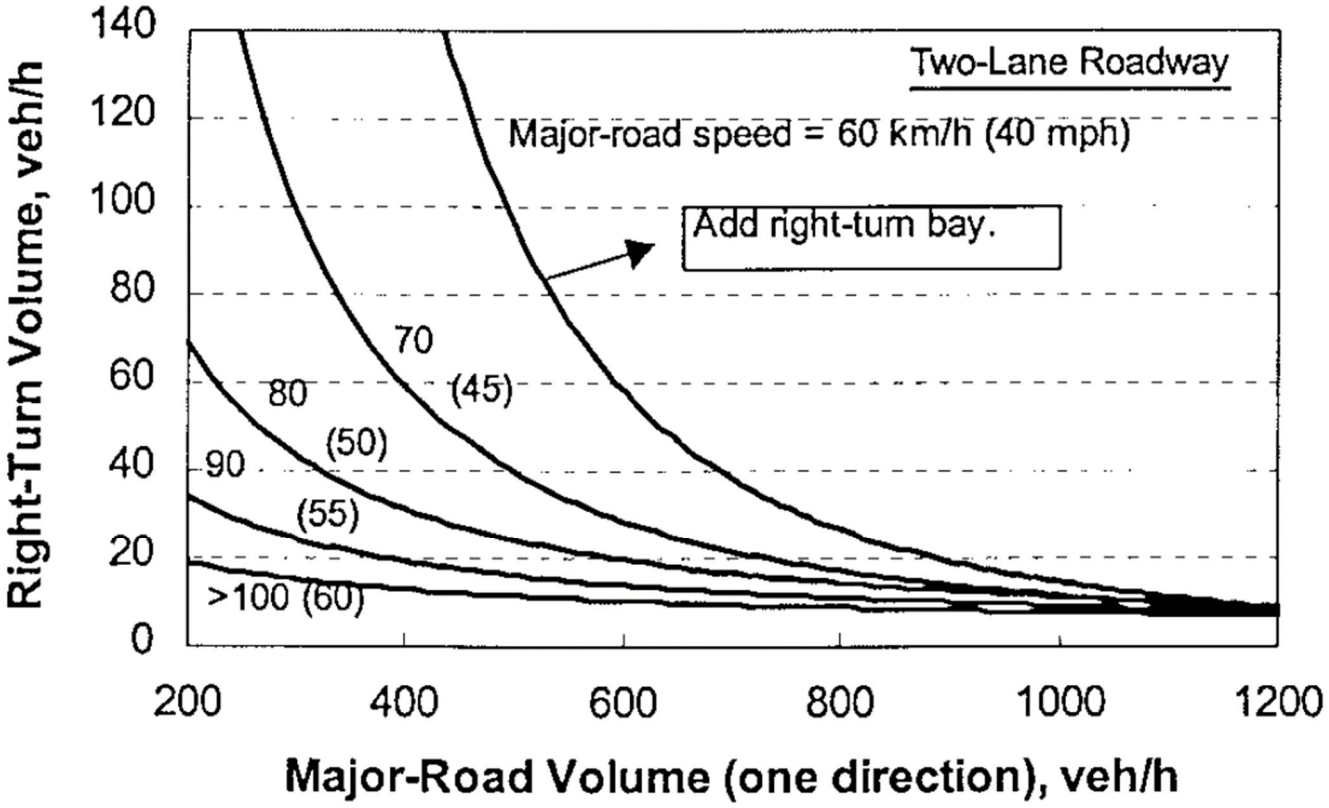
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Right-Turn Lane Analysis
2023 Background Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	25	115	No*
			PM	14	77	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	5	136	No*
			PM	5	115	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	5	72	No*
			PM	17	84	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	0	35	No*
			PM	14	112	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



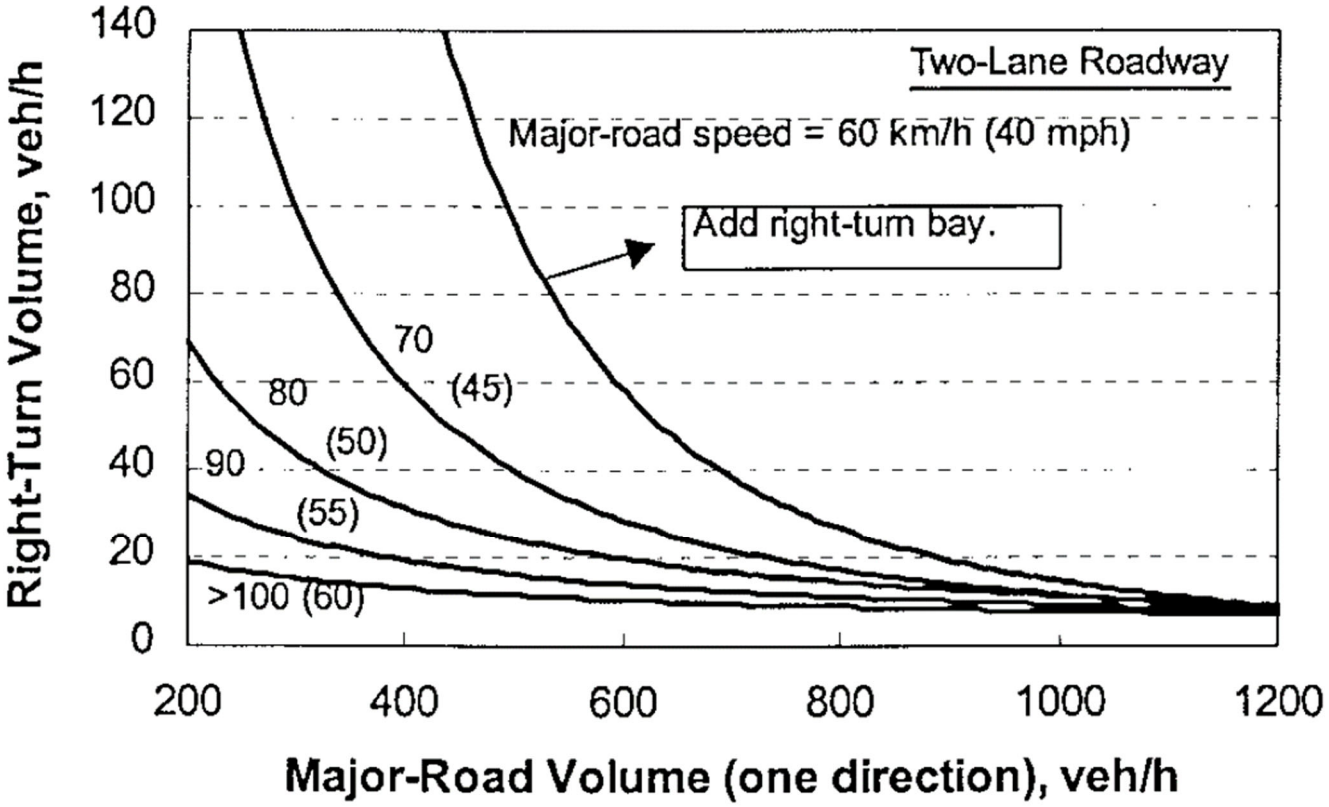
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Right-Turn Lane Analysis
2023 Total Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	25	117	No*
			PM	14	82	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	5	162	No*
			PM	5	132	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	5	78	No*
			PM	17	88	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	0	37	No*
			PM	14	119	No*
5 Site Access & Purple Sage Road	WB	50	AM	2	138	No*
			PM	7	122	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



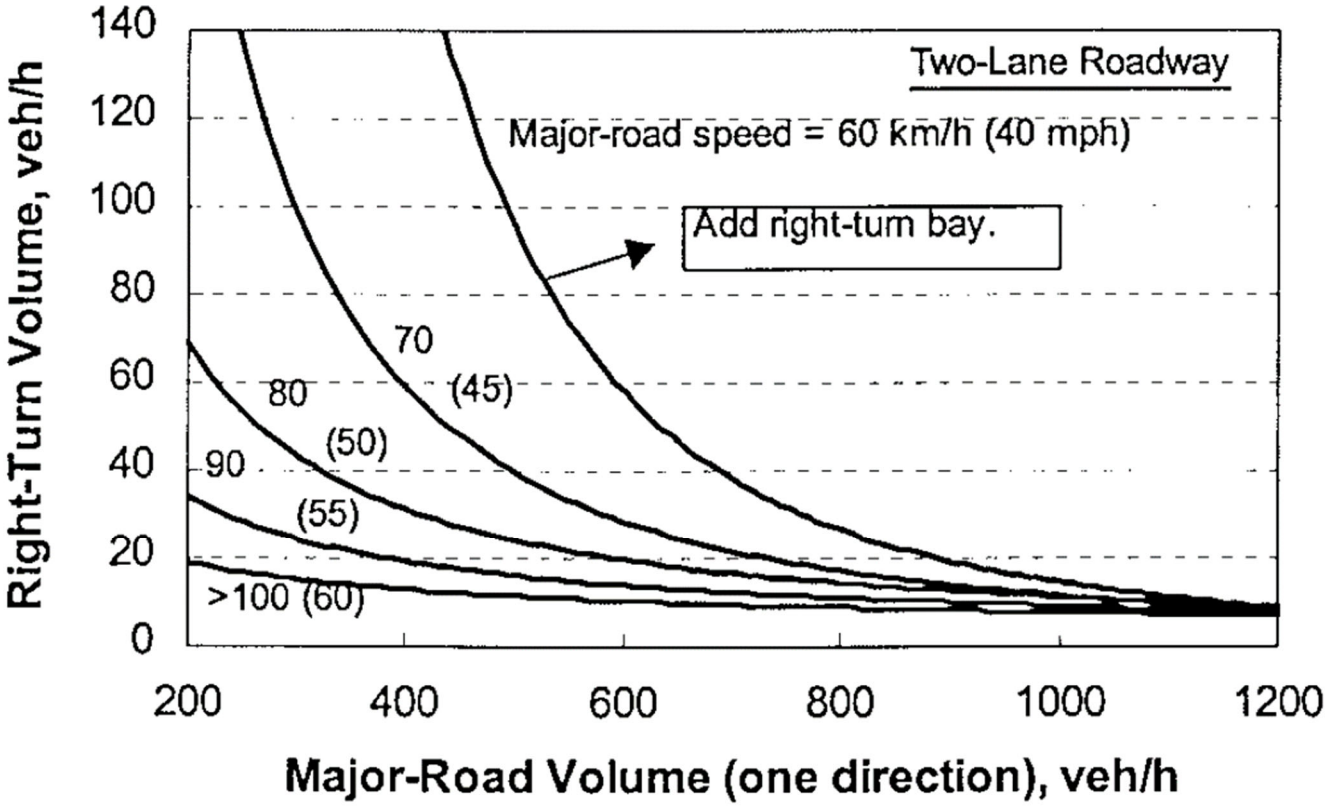
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Right-Turn Lane Analysis
2028 Background Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	35	161	No*
			PM	19	107	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	6	188	No*
			PM	6	159	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	6	99	No*
			PM	24	116	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	0	49	No*
			PM	19	155	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



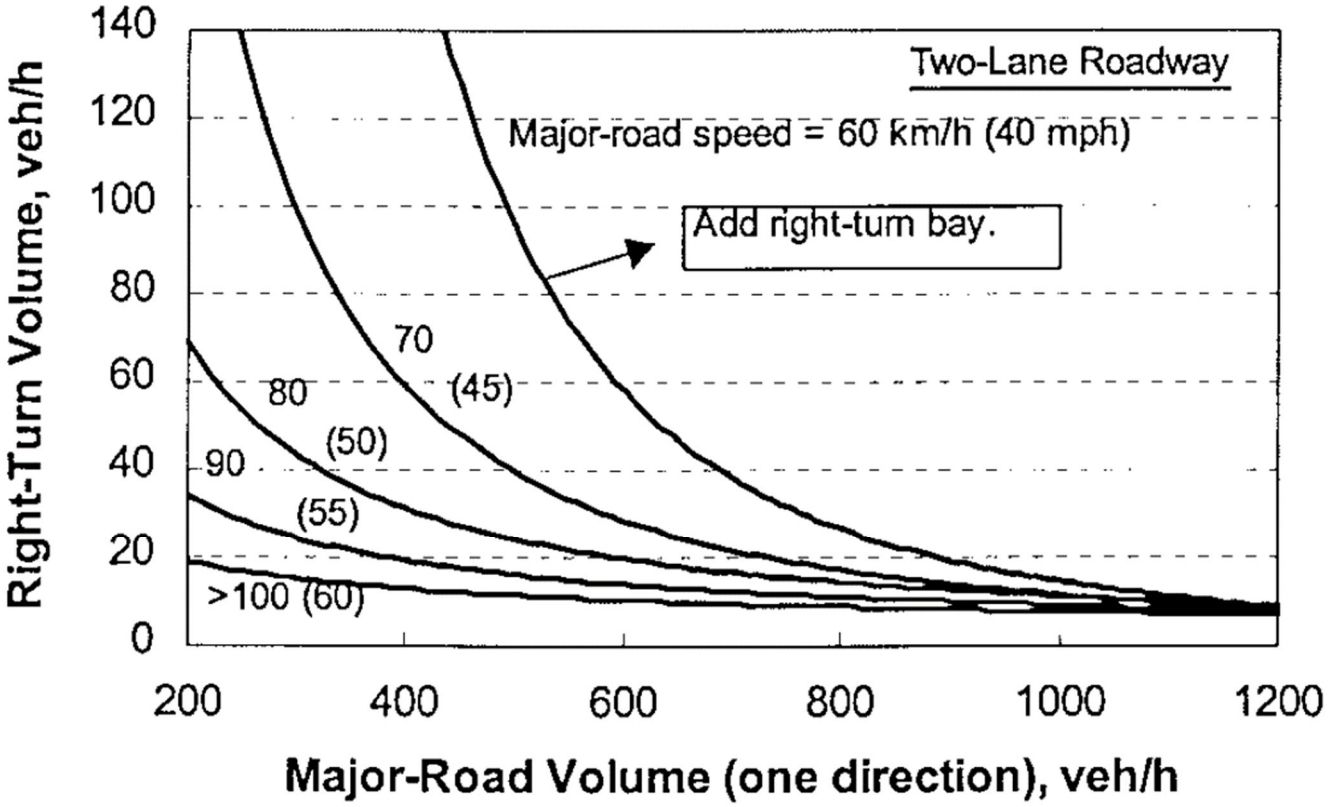
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Right-Turn Lane Analysis
2028 Total Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	35	163	No*
			PM	19	112	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	6	214	No*
			PM	6	176	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	6	105	No*
			PM	24	120	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	0	51	No*
			PM	19	162	No*
5 Site Access & Purple Sage Road	WB	50	AM	2	190	No*
			PM	7	166	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



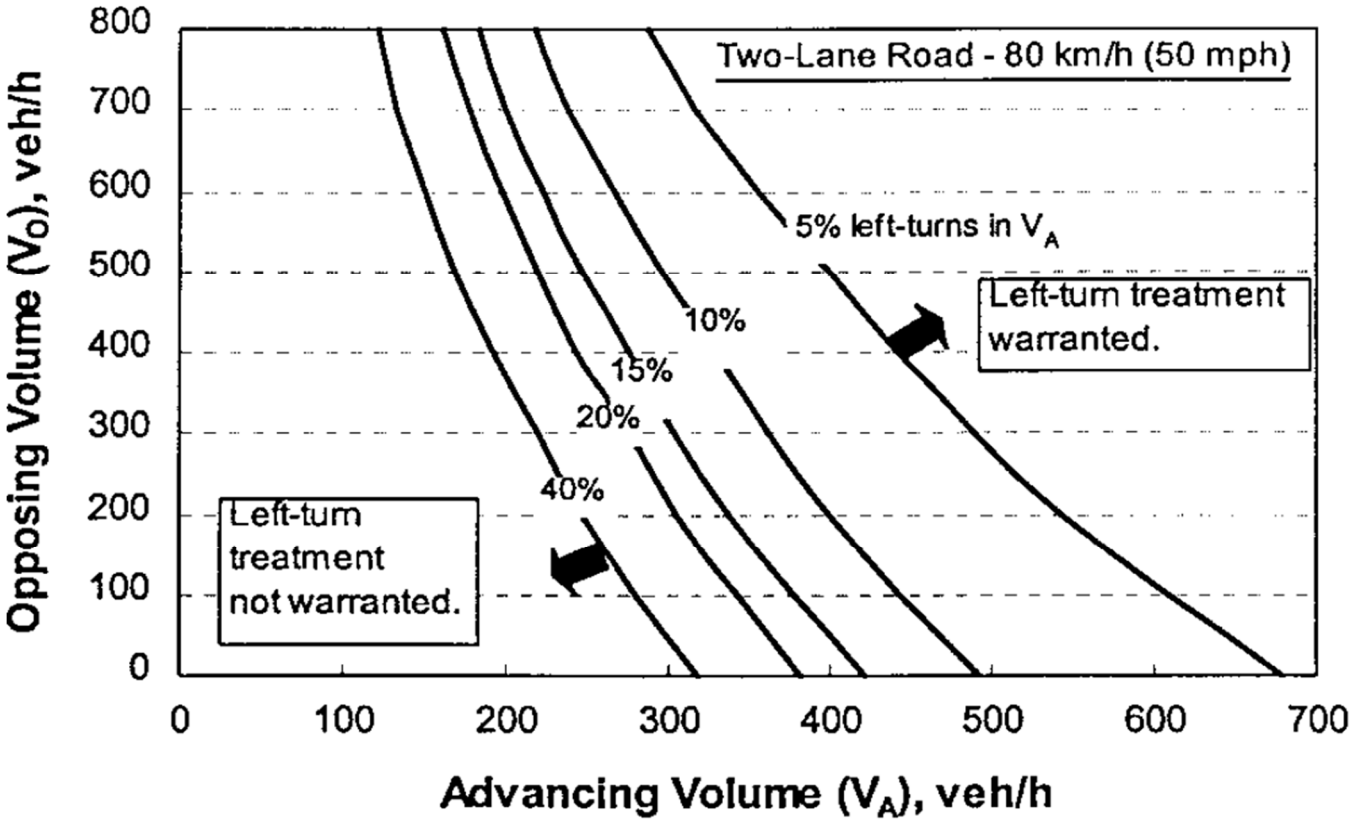
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2021 Existing Traffic - 50 mph

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	101	86	12.9%	No*
			PM	67	78	22.4%	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	118	88	27.1%	No*
			PM	100	52	22.0%	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	62	31	17.7%	No*
			PM	73	86	16.4%	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	31	51	0.0%	No*
			PM	97	61	11.3%	No*

*Advancing and Opposing Volume < 225 vph = Not Warranted



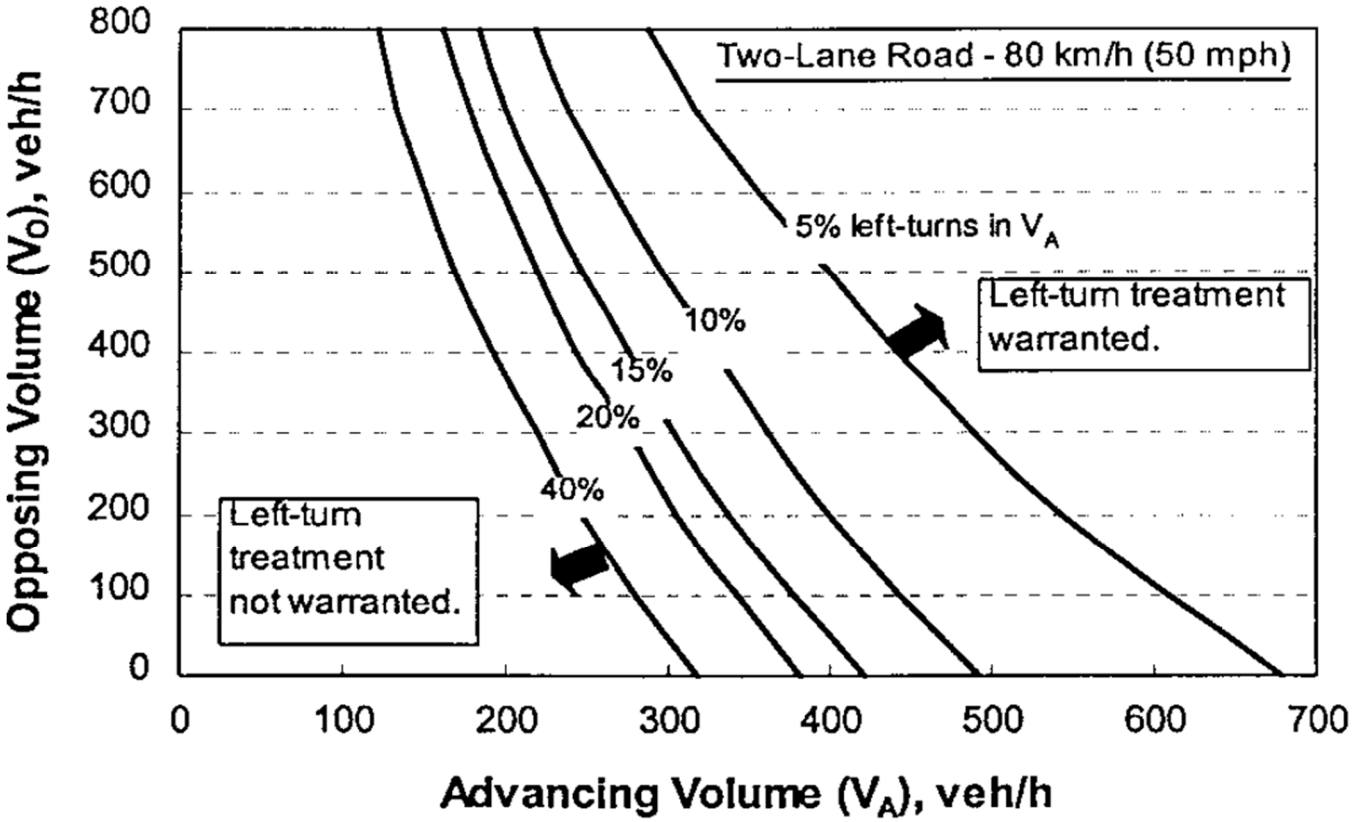
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2023 Background Traffic - 50 mph

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	115	99	13.0%	No*
			PM	77	90	22.1%	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	136	100	27.2%	No*
			PM	115	60	21.7%	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	72	35	18.1%	No*
			PM	84	99	16.7%	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	35	59	0.0%	No*
			PM	112	70	11.6%	No*

*Advancing and Opposing Volume < 225 vph = Not Warranted



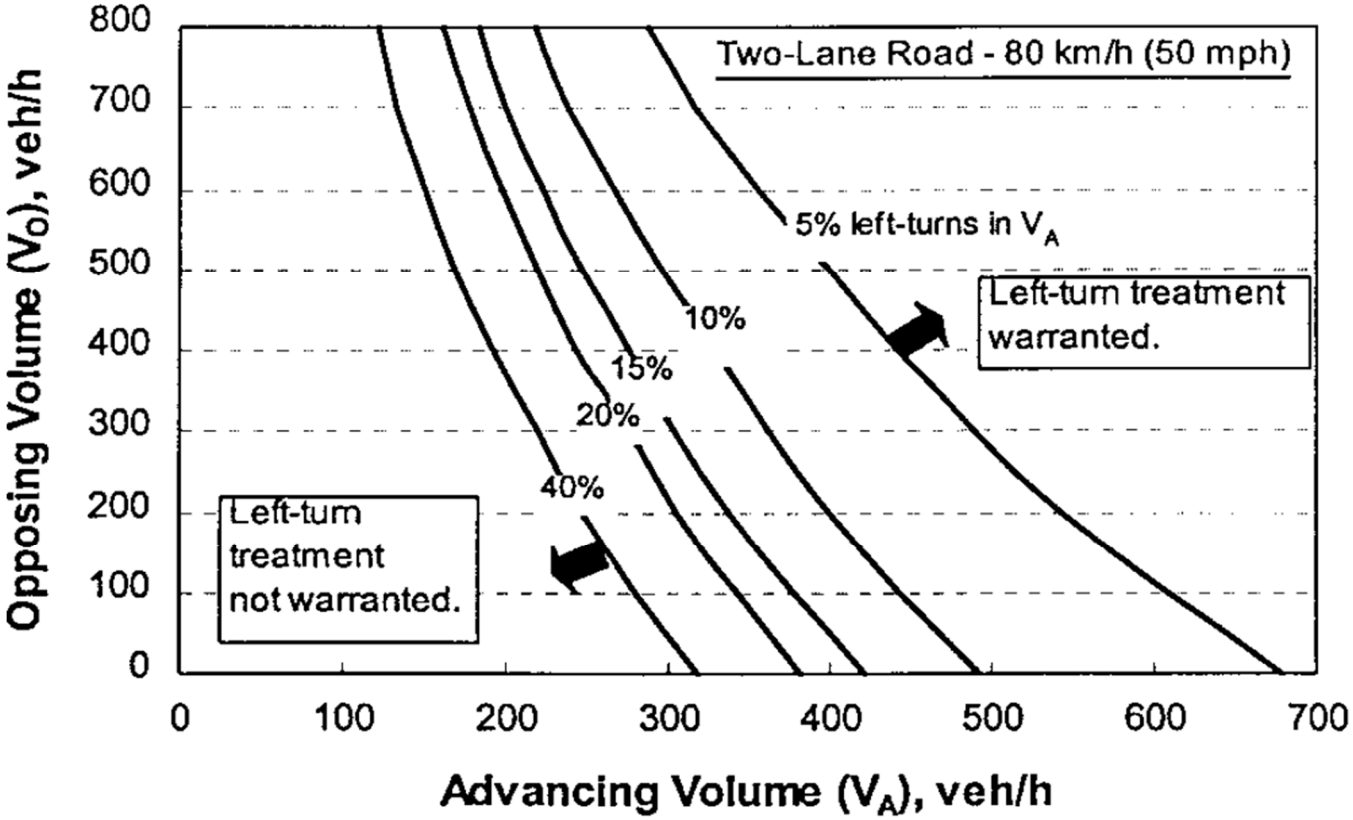
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2023 Total Traffic - 50 mph

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	117	104	12.9%	No*
			PM	82	93	20.7%	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	162	102	35.8%	No*
			PM	132	65	29.3%	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	78	37	16.6%	No*
			PM	88	106	15.9%	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	37	65	0.0%	No*
			PM	119	89	10.9%	No*
4 Site Access & Purple Sage Road	WB	50	AM	119	138	7.4%	No*
			PM	117	122	23.9%	No*

*Advancing and Opposing Volume < 225 vph = Not Warranted



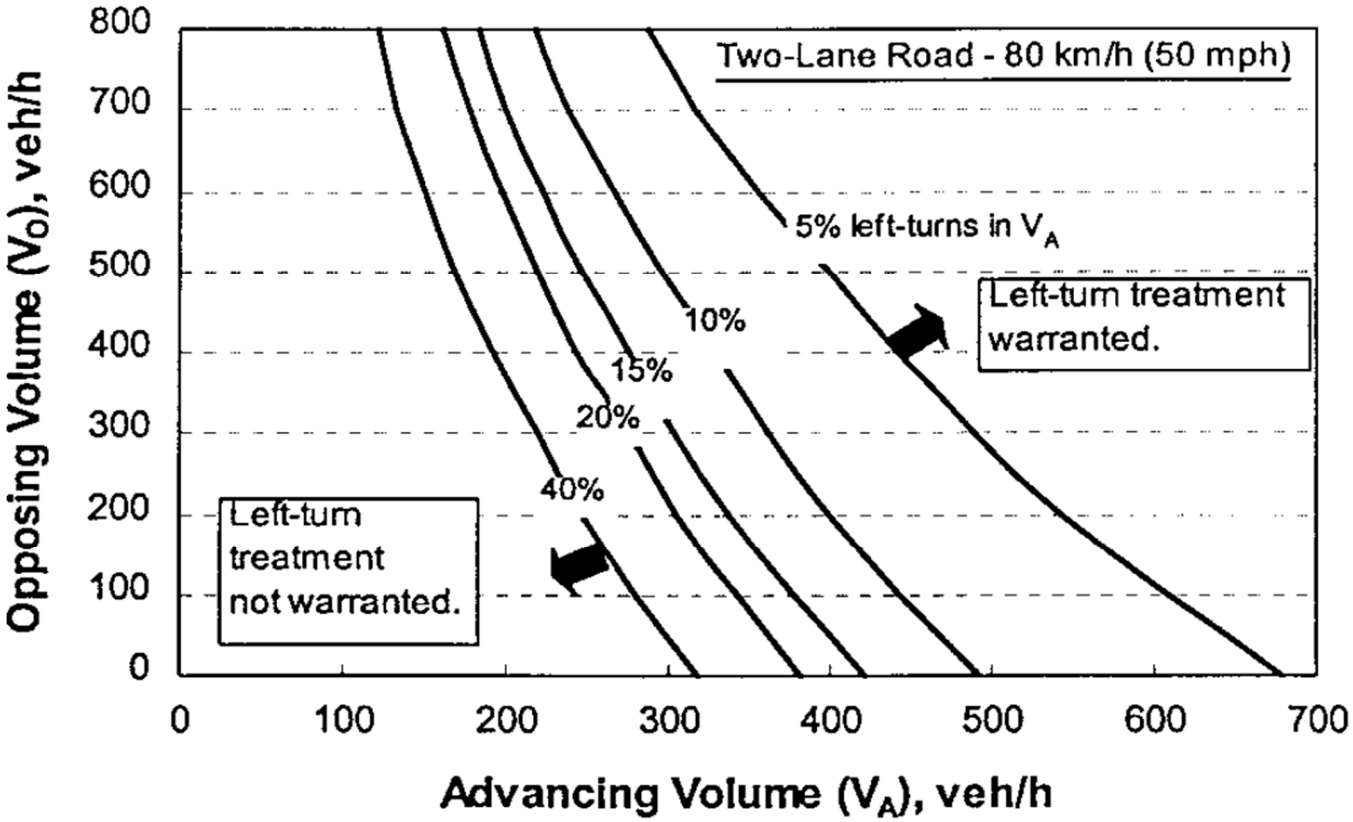
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2028 Background Traffic - 50 mph

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
1 Lansing Lane & Purple Sage Road	EB	50	AM	161	137	13.0%	No*
			PM	107	124	22.4%	No*
2 Lansing Lane & Purple Sage Road	WB	50	AM	188	140	27.1%	No*
			PM	159	83	22.0%	No*
3 Kingsbury Road & Purple Sage Road	EB	50	AM	99	49	18.2%	No*
			PM	116	137	16.4%	No*
4 Kingsbury Road & Purple Sage Road	WB	50	AM	49	81	0.0%	No*
			PM	155	97	11.6%	No*

*Advancing and Opposing Volume < 225 vph = Not Warranted



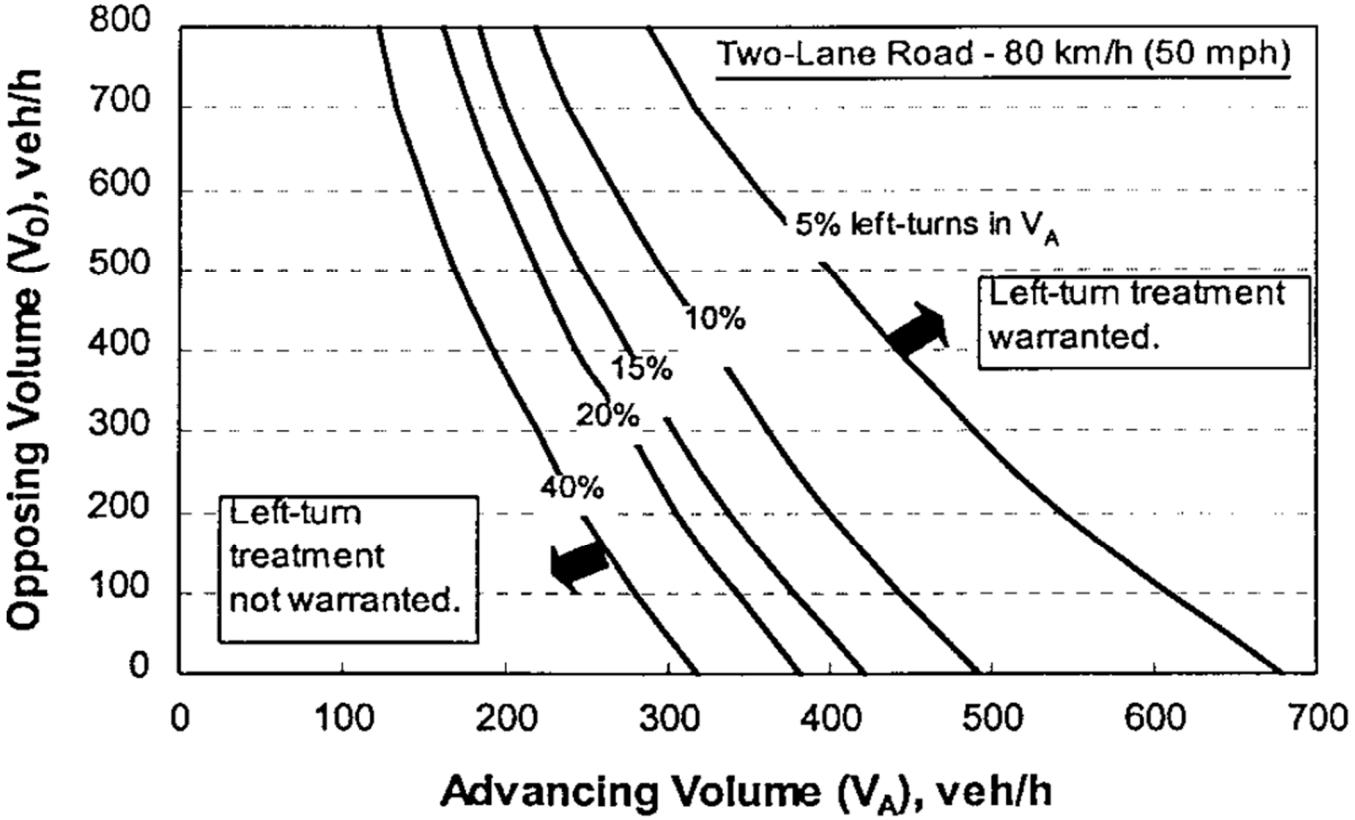
AM Peak 1 PM Peak 1

Mint Farm Subdivision
Canyon County, Idaho

NCHRP 457 Left-Turn Lane Analysis
2028 Total Traffic - 50 mph

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
1	Lansing Lane & Purple Sage Road	EB	50	AM	163	142	12.9%	No*
				PM	112	127	21.4%	No*
2	Lansing Lane & Purple Sage Road	WB	50	AM	214	142	33.6%	No*
				PM	176	88	27.7%	No*
3	Kingsbury Road & Purple Sage Road	EB	50	AM	105	51	17.1%	No*
				PM	120	144	15.8%	No*
4	Kingsbury Road & Purple Sage Road	WB	50	AM	51	87	0.0%	No*
				PM	162	101	11.1%	No*
4	Site Access & Purple Sage Road	WB	50	AM	156	190	5.6%	No*
				PM	143	166	19.6%	No*

*Advancing and Opposing Volume < 225 vph = Not Warranted



AM Peak (1) PM Peak (1)