MEMORANDUM

TO: **Laramie County Board of County Commissioners**

FROM: **Cate Cundall, Associate Planner**

DATE: **June 17, 2025**

TITLE: **PUBLIC HEARING regarding the CK Gold Project Site Plan, located on portions of Section 25 and 36, T14N, R70W, and Portions of Sections 28, 29, and 32, and all of Section 31, T14N, R69W, Laramie County, WY.**

EXECUTIVE SUMMARY

Gold King Corporation applied for approval of the CK Gold Project Site Plan located on the South ½ of Section 25 and all of Section 36, Township 14 North, Range 70 West, and Portions of Section 28, 29, and 32 and all of Section 31, Township 14 North, Range 69 West. The proposed site is located off Road 210 approximately 20 miles west of Cheyenne, Wyoming.

The project is the development of a gold and copper mine that will use an open pit, processing plant, waste rock facilities, and a tailings management facility. The subject property is owned by both private parties and the State of Wyoming. Access to the property will be via a gravel road to Road 210 approximately two miles west of Happy Jack Road. The access road easement will be fenced on both sides and the Project will also be fenced.

BACKGROUND

The subject parcels are situated in the LU – Land Use Zone District and is agricultural land. The Laramie County Comprehensive Plan identifies the area as Ag and Range Land (AGR).

Pertinent Statutes and Regulations include:
Section 2-2-133 governing the Site Plan process.
Section 4-2-114 governing the LU – Land Use Zone District.

DISCUSSION

The project has obtained a WY DEQ Land Quality Division Regular Mine Operating Permit, WY DEQ Water Quality Division Pollutant Discharge Elimination System (WYPEDS) Permit, DEQ Industrial Siting Division Air Quality Permit, and multiple pond and well use permits from the Wyoming State Engineer's Office.

The project will not have driveways, dedicated parking spots, or a landscaping plan. Site access roads with a running surface width of approximately 26 feet will connect the various mine features and buildings. General parking areas will be located next to each building. Haul roads will be separate from the access roads to allow for haul truck traffic to move material from the pit to the primary crusher or one of the pile facilities. Accesses to the buildings will be constructed following construction of the buildings. The largest building of the Project is the processing plant with a height of 100 feet. There are no dedicated floors, rather there are differing elevations for the equipment and machinery within the building.

The applicants is planning to use a fire suppression system supplied from a large water tank that will be located uphill and to the west of the Project. Additionally, the Project can utilize water trucks and heavy equipment in the event of a fire. Project trash will be collected in receptacles located near each building.

A reclamation plan has been developed. The plan generally describes the post-mining land use which is consistent with the pre-mining land use, contours, and methods to revegetate the disturbed area. DEQ approved 3 seed mixes for use in the revegetation process. Topsoil will be spread over graded areas prior to revegetation. Concurrent reclamation will be performed as the project progresses to reduce areas of disturbance.

Project drainage will follow existing flow paths towards either Middle Crow Creek or South Crow Creek. There are designed and permitted ponds to detain the water before using the water in the processing plant or testing the water quality for discharge.

Areas where the buildings will be built are the only areas considered impervious within the plant area. Geomembrane liners will also be installed for some of the material stockpiles. The remainder of the projects area will be compacted soils, gravel, or undisturbed ground.

Agency reviews are being completed. A development sign was posted, adjacent property owners notified, and a legal advertisement was placed in the Wyoming Tribune Eagle. No comments have been received.

RECOMMENDATION and FINDINGS

Based upon evidence provided, staff recommend the Laramie County Board of Commissioners find that:

- **a.** This application meets the criteria for Site Plans pursuant to section 2-2-133 of the Laramie County Land Use Regulations; and,
- **b.** This application is in conformance with Section 4-2-114 of the Laramie County Land Use Regulations governing the LU – Land Use Zone District.

and that the Board may approve the CK Gold Project Site Plan on the condition that:

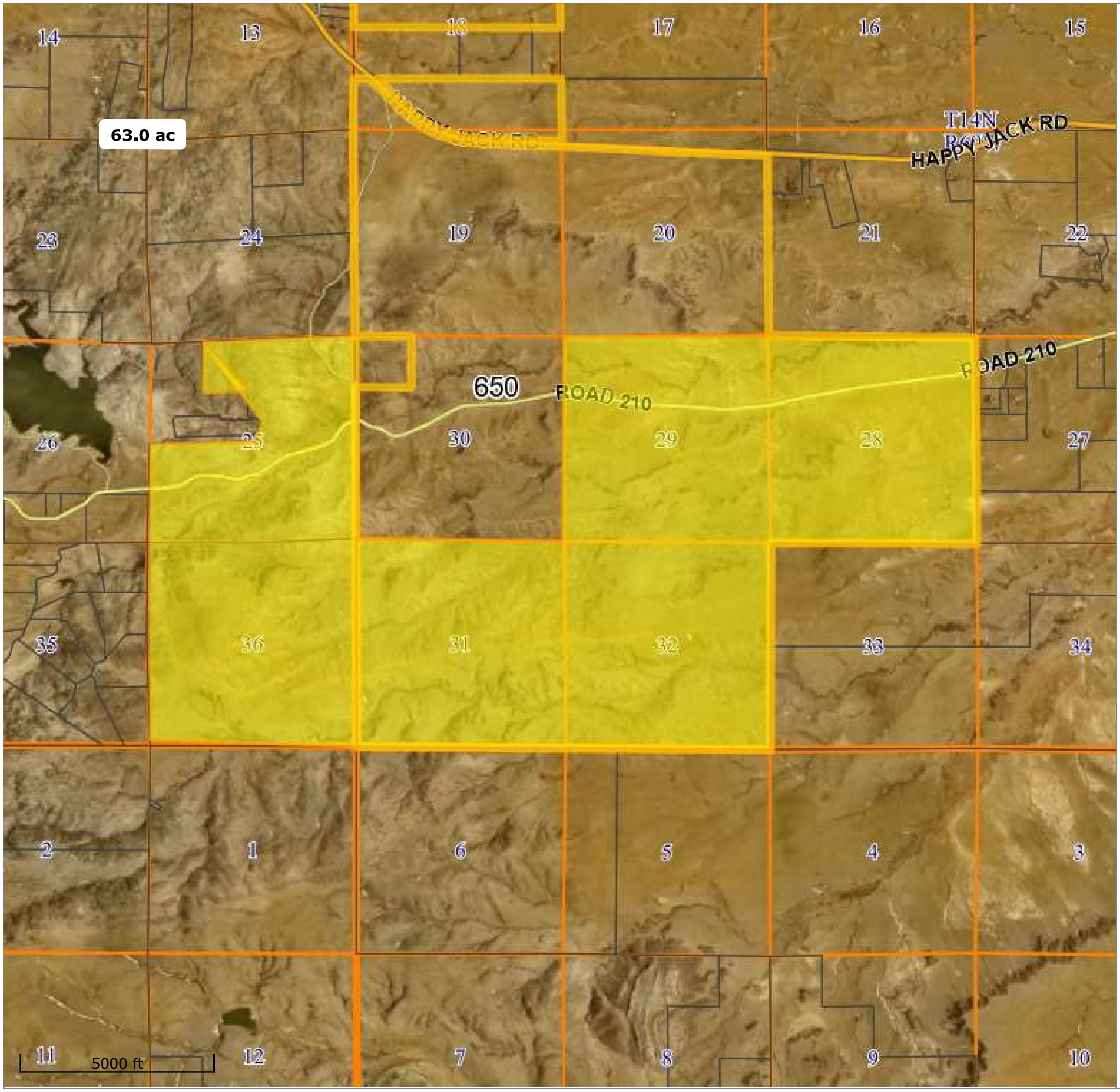
1. All agency comments must be addressed and corrections made to the Site Plan before a Certificate of Review is issued.

PROPOSED MOTION

I move to approve the CK Gold Project Site Plan with one condition and adopt the findings of fact a and b of the staff report.

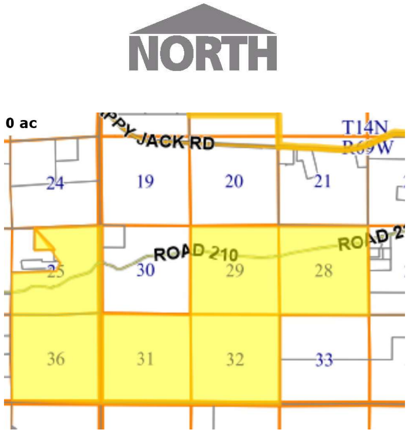
ATTACHMENTS

Attachment 1:	**Location Map**
Attachment 2:	**Applicant Justification Letter**
Attachment 3:	**Pre-App Notes**
Attachment 4:	**Agency Review Comments and Applicant Response**
Attachment 5:	**Surface Owner's Agreement**
Attachment 6:	**Traffic Study**
Attachment 7:	**Access Road Remote Gate Conceptual Plan**
Attachment 8:	**WYPDES Permit**
Attachment 9:	**Resolution**
Attachment 9:	**Site Plan Exhibit**



CK Gold Project
Site Plan

PZ-25-00035



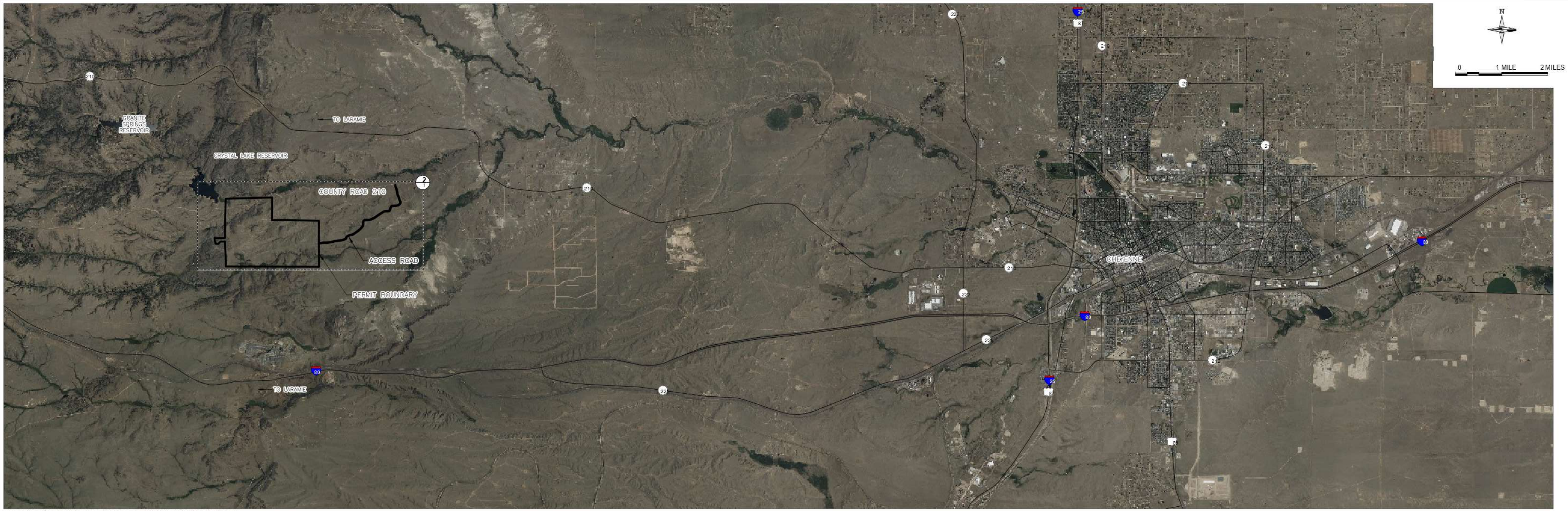
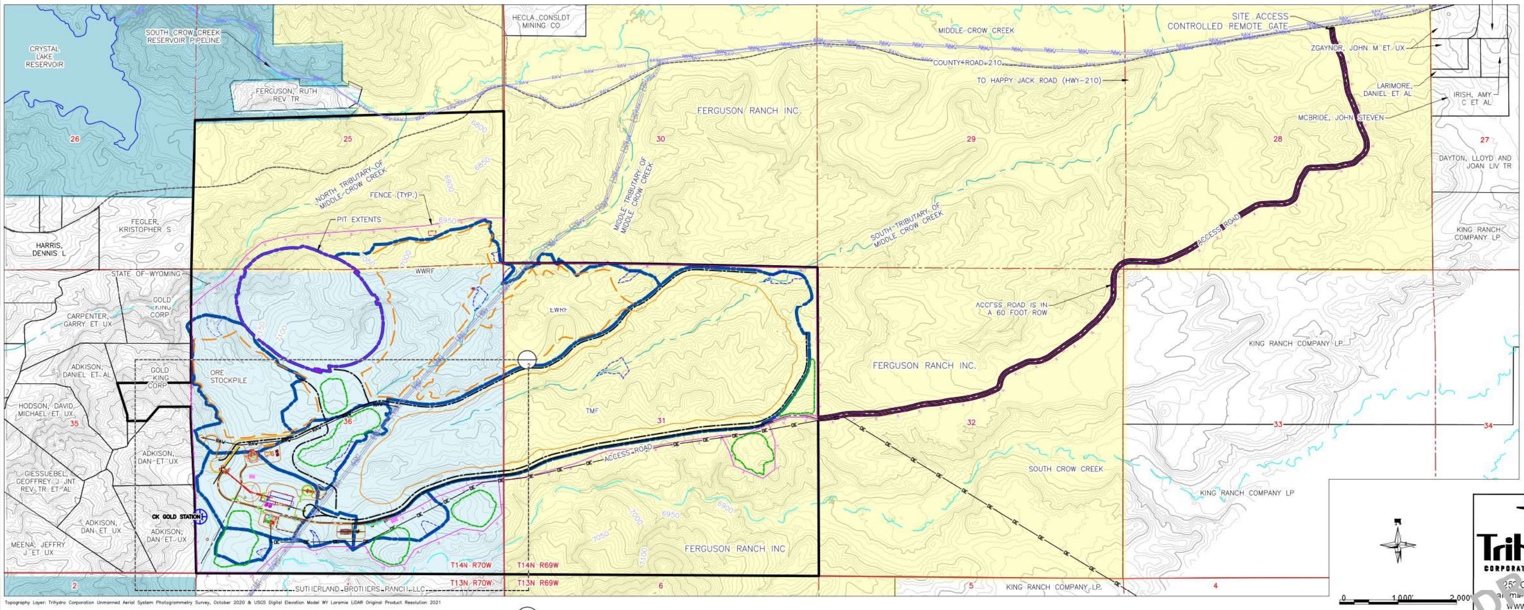


Image Citation: ©2025 Microsoft Corporation ©2025 Maxar ©CNES (2025) Distribution Airbus DS Bing Image

① **PROJECT VICINITY**
SCALE 1" = 1 MILE



Topography Layer: Trihydro Corporation Unmanned Aerial System Photogrammetry Survey, October 2020 & USGS Digital Elevation Model WY Laramie LiDAR Original Product Resolution 2021

② **PROJECT AREA AND LAYOUT**
SCALE 1" = 1,000'

EXPLANATION

━━━	OPERATING PERMIT BOUNDARY
───	TOWNSHIP/RANGE
─ ─ ─	SECTION
───	PAVED ROAD
- - - -	UNPAVED ROAD
━ ━ ━	HAUL ROAD
─ - ─	ACCESS ROAD
──OE──	BLACK HILLS ENERGY POWER LINE
──7150──	EXISTING GROUND CONTOURS (10-FOOT INTERVAL)
▬	LEACH FIELD
──RAW──	RAW WATER TRANSMISSION PIPELINE
──RAW──	EXISTING BOPU RAW WATER PIPELINES AND SOUTH CROW CREEK RESERVOIR PIPELINE
───	INTERMITTENT/ PERENNIAL STREAM
───	EPHEMERAL DRAINAGE/STREAM
───	RESERVOIR
- - - -	DETENTION PONDS
━ ━	TAILINGS MANAGEMENT FACILITY, WEST AND EAST WASTE ROCK FACILITIES, AND ORE STOCKPILE
━━━━	PIT EXTENTS
━━━━	TOPSOIL STOCKPILES
──×──	FENCE
▬	CULVERT
▭	STATE OF WYOMING
▭	LOCAL GOVERNMENT
▭	FERGUSON RANCH INC
──ESMT──	RAW WATER PIPELINE EASEMENT
━━━━	SITE BASINS

Trihydro CORPORATION
252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745 7474 (F) 307/745 7729

FIGURE 1

VICINITY AND PROJECT AREA MAPS

CK GOLD PROJECT
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: AS SHOWN	Date: 4/30/2025	File: 74L-SITEPLAN

GOLD KING CORP

1807 Capitol Ave.
Suite 206
Cheyenne, WY 82001
(307) 514-0638 ☎

May 2, 2025

Mr. Justin Arnold
Department Head of Laramie County Planning & Development
Program Manager
Archer Complex
3966 Archer Pkwy
Cheyenne, WY 82009

RE: Gold King Corp., CK Gold Project, Site Plan Application

Dear Mr. Arnold:

Enclosed please find the Laramie County Site Plan application for the Gold King Corp. CK Gold Project (Project) located approximately 20 miles west of Cheyenne in Laramie County, Wyoming (Figure 1). The application includes this letter, the filled out and signed application form, and two figures. The 2022 Laramie County Land Use Regulations were used in developing the figures for this application.
The CK Gold Project is located on S½ of Section 25 and Section 36 of Township 14 North (T14N) Range 70 West (R70W), Section 31 and parts of Sections 28, 29, and 32 of T14N R69W. The State owns Section 36 and the rest is privately owned. The Project is located in the unzoned regulatory area. The Project is a gold and copper mine that will use an open pit, processing plant, waste rock facilities, and a tailings management facility. Access to the Project will be via a 4.26-mile gravel access road to County Road 210 approximately 2 miles west of Highway 210 (Happy Jack Road). The access road will use a 26-foot running surface within a 60-foot easement. The road is designed with ditches on both sides. Access will be controlled by a remote gate near County Road 210 and the main gate near the plant facilities. The access road easement will be fenced on both sides and the Project will also fenced either by newly installed fence or fence along property boundaries. Figures 1 and 2 show the Project's vicinity to Cheyenne, the overall Project permit boundary, and main building features.

The Project has obtained multiple State level permits and are listed below:

- Wyoming Department of Environmental Quality (DEQ) – Land Quality Division (LQD) Regular Mine Operating Permit (RMOP)
- DEQ – Water Quality Division (WQD) – Wyoming Pollutant Discharge Elimination System (WYPDES) Permit
- DEQ – Industrial Siting Division (ISD) – Industrial Siting Permit (ISP)
- DEQ – Air Quality Division (AQD) – Air Quality Permit (AQP)
- Wyoming State Engineer's Office (SEO) – Multiple Pond and Well Use Permits

The Project will not have driveways, dedicated parking spots, or a landscaping plan. Site access roads with a running surface width of approximately 26 feet will connect the various mine features and buildings and general parking areas will be located near each building. Haul roads will be separate from the access roads to allow for haul truck traffic to move material from the pit to the primary crusher or one of the pile facilities. There will be no established setbacks for the buildings shown on the figures. The Project will construct access to the building following construction of the buildings. The largest building of the Project is the processing plant with a height of 100 feet. There are not dedicated floors, rather there are differing elevations for the equipment and machinery within the building. Areas where the buildings will be built are the only areas considered impervious within the plant area. Geomembrane liners will also be installed for some of the material stockpiles. The rest of the Project's land will be compacted soils, gravel, or undisturbed ground.

The Project is planning to use a fire suppression system supplied from a large water tank that will be located uphill and to the west of the Project. Additionally, the Project can utilize water trucks and heavy equipment in the event of a fire. Project trash will be collected in receptacles located near each building and the trash will be disposed of in the Laramie County landfill.

As part of the process to obtain the RMOP, the Project developed a reclamation plan. The plan generally describes the post-mining land use which is consistent with the pre-mining land use, contours, and methods to revegetate the disturbed areas. DEQ – LQD approved 3 seed mixes (i.e., primary, shrub, and marsh) for use in the revegetation process. Topsoil will be spread over graded areas prior to revegetation is performed. Also, as the Project progresses, concurrent reclamation may be performed to reduce areas of disturbance.

Project drainage generally follows existing flow paths towards either Middle Crow Creek or South Crow Creek. The Project has designed and permitted ponds to detain the water before using the water in the processing plant or testing the water quality for discharge. The RMOP and WYPDES permits provide the basis for Project water management.

Please contact me with any questions.

Sincerely,

Kevin Francis SME RM
Vice President
Gold King Corp

Site Plan Application - Laramie County, Wyoming

Give Application To:
Laramie County Planning and Development
3966 Archer Parkway – Cheyenne, WY 82009
planning@laramiecounty.com

Complete Application, Required Documents and Initial Payment Required at Time of Filing.

Pre- Application Meeting Date January 16, 2025

Name of Project CK Gold Project

OWNER ttach a separate sheet if there are additional property owners

Name Gold King Corp. Phone (303) 350-0092

Address 1807 Capitol Avenue, Suite 206 City Cheyenne State WY Zip Code 82001

Email kf@usgoldcorp.com

APPLICANT

Name Kevin Francis Phone (303) 350-0092

Address PO Box 22565 City Denver State CO Zip Code 80222

Email kf@usgoldcorp.com

LOCATION

Legal Description S1/2 S25 & S36 of T14N R70W, S31 and parts of S28, S29, & S32 of T14N R69W

Site Address ______ Site Area: Acres 1,628.8 *or* Site Square Feet ______

Site Location Description (If Address is Unavailable) Site is approx. 4.5 miles south southeast off of CR-210, the access road connects with CR-210 approximately 2 miles west of HWY-210.

Current Zoning Unzoned Regulatory Area Current Land Use livestock grazing and wildlife habitat

DEVELOPMENT INFORMATION

Description of proposed use(s).

Development of a copper and gold pit mine.

Required Documents/Initial fee due at time of submittal. Determined at Pre-Application meeting.
Site Plan Drawing, Landscape Plan Drawing, Digital copy of all files.
Pre-Application Notes, Project Narrative Letter, Warranty Deed.FAA Approval, if necessary
GESC Permit Application, Drainage and or Traffic Study or Waiver Request Letter, Sign details.

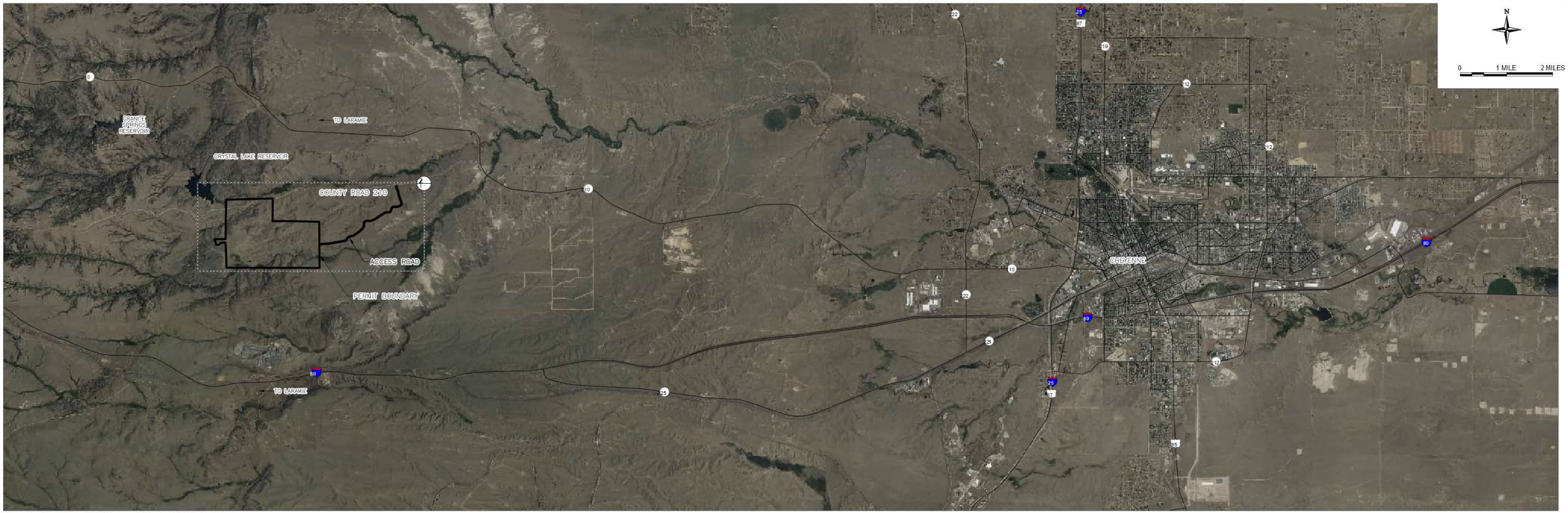
I hereby certify that I am the owner/applicant named herein and that I have familiarized myself with the rules and regulations with respect to the filing of this application and that the foregoing statements and answers contained on the application and in required documents are true and accurate to the best of my knowledge. I understand that the Site Plan approved by the Laramie County Planning and Development Office represents a commitment by me to carry out the construction of the project as represented. Any and all modification to the "Approved Site Plan" must be coordinated through the Laramie County Planning and Development Office, at which time a determination will be made as to the need for an amended Site Plan and/or additional Administrative or Board review. I also understand that the site will be examined during the final inspection for compliance with the "Approved Site Plan" of record. NOTE: unapproved modifications to the site may be cause for non-issuance of a "Certificate of Compliance". The undersigned do hereby agree to pay all fees associated with this application. It is understood an incomplete submittal will not be accepted. **ORIGINAL SIGNATURE OF BOTH THE OWNER AND THE APPLICANT ARE REQUIRED FOR SUBMISSION OF THIS APPLICATION**

Signature of Owner ______ Date 4/30/2025

Printed Name Kevin Francis

Signature of Applicant ______ Date 4/30/2025

Printed Name Kevin Francis



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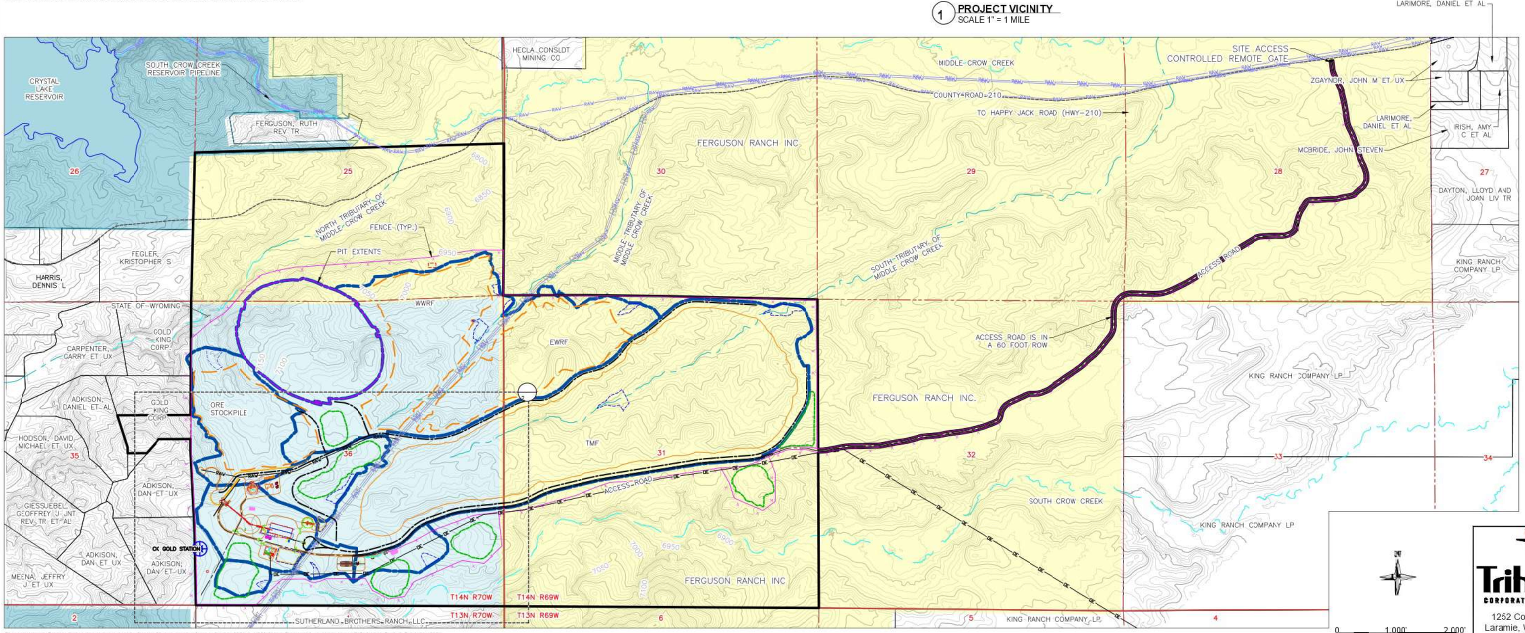

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② **PROJECT AREA AND LAYOUT**
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EXPLANATION

▬	OPERATING PERMIT BOUNDARY
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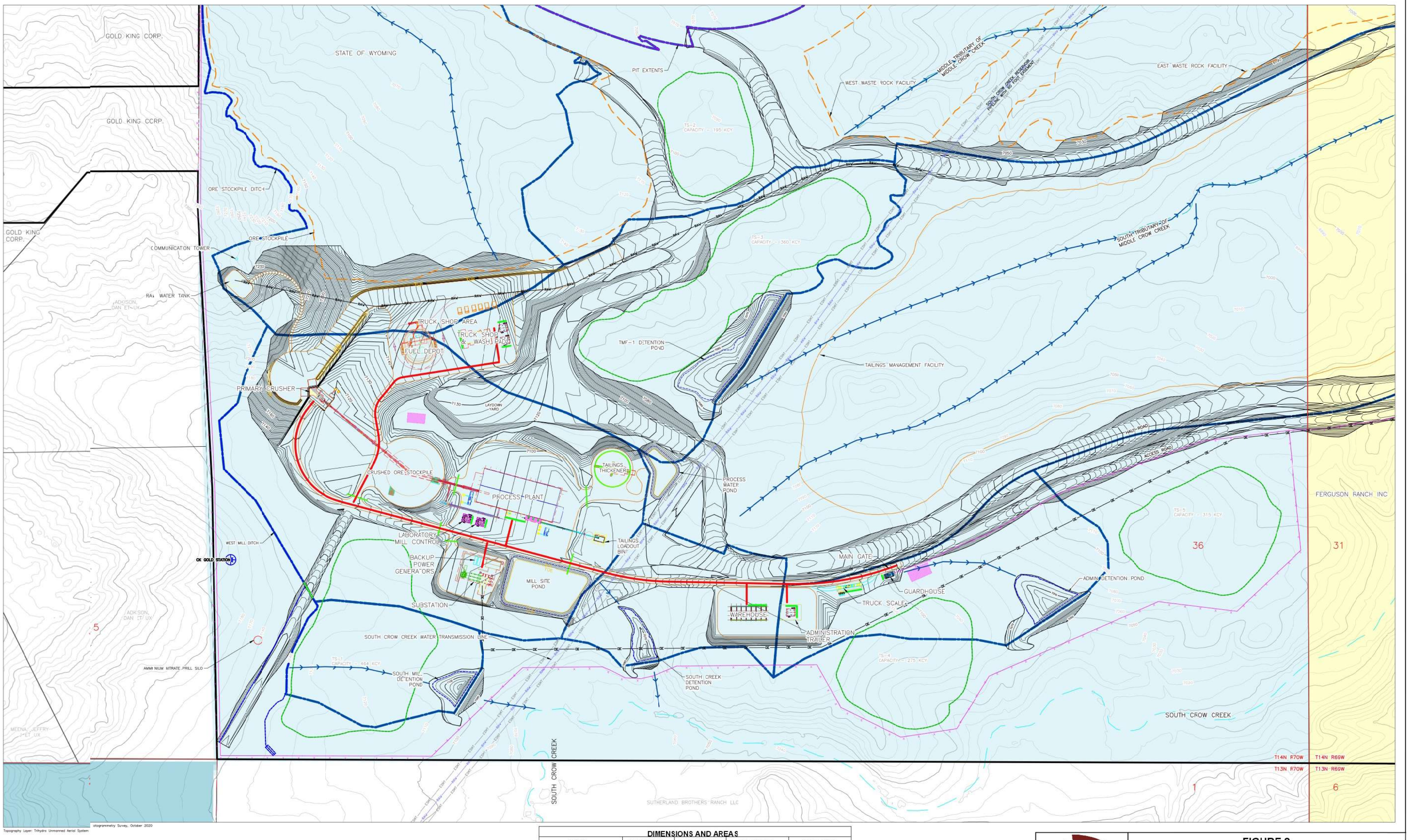
FIGURE 1

VICINITY AND PROJECT AREA MAPS

CK GOLD PROJECT
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: AS SHOWN	Date: 4/30/2025	File: 74L-SITEPLAN



DIMENSIONS AND AREAS

ITEM	WIDTH (FT)	LENGTH (FT)	AREA (SF)	AREA (AC)
TOTAL PROJECT AREA	20,000	9,350		1,628.8
PLANT FACILITY AREA	190	375	71,250	1.6
ADMIN/WAREHOUSE AREA	475	230	109,250	2.5
TRUCK SHOP AREA	570	350	199,500	4.5

NOTES:

1. DIMENSIONS AND AREAS IN TABLE ARE APPROXIMATE AND ROUNDED.
2. THE TOTAL PROJECT AREA WIDTH AND HEIGHT INCLUDE STRAIGHT MEASUREMENTS FROM WHERE THE ACCESS ROAD CONNECTS TO COUNTY ROAD 210.
3. THE PLANT FACILITY AREA IS THE MEASUREMENTS OF THE PROCESS PLANT AS SHOWN.
4. THE ADMIN/WAREHOUSE AREA DIMENSIONS INCLUDE THE FULL PAD.
5. THE TRUCK SHOP AREA INCLUDES THE FUEL DEPOT AND SURROUNDING PAD.
6. PARKING AREAS ARE DENOTED ON THE FIGURE. EXACT NUMBER OF PARKING SPACES ARE NOT CONFIRMED AT THIS TIME.

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FIGURE 2

SITE MAP

CK GOLD MINE
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB | Checked By: ZH | Scale: AS SHOWN | Date: 4/30/2025 | File: 74L-SITEPLAN

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LARAMIE COUNTY PLANNING & DEVELOPMENT DEPARTMENT

3966 Archer Pkwy
Cheyenne, WY 82009 planning@laramiecounty.com
Phone (307) 633-4303 Fax (307) 633-4616

Pre-Application Meeting Notes

Disclaimer: These notes are intended as guidance only. Fee calculations are determined at the time of application, and issues that arise during review periods are not always anticipated at the pre-application stage.
Public Records Act: This document and any documents provided by the applicant to Planning may constitute a public record under W.S. § 16-4-201 et seq. Applicants are advised not to divulge any information at a pre-application meeting with Planning that they do not yet desire to be public information.

Date: 1-16-25 Staff: JA, CC, BH, SK, JC (LCFA), Property Owner: State of WY

Project Description: Gold mine; Copper mine

Project Location/Address: Crystal Lake Rd P #: 0057035

ATTENDEES/AGENTS/PARTIES

Applicant U.S. Gold Corp, George Be	Phone 800-557-4550	Email gb@usgoldcorp.gold
Other	Phone	Email
Other	Phone	Email

APPLICATION TYPE(S)

- ☐ Administrative Plat (Vacation? Y/N)
- ☐ Appeal
- ☐ Board Approval
- ☐ Home Occupation
- ☐ Family Exemption
- ☐ Preliminary Development Plan
- ☐ Public Hearing – No Approval Required (Xmission lines, O&G)
- ☑ Site Plan See LCLUR §2-2-133 for requirements
- ☐ Site Plan – Amendment
- ☐ Site Plan – For Records
- ☐ Subdivision Exemption – Other
- ☐ Subdivision Permit & Plat
- ☐ Variance
- ☐ Zone Change

APPLICATION GUIDANCE

☑ Yes ☐ No	Application Fees:
☑ Yes ☐ No	Copy of Pre-Application Meeting Notes:
☑ Yes ☐ No	Project Narrative Letter/Justification Letter:
☑ Yes ☐ No	Warranty Deed/[✓ Lease Agreement]:
☑ Yes ☐ No	Plat / [✓ Site Plan] / Plot Plan / Record of Survey / Preliminary Dev. Plan / Route Map / Zone Change Map:
☑ Yes ☐ No ☐ TBD	Drainage Plans:
☑ Yes ☐ No ☐ Letter of Waiver	Drainage Study: already completed
☑ Yes ☐ No ☐ Letter of Waiver	Traffic Study: already completed

Pre-Application Meeting Notes

☐ Yes ☑ No	Community Facility Fees Acknowledgement Letter:
☐ Yes ☑ No	Public Safety Fees Acknowledgement Letter:
☐ Yes ☑ No ☐ TBD	WY DEQ Chapter 23 Study/Submittal Letter: Other DEQ approvals obtained
☐ Yes ☐ No ☐ TBD	Development Agreement:
☐ Yes ☐ No ☐ TBD	Roadway Maintenance Plan:
☐ Yes ☐ No ☐ TBD	Road/Easement Use Agreement:
☐ Yes ☐ No ☐ TBD	ROW Construction Permit:
☑ Yes ☐ No	Engineer Review – Paid by Applicant:
☑ Yes ☐ No ☐ TBD	Environmental Health Review / Approval: for septic system/leach field
☐ Yes ☑ No ☐ TBD	Environmental and Services Impact Report:
☑ Yes ☐ No ☐ TBD	GESC/Grading, Erosion & Sediment Control Permit: Standard
☐ Yes ☑ No ☐ TBD	Floodplain Development Permit:
☐ Yes ☑ No ☐ Letter of Consent	Perimeter Fence Construction per W.S § 18-5-319:

Public Notice Requirements	**General Notes:**
☑ Yes ☐ No	Public Notice Sign(s) Required – Posted/Paid by Applicant:
☐ Yes ☐ No	Newspaper Legal Notice Required – Paid by Applicant: TBD.
☑ Yes ☐ No	Property Owner Notification Letter Required – Paid by Applicant:

Pre-Application Meeting Notes

Miscellaneous Notes:

Per Applicant:

~6 trucks/day estimated,
- Dust control measures implemented (40K tanks)
- No flue/stack emissions
- WYPDES already obtained Nov '24
- Gravity-fed redundant Cistern (800K gal)
  - Brush fire mitigation measures implemented
  - Will conduct local EMS training
- Leach field for employees
- OUA executed w/ city, Sourcing is still in discussion
- Bonding already in place for Phase I

Planning: Bus Stop will require seperate site plan (can use these notes)

Pub Wrks: - Ensure traffic study included in submittals
- New miner MSHA training coming up for County staff (or escort)

LCFA: - Would suggest closures on Rd 210 when blasting
- Provide MSDS sheets for review please

Permit Notes ×

AGENCY REVIEW #1

Permit Notes

Permit Number: PZ-25-00035

Parcel Number: 14701030000300

Site Address: UNKNOWN
Laramie County, WY 00000

Submitted: 05/06/2025
Technically Complete: 05/07/2025
Approved:
Issued:

Applicant: Francis, Kevin
Owner: STATE OF WYOMING
Project Description: Copper and gold mine with an open pit, crushers, a processing plant, waste rock facilities, and a tailings management facility.

Begin Date	End Date	Permit Area	Subject	Note Type	Note Text	Created By
05/07/2025		Application	PZ-25-00035	GENERAL	Public Hearing before the BOCC will be June 17, 2025.	CATHERINE.CUNDALL@LARAMIECOUNTYWY.GOV
05/08/2025		Application	PZ-25-00035	GENERAL	LCFA requests additional information on fire suppression water such as gallons available, hose connections, pump/flow rates. LCFA would like to ensure there is a road maintenance/snow plan for the long gravel road leading to the site along with 24/7 gate entry/ access via code or Knox box.	MANUEL.MUZQUIZ@LARAMIECOUNTYWY.GOV
05/08/2025		Workflow	COUNTY REAL ESTATE OFFICE REVIEW	GENERAL	No comments	TERESA.LEMASTER@LARAMIECOUNTYWY.GOV
05/12/2025		Application	PZ-25-00035	GENERAL	As this is not a subdivision review, we have no comments. When/if the SEO receives applications for ponds/water wells, we will review the project and make the appropriate decisions at that time.	SUE.KINSLEY@LARAMIECOUNTYWY.GOV
05/14/2025		Application	PZ-25-00035	GENERAL	WAPA has no conflict with this project.	ROGERS@LARAMIECOUNTYWY.GOV
05/21/2025		Application	PZ-25-00035	GENERAL	Ensure that appropriate access for emergency services is accommodated. All LCLUR shall also be followed. Site safety emergency plans would be beneficial to have on file at the Emergency Management Office as well as at the other first responder departments that have jurisdiction,	MATTHEW.BUTLER@LARAMIECOUNTYWY.GOV
05/21/2025		Application	PZ-25-00035	GENERAL	1st Review - 1.Please show the width of the access road on the site plan. For a rural commercial development, the minimum width of the roadway is 24. A proposed cross section detail would be helpful. Is the access road existing or proposed? 2.Please provide details (i.e., dimensions, radii, etc.) on the access road where it ties into Road 210.	SCOTT.LARSON@LARAMIECOUNTYWY.GOV
05/21/2025		Workflow	ENVIRONMENTAL HEALTH REVIEW	GENERAL	If wastewater holding tanks are utilized for construction, contact Environmental Health for a permit. Office buildings will require commercial wastewater permits and septic systems will need to be engineered. Contact Environmental Health for questions at (307) 633-4090.	TIFFANY.GAERTNER@LARAMIECOUNTYWY.GOV

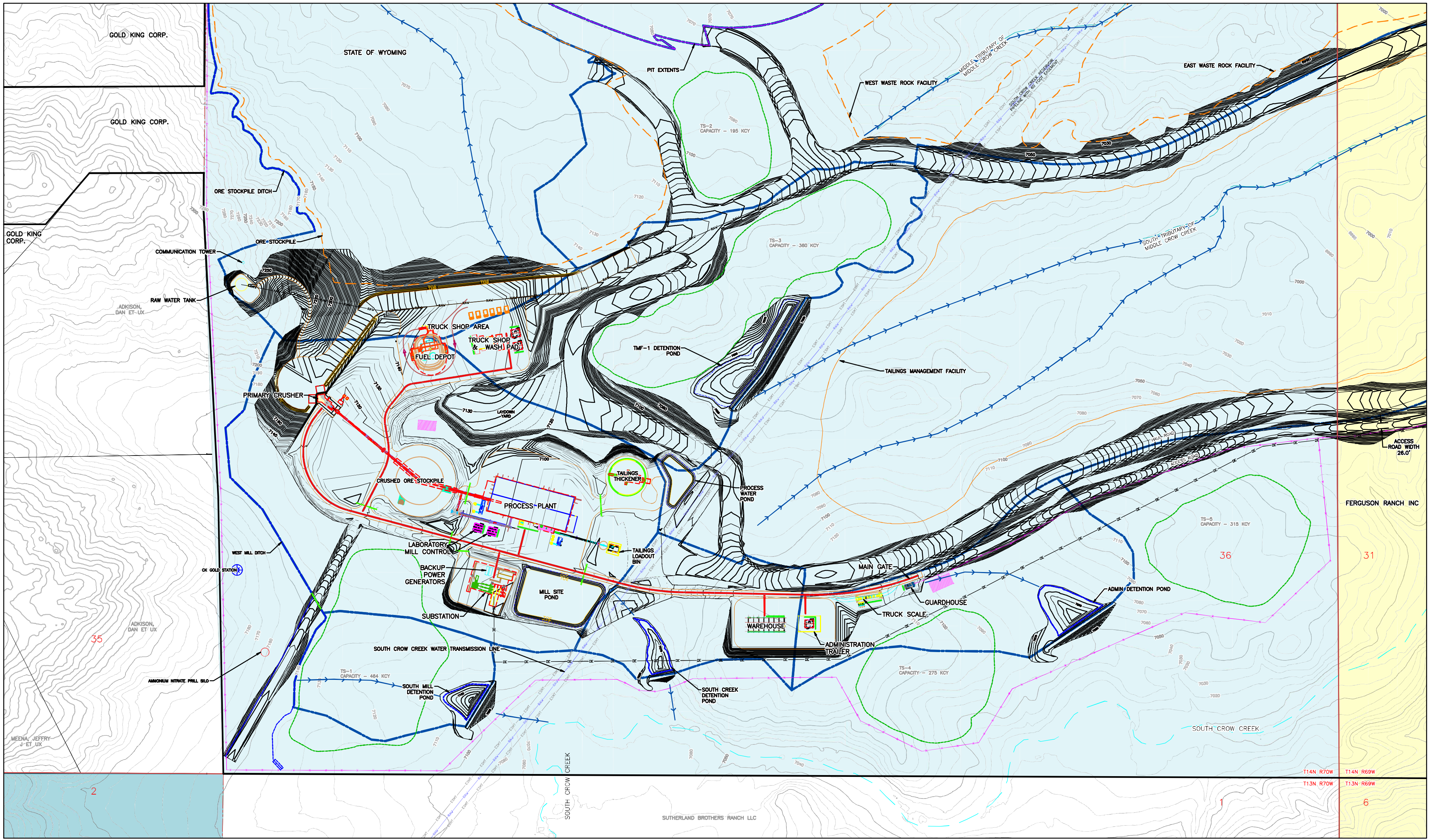
AGENCY REVIEW #1

Permit Number: PZ-25-00035
Parcel Number 14701030000300
Site Address Unknown
Laramie County, WY 00000
Submitted 5/6/2025
Technically Complete 5/7/2025

APPLICANT RESPONSE

Applicant Francis, Kevin
Owner State of Wyoming
Project Description Copper and gold mine with an open pit, crushers, a processing plant, waste rock facilities, and a tailings management facility

Begin Date	End Date	Permit Area	Subject	Note Type	Note Text	Created By	Gold King Corp Response	Gold King Corp Response	Gold King Corp Response
5/7/2025		Application	PZ-25-00035	General	Public Hearing before the BOCC will be June 17, 2025	Catherine.cundall@laramiecountywy.gov	Acknowledged		
5/8/2025		Application	PZ-25-00035	General	LCFA requests additional information on fire suppression water such as gallons available, hose connections, pump/flow rates. LCFA would like to ensure there is a road maintenance/snow plan for the long gravel road leading to the site along with 24/7 gate entry/ access via code or Knox box.	manuel.muzquiz@laramiecountywy.gov	Fire Water System feasibility level design parameters: FIRE SUPPRESSION DESIGN The Fresh/Fire water tank will be located at an elevation where it will utilize gravity to obtain the pressure requirements to the mine facilities. This tank will contain the water volume required for a worst case fire event. The bottom volume of the tank will contain the required fire water volume and will be allocated strictly for fire water, to be available for two (2) hours of flow at a flow rate of 250 gpm for each hydrant with a maximum of three (3) hydrants in use at any one time. This results in a total volume of 90,000 gallons to be held in the Fresh/Fire Water Tank as fire water. The below design is based around NFPA codes and standards.	FIRE DESIGN CODE This specifies how the design for the required water flow and pressure was established. Fire water for standpipe and hose system is designed according to NFPA 14. •Designed as Class II standpipe system, 1.5 inch hose stations. oMinimum design pressure of 65 psi. oMinimum flow rate of 100 gpm. •Designed as Class III standpipe system, provided with a 2.5 inch hose connection along with a 2.5 inch x 1.5 inch reducer and a cap attached with a chain. oMinimum design pressure of 100 psi. oMinimum flow rate of 500 gpm. •Hydrants designed as 2.5 inch hose connection. oMinimum design pressure of 100 psi. oMaximum flow rate of 250 gpm. Fire water demand for fire-fighting purposes is designed according to NFPA 122. •Minimum duration time at 2 hours.	FIRE EVENT SYSTEM DESIGN Evaluate possible events to determine required fire water volume with water supply time at 120 minutes. Design Case: Allow for three (3) hydrants at 250 gpm requiring a volume of 90,000 gallons. Tank fire water volume to be set at 90,000 gallons. Hydrants require highest flow rate and pressure. Fire water pumps to be sized for three (3) hydrants, 750 gpm @ 100 psi. FIRE WATER TANK The Fresh/Fire Water Tank (7400-TK-861) is currently sized at 60' Diameter x 60' High providing approximately 1,227,000 gallons of water. The tank will be located at a minimum elevation of 230 ft higher than the elevation of the plant, this will provide the required 100 psi pressure at the hydrants. The pipeline will be sized for minimal friction and final location of the tank will guarantee the 100 psi at the plant hydrants. The mine will operate 24/7/365, therefore, the access road will be maintained from County Road 210 to the mine site to limit interruption.
5/8/2025		Workflow	County Real Estate Office Review	General	No comments	teresa.lemaster@laramiecountywy.gov	Acknowledged		
5/12/2025		Application	PZ-25-00035	General	As this is not a subdivision review, we have no comments.When/if the SEO receives applications for ponds/water wells, we will review the project and make the appropriate decisionsat that time.	sue.kinsley@laramiecountywy.gov	SEO permits have been obtained for Project ponds and wells.		
5/14/2025		Application	PZ-25-00035	General	WAPA has no conflict with this project	rogers@laramiecountywy.gov	Acknowledged		
5/21/2025		Application	PZ-25-00035	General	Ensure that appropriate access for emergency services is accomodated. All LCLUR shall also be followed. Site safety emergency plans would be beneficial to have on file at the Emergency Management Office as well as at the other first responder departments that have jurisdiction,	matthew.butler@laramiecountywy.gov	The safety emergency procedure documents are in early preparation. Once completed they will be shared with relevant parties.		
5/21/2025		Application	PZ-25-00035	General	1st Review- 1.Please show the width of the access road on the site plan. For a rural commercial development, the minimum width of the roadway is 24. A proposed cross section detail would be helpful. Is the access road existing or proposed? 2.Please provide details (i.e., dimensions, radii, etc.) on the access road where it ties into Road 210.	scott.larson@laramiecountywy.gov	Site Plan Figures 1 and 2 have been updated accordingly. The conceptual design for the access road county road connection is shown on the new Figure 3 (included).		
5/21/2025		Workflow	Environmental Health Review	General	If wastewater holding tanks are utilized for construction, contact Environmental Health for a permit. Office buildings will require commercial wastewater permits and septic systems will need to be engineered. Contact Environmental Health for questions at (307) 633-4090.	tiffany.gaertner@laramiecountywy.gov	Acknowledged		



Topography Layer: Trihydro Unmanned Aerial System Photogrammetry Survey, October 2020

EXPLANATION

- OPERATING PERMIT BOUNDARY
- TOWNSHIP/RANGE
- SECTION
- UNPAVED ROAD
- HAUL ROAD
- ACCESS ROAD
- BLACK HILLS ENERGY POWER LINE
- EXISTING GROUND CONTOURS (10-FOOT INTERVAL)
- PROPOSED GROUND CONTOURS (2-FOOT INTERVAL)
- LEACH FIELD
- RAW WATER PIPELINE EASEMENT
- RAW WATER TRANSMISSION PIPELINE
- SOUTH CROW CREEK RESERVOIR PIPELINE
- INTERMITTENT/PERENNIAL STREAM
- EPHEMERAL DRAINAGE/STREAM
- DETENTION PONDS AND COLLECTION DITCHES
- TAILINGS MANAGEMENT FACILITY, WEST AND EAST WASTE ROCK FACILITIES, AND ORE STOCKPILE
- PIT EXTENTS
- TOPSOIL STOCKPILES
- FENCE
- CULVERT
- STATE OWNED LANDS
- LOCAL GOVERNMENT OWNED LANDS
- SITE BASINS
- GENERAL FLOW PATH
- SITE ACCESS
- GENERAL PARKING

DIMENSIONS AND AREAS

ITEM	WIDTH (FT)	LENGTH (FT)	AREA (SF)	AREA (AC)
TOTAL PROJECT AREA	20,000	9,350		1,628.8
PLANT FACILITY AREA	190	375	71,250	1.6
ADMIN/WAREHOUSE AREA	475	230	109,250	2.5
TRUCK SHOP AREA	570	350	199,500	4.5

NOTES:

1. DIMENSIONS AND AREAS IN TABLE ARE APPROXIMATE AND ROUNDED.
2. THE TOTAL PROJECT AREA WIDTH AND HEIGHT INCLUDE STRAIGHT MEASUREMENTS FROM WHERE THE ACCESS ROAD CONNECTS TO COUNTY ROAD 210.
3. THE PLANT FACILITY AREA IS THE MEASUREMENTS OF THE PROCESS PLANT AS SHOWN.
4. THE ADMIN/WAREHOUSE AREA DIMENSIONS INCLUDE THE FULL PAD.
5. THE TRUCK SHOP AREA INCLUDES THE FUEL DEPOT AND SURROUNDING PAD.
6. PARKING AREAS ARE DENOTED ON THE FIGURE. EXACT NUMBER OF PARKING SPACES ARE NOT CONFIRMED AT THIS TIME.

N

0 200' 400'

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FIGURE 2

SITE MAP

CK GOLD MINE
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB | Checked By: ZH | Scale: AS SHOWN | Date: 5/30/2025 | File: 74L-SITEPLAN

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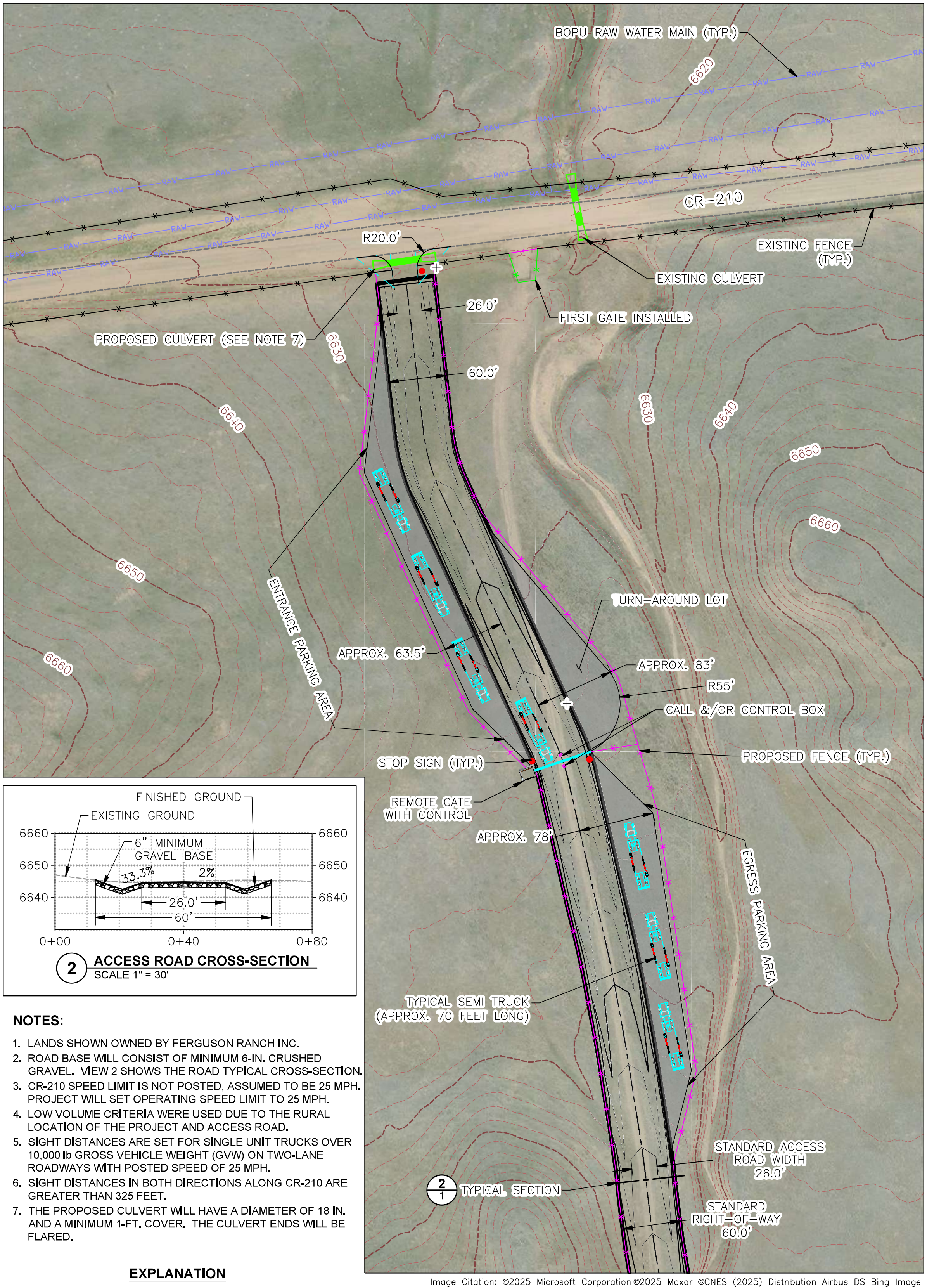

Image Citation: ©2025 Microsoft Corporation ©2025 Maxar ©CNES (2025) Distribution Airbus DS Bing Image

Topography Layer: Trihydro Corporation Unmanned Aerial System Photogrammetry Survey, October 2020 & USGS Digital Elevation Model WY Laramie LiDAR Original Product Resolution 2021

NOTES:

1. LANDS SHOWN OWNED BY FERGUSON RANCH INC.
2. ROAD BASE WILL CONSIST OF MINIMUM 6-IN. CRUSHED GRAVEL. VIEW 2 SHOWS THE ROAD TYPICAL CROSS-SECTION.
3. CR-210 SPEED LIMIT IS NOT POSTED, ASSUMED TO BE 25 MPH. PROJECT WILL SET OPERATING SPEED LIMIT TO 25 MPH.
4. LOW VOLUME CRITERIA WERE USED DUE TO THE RURAL LOCATION OF THE PROJECT AND ACCESS ROAD.
5. SIGHT DISTANCES ARE SET FOR SINGLE UNIT TRUCKS OVER 10,000 lb GROSS VEHICLE WEIGHT (GVW) ON TWO-LANE ROADWAYS WITH POSTED SPEED OF 25 MPH.
6. SIGHT DISTANCES IN BOTH DIRECTIONS ALONG CR-210 ARE GREATER THAN 325 FEET.
7. THE PROPOSED CULVERT WILL HAVE A DIAMETER OF 18 IN. AND A MINIMUM 1-FT. COVER. THE CULVERT ENDS WILL BE FLARED.

EXPLANATION

-6650-	EXISTING GROUND CONTOURS (2-FOOT INTERVAL)
– – – –	CR-210
— - —	ACCESS ROAD CENTER LINE
—×—	PROPOSED FENCE
—×—	EXISTING FENCE
—×—	FIRST GATE INSTALLED
—RAW—	EXISTING BOPU RAW WATER PIPELINES
━━	REMOTE GATE
■	CALL &/OR CONTROL BOX
▭	CULVERT
●	STOP SIGN
— —	SIGHT DISTANCE TRIANGLE

N

0 100'

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FIGURE 3

ACCESS ROAD COUNTY ROAD REMOTE GATE CONCEPTUAL DESIGN PLAN VIEW

CK GOLD PROJECT
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: 1" = 100'	Date: 5/30/2025	File: 74L_ACCESSROAD-COUNTYROAD_CONCEPT

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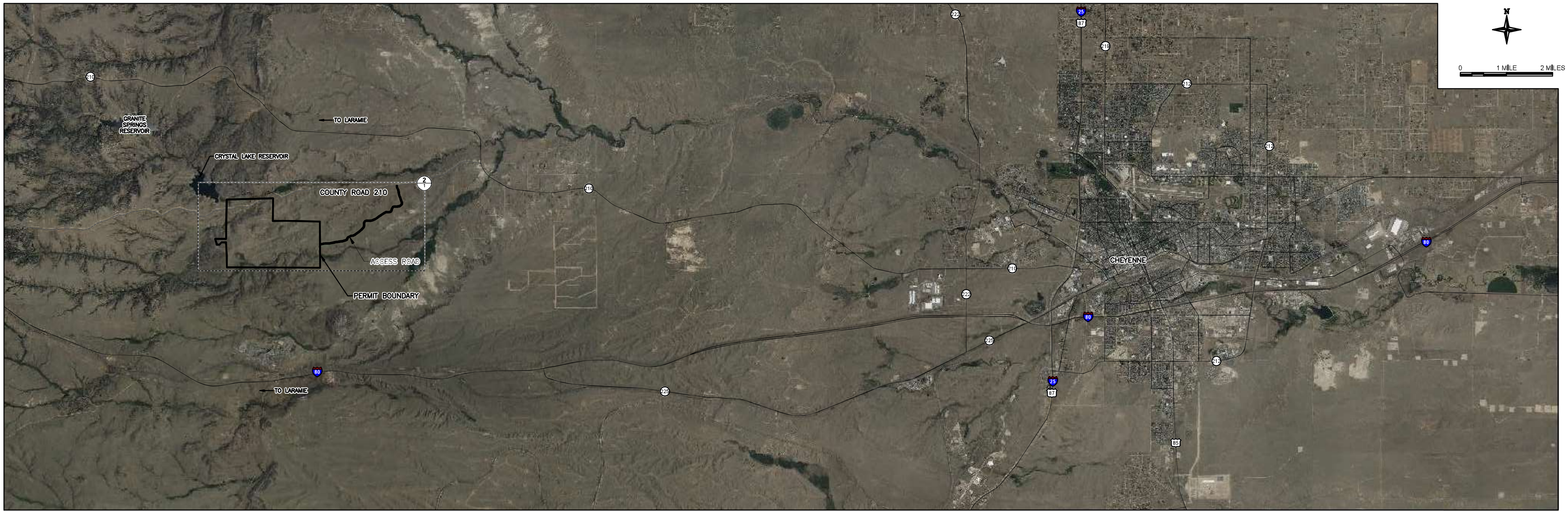
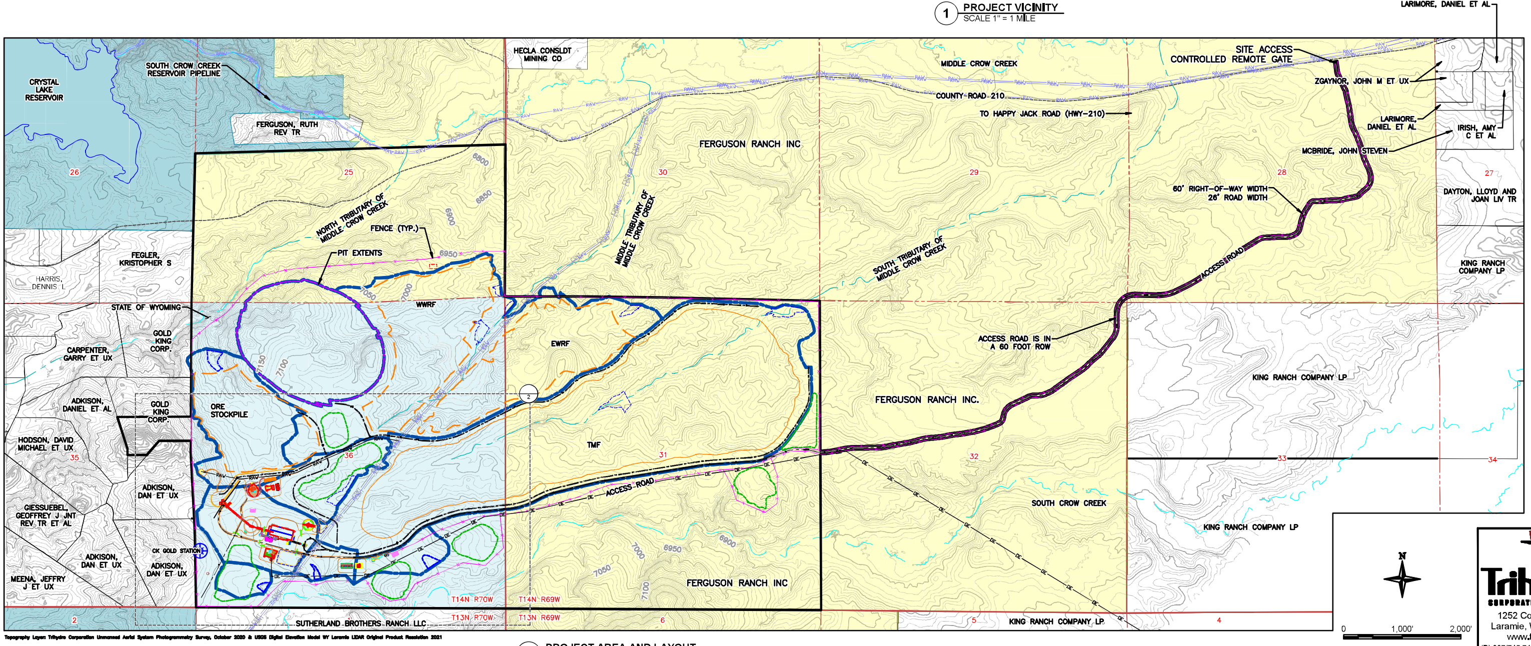


Image Citation: ©2025 Microsoft Corporation ©2025 Maxar ©CNES (2025) Distribution Airbus DS Bing Image

① PROJECT VICINITY
SCALE 1" = 1 MILE



Topography Layer: Trihydro Corporation Unmanned Aerial System Photogrammetry Survey, October 2020 & USGS Digital Elevation Model WY Laramie LIDAR Original Product Resolution 2021

② PROJECT AREA AND LAYOUT
SCALE 1" = 1,000'

EXPLANATION

- OPERATING PERMIT BOUNDARY
- TOWNSHIP/RANGE
- SECTION
- PAVED ROAD
- UNPAVED ROAD
- HAUL ROAD
- ACCESS ROAD
- BLACK HILLS ENERGY POWER LINE
- 7150 EXISTING GROUND CONTOURS (10-FOOT INTERVAL)
- LEACH FIELD
- RAW RAW WATER TRANSMISSION PIPELINE
- RAW EXISTING BOPU RAW WATER PIPELINES AND SOUTH CROW CREEK RESERVOIR PIPELINE
- INTERMITTENT/ PERENNIAL STREAM
- EPHEMERAL DRAINAGE/STREAM
- RESERVOIR
- DETENTION PONDS
- TAILINGS MANAGEMENT FACILITY, WEST AND EAST WASTE ROCK FACILITIES, AND ORE STOCKPILE
- PIT EXTENTS
- TOPSOIL STOCKPILES
- × FENCE
- CULVERT
- STATE OF WYOMING
- LOCAL GOVERNMENT
- FERGUSON RANCH INC
- ESMT RAW WATER PIPELINE EASEMENT
- SITE BASINS

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FIGURE 1

VICINITY AND PROJECT AREA MAPS

CK GOLD PROJECT
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: AS SHOWN	Date: 5/29/2025	File: 74L-SITEPLAN

SURFACE LANDOWNER'S CONSENT

I, Jason Crowder, Deputy Director, Office of State Lands and Investments, CERTIFY that the State of Wyoming holds surface rights on the following lands on which the State of Wyoming holds mineral estate rights:

Section 36	T. 14 N.	R. 70 W.
Section	T. ___N.	R. ___W.
Section	T. ___N.	R. ___W.

County of Laramie

I have examined the mining and reclamation plans, prepared by Gold King Corp. in compliance with the Wyoming Environmental Quality Act, and do hereby approve said plans, and reiterate certain provisions within the State of Wyoming Metallic and Non-Metallic Rocks and Minerals mining lease #0-40828 issued to Wyoming Gold Mining Company, Inc. (Section 1 and Section 4(A)), which grant the lessee's right to enter upon, occupy and enjoy such surface areas of the described tracts as are necessary for mining operations, along with other activities contemplated by the lease.

Dated this 18th day of October 2022.

Deputy Director – Office of State Lands and Investments
(Signature)

Jason Crowder – Deputy Director
Name (printed or typed)

2022-10-20
Witness (Signature) (Date)

Richard Sharor
Witness Name (printed or typed)

SURFACE LANDOWNER'S CONSENT

I, Walter Ferguson , CERTIFY that Ferguson Ranch Inc. owns or holds surface access rights on the following lands on which Gold King Corp. holds mineral estate rights, or proposes to conduct mine operations or access to the CK Gold Project:

Section (for use N. of access road)	Section 31,	Township 14 N.,	Range 69 W.
60' Access Right-of Way	Section 31,	Township 14 N.,	Range 69 W.
60' Access Right-of Way	Section 32,	Township 14 N.,	Range 69 W.
60' Access Right-of Way	Section 28,	Township 14 N.,	Range 69 W.
South of County Road 210	Section 25,	Township 14 N.,	Range 70 W.
60' Right-of-Way S.E. Corner	Section 29,	Township 14 N.,	Range 69 W.
State Section - Grazing Rights	Section 36,	Township 14 N.,	Range 70W.

County of Laramie .

I have examined the mining and reclamation plans, prepared by Gold King Corp., a wholly owned subsidiary of U.S. Gold Corporation, for the CK Gold Mine, in compliance with the Wyoming ENVIRONMENTAL QUALITY ACT W.S. 35-11-406(b)(xi), and do hereby approve said plans, and give my consent to enter and carry out said mining and reclamation programs on said lands as proposed therein. I do hereby grant access to the Access Road and all permitted areas within the Permit Boundary of the mine site to U.S. Gold Corporation/CK Gold Mine and its vendors and invited guests, to enter said lands during operating hours.

Dated 7 day of Feb , 2023 .

Walter Ferguson III

Surface Landowner (Signature)

Walter Ferguson, President, Ferguson Ranch Inc.

Name (printed or typed)

KEVIN FRANCIS

Witness Name (printed or typed)

y2consultants.com
307 733 2999

Nov 16, 2022

Mr. Kevin Francis, SME RM, Vice President for Exploration & Technical Services
1807 Capital Avenue, PO Box 4353, Cheyenne, WY 82001
Office: 303.495.2551 Cell/Text: 303.350.0092 kf@usgoldcorp.gold

RE: Traffic Impact Study for Proposed CK Gold Project (AKA "Gold King Mine") in Laramie County, Wyoming

Dear Mr. Francis,

This memorandum describes effects of traffic generated by and distributed from the proposed "CK Gold Project" with a mine access drive on Laramie County Road 210, 1.9 miles west of Happy Jack Road (Wyoming Highway 210) and a bus staging area located on the southwest corner of WYO 210 (Happy Jack Road) and WY 222 (Roundtop Road).

Background traffic and forecast growth were estimated using traffic counts taken August 2nd to 4th, 2022. These counts were grown using growth rates for road links in the Cheyenne Metropolitan Planning Organization (MPO) 2019 and 2045 traffic model to replicate "*No-Build*" background traffic for the years 2025 and 2035.

A gold mine is a rare land use not listed in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, so new traffic was estimated using planned construction and operations employment and trucking operations for the mine. Project traffic was added to background 2025 and 2035 traffic to estimate "*Build*" traffic scenarios.

Analysis of truck classes and weights for the project yields an estimated 175,000 Equivalent Single Axle Loadings (ESALs) over the 12-year duration of mine construction and operations. This represents a 45% increase over existing ESALs on Happy Jack Road. All trucks will follow CR-210 and Happy Jack Road from the mine entrance to Roundtop Road. Approximately 90% of trucks will follow Roundtop Road to I-80 and 10% will follow Happy Jack Road to I-25.

Analysis of existing and forecast traffic using the Highway Capacity Software (HCS), reveals that all intersection turn movements will operate at an acceptable level of service C or better for the duration of mine construction and operations. For this reason, Y2 has no recommendations for intersection capacity improvements.

If there are any questions regarding this traffic impact study, please do not hesitate to contact me.

Sincerely,

Edmund Waddell, MUP/MOAA
Community & Transportation Planner
Y2 Consultants

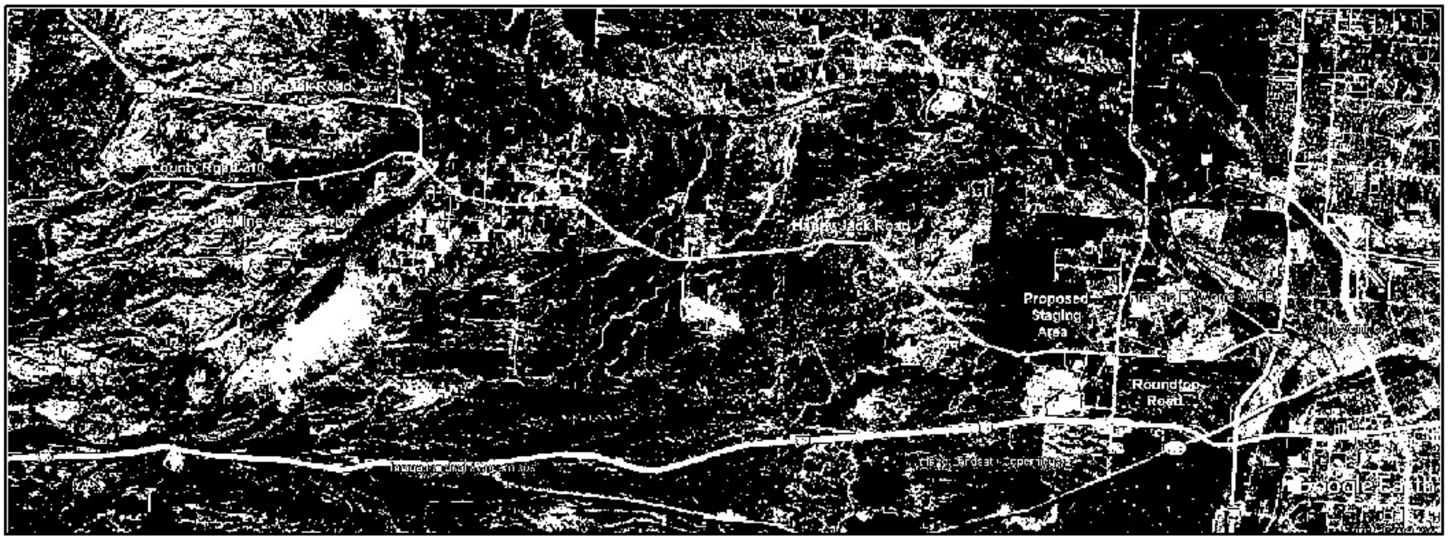
Atch: Traffic Impact Analysis Memorandum with Appendices A through C

Proposed Development: The proposed development is an open-pit gold and copper mine and ore processing plant with employee access by private bus. The employee parking lot will be at a bus staging area on the southwest corner of State Highway 210 (Happy Jack Rd) and State Highway 222 (Roundtop Road), with driveway access on McKinney Drive.

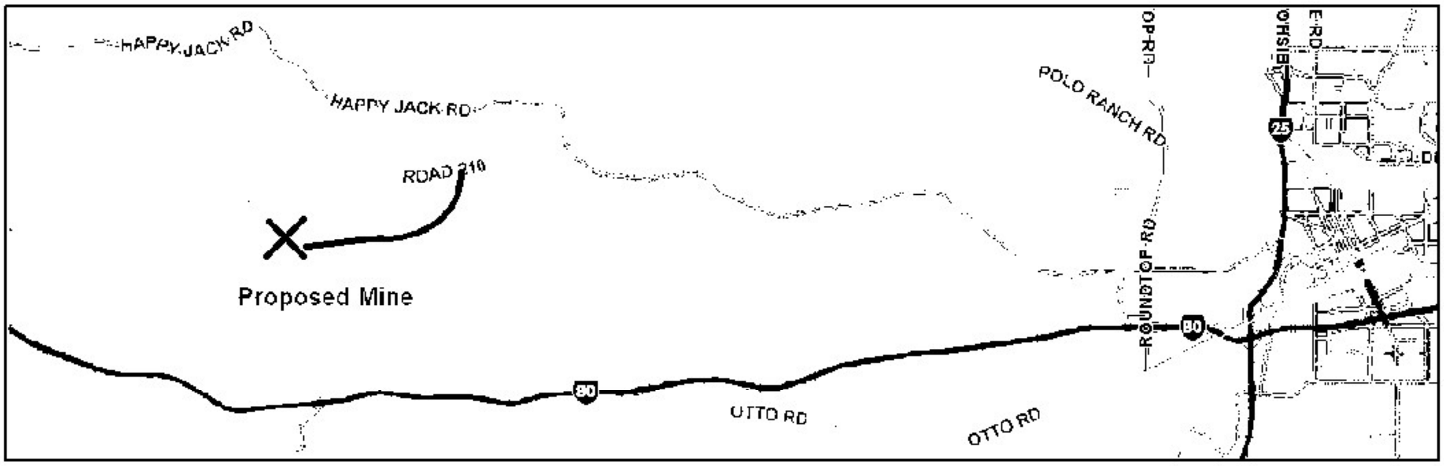
Project Location: The planned project is located on 2.5 square miles: a combination of 40% state and 60% private property 20 miles west of Cheyenne. Access to the site is via Laramie County Road 210 and Happy Jack Road (SH 210)

- **Description:** South side of Laramie County Road 210, 1.9 miles west of State Highway 210, Cheyenne, WY
- **Lat Long:** Latitude 41º 09' 28.55" N Longitude 105º 07' 18.03" W
- **Township and Range:** Section 36 and S ½ of Section 25 T14N R70W, and Section 31 of T14N R 69W, Laramie County, Wyoming
- **Street Address:** 650 County Road 210, Cheyenne, WY

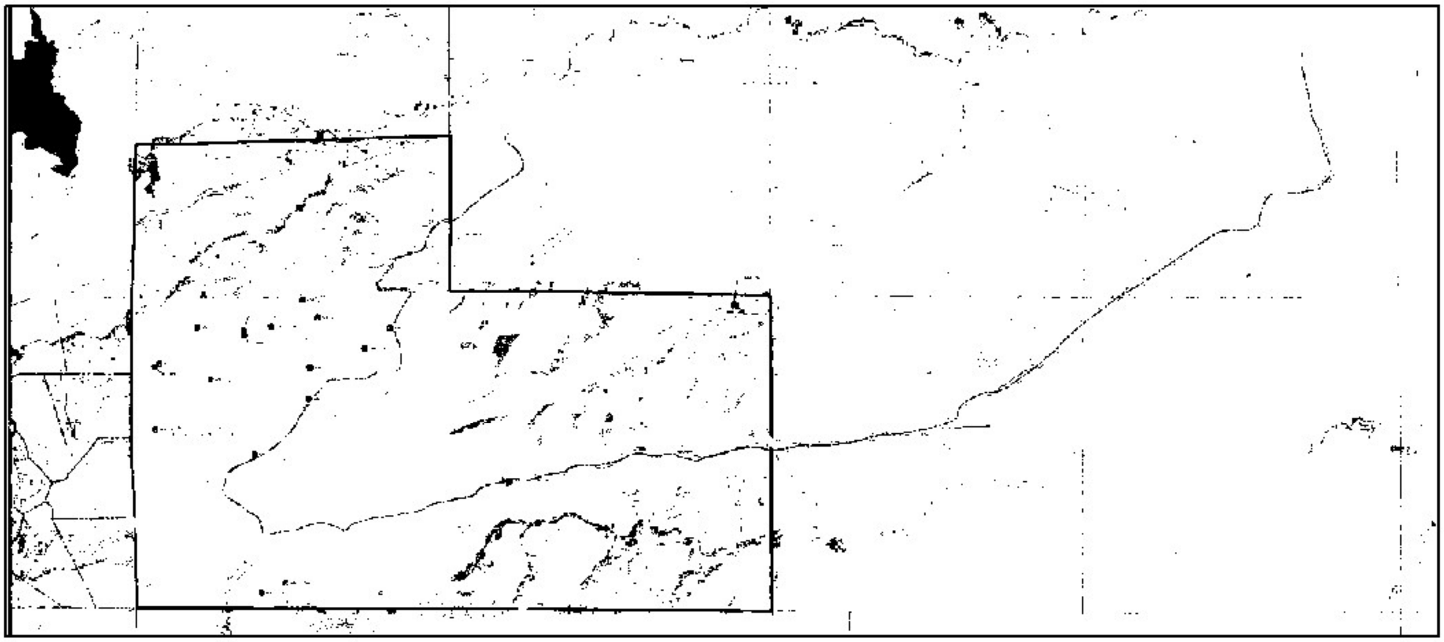
Aerial Road Map:



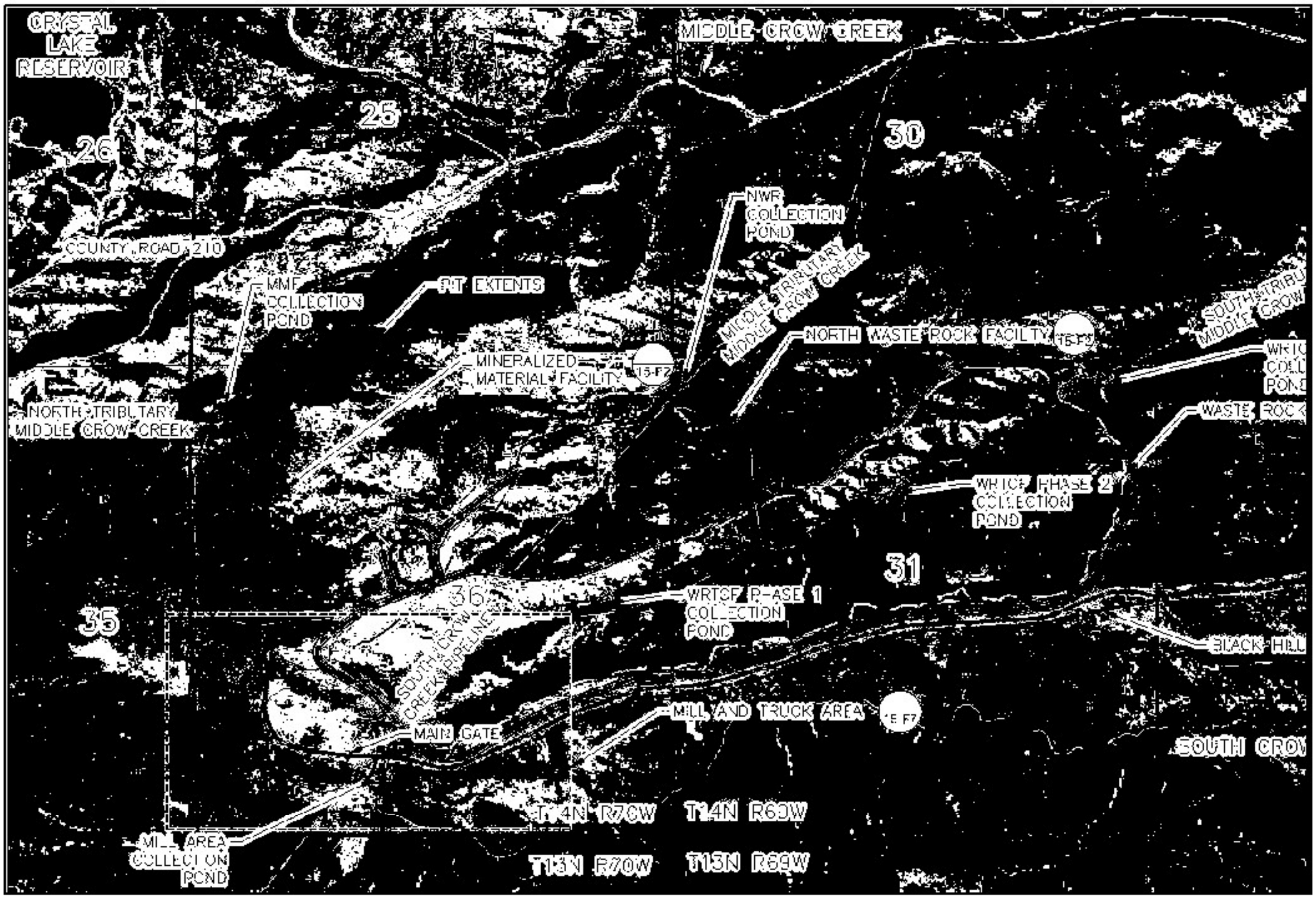
Roads and Lot Lines:



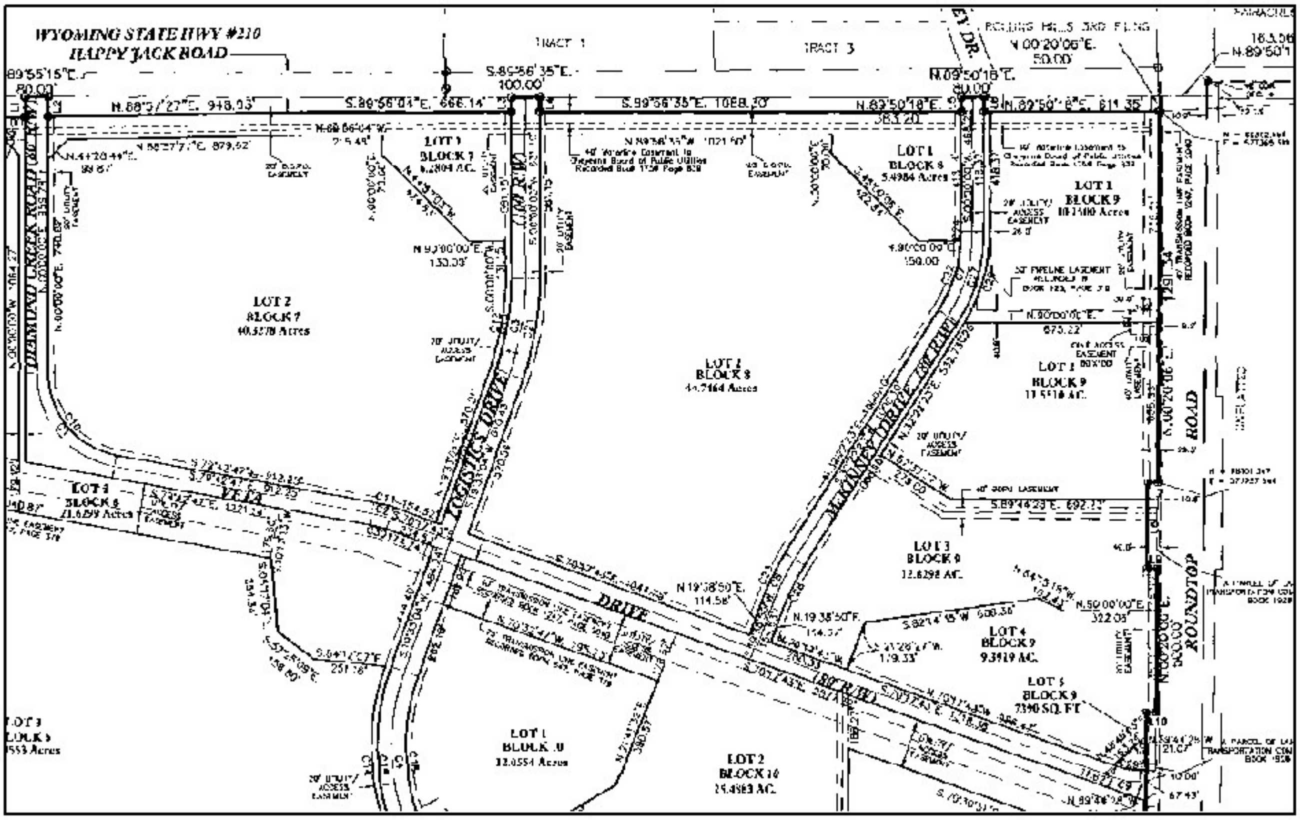
Mine Area and Access Drive to County Road 210:



Project Area Diagram:



Bus Staging Area: McKinney Drive, SW corner of Roundtop Road and Happy Jack Road.



Existing Land Use: Both existing parcels are vacant and do not generate traffic.

Site Access:

- The CK Gold Mine entrance gate is on the south side of Laramie County Road 210, 1.9 miles west of Happy Jack Road.
- Bus Staging Area will be in Lot 1 of the North Range Business Park 3rd Filing (excerpt above) with entrance drives on McKinney Drive south of Happy Jack Road.

Sensitive Location:

- <u>**Gilchrist Elementary School**</u> is at 1108 Happy Jack Rd. (on the north side of Happy Jack Road, 4,000 feet east of County Road 210). School starts at 8:35 and ends at 3:35. Principal Kristin Cavallier, stated that two buses and 20-30 parent drop-offs arrive before 8:35 AM and then depart. Two buses and 20-30 parent pick-ups arrive before 3:35 PM and depart after 3:35 PM. Principal Cavalier can be reached at (307) 771-2285
- **Morning Traffic** at Gilchrist Elementary School takes place after buses and light trucks have already reached the mine for the 8AM shift change. <u>*Returning buses will depart the mine at three-minute intervals and will not impact morning school traffic.*</u>
- **Afternoon Traffic** enters the school parking lot before 3:35 and departs after 3:35. Employee buses spaced at 3-minute intervals will arrive at the mine prior to 3:50 PM and then depart after 4:10 PM – after school traffic is gone. *Project buses will not impact afternoon school traffic.*

Existing Traffic (2022):

- **Existing peak hour turn movements** and connecting link volumes were counted at study intersections during the week of August 4, 2022. The observed peak-hour turn movements are depicted in diagrams in Appendix A.

Available Traffic Volume Counts, Vehicle, Class, and Speeds (2022):

Roadway Link	Average Weekday Traffic	Percent Trucks*	AM Peak Volume	PM Peak Volume	85th Percentile Speed (MPH)
CR 210 west of Happy Jack Road	**200**	**19%**	**11**	**26**	**42.0 EB 35.1 WB**
Happy Jack Road north of CR 210	**1,500**	**26%**	**97**	**126**	**65.9 NB 67.2 SB**
Happy Jack Road south of CR 210	**1,600**	**24%**	**95**	**147**	**61.7 NB 65.8 SB**
***McKinney Drive south of Happy Jack Rd.**	-	-	-	-	-
***Veta Drive west of Roundtop Rd.**	-	-	-	-	-
Happy Jack Road west of Roundtop Rd	**4,000**	**23.5%**	**265**	**310**	**59.4 EB 59.7 WB**
Happy Jack Road east of Roundtop Road	**3,750**	**22.5%**	**259**	**296**	**62.1 EB 59.8 WB**
Roundtop north of Happy Jack	**1,100**	**26.2%**	**83**	**104**	**42.2 NB 44.6 SB**
Roundtop south of Happy Jack	**1,700**	**33.1%**	**123**	**148**	**49.7 NB 46.3 SB**
Horizon Drive west of Roundtop Road	**2,650**	-	-	-	-
Roundtop south of Horizon Drive	**3,750**	-	-	-	-
Westbound I-80 Off Ramp at Roundtop	**1,490**	-	-	-	-
Westbound I-80 On Ramp at Roundtop	**100**	-	-	-	-
Eastbound I-80 Off Ramp at Roundtop	**120**	-	-	-	-
Eastbound I-80 On Ramp at Roundtop	**1,450**	-	-	-	-
Roundtop south of I-80	**600**	**29.7%**	**39**	**72**	**55.1 NB 58.6 SB**
Southbound I-25 Off Ramp at Missile Drive	**2,375**	-	-	-	-
Southbound I-25 On Ramp at Missile Drive	**515**	-	-	-	-
Northbound I-25 Off Ramp at Missile Drive	**700**	-	-	-	-
Northbound I-25 On Ramp at Missile Drive	**2,500**	-	-	-	-
Missile Drive east of I-25	**7,950**	**20.4%**	**650**	**706**	**44.1 EB 46.2 WB**

* This percentage includes all vehicles Class 5 or above, which captures pickups with dual rear tires. These are not considered heavy vehicles for capacity purposes.

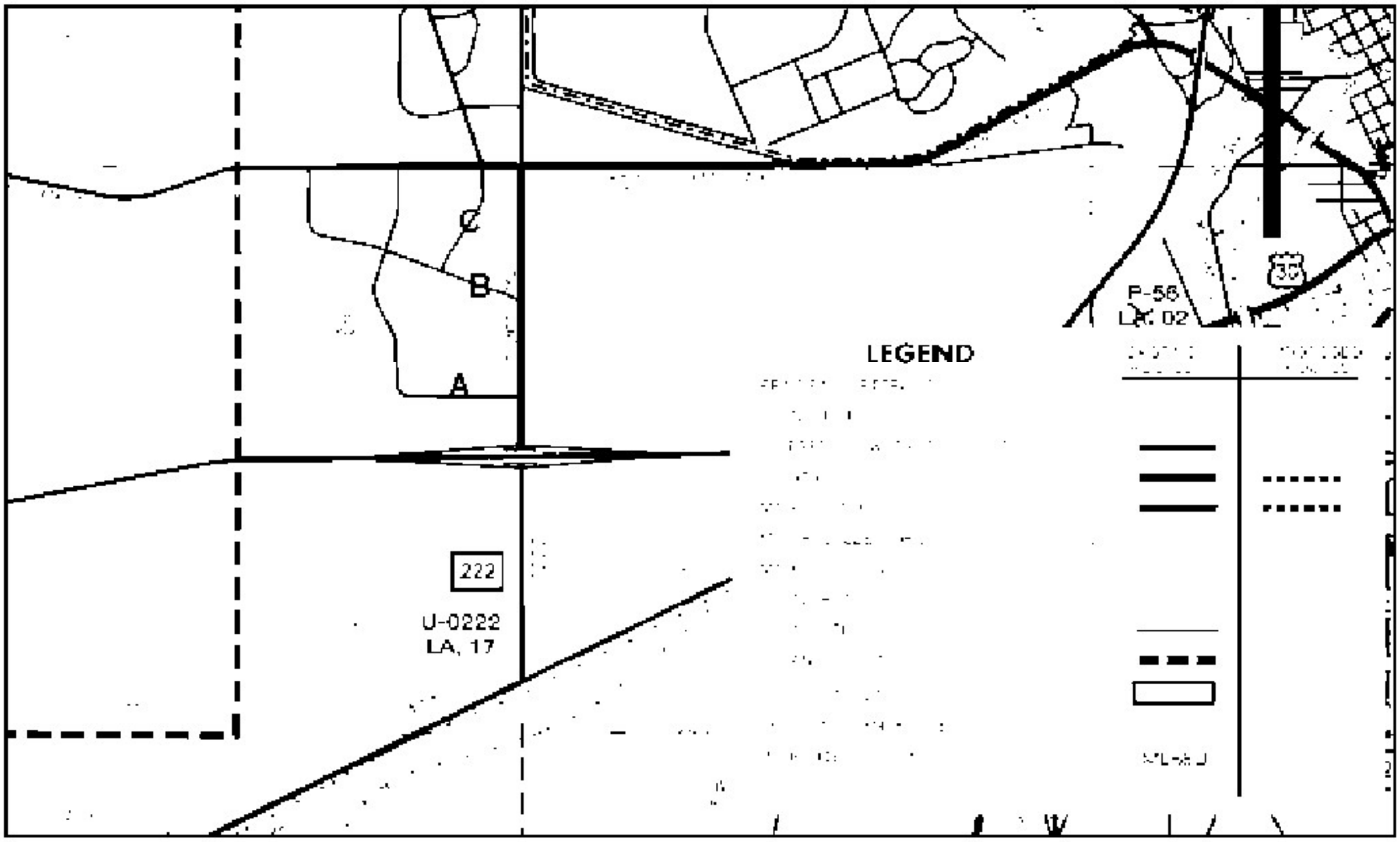
* McKinney Drive and Veta Drive are recently platted access streets with no adjacent development and minimal traffic.

Existing (2022) Intersection AM and PM Peak Hour Factors (PHF)

Intersection #	Intersection	AM Peak Hour Factor	PM Peak Hour Factor
1	CR 210 at Mine Entrance Drive	.8981	.8547
2	Happy Jack Road at CR 210	.8981	.8547
3	Happy Jack Road at McKinney Drive	.8409	.8615
4	Happy Jack Road at Roundtop Road	.8409	.8615
5	Roundtop Road at Veta Drive	.8409	.8615
6	Roundtop Road at Westbound I-80 Ramps	.8409	.7983
7	Roundtop Road at Eastbound I-80 Ramps	.8889	.8164
8	Happy Jack Road / Missile Drive at Southbound I-25 Ramps	.9452	.8631
9	Happy Jack Road / Missile Drive at Northbound I-25 Ramps	.8971	.9222

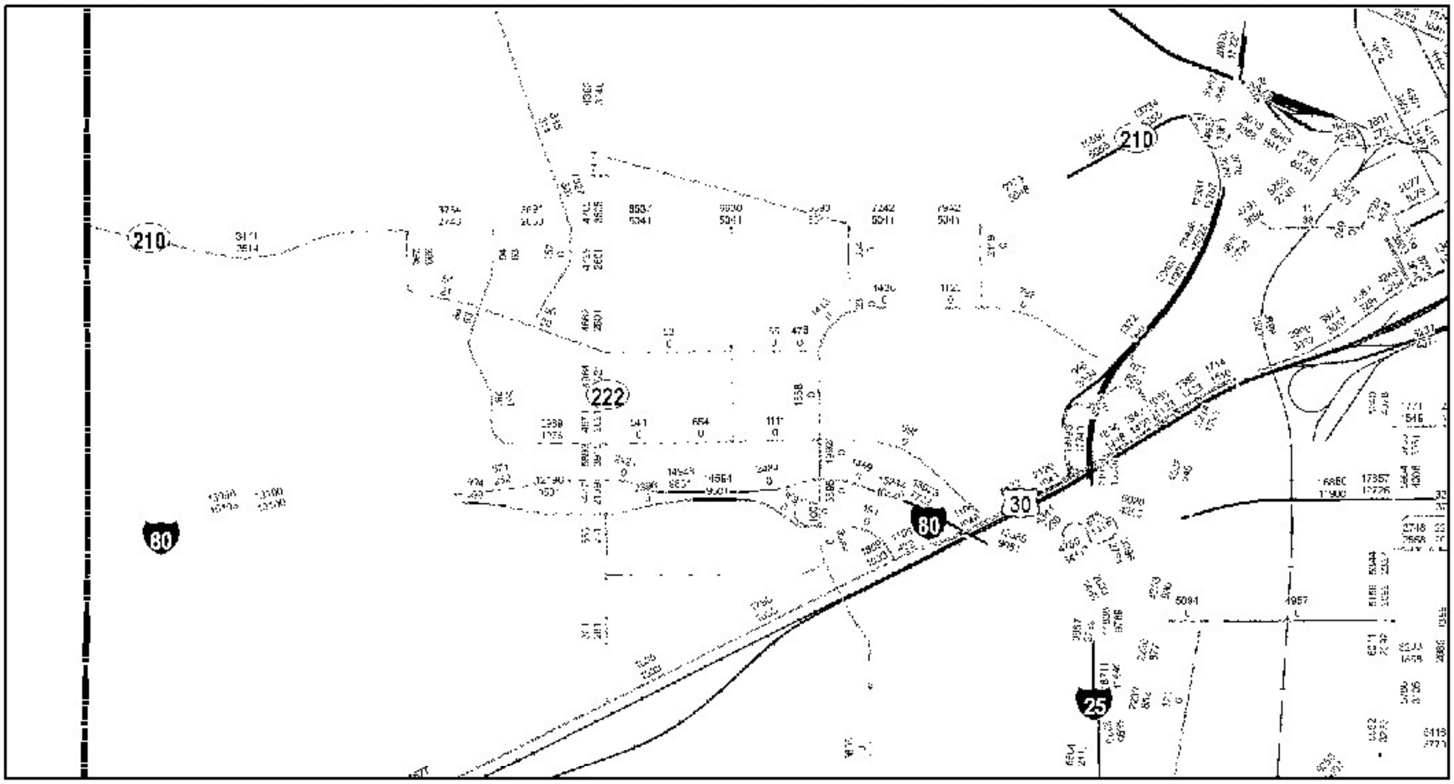
Existing Roadway Functional Classes: In 2015, Cheyenne Metropolitan Planning Organization (MPO) formally classified study area roads as follows:

- I-80 and I-25: Interstate
- Happy Jack Road: Minor Arterial
- Roundtop Road north of I-80: Minor Arterial
- Roundtop Road south of I-80: Major Collector
- A (Horizon Drive / Logistics Drive): Major Collector
- B (Veta Drive) Local Street
- C (McKinney Drive) Local Street



Forecast Baseline (No-Build) Traffic (2025 and 2035): Future traffic growth was estimated using link-specific growth rates from the Cheyenne MPO fiscally constrained traffic model, shown below. The Base Year is 2019 and the Forecast Year is 2045. The traffic growth rate is assumed to be uniform year to year. Turn movement forecast used the percentage of model growth occurring between the base year 2022 and forecast years 2025 and 2035. Forecast turn movements are shown in diagrams in Appendix A.

Image of Cheyenne MPO Travel Demand Model showing Forecast Average Daily Traffic for years 2019 and 2045:



Trip Generation: The following employment data was used to estimate employee traffic at the mine, bus staging area, and connecting links during AM and PM peak periods:

Construction Phase Trip Estimates:

- **Construction Phase Peak Hour Trip Generation:** Construction at the mine site is planned for 2024-2025. Employee numbers will vary from month to month, with an expected average of 170 construction workers, and a maximum of 349 total employees during month 16 of construction (about June 2025).

- **Construction Phase Maximum Traffic:** Construction employment will peak in June 2025 and then taper off (chart below). In peak month 16 (about June 2025) 349 personnel will work the day shift from 8 AM to 4 PM, arriving at the project on 7 company buses. Fifty other employees will arrive at odd times via 24 light trucks. This analysis uses that peak month combined with 2025 background traffic volumes for the worst-case construction traffic generation estimate. These generated trips were added to 2025 AM and PM background growth to develop construction phase "BUILD" traffic estimates.

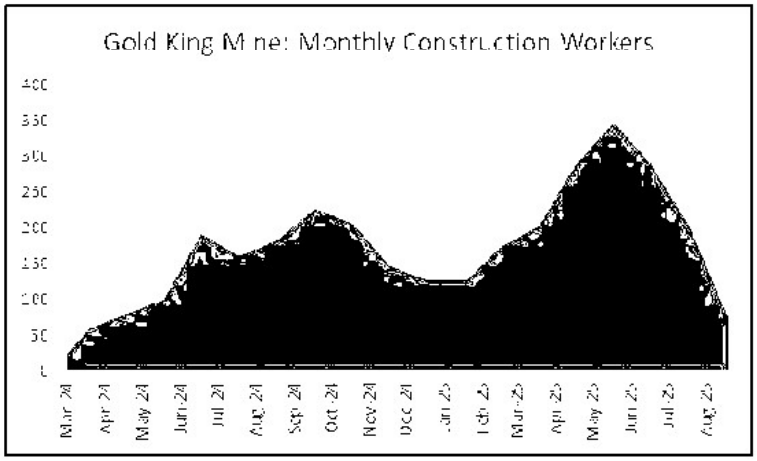


Table of Estimated Monthly Construction Employment:

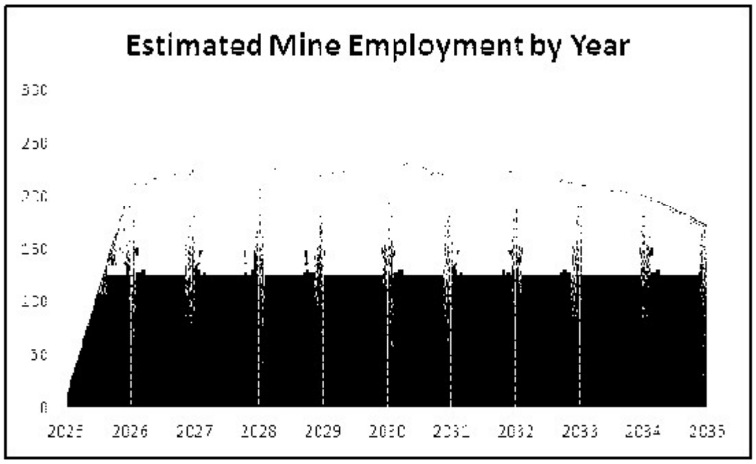
US Gold - Gold King Mine Project - Estimate October 2022
Workers by Category - In-Migration

Construction Skill	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25
Laborers	1	5	5	44	76	50	57	30	72	35	31	31	31	31	55	73	55	32	8
Operators	7	25	26	26	45	45	45	45	45	22	10	10	10	10	20	30	20	10	2
Ironworkers					20	20	35	35	35	35	35	35	35	49	69	75	69	30	2
Truck Drivers	5	16	16	16	16	10	10	10	8	8	4	4	4	4	8	8	8		
Electricians					20	20	20	30	30	30	30	30	35	49	70	90	70	70	5
Craft Supervision				2	3	3	3	3	3	3	3	3	3	3	5	10	5	4	4
Construction Inspector/Engineer	1	1	2	2	2	2	2	2	2	2	2	2	4	4	8	8	4	4	4
Health and Safety Specialists	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction Management	1	1	1	1	1	2	2	2	2	2	2	2	2	2	4	4	2	2	2
Construction Total Employees	16	50	51	92	184	153	175	218	198	138	118	118	125	153	240	299	234	153	28
Quarterly Average	16	65			171			185			121			231			139		
Owners Team/Mining during Const.																			
Mining and Geological Engineers	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Excavating,Loading Operators surf.	8	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Earth Drillers			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Explosive Workers			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Extractive Workers, All Other													10	10	10	10	10	10	10
Plant and System Operators													30	30	30	30	30	30	30
Owners Total Employees	10	10	10	10	10	10	10	10	10	10	10	10	50	50	50	50	50	50	50
Quarterly Average	10	10			10			10			24			50			50		
Total Workforce	26	60	61	102	194	163	185	226	208	148	128	128	175	203	290	**349**	284	203	78

Peak Hour Construction Phase Traffic Generation (Max Employees in Month 16, Year 2025)				
	AM Inbound Vehicles	**AM Outbound Vehicles**	**PM Inbound Vehicles**	**PM Outbound Vehicles**
Mine Traffic	**24 POV's in** **7 Buses In**	**0 POVs Out** **7 Buses Out**	**0 POV's In** **7 Buses In**	**24 POV's Out** **7 Buses Out**
MINE TOTAL	**31 IN**	**7 OUT**	**7 IN**	**31 OUT**
	7:30-8:30 AM	**7:30-8:30 AM**	**3:30-4:30 PM**	**3:30-4:30 PM**
Bus Staging Area Traffic:	**349 POV's In** **0 Buses In**	**26 POV's Out*** **7 Buses Out**	**26 POV's In** **7 Buses In**	**349 POV's Out** **0 Buses Out**
BUS STAGING AREA TOTAL	**349 IN**	**33 OUT**	**33 IN**	**349 OUT**
	7:00-8:00 AM	**7:00-8:00 AM**	**4:00-5:00 PM**	**4:00-5:00 PM**

*For estimation purposes, we assume 8% of employees will be dropped off and picked up at the staging area.

Mine Production Phase Trip Estimates:



- **Mine Operations Phase Employment:** During peak mining operations in about the year 2030, Gold King Mine is expected to operate with a maximum of about 234 daily employees, working three shifts. The day shift, from 8 AM to 4 PM, will have 106 employees. The swing shift from 4 PM to Midnight and midnight shift from Midnight to 8 AM are planned for 64 employees each. The larger day shift will create the AM peak and PM peak traffic volumes.

- **Travel time to the Mine:** The bus trip from Gold King Mine to the Staging Area takes about 25 to 30 minutes, so peak hours do not occur at the same time at the mine and the staging area.

- **AM Traffic Operations during the Production Phase.** The 106 day-shift employees will arrive at the bus staging area from I-25 and I-80 by private vehicles, and board 2-to-3 buses that will depart for the mine between 7:20 AM and 7:30 AM. Seven light trucks will carry 12 other non-shift personnel, including management, government staff, and visitors. Buses will arrive at the mine about 7:35 to 7:45 and the AM shift change will take place at 8 AM. Buses carrying 64 midnight shift workers will then depart the mine starting at about 8:10 AM and arrive back at the staging area between 8:35 and 8:45 AM.

  AM Peak Hour at the Mine: At the mine, the AM peak will take place from 7:30 to 8:30 AM as the day shift buses and light trucks arrive and the night shift worker buses depart.

  AM Peak Hour at the Bus Staging area: At the bus staging area, the AM Peak hour will take place as day shift workers arrive prior to 7:20 AM and board buses to the mine leaving between 7:20 AM and 7:25 AM. The smaller (64 worker) night shift will not return to the staging area until after 8:30 AM so they will not be part of AM Peak Hour traffic flows. The AM peak at the Bus Staging Area will be from 7AM to 8 AM.

- **PM Traffic Operations during the Production Phase.** The 64 swing-shift employees will arrive at the bus staging area by private vehicles and board 2-to-3 buses that will depart for the mine between 3:20 PM and 3:30 PM. Buses will arrive at the mine about 3:35 to 3:45 for the PM shift change at 4 PM. Buses carrying 106 day-shift workers will then depart the mine starting at about 4:10 PM and arrive back at the staging area between 4:35 and 4:45 PM. Seven light trucks will carry 12 other non-shift personnel, including management, government staff, and visitors. For a conservative estimate, we will include these vehicles in the PM Peak traffic. After 4:35 PM, day shift workers will then depart the bus staging area by private vehicle toward the I-25 and I-80 interchanges.

  PM Peak Hour at the Mine: At the mine, the PM peak will take place from 3:30 to 4:30 PM as the swing shift arrives at the mine and day shift workers depart the mine.

- **PM Peak Hour at the Bus Staging area:** At the bus staging area, the PM Peak hour will take place as day shift buses arrive at the staging area between 4:35 and 4:45 PM and day-shift workers drive home. The PM peak at the Bus Staging Area will be from 4:30 PM to 5:30 PM. The smaller (64 worker) swing shift will arrive at the staging area prior to 3:20 and will not be part of the main PM Peak Hour traffic flows.

Peak Hour Production Phase Traffic Generation (Maximum Employees through the Year 2035)				
	AM Inbound Vehicles	AM Outbound Vehicles	PM Inbound	PM Outbound
Mine Traffic	3 Buses 7 Light Trucks	3 buses	3 buses	3 buses 7 light Trucks
MINE TOTAL	10	3	3	10
	7:30-8:30 AM	7:30-8:30 AM	3:30-4:30 PM	3:30-4:30 PM
Bus Staging Area Traffic:	106 POVs	9 POV's 3 Buses 7 Light Trucks	9 POVs 3 Buses 7 Light Trucks	106 POV's
BUS STAGING AREA TOTAL	106	19	19	106
	7:00-8:00 AM	7:00-8:00 AM	4:00-5:00 PM	4:00-5:00 PM

Trip Distribution Calculations:

A spreadsheet gravity model was used to estimate traffic interaction with major labor markets. The largest city in each county was used to estimate the travel time to the Bus Staging Area. An adjustable friction exponent allows sensitivity testing to adjust for the travelers' perceived value of travel time. Generally, higher wages will make workers tolerate longer commutes. Model results are in the following tables:

Peak Employment Distribution based on Distance from Bus Staging Area

Units	Rate	Pi	Friction Exponent						
1	100	232	1						
Place	**Size**	**Travel Time**	**F Factor**	**PiAjFij**	**Tij**	**Pct**			
Laramie	38,664	40	0.025000	224251	7	3.0%	3%	Westbound	
Cheyenne	99,272	10	0.100000	2303110	71	30.7%	97%	Eastbound	
Denver	715,878	90	0.011111	1845374	57	24.6%			
Ft Collins	350,523	42	0.023810	1936222	60	25.8%			
Greeley	315,389	61	0.016393	1199512	37	16.0%			
				7508471	**232**	**100%**			

Units	Rate	Pi	Friction Exponent						
1	100	232	1.5						
Place	**Size**	**Travel Time**	**F Factor**	**PiAjFij**	**Tij**	**Pct**			
Laramie	38,664	40	0.003953	35457	6	2.5%	3%	Westbound	
Cheyenne	99,272	10	0.031623	728307	120	51.6%	97%	Eastbound	
Denver	715,878	90	0.001171	194520	32	13.8%			
Ft Collins	350,523	42	0.003674	298766	49	21.2%			
Greeley	315,389	61	0.002099	153582	25	10.9%			
				1410632	**232**	**100%**			

Units	Rate	Pi	Friction Exponent						
1	100	232	2						
Place	**Size**	**Travel Time**	**F Factor**	**PiAjFij**	**Tij**	**Pct**			
Laramie	38,664	40	0.000625	5606	4	1.7%	2%	Westbound	
Cheyenne	99,272	10	0.010000	230311	166	71.5%	98%	Eastbound	
Denver	715,878	90	0.000123	20504	15	6.4%			
Ft Collins	350,523	42	0.000567	46101	33	14.3%			
Greeley	315,389	61	0.000269	19664	14	6.1%			
				322186	**232**	**100%**			

Units	Rate	Pi	Friction Exponent						
1	100	232	3						
Place	**Size**	**Travel Time**	**F Factor**	**PiAjFij**	**Tij**	**Pct**			
Laramie	38,664	40	0.000016	140	1	0.6%	1%	Westbound	
Cheyenne	99,272	10	0.001000	23031	215	92.8%	99%	Eastbound	
Denver	715,878	90	0.000001	228	2	0.9%			
Ft Collins	350,523	42	0.000013	1098	10	4.4%			
Greeley	315,389	61	0.000004	322	3	1.3%			
				24819	**232**	**100%**			

Gravity model sensitivity testing yields the following findings:

- Due to its greater distance and smaller population, only 3% or less employee trips will be produced in The City of Laramie or Albany County. This was the maximum percentage using any travel time coefficient.
- Modification of the value of travel time alters the percentage of workers from Cheyenne vs northern Colorado.
- Cheyenne/Laramie County produces from 31% to 93% of trips, averaging about 62%.
- Due to its large population, Denver County produces from 0.9% to 25% of trips, averaging about 12%.
- Fort Collins/Larimer County produces 4% to 26% of trips, averaging about 15%
- Greeley / Weld County produces 5.8% to 16.5% of trips with a mean of 11.0%.

Given these model results, we project that 97% of employee and contractor traffic will come from Cheyenne and the Front Range region, via Interstate 80 and Interstate 25. The remaining 3% will come from Albany County via the I-80 Roundtop Interchange.

Mode Choice: Given the lack of transit service and distance of the Bus Staging Area from regional labor markets, all commuting trips are assumed to arrive by privately owned vehicle "POV".

Vehicle Occupancy Rate: The typical US vehicle occupancy for work trips is 1.08 to 1.16 persons per vehicle.[1] Due to the potential long-distance commuting in Wyoming, we have assumed the lower rate of 1.08. So, for estimation purposes, we assume that 8% of shift employees will be dropped off and picked up at the bus staging area.

Traffic Assignment Methodology: Traffic was assigned using "All-or-Nothing" assignment to the shortest travel path to and from the Bus Staging Area. For simplicity, employee trips were split 50/50 between the I-25/Missile Drive and I-80/Roundtop Road interchanges. All mine trucks will be directed to the I-80/Roundtop interchange.

Traffic Forecast Scenarios: Detailed turn movements were estimated for the following traffic scenarios:

- Year 2022 Counts
- Year 2025 No-Build Year 2025 with Construction Traffic
- Year 2035 No-Build Year 2035 with Mine Operations Traffic

Capacity Analyses: Capacity analyses were conducted for the nine study area intersections using the Highway Capacity Software (HCS 2023) with capacity parameters in the *Highway Capacity Manual 7th Edition A Guide for Multimodal Mobility Analysis (2022).* Capacity Analyses were conducted for the following eight scenarios:

- Year 2025 AM & PM No-Build Year 2025 AM & PM Build (with Construction Traffic)
- Year 2035 AM & PM No-Build Year 2035 AM & PM Build (with Mining Traffic)

"No-Build" traffic scenarios assume the mine isn't built and existing traffic grows as projected in the Cheyenne MPO traffic model. "Build" scenarios assume that mine-generated traffic is added onto "no-build" traffic.

The output of capacity analysis is an estimate of seconds of delay and resulting *"Level of Service"* for each traffic movement at an intersection.

Explanation of "Level of Service:"

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[1] *Summary of Travel Trends, 2017 National Household Travel Survey*, Federal Highway Administration Office of Policy and Governmental Affairs, Washington DC, 2017.

- Level of Service (LOS) is a measure of expected or actual delay or traffic density.
- Level of Service at intersections is based on seconds of delay per vehicle.
- Road agencies establish acceptable level of service performance for their road systems.
- Typically, a forecast LOS of D or better is considered acceptable.
- Level of Service is more restrictive at unsignalized intersections because drivers do not know when they can enter the intersection and may become impatient more quickly.

Level of Service: Unsignalized Intersections		**Level of Service: Signalized Intersections**	
A	**< 10 seconds**	**A**	**< 10 seconds**
B	**10 to 15 seconds**	**B**	**10 to 20 seconds**
C	**15 to 25 seconds**	**C**	**20 to 35 seconds**
D	**25 to 35 seconds**	**D**	**35 to 55 seconds**
E	**35 to 50 seconds**	**E**	**55 to 80 seconds**
F	**> 50 seconds**	**F**	**> 80 seconds**

Capacity Findings:

- Capacity analysis was completed using the Highway Capacity Software for eight traffic scenarios at all nine intersections. Under all scenarios, every intersection turn movement operates at a Level of Service C or better.
- The following tables list the projected peak-hour level of service and seconds of delay for the worst-case traffic movement at each intersection, and the average for all vehicles in the intersection.

SIGNALIZED INTERSECTIONS (I-25 Interchange Ramp Terminals)					
Intersection	**Scenario**	**AM Peak LOS & Max Delay**	**PM Peak LOS & Max Delay**	**AM Avg LOS & Average Delay**	**PM Avg LOS & Average Delay**
Happy Jack Road at I-25 Southbound Ramps	2025 No Build	LOS C 30.9 Secs	LOS C 27.6 Secs	LOS B 13.9 Secs	LOS B 19.6 Secs
	2025 Build	LOS C 30.9 Secs	LOS C 28.0 Secs	LOS B 14.0 Secs	LOS B 17.9 Secs
	2035 No Build	LOS C 30.7 Secs	LOS C 27.8 Secs	LOS B 15.0 Secs	LOS B 19.9 Secs
	2035 Build	LOS C 30.7 Secs	LOS C 27.9 Secs	LOS B 15.0 Secs	LOS B 19.6 Secs
Missile Drive at I-25 Northbound Ramps	2025 No Build	LOS C 27.0 Secs	LOS C 32.3 Secs	LOS A 9.5 Secs	LOS A 4.5 Secs
	2025 Build	LOS C 28.2 Secs	LOS C 31.5 Secs	LOS B 12.1 Secs	LOS A 4.8 Secs
	2035 No Build	LOS C 26.4 Secs	LOS C 31 Secs	LOS A 10.0 Secs	LOS B 5.0 Secs
	2035 Build	LOS C 27.5 Secs	LOS C 30.9 Secs	LOS B 11.0 Secs	LOS A 5.1 Secs

UNSIGNALIZED INTERSECTION CAPACITY ANALYSES			
Intersection	**Traffic Scenario**	**AM Peak Level of Service & Max Delay**	**PM Peak Level of Service & Max Delay**
Gold King Mine Access Road at CR 210	2025 No Build	LOS A – 5.0 Secs	LOS A – 5.0 Secs
	2025 Build	LOS A – 8.4 Secs	LOS A - 8.5 Secs
	2035 No Build	LOS A – 5.0 Secs	LOS A – 5.0 Secs
	2035 Build	LOS A - 8.4 Secs	LOS A - 8.4 Secs
County Road 210 at Happy Jack Road	2025 No Build	LOS A – 8.7 Secs	LOS A – 8.7 Secs
	2025 Build	LOS A – 8.7 Secs	LOS A – 8.7 Secs
	2035 No Build	LOS A – 8.7 Secs	LOS A – 8.8 Secs
	2035 Build	LOS A – 8.8 Secs	LOS A - 8.7 Secs
Happy Jack Road at McKinney Drive	2025 No Build	LOS B – 10.4 Secs	LOS B – 10.8 Secs
	2025 Build	LOS C – 15.8 Secs	LOS B - 13.7 Secs
	2035 No Build	LOS B – 10.8 Secs	LOS B - 11.0 Secs
	2035 Build	LOS B – 12.2 Secs	LOS B – 11.6 Secs
Happy Jack Road at Roundtop Road	2025 No Build	LOS B – 11.4 Secs	LOS B – 11.5 Secs
	2025 Build	LOS A – 8.8 Secs	LOS B - 13.6 Secs
	2035 No Build	LOS B – 12.1 Secs	LOS B – 12.2 Secs
	2035 Build	LOS B – 13.6 Secs	LOS B – 13.6 Secs
Roundtop Road at Veta Drive	2025 No Build	LOS A – 5.0 Secs	LOS A – 5.0 Secs
	2025 Build	LOS A – 8.8 Secs	LOS A – 9.7 Secs
	2035 No Build	LOS A – 5.0 Secs	LOS A – 5.0 Secs
	2035 Build	LOS A – 9.0 Secs	LOS A – 9.1 Secs
Roundtop Road at I-80 Westbound Ramps	2025 No Build	LOS B – 10.2 Secs	LOS B – 10.6 Secs
	2025 Build	LOS B – 14.6 Secs	LOS B – 14.0 Secs
	2035 No Build	LOS B – 11.0 Secs	LOS B – 11.5 Secs
	2035 Build	LOS B – 11.7 Secs	LOS B - 13.3 Secs
Roundtop Road at I-80 Eastbound Ramps	2025 No Build	LOS A – 8.8 Secs	LOS A – 8.8 Secs
	2025 Build	LOS A – 8.8 Secs	LOS A – 8.8 Secs
	2035 No Build	LOS A – 8.7 Secs	LOS A – 8.8 Secs
	2035 Build	LOS A – 8.7 Secs	LOS A – 8.8 Secs

Capacity Findings:

All intersection turn movements are projected to operate at level of service C or better for the duration of mine construction and operations. There were no capacity failures. All existing road and intersection capacities appear sufficient to accommodate projected traffic volumes resulting from the Gold King Mine.

Recommendations:

Y2 has no recommendations for roadway or intersection capacity improvements.

TRUCKS

Most truck trips take place during off-peak times, so they do not impact intersection capacity performance. The main potential impact of heavy trucks is due to their axle weights and cumulative effects on road pavements and bridge structures.

To avoid impacting the *Medicine Bow National Forest* and *Curt Gowdy State Park* recreation areas, the CK Gold Project will direct trucks east on Happy Jack Road to the Interstate-80 Roundtop Road Interchange for access to the interstate highway system.

In transportation analysis, the term "trip" is always one way, from point A to point B. The return from B to A is another "trip." Total vehicle trips during peak 24-hour mining operations will include vehicle types in the following table

Construction Phase Heavy Trucks: Each day of construction will generate about 16 truck trips (8 in and 8 out) of various types (cement, steel, equipment, surveyors, QA/QC, etc.). These trucks will be primarily owned, operated, and permitted by independent contractors.

Construction vehicles will include a variety of types for different purposes, mostly owned and operated by contractors. We expect that contractors will assure their own trucks are properly configured and permitted by WYDOT. The following table shows the approximate daily average number and weight of vehicles of each type.

Construction Phase (2024-2025): Average Daily Buses and Trucks

Vehicle Type	FHWA Class	Axles	Average Personnel	Persons per Vehicle	Average Vehicle Trips Per Day	Average Vehicle Weight (lbs.)	Weight per Axle
Bus	4	2	207	50	10	Laden: 48,000 Unladen: 35,000	17,500 to 24,000
4- Tire Single-Unit Light Truck	3	2	50	2.5	48	6,000	3,000
Cement Truck	7	4+1	1	1	2	Laden: 66,000 Unladen: 26,000	6,500 to 13,500
Steel Truck 16 Wheel 5-Axle Tractor Trailer	9	5	1	1	1.0	Laden 80,000 Unladen 35,000	7,000 to 16,000
Equipment Truck 16 Wheel 5-Axle Tractor Trailer	9	5	1	1	6	Laden 80,000 Unladen35,000	7,000 to 16,000
QA/QC Truck	3	2	2	2	4	6,000	3,000
Surveyor Truck	3	2	1	1	2	6,000	3,000
TOTAL DAILY TRIPS					**73**		

Heavy Vehicles During Operations: Once construction is complete, the CK Gold project will operate three daily shifts 24/7 from 2026 through 2035. The facility is planned to process 20,000 tons of rock daily, producing 160 tons of metal ore concentrate. Metal ore concentrate will be loaded into industrial bags and shipped out on five, 5-axle "flatbed" or "dry-van" tractor-trailers, with each truck carrying 64,000 pounds (32 tons) of concentrate. Ore trucks will be selected to comply with the WYDOT truck size and weight regulation "Gold Book," December 2013.

- **Operations Phase Heavy Trucks**.
    - During operations, about nine delivery truck trips will take place daily (4.5 trips in and 4.5 trips out). These trucks will arrive laden and depart empty.
    - Also, during operations, ten ore truck trips will take place daily: 5 trucks will arrive empty and depart with 25 tons of ore concentrate.

Equivalent Single Axle Loadings (ESALs):

"ESALs" are a measure of the pounding a pavement receives from vehicles passing over it. One ESAL is equivalent to the pavement stress caused by one 18,000-pound axle with four tires. Light vehicles have little effect on pavements, but as vehicles (and their axles) increase in weight, the stress on pavements increases exponentially.

Existing ESALs on WYO 210 (Happy Jack) west of WYO 222 (Roundtop Road) were estimated based on vehicle classification counts taken Tuesday, August 2, 2022. On that weekday, 3993 vehicles used Happy Jack Road, classified as follows:

Vehicle Class	1	2	3	4	5	6	7	8	9	10	11	12	13
Number of Vehicles	47	1,907	1,054	39	876	32	0	17	16	3	1	0	1
Percent	1.2%	47.8%	26.4%	1.0%	21.9%	0.8%	0.0%	0.4%	0.4%	0.1%	0.0%	0.0%	0.0%

Based on existing vehicle volumes and a projected 2% growth rate for trucks, the estimated total "No-Build" ESALs for the next 12 years on Happy Jack Road are 390,000, or approximately 30,000 ESALs annually.[2]

Analysis of expected truck classes and loads weights yielded an estimate of ~175,000 additional Equivalent Single Axle Loadings (ESALs) resulting from the project over the 12-year duration of construction and operations. The average is about 14,600 ESAL's annually. 100% of trucks will follow CR-210 and Happy Jack Road from the mine entrance to Roundtop Road. About 90% of trucks will then follow Roundtop Road to I-80 and 10% will follow Happy Jack Road to I-25.

ESAL Finding: The effect of mine construction and operations on ESALs on Happy Jack Road is an estimated increase from 390,000 to 565,000 ESALs over the 12 years from 2024 through 2035, representing an increase of 45%.

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[2] Source: Connecticut DOT: https://www.google.com/search?q=ESAL+Calculator+Spreadsheet&rlz=1C1GCEA_enUS907US907&oq=ESAL+Calculator+Spreadsheet&aqs=chrome..69i57j0i22i30.10805j0j15&sourceid=chrome&ie=UTF-8

HEAVY VEHICLE AND ESAL ESTIMATES

CONSTRUCTION PHASE (About Mar 2024 - Sep 2025: 19 months)

Vehicle Type	Cargo	FHWA Class	Axles	Weight Inbound	Number Per Year	ESALS (bit)	Weight Outbound	Number Per Year	ESALS (bit)	PHASE TOTAL ESALS (Bituminous)
BUSES	Employees	4	2	48,000	2,520	3,326	48,000	2520	3,326	10,534
TRUCKS										
	Cement	7	4+1	66,000	365	585	26,000	365	369	1,509
	Steel	9	5	80,000	183	433	35,000	183	188	982
	Equipment	9	5	80,000	1,080	2,560	35,000	1,080	1,112	5,814
PHASE TOTAL (19 Months)										**18,839**
			12 Month	**19 Months**						
	Eastbound Total ESALs		**4,995**	**7,909**						
	Westbound Total ESALS		**6,903**	**10,930**						

PRODUCTION PHASE (About Oct 2025 - Sep 2035: 120 Months)

Vehicle Type	Cargo	FHWA Class	Axles	Weight Inbound	Number Per Year	ESALS	Weight Outbound	Number Per Year	ESALS	PHASE TOTAL ESALS (Bituminous)
BUSES	Employees	4	2	48,000	2160	1,253	48,000	2160	1,253	25,056
TRUCKS	**Long Distance Deliveries (Incoming Via I-80)**									
	Grinding Balls	9	5	75,000	329	944	35,000	329	339	12,831
	MIBC	9	5	67,000	25	51	35,000	25	26	768
	Collector 1	9	5	67,000	5	10	35,000	5	5	154
	Collector 2	9	5	67,000	5	10	35,000	5	5	154
	Flocculant	9	5	67,000	23	47	35,000	23	24	706
	Frother 2	9	5	67,000	5	10	35,000	5	5	154
	Coagulant	9	5	67,000	5	10	35,000	5	5	154
	Lime	9	5	75,000	110	316	35,000	110	113	4,290
	Mill/Crusher Liners	9	5	59,000	2	3	35,000	2	2	51
	Maintenance Spares	8	4	33,000	39.6	20	26,000	39.6	20	404
	Bentonite	8	5	80,000	365	865	35,000	365	621	14,856
	Local Deliveries (Incoming Via I-80 and I-25)									
	Emulsion (Neutral)	7	4+	48,000	500	660	20,000	500	500	11,600
	Explosive Consumables	6	3	10,000	12	1	3,300	12	1	24
	Drilling Consumables	6	3	40,000	12	2	26,000	12	12	139
	Truck Parts	6	3	10,000	12	0.1	3,300	12	1	13
	Tires	7	4+	45,000	6	7	33,000	6	6	136
	Fuel	7	5	80,000	227	539	35,000	227	239	7,773
	Ore Shipments (Outgoing Via I-80 West)									
	Gold Ore Concentrate	9	5	35,000	1898	3,227	80,000	1898	4,498	77,249
PHASE TOTAL ESALs (10 years)					**5741**			**5741**		**156,508**
PHASE ANNUAL ESALS										**15,651**
GOLD KING MINE TOTAL ESALS 2024-2036										**175,348**
			12 Month	**10 Years**	**12 years**					
	Eastbound Total ESALs		**7,676**	**76,757**	**84,666**					
	Westbound Total ESALS		**7,975**	**79,752**	**90,682**					

[3]

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[3] Source: *Alaska Pavement Design Manual Chapter 6: Design Input - Equivalent Single Axle Loads,* Alaska DOT, July 2020.

Operations Phase (2026-2035): Average Daily Buses, Trucks, Axles and Weights

Vehicle Type	FHWA Class	Axles	Personnel	Persons per Vehicle	Average Vehicle Trips Per Day	Average Vehicle Weight (lbs.)	Weight per Axle
Workers and Visitors to and from Bus Staging Area							
Buses (all 3 shifts)	4	2	240	50	28	Laden: 48,000 Unladen: 35,000	17,500 to 24,000
General Manager	3	2	1	1	4	6,000	3,000
Government Officials	3	2	2	2	0.2	6,000	3,000
Visitors	3	2	2	1	0.2	6,000	3,000
<u>TOTAL DAILY TRIPS</u>					<u>33</u>		

Process Plant Operations – Deliveries from Denver/Salt Lake via I-80 Roundtop Interchange

Vehicle Type	FHWA Class	Axles	Personnel	Persons per Vehicle	Average Daily Vehicle Trips	Average Vehicle Weight (lbs.)	Weight per Axle
Grinding Balls 5-Axle Tractor Trailer	9	5	1	1	1.8	Laden 75,000 Unladen 35,000	7,000 to 15,000
Methyl Isobutyl Carbinol (MIBC) 5-Axle Tractor Trailer	9	5	1	1	0.2	Laden 67,000 Unladen 35,000	7,000 to 13,400
Collector 1 5-Axle Tractor Trailer	9	5	1	1	0.04	Laden 67,000 Unladen 35,000	7,000 to 13,400
Collector 2 5-Axle Tractor Trailer	9	5	1	1	0.04	Laden 67,000 Unladen 35,000	7,000 to 13,400
Flocculant 5-Axle Tractor Trailer	9	5	1	1	0.2	Laden 67,000 Unladen 35,000	7,000 to 13,400
Frother 2 5-Axle Tractor Trailer	9	5	1	1	0.04	Laden 67,000 Unladen 35,000	7,000 to 13,400
Coagulant 5-Axle Tractor Trailer	9	5	1	1	0.04	Laden 67,000 Unladen 35,000	7,000 to 13,400
Lime 5-Axle Bulk Tanker	9	5	1	1	0.6	Laden 75,000 Unladen 35,000	7,000 to 15,000
Mill/Crusher Liners 5-Axle Tractor Trailer	9	5	1	1	0.02	Laden 59,000 Unladen 35,000	7,000 to 11,800
Maintenance Spares Various Classes	8	4	1	1	0.2	Laden 33,000 Unladen 26,000	6,500 to 8,500
Bentonite Bulk Tanker	9	5	1	1	2	Laden 80,000 Unladen 35,000	7,000 to 16,000
<u>TOTAL DAILY TRIPS</u>					<u>5</u>		

Operations – Deliveries from Buckley Powder (Cheyenne) Denver & Salt Lake via I-80/Roundtop

Vehicle Type	FHWA Class	Axles	Personnel	Persons per Vehicle	Average Vehicle Trips Per Day	Average Vehicle Weight (lbs.)	Weight per Axle
Emulsion (Neutral) Bulk Tanker	7	4+	1	1	2.7	Laden 48,000 Unladen 20,000	5,000 to 12,000
Explosives 3-Axle Single-Unit	6	3	1	1	.06	10,000	3,300
Drilling Consumables 3-Axle Single Unit	6	3	1	1	.06	Laden 40,000 Unladen 26,000	8,700 to 13,300
Truck Parts 3-Axle Single Unit	6	3	1	1	.06	10,000	3,300
Tires 4+-Axle Single Unit	7	4+	1	1	.03	Laden 45,000 Unladen 33,000	8,250 to 11,250
Fuel Bulk Tanker	7	5	1	1	1.3	Laden 80,000 Unladen 35,000	to 20,000
TOTAL DAILY TRIPS					**4.5**		

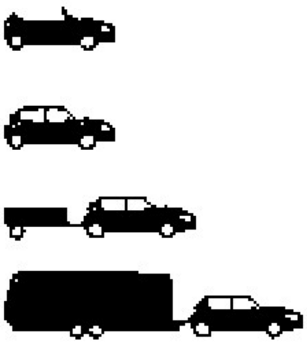
Ore Concentrate Shipments from CK Gold Project to Salt Lake City via I-80 / Roundtop Interchange

Vehicle Type	FHWA Class	Axles	Personnel	Persons per Vehicle	Average Daily Vehicle Trips	Average Vehicle Weight (lbs.)	Weight per Axle
Ore Concentrate 5-Axle Flatbed Semi	9	5	1	1	10	Laden 80,000 Unladen 35,000	7,000 to 16,000
TOTAL DAILY TRIPS					**10**		

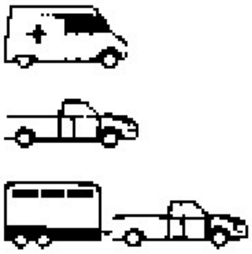
FHWA Vehicle Classification Chart:

Class 1
Motorcycles

Class 2
Passenger cars

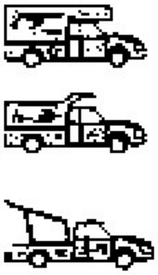


Class 3
Four tire,
single unit

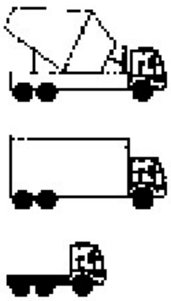


Class 4
Buses

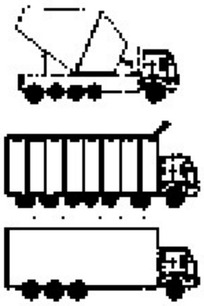
Class 5
Two axle, six
tire, single unit



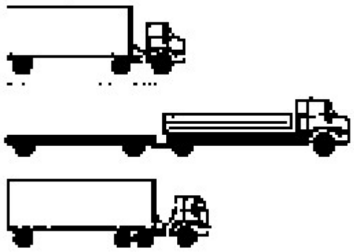
Class 6
Three axle,
single unit



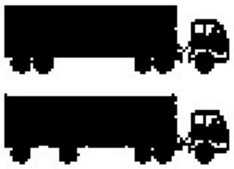
Class 7
Four or more
axle, single unit



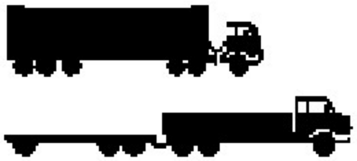
Class 8
Four or less axle,
single trailer



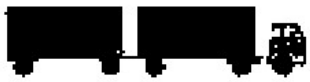
Class 9
5-Axle tractor
semitrailer



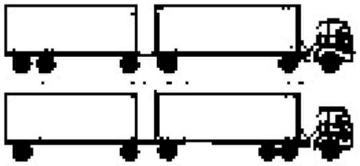
Class 10
Six or more axle,
single trailer



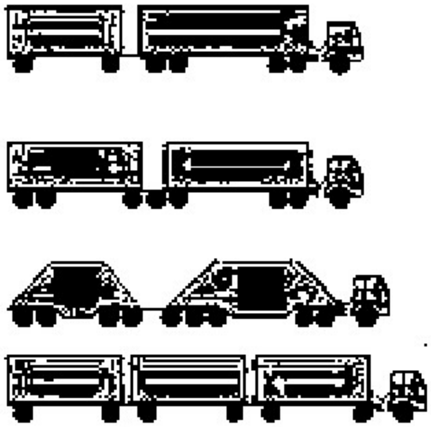
Class 11
Five or less axle,
multi trailer



Class 12
Six axle, multi-
trailer



Class 13
Seven or more
axle, multi-trailer



Existing System Descriptions and Photos:

TEE Intersection of CK Gold Project Access Drive at CR 210:

- The entry gate road for Gold King Mine intersects Laramie County Road 210 on the south 1.9 miles west of Happy Jack Road.
- **Gold King Mine Access Drive** is currently a one lane dirt road that extends about 4.5 miles southwest from County Road 210 to the mine.
- **County Road 210 at the Mine Entrance Drive** is a 30-foot-wide gravel road. A culvert crosses under Hwy 210 on the east leg of the intersection.
- **CR 210 West of the Gold King Mine Road** becomes a winding gravel/dirt road and crosses into Albany County before intersecting Interstate 80 at Buford, 11 Miles west of the mine entrance. Although the dirt road is well maintained, it is not suitable for heavy trucks or high traffic volumes and the maximum safe speed is about 30 MPH. Mine traffic will be directed east to Happy Jack Road.

Looking west on CR 210 at CK Gold Project Entrance Drive on the left. (North is to the right.)

TEE Intersection of County Road 210 (CR-210) at Happy Jack Road (State Highway 210):

- This site may be confusing because State Highway 210 and County Road 210 have the same route number.
- **County Road 210** is a two-lane blacktop road 24 feet wide. The speed limit is not posted. The pavement is in poor condition and becomes gravel 380 feet west of Happy Jack Road. The 2-way weekday traffic volume is 191 vehicles with 20% trucks. 85th percentile speeds on the paved segment are 35.1 MPH westbound and 42.0 MPH eastbound. Hwy 210 is STOP controlled at the Happy Jack Intersection.
- **Happy Jack Road (SH-210)** at this location consists of two, 12' travel lanes with 8-foot shoulders. The speed limit is 55 MPH through the intersection, increasing to 65 MPH north of the intersection. A northbound left turn lane begins 250 feet southeast of Hwy 210. The right pavement edge lines have rumble stripes.
- **Happy Jack Road North of CR 210** carries 1,486 vehicles on a weekday, including 26% trucks. 85th percentile speeds are 65.9 MPH northbound and 67.2 MPH southbound.
- **Happy Jack Rd (SH 210) South of CR 210** carries 1617 vehicles per day with 23% trucks. The speed limit is 55 MPH. 85th percentile speeds are 61.7 MPH northbound and 65.8 MPH southbound.

Aerial view of County Road 210 (left) at Happy Jack Road (North is at top.)

Cross Intersection of Happy Jack Road at McKinney Drive:

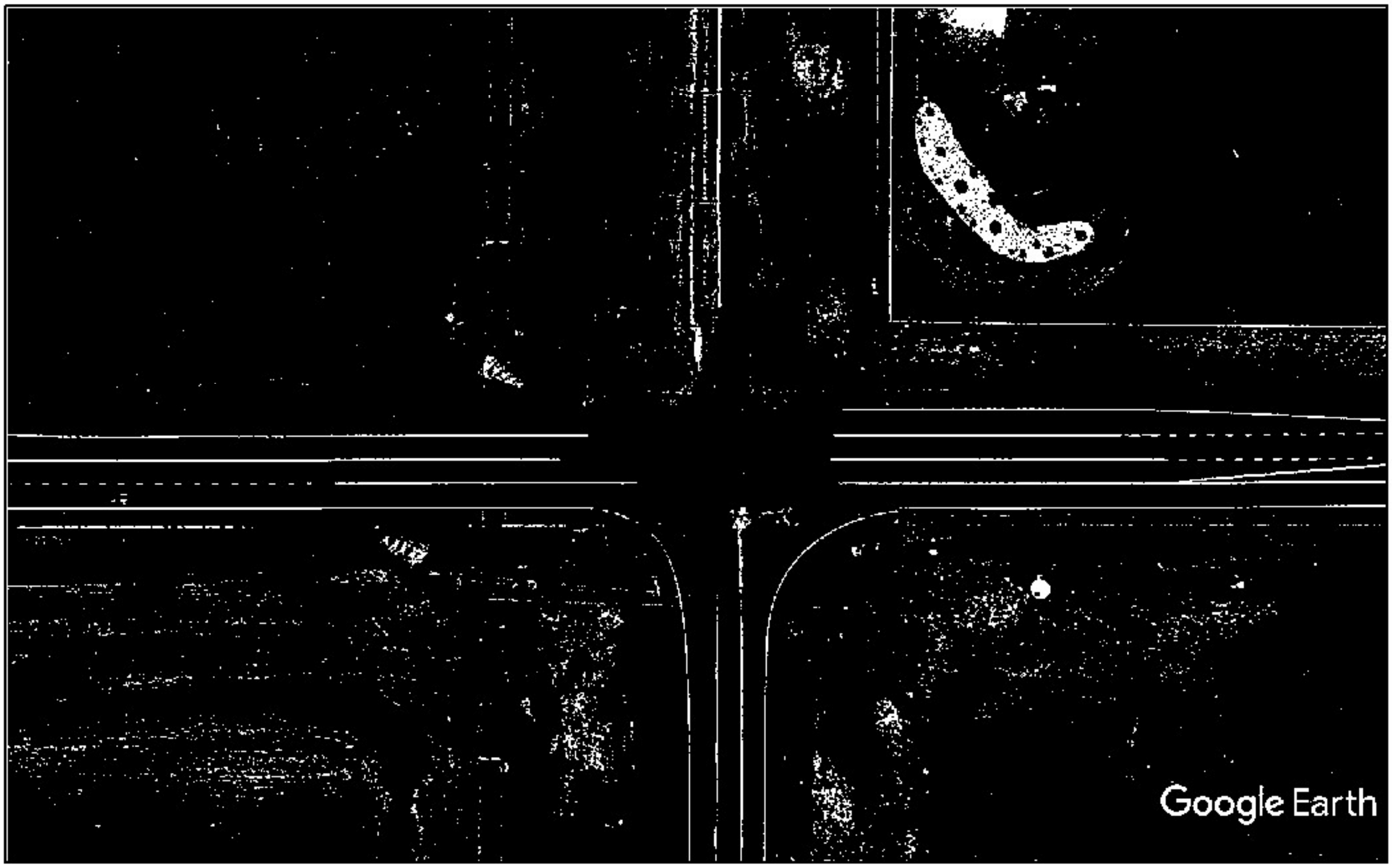
- This intersection is located 750 feet west of Roundtop Road.
- The east and west legs of this intersection are Happy Jack Road (SH 210): a 55 MPH three-lane roadway with two 12' travel lanes, center left-turn-lane, and two 8' shoulders. Daily volume is about 4,000 vehicles and 85th percentile speeds are 59.4 MPH eastbound and 59.7 MPH westbound.
- The north leg of McKinney Drive is a residential access street serving about 15 single family homes and an estimated daily volume of 143 vehicles.
- The south leg of McKinney Drive is an undeveloped local access street planned to serve the *North Range Business Park 3rd Filing* subdivision. No adjacent lots have been developed yet so there is no traffic. The asphalt road is 36 feet wide and striped with two, twelve-foot travel lanes and 6-foot shoulders.

Aerial view of Happy Jack Road (E-W) at McKinney Drive. (North is at top.)

Cross Intersection of Happy Jack Road at Roundtop Road:

- The west leg of Happy Jack Road (SH 210) is a 55 MPH three-lane roadway with two 12' travel lanes, center left-turn-lane, and two 8' shoulders. The weekday volume is 3,993 vehicles, including 24% trucks. 85th percentile speeds are 59.4 MPH eastbound and 59.7 MPH westbound.
- The east leg of Happy Jack Road is signed at 55 MPH and consists of two 12-foot through lanes with westbound right turn and left turn bays, 200 feet long. This segment carries 3,745 vehicles on weekdays, including 23% trucks. 85th percentile speeds are 62.1 MPH eastbound and 59.8 MPH westbound.
- The north leg of Roundtop Road (SH 222) is a 55 MPH 24-foot asphalt roadway which flares to 90-feet wide at the intersection of Happy Jack Road. Roundtop Road is STOP controlled at Happy Jack Road. This intersection leg carries 1,096 vehicles on weekdays, including 26% trucks. 85th percentile speeds are 42.2 MPH northbound and 44.6 MPH southbound.
- The south leg of Roundtop Road (SH 222) is a 55 MPH two-lane asphalt road (two x 12-foot travel lanes with 3' shoulders), flaring to a three-lane roadway (northbound Thru-Left-lane and Right-turn-lane) 300 feet south of Happy Jack Road. This leg carries 1,706 vehicles on weekdays, including 33% trucks. 85th percentile speeds are 49.7 MPH northbound and 46.3 MPH southbound.

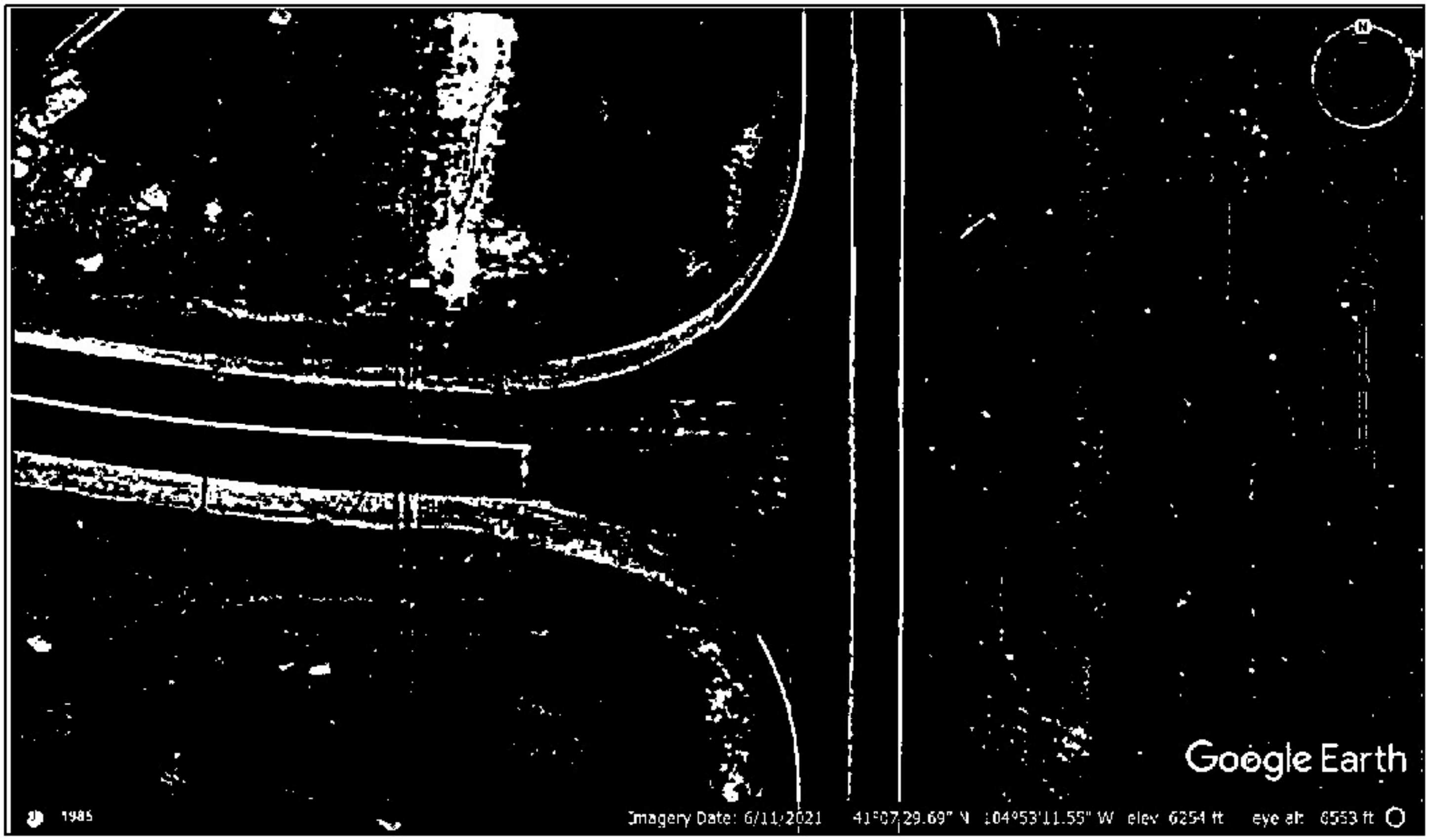
Aerial View of Happy Jack Road (E-W) at Roundtop Road (N-S) (North is at top.)



TEE Intersection of Roundtop Road at Veta Drive:

- The Veta Drive intersection is located 2400 feet south of Happy Jack Road.
- The north and south legs of Roundtop Road consist of two, twelve-foot travel lanes signed at 55 MPH. The roadway connects I-80 to Happy Jack Road and carries a daily volume is about 1700 vehicles with 33% trucks.
- Veta Drive west of Roundtop Road is a local access street planned to serve the *North Range Business Park 3rd Filing* subdivision. Adjacent parcels near Roundtop Road are not yet developed so there is currently little or no traffic volume on that intersection leg.

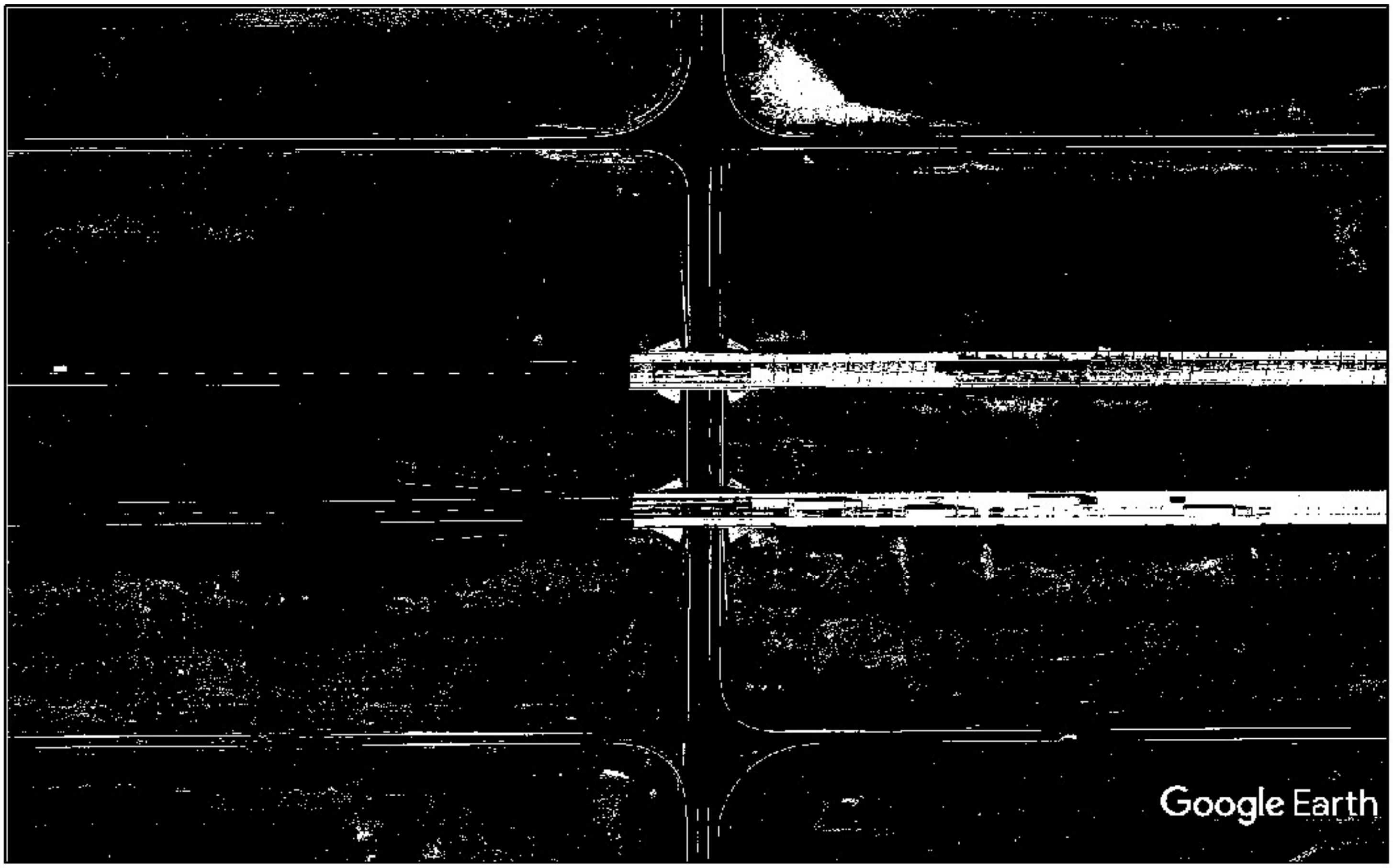
Aerial view of Roundtop Road at Veta Drive. (North is at top.)


N
Google Earth
1985
Imagery Date: 6/11/2021 41°07'29.69" N 104°53'11.55" W elev 6254 ft eye alt 6553 ft

I-80 / Roundtop Road (State Highway 222) Diamond Interchange:

- Roundtop Road (SH 222) is a 55 mph, 3-lane roadway with 2-foot shoulders.
- All I-80 ramps have a single, 12-foot lane with 8-foot shoulders
- The westbound on-ramp is gated to prevent freeway entry when closed due to winter weather. When this occurs, semis park at any available space nearby.
- Roundtop Road (SH 222) north of I-80 carries about 3750 vehicles on weekdays, with about 40% commercial trucks. The roadway serves several nearby trucking facilities, including the regional Walmart distribution center on Horizon Drive.
- Roundtop Road (SH 222) south of I-80 carries 586 vehicles on weekdays, with 40% trucks. 85th percentile speeds are 55.1 MPH northbound and 58.6 MPH southbound.

Aerial View of I-80 Interchange Ramps at Roundtop Road. (North is at top.)



I-25 / Happy Jack Road / Missile Drive Interchange:

- The configuration of this interchange was converted from a cloverleaf to a modified diamond in 2009.
- The speed limit on I-25 is reduced from 75 MPH to 65 MPH through this area.

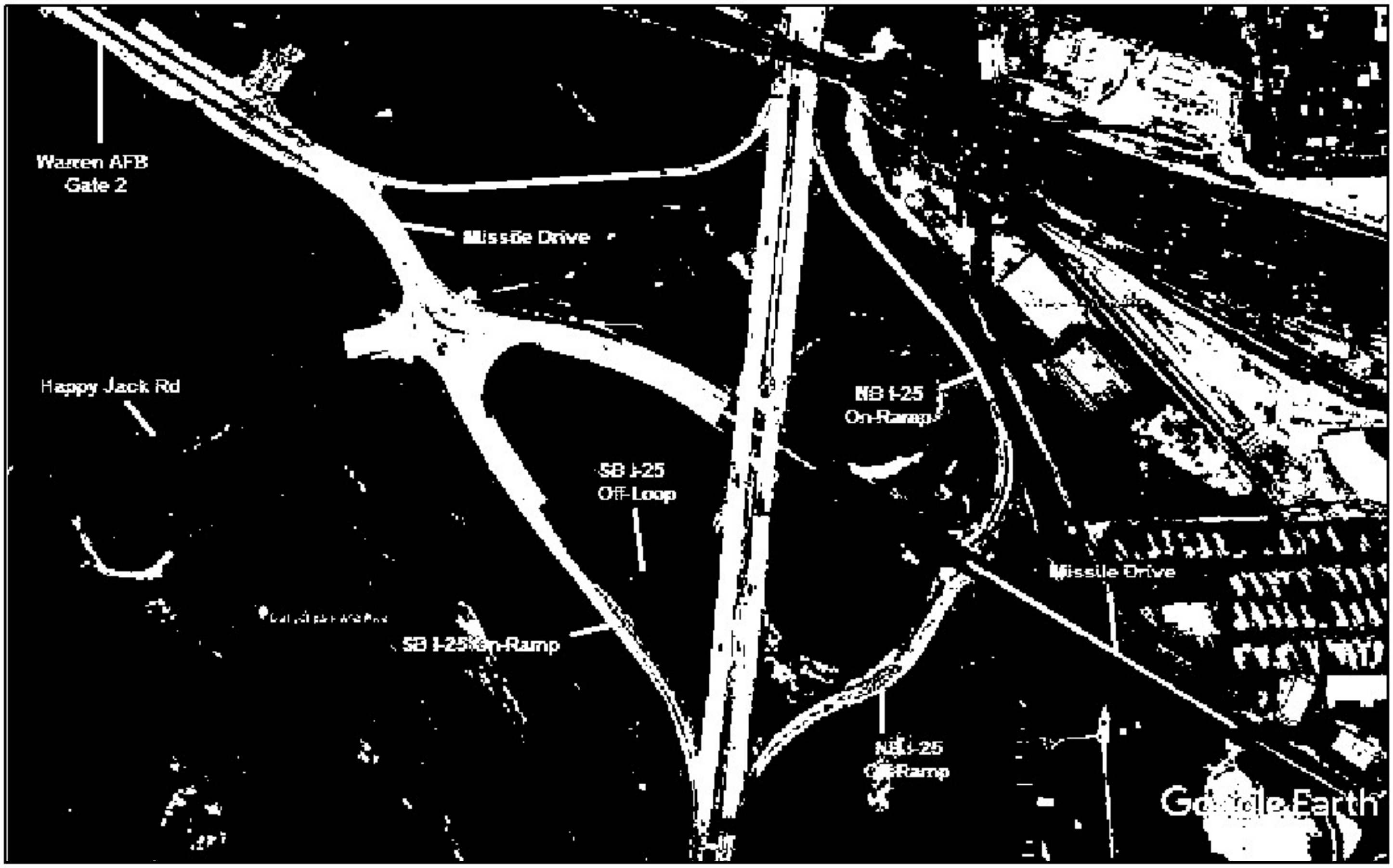
West Ramp Terminal Signalized Cross Intersection

- Happy Jack Road (SH 210) is a 40 MPH, 5-lane asphalt roadway west of the interchange. The eastbound right lane must exit to the I-25 southbound on ramp. This segment carries 3,745 vehicles on weekdays, including 23% trucks.
- The north leg of the I-25 southbound intersection is Missile Drive (F.E. Warren Air Force Base Gate 2). The southbound right turn is channelized.
- The south leg of the I-25 southbound intersection is the southbound I-25 on-ramp and southbound I-25 off-ramp. The northbound right turn is channelized.

East Ramp Terminal Signalized Cross Intersection

- East of I-25, Happy Jack Road becomes Missile Drive. The cross section is 5-lane, and the speed limit is 40 MPH. Weekday traffic volume is 7,949 vehicles with 20% trucks. 85th percentile speeds are 44.1 MPH eastbound and 46.2 MPH westbound.
- The northbound off-ramp flares to a left-thru lane and a right turn only lane.
- The northbound on-ramp is a single, 14-foot lane with 8-foot right shoulder and 5-foot left shoulder.

Aerial View of Interstate 25 Interchange Ramps at Happy Jack Road and Missile Drive (North is at top.)

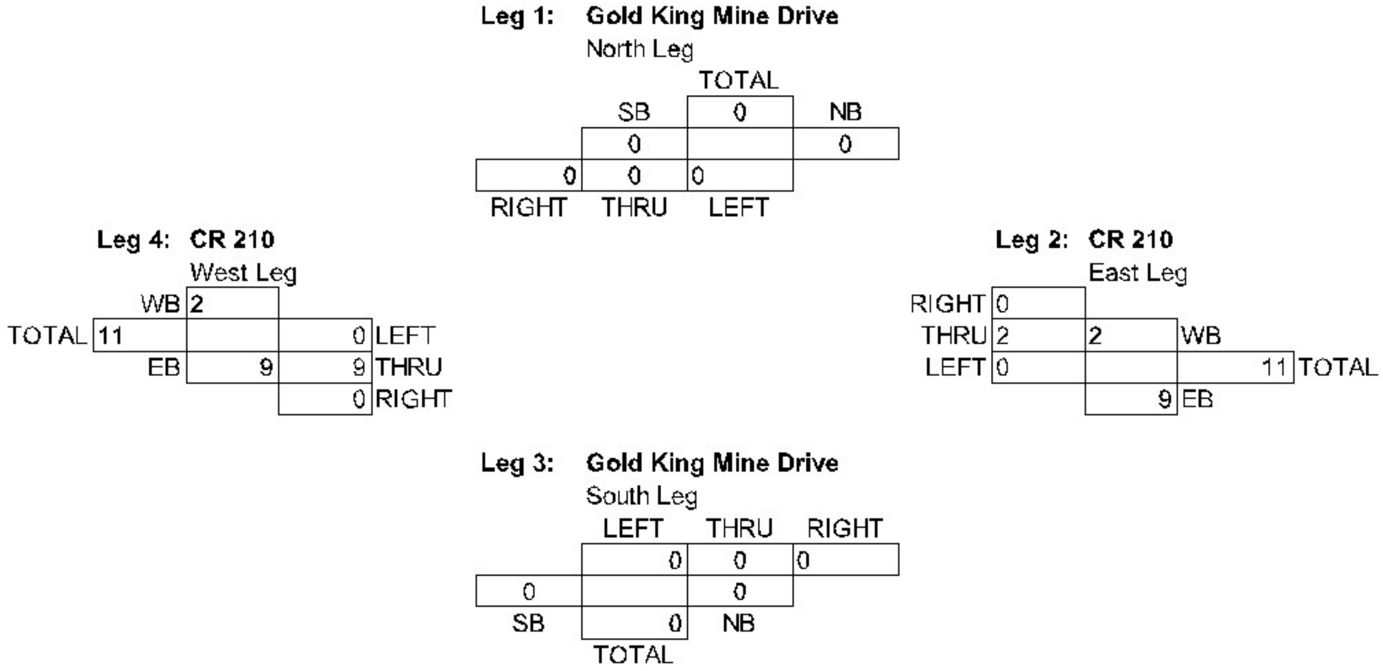


Appendix A: Turn Movement Forecasts

Gold King Mine Drive at CR 210

Crossroad Diagram:

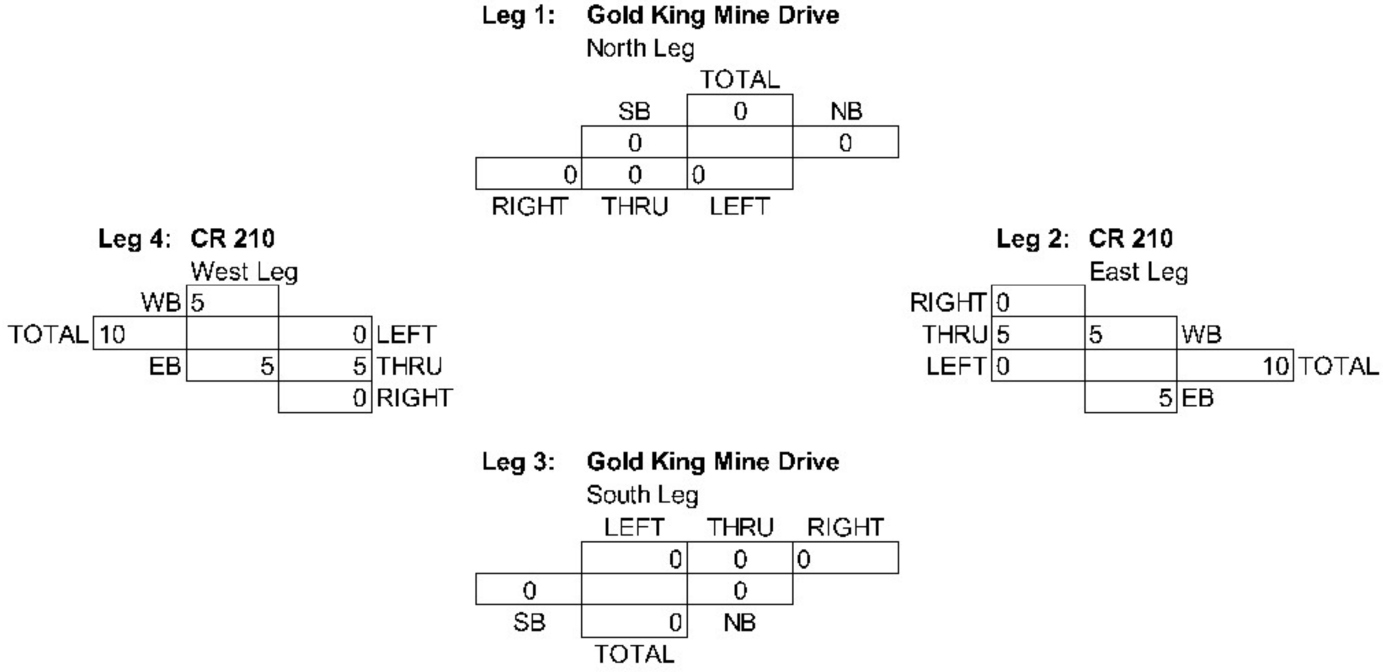
2022 AM Peak Count



Gold King Mine Drive at CR 210

Crossroad Diagram:

2022 PM PEAK COUNT



Gold King Mine Drive at CR 210

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: Gold King Mine Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	31	WB	
LEFT	31		38	TOTAL
		7	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	7
31		7	
SB	38	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: Gold King Mine Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	7	WB	
LEFT	7		38	TOTAL
		31	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	31
7		31	
SB	38	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

2025 AM Peak NO-BUILD

Leg 1: Gold King Mine Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	2		
TOTAL	12		0	LEFT
	EB	9	9	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	2	2	WB	
LEFT	0		11	TOTAL
		9	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

2025 PM PEAK NO-BUILD

Leg 1: Gold King Mine Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	5		
TOTAL	11		0	LEFT
	EB	5	5	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	5	5	WB	
LEFT	0		10	TOTAL
		5	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Gold King Mine Drive

North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210

West Leg

	WB	2		
TOTAL	11		0	LEFT
	EB	9	9	THRU
			0	RIGHT

Leg 2: CR 210

East Leg

RIGHT	0			
THRU	2	33	WB	
LEFT	31		49	TOTAL
		16	EB	

Leg 3: Gold King Mine Drive

South Leg

	LEFT	THRU	RIGHT
	0	0	7
31		7	
SB	38	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Gold King Mine Drive

North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210

West Leg

	WB	5		
TOTAL	10		0	LEFT
	EB	5	5	THRU
			0	RIGHT

Leg 2: CR 210

East Leg

RIGHT	0			
THRU	5	12	WB	
LEFT	7		48	TOTAL
		36	EB	

Leg 3: Gold King Mine Drive

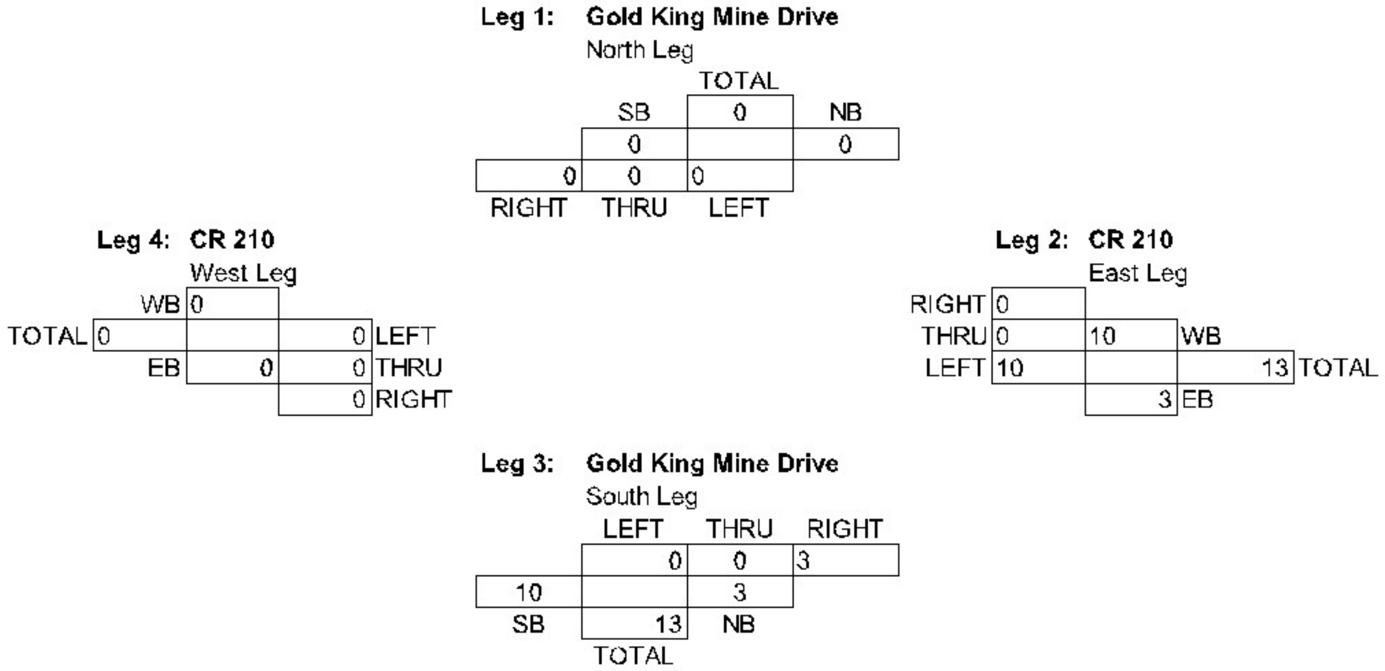
South Leg

	LEFT	THRU	RIGHT
	0	0	31
7		31	
SB	38	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

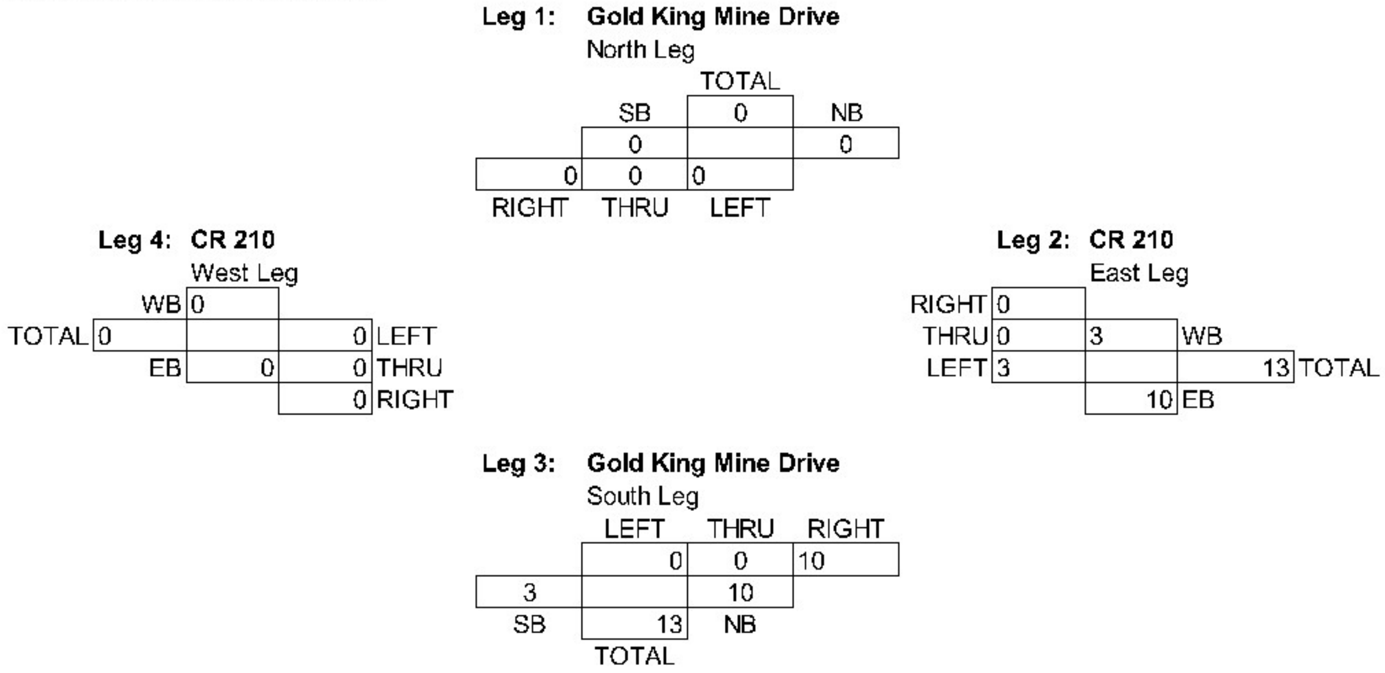
Operations AM Trip Generation



Gold King Mine Drive at CR 210

Crossroad Diagram:

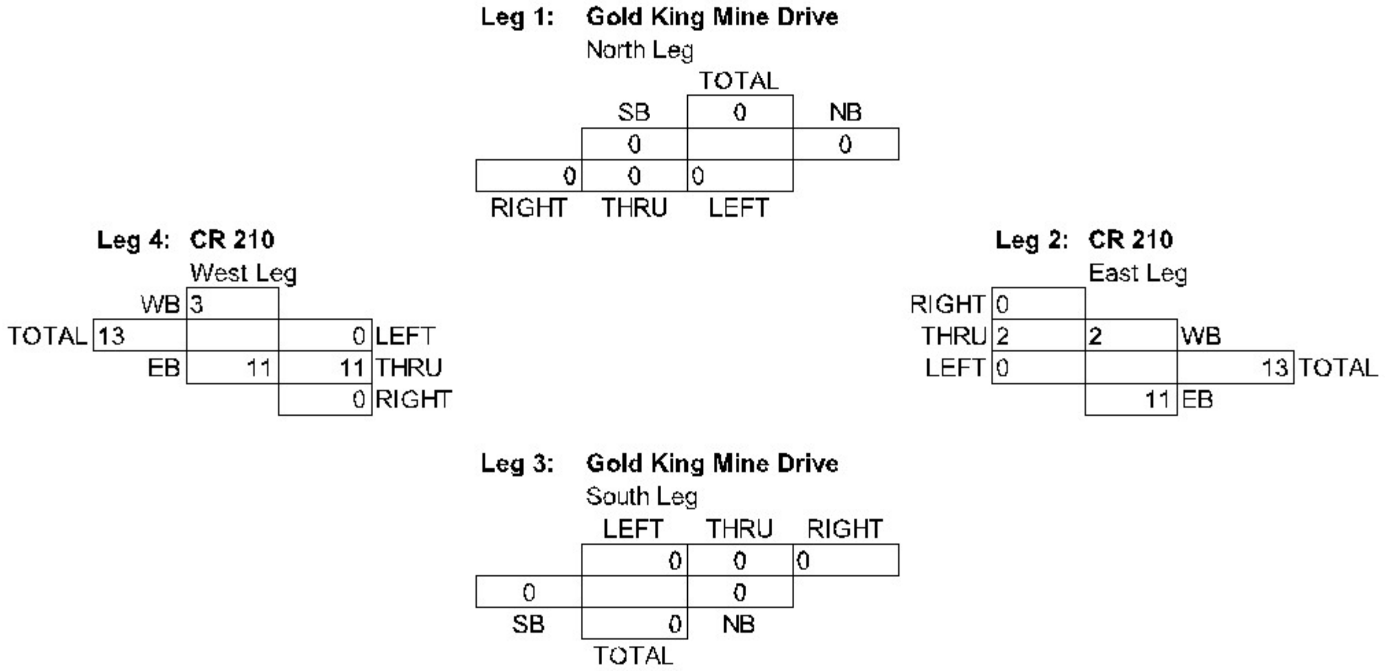
Operations PM Trip Generation



Gold King Mine Drive at CR 210

Crossroad Diagram:

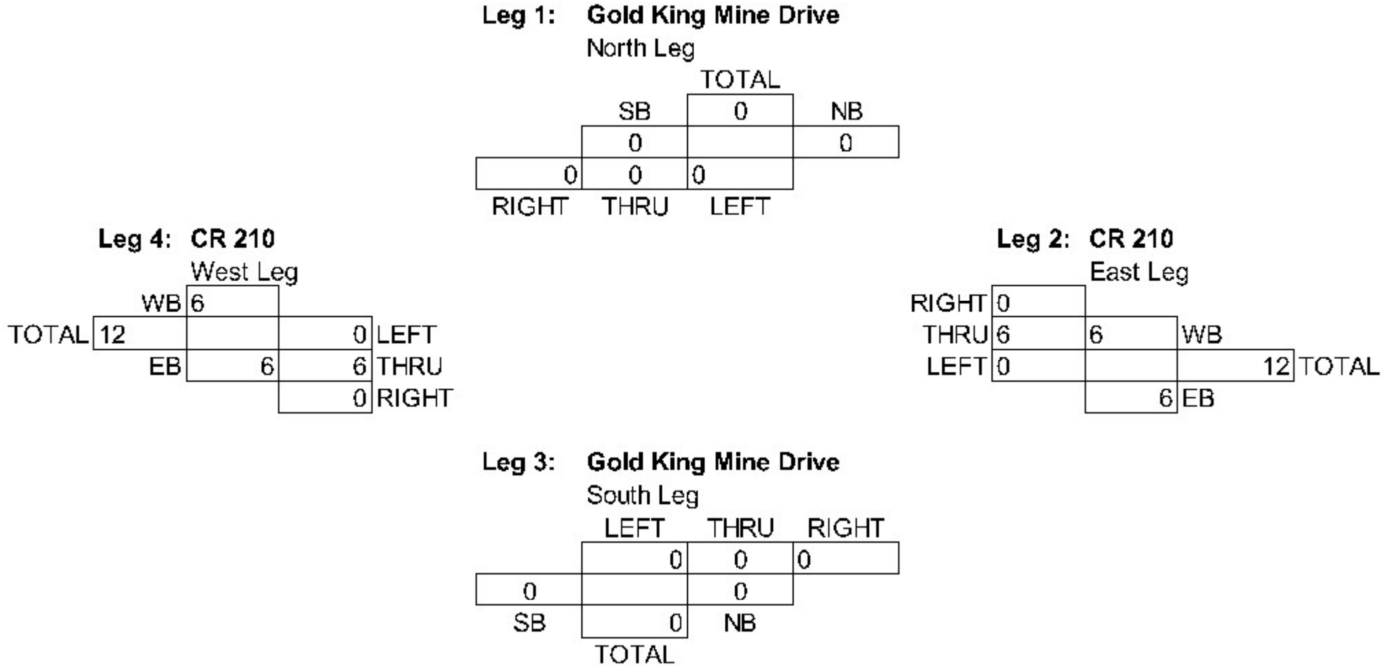
2035 AM Peak NO-BUILD



Gold King Mine Drive at CR 210

Crossroad Diagram:

2035 PM PEAK NO-BUILD



Gold King Mine Drive at CR 210

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Gold King Mine Drive
North Leg

	SB	TOTAL	NB
		0	
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	2		
TOTAL	13		0	LEFT
	EB	11	11	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	2	12	WB	
LEFT	10		26	TOTAL
		14	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	3
10		3	
SB	13	NB	
	TOTAL		

Gold King Mine Drive at CR 210

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Gold King Mine Drive
North Leg

	SB	TOTAL	NB
		0	
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	6		
TOTAL	12		0	LEFT
	EB	6	6	THRU
			0	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	6	9	WB	
LEFT	3		25	TOTAL
		16	EB	

Leg 3: Gold King Mine Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	10
3		10	
SB	13	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2022 AM Peak Count

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	87	NB
	56		31
0	56	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	2		
TOTAL	11		1	LEFT
	EB	9	0	THRU
			8	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	2	30	0
64		32	
SB	96	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	138	NB
	45		93
0	45	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	5		
TOTAL	10		1	LEFT
	EB	5	0	THRU
			4	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

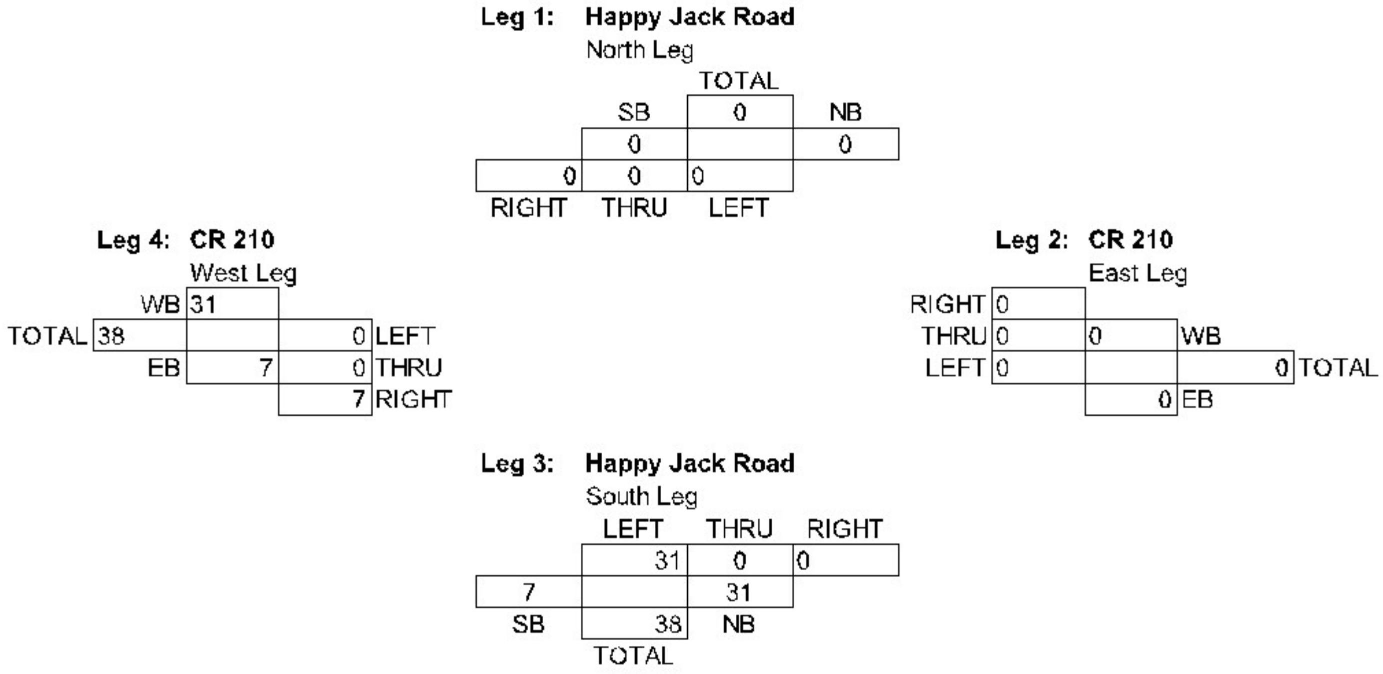
Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	5	92	0
49		97	
SB	146	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

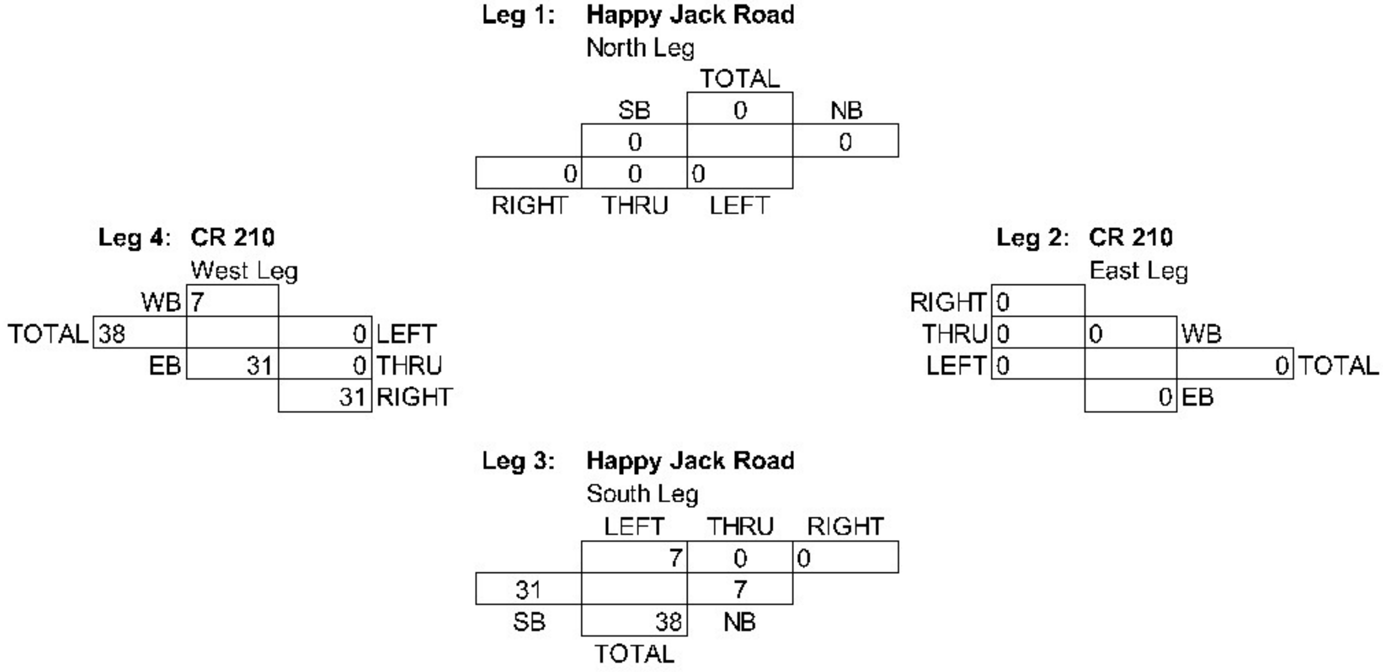
Construction AM Trip Generation



Happy Jack Road at CR 210

Crossroad Diagram:

Construction PM Trip Generation



Happy Jack Road at CR 210

Crossroad Diagram:

2025 AM Peak NO BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	91	NB
	59		32
0	58	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

WB	2			
TOTAL	12		1	LEFT
EB		9	0	THRU
			8	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0			0 TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	2	31	0
67		33	
SB	100	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	144	NB
	47		97
0	47	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

WB	5			
TOTAL	11		1	LEFT
EB		5	0	THRU
			4	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0			0 TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	5	96	0
51		101	
SB	153	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	90	NB
	58		32
0	58	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	33		
TOTAL	49		1	LEFT
	EB	16	0	THRU
			15	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	33	31	0
73		64	
SB	137	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	144	NB
	47		97
0	47	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	7		
TOTAL	43		1	LEFT
	EB	36	0	THRU
			35	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	7	96	0
82		103	
SB	185	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

Operations AM Trip Generation

Leg 1: **Happy Jack Road**
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: **CR 210**
West Leg

	WB	10		
TOTAL	13		0	LEFT
	EB	3	0	THRU
			3	RIGHT

Leg 2: **CR 210**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: **Happy Jack Road**
South Leg

	LEFT	THRU	RIGHT
	10	0	0
3		10	
SB	13	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

Operations PM Trip Generation

Leg 1: **Happy Jack Road**
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: **CR 210**
West Leg

	WB	3		
TOTAL	13		0	LEFT
	EB	10	0	THRU
			10	RIGHT

Leg 2: **CR 210**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: **Happy Jack Road**
South Leg

	LEFT	THRU	RIGHT
	3	0	0
10		3	
SB	13	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2035 AM Peak NO BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	105	NB
	68		37
0	68	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	3		
TOTAL	13		1	LEFT
	EB	11	0	THRU
			10	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	2	36	0
77		39	
SB	116	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	167	NB
	54		112
0	54	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	6		
TOTAL	12		1	LEFT
	EB	6	0	THRU
			5	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	6	111	0
59		117	
SB	176	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	105	NB
	68		37
0	68	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	12		
TOTAL	26		1	LEFT
	EB	14	0	THRU
			13	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	12	36	0
81		48	
SB	129	NB	
	TOTAL		

Happy Jack Road at CR 210

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Happy Jack Road
North Leg

		TOTAL	
	SB	166	NB
	54		112
0	54	0	
RIGHT	THRU	LEFT	

Leg 4: CR 210
West Leg

	WB	9		
TOTAL	25		1	LEFT
	EB	16	0	THRU
			15	RIGHT

Leg 2: CR 210
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Happy Jack Road
South Leg

	LEFT	THRU	RIGHT
	9	111	0
69		120	
SB	189	NB	
	TOTAL		

McKinney at Happy Jack

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: McKinney
North Leg

		TOTAL	
	SB	11	NB
	8		3
1	0	7	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack
West Leg

	WB	105		
TOTAL	263		0	LEFT
	EB	158	157	THRU
			1	RIGHT

Leg 2: Happy Jack
East Leg

RIGHT	3			
THRU	103	107	WB	
LEFT	1		272	TOTAL
		165	EB	

Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	1	0	1
2		2	
SB	4	NB	
	TOTAL		

McKinney at Happy Jack Road

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: McKinney
North Leg

		TOTAL	
	SB	15	NB
	6		9
1	0	5	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	178		
TOTAL	317		1	LEFT
	EB	139	137	THRU
			1	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	8			
THRU	177	186	WB	
LEFT	1		329	TOTAL
		143	EB	

Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	0	0	1
2		1	
SB	3	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	7		
TOTAL	7		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	175	WB	
LEFT	175		188	TOTAL
		13	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	7	0	13
175		20	
SB	195	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	0		
TOTAL	7		0	LEFT
	EB	7	0	THRU
			7	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	13	WB	
LEFT	13		188	TOTAL
		175	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	175
20		175	
SB	195	NB	
	TOTAL		

McKinney at Happy Jack

Crossroad Diagram:

2025 AM PEAK NO BUILD

Leg 1: McKinney
North Leg

		TOTAL	
	SB	11	NB
	8		3
1	0	7	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack
West Leg

WB	110			
TOTAL	275		0	LEFT
	EB	165	164	THRU
			1	RIGHT

Leg 2: Happy Jack
East Leg

RIGHT	3			
THRU	108	112	WB	
LEFT	1		284	TOTAL
		172	EB	

Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	1	0	1
2		2	
SB	4	NB	
	TOTAL		

McKinney at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: McKinney
North Leg

		TOTAL	
	SB	16	NB
	6		9
1	0	5	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

WB	185			
TOTAL	330		1	LEFT
	EB	145	143	THRU
			1	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	8			
THRU	183	192	WB	
LEFT	1		341	TOTAL
		149	EB	

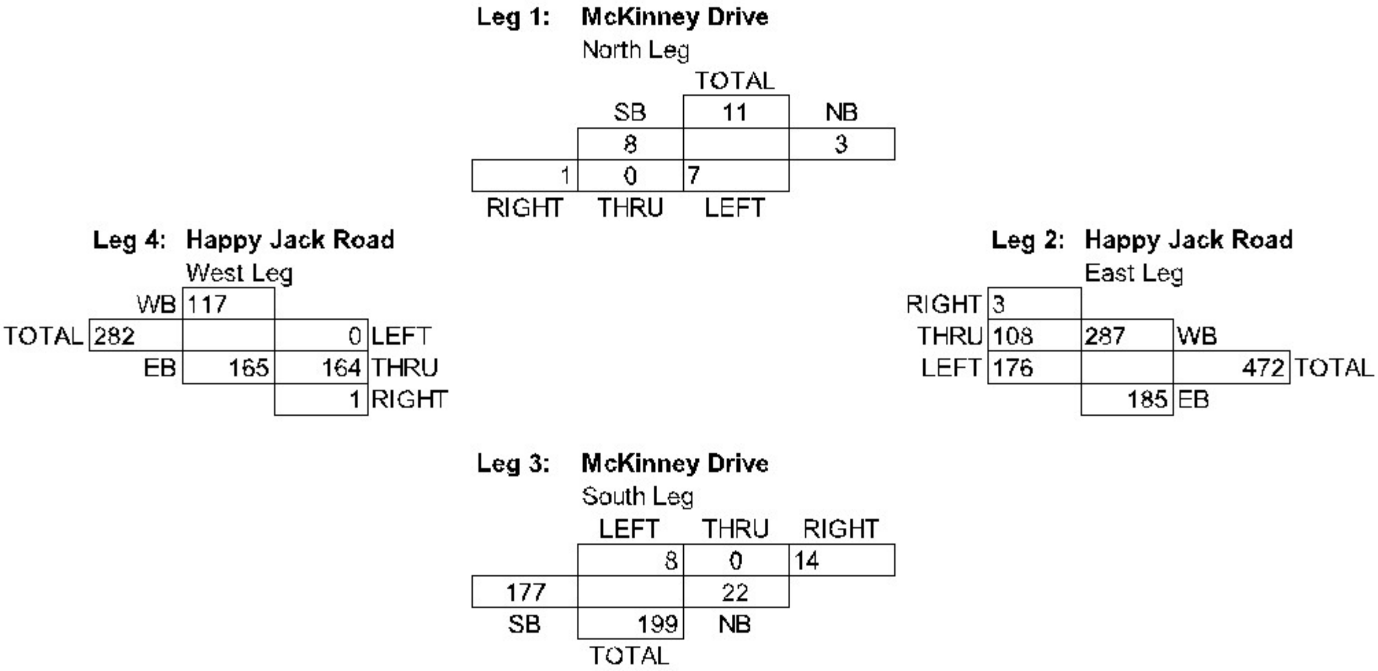
Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	0	0	1
2		1	
SB	3	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

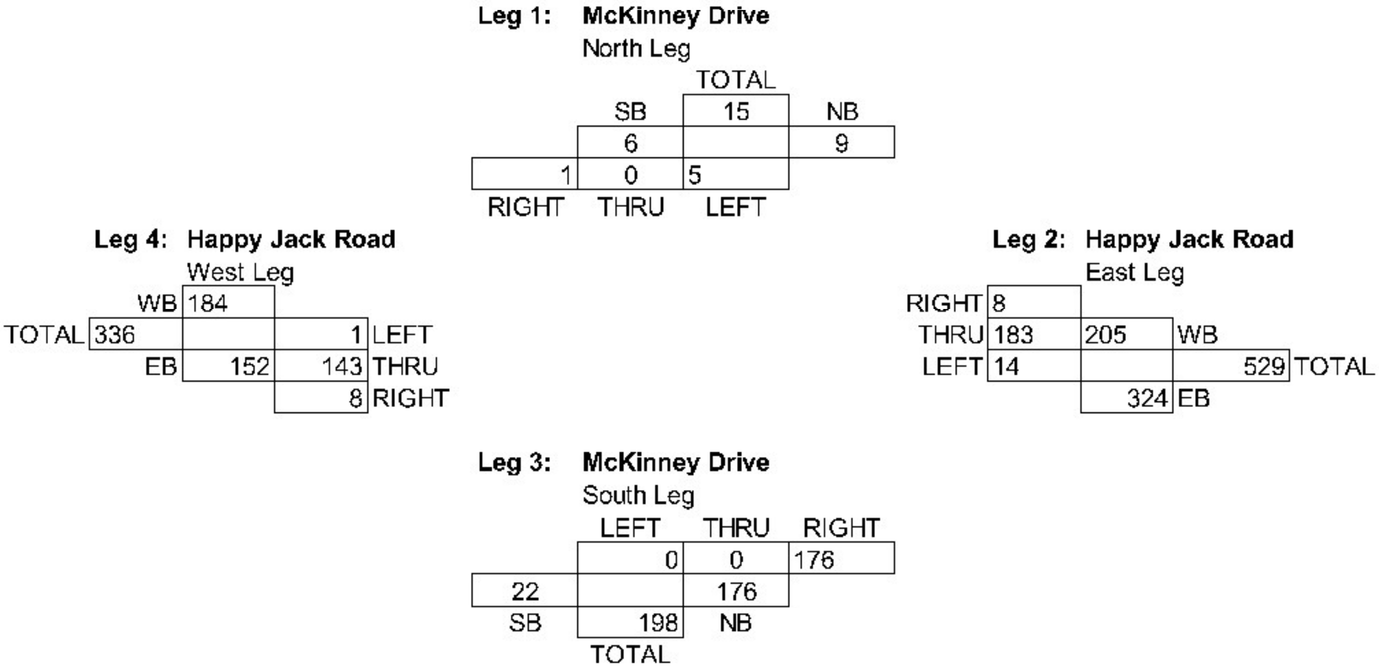
2025 AM PEAK BUILD



McKinney Drive at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK BUILD



McKinney Drive at Happy Jack Road

Crossroad Diagram:

Operations AM Trip Generation

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	10		
TOTAL	10		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	53	WB	
LEFT	53		58	TOTAL
		5	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	10	0	5
53		15	
SB	68	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

Operations PM Trip Generation

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	0		
TOTAL	10		0	LEFT
	EB	10	0	THRU
			10	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	5	WB	
LEFT	5		58	TOTAL
		53	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	53
15		53	
SB	68	NB	
	TOTAL		

McKinney at Happy Jack

Crossroad Diagram:

2035 AM PEAK NO BUILD

Leg 1: McKinney
North Leg

		TOTAL	
	SB	13	NB
	10		4
1	0	8	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack
West Leg

	WB	127		
TOTAL	317		0	LEFT
	EB	190	189	THRU
			1	RIGHT

Leg 2: Happy Jack
East Leg

RIGHT	4			
THRU	124	129	WB	
LEFT	1		328	TOTAL
		199	EB	

Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	1	0	1
2		2	
SB	5	NB	
	TOTAL		

McKinney at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: McKinney
North Leg

		TOTAL	
	SB	18	NB
	7		11
2	0	5	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	209		
TOTAL	376		2	LEFT
	EB	167	163	THRU
			2	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	8			
THRU	206	216	WB	
LEFT	1		385	TOTAL
		169	EB	

Leg 3: McKinney
South Leg

	LEFT	THRU	RIGHT
	0	0	1
3		1	
SB	5	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	13	NB
	9		4
1	0	8	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	136		
TOTAL	326		0	LEFT
	EB	190	189	THRU
			1	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	4			
THRU	124	182	WB	
LEFT	54		385	TOTAL
		203	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	11	0	6
55		17	
SB	72	NB	
	TOTAL		

McKinney Drive at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: McKinney Drive
North Leg

		TOTAL	
	SB	17	NB
	7		10
2	0	5	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	208		
TOTAL	385		2	LEFT
	EB	177	163	THRU
			12	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	8			
THRU	206	220	WB	
LEFT	6		442	TOTAL
		222	EB	

Leg 3: McKinney Drive
South Leg

	LEFT	THRU	RIGHT
	0	0	54
18		54	
SB	72	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	83	NB
	55		28
2	21	32	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	107		
TOTAL	272		2	LEFT
	EB	165	119	THRU
			44	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	9			
THRU	77	97	WB	
LEFT	11		256	TOTAL
		159	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	28	17	8
76		53	
SB	129	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	112	NB
	37		75
4	16	17	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	186		
TOTAL	329		6	LEFT
	EB	143	101	THRU
			36	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	46			
THRU	137	193	WB	
LEFT	10		318	TOTAL
		125	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	45	23	7
62		75	
SB	137	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	175		
TOTAL	188		0	LEFT
	EB	13	13	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	175	175	WB	
LEFT	0		188	TOTAL
		13	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	0	NB
	0		0
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	13		
TOTAL	188		0	LEFT
	EB	175	175	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	13	13	WB	
LEFT	0		188	TOTAL
		175	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	86	NB
	57		29
2	23	33	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	112		
TOTAL	284		2	LEFT
	EB	172	122	THRU
			48	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	9			
THRU	79	100	WB	
LEFT	13		265	TOTAL
		164	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	31	18	9
83		58	
SB	141	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	117	NB
	39		78
4	17	17	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	194		
TOTAL	344		6	LEFT
	EB	149	104	THRU
			39	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	47			
THRU	141	200	WB	
LEFT	11		329	TOTAL
		129	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	49	25	8
68		82	
SB	150	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	87	NB
	58		29
2	23	33	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	287		
TOTAL	472		2	LEFT
	EB	185	135	THRU
			48	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	9			
THRU	254	276	WB	
LEFT	13		453	TOTAL
		177	EB	

Leg 3: Roundtop Road

South Leg

	LEFT	THRU	RIGHT
	31	18	9
84		58	
SB	142	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	116	NB
	38		78
4	17	17	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	207		
TOTAL	531		6	LEFT
	EB	324	279	THRU
			39	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	47			
THRU	154	212	WB	
LEFT	11		516	TOTAL
		304	EB	

Leg 3: Roundtop Road

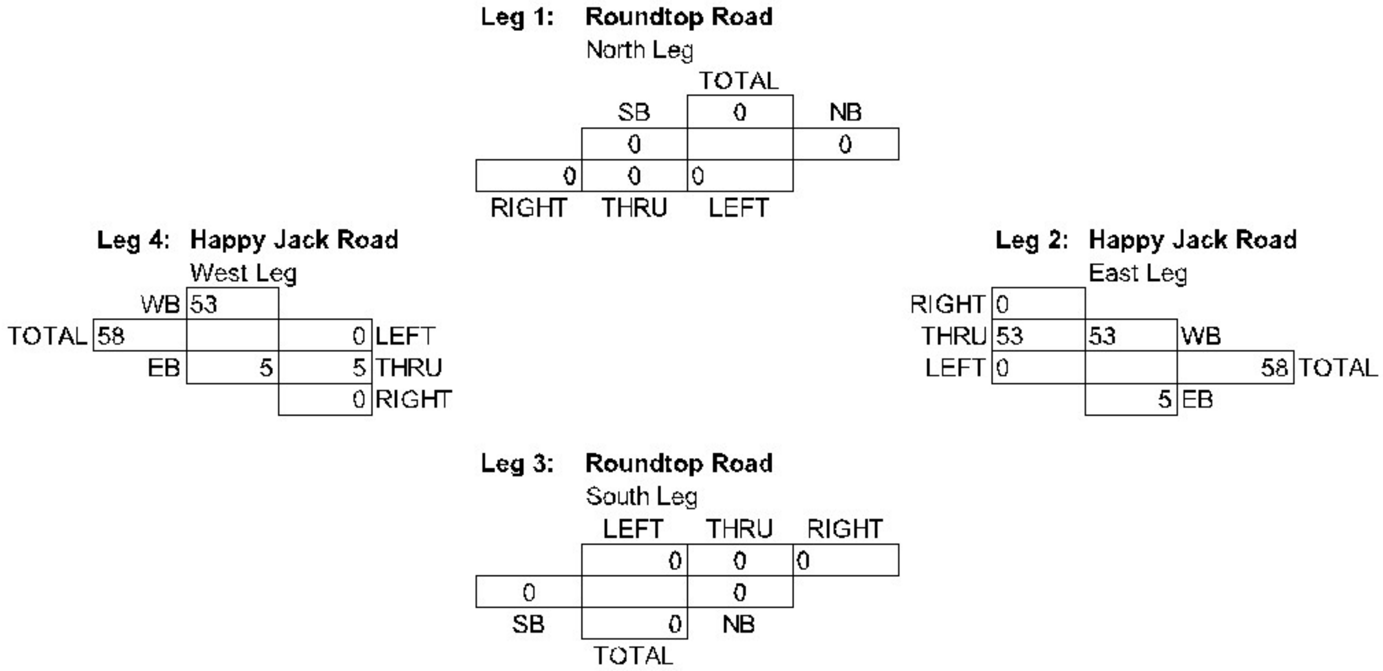
South Leg

	LEFT	THRU	RIGHT
	49	25	8
67		82	
SB	149	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

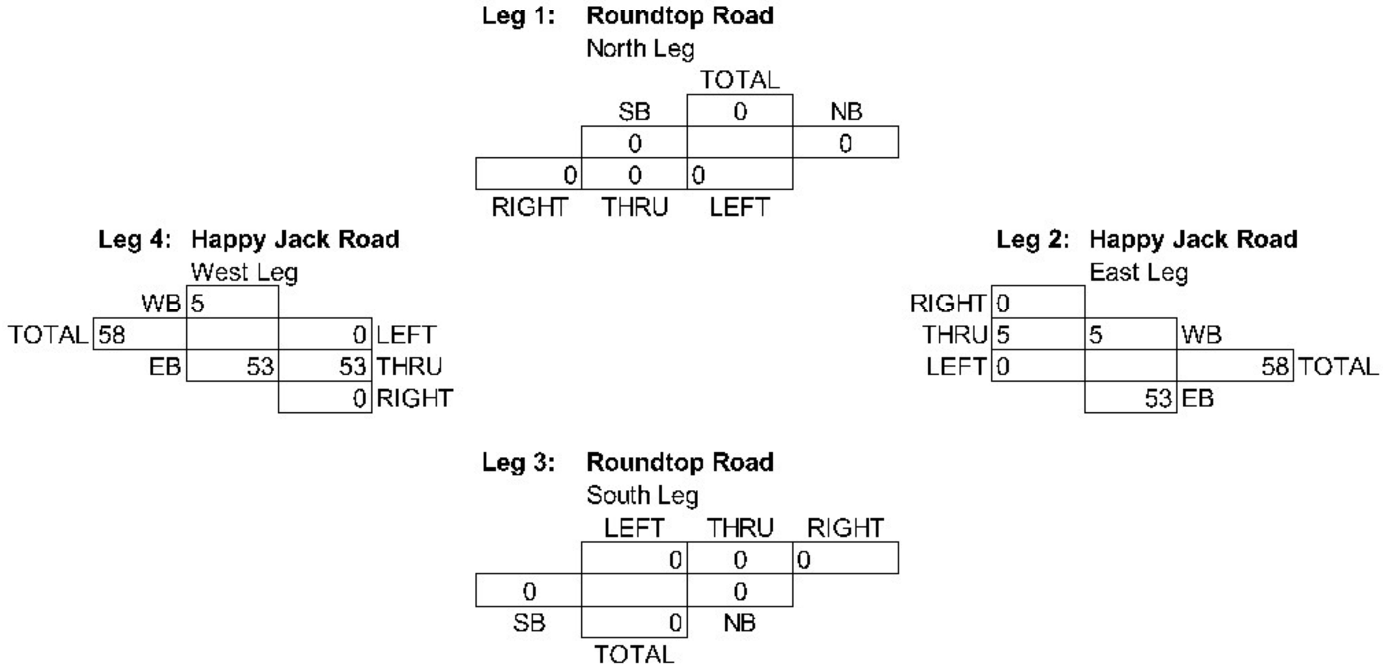
Operations AM Trip Generation



Roundtop Road at Happy Jack Road

Crossroad Diagram:

Operations PM Trip Generation



Roundtop Road at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	99	NB
	66		33
2	29	35	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	128		
TOTAL	327		2	LEFT
	EB	199	133	THRU
			64	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	9			
THRU	84	112	WB	
LEFT	19		295	TOTAL
		183	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	42	23	15
113		79	
SB	192	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	134	NB
	44		90
4	22	18	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	225		
TOTAL	397		5	LEFT
	EB	172	114	THRU
			53	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	51			
THRU	155	224	WB	
LEFT	18		369	TOTAL
		145	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	66	33	13
93		112	
SB	205	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	100	NB
	66		34
2	29	35	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	181		
TOTAL	385		2	LEFT
	EB	204	138	THRU
			64	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	9			
THRU	137	165	WB	
LEFT	19		353	TOTAL
		188	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	42	23	15
112		80	
SB	192	NB	
	TOTAL		

Roundtop Road at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	133	NB
	44		89
4	22	18	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	230		
TOTAL	455		5	LEFT
	EB	225	167	THRU
			53	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	51			
THRU	160	229	WB	
LEFT	18		427	TOTAL
		198	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	66	33	13
93		112	
SB	205	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2022 AM PEAK

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	129	NB
	76		53
0	76	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	53	0
76		53	
SB	129	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2022 PM PEAK

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	137	NB
	62		75
0	62	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

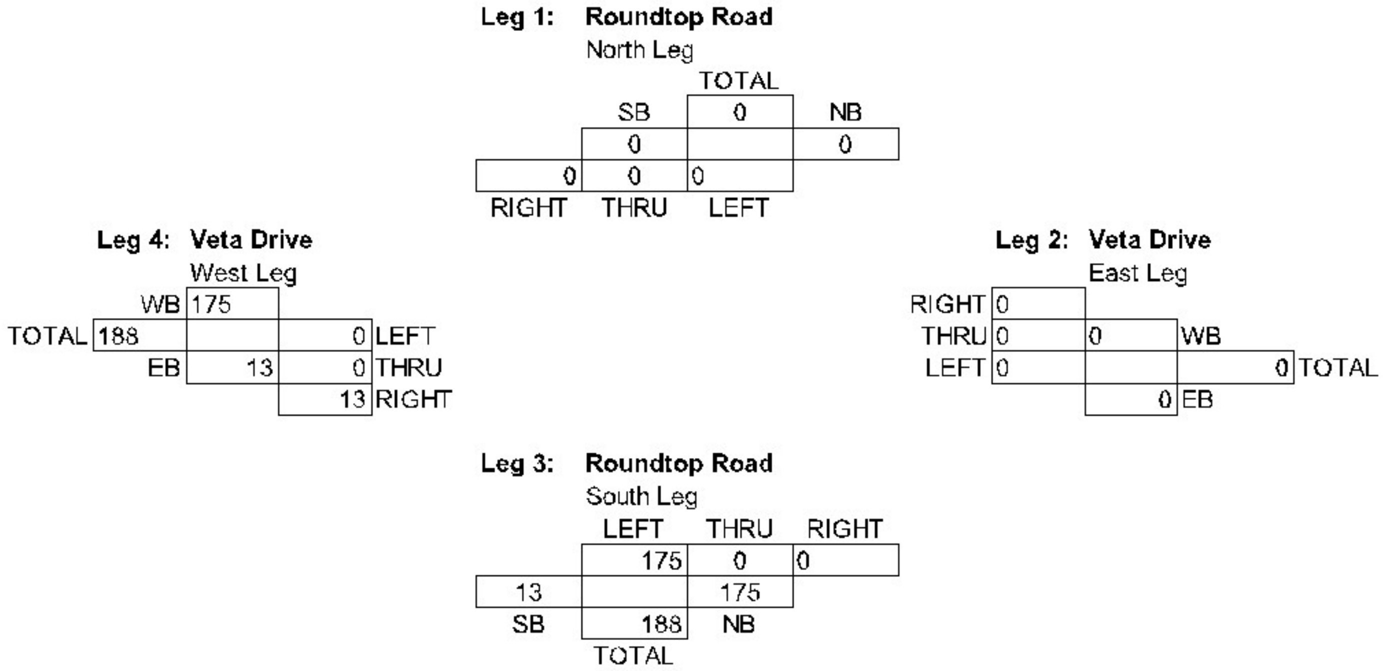
Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	75	0
62		75	
SB	137	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

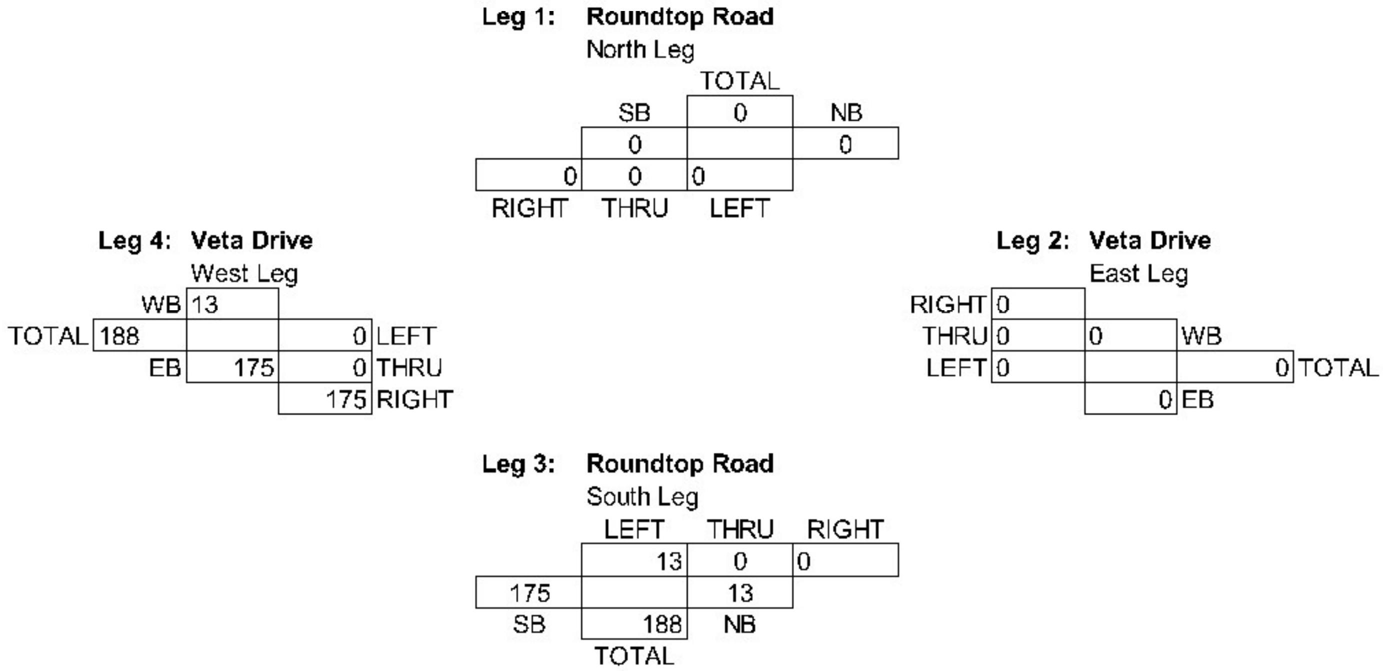
Construction AM Trip Generation



Roundtop Road at Veta Drive

Crossroad Diagram:

Construction PM Trip Generation



Roundtop Road at Veta Drive

Crossroad Diagram:

2025 AM PEAK NO BUILD

Leg 1: **Roundtop Road**
North Leg

		TOTAL	
	SB	142	NB
	83		58
0	83	0	
RIGHT	THRU	LEFT	

Leg 4: **Veta Drive**
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: **Veta Drive**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: **Roundtop Road**
South Leg

	LEFT	THRU	RIGHT
	0	58	0
83		58	
SB	142	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: **Roundtop Road**
North Leg

		TOTAL	
	SB	150	NB
	68		82
0	68	0	
RIGHT	THRU	LEFT	

Leg 4: **Veta Drive**
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: **Veta Drive**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: **Roundtop Road**
South Leg

	LEFT	THRU	RIGHT
	0	82	0
68		82	
SB	150	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	141	NB
	83		58
0	83	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	175		
TOTAL	188		0	LEFT
	EB	13	0	THRU
			13	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	175	58	0
96		233	
SB	329	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	150	NB
	68		82
0	68	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	13		
TOTAL	188		0	LEFT
	EB	175	0	THRU
			175	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

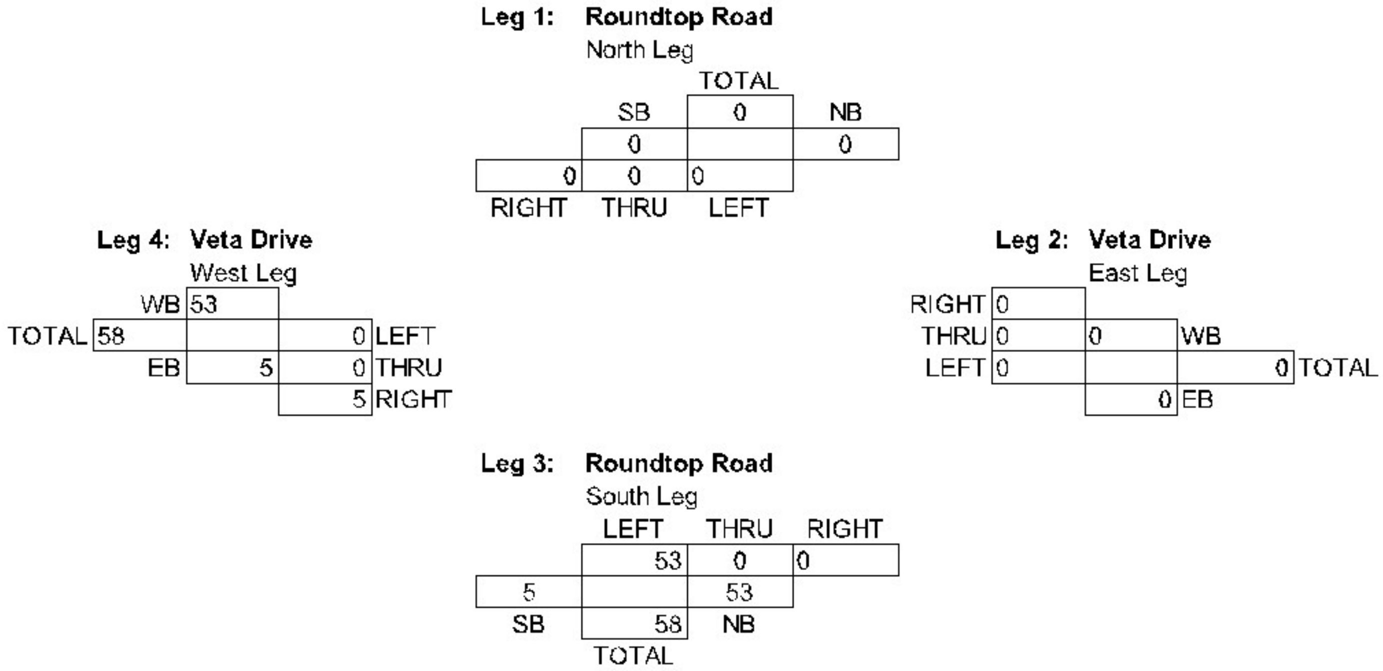
Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	13	82	0
243		95	
SB	338	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

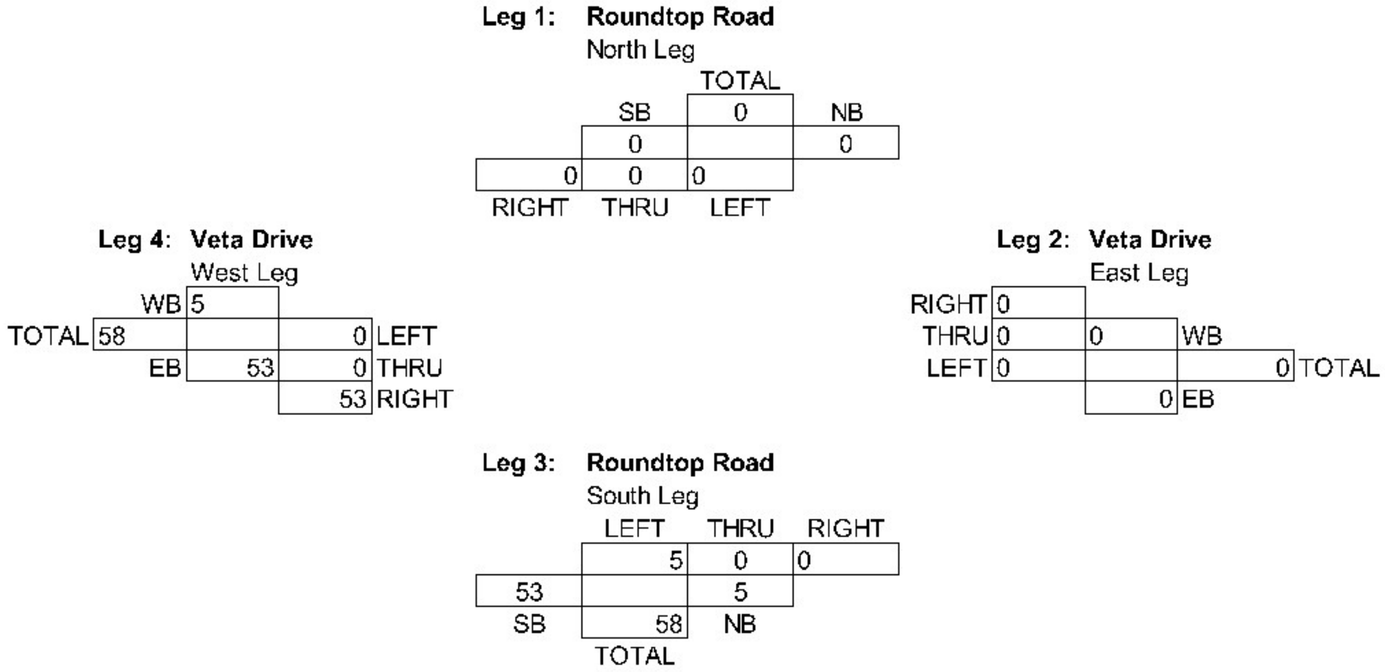
Operations AM Trip Generation



Roundtop Road at Veta Drive

Crossroad Diagram:

Operations PM Trip Generation



Roundtop Road at Veta Drive

Crossroad Diagram:

2035 AM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	193	NB
	114		79
0	114	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	79	0
114		79	
SB	193	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	205	NB
	93		112
0	93	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	112	0
93		112	
SB	205	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	193	NB
	114		79
0	114	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	53		
TOTAL	58		0	LEFT
	EB	5	0	THRU
			5	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	53	79	0
119		132	
SB	251	NB	
	TOTAL		

Roundtop Road at Veta Drive

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	205	NB
	93		112
0	93	0	
RIGHT	THRU	LEFT	

Leg 4: Veta Drive
West Leg

	WB	5		
TOTAL	58		0	LEFT
	EB	53	0	THRU
			53	RIGHT

Leg 2: Veta Drive
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	5	112	0
146		117	
SB	263	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	253	NB
	94		159
11	83	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps

West Leg

WB	12			
TOTAL	12		0	LEFT
EB		0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps

East Leg

RIGHT	146			
THRU	1	152	WB	
LEFT	5		152	TOTAL
		0	EB	

Leg 3: Roundtop Road

South Leg

	LEFT	THRU	RIGHT
	0	13	0
88		13	
SB	101	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	274	NB
	159		115
9	150	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps

West Leg

WB	11			
TOTAL	11		0	LEFT
EB		0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps

East Leg

RIGHT	95			
THRU	1	101	WB	
LEFT	5		101	TOTAL
		0	EB	

Leg 3: Roundtop Road

South Leg

	LEFT	THRU	RIGHT
	1	20	0
155		21	
SB	176	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	188	NB
	13		175
1	12	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	1		
TOTAL	1		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	170			
THRU	0	170	WB	
LEFT	0		170	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	5	0
12		5	
SB	17	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	188	NB
	175		13
5	170	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	5		
TOTAL	5		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	12			
THRU	0	12	WB	
LEFT	0		12	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	1	0
170		1	
SB	171	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2025 AM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	271	NB
	98		173
11	86	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	13		
TOTAL	13		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	159			
THRU	2	170	WB	
LEFT	9		170	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	14	0
95		14	
SB	109	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2025 PM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	288	NB
	165		123
9	156	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	12		
TOTAL	12		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	103			
THRU	2	113	WB	
LEFT	9		113	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	2	20	0
165		22	
SB	187	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	458	NB
	110		348
12	98	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps

West Leg

	WB	14		
TOTAL	14		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps

East Leg

RIGHT	329			
THRU	2	340	WB	
LEFT	9		340	TOTAL
		0	EB	

Leg 3: Roundtop Road

South Leg

	LEFT	THRU	RIGHT
	0	19	0
107		19	
SB	126	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Roundtop Road

North Leg

		TOTAL	
	SB	476	NB
	340		136
14	326	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps

West Leg

	WB	18		
TOTAL	18		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps

East Leg

RIGHT	115			
THRU	2	126	WB	
LEFT	9		126	TOTAL
		0	EB	

Leg 3: Roundtop Road

South Leg

	LEFT	THRU	RIGHT
	2	21	0
335		23	
SB	358	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

Operations AM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	58	NB
	5		53
0	5	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	0		
TOTAL	0		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	52			
THRU	0	52	WB	
LEFT	0		52	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	2	0
5		2	
SB	7	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

Operations PM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	58	NB
	53		5
2	51	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	2		
TOTAL	2		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	5			
THRU	0	5	WB	
LEFT	0		5	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	0	0
51		0	
SB	52	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2035 AM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	338	NB
	111		227
13	98	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	19		
TOTAL	19		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	211			
THRU	6	248	WB	
LEFT	31		248	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	1	16	0
129		16	
SB	145	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2035 PM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	340	NB
	188		152
8	180	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	16		
TOTAL	16		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	130			
THRU	5	165	WB	
LEFT	30		165	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	4	22	0
210		26	
SB	236	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	396	NB
	116		280
13	103	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	20		
TOTAL	20		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	263			
THRU	6	300	WB	
LEFT	31		300	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	1	18	0
134		19	
SB	153	NB	
	TOTAL		

Roundtop Road at I-80 Westbound Ramps

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	398	NB
	241		157
10	231	0	
RIGHT	THRU	LEFT	

Leg 4: I-80 Westbound Ramps
West Leg

	WB	19		
TOTAL	19		0	LEFT
	EB	0	0	THRU
			0	RIGHT

Leg 2: I-80 Westbound Ramps
East Leg

RIGHT	135			
THRU	5	170	WB	
LEFT	30		170	TOTAL
		0	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	4	22	0
261		26	
SB	287	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: **Roundtop Road**
North Leg

		TOTAL	
	SB	118	NB
	106		12
0	16	90	
RIGHT	THRU	LEFT	

Leg 4: **I-80 Eastbound Ramps**
West Leg

	WB	0		
TOTAL	5		3	LEFT
	EB	5	0	THRU
			2	RIGHT

Leg 2: **I-80 Eastbound Ramps**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		98	TOTAL
		98	EB	

Leg 3: **Roundtop Road**
South Leg

	LEFT	THRU	RIGHT
	0	9	8
18		17	
SB	35	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: **Roundtop Road**
North Leg

		TOTAL	
	SB	175	NB
	154		21
0	20	134	
RIGHT	THRU	LEFT	

Leg 4: **I-80 Eastbound Ramps**
West Leg

	WB	0		
TOTAL	6		3	LEFT
	EB	6	2	THRU
			1	RIGHT

Leg 2: **I-80 Eastbound Ramps**
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		167	TOTAL
		167	EB	

Leg 3: **Roundtop Road**
South Leg

	LEFT	THRU	RIGHT
	0	18	31
21		49	
SB	70	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	17	NB
	12		5
0	0	12	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	5		5	LEFT
	EB	5	0	THRU
			0	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		12	TOTAL
		12	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	171	NB
	170		1
0	0	170	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	1		1	LEFT
	EB	1	0	THRU
			0	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		170	TOTAL
		170	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	0	0
0		0	
SB	0	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2025 AM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	122	NB
	110		12
0	16	95	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

WB		0		
TOTAL	5		3	LEFT
EB		5	0	THRU
			2	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		104	TOTAL
		104	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	9	9
18		18	
SB	36	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	181	NB
	160		21
0	20	140	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

WB		0		
TOTAL	6		3	LEFT
EB		6	2	THRU
			1	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		176	TOTAL
		176	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	18	34
21		51	
SB	72	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	140	NB
	123		17
0	16	107	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	10		8	LEFT
	EB	10	0	THRU
			2	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		116	TOTAL
		116	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	9	9
18		18	
SB	36	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	352	NB
	330		22
0	20	310	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	7		4	LEFT
	EB	7	2	THRU
			1	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		346	TOTAL
		346	EB	

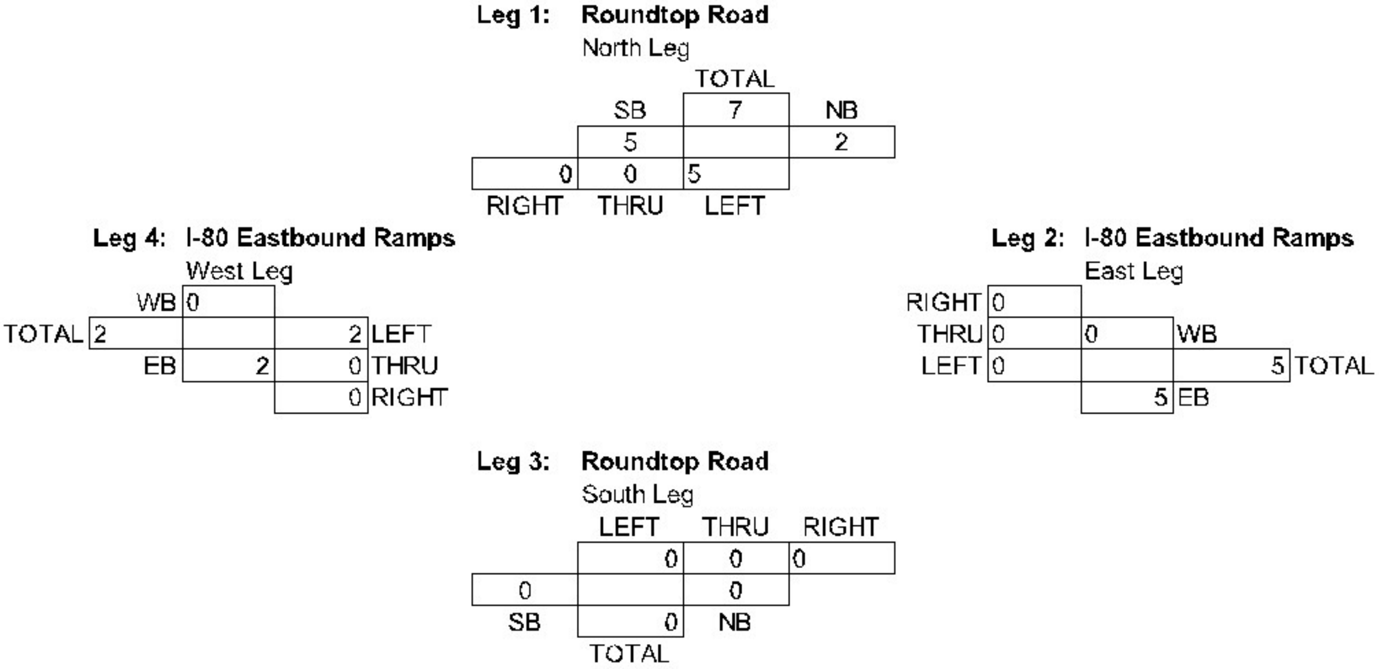
Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	18	34
21		52	
SB	73	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

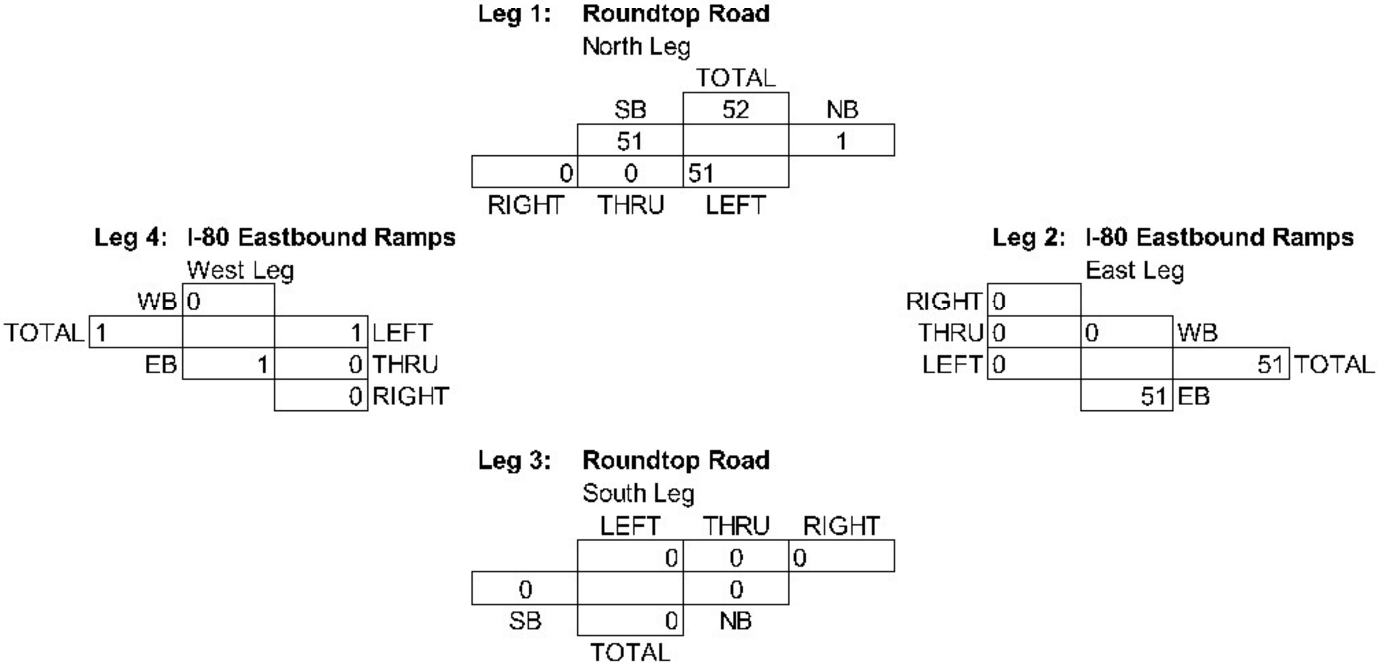
Operations AM Trip Generation



Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

Operations PM Trip Generation



Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2035 AM PEAK NO-BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	136	NB
	125		11
0	14	111	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	7		3	LEFT
	EB	7	0	THRU
			3	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		125	TOTAL
		125	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	8	13
17		21	
SB	38	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	201	NB
	182		19
0	19	163	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	8		3	LEFT
	EB	8	3	THRU
			1	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		211	TOTAL
		211	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	16	44
20		60	
SB	80	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	143	NB
	130		13
0	14	116	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	8		5	LEFT
	EB	8	0	THRU
			3	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		129	TOTAL
		129	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	8	13
17		21	
SB	38	NB	
	TOTAL		

Roundtop Road at I-80 Eastbound Ramps

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: Roundtop Road
North Leg

		TOTAL	
	SB	253	NB
	233		20
0	19	214	
RIGHT	THRU	LEFT	

Leg 4: I-80 Eastbound Ramps
West Leg

	WB	0		
TOTAL	8		4	LEFT
	EB	8	3	THRU
			1	RIGHT

Leg 2: I-80 Eastbound Ramps
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		261	TOTAL
		261	EB	

Leg 3: Roundtop Road
South Leg

	LEFT	THRU	RIGHT
	0	16	44
20		60	
SB	80	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	421	NB
	83		338
3	35	45	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	56		
TOTAL	233		9	LEFT
	EB	177	163	THRU
			5	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	329			
THRU	12	403	WB	
LEFT	62		769	TOTAL
		366	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	41	0	158
102		199	
SB	301	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	455	NB
	368		87
13	128	227	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	180		
TOTAL	358		16	LEFT
	EB	178	161	THRU
			1	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	71			
THRU	82	188	WB	
LEFT	35		691	TOTAL
		503	EB	

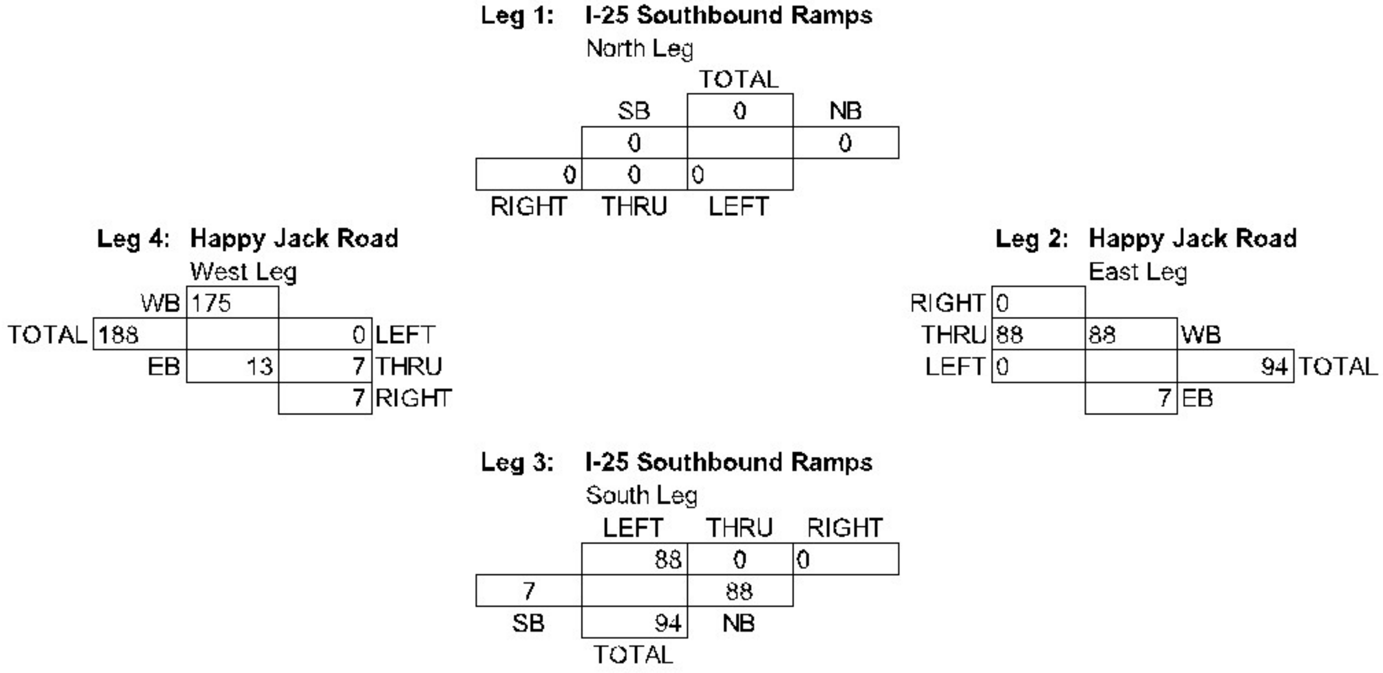
Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	85	0	115
164		200	
SB	364	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

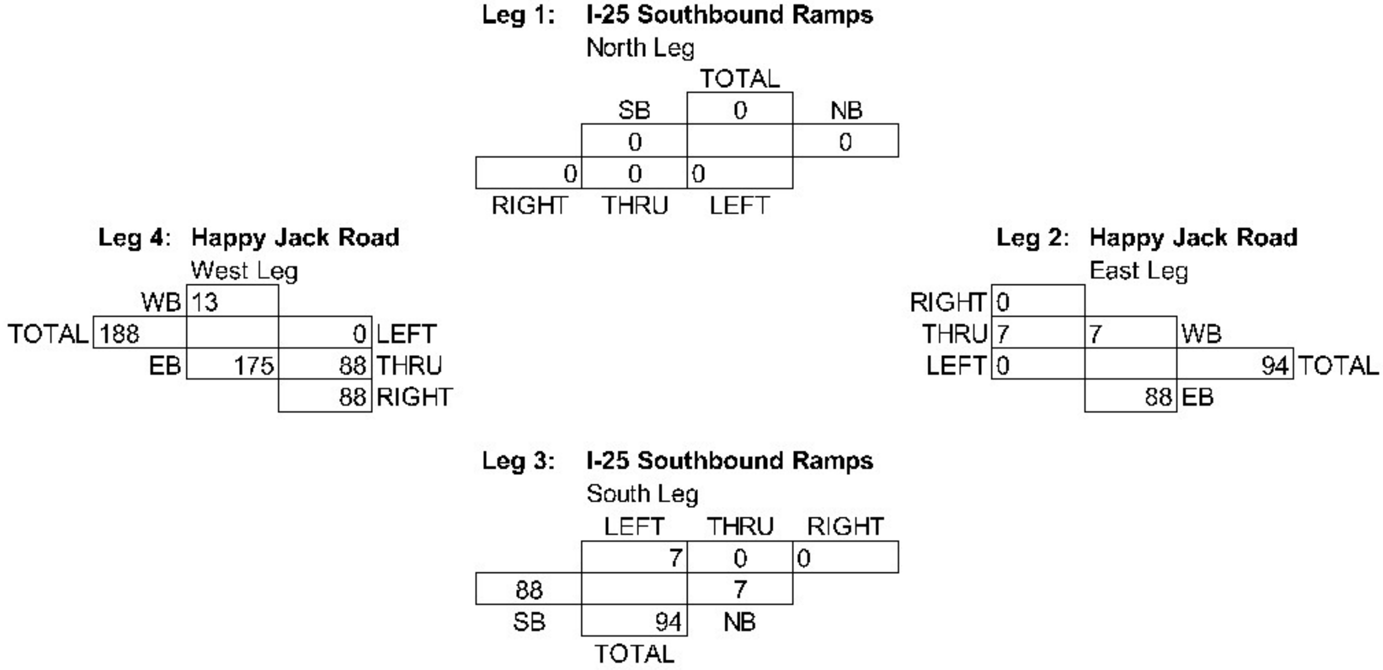
Construction AM Trip Generation



I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

Construction PM Trip Generation



I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK NO-BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	451	NB
	89		363
3	41	45	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	63		
TOTAL	259		12	LEFT
	EB	197	178	THRU
			6	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	351			
THRU	12	428	WB	
LEFT	65		820	TOTAL
		392	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	48	0	169
112		217	
SB	329	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK NO BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	486	NB
	393		93
15	141	237	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	200		
TOTAL	398		19	LEFT
	EB	198	178	THRU
			1	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	74			
THRU	89	200	WB	
LEFT	37		735	TOTAL
		535	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	97	0	121
179		218	
SB	397	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	452	NB
	89		363
3	41	45	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	238		
TOTAL	447		12	LEFT
	EB	209	185	THRU
			13	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	351			
THRU	100	516	WB	
LEFT	65		914	TOTAL
		399	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	136	0	169
119		305	
SB	423	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	486	NB
	393		93
15	141	237	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	214		
TOTAL	587		19	LEFT
	EB	373	266	THRU
			89	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	74			
THRU	96	207	WB	
LEFT	37		830	TOTAL
		624	EB	

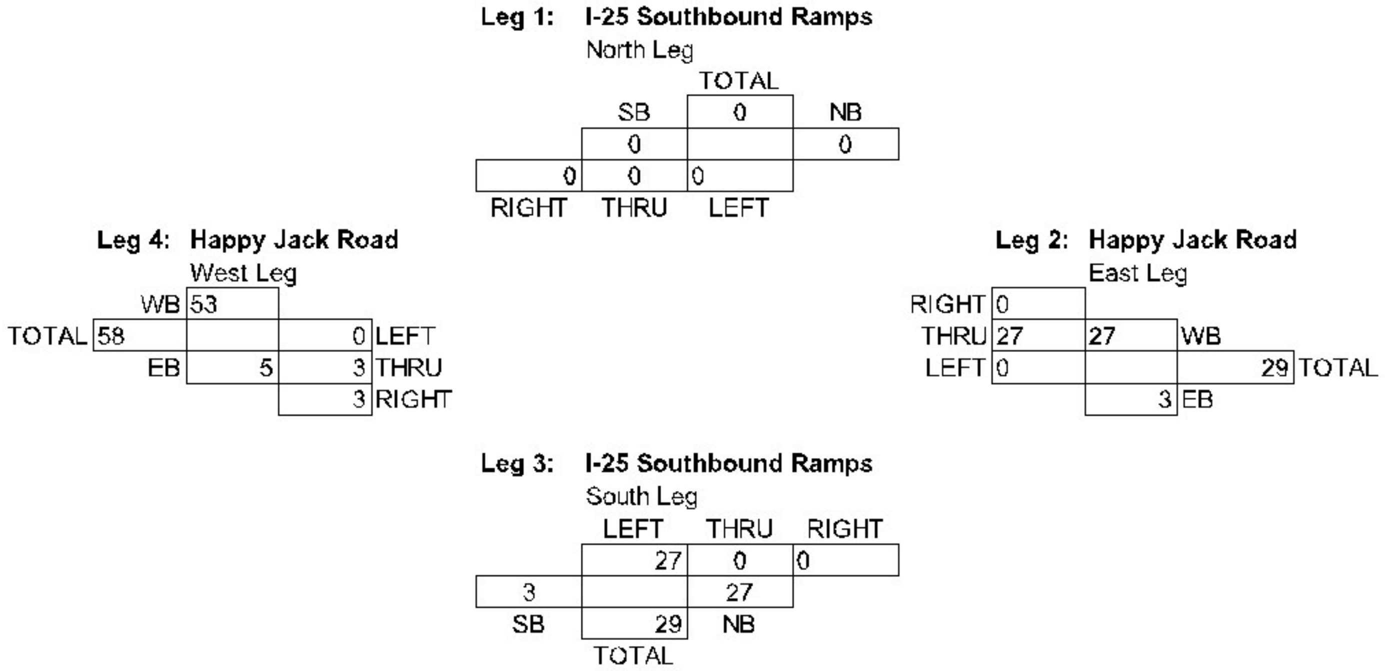
Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	104	0	121
267		225	
SB	491	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

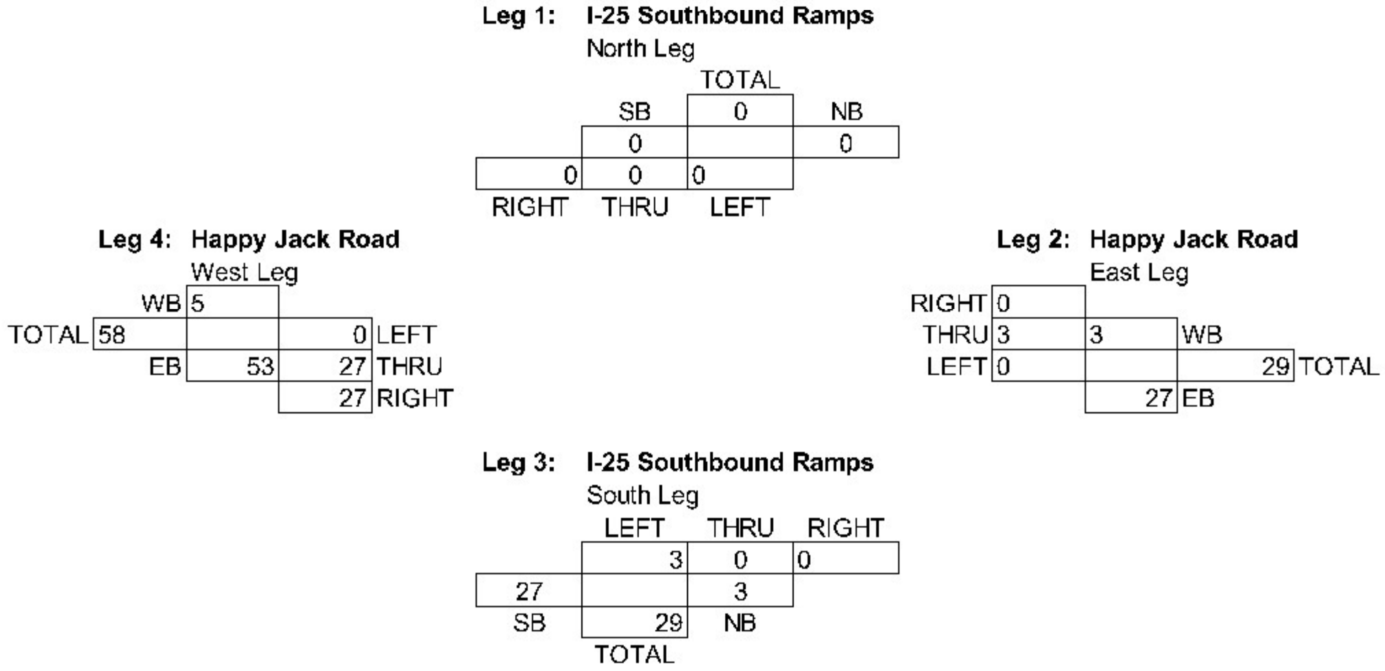
Operations AM Trip Generation



I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

Operations PM Trip Generation



I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK NO-BUILD

Leg 1: I-25 Southbound Ramps

North Leg

		TOTAL	
	SB	571	NB
	110		461
4	63	43	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	92		
TOTAL	370		26	LEFT
	EB	279	239	THRU
			13	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	435			
THRU	11	522	WB	
LEFT	76		1016	TOTAL
		493	EB	

Leg 3: I-25 Southbound Ramps

South Leg

	LEFT	THRU	RIGHT
	76	0	211
152		288	
SB	440	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK NO BUILD

Leg 1: I-25 Southbound Ramps

North Leg

		TOTAL	
	SB	603	NB
	487		116
22	194	270	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	286		
TOTAL	566		31	LEFT
	EB	280	248	THRU
			2	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	86			
THRU	115	244	WB	
LEFT	43		902	TOTAL
		658	EB	

Leg 3: I-25 Southbound Ramps

South Leg

	LEFT	THRU	RIGHT
	149	0	140
239		289	
SB	529	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	571	NB
	110		461
4	63	43	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	144		
TOTAL	427		26	LEFT
	EB	283	242	THRU
			16	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	435			
THRU	38	549	WB	
LEFT	76		1044	TOTAL
		496	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	103	0	211
155		314	
SB	468	NB	
	TOTAL		

I-25 Southbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: I-25 Southbound Ramps
North Leg

		TOTAL	
	SB	603	NB
	486		117
22	194	270	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	291		
TOTAL	625		31	LEFT
	EB	334	275	THRU
			29	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	86			
THRU	118	247	WB	
LEFT	43		931	TOTAL
		685	EB	

Leg 3: I-25 Southbound Ramps
South Leg

	LEFT	THRU	RIGHT
	152	0	140
266		292	
SB	557	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2022 AM PEAK COUNT

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	164	NB
	0		164
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	400		
TOTAL	763		82	LEFT
	EB	363	281	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	80			
THRU	226	306	WB	
LEFT	0		657	TOTAL
		351	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	174	2	70
0		246	
SB	246	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2022 PM PEAK COUNT

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	387	NB
	0		387
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	208		
TOTAL	718		185	LEFT
	EB	510	325	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	201			
THRU	160	361	WB	
LEFT	0		725	TOTAL
		364	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	48	1	39
0		88	
SB	88	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

Construction AM Trip Generation

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	7	NB
	0		7
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	88		
TOTAL	95		7	LEFT
	EB	7	0	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	88	0	0
0		88	
SB	88	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

Construction PM Trip Generation

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	88	NB
	0		88
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	7		
TOTAL	95		88	LEFT
	EB	88	0	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	0			
THRU	0	0	WB	
LEFT	0		0	TOTAL
		0	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	7	0	0
0		7	
SB	7	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK NO BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	178	NB
	0		178
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	422		
TOTAL	808		91	LEFT
	EB	385	294	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	85			
THRU	236	321	WB	
LEFT	0		686	TOTAL
		366	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	186	2	72
0		260	
SB	260	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK NO-BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	417	NB
	0		417
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	218		
TOTAL	760		204	LEFT
	EB	542	337	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	212			
THRU	167	378	WB	
LEFT	0		756	TOTAL
		377	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	52	1	40
0		93	
SB	93	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 AM PEAK BUILD

Leg 1: I-25 Northbound Ramps

North Leg

		TOTAL	
	SB	185	NB
	0		185
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	510		
TOTAL	902		98	LEFT
	EB	392	294	THRU
			0	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	85			
THRU	236	321	WB	
LEFT	0		687	TOTAL
		366	EB	

Leg 3: I-25 Northbound Ramps

South Leg

	LEFT	THRU	RIGHT
	274	2	72
0		348	
SB	348	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2025 PM PEAK BUILD

Leg 1: I-25 Northbound Ramps

North Leg

		TOTAL	
	SB	505	NB
	0		505
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road

West Leg

	WB	226		
TOTAL	855		292	LEFT
	EB	629	337	THRU
			0	RIGHT

Leg 2: Happy Jack Road

East Leg

RIGHT	212			
THRU	167	379	WB	
LEFT	0		756	TOTAL
		377	EB	

Leg 3: I-25 Northbound Ramps

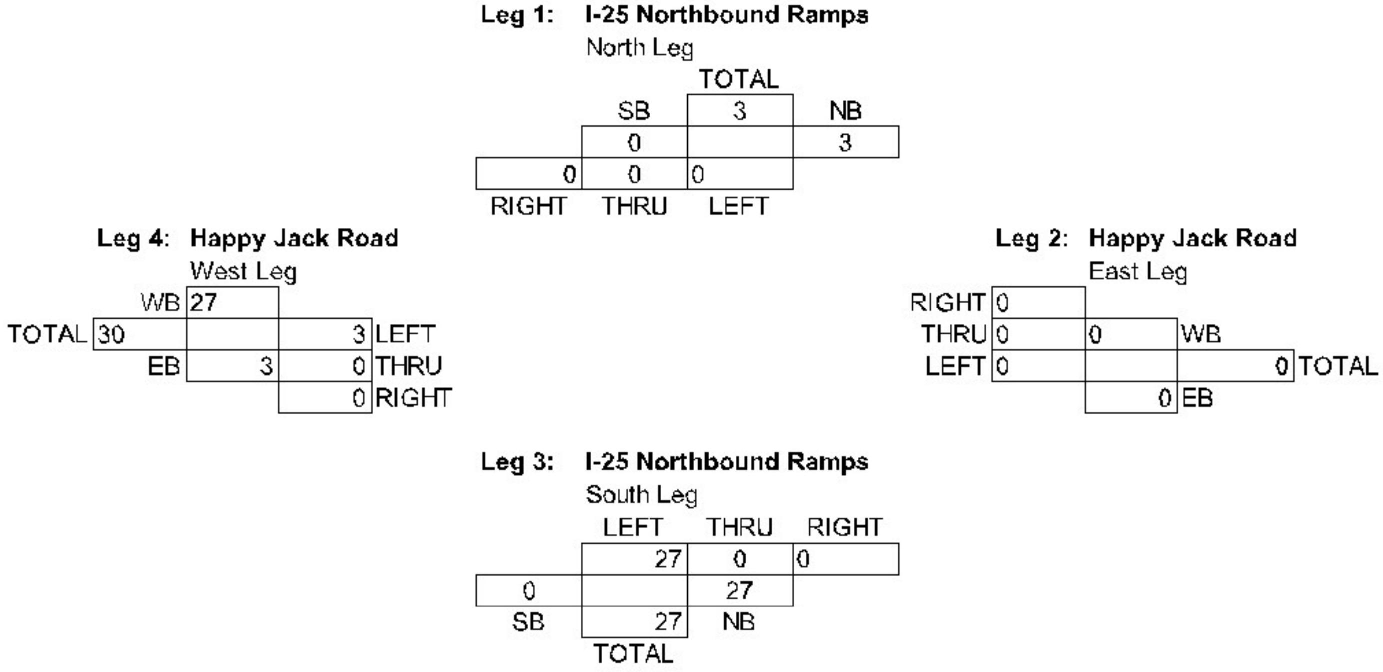
South Leg

	LEFT	THRU	RIGHT
	59	1	40
0		100	
SB	100	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

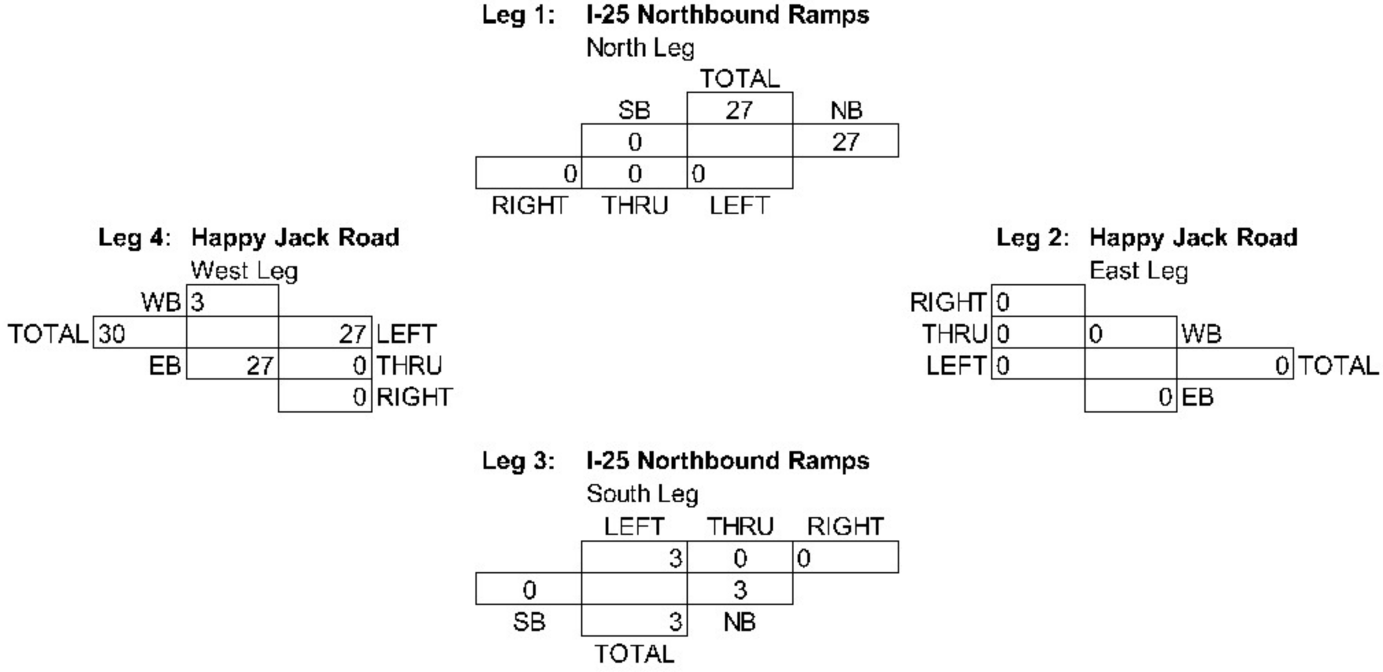
Operations AM Trip Generation



I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

Operations PM Trip Generation



I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK NO BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	232	NB
	0		232
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	506		
TOTAL	977		128	LEFT
	EB	470	343	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	102			
THRU	273	374	WB	
LEFT	0		794	TOTAL
		420	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	233	3	77
0		313	
SB	313	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK NO-BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	534	NB
	0		534
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	257		
TOTAL	917		281	LEFT
	EB	661	380	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	252			
THRU	190	442	WB	
LEFT	0		866	TOTAL
		424	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	67	1	44
0		112	
SB	112	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 AM PEAK BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	236	NB
	0		236
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	533		
TOTAL	1007		131	LEFT
	EB	474	343	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	102			
THRU	273	375	WB	
LEFT	0		795	TOTAL
		420	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	260	3	77
0		340	
SB	340	NB	
	TOTAL		

I-25 Northbound Ramps at Happy Jack Road

Crossroad Diagram:

2035 PM PEAK BUILD

Leg 1: I-25 Northbound Ramps
North Leg

		TOTAL	
	SB	561	NB
	0		561
0	0	0	
RIGHT	THRU	LEFT	

Leg 4: Happy Jack Road
West Leg

	WB	260		
TOTAL	948		308	LEFT
	EB	688	380	THRU
			0	RIGHT

Leg 2: Happy Jack Road
East Leg

RIGHT	252			
THRU	190	442	WB	
LEFT	0		866	TOTAL
		424	EB	

Leg 3: I-25 Northbound Ramps
South Leg

	LEFT	THRU	RIGHT
	70	1	44
0		115	
SB	115	NB	
	TOTAL		

Appendix B: Capacity Analysis Plots

[illegible]

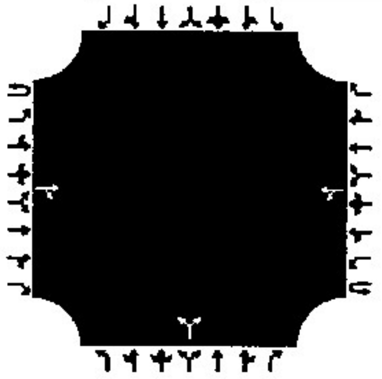
General Information

Analyst	G Grigsby
Agency/Co	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2022
Time Analyzed	2022 AM Peak Count
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			9	0		0	2			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1601					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.2					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

[illegible]

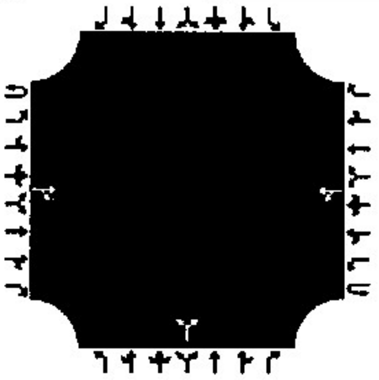
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2022
Time Analyzed	2022 PM Peak Count
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			5	0		0	5			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1608					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.2					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

[illegible]

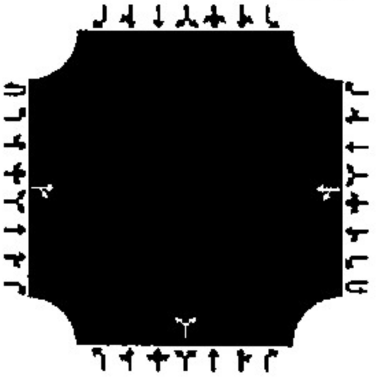
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak NO-BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			9	0		0	2			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1601					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.2					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

[illegible]

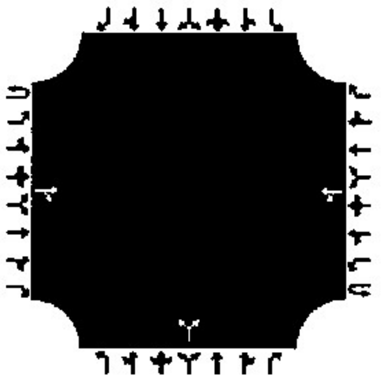
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			9	0		31	2			0		7				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						34					8					
Capacity, c (veh/h)						1601					1068					
v/c Ratio						0.02					0.01					
95% Queue Length, Q_{95} (veh)						0.1					0.0					
Control Delay (s/veh)						7.3					8.4					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					6.9				8.4							
Approach LOS									A							

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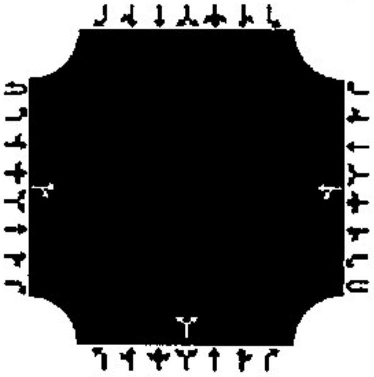
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak NO-BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			5	0		0	5			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

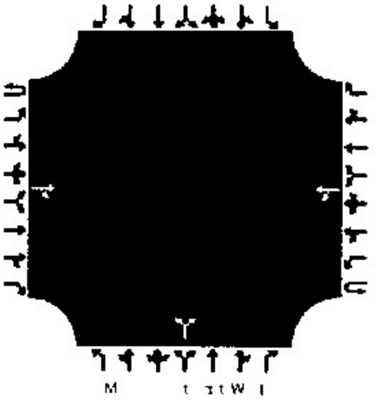
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1608					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.2					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

[illegible]

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Gold King Mine Dr @ CR210
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	10/25/2022	East/West Street	CR 210
Analysis Year	2025	North/South Street	Gold King Mine Road
Time Analyzed	2025 PM Peak BUILD	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			5	0		7	5			0		31				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						8					34					
Capacity, c (veh/h)						1608					1074					
v/c Ratio						0.00					0.03					
95% Queue Length, Q_{95} (veh)						0.0					0.1					
Control Delay (s/veh)						7.3					8.5					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					4.5				8.5							
Approach LOS									A							

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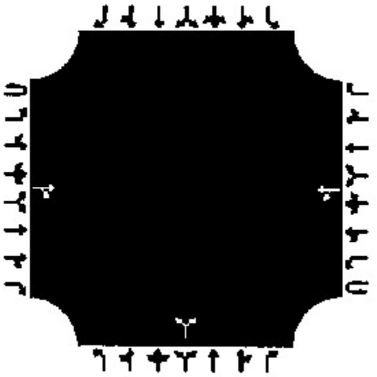
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak NO-BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			11	0		0	2			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1598					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.3					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

[illegible]

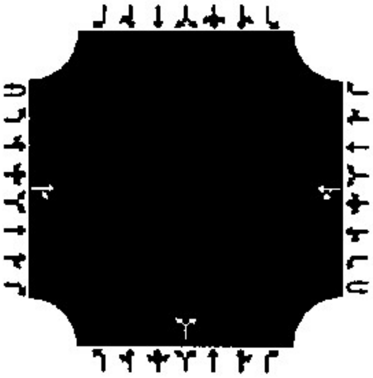
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			11	0		10	2			0		3				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

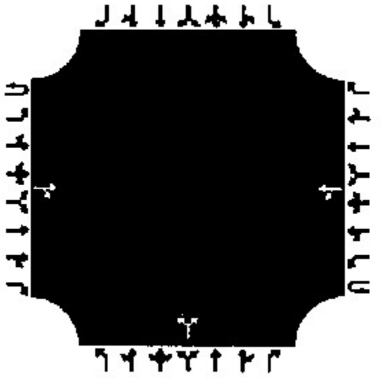
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					3					
Capacity, c (veh/h)						1598					1065					
v/c Ratio						0.01					0.00					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
Control Delay (s/veh)						7.3					8.4					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					6.2				8.4							
Approach LOS									A							

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Gold King Mine Dr @ CR210
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	10/25/2022	East/West Street	CR 210
Analysis Year	2035	North/South Street	Gold King Mine Road
Time Analyzed	2035 PM Peak NO-BUILD	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			6	0		0	6			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						1605					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						7.2					5.0					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					0.0				5.0							
Approach LOS									A							

HCS 2010 Two-Way Stop-Control Report

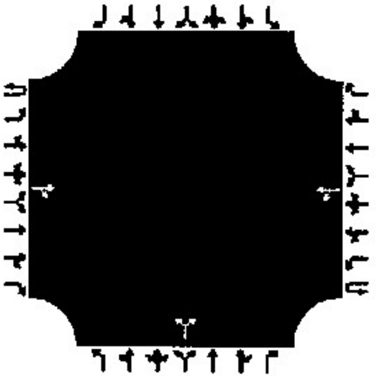
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	10/25/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak BUILD
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Gold King Mine Dr @ CR210
Jurisdiction	
East/West Street	CR 210
North/South Street	Gold King Mine Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			6	0		3	6			0		10				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						3					11					
Capacity, c (veh/h)						1605					1072					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
Control Delay (s/veh)						7.2					8.4					
Level of Service, LOS						A					A					
Approach Delay (s/veh)					2.2				8.4							
Approach LOS									A							

[illegible]

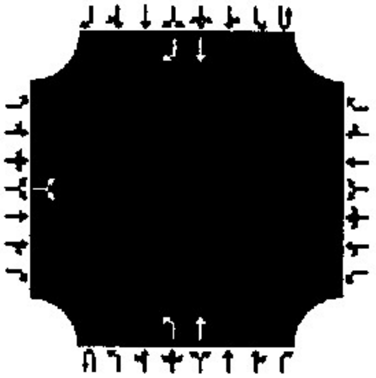
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 AM Peak
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		8						2	30				56	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			989							1534						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.4							
Approach LOS	A															

[illegible]

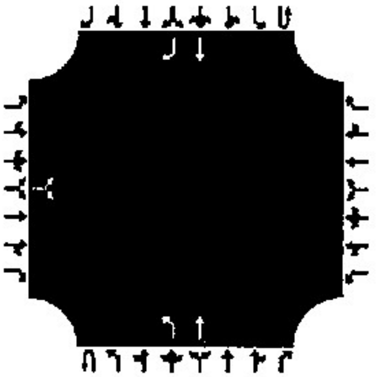
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 PM Peak
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		4						5	92				45	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

	Eastbound				Westbound				Northbound				Southbound			
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

	Eastbound				Westbound				Northbound				Southbound			
Flow Rate, v (veh/h)			5							5						
Capacity, c (veh/h)			971							1550						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.3							
Approach LOS	A															

[illegible]

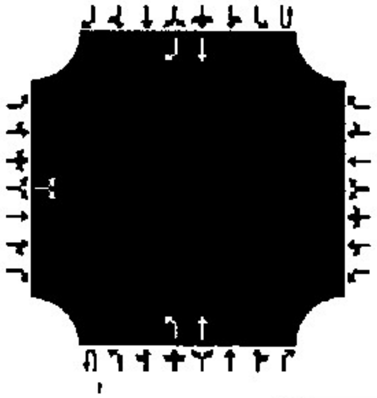
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		15						33	31				58	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			17							36						
Capacity, c (veh/h)			984							1531						
v/c Ratio			0.02							0.02						
95% Queue Length, Q_{95} (veh)			0.1							0.1						
Control Delay (s/veh)			8.7							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								3.8							
Approach LOS	A															

[illegible]

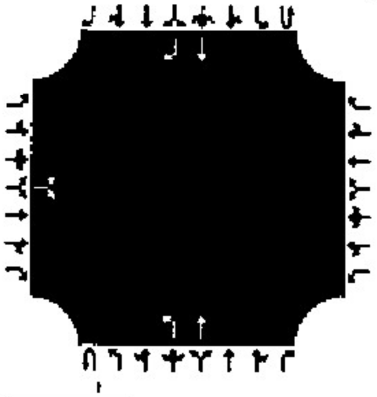
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		35						7	96				47	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			39							8						
Capacity, c (veh/h)			1007							1547						
v/c Ratio			0.04							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.5							
Approach LOS	A															

HCS 2010™ TWSC Version 6.90

Happy Jack Rd - CR210 2025 PM Peak Build.xtw

Generated: 11/9/2022 9:41:48 AM

[illegible]

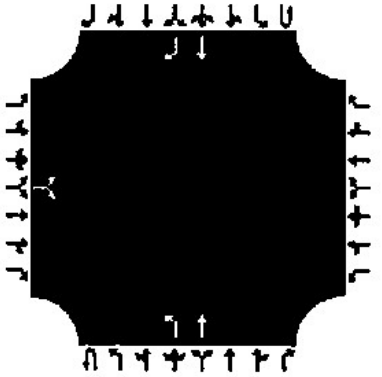
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2022 AM Peak No Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		8						2	31				58	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			986							1531						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.4							
Approach LOS	A															

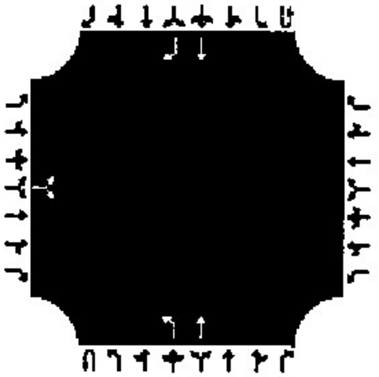
[illegible]

General Information

Site Information

Analyst	G Grigsby	Intersection	Happy Jack Rd @ CR 210
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	CR 210
Analysis Year	2025	North/South Street	Happy Jack Road
Time Analyzed	2022 PM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		4						5	96				47	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							5						
Capacity, c (veh/h)			968							1547						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.3							
Approach LOS	A															

HCS 2010™ TWSC Version 6.90 Generated: 11/8/2022 2:47:07 PM

Happy Jack Rd - CR210 2025 PM Peak No Build.xtw

[illegible]

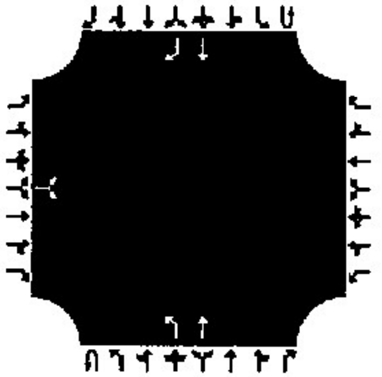
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak No Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		10						2	36				68	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

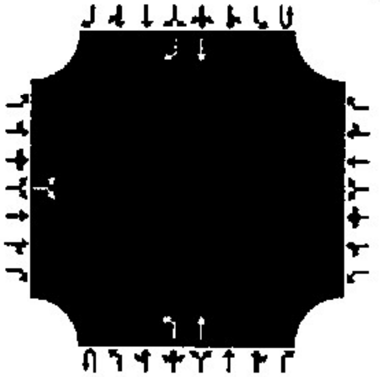
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			12							2						
Capacity, c (veh/h)			974							1517						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.4							
Approach LOS	A															

HCS Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Happy Jack Rd @ CR 210
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	CR 210
Analysis Year	2035	North/South Street	Happy Jack Road
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		13						12	36				68	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							13						
Capacity, c (veh/h)			973							1517						
v/c Ratio			0.02							0.01						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.8							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.8								1.8							
Approach LOS	A															

[illegible]

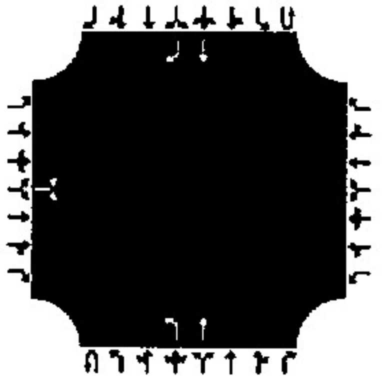
General Information

Analyst	G Grigsby
Agency/Co	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak No Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Happy Jack Rd @ CR 210
Jurisdiction	
East/West Street	CR 210
North/South Street	Happy Jack Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		5						6	111				54	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

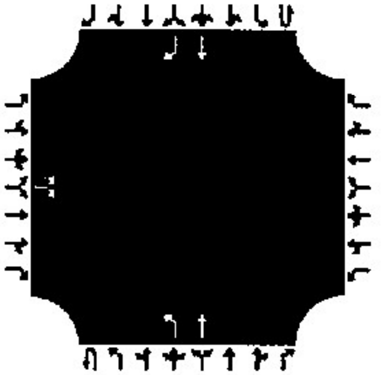
Flow Rate, v (veh/h)			6							7						
Capacity, c (veh/h)			960							1537						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			8.8							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.8								0.4							
Approach LOS	A															

HCS 2010™ TWSC Version 6.90
Happy Jack Rd - CR210 2035 PM Peak No Build.xtw
Generated: 11/8/2022 2:50:26 PM

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Happy Jack Rd @ CR 210
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	CR 210
Analysis Year	2035	North/South Street	Happy Jack Road
Time Analyzed	2035 PM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		1		15						9	111				54	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			17							10						
Capacity, c (veh/h)			987							1537						
v/c Ratio			0.02							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.7							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.7								0.6							
Approach LOS	A															

[illegible]

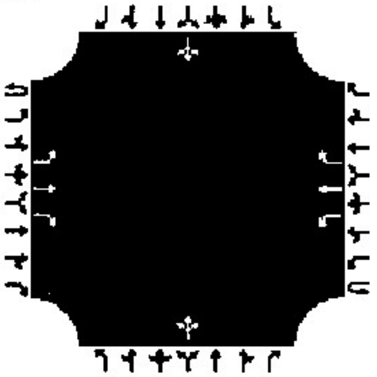
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 AM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	McKinney Rd @ Happy Jack
Jurisdiction	
East/West Street	Happy Jack Rd
North/South Street	McKinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		00	157	1		1	103	3		1	0	1		7	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Approach	Eastbound				Westbound				Northbound				Southbound			
Flow Rate, v (veh/h)		0				1					2				9	
Capacity, c (veh/h)		1466				1397					752				685	
v/c Ratio		0.00				0.00					0.00				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.5				7.6					9.8				10.3	
Level of Service, LOS		A				A					A				B	
Approach Delay (s/veh)	0.0				0.1				9.8				10.3			
Approach LOS									A				B			

[illegible]

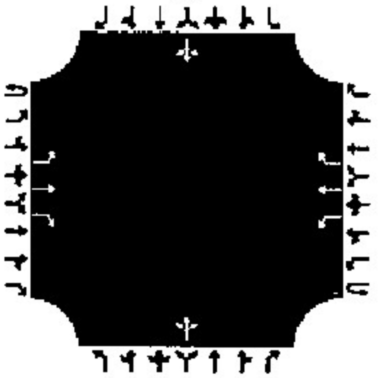
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 PM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	McKinney Rd @ Happy Jack
Jurisdiction	
East/West Street	Happy Jack Rd
North/South Street	McKinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		1	137	1		1	177	8		0	0	1		5	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

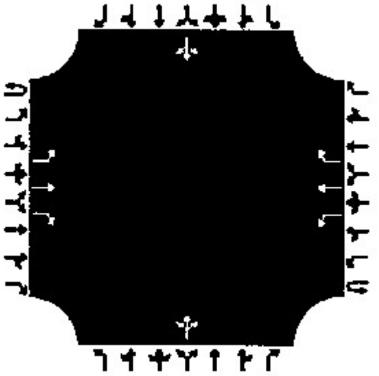
Flow Rate, v (veh/h)		1				1					1				6	
Capacity, c (veh/h)		1364				1423					894				635	
v/c Ratio		0.00				0.00					0.00				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.6				7.5					9.0				10.7	
Level of Service, LOS		A				A					A				B	
Approach Delay (s/veh)	0.1				0.0				9.0				10.7			
Approach LOS									A				B			

[illegible]

General Information

Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2025	North/South Street	McKinney Rd
Time Analyzed	2025 AM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		0	164	1		1	108	3		1	0	1		7	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				1					2				9	
Capacity, c (veh/h)		1460				1389					742				673	
v/c Ratio		0.00				0.00					0.00				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.5				7.6					9.9				10.4	
Level of Service, LOS		A				A					A				B	
Approach Delay (s/veh)	0.0				0.1				9.9				10.4			
Approach LOS									A				B			

[illegible]

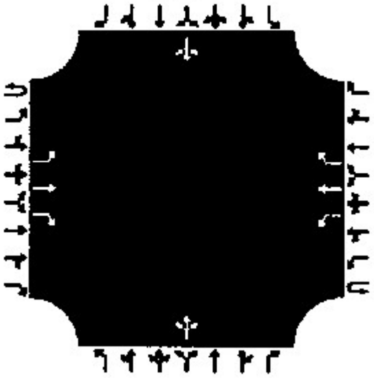
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	McKinney Rd @ Happy Jack
Jurisdiction	
East/West Street	Happy Jack Rd
North/South Street	McKinney Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		0	164	1		176	108	3		8	0	14		7	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

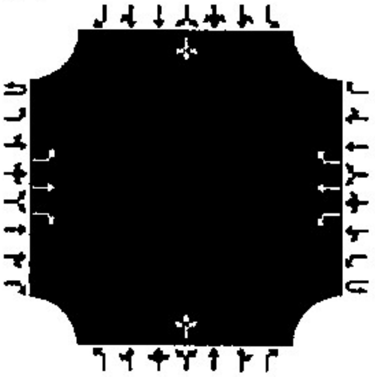
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				191					24				9	
Capacity, c (veh/h)		1460				1389					533				343	
v/c Ratio		0.00				0.14					0.05				0.03	
95% Queue Length, Q_{95} (veh)		0.0				0.5					0.1				0.1	
Control Delay (s/veh)		7.5				8.0					12.1				15.8	
Level of Service, LOS		A				A					B				C	
Approach Delay (s/veh)	0.0				4.9				12.1				15.8			
Approach LOS									B				C			

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2025	North/South Street	McKinney Rd
Time Analyzed	2025 PM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		1	143	1		1	183	8		0	0	1		5	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

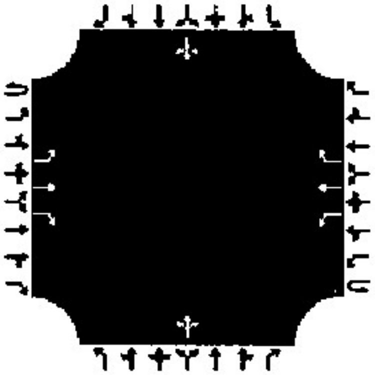
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				1					1				6	
Capacity, c (veh/h)		1355				1416					888				624	
v/c Ratio		0.00				0.00					0.00				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.7				7.5					9.1				10.8	
Level of Service, LOS		A				A					A				B	
Approach Delay (s/veh)	0.0				0.0				9.1				10.8			
Approach LOS									A				B			

[illegible]

## General Information		## Site Information	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2025	North/South Street	McKinney Rd
Time Analyzed	2025 PM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		1	143	8		14	183	8		8	0	176		5	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

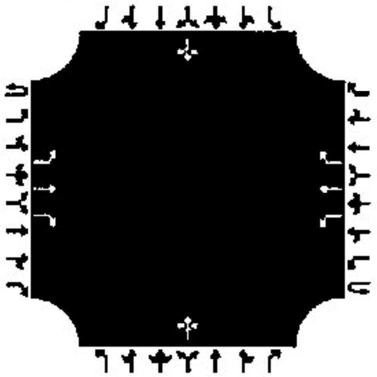
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				15					200				6	
Capacity, c (veh/h)		1355				1407					865				421	
v/c Ratio		0.00				0.01					0.23				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.9				0.0	
Control Delay (s/veh)		7.7				7.6					10.4				13.7	
Level of Service, LOS		A				A					B				B	
Approach Delay (s/veh)	0.0				0.5				10.4				13.7			
Approach LOS									B				B			

[illegible]

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	McKinney Rd
Time Analyzed	2035 AM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		0	189	1		1	124	4		1	0	1		8	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				1					2				10	
Capacity, c (veh/h)		1437				1358					703				630	
v/c Ratio		0.00				0.00					0.00				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.5				7.7					10.1				10.8	
Level of Service, LOS		A				A					B				B	
Approach Delay (s/veh)	0.0				0.1				10.1				10.8			
Approach LOS									B				B			

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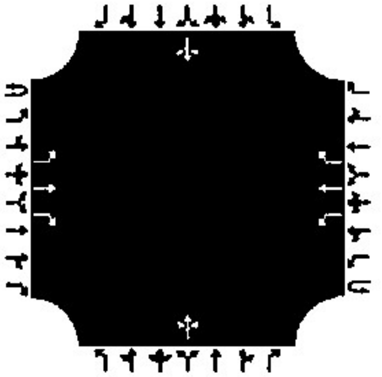
McKinney @ Happy Jack 2035 AM Peak NO Build.xtw

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	McKinney Rd
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		0	189	1		54	124	4		11	0	6		8	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				59					19				10	
Capacity, c (veh/h)		1437				1358					581				511	
v/c Ratio		0.00				0.04					0.03				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.1				0.1	
Control Delay (s/veh)		7.5				7.8					11.4				12.2	
Level of Service, LOS		A				A					B				B	
Approach Delay (s/veh)	0.0				2.3				11.4				12.2			
Approach LOS									B				B			

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McKinney @ Happy Jack 2035 AM Peak Build.xtw

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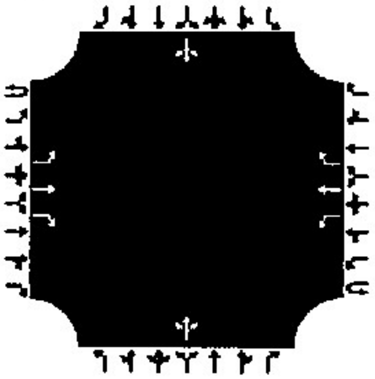
General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	McKinney Rd
Time Analyzed	2035 PM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		2	163	2		1	206	8		0	0	1		5	0	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				1					1				7	
Capacity, c (veh/h)		1327				1389					863				606	
v/c Ratio		0.00				0.00					0.00				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.7				7.6					9.2				11.0	
Level of Service, LOS		A				A					A				B	
Approach Delay (s/veh)	0.1				0.0				9.2				11.0			
Approach LOS									A				B			

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McKinney @ Happy Jack 2035 PM Peak NO Build.xtw

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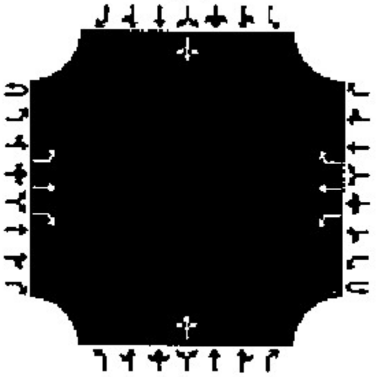
General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinney Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	McKinney Rd
Time Analyzed	2035 PM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	1		0	1	0		0	1	0
Configuration		L	T	R		L	T	R			LTR				LTR	
Volume, V (veh/h)		2	163	12		6	206	8		11	0	6		8	0	1
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

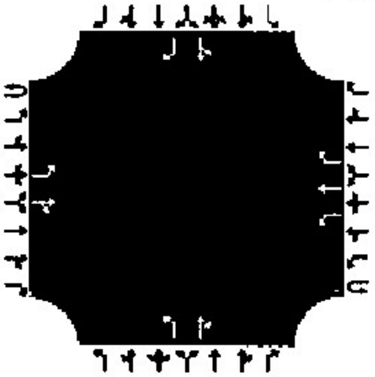
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				7					19				10	
Capacity, c (veh/h)		1327				1376					625				552	
v/c Ratio		0.00				0.01					0.03				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.7				7.6					10.9				11.6	
Level of Service, LOS		A				A					B				B	
Approach Delay (s/veh)	0.1				0.2				10.9				11.6			
Approach LOS									B				B			

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2022	North/South Street	Roundtop Rd
Time Analyzed	2022 AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		2	119	44		11	77	9		28	17	8		32	21	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				12				30		27		58		2
Capacity, c (veh/h)		1492				1391				646		700		632		972
v/c Ratio		0.00				0.01				0.05		0.04		0.09		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.1		0.1		0.3		0.0
Control Delay (s/veh)		7.4				7.6				10.8		10.4		11.3		8.7
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.1				0.9				10.6				11.2			
Approach LOS									B				B			

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Roundtop Rd @ Happy Jack 2022 AM Peak.xtw

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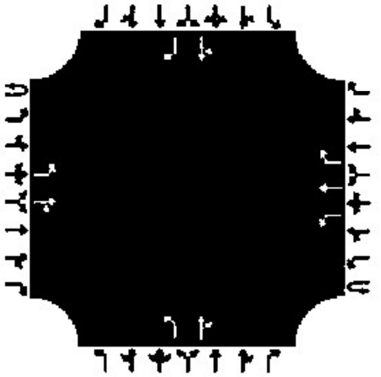
[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2022	North/South Street	Roundtop Rd
Time Analyzed	2022 PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		36	107	6		10	137	46		45	23	7		17	16	4
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

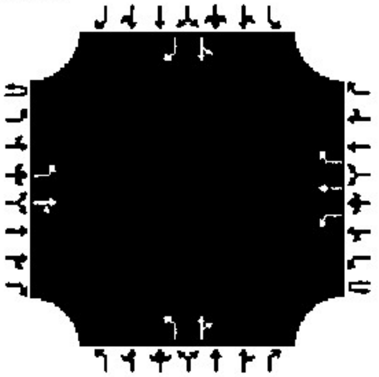
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		39				11				49		33		35		4
Capacity, c (veh/h)		1366				1464				550		605		538		894
v/c Ratio		0.03				0.01				0.09		0.05		0.07		0.00
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.3		0.2		0.2		0.0
Control Delay (s/veh)		7.7				7.5				12.2		11.3		12.2		9.0
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	1.9				0.4				11.8				11.8			
Approach LOS									B				B			

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 AM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		2	122	48		13	79	9		31	18	9		33	23	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

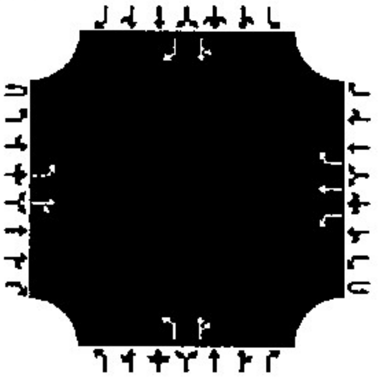
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				14				34		30		61		2
Capacity, c (veh/h)		1490				1382				632		690		617		969
v/c Ratio		0.00				0.01				0.05		0.04		0.10		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.2		0.1		0.3		0.0
Control Delay (s/veh)		7.4				7.6				11.0		10.5		11.5		8.7
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.1				1.0				10.8				11.4			
Approach LOS									B				B			

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 PM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		6	104	39		11	141	47		49	25	8		17	17	4
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7				12				53		36		36		4
Capacity, c (veh/h)		1360				1417				592		641		572		890
v/c Ratio		0.01				0.01				0.09		0.06		0.06		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.3		0.2		0.2		0.0
Control Delay (s/veh)		7.7				7.6				11.7		11.0		11.7		9.1
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.3				0.4				11.4				11.5			
Approach LOS									B				B			

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Roundtop Rd @ Happy Jack 2025 PM Peak No Build.xtw

[illegible]

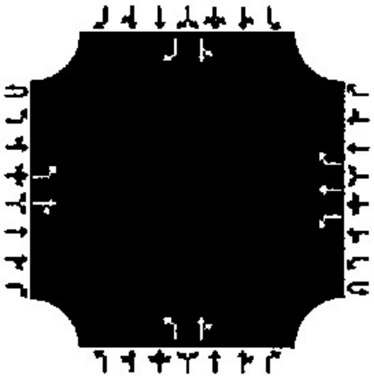
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak No Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Happy Jack
Jurisdiction	
East/West Street	Happy Jack Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		2	133	64		19	84	9		42	23	15		35	29	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				21				46		41		70		2
Capacity, c (veh/h)		1483				1348				582		670		569		963
v/c Ratio		0.00				0.02				0.08		0.06		0.12		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.3		0.2		0.4		0.0
Control Delay (s/veh)		7.4				7.7				11.7		10.7		12.2		8.7
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.1				1.3				11.3				12.1			
Approach LOS									B				B			

[illegible]

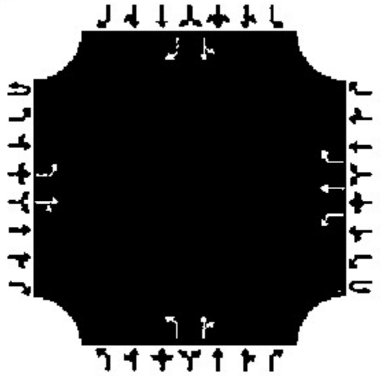
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak No Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Happy Jack
Jurisdiction	
East/West Street	Happy Jack Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		5	114	53		18	155	51		66	33	13		18	22	4
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				20				72		50		44		4
Capacity, c (veh/h)		1338				1386				541		613		523		873
v/c Ratio		0.00				0.01				0.13		0.08		0.08		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.5		0.3		0.3		0.0
Control Delay (s/veh)		7.7				7.6				12.7		11.4		12.5		9.1
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.2				0.6				12.1				12.2			
Approach LOS									B				B			

[illegible]

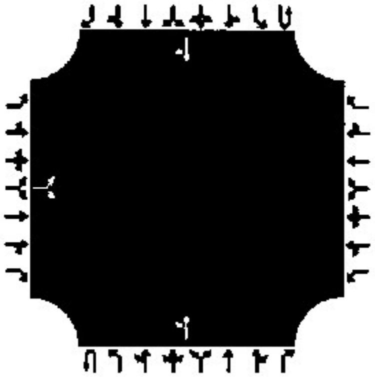
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 AM Peak
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	53				76	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1506						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

[illegible]

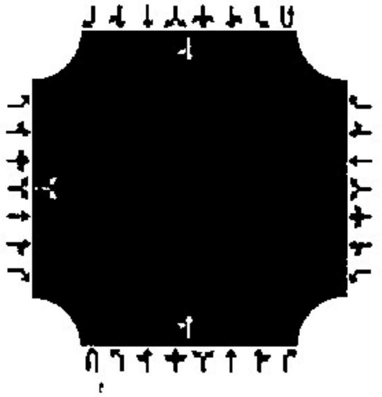
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 PM Peak
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	75				62	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1526						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

[illegible]

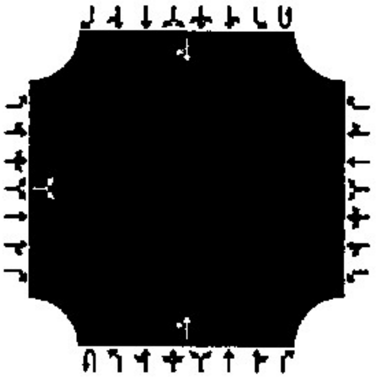
General Information

Analyst	G Grigsby
Agency/Co	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak No Build
Intersection Orientation	North South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	58				83	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1497						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

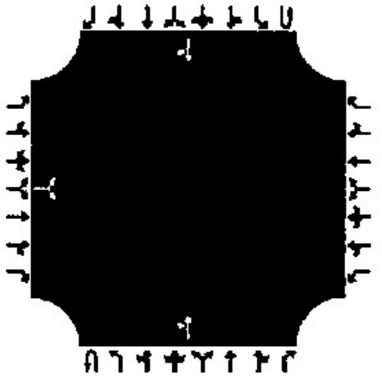
[illegible]

General Information

Site Information

Analyst	G Grigsby	Intersection	Roundtop Rd @ Veta Drive
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Veta Rd
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 PM Peak No Build	Peak Hour Factor	0 92
Intersection Orientation	North-South	Analysis Time Period (hrs)	1 00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	82				68	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1517						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

[illegible]

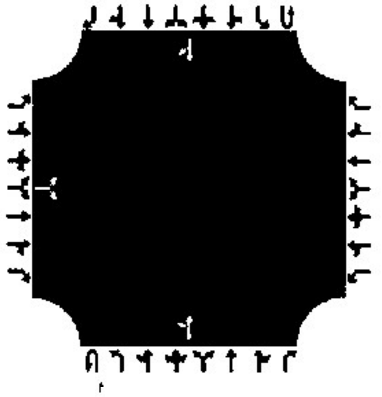
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak No Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	79				114	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1455						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.5						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

[illegible]

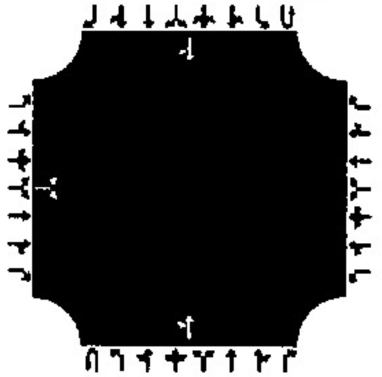
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak No Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		0						0	112				93	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0							0						
Capacity, c (veh/h)			0							1483						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)			5.0							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	5.0								0.0							
Approach LOS	A															

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Roundtop Rd @ Veta Dr 2035 PM Peak No Build.xtw

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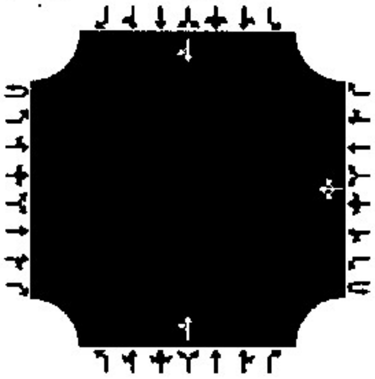
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 AM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						5	1	146		0	13				83	11
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5				14						102
Capacity, c (veh/h)						0										815
v/c Ratio																0.13
95% Queue Length, Q_{95} (veh)																0.4
Control Delay (s/veh)																10.0
Level of Service, LOS																B
Approach Delay (s/veh)													10.0			
Approach LOS													B			

[illegible]

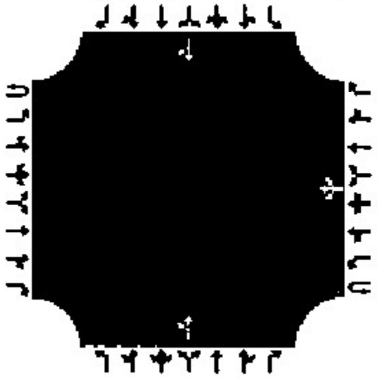
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2022
Time Analyzed	2022 PM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ West Ramps
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						5	1	95		1	20				150	9
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5				23						173
Capacity, c (veh/h)						0										835
v/c Ratio																0.21
95% Queue Length, Q_{95} (veh)																0.8
Control Delay (s/veh)																10.4
Level of Service, LOS																B
Approach Delay (s/veh)													10.4			
Approach LOS													B			

[illegible]

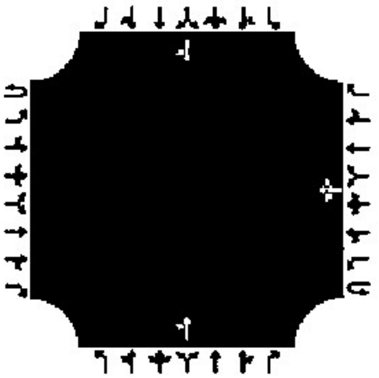
General Information

Analyst	G Grigsby
Agency/Co	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I 80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						9	2	159		0	14				86	11
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10				15						105
Capacity, c (veh/h)						0										737
v/c Ratio																0.13
95% Queue Length, Q_{95} (veh)																0.5
Control Delay (s/veh)																10.2
Level of Service, LOS																B
Approach Delay (s/veh)													10.2			
Approach LOS													B			

[illegible]

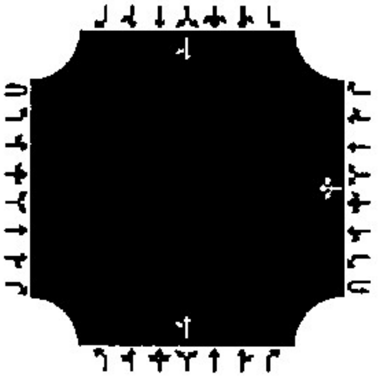
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						9	2	103		2	20				156	9
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10				24						180
Capacity, c (veh/h)						0										819
v/c Ratio																0.22
95% Queue Length, Q_{95} (veh)																0.8
Control Delay (s/veh)																10.6
Level of Service, LOS																B
Approach Delay (s/veh)													10.6			
Approach LOS													B			

[illegible]

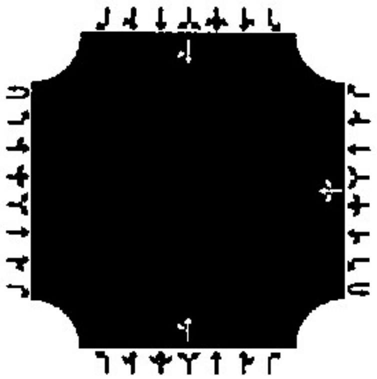
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						30	5	130		4	22				180	8
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						33				28						205
Capacity, c (veh/h)						0										755
v/c Ratio																0.27
95% Queue Length, Q_{95} (veh)																1.1
Control Delay (s/veh)																11.5
Level of Service, LOS																B
Approach Delay (s/veh)													11.5			
Approach LOS													B			

[illegible]

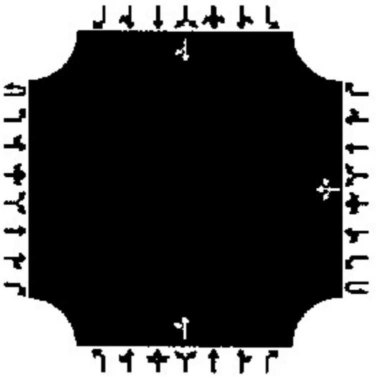
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak No Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						31	6	211		1	16				98	13
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						34				18						121
Capacity, c (veh/h)						0										723
v/c Ratio																0.17
95% Queue Length, Q_{95} (veh)																0.6
Control Delay (s/veh)																11.0
Level of Service, LOS																B
Approach Delay (s/veh)													11.0			
Approach LOS													B			

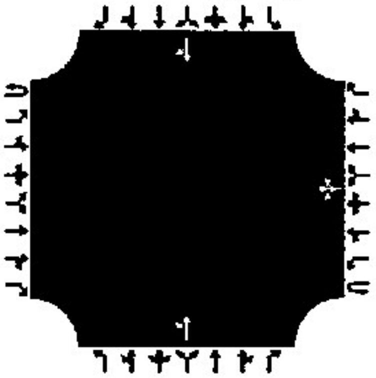
HCS 2010™ TWSC Version 6.90 Generated: 11/9/2022 8:57:39 AM

Roundtop Rd @ I-80 West Ramp 2035 AM Peak No Build.xtw

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 West R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Westbound Ramps
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 PM Peak No Bu ld	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						30	5	130		4	22				180	8
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						33				26						205
Capacity, c (veh/h)						0										755
v/c Ratio																0.27
95% Queue Length, Q_{95} (veh)																1.1
Control Delay (s/veh)																11.5
Level of Service, LOS																B
Approach Delay (s/veh)													11.5			
Approach LOS													B			

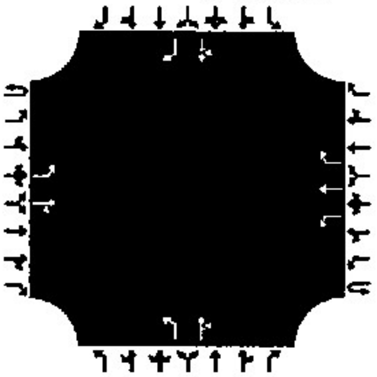
HCS 2010™ TWSC Version 6.90 Generated: 11/9/2022 8:59:00 AM

Roundtop Rd @ I-80 West Ramp 2035 PM Peak No Build.xtw

[illegible]

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.84
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		2	138	64		19	137	9		42	23	15		35	29	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				23				50		45		77		2
Capacity, c (veh/h)		1395				1319				493		609		490		878
v/c Ratio		0.00				0.02				0.10		0.07		0.16		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.3		0.2		0.6		0.0
Control Delay (s/veh)		7.6				7.8				13.1		11.4		13.7		9.1
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.1				0.9				12.3				13.6			
Approach LOS									B				B			

[illegible]

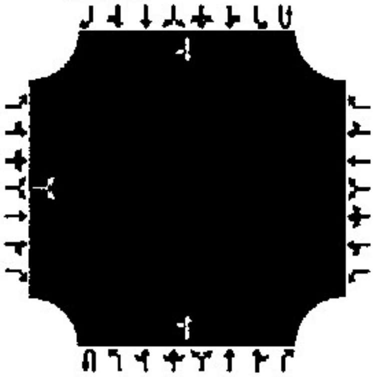
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.84
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		13						175	58				83	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							208						
Capacity, c (veh/h)			953							1486						
v/c Ratio			0.02							0.14						
95% Queue Length, Q_{95} (veh)			0.0							0.5						
Control Delay (s/veh)			8.8							7.8						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.8								6.2							
Approach LOS	A															

[illegible]

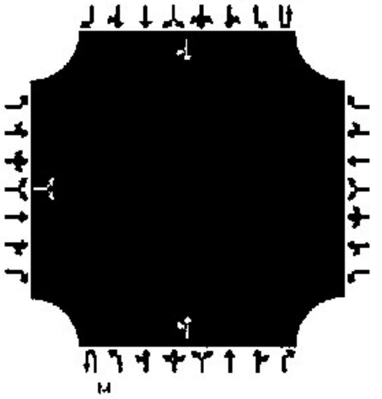
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.84
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		175						13	82				68	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

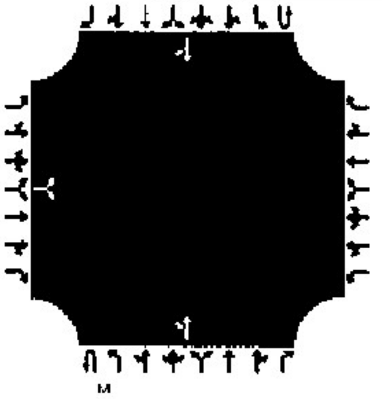
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			208							15						
Capacity, c (veh/h)			975							1508						
v/c Ratio			0.21							0.01						
95% Queue Length, Q_{95} (veh)			0.8							0.0						
Control Delay (s/veh)			9.7							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	9.7								1.1							
Approach LOS	A															

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Veta Drive
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Veta Rd
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.84
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		5						53	79				114	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6							63						
Capacity, c (veh/h)			909							1440						
v/c Ratio			0.01							0.04						
95% Queue Length, Q_{95} (veh)			0.0							0.1						
Control Delay (s/veh)			9.0							7.6						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	9.0								3.3							
Approach LOS	A															

[illegible]

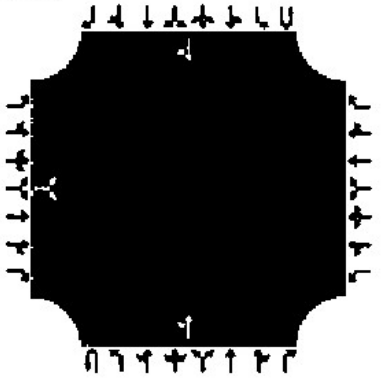
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 AM Peak Build
Intersection Orientation	North-South
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ Veta Drive
Jurisdiction	
East/West Street	Veta Rd
North/South Street	Roundtop Rd
Peak Hour Factor	0.84
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		5						53	79				114	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6							63						
Capacity, c (veh/h)			909							1440						
v/c Ratio			0.01							0.04						
95% Queue Length, Q_{95} (veh)			0.0							0.1						
Control Delay (s/veh)			9.0							7.6						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	9.0								3.3							
Approach LOS	A															

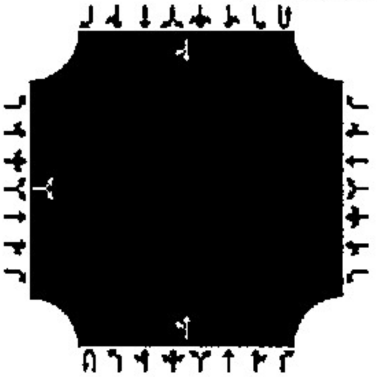
[illegible]

General Information

Site Information

Analyst	G Grigsby	Intersection	Roundtop Rd @ Veta Drive
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Veta Rd
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 PM Peak Build	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		53						5	112				93	0
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

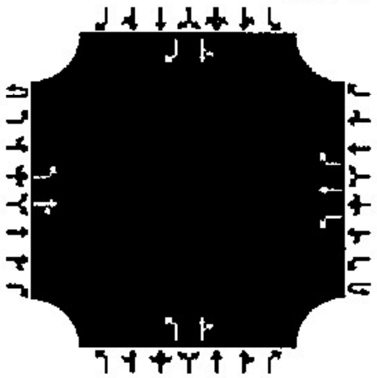
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			62							6						
Capacity, c (veh/h)			942							1475						
v/c Ratio			0.07							0.00						
95% Queue Length, Q_{95} (veh)			0.2							0.0						
Control Delay (s/veh)			9.1							7.5						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	9.1								0.4							
Approach LOS	A															

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ Happy Jack
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	Happy Jack Rd
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 PM Peak Build	Peak Hour Factor	0.84
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		0	1	1
Configuration		L		TR		L	T	R		L		TR		LT		R
Volume, V (veh/h)		2	138	64		19	137	9		42	23	15		35	29	2
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

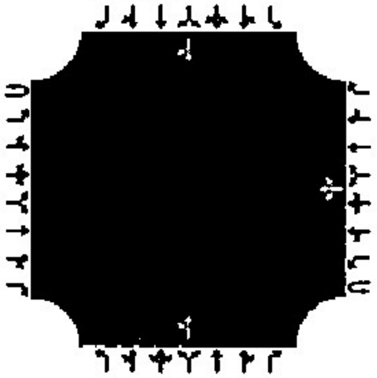
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				23				50		45		77		2
Capacity, c (veh/h)		1395				1319				493		609		490		878
v/c Ratio		0.00				0.02				0.10		0.07		0.16		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.3		0.2		0.6		0.0
Control Delay (s/veh)		7.6				7.8				13.1		11.4		13.7		9.1
Level of Service, LOS		A				A				B		B		B		A
Approach Delay (s/veh)	0.1				0.9				12.3				13.6			
Approach LOS									B				B			

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 West R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I 80 Westbound Ramps
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.84
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						31	6	263		1	18				103	13
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						37				22						138
Capacity, c (veh/h)						0										679
v/c Ratio																0.20
95% Queue Length, Q_{95} (veh)																0.8
Control Delay (s/veh)																11.7
Level of Service, LOS																B
Approach Delay (s/veh)													11.7			
Approach LOS													B			

[illegible]

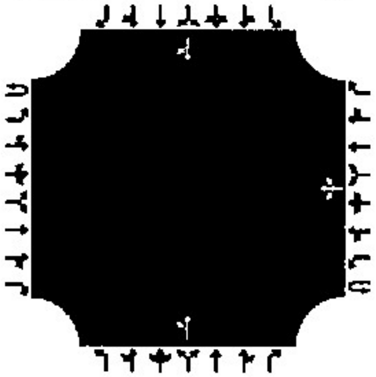
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersect on	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Stree:	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.80
Ana ys s Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						30	5	135		4	22				231	10
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						38				33						301
Capacity, c (veh/h)						0										732
v/c Ratio																0.41
95% Queue Length, Q_{95} (veh)																2.1
Control Delay (s/veh)																13.3
Level of Service, LOS																B
Approach Delay (s/veh)													13 3			
Approach LOS													B			

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Roundtop Rd @ I-80 West Ramp 2035 PM Peak Build xtw

[illegible]

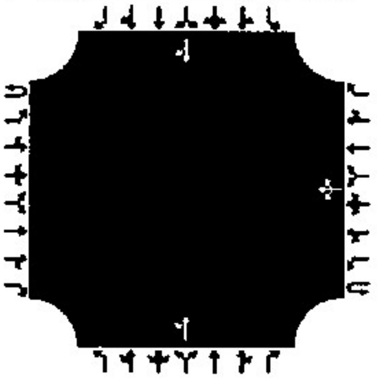
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 West R
Jurisdiction	
East/West Street	I-80 Westbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.84
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						9	2	115		2	21				326	14
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11				27						405
Capacity, c (veh/h)						0										802
v/c Ratio																0.50
95% Queue Length, Q_{95} (veh)																3.0
Control Delay (s/veh)																14.0
Level of Service, LOS																B
Approach Delay (s/veh)													14.0			
Approach LOS													B			

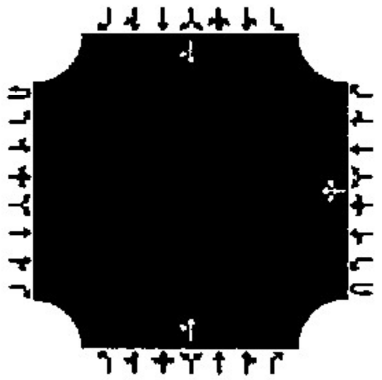
[illegible]

General Information

Analyst	G Grigsby	Intersection	Roundtop Rd @ I 80 West R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Westbound Ramps
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 PM Peak Build	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						9	2	115		2	21				326	14
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

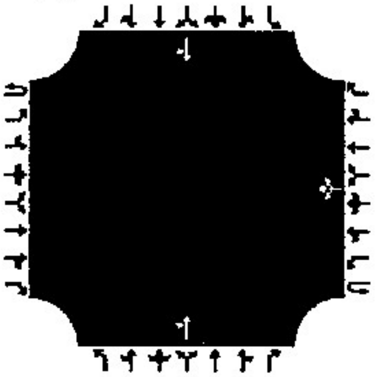
Flow Rate, v (veh/h)						11				28						426
Capacity, c (veh/h)						0										798
v/c Ratio																0.53
95% Queue Length, Q_{95} (veh)																3.4
Control Delay (s/veh)																14.6
Level of Service, LOS																B
Approach Delay (s/veh)													14.6			
Approach LOS													B			

[illegible]

General Information / Site Information

Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 West R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Westbound Ramps
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 AM Peak Build	Peak Hour Factor	0.84
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	1	0		0	1	0		0	1	0
Configuration							LTR			LT						TR
Volume, V (veh/h)						9	2	329		0	19				98	12
Percent Heavy Vehicles (%)						3				3	3				3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11				23						131
Capacity, c (veh/h)						0										691
v/c Ratio																0.19
95% Queue Length, Q_{95} (veh)																0.7
Control Delay (s/veh)																11.4
Level of Service, LOS																B
Approach Delay (s/veh)													11.4			
Approach LOS													B			

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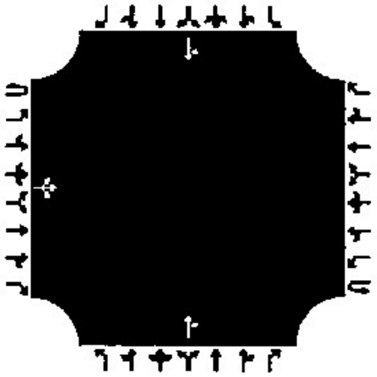
Roundtop Rd @ I-80 West Ramp 2025 AM Peak No Build.xtw

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Eastbound Ramps
Analysis Year	2022	North/South Street	Roundtop Rd
Time Analyzed	2022 AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	0	2							9	8		90	16	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow Up Headway (sec)																
Follow-Up Headway (sec)																

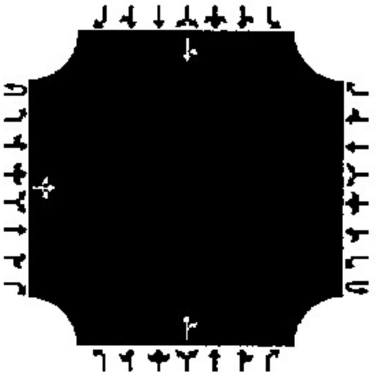
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										19		115		
Capacity, c (veh/h)		0										968				
v/c Ratio												0.02				
95% Queue Length, Q_{95} (veh)												0.1				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I 80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I 80 Eastbound Ramps
Analysis Year	2022	North/South Street	Roundtop Rd
Time Analyzed	2022 PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	2	1							18	31		134	20	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

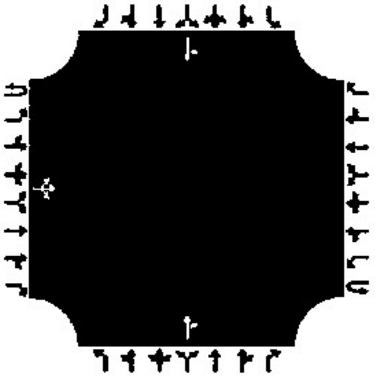
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										54		168		
Capacity, c (veh/h)		0										997				
v/c Ratio												0.05				
95% Queue Length, Q_{95} (veh)												0.2				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

[illegible]

General Information		Site Information	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Eastbound Ramps
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 AM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	0	2							9	9		95	16	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										20		120		
Capacity, c (veh/h)		0										973				
v/c Ratio												0.02				
95% Queue Length, Q_{95} (veh)												0.1				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

[illegible]

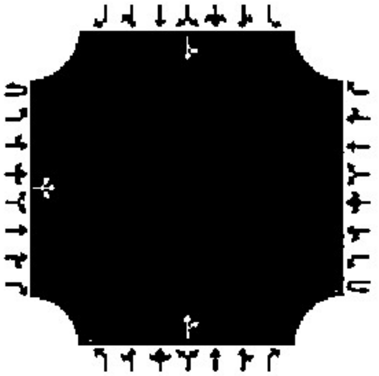
General Information

Analyst	G Grigsby
Agency/Co	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 AM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 East R
Jurisdiction	
East/West Street	I-80 Eastbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.89
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		8	0	2							9	9		107	16	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

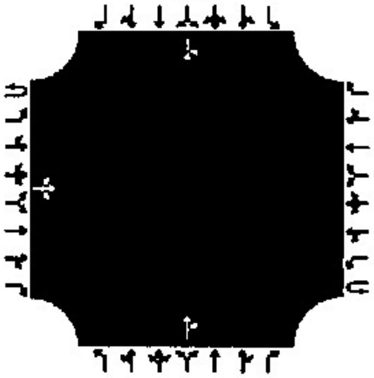
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9										20		138		
Capacity, c (veh/h)		0										965				
v/c Ratio												0.02				
95% Queue Length, Q_{95} (veh)												0.1				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

HCS 2010 Two-Way Stop-Control Report

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Eastbound Ramps
Analysis Year	2025	North/South Street	Roundtop Rd
Time Analyzed	2025 PM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	2	1							18	34		20	140	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										57		174		
Capacity, c (veh/h)		0										1001				
v/c Ratio												0.06				
95% Queue Length, Q_{95} (veh)												0.2				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

[illegible]

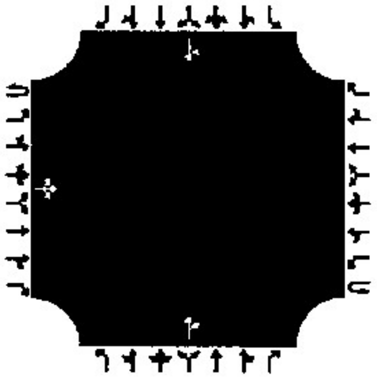
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2025
Time Analyzed	2025 PM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 East R
Jurisdiction	
East/West Street	I-80 Eastbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.89
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		4	2	1							18	34		310	20	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

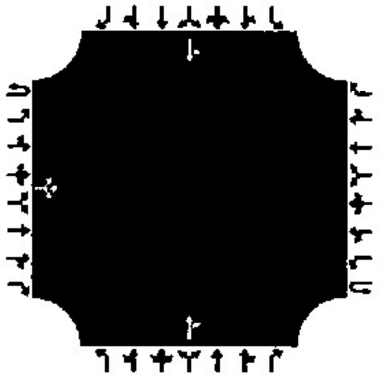
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4										58		370		
Capacity, c (veh/h)		0										1002				
v/c Ratio												0.06				
95% Queue Length, Q_{95} (veh)												0.2				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

[illegible]

General Information		**Site Information**	
Analyst	G Grigsby	Intersection	Roundtop Rd @ 80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Eastbound Ramps
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 AM Peak No Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	0	3							8	13		111	14	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										23		136		
Capacity, c (veh/h)		0										993				
v/c Ratio												0.02				
95% Queue Length, Q_{95} (veh)												0.1				
Control Delay (s/veh)												8.7				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.7							
Approach LOS									A							

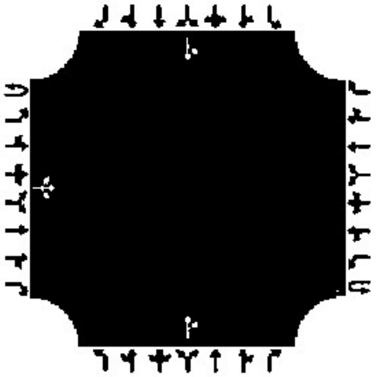
[illegible]

General Information

Site Information

Analyst	G Grigsby	Intersection	Roundtop Rd @ I-80 East R
Agency/Co.	Y2 Consultants, LLC	Jurisdiction	
Date Performed	11/8/2022	East/West Street	I-80 Eastbound Ramps
Analysis Year	2035	North/South Street	Roundtop Rd
Time Analyzed	2035 AM Peak Build	Peak Hour Factor	0.89
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	Gold King Mine		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		5	0	3							8	13		116	14	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6										24		146		
Capacity, c (veh/h)		0										993				
v/c Ratio												0.02				
95% Queue Length, Q_{95} (veh)												0.1				
Control Delay (s/veh)												8.7				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.7							
Approach LOS									A							

HCS 2010™ TWSC Version 6.90 Generated: 11/15/2022 1:21:39 PM

Roundtop Rd @ I-80 East Ramp 2035 AM Peak Build.xtw

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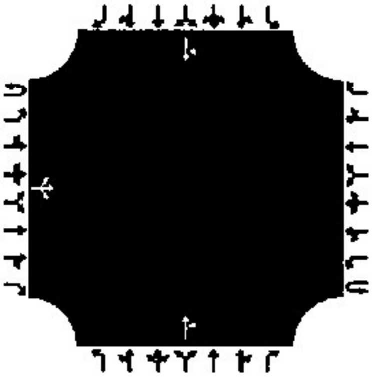
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak No Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 East R
Jurisdiction	
East/West Street	I-80 Eastbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		3	3	1							16	44		163	19	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Approach	Eastbound				Westbound				Northbound				Southbound			
Flow Rate, v (veh/h)		3										65		198		
Capacity, c (veh/h)		0										1017				
v/c Ratio												0.06				
95% Queue Length, Q_{95} (veh)												0.2				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

[illegible]

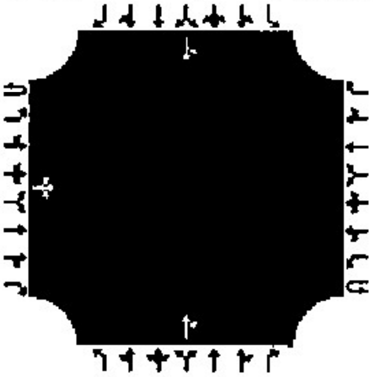
General Information

Analyst	G Grigsby
Agency/Co.	Y2 Consultants, LLC
Date Performed	11/8/2022
Analysis Year	2035
Time Analyzed	2035 PM Peak Build
Intersection Orientation	East-West
Project Description	Gold King Mine

Site Information

Intersection	Roundtop Rd @ I-80 East R
Jurisdiction	
East/West Street	I-80 Eastbound Ramps
North/South Street	Roundtop Rd
Peak Hour Factor	0.82
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		4	3	1							16	44		214	19	
Percent Heavy Vehicles (%)		3									3	3		3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

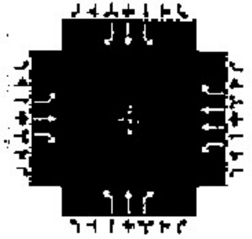
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

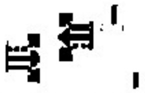
Flow Rate, v (veh/h)		5										74		284		
Capacity, c (veh/h)		0										1014				
v/c Ratio												0.07				
95% Queue Length, Q_{95} (veh)												0.2				
Control Delay (s/veh)												8.8				
Level of Service, LOS												A				
Approach Delay (s/veh)									8.8							
Approach LOS									A							

HCS 2010 Signalized Intersection Results Summary

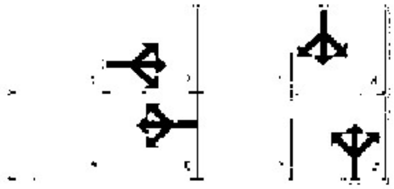
General Information				Intersection Information	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2022	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	Polk.Taft-E.Pershing 2045 AM Peak.xus		
Project Description	2022 AM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	163	5	62	12	329	41	0	158	45	35	3



Signal Information										
Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	36.2	3.1	8.7	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0	0.0



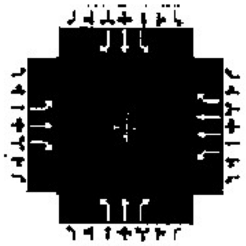
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		40.2		40.2		12.7		7.1
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g s*), s						8.1		3.6
Green Extension Time (*g e*), s		0.0		0.0		0.8		0.2
Phase Call Probability						0.97		0.78
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	10	177	5	67	13	358	45	0	172	49	38	3
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1423	1900	1610	1226	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g s*), s	0.2	2.4	0.1	1.5	0.1	6.8	1.3	0.0	6.1	1.6	1.2	0.1
Cycle Queue Clearance Time (*g c*), s	0.3	2.4	0.1	4.0	0.1	6.8	1.3	0.0	6.1	1.6	1.2	0.1
Green Ratio (*g/C*)	0.60	0.60	0.60	0.60	0.60	0.60	0.14	0.14	0.14	0.05	0.05	0.05
Capacity (*c*), veh/h	977	1147	972	810	2184	972	261	274	232	94	99	84
Volume-to-Capacity Ratio (*X*)	0.010	0 154	0.006	0.083	0.006	0.368	0.171	0.000	0.739	0.521	0.386	0.039
Back of Queue (*Q*), ft/ln (50 th percentile)	1	19.3	0.5	8.6	0.6	47.2	13.3	0	60.9	18.8	14	1.1
Back of Queue (*Q*), veh/ln (50 th percentile)	0.0	0.8	0.0	0.3	0.0	1.9	0.5	0.0	2.4	0.8	0.6	0.0
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d 1*), s/veh	4.8	5.2	4.7	6.1	4.7	6.1	22.5	0.0	24.6	27.7	27.5	27.0
Incremental Delay (*d 2*), s/veh	0.0	0.3	0.0	0.2	0.0	1.1	0.3	0.0	4.6	4.4	2.5	0.2
Initial Queue Delay (*d 3*), 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
Control Delay (*d*), s/veh	4.8	5.5	4.7	6.3	4 7	7.1	22.8	0.0	29.2	32.1	30.0	27.2
Level of Service (LOS)	A	A	A	A	A	A	C		C	C	C	C
Approach Delay, s/veh / LOS	5.4		A	6.9		A	27.9		C	31.1		C
Intersection Delay, s/veh / LOS			13.8						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	0.8	A	0.8	A	0.8	A	0.6	A

HCS 2010 Signalized Intersection Results Summary

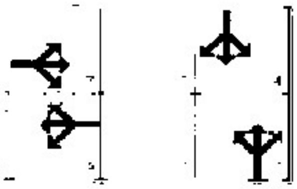
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2022	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2022 PM Peak.xus		
Project Description	2022 PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	16	161	1	35	82	71	85	0	115	227	128	13

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	30.4	10.6	6.9	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



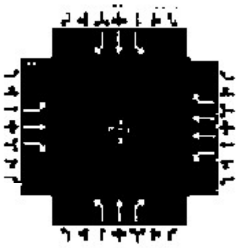
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		34.4		34.4		10.9		14.6
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g* $_s$), s						6.5		9.8
Green Extension Time (*g* $_e$), s		0.0		0.0		0.7		0.9
Phase Call Probability						0.97		1.00
Max Out Probability						0.00		0.23

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	17	175	1	38	89	77	92	0	125	247	139	14
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1328	1900	1610	1229	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g* $_s$), s	0.4	3.0	0.0	1.0	0.7	1.5	2.9	0.0	4.5	7.8	3.9	0.4
Cycle Queue Clearance Time (*g* $_c$), s	1.2	3.0	0.0	4.0	0.7	1.5	2.9	0.0	4.5	7.8	3.9	0.4
Green Ratio (*g/C*)	0.51	0.51	0.51	0.51	0.51	0.51	0.12	0.12	0.12	0.18	0.18	0.18
Capacity (*c*), veh/h	777	963	816	681	1834	816	210	220	187	321	337	285
Volume-to-Capacity Ratio (*X*)	0.022	0.182	0.001	0.056	0.049	0.095	0.441	0.000	0.670	0.769	0.413	0.049
Back of Queue (*Q*), ft/ln (50 th percentile)	2.6	27.3	0.2	6.6	6.1	11.6	30.4	0	44.8	84.4	41.7	3.9
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	1.1	0.0	0.3	0.2	0.5	1.2	0.0	1.8	3.4	1.7	0.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d* $_1$), s/veh	7.8	8.0	7.3	9.1	7.5	7.7	24.7	0.0	25.4	23.5	21.9	20.5
Incremental Delay (*d* $_2$), s/veh	0.1	0.4	0.0	0.2	0.1	0.2	1.5	0.0	4.1	3.9	0.8	0.1
Initial Queue Delay (*d* $_3$), 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
Control Delay (*d*), s/veh	7.8	8.5	7.3	9.3	7.5	7.9	26.2	0.0	29.5	27.4	22.7	20.6
Level of Service (LOS)	A	A	A	A	A	A	C		C	C	C	C
Approach Delay, s/veh / LOS	8.4		A	8.0		A	28.1		C	25.5		C
Intersection Delay, s/veh / LOS				19.3						B		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	0.8	A	0.7	A	0.8	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

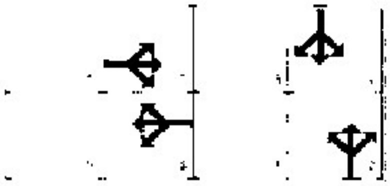
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2025	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2025 AM Peak No-...		
Project Description	2025 AM Peak - No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	12	178	6	65	12	351	48	0	169	45	41	3

Signal Information

Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	35.9	3.2	9.0	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0	0.0



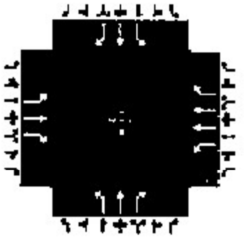
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		39.9		39.9		13.0		7.2
Change Period, (*Y+R* c), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g* s), s						8.3		3.5
Green Extension Time (*g* e), s		0.0		0.0		0.8		0.2
Phase Call Probability						0.98		0.79
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	13	187	6	68	13	369	51	0	178	47	43	3
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1424	1900	1610	1215	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g* s), s	0.2	2.6	0.1	1.6	0.1	7.2	1.5	0.0	6.3	1.5	1.3	0.1
Cycle Queue Clearance Time (*g* c), s	0.3	2.6	0.1	4.2	0.1	7.2	1.5	0.0	6.3	1.5	1.3	0.1
Green Ratio (*g/C*)	0.60	0.60	0.60	0.60	0.60	0.60	0.15	0.15	0.15	0.05	0.05	0.05
Capacity (*c*), veh/h	969	1136	963	793	2164	963	270	283	240	95	100	85
Volume-to-Capacity Ratio (*X*)	0.013	0.165	0.007	0.086	0.006	0.384	0.187	0.000	0.740	0.497	0.431	0.037
Back of Queue (*Q*), ft/ln (50 th percentile)	1.3	21.2	0.7	9	0.6	50.9	15	0	62.8	18	16	1.1
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	0.8	0.0	0.4	0.0	2.0	0.6	0.0	2.5	0.7	0.6	0.0
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d* 1), s/veh	4.9	5.4	4.9	6.3	4.9	6.3	22.3	0.0	24.4	27.6	27.5	27.0
Incremental Delay (*d* 2), s/veh	0.0	0.3	0.0	0.2	0.0	1.2	0.3	0.0	4.4	4.0	2.9	0.2
Initial Queue Delay (*d* 3), 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
Control Delay (*d*), s/veh	5.0	5.7	4.9	6.5	4.9	7.4	22.7	0.0	28.9	31.6	30.5	27.2
Level of Service (LOS)	A	A	A	A	A	A	C		C	C	C	C
Approach Delay, s/veh / LOS	5.6		A	7.2		A	27.5		C	30.9		C
Intersection Delay, s/veh / LOS			13.9						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	0.8	A	0.9	A	0.9	A	0.6	A

HCS 2010 Signalized Intersection Results Summary

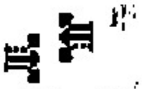
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2025	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2025 AM Peak Buil...		
Project Description	2025 AM Peak - Build				

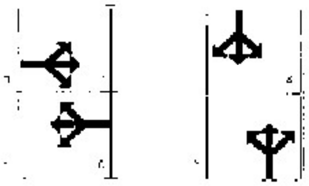


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	12	185	13	65	100	351	136	0	169	45	41	3

Signal Information

Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On	Green	35.4	3.2	9.4	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0
				Red	1.0	1.0	1.0	0.0	0.0	0.0





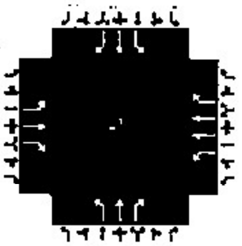
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		39.4		39.4		13.4		7.2
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g* $_s$), s						8.3		3.5
Green Extension Time (*g* $_e$), s		0.0		0.0		1.2		0.2
Phase Call Probability						1.00		0.79
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	13	195	14	68	105	369	143	0	178	47	43	3
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1309	1900	1610	1207	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g* $_s$), s	0.2	2.8	0.2	1.6	0.7	7.3	4.3	0.0	6.3	1.5	1.3	0.1
Cycle Queue Clearance Time (*g* $_c$), s	1.0	2.8	0.2	4.5	0.7	7.3	4.3	0.0	6.3	1.5	1.3	0.1
Green Ratio (*g/C*)	0.59	0.59	0.59	0.59	0.59	0.59	0.16	0.16	0.16	0.05	0.05	0.05
Capacity (*c*), veh/h	877	1122	951	776	2137	951	283	298	252	95	100	85
Volume-to-Capacity Ratio (*X*)	0.014	0.174	0.014	0.088	0.049	0.388	0.505	0.000	0.705	0.497	0.431	0.037
Back of Queue (*Q*), ft/ln (50 th percentile)	1.4	22.8	1.5	9.3	5.4	52.3	45.3	0	61.1	18	16	1.1
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	0.9	0.1	0.4	0.2	2.1	1.8	0.0	2.4	0.7	0.6	0.0
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d* $_1$), s/veh	5.4	5.6	5.1	6.6	5.2	6.5	23.2	0.0	24.0	27.6	27.5	27.0
Incremental Delay (*d* $_2$), s/veh	0.0	0.3	0.0	0.2	0.0	1.2	1.4	0.0	3.6	4.0	2.9	0.2
Initial Queue Delay (*d* $_3$), 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
Control Delay (*d*), s/veh	5.4	5.9	5.1	6.8	5.2	7.7	24.6	0.0	27.6	31.6	30.5	27.2
Level of Service (LOS)	A	A	A	A	A	A	C		C	C	C	C
Approach Delay, s/veh / LOS	5.9		A	7.1		A	26.2		C	30.9		C
Intersection Delay, s/veh / LOS			14.0						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	0.9	A	0.9	A	1.0	A	0.6	A

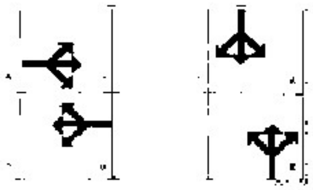
HCS 2010 Signalized Intersection Results Summary

General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.86
Urban Street		Analysis Year	.2025	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2025 PM Peak No-...		
Project Description	2025 PM Peak - No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	19	178	1	37	89	74	97	0	121	237	141	15

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



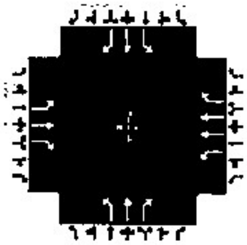
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		32.7		32.7		11.7		15.6
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		0.0		0.0
Queue Clearance Time (g_s), s		0.0		0.0		0.0		0.0
Green Extension Time (g_e), s		0.0		0.0		0.0		0.0
Phase Call Probability		0.00		0.00		0.00		0.00
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Saturation Flow Rate (*s*), veh/h/ln	0	0	0	0	0	0	0	0	0	0	0	0
Queue Service Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Queue Clearance Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Ratio (*g/C*)	0.48	0.48	0.48	0.48	0.48	0.48	0.13	0.13	0.13	0.19	0.19	0.19
Capacity (*c*), veh/h	727	909	770	615	1731	770	232	243	206	350	368	312
Volume-to-Capacity Ratio (*X*)	0.030	0.228	0.002	0.070	0.060	0.112	0.487	0.000	0.683	0.787	0.446	0.056
Back of Queue (*Q*), ft/ln (50 th percentile)	3.7	36	0.2	8.3	7.8	14.2	36.9	0	49.7	95.9	48.5	4.7
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	1.4	0.0	0.3	0.3	0.6	1.5	0.0	2.0	3.8	1.9	0.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	8.8	9.2	8.2	10.7	8.4	8.6	24.3	0.0	25.0	23.0	21.4	19.7
Incremental Delay (d_2), s/veh	0.1	0.6	0.0	0.2	0.1	0.3	1.6	0.0	4.0	5.0	0.8	0.1
Initial Queue Delay (d_3), 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
Control Delay (*d*), s/veh	8.9	9.7	8.2	10.9	8.5	8.9	25.9	0.0	29.0	28.0	22.2	19.8
Level of Service (LOS)	A	A	A	B	A	A	C		C	C	C	B
Approach Delay, s/veh / LOS	9.6		A	9.1		A	27.6		C	25.6		C
Intersection Delay, s/veh / LOS			19.6						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	0.9	A	0.7	A	0.9	A	1.2	A

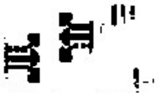
HCS 2010 Signalized Intersection Results Summary

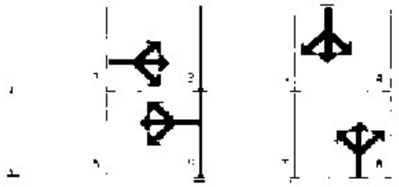
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2025	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2025 PM Peak Buil...		
Project Description	2025 PM Peak - Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	19	266	89	37	96	74	104	0	121	237	141	15

Signal Information									
Cycle, s	60.0	Reference Phase	2						
Offset, s	0	Reference Point	End	Green	30.1	10.8	7.1	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0	0.0



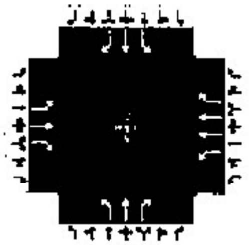


Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		34.1		34.1		11.1		14.8
Change Period, (*Y+R* c), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g* s), s						6.5		9.9
Green Extension Time (*g* e), s		0.0		0.0		0.7		0.9
Phase Call Probability						0.98		1.00
Max Out Probability						0.00		0.25

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	20	280	94	39	101	78	109	0	127	249	148	16
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1314	1900	1610	1117	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g* s), s	0.5	5.2	1.8	1.3	0.9	1.5	3.4	0.0	4.5	7.9	4.2	0.5
Cycle Queue Clearance Time (*g* c), s	1.3	5.2	1.8	6.4	0.9	1.5	3.4	0.0	4.5	7.9	4.2	0.5
Green Ratio (*g/C*)	0.50	0.50	0.50	0.50	0.50	0.50	0.12	0.12	0.12	0.18	0.18	0.18
Capacity (*c*), veh/h	761	953	808	584	1815	808	215	226	192	324	340	289
Volume-to-Capacity Ratio (*X*)	0.026	0.294	0.116	0.067	0.056	0.096	0.508	0.000	0.665	0.769	0.436	0.055
Back of Queue (*Q*), ft/ln (50 th percentile)	3.1	47.8	14.5	7.6	7.1	11.9	36.4	0	45.2	85.1	44.6	4.4
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	1.9	0.6	0.3	0.3	0.5	1.5	0.0	1.8	3.4	1.8	0.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d* 1), s/veh	8.0	8.7	7.9	10.6	7.7	7.8	24.8	0.0	25.3	23.4	21.9	20.4
Incremental Delay (*d* 2), s/veh	0.1	0.8	0.3	0.2	0.1	0.2	1.9	0.0	3.9	3.9	0.9	0.1
Initial Queue Delay (*d* 3), 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
Control Delay (*d*), s/veh	8.1	9.5	8.2	10.8	7.7	8.1	26.6	0.0	29.2	27.3	22.8	20.5
Level of Service (LOS)	A	A	A	B	A	A	C		C	C	C	C
Approach Delay, s/veh / LOS	9.1		A	8.4		A	28.0		C	25.4		C
Intersection Delay, s/veh / LOS			17.9						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.7	A	0.9	A	1.2	A

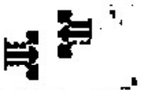
HCS 2010 Signalized Intersection Results Summary



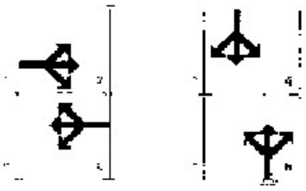
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2035 AM Peak No-...		
Project Description	2035 AM Peak - No Build				

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	26	239	13	76	11	435	76	0	211	43	63	4

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	33.5	3.7	10.9	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



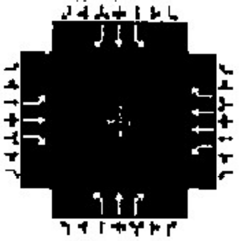
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		37.5		37.5		14.9		7.7
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (*g s*), s						9 9		4.0
Green Extension Time (*g e*), s		0.0		0.0		1.1		0.2
Phase Call Probability						0.99		0.85
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	27	252	14	80	12	458	80	0	222	45	66	4
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1425	1900	1610	1146	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g s*), s	0.5	4.1	0.2	2.3	0.1	10.5	2.3	0.0	7.9	1.4	2.0	0.1
Cycle Queue Clearance Time (*g c*), s	0.6	4.1	0.2	6.4	0.1	10.5	2.3	0.0	7.9	1.4	2.0	0.1
Green Ratio (*g/C*)	0.56	0.56	0.56	0.56	0.56	0.56	0.18	0.18	0.18	0.06	0.06	0.06
Capacity (*c*), veh/h	913	1060	898	682	2018	898	328	345	292	110	116	98
Volume-to-Capacity Ratio (*X*)	0.030	0.237	0.015	0.117	0.006	0.510	0 244	0.000	0.761	0.410	0.573	0.043
Back of Queue (*Q*), ft/ln (50 th percentile)	3.4	34.8	1.7	13.2	0.7	81.3	22.9	0	76.1	16.4	25.1	1.4
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	1.4	0.1	0.5	0.0	3.3	0.9	0.0	3.0	0.7	1.0	0.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d 1*), s/veh	6.0	6.8	5.9	8.4	5.9	8.2	21.0	0.0	23.3	27.1	27.4	26.5
Incremental Delay (*d 2*), s/veh	0.1	0.5	0.0	0.4	0.0	2 1	0.4	0.0	4.1	2.4	4.4	0.2
Initial Queue Delay (*d 3*), 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
Control Delay (*d*), s/veh	6.1	7.3	5 9	8.7	5.9	10.3	21.4	0.0	27.4	29.6	31 8	26.7
Level of Service (LOS)	A	A	A	A	A	B	C		C	C	C	C
Approach Delay, s/veh / LOS	7.1		A	10.0		A	25.8		C	30.7		C
Intersection Delay, s/veh / LOS				15.0						B		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	1.0	A	0.9	A	1.0	A	0.7	A

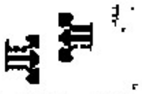
HCS 2010 Signalized Intersection Results Summary

General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2035 AM Peak Buil...		
Project Description	2035 AM Peak - Build				

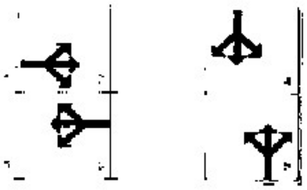


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	26	242	16	76	38	435	103	0	211	43	63	4

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	33.3	3.7	11.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



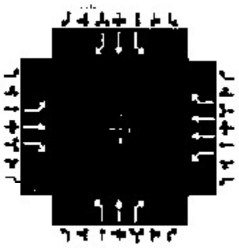
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		37.3		37.3		15.0		7.7
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.1
Queue Clearance Time (g_s), s						9.8		4.0
Green Extension Time (g_e), s		0.0		0.0		1.2		0.2
Phase Call Probability						1.00		0.85
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	27	255	17	80	40	458	108	0	222	45	66	4
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1389	1900	1610	1143	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (g_s), s	0.5	4.1	0.3	2.3	0.3	10.6	3.1	0.0	7.8	1.4	2.0	0.1
Cycle Queue Clearance Time (g_c), s	0.8	4.1	0.3	6.5	0.3	10.6	3.1	0.0	7.8	1.4	2.0	0.1
Green Ratio (*g/C*)	0.56	0.56	0.56	0.56	0.56	0.56	0.18	0.18	0.18	0.06	0.06	0.06
Capacity (*c*), veh/h	885	1056	895	676	2011	895	332	348	295	110	116	98
Volume-to-Capacity Ratio (*X*)	0.031	0.241	0.019	0.118	0.020	0.512	0.327	0.000	0.753	0.410	0.573	0.043
Back of Queue (*Q*), ft/ln (50 th percentile)	3.5	35.6	2.1	13.3	2.3	81.7	31.7	0	75.7	16.4	25.1	1.4
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	1.4	0.1	0.5	0.1	3.3	1.3	0.0	3.0	0.7	1.0	0.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	6.2	6.8	6.0	8.5	6.0	8.3	21.3	0.0	23.2	27.1	27.4	26.5
Incremental Delay (d_2), s/veh	0.1	0.5	0.0	0.4	0.0	2.1	0.6	0.0	3.9	2.4	4.4	0.2
Initial Queue Delay (d_3), 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
Control Delay (*d*), s/veh	6.2	7.4	6.0	8.8	6.0	10.4	21.9	0.0	27.1	29.6	31.8	26.7
Level of Service (LOS)	A	A	A	A	A	B	C		C	C	C	C
Approach Delay, s/veh / LOS	7.2		A	9.8		A	25.4		C	30.7		C
Intersection Delay, s/veh / LOS			15.0						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	1.0	A	1.0	A	1.0	A	0.7	A

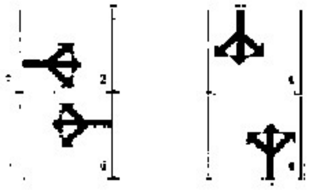
HCS 2010 Signalized Intersection Results Summary

General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2035 PM Peak No-...		
Project Description	2035 PM Peak - No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	31	248	2	43	115	86	149	0	140	270	194	22

Signal Information										
Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	27.9	12.0	8.1	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0	0.0



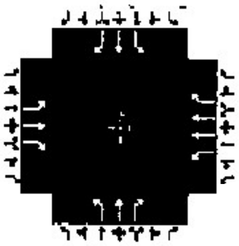
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		31.9		31.9		12.1		16.0
Change Period, (Y+R c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		0.0		0.0		4.2		4.1
Queue Clearance Time (g s), s						7.2		10.9
Green Extension Time (g e), s		0.0		0.0		0.9		1.0
Phase Call Probability						0.99		1.00
Max Out Probability						0.00		0.47

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	33	261	2	45	121	91	157	0	147	284	204	23
Adjusted Saturation Flow Rate (s), veh/h/ln	1291	1900	1610	1136	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (g s), s	0.9	5.1	0.0	1.5	1.1	1.9	4.9	0.0	5.2	8.9	5.8	0.7
Cycle Queue Clearance Time (g c), s	2.0	5.1	0.0	6.7	1.1	1.9	4.9	0.0	5.2	8.9	5.8	0.7
Green Ratio (g/C)	0.46	0.46	0.46	0.46	0.46	0.46	0.14	0.14	0.14	0.20	0.20	0.20
Capacity (c), veh/h	696	883	749	551	1662	749	245	257	218	361	379	321
Volume-to-Capacity Ratio (X)	0.047	0.295	0.003	0.082	0.072	0.121	0.640	0.000	0.676	0.787	0.538	0.072
Back of Queue (Q), ft/ln (50 th percentile)	5.7	49.3	0.3	9.6	9.6	15.7	53.2	0	51.3	99.4	61.7	6.2
Back of Queue (Q), veh/ln (50 th percentile)	0.2	2.0	0.0	0.4	0.4	0.6	2.1	0.0	2.1	4.0	2.5	0.2
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d 1), s/veh	9.4	10.0	8.6	12.0	8.9	9.1	24.6	0.0	24.7	22.8	21.5	19.5
Incremental Delay (d 2), s/veh	0.1	0.9	0.0	0.3	0.1	0.3	2.8	0.0	3.6	5.3	1.2	0.1
Initial Queue Delay (d 3), 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
Control Delay (d), s/veh	9.6	10.8	8.6	12.3	9.0	9.4	27.3	0.0	28.3	28.0	22.7	19.6
Level of Service (LOS)	A	B	A	B	A	A	C		C	C	C	B
Approach Delay, s/veh / LOS	10.7		B	9.7		A	27.8		C	25.5		C
Intersection Delay, s/veh / LOS			19.9						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	1.0	A	0.7	A	1.0	A	1.3	A

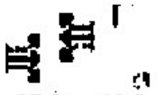
HCS 2010 Signalized Intersection Results Summary

General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.95
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 South @ Happy Jac...	File Name	I-25 South - Happy Jack Rd - 2035 PM Peak Buil...		
Project Description	2035 PM Peak - Build				

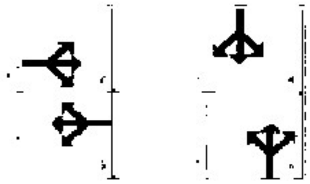


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	31	275	29	43	118	86	152	0	140	270	194	22

Signal Information				
Cycle, s	60.0	Reference Phase	2	
Offset, s	0	Reference Point	End	
Uncoordinated	No	Simult. Gap E/W	On	
Force Mode	Fixed	Simult. Gap N/S	On	



Green	27.9	12.0	8.1	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		5.0		9.0		9.0
Phase Duration, s		31.9		31.9		12.1		16.0
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		4.1
Queue Clearance Time (*g s*), s						7.2		10.9
Green Extension Time (*g e*), s		0.0		0.0		1.0		1.0
Phase Call Probability						0.99		1.00
Max Out Probability						0.00		0.47

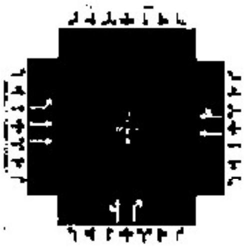
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	33	289	31	45	124	91	160	0	147	284	204	23
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1287	1900	1610	1107	1809	1610	1810	1900	1610	1810	1900	1610
Queue Service Time (*g s*), s	0.9	5.8	0.6	1.6	1.1	1.9	5.0	0.0	5.2	8.9	5.8	0.7
Cycle Queue Clearance Time (*g c*), s	2.0	5.8	0.6	7.4	1.1	1.9	5.0	0.0	5.2	8.9	5.8	0.7
Green Ratio (*g/C*)	0.46	0.46	0.46	0.46	0.46	0.46	0.14	0.14	0.14	0.20	0.20	0.20
Capacity (*c*), veh/h	694	883	748	528	1681	748	245	258	218	361	379	321
Volume-to-Capacity Ratio (*X*)	0.047	0.328	0.041	0.086	0.074	0.121	0.652	0.000	0.675	0.787	0.538	0.072
Back of Queue (*Q*), ft/ln (50 th percentile)	5.7	55.7	5.1	9.9	9.9	15.7	54.5	0	51.3	99.4	61.7	6.2
Back of Queue (*Q*), veh/ln (50 th percentile)	0.2	2.2	0.2	0.4	0.4	0.6	2.2	0.0	2.1	4.0	2.5	0.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d 1*), s/veh	9.5	10.1	8.8	12.5	8.9	9.1	24.6	0.0	24.7	22.8	21.5	19.5
Incremental Delay (*d 2*), s/veh	0.1	1.0	0.1	0.3	0.1	0.3	2.9	0.0	3.6	5.3	1.2	0.1
Initial Queue Delay (*d 3*), 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
Control Delay (*d*), s/veh	9.6	11.1	8.9	12.8	9.0	9.4	27.5	0.0	28.3	28.0	22.7	19.6
Level of Service (LOS)	A	B	A	B	A	A	C		C	C	C	B

	EB		WB		NB		SB	
Approach Delay, s/veh / LOS	10.8	B	9.8	A	27.9	C	25.5	C
Intersection Delay, s/veh / LOS		19.6				B		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	2.6	B	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.7	A	1.0	A	1.3	A

HCS 2010 Signalized Intersection Results Summary

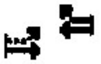
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2022	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2022 AM Peak xus		
Project Description	2022 AM Peak				



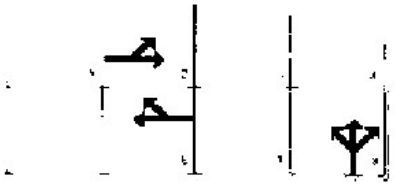
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	82	281			226	80	174	2	70			

Signal Information

Cycle, s	60.0	Reference Phase	2	
Offset, s	0	Reference Point	End	
Uncoordinated	No	Simult. Gap E/W	On	
Force Mode	Fixed	Simult. Gap N/S	On	



Green	43.4	8.6	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0



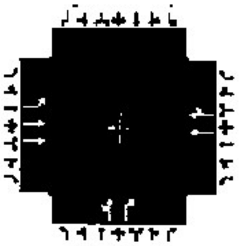
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		47.4		47.4		12.6		
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* $_s$), s						8.1		
Green Extension Time (*g* $_e$), s		0.0		0.0		0.6		
Phase Call Probability						0.99		
Max Out Probability						0.06		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	89	305			171	162		191	76			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1064	1809			1900	1732		1811	1610			
Queue Service Time (*g* $_s$), s	1.7	1.5			2.5	1.7		6.1	2.5			
Cycle Queue Clearance Time (*g* $_c$), s	4.2	1.5			2.5	1.7		6.1	2.5			
Green Ratio (*g/C*)	0.72	0.72			0.72	0.72		0.14	0.14			
Capacity (*c*), veh/h	846	2617			1375	1253		259	231			
Volume-to-Capacity Ratio (*X*)	0.105	0.117			0.124	0.129		0.738	0.330			
Back of Queue (*Q*), ft/ln (50 th percentile)	6.8	7			8.8	8.5		67.1	23.6			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.3	0.3			0.4	0.3		2.7	0.9			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* $_1$), s/veh	3.3	2.5			2.5	2.5		24.6	23.1			
Incremental Delay (*d* $_2$), s/veh	0.3	0.1			0.2	0.2		4.1	0.8			
Initial Queue Delay (*d* $_3$), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	3.6	2.6			2.7	2.7		28.7	23.9			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	2.8		A	2.7		A	27.4		C	0.0		
Intersection Delay, s/veh / LOS			9.4							A		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	0.8	A	0.8	A	0.9	A		

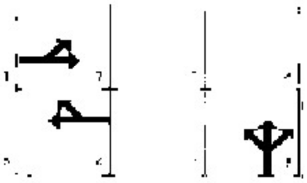
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2022	Analysis Period	1> 7.00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2022 PM Peak.xus		
Project Description	2022 PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	185	325			160	201	48	1	39			

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



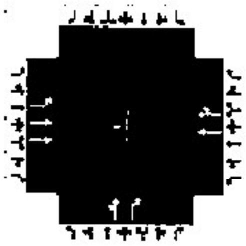
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		47.4		47.4		12.6		
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		0.0		
Queue Clearance Time (*g* $_s$), s		0.0		0.0		0.0		
Green Extension Time (*g* $_e$), s		0.0		0.0		0.0		
Phase Call Probability		0.00		0.00		0.00		
Max Out Probability		0.00		0.00		0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	0	0			0	0		0	0			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	0	0			0	0		0	0			
Queue Service Time (*g* $_s$), s	0.0	0.0			0.0	0.0		0.0	0.0			
Cycle Queue Clearance Time (*g* $_c$), s	0.0	0.0			0.0	0.0		0.0	0.0			
Green Ratio (*g/C*)	0.72	0.72			0.72	0.72		0.14	0.14			
Capacity (*c*), veh/h	846	2617			1375	1253		259	231			
Volume-to-Capacity Ratio (*X*)	0.105	0.117			0.124	0.129		0.738	0.330			
Back of Queue (*Q*), ft/ln (50 th percentile)	6.8	7			8.8	8.5		67.1	23.6			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.3	0.3			0.4	0.3		2.7	0.9			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* $_1$), s/veh	3.3	2.5			2.5	2.5		24.6	23.1			
Incremental Delay (*d* $_2$), s/veh	0.3	0.1			0.2	0.2		4.1	0.8			
Initial Queue Delay (*d* $_3$), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	3.6	2.6			2.7	2.7		28.7	23.9			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	2.8		A	2.7		A	27.4		C	0.0		
Intersection Delay, s/veh / LOS			9.4						A			

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.6		A	1.8		A	2.7		B	2.8		C
Bicycle LOS Score / LOS	0.8		A	0.8		A	0.9		A			

HCS 2010 Signalized Intersection Results Summary

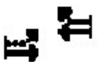
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.90
Urban Street		Analysis Year	2025	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2025 AM Peak No B...		
Project Description	2025 AM Peak - No Build				

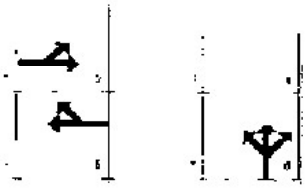


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	91	294			236	85	186	2	72			

Signal Information

Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	42.8	9.2	0.0	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0



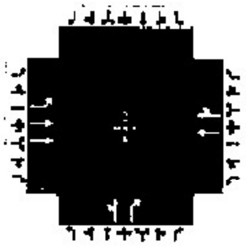


Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		46.8		46.8		13.2		
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* $_s$), s						8.6		
Green Extension Time (*g* $_e$), s		0.0		0.0		0.7		
Phase Call Probability						0.99		
Max Out Probability						0.10		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	101	327			183	173		209	80			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1041	1809			1900	1730		1810	1610			
Queue Service Time (*g* $_s$), s	2.1	1.7			2.7	1.9		6.6	2.7			
Cycle Queue Clearance Time (*g* $_c$), s	4.8	1.7			2.7	1.9		6.6	2.7			
Green Ratio (*g/C*)	0.71	0.71			0.71	0.71		0.15	0.15			
Capacity (*c*), veh/h	816	2580			1355	1234		278	247			
Volume-to-Capacity Ratio (*X*)	0.124	0.127			0.135	0.140		0.752	0.324			
Back of Queue (*Q*), ft/ln (50 th percentile)	8.5	8.5			10.5	10.1		72.7	24.4			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.3	0.3			0.4	0.4		2.9	1.0			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* $_1$), s/veh	3.6	2.7			2.7	2.7		24.3	22.6			
Incremental Delay (*d* $_2$), s/veh	0.3	0.1			0.2	0.2		4.1	0.8			
Initial Queue Delay (*d* $_3$), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	4.0	2.8			2.9	3.0		28.4	23.4			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	3.1		A	3.0		A	27.0		C	0.0		
Intersection Delay, s/veh / LOS			9.5						A			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	0.8	A	0.8	A	1.0	A		

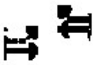
HCS 2010 Signalized Intersection Results Summary



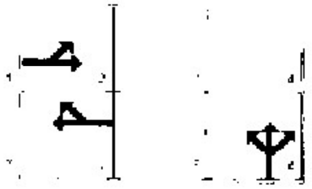
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.89
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2025 AM Peak Build...		
Project Description	2025 AM Peak - Build				

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	98	294			236	85	274	2	72			

Signal Information



Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On	Green	39.5	12.5	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.0	3.0	0.0	0.0	0.0	0.0
				Red	1.0	1.0	0.0	0.0	0.0	0.0



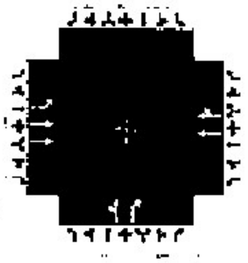
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		43.5		43.5		16.5		
Change Period, (Y+R c), s		4.0		4.0		4.0		
Max Allow Headway (MAH), s		0.0		0.0		4.2		
Queue Clearance Time (g s), s						11.8		
Green Extension Time (g e), s		0.0		0.0		0.7		
Phase Call Probability						1.00		
Max Out Probability						0.63		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (v), veh/h	110	330			186	175		310	81			
Adjusted Saturation Flow Rate (s), veh/h/ln	1037	1809			1900	1730		1810	1610			
Queue Service Time (g s), s	2.8	2.1			2.7	2.3		9.8	2.5			
Cycle Queue Clearance Time (g c), s	5.5	2.1			2.7	2.3		9.8	2.5			
Green Ratio (g/C)	0.66	0.66			0.66	0.66		0.21	0.21			
Capacity (c), veh/h	756	2381			1251	1139		377	336			
Volume-to-Capacity Ratio (X)	0.146	0.139			0.148	0.154		0.822	0.241			
Back of Queue (Q), ft/ln (50 th percentile)	12.5	12.8			15.6	14.9		114.4	22.3			
Back of Queue (Q), veh/ln (50 th percentile)	0.5	0.5			0.6	0.6		4.6	0.9			
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (d 1), s/veh	5.0	3.9			3.9	3.9		22.7	19.8			
Incremental Delay (d 2), s/veh	0.4	0.1			0.3	0.3		7.7	0.4			
Initial Queue Delay (d 3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (d), s/veh	5.4	4.0			4.1	4.2		30.3	20.2			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	4.3		A	4.2		A	28.2		C	0.0		
Intersection Delay, s/veh / LOS			12.1						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	0.9	A	0.8	A	1.1	A		

HCS 2010 Signalized Intersection Results Summary

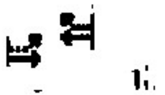
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2025	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2025 PM Peak No B...		
Project Description	2025 PM Peak - No Build				



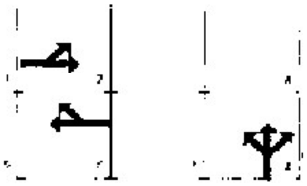
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	204	337			167	212	52	1	40			

Signal Information

Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	48.7	3.3	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0

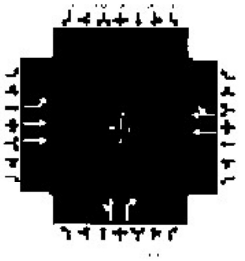


Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		52.7		52.7		7.3		
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* $_s$), s						3.9		
Green Extension Time (*g* $_e$), s		0.0		0.0		0.2		
Phase Call Probability						0.81		
Max Out Probability						0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	222	366			182	230		58	43			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	989	1809			1900	1610		1811	1610			
Queue Service Time (*g* $_s$), s	4.0	1.3			2.6	1.9		1.9	1.6			
Cycle Queue Clearance Time (*g* $_c$), s	6.7	1.3			2.6	1.9		1.9	1.6			
Green Ratio (*g/C*)	0.81	0.81			0.81	0.81		0.06	0.06			
Capacity (*c*), veh/h	879	2935			1541	1306		100	89			
Volume-to-Capacity Ratio (*X*)	0.252	0.125			0.118	0.176		0.574	0.488			
Back of Queue (*Q*), ft/ln (50 th percentile)	9.8	1.1			1.9	3		22.3	16.6			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.4	0.0			0.1	0.1		0.9	0.7			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* $_1$), s/veh	2.1	1.2			1.2	1.2		27.6	27.5			
Incremental Delay (*d* $_2$), s/veh	0.7	0.1			0.2	0.3		5.1	4.1			
Initial Queue Delay (*d* $_3$), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	2.8	1.3			1.3	1.5		32.7	31.6			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	1.8		A	1.5		A	32.3		C	0.0		
Intersection Delay, s/veh / LOS			4.5							A		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	1.0	A	0.8	A	0.7	A		

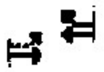
HCS 2010 Signalized Intersection Results Summary

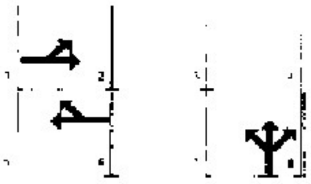


General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.89
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2025 PM Peak Build...		
Project Description	2025 PM Peak - Build				

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	292	337			167	212	59	1	40			

Signal Information





Cycle, s	60.0	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	48.3	3.7	0.0	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0

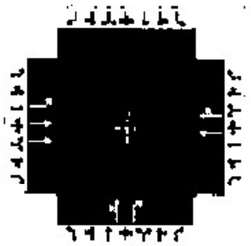
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		52.3		52.3		7.7		
Change Period, (*Y+R* c), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* s), s						4.2		
Green Extension Time (*g* e), s		0.0		0.0		0.2		
Phase Call Probability						0.85		
Max Out Probability						0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	328	379			188	238		67	45			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	977	1809			1900	1610		1811	1610			
Queue Service Time (*g* s), s	7.3	1.4			2.7	2.0		2.2	1.6			
Cycle Queue Clearance Time (*g* c), s	10.1	1.4			2.7	2.0		2.2	1.6			
Green Ratio (*g/C*)	0.80	0.80			0.80	0.80		0.06	0.06			
Capacity (*c*), veh/h	861	2910			1528	1295		113	100			
Volume-to-Capacity Ratio (*X*)	0.381	0.130			0.123	0.184		0.597	0.448			
Back of Queue (*Q*), ft/ln (50 th percentile)	18.8	1.7			2.5	4		25.8	16.6			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.8	0.1			0.1	0.2		1.0	0.7			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* 1), s/veh	2.6	1.3			1.3	1.3		27.4	27.1			
Incremental Delay (*d* 2), s/veh	1.3	0.1			0.2	0.3		5.0	3.1			
Initial Queue Delay (*d* 3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	3.9	1.4			1.4	1.7		32.4	30.2			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	2.6		A	1.6		A	31.5		C	0.0		
Intersection Delay, s/veh / LOS			4.8						A			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.8	A	0.7	A		

HCS 2010 Signalized Intersection Results Summary

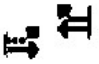
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.90
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2035 AM Peak No B...		
Project Description	2035 AM Peak - No Build				



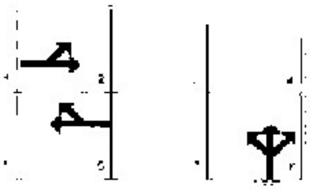
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	128	343			273	102	233	3	77			

Signal Information

Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	41.0	11.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0



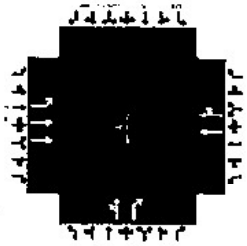
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		45.0		45.0		15.0		
Change Period, (*Y+R* c), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* s), s						10.3		
Green Extension Time (*g* e), s		0.0		0.0		0.7		
Phase Call Probability						1.00		
Max Out Probability						0.29		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	142	381			215	201		262	86			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	985	1809			1900	1725		1811	1610			
Queue Service Time (*g* s), s	3.7	2.2			3.2	2.5		8.3	2.8			
Cycle Queue Clearance Time (*g* c), s	6.9	2.2			3.2	2.5		8.3	2.8			
Green Ratio (*g/C*)	0.68	0.68			0.68	0.68		0.18	0.18			
Capacity (*c*), veh/h	741	2473			1299	1179		332	295			
Volume-to-Capacity Ratio (*X*)	0.192	0.154			0.166	0.171		0.791	0.290			
Back of Queue (*Q*), ft/ln (50 th percentile)	15.6	12.7			15.5	14.9		91.2	24.9			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.6	0.5			0.6	0.6		3.6	1.0			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* 1), s/veh	4.8	3.4			3.4	3.4		23.4	21.1			
Incremental Delay (*d* 2), s/veh	0.6	0.1			0.3	0.3		4.6	0.5			
Initial Queue Delay (*d* 3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	5.4	3.5			3.7	3.7		28.0	21.7			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	4.0	A		3.7	A		26.4	C		0.0		
Intersection Delay, s/veh / LOS			10.0							A		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	0.9	A	0.8	A	1.1	A		

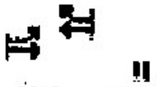
HCS 2010 Signalized Intersection Results Summary

General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.89
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2035 AM Peak Build...		
Project Description	2035 AM Peak - Build				

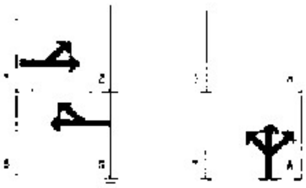


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	131	343			273	102	260	3	77			

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	39.9	12.1	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0



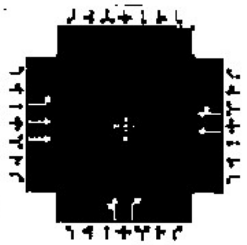
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		43.9		43.9		16.1		
Change Period, (*Y+R* $_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g* $_s$), s						11.4		
Green Extension Time (*g* $_e$), s		0.0		0.0		0.7		
Phase Call Probability						1.00		
Max Out Probability						0.50		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	147	385			218	204		296	87			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	981	1809			1900	1725		1811	1610			
Queue Service Time (*g* $_s$), s	4.1	2.4			3.2	2.7		9.4	2.7			
Cycle Queue Clearance Time (*g* $_c$), s	7.3	2.4			3.2	2.7		9.4	2.7			
Green Ratio (*g/C*)	0.67	0.67			0.67	0.67		0.20	0.20			
Capacity (*c*), veh/h	720	2408			1265	1149		364	324			
Volume-to-Capacity Ratio (*X*)	0.204	0.160			0.172	0.177		0.812	0.267			
Back of Queue (*Q*), ft/ln (50 th percentile)	17.7	14.4			17.7	16.8		106.9	24.3			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.7	0.6			0.7	0.7		4.3	1.0			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d* $_1$), s/veh	5.3	3.8			3.8	3.8		22.9	20.2			
Incremental Delay (*d* $_2$), s/veh	0.6	0.1			0.3	0.3		6.7	0.4			
Initial Queue Delay (*d* $_3$), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	6.0	3.9			4.1	4.1		29.6	20.7			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	4.5		A	4.1		A	27.5		C	0.0		
Intersection Delay, s/veh / LOS			11.0						B			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	0.9	A	0.8	A	1.1	A		

HCS 2010 Signalized Intersection Results Summary

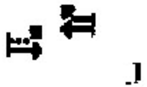
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.90
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2035 PM Peak No B...		
Project Description	2035 PM Peak - No Build				



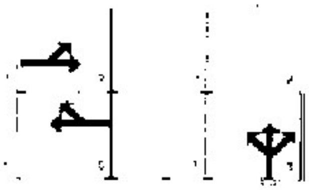
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	281	380			190	252	67	1	44			

Signal Information

Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	47.9	4.1	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		51.9		51.9		8.1		
Change Period, (*Y+R*c), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (*g*s), s						4.4		
Green Extension Time (*g*e), s		0.0		0.0		0.3		
Phase Call Probability						0.87		
Max Out Probability						0.00		

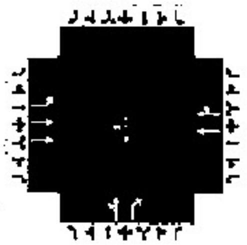
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	312	422			211	280		76	49			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	920	1809			1900	1610		1811	1610			
Queue Service Time (*g*s), s	7.8	1.6			3.1	2.6		2.4	1.7			
Cycle Queue Clearance Time (*g*c), s	11.0	1.6			3.1	2.6		2.4	1.7			
Green Ratio (*g/C*)	0.80	0.80			0.80	0.80		0.07	0.07			
Capacity (*c*), veh/h	806	2887			1516	1285		124	111			
Volume-to-Capacity Ratio (*X*)	0.387	0.146			0.139	0.218		0.608	0.442			
Back of Queue (*Q*), ft/ln (50 th percentile)	21.3	2.7			3.6	5.8		28.5	17.7			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.9	0.1			0.1	0.2		1.1	0.7			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (*d*1), s/veh	2.9	1.4			1.4	1.5		27.2	26.8			
Incremental Delay (*d*2), s/veh	1.4	0.1			0.2	0.4		4.7	2.8			
Initial Queue Delay (*d*3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	4.3	1.5			1.6	1.9		31.9	29.6			
Level of Service (LOS)	A	A			A	A		C	C			

	EB		WB		NB		SB	
Approach Delay, s/veh / LOS	2.7	A	1.7	A	31.0	C	0.0	
Intersection Delay, s/veh / LOS			5.0				A	

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.9	A	0.7	A		

HCS 2010 Signalized Intersection Results Summary

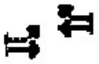
General Information				**Intersection Information**	
Agency	Western R&D, Ltd.			Duration, h	0.25
Analyst	G Grigsby	Analysis Date	9/15/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street		Analysis Year	2035	Analysis Period	1> 7:00
Intersection	I-25 North @ Happy Jac...	File Name	I-25 North - Happy Jack Rd - 2035 PM Peak Build...		
Project Description	2035 PM Peak - Build				



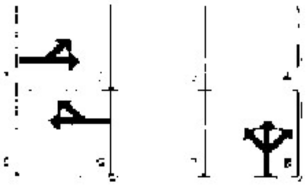
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	308	380			190	252	70	1	44			

Signal Information

Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	47.8	4.2	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		6.0		8.0		11.0		
Phase Duration, s		51.8		51.8		8.2		
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		
Max Allow Headway (*MAH*), s		0.0		0.0		4.2		
Queue Clearance Time (g_s), s						4.5		
Green Extension Time (g_e), s		0.0		0.0		0.3		
Phase Call Probability						0.88		
Max Out Probability						0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate (*v*), veh/h	335	413			207	274		77	48			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	929	1809			1900	1610		1811	1610			
Queue Service Time (g_s), s	8.6	1.6			3.0	2.5		2.5	1.7			
Cycle Queue Clearance Time (g_c), s	11.6	1.6			3.0	2.5		2.5	1.7			
Green Ratio (*g/C*)	0.80	0.80			0.80	0.80		0.07	0.07			
Capacity (*c*), veh/h	813	2884			1515	1284		126	112			
Volume-to-Capacity Ratio (*X*)	0.412	0.143			0.136	0.213		0.613	0.427			
Back of Queue (*Q*), ft/ln (50 th percentile)	23.6	2.6			3.6	5.7		29.1	17.3			
Back of Queue (*Q*), veh/ln (50 th percentile)	0.9	0.1			0.1	0.2		1.2	0.7			
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00			0.00	0.00		0.00	0.00			
Uniform Delay (d_1), s/veh	3.0	1.4			1.4	1.5		27.1	26.8			
Incremental Delay (d_2), s/veh	1.5	0.1			0.2	0.4		4.8	2.6			
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	4.6	1.5			1.6	1.9		31.9	29.3			
Level of Service (LOS)	A	A			A	A		C	C			
Approach Delay, s/veh / LOS	2.9		A	1.7		A	30.9		C	0.0		
Intersection Delay, s/veh / LOS				5.1						A		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	1.8	A	2.7	B	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.9	A	0.7	A		

Appendix C: Signal Timing Plans

[redacted]

WYDOT
Administration

MaxTime Timing Sheet

3365 WYDOT Default

Cross Black_White.jpg

Unit Information

Controller ID	60
Main St.	Happy Jack
Side St.	Gate 2/I-25 NB

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	Mode
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux_P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	0	Auto Ped Clr	Enable	Red Revert	4 0	Backup Time	600	Ext Mode	Disable
All Red Exit	0	Grn Flash Freq.	60	Yel Flash Freq	60	MCE Enable	Enable	Free Seq.	1
MCE Seq.	1	Start Yellow	0.0	Start Red	0.0	Start Clear Hold	0		
Master By TOD	Disable	Flash CVM	Disable	All Red Flash	Disable	3 Phs Dia Seq			
				Auto Ped Clear	Enable	4 Phs Dia Seq			

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	4	5	15	5	4	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	1.0	1.0	1.0	1.0	1.0	1.0	1 0	1.0	0.0	0.0	0.0	0.0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Max-1	0	30	0	30	0	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	4 1	3.0	3.9	3 0	4 1	3 0	3.9	3.0	3 0	3.0	3.0	3 0	3 0	3 0	3 0	3 0	3 0	3 0	3 0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	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 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Added Initial	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 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Max Initial	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 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	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 0	0 0	0 0	0.0	0.0	0 0	0 0	0 0
Min Gap	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 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	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 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[redacted]

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

Sequence 1	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4	
9	
10	
11	
12	
13	
14	
15	
16	

Phase Configuration

Ph.	Startup	Ring	Concurrent	Startup Min	Description
1	Phase Not On	0		0	
2	Green No Walk	1	6	0	EB
3	Phase Not On	0		0	
4	Phase Not On	1	8	0	SB
5	Phase Not On	0		0	
6	Green No Walk	2	2	0	WB
7	Phase Not On	0		0	
8	Phase Not On	2	4	0	NB
9	None	0		0	
10	None	0		0	
11	None	0		0	
12	None	0		0	
13	None	0		0	
14	None	0		0	
15	None	0		0	
16	None	0		0	
17	None	0		0	
18	None	0		0	
19	None	0		0	
20	None	0		0	

Sequence Configuration

Sequence 1

Ring	Phases
1	2,a,4,b
2	6,a,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 2

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 3

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 4

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

[redacted]

14	
15	
16	

14	
15	
16	

14	
15	
16	

14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 19

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 20

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 17

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

9	
10	
11	
12	
13	
14	
15	
16	

Global Phase Recalls

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Min																				
Max																				
Ped																				
Act Walk Rest																				

Global Veh Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erractic Count	1
Global Failed Recall	None
Detector Reset Enable	Enabled

Global Ped Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erractic Count	0

Global Pri/Pre Det Diag

Global No Activity	0
Global Max Presence	0
Global Erractic Count	0

Vehicle Detection Parameters

Det.	Call Phs	Call Ped	Call Ovl	Add Call Phases	Sw Phs	Delay	Extend	Queue Limit	Ext Hold	No Activity	Max Pres	Erratic Counts	Failed Time	Failed Recall	Fail Link	Description
1	2	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	EB Truck
2	2	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	EB Dilemma
3	2	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	EB C/Ext-Q
4	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
5	4	0	0		0	0.0	0.0	0	0.0	0	20	255	0	None	0	SB Ext
6	4	0	0		0	0.0	0.0	0	0.0	0	20	255	10	None	0	SB C/Ext
7	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
8	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
9	6	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	WB Truck
10	6	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	WB Dilemma
11	6	0	0		0	0.0	0.0	0	0.0	0	10	255	20	None	0	WB C/Ext-Q
12	6	0	0		0	0.0	0.0	0	0.0	0	20	255	20	None	0	WBLT C/Ext
13	8	0	0		0	0.0	0.0	0	0.0	0	20	255	0	None	0	NB Ext
14	8	0	0		0	0.0	0.0	0	0.0	0	20	255	15	None	0	NB C/Ext
15	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
16	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	

[redacted]

71	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
72	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector	X	X	X		X	X			X	X	X	X	X	X						
Occupancy	X	X	X		X	X			X	X	X	X	X	X						
Yellow Lock Call																				
Red Lock call																				
Extend	X	X	X		X	X			X	X	X	X	X	X						
Added Initial																				
Queue																				
Call			X			X					X	X		X						
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector														X			X	X		X
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Extend																				
Added Initial																				
Queue																				
Call																				
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector	X	X	X	X	X	X		X												
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Extend																				
Added Initial																				
Queue																				
Call																				
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock call												
Extend												
Added Initial												
Queue												
Call												

Data Collection Period	60
Number of Periods	15

4	Disabled	Off						
5	Disabled	Off						
6	Disabled	Off						
7	Disabled	Off						
8	Disabled	Off						
9	Disabled	Off						
10	Disabled	Off						
11	Disabled	Off						
12	Disabled	Off						
13	Disabled	Off						
14	Disabled	Off						
15	Disabled	Off						
16	Disabled	Off						

OLP	TrG Omit Phs	Negative Peds	Neg Ped Ovlps	Grn Sup Phs	N Ped Phs Calls	Description
1						
2						
3						
4						
5						
6						

OLP	TrG Omit Phs	Negative Peds	Neg Ped Ovlps	Grn Sup Phs	N Ped Phs Calls	Description
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

OLP	Trail GRN	Trail YEL	Trail RED	Walk 1	Ped Clr 1	Walk 2	Ped Clr 2	Delay	Flash	Min Green	Mx Grn Ext	Red Revert	Flash Inactive	Flash Alt	Walk Rest
1	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
2	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
3	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
4	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
5	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
6	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
7	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
8	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
9	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
10	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
11	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
12	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
13	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
14	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
15	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
16	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off

Overlap Options

Overlap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Startup Call																
Recall																
No Veh Reserv																

Overlap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call for Service																
Trail Grn Bridge																
FYA Prot. Red Cl																

8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 2

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 3

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 4

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 8

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 9

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float

Split 9

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 10

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float

								X																				
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																	X	X	X	X	X	X	X					

Day Plan 3 On Wednesday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
									X																			
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																		X	X	X	X	X	X	X				

Day Plan 3 On Thursday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
										X																		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																			X	X	X	X	X	X	X			

Day Plan 3 On 2nd Friday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
											X																	
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																				X	X	X	X	X	X	X		

Day Plan 3 On 2nd Saturday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												X																
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																					X	X	X	X	X	X	X	

Day Plan 4 On 2nd Sunday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						X																						
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																						X	X	X	X	X	X	

Day Plan 4 On 2nd Sunday CFD (8/1)

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						X							X															
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	X																											

Day Plan 0 On

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 0 On

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

Day Plan 17

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 18

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 19

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 20

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	Free											
16	None											
17	None											
18	None											
19	None											
20	Flash											
21	None											
22	None											
23	None											
24	None											
25	None											
26	None											
27	None											
28	None											
29	None											
30	None											
31	None											
32	None											

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											
52	None											
53	None											
54	None											
55	None											
56	None											
57	None											
58	None											
59	None											
60	None											
61	None											
62	None											
63	None											
64	None											

Action Commands

Action 1

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Action 2

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Sp F10									Sp F12									Sp F14									Sp F16								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Enabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Type	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh
Description								
Track Phases								
Track 2 Phases								
Track Overlaps								
Track 2 Overlaps								
Dwell Phase								
Dwell Ped								
Dwell Overlaps								
Cycling Phases								
Cycling Peds								
Cycling Overlaps								
Exit Phases								
Exit Overlaps								
Exit Veh Calls								
Exit Ped Calls								
Recovery Omit Phs								
Max Pres Action	0	0	0	0	0	0	0	0
Exit Type	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases
Exit Max Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Cabinet Config

Run ITS on NEMA port 1	No
Run ITS on 2070-1C C13S	No

Enable TS2/ATC Stop Time	
Disable TS2 Startup Call	

Disable TS2 Fault Flash	
Disable TS2 Cab. Alarms	X

IO Modules

IO Mod	TYPE
1	Caltrans 332
2	TS2 MMU
3	TS2 DR1 BIU
4	TS2 DR3 BIU
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source	MMU Channel
1	Phs Veh	1	1
2	Phs Veh	2	2
3	Phs Veh	3	3
4	Phs Veh	4	4
5	Phs Veh	5	5
6	Phs Veh	6	6
7	Phs Veh	7	7
8	Phs Veh	8	8
9	Olp	9	9
10	Olp	10	10

Chan	Ctrl Type	Source	MMU Channel
11	Olp	11	11
12	Olp	12	12
13	Phs Ped	2	13
14	Phs Ped	4	14
15	Phs Ped	6	15
16	Phs Ped	8	16
17	None	0	17
18	None	0	18
19	None	0	19
20	None	0	20

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow		X				X										
Flash Red				X				X								
Alt Flash				X				X								
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	Not Act	On	Off	Off	Red
2	Dly Grn	On	Off	Off	Red

Interval	Description	Red	Yel	Grn	Type
7	Pre Clr	Off	Off	On	Green
8	Yel Change	Off	On	Off	Yellow

Peer Configuration

Ctrl	Peer ID	Device Type	IP address	IP Port	Http Port	Serial Port	Serial Addr	Master Sect.	P2P TO	Description
1	0	Peer MaxTime		161	80	0	0	0	15	
2	0	Peer MaxTime		161	80	0	0	0	15	
3	0	Peer MaxTime		161	80	0	0	0	15	
4	0	Peer MaxTime		161	80	0	0	0	15	
5	0	Peer MaxTime		161	80	0	0	0	15	
6	0	Peer MaxTime		161	80	0	0	0	15	
7	0	Peer MaxTime		161	80	0	0	0	15	
8	0	Peer MaxTime		161	80	0	0	0	15	
9	0	Peer MaxTime		161	80	0	0	0	15	
10	0	Peer MaxTime		161	80	0	0	0	15	

Master Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	
9	None	60	1	300	240	
10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Pgrm	Description
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	

WYDOT

Administration

MaxTime Timing Sheet

336S WYDOT Default

Cross Black_White.jpg

Unit Information

Controller ID	12
Main St.	Missile
Side St.	I-25 NB

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	0
All Red Exit	0
MCE Seq	1
Master By TOD	Disable

Auto Ped Clr	Enable
Grn Flash Freq.	60
Start Yellow	0.0
Flash CVM	Disable

Red Revert	4.0
Yel Flash Freq	60
Start Red	0.0
All Red Flash	Disable
Auto Ped Clear	Enable

Backup Time	600
MCE Enable	Enable
Start Clear Hold	0
3 Phs Dia Seq	
4 Phs Dia Seq	

Ext Mode	Enable
Free Seq	1

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	5	4	15	5	4	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	0	35	0	0	10	30	0	25	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	35	0	0	10	30	0	35	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	4.1	3.0	3.0	4.1	4.1	3.0	3.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

3	
4	
5	
6	
7	
8	

Sequence 1	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4	
9	
10	
11	
12	
13	
14	
15	
16	

Phase Configuration

Ph.	Startup	Ring	Concurrent	Startup Min	Description
1	Phase Not On	0		0	
2	Green No Walk	1	6,5	0	EB
3	Phase Not On	0		0	
4	Phase Not On	0		0	
5	Phase Not On	2	2	0	EBLT
6	Green No Walk	2	2	0	WB
7	Phase Not On	0		0	
8	Phase Not On	2		0	NB
9	None	0		0	
10	None	0		0	
11	None	0		0	
12	None	0		0	
13	None	0		0	
14	None	0		0	
15	None	0		0	
16	None	0		0	
17	None	0		0	
18	None	0		0	
19	None	0		0	
20	None	0		0	

Sequence Configuration

Sequence 1

Ring	Phases
1	2,a,b
2	6,5,a,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 2

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 3

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Sequence 4

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

14	
15	
16	

14	
15	
16	

14	
15	
16	

14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 19

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 20

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 17

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

9	
10	
11	
12	
13	
14	
15	
16	

Global Phase Recalls

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Min																				
Max																				
Ped																				
Act Walk Rest																				

Global Veh Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erractic Count	1
Global Failed Recall	None
Detector Reset Enable	Enabled

Global Ped Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erractic Count	0

Global Pri/Pre Det Diag

Global No Activity	0
Global Max Presence	0
Global Erractic Count	0

Vehicle Detection Parameters

Det.	Call Phs	Call Ped	Call Ovl	Add Call Phases	Sw Phs	Delay	Extend	Queue Limit	Ext Hold	No Activity	Max Pres	Erratic Counts	Failed Time	Failed Recall	Fail Link	Description
1	2	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	EB Truck
2	2	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	EB Dilemma
3	2	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	EB C/Ext-Q
4	5	0	0	6	0	5.0	0.0	0	0.0	0	20	255	0	Min Recall	0	EBLT C/Ext
5	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
6	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
7	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
8	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
9	6	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	WB Truck
10	6	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	WB Dilemma
11	6	0	0		0	0.0	0.0	0	0.0	0	10	255	25	None	0	WB C/Ext-Q
12	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
13	8	0	0		0	0.0	0.0	0	0.0	0	10	255	0	None	0	NB Ext
14	8	0	0		0	0.0	0.0	0	0.0	0	20	255	10	None	0	NB C/Ext
15	8	0	0		0	15.0	0.0	0	0.0	0	20	255	0	Min Recall	0	NB C/Ext-delay
16	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	

71	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	
72	0	0	0		0	0.0	0.0	0	0.0	0	0	0	0	None	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector	X	X	X	X					X	X	X		X	X	X					
Occupancy	X	X	X	X					X	X	X		X	X	X					
Yellow Lock Call																				
Red Lock call																				
Extend	X	X	X	X					X	X	X		X	X	X					
Added Initial																				
Queue																				
Call			X	X							X			X	X					
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector													X	X	X	X				
Occupancy													X	X	X	X				
Yellow Lock Call																				
Red Lock call																				
Extend																				
Added Initial																				
Queue																				
Call																				
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector		X			X		X													
Occupancy		X			X		X													
Yellow Lock Call																				
Red Lock call																				
Extend																				
Added Initial																				
Queue																				
Call																				
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock call												
Extend												
Added Initial												
Queue												
Call												

Data Collection Period	60
Number of Periods	15

4	Disabled	Off						
5	Enabled	FYA - 4 Sec	6	5				
6	Disabled	Off						
7	Disabled	FYA - 4 Sec	8	7				
8	Disabled	Off						
9	Disabled	Off						
10	Disabled	Off						
11	Disabled	Off						
12	Disabled	Off						
13	Disabled	Off						
14	Disabled	Off						
15	Disabled	Off						
16	Disabled	Off						

OLP	TrG Omit Phs	Negative Peds	Neg Ped Ovlps	Grn Sup Phs	N Ped Phs Calls	Description
1						
2						
3						
4						
5						EB FYLTA
6						

OLP	TrG Omit Phs	Negative Peds	Neg Ped Ovlps	Grn Sup Phs	N Ped Phs Calls	Description
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

OLP	Trail GRN	Trail YEL	Trail RED	Walk 1	Ped Clr 1	Walk 2	Ped Clr 2	Delay	Flash	Min Green	Mx Grn Ext	Red Revert	Flash Inactive	Flash Alt	Walk Rest
1	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
2	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
3	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
4	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
5	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
6	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
7	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
8	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
9	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
10	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
11	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
12	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
13	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
14	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
15	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off
16	0	0.0	0.0	0	0	0	0	0.0	Off	0	0	0.0	Off	Off	Off

Overlap Options

Overlap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Startup Call																
Recall																
No Veh Reserv																

Overlap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call for Service																
Trail Grn Bridge																
FYA Prot. Red Cl					X											

8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 2

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 3

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 4

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 8				Coord	Ref	Cover	Force Off		Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 9				Coord	Ref	Cover	Force Off		Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float

Split 9				Coord	Ref	Cover	Force Off		Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float
9	0	0	0				Fix	None	0	0	Float
10	0	0	0				Fix	None	0	0	Float
11	0	0	0				Fix	None	0	0	Float
12	0	0	0				Fix	None	0	0	Float
13	0	0	0				Fix	None	0	0	Float
14	0	0	0				Fix	None	0	0	Float
15	0	0	0				Fix	None	0	0	Float
16	0	0	0				Fix	None	0	0	Float

Split 10				Coord	Ref	Cover	Force Off		Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float

								X																				
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																	X	X	X	X	X	X	X					

Day Plan 3 On Wednesday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
									X																			
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																		X	X	X	X	X	X	X				

Day Plan 3 On Thursday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
										X																		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																			X	X	X	X	X	X	X			

Day Plan 3 On 2nd Friday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
											X																	
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																				X	X	X	X	X	X	X		

Day Plan 3 On 2nd Saturday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												X																
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																					X	X	X	X	X	X	X	

Day Plan 4 On 2nd Sunday CFD

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						X																						
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X																						X	X	X	X	X	X	

Day Plan 4 On 2nd Sunday CFD (8/1)

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						X							X															
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	X																											

Day Plan 0 On

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 0 On

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

Day Plan 17

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 18

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 19

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 20

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	Free											
16	None											
17	None											
18	None											
19	None											
20	Flash											
21	None											
22	None											
23	None											
24	None											
25	None											
26	None											
27	None											
28	None											
29	None											
30	None											
31	None											
32	None											

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											
52	None											
53	None											
54	None											
55	None											
56	None											
57	None											
58	None											
59	None											
60	None											
61	None											
62	None											
63	None											
64	None											

Action Commands

Action 1

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Action 2

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Sp F10									Sp F12									Sp F14									Sp F16								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Enabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Type	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh
Description								
Track Phases								
Track 2 Phases								
Track Overlaps								
Track 2 Overlaps								
Dwell Phase								
Dwell Ped								
Dwell Overlaps								
Cycling Phases								
Cycling Peds								
Cycling Overlaps								
Exit Phases								
Exit Overlaps								
Exit Veh Calls								
Exit Ped Calls								
Recovery Omit Phs								
Max Pres Action	0	0	0	0	0	0	0	0
Exit Type	Exit Phases	Exit Phases	Exit Coord	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases
Exit Max Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Cabinet Config

Run ITS on NEMA port 1	No
Run ITS on 2070-1C C13S	No

Enable TS2/ATC Stop Time	
Disable TS2 Startup Call	

Disable TS2 Fault Flash	
Disable TS2 Cab. Alarms	X

IO Modules

IO Mod	TYPE
1	Caltrans 332
2	TS2 MMU
3	TS2 DR1 BIU
4	TS2 DR3 BIU
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source	MMU Channel
1	Olp	1	1
2	Phs Veh	2	2
3	Olp	3	3
4	Phs Veh	4	4
5	Olp	5	5
6	Phs Veh	6	6
7	Olp	7	7
8	Phs Veh	8	8
9	Olp	9	9
10	Olp	10	10

Chan	Ctrl Type	Source	MMU Channel
11	Olp	11	11
12	Olp	12	12
13	Phs Ped	2	13
14	Phs Ped	4	14
15	Phs Ped	6	15
16	Phs Ped	8	16
17	None	0	17
18	None	0	18
19	None	0	19
20	None	0	20

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow		X			X	X										
Flash Red								X								
Alt Flash								X								
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	Not Act	On	Off	Off	Red
2	Dly Grn	On	Off	Off	Red

Interval	Description	Red	Yel	Grn	Type
7	Pre Clr	Off	Off	On	Green
8	Yel Change	Off	On	Off	Yellow

Peer Configuration

Ctrl	Peer ID	Device Type	IP address	IP Port	Http Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0	Peer MaxTime		161	80	0	0	0	15	
2	0	Peer MaxTime		161	80	0	0	0	15	
3	0	Peer MaxTime		161	80	0	0	0	15	
4	0	Peer MaxTime		161	80	0	0	0	15	
5	0	Peer MaxTime		161	80	0	0	0	15	
6	0	Peer MaxTime		161	80	0	0	0	15	
7	0	Peer MaxTime		161	80	0	0	0	15	
8	0	Peer MaxTime		161	80	0	0	0	15	
9	0	Peer MaxTime		161	80	0	0	0	15	
10	0	Peer MaxTime		161	80	0	0	0	15	

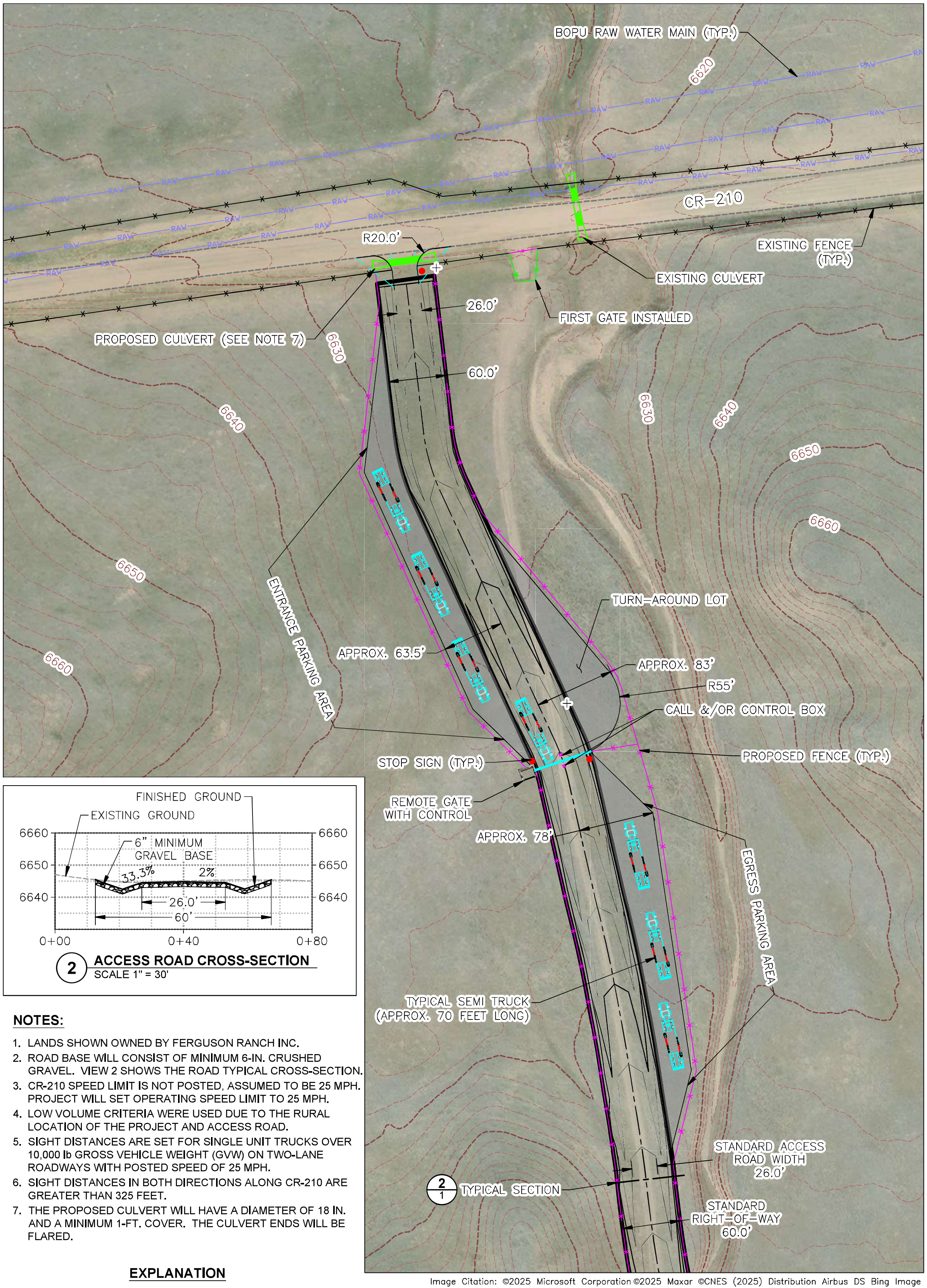
Master Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	
9	None	60	1	300	240	
10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Pgrm	Description
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	



2 **ACCESS ROAD CROSS-SECTION**
SCALE 1" = 30'

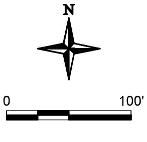
Image Citation: ©2025 Microsoft Corporation ©2025 Maxar ©CNES (2025) Distribution Airbus DS Bing Image
Topography Layer: Trihydro Corporation Unmanned Aerial System Photogrammetry Survey, October 2020 & USGS Digital Elevation Model WY Laramie LiDAR Original Product Resolution 2021

NOTES:

1. LANDS SHOWN OWNED BY FERGUSON RANCH INC.
2. ROAD BASE WILL CONSIST OF MINIMUM 6-IN. CRUSHED GRAVEL. VIEW 2 SHOWS THE ROAD TYPICAL CROSS-SECTION.
3. CR-210 SPEED LIMIT IS NOT POSTED, ASSUMED TO BE 25 MPH. PROJECT WILL SET OPERATING SPEED LIMIT TO 25 MPH.
4. LOW VOLUME CRITERIA WERE USED DUE TO THE RURAL LOCATION OF THE PROJECT AND ACCESS ROAD.
5. SIGHT DISTANCES ARE SET FOR SINGLE UNIT TRUCKS OVER 10,000 lb GROSS VEHICLE WEIGHT (GVW) ON TWO-LANE ROADWAYS WITH POSTED SPEED OF 25 MPH.
6. SIGHT DISTANCES IN BOTH DIRECTIONS ALONG CR-210 ARE GREATER THAN 325 FEET.
7. THE PROPOSED CULVERT WILL HAVE A DIAMETER OF 18 IN. AND A MINIMUM 1-FT. COVER. THE CULVERT ENDS WILL BE FLARED.

EXPLANATION

-:6650:-	EXISTING GROUND CONTOURS (2-FOOT INTERVAL)
– – – –	CR-210
— – —	ACCESS ROAD CENTER LINE
—×—	PROPOSED FENCE
—×—	EXISTING FENCE
—×—	FIRST GATE INSTALLED
—RAW—	EXISTING BOPU RAW WATER PIPELINES
——	REMOTE GATE
■	CALL &/OR CONTROL BOX
▭	CULVERT
●	STOP SIGN
— —	SIGHT DISTANCE TRIANGLE



Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 3

ACCESS ROAD COUNTY ROAD REMOTE GATE CONCEPTUAL DESIGN PLAN VIEW

CK GOLD PROJECT
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: 1" = 100'	Date: 5/30/2025	File: 74L_ACCESSROAD-COUNTYROAD_CONCEPT

L:\US GOLD CORP – DOCUMENTS\CADD\SINGLEFIGURES\LARAMIECO\74L_ACCESSROAD–COUNTYROAD_CONCEPT

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Mark Gordon, Governor

Todd Parfitt, Director

April 29, 2024

Mr. Patrick Crank
Gold King Corp.
1815 Evans Ave.
Cheyenne, WY 82001

RE: Gold King Corp., Application for a Surface Gold Mine Permit TFN 7 2/142

Dear Mr. Crank:

I have received and reviewed the recommendation provided by the Land Quality Division (LQD) Administrator regarding the Gold King Corp. (GK) application for a Surface Gold Mine Permit TFN (Temporary Filing Number) 7 2/142. The applicant has applied for a gold surface mining operation located in Sections 25 & 36, Township 14 North, Range 70 West and Section 31, Township 14 North, Range 69 West in Laramie County, Wyoming. The proposed permit area will cover 1,628.8 acres and GK intends to affect approximately 1,057 acres within the permit boundary. I accept the recommendation of the LQD Administrator and as the Wyoming Department of Environmental Quality Director approve the issuance of this permit in accordance with Wyoming Statute §35-11-406(q)(ii). I also accept the recommendations of the LQD Administrator for the following conditions to be placed on the Form 1 of the permit approval:

> Condition 1: No construction or mining activities shall be allowed to commence until the reclamation performance bond, in the amount of $5,010,000 as set forth in the Director's Bond Letter dated February 20, 2024, is approved.
>
> Condition 2: The application states multiple discharge points that require WYPDES permits. The operator has applied for these permits and is awaiting final approval. As a non-significant revision (NSR) to the approved permit, the operator shall provide an updated map of approved discharge locations and a list of WYPDES permit numbers when they are made available to them. The operator is not authorized to conduct discharge activities until the permits are approved and placed into the permit.
>
> Condition 3: No construction or mining activities shall be allowed to commence until the applicant obtains required WDEQ-Air Quality Division (AQD) permits. As an NSR to the approved permit, a copy of the approved AQD permit(s) shall be inserted into the approved mining plan when they are made available.

A copy of this letter and the Administrators report, and recommendations will be mailed to the objector of record. The applicant or objector who filed an objection on or before March 29, 2024, may appeal this decision to the Environmental Quality Council within 30 days after this notification of agency action.

Sincerely,

Todd Parfitt
Director

cc: Nolan Rapp, Natural Resources Policy Staff
Kyle Wendtland, Land Quality Division Administrator
Greg Weisz, Senior Assistant Attorney General
Nancy Vehr, Air Quality Administrator
Jennifer Zygmunt, Water Quality Administrator
Robin Jones, LQD District 1 Supervisor

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Mark Gordon, Governor

Todd Parfitt, Director

MEMORANDUM

TO: Todd Parfitt, Director

FROM: Kyle Wendtland, Administrator LQD

DATE: April 29, 2024

SUBJECT: Public Notice Comments, Actions, & Recommendations, Gold King Corp., Regular Mine Permit Application, Temporary Filing Number (TFN) 7 2/142.

Section 1, General Project Overview

The application package for this Regular Mine permit was received by the Land Quality Division (LQD) on September 13, 2022. The application was declared complete on November 16, 2022 and the application notice was published in the Wyoming Tribune Eagle and the Laramie Boomerang on November 21 & 28, 2022. Declaration of application completeness indicates that all the necessary components of the application are present and prompts the review of the application for technical adequacy.

Once declared complete, the application was reviewed by the LQD District 1 (D1) staff for technical deficiencies as required by the Wyoming Environmental Quality Act. Application reviews were provided by the following D1 staff: Chad Haley, Natural Resource Program Principal; Brian Goodnough, Surface Water Hydrologist; Blaise Hansen, Geologist; Christine Henkel (former staff) Wildlife Biologist; and Robin Jones D1 Supervisor, Vegetation Ecologist. Additionally, a hydrogeological contractor [Geosyntec Consulting, Inc. (GS)] was employed by the Department to provide independent review of geological, hydrogeological, and geochemical aspects of the application.

The first round of technical comments was submitted to Gold King Corp. (GK) on April 13, 2023. Responses to these technical comments were received by LQD on October 9, 2023 and the second-round technical comments were sent to GK November 8, 2023. Response to the second-round was received by LQD on January 2, 2024. Review of these responses was concluded with the application package being deemed technically complete on February 1, 2024. At this time GK was instructed by LQD to proceed with the provisions of Wyoming Statute (W. S.) §35-11-406(j) and the first date of public notice of a technically adequate application in the Wyoming Tribune was February 7, 2024. The technically adequate notice also published February 14, 21 and 28, 2024. The statutorily required 30-day comment period opened February 29, 2024 and concluded March 29, 2024.

Section 2, Comments and Actions:

The Land Quality Division received fifteen (15) total comments in relation to this Regular Mine application. Fourteen (14) of these comments expressed support for the mine application. LQD reviewed these comments and has included them in the record for the project.

The one (1) remaining comment was not expressed as a formal objection to the application but rather a concern from a landowner with property located in the general vicinity of the proposed project. This concern was centered around the water well on the objector's property in relation to various development aspects of this project. Specifically, the concern centered on water production from the objector's well and how it may be affected by project water use from the proposed Lone Tree Creek Well Field and the effect of inflow of local groundwater to the proposed mine pit. In order to address these concerns LQD tasked GS with providing an independent third-party review of the citizen's concerns. This independent review of the citizen's concerns was provided to LQD by email on 4/17/2024.

Section 3, Administrators Review and Recommendations:

Wyoming Statute W. S. §35-11-406(q)(ii) directs the LQD Administrator to review all objections, and forward a report and recommendations on the objections to the director. The following address the one citizen concern that LQD received during the thirty (30) day public comment period for this application. Additionally, the following includes a recommendation for three (3) conditions to be placed on the Form 1 of the application to address the various timing of permitting actions and project bonding requirements.

Citizen's Concern

Prompted by the citizen's concern (Attachment A) noted above the LQD tasked GS to conduct an independent review of available materials to address this concern. The review by GS analyzed permit application documents, the Wyoming State Engineer's Office permit summary for the property well in question, and several studies performed by the Wyoming Water Development Office related to the development of the Lone Tree Creek Well Field (LTC). One aspect of the project development that concerned the citizen included a question of probable impact to the property well in relation to the development of LTC well filed. Through the analysis (Attachment B), GS determined that the property well is placed in Precambrian aged Sherman Granite. Additionally, the LTC well field is proposed to be installed in the Permian-Pennsylvanian aged Casper Formation approximately 7.9 miles to the southeast of the property well. The GS analysis reported that the property well and the LTC are in separate, distinct geologic formations and that there is "little to no hydraulic conductivity between the two locations." Further, the GS analysis indicated that groundwater drawdown effects from the proposed pumping at the LTC are projected to be limited to the Casper Formation and other shallow aquifers in the immediate area of the LTC well field.

Another aspect of the project development that concerned the citizen included the potential of the mining pit development leading to dewatering of the property well. The GS analysis indicated that the long-term groundwater drawdown effects related to development of the mining pit are projected to be limited to the CK Gold Mine Property only, i. e., limited to the proposed permit boundary, which is approximately 3.5 miles southeast of the property well.

The information provided by GS confirms that there will likely be no impact to the property well from either the mining activities or the pumping of groundwater at the LTC well field.

Form 1 Recommended Permit Conditions:

The following three (3) conditions are recommended for inclusion on the Form 1 of the approved application. The necessity to include these conditions on the Form 1 are to ensure, despite the unknown timing associated with these various objectives, that these will be in place prior to the initiation of any project development activity under the LQD permit. Including these conditions on the Form 1 of the permit application in no way constitutes reasons for permit denial as outlined in W. S. §35-11-406(m).

Reclamation Performance Bond

Condition 1: No construction or mining activities shall be allowed to commence until the reclamation performance bond, in the amount of $5,010,000 as set forth in the Director's Bond Letter dated February 20, 2024, is approved.

WYPDES

Condition 2: The application states multiple discharge points that require WYPDES permits. The operator has applied for these permits and is awaiting final approval. As a non-significant revision (NSR) to the approved permit, the operator shall provide an updated map of approved discharge locations and a list of WYPDES permit numbers when they are made available to them. The operator is not authorized to conduct discharge activities until the permits are approved and placed in the permit.

Air Quality Permits

Condition 3: No construction or mining activities shall be allowed to commence until the applicant obtains required WDEQ-Air Quality permits. As an NSR to the approved permit, a copy of the approved AQD permit(s) shall be inserted into the approved mining plan when they are made available.

Recommendation

This permit application has met all the requirements outlined in W.S. §35-11-406 and the LQD Noncoal Rules and Regulations. Statutory deadline requirements were met by the LQD staff.

I, as the Administrator of the WDEQ-LQD, recommend approval of the proposed mine permit (TFN 7 2/142) with the above three (3) permit conditions.

Memorandum

Date:	April 17, 2024
To:	Chad Haley, Muthu Kuchanur, and Robin Jones, Wyoming Department of Environmental Quality Land Quality Division
Copies to:	David Folkes, P.E. (CO), Martina Litasi, P.G. (WY), Sarah Walker, P.G. (NC), Luke Varner, G.I.T.(FL)
From:	Geosyntec Consultants, Inc.
Subject:	Gold King Corporation, CK Gold Mine Permit Application, Review of Public Comments

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Geosyntec Consultants (Geosyntec) has completed its review of Mr. Bert McCauley's public comments regarding Gold King Corporation's CK Gold Mine Regular Mine Operating Permit Application (Temporary Filing Number 7 2/142). This review is focused on Mr. McCauley's concerns regarding the CK Gold Mine's pumping requirements from the proposed Lone Tree Well Field and how potential drawdown may impact aquifers in the region of the CK Gold Mine and specifically the well located at his home (P180840). The remainder of this document outlines observations made during review of the regional hydrogeology near the CK Gold Mine Pit (Pit), the Lone Tree Creek (LTC) Well Field as they apply to Mr. McCauley's comments. The Pit, the LTC Well Field, and P180840 are depicted on **Figures 1** and **2**.

Mr. McCauley's Well (water right P180840)

P180840 is located approximately 3.6 miles northwest of the Pit and approximately 7.9 miles northwest of the LTC Well Field (farther than the 6 miles noted in Mr. McCauley's comment). Publicly available literature discussing hydrogeology in the area of P180840 includes Wyoming State Geological Survey's *Geology of Curt Gowdy State Park,* which suggests P180840 and other wells in the surrounding area likely extract groundwater from localized unconsolidated aquifers forming in the Laramie Mountain drainage features and fractured bedrock zones of the Sherman Granite. These zones receive groundwater recharge from Laramie Mountains precipitation infiltrating through shallow surface sediments (if present) into the fractured bedrock. However, no literature was found to provide hydraulic characteristics of these water bearing zones within the Sherman Granite.

The Wyoming State Engineer's Office (SEO) permit summary lists P180840 installation to a depth of 500 feet (ft) below land surface (bls) and is claimed by Mr. McCauley to average an estimated depth to water of 460 ft bls. This suggests approximately 40 ft of water column within the well. Mr. McCauley indicates P180840 exhibits anomalous water levels in comparison to other wells in the vicinity stating other wells in the area typically exhibit water levels up to several hundred feet above the well depths and therefore suspects his well to be in a perched aquifer zone. However, no well specific measurements (depth to water [DTW]) are provided for Mr. McCauley's or other neighboring wells. Groundwater level variability in fractured bedrock areas with limited hydraulic connectivity to surrounding aquifers is common and typically results in isolated water bearing zones. Additionally, the Wyoming SEO permit summary lists the P180840 water bearing zone from 380 ft bls to 500 ft bls and details the pump placement within the well at 465 ft bls. The placement of the pump within P180840 may conflict with the claim that DTW in the well averages 460 ft bls. Pumps are typically placed significantly below the groundwater surface to account for seasonal variation and drawdown due to pumping. It is unclear if Mr. McCauley's statement that average DTW at P180840 is for static or steady state pumping conditions.

Lone Tree Creek Well Field

The test well (LTC-1) utilized to evaluate the feasibility of the proposed LTC Well Field is located approximately 7.9 southeast of P180840 and is depicted on **Figures 1** and **2**. LTC-1 was installed to a depth of 1,348 ft bls into the Casper Formation. Multiple studies[1] funded by the Wyoming Water Development Commission (WWDC) have been conducted to evaluate the location and feasibility of the LTC Well Field. An aquifer performance test (APT) completed during these studies suggest the Casper Formation in area of the LTC Well Field exhibit a transmissivity of 43,900 gallons per day (gpd)/ft and a hydraulic conductivity of 45.6 gpd/ft^2 (Lidstone, 2008). 48-hour and 30-day APTs at a 600 gallon per minute (gpm) pumping rate resulted in approximately 17 ft and 71 ft of drawdown, respectively at LTC-1. The LTC-1 APT drawdown test results are depicted in **Attachment A**. Within the LTC Well Field, the Sherman Granite is the underlying bedrock to the Casper Formation and is thought to be a minor aquifer only producing water in zones where fracturing is present.

CK Gold Mine Pit

The planned excavation area for the Pit is depicted on **Figures 1** and **2**. The primary ore material that will be extracted from the Pit during mining operations are composed of surficial soils from the White River Formation and granodiorite within the Sherman Granite. The Pit excavation is anticipated to result in a hydraulic low point affecting groundwater elevations in the area of the Pit. However, these drawdown effects are projected to be limited to within the boundary of the CK Gold Mine which is depicted on the figure included as **Attachment B**.

Granite Springs and Crystal Lake Reservoirs

As depicted on **Figure 1**, P180840 is located just south of Granite Springs Reservoir and northwest of Crystal Lake Reservoir. A search for publicly available information on the hydraulic connectivity of these reservoirs to groundwater aquifers in the area provided no results. However, basic principles of groundwater system boundaries (hydraulic and physical) suggest the Crystal

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[1] Three studies were performed: States West 2006 *Belvoir Ranch Paleozoic Groundwater Exploration Project*, Lidstone and Associates 2008 *Belvoir Ranch Lone Tree Well Test Report*, and Lidstone and Associates 2012 *Cheyenne Belvoir ranch Groundwater Level II Study*.

Springs Reservoir is an aquifer input source in the area of the P180840 stabilizing impacts of groundwater withdrawal to groundwater levels this area.

Regional Groundwater Levels and Flow Direction

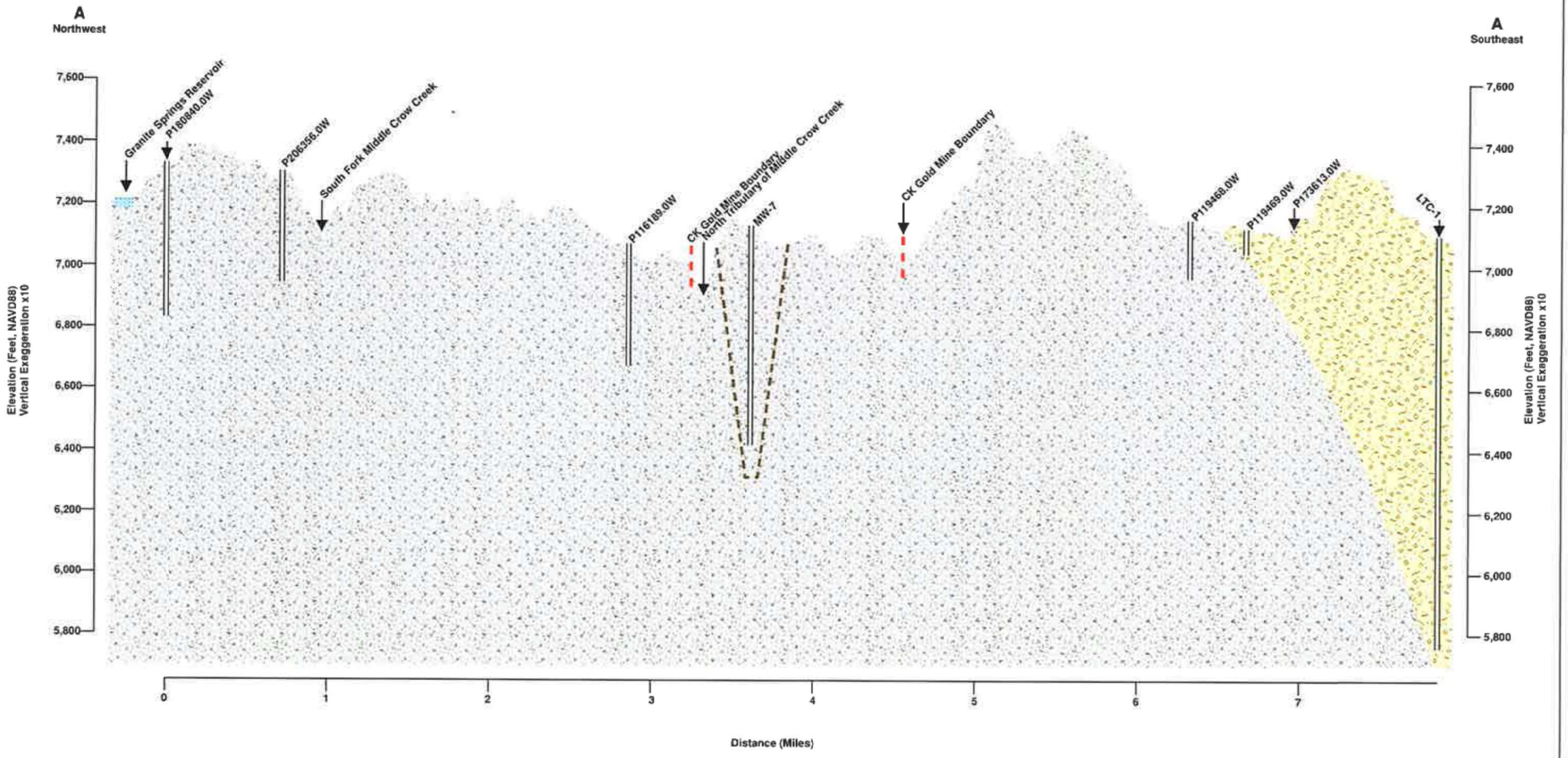
A map depicting regional groundwater levels and flow directions for bedrock and basin fill deposits in the area of P180840, the CK Gold Mine, and the LTC Well Field is included as **Attachment C**. Groundwater flow in the region is generally southeast to east for both aquifer types suggesting P180840 is hydraulically upgradient from both the Pit and the LTC Well Field.

Summary and Conclusions

Evaluation of documents included as part of the CK Gold Mine Permit Application and other publicly available reports suggest P180840 is likely placed within water bearing fractured bedrock zones within the Sherman Granite. P180840 likely receives groundwater recharge through infiltration of precipitation from the Laramie Mountains and may exhibit varied water levels in comparison to other wells in the area due to the nature of the fractured bedrock aquifers. The LTC Creek Well Field is proposed to extract water from the Casper Formation which directly overlies Sherman Granite in the proposed LTC Well Field area. Considering the proposed LTC Well Field is approximately 7.9 miles southeast of P180840 and is screened within a different aquifer unit, there likely is limited to no hydraulic connection between the two well locations. Drawdown effects from pumping at the LTC Well Field are projected to be limited to the Casper Formation and other more shallow aquifers in the area. Additionally, the long-term groundwater drawdown effects of the Pit are projected to be limited to the CK Gold Mine Property.

Our assessment that the Casper Formation is likely not hydraulically connected to the Sherman Granite in the vicinity of Mr. McCauley's well addresses his concerns that the LTC Well Field could impact the water bearing zones of the Sherman Granite and therefore static water levels in his well (concerns from SEO report #1 and #3). Mr. Cauley's concern #2 regarding seasonal vs. continuous pumping appears to be in reference to a quote from the Lidstone & Associates (2012) study and does not reflect the anticipated water demand of the CK Gold Project. Geosyntec was not able to review this report to corroborate this information (website link was not functional). Based on their review of the existing studies including Lidstone & Associates (2012), it is SEO's opinion that the Casper Aquifer would be able to meet the needs of the CK Gold Project of 907 acre-feet per year.

FIGURES



Legend

- 🟥 CK Gold Mine Boundary
- ▬ Proposed Pit Excavation
- 🟨 Basin Deposits
- ▨ Granite and Granodiorite
- 🟦 Water
- ‖ Well

Notes:
1. Subsurface geology depicted has been generalized for the purpose of generating this cross-section.
2. "Basin Deposits" includes each of the following formations: Alluvial deposits, Ogallala Formation, White River Formation, Casper Formation and Fountain Formation.
3. Relatively thin (<100 ft) areas of White River Formation existing above the granite and granodiorite have been removed for the purposes of generalizing this figure.
4. Surface topography is from the USGS 3D Elevation Program, 2021.
5 NAVD88 indicates the national vertical datum of 1988.

N

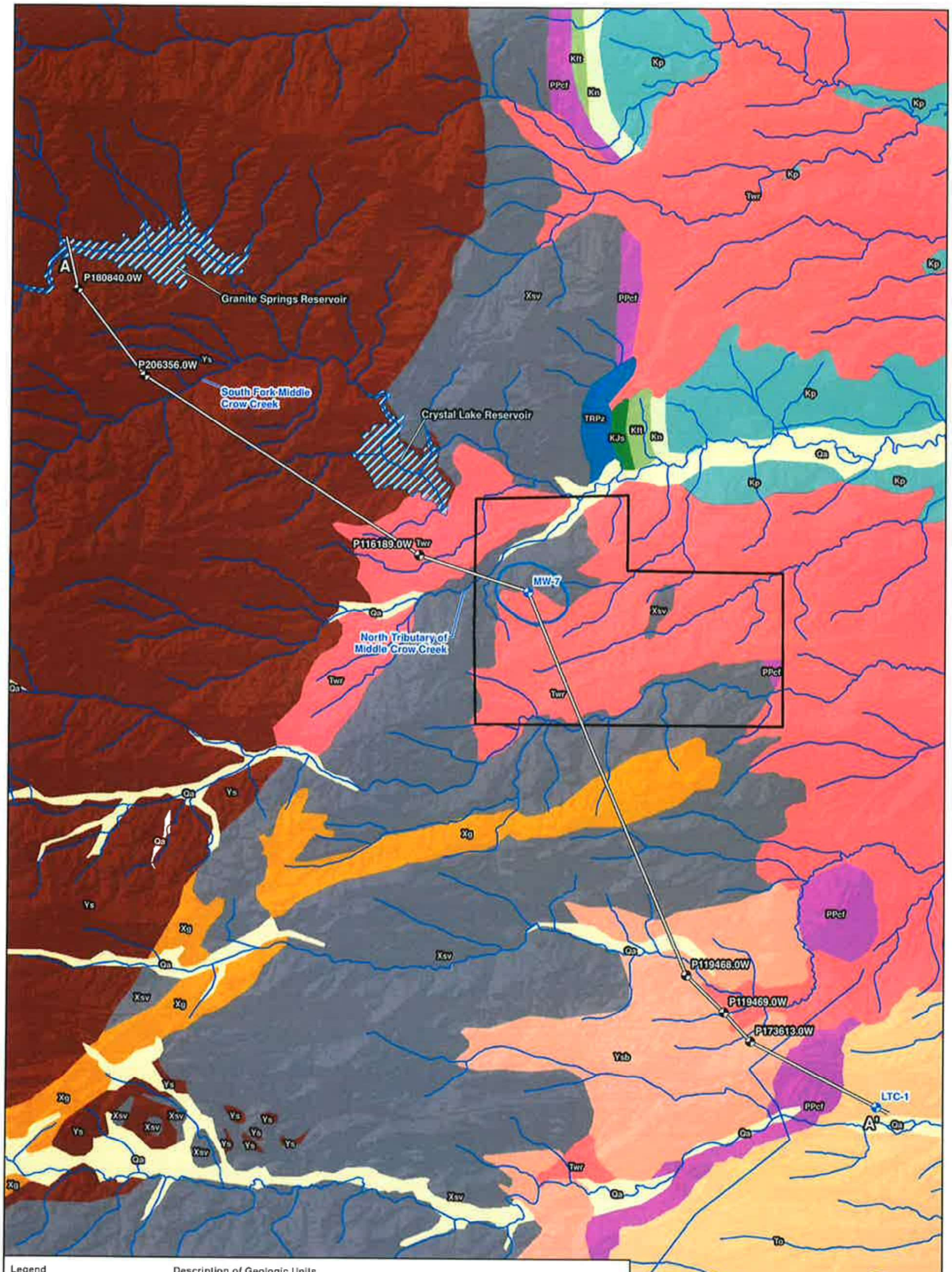
0 0.6 Miles
Vertical Exaggeration x10

Generalized Cross Section A-A'
Area of CK Gold Mine, Wyoming

Geosyntec consultants

DE0569 April 2024

Figure 2



Legend

- ◕ Domestic Well
- ◕ Monitoring Well
- ═ Transect A-A'
- — Stream
- ☐ CK Gold Mine Boundary
- ☐ Proposed Pit Excavation
- ▨ Reservoirs

Description of Geologic Units

- 🟩 KJs - Cloverly, Morrison, and Sundance Formations, Undivided
- 🟩 Kft - Frontier Formation, Mowry Shale, Muddy Sandstone, and Thermopolis Shale
- Kn - Niobrara Formation
- 🟦 Kp - Pierre Shale
- 🟪 PPcf - Casper and Fountain Formations
- Qa - Alluvial Deposits
- 🟦 TRPz - Chugwater Formation, Forelle Limestone, and Satanka Shale
- 🟨 To - Ogallala Formation
- 🟥 Twr - White River Formation
- 🟧 Xg - Granitic rocks
- ⬛ Xsv - Metasedimentary and Metavolcanic Rocks
- 🟫 Ys - Sherman Granite
- 🟧 Ysb - Sherman Granite Border Facies

N

0 0.6 Miles

Notes:

1. Geology shown is from the *Geologic Map of the Laramie 30' x 60' Quadrangle, Albany and Laramie Counties, Southeastern Wyoming* by the Wyoming State Geological Survey, 2007.
2. Streams and hydrological features are from the USGS national hydrological dataset.

Bedrock Surface Geology
Area of CK Gold Mine, Wyoming

Geosyntec consultants

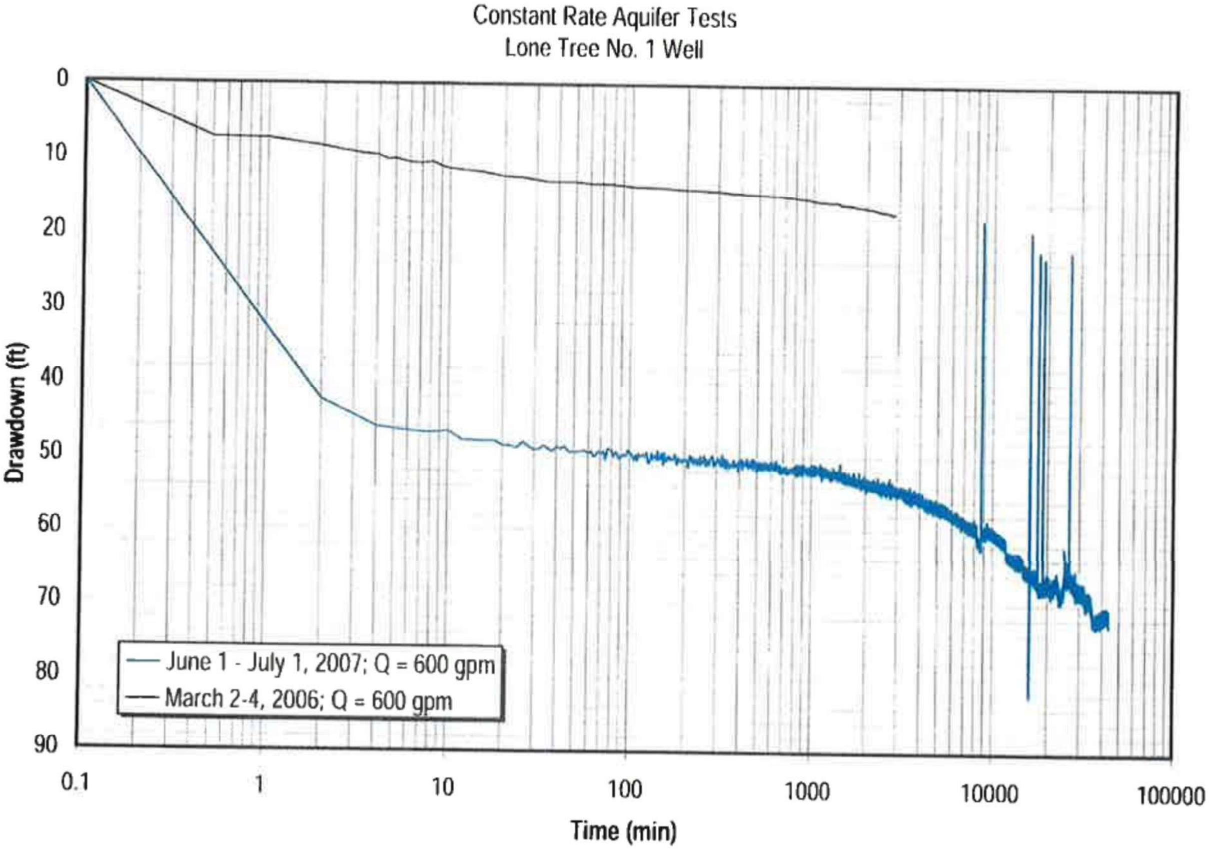
Figure 1

DE0569

April 2024

ATTACHMENT A

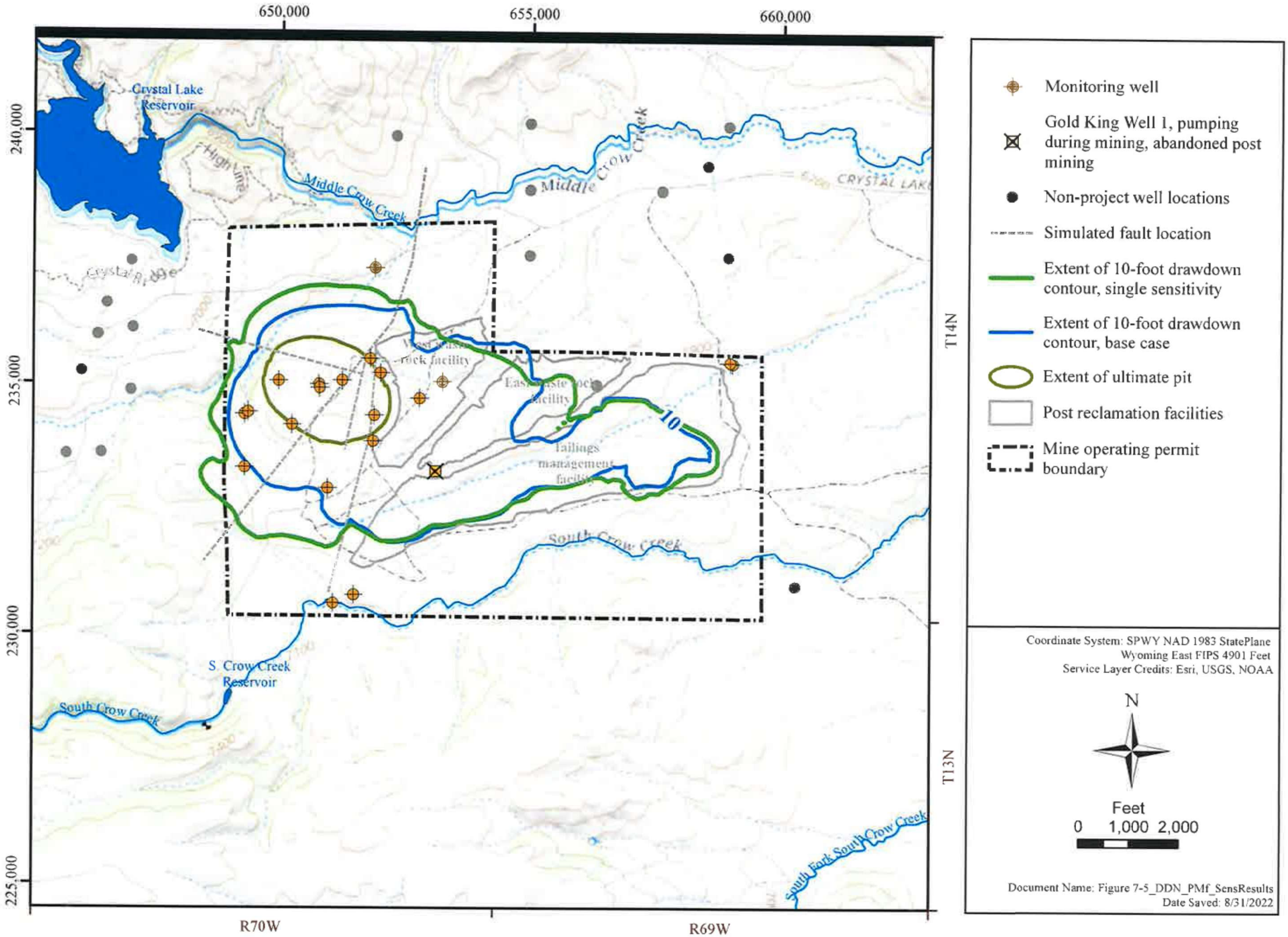
Figure 11 – Graph of LTC-1 48-hour and 30-day Pump Tests
(From the 2008 WWDC Report)



The 2012 Lidstone report (page 6-1) indicate that geologic structures near the LTC-1 well "have resulted in an enhanced zone of permeability due to fracturing and dissolution tube development that would produce sufficient water to warrant a well field." The 2012 report indicates that the hydrogeological parameters of the LTC-1 well are more typical of a karst limestone or perhaps fracture flow.

Figure 12 below (from Western Water Consultants, 1982) is a schematic cross section that illustrates the development of enhanced permeability in the Casper Formation associated with geologic structures.

ATTACHMENT B


650,000
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660,000
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235,000
230,000
225,000
R70W
R69W
T14N
T13N
Crystal Lake Reservoir
High Line
Crystal Ridge
Middle Crow Creek
Middle Crow Creek
CRYSTAL LAKE
West Waste rock facility
East Waste rock facility
Tailings management facility
10
South Crow Creek
S. Crow Creek Reservoir
South Crow Creek
South Fork South Crow Creek
Monitoring well
Gold King Well 1, pumping during mining, abandoned post mining
Non-project well locations
Simulated fault location
Extent of 10-foot drawdown contour, single sensitivity
Extent of 10-foot drawdown contour, base case
Extent of ultimate pit
Post reclamation facilities
Mine operating permit boundary
Coordinate System: SPWY NAD 1983 StatePlane Wyoming East FIPS 4901 Feet
Service Layer Credits: Esri, USGS, NOAA
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Feet
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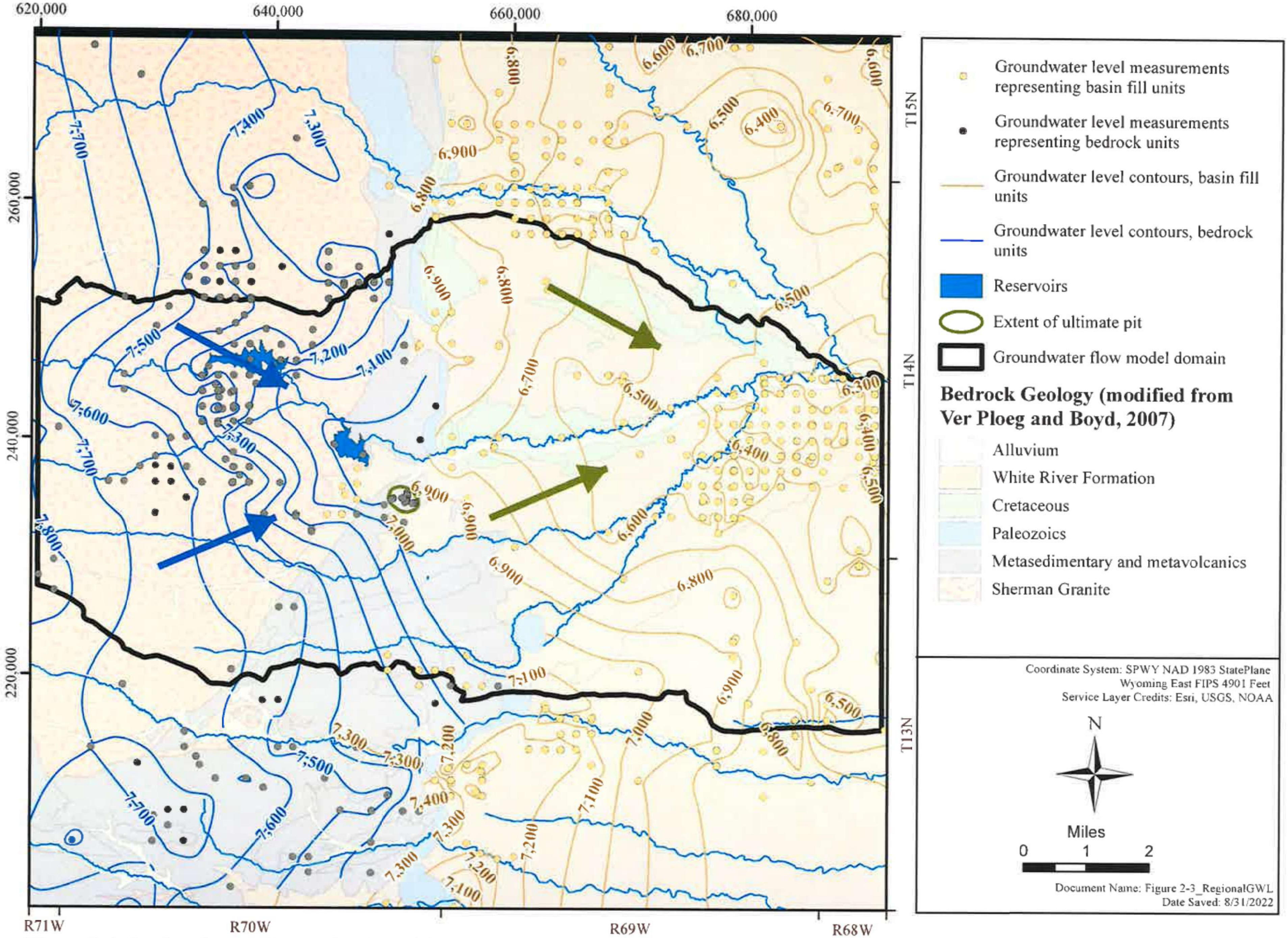
Date Saved: 8/31/2022

Figure 7-5. Predicted groundwater drawdown extent 150-years after the end of mining for base-case model and assuming a 20-percent decrease in recharge

NEIRBO HYDRO GEOLOGY

ATTACHMENT C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Groundwater level measurements representing basin fill units
Groundwater level measurements representing bedrock units
Groundwater level contours, basin fill units
Groundwater level contours, bedrock units
Reservoirs
Extent of ultimate pit
Groundwater flow model domain
Bedrock Geology (modified from Ver Ploeg and Boyd, 2007)
Alluvium
White River Formation
Cretaceous
Paleozoics
Metasedimentary and metavolcanics
Sherman Granite
Coordinate System: SPWY NAD 1983 StatePlane Wyoming East FIPS 4901 Feet
Service Layer Credits: Esri, USGS, NOAA
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Date Saved: 8/31/2022

Figure 2-4. Regional groundwater levels and flow directions

NEIRBO HYDRO GEOLOGY

Attachment A

Complaint

Bert McCauley

I live in Mountain Meadows subdivision, which is not submitting comments as an organization on this proposal, to my knowledge. I am taking this action unilaterally because I believe my specific well could be in more jeopardy from the anticipated 14-year project drawdowns because our well depth is 500 ft., with a static water depth only 40 ft. higher, at 460 ft.; and, to get even that, we had to frack the rock strata we are in at 3 locations below 350 ft. Most of the other wells around our lot, and in most of the subdivision for that matter, are in the 300 ft. to 600 ft. depth range, but their static water levels are typically hundreds of feet above well depths, not 40 feet like ours. I believe our very low static water depth may indicate we are located in a "perched" branch of the main aquifer that could sustain some serious impacts from the anticipated volume of water extracted from the Casper Aquifer formation at the LTC Well Field on a continuous basis for this project for 14 years.

Please see the attached PDF white paper I have assembled directly from the SEO's final report on this project, which more or less summarizes the situation and my concerns, highlighted at the bottom of the first page. I would like each of these concerns noted and/or addressed by the SEO and/or WYDEQ. Please note also from Exhibit 2 therein that there are historic drawdown static losses in Laramie County from industrial or agricultural wells in SE Wyoming, I believe in the Ogalla Aquifer formation. Also of note is that the City of Cheyenne and Laramie County in the 1980s-90s both agreed to a moratorium on 2.5 AC residential lots in the north and east areas of Cheyenne, stipulating 5 AC lots as the minimum for subdivisions, specifically because of concerns of impacts on static aquifer depths in that aquifer. Both of these examples are to highlight that my concern is not without precedent in this regard.
Bert J. McCauley, P.E.(Ret.)

B. McCauley
25March2024

The Gold King CK Project water needs over 14-year project life[1]:

Gold King Corp estimated that the new facility will use 907 acre-feet (***296 million gallons***) ***per year***, which is equivalent to ***continuous pumping*** at ***562 gallons per minute*** ("gpm"). The majority is process water demand which is ***not expected to vary seasonally***. Some seasonal variation in water use for dust control is expected, resulting in expected demand during the summer months being slightly larger on average than during the winter months, with average July-September demand being 584 gpm. The maximum instantaneous use, or peak water demand, was not specified. The projected life of the mine is ten years, with a total project duration of about 14 years, including construction and reclamation. During construction, water demand is expected to be about 100 acre-feet per year. During reclamation, the expected water demand is 55 acre-feet per year. Assuming that construction and reclamation are each completed in two years, the total water use over the life of the facility is 9,380 acre-feet (3,056 million gallons).

The development of the well field under the Purchase Agreement consists of construction of up to three new wells into the Casper Formation and associated infrastructure. The wells have not yet been drilled or permitted by the SEO, and the number of wells drilled may depend on future events and future consultation and agreement between the parties (i.e., SEO, BOPU, and the Project). The SEO received six applications, three for municipal use and three enlargement applications for time-limited industrial use, all listing BOPU as the applicant. ***These applications are currently under review.***

According to calculations of aquifer drawdown and sustainable yield performed by Lidstone & Associates (2012, page 6-9), "…the Casper Aquifer ***may be able to support*** development of 2,000 gpm from the Lone Tree Creek Well Field (1,060 acre-feet per year), …***on a seasonal basis, or 120 day annual summer pumping season***." This yield would be sufficient to supply the needs of the CK Gold Project (907 acre-feet per year). At this pumping rate, Lidstone & Associates (2012) estimated that static water levels in the LTC well field ***would be lowered approximately 9 feet*** after 20 years of production. However, a significant amount of development and infrastructure work is needed to bring this water resource to the point where it can be utilized at the mine site. This process may be expensive and has the potential to delay the CK Gold Project.

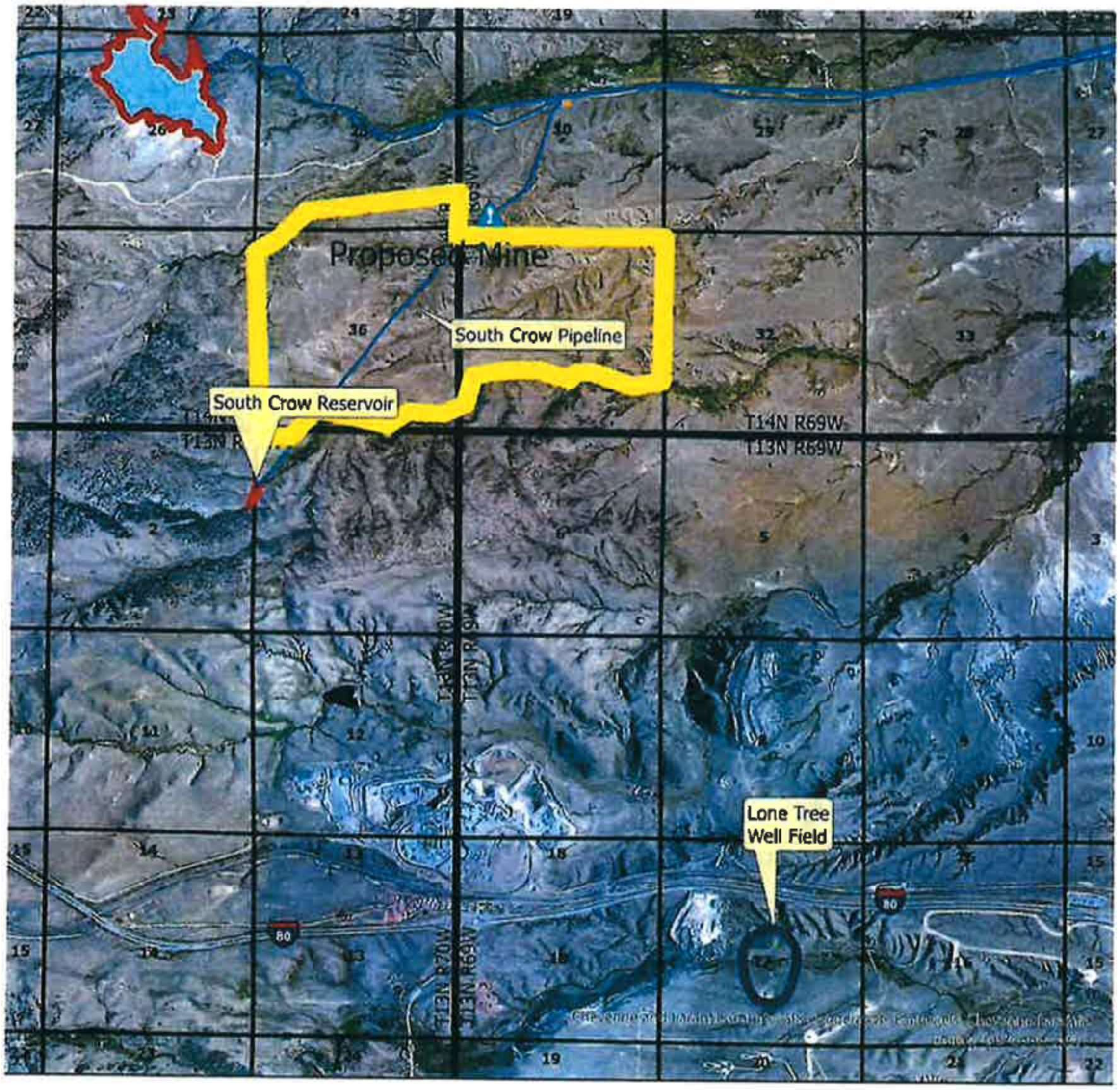
Concerns from SEO report:

1) "***may be able to support***". Indications are it will not support this volume (see below) and ~600 gpm of ***continuous pumping*** may affect our aquifer level negatively.
2) "***120 day…summer pumping season***". Project process water supply is "***not expected to vary seasonally***", i.e., 900 Ac-Ft is a year-round requirement, indicating that the LTC Well Field WILL NOT be able to provide needed water, thus potentially affecting my upper part of the aquifer negatively.
3) "***lowered…9 feet after 20 years***". How will continuous pumping of 600 gpm at the LTC Well Field for 14 years affect my well's static water level ~6 miles away?

[1]Excerpted from: "Final Opinion of Water Supply and Water Yield Analysis for CK Gold Project, Laramie County, Wyoming", Wyoming State Engineers Office, April 2023

Exhibit 1

Proximity of 6 new industrial wells relative to Mountain Meadows (Crystal Lake shown SE of Granite Lake and Mountain Meadows subdivision by ~1.5 mi.).



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andard Parallel 2: 0.0000
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ap Units: Foot US

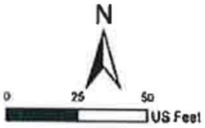


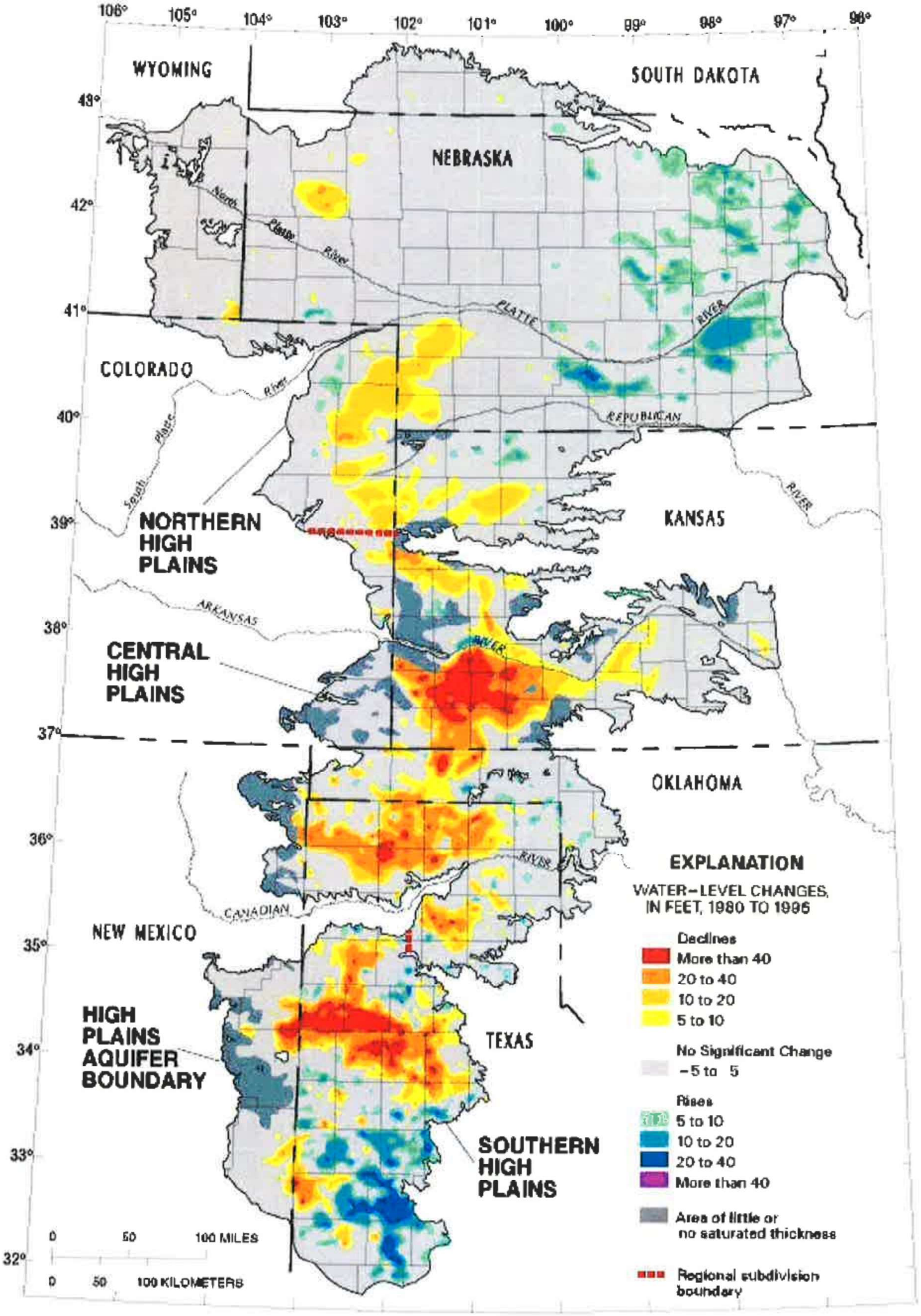
EXHIBIT 1

Current Date/Time: 1/27/2023 3:32 PM

Path: C:\Users\fstrong\City of Cheyenne Board of Public Utilities\Capita
Projects Team Site - Documents\2_Developments\01_Prelim\US Gold

Exhibit 2

High Plains Aquifer static water drops and rises over the years (note SE Wyoming).



Attachment B

Geosyntec Consultants, Inc.

Analysis of the proposed Lone Tree Creek Well Field pumping impacts to domestic well P180840

RESOLUTION # ______________________

A RESOLUTION FOR A SITE PLAN FOR THE CK GOLD PROJECT SITE PLAN LOCATED ON PORTIONS OF SECTION 25 AND 36, TOWNSHIP 14 NORTH, RANGE 70 WEST, AND PORTIONS OF SECTION 28, 29, AND 32, AND ALL OF SECTION 31, TOWNSHIP 14 NORTH, RANGE 69 WEST, 6TH P.M., LARAMIE COUNTY, WYOMING.

WHEREAS, Wyoming State Statutes §§18-5-101 to 18-5-107; §§18-5-201 to 18-5-208; §§18-5-301 to 18-5-315 authorize Laramie County, in promoting the public health, safety, morals and general welfare of the county, to regulate the use of land through zoning in unincorporated Laramie County; and

WHEREAS, the Laramie County Board of Commissioners have adopted the Laramie County Land Use Regulations (LCLUR); and

WHEREAS, this application meets the criteria for a Site Plan pursuant to Section 2-2-133 of the Laramie County Land Use Regulations; and

WHEREAS, this application is in conformance with Section 4-2-114 of the LCLUR governing the LU – Land Use Zone District.

NOW THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF LARAMIE COUNTY, WYOMING, as follows:

The Laramie County Board of Commissioners finds that:

a. This application is in conformance with Section 2-2-133 governing Site Plans; and,

This application is in conformance with Section 4-2-114 governing the LU = Land Use Zone District.

THEREFORE, the Board places the following conditions on the CK Gold Project Site Plan:

1. **All agency comments must be addressed and corrections made to the Site Plan prior to issuance of a Certificate of Review.**

PRESENTED, READ, AND PASSED, this ________________ day of ____________________________, 2025.

LARAMIE COUNTY BOARD OF COMMISSIONERS

____

Gunnar Malm, Chairman

ATTEST:

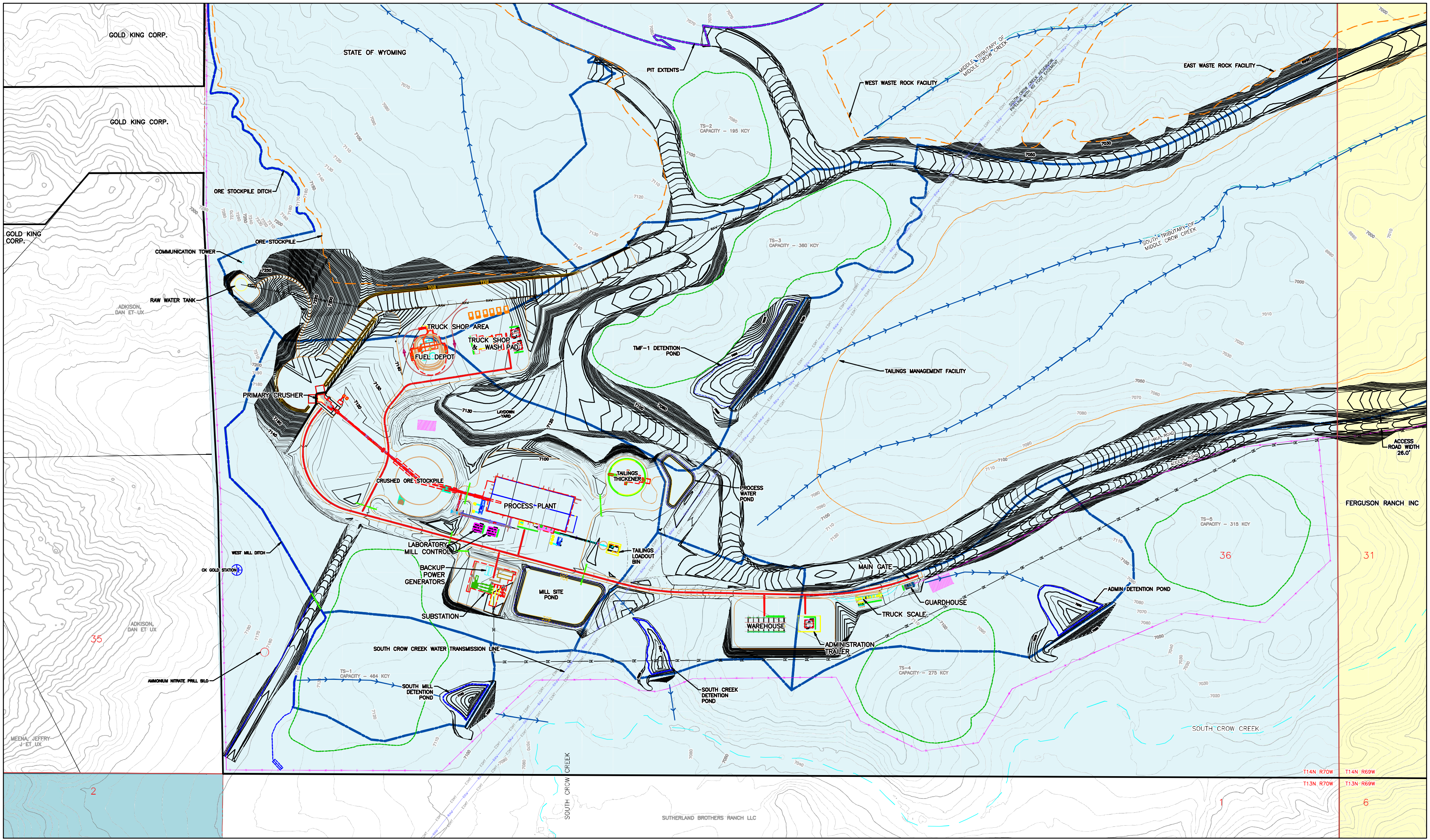
____

Debra K. Lee, Laramie County Clerk

Reviewed and approved as to form:

____

Laramie County Attorney



Topography Layer: Trihydro Unmanned Aerial System Photogrammetry Survey, October 2020

EXPLANATION

OPERATING PERMIT BOUNDARY
TOWNSHIP/RANGE
SECTION
UNPAVED ROAD
HAUL ROAD
ACCESS ROAD
BLACK HILLS ENERGY POWER LINE
EXISTING GROUND CONTOURS (10-FOOT INTERVAL)
PROPOSED GROUND CONTOURS (2-FOOT INTERVAL)
LEACH FIELD
RAW WATER PIPELINE EASEMENT
RAW WATER TRANSMISSION PIPELINE
SOUTH CROW CREEK RESERVOIR PIPELINE
INTERMITTENT/PERENNIAL STREAM
EPHEMERAL DRAINAGE/STREAM
DETENTION PONDS AND COLLECTION DITCHES
TAILINGS MANAGEMENT FACILITY, WEST AND EAST WASTE ROCK FACILITIES, AND ORE STOCKPILE
PIT EXTENTS
TOPSOIL STOCKPILES
FENCE
CULVERT
STATE OWNED LANDS
LOCAL GOVERNMENT OWNED LANDS
SITE BASINS
GENERAL FLOW PATH
SITE ACCESS
GENERAL PARKING

DIMENSIONS AND AREAS

ITEM	WIDTH (FT)	LENGTH (FT)	AREA (SF)	AREA (AC)
TOTAL PROJECT AREA	20,000	9,350		1,628.8
PLANT FACILITY AREA	190	375	71,250	1.6
ADMIN/WAREHOUSE AREA	475	230	109,250	2.5
TRUCK SHOP AREA	570	350	199,500	4.5

NOTES:

1. DIMENSIONS AND AREAS IN TABLE ARE APPROXIMATE AND ROUNDED.
2. THE TOTAL PROJECT AREA WIDTH AND HEIGHT INCLUDE STRAIGHT MEASUREMENTS FROM WHERE THE ACCESS ROAD CONNECTS TO COUNTY ROAD 210.
3. THE PLANT FACILITY AREA IS THE MEASUREMENTS OF THE PROCESS PLANT AS SHOWN.
4. THE ADMIN/WAREHOUSE AREA DIMENSIONS INCLUDE THE FULL PAD.
5. THE TRUCK SHOP AREA INCLUDES THE FUEL DEPOT AND SURROUNDING PAD.
6. PARKING AREAS ARE DENOTED ON THE FIGURE. EXACT NUMBER OF PARKING SPACES ARE NOT CONFIRMED AT THIS TIME.

Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

SITE MAP

CK GOLD MINE
GOLD KING CORP.
LARAMIE COUNTY, WYOMING

Drawn By: BB	Checked By: ZH	Scale: AS SHOWN	Date: 5/30/2025	File: 74L-SITEPLAN

L:\US GOLD CORP - DOCUMENTS\CADD\SINGLEFIGURES\LARAMIECO\74L-SITEPLAN