



ROAD SAFETY AUDIT: 1100 WEST/MAIN STREET WOODS CROSS/NORTH SALT LAKE

5/29/2026

PREPARED FOR:



SUBMITTED BY:



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1. INTRODUCTION

The cities of Woods Cross and North Salt Lake, Utah, submitted a request to the Wasatch Front Regional Council (WFRC) to conduct a Road Safety Audit along 1100 West (Woods Cross) / Main Street (North Salt Lake). WFRC approved this request and retained METHODS Consulting as a third-party consultant to perform a Road Safety Audit with WFRC and staff from Woods Cross and North Salt Lake, including police officers, engineers, and planners in November 2025. This report summarizes the existing conditions of the project area, observations made in the field, and short-, medium-, and long-term recommendations.

Road Safety Audit Definition

According to the Federal Highway Administration (FHWA), a **Road Safety Audit (RSA)** is a formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users.

Figure 1: Summary of What RSAs Are and Are Not

RSAs <u>are</u> :	RSAs <u>are not</u> :
♦ Focused on road safety ♦ A formal examination ♦ Proactive in nature ♦ Conducted by a multidisciplinary team ♦ Conducted by a team that is independent of the operations, design, or ownership of the facility ♦ Conducted by a qualified team ♦ Broad enough to consider the safety of all road users of the facility ♦ Qualitative in nature	♦ A means to evaluate the design of a facility ♦ A check of compliance with standards ♦ A means of ranking or justifying one project over another ♦ A means of rating one design option over another ♦ A redesign of a project ♦ A crash investigation (although the crash history of an existing facility is reviewed by an RSA team)

Road Safety Audit Meetings and Process

As noted above, the RSA process is conducted in accordance with FHWA guidelines. **Figure 2** outlines the steps involved in an RSA.

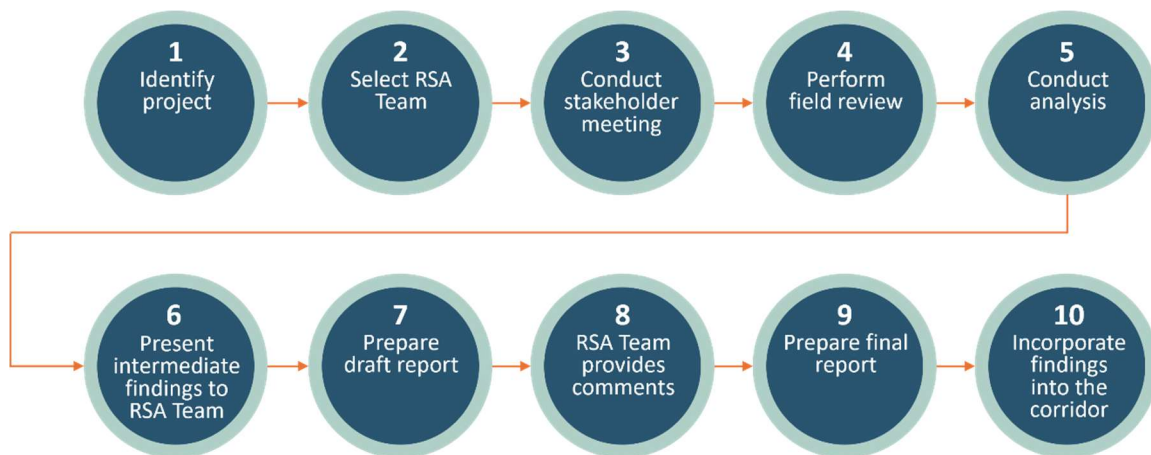


Figure 2: Key Steps in a Road Safety Audit

Stakeholders and points of contact participate throughout the process, particularly during key meetings. The kick-off meeting introduced concept of an RSA, its process, and the responsibilities of the point of contact. At the organizational meeting, WFRC staff, METHODS staff, and the point of contact identified the following locations for the field review:

- Pacific Avenue
- South Railroad Crossing
- 2600 South
- North Railroad Crossing
- 1950 South

At the stakeholder meeting the RSA process was introduced, key features of the corridor were presented, and the plan for the field review was outlined. At the field review, observations were made at the locations outlined above. Key takeaways from the field review are included in the Appendix. The consultant team presented the identified key concerns and potential solutions at the intermediate meeting.

Project Team and Field Review

RSAs require an independent, qualified, and multidisciplinary team of experts. Team members should act independently of the project owner/design team and have the freedom, ability, and comfort to comment frankly on potentially controversial safety issues. Having a combination of skills and experience in different areas is also helpful to ensure the most critical aspects of the project are addressed¹.

¹ FHWA Road Safety Audit Guidelines, Publication No. FHWA-SA-06-06, page 27

The 1100 West / Main Street RSA's team included 13 members, identified in Table 1 with the elements of the audit for which they were present. Erica Wygonik of METHODS Consulting was the RSA team leader; Jeremy Searle from METHODS led the Field Review.

Table 1: RSA Team Members and Attendance

Name	Agency	AM Peak Hour Review	Stakeholder Meeting	Field Review	PM Peak Hour Review	Intermediate Results Meeting
Ali Avery	North Salt Lake		X	X		X
Karyn Baxter	North Salt Lake		X	X		X
Mitch Gwilliam	North Salt Lake		X	X		X
Sam Christansen	Woods Cross		X	X		X
Curtis Poole	Woods Cross		X	X		X
Eric Jones	Woods Cross		X			X
Kip Billings	WFRC		X	X		
Fariba Soltani	WFRC		X	X		
Wayne Bennion	WFRC					X
Erica Wygonik (team leader)	METHODS (Consultant)					X
Ian MacGregor	METHODS (Consultant)	X	X	X	X	X
Jeremy Searle	METHODS (Consultant)	X	X	X		
Dallas Wall	METHODS (Consultant)		X	X		X

The team gathered for a stakeholder meeting at North Salt Lake City Hall at 9:00 am, then held a field review, driving the corridor and making stops at key locations to discuss and observe together. METHODS also observed the corridor including specific observations at the intersections of 2600 South and 1950 South during the school drop-off time and when the school day at Legacy Preparatory Academy ended. METHODS also observed the two railroad crossings along the corridor. After the formal field review was over, METHODS collected speed data and made additional observations throughout the corridor. Findings and analysis from these observations are included in this report.

Following the field review and additional observations, METHODS met with members of the RSA team to discuss a list of short-, medium-, and long-term recommendations to include in the final report.

2. PROJECT CONTEXT

The total length of the study corridor is the 1.1-mile segment between I-15 and 2150 South. The project corridor is located west of I-15 and east of Redwood Road (SR-68). 1100 West / Main Street is a north-south road. Woods Cross and North Salt Lake own the study corridor within their respective jurisdictional boundaries. Within Woods Cross, the study roadway is referred to as 1100 West. Within North Salt Lake, it is referred to as Main Street.

1100 West/Main Street is in an industrial zone. A large amount of traffic north of 2600 South includes heavy vehicles entering and exiting Silver Eagle Refining. In addition to the rail crossings on the study corridor, there are also two railroad crossings along 2600 South within 500 feet of the corridor. One is located west of 1100 West/Main Street, while the other is located to the east. The crossing to the east is used by both freight and the FrontRunner. The crossing to the west is only used by freight.

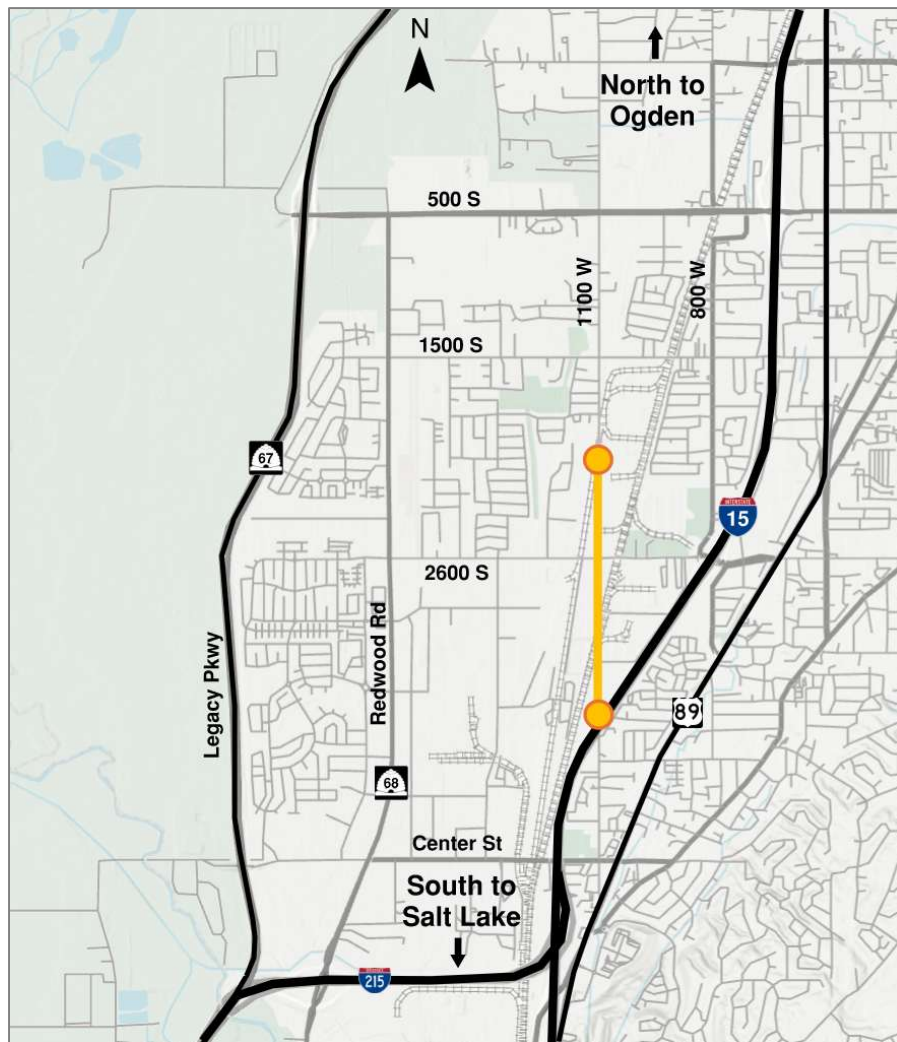


Figure 3: Project Location

Planned Improvements

There are currently plans to improve segments along the project corridor in both North Salt Lake and Woods Cross. Construction for these improvements is anticipated to begin in the fall of 2026. The planned improvements along the study corridor are described below in **Figure 4**. The RSA team reviewed the site plans and provided comments on additional safety measures that could be implemented (included in the Appendix).

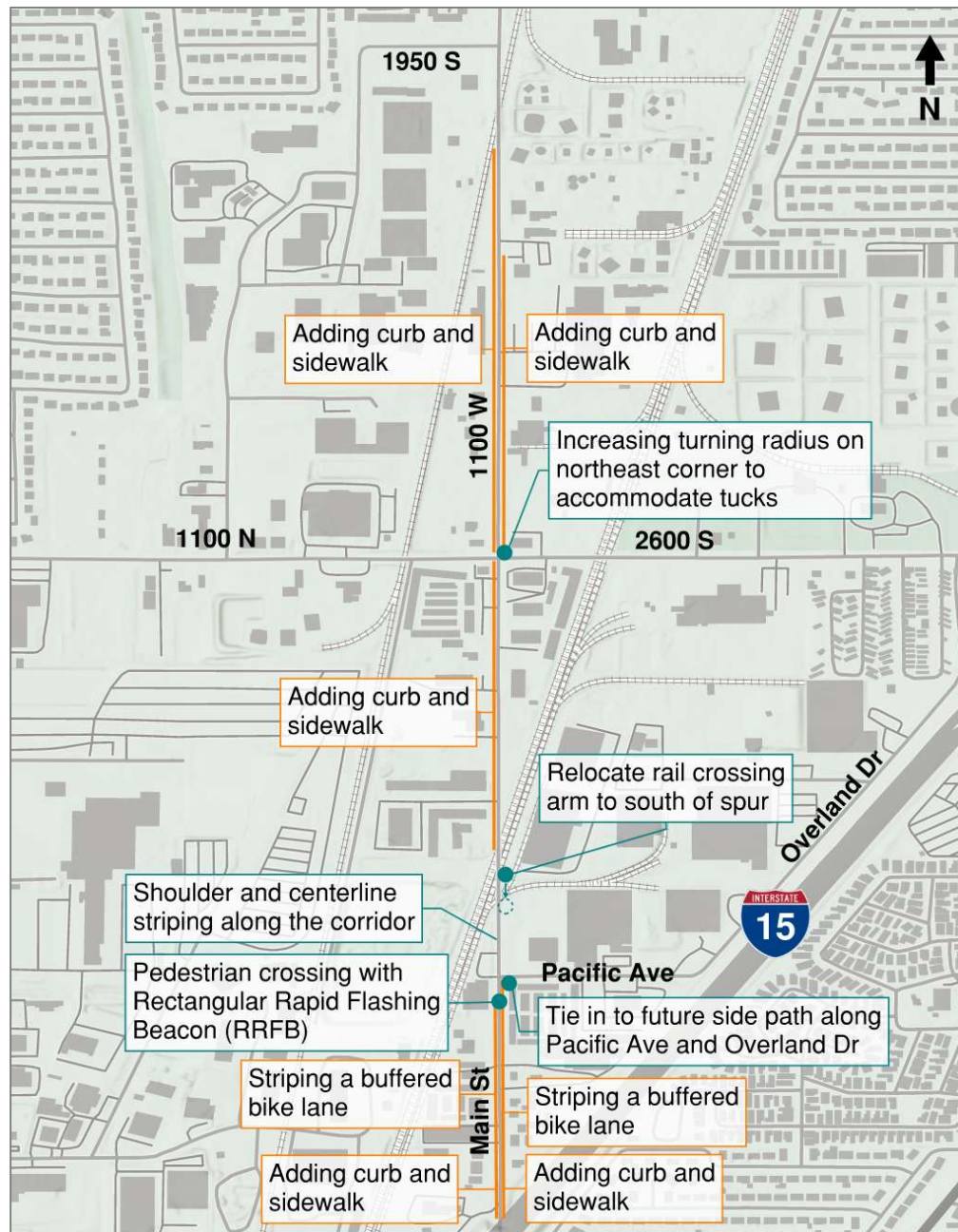


Figure 4: Planned Improvements Along the Study Corridor

WFRC Comprehensive Safety Action Plan

The WFRC Comprehensive Safety Action Plan (CSAP) was completed in 2024. This plan presents strategies to reduce roadway fatalities and serious injuries in the WFRC region. Portions of the study corridor were identified in the plan, specifically 1100 West from 2600 South to 1500 South. Safety measures identified in the plan are shown in **Figure 5**.

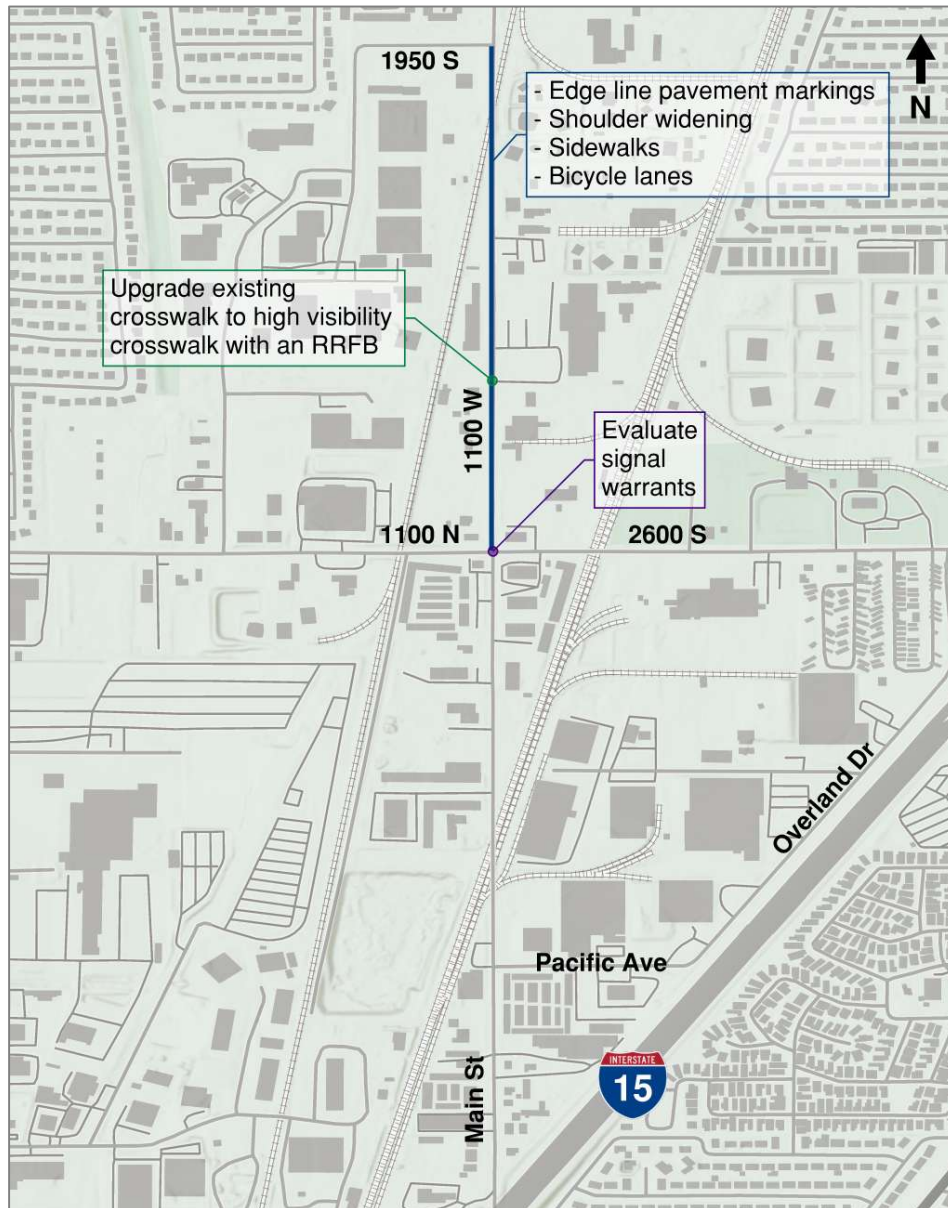


Figure 5: Safety Measures on the Study Corridor Identified in WFRC CSAP

3. EXISTING CONDITIONS

The study corridor is the 1.1-mile segment between I-15 and 2150 South.

Roadway Cross Section

The cross section of different segments of the corridor vary, as shown in **Figure 6**. Some cross sections will be modified as the planned improvements are completed.

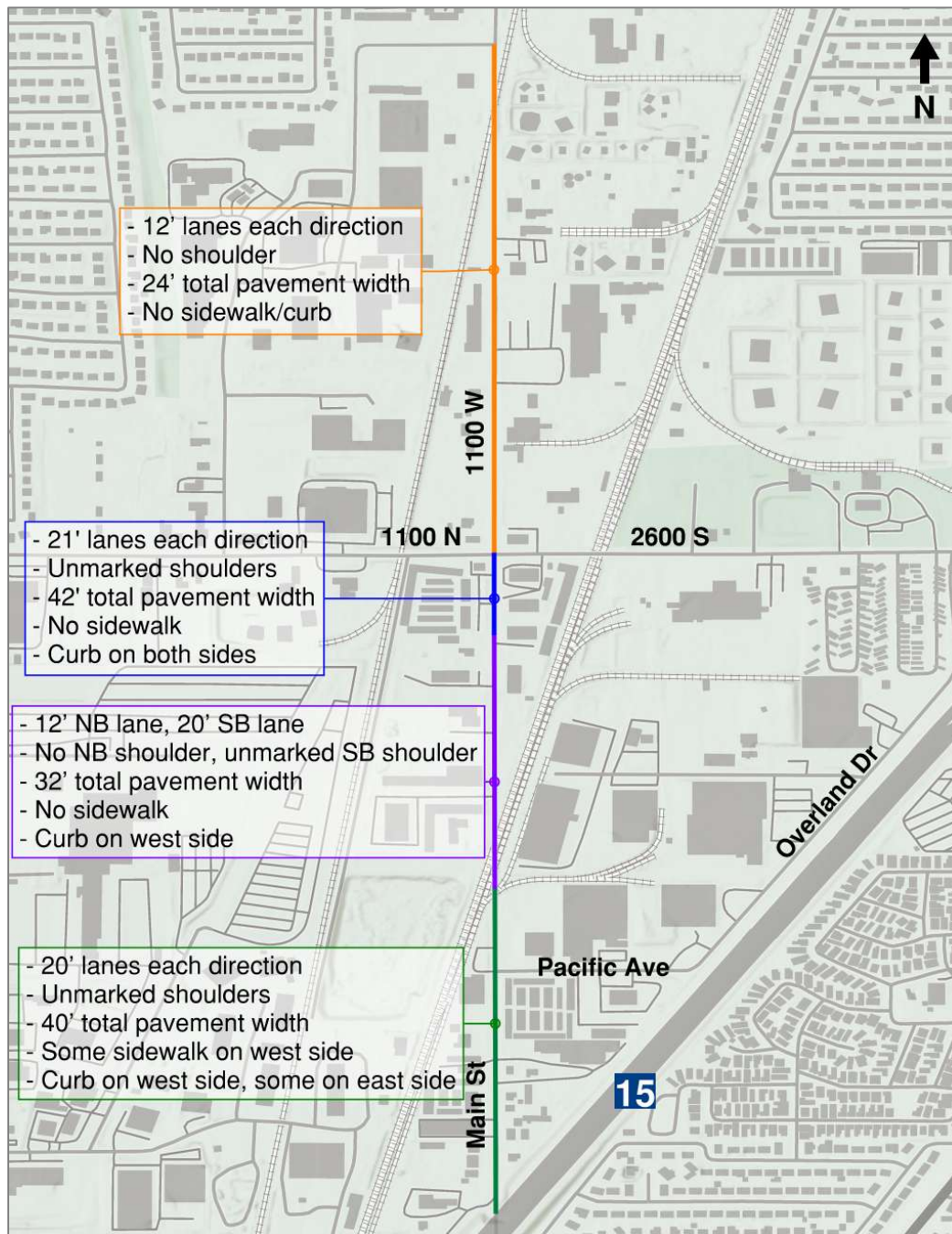


Figure 6: Existing Roadway Cross Sections

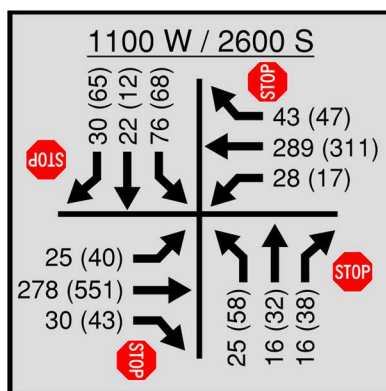
Volumes

The annual average daily traffic volume was reported by UDOT as 5,200 vehicles per day in 2024. Volumes are higher near 2600 South as this roadway continues north to Silver Eagle Refining and Legacy Preparatory Academy. The proportion of heavy vehicles is higher near Silver Eagle Refining.

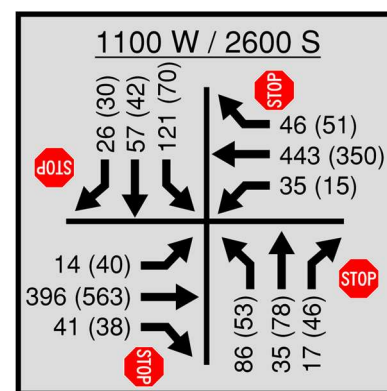
Turning movement count data was collected at the 1100 North/2600 South & 1100 West/Main Street intersection in June 2025 and on the day of the field review in November 2025. Peak hour traffic volumes from both dates are shown in [Figure 7](#).

Key

XX (XX) – AM Peak Hour (PM Peak Hour)



June 2025 Counts



November 2025 Counts

Figure 7: 1100 West & 2600 South Turning Movement Counts

Speeds

The speed limit is 30 mph along the study corridor. Speed data was collected the day of the RSA site visit south of 2600 South and north of the railroad crossing near Silver Eagle Refining during free flow conditions outside of peak hours. South of 2600 South, the 85th percentile speed was **37 mph** in both the northbound and southbound directions. Near the railroad crossing north of Silver Eagle Refining, the 85th percentile speed was **35 mph** in the northbound direction and **36 mph** in the southbound direction.

Crash Summary

Crash data was obtained from the UDOT Traffic and Safety Division. Crash data may be protected under 23 USC 407. A summary of crashes is shown in [Table 2](#) and [Figure 8](#). Data from the most recent validated five full years (January 2020 to December 2024) was used. Crashes reported in 2025 were also reviewed, but they may not be fully validated. While this database is generally considered complete, crashes that do not involve a motor vehicle are not recorded. Thus, there is not a record of crashes involving just a bicycle.

Table 2: Crash Data Summary

Year	All Crashes	
	Total	Severe (Fatal or Serious Injury)
2020	4	0
2021	16	0
2022	11	0
2023	10	0
2024	4	0
2025*	12	0
Total:	57	0

*2025 crash data may not be fully validated



Figure 8: Crash Summary

Notable Crash History Findings Along the Study Corridor

- ♦ 57 crashes were reported between 2020 and 2024. Of these crashes, 40 were reported at the intersection with 2600 South.
- ♦ One reported crash involving a pedestrian occurred at the 2600 South & 1100 West / Main Street intersection. The crash involved a southbound right-turning vehicle and a scooter heading eastbound.
- ♦ There have been no reported serious injury crashes (fatal or suspected serious injury) along the study corridor between 2020 and 2024.

4. FINDINGS AND MEASURES FOR CONSIDERATION

During the RSA stakeholder meeting and field review, the project team members discussed their collective knowledge and experience with the corridor, observed the corridor together at various stopping points, and identified possible improvements. The following sections summarize these findings and measures for consideration, backed by data after a summary of corridor-wide findings and measures for consideration. Measures for consideration are identified as **short-**, **medium-**, or **long-term**.

A summary map of all location-specific insights and issues is shown in **Figure 9**. Insights are not necessarily safety concerns, but observations or background information that inform recommended safety measures. Issues are safety concerns which the suggested measures intend to address.

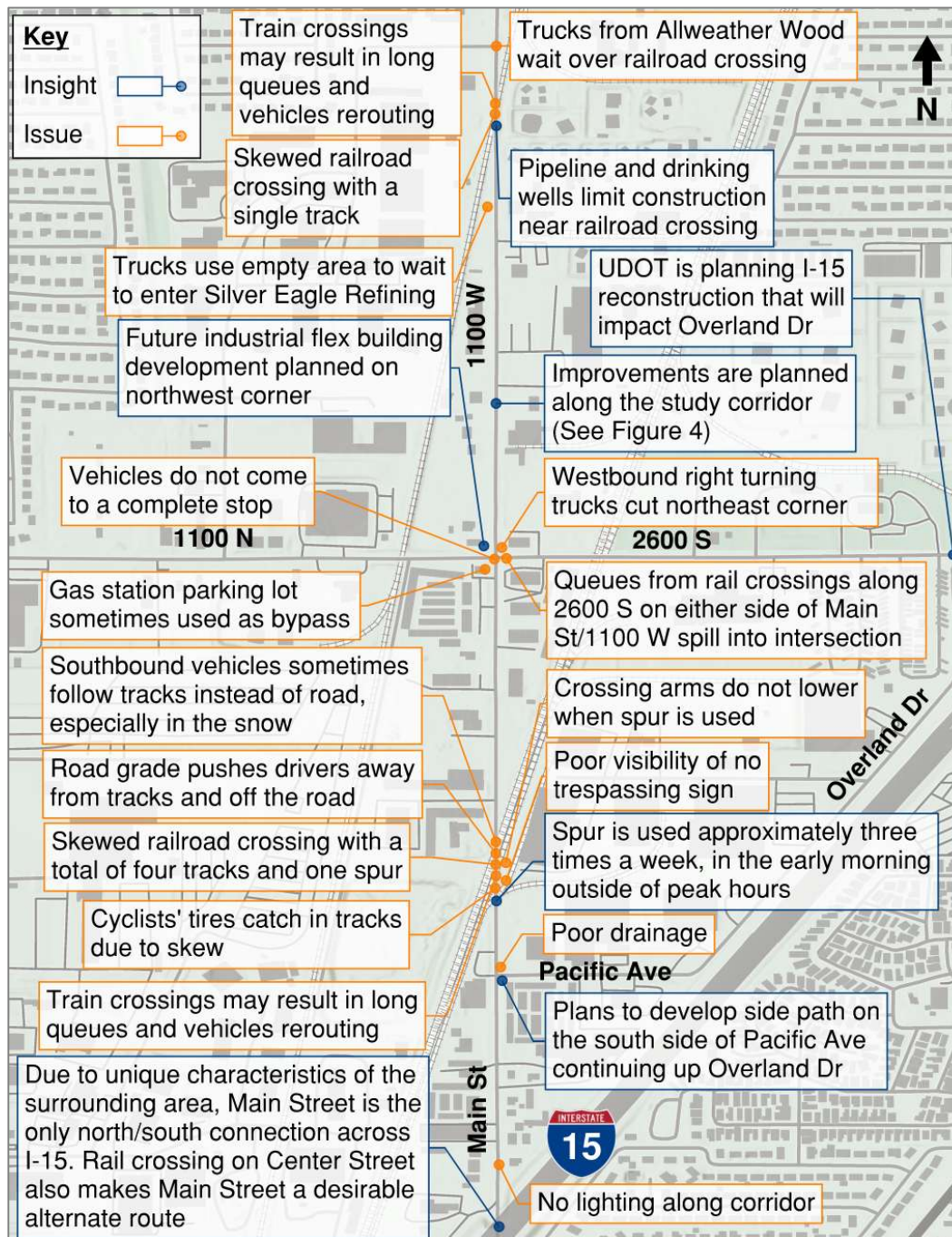


Figure 9: Insights and Issues Summary

Corridor-Wide

Insight: There are plans to construct a paved path on the south side of Pacific Avenue, continuing onto the east side of Overland Drive. This will connect into the I-15 reconstruction project being completed by UDOT.

Insight: Union Pacific Railroad (UPRR) has jurisdiction over the railroad. Thus, improvements to the railroad will need to be coordinated with UPRR.

Insight: Due to the unique characteristics of the surrounding area, Main Street is the only north/south connection across I-15.

Insight: There are plans to construct improvements along portions of 1100 West / Main Street in the fall of 2026. Some of the findings and measures for consideration mentioned in this section may already be planned.

Issue #1: Lighting is limited along the corridor. This can result in intersections coming up unexpectedly.

Short-Term Measure: Install intersection warning signs, stop bars, and stop ahead signs to improve visibility of intersections.

- **To advance**

Medium-Term Measure: Install lighting, particularly at intersections.

- **To advance**

Issue #2: As this is the only north/south crossing of I-15, cyclists use this corridor, despite it being a heavily industrial area.

Short-Term Measure: Wayfinding signage directing cyclists away from industrial area.

- **To advance**

Medium-Term Measure: Continue with plans to divert cyclists to Pacific Avenue and Overland Drive to 800 West, which would route cyclists from Main Street.

- **To advance**

Medium-Term Measure: Consider renaming Main Street from I-15 to 2600 South. The name Main Street may be associated with a more pedestrian/cyclist friendly area. Renaming the road could adjust expectations for traffic using the corridor.

- **Not to advance – Main Street is one of the only through routes in North Salt Lake. Main Street also fronts North Salt Lake City Hall south of the study area. Renaming Main Street is not a viable option.**

Long-Term Measure: Consider alternate connections, including east-west routes.

- **To advance – This is a long-term solution that would need to be explored via a planning study to identify potential routes.**

Issue #3: There is no shoulder striping along the corridor.

Short-Term Measure: Consider edge striping to help differentiate the edge of the roadway. At the wider sections of Main Street south of Pacific Avenue, consider striping shoulders or a buffered bike lane.

- **To advance – The planned improvements in the Appendix include striping a shoulder and buffered bike lane on sections of the corridor.**

Pacific Avenue

Insight: The planned improvements include a sidewalk on both sides of the roadway south of Pacific Avenue, as well as an RRFB crossing.

Short-Term Measure: Continue with plans to install sidewalks south of Pacific Avenue. If the RRFB crossing supports a trail, then a special emphasis crosswalk should be installed.

- **To advance**

Issue #1: There is poor drainage on the northwest corner of the Pacific Avenue intersection.



Short-Term Measure: Add gravel to improve the shoulder.

- **To advance**

Medium-Term Measure: Improve drainage infrastructure.

- **To advance**

Issue #2: Lighting is limited at this intersection.

Medium-Term Measure: Install additional intersection lighting.

- **To advance**

South Railroad Crossing

Insight: Union Pacific Railroad (UPRR) has jurisdiction over the railroad. Thus, improvements to the railroad will need to be coordinated with UPRR.

Issue #1: The railroad crossing at this location is skewed. Cyclists crossing these tracks have caught their tires in the tracks.



Short-Term Measure: Install wayfinding signage to direct cyclists away from the industrial area and railroad crossings.

- **To advance**

Medium-Term Measure: Install bike safe track, consisting of rubber that fills in the gaps on a railroad track. This prevents bike tires from getting caught in the track, and trains can travel over the rubber when they are using the crossing.

- **To advance**



Source: HiRAIL RS Rail Seal, <https://hirail.com/wp-content/uploads/2017/10/Install-Instructions-RS-0711.pdf>

Long-Term Measure: Pedestrian and cyclist grade separated crossing over the four tracks and the spur.

- **To advance**

Long-Term Measure: Consider stubbing Main Street on the north and south side of the railroad crossing, prohibiting traffic from crossing the tracks at this location.

- **Not to advance** – Due to the unique characteristics of the area, Main Street is one of the only corridors to cross I-15 in North Salt Lake. Additionally, this route is important for emergency vehicles.

Long-Term Measure: Provide an alternate mixed use path along Main Street with an alignment that allows cyclists to cross the tracks at a right angle.

- **Not to advance**– UP is not supportive of this infrastructure at this time. This solution may be considered again in the future, but only with additional study.

Long-Term Measure: Consider a new connection to the west, such as connecting to 500 North or Franklin Parkway. This connection could be for vehicles or cyclists. A new connection could allow cyclists to cross the tracks at a better angle than the skew that currently exists on Main Street.

- **To advance** – This is a long-term solution that would need to be explored via a planning study to identify potential routes.

Issue #2: Due to the length of time needed for pedestrians to cross the railroad tracks, pedestrians cannot cross in adequate time. Thus, pedestrians are not permitted to cross the railroad tracks. There is a no trespassing sign north of the rail spur, but it is small and visibility is limited.



Short-Term Measure: Improve visibility of the no trespassing sign, potentially installing additional signage south of rail spur.

- **To advance**

Short-Term Measure: Install pedestrian wayfinding near Pacific Avenue, directing pedestrians up Pacific Avenue and Overland Drive.

- **To advance**

Medium-Term Measure: Install pedestrian fencing to deter pedestrians.

- **To advance**

Long-Term Measure: Pedestrian and cyclist grade separated crossing over the four tracks and the spur.

- **To advance**

Issue #3: The railroad crossing arms for northbound vehicles is between the spur and the mainline tracks.



Short-Term Measure: Continue with plans to relocate the crossing arms so they are south of the spur.

- **To advance**

Issue #4: The roadway grade pushes southbound vehicles off the track and away from the roadway, and some vehicles follow the tracks instead of the road in snowy conditions.

Medium-Term Measure: Implement flex delineation posts to help drivers identify the edge of pavement.

- **To advance**

2600 South

Insight: There are plans for a flex industrial space on the northwest corner of the intersection.

Short-Term Measure: Consider a plan for access management plan near the intersection.

- **To advance**

Issue #1: When longer trains use the crossings on 2600 South on either side of Main Street / 1100 West, vehicle queues extend into the intersection. This is most common during peak hours.



Short-Term Measure: Install “Do Not Block” pavement marking and signage.

- **To advance**

Long-Term Measure: Consider signalizing the intersection if the appropriate warrants are met. If signalized, the signal should be coordinated with the railroad crossings. Signalizing this intersection will likely require restriping the lane configuration, converting the through/left-turn lanes on 2600 South to dedicated left turn lanes. This change will reduce the number of through lanes, and thus the capacity, of 2600 South.

- **To advance**

Issue #1: Westbound right turning trucks are cutting the corner, hitting the curb.

Short-Term Measure: Continue with plans to increase turning radius on northeast corner to accommodate trucks.

- **To advance**

North Railroad Crossing

Insight: Pipeline and drinking well locations limit construction near the railroad crossing.



Issue #1: The railroad crossing at this location is skewed. Cyclists crossing these tracks have tires caught in the tracks and fall off their bikes.

Medium-Term Measure: Install bike safe track, consisting of rubber that fills in the gaps on a railroad track. This prevents bike tires from getting into the track, and trains can travel over the rubber when they are in the crossing.

- **To advance**

Issue #2: Trucks accessing Silver Eagle Refining are parking and waiting on the west side of the roadway.



Long-Term Measure: Pave and stripe the west side of the roadway to formalize the truck waiting area. Note: this area is owned by Silver Eagle Refining, and any improvement would need to be coordinated with them.

- **To advance**

Issue #3: Lighting is limited at this location.

Medium-Term Measure: Install intersection lighting.

- To advance

Issue #4: There are no railroad crossing arms at this location.

Medium-Term Measure: Consider installing crossing arms.

- To advance

1950 South

Insight: There are currently plans to implement an all-way stop at this intersection to allow trucks from Allweather Wood to turn onto 1100 West without waiting too long over the railroad tracks.

Issue #1: When westbound trucks from Allweather Wood exit, they stop over the railroad tracks while waiting for an acceptable gap.



Short-Term Measure: Continue with plans to convert intersection to an all-way stop. As this is a change in traffic control at this intersection, additional measures such as stop ahead signs, LED flashers, and variable message signs should be implemented along 1100 West to notify drivers of the change.

- To advance

Medium-Term Measure: Consider restricting the Allweather Wood access to right-in-right-out. Thus, trucks entering Allweather Wood only need to be concerned about right turn gaps.

- **Not to advance – Implementing measure is logistically complicated, requiring consent and coordination of property owner, railroad, and city.**

Long-Term Measure: Consider relocating the Allweather Wood access north to align with 1900 South. There is more space at this location between the intersection and the railroad tracks for queue storage.

- **Not to advance – Measure will require redesign of the Allweather Wood site and the railroad may not allow new railroad crossings even if this solution removes existing crossings.**

Benefit-Cost Analysis

The following tables show the cost estimate, expected crash reduction, and benefit-cost ratio of each improvement. These are high-level estimates, based on the best available information. Cost estimates rely on current unit costs, available project estimates, or estimates from similar projects.

METHODS estimated the safety costs in the study area using both predictive modeling and the observed crash data. The estimates relied on the observed crash history unless the crash history was relatively limited. In those instances, the values from the predictive modeling were used. When predictive modeling was used, AADTs were developed using UDOT 2024 AADT information, estimated from turning movements, or estimated from similar roads or surrounding land use. In both cases, crash modification factors (CMFs) from the Utah CMF database, the WFRC CSAP, or the CMF Clearinghouse were applied to each measure when there was an applicable equivalent countermeasure. Not all measures have an equivalent countermeasure for various reasons. The lower the CMF, the greater reduction in crashes a countermeasure is expected to produce.

The following table summarizes the improvements with their CMF, cost estimate, and benefit-cost ratio. A benefit-cost ratio (B/C) above 1 means the benefit of a countermeasure is greater than the cost of that countermeasure. The benefit values used to determine the final B/C ratio are based on a 20-year analysis. The cost of a countermeasure is factored based on its service life. Complete calculations for each improvement are included in the Appendix.

Table 3: Benefit-Cost Analysis²

ID	Location	Measure	CMF	20-Year Benefit	20-Year Cost	Benefit-Cost Ratio (B/C)
SHORT TERM						
S-1	Corridor Wide	Low-Cost Countermeasures at intersections (Double stop signs, stop ahead signs, LED flashers, stop ahead striping)	0.900	\$2,841,000	\$400,000	7.10
S-2	Corridor Wide	Wayfinding signage	0.902	\$2,773,000	\$47,000	59.00
S-3	Corridor Wide	Edge striping	0.962	\$1,091,000	\$16,000	68.19
S-4	Pacific Avenue	Add gravel to shoulder	Drainage issue			
S-5	South RR Crossing	Wayfinding directing pedestrians and cyclists away	0.902	\$13,000	\$32,000	0.41
S-6	South RR Crossing	Improve sign visibility	0.902	\$13,000	\$16,000	0.81
S-7	South RR Crossing	Continue with plans to relocate RR crossing arms south of spur	0.060	\$177,000	\$69,000	2.57
S-8	2600 South	Access Management	0.930	\$805,000	\$21,000	38.33
S-9	2600 South	Do not block pavement marking and signage	0.902	\$1,123,000	\$32,000	35.09
S-10	2600 South	Continue with plans to increase westbound left turn radius	0.998	\$17,000	\$392,000	0.04
S-11	1950 S	Continue with plans to make intersection all-way stop	0.951	\$72,000	\$16,000	4.50
MEDIUM TERM						
M-1	Corridor Wide	Lighting	0.957	\$1,217,000	\$507,000	2.40
M-2	Corridor Wide	Continue to install bike lanes up Pacific Avenue to Overland Drive	0.997	\$88,000	\$21,000	4.19
M-3	Pacific Avenue	Improve drainage infrastructure	Drainage issue			
M-4	Pacific Avenue	Intersection lighting	0.982	\$11,000	\$50,000	0.22
M-5	South RR Crossing	Bike safe track	0.996	\$1,000	\$174,000	0.01
M-6	South RR Crossing	Pedestrian fencing	0.880	\$23,000	\$66,000	0.35
M-7	South RR Crossing	Flex delineation posts for SB vehicles	0.952	\$9,000	\$5,000	1.80
M-8	North RR Crossing	Bike safe track	0.996	\$2,000	\$35,000	0.06
M-9	North RR Crossing	Intersection lighting	0.982	\$34,000	\$50,000	0.68
M-10	North RR Crossing	RR crossing arms	0.060	\$602,000	\$69,000	8.72
LONG TERM						
L-1	Corridor Wide	Develop alternate east-west routes, via a planning study	Not a direct safety measure			
L-2	South RR crossing	Ped/cyclist grade separated crossing	0.991	\$2,000	\$3,036,000	0.00
L-3	2600 South	Signalize intersection	0.560	\$5,060,000	\$500,000	10.12
L-4	North RR crossing	Pave truck waiting depot to formalize truck waiting	0.890	\$71,000	\$750,000	0.09

² Lower CMFs indicate a countermeasure is expected to result in a larger reduction in crashes.

5. RECOMMENDATIONS

The following summarizes the recommendations based on known operations, safety, and geometry along the study corridor and the preliminary evaluation of the measures described above.

Table 4: Recommendations

ID	Location	Measure	Recommended?	Details
SHORT TERM				
S-1	Corridor Wide	Low-Cost Countermeasures at intersections (Double stop signs, stop ahead signs & striping, LED flashers)	Yes	-
S-2	Corridor Wide	Wayfinding signage	Yes	-
S-3	Corridor Wide	Edge striping	Yes	-
S-4	Pacific Avenue	Add gravel to shoulder	Drainage issue	
S-5	South RR Crossing	Wayfinding directing pedestrians and cyclists away from RR crossing	Not at this time	B/C < 1
S-6	South RR Crossing	Improve sign visibility	Yes	B/C < 1 Coordination w/ railroad required
S-7	South RR Crossing	Continue with plans to relocate RR crossing arms south of spur	Yes	-
S-8	2600 South	Access Management	Yes	-
S-9	2600 South	Do not block striping and signage	Yes	-
S-10	2600 South	Continue with plans to increase westbound left turn radius	In construction plans	B/C < 1
S-11	1950 S	Continue with plans to make intersection all-way stop	Yes	-
MEDIUM TERM				
M-1	Corridor Wide	Lighting	Yes	-
M-2	Corridor Wide	Continue to install bike lanes up Pacific Avenue to Overland Drive	Yes	-
M-3	Pacific Avenue	Improve drainage infrastructure	Drainage issue	
M-4	Pacific Avenue	Intersection lighting	Not at this time	B/C < 1
M-5	South RR Crossing	Bike safe track	Yes	B/C < 1 Coordination w/ railroad required
M-6	South RR Crossing	Pedestrian fencing	Not at this time	B/C < 1 Coordination w/ railroad required
M-7	South RR Crossing	Flex delineation posts for SB vehicles	Yes	Coordination w/ railroad required
M-8	North RR Crossing	Bike safe track	Yes	B/C < 1 Coordination w/ railroad required
M-9	North RR Crossing	Intersection lighting	Not at this time	B/C < 1
M-10	North RR Crossing	RR crossing arms	Yes	Coordination w/ railroad required
LONG TERM				
L-1	Corridor Wide	Alternate east-west routes, potentially determined after planning study	Not a direct safety measure	
L-2	South RR crossing	Ped/cyclist grade separated crossing	Not at this time	B/C < 1 Consider if a planning study determines it is viable.
L-3	2600 South	Signalize intersection	Yes	Coordinate signal with RR crossings to the east and the west. Lane configuration may change.
L-4	North RR crossing	Pave truck waiting depot to formalize truck waiting	Not at this time	B/C < 1 Requires coordination with landowner

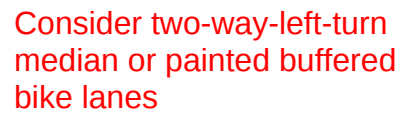
6. APPENDIX

A: Marked up Plans for 1100 West in Woods Cross City

B: Marked up Plans for Main Street Sidewalk in North Salt Lake

C: Summary of Issues

D: Detailed Benefit-Cost Calculation Table



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Kaysville, UT 84037

Phone: 801.547.0393
www.jub.com

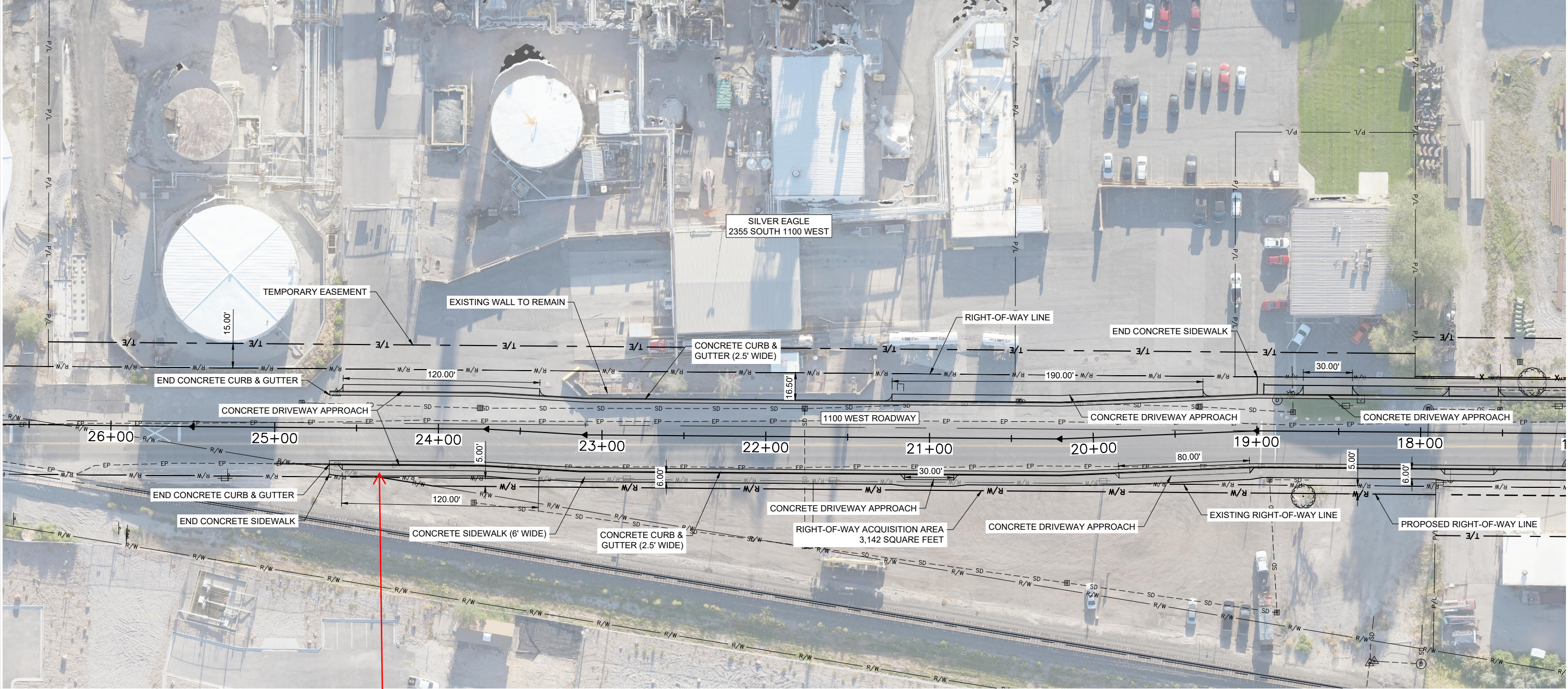
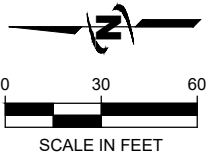


J-U-B ENGINEERS, INC.

FILE : 55-20-133_EXHIBITS
JUB PROJ. #: 55-20-113
DRAWN BY: MSC
DESIGN BY: MSC
CHECKED BY: GLS
 ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 10/23/2024
SHEET NUMBER:

EXH B



Consider "Sidewalk Ends" sign

REUSE OF DRAWINGS			
J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.			
REVISION			
NO.	DESCRIPTION	BY	DATE

J-U-B ENGINEERS, INC.

466 North 900 West
Kaysville, UT 84037

Phone: 801.547.0393
www.jub.com


J-U-B ENGINEERS, INC.

PRELIMINARY
PLANS

NOT FOR
CONSTRUCTION

FILE : 55-20-133, EXHIBITS
JUB PROJ. # : 55-20-113
DRAWN BY: MSC
DESIGN BY: MSC
CHECKED BY: GLS

ONE INCH =
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

1100 WEST ROADWAY: 2100 S TO 2600 S
WOODS CROSS CITY

SILVER EAGLE REFINERY
2355 SOUTH 1100 WEST

LAST UPDATED: 10/23/2024
SHEET NUMBER:

EXH A

SHEET NO.
1

U.S. Standard Units
(Inch-Pound Units)

ALL UNITS IN FEET UNLESS
OTHERWISE NOTED

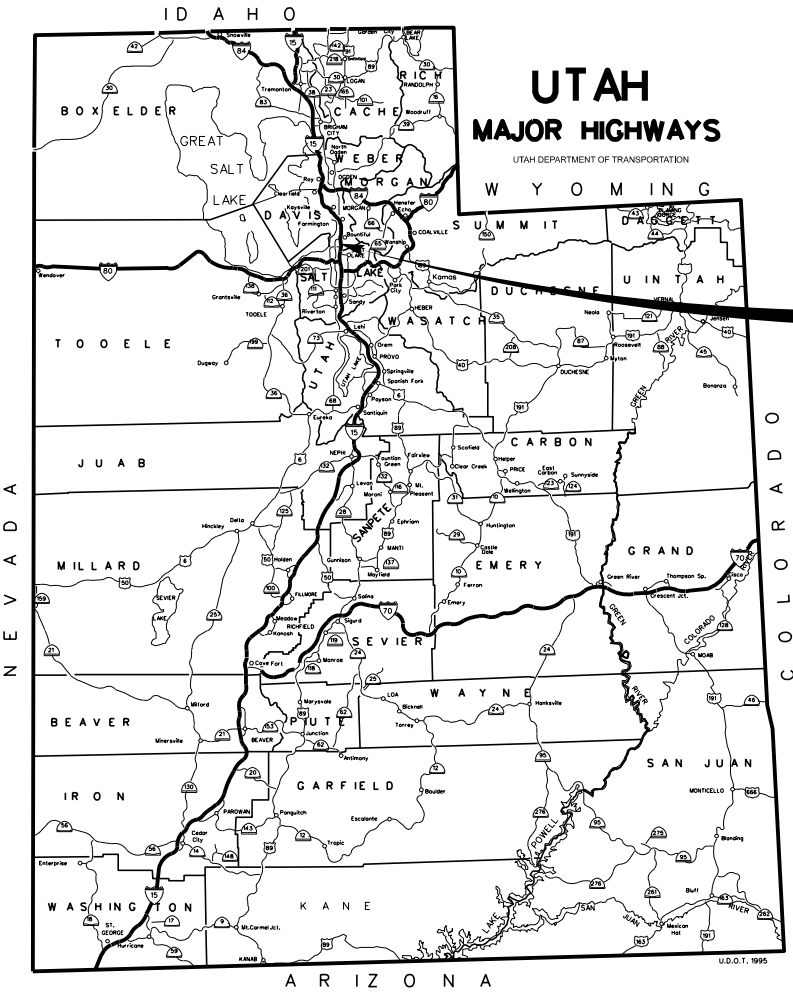
UTAH

DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED PROJECT
FEDERAL AID PROJECT

F-1384(2)1 PIN: 19623

NSL - MAIN STREET SIDEWALK; I-15 TO 1001 NORTH
RECONSTRUCT & WIDENING
DAVIS COUNTY
LENGTH 0.682 MILES



F-1384(2)1

100+00.00
BEGIN PROJECT
F-1384(2)1

N 470473.449
E 526822.818

136+01.82
END PROJECT
F-1384(2)1

N 474075.434
E 526832.425

NOTES:

1. OBTAIN COUNTY PERMIT FOR ANY GOVERNMENT SURVEY MONUMENT WITHIN THIRTY FEET OF WORK PER UDOT SPECIFICATION 00820M AND 01721.

INDEX TO SHEETS

SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
1	1	TITLE / INDEX TO SHEETS
1-A	1	SIGNATURES
1-B	1	ABBREVIATIONS AND LEGEND
HC-01	1	HORIZONTAL CONTROL
CR-01	1	CROSS REFERENCE
SC-01	1	SURVEY CONTROL
TS-01 TO TS-04	4	TYPICAL SECTION
DT-01	1	DETAILS
SM-01 TO SM-11	11	SUMMARY
MOT-01	1	MAINTENANCE OF TRAFFIC
RD-01 TO RD-07	7	ROADWAY
RMV-01 TO RMV-07	7	REMOVAL
UT-01 TO UT-07	7	UTILITY
RR-01	1	RAILROAD
GR-01 TO GR-09	9	GRADE
DR-01 TO DR-07	12	DRAINAGE
SS-01 TO SS-07	7	SIGNING AND STRIPING



VICINITY MAP

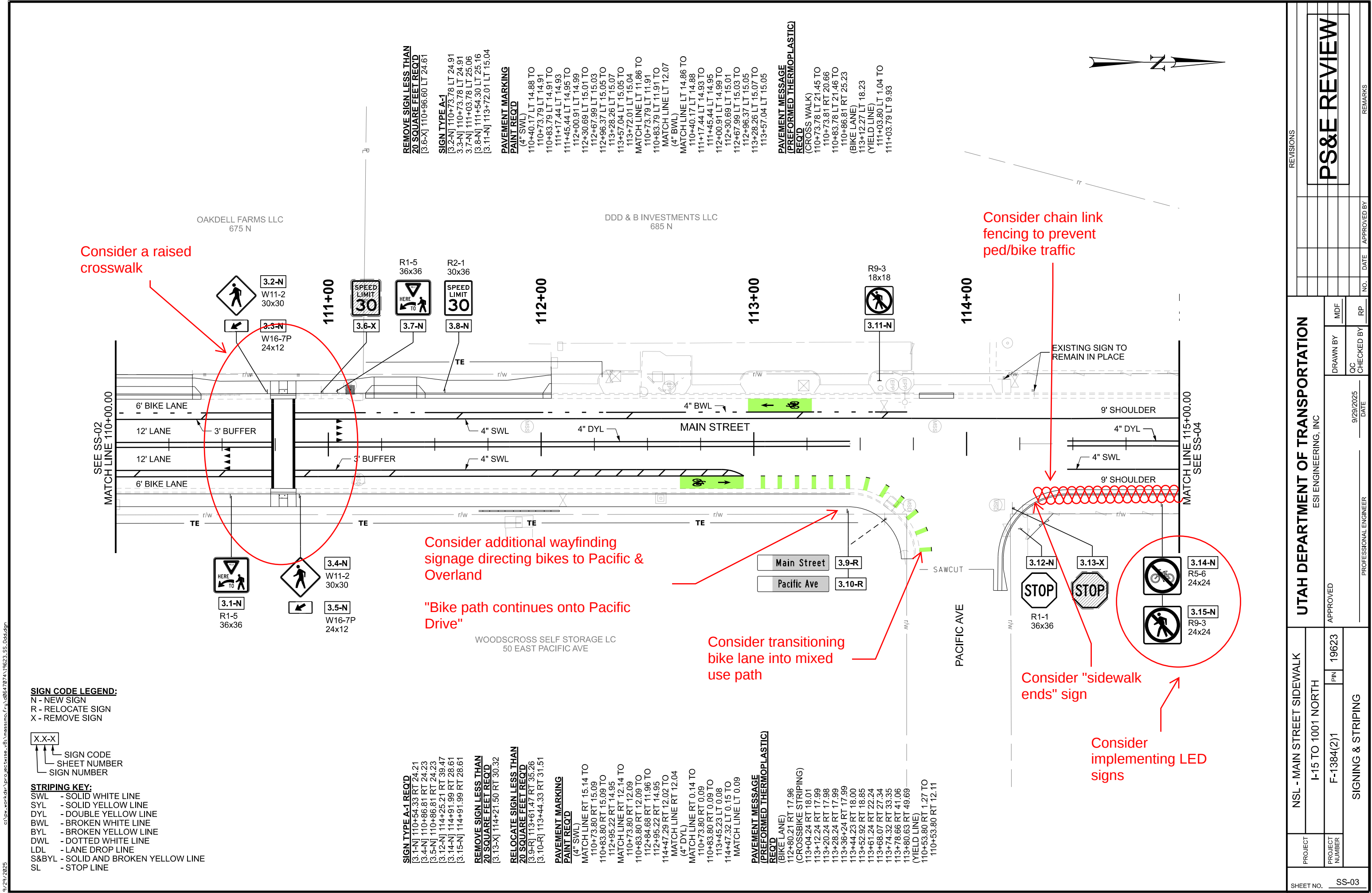
VERIFIED FOR SUBMISSION FOR ADVERTISEMENT

APPROVED FOR USE
DESIGN ENGINEER

CITY ENGINEER, NORTH SALT LAKE CITY

UTAH DEPARTMENT OF TRANSPORTATION
APPROVED FOR ADVERTISEMENT

REGION ONE PRECONSTRUCTION ENGINEER





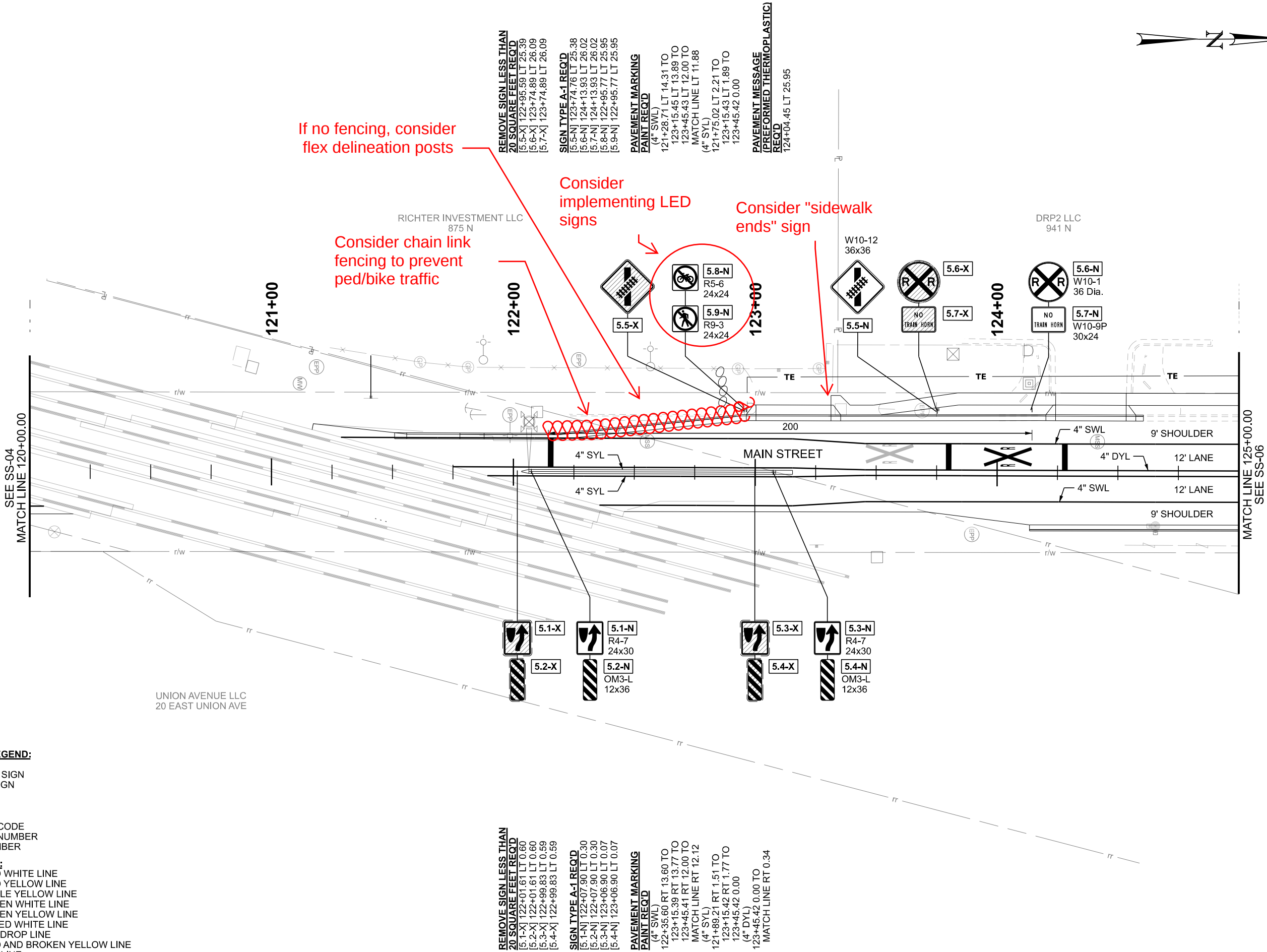
c:\pwworkdir\project\utah\8\massimo.F\1\0623_SS_05.dgn 9/29/2025 ESI #23-138

SIGN CODE LEGEND:
N - NEW SIGN
R - RELOCATE SIGN
X - REMOVE SIGN

X.X-X
SIGN CODE
SHEET NUMBER
SIGN NUMBER

STRIPING KEY:

- SWL - SOLID WHITE LINE
- SYL - SOLID YELLOW LINE
- DYL - DOUBLE YELLOW LINE
- BWL - BROKEN WHITE LINE
- BYL - BROKEN YELLOW LINE
- DWL - DOTTED WHITE LINE
- LDL - LANE DROP LINE
- S&BYL - SOLID AND BROKEN YELLOW LINE
- SL - STOP LINE



PROJECT		NSL - MAIN STREET SIDEWALK		UTAH DEPARTMENT OF TRANSPORTATION		REVISIONS	
PROJECT NUMBER		I-15 TO 1001 NORTH F-1384(2)1		ESI ENGINEERING, INC			
SIGNING & STRIPING		APPROVED		DRAWN BY MDF			
		PIN 19623		QC CHECKED BY RP			
		DATE 9/29/2025		APPROVED BY			
		PROFESSIONAL ENGINEER		NO.		DATE	
						REMARKS	
SHEET NO.		SS-05					
						PS&E REVIEW	

APPENDIX C: Summary of Issues

The following list of issues are a compilation of the project team's observations during the RSA field review on November 12, 2025, the experience of City officials, and the crash history and volumes discussed in the Existing Conditions.

Entire Corridor

- No lighting
- Cyclists falling off bikes when crossing RR crossings due to skew
- City proposing to reroute the bicycle path around Pacific Avenue, up Overland Drive (Overland Drive to be reconstructed by UDOT with I-15 widening).
- City asked that traffic counts include truck counts (not just a proportion from the AADT estimates).
- This is an industrial corridor. Potentially help road identity by changing the name from Main Street to something that is not so inviting to casual users. . . Industrial Way?
- For the short segment of 40' cross section, add a TWLTL to narrow the roadway, add shoulder striping and perhaps a buffer bicycle lane on the west side, on the eastside they need to transition to a shared use path and get the northbound bicycle lane off the roadway. The shared use path will continue eastward on Pacific Ave and continue up to 2600 South.

Pacific Ave

- Poor drainage
- Limited lighting
- Large landscape rocks are used to keep vehicles from turning over curb.
- Loading configuration of industry on the west side suggests trucks are leaving in north exit, east shoulder shows traffic off of pavement.
- City would like to limit recreational users on Main Street but not sure how.
- City planning on a crossing from west to east mid-block for bicycles and then a separated bike trail on east side up to and around Pacific Ave.
- City feels it is unlikely to manage active transportation users coming south from Woods Cross (between 2600 South to Pacific).
- Pacific Avenue will have sidewalk on both sides

South RR crossing

- RR crossing is skewed
- 5 tracks cross at this location
- Road grade pushes drivers away from tracks and off the road
- Southbound vehicles have turned to follow tracks instead of road (particularly in snowy conditions when the alignment is not obvious, has led to vehicles being stuck on rails)
- Poor visibility of no trespassing sign
- Pedestrians aren't allowed to cross here
- Boulders in clear zone
- Wide commercial access
- Team discussed realignment to avoid skew but concluded that it doesn't benefit vehicles
- Spur is used 3x week between 12 & 6
 - a. Arms don't come down when spur is used
- Priority to make new bike route very desirable
- Pedestrian fencing needed at the turnaround to keep persons and bicycles from crossing the rail lines.

2600 S

- Gas station accesses too close to intersection
 - a. Gas station attendant stated that some vehicles bypass queue through Fast Stop Express to go southbound on Main Street
- Queues from RR crossing on 2600 S spill into intersection
- Westbound right turning trucks cut northeast corner of intersection, many are double tankers to the refinery, currently this is shared through/right turn lane. Also the westbound is a shared through/left.
- Vehicles do not come to a complete stop
- High truck volume: Silver Eagle Refining (95 trucks/day), FedEx a lot of activity
- If bicycles are rerouted (along Pacific and up Overland Drive to 2600 South then west back to Main Street) plan should account for bike path (needs to turn north)
- What are the signal warrants at the 4-way stop
- Northwest corner to be rezoned for future development.
- Speed 30 mph southbound
- Southbound sidewalk will stop at end of Pioneer Storage
- If train stops on Center Street, 100% of traffic uses Main Street as detour

- Partial lighting
- East of the intersection there is a rail crossing with 4 tracks (3 are Union Pacific, 1 is UTA). UTA requires frequent crossings each day.
- West of the intersection there is a rail crossing with 1 track (Union Pacific) with 2-3 trains per day.
- The Sinclair gas station is too close to build a roundabout since it would need to be big enough to handle the trucks. IF they could build a roundabout, great! Or could look at signalizing this intersection. It would be easier to signalize if there were no right turn lanes but just give a dedicated left turn with a shared through right for each leg.
- A traffic signal would need a queue cutter for the crossing of 2600 South in BOTH directions.

North RR crossing

- RR crossing is skewed
- Petroleum pipeline and drinking wells constrain construction options
- Trucks use empty areas southwest of wait to enter Silver Eagle Refining
- Roadway lighting is not adequate
- 2-8 trains/day
- Options depend on which direction most of the traffic comes from to go to the Silver Refining weigh station. If most of it comes from the south (and thus required to queue on the west side of the roadway), then an improvement would have the weigh process reversed (enter on the south and exit to the north). If they are coming from the north no change is required. Either way an all-way stop at the exit of the weigh station with some sort of queuing on the west side. . . perhaps a “truck only” displaced left turn (assuming weigh station will remain the same as current layout) might help flow and queueing.
- Widen the roadway throughout this section seems advisable; a 3T configuration with buffered bicycle lanes and sidewalks would likely work well.

1950 S

- Trucks on westbound access must wait parked over the RR crossing
- City planning on a 4-way stop with flashers in future (required by railroad) for access to Allweather Wood.
- 30 MPH throughout. Police felt they may have higher speeds but not documented.
- Vertical curve at crossing looking south towards turn around for weigh station

Appendix D: Detailed Benefit-Cost Calculation Table

			CMF							Predicted					Observed							
ID	Location	Measure	Fatal	SI	Minor Injury	Possible Injury	PDO	Overall CMF	Type	Cost per crash	# of Crashes	# w/ Treatment	Crashes avoided	Annual Crash Costs	Safety Benefit per Year	Fatal	SI	Minor Injury	Possible Injury	PDO	# of Crashes	Fatal w/ Treatment
SHORT TERM																						
S-1	Corridor Wide	Low Cost Countermeasures at intersections	0.90	0.90	0.90	0.90	0.90	0.90	2U	\$274,067	6.967	6.27	0.697	\$1,909,426	\$190,943	0	0	0.4	1	7.8	9.2	0
S-2	Corridor Wide	Wayfinding signage (62 & 63)	1.00	0.85	0.85	0.85	0.93	0.90	2U	\$274,067	6.967	6.29	0.68	\$1,909,426	\$186,387	0	0	0.4	1	7.8	9.2	0
S-3	Corridor Wide	Edge striping	0.96	0.96	0.96	0.96	0.96	0.96	2U	\$274,067	6.967	6.70	0.27	\$1,909,426	\$73,322	0	0	0.4	1	7.8	9.2	0
S-4	Pacific Avenue	Add gravel (drainage)	Not a direct safety measure																			
S-5	South RR Crossing	Wayfinding directing pedestrians and cyclists away (62 & 63)	1.00	0.85	0.85	0.85	0.93	0.90				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
S-6	South RR Crossing	Improve sign visibility	1.00	0.85	0.85	0.85	0.93	0.90				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
S-7	South RR Crossing	Continue with plans to reloacte arms south of spur (install arms)	0.06	0.06	0.06	0.06	0.06	0.06				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
S-8	2600 South	Access Management	0.93	0.93	0.93	0.93	0.93	0.93	4aST	\$266,561	2.9	2.70	0.20	\$773,027	\$54,112	0	0	0.2	0.8	5.4	6.4	0
S-9	2600 South	Do not block pavement marking and signage ((62 & 63))	1.00	0.85	0.85	0.85	0.93	0.90	4aST	\$266,561	2.9	2.62	0.28	\$773,027	\$75,458	0	0	0.2	0.8	5.4	6.4	0
S-10	2600 South	Continue with plans to increase WB LT turning radius	1.00	1.00	1.00	1.00	1.00	1.00	4aST	\$266,561	2.9	2.90	0.00	\$773,027	\$1,176	0	0	0.2	0.8	5.4	6.4	0
S-11	1950 S	Continue with plans to make intersection all-way stop	0.95	0.95	0.95	0.95	0.95	0.95	3ST	\$112,452	0.884	0.84	0.04	\$99,407	\$4,846	0	0	0	0	0	0	0
MEDIUM TERM																						
M-1	Corridor Wide	Lighting	0.95	0.95	0.95	0.95	0.96	0.96	2U	\$274,067	6.967	6.67	0.30	\$1,909,426	\$81,822	0	0	0.4	1	7.8	9.2	0
M-2	Corridor Wide	Continue with Pacific - Overland plans (bike lanes - check UDOT list)	1.00	1.00	1.00	1.00	1.00	1.00	2U	\$274,067	6.967	6.95	0.02	\$1,909,426	\$5,919	0	0	0.4	1	7.8	9.2	0
M-3	Pacific Avenue	Improve drainage infrastructure	Not a direct safety measure																			
M-4	Pacific Avenue	Intersection lighting	0.95	0.95	0.95	0.95	1.00	0.98	3ST	\$112,452	0.36	0.35	0.01	\$40,483	\$743	0	0	0	0	0.2	0.2	0
M-5	South RR Crossing	Bikesafe track (3258)	1.00	1.00	1.00	1.00	1.00	1.00				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
M-6	South RR Crossing	Pedestrian fencing (CMF 5258)	0.88	0.88	0.88	0.88	0.88	0.88				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
M-7	South RR Crossing	Flex delineation posts for SB vehicles	0.95	0.95	0.95	0.95	0.95	0.95				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
M-8	North RR Crossing	Bikesafe track (3258)	1.00	1.00	1.00	1.00	1.00	1.00				0.00	0.00		\$0	0	0	0	0.2	0	0.2	0
M-9	North RR Crossing	Intersection lighting	0.95	0.95	0.95	0.95	1.00	0.98				0.00	0.00		\$0	0	0	0	0.2	0	0.2	0
M-10	North RR Crossing	RR crossing arms	0.06	0.06	0.06	0.06	0.06	0.06				0.00	0.00		\$0	0	0	0	0.2	0	0.2	0
LONG TERM																						
L-1	Corridor Wide	Alternate E/W routes (Planning Study)	Not a direct safety countermeasure																			
L-2	South RR crossing	Ped/cyclist grade separated crossing (separated path)	0.99	0.99	0.99	0.99	0.99	0.99				0.00	0.00		\$0	0	0	0	0	0.6	0.6	0
L-3	2600 South	signalization	0.56	0.56	0.56	0.56	0.56	0.56	4aST	\$266,561	2.9	1.62	1.28	\$773,027	\$340,132	0	0	0.2	0.8	5.4	6.4	0
L-4	North RR crossing	Pave truck waiting depot to formalize truck waiting (install C&G - tidying up exsting behavior)	0.89	0.89	0.89	0.89	0.89	0.89				0.00	0.00		\$0	0	0	0	0.2	0	0.2	0

Appendix D: Detailed Benefit-Cost Calculation Table

ID	Location	Measure	SI w/ Treatment	Minor Injury w/ Treatment	Possible Injury w/ Treatment	PDO w/ Treatment	# w/ Treatment	Crashes Avoided	Annual Crash Costs	Annual Crash Cost w/ Treatment	Safety Benefit per Year	20-year analysis period, 3% rate	Cost	Service Life (Years)	20-year Cost	Benefit-Cost Ratio (B/C)
SHORT TERM																
S-1	Corridor Wide	Low Cost Countermeasures at intersections	0	0.36	0.9	7.02	8.28	0.92	\$548,380	\$493,542	\$54,838	\$2,841,000	\$76,000	3	\$400,000	7.10
S-2	Corridor Wide	Wayfinding signage (62 & 63)	0	0.34	0.85	7.254	8.44	0.76	\$548,380	\$479,289	\$69,091	\$2,773,000	\$9,000	3	\$47,000	59.00
S-3	Corridor Wide	Edge striping	0	0.38464	0.9616	7.50048	8.85	0.35	\$548,380	\$527,322	\$21,058	\$1,091,000	\$3,000	3	\$16,000	68.19
S-4	Pacific Avenue	Add gravel (drainage)														
S-5	South RR Crossing	Wayfinding directing pedestrians and cyclists away (62 & 63)	0	0	0	0.558	0.56	0.04	\$12,660	\$11,774	\$886	\$13,000	\$6,000	3	\$32,000	0.41
S-6	South RR Crossing	Improve sign visibility	0	0	0	0.558	0.56	0.04	\$12,660	\$11,774	\$886	\$13,000	\$3,000	3	\$16,000	0.81
S-7	South RR Crossing	Continue with plans to relocate arms south of spur (install arms)	0	0	0	0.036	0.04	0.56	\$12,660	\$760	\$11,900	\$177,000	\$55,000	15	\$69,000	2.57
S-8	2600 South	Access Management	0	0.186	0.744	5.022	5.95	0.45	\$370,460	\$344,528	\$25,932	\$805,000	\$21,000	20	\$21,000	38.33
S-9	2600 South	Do not block pavement marking and signage ((62 & 63))	0	0.17	0.68	5.022	5.87	0.53	\$370,460	\$324,006	\$46,454	\$1,123,000	\$6,000	3	\$32,000	35.09
S-10	2600 South	Continue with plans to increase WB LT turning radius	0	0.1996958399	0.7987833597	5.391787678	6.39	0.01	\$370,460	\$369,897	\$563	\$17,000	\$225,000	10	\$392,000	0.04
S-11	1950 S	Continue with plans to make intersection all-way stop	0	0	0	0	0.00	0.00	\$0	\$0	\$0	\$72,000	\$3,000	3	\$16,000	4.50
MEDIUM TERM																
M-1	Corridor Wide	Lighting	0	0.37952	0.9488	7.50048	8.83	0.37	\$548,380	\$522,410	\$25,970	\$1,217,000	\$407,000	15	\$507,000	2.40
M-2	Corridor Wide	Continue with Pacific - Overland plans (bike lanes - check UDOT list)	0	0.39876	0.9969	7.77582	9.17	0.03	\$548,380	\$546,680	\$1,700	\$88,000	\$25,000	25	\$21,000	4.19
M-3	Pacific Avenue	Improve drainage infrastructure														
M-4	Pacific Avenue	Intersection lighting	0	0	0	0.2	0.20	0.00	\$4,220	\$4,220	\$0	\$11,000	\$40,000	15	\$50,000	0.22
M-5	South RR Crossing	Bikesafe track (3258)	0	0	0	0.59766	0.60	0.00	\$12,660	\$12,611	\$49	\$1,000	\$100,000	10	\$174,000	0.01
M-6	South RR Crossing	Pedestrian fencing (CMF 5258)	0	0	0	0.528	0.53	0.07	\$12,660	\$11,141	\$1,519	\$23,000	\$38,000	10	\$66,000	0.35
M-7	South RR Crossing	Flex delineation posts for SB vehicles	0	0	0	0.5712	0.57	0.03	\$12,660	\$12,052	\$608	\$9,000	\$1,000	3	\$5,000	1.80
M-8	North RR Crossing	Bikesafe track (3258)	0	0	0.19922	0	0.20	0.00	\$43,080	\$42,912	\$168	\$2,000	\$20,000	10	\$35,000	0.06
M-9	North RR Crossing	Intersection lighting	0	0	0.18944	0	0.19	0.01	\$43,080	\$40,805	\$2,275	\$34,000	\$40,000	15	\$50,000	0.68
M-10	North RR Crossing	RR crossing arms	0	0	0.012	0	0.01	0.19	\$43,080	\$2,585	\$40,495	\$602,000	\$55,000	15	\$69,000	8.72
LONG TERM																
L-1	Corridor Wide	Alternate E/W routes (Planning Study)														
L-2	South RR crossing	Ped/cyclist grade separated crossing (separated path)	0	0	0	0.59454	0.59	0.01	\$12,660	\$12,545	\$115	\$2,000	\$4,000,000	30	\$3,036,000	0.00
L-3	2600 South	signalization	0	0.112	0.448	3.024	3.58	2.82	\$370,460	\$207,458	\$163,002	\$5,060,000	\$500,000	20	\$500,000	10.12
L-4	North RR crossing	Pave truck waiting depot to formalize truck waiting (install C&G - tidying up exsting behavior)	0	0	0.178	0	0.18	0.02	\$43,080	\$38,341	\$4,739	\$71,000	\$750,000	20	\$750,000	0.09