## **APPENDIX D5: NORTH DAVIS COUNTY**

Safety Summary Tech Memo #1 Safety Analysis Case Study Project Information Sheets Case Study Project Location Map Equity Index Map

## NORTH DAVIS COUNTY SAFETY SUMMARY



## **CSAP OVERVIEW**

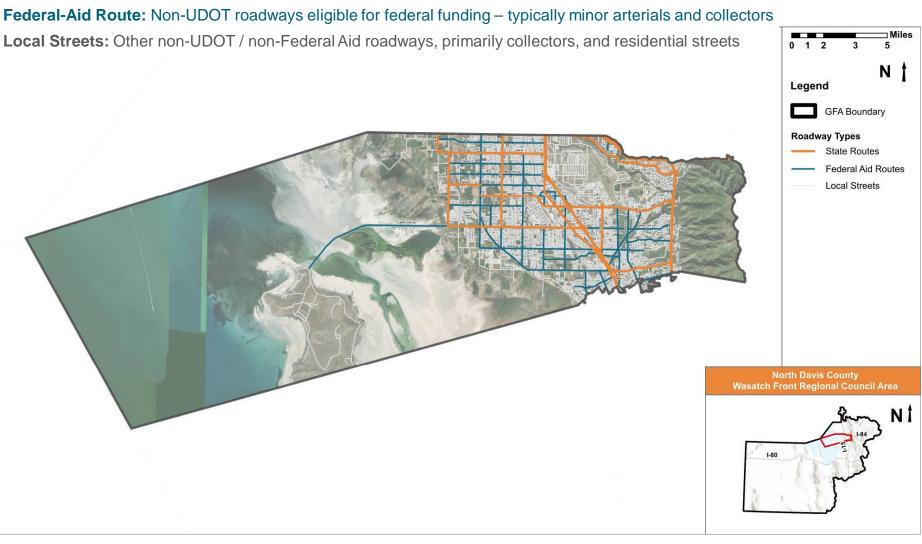
"A plan to provide local governments the means to make strategic roadway safety improvements"

Wasatch Front Regional Council (WFRC) is preparing a regional Comprehensive Safety Action Plan (CSAP). The CSAP will present a holistic, well-defined strategy to reduce roadway fatalities and serious injuries in the Wasatch Front region.

The CSAP will analyze safety needs, identify high-risk locations and factors contributing to crashes, and *prioritize* strategies to address them.

The CSAP will meet eligibility requirements that allow local jurisdictions to apply for Implementation Grants from the United States Department of Transportation (USDOT) Safe Streets and Roads for All (SS4A) discretionary grant program. The grant program was established by the Bipartisan Infrastructure Law (BIL) with \$5 billion in appropriated funds, 2022-2026. A Safety Action Plan must include the following elements, as specified by FHWA to satisfy eligibility requirements to apply for an implementation grant:

State Route: Roadways owned, operated, and maintained by UDOT



## **Self-Certification Checklist**

#### Plan must include the following:

- **Safety Analysis** 
  - Existing conditions and historical trends
  - Crashes by location, severity, and contributing factor
  - Systemic and specific safety needs
  - Geospatial identification of higher risk locations
- Identification of comprehensive set of projects and strategies

...And must complete 4 of the 6 elements to the right:

- Leadership Commitment 1.
  - Governing body publicly commit to a zero fatalities and serious injury goal
- **Plan Development** 2.
  - Committee charged with plan
    - development, implementation, and monitoring

#### **Development Activities** 3.

Engagement with public and relevant stakeholders

- 5.

6.

4.

# North Davis County Geographic Focus Area

### Equity

Data-driven, inclusive, and representative processes

### Policies, Plans, Guidelines, and/or **Standards**

Assessment policies, plans, guidelines, and/or standards

### Progress

Description on how progress will be measured over time



## Safe System Approach

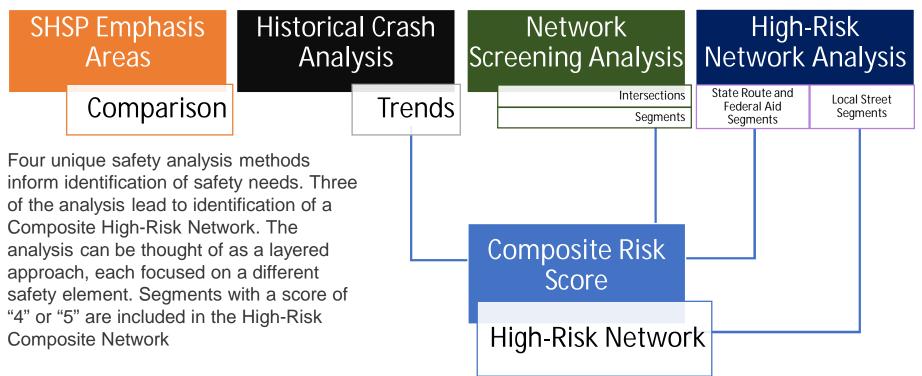
Implementing a Safe System Approach requires moving away from traditional safety paradigms.

- □ The Safe System approach seeks to prevent death and serious injuries.
- □ The Safe System approach designs for human mistakes and limitations.
- □ The Safe System approach focuses on speed management and strategies to reduce system kinetic energy.
- □ The Safe System approach aims to share responsibility among system users, managers, and others.
- The Safe System approach proactively identifies and addresses risks



Traditional Approach to Safety	
Prevent crashes	Prever
Improve human behavior	Desigr
Control speeding	Reduc
Individuals are responsible	Share
React based on crash history	Proact

## Safety Analysis Methodology



Analysis	Composite High Risk Score Element	Value
Historical Crash Analysis	Segment 5-Year Crash Totals ≥ 3 Crashes	1
Network Screening Analysis	Positive CCR Differential	1
	Crash Profile Risk Score ≥ 20	1
High-Risk Network Analysis	usRAP Vehicle Star Rating = 1-2 Stars	1
HIGH-RISK NELWOIK ANALYSIS	usRAP Pedestrian Star Rating = 1-2 Stars	0.5
	usRAP Bicycle Star Rating = 1-2 Stars	0.5
Total Possible Composite Risk Score		5

# North Davis County Geographic Focus Area

#### Safe System Approach Paradigm

ent death and serious injury

In for human mistakes/limitations

ce system kinetic energy

responsibility

ctively identify and address risks



## Strategic Highway Safety Plan (SHSP) Emphasis Area Comparison

Based on a comparison of fatal and serious injuries for each Utah SHSP Emphasis area, the following emphasis areas should be considered when developing safety improvement projects specific to the North Davis County GFA.

- Intersection
- Motorcycle
- **Teen Driver**
- Speed-Related
- Roadway Departure

Intersection, Roadway Departure, and Speed-Related emphasis areas rank highest in terms of number of fatal and serious injuries at the Statewide and WFRC Levels.

In addition to Intersection, Roadway Departure, and Speed-Related emphasis areas within the North Davis County GFA, Teen Driver and Motorcycle are also identified as top emphasis areas.

## Strategic Highway Safety Plan Emphasis Area Comparison

		Statewid	le Totals	WFRC	Totals	North D	avis County	Totals
Category	Utah SHSP Safety Emphasis Area	Fatal and Serious Injury	Rank	Fatal and Serious Injury	Rank	Fatal and Serious Injury	Rank	Change in Rank From WFRC
	Teen Driver	1,640	4	751	4	63	3	1
	Older Driver	1,508	6	700	6	56	6	0
	Speed-Related	2,133	3	936	3	63	4	-1
Driver	Aggressive Driving	555	11	297	10	17	11	-1
	Distracted Driving	718	10	286	11	31	9	2
	Impaired Driving	1,184	8	623	8	29	10	-2
	No Safety Restraints	1,542	5	599	9	32	8	1
	Intersection	3,567	1	2,163	1	174	1	0
Roadway	Roadway Departure	2,931	2	1,014	2	58	5	-3
	Motorcycle	1,457	7	750	5	66	2	3
Special Users	Pedestrian	912	9	636	7	44	7	0
	Bicycle*	280	12	167	12	12	12	0

\*While Bicycles are not one of the eleven Utah SHSP emphasis areas, they are included as part of the CSAP safety analysis.

# North Davis County Geographic Focus Area

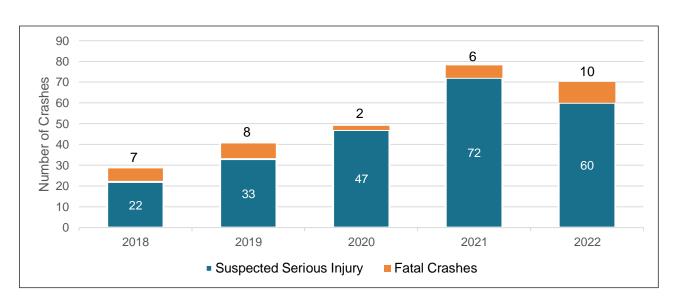
SHSP Emphasis Areas

Comparison



## **5-Year Historical Crash Trends in North Davis County GFA**

Route Type	State	Route		al Aid ute	Local	Street	Overa	II Total	% of WFRC
Crash Severity	Cras	shes	Cras	shes	Cras	shes	Cras	shes	%
orash cerenty	#	%	#	%	#	%	#	%	70
Fatal	29	0%	3	0%	1	0%	33	0.2%	0.0%
Suspected Serious Injury	151	2%	59	2%	24	2%	234	1.8%	0.1%
Suspected Minor Injury	1,176	13%	403	15%	154	10%	1,733	13.0%	1.0%
Possible Injury	1,683	19%	507	19%	173	11%	2,363	17.8%	1.3%
No Injury / Property Damage Only	6,026	66%	1,727	64%	1,172	77%	8,925	67.2%	4.9%
Route Total	9,065	100%	2,699	100%	1,524	100%	13,288	100%	7.4%



## Annual Fatal and Serious Injury Crashes (2018-2022)

70

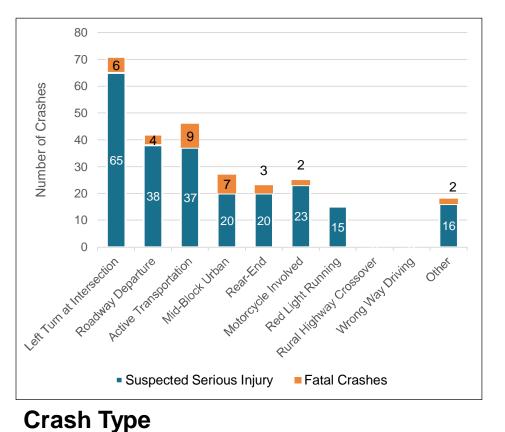
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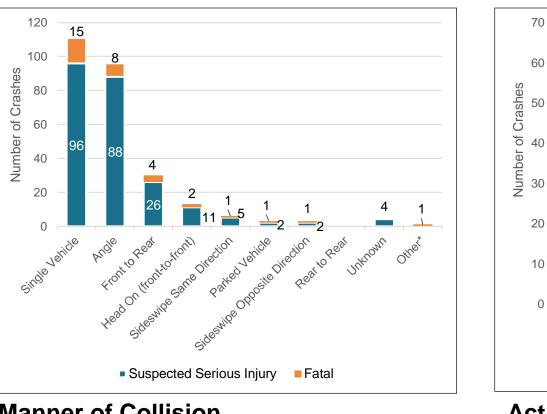
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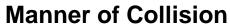
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10

0



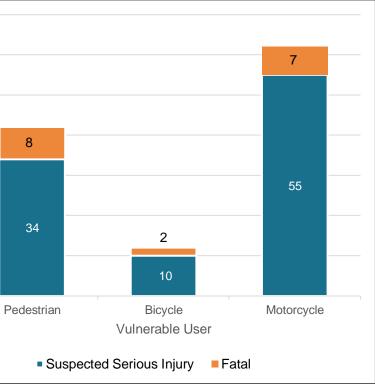






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# North Davis County Geographic Focus Area



## **Active Transportation**

### **Historical Crash** Analysis

Trends



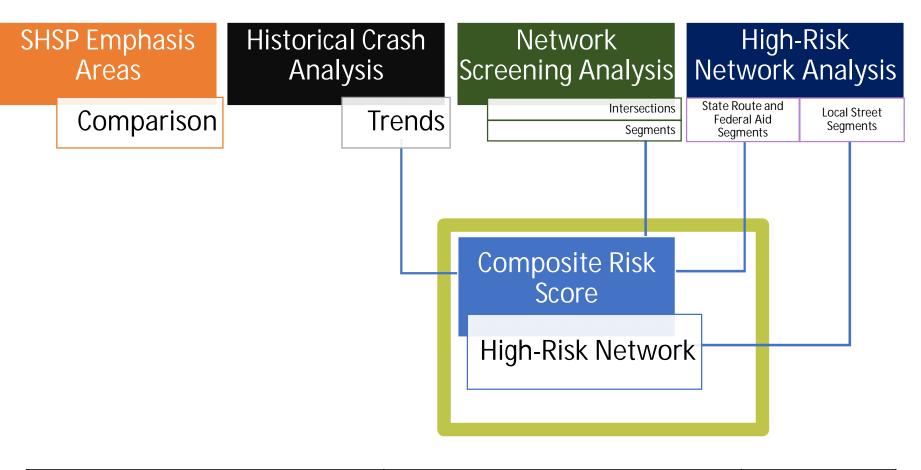
## **Composite High-Risk Roadway Network**

Each of the completed safety analysis methodologies identified segments or intersections that are **candidates for safety improvements** to reduce fatalities and serious injury crashes.

To provide focused information for jurisdictional decisions regarding prioritization of safety improvements, an analysis was performed to identify overlapping segments from each of the analysis methodologies. A composite risk score, from zero to five, was assigned to each State Highway or Federal Aid Route segment in the region. State Route or Federal Aid Route segments with a score of "4" or higher are included in the Composite High-Risk Network. These represent the top 10% of State Route and Federal Aid Route segments for the entire WFRC area.

The Composite High Risk Network map on page 8 includes State Route and Federal Aid Route segments with a score of "4" or higher.

A list of locally-owned and maintained Federal Aid Route segments in the North Davis County GFA Composite High-Risk Network is included on the next page. Streets operated and maintained by local agencies are an emphasis of the SS4A program.



Analysis	Composite High Risk Score Element	Value
Historical Crash Analysis	Segment 5-Year Crash Totals ≥ 3 Crashes	1
Network Screening Analysis	Positive Local CCR Differential	1
	Crash Profile Risk Score ≥ 20	1
High Dick Notwork Apolysia	usRAP Vehicle Star Rating = 1-2 Stars	1
High Risk Network Analysis	usRAP Pedestrian Star Rating = 1-2 Stars	0.5
	usRAP Bicycle Star Rating = 1-2 Stars	0.5
otal Possible Composite Risk Score		5

# North Davis County Geographic Focus Area

Composite Risk Score Composite High-Risk Network (Segments)



## Composite High-Risk Network (State Route/Federal Aid) and Local Street Risk Network

						R	ISK T	TYPE			
Facility	Limits	Functional Classification	City	Length (miles)	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Street Risk Assessment
State Route			·								
200 West (SR-108)	6000 South to 1700 South	Other Principal Arterial	Clinton, Roy, Syracuse, W	4.5	Х	Х	Х	Х	Х	Х	
State Street/ Main Street (SR-12	600 South to Layton Pkwy	Other Principal Arterial	Clearfield, Layton, Roy, S	8.0	Х	Х	Х	Х	Х	Х	
Hill Field Road (SR-232)	Bernard Fisher Hwy to 1000 N	Minor Arterial	Layton	2.0	Х	Х	Х	Х		Х	
1800 North (SR-37)	225 West to Main Street	Minor Arterial	Clinton, Sunset	2.2	Х	Х	Х	Х	Х	Х	
Bernard Fisher Hwy (SR-193)	1000 West to Highway 39	Other Principal Arterial	Layton, Clearfield	8.0	Х	Х	Х	Х		Х	
Antelope Drive (SR-108)	3400 West to I-15	Other Principal Arterial	Clearfield, Syracuse	5.5	Х	Х	Х	Х		Х	
Gentile Street/ Oaks Hills Drive	Fort Lane to James V Hansen Hwy	Other Principal Arterial	Clearfield	3.5	Х	Х	Х	Х		Х	
Federal Aid Routes											
800 N	50 W to Main St	Major Collector	Clearfield	0.1	Х	Х	Х		Х	Х	
1000 W	300 N to Antelope Dr	Major Collector	Clearfield	2.0	Х	Х	Х	Х		Х	
2000 W	1700 S to 1900 S	Major Collector	Syracuse	0.2	Х	Х	Х	Х	Х	Х	
Main St	1800 S to 1900 S	Major Collector	Clearfield	0.1	Х	Х	Х	Х		Х	
Hill Field Rd	825 N to Main St	Minor Arterial	Layton	0.5	Х	Х		Х	Х	Х	
Gentile St	3200 W to 575 W	Major Collector	Layton	2.5	Х	Х	Х		Х	Х	
Fairfield Rd	Gentile St to Rosewood Ln	Minor Arterial	Layton	0.2	Х	Х	Х		Х	Х	
Main St	Rosewood Way to Clearway Dr	Minor Arterial	Layton	0.1	Х	Х	Х		Х	Х	

State Route and Federal Aid segments in the North **Davis County GFA** Composite High-Risk Network are listed at left. Each of these segments received a composite risk score of "4" or higher. These segments provide a focus for local jurisdictions or for coordination with UDOT. Each of these segments are shown on the map on page 8.

# North Davis County Geographic Focus Area

**Composite Risk** Score Composite High-Risk Network (Segments)



## Composite High-Risk Network (State Route/Federal Aid) and Local Street Risk Network

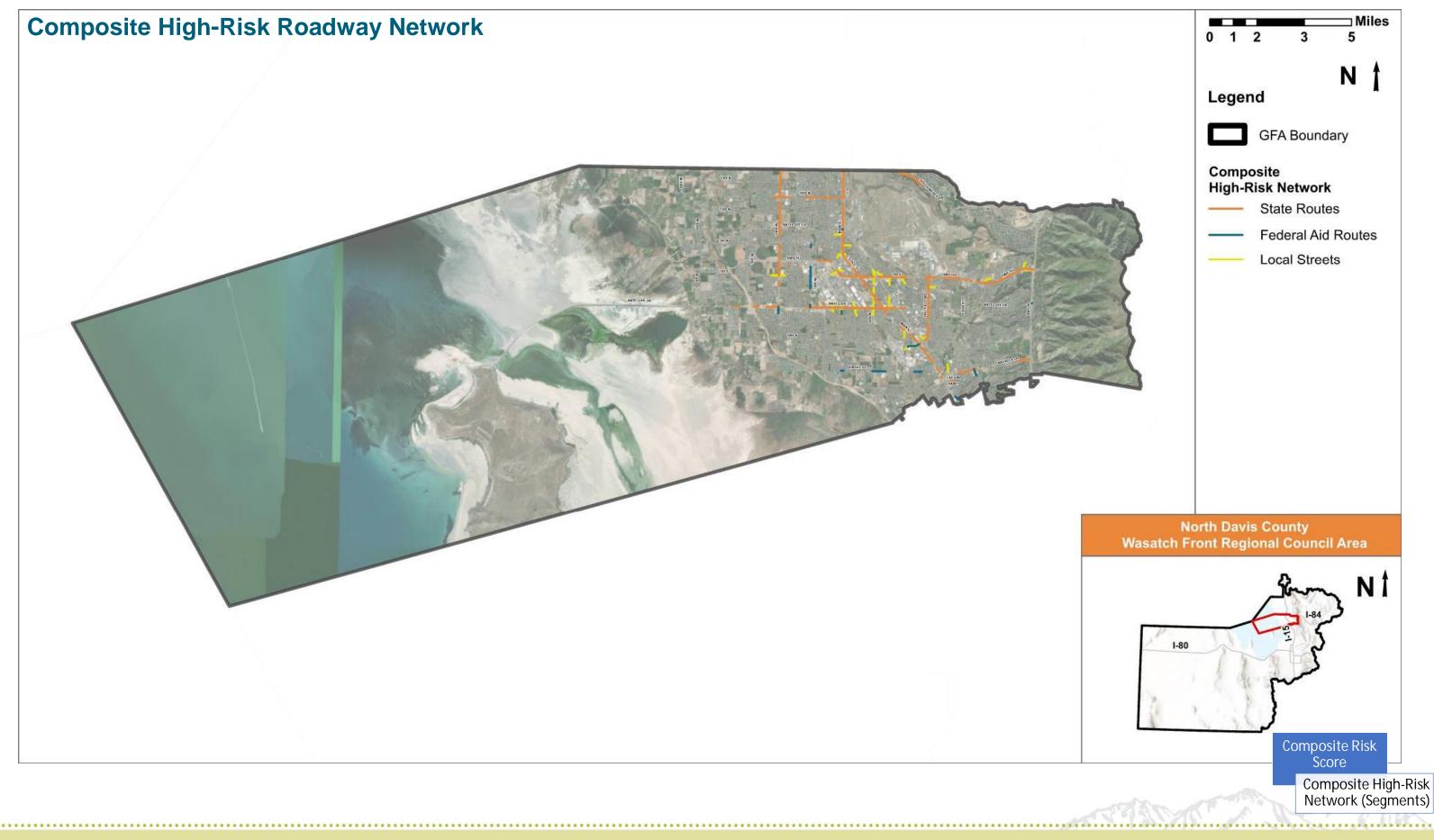
						RI	SK T	YPE				
Facility	Limits	Functional Classification	City	Length (miles)	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Street Risk Assessment	
Local Streets					Lc	ocal St	reet F	Risk A	ssess	ment	t	
Hill Field Road	2500 West to SR-126	Minor Arterial	Layton	1.9							Х	
1000 East	450 South to 2200 South	Major Collector	Clearfield	1.7							Х	
1000 East	2200 South to Gentile Street	Major Collector	Clearfield	1.5							Х	
1200 West	I-15 to 1000 North	Local	Layton	0.6		The Lo					Х	
Wasatch Drive	SR-109 to 850 East	Local	Layton	0.8		sment					Х	
300 North	SR-126 to I-15	Local	Clearfield	0.4		n as loo mity to				ment cors es,	Х	
Main Street	7th Street to Gentile Street	Major Collector	Layton/Clearfield	2.1	PLOVI	-	braki				Х	
700 South	2300 West to 1400 West	Minor Collector	Syracuse	0.9				5			Х	
Center Street	SR-193 to 400 East	Major Collector	Clearfield	0.9							Х	
1700 West	1500 South to 1960 North	Local	Layton/Clearfield	0.4							Х	

Local Streets are also listed at left. These segments were identified through a separate analysis that considered factors such as crash location, proximity to schools, and hard braking.

# North Davis County Geographic Focus Area

Composite Risk Score Composite High-Risk Network (Segments)







## **Network Screening -**Intersections

Network Screening is one of the inputs to the Composite High-Risk Network. Network screening is based on Critical Crash Rate Differential analysis as documented in the Highway Safety Manual. This analysis identified intersections where historical crash rates exceed those which can be expected for similar facilities.

A list of the top-10 intersections on State Routes, Federal Aid Routes, and Local (Non-Federal Aid) Streets in the North Davis County GFA are listed at right, along with their associated number of crashes.

For each intersection, the Critical Crash Rate (CCR) Differential and Equivalent Property Damage Only (EDPO) value is listed. These intersections represent those with the highest potential for safety improvements and can be considered as project candidate locations.

Signalized and unsignalized intersections in the North Davis County GFA with a positive Critical Crash Rate Differential (rate exceeds expected rate) are mapped on page 9.

Intersection	ED	City	Crashes	Critical Crash Rate Differential	EPDO <sup>1</sup>	Fatal	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	No Injury/PDO	Angle	Front to Rear	Head On	Parked Vehicle	Single Vehicle	Rear to Rear	Rear to Side	Sideswipe (Same Direction)	Sideswipe (opposite Direction)	Other/Unknown	Pedestrian	Bicycle	Motorcycle
Signalized Intersections																							
Woodland Park Dr & Heritage Park Blvd	39940	Layton	11	8.8	11	0	0	0	0	11	10	1	0	0	0	0	0	0	0	0	0	0	0
Main St & 800 N	42215	Clearfield	120	0.9	732	0	0	20	18	82	39	67	5	3	0	0	0	1	5	0	1	0	1
1000 E & 700 S	41106	Clearfield	75	0.6	560	0	0	15	16	44	34	27	2	10	0	0	0	0	1	1	2	3	0
State St & State St	41313	Clearfield	110	0.5	875	0	1	17	30	62	43	45	5	7	1	0	0	1	6	2	6	0	1
Main St & 650 N	42120	Clearfield	107	0.4	692	0	2	11	16	78	42	39	1	4	0	0	0	1	20	0	2	1	0
Fort Ln & Gentile St	38701	Layton	64	0.2	429	0	1	6	14	43	30	15	2	12	1	0	0	1	2	1	2	1	2
1000 W & HWY 193	40412	Layton	154	0.2	2245	1	3	25	38	87	89	42	3	7	0	0	0	2	6	5	2	3	3
1000 W & 200 S	41615	Clearfield	34	0.2	425	0	0	14	9	11	16	12	2	2	1	0	0	1	0	0	1	0	0
Main St & 1800 N	42960	Sunset	77	0.2	1604	1	2	16	11	47	45	23	2	5	0	0	0	1	1	0	3	1	2
Hill Field Rd & Antelope Dr	40453	Layton	97	0.1	632	0	1	12	18	66	48	30	4	3	2	0	0	0	8	2	1	0	1
Unsignalized Intersections		_																					
King St & Olsen Plaza Dr	39108	Layton	6	23.6	16	0	0	0	1	5	0	3	0	2	0	0	0	0	1	0	0	0	0
Layton Hills Pkwy & Heritage Park Blvd	39937	Layton	19	4.8	40	0	0	1	0	18	16	2	1	0	0	0	0	0	0	0	0	0	0
Angel St & 1650 N	40128	Layton	3	4.1	24	0	0	1	0	2	0	0	1	2	0	0	0	0	0	0	0	0	1
50 E & 50 E	38303	Layton	3	3.3	24	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0
Us 89 Nb X402 Off Gordon Ave Ramp & 1200 N	39556	Layton	4	2.2	25	0	0	1	0	3	2	1	0	1	0	0	0	0	0	0	0	0	0
South Ring Rd & Southeast Entrance	39544	Layton	3	1.4	3	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0
Emerald Dr & Oakridge Dr	39460	Layton	3	1.1	24	0	0	1	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0
Evergreen Ln & Cherry Ln	39717	Layton	3	1.0	24	0	0	1	0	2	2	0	0	0	1	0	0	0	0	0	0	0	0
3000 W & 1800 N	42980	Clinton	28	1.0	300	0	1	5	7	15	21	4	1	2	0	0	0	0	0	0	0	0	0
500 E & 450 S	41480	Clearfield	8	1.0	39	0	0	0	3	5	4	2	0	1	1	0	0	0	0	0	0	0	0
1. Equivalent Property Damage Only Crashes																							

= 90 - 100% probability that crash type is over-represented

= 80 - 90% probability that crash type is over-represented

= 70 - 80% probability that crash type is over-represented

# North Davis County Geographic Focus Area

Network Screening Analysi Intersections

Segments







# **Supporting Information**



## High-Risk Roadway Segments (Federal Aid Routes)

				R	ISK	ΓΥΡΕ			
Facility	Limits	City	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Streets Risk Assessment
Federal Aid Routes				-					
475 East	South Weber Drive to I-84	South Weber	Х	Х	Х				
2300 North / 2425 North	4500 West to Crainefield Road	Hooper	Х	Х	Х				
2300 North	3600 West to 1700 West	Clinton	Х		Х				
2300 North	1700 West to 75 West	Sunset			Х				
1300 North	4500 West to 2350 West	West Point	Х	Х	Х				
1300 North	2350 West to Main Street	Clinton, Clearfield			Х				
1000 West	1300 North to 1800 North	Clinton	Х	Х	Х				
1000 West	800 North to 1075 North	Clinton	Х	Х	Х				
800 North	4500 West to 3000 West	West Point	Х	Х					
800 North	3000 West to 2300 West	Clinton	Х	Х	Х				
800 North	2300 West to 1000 West	Clinton	Х						
800 North	1000 West to Main Street	Clearfield	Х	Х	Х				
1000 West	300 North to 800 North	Clearfield		Х	Х				
1000 West	200 South to 300 North	Clearfield		Х	Х				
300 North	3000 West to Cambridge Park	West Point		Х	Х				
300 North	Cambridge Park to 825 West	West Point		Х	Х				
300 North	825 West to Main Street	Clearfield			Х				

A list of Federal Aid segments in the **North Davis** County GFA identified from each of the safety analysis methods is listed in the table at left. An "x" is placed to identify the analysis that flagged the segment:

The maps on page 17 through 21 depict each of these segments identified by the respective analysis.

# North Davis County Geographic Focus Area

usRAP Star Ratings (Vehicle, Bicycle, Pedestrian) Crash Profile Risk Score Network Screening, applying Critical Crash

Rate (CCR) and Significant Crashes (three or more crashes over 5-year period)

> **Composite Risk** Score



## High-Risk Roadway Segments (Federal Aid Routes), Cont'd

				R	SISK <sup>-</sup>	TYPE	Ξ			A
Facility	Limits	City	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Streets Risk Assessment	<b>C</b> ar is se
Federal Aid Routes										TI
Center Street	State Street to 450 East	Clearfield			Х					th ar
500 East	State Street to Maple Street	Clearfield			Х					a
Main Street	575 South to Park Circle	Clearfield	Х		Х					
200 South	150 West to Main Street	Clearfield	Х		Х					
3000 West	1700 South to 700 South	Syracuse	Х							
1000 West	1700 South to 200 South	Syracuse	Х	Х	Х					
1000 East	Antelope Drive to 700 South	Layton			Х					
700 South	4500 West to Killarney Drive	West Point	Х	Х						
Fairfield Road	320 South SR-193	Layton	Х	Х	Х					
Bluff Road	3000 West to 2000 West	Syracuse	Х		Х					
Bluff Road	2000 West to Gentile Street	Syracuse	Х							
3000 West	2700 South to 1700 South	Syracuse	Х							
2000 West	2700 South to 1700 South	Syracuse	Х	Х	Х					
1000 West	2700 South to 1700 South	Syracuse	Х	Х	Х					
Main Street	1000 North to Antelope Drive	Layton	Х	Х	Х					
2200 West	1000 North to Antelope Drive	Layton			Х					
Antelope Drive	I-15 to Alder Street	Layton	Х							
2700 South	3000 West to 2000 West	Syracuse	X	Х	10000		11.2.2			

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# North Davis County Geographic Focus Area

usRAP Star Ratings (Vehicle, Bicycle, Pedestrian) Crash Profile Risk Score Network Screening, applying Critical Crash

Rate (CCR) and Significant Crashes (three or more crashes over 5-year period)

> **Composite Risk** Score



## High-Risk Roadway Segments (Federal Aid Routes), Cont'd

				R	ISK <sup>-</sup>	TYPE	-		
Facility	Limits	City	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Streets Risk Assessment
ederal Aid Routes									
2700 South	2000 West to 1000 West	Syracuse	Х	Х					
2700 South	1000 West to 3700 West	Syracuse		Х					
Cherry Lane	Fairfield Road to 2800 East	Layton			Х				
400 West	Francis Street to Barbara Street	Layton			Х				
Golden Avenue	400 West to Gordon Street	Layton			Х				
1000 North	Hill Field Road to Emerald Drive	Layton	Х						
000 West	Bluff Road to 1000 North	Layton	Х	Х	Х				
3200 West	Gentile Street to 1000 North	Layton	Х	Х					
Hill Field Road	3200 West to 2200 West	Layton	Х	Х	Х				
Hill Field Road	2200 West to Main Street	Layton	Х	Х					
Gentile Street	Bluff Road to Main Street	Syracuse	Х	Х	Х				
Angel Street	South GFA Extents to Gentile Street	Layton	Х	Х	Х				
lint Street	South GFA Extents to Gentile Street	Layton	Х	Х	Х				
175 East	South Weber Drive to I-84	South Weber	Х	Х	Х				
300 North	2000 West to State Street	West Point				Х			
Vain Street	575 South to Park Circle	Layton				Х			
Hill Field Road	3200 West to Main Street	Layton				Х			

# North Davis County Geographic Focus Area

of Federal Aid segments in the North Davis ty GFA identified from each of the safety is methods is listed in the table at left. An "x" ced to identify the analysis that flagged the ent:

RAP Star Ratings (Vehicle, Bicycle, edestrian) ash Profile Risk Score etwork Screening, applying Critical Crash

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aps on page 17 through 21 depict each of segments identified by the respective is.

> **Composite Risk** Score



## High-Risk Roadway Segments (Federal Aid Routes), Cont'd

				R	ISK 7	TYPE			
Facility	Limits	City	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Streets Risk Assessment
ederal Aid Routes			_						
3000 West	2700 South to 1700 South	Syracuse				Х			
1000 West	Bluff Road to Bernard Fisher Highway	Syracuse				Х			
Antelope Drive	1200 West to Alder Street	Layton				Х			
3200 West / Main Street	Gentile Street to Antelope Drive	Syracuse				Х			
luff Road / Gentile Street	2700 South to 575 West	Layton				Х			
300 North	4500 West to 3455 West	West Point				Х			
300 North	3500 West to 2000 West	West Point				Х			
2325 North / 2300 North	5000 West to 2740 West	Hooper				Х			
300 North	4500 West to 3000 West	West Point				Х			
700 South	4500 West to Killarney Drive	West Point				Х			
175 East	SR-60 to I-84	South Weber				Х			
BluffRoad	Gentile Street to 3150 South	Layton				Х			
1000 E	1000 S to Hwy 193	Clearfield					Х	Х	
Antelope Dr	Hobbs Creek Dr to Hwy 89	Layton					Х	Х	
1000 E	Antelope Dr to Hidden Cove Bach Apartmen	Clearfield					Х	Х	
1000 E	1225 S to 1150 S	Clearfield					Х	Х	
1300 N	2000 W to 2090 W	Clinton					Х	Х	

# North Davis County Geographic Focus Area

Federal Aid segments in the **North Davis** y GFA identified from each of the safety is methods is listed in the table at left. An "x" ed to identify the analysis that flagged the nt:

RAP Star Ratings (Vehicle, Bicycle, destrian) ash Profile Risk Score twork Screening, applying Critical Crash

te (CCR) and Significant Crashes (three or re crashes over 5-year period)

aps on page 17 through 21 depict each of segments identified by the respective S.

> **Composite Risk** Score



## High-Risk Roadway Segments (Federal Aid Routes), Cont'd. & Network Screening – Segments (Local Streets)

			RISK TYPE						
Facility	Limits	City	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Streets Risk Assessment
Federal Aid Routes	<u>·</u>			<u> </u>		<u> </u>			
1000 E	15254 S to 1450 S	Clearfield					Х	Х	
1000 E	Hidden Cove Bach Apartments to Oakstone	Clearfield					Х	Х	
1000 E	Express Dr to State St	Clearfield					Х	Х	
2200 W	2200 S to Access Road	Layton					Х	Х	
200 S	State St to Marilyn Dr	Clearfield					Х	Х	
Local Streets	·			-					
H St	13th St to 11th St	Clearfield					Х	Х	
900 W	Antelope Dr to 1600 S	Clearfield					Х	Х	
550 N	1350 W to 1300 W	Clearfield					Х	Х	
650 N	Main St to James St	Clearfield					Х	Х	
Oakstone Apartments	Entire Loop	Clearfield					Х	Х	
1500 E	800 S to Hwy 193	Clearfield					Х	Х	
King St	Olsen Plz to Main St	Layton					Х	Х	
Olsen Plaza Dr	Kings St to Main St	Layton					XX		
King St	King Cir to Cook Dr	Layton					Х	Х	
400 W	1985 N to 450 W	Sunset					Х	Х	

- •

The maps on page 17 through 21 depict each of these segments identified by the respective analysis.

A list of Local Street segments in the North Davis County GFA identified from Network Screening, applying Critical Crash Rate (CCR) and Significant Crashes (three or more crashes over 5-year period), is shown at left.

# North Davis County Geographic Focus Area

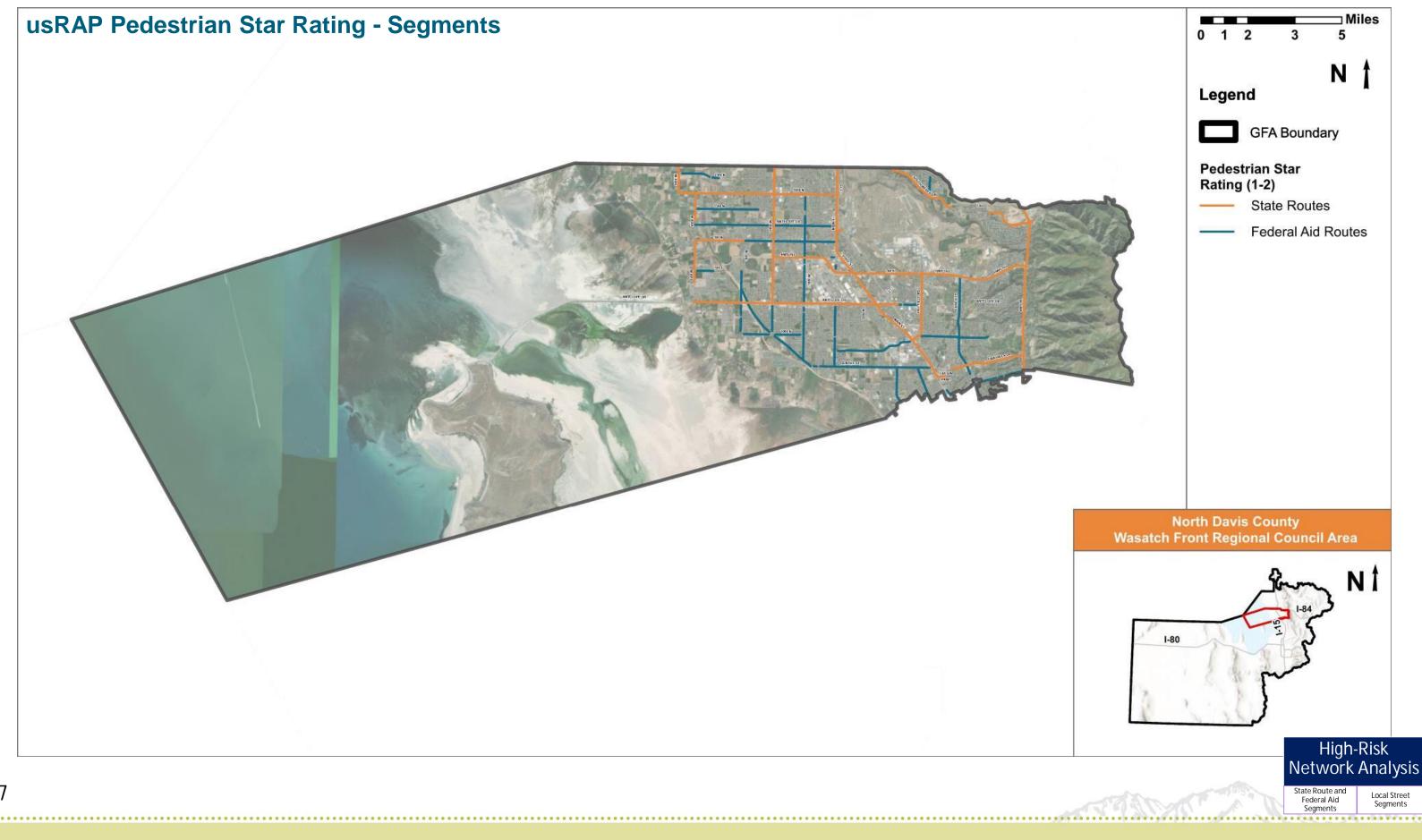
A list of Federal Aid and Local Street segments in the North Davis County GFA identified from each of the safety analysis methods is listed in the table at left. An "x" is placed to identify the analysis that flagged the segment:

• **usRAP** Star Ratings (Vehicle, Bicycle, Pedestrian) Crash Profile Risk Score

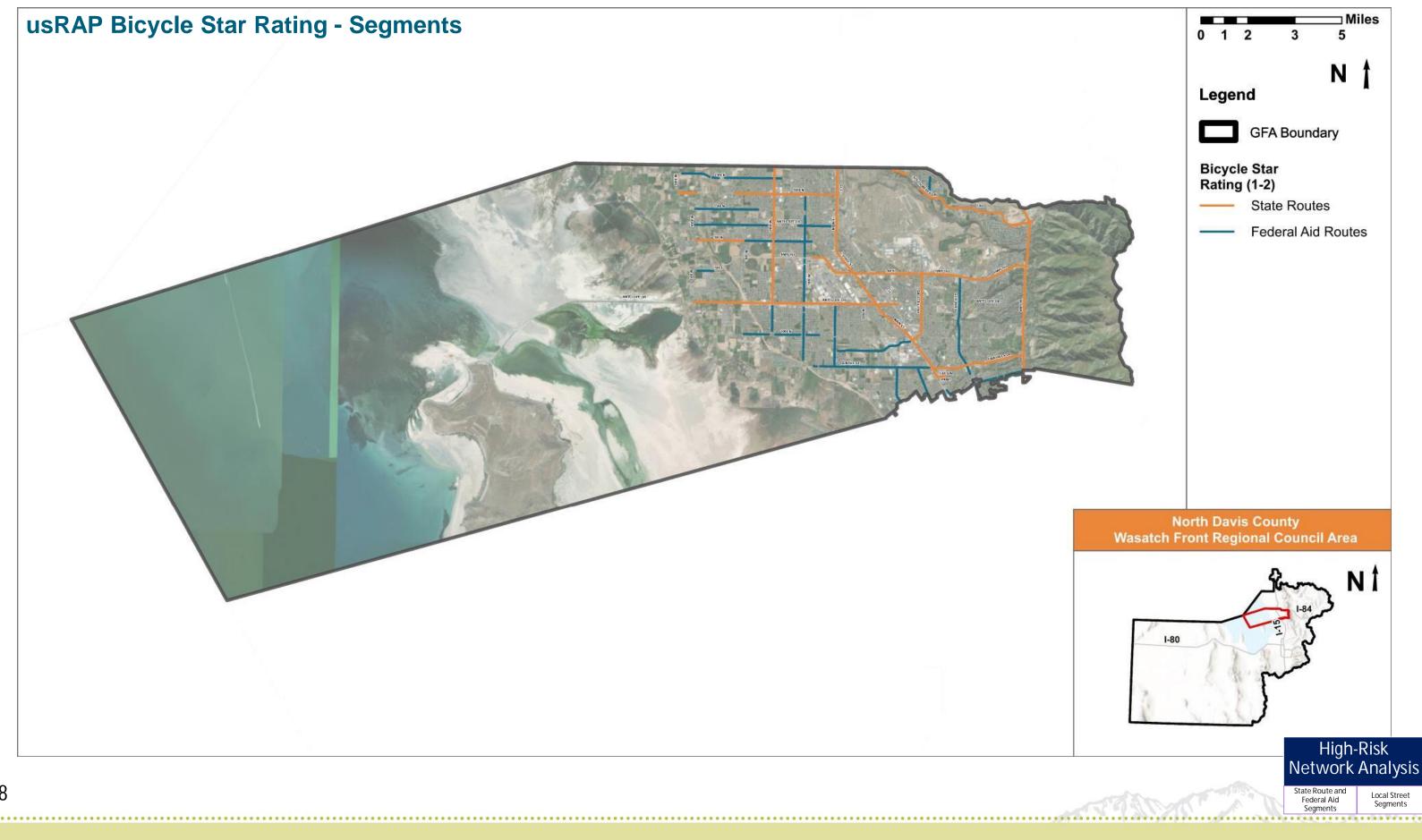
Network Screening, applying Critical Crash Rate (CCR) and Significant Crashes (three or more crashes over 5-year period)

> Composite Risk Score

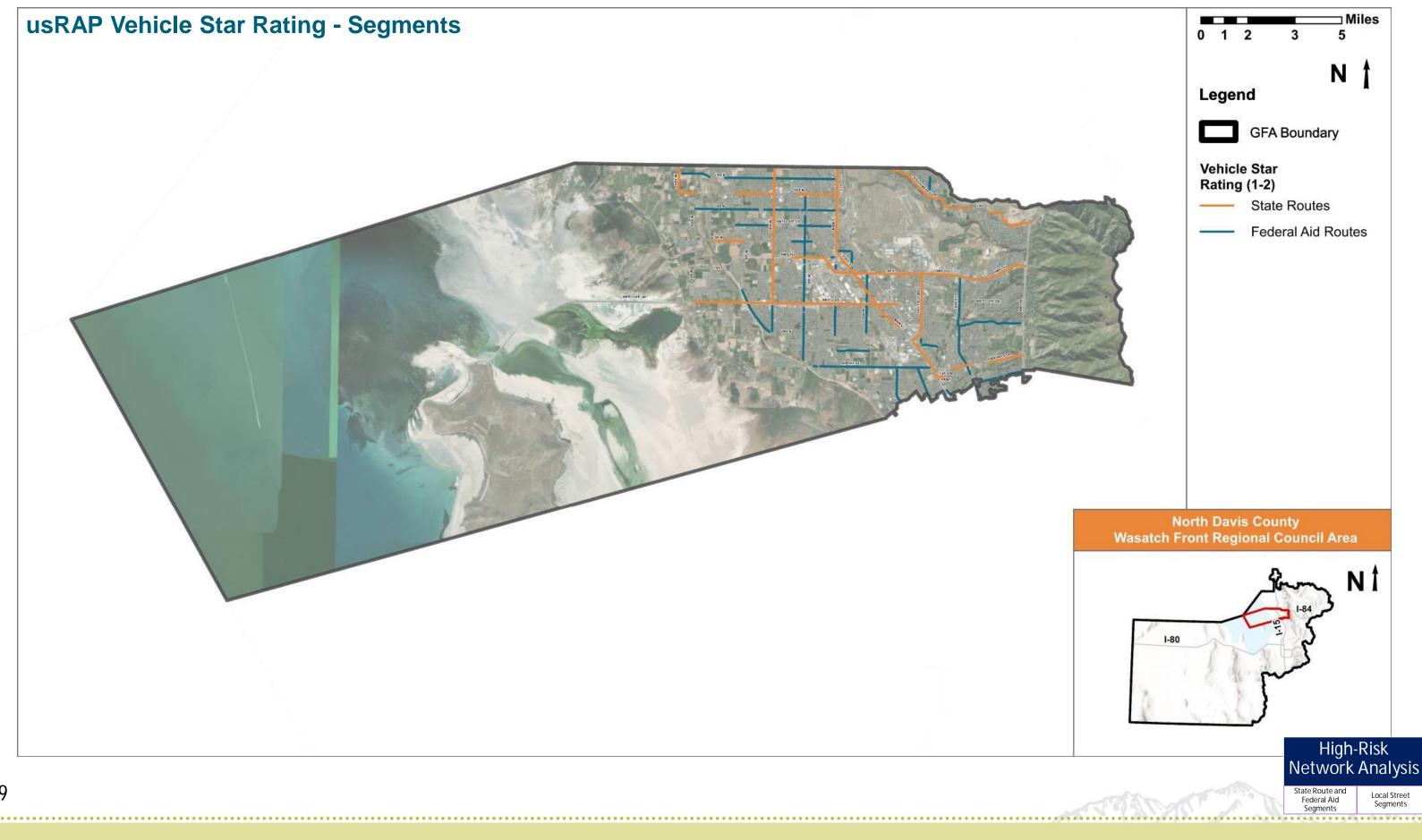




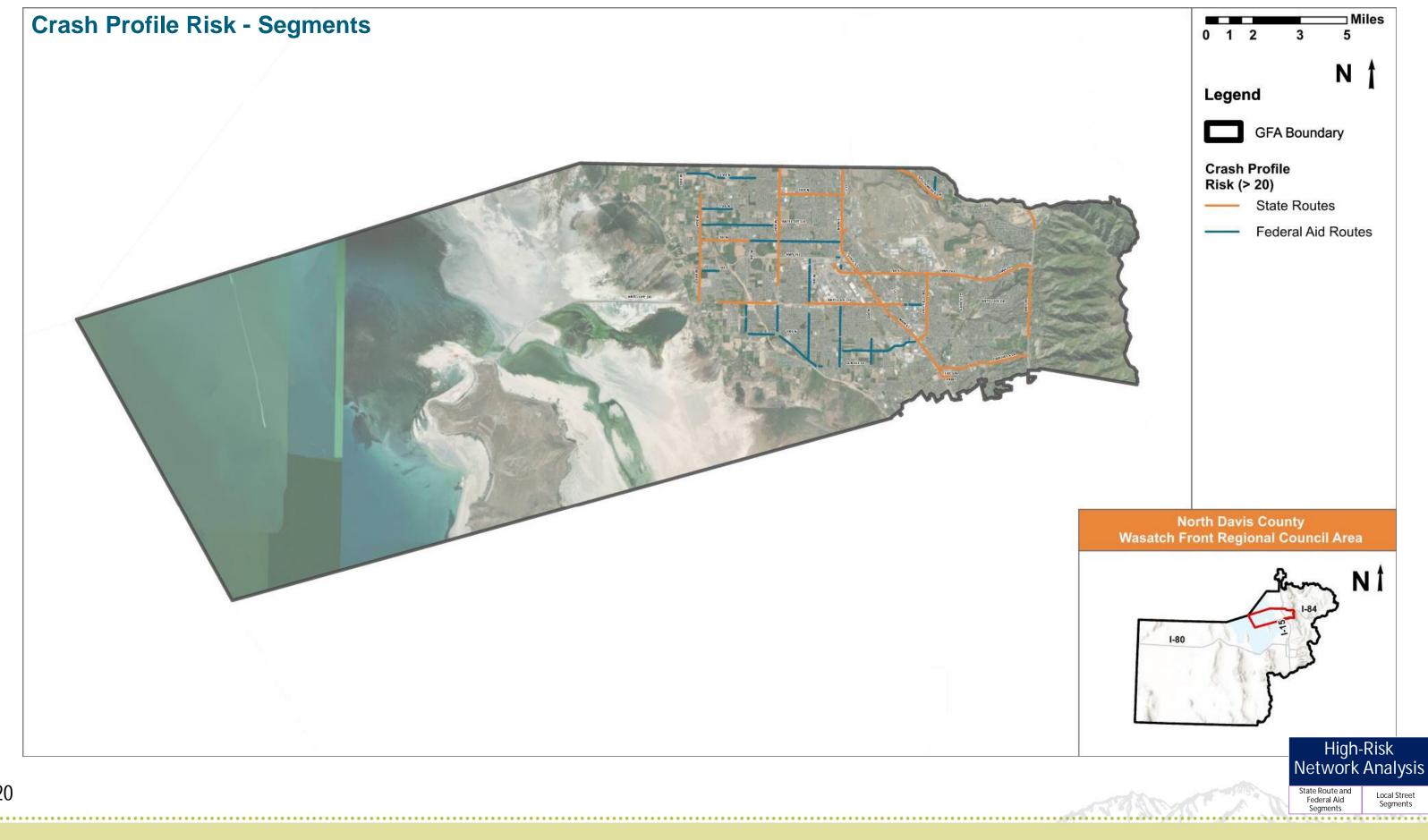




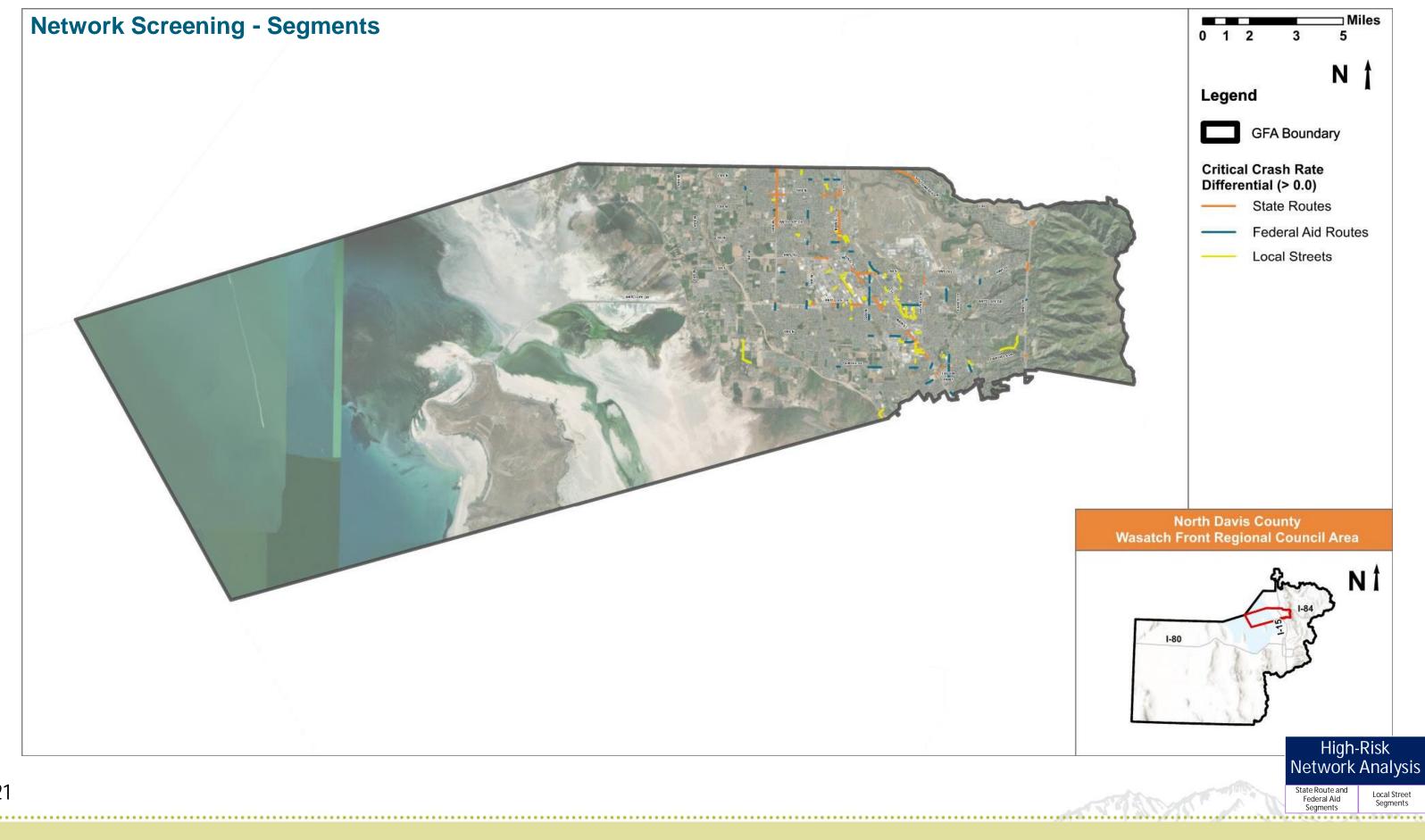












## NORTH DAVIS COUNTY TECH MEMO #1 SAFETY ANALYSIS



### **TECHNICAL MEMORANDUM #1**

## APPENDIX A5 - NORTH DAVIS COUNTY GEOGRAPHIC FOCUS AREA ANALYSIS

December 2023

### **Statutory Notice**

## 23 U.S.C. § 409: US Code - Section 409: Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway- highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

File name: Appendix A5 - North Davis County GFA - Safety Analysis

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Comprehensive Safety Action Plan

### 1. Introduction

**Appendix A5** summarizes the safety analysis performed for the North Davis County Geographic Focus Area (GFA) for the Wasatch Front Area Comprehensive Safety Action Plan (CSAP).

The analysis of available safety related data informs identification of a potential project locations that may be further considered in the development of safety related projects and project types.

#### 1.1. Safety Analysis

The following safety analysis methodologies were completed for the North Davis County GFA:

- Strategic Highway Safety Plan (SHSP) Emphasis Area Analysis
- Historical Crash Analysis
- Crash and Network Screening Analysis
- Roadway Characteristic Risk Analysis
- Crash Profile Risk Assessment
- usRAP Risk Factors Analysis
- Local Street Risk Assessment

An overview on the methodologies used to perform these safety analyses are described in Technical Memorandum #1: Safety Analysis Results Summary. **Appendix A5** summarizes the results of the analyses for the North Davis County GFA.

#### **1.2.** Appendix Organization

This Appendix is organized into the following sections:

- Section 1 Introduction
- Section 2 North Davis County GFA Study Area and Roadway Network.
- Section 3 Strategic Highway Safety Plan (SHSP) Emphasis Area Analysis.
- Section 4 Historical Crash Analysis
- Section 5 Crash and Network Screening Analysis based on Highway Safety Manual (HSM).
- Section 6 Roadway Characteristic Risk Analysis
- Section 7 Common Risk Characteristics and Composite High-Risk Roadway Network



### 2. Study Area

The CSAP study area includes each jurisdiction within the WFRC area. To organize the large number of jurisdictions within the WFRC area into manageable analysis areas, jurisdictions are organized into Geographic Focus Areas (GFA). The North Davis County GFA (**Figure 2.1**) is located entirely within Davis County and includes the following agencies and jurisdictions:

- Clearfield
- Clinton
- Layton
- South Weber
- Sunset
- Syracuse
- West Point

The safety analyses presented in this Technical Memorandum are specific to the North Davis County GFA.

**Figure 2.2** highlights the roadway network within the North Davis County GFA study area. Roadways within the study area are divided into the following three categories:

- State Routes: UDOT-maintained roads
- Federal Aid Routes: Jurisdiction-maintained roads eligible for federal funding
- Local Streets: Local Jurisdiction-maintained roads that are not Federal Aid routes.

**NOTE ON CRASH DATA ANALYSIS:** All crash data presented in this Technical Memorandum are specific to the North Davis County GFA, for the years 2018-2022. Crash data was obtained from the Utah Department of Transportation.



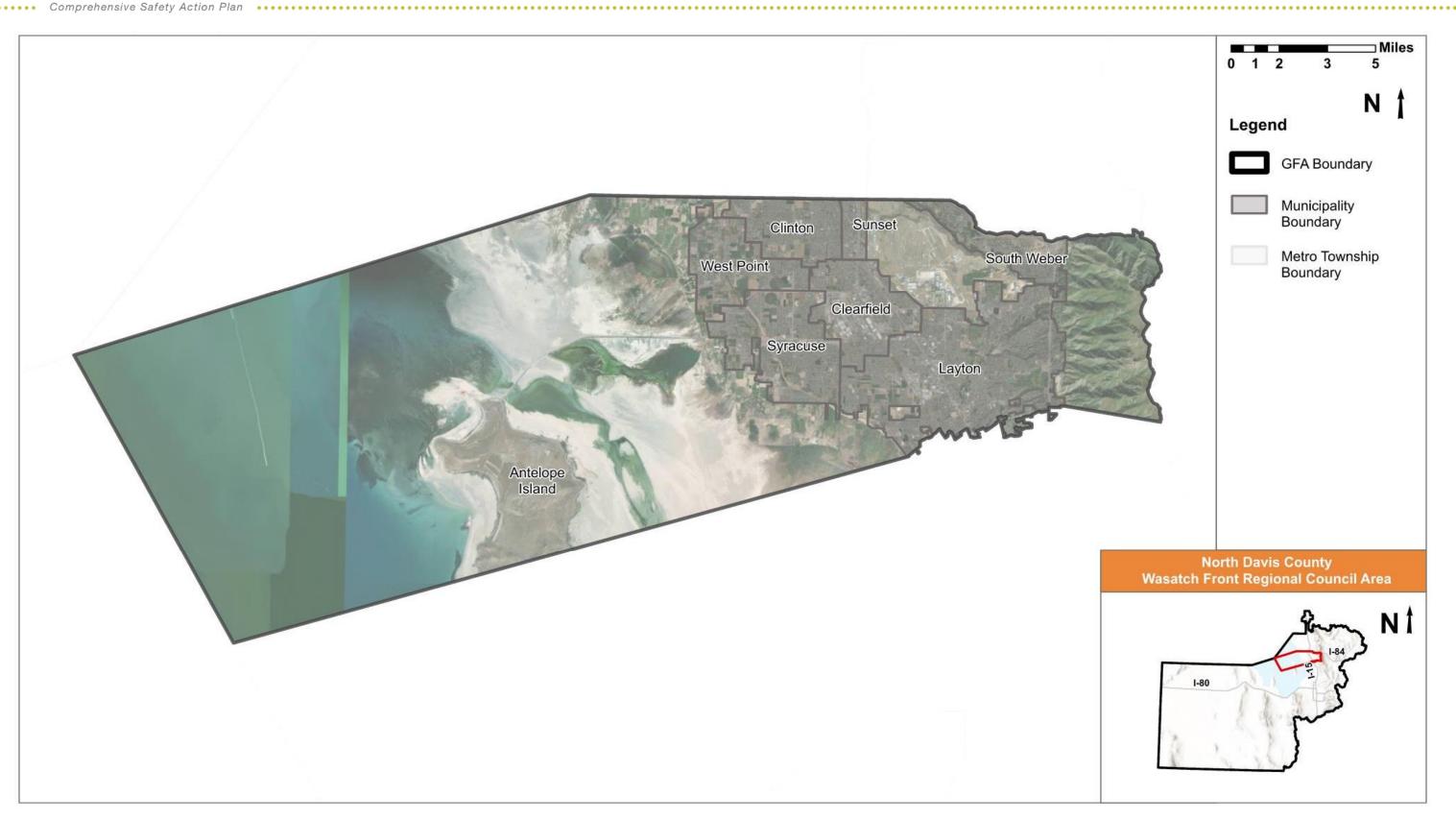


Figure 2.1 – North Davis County GFA Study Area





#### Figure 2.2 – North Davis County GFA Roadway Network



## 3. SHSP Emphasis Area Analysis

The SHSP emphasis area analysis ranks the frequency of fatal and serious injury crashes in the North Davis County GFA for each of the eleven Utah SHSP emphasis areas. The rankings of the emphasis areas are compared for the North Davis County GFA, statewide (all public roads statewide), and the WFRC study area totals. Each reported crash can have more than one emphasis area identified. The results of the SHSP emphasis area analysis are displayed in **Table 3.1**. The top five ranked emphasis areas are highlighted in the table with the top five for the North Davis County GFA listed below:

- Intersections
- Motorcycle
- Teen Driver
- Speed-Related
- Roadway Departure

		Statewid	le Totals	WFRC	Totals	North Davis County Totals			
Category	Utah SHSP Safety Emphasis Area	Fatal and Serious Injury	Rank	Fatal and Serious Injury	Rank	Fatal and Serious Injury	Rank	Change in Rank From WFRC	
	Teen Driver	1,640	4	751	4	63	3	1	
	Older Driver	1,508	6	700	6	56	6	0	
	Speed- Related	2,133	3	936	3	63	4	-1	
Driver	Aggressive Driving	555	11	297	10	17	11	-1	
	Distracted Driving	718	10	286	11	31	9	2	
	Impaired Driving	1,184	8	623	8	29	10	-2	
	No Safety Restraints	1,542	5	599	9	32	8	1	
	Intersection	3,567	1	2,163	1	174	1	0	
Roadway	Roadway Departure	2,931	2	1,014	2	58	5	-3	
	Motorcycle	1,457	7	750	5	66	2	3	
Special Users	Pedestrian	912	9	636	7	44	7	0	
000.0	Bicycle*	280	12	167	12	12	12	0	

#### Table 3.1 – SHSP Emphasis Areas Analysis

\*Bicyclists aren't one of the eleven Utah SHSP emphasis areas but was included as part of the CSAP safety analysis.



## 4. Historical Crash Analysis

A historical crash data analysis was conducted for the most recent complete 5-year period from 2018 to 2022. This historical crash analysis is primarily focused on fatal and serious injury crashes. Overall Crashes

#### 4.1. Overall Crashes

**Table 4.1** provides an overview of overall crashes by severity and roadway ownership within the North Davis County GFA. The data shows the following:

- State Routes recorded 68% of the total crashes in this GFA
- Federal Aid routes recorded 20% of fatal and serious injury crashes in this GFA
- Local Streets (non-Federal Aid) recorded 11% of fatal and serious injury crashes in this GFA

Route Type	State Route		Federal Aid Route		Local Street		Overall Total		% of WFRC	
Crash Severity	Crashes		Crashes		Crashes		Crashes		%	
	#	%	#	%	#	%	#	%	70	
Fatal	29	0%	3	0%	1	0%	33	0.2%	0.0%	
Suspected Serious Injury	151	2%	59	2%	24	2%	234	1.8%	0.1%	
Suspected Minor Injury	1,176	13%	403	15%	154	10%	1,733	13.0%	1.0%	
Possible Injury	1,683	19%	507	19%	173	11%	2,363	17.8%	1.3%	
No Injury / Property Damage Only	6,026	66%	1,727	64%	1,172	77%	8,925	67.2%	4.9%	
Route Total	9,065	100%	2,699	100%	1,524	100%	13,288	100%	7.4%	

#### Table 4.1 – Crashes by Severity by Roadway Ownership

#### 4.2. Fatal and Serious Injury Crashes by Year

**Figure 4.1** through **Figure 4.3** provide an overview of fatal and serious injury crashes by year and roadway ownership for the North Davis County GFA. The data shows the following:

- Fatal crashes have increased during the 5-year period (2018-2022), with ten fatal crashes occurring in 2022, up from 7 in 2018
- Serious injury crashes have increased during the 5-year period (2018-2022)
- Year 2021 recorded highest number of serious crashes during the 5-year period (2018 2022)
- Most (27of 33) of the fatal and serious injury crashes occurred on state routes

#### 4.3. Fatal and Serious Injury Crashes by Location

Figure 4.4 shows the locations of the fatal and serious injury crashes within the North Davis County GFA.

Figure 4.5 is a density map of fatal and serious injury crashes within the North Davis County GFA.



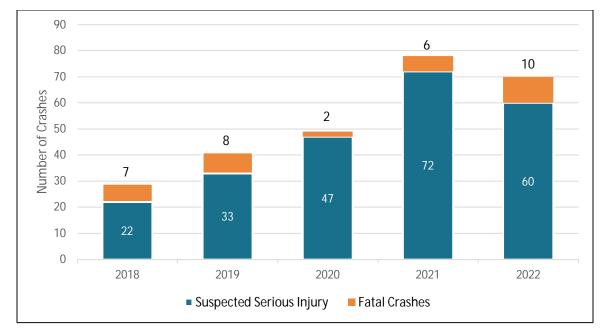
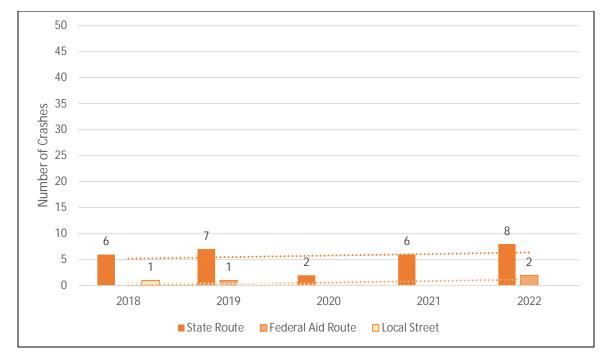


Figure 4.1 – Fatal and Serious Injury Crashes by Year





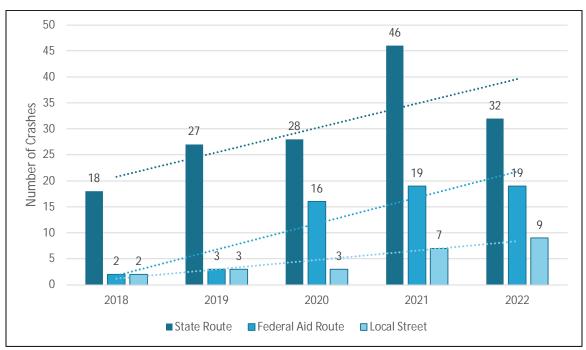
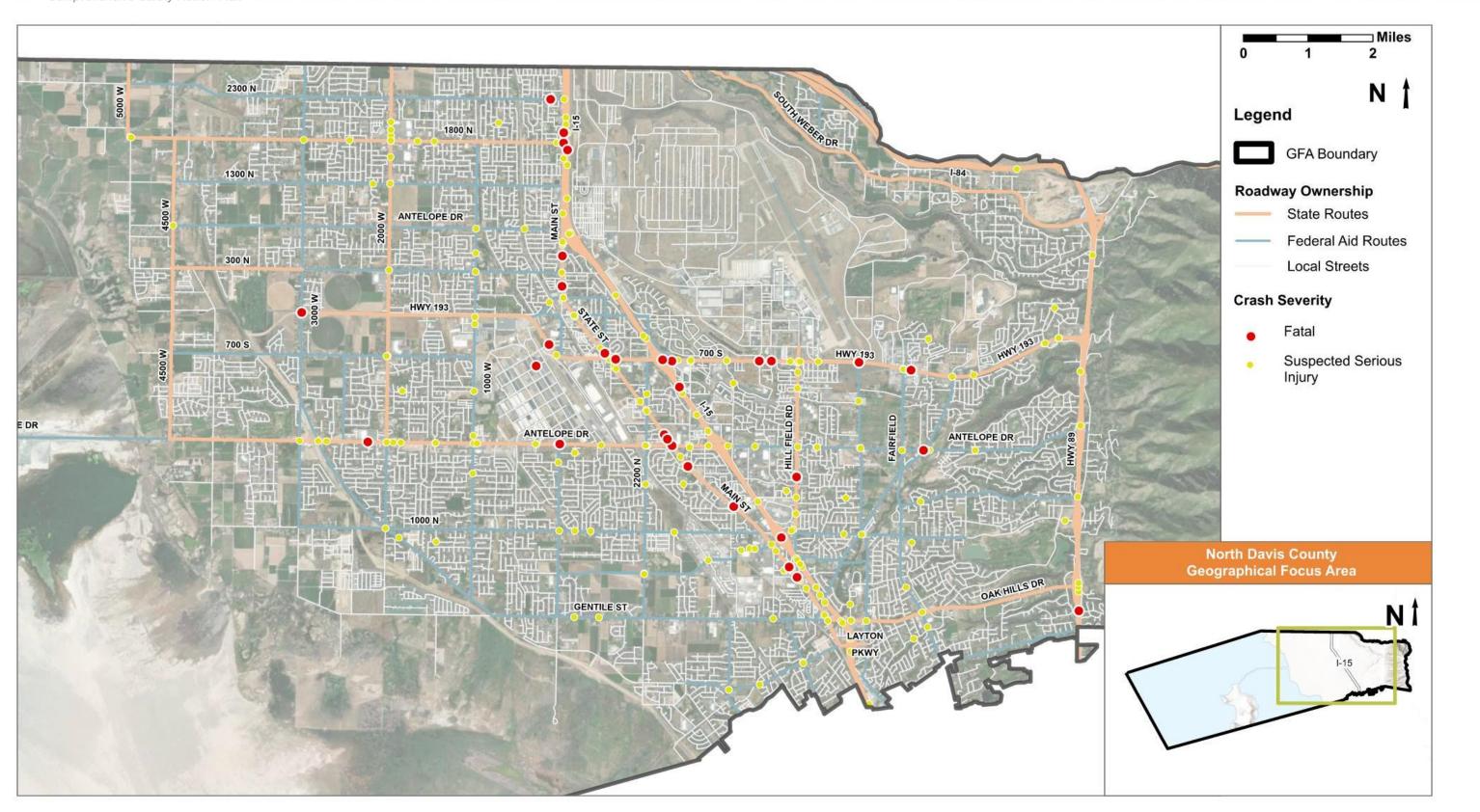


Figure 4.2 – Annual Fatal Crashes by Roadway Ownership

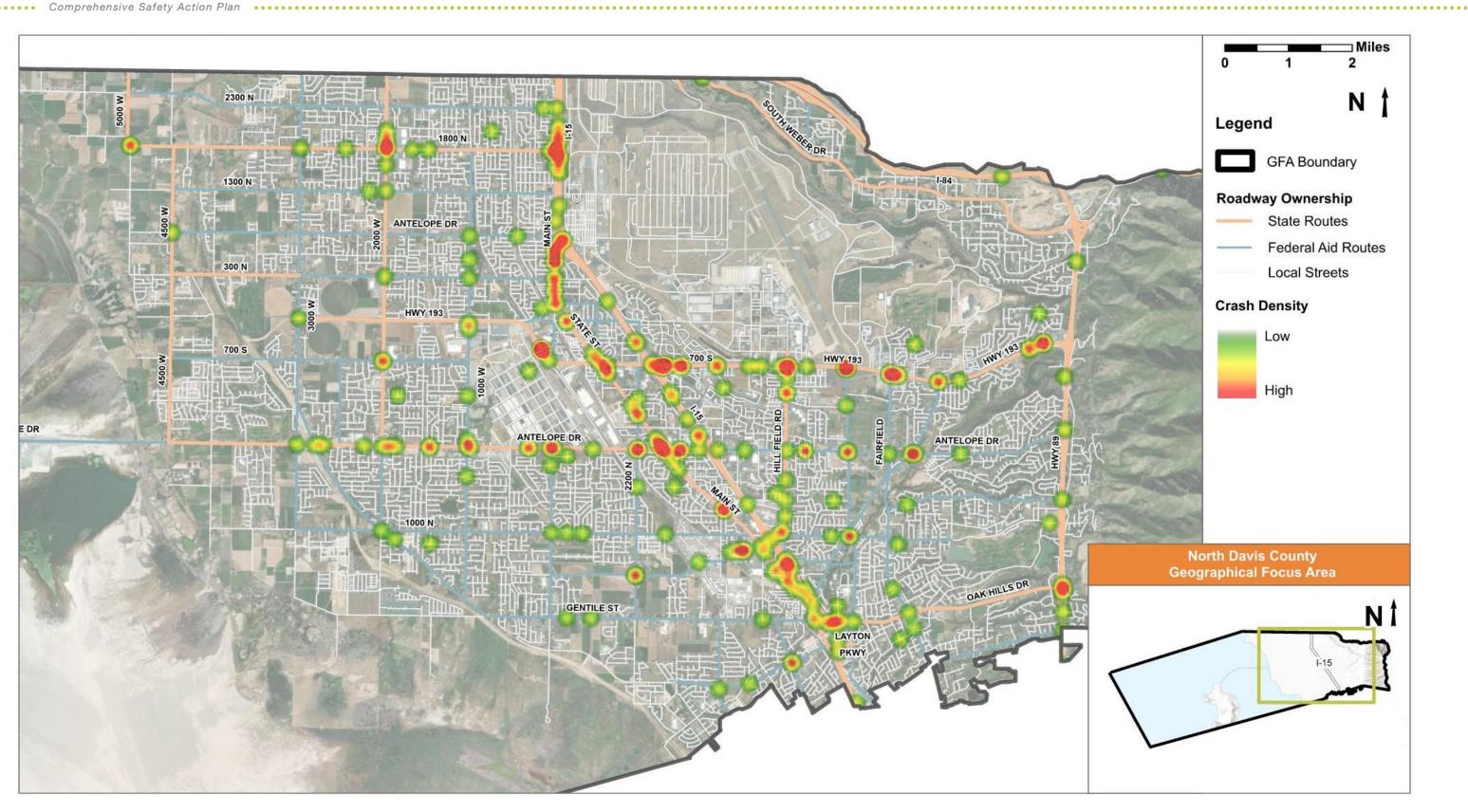
Figure 4.3 – Annual Serious Injury Crashes by Roadway Ownership





### Figure 4.4 – Fatal and Serious Injury Crashes





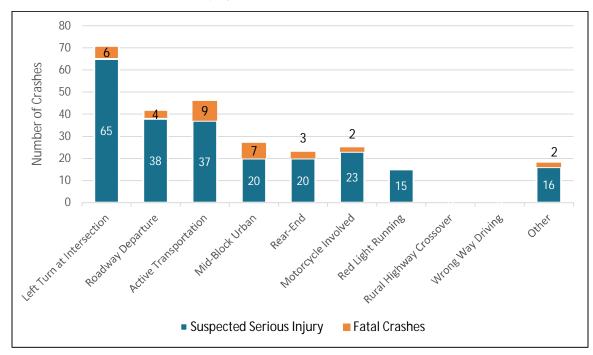
### Figure 4.5 – Fatal and Serious Injury Crash Density



## 4.4. Fatal and Serious Injury Crashes by Crash Type

**Figure 4.6** through **Figure 4.8** provide an overview of fatal and serious injury crashes by crash type and roadway ownership for the North Davis County GFA. The data shows the following:

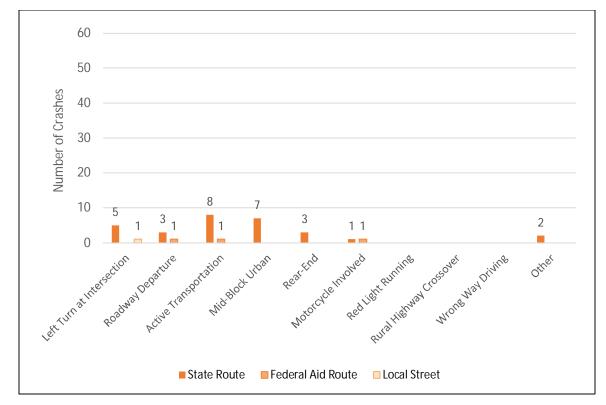
- The Left-Turn at Intersection crash type has the highest number of total fatal and serious injuries with 71 crashes
- Other prominent crash types are Active Transportation, and Roadway Departure
- There were eight Active Transportation fatal crashes on State Routes, and one Active Transportation fatal crash on a Federal Aid route



29 of 33 fatal and serious injury crashes occurred on State Routes

Figure 4.6 – Fatal and Serious Injury Crashes by Crash Type







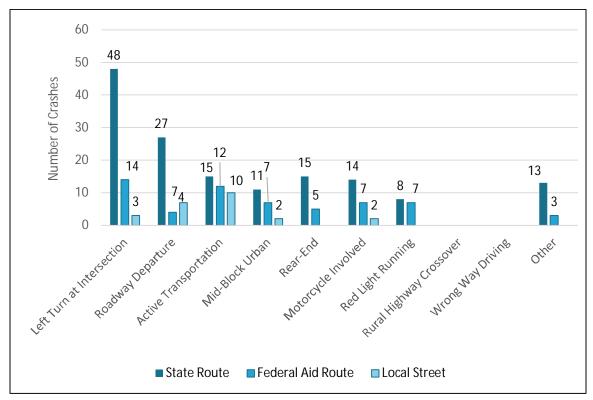


Figure 4.8 – Serious Injury Crashes by Crash Type and Roadway Ownership



### 4.5. Fatal and Serious Injury Vulnerable User Crashes

**Figure 4.9** through **Figure 4.11** provide an overview of fatal and serious injury crashes by vulnerable road user and roadway ownership for the North Davis County GFA. The data shows the following:

 There were 8 pedestrian fatal crashes and two bicycle fatal crashes over the five-year analysis period

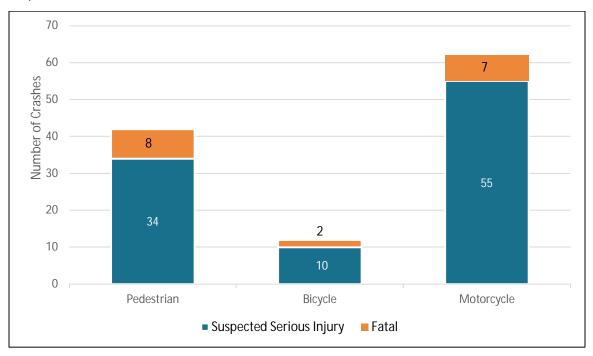
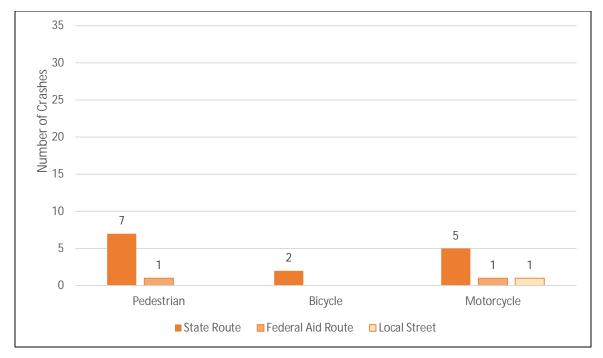


Figure 4.9 – Fatal and Serious Injury Crashes by Vulnerable User





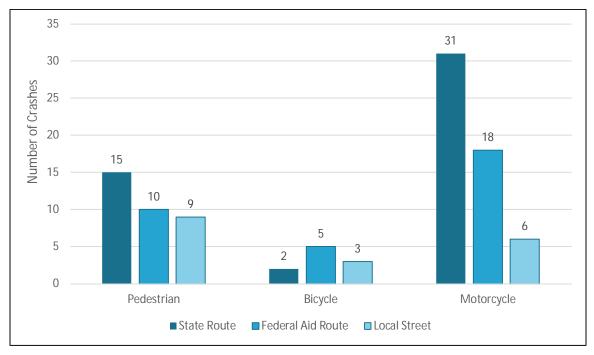


Figure 4.11 – Serious Injury Crashes by Vulnerable User and Roadway Ownership



## 4.6. Fatal and Serious Injury Crashes by Manner of Collision

**Figure 4.12** through **Figure 4.14** provide an overview of fatal and serious injury crashes by manner of collision and roadway ownership for the North Davis County GFA. The data shows the following:

- Single vehicle and angle crash types resulted in the largest number of fatal and serious injury crashes in this GFA
- No other crash types exceeded four fatal crashes
- 11 of 15 single-vehicle fatal crashes occurred on State Routes, three on Federal Aid routes, and one on a Local Street

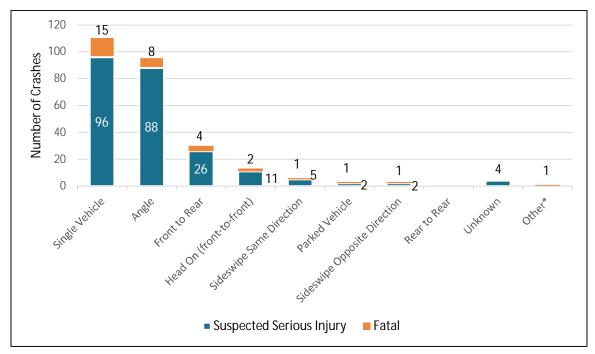
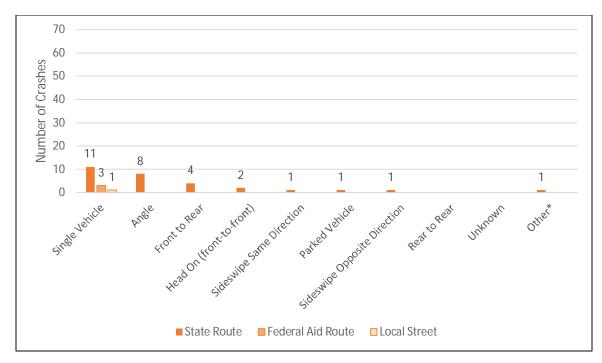
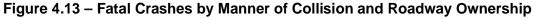


Figure 4.12 – Fatal and Serious Injury Crashes by Manner of Collision





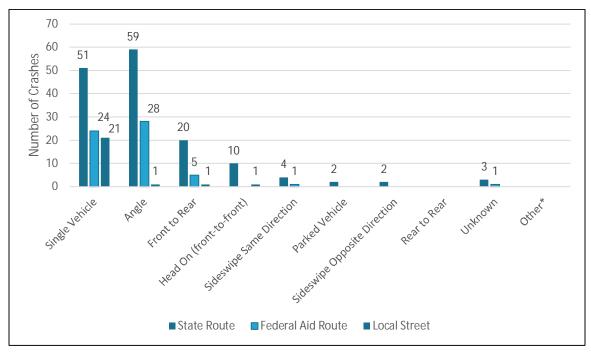


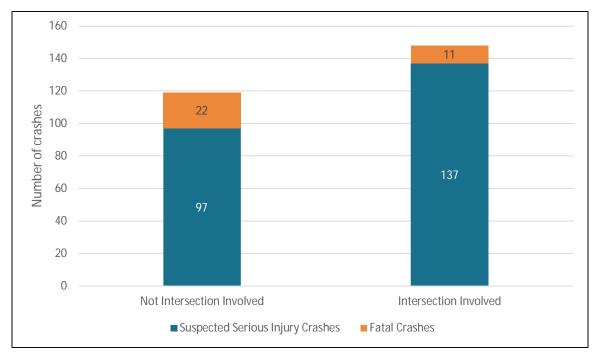
Figure 4.14 – Serious Injury Crashes by Manner of Collision and Roadway Ownership



## 4.7. Fatal and Serious Injury Intersection Crashes

**Figure 4.15** through **Figure 4.17** provide an overview of fatal and serious injury crashes by intersection and roadway ownership for the North Davis County GFA. The data shows the following:

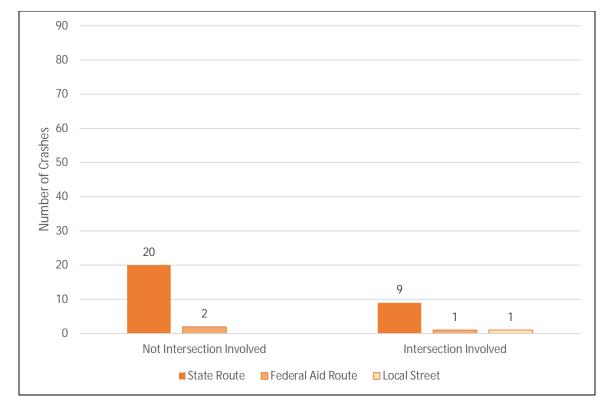
- Not intersection involved fatal crashes are double the number intersection involved crashes.
- However, there the total number of fatal and serious injury crashes at intersections exceeds that of non-intersections.



20 of 22 fatal not intersection involved crashes occurred on State Routes.

Figure 4.15 – Fatal and Serious Injury Crashes by Intersection







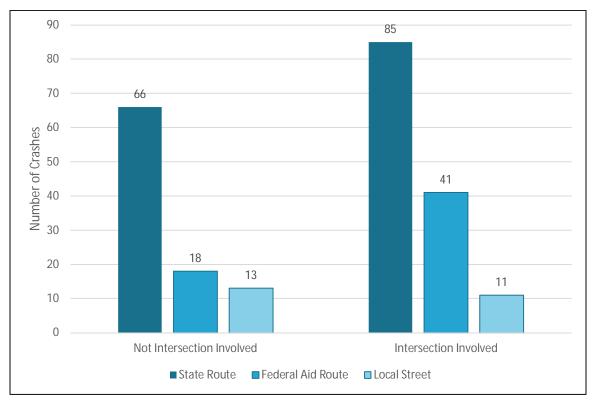


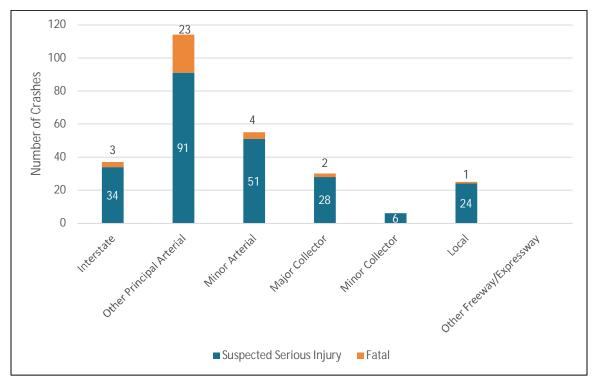
Figure 4.17 – Serious Injury Crashes by Intersection and Roadway Ownership



## 4.8. Fatal and Serious Injury Crashes by Functional Class

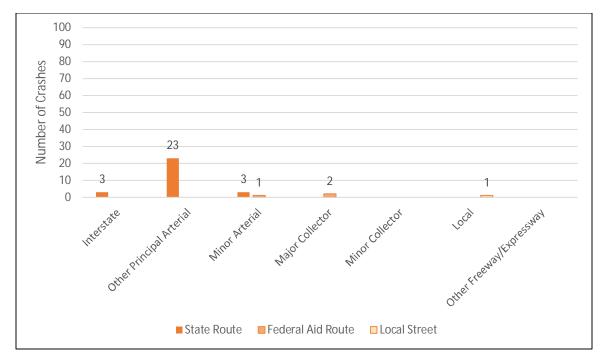
**Figure 4.18** through **Figure 4.20** provide an overview of fatal and serious injury crashes by functional class and roadway ownership for the North Davis County GFA. The data shows the following:

Principal Arterial recorded the highest total number of fatal and serious injury crashes (23); all
of the Principal Arterials are State Routes



Three fatal crashes occurred on Interstate, and four on minor arterials

Figure 4.18 – Fatal and Serious Injury Crashes by Functional Class





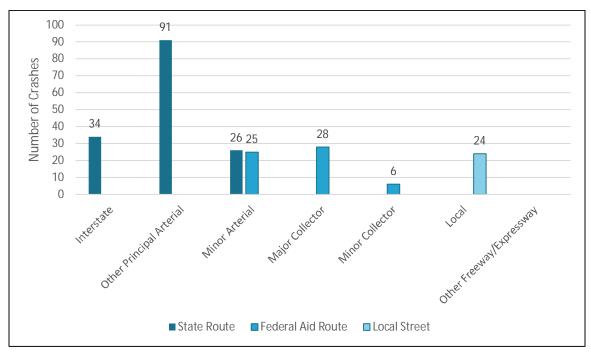


Figure 4.20 – Serious Injury Crashes by Functional Class and Roadway Ownership



## 4.9. Fatal and Serious Injury Crash Trees Diagrams

Fatal and serious injury crash tree diagrams were generated for the North Davis County GFA. These crash tree diagrams are presented in **Figure 4.23** through **Figure 4.22**.

The crash trees are limited to the top 3 categories for crash type and manner of collision. Each crash tree diagram displays the total fatal and serious injury crashes (T), fatal crashes (K), and serious injury crashes (A). The data shows the following:

- State Routes recorded the highest number of crashes
- Most crashes occurred in urban areas
- Higher number of non-intersection related crashes were recorded on all three roadway types (State Route, Federal Aid, Local)
- On Federal Aid routes in urban areas, prominent crash types are left-turn at intersection, redlight running, and active transportation



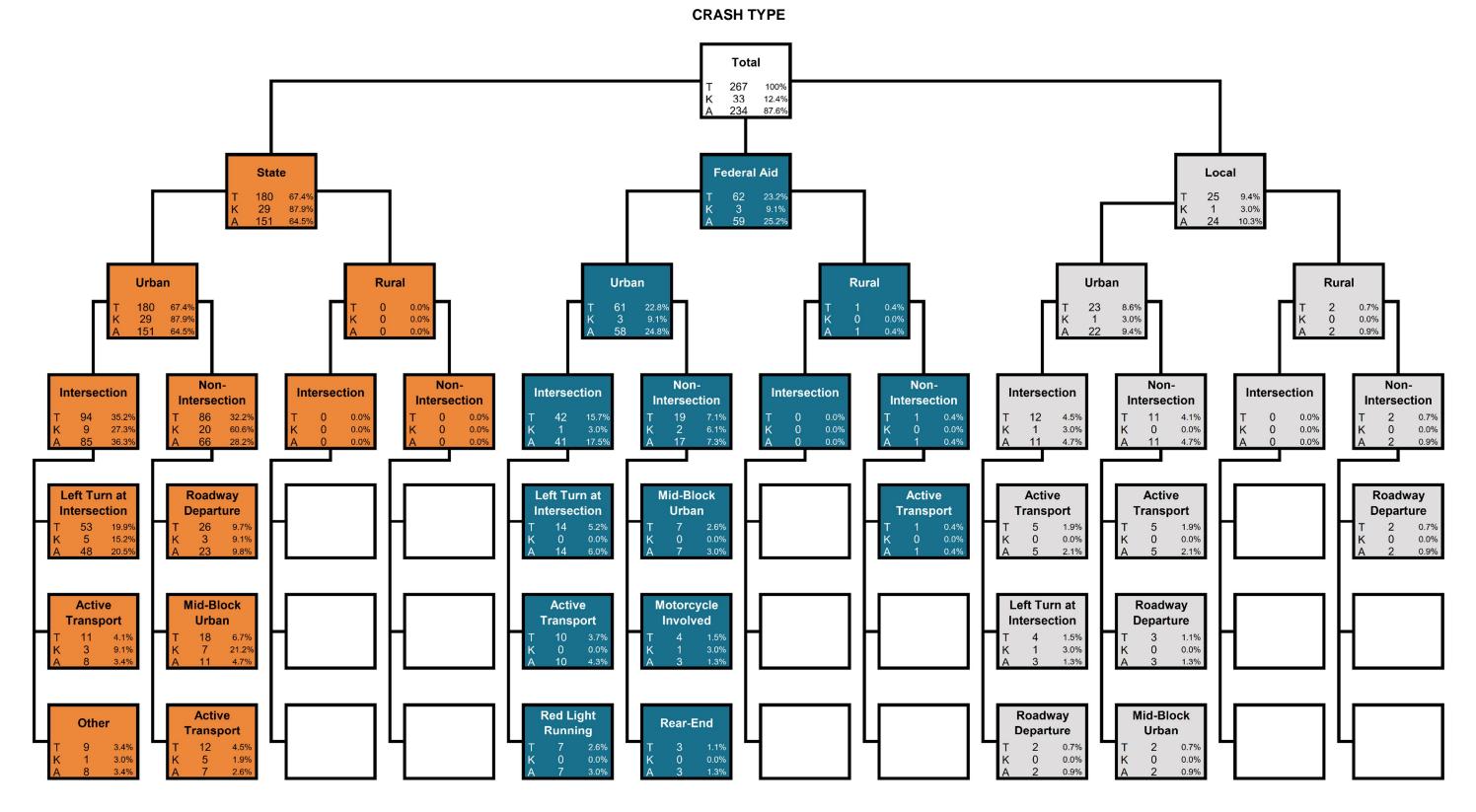


Figure 4.21 – Fatal and Serious Injury Crash Tree Diagram (Crash Type)

A5-26



MANNER OF COLLISION

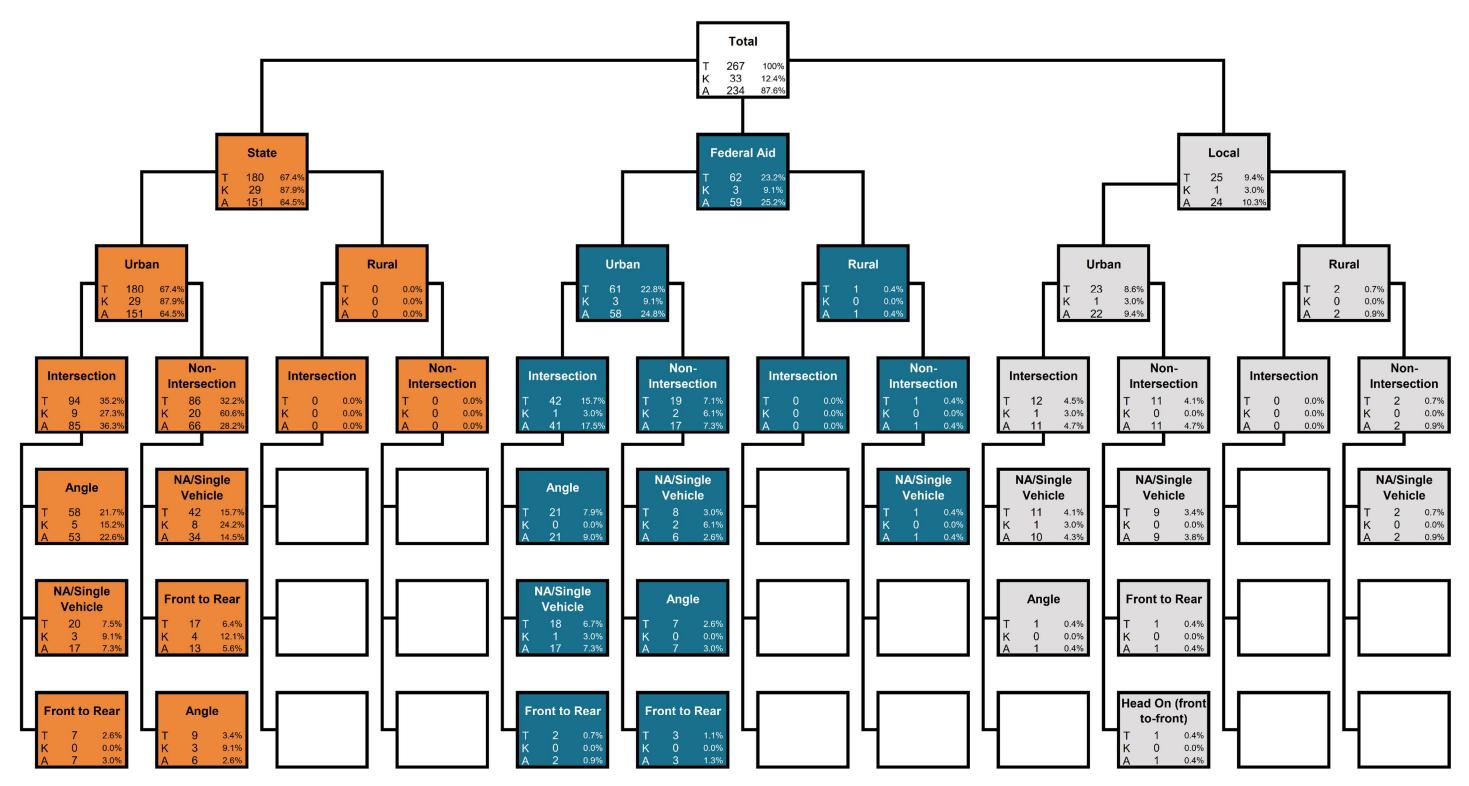


Figure 4.22 – Fatal and Serious Injury Crash Tree Diagram (Manner of Collision)

A5-27



**ACTIVE TRANSPORTATION** 

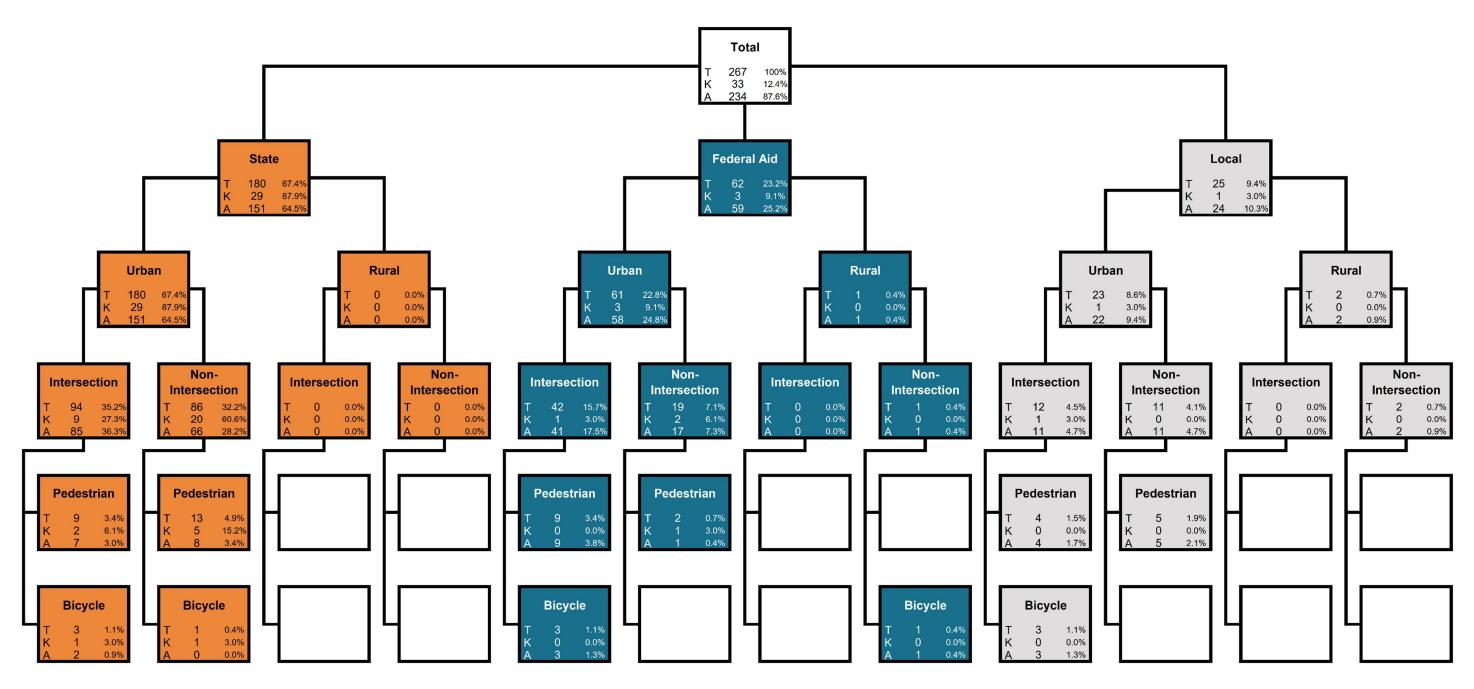


Figure 4.23 – Fatal and Serious Injury Crash Tree Diagram (Active Transportation)



# 5. Crash and Network Screening Analysis

A crash and network screening analysis was prepared for the North Davis County GFA informed by four sub-analyses:

- Number of Crashes
- Critical Crash Rate (CCR)
- Probability of a Specific Crash Type Exceeding Threshold Proportion
- Equivalent Property Damage Only (EPDO)

CCR Differential by roadway ownership are mapped in the following figures:

- Figure 5.1 CCR Differential Segments (State Routes)
- **Figure 5.2** CCR Differential Segments (Federal Aid Routes)
- **Figure 5.3** CCR Differential Segments (Local Routes)

A positive Local CCR Differential is an indication of a location with a potential for safety improvement (PSI).

A list of the top 10 CCR Differential segments and intersections for the North Davis County GFA are located in **Table 5.1** and **Table 5.2** along with their associated number of crashes, probability of a specific crash type exceeding threshold proportion, and EPDO analysis results.

These locations represent those with the highest potential for safety improvements and can be considered as project candidate locations.





Figure 5.1 – CCR Differential – Segments (State Routes)



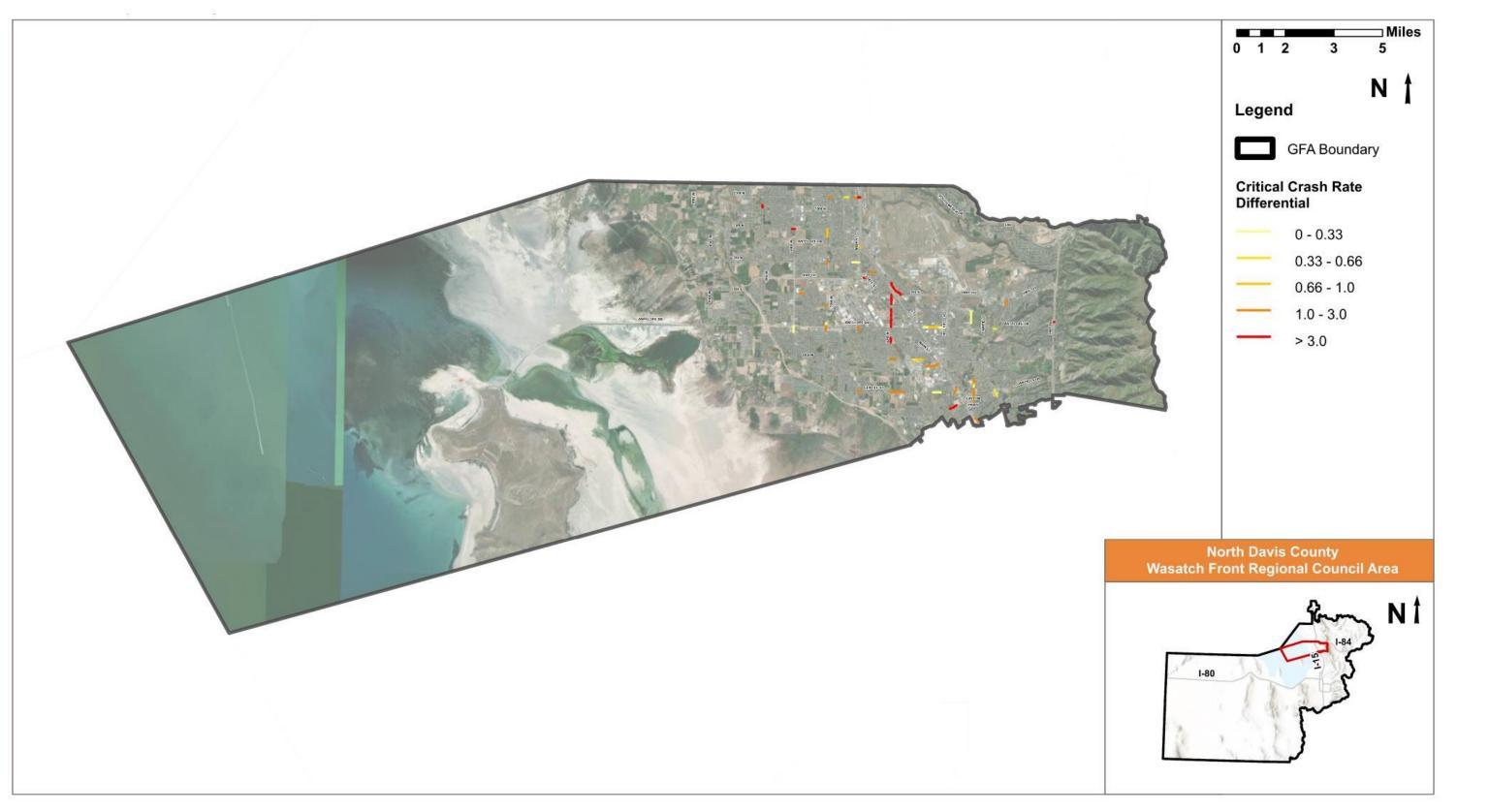


Figure 5.2 – CCR Differential – Segments (Federal Aid Routes)



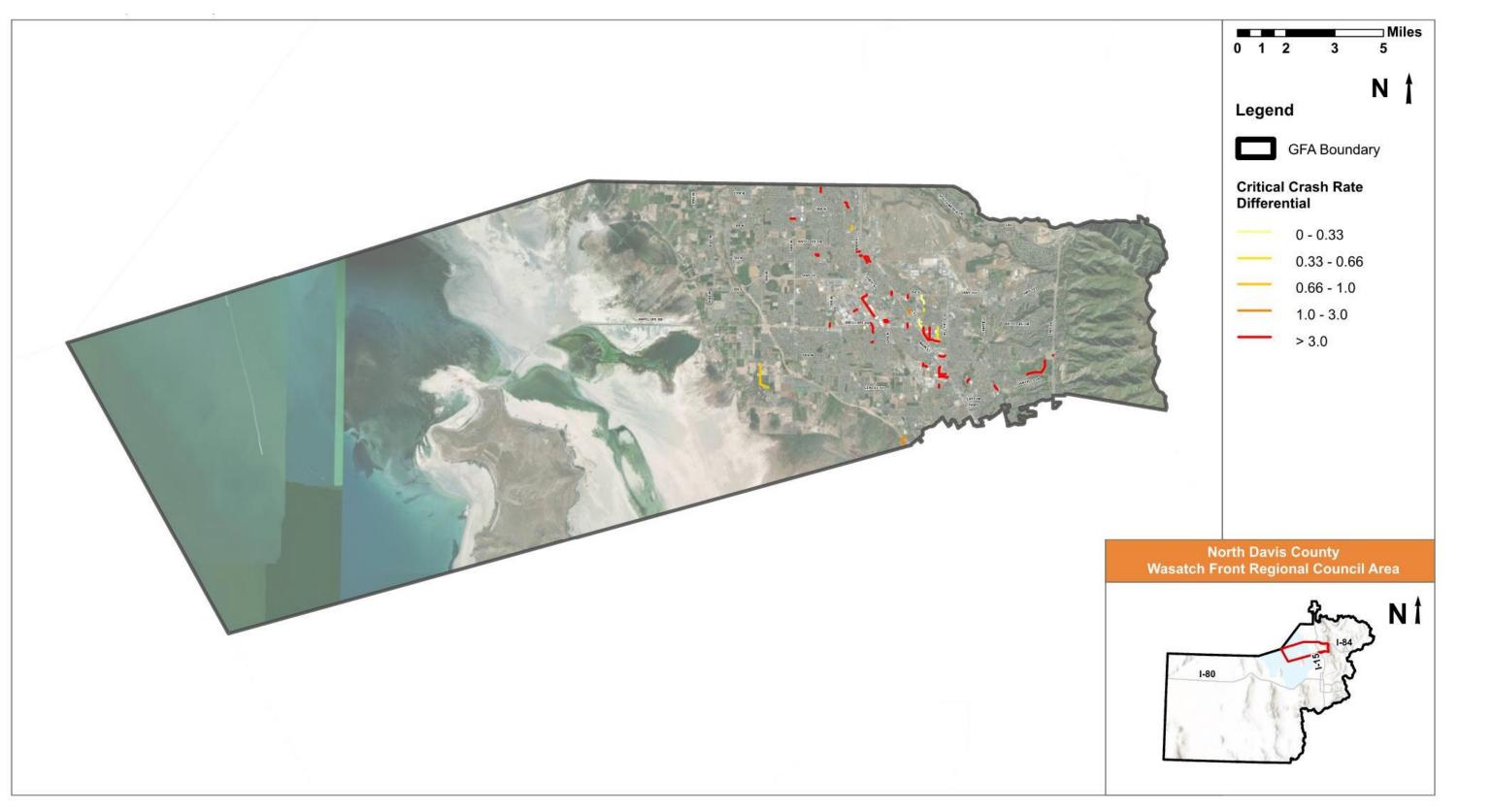


Figure 5.3 – CCR Differential – Segments (Local Routes)



### Table 5.1 – Crash and Network Screening Analysis Results - Segments

Facility	Limits	Functional Classification	City	Crashes	Critical Crash Rate Differential	EPDO <sup>1</sup>	Fatal	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	No Injury/PDO	Angle	Front to Rear	Head On	Single Vehicle	Parked Vehicle	Rear to Rear	Rear to Side	Sideswipe (Same Direction)	Sideswipe (opposite Direction)	Other/Unknown	Pedestrian	Bicycle	Motorcycle
State Routes		1	/																					
SR-193	James V Hansen Hwy	Other Principal Arterial	Layton	8	10.5	51	0	0	2	0	6	0	5	0	3	0	0	0	0	0	0	0	0	0
Oak Hills Dr (SR-109)	Hwy 89 to Eastside Dr	Minor Arterial	Layton	6	6.8	16	0	0	0	1	5	0	2	0	2	0	0	0	1	1	0	1	0	0
Main St (SR-126)	North Villa Dr to 650 N	Other Principal Arterial	Clearfield	42	4.8	493	0	1	11	12	18	16	16	0	3	1	0	0	0	6	0	1	0	3
Hill Field Rd (SR-126)	Antelope Dr to Quail Cove Apartments	Minor Arterial	Layton	23	3.9	44	0	0	0	2	21	13	6	0	0	0	0	0	0	3	1	0	0	0
2000 W (SR-208)	1300 N to 1520 N	Other Principal Arterial	Clinton	32	3.1	273	0	0	5	13	14	0	30	0	2	0	0	0	0	0	0	0	1	0
2000 W (SR-208)	1630 N to 1800 N	Other Principal Arterial	Clinton	25	2.9	140	0	0	1	9	15	12	11	1	0	0	0	0	0	1	0	0	0	1
2000 W (SR-208)	1520 N to 1630 N	Other Principal Arterial	Clinton	16	2.9	79	0	0	2	2	12	5	11	0	0	0	0	0	0	0	0	0	0	0
Main St (SR-126)	Villa Dr to North Villa Dr	Other Principal Arterial	Clearfield	13	2.7	1098	1	1	3	4	4	3	6	0	2	1	0	0	0	1	0	1	0	1
Hill Field Rd (SR-232)	2675 N to 2875 N	Minor Arterial	Layton	9	2.6	41	0	0	1	1	7	0	5	0	3	0	0	0	0	0	1	0	0	0
Main St (SR-126)	King St to Hill Villa Dr	Other Principal Arterial	Layton	22	2.4	222	0	0	5	9	8	12	2	0	0	1	0	0	0	6	1	0	0	2
Federal Aid Routes																								
1000 E	1000 S to Hwy 193	Major Collector	Clearfield	22	50.7	106	0	0	2	4	16	5	9	0	2	1	0	0	0	5	0	0	0	1
Antelope Dr	Hobbs Creek Dr to Hwy 89	Minor Arterial	Layton	7	43.4	17	0	0	0	1	6	0	3	0	3	0	0	0	0	0	1	0	0	0
1000 E	Antelope Dr to Hidden Cove Bach Apart	Major Collector	Clearfield	4	28.4	14	0	0	0	1	3	0	1	0	0	0	0	0	0	3	0	0	0	0
1000 E	1225 S to 1150 S	Major Collector	Clearfield	4	25.4	25	0	0	0	2	2	1	2	0	0	0	0	0	0	1	0	0	0	0
1300 N	2000 W to 2090 W	Minor Collector	Clinton	6	23.8	6	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0
1000 E	15254 S to 1450 S	Major Collector	Clearfield	4	23.8	25	0	0	1	0	3	1	1	0	1	0	0	1	0	0	0	1	0	0
1000 E	Hidden Cove Bach Apartments to Oakst	Major Collector	Clearfield	4	23.3	25	0	0	1	0	3	0	0	0	3	0	0	0	0	1	0	0	0	0
1000 E	Express Dr to State St	Major Collector	Clearfield	4	22.1	14	0	0	0	1	3	0	2	0	1	0	0	0	0	1	0	0	0	0
2200 W	2200 S to Access Road	Major Collector	Layton	3	14.6	3	0	0	0	0	3	0	1	0	1	1	0	0	0	0	0	0	0	0
200 S	State St to Marilyn Dr	Minor Collector	Clearfield	3	13.9	3	0	0	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0
Local Streets	' 				ļ.																		in i	
H St	13th St to 11th St	Local	Clearfield	3	5803.9	3	0	0	0	0	3	0	1	0	2	0	0	0	0	0	0	0	0	0
900 W	Antelope Dr to 1600 S	Local	Clearfield	3	2141.9	3	0	0	0	0	3	2	0	0	0	0	0	0	0	1	0	0	0	0
550 N	1350 W to 1300 W	Local	Clearfield	3	993.0	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
650 N	Main St to James St	Local	Clearfield	5	280.8	47	0	0	1	2	2	3	0	0	2	0	0	0	0	0	0	1	0	0
Oakstone Apartments		Local	Clearfield	4	90.5	25	0	0	1	0	3	0	0	0	1	3	0	0	0	0	0	0	0	0
1500 E	800 S to Hwy 193	Local	Clearfield	4	78.1	107	0	1	0	1	2	1	0	0	1	1	0	0	0	1	0	0	0	1
King St	Olsen Plz to Main St	Local	Layton	3	76.9	13	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0
Olsen Plaza Dr	Kings St to Main St	Local	Layton	5	73.0	98	0	1	0	0	4	2	0	0	2	0	0	0	0	1	0	1	0	0
King St	King Cir to Cook Dr	Local	Layton	3	67.4	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
400 W	1985 N to 450 W	Local	Sunset	3	46.9	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
. Equivalent Property Damage Only Crashes       = 90 - 100% probability that crash type is over-represented         = 80 - 90% probability that crash type is over-represented         = 70 - 80% probability that crash type is over-represented						ted ed																		

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Figure 5.4 – CCR Differential – Intersections (Signalized)



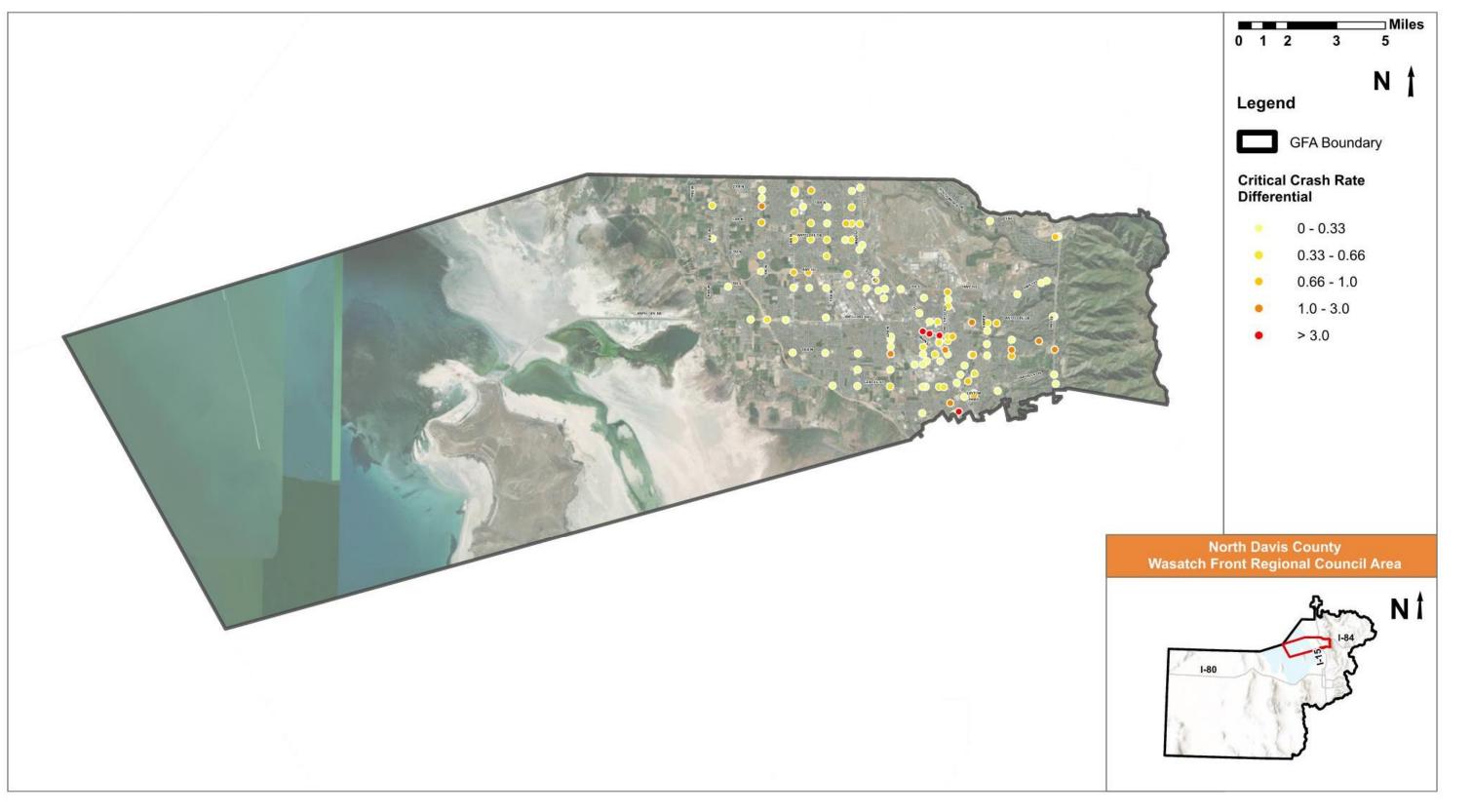


Figure 5.5 – CCR Differential – Intersections (Unsignalized)



### Table 5.2 – Crash and Network Screening Analysis Results - Intersections

Intersection	ED	City	Crashes	Critical Crash Rate Differential	EPD0 <sup>1</sup>	Fatal	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	No Injury/PDO	Angle	Front to Rear	Head On	Parked Vehicle	Single Vehicle	Rear to Rear	Rear to Side	Sideswipe (Same Direction)	Sideswipe (opposite Direction)	Other/Unknown	Pedestrian	Bicycle	Motorcycle
Signalized Intersections				-																_			
Woodland Park Dr & Heritage Park Blvd	39940	Layton	11	8.8	11	0	0	0	0	11	10	1	0	0	0	0	0	0	0	0	0	0	0
Main St & 800 N	42215	Clearfield	120	0.9	732	0	0	20	18	82	39	67	5	3	0	0	0	1	5	0	1	0	1
1000 E & 700 S	41106	Clearfield	75	0.6	560	0	0	15	16	44	34	27	2	10	0	0	0	0	1	1	2	3	0
State St & State St	41313	Clearfield	110	0.5	875	0	1	17	30	62	43	45	5	7	1	0	0	1	6	2	6	0	1
Main St & 650 N	42120	Clearfield	107	0.4	692	0	2	11	16	78	42	39	1	4	0	0	0	1	20	0	2	1	0
Fort Ln & Gentile St	38701	Layton	64	0.2	429	0	1	6	14	43	30	15	2	12	1	0	0	1	2	1	2	1	2
1000 W & HWY 193	40412	Layton	154	0.2	2245	1	3	25	38	87	89	42	3	7	0	0	0	2	6	5	2	3	3
1000 W & 200 S	41615	Clearfield	34	0.2	425	0	0	14	9	11	16	12	2	2	1	0	0	1	0	0	1	0	0
Main St & 1800 N	42960	Sunset	77	0.2	1604	1	2	16	11	47	45	23	2	5	0	0	0	1	1	0	3	1	2
Hill Field Rd & Antelope Dr	40453	Layton	97	0.1	632	0	1	12	18	66	48	30	4	3	2	0	0	0	8	2	1	0	1
Unsignalized Intersections						-					-												
King St & Olsen Plaza Dr	39108	Layton	6	23.6	16	0	0	0	1	5	0	3	0	2	0	0	0	0	1	0	0	0	0
Layton Hills Pkwy & Heritage Park Blvd	39937	Layton	19	4.8	40	0	0	1	0	18	16	2	1	0	0	0	0	0	0	0	0	0	0
Angel St & 1650 N	40128	Layton	3	4.1	24	0	0	1	0	2	0	0	1	2	0	0	0	0	0	0	0	0	1
50 E & 50 E	38303	Layton	3	3.3	24	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0
Us 89 Nb X402 Off Gordon Ave Ramp & 1200 N	39556	Layton	4	2.2	25	0	0	1	0	3	2	1	0	1	0	0	0	0	0	0	0	0	0
South Ring Rd & Southeast Entrance	39544	Layton	3	1.4	3	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0
Emerald Dr & Oakridge Dr	39460	Layton	3	1.1	24	0	0	1	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0
Evergreen Ln & Cherry Ln	39717	Layton	3	1.0	24	0	0	1	0	2	2	0	0	0	1	0	0	0	0	0	0	0	0
3000 W & 1800 N	42980	Clinton	28	1.0	300	0	1	5	7	15	21	4	1	2	0	0	0	0	0	0	0	0	0
500 E & 450 S	41480	Clearfield	8	1.0	39	0	0	0	3	5	4	2	0	1	1	0	0	0	0	0	0	0	0
Equivalent Property Damage Only Crashes = 90 - 100% probability that crash type is over-represented = 80 - 90% probability that crash type is over-represented = 70 - 80% probability that crash type is over-represented				d																			



## 6. Roadway Characteristic Risk Analysis

A roadway characteristic risk analysis was performed using the following three sub-analysis:

- Crash Profile Risk Assessment
- usRAP Risk Assessment
- Local Street Risk Assessment

#### 6.1. Crash Profile Risk Assessment

This risk assessment sub-analysis identifies common roadway characteristics for fatal and serious injury crashes that occurred within the WFRC study area. Based on the scoring of the various roadway characteristic risks identified from analysis of crash reports, a risk score was assigned to all state and federal aid routes within the North Davis County GFA consistent with the methodology described in Tech Memo #1 Section 3.4. The results of the Crash Profile Risk Assessment are mapped in the following figures:

- Figure 6.1 Crash Profile Risk Assessment Results (State Routes)
- **Figure 6.2** Crash Profile Risk Assessment Results (Federal Aid Routes)

**Table 6.1** provides an overview of urban and rural segments with the highest risk scoring. Up to ten urban and rural segments are listed if the segment received at least 67% of the overall total risk score.

Area Type	Road Segment	Extents	Risk Score
Urban	300 North	2000 West to State Street	21.8 to 24.5
Urban	Main Street	575 South to Park Circle	24
Urban	Hill Field Road	3200 West to Main Street	21.9 to 23.8
Urban	3000 West	2700 South to 1700 South	21 to 23.3
Urban	1000 West	Bluff Road to Bernard Fisher Highway	21 to 22.8
Urban	Antelope Drive	1200 West to Alder Street	22 to 22.4
Urban	3200 West / Main Street	Gentile Street to Antelope Drive	21.2 to 22.1
Urban	Bluff Road / Gentile Street	2700 South to 575 West	21 to 22
Urban	1300 North	4500 West to 3455 West	21
Urban	800 North	3500 West to 2000 West	21
Rural	2325 North / 2300 North	5000 West to 2740 West	21.5 to 23.5
Rural	800 North	4500 West to 3000 West	23.2
Rural	700 South	4500 West to Killarney Drive	21.5
Rural	475 East	SR-60 to I-84	21.1
Rural	Bluff Road	Gentile Street to 3150 South	21

#### Table 6.1 – WFRC Risk Segments (Federal Aid Routes)





Figure 6.1 – Crash Profile Risk Assessment Results (State Routes)





Figure 6.2 – Crash Profile Risk Assessment Results (Federal Aid Routes)



#### 6.2. usRAP Risk Assessment

A roadway characteristic risk assessment was performed using roadway feature data collected for Utah state and federal aid routes. The risk assessment was performed using the usRAP tool. The output of the usRAP tool is a star rating or risk rating for vehicle, pedestrian, and bicyclist features. The results of the usRAP risk assessment by star rating are mapped in the following figures:

- Figure 6.3 Vehicle Star Rating (State Routes)
- Figure 6.4 Vehicle Star Rating (Federal Aid Routes)
- Figure 6.5 Pedestrian Star Rating (State Routes)
- Figure 6.6 Pedestrian Star Rating (Federal Aid Routes)
- Figure 6.7 Bicycle Star Rating (State Routes)
- **Figure 6.8** Bicycle Star Rating (Federal Aid Routes)

A summary of the highest risk segments (1-2 Stars) for federal aid routes in the North Davis County GFA are located in **Table 6.2**.

Road Segment	Extents	Vehicle Risk	Pedestrian Risk	Bicycle Risk
475 East	South Weber Drive to I-84	X	X	X
2300 North / 2425 North	4500 West to Crainefield Road	Х	x	x
2300 North	3600 West to 1700 West	X	X	
2300 North	1700 West to 75 West	X		
1300 North	4500 West to 2350 West	X	X	X
1300 North	2350 West to Main Street	X		
1000 West	1300 North to 1800 North	X	X	X
1000 West	800 North to 1075 North	X	X	X
800 North	4500 West to 3000 West		X	X
800 North	3000 West to 2300 West	X	X	X
800 North	2300 West to 1000 West		X	
800 North	1000 West to Main Street	X	X	X
1000 West	300 North to 800 North	X		X
1000 West	200 South to 300 North	X		X
300 North	3000 West to Cambridge Park	X		X
300 North	Cambridge Park to 825 West	X		X
300 North	825 West to Main Street	X		
Center Street	State Street to 450 East	X		
500 East	State Street to Maple Street	X		
Main Street	575 South to Parck Circle	X	X	
200 South	150 West to Main Street	X	X	

#### Table 6.2 – usRAP Risk Segments (Federal Aid Route)



Road Segment	Extents	Vehicle Risk	Pedestrian Risk	Bicycle Risk
3000 West	1700 South to 700 South		Х	
1000 West	1700 South to 200 South	Х	X	Х
1000 East	Antelope Drive to 700 South	Х		
700 South	4500 West to Killarney Drive		X	X
Fairfield Road	320 South SR-193	X	x	Х
Bluff Road	3000 West to 2000 West	X	x	
Bluff Road	2000 West to Gentile Street		X	
3000 West	2700 South to 1700 South		x	
2000 West	2700 South to 1700 South	Х	X	Х
1000 West	2700 South to 1700 South	Х	Х	X
Main Street	1000 North to Antelope Drive	Х	X	Х
2200 West	1000 North to Antelope Drive	Х		
Antelope Drive	I-15 to Alder Street		X	
2700 South	3000 West to 2000 West		X	X
2700 South	2000 West to 1000 West		x	Х
2700 South	1000 West to 3700 West			Х
Cherry Lane	Fairfield Road to 2800 East	X		
400 West	Francis Street to Barbara Street	X		
Golden Avenue	400 West to Gordon Street	Х		
1000 North	Hill Field Road to Emerald Drive		x	
1000 West	Bluff Road to 1000 North	X	x	Х
3200 West	Gentile Street to 1000 North		X	X
Hill Field Road	Hill Field Road 3200 West to 2200 West		Х	X
Hill Field Road	2200 West to Main Street		X	X
Gentile Street	Bluff Road to Main Street	Х	Х	X
Angel Street	South GFA Extents to Gentile Street	Х	Х	X
Flint Street	South GFA Extents to Gentile Street	Х	Х	X
475 East	South Weber Drive to I-84	Х	X	Х



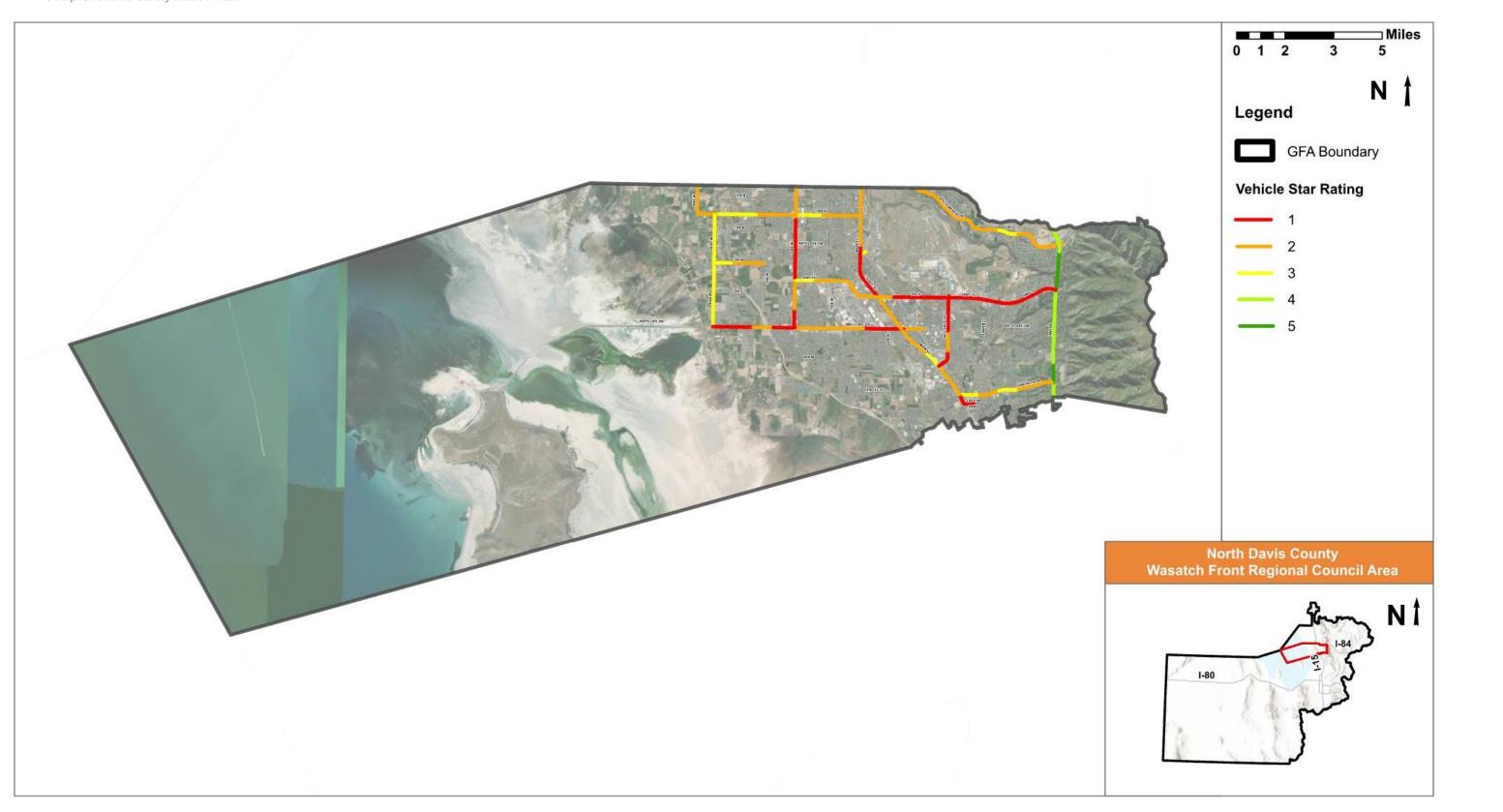


Figure 6.3 – Vehicle Star Rating (State Routes)





Figure 6.4 – Vehicle Star Rating (Federal Aid Routes)



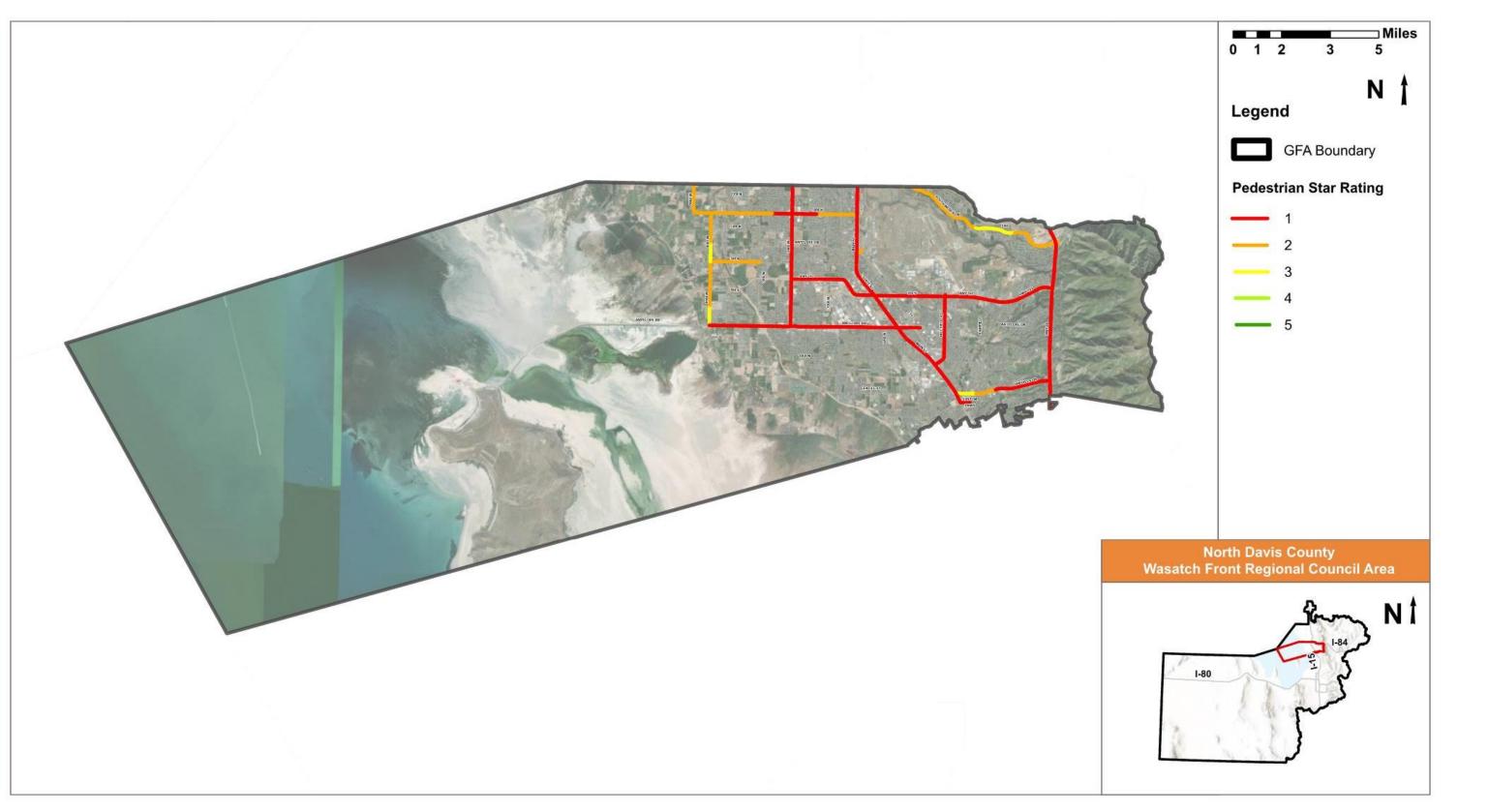


Figure 6.5 – Pedestrian Star Rating (State Routes)



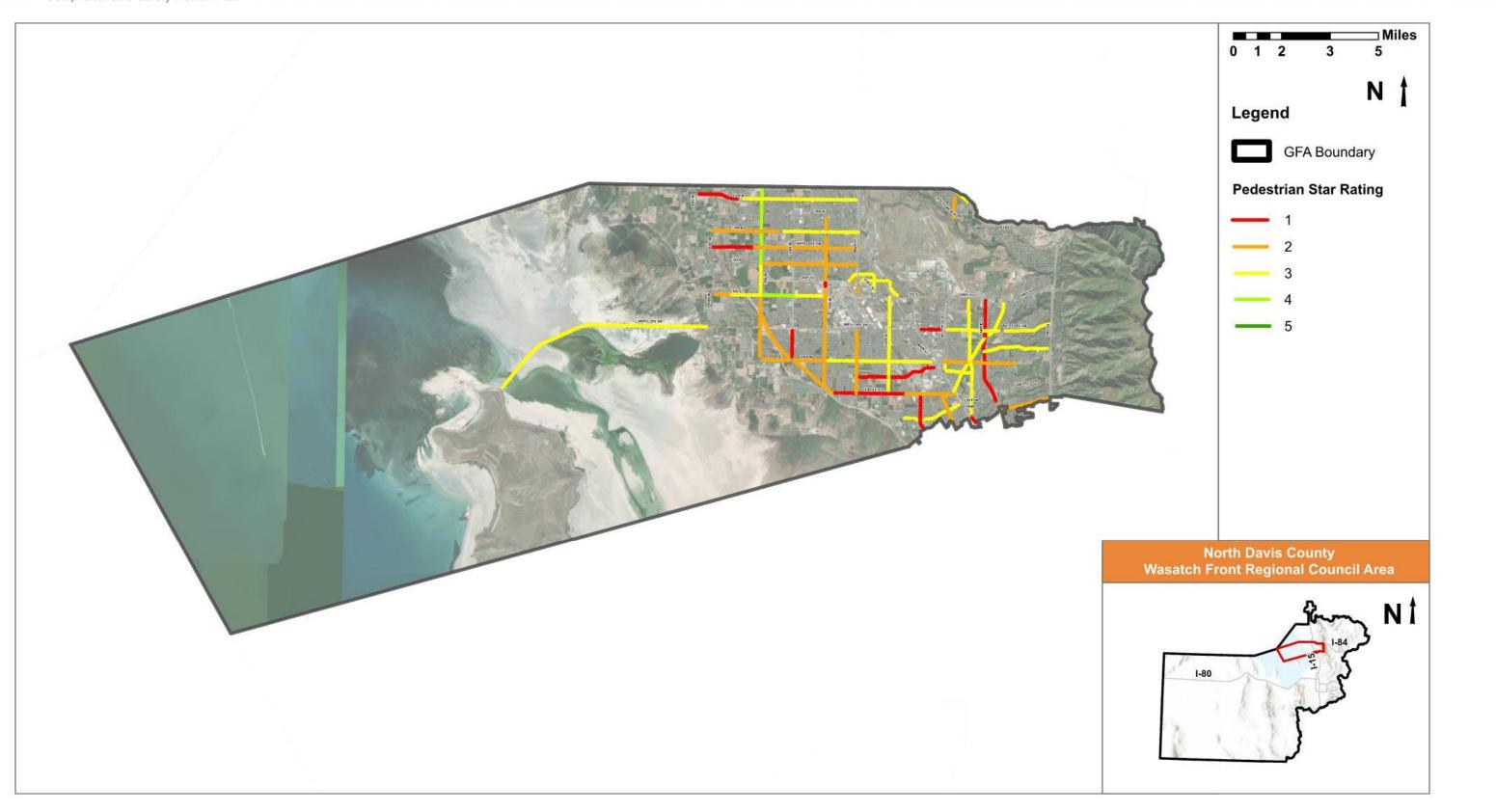


Figure 6.6 – Pedestrian Star Rating (Federal Aid Routes)



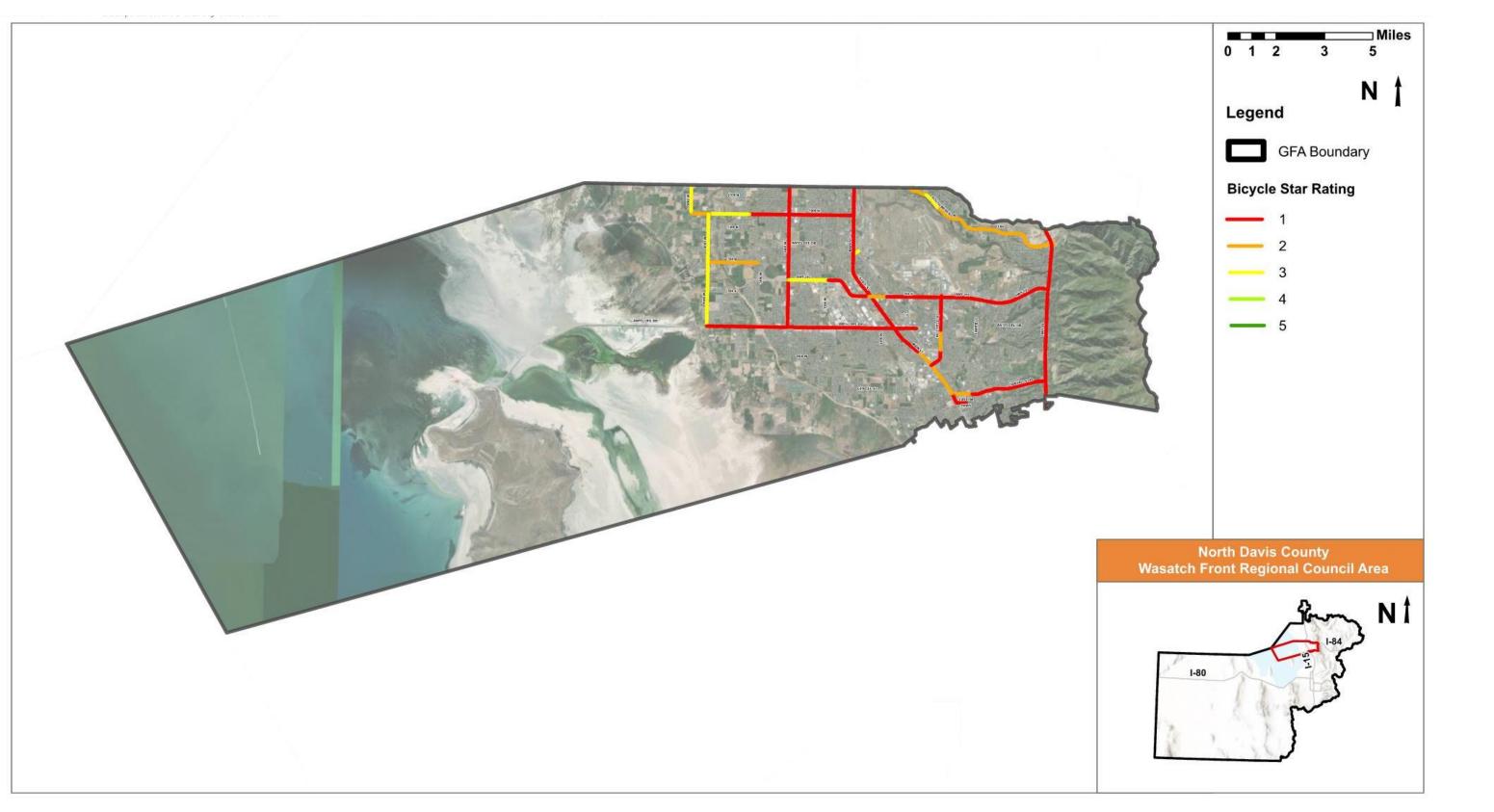


Figure 6.7 – Bicycle Star Rating (State Routes)





Figure 6.8 – Bicycle Star Rating (Federal Aid Routes)



#### 6.3. Local Street Risk Assessment

A local street risk assessment was performed for all local roads within WFRC that are not included in the usRAP network. The results of the local street risk assessment are summarized in **Table 6.3** and **Figure 6.9**. Mapped segments include the top 5% risk segments within the WFRC study area and the top 10 segments or high priority segments within the North Davis County GFA.

Road Segment	Extents
Hill Field Road	2500 West – SR-126
1000 East	450 South – 2200 South
1000 East	2200 South – Gentile Street
1200 West	I-15 – 1000 North
Wasatch Drive	SR-109 – 850 East
300 North	SR-126 – I-15
Main Street	7th Street – Gentile Street
700 South	2300 West – 1400 West
Center Street	SR-193 – 400 East
1700 West	1500 South – 1960 North

#### Table 6.3 – Local Street High Priority Segments





Figure 6.9 – Local Street Risk Assessment Results



# 7. Safety Analysis Summary

This section summarizes the safety analysis performed for the North Davis County GFA by identifying common risk characteristics and a composite high-risk roadway network.

# 7.1. Common Risk Characteristics

Based on the SHSP Emphasis Area Analysis and the Historical Crash Analysis summarized above, the following are common risk characteristics that should be considered when developing safety improvement projects specific to the North Davis County GFA:

- Intersections
  - 55.6% of all fatal and serious injuries
- Motorcycle
  - 21.19% of all fatal and serious injuries
  - 9.4% of all fatal and serious injury crashes
- Teen Driver
  - 20.1% of all fatal and serious injuries
- Speed-Related
  - 20.1% of all fatal and serious injury crashes
- Roadway Departure
  - 18.5% of all fatal and serious injuries
  - 15.7 % of all fatal and serious injury crashes
- Active Transportation
  - 17.2% of all fatal and serious injury crashes
- Left Turn at Intersection
  - 26.6% of all fatal and serious injury crashes

# 7.2. Composite High-Risk Roadway Network

Each of the safety analysis methodologies completed identified segments that can be improved to reduce fatalities and serious injuries.

To identify an overall high-risk roadway network and provide focused information for jurisdictional decisions regarding prioritization of safety improvements, an analysis was performed to identify overlapping segments from each of the analysis methodologies. A composite score, from zero to five, was determined using the approach in **Table 7.1**. The high-risk roadway network is a composite of the various risks as presented in **Section 4** through **Section 6** of Tech Memo #1. The top 10% of roadway segments for the entire WFRC area are included in the Composite High-Risk Network. These segments have a composite risk value of four or higher.

The North Davis County GFA Composite High-Risk Network for Federal Aid routes is summarized in **Table 7.2**.

The results are also mapped in Figure 7.1 (State Routes) and Figure 7.2 (Federal Aid Routes).



# 7. Safety Analysis Summary

This section summarizes the safety analysis performed for the North Davis County GFA by identifying common risk characteristics and a composite high-risk roadway network.

# 7.1. Common Risk Characteristics

Based on the SHSP Emphasis Area Analysis and the Historical Crash Analysis summarized above, the following are common risk characteristics that should be considered when developing safety improvement projects specific to the North Davis County GFA:

- Intersections
  - 50.2% of all fatal and serious injuries
- Left Turn at Intersection
  - 39.4% of all fatal and serious injury crashes
- Roadway Departure
  - 27.6% of all fatal and serious injuries
  - 23.3 % of all fatal and serious injury crashes
- Teen Driver
  - 23.2% of all fatal and serious injuries
- Active Transportation
  - 25.6% of all fatal and serious injury crashes
- Distracted Driving
  - 22.9% of all fatal and serious injuries
- Impaired Driving
  - 21.9% of all fatal and serious injuries

# 7.2. Composite High-Risk Roadway Network

Each of the safety analysis methodologies completed identified segments that can be improved to reduce fatalities and serious injuries.

To identify an overall high-risk roadway network and provide focused information for jurisdictional decisions regarding prioritization of safety improvements, an analysis was performed to identify overlapping segments from each of the analysis methodologies. A composite score, from zero to five, was determined using the approach in **Table 7.1**. The high-risk roadway network is a composite of the various risks as presented in **Section 4** through **Section 6** of Tech Memo #1. The top 10% of roadway segments for the entire WFRC area are included in the Composite High-Risk Network. These segments have a composite risk value of four or higher.

The North Davis County GFA Composite High-Risk Network for State Routes and Federal Aid Routes is summarized in **Table 7.2**.

The results are also mapped in Figure 7.1 (State Routes) and Figure 7.2 (Federal Aid Routes).

A summary of findings was presented to the GFA groups and is provided in **Attachment A**. Refer to **Attachment A** for additional information on high-risk roadways not included in the composite network and an overview of the safety analysis methodology.



Analysis	Risk Type	Approach	Value
Historical Crash Analysis	Historical Crash Risk	5-Year Crash Totals ≥ 3 Crashes	1
Crash and Network Screening Analysis	Systemic Crash Risk	Positive Local CCR Differential	1
WFRC Risk Assessment	Roadway Risk	Risk Score ≥ 20	1
usRAP Risk Assessment	Vehicle Risk	Vehicle Star Rating = 1-2 Stars	1
usRAP Risk Assessment	Pedestrian Risk	Pedestrian Star Rating = 1-2 Stars	0.5
usRAP Risk Assessment	Bicycle Risk	Bicycle Star Rating = 1-2 Stars	0.5
	5		

## Table 7.1 – Composite High-Risk Roadway

The greater the overlap the higher the likelihood that the segment has risk factors that should be addressed to reduce and/or eliminate fatal and serious injury crashes at that location. The top 10% of roadway segments for the entire WFRC area are considered high-risk segments. These segments have a composite risk value of four or higher. A summary of the composite high-risk roadway network for federal aid routes is summarized in **Table 7.2**. The results are also mapped in **Figure 7.1** and **Figure 7.2**.

# Table 7.2 – North Davis County High-Risk Roadway Network (State Routes and Federal Aid Routes)

						R	ISK 1	rype	-		
Facility	Limits	Functional Classification	City	Length (miles)	usRAP- Pedestrian Star Rating	usRAP - Bicycle Star Rating	usRAP- Vehicle Star Rating	Crash Profile Risk Score	CCR Differential Analysis	Significant Crashes	Local Street Risk Assessment
State Route											
200 West (SR-108)	6000 South to 1700 South	Other Principal Arterial	Clinton, Roy, Syracuse, V	4.5	Х	Х	Х	Х	Х	Х	
State Street/ Main Street (SR-1)	600 South to Layton Pkwy	Other Principal Arterial	Clearfield, Layton, Roy, S	8.0	Х	Х	Х	Х	Х	Х	
Hill Field Road (SR-232)	Bernard Fisher Hwy to 1000 N	Minor Arterial	Layton	2.0	Х	Х	Х	Х		Х	
1800 North (SR-37)	225 West to Main Street	Minor Arterial	Clinton, Sunset	2.2	Х	Х	Х	Х	Х	Х	
Bernard Fisher Hwy (SR-193)	1000 West to Highway 39	Other Principal Arterial	Layton, Clearfield	8.0	Х	Х	Х	Х		Х	
Antelope Drive (SR-108)	3400 West to I-15	Other Principal Arterial	Clearfield, Syracuse	5.5	Х	Х	Х	Х		Х	
Gentile Street/ Oaks Hills Driv	Fort Lane to James V Hansen Hwy	Other Principal Arterial	Clearfield	3.5	Х	Х	Х	Х		Х	
Federal Aid Routes											
800 N	50 W to Main St	Major Collector	Clearfield	0.1	Х	Х	Х		Х	Х	
1000 W	300 N to Antelope Dr	Major Collector	Clearfield	2.0	Х	Х	Х	Х		Х	
2000 W	1700 S to 1900 S	Major Collector	Syracuse	0.2	Х	Х	Х	Х	Х	Х	
Main St	1800 S to 1900 S	Major Collector	Clearfield	0.1	Х	Х	Х	Х		Х	
Hill Field Rd	825 N to Main St	Minor Arterial	Layton	0.5	Х	Х		Х	Х	Х	
Gentile St	3200 W to 575 W	Major Collector	Layton	2.5	Х	Х	Х		Х	Х	
Fairfield Rd	Gentile St to Rosewood Ln	Minor Arterial	Layton	0.2	Х	Х	Х		Х	Х	
Main St	Rosewood Way to Clearway Dr	Minor Arterial	Layton	0.1	Х	Х	Х		Х	Х	





Figure 7.1 – North Davis County High-Risk Roadway Network (State Routes)



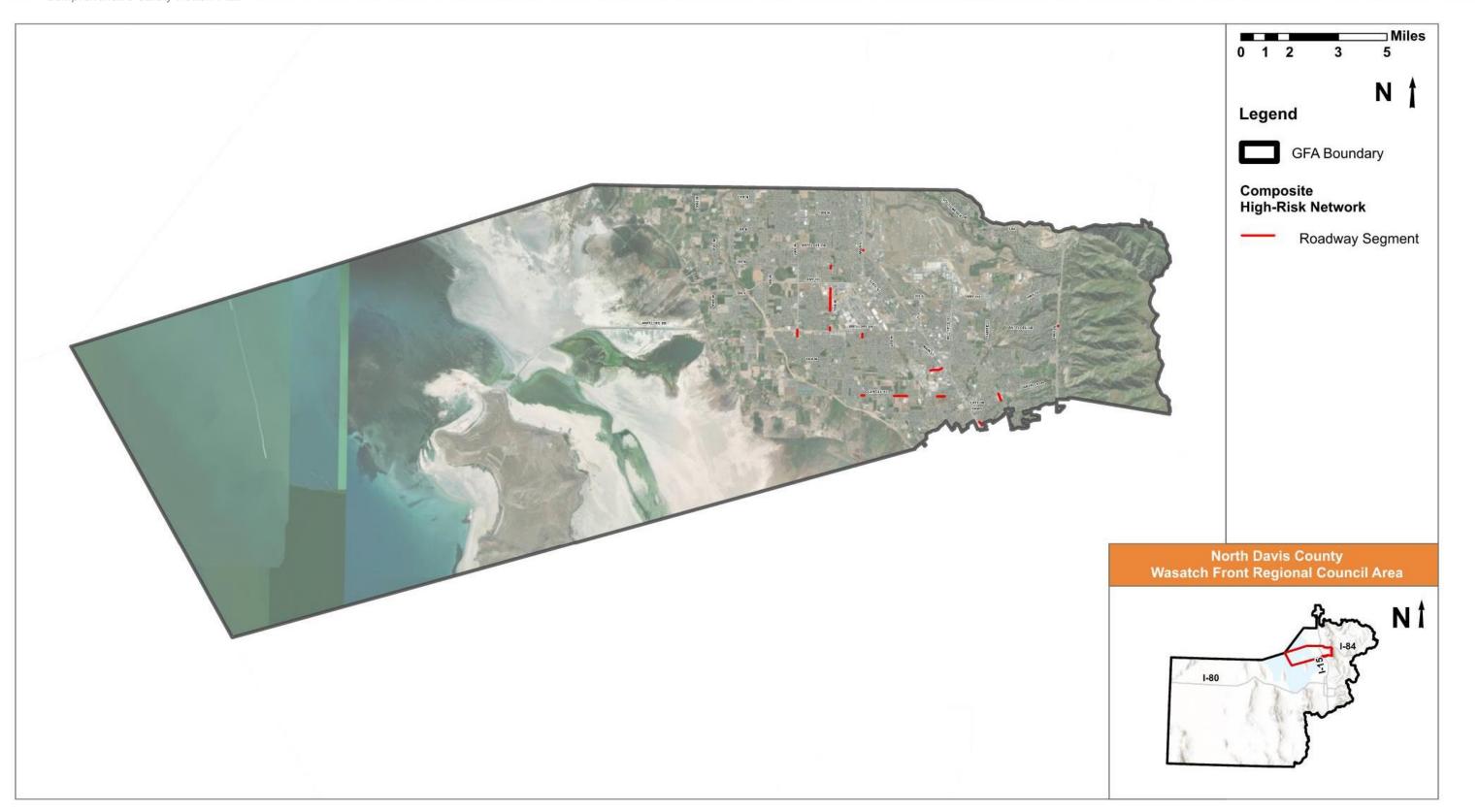


Figure 7.2 – North Davis County High-Risk Roadway Network (Federal Aid Routes)

APPENDIX

# NORTH DAVIS COUNTY CASE STUDY PROJECT INFORMATION SHEETS

		North Davis County
Project ID	Jurisdictions	Project Name
6.21.1.1	Clearfield, Layton	700 South (SR 193) from 1000 West to US 89
6.21.2.1	Clearfield, Syracuse	Antelope Drive (SR 108) from 2500 West to 500 West
6.21.3	Clearfield	1000 East from 700 South (SR 193) to Antelope Drive (SR 108)
6.22.1.1	Clinton, Roy	2000 West (SR 108) from 6000 South (Roy) to 800 North
6.22.2	Clinton	1800 North (SR 37) from 3000 West to 2000 West
6.23.1	Layton	2200 West from Antelope Drive to Gentile Street
6.23.2	Layton	North Hill Field Road (SR 232) from 700 South (SR 193) to Main Street (SR 126)
6.23.3	Layton	Main Street (SR 126) from Antelope Drive to Layton Parkway
6.23.4.1	Layton, Clearfield	700 South (SR 193) from 1000 West to US 89
6.24.1.1	South Weber, Riverdale	Weber Drive from 1050 West to Canyon Meadows Drives
6.25.1.1	Sunset, Roy	Main Street (SR 126) from 600 South (Roy) to 800 North
6.26.1	Syracuse	2000 West (SR 108) from SR 193 to SR 127
6.26.2.1	Syracuse, Clearfield	Antelope Drive (SR 108) from 4000 West to 500 West
6.26.3	Syracuse	2000 West from Antelope Drive to 2700 South
6.27.1	West Point	2000 West (SR 108) from 800 North to SR 193
6.27.2	West Point	Unsignalized Intersections; West Point

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### Project Information Sheet

GFA(s):	North Davis County
Project Name:	700 South (SR 193) from 1000 West to US 89
Jurisdiction(s):	Clearfield, Layton
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	High

#### Location Description

Roadway:	700 Sout	h (SR 193)	
From:	1000 We	st	
То:	US 89		
Length:	7.24	miles	

Key Intersection Locations:800 East100Industrial Parkway3102650 EastHill

1000 East 3100 North Hill Field Road

Composite Safety Score Historic Crashes

Crash Profile Risk Score

Local Street Assessment

Fatal

Angle Front to Rear (FR)

Serious Injury Pedestrian (Ped)

Bicycle (Bike) Motorcycle

Critical Crash Rate Differential

usRAP - Star Rating (Veh, Ped, Bike)

State Street Frontage Road 2400 East

Why Was This Location Identified?

What Crash Types are Over-Represented? ✓ Head On (HO)

Parked Vehicle (PV) Single Vehicle Rear to Rear (RR)

Rear to Side (RS) Sideswipe (SS)

Other/Unknown

Center Street 1000 West

6.21.1.1

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### **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	7.24
Average Daily Traffic (vehicles per day)	27,063
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	11

#### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	3
Suspected Serious Injury Crashes (A)	3
Suspected Minor Injury Crashes (B)	17
Possible Injury Crashes (C)	36
No Injury/PDO Crashes (O)	175
Total Crashes	234
Total EPDO Crashes	3,909

#### Intersection Crash History

									What Crash Types are Over-Represented?							
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
800 East & 700 South		0	0	1	6	4	11	94				1				1
Industrial Parkway & 700 South		0	0	2	11	1	14	171				1				
2650 East & 700 South		0	3	2	5	11	21	394	~		~					
1000 East & 700 South	✓	0	0	16	44	34	94	890		✓				1		
3100 North & 700 South	<	0	0	1	12	4	17	163				1				Í
Hill Field Road & 700 South	<ul><li>✓</li></ul>	0	4	16	82	10	112	1,673				1				
State Street & 700 South	~	0	1	30	62	43	136	1,509		✓		1	<ul> <li>✓</li> </ul>			
Frontage Road & 700 South	<	0	0	5	8	2	15	204				1				
2400 East & 700 South	✓	0	2	1	14	7	24	376	~			1				~
Center Street & 700 South	✓	0	0	9	15	8	32	379				1	✓			✓
1000 West & 700 South	✓	0	0	9	11	16	36	341					<b>√</b>			<ul> <li>✓</li> </ul>

700 South (SR 193) from 1000 West to US 89

Date Prepared: 3/14/2024 Prepared By: JSF Checked By: BCC

Map ID:

700 South (SR 193) from 1000 West to US 89

Marchine,

WASATCH FRONT REGIONAL COUNCIL sive Safety Action Plan

#### Project Description/How is safety improved?

This project addresses speed management to address front to rear crashes, intersection improvements to reduce left turn crashes, and access management to address sideswipe and head on crashes. Improvements include raised medians along the entire length of the corridor. An Intersection Control Evaluation (ICE) is recommended at locations with high frequency of crashes and at existing High-T configurations (1700 E., 2400 E., Fort Ln., Haven J Barlow Pkwy, 1500 E., Frontage Rd., & H St.). Minor street access should be evaluated to determine locations were access can be managed including consolidation or elimination. Protected intersection are proposed to reduce pedestrian crashes at Fort Ln. and Frontage Rd. Signal upgrades are proposed at Fairfield Rd. Church St. & H St.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis

#### **Proposed Proven Safety Countermeasures**



nantian I



Left-Turn Conflict Intersections

#### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Raised Medians on Roadways with Existing TWLTL	0.29	All Crashes	7.24	MILE	\$ 928,000	\$ 6,718,720
Install Driver Feedback Speed Limit Signs	NA	All Crashes	4.00	EACH	\$ 10,000	\$ 40,000
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements								
Item Description	CMF	Applicable Crashes	Quantity	Unit	l	Init Price		Item Cost
Perform an Intersection Control Evaluation and Implement	NA	All Crashes	7.00	INT	\$	225,000	\$	1,575,000
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	1.00	INT	\$	8,000	\$	8,000
Change Permissive Left-Turn to Protected or Protected/Permissive	0.79 - 0.95	Left-Turn	2.00	INT	\$	8,000	\$	16,000
Protected Intersection	NA	All Crashes	2.00	INT	\$	650,000	\$	1,300,000
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
						ents Subtotal:		9,657,720
				Mobilizatior				75,000
				affic Contr	· ·	/		482,886
		Items Not E	stimated / 0				•	2,897,316
				Estimate	d Cons	struction Cost:	\$	13,112,922
Local Match <sup>†</sup> : 20% \$ 3,330,800								
<sup>†</sup> Toward SS4A Implementation Grants		Prec	onstruction	Engineerii	ng/Des	ign 12%	\$	1,573,551
					Utilitie	s**	\$	-
					ROW	**	\$	-
		Constru	ction Engin	eering/Mai	nagem	ent 15%	\$	1,966,938
				Estim	ated I	Project Total:	\$	16,654,000
*Mobilizatio	on is 10% +/-	of the subtotal with a	minimum o	of \$2,500 a	ind a n	naximum of \$7	/5,00	0
**To be eva	aluated during	g feasibility study/desi	ign					

#### **Additional Potential Improvements**

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	Implement 3/4 access at unsignalized locations with median installation where feasible
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

# **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	Antelope Drive (SR 108) from 4000 West to 500 West
Jurisdiction(s):	Clearfield, Syracuse
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Medium, Low

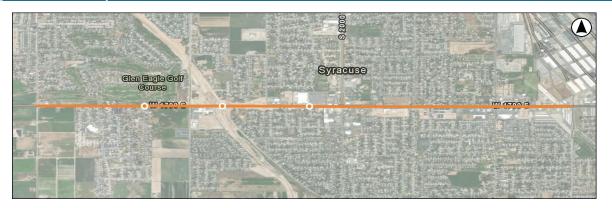
## **Location Description**

Roadway:	
From:	
To:	
Length:	

Antelope Drive (SR 108) 4000 West 500 West 3.52 miles

Key Intersection Locations: 3300 West Bluff Road 2210 West

### **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	3.52
Average Daily Traffic (vehicles per day)	21,814
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	3

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	3
Suspected Minor Injury Crashes (B)	13
Possible Injury Crashes (C)	23
No Injury/PDO Crashes (O)	42
Total Crashes	81
Total EPDO Crashes	874

### Intersection Crash History

												ypes ar	e Over-	Represe	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
3300 West & Antelope Drive		0	0	4	2	0	6	112				1				
Bluff Road & Antelope Drive		0	1	9	11	21	42	440			✓					
2210 West & Antelope Drive		0	0	10	10	20	40	356			~					

Why Was This Location Identified?				
Composite Safety Score				
Historic Crashes				
Critical Crash Rate Differential				
Crash Profile Risk Score				
usRAP - Star Rating (Veh, Ped, Bike)	✓			
Local Street Assessment				

What Crash Types are Over-Represented?							
Fatal		Head On (HO)	✓				
Serious Injury	1	Parked Vehicle (PV)	✓				
Pedestrian (Ped)		Single Vehicle	~				
Bicycle (Bike)		Rear to Rear (RR)					
Motorcycle		Rear to Side (RS)					
Angle	✓	Sideswipe (SS)	✓				
Front to Rear (FR)	~	Other/Unknown					

Date Prepared:	3/14/2024
Prepared By:	JSF
Checked By:	BCC

Antelope Drive (SR 108) from 4000 West to 500 West

Map ID: 6.21.2.1

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

#### Project Description/How is safety improved?

Portions of this project are within the new West Davis Corridor with an interchange at Antelope Drive. Project assumes that no improvements within the West Davis project limits are required between 3000 W and 2000 S. This project installs medians east of 3000 W. Other systemic countermeasures include sidewalk infill, shoulder paving (west of 3300 W.), and bicycle lane extension (east of 1000 W.). Intersection improvements include replacing existing "doghouse" signal heads with FYA signal heads (1000 W.), upgrading pedestrian crossings at Doral Dr. with installation of an RRFB, and systemic stop-controlled improvements at 3300 W.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



# Walkways

Antelope Drive (SR 108) from 4000 West to 500 West

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Provide 2-Ft Paved Shoulder on Rural 2-Lane Roadways	0.66 - 0.89	All Crashes	0.71	MILE	\$ 298,000	\$ 211,580
Install Sidewalk or Walkways	NA	Pedestrian	0.43	MILE	\$ 634,000	\$ 272,620
Install Raised Medians on Roadways with Existing TWLTL	0.29	All Crashes	2.52	MILE	\$ 928,000	\$ 2,338,560
Install Bicycle Lane	0.51 - 0.694	Bicycle	0.51	MILE	\$ 21,000	\$ 10,710
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements								
Item Description	CMF	Applicable Crashes	Quantity	Unit	l	Jnit Price		Item Cost
Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	2.00	INT	\$	19,000	\$	38,000
Install a Rectangular Rapid Flashing Beacons (RRFB)	0.526	Pedestrian	1.00	XING (2)	\$	15,000	\$	15,000
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	1.00	INT	\$	8,000	\$	8,000
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	2,894,470
Improvements Subtotal: \$								
Mobilization: (% +/-)* 10% 💲								
				affic Contro	· ·	/		144,724 868,341
Items Not Estimated / Contingency: (% +/-) 30%								
· · · · · · · · · · · · · · · · · · ·				Estimated	d Cons	struction Cost:	\$	3,982,535
Local Match <sup>†</sup> : 20% \$ 1,011,600								
<sup>†</sup> Toward SS4A Implementation Grants		Prece	onstruction	Engineerii	ng/Des	sign 12%	\$	477,904
					Utilitie	€S**	\$	-
					ROW	/**	\$	-
		Construe	ction Engin	eering/Mai	nagem	nent 15%	\$	597,380
Estimated Project Total:								5,058,000
		of the subtotal with a		of \$2,500 a	nd a n	naximum of \$7	′5,00	0
	aluated during	g feasibility study/desi	gn					

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the **Countermeasure Toolbox** for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan 1000 East from 700 South (SR 193) to Antelope Drive (SR 108)

# **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	1000 East from 700 South (SR 193) to Antelope Drive (SR 108)
Jurisdiction(s):	Clearfield
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	High, Medium

### **Location Description**

Roadway: From: To: Length:

1000 East 700 South (SR 193) Antelope Drive (SR 108) 0.99 miles

Key Intersection Locations: 700 South State Street

### **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	0.99
Average Daily Traffic (vehicles per day)	749
Functional Classification	Major Collector
Roadway Ownership	Federal Aid - Local
Urban/Rural Designation	Urban
Number of Key Intersections	2

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	0
Suspected Minor Injury Crashes (B)	5
Possible Injury Crashes (C)	11
No Injury/PDO Crashes (O)	34
Total Crashes	50
Total EPDO Crashes	270

### Intersection Crash History

Why Was This Location Identified?								
Composite Safety Score								
Historic Crashes	✓							
Critical Crash Rate Differential	✓							
Crash Profile Risk Score								
usRAP - Star Rating (Veh, Ped, Bike)	1							
Local Street Assessment	<ul> <li>✓</li> </ul>							

What Crash Types are Over-Represented?								
Fatal Head On (HO)								
Serious Injury		Parked Vehicle (PV)	✓					
Pedestrian (Ped)		Single Vehicle						
Bicycle (Bike)		Rear to Rear (RR)						
Motorcycle		Rear to Side (RS)						
Angle		Sideswipe (SS)						
Front to Rear (FR)	✓	Other/Unknown						

								1	What Crash Types are Over-Represented?							
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
700 South & 1000 East	1	0	0	15	16	44	75	560		✓				✓		1
State Street & 1000 East	1	0	2	7	6	27	42	439		✓		✓				
																1
																1
																1
																1
																L

3/14/2024 Date Prepared: Prepared By: MA Checked By: EMF

Map ID:

6.21.3

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1000 East from 700 South (SR 193) to Antelope Drive (SR 108)

#### Project Description/How is safety improved?

Safety Action I

This project includes improvements along 1000 E to address an overrepresentation of rear-end and parked vehicle collisions: lane narrowing through parked area striping and wider lane striping; removal of southbound through lane from 700 S to approximately 900 S; implementation of bulbouts at crossing south of 900 S; RRFB's at Campbell Heights and 1525 S, including bulb outs and raised crossings. The following intersection improvements are recommended to address an overrepresentation of ped/bike, rear-end and parked vehicle collisions: 700 S/1000 E, protected intersection improvements.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**









Road Diets (Roadway Configuration)

#### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Traffic Calming - Lane Narrowing	0.68	All Crashes	0.99	MILE	\$ 39,000	\$ 38,610
Traffic Calming - Wider Lane Lines	0.68	All Crashes	0.99	MILE	\$ 21,000	\$ 20,790
4-Lane to 3-Lane Road Diet Conversion	0.53 - 0.81	All Crashes	0.19	MILE	\$ 22,000	\$ 4,180
Install a Rectangular Rapid Flashing Beacons (RRFB)	0.526	Pedestrian	2.00	XING (2)	\$ 15,000	\$ 30,000
Traffic Calming - Bulbouts	0.68	All Crashes	12.00	EACH	\$ 36,000	\$ 432,000
Install Raised Crosswalk	NA	Pedestrian	2.00	EACH	\$ 71,000	\$ 142,000
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

#### Intersection Improvements

intersection improvements				-			
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit	Price	Item Cost
Protected Intersection	NA	All Crashes	1.00	INT	\$	650,000	\$ 650,000
Provide Right-Turn Lanes	0.74 - 0.86	All Crashes	2.00	LANE	\$	150,000	\$ 300,000
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
				Imp	rovements	Subtotal:	\$ 1,617,580
			1	Mobilizatior	n: (% +/-)*	10%	\$ 75,000
			Tr	affic Contro	ol: (% +/-)	5%	\$ 80,879
		Items Not E	stimated / 0	Contingend	y: (% +/-)	30%	\$ 485,274
				Estimate	d Construc	tion Cost:	\$ 2,258,733
Local Match <sup>†</sup> : 20% \$ 573,800							, ,
<sup>†</sup> Toward SS4A Implementation Grants		Prece	onstruction	Enaineerii	na/Desian	12%	\$ 271,048
				5	Utilities**		\$ -
					ROW**		\$ -
		Constru	ction Engin	eering/Mai	nagement	15%	\$ 338,810

Estimated Project Total: \$ 2,869,000

\*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of \$75,000 \*\*To be evaluated during feasibility study/design

#### **Additional Potential Improvements**

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	Safe Routes to School
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan 2000 West (SR 108) from 6000 South (Roy) to 800 North

### **Project Information Sheet**

n 6000 South (Roy) to 2050 North
Departures, Teen Driver

### **Location Description**

Roadway:	
From:	
To:	
Length:	

2000 West (SR 108) 6000 South (Roy) 2050 North 0.75 miles

### **Project Location Map**

Key Intersection Locations: 2220 North 2300 North 6000 South



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	0.75
Average Daily Traffic (vehicles per day)	19,938
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	3

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	2
Suspected Serious Injury Crashes (A)	14
Suspected Minor Injury Crashes (B)	33
Possible Injury Crashes (C)	56
No Injury/PDO Crashes (O)	0
Total Crashes	105
Total EPDO Crashes	4,460

### Intersection Crash History

											<u> </u>		_		. 10	
													e Over-			
Intersections	Signal	ĸ	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
2220 North & 2000 West		0	0	4	5	1	10	147				✓				l
2300 North & 2000 West	<ul><li>✓</li></ul>	0	0	10	26	16	52	534				✓	✓			✓
6000 South & 2000 West	1	0	0	6	15	9	30	313				✓				~
																1
																1
																1
																1

Why Was This Location Identified?					
Composite Safety Score	1				
Historic Crashes	✓				
Critical Crash Rate Differential	✓				
Crash Profile Risk Score	✓				
usRAP - Star Rating (Veh, Ped, Bike)	✓				
Local Street Assessment					

What Crash T	What Crash Types are Over-Represented?							
Fatal		Head On (HO)	✓					
Serious Injury	1	Parked Vehicle (PV)						
Pedestrian (Ped)		Single Vehicle	✓					
Bicycle (Bike)		Rear to Rear (RR)						
Motorcycle	✓	Rear to Side (RS)						
Angle		Sideswipe (SS)						
Front to Rear (FR)	1	Other/Unknown						

Date Prepared:	3/14/2024
Prepared By:	EJS
Checked By:	BCC

Map ID: 6.22.1.1 and the second the second

WASATCH FRONT REGIONAL COUNCIL 2000 West (SR 108) from 6000 South (Roy) to 800 North Comprehensive Safety Action Plan

#### Project Description/How is safety improved?

This project upgrades existing signals to include flashing yellow arrows (FYA) at 800 N, 1300 N, 2300 N, and 6000 S. The project includes driver feedback speed limit signs to address speeding associated with front to rear crashes. The project includes shoulder widening, new sidewalks (800 N to 1300 N and 2300 N to 6000 S), and installs bicycle lanes.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

### **Proposed Proven Safety Countermeasures**







### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Driver Feedback Speed Limit Signs	NA	All Crashes	3.00	EACH	\$ 10,000	30,000
Shoulder Widening on Rural Roads	0.771	All Crashes	0.75	MILE	\$ 32,000	\$ 24,000
Install Sidewalk or Walkways	NA	Pedestrian	0.75	MILE	\$ 634,000	\$ 475,500
Install Bicycle Lane	0.51 - 0.694	Bicycle	1.50	MILE	\$ 21,000	\$ 31,500
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements								
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Pr	ice	lte	em Cost
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	2.00	INT	\$	8,000	\$	16,000
Change a permissive only to Flashing Yellow Arrow	0.5 - 0.6	Left-Turn	2.00	INT	\$	8,000	\$	16,000
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
					rovements S			593,000
					n: (% +/-)*	10%		59,300
				affic Contr		5%	\$	29,650
		Items Not E	stimated / C			30%	\$	177,900
Local Match <sup>†</sup> : 20% \$ 218,600				Estimate	d Constructio	on Cost:	\$	859,850
<sup>†</sup> Toward SS4A Implementation Grants		Preci	onstruction	Engineerii	na/Desian	12%	\$	103,182
		11000	511011 4011011	Linginooni	Utilities**	1270	\$	-
					ROW**		\$	-
		Constru	ction Engin	eerina/Mai		15%	\$	128,978
					ated Projec			1,093,000
*Mobilizatior	n is 10% +/-	of the subtotal with a	minimum c					
**To be eval	uated during	g feasibility study/desi	gn					

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the **Countermeasure Toolbox** for a complete list of safety countermeasures.

Additional Improvements #1:	
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

#### Use Restricted 23 U.S.C. § 407

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	1800 North (SR 37) from 3000 West to 2000 West
Jurisdiction(s):	Clinton
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Low

### **Location Description**

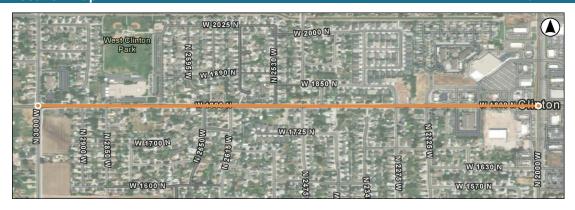
Roadway: From: To: Length:

1800 North (SR 37) 3000 West 2000 West 1.01 miles

## **Project Location Map**

Key Intersection Locations: 2000 West 3000 West

> 6.22.2 Map ID:



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	1.01
Average Daily Traffic (vehicles per day)	16,848
Functional Classification	Minor Arterial
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	2

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	1
Suspected Minor Injury Crashes (B)	3
Possible Injury Crashes (C)	6
No Injury/PDO Crashes (O)	15
Total Crashes	25
Total EPDO Crashes	244

### Intersection Crash History

										What 0	Crash T	ypes ar	e Over-	Represe	ented?	_
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
2000 West & 1800 North	✓	0	3	19	42	37	101	1,219			~					1
3000 West & 1800 North	<ul> <li>✓</li> </ul>	0	1	7	15	21	44	441			✓					
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Why Was This Location Identified?					
Composite Safety Score	✓				
Historic Crashes	✓				
Critical Crash Rate Differential	✓				
Crash Profile Risk Score	✓				
usRAP - Star Rating (Veh, Ped, Bike)	✓				
Local Street Assessment					

What Crash Types are Over-Represented?						
Fatal		Head On (HO)				
Serious Injury	1	Parked Vehicle (PV)	✓			
Pedestrian (Ped)		Single Vehicle	~			
Bicycle (Bike)		Rear to Rear (RR)				
Motorcycle		Rear to Side (RS)				
Angle		Sideswipe (SS)	✓			
Front to Rear (FR)	1	Other/Unknown				

Date Prepared:	3/14/2024
Prepared By:	JSF
Checked By:	EJS

1800 North (SR 37) from 3000 West to 550 West

1800 North (SR 37) from 3000 West to 550 West

#### A LINE AND AND A March 1188

WASATCH FRONT REGIONAL COUNCIL Safety Action

#### Project Description/How is safety improved?

This majority of this project corridor is located near residential housing including two elementary schools. This project focuses on systemic safety improvement that help reduce vehicle speeds and improve active transportation along the corridor. Traffic calming measures include lane narrowing, installing wider lane lines, and driver feedback speed limit signs near the elementary schools. Bicycle lanes will also be installed along the corridor. The school crossing at 1200 West near Clinton Elementary will be upgraded to include RRFB signage, high visibility crosswalk enhancements, and a pedestrian refuge island. Sidewalk infill is also included as part of this project. Upgrading left-turn signal timings and installing flashing vellow area type signal heads area included (at 3000 W. 1500 W. and 1000 W). This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



Medians and Pedestrian Refuge Islands in Urban & Suburban Areas



Rectangular Rapid Flashing Beacons (RRFB)

Walkways

994,000

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Sidewalk or Walkways	NA	Pedestrian	0.21	MILE	\$ 634,000	\$ 133,140
Install Bicycle Lane	0.51 - 0.694	Bicycle	2.47	MILE	\$ 21,000	\$ 51,870
Traffic Calming - Lane Narrowing	0.68	All Crashes	2.47	MILE	\$ 39,000	\$ 96,330
Traffic Calming - Wider Lane Lines	0.68	All Crashes	1.92	MILE	\$ 21,000	\$ 40,320
Install Driver Feedback Speed Limit Signs	NA	All Crashes	4.00	EACH	\$ 10,000	\$ 40,000
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	1	Item Cost
Install a Rectangular Rapid Flashing Beacons (RRFB)	0.526	Pedestrian	1.00	XING (2)	\$ 15,000	\$	15,000
Upgrade Existing Crosswalk to High-Visibility Crosswalk	0.6 - 0.75		1.00	XING	\$ 37,000		37,000
Install Pedestrian Refuge Island	0.54	Pedestrian	1.00	EACH	\$ 30,000	\$	30,000
Change a permissive only to Flashing Yellow Arrow	0.5 - 0.6	Left-Turn	3.00	INT	\$ 8,000	\$	24,000
Adequate Number/Visibility of Signal Heads	0.85	All Crashes	3.00	INT	\$ 24,000	\$	72,000
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
				Imp	rovements Subtotal	: \$	539,660
				Mobilization			53,970
				affic Contro		\$	26,983
		Items Not E	stimated / (	Contingenc	:y: (% +/-) 30%	\$	161,898
				Estimated	d Construction Cost	: \$	782,511
Local Match <sup>†</sup> : 20% \$	198,800						
<sup>†</sup> Toward SS4A Implementation Grants		Prec	onstruction	Engineerir	ng/Design 12%	\$	93,901
·				-	Utilities**	\$	-
					ROW**	\$	-
		Constru	ction Engin	eering/Mar	nagement 15%	\$	117,377
			-		· · · · · · · · · · · · · · · · · · ·	-	

Estimated Project Total: \$

\*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of \$75,000 \*\*To be evaluated during feasibility study/design

#### **Additional Potential Improvements**

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

#### Use Restricted 23 U.S.C. § 407

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

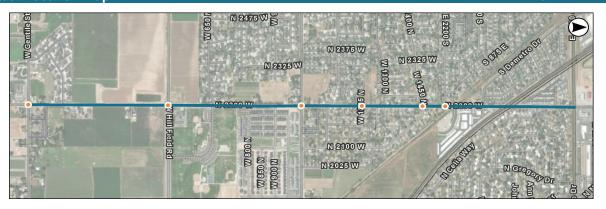
# Project Information Sheet

GFA(s):	North Davis County
Project Name:	2200 West from Antelope Drive to Gentile Street
Jurisdiction(s):	Layton
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	High, Medium

### **Location Description**

Roadway:	2200 West	t	Key Intersect	ion Locations:
From:	Antelope D	Drive	1225 North	Gentile Street
То:	Gentile Str	eet	1450 North	Hill Field Road
Length:	2.00	miles	2200 South	Gordon Avenu

# Project Location Map



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	2.00
Average Daily Traffic (vehicles per day)	1,757
Functional Classification	Major Collector
Roadway Ownership	Federal Aid - Local
Urban/Rural Designation	Urban
Number of Key Intersections	6

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	0
Suspected Minor Injury Crashes (B)	1
Possible Injury Crashes (C)	4
No Injury/PDO Crashes (O)	16
Total Crashes	21
Total EPDO Crashes	84

### Intersection Crash History

												ypes ar	e Over-	Represe	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
1225 North & 2200 West		0	0	0	4	2	6	47				✓				1
1450 North & 2200 West		0	0	0	5	1	6	58				✓				
2200 South & 2200 West		0	0	1	2	2	5	47		✓				1		
Gentile Street & 2200 West	✓	0	0	2	12	5	19	186		<ul><li>✓</li></ul>		✓				
Hill Field Road & 2200 West	✓	0	2	1	5	7	15	274	✓		1					-
Gordon Avenue & 2200 West	✓	0	0	4	14	13	31	261								

Date Prepared:	3/14/2024
Prepared By:	JSF
Checked By:	EJS

2200 West from Antelope Drive to Gentile Street

Map ID:

6.23.1

Why Was This Location Identified?				
Composite Safety Score				
Historic Crashes	~			
Critical Crash Rate Differential	~			
Crash Profile Risk Score	~			
usRAP - Star Rating (Veh, Ped, Bike)	~			
Local Street Assessment	✓			

Gentile Street Hill Field Road Gordon Avenue

What Crash Types are Over-Represented?					
Fatal		Head On (HO)			
Serious Injury		Parked Vehicle (PV)	<		
Pedestrian (Ped)		Single Vehicle			
Bicycle (Bike)		Rear to Rear (RR)			
Motorcycle		Rear to Side (RS)			
Angle		Sideswipe (SS)	✓		
Front to Rear (FR)	1	Other/Unknown			

2200 West from Antelope Drive to Gentile Street

Unit Price

\_

Item Cost

No all all and Marchine,

WASATCH FRONT REGIONAL COUNCIL Safety Action

Project Description/How is safety improved?

This project focuses on systemic active transportation and signalized intersections improvements. Improvements include roadway/shoulder widening (Hill Field Road to Gentile Street), sidewalk infill along the entire length of the corridor, lane narrowing, and striping a bicycle lane. Signalized intersection improvements include adding retroreflective backplates (Gentile Street & Hill Field Road) and replacing existing "doghouse" signal heads with a flashing yellow arrow (FYA) signal head (Hill Field Road, Gordon Avenue/1000 North, & Antelope Drive). Unsignalized intersections improvements are recommended for 2200 South. These countermeasures help address the over-representation of pedestrian and bicycle crashes and front to rear speeding type crashes. This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional

improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



Intersection Improvements





Walkways

#### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Sidewalk or Walkways	NA	Pedestrian	0.66	MILE	\$ 634,000	\$ 418,440
Provide 2-Ft Paved Shoulder on Rural 2-Lane Roadways	0.66 - 0.89	All Crashes	0.39	MILE	\$ 298,000	\$ 116,220
Shoulder Widening on Rural Roads	0.771	All Crashes	0.39	MILE	\$ 32,000	\$ 12,480
Install Bicycle Lane	0.51 - 0.694	Bicycle	2.00	MILE	\$ 21,000	\$ 42,000
Traffic Calming - Lane Narrowing	0.68	All Crashes	2.00	MILE	\$ 39,000	\$ 78,000
Pedestrian Overpass over the Railroad	NA	NA	1.00	EACH	\$ 12,000,000	\$ 12,000,000
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Item Description	CMF	Applicable Crashes	Quantity	Unit	
Install Retroreflective Backplates/Boarders	0.85	All Crashes	16.00	EACH	
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	3.00	INT	
Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	1.00	INT	

Install Retroreflective Backplates/Boarders	0.85	All Crashes	16.00	EACH	\$	275	\$ 4,400
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	3.00	INT	\$	8,000	\$ 24,000
Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	1.00	INT	\$	19,000	\$ 19,000
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
				Imp	rovements	s Subtotal:	\$ 12,714,540
			I	Mobilizatior	n: (% +/-)*	10%	\$ 75,000
				affic Contr		5%	\$ 635,727
		Items Not E	stimated / 0	Contingend	су: (% +/-)	30%	\$ 3,814,362
t i				Estimate	d Construc	ction Cost:	\$ 17,239,629

Local Match': 20%	\$ 4,379,000		
<sup>†</sup> Toward SS4A Implementation Grants	Preconstruction Engineering/Design 12	% \$	2,068,755
	Utilities**	\$	-
	ROW**	\$	-
	Construction Engineering/Management 15	% \$	2,585,944
	Estimated Project Tot	al: \$	21,895,000
	*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of	\$75,00	00
	**To be evaluated during feasibility study/design		
Additional Potential Improvements			

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Evaluate signalization at warranted intersections
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

North Hill Field Road from 700 South (SR 193) to Main Street (SR 126)

Date Prepared:

### Project Information Sheet

GFA(s):	North Davis County
Project Name:	North Hill Field Road (SR 232) from 700 South (SR 193) to Main Street (SR 126)
Jurisdiction(s):	Layton
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Medium, Low

#### Prepared By: JSF Checked By: EJS

#### Location Description

Roadway: From: To: Length:

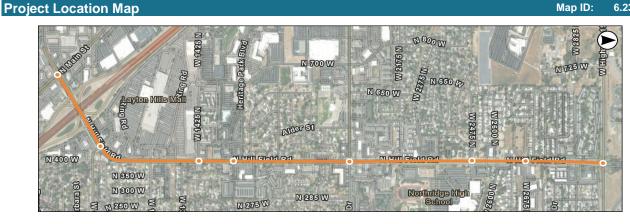
North Hill Field Road (SR 232) 700 South (SR 193) Main Street (SR 126) 2.26 miles

Key Intersection Locations: Main Street 1550 North Gordon Avenue Antelope Drive 1425 North 2475 North

2675 North SR 193

> Map ID: 6.23.2

3/14/2024



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	2.26
Average Daily Traffic (vehicles per day)	26,103
Functional Classification	Minor Arterial
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	8

#### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	1
Suspected Serious Injury Crashes (A)	2
Suspected Minor Injury Crashes (B)	14
Possible Injury Crashes (C)	25
No Injury/PDO Crashes (O)	114
Total Crashes	156
Total EPDO Crashes	1,786

#### Intersection Crash History

	What Crash Types are Over-Represent										ented?					
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
Main Street & North Hill Field Roa	~	0	1	53	146	176	376	3,109			✓					
Gordon Avenue & North Hill Field	✓	0	1	13	54	44	112	1,041		<ul> <li>✓</li> </ul>	✓			1		✓
1425 North & North Hill Field Road		0	1	6	10	19	36	360			~					
1550 North & North Hill Field Road		0	0	6	14	15	35	308		✓				*		√
Antelope Drive & North Hill Field F		0	1	18	66	48	133	1,293			✓		✓			- ✓
2475 North & North Hill Field Road	✓	0	0	3	17	15	35	275		✓	✓					
2675 North & North Hill Field Road		0	2	6	8	9	25	421	1	<ul><li>✓</li></ul>						
SR 193 & North Hill Field Road	✓	0	4	16	82	10	112	1,673				1				

Why Was This Location Identified?						
Composite Safety Score	1					
Historic Crashes	1					
Critical Crash Rate Differential	1					
Crash Profile Risk Score	1					
usRAP - Star Rating (Veh, Ped, Bike)	1					
Local Street Assessment						

What Crash Types are Over-Represented?							
✓							
✓							
✓							

Marchine, WASATCH FRONT REGIONAL COUNCIL

sive Safety Action Plan

North Hill Field Road from 700 South (SR 193) to Main Street (SR 126)

#### Project Description/How is safety improved?

This project is focused on systemic bicycle and pedestrian improvements to mitigate the over-representation of that type of crash. This is accomplished by installing medians with pedestrian refuge islands, narrowing lane widths to slow vehicle speeds, and installing a bicycle lane along the corridor. These improvements are proposed from 1225 North to SR 193, approximately. Signalized intersection improvements are also recommended to replace "doghouse" signal heads with flashing yellow arrow (FYA) signal heads (1225 North & 2475 North) and provide leading pedestrian interval (LPI) at signalized school crossings near Northridge High School (Antelope Drive & 2475 North). Unsignalized intersections recommended for improvement are 1550 North and 2675 North.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



Medians and Pedestrian Refuge Islands in Urban & Suburban Areas

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Medians and Pedestrian Refuge Islands in Urban Areas	0.44	Pedestrian	1.84	LE (URBA	\$ 958,000	\$ 1,762,720
Traffic Calming - Lane Narrowing	0.68	All Crashes	1.77	MILE	\$ 39,000	\$ 69,030
Install Bicycle Lane	0.51 - 0.694	Bicycle	1.77	MILE	\$ 21,000	\$ 37,170
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Item Description         CMF         Applicable Crashes         Quantity         Unit         Unit         Unit         Unit         Unit         Construction           Change a 5-section "Doghouse" to Flashing Yellow Arrow         0.75 - 0.93         Left-Turn         2.00         INT         \$         8.000         \$         16.000           Systemic Low-Cost Countermeasures at Stop-Control Intersection         0.73 - 0.9         All Crashes         2.00         INT         \$         19.000         \$         38.000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$         -           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$         200,000         \$         400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$         200,000         \$         3         \$         -           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$         200,000         \$         -         \$         -         -         \$         -         -         \$         -         \$	Intersection Improvements								
Include a Leading Pedestrian Interval (LPI)         0.87         Pedestrian         2.00         INT         \$ 3,000         \$ 6,000           Systemic Low-Cost Countermeasures at Stop-Control Intersection         0.73 - 0.9         All Crashes         2.00         INT         \$ 19,000         \$ 38,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         Install Pedestrian         \$ 200         \$ 5         -           Install Pedestrian Hybrid Beacons (PHB)         Install Pedestrian         Install Pedestrian         \$ 5         -         \$ 5         -         \$ 5         -         \$ 5         -         \$ 5         -         \$ 5         -         \$ 5	Item Description	CMF	Applicable Crashes	Quantity	Unit	U	nit Price		Item Cost
Systemic Low-Cost Countermeasures at Stop-Control Intersection         0.73 - 0.9         All Crashes         2.00         INT         \$ 19,000         \$ 38,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         Install Pedestrian Hybrid Beacons (PHB) or HAWK         \$ 5         -	Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	2.00	INT	\$	8,000	\$	16,000
Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Install Pedestrian Hybrid Beacons (PHB) or HAWK         0.453         Pedestrian         2.00         EACH         \$ 200,000         \$ 400,000           Impovements Subtotation         Improvements Subtotation         \$ -	Include a Leading Pedestrian Interval (LPI)	0.87	Pedestrian	2.00	INT	\$	3,000	\$	6,000
Improvements         Subtration         S         -           Improvements         S         -         S         -           Improvements         S         -         S         -           Improvements         S         -         S         -           Improvements         Subtotal:         S         2,328,920           Mobilization:         (% +/-)*         10%         S         75,000           Traffic Control: (% +/-)         5%         5         116,446           Items Not Estimated / Contingency: (% +/-)         5%         5         16,446           Items Not Estimated / Contingency: (% +/-)         5%         5         16,446           Items Not Estimated Construction Cost:         S         3,219,042           Toward SS4A Implementation Grants         Preconstruction Engineering/Design         12%         S         386,285           Utilities**         S         -         S         S         -         S           ROW**         S         -         S         -         S         -         S           Estimated Project Total:         S         4,089,000         S         4,089,000         S         -	Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	2.00	INT	\$	19,000	\$	38,000
Image: Second	Install Pedestrian Hybrid Beacons (PHB) or HAWK	0.453	Pedestrian	2.00	EACH	\$	200,000	\$	400,000
Image: Second								\$	-
Image: Second								\$	-
Image: Second								\$	-
Improvements         Subtotal:         S         -           Improvements         Subtotal:         S         2,328,920           Mobilization:         (% +/-)*         10%         S         75,000           Traffic Control:         (% +/-)         5%         116,446           Items Not Estimated / Contingency:         (% +/-)         5%         S         698,676           Estimated Construction Cost:         \$         3,219,042         S         698,676           Local Match <sup>1</sup> :         20%         \$         817,800         Freconstruction Engineering/Design         12%           *         3,219,042         S         386,285         Utilities**         -           *         ROW**         \$         -         -         -           ROW**         \$         -         -         -         -           Construction Engineering/Management         15%         \$         482,856         -           Estimated Project Total:         \$         4,089,000         -         -									-
Improvements Subtotal:       \$ -         Improvements Subtotal:       \$ 2,328,920         Mobilization:       (% +/-)*         Mobilization:       (% +/-)*         Traffic Control:       (% +/-)*         Items Not Estimated / Contingency:       (% +/-)         S       116,446         Items Not Estimated / Contingency:       (% +/-)         S       3,219,042         Toward SS4A Implementation Grants       Preconstruction Engineering/Design         Preconstruction Engineering/Design       12%         ROW**       \$ -         Construction Engineering/Management       15%         Estimated Project Total:       \$ 4,089,000								Ŧ	-
Mobilization: (% +/-)*         10%         \$ 75,000           Traffic Control: (% +/-)         5%         \$ 116,446           Items Not Estimated / Contingency: (% +/-)         30%         \$ 698,676           Estimated Construction Cost:         \$ 3,219,042           * Toward SS4A Implementation Grants         Preconstruction Engineering/Design         12%         \$ 386,285           Utilities**         \$ -         ROW**         \$ -         -           ROW**         \$ -         Construction Engineering/Management         15%         \$ 482,856           Estimated Project Total:         \$ 4,089,000         \$ 4,089,000         \$ 4,089,000								\$	-
Mobilization: (% +/-)*         10%         \$ 75,000           Traffic Control: (% +/-)         5%         \$ 116,446           Items Not Estimated / Contingency: (% +/-)         30%         \$ 698,676           Estimated Construction Cost:         \$ 3,219,042           * Toward SS4A Implementation Grants         Preconstruction Engineering/Design         12%         \$ 386,285           Utilities**         \$ -         ROW**         \$ -         -           ROW**         \$ -         Construction Engineering/Management         15%         \$ 482,856           Estimated Project Total:         \$ 4,089,000         \$ 4,089,000         \$ 4,089,000								\$	-
Traffic Control: (% +/-)       5%       \$ 116,446         Items Not Estimated / Contingency: (% +/-)       30%       \$ 698,676         Estimated Construction Cost:       \$ 3,219,042         *       Toward SS4A Implementation Grants       Preconstruction Engineering/Design       12%       \$ 386,285         Utilities**       \$       -       ROW**       \$       -         ROW**       \$       -       Construction Engineering/Management       15%       \$ 482,856         Estimated Project Total:       \$       4,089,000       \$       4,089,000					•				
Local Match <sup>†</sup> :       20%       \$ 817,800 <sup>†</sup> Toward SS4A Implementation Grants       \$ 817,800         Preconstruction Engineering/Design       12%       \$ 386,285         Utilities**       \$ -         ROW**       \$ -         Construction Engineering/Management       15%       \$ 482,856         Estimated Project Total:       \$ 4,089,000								<u> </u>	,
Local Match <sup>†</sup> :       20%       \$ 817,800 <sup>†</sup> Toward SS4A Implementation Grants       Preconstruction Engineering/Design       12%       \$ 386,285         Utilities***       \$       -         ROW**       \$       -         Construction Engineering/Management       15%       \$ 482,856         Estimated Project Total:       \$ 4,089,000									
Local Match <sup>†</sup> : 20% \$ 817,800 <sup>†</sup> Toward SS4A Implementation Grants <sup>†</sup> Toward SS4A Implementation Grants <sup>†</sup> Toward SS4A Implementation Grants <sup>†</sup> Toward SS4A Implementation Grants <sup>†</sup> Construction Engineering/Management 15% Estimated Project Total: \$ 4,089,000			Items Not Es	stimated / C					,
<sup>†</sup> Toward SS4A Implementation Grants Preconstruction Engineering/Design 12% \$ 386,285 Utilities** ROW** \$ - ROW** \$ - Construction Engineering/Management 15% \$ 482,856 Estimated Project Total: \$ 4,089,000					Estimate	d Cons	truction Cost:	\$	3,219,042
Utilities**     \$       ROW**     \$       Construction Engineering/Management     15%       Estimated Project Total:     \$									
ROW** \$- Construction Engineering/Management 15% \$482,856 Estimated Project Total: \$4,089,000	<sup>1</sup> Toward SS4A Implementation Grants		Preco	onstruction	Engineeri		0	\$	386,285
Construction Engineering/Management 15% \$ 482,856 Estimated Project Total: \$ 4,089,000								\$	-
Estimated Project Total: \$ 4,089,000								\$	
			Construe	ction Engin					,
*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of \$75,000							•		
					of \$2,500 a	ind a m	aximum of \$7	'5,000	)
**To be evaluated during feasibility study/design Additional Potential Improvements		iluated during	y reasibility study/desi	gn					

#### litional Potential Improvement

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan Main Street (SR 126) from Antelope Drive to Layton Parkway

### **Project Information Sheet**

North Davis County
Main Street (SR 126) from Antelope Drive to Layton Parkway
Layton
Intersections, Roadway Departures, Teen Driver
High, Medium

# **Location Description**

Roadway:	Main Stre	et (SR 126)	Key
From:	Antelope	Drive	Layte
To:	Layton Pa	arkway	Chu
Length:	3.06	miles	King

### **Project Location Map**

Intersection Locations: /ton Parkway Hill Field Road urch Street Gordon Avenue ng Street Antelope Drive

Local Street Assessment

6.23.3 Map ID:

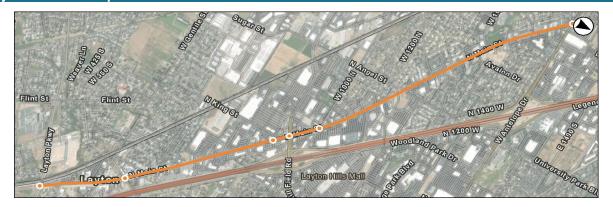
3/14/2024

JSF

EJS

Date Prepared: Prepared By:

Checked By:



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	3.06
Average Daily Traffic (vehicles per day)	22,414
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	6

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	4
Suspected Serious Injury Crashes (A)	3
Suspected Minor Injury Crashes (B)	16
Possible Injury Crashes (C)	32
No Injury/PDO Crashes (O)	108
Total Crashes	163
Total EPDO Crashes	4,663

### In

Intersection Crash History																
1						What	Crash T	ypes ar	e Over-	Represe	ented?					
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
Layton Parkway & Main Street	✓	0	0	4	16	1	21	272				1				✓
Church Street & Main Street		0	0	4	12	10	26	235		✓	✓					✓
King Street & Main Street	1	0	1	2	8	6	17	235	✓	✓		✓				✓
Hill Field Road & Main Street	<ul><li>✓</li></ul>	0	1	53	146	176	376	3,109			✓					
Gordon Avenue & Main Street	✓	0	0	6	14	12	32	305					1			
Antelope Drive & Main Street	1	1	3	38	87	89	218	3,094	1	✓	1					✓

Why Was This Location Identified? Composite Safety Score Historic Crashes Critical Crash Rate Differential ٢ Crash Profile Risk Score 1 usRAP - Star Rating (Veh, Ped, Bike)

What Crash Types are Over-Represented?					
Fatal	1	Head On (HO)			
Serious Injury	✓	Parked Vehicle (PV)	✓		
Pedestrian (Ped)	1	Single Vehicle	~		
Bicycle (Bike)	1	Rear to Rear (RR)			
Motorcycle		Rear to Side (RS)			
Angle	✓	Sideswipe (SS)	✓		
Front to Rear (FR)	~	Other/Unknown	~		

Marchine, WASATCH FRONT REGIONAL COUNCIL

Main Street (SR 126) from Antelope Drive to Layton Parkway

#### Project Description/How is safety improved?

Safety Action

This project is focused on systemic improvements to reduce the number of angled, speed-related, bicycle, and pedestrian crashes. Countermeasures include installing medians with pedestrian refuge islands along the entire corridor and looking for opportunities to restrict access along the minor streets where possible. Installation of medians along with narrow lane widths, buffered bicycle lanes, and removing on-street parking are to act as traffic calming and systemic bicycle and pedestrian improvements. Intersection improvements include leading pedestrian intervals (Antelope Drive, 1600 North, Angel Street, & 500 North), additional right-turn lanes at 500 North. and additional flashing vellow arrow (FYA) signal heads at Gordon Avenue. This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional

improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



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Leading ¥



**Bicycle Lanes** 

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes			Unit Price	Item Cost
Install Medians and Pedestrian Refuge Islands in Urban Areas	0.44	Pedestrian	2.23	LE (URBA	\$ 958,000	\$ 2,136,340
Traffic Calming - Lane Narrowing	0.68	All Crashes	3.06	MILE	\$ 39,000	119,340
Install Buffered Bicycle Lane	NA	Bicycle	3.06	MILE	\$ 26,000	\$ 79,560
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Change a permissive only to Flashing Yellow Arrow	0.5 - 0.6	Left-Turn	1.00	INT	\$ 8,000	\$ 8,000
Provide Right-Turn Lanes	0.74 - 0.86	6 All Crashes	1.00	LANE	\$ 150,000	\$ 150,000
Include a Leading Pedestrian Interval (LPI)	0.87	Pedestrian	4.00	INT	\$ 3,000	\$ 12,000
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
				Imp	rovements Subtotal	\$ 2,505,240
			1	Nobilization	n: (% +/-)* 10%	\$ 75,000
			Tra	affic Contr	ol: (% +/-) 5%	\$ 125,262
		Items Not E	stimated / C	Contingend	sy: (% +/-) 30%	\$ 751,572
				Estimate	d Construction Cost	\$ 3,457,074
Local Match <sup>†</sup> : 20% \$ 8	78,200					
<sup>†</sup> Toward SS4A Implementation Grants		Prec	onstruction	Engineerii	ng/Design 12%	\$ 414,849
					Utilities**	\$ -
					ROW**	\$ -
		Constru	ction Engin	eering/Ma	nagement 15%	\$ 518,561

Estimated Project Total: \$

4,391,000

\*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of \$75,000 \*\*To be evaluated during feasibility study/design

#### **Additional Potential Improvements**

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1: Additional Improvements #2:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #3:	Eliminate on-street parking
Additional Improvements #4:	Evaluate unsignalized intersection to become 3/4 access and right-in/right-out location with median installation
Additional Improvements #5:	UDOT funded three (3) PHBs

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### Project Information Sheet

GFA(s):	North Davis County
Project Name:	700 South (SR 193) from 1000 West to US 89
Jurisdiction(s):	Layton, Clearfield
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	High

#### Location Description

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Roadway:	700 Sout	h (SR 193)	Key Int
From:	1000 We	est	800 Eas
To:	US 89		Industri
Length:	7.24	miles	2650 Ea

Key Intersection Locations:300 East100ndustrial Parkway3102650 EastHill

1000 East 3100 North Hill Field Road

Composite Safety Score Historic Crashes

Crash Profile Risk Score

Local Street Assessment

Fatal

Angle

Serious Injury Pedestrian (Ped)

Front to Rear (FR)

Bicycle (Bike) Motorcycle

Critical Crash Rate Differential

usRAP - Star Rating (Veh, Ped, Bike)

State Street Frontage Road 2400 East

Why Was This Location Identified?

What Crash Types are Over-Represented? ✓ Head On (HO)

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Parked Vehicle (PV) Single Vehicle Rear to Rear (RR)

Rear to Side (RS) Sideswipe (SS)

Other/Unknown

Center Street 1000 West

6.23.4.1

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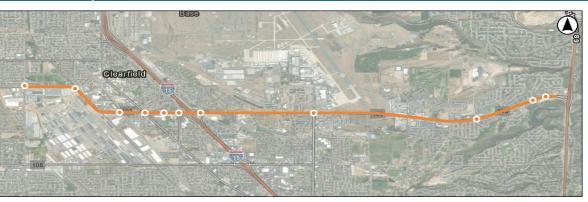
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### **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	7.24
Average Daily Traffic (vehicles per day)	27,063
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	11

#### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	3
Suspected Serious Injury Crashes (A)	3
Suspected Minor Injury Crashes (B)	17
Possible Injury Crashes (C)	36
No Injury/PDO Crashes (O)	175
Total Crashes	234
Total EPDO Crashes	3,909

#### Intersection Crash History

									What Crash Types are Over-Represented?							
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
800 East & 700 South		0	0	1	6	4	11	94				1				<b>√</b>
Industrial Parkway & 700 South		0	0	2	11	1	14	171				✓				
2650 East & 700 South		0	3	2	5	11	21	394	~		~					
1000 East & 700 South	<ul><li>✓</li></ul>	0	0	16	44	34	94	890		✓				<b>√</b>		
3100 North & 700 South	✓	0	0	1	12	4	17	163				1				1
Hill Field Road & 700 South	<ul> <li>✓</li> </ul>	0	4	16	82	10	112	1,673				1				
State Street & 700 South	✓	0	1	30	62	43	136	1,509		<		~	<ul> <li>✓</li> </ul>			
Frontage Road & 700 South	✓	0	0	5	8	2	15	204				1				
2400 East & 700 South	<ul><li>✓</li></ul>	0	2	1	14	7	24	376	~			1				1
Center Street & 700 South	<ul><li>✓</li></ul>	0	0	9	15	8	32	379				✓	✓			✓
1000 West & 700 South	✓	0	0	9	11	16	36	341					✓			<b>√</b>
																1

700 South (SR 193) from 1000 West to US 89

Date Prepared: 3/14/2024 Prepared By: JSF Checked By: BC

Map ID:

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

#### Project Description/How is safety improved?

This projects looks at systemically improving safety along the corridor and addressing intersection related crashes including left turning crashes. This is done by implementing raised medians along the entire length of the corridor and evaluating control at major intersections to determine the best control type. An Intersection Control Evaluation (ICE) is recommended at locations with high crashes total and existing High-T configurations (1700 E., 2400 E., Fort Ln., Haven J Barlow Pkwy, 1500 E., Frontage Rd., & H St.). Minor street access should also be evaluated to determine locations were access can be eliminated. Protected intersection are need to reduce bedestrian crashes Fort Ln. and Frontage Rd. On signal uparades are also needed (Fairfield Rd. Church St. & H St.). *This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.* 

#### **Proposed Proven Safety Countermeasures**



Intersection Improvements

Medians and Pedestrian Refuge Islands in Urban & Suburban Areas

#### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Raised Medians on Roadways with Existing TWLTL	0.29	All Crashes	7.24	MILE	\$ 928,000	\$ 6,718,720
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

CMF	Applicable Crashes	Quantity	Unit	Unit F	Price		tem Cost
NA	All Crashes	7.00	INT	\$	225,000	\$	1,575,000
0.75 - 0.93	Left-Turn	1.00	INT	\$	8,000	\$	8,000
0.79 - 0.95	Left-Turn	2.00	INT	\$	8,000	\$	16,000
NA	All Crashes	2.00	INT	\$	650,000	\$	1,300,000
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
			Imp	rovements	Subtotal:	\$	9,617,720
		1	Nobilization	n: (% +/-)*	10%	\$	75,000
		Tr	affic Contr	ol: (% +/-)	5%	\$	480,886
	Items Not E	stimated / 0	Contingend	су: (% +/-)	30%	\$	2,885,316
			Estimate	d Construct	tion Cost:	\$	13,058,922
	Prec	onstruction	Engineeri	ng/Design	12%	\$	1,567,071
				Utilities**		\$	-
				ROW**		\$	-
	Constru	ction Engin	eering/Ma	nagement	15%	\$	1,958,838
		-	Estin	nated Proje	ect Total:	\$	16,585,000
n is 10% +/-	of the subtotal with a	minimum o	of \$2,500 a	and a maxin	num of \$7	5,000	
	NA 0.75 - 0.93 0.79 - 0.95 NA	NA       All Crashes         0.75 - 0.93       Left-Turn         0.79 - 0.95       Left-Turn         NA       All Crashes         Image: NA       Image: NA         Image: NA       Image: NA	NA       All Crashes       7.00         0.75 - 0.93       Left-Turn       1.00         0.79 - 0.95       Left-Turn       2.00         NA       All Crashes       2.00         NA       All Crashes       2.00         Image: State of the s	NA       All Crashes       7.00       INT         0.75 - 0.93       Left-Turn       1.00       INT         0.79 - 0.95       Left-Turn       2.00       INT         NA       All Crashes       2.00       INT         Imp       Mobilization       Imp       Mobilization         Traffic Contr       Items Not Estimated / Contingenc       Estimate         Preconstruction Engineering/Mail       Construction Engineering/Mail       Estim	NA         All Crashes         7.00         INT         \$           0.75 - 0.93         Left-Turn         1.00         INT         \$           0.79 - 0.95         Left-Turn         2.00         INT         \$           NA         All Crashes         2.00         INT         \$           NA         All Crashes         2.00         INT         \$           NA         All Crashes         2.00         INT         \$           Improvements         Improvements         Improvements           Mobilization: (% +/-)*         Traffic Control: (% +/-)         Items Not Estimated / Contingency: (% +/-)           Items Not Estimated / Contingency: (% +/-)         Estimated Construction         Estimated Construction           Preconstruction Engineering/Design         Utilities**         ROW**           Construction Engineering/Management         Estimated Projet	NA         All Crashes         7.00         INT         \$ 225,000           0.75 - 0.93         Left-Turn         1.00         INT         \$ 8,000           0.79 - 0.95         Left-Turn         2.00         INT         \$ 8,000           NA         All Crashes         2.00         INT         \$ 650,000           NA         All Crashes         2.00         INT         \$ 650,000           NA         All Crashes         2.00         INT         \$ 10%           Improvements         Subtotal:         Mobilization: (% +/-)*         10%           Traffic Control: (% +/-)         5%         1tems Not Estimated / Contingency: (% +/-)         30%           Estimated Construction Engineering/Design         12%         Utilities**         ROW**           Construction Engineering/Management         15%         Estimated Project Total:	NA         All Crashes         7.00         INT         \$ 225,000         \$           0.75 - 0.93         Left-Turn         1.00         INT         \$ 8,000         \$           0.79 - 0.95         Left-Turn         2.00         INT         \$ 8,000         \$           NA         All Crashes         2.00         INT         \$ 650,000         \$           Improvements         S         \$         \$         \$         \$           Improvements         Subtotal:         \$         \$         \$         \$           Improvements         Subtotal:         \$         \$         \$         \$           Improvements         Subtotal:         \$         \$         \$         \$         \$           Items Not Estimated / Contingency: (% +/-)         30%         \$         \$         \$

\*\*To be evaluated during feasibility study/design

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the *Countermeasure Toolbox* for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	Implement 3/4 access at unsignalized locations with median installation where feasible
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan Weber Drive from 1050 West to Canyon Meadows Drives

## **Project Information Sheet**

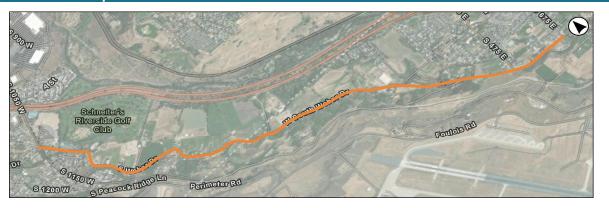
GFA(s):	Central Weber County, North Davis County
Project Name:	Weber Drive from 1050 West to Canyon Meadows Drives
Jurisdiction(s):	South Weber, Riverdale
Emphasis Areas:	Intersections, Roadway Departures, Impaired Driving
Equity Priority:	Medium, Low

### **Location Description**

Roadway:	Weber D	rive
From:	1050 We	st
To:	Canyon I	Meadows Drives
Length:	3.24	miles

#### Key Intersection Locations:

## **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	3.24
Average Daily Traffic (vehicles per day)	2,754
Functional Classification	Major Collector
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	0

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	1
Suspected Minor Injury Crashes (B)	6
Possible Injury Crashes (C)	6
No Injury/PDO Crashes (O)	10
Total Crashes	23
Total EPDO Crashes	306

### Intersection Crash History

Why Was This Location Identified?	
Composite Safety Score	✓
Historic Crashes	✓
Critical Crash Rate Differential	✓
Crash Profile Risk Score	- ✓
usRAP - Star Rating (Veh, Ped, Bike)	1
Local Street Assessment	

What Crash Types are Over-Represented?									
Fatal		Head On (HO)							
Serious Injury		Parked Vehicle (PV)							
Pedestrian (Ped)		Single Vehicle							
Bicycle (Bike)		Rear to Rear (RR)							
Motorcycle		Rear to Side (RS)							
Angle	✓	Sideswipe (SS)	✓						
Front to Rear (FR)		Other/Unknown							

								1	What Crash Types are Over-Represented?							
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
																<u> </u>
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3/14/2024

JSF

EJS

Date Prepared:

Prepared By:

Checked By:

6.24.1.1 Map ID:

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WASATCH FRONT REGIONAL COUNCIL Weber Drive from 1050 West to Canyon Meadows Drives
Comprehensive Safety Action Plan

Project Description/How is safety improved?

This project look to systemically improve safety along the corridor by applying countermeasures targeted at improving safety on a typical rural two lane roadway. The systemic countermeasures include shoulder widening, edge line rumble strips, driver feedback and upgraded signage on curves, and edge line pavement markings.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**





Longitudinal Rumble Strips and Stripes on Two-Lane Roads



Wider Edge Lines

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Driver Feedback Speed Limit Signs	NA	All Crashes	4.00	EACH	\$ 10,000	\$ 40,000
Provide 2-Ft Paved Shoulder on Rural 2-Lane Roadways	0.66 - 0.89	All Crashes	3.24	MILE	\$ 298,000	\$ 965,520
Install Safety Edge with Repaving Projects	0.79 - 0.892	All Crashes	3.24	MILE	\$ 121,000	\$ 392,040
Install and/or Upgrade Curve Signage to Enhanced Delineations	0.4 - 0.852	All Crashes	12.00	CURVE	\$ 2,000	\$ 24,000
Install Edge line Rumble Strips	0.49 - 0.87	Fatal & Injury	3.24	MILE	\$ 9,000	\$ 29,160
Install 6" Edge line (Both Sides of Road)	0.64 - 0.88	All Crashes	3.24	MILE	\$ 7,000	\$ 22,680
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

	Item Description		CMF	Applicable Crashes	Quantity	Unit	Unit Pri			m Cost
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
									\$	-
							rovements Su			1,473,40
						Mobilization		10%		75,00
				liama Nat F		affic Contro		5% 30%		73,67
				Items Not Es	sumated / C		d Construction		+	442,02
ocal Match <sup>†</sup> :	20% \$	524,400				Estimated		n cost.	Φ	2,064,09
Toward SS4A Imple				Prece	onstruction	Engineerii	na/Desian	12%	\$	247,69
						2.19.10011	Utilities**		\$	
							ROW**		\$	-
				Construe	ction Engin	eering/Mai		15%	\$	309,61
					5		ated Project			2,622,00
		*Mobilizatio	n is 10% +/-	of the subtotal with a	minimum o					
		**To be eva	luated durin	g feasibility study/desi	gn					

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the **Countermeasure Toolbox** for a complete list of safety countermeasures.

Additional Improvements #1:	Improve Roadside Design on Curves
Additional Improvements #2:	Re-Evaluate Speed Based on Roadway Context, Built Environment, and Existing Road Users
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan Main Street (SR 126) from 600 South (Roy) to 800 North

### **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	Main Street (SR 126) from 6000 South (Roy) to 800 North
Jurisdiction(s):	Sunset, Roy
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Medium

#### Location Description

Roadway:	
From:	
To:	
Length:	

Main Street (SR 126) 6000 South (Roy) 800 North 2.01 miles

#### Key Intersection Locations: 2400 North 1800 North 800 North 1300 North

Composite Safety Score Historic Crashes

### **Project Location Map**



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	2.01
Average Daily Traffic (vehicles per day)	24,754
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	4

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	1
Suspected Serious Injury Crashes (A)	1
Suspected Minor Injury Crashes (B)	12
Possible Injury Crashes (C)	19
No Injury/PDO Crashes (O)	89
Total Crashes	122
Total EPDO Crashes	1,554

#### Intersection Crash History

Critical Crash Rate Differential						
Crash Profile Risk Score			✓			
usRAP - Star Rating (Vel	h, Ped,	Bike)	✓			
Local Street Assessment						
What Crash T	ypes ar	e Over-Represented?				
Fatal	✓	Head On (HO)				
<b>O</b> · · · ·						

Why Was This Location Identified?

Fatal	✓	Head On (HO)	
Serious Injury		Parked Vehicle (PV)	✓
Pedestrian (Ped)		Single Vehicle	✓
Bicycle (Bike)		Rear to Rear (RR)	
Motorcycle		Rear to Side (RS)	
Angle		Sideswipe (SS)	
Front to Rear (FR)	1	Other/Unknown	

										What	Crash T	ypes ar	e Over-	Represe	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
2400 North & Main Street		0	0	2	9	8	19	155		✓	1					
800 North & Main Street	✓	0	0	18	82	39	139	1,372				✓	✓			
1300 North & Main Street	1	0	0	2	28	9	39	372				✓				✓
1800 North & Main Street	✓	1	2	11	47	45	106	1,900	1		-					
																1
																1
																1
																1

Date Prepared:	3/14/2024
Prepared By:	JSF
Checked By:	EJS

Map ID: 6.25.1.1 and the second and the

Main Street (SR 126) from 600 South (Roy) to 800 North WASATCH FRONT REGIONAL COUNCIL Safety Action I

#### Project Description/How is safety improved?

This project improves safety by installing raised medians along the corridor and sidewalk infill on the east side of the corridor. Systemic bicycle improvements include adding bicycle treatments at key intersections along the corridor (800 N., 1300 N., 1800 N., 2300 N., 6000 S.). These countermeasures help address over-represented head-on and pedestrian/bicycle crashes.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

### **Proposed Proven Safety Countermeasures**





### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Raised Medians on Roadways with Existing TWLTL	0.29	All Crashes	2.01	MILE	\$ 928,000	\$ 1,865,280
Install Sidewalk or Walkways	NA	Pedestrian	1.18	MILE	\$ 634,000	\$ 747,728
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements								
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit	Price	lf	tem Cost
Add Bicycle Treatments at Intersections	NA	All Crashes	5.00	INT	\$	9,000	\$	45,000
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	1.00	INT	\$	8,000	\$	8,000
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
						s Subtotal:		2,666,008
				Mobilization				75,000
				affic Contr	· · ·		*	133,300
		Items Not Es	stimated / 0					799,802
				Estimate	d Constru	ction Cost:	\$	3,674,110
Local Match <sup>†</sup> : 20% \$ 933,400								
<sup>†</sup> Toward SS4A Implementation Grants		Preco	onstruction	Engineerii			\$	440,893
					Utilities**		\$	-
		_			ROW**		\$	-
		Construe	ction Engin					551,117
						ject Total:		4,667,000
		of the subtotal with a		ot \$2,500 a	ind a max	imum of \$7	5,000	
	luated during	g feasibility study/desi	gn					
Additional Potential Improvements								

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	Remove on street parking to ensure upgrade to buffered bicycle lane fits with existing width
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

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#### Use Restricted 23 U.S.C. § 407

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	2000 West (SR 108) from SR 193 to SR 127
Jurisdiction(s):	Syracuse
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Low

### **Location Description**

Roadway: From: To: Length:

2000 West (SR 108) SR 193 SR 127 1.48 miles

### **Project Location Map**

Key Intersection Locations: 700 South

SR 193

S 2200 W S 2200 V S 2125 W  $(\blacktriangleright)$ B 2 9400 M racuse Town Center S 002 M 8 samSyracuse 108 1200 S 1925V W 200 S W THE S Founders Park

### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	1.48
Average Daily Traffic (vehicles per day)	21,870
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	2

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	0
Suspected Minor Injury Crashes (B)	6
Possible Injury Crashes (C)	6
No Injury/PDO Crashes (O)	20
Total Crashes	32
Total EPDO Crashes	222

### Intersection Crash History

												ypes ar	e Over-	Repres	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
700 South & 2000 West	✓	0	2	9	7	15	33	482	1	✓	~					
SR 193 & 2000 West	1	0	0	17	21	22	60	639				✓	✓			
																<u> </u>
																<u> </u>
	_															┝───

Why Was This Location Identified?						
Composite Safety Score	✓					
Historic Crashes	✓					
Critical Crash Rate Differential	✓					
Crash Profile Risk Score	✓					
usRAP - Star Rating (Veh, Ped, Bike)	✓					
Local Street Assessment						

What Crash Types are Over-Represented?									
Fatal		Head On (HO)							
Serious Injury		Parked Vehicle (PV)	✓						
Pedestrian (Ped)		Single Vehicle							
Bicycle (Bike)		Rear to Rear (RR)							
Motorcycle		Rear to Side (RS)							
Angle		Sideswipe (SS)							
Front to Rear (FR)	1	Other/Unknown							

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Map ID:

Date Prepared: 3/14/2024 Prepared By: EJS Checked By:

2000 West (SR 108) from SR 193 to SR 127

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

#### Project Description/How is safety improved?

This project addresses intersection active transportation crashes and speeding along the corridor. The project upgrades existing crosswalks to high-visibility crosswalks, provides button to extend the pedestrian crossing time, and adds bicycle treatments at the 700 South intersection to address active transportation issues associated with proximity to Syracuse High School. The proposed driver feedback speed limit signs help address speeding on the corridor and the over-representation of front to rear crashes.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**





Crosswalk Visibility Enhancements

### **Opinion of Probable Construction Cost**

Segment Improvements							
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price		Item Cost
Install Driver Feedback Speed Limit Signs	NA	All Crashes	4.00	EACH	\$	10,000	\$ 40,000
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -

Intersection Improvements Item Description	CMF	Applicable Crashes	Quantity	Unit		Unit Price		Item Cost
Upgrade Existing Crosswalk to High-Visibility Crosswalk	0.6 - 0.75		4.00	XING	\$	37,000	\$	148,000
Extended Time Pushbutton	NA	Pedestrian	4.00	EACH	\$	500	\$	2,000
Add Bicycle Treatments at Intersections	NA	All Crashes	1.00	INT	\$	9,000	\$	9,000
· · ·							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
				Imp	rove	ments Subtotal:	\$	199,000
				Nobilization				19,900
				affic Contr				9,950
		Items Not E	stimated / 0				•	59,700
· · · · · · · · · · · · · · · · · · ·				Estimate	d Co	nstruction Cost:	\$	288,550
Local Match <sup>†</sup> : 20% <b>\$</b> 73,400								
<sup>†</sup> Toward SS4A Implementation Grants		Prec	onstruction	Engineeri			\$	34,626
						ties**	\$	-
					RO		\$	-
		Constru	ction Engin					43,283
						Project Total:		367,000
		of the subtotal with a		ot \$2,500 a	ind a	maximum of \$7	5,00	U
** I o be e	evaluated during	g feasibility study/desi	ign					

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the **Countermeasure Toolbox** for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

#### 2000 West (SR 108) from SR 193 to SR 127

WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan Antelope Drive (SR 108) from 4000 West to 500 West

### **Project Information Sheet**

GFA(s):	North Davis County
Project Name:	Antelope Drive (SR 108) from 4000 West to 500 West
Jurisdiction(s):	Syracuse, Clearfield
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Medium, Low

### **Location Description**

Roadway:	
From:	
To:	
Length:	

Antelope Drive (SR 108) 4000 West 500 West 3.52 miles

#### Key Intersection Locations: 3300 West Bluff Road 2210 West

Local Street Assessment

## **Project Location Map**

	82000 82000	
Cian Engle Coll Course	Syracuse	

### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	3.52
Average Daily Traffic (vehicles per day)	21,814
Functional Classification	Other Principal Arteria
Roadway Ownership	State
Urban/Rural Designation	Urban
Number of Key Intersections	3

### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	3
Suspected Minor Injury Crashes (B)	13
Possible Injury Crashes (C)	23
No Injury/PDO Crashes (O)	42
Total Crashes	81
Total EPDO Crashes	874

#### Intersection Crash History

												_	_	_		
													e Over-			
Intersections	Signal	ĸ	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
3300 West & Antelope Drive		0	0	4	2	0	6	112				✓				
Bluff Road & Antelope Drive		0	1	9	11	21	42	440			1					
2210 West & Antelope Drive		0	0	10	10	20	40	356			~					

	-10
Why Was This Location Identifie	d?
Composite Safety Score	✓
Historic Crashes	1
Critical Crash Rate Differential	✓
Crash Profile Risk Score	✓
usRAP - Star Rating (Veh, Ped, Bike)	1

What Crash Types are Over-Represented?						
Fatal		Head On (HO)	✓			
Serious Injury	✓	Parked Vehicle (PV)	✓			
Pedestrian (Ped)		Single Vehicle	✓			
Bicycle (Bike)		Rear to Rear (RR)				
Motorcycle		Rear to Side (RS)				
Angle	✓	Sideswipe (SS)	✓			
Front to Rear (FR)	✓	Other/Unknown				

3/14/2024 Prepared By: JSF Checked By: EJS

> Map ID: 6.26.2.1

Date Prepared:

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

#### Project Description/How is safety improved?

Portions of this project have been under recent construction as part of the West Davis Corridor, specifically a new interchange at Antelope Drive. These project improvements are based on the assumption that when construction is completed it will match the existing roadway cross-section east of 2000 W., which includes bicycle lanes. This project focuses on the systemic countermeasure of installing medians east of 3000 W. Other systemic countermeasures include sidewalk infill, shoulder paving (west of 3300 W.), and bicycle lane extension (east of 1000 W.). Intersection improvements include replacing existing "doghouse" signal heads with FYA signal heads (1000 W.), upgrading pedestrian crossings at Doral Dr. with installation of an RRFB, and systemic stop-controlled improvements at 3300 W. and 4000 W.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



Walkways

Antelope Drive (SR 108) from 4000 West to 500 West

### **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Provide 2-Ft Paved Shoulder on Rural 2-Lane Roadways	0.66 - 0.89	All Crashes	0.71	MILE	\$ 298,000	\$ 211,580
Install Sidewalk or Walkways	NA	Pedestrian	0.43	MILE	\$ 634,000	\$ 272,620
Install Raised Medians on Roadways with Existing TWLTL	0.29	All Crashes	2.52	MILE	\$ 928,000	\$ 2,338,560
Install Bicycle Lane	0.51 - 0.694	Bicycle	0.51	MILE	\$ 21,000	\$ 10,710
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements							
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price		Item Cost
Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	3.00	INT	\$ 19,000	\$	57,000
Install a Rectangular Rapid Flashing Beacons (RRFB)	0.526	Pedestrian	1.00	XING (2)	\$ 15,000	\$	15,000
Change a 5-section "Doghouse" to Flashing Yellow Arrow	0.75 - 0.93	Left-Turn	1.00	INT	\$ 8,000	\$	8,000
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
					rovements Subtotal	_	2,913,470
					n: (% +/-)*         10%		75,000
				affic Contro	· /		145,674
		Items Not E	stimated / C	0			874,041
				Estimated	d Construction Cost	: \$	4,008,185
Local Match <sup>†</sup> : 20% \$ 1,018,200		_					(
<sup>†</sup> Toward SS4A Implementation Grants		Prece	onstruction	Engineerii	0 0	\$	480,982
					Utilities**	\$	-
					ROW**	\$	-
		Constru	ction Engin				601,228
					ated Project Total		5,091,000
*Mobilizati	ion is 10% +/-	of the subtotal with a	minimum c	of \$2,500 a	ind a maximum of \$	75,00	JU

\*\*To be evaluated during feasibility study/design

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the *Countermeasure Toolbox* for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### Project Information Sheet

GFA(s):	North Davis County
Project Name:	2000 West from Antelope Drive to 2700 South
Jurisdiction(s):	Syracuse
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Medium, Low

#### Location Description

2000
Antel
2700
0.99

West lope Drive South miles

### **Project Location Map**



Key Intersection Locations: Bluff Road

Composite Safety Score Historic Crashes

Crash Profile Risk Score

Local Street Assessment

Fatal

Angle Front to Rear (FR)

Serious Injury Pedestrian (Ped)

Bicycle (Bike) Motorcycle

Critical Crash Rate Differential

usRAP - Star Rating (Veh, Ped, Bike)

JSF EJS

Map ID:

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### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	0.99
Average Daily Traffic (vehicles per day)	8,640
Functional Classification	Major Collector
Roadway Ownership	Federal Aid - Local
Urban/Rural Designation	Urban
Number of Key Intersections	1

#### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	0
Suspected Serious Injury Crashes (A)	0
Suspected Minor Injury Crashes (B)	3
Possible Injury Crashes (C)	4
No Injury/PDO Crashes (O)	5
Total Crashes	12
Total EPDO Crashes	117

#### Intersection Crash History

													e Over-	Represe	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike	Angle	FR	HO	PV	RR/RS	SS
Bluff Road & 2000 West		0	1	1	1	0	3	127	~	✓						

2000 West from Antelope Drive to 2700 South

Date Prepared: 3/14/2024 Prepared By: Checked By:

Why Was This Location Identified?

What Crash Types are Over-Represented? Head On (HO)

1

Parked Vehicle (PV) Single Vehicle Rear to Rear (RR)

Rear to Side (RS) Sideswipe (SS)

Other/Unknown

2000 West from Antelope Drive to 2700 South

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

Project Description/How is safety improved?

This project is focused on implementing systemic safety countermeasure to ensure proper speeds through the residential neighborhoods and improve the overall bicycle and pedestrian experience along the corridor. Speed related countermeasures include driver feedback speed limit signs and traffic calming in the form of narrower lane widths and wider lane lines. Buffered bicycle lanes are proposed along the entire length of the corridor. The intersection of 1900 South is proposed to be upgraded with high visibility crosswalks and intersection lighting.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

#### **Proposed Proven Safety Countermeasures**



. . . . .





Crosswalk Visibility Enhancements



## **Opinion of Probable Construction Cost**

Segment Improvements						
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost
Install Driver Feedback Speed Limit Signs	NA	All Crashes	4.00	EACH	\$ 10,000	\$ 40,000
Traffic Calming - Lane Narrowing	0.68	All Crashes	0.99	MILE	\$ 39,000	\$ 38,610
Install Buffered Bicycle Lane	NA	Bicycle	0.99	MILE	\$ 26,000	\$ 25,740
Traffic Calming - Wider Lane Lines	0.68	All Crashes	0.99	MILE	\$ 21,000	\$ 20,790
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -

Intersection Improvements									
Item Description		CMF	Applicable Crashes	Quantity	Unit	Unit Pric	e		tem Cost
Upgrade Existing Crosswalk to High-Visibility Crosswalk		0.6 - 0.75	Pedestrian	3.00	XING	\$ 37	7,000	\$	111,000
Install Intersection Lighting		0.62 - 0.67	Nighttime	1.00	INT	\$ 31	,000	\$	31,000
								\$	-
								\$	-
								\$	-
								\$	-
								\$	-
								\$	-
								\$	-
								\$	-
								\$	-
					Imp	rovements Sub	ototal:	\$	267,140
					/lobilizatior		10%	- T	26,720
					affic Contro		5%		13,357
			Items Not E	stimated / C			30%		80,142
					Estimated	d Construction	Cost:	\$	387,359
Local Match <sup>†</sup> : 20% \$	98,400								
<sup>†</sup> Toward SS4A Implementation Grants			12%	\$	46,483				
						Utilities**		\$	-
						ROW**		\$	-

Construction Engineering/Management 15% \$

Estimated Project Total: \$

58,104

492,000

\*Mobilization is 10% +/- of the subtotal with a minimum of \$2,500 and a maximum of \$75,000 \*\*To be evaluated during feasibility study/design

#### Additional Potential Improvements

Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the *Countermeasure Toolbox* for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
Additional Improvements #3:	
Additional Improvements #4:	
Additional Improvements #5:	

#### Disclaimer:

Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

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WASATCH FRONT REGIONAL COUNCIL Comprehensive Safety Action Plan

### Project Information Sheet

GFA(s):	North Davis County
Project Name:	Unsignalized Intersections
Jurisdiction(s):	West Point
Emphasis Areas:	Intersections, Roadway Departures, Teen Driver
Equity Priority:	Low

#### Location Description

Roadway:NAFrom:NATo:NALength:NA

### **Project Location Map**

Key Intersection Locations: 1800 North 800 North 700 South

Composite Safety Score Historic Crashes

Local Street Assessment

Fatal Serious Injury

Angle

Pedestrian (Ped)

Front to Rear (FR

Bicycle (Bike)

Motorcycle

Critical Crash Rate Differential Crash Profile Risk Score usRAP - Star Rating (Veh, Ped, Bike)

Why Was This Location Identified?

What Crash Types are Over-Represented?

Head On (HO)

Single Vehicle

Rear to Rear (RR)

Rear to Side (RS)

Sideswipe (SS)

Other/Unknown

Parked Vehicle (PV)

Map ID: 6.27.1



### Segment Information and Safety Analysis Areas Summary

Roadway Characteristics	Value
Length (miles)	NA
Average Daily Traffic (vehicles per day)	NA
Functional Classification	NA
Roadway Ownership	NA
Urban/Rural Designation	NA
Number of Key Intersections	NA

#### Segment Crash History

Crash History (2018 - 2022)	# of crashes
Fatal Crashes (K)	NA
Suspected Serious Injury Crashes (A)	NA
Suspected Minor Injury Crashes (B)	NA
Possible Injury Crashes (C)	NA
No Injury/PDO Crashes (O)	NA
Total Crashes	NA
Total EPDO Crashes	NA

#### Intersection Crash History

										What	Crash T	ypes ar	e Over-	Represe	ented?	
Intersections	Signal	K	Α	В	С	0	Total	EPDO	K/A	Ped/Bike			HO	PV	RR/RS	SS
1800 North & 4500 West		0	0	0	1	3	4	14								✓
800 North & 4500 West		0	1	0	0	3	4	97	✓							✓
700 South & 4000 West		0	0	0	1	3	4	14			~					
																<u> </u>
	_															L
													-		-	

**Unsignalized Intersections; West Point** 

Date Prepared: 3/14/2024 Prepared By: MA Checked By: EMF and the second Marchine,

WASATCH FRONT REGIONAL COUNCIL Safety Action Plan

Unsignalized Intersections; West Point

#### Project Description/How is safety improved?

This project identifies the following intersection improvements to address an overrepresentation of sideswipe, serious injury and angle collisions: 1800 N/4500 W, perform an intersection control evaluation to address the offset between the north and south legs and consider roundabout control; 800 N/4500 W and 700 S/4500 W, provide sight distance, visibility and lighting improvements (including advanced warning signage and striping) for all approaches to these intersections, in addition to adding left- and right-turn lanes on the major approaches to these intersections.

This project description represents potential safety improvement strategies that could be implemented at this location, as well as other locations with similar conditions. Additional improvement strategies could be considered subject to engineering analysis.

### **Proposed Proven Safety Countermeasures**



### **Opinion of Probable Construction Cost**

Segment Improvements							
Item Description	CMF	Applicable Crashes	Quantity	Unit	Unit Price	Item Cost	
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-
						\$	-

Intersection Improvements								
Item Description	CMF	Applicable Crashes	Quantity	Unit		Unit Price		Item Cost
Perform an Intersection Control Evaluation and Implement	NA	All Crashes	1.00	INT	\$	225,000	\$	225,000
Convert Existing Intersection to Modern Roundabout	0.18 - 0.59	All Crashes	1.00	INT	\$	2,500,000	\$	2,500,000
Systemic Low-Cost Countermeasures at Stop-Control Intersection	0.73 - 0.9	All Crashes	3.00	INT	\$	19,000	\$	57,000
Install Intersection Lighting	0.62 - 0.67	Nighttime	2.00	INT	\$	31,000	\$	62,000
Provide Left-Turn Lanes	0.52 - 0.72	Rural	2.00	LANE	\$	300,000	\$	600,000
Provide Right-Turn Lanes	0.74 - 0.86	All Crashes	2.00	LANE	\$	150,000	\$	300,000
							\$	-
							\$	-
							\$	-
							\$	-
							\$	-
				Imp	rover	nents Subtotal:	\$	3,744,000
			1	Nobilizatio	า: (%	+/-)* 10%	\$	75,000
				affic Contr				187,200
		Items Not Es	stimated / 0	Contingena	:у: (%	5 +/-) 30%	\$	1,123,200
				Estimate	d Cor	struction Cost:	\$	5,129,400
Local Match <sup>†</sup> : 20% \$ 1,303,000								
<sup>†</sup> Toward SS4A Implementation Grants Preconstruction Engine					ng/De	sign 12%	\$	615,528
Utilities**						ies**	\$	-
					ROV	V**	\$	-
		Construe	ction Engin	eering/Ma	nager	ment 15%	\$	769,410
				Éstin	nated	Project Total:	\$	6,515,000
*Mobilizati	on is 10% +/-	of the subtotal with a	minimum o	of \$2,500 a	and a	maximum of \$7	5,000	)

\*\*To be evaluated during feasibility study/design

#### **Additional Potential Improvements**

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Additional safety improvements could be considered that were not included due to availability of data, need for site-specific information, and/or agency/jurisdiction input. Potential additional countermeasures are listed below. Refer to the Countermeasure Toolbox for a complete list of safety countermeasures.

Additional Improvements #1:	Set Appropriate Speed Limits for All Road Users
Additional Improvements #2:	
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Additional Improvements #5:	

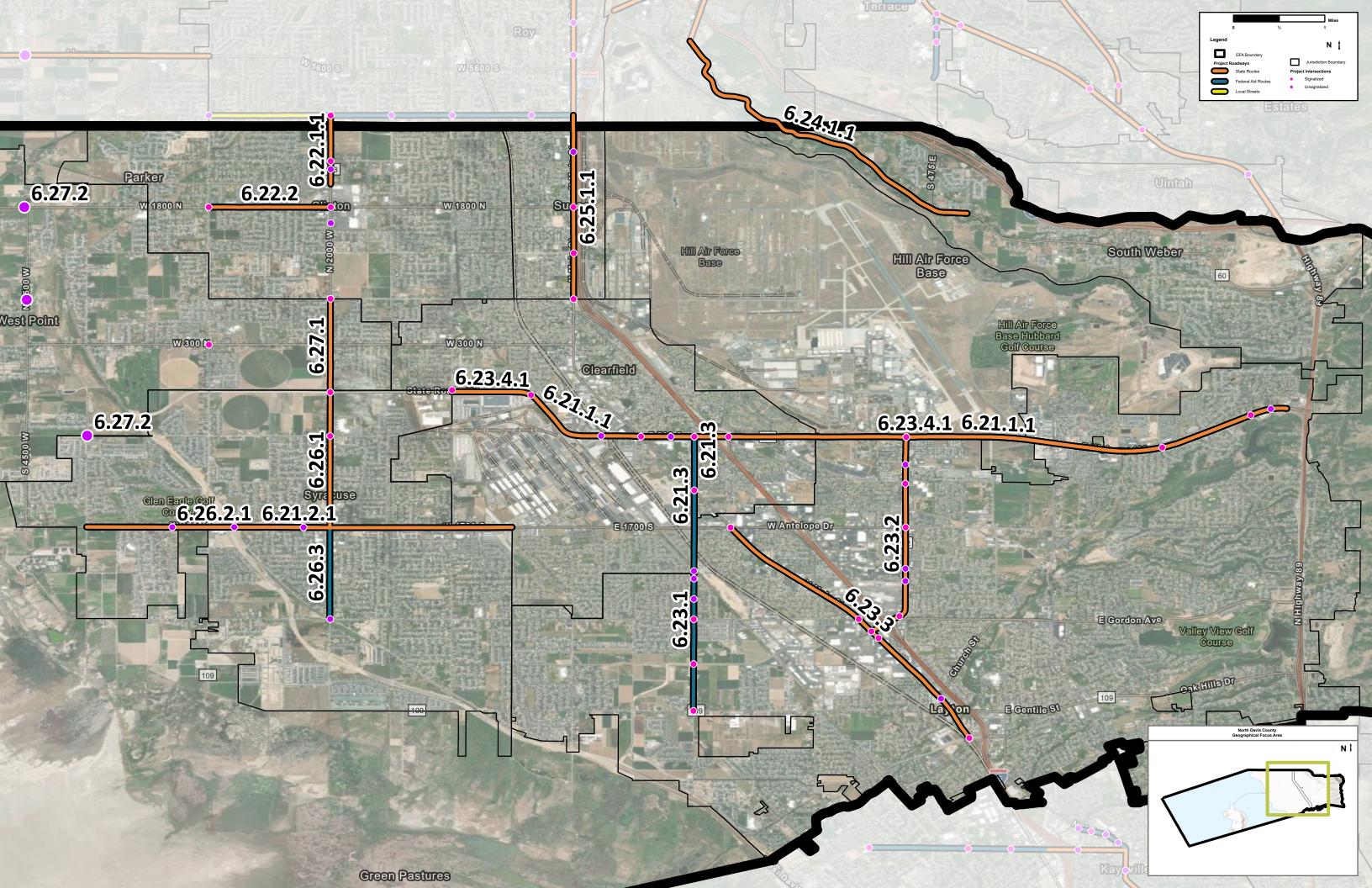
Disclaimer: Disclaimer: The cost estimates provided in this document are for comparison purposes only. Actual project costs will vary. The recommended safety improvement strategies were based on available data and reasonable engineering judgment and a more detailed assessment may suggest additional safety strategies that could be considered.

#### **Unsignalized Intersections; West Point**

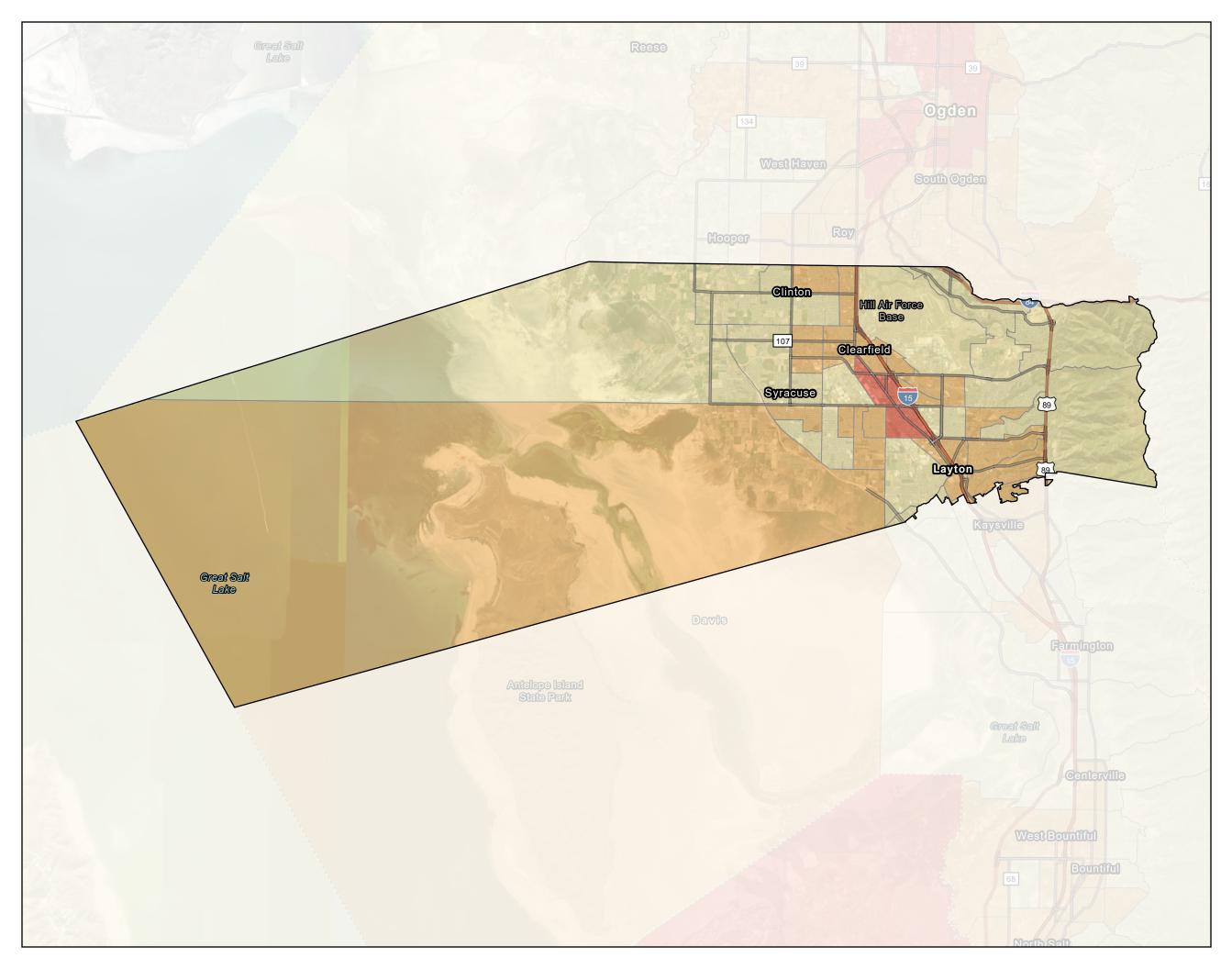
#### Addditonal Information

This project identifies the following intersection improvements to address an overrepresentation of sideswipe, serious injury and angle collisions: 1800 N/4500 W, perform an intersection control evaluation to address the offset between the north and south legs and consider roundabout control; 800 N/4500 W and 700 S/4500 W, provide sight distance, visibility and lighting improvements (including advanced warning signage and striping) for all approaches to these intersections, in addition to adding left- and right-turn lanes on the major approaches to these intersections.

# NORTH DAVIS COUNTY CASE STUDY PROJECT LOCATION MAP



# NORTH DAVIS COUNTY EQUITY INDEX MAP



# North Davis County Equity Need Areas High Medium Low