KELLER ASSOCIATES

TRAFFIC REPORT

US-95 CORRIDOR STUDY
OREGON STATE LINE TO US-20/26, NYSSA JUNCTION
ITD Key No. 09968

US-20/26 CORRIDOR STUDY
OREGON STATE LINE TO I-84 JUNCTION
ITD Key No. 09972

SH-19 CORRIDOR STUDY
OREGON STATE LINE TO CALDWELL
ITD Key No. 09973

March 15, 2020

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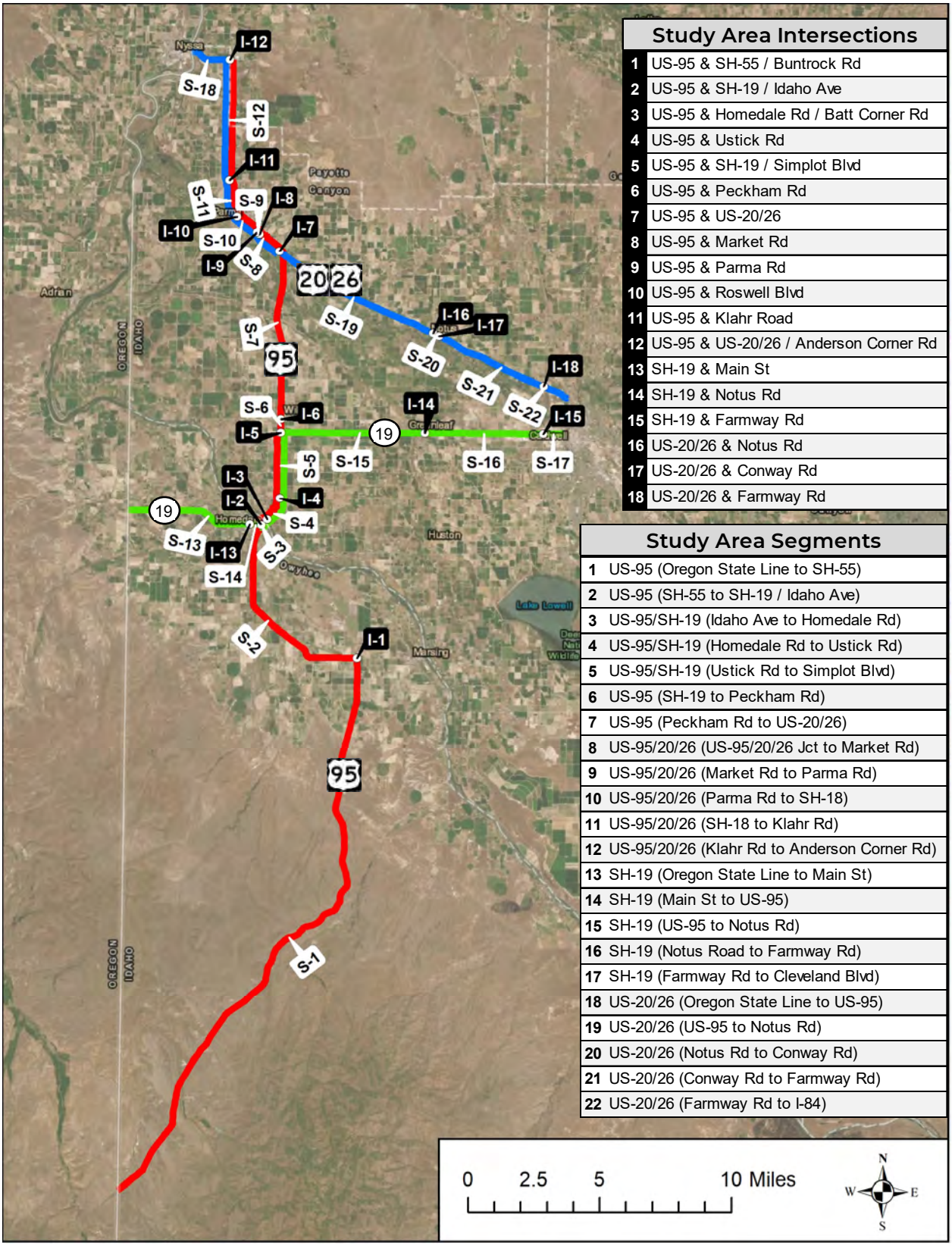
1. BACKGROUND & METHODOLOGY

The Idaho Transportation Department (ITD) contracted Keller Associates to prepare a traffic report as part of three Corridor Study projects: US-95, US-20/26, and SH-19 in Canyon and Owyhee Counties. The traffic studies for these projects are combined into a single report because portions of the highways overlap each other. **Figure 1** on the following page illustrates the study area, which consists of 18 study intersections and 22 study segments. US-95 is shown in red, SH-19 is shown in green, and US-20/26 is shown in blue.

The goal of this traffic study is to identify existing and future traffic safety, capacity, and access management concerns in the study area and recommend appropriate mitigations, if needed. The design year for this study is 2040.

To accomplish these goals, the following tasks were carried out and are documented in this report:

- Data Collection and Processing – existing traffic volumes, traffic forecasts, travel times, and crash data were collected from regional agencies and processed as needed for analysis
- Existing Conditions Analysis – existing freight patterns, traffic capacity, travel times and five-year crash history were evaluated
- Potential Safety Improvements – safety improvements are proposed to mitigate concerns found in the Existing Conditions Analysis
- Future No-Build Conditions Analysis (2040) – future traffic capacity and travel times were evaluated assuming no changes are made to existing highways and intersections
- Potential Build Capacity Improvements (2040) – capacity improvements are proposed to mitigate capacity concerns found in the Future No-Build Analysis
- Future Build Conditions Analysis (2040) – future traffic capacity and travel times were evaluated assuming the proposed Build improvements have been implemented
- Public Involvement – public input was gathered via stakeholder meetings as well as public open houses in the cities of Wilder, Notus, Homedale, Greenleaf, and Parma
- Access Management – current access management policies were documented and evaluated for compatibility with proposed safety and capacity improvements



Study Area Intersections	
1	US-95 & SH-55 / Buntrock Rd
2	US-95 & SH-19 / Idaho Ave
3	US-95 & Homedale Rd / Batt Corner Rd
4	US-95 & Ustick Rd
5	US-95 & SH-19 / Simplot Blvd
6	US-95 & Peckham Rd
7	US-95 & US-20/26
8	US-95 & Market Rd
9	US-95 & Parma Rd
10	US-95 & Roswell Blvd
11	US-95 & Klahr Road
12	US-95 & US-20/26 / Anderson Corner Rd
13	SH-19 & Main St
14	SH-19 & Notus Rd
15	SH-19 & Farmway Rd
16	US-20/26 & Notus Rd
17	US-20/26 & Conway Rd
18	US-20/26 & Farmway Rd

Study Area Segments	
1	US-95 (Oregon State Line to SH-55)
2	US-95 (SH-55 to SH-19 / Idaho Ave)
3	US-95/SH-19 (Idaho Ave to Homedale Rd)
4	US-95/SH-19 (Homedale Rd to Ustick Rd)
5	US-95/SH-19 (Ustick Rd to Simplot Blvd)
6	US-95 (SH-19 to Peckham Rd)
7	US-95 (Peckham Rd to US-20/26)
8	US-95/20/26 (US-95/20/26 Jct to Market Rd)
9	US-95/20/26 (Market Rd to Parma Rd)
10	US-95/20/26 (Parma Rd to SH-18)
11	US-95/20/26 (SH-18 to Klahr Rd)
12	US-95/20/26 (Klahr Rd to Anderson Corner Rd)
13	SH-19 (Oregon State Line to Main St)
14	SH-19 (Main St to US-95)
15	SH-19 (US-95 to Notus Rd)
16	SH-19 (Notus Road to Farmway Rd)
17	SH-19 (Farmway Rd to Cleveland Blvd)
18	US-20/26 (Oregon State Line to US-95)
19	US-20/26 (US-95 to Notus Rd)
20	US-20/26 (Notus Rd to Conway Rd)
21	US-20/26 (Conway Rd to Farmway Rd)
22	US-20/26 (Farmway Rd to I-84)

Figure 1: Vicinity Map

1.1 LEVEL-OF-SERVICE DEFINITION

This study uses Level of Service (LOS) to measure roadway capacity. LOS is a qualitative measure of traffic congestion and delay, ranging from A to F. LOS A represents very low traffic volumes compared to the capacity of the roadway, while LOS F represents traffic demand that exceeds capacity, causing a bottleneck in traffic flow and serious congestion.

1.1.1 Intersections

The majority of LOS reported in this study is at intersections, where poor traffic operation is usually first to occur, as opposed to along roadway segments. In urban areas, an average LOS D is generally acceptable during peak periods, while LOS E (defined as capacity) is often acceptable for an individual turning movement. In rural areas, drivers typically expect better traffic flow and therefore average LOS C and worst movement LOS D are considered the minimum acceptable.

The Highway Capacity Manual (HCM), Synchro, and Sidra Intersection (SIDRA) analysis methodologies assign LOS to intersections, lanes, and individual turning movements based primarily on vehicle delay. The volume-to-capacity (v/c) ratio[1] is also used, in that a v/c ratio greater than 1.0 represents oversaturated conditions and always results in a LOS F in both the HCM and SIDRA methodologies, regardless of delay. The thresholds for each LOS vary, based on type of intersection control, as shown in **Table 1** below.

Table 1: Intersection Level of Service Definitions

Level of Service	Average Delay per Vehicle in Seconds (d)		
	Traffic Signal	Roundabout	Stop Control
A	d ≤ 10	d ≤ 10	d ≤ 10
B	10 < d ≤ 20	10 < d ≤ 20	10 < d ≤ 15
C	20 < d ≤ 35	20 < d ≤ 35	15 < d ≤ 25
D	35 < d ≤ 55	35 < d ≤ 50	25 < d ≤ 35
E	55 < d ≤ 80	50 < d ≤ 70	35 < d ≤ 50
F	80 < d **or** v/c > 1.0	70 < d **or** v/c > 1.0	50 < d **or** v/c > 1.0

The minimum acceptable intersection levels of service for this study are:

- Urban/suburban intersections (#6, #10, #13, #15, and #16):
  - Average – LOS D[2]
  - Worst Movement – LOS E
- Rural intersections (all other study area intersections):
  - Average – LOS C[2]
  - Worst Movement – LOS D

1.1.2 Roadway Segments

Capacity was analyzed for select roadway segments using the HCM two-lane highway methodology, as detailed further in Section 5.2. The minimum acceptable operation for such segments is LOS C, based on ITD's Design Manual, Section 335.06 for urban/suburban arterials. The LOS C standard is also consistent with Canyon and Owyhee County requirements.

[1] Also referred to as degree of saturation.

[2] Referenced from the current Highway Standards & Development Procedures manuals for Canyon County and Owyhee County.

2. DATA COLLECTION & PROCESSING

2.1 TRAVEL TIMES

ITD provided INRIX[3] and National Performance Management Research Data Set (NPMRDS) travel time data from April 2018 for the US-95, SH-19, and US-20/26 corridors in the study area.

Keller Associates collected travel time data using the floating-car method[4]; SH-19 and US-20/26 data were collected on Wednesday afternoon, October 10, 2018, and US-95 data were collected Monday afternoon, November 26, 2018[5].

2.2 TURNING MOVEMENT COUNTS

ITD provided recent turning movement counts for the 18 study intersections. Four of the intersections (#8, #9, #17, and #18) were counted in 2014, intersection #12 was counted in 2019, and the other intersections were counted in 2018. Turning movement count spreadsheets are included in **Appendix A**.

2.3 TRAFFIC VOLUME ADJUSTMENT FACTORS

ITD provided hourly volume data from six automatic traffic recorders (ATRs) in the study area from July 1, 2017 to July 31, 2018. Keller Associates used the data to develop monthly and day-of-week adjustment factors and applied them to turning movement count volumes to account for seasonal traffic variations and adjust all intersection volumes to their annual weekday average. Adjustment factor tables are included in **Appendix B**.

2.4 TRAFFIC FORECASTS

Year 2018 and 2040 turning movement volumes were established using traffic forecast data provided by ITD and the Community Planning Association of Southwest Idaho (COMPASS):

- COMPASS provided directional ADT and peak hour volumes from their 2018 Build and 2040 Build travel demand models for the Canyon County areas of the study.
- ITD provided directional ADT and peak hour volumes from their 2012 and 2040 Statewide Travel Demand Models (STDMs) for the remaining areas in Owyhee County.
- The COMPASS and ITD travel demand model forecasts were found to be less accurate near their area boundaries[6], close to Intersections #1 and #12. Instead, ITD Roadway Data Section provided 2018 and 2040 ADT and design hour volume (DHV) for each leg of those intersections.

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[3] INRIX is a private company that provides location-based data and analytics, such as traffic and parking, to automakers, cities and road authorities worldwide, and in turn-by-turn navigation applications like Google Waze.

[4] The driver follows the flow of traffic and attempts to pass the same number of vehicles that pass him or her.

[5] November 26th was "Cyber Monday." However, no significant differences were observed. US-95 travel times were only slightly slower than the posted speed limit.

[6] Travel demand forecasts on the fringe of a modeled area are influenced heavily by external traffic counts, and less so by traditional gravity model productions and attractions.

The COMPASS and ITD data were used to forecast 2018 and 2040 traffic volumes by first applying the models' annual increases in volume (increment) to existing traffic counts, and then using the Furness Method[7] to estimate individual turning movements. Forecasting model data and Furness Method output volumes are included in **Appendices C and D**, respectively (see also Section 5.2 and Table 11).

To validate the 2018 forecasts of the four intersections with 2014 turning movement count data, Furness Method output volumes were compared to tube count volumes recorded on September 25, 2018 (shown in **Table 2** below).

Table 2: 2018 Tube Counts vs. Furness Method Volumes

Intersection	Peak Hour	Tube Counts (veh/hr)	Furness Method (veh/hr)	Difference Furness-Tube (veh/hr)
8 US-95 & Market Road, east leg	AM	49	71	22
	PM	60	61	1
9 US-95 & Parma Road, north leg	AM	172	164	-8
	PM	100	128	28
17 US-20/26 & Conway Road, north leg	AM	177	126	-49
	PM	166	131	-35
18 US-20/26 & Farmway Road, north leg	AM	158	130	-28
	PM	202	175	-27

Differences can be attributed to several factors such as expected vs. actual traffic growth between 2014 and 2018, day-to-day fluctuations, special events, or data collection equipment accuracy. Seasonal and day-of-week adjustment factors were applied to the tube count volumes before comparison.

2.5 CRASH DATA

Study area crash data from 2013 to 2016 were obtained from the Local Highway Technical Assistance Council (LHTAC). 2017 crash data were obtained from ITD. These data were used to develop crash rates, identify problem roadway segments and intersections, and propose potential safety improvements, all of which are detailed in **Section 3.4** and **Section 4** of this report. Crash data spreadsheets are included in **Appendix E**.

Crash rates and costs were calculated using 2018 Annual Average Daily Traffic (AADT), via turning movement count and tube counts (adjusted with seasonal factors) and crash costs from the 2016 Idaho Traffic Crashes report. Both AADT and crash costs were adjusted to year 2018 values using a two-percent annual growth rate. Crashes influenced by alcohol, drugs, or illness were omitted from the analysis. The inflation-adjusted 2018 crash costs are as follows:

- Fatalities: $10,012,571 per crash
- Type-A (Incapacitating Injuries): $478,851 per crash
- Type-B (Non-incapacitating Injuries): $130,424 per crash
- Type-C (Possible Injuries): $66,599 per crash
- Property Damage Only: $3,374 per crash

[7] A common factoring algorithm developed by K.P. Furness. This iterative method, as described in NCHRP Reports 255 and 765, is used to convert approach growth increments to forecasted turning movements.

3. EXISTING CONDITIONS

3.1 REGIONAL FREIGHT CLUSTERS AND CORRIDORS

The 2017 COMPASS Freight Study was referenced to identify existing regional freight clusters and travel corridors in the study area. It is important to note that the study only identified *existing* clusters and corridors; they may not necessarily reflect ideal or desired patterns in the future.

3.1.1 Freight Clusters

The COMPASS Freight Study identified three existing classes of freight clusters in the Treasure Valley: Primary, Secondary, and Tertiary. As shown in **Figure 2** below, there is a Primary cluster that bisects SH-19 and US-20/26 on the west side of Caldwell, a Secondary cluster along both sides of US-95 between Wilder and US-20/26, and a Tertiary cluster at the intersection of US-95 and SH-19 in Homedale.

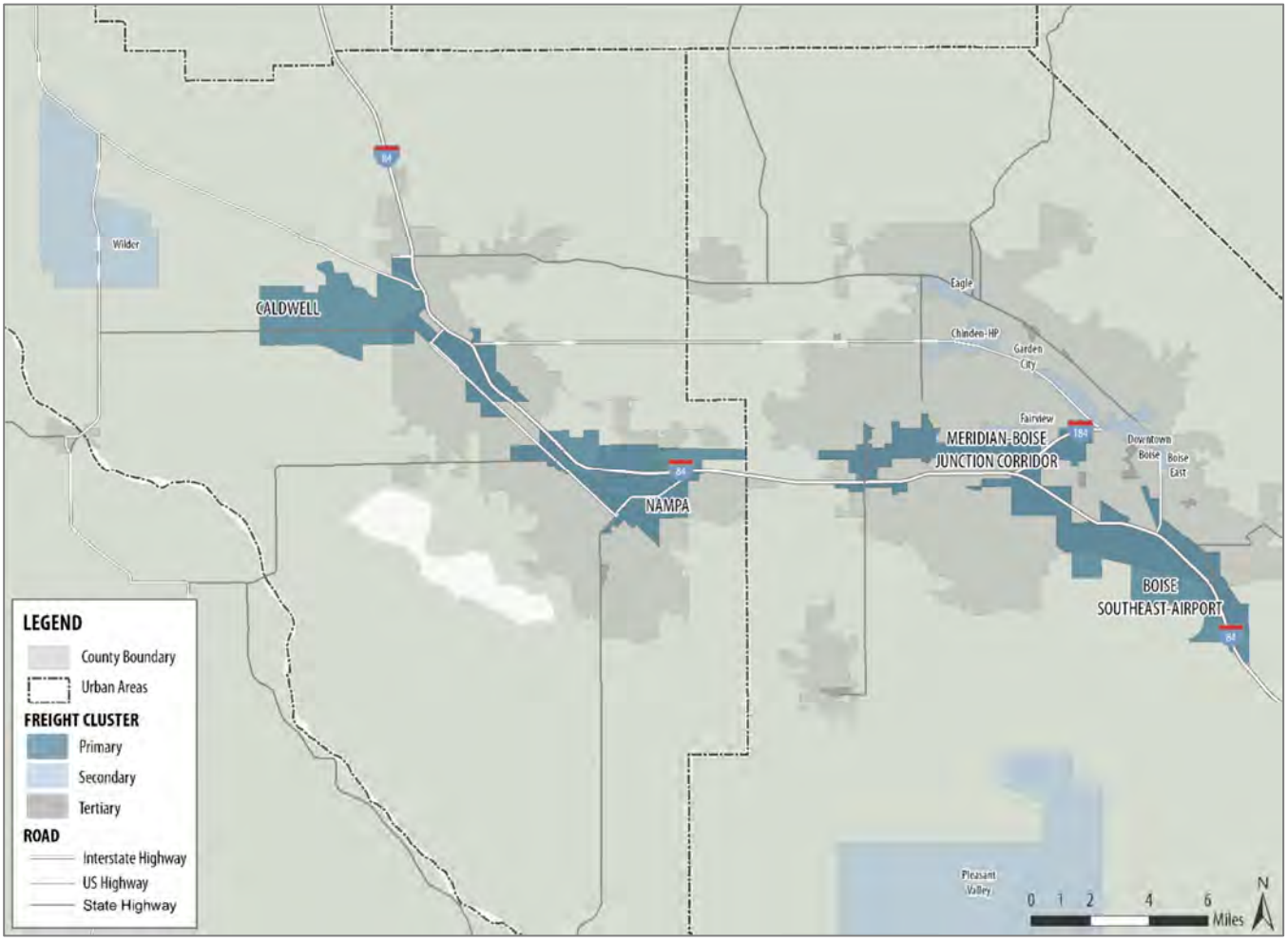


Figure 2: Existing Regional Freight Clusters – 2017 COMPASS Freight Study

3.1.2 Freight Corridors

The COMPASS Freight Study classified US-95, SH-19, and US-20/26 within Canyon County as Regional Corridors, the highest-order of four classes (see **Figure 3** below). Regional Corridors are high-volume truck corridors that serve as the backbone of the network and primarily move freight across or through the region. Farmway Road south of SH-19 was classified as a Regional Connector, which is the second highest-order class and provides connectivity from Regional Corridors to Primary Freight Clusters. Several other roadways in the study area were classified as Other Connectors, which is the lowest-order class and includes agricultural and detour routes.

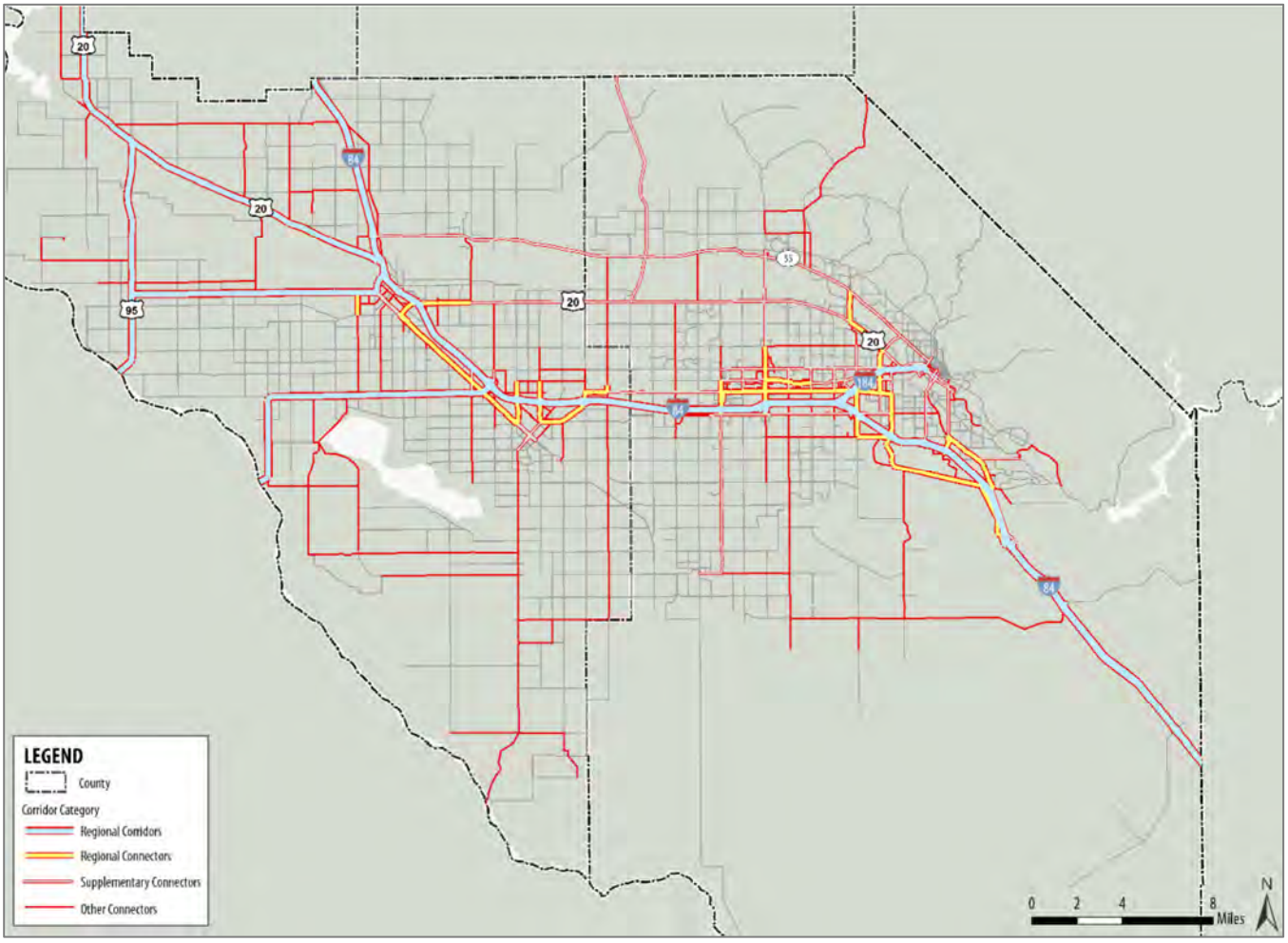


Figure 3: Existing Regional Freight Corridors – 2017 COMPASS Freight Study

3.2 CAPACITY ANALYSES

After adjusting turning movement volumes to year 2018 weekday averages (discussed previously), capacity analyses were performed using the Synchro 10 software. **Table 3** on the following page summarizes 2018 AM and PM peak hour level of service (LOS) and delay (in seconds per vehicle) at the study intersections. Synchro output sheets for existing conditions are included in **Appendix F**.

Existing level of service is acceptable at all but two intersections (highlighted orange in **Table 3**). At US-95 & SH-19/Simplot Blvd, the westbound left turn from SH-19 onto US-95 reaches LOS E during the PM peak hour. At SH-19 & Farmway Road, the northbound approach reaches LOS F during the PM peak hour.

Table 3: Intersection LOS and Delay (seconds/vehicle) – 2018 Existing Conditions

	Intersection	AM Peak Hour		PM Peak Hour	
		Intersection Average	Worst Movement	Intersection Average	Worst Movement
1	**US-95 & SH-55 / Buntrock Road**	LOS A 5 sec	LOS B 13 sec Northbound left	LOS A 5 sec	LOS B 14 sec Northbound left
2	**US-95 & SH-19 / Idaho Ave**	LOS A 8 sec	LOS C 20 sec Southeastbound left	LOS A 4 sec	LOS C 16 sec Southeastbound left
3	**US-95 & Homedale Rd / Batt Corner Rd**	LOS A 4 sec	LOS C 23 sec Northwestbound left	LOS A 5 sec	LOS D 27 sec Northwestbound left
4	**US-95 & Ustick Road**	LOS A 2 sec	LOS B 14 sec Westbound left	LOS A 2 sec	LOS C 15 sec Westbound left
5	**US-95 & SH-19 / Simplot Blvd**	LOS A 8 sec	LOS D 28 sec Westbound left	LOS B 13 sec	LOS E 44 sec Westbound left
6	**US-95 & Peckham Road**	LOS A 3 sec	LOS B 14 sec Westbound left	LOS A 3 sec	LOS C 16 sec Westbound left
7	**US-95 & US-20/26**	LOS A 4 sec	LOS C 21 sec Southwestbound left	LOS A 2 sec	LOS C 16 sec Southwestbound left
8	**US-95 & Market Road**	LOS A 1 sec	LOS C 15 sec Westbound left	LOS A 1 sec	LOS C 17 sec Westbound left
9	**US-95 & Parma Road**	LOS A 2 sec	LOS C 15 sec Southbound left	LOS A 1 sec	LOS C 20 sec Southbound left
10	**US-95 & Roswell Blvd**	LOS B 13 sec	LOS C 19 sec Northeastbound left	LOS A 5 sec	LOS C 17 sec Northeastbound left
11	**US-95 & Klahr Road**	LOS B 10 sec	LOS B 12 sec Southbound left	LOS B 11 sec	LOS B 13 sec Southbound left
12	**US-95 & US-20/26 / Anderson Corner Road**	LOS A 5 sec	LOS B 14 sec Eastbound left	LOS A 6 sec	LOS C 16 sec Eastbound left
13	**SH-19 & Main St**	LOS B 14 sec	LOS C 17 sec Eastbound left	LOS B 12 sec	LOS B 13 sec Westbound left
14	**SH-19 & Notus Road**	LOS A 4 sec	LOS D 29 sec Southbound left	LOS A 3 sec	LOS D 28 sec Southbound left
15	**SH-19 & Farmway Road**	LOS B 10 sec	LOS E 47 sec Northbound right	LOS C 16 sec	LOS F 89 sec Northbound right
16	**US-20/26 & Notus Road**	LOS A 3 sec	LOS B 13 sec Northbound left	LOS A 2 sec	LOS B 13 sec Northbound left
17	**US-20/26 & Conway Road**	LOS A 2 sec	LOS C 16 sec Southbound left	LOS A 1 sec	LOS C 15 sec Southbound left
18	**US-20/26 & Farmway Road**	LOS A 2 sec	LOS B 14 sec Southbound left	LOS A 2 sec	LOS C 16 sec Southbound left

3.3 CORRIDOR TRAVEL TIMES

Table 4 compares the INRIX/NPMRDS travel times, Keller Associates' field-measured travel times, and "Speed Limit"[8] travel times.

Table 4: Travel Time Comparison – 2018 Existing Conditions, PM Peak Hour

Corridor		Field-Measured	INRIX/NPMRDS	Speed Limit[8]
US-95 (50.6 miles)	Northbound	51 min, 35 sec	57 min, 46 sec	51 min, 35 sec
	Southbound	49 min, 20 sec	60 min, 57 sec	51 min, 35 sec
SH-19 (19.8 miles)	Eastbound	24 min, 24 sec	26 min, 57 sec	23 min, 23 sec
	Westbound	23 min, 41 sec	26 min, 34 sec	23 min, 23 sec
US-20/26 (21.8 miles)	Eastbound	23 min, 39 sec	26 min, 15 sec	23 min, 25 sec
	Westbound	23 min, 45 sec	25 min, 53 sec	23 min, 25 sec

Field-measured (floating-car) travel times are approximately 10 percent shorter than INRIX/NPMRDS travel times and are approximately equal to Speed Limit travel times. Possible reasons for the discrepancy between field measured and INRIX/NPMRDS travel times are:

- INRIX/NPMRDS data likely includes some vehicles that are pulling off and onto the highways (and therefore traveling slower on average), because most vehicles are not traversing the corridors end-to-end as was done for field-measured travel times.
- Truck slowdowns on steep grades are reflected in the INRIX/NPMRDS travel times; southbound US-95 travel times are approximately three minutes longer than corresponding northbound times due to the significant elevation rise between the Marsing Port-of-Entry and Oregon State Line.

Field-measured travel times will be used for comparison with the 2040 No Build and 2040 Build travel time estimates discussed in **Section 5.3** and **Section 7.2** of the report, respectively.

3.4 SAFETY ANALYSIS

Crash rates and costs were calculated for the study intersections and segments and are shown in **Tables 5, 6 and 7** on the following pages; locations with frequent and/or severe crashes (highlighted orange) were identified based on the criteria listed below. Keller Associates established these criteria in order to focus improvements (see **Section 4**) on the highest-risk locations.

- Intersections with at least:
  - 1.0 crashes/MV (million vehicles); or
  - $200,000/year in crash costs
- Roadway Segments with at least:
  - 1.0 crashes/MVM (million vehicle miles), or;
  - $200,000/year/mile in crash costs

[8] Theoretical travel time assuming posted speed limits and no delay at intersections; this was calculated to serve as a control group for comparison with the Field-Measured and INRIX/NPMRDS travel times.

3.4.1 Intersection-Related Crashes

Table 5 summarizes the 2013-2017 crash history at the 18 study intersections. **Table 6** lists other intersections in the study area with severe crashes. For the purposes of this analysis, intersection-related crashes are defined as all crashes within 300 feet of a given intersection.

Table 5: Study Intersection Crash Rates and Costs

	Intersection	Number of Crashes by Severity						2018 AADT	Crash Rate (crashes/ MV)	Cost/year
		Fatal	A Inj.	B Inj.	C Inj.	Prop. Dmg.	Total			
1	**US-95 & SH-55 / Buntrock Road**	-	2	1	1	3	7	6,500	0.6	$233,000
2	**US-95 & SH-19 / Idaho Ave**	-	-	-	-	1	1	11,000	0.0	$1,000
3	**US-95 & Homedale Rd / Batt Corner Rd**	-	-	-	2	5	7	10,900	0.4	$31,000
4	**US-95 & Ustick Road**	-	1	1	1	1	4	7,800	0.3	$136,000
5	**US-95 & SH-19 / Simplot Blvd**	-	1	4	1	7	13	9,600	0.7	$219,000
6	**US-95 & Peckham Road**	-	-	1	2	2	5	9,600	0.3	$55,000
7	**US-95 & US-20/26**	-	1	1	-	6	8	9,400	0.5	$126,000
8	**US-95 & Market Road**	-	1	1	2	3	7	11,200	0.3	$151,000
9	**US-95 & Parma Road**	-	-	-	-	2	2	11,300	0.1	$2,000
10	**US-95 & Roswell Blvd**	-	-	-	-	4	4	9,700	0.2	$3,000
11	**US-95 & Klahr Road**	-	1	-	1	4	6	7,300	0.5	$112,000
12	**US-95 & US-20/26 / Anderson Corner Road**	-	1	2	6	5	14	7,300	1.1	$232,000
13	**SH-19 & Main St**	-	-	1	1	3	5	8,200	0.3	$42,000
14	**SH-19 & Notus Road**	1	2	-	-	5	8	11,000	0.4	$2,198,000
15	**SH-19 & Farmway Road**	-	2	-	3	23	28	17,900	0.9	$248,000
16	**US-20/26 & Notus Road**	-	-	-	-	1	1	8,800	0.1	$1,000
17	**US-20/26 & Conway Road**	-	-	-	-	4	4	9,900	0.2	$3,000
18	**US-20/26 & Farmway Road**	-	1	1	3	9	14	11,100	0.7	$168,000
	Total	1	13	13	23	88	138			

Several intersections (highlighted orange in **Table 5**) exceed the specified thresholds for crash rates or costs. These intersections are listed below along with a narrative description of safety issues:

- Intersection #1, US-95 & SH-55 / Buntrock Road – Severe crashes involved vehicles turning left into and out of the minor stop-controlled approaches. Based on Golden Gate Highway District #3 staff observations, it is possible that large trucks in the eastbound and westbound turn lanes obscure line-of-sight between free-flowing through vehicles and northbound / southbound stopped vehicles, leading to angle crashes. This intersection ranked #238 on ITD's High Accident List for 2016-2018 data.
- Intersection #5, US-95 & SH-19 / Simplot Blvd – Several crashes resulted in injuries. The more-severe injuries tend to be caused by angle crashes, with inattention and failure to yield cited as the most common contributing factors. The minor injuries and property damage crashes tend to be rear-end collisions. Most crashes involved westbound vehicles. Long queues and delays on the westbound approach may be contributing factors to the safety issues at this intersection; therefore, capacity improvements would also bring safety benefits. This intersection ranked #359 on ITD's High Accident List for 2016-2018 data.
- Intersection #12, US-95 & US-20/26 / Anderson Corner Road – Frequent injury crashes. The most common crashes involved northbound left turning vehicles, and the most contributing circumstance was failure to yield. This intersection ranked #58 on ITD's High Accident List for 2016-2018 data.
- Intersection #14, SH-19 & Notus Road – A fatality and two serious injury ("A" injury) crashes occurred. All three crashes were angle crashes between southbound vehicles and free-flowing east-west vehicles. It is possible that westbound trucks turning onto Notus Road obscure line-of-sight between free-flowing vehicles and stopped southbound vehicles. An oversized stop sign with a flashing beacon was recently installed and may have mitigated the safety issues somewhat, but a few more years of crash experience are needed to confirm. This intersection ranked #146 on ITD's High Accident List for 2016-2018 data.
- Intersection #15, SH-19 & Farmway Road – There were two serious injury ("A" injury) crashes and many property-damage-only crashes in the past five years. Most crashes were caused by northbound vehicles, which suggests that the long northbound delays pressure drivers to accept unsuitable gaps in SH-19 traffic. Long queues could also account for the northbound rear-end crashes; therefore, capacity improvements to this intersection would also bring safety benefits. This intersection ranked #35 on ITD's High Accident List for 2016-2018 data.

Table 6: Other Intersection Crash Rates and Costs

Intersection	Number of Crashes by Severity						Cost/year
	Fatal	A Inj.	B Inj.	C Inj.	Prop. Dmg.	Total	
US-95 & Lower Pleasant Ridge Road	1	1	-	-	1	3	$2,099,000
US-95 & Red Top Road	1	-	-	1	1	3	$2,017,000
US-20/26 & Wilson Lane	1	-	-	-	-	1	$2,003,000

Outside the 18 study intersections, three other intersections in the area exceeded the specified thresholds for crash rates and crash costs:

- US-95 & Lower Pleasant Ridge Road – A fatality occurred when a westbound vehicle failed to obey the stop sign and collided with a north-south vehicle. The existing stop signs do not

appear to be oversized or enhanced beyond what is typical for the study area. The eastbound approach has no crash history from 2013-2017 but has constrained sight distance due to vegetation and a vertical crest in the roadway alignment.

- US-95 & Red Top Road – A fatality occurred when an eastbound driver failed to obey the stop sign and collided with a north-south vehicle. The existing stop signs do not appear to be oversized or enhanced beyond what is typical for the study area. Since the crashes occurred, the eastbound leg of the intersection has been marked with a center line and edge lines, and a fence was installed on the southwest corner property line; these changes have not been in place long enough to determine their effect on intersection safety.
- US-20/26 & Wilson Lane – A fatality occurred when a westbound US-20/26 vehicle rear-ended another vehicle during the PM peak hour. It appears that the leading vehicle was slowing down or stopping to turn left onto Wilson Lane. US-20/26 at this location does not have left turn bays or a center turn lane to provide refuge for left turning vehicles.

3.4.2 Segment-Related Crashes

Table 7 on the following page summarizes the 2013-2017 crash history along the 22 study segments. The calculated roadway segment crash rates do not include any intersection-related crashes.

Nine of the 22 study segments exceed the specified thresholds for crash rates or costs. These roadway segments are listed below along with a narrative description of safety issues:

- Segment #2, US-95 (SH-55 to SH-19 / Idaho Avenue) – A fatality occurred when a southbound vehicle on US-95 overturned while negotiating the horizontal curve near the intersection with Y Road. The horizontal curve at this intersection may not be signed or delineated well enough; for example, the outside edge line of US-95 is absent at the beginning of the horizontal curve, within the intersection. The other crashes along the segment were less severe but consisted of animal collisions (wild and domestic), lane departures, and rear-end collisions.
- Segment #7, US-95 (Peckham Road to US-20/26) – A fatality occurred when a southbound vehicle on US-95 attempted to pass, overcorrected, and ran off the road. Other serious injury ("A" Injury) crashes involved an inattentive driver running off the road during rainy weather, and a southbound vehicle striking a domestic animal while the driver's vision was obstructed due to bright headlights. The other crashes along the segment were less severe but consisted of animal collisions (wild and domestic), lane departures, and rear-end collisions.
- Segment #8, US-95/20/26 (US-95/20/26 Jct to Market Road) – Two serious injury crashes occurred. One was caused by a drowsy/fatigued northbound driver drifting left of center and side swiping an opposing vehicle. The other was a southbound rear-end caused by following too close. The other crashes along the segment were lane departures, some of which were influenced by winter driving conditions.
- Segment #14, SH-19 (Main St to US-95) – Although none of the crashes resulted in serious injuries, there were seven crashes along this short roadway segment within Homedale city limits. The crashes were typical of low-speed urban environments: collisions with parked cars, backing vehicles, and rear-end collisions.
- Segment #15, SH-19 (US-95 to Notus Road) – A fatality occurred when a westbound vehicle drifted left of center and sideswiped an opposing vehicle several hundred feet west of Van Slyke Road. The other crashes along the segment were less severe but consisted of animal collisions (wild and domestic), lane departures, and rear-end collisions. There were numerous property damage crashes within Greenleaf city limits that are typical of low-speed urban areas; the recent conversion to a three-lane section may help prevent similar crashes in the future.

Table 7: Segment Crash Rates and Costs

	Segment	Number of Crashes by Severity						Length (miles)	2018 AADT	Crash Rate (crashes/ MVM)	Cost (per year per mile)
		Fatal	A Inj.	B Inj.	C Inj.	Prop. Dmg.	Total				
1	US-95 (Oregon State Line to SH-55)	-	-	9	9	28	46	23.9	2,400	0.4	$16,000
2	US-95 (SH-55 to SH-19 / Idaho Ave)	1	-	1	6	11	19	7.7	4,100	0.3	$274,000
3	US-95/SH-19 (Idaho Ave to Homedale Road)	-	-	-	1	-	1	0.3	10,400	0.2	$44,000
4	US-95/SH-19 (Homedale Rd to Ustick Road)	-	-	-	-	4	4	0.9	6,900	0.4	$4,000
5	US-95/SH-19 (Ustick Road to Simplot Blvd)	-	1	-	1	3	5	2.4	6,800	0.2	$47,000
6	US-95 (SH-19 to Peckham Road)	-	-	-	-	5	5	0.4	8,600	0.8	$9,000
7	US-95 (Peckham Road to US-20/26)	1	2	1	4	18	26	6.7	5,300	0.4	$344,000
8	US-95/20/26 (US-95/20/26 Jct to Market Rd)	-	2	1	1	3	7	0.9	8,900	0.5	$258,000
9	US-95/20/26 (Market Road to Parma Road)	-	-	-	-	-	0	0.0	10,900	n/a	n/a
10	US-95/20/26 (Parma Road to SH-18)	-	-	2	-	3	5	0.8	8,100	0.4	$65,000
11	US-95/20/26 (SH-18 to Klahr Road)	-	-	1	-	2	3	1.3	7,100	0.2	$21,000
12	US-95/20/26 (Klahr Rd to Anderson Corner Rd)	-	2	1	5	7	15	4.4	6,700	0.3	$66,000
13	SH-19 (Oregon State Line to Main St)	-	-	3	2	8	13	4.7	5,500	0.3	$24,000
14	SH-19 (Main St to US-95)	-	-	-	1	6	7	0.3	6,100	1.9	$53,000
15	SH-19 (US-95 to Notus Road)	1	-	2	5	19	27	5.4	9,200	0.3	$399,000
16	SH-19 (Notus Road to Farmway Road)	1	5	5	5	12	28	4.4	10,300	0.3	$614,000
17	SH-19 (Farmway Road to Cleveland Blvd)	-	1	4	5	6	16	0.7	15,800	0.8	$414,000
18	US-20/26 (Oregon State Line to US-95)	-	1	1	2	6	10	1.4	3,700	1.0	$107,000
19	US-20/26 (US-95 to Notus Road)	4	1	1	3	20	29	6.5	7,300	0.3	$1,252,000
20	US-20/26 (Notus Road to Conway Road)	-	-	-	-	-	0	0.1	7,700	n/a	n/a
21	US-20/26 (Conway Road to Farmway Road)	-	3	3	6	17	29	4.3	8,900	0.4	$107,000
22	US-20/26 (Farmway Road to I-84)	-	-	-	1	6	7	0.9	11,100	0.4	$19,000
	Total	8	18	35	57	184	302				

- Segment #16, SH-19 (Notus Road to Farmway Road) – A fatality occurred when an eastbound vehicle rear-ended a vehicle turning off the highway; inattention was cited as the contributing circumstance. Five serious injury crashes occurred; three of them were rear-end collisions and two were overturning crashes. The other crashes along the segment were less severe but consisted of animal collisions (wild), lane departures, and rear-end collisions.
- Segment #17, SH-19 (Farmway Road to Cleveland Blvd) – A serious injury crash occurred when a driver failed to yield when exiting a driveway approximately 300 feet west of Cleveland Blvd. Most of the other crashes along the segment were influenced by failing to yield, following too close, or improper lane changes. Many were located near the intersection with Cleveland Blvd.
- Segment #18, US-20/26 (Oregon State Line to US-95) – A serious injury crash occurred when a driver failed to yield when turning left out of a parking lot near Apple Valley Road. Most of the other crashes occurred along the horizontal curve near Apple Valley Road and involved lane departures or rear-end collisions.
- Segment #19, US-20/26 (US-95 to Notus Road) – Four fatalities occurred. All four involved westbound vehicles and lane departures; two resulted in head-on collisions and two appeared to be influenced by the horizontal curve between Milepost 11.5 and 12.0. A serious injury crash occurred in which a westbound vehicle overcorrected and overturned. None of these severe crashes were influenced by weather or adverse conditions. The other crashes along the segment were less severe but consisted of wild animal collisions, lane departures, and rear-end collisions.

4. POTENTIAL SAFETY IMPROVEMENTS

Potential safety improvements were investigated for locations with frequent and/or severe crashes (highlighted orange in **Tables 5, 6 and 7** in **Section 3**). **Tables 8 and 9** show short-term and long-term potential improvements and applicable Crash Modification Factors (CMFs). Aerial photos of intersection safety improvement locations are included in **Appendix G**. CMF source information is included in **Appendix H**.

Table 8: Segment Safety Improvements

Roadway Segment		Potential Improvements			
		Short-Term	CMF	Long-Term	CMF
2	**US-95 (SH-55 to SH-19 / Idaho Ave)**	Lower advisory speed on curve near Y-Road Install centerline and shoulder rumble strips	0.87 0.80	Widen paved shoulders to at least 6 feet	0.77
7	**US-95 (Peckham Road to US-20/26)**	Install centerline and shoulder rumble strips	0.80	None identified	
8	**US-95/20/26 (US-95/20/26 Jct to Market Road)**	Install centerline and shoulder rumble strips	0.80	Install two-way left turn lane	0.64
14	**SH-19 (Main St to US-95)[9]**	Restripe with two-way left turn lane	0.80	None identified	
15	**SH-19 (US-95 to Notus Road)**	Install centerline and shoulder rumble strips	0.80	None identified	
16	**SH-19 (Notus Rd to Farmway Road)**	Install shoulder rumble strips	0.84	None identified	
17	**SH-19 (Farmway Rd to Cleveland Blvd)**	None identified		Access management	unknown
18	**US-20/26 (Oregon State Line to US-95)**	Install centerline and shoulder rumble strips	0.80	Install a two-way left turn lane and widen paved shoulders to at least 6 feet	0.64
19	**US-20/26 (US-95 to Notus Road)**	Install centerline and shoulder rumble strips	0.80	None identified	

[9] Downtown Homedale Reconstruction, KN 20156, is a planned FY2021 project. It will provide new base and surface, stormwater system, ADA pedestrian ramps, and some curb replacement. The existing pavement marking will be replaced as-is. The proposed two-way left-turn lane will fit with existing parallel parking in this segment.

Table 9: Intersection Safety Improvements

Intersections	Potential Improvements			
	Short-Term	CMF	Long-Term	CMF
1 US-95 & SH-55 / Buntrock Rd	Install advance warning beacons on eastbound and westbound approaches	0.95	Roundabout	0.29
	Install transverse rumble strips on northbound and southbound approaches	0.87		
5 US-95 & SH-19 / Simplot Blvd	Install "Cross Traffic Does Not Stop" plaques below stop signs	unknown	Roundabout	0.22
	Install transverse rumble strips on eastbound and westbound approaches	0.87	Traffic signal (if warrants are met)	0.56
	Install a southbound bypass lane to provide refuge for westbound left turning traffic	unknown		
12 US-95 & US-20/26 / Anderson Corner Rd	Re-stripe and re-align lanes to reduce semi-truck off-tracking into opposing lanes	Unknown	Roundabout	0.29
	Install advance warning beacons on northbound and southbound approaches	0.95	RCUT[10] with U-turns on US-20/26	unknown
	Install "Cross Traffic Does Not Stop" plaques below stop signs	unknown		
	Install transverse rumble strips on eastbound and westbound approaches	0.87		
14 SH-19 & Notus Rd	Install "Cross Traffic Does Not Stop" plaques below stop signs	unknown	Eastbound bypass lane to provide refuge for southbound left turning traffic	unknown
15 SH-19 & Farmway Rd	None identified		Roundabout	0.68
			Traffic signal (if warrants are met)	0.95[11]
– US-95 & Lower Pleasant Ridge Rd	Install oversized stop signs with solar-powered flashing beacons	0.95	None identified	
– US-95 & Red Top Rd	Install oversized stop signs with solar-powered flashing beacons	0.95	None identified	
– US-20/26 & Wilson Ln[12]	None identified		Provide a center left turn lane when US-20/26 is widened	unknown

[10] Restricted Crossing U-Turn alternative intersection design

[11] In urban areas, conversion from two-way stop control to a traffic signal reduces the risk of high-severity right-angle crashes but increases the risk for lower-severity rear-end crashes, typically resulting in a minor reduction in total crashes.

[12] Wilson Lane is a private road; ITD would not normally make improvements for this intersection.

5. FUTURE CONDITIONS – 2040 "NO BUILD" SCENARIO

This section discusses intersection capacity and corridor travel times under 2040 traffic volume forecasts, assuming roadway geometry and lane configurations remain the same as they are today (i.e. "No Build" scenario).

5.1 INTERSECTION CAPACITY ANALYSIS

Table 10 on the following page summarizes level of service and delay for the 2040 No Build scenario at the 18 study intersections. Synchro and Sidra output are included in **Appendix I** and analysis volumes (discussed previously in Section 2.4) are shown in **Appendix D**.

Eleven of the 18 study intersections are expected to have capacity issues in the 2040 No Build scenario. **Section 6** discusses improvements to mitigate these issues.

5.2 SEGMENT CAPACITY ANALYSIS

Capacity was analyzed for select segments shown in **Table 11** using the HCS7 two-lane highway module. These roadway segments were selected for further analysis for the following reasons:

- Widening US-20/26 from Parma to Caldwell is listed as an Unfunded Project Priority in COMPASS' Communities in Motion 2040 2.0 plan. This portion of US-20/26 includes Segments 8, 9, 10, 20, 21, and 22.
- Segment 3 (US-95 from Idaho Ave to Homedale Rd) and Segment 15 (SH-19 from US-95 to Notus Road) are the only other two-lane highways in this study area with AADT that are comparable to US-20/26 from Parma to Caldwell. The other study segments are not expected to approach capacity by 2040.

Projected 2040 AADT for the select segments was determined by calculating the volume difference (increment) between 2018 and 2040 COMPASS forecasting models and adding the result to 2018 AADT[13], as illustrated in **Table 11**. Assumptions for the two-lane highway LOS analyses include:

- 0.10 K-factor (i.e. peak-hour volumes are 10 percent of AADT)
- 60/40 directional split[14]
- 15 percent heavy vehicles[15]
- No passing allowed; this is a conservative assumption, considering some portions of the segments allow passing.

All nine analyzed segments are expected to have unacceptable LOS in the 2040 No Build scenario, indicating that capacity improvements should be considered. HCS7 output is included in **Appendix I**.

[13] Using the increment method of forecasting future volumes is preferred when a travel demand model is available, as opposed to using a growth factor or rate. The growth factor method can generate very odd results when either the traffic count or base year model volume is very low. The factor method also does not guarantee continuity of flow from one link to the next. Therefore, the increment method is recommended. See NCHRP Reports 255 and 765 for further information.

[14] A default value used by ITD; typically conservative for daily traffic

[15] An average of observed values across the study area

Table 10: Intersection LOS and Delay (seconds/vehicle) – 2040 No Build

	Intersection	AM Peak Hour		PM Peak Hour	
		Intersection Average	Worst Movement	Intersection Average	Worst Movement
1	**US-95 & SH-55 / Buntrock Road**	LOS A 6 sec	LOS C 17 sec Northbound left	LOS A 6 sec	LOS C 19 sec Northbound left
2	**US-95 & SH-19 / Idaho Ave**	LOS C 17 sec	LOS E 50 sec Eastbound left	LOS A 9 sec	LOS D 34 sec Eastbound left
3	**US-95 & Homedale Rd / Batt Corner Rd**	LOS C 18 sec	LOS F 93 sec Northbound left	LOS C 19 sec	LOS F 119 sec Northbound left
4	**US-95 & Ustick Road**	LOS A 2 sec	LOS C 18 sec Westbound left	LOS A 2 sec	LOS C 23 sec Westbound left
5	**US-95 & SH-19 / Simplot Blvd**	LOS F 96 sec	LOS F 300+ Westbound left	LOS F 170 sec	LOS F 300+ Westbound left
6	**US-95 & Peckham Road**	LOS A 7 sec	LOS C 22 sec Westbound left	LOS A 9 sec	LOS F 55 sec Westbound left
7	**US-95 & US-20/26**	LOS A 9 sec	LOS F 96 sec Southeastbound left	LOS A 6 sec	LOS F 78 sec Southeastbound left
8	**US-95 & Market Road**	LOS A 5 sec	LOS F 88 sec Westbound left	LOS A 1 sec	LOS E 40 sec Northwestbound left
9	**US-95 & Parma Road**	LOS C 23 sec	LOS F 161 sec Southbound left	LOS A 8 sec	LOS F 137 sec Southbound left
10	**US-95 & Roswell Blvd**	LOS A 7 sec	LOS C 23 sec Northbound left	LOS A 5 sec	LOS C 23 sec Northbound left
11	**US-95 & Klahr Road**	LOS B 12 sec	LOS B 14 sec Southbound left	LOS B 14 sec	LOS C 17 sec Southbound left
12	**US-95 & US-20/26 / Anderson Corner Road**	LOS A 6 sec	LOS C 24 sec Eastbound left	LOS A 8 sec	LOS D 32 sec Eastbound left
13	**SH-19 & Main St**	LOS C 16 sec	LOS C 20 sec Eastbound thru	LOS C 17 sec	LOS C 20 sec Westbound thru
14	**SH-19 & Notus Road**	LOS F 300+	LOS F 300+ Southbound left	LOS F 230 sec	LOS F 300+ Southbound left
15	**SH-19 & Farmway Road**	LOS C 23 sec	LOS F 168 sec Northbound left	LOS F 55 sec	LOS F 300+ Northbound left
16	**US-20/26 & Notus Road**	LOS A 3 sec	LOS C 24 sec Northbound left	LOS A 8 sec	LOS E 41 sec Northbound left
17	**US-20/26 & Conway Road**	LOS A 3 sec	LOS E 45 sec Southbound left	LOS A 2 sec	LOS E 50 sec Southbound left
18	**US-20/26 & Farmway Road**	LOS A 3 sec	LOS D 29 sec Northbound left	LOS A 8 sec	LOS F 61 sec Southbound left

300+ = calculated delay greater than 300 seconds, which is too large for the HCM deterministic model. Microsimulation software such as SimTraffic or VISSIM may yield more realistic delay, but it is still expected to operate at LOS F.

Table 11: Segment LOS – 2040 No Build

	Roadway Segment	2018 AADT		COMPASS Model 2040		COMPASS Model 2018		Projected 2040 AADT	Two-Lane Highway LOS
3	**US-95 (Idaho Ave to Homedale Rd)**	10,400	+	9,900	–	6,200	=	14,100	LOS E
8	**US-95/20/26 (US-95/20/26 Jct to Market Rd)**	8,900	+	18,900	–	10,900	=	16,900	LOS D
9	**US-95/20/26 (Market Road to Parma Rd)**	10,900	+	19,900	–	11,500	=	19,300	LOS E
10	**US-95/20/26 (Parma Road to SH-18)**	8,100	+	18,600	–	10,700	=	16,000	LOS E
15	**SH-19/Simplot Blvd (US-95 to Notus Rd)**	9,200	+	17,300	–	8,800	=	17,700	LOS E
19	**US-20/26 (US-95 to Notus Rd)**	7,300	+	19,800	–	10,600	=	16,500	LOS D
20	**US-20/26 (Notus Rd to Conway Rd)**	7,700	+	19,400	–	10,700	=	16,400	LOS E
21	**US-20/26 (Conway Rd to Farmway Rd)**	8,900	+	21,400	–	11,800	=	18,500	LOS E
22	**US-20/26 (Farmway Rd to I-84)**	11,100	+	22,700	–	13,000	=	20,800	LOS E

5.3 CORRIDOR TRAVEL TIMES

US-95, SH-19 and US-20/26 travel times for the 2040 No Build scenario (see **Table 12**) were estimated by calculating the increase in study area intersection segment delays between 2018 and 2040 adding them to the 2018 travel times. Intersection delays were calculated via intersection capacity analysis, discussed previously. Segment delays are expected to be minor and approximately uniform across all three corridors, and therefore were not calculated for this analysis.

Table 12: Travel Time Comparison – 2040 No Build, PM Peak Hour

Corridor		2018 Travel Times (Field-Measured)	2018 – 2040 Intersection Travel Time Increase	2040 Travel Times
US-95 (50.6 miles)	Northbound	51 min, 35 sec	+8 sec	51 min, 43 sec
	Southbound	49 min, 20 sec	+2 sec	49 min, 22 sec
SH-19 (19.8 miles)	Eastbound	24 min, 24 sec	+24 sec	24 min, 48 sec
	Westbound	23 min, 41 sec	+10 min, 22 sec	34 min, 3 sec
US-20/26 (21.8 miles)	Eastbound	23 min, 39 sec	+0 sec	23 min, 39 sec
	Westbound	23 min, 45 sec	+1 sec	23 min, 46 sec

US-95, US-20/26, and eastbound SH-19 are expected to have relatively small travel time increases in the 2040 No Build scenario. However, westbound SH-19 is expected to have larger travel time increases because of the westbound left turn delay at the congested US-95 & SH-19/Simplot Blvd intersection.

6. POTENTIAL CAPACITY IMPROVEMENTS ("BUILD")

Intersection capacity improvements (see **Table 13** below) were developed for all intersections that are expected to have unacceptable level of service in the 2040 No Build scenario (highlighted orange in **Table 10** in **Section 5**). Up to three improvement options were considered for each intersection, presented with no preference or priority; further engineering analysis will be required when the improvement projects are programmed in the ITIP for construction.

Table 13: Intersection Capacity Improvements

Intersection		Option 1	Option 2	Option 3
2	**US-95 & SH-19 / Idaho Ave**	Restripe median to provide a refuge for minor road left turning vehicles	Eliminate the east leg of the intersection; relocate airport access to the south	
3	**US-95 & Homedale Rd / Batt Corner Rd**	Widen pavement to provide a median refuge for minor road left turning vehicles	Traffic signal	Roundabout
5	**US-95 & SH-19 / Simplot Blvd**	Traffic signal	Roundabout	
6	**US-95 & Peckham Rd**	Add a westbound left turn lane	All-way stop	All-way stop with a US-95 "road diet" through Wilder (convert from four-lane to three-lane)[16]
7	**US-95 & US-20/26**	Restripe median to provide an acceleration/refuge lane for minor road left turning vehicles	Same as Option 1, but with a separated southbound thru lane and raised median (Green "T" Intersection)	
8	**US-95 & Market Rd**	Widen pavement to provide a median refuge or acceleration lane for minor road left turning vehicles	Widen Market Road to have dedicated right-turn and left-turn lanes	
9	**US-95 & Parma Rd**	Widen pavement to provide a median refuge or acceleration lane for minor road left turning vehicles	Widen Parma Road to have dedicated right-turn and left-turn lanes	
14	**SH-19 & Notus Rd**	Add a 2nd eastbound through lane; Add northbound and south-bound right turn lanes	Traffic signal	Roundabout
15	**SH-19 & Farmway Rd**	Traffic signal	Roundabout	
17	**US-20/26 & Conway Rd**	Widen pavement to provide median refuge or acceleration lane for minor road left turning vehicles	Widen Conway Road to have dedicated right-turn and left-turn lanes	
18	**US-20/26 & Farmway Rd**	Add southbound right turn lane	Traffic signal	Roundabout

[16] Projected 2040 AADT on adjacent Segments #6 and #7 are 12,200 and 6,100 vehicles, respectively; both of which are LOS C or better with a three-lane cross section.

Capacity was not evaluated for all roadway segments in the study area because most of them are expected to be far below capacity in 2040, considering their 2018 AADT and the study area's projected growth. However, the following segments are approaching capacity for two-lane highways (highlighted orange in **Table 11** in **Section 5**), and widening to four or five lanes is expected to be needed by 2040:

- Segment #3: US-95 (Idaho Ave to Homedale Rd)
- Segment #8: US-95/20/26 (US-95/20/26 Jct to Market Rd)
- Segment #9: US-95/20/26 (Market Rd to Parma Rd)
- Segment #10: US-95/20/26 (Parma Rd to SH-18 / Roswell Blvd)
- Segment #15: SH-19 (Main St to US-95)
- Segment #19: US-20/26 (US-95 to Notus Rd)
- Segment #20: US-20/26 (Notus Rd to Conway Rd)
- Segment #21: US-20/26 (Conway Rd to Farmway Rd)
- Segment #22: US-20/26 (Farmway Rd to I-84)

7. FUTURE CONDITIONS – 2040 "BUILD" SCENARIO

Intersection capacity and corridor travel times were then evaluated with the proposed improvements using 2040 traffic volume forecasts (i.e. "Build" scenario).

7.1 INTERSECTION CAPACITY ANALYSIS

Table 14 summarizes level of service and delay for select 2040 Build options at the study intersections shown previously in Table 13. Synchro and Sidra output sheets are included in **Appendix J**.

Table 14: Intersection LOS and Delay (seconds/vehicle) – 2040 Build

Intersection		AM Peak Hour		PM Peak Hour	
		Intersection Average	Worst Movement	Intersection Average	Worst Movement
2	**US-95 & SH-19 / Idaho Ave**				
	Option 1: Median Refuge	LOS A 9 sec	LOS C 25 sec Eastbound left	LOS A 6 sec	LOS C 19 sec Eastbound left
3	**US-95 & Homedale Rd / Batt Corner Rd**				
	Option 1: Median Refuge	LOS A 6 sec	LOS C 24 sec Northbound left	LOS A 6 sec	LOS D 25 sec Northbound left
	Option 2: Traffic Signal	LOS B 16 sec	LOS C 26 sec Northbound left	LOS B 14 sec	LOS C 21 sec Northbound left
	Option 3: Roundabout	LOS A 6 sec	LOS C 20 sec Southbound left	LOS A 5 sec	LOS B 15 sec Southbound left
5	**US-95 & SH-19 / Simplot Blvd**				
	Option 1: Traffic Signal	LOS B 16 sec	LOS D 36 sec Westbound left	LOS C 20 sec	LOS D 35 sec Southbound left
	Option 2: Roundabout	LOS A 9 sec	LOS B 16 sec Northbound left	LOS A 9 sec	LOS B 16 sec Westbound left
6	**US-95 & Peckham Road**				
	Option 1: Add WB Left Turn Lane	LOS A 7 sec	LOS C 23 sec Westbound left	LOS A 8 sec	LOS E 47 sec Westbound left
	Option 2: All-Way Stop	LOS B 12 sec	LOS B 13 sec Eastbound left	LOS B 14 sec	LOS C 19 sec Northbound left
	Option 3: Road Diet with All-Way Stop	LOS B 14 sec	LOS C 17 sec Northbound left	LOS B 14 sec	LOS C 16 sec Northbound left
7	**US-95 & US-20/26**				
	Option 1: Median Refuge	LOS A 3 sec	LOS C 22 sec Southwestbound left	LOS A 5 sec	LOS C 22 sec Southwestbound left
8	**US-95 & Market Road**				
	Option 1: Median Refuge	LOS A 2 sec	LOS C 19 sec Westbound left	LOS A 1 sec	LOS C 21 sec Westbound left
9	**US-95 & Parma Road**				
	Option 1: Median Refuge	LOS A 4 sec	LOS D 26 sec Southbound left	LOS A 2 sec	LOS C 24 sec Southbound left

(table continued next page)

14	**SH-19 & Notus Road**						
	Option 1: Add NB & SB Right Turn Lanes and a 2nd EB Through Lane	LOS F	300+	LOS F 300+ Southbound left		LOS F	144 sec	LOS F 300+ Southbound left	
	Option 2: Traffic Signal	LOS B	17 sec	LOS C 27 sec Southbound left		LOS B	11 sec	LOS C 28 sec Southbound left	
	Option 3: Roundabout	LOS A	9 sec	LOS B 17 sec Eastbound left		LOS A	8 sec	LOS B 18 sec Southbound left	
15	**SH-19 & Farmway Road**						
	Option 1: Traffic Signal	LOS C	24 sec	LOS D 40 sec Northbound left		LOS C	23 sec	LOS D 43 sec Northbound left	
	Option 2: Roundabout	LOS A	9 sec	LOS C 23 sec Northbound left		LOS A	9 sec	LOS B 19 sec Northbound left	
17	**US-20/26 & Conway Road**						
	Option 1: Median Refuge	LOS A	2 sec	LOS C 18 sec Southbound left		LOS A	1 sec	LOS C 19 sec Southbound left	
18	**US-20/26 & Farmway Road**						
	Option 1: Add SB Right Turn Lane	LOS A	3 sec	LOS D 29 sec Northbound left		LOS A	4 sec	LOS F 52 sec Northbound left	
	Option 2: Traffic Signal	LOS B	10 sec	LOS C 32 sec Southbound left		LOS B	15 sec	LOS C 39 sec Southbound left	
	Option 3: Roundabout	LOS A	9 sec	LOS B 19 sec Northbound left		LOS B	11 sec	LOS C 23 sec Southbound left	

300+ = calculated delay greater than 300 seconds, which is too large for the HCM deterministic model. Microsimulation software such as SimTraffic or VISSIM may yield more realistic delay, but it is still expected to operate at LOS F.

All but two of the listed improvements are expected to achieve acceptable LOS in 2040. The two options with unacceptable LOS (Intersection 14, Option 1 and Intersection 18, Option 1) are relatively low-cost, interim improvements to be implemented while funding is being secured for more comprehensive solutions.

7.2 CORRIDOR TRAVEL TIMES

US-95, SH-19 and US-20/26 travel times for the 2040 Build scenario (see **Table 15**) were estimated by calculating the increase in study area intersection delays between 2018 and 2040 adding them to the 2018 travel times. For intersections with multiple Build options, the options with the lowest average intersection delay were used to calculate travel time.

Table 15: Travel Time Comparison – 2040 Build, PM Peak Hour

Corridor		2018 Travel Times (Field-Measured)	2018 – 2040 Intersection Travel Time Increase (No Build)	2040 Travel Times (No Build)	2018 – 2040 Intersection Travel Time Increase (Build)[17]	2040 Travel Times (Build)
US-95 (50.6 mi)	Northbound	51 min, 35 sec	+8 sec	51 min, 43 sec	+34 sec	52 min, 9 sec
	Southbound	49 min, 20 sec	+2 sec	49 min, 22 sec	+27 sec	49 min, 47 sec
SH-19 (19.8 mi)	Eastbound	24 min, 24 sec	+24 sec	24 min, 48 sec	+36 sec	25 min, 0 sec
	Westbound	23 min, 41 sec	+10 min, 22 sec	34 min, 3 sec	-1 sec	23 min, 40 sec
US-20/26 (21.8 mi)	Eastbound	23 min, 39 sec	+0 sec	23 min, 39 sec	+9 sec	23 min, 48 sec
	Westbound	23 min, 45 sec	+1 sec	23 min, 46 sec	+10 sec	23 min, 55 sec

Compared to the 2040 No Build travel times, 2040 Build travel times for US-95, US-20/26, and eastbound SH-19 would be slightly longer than 2040 No Build travel times. This is to be expected because Build improvements such as all-way stops, traffic signals and roundabouts introduce small delays to major street traffic in order to reduce large delays for minor street traffic. Westbound SH-19 would have much shorter travel time as a result of the Build improvements because the westbound left turn delay at US-95 & SH-19/Simplot Blvd would be reduced from over 300 seconds to only 16 seconds.

[17] Should the roadway segment widening discussed in Section 6 occur, it is expected that mainline delay through intersections will be slightly lower, and therefore increases in 2040 Build travel time will be slightly lower than shown in Table 15.

8. PUBLIC INVOLVEMENT

8.1 STAKEHOLDER INVOLVEMENT

A stakeholder meeting was held on Monday, April 8, 2019 immediately following a Caldwell Chamber of Commerce Transportation Committee meeting. ITD and the consultant team requested input from the attendees regarding a draft of the proposed capacity and safety improvements. In attendance at the stakeholder meeting were:

- Doug Amick, City of Greenleaf
- Gordon Bates, Golden Gate Highway District #3
- Lee Belt, City of Greenleaf
- Alex Grover, Keller Associates
- Dave Jones, Canyon Highway District #4
- Stephen Lewis, Keller Associates
- Jake Melder, Idaho Transportation Department
- Patricia Nilsson, Canyon County Development Services
- Mayor Dave Porterfield, City of Notus
- Sajonara Tipuric, City of Caldwell
- Lynn Troxel, Notus-Parma Highway District #2
- Mark Wasdahl, Idaho Transportation Department

Stakeholder comments were gathered during the meeting and via email in the days following the meeting. Meeting minutes and comment responses are included in **Appendix K**.

In addition, ITD and the consultant team received input from J.R. Simplot Company via conference call regarding the proposed capacity and safety improvements. Meeting minutes are included in **Appendix K**.

Key outcomes from the stakeholder input are detailed below.

- Severe crashes at non-study intersections were investigated and improvements developed (see **Table 6** in **Section 3** of this report)
- As part of a summer 2019 resurfacing project, SH-19 within the City of Greenleaf was restriped from a two-lane roadway with on-street parking to a three-lane roadway without parking, following approval from City Council.
- Pavement widening was recommended as part of the proposed “median refuge” improvements (see **Table 13**) at select intersections. This was added to ensure a minimum paved shoulder width of four feet to accommodate bicycles.
- A future Road Safety Audit (RSA) was suggested to refine the safety analysis and improvements proposed in this study.

8.2 PUBLIC OPEN HOUSE MEETINGS

Five public open house meetings were held at the following dates and locations to gather public input on the proposed capacity and safety improvements:

- Thursday, Aug. 8, 2019 – City of Wilder
- Monday, Aug. 14, 2019 – City of Notus
- Thursday, Aug. 29, 2019 – City of Homedale
- Tuesday, Sep. 3, 2019 – City of Greenleaf
- Wednesday, Sep. 4, 2019 – City of Parma

Display boards were set up at each meeting. ITD and the consultant team were present to explain the study and answer questions. The meeting attendants were encouraged to fill out comment forms or visit the project website and leave comments on an interactive GIS "Story Map" that was developed by ITD staff for this project.

ITD contracted with Rosemary Brennan Curtin, Inc. (RBCI) to assist with the open houses. This included providing some of the display boards, coordinating with local agencies to set meeting times and locations, attending the open houses, and collecting and compiling comments from the meeting attendants. Following the meetings, RBCI compiled a summary of the open houses and comments received (see **Appendix L**). Key outcomes and conclusions from the open houses are detailed in the following sections.

8.2.1 General

- Rumble strip improvements (see **Table 8**) should be subject to a noise study prior to installation. Public comments were supportive of rumble strips.
- Some meeting attendants were supportive of roundabouts, while others were opposed. The opposition was concerned about accommodating semi-trucks and safety issues caused by other drivers not understanding how to correctly navigate roundabouts.

8.2.2 Intersections

- Intersection #5, US-95 & SH-19 / Simplot Blvd – Public comments favored a roundabout over a traffic signal.
- Intersection #10, US-95/20/26 & SH-18 / Roswell Blvd – Although safety and capacity analyses in this study did not indicate any issues out to 2040, many residents commented on the need for changes to this intersection. The Jackson's convenience store on the northeast corner was often mentioned as a landmark and potential source of truck and vehicle traffic.
- Intersection #12, US-95 & US-20/26 / Anderson Corner Rd – Public comments were generally skeptical about a roundabout or Restricted-Crossing U-Turn (RCUT) design at this intersection due to truck traffic.
- Intersection #14, SH-19 & Notus Rd – Public comments favored a traffic signal over a roundabout. In the short term, a median refuge or acceleration lane is desired on SH-19 for southbound Notus Road traffic turning left onto SH-19.
- Intersection #15, SH-19 & Farmway Rd – Public comments favored a traffic signal over a roundabout due to truck traffic and proximity of the railroad crossing.

- Intersection #16, US-20/26 & Notus Rd – Improvements are desired to ensure gravel trucks do not stop with their trailers on the railroad tracks. Currently, there is only 70 feet between the stop bar and railroad tracks. A free-running right-turn onto US-20/26, followed by a merge, is a possible solution.
- US-95/20/26 & Pearl Road – Sight distance, turn lanes, and/or corner radii improvements are desired to improve safety for farming trucks.
- US-95/20/26 & Locker Road – Sight distance, turn lanes, and/or corner radii improvements are desired to improve safety for farming trucks.
- US-95/20/26 & Parma Rural Fire Station access – Meeting attendees considered the existing intersection unsafe and desired turn lanes and flashing beacons.

8.2.3 Roadway Segments

- Segment #10, US-95/20/26 (Parma Rd to SH-18 / Roswell Blvd) – Pedestrian and bicycle safety improvements, such as marked crosswalks, are desired within Parma along US-95/20/26.
- Segment #14, SH-19 (Oregon State Line to Main St) – Pedestrian and bicycle safety improvements are desired within Homedale along SH-19 / Idaho Avenue.
- Segment #15, SH-19 (Main St to US-95) – Pedestrian and bicycle safety improvements are desired within Homedale along SH-19 / Idaho Avenue.
- Segment #18, US-20/26 (Oregon State Line to US-95) – A center two-way left turn lane is desired to improve safety by providing a refuge for vehicles and trucks turning left onto and from US-20/26.

8.2.4 Miscellaneous

- Several meeting attendants asked about or commented on the need for a US-95/20/26 bypass or alternate route to the east and north of Parma. The commonly suggested alignment for this route was Shelton Road to Klahr Road. Attendants thought US-95/20/26 truck and traffic volumes within Parma are currently too high or will be too high in the future if US-20/26 is widened between Parma and I-84. A bypass may be preferable to widening US-95/20/26 within Parma city limits considering the associated right-of-way and property impacts.
- The Oregon Department of Transportation (ODOT) categorizes US-95 within Idaho as a “paired route” and has committed to the trucking industry to accommodate oversized loads on it when I-84 is restricted. Past oversized loads have been up to 24 feet wide and 250 feet long. ODOT requests that these oversized loads are considered in the improvement selection process, especially when considering roundabouts or RCUTs.
- The most recent City of Nyssa Transportation System Plan identified a project to extend bike lanes on US-20/26 to Riverfront Park, adjacent to the Snake River ridge and Idaho-Oregon state line. To maintain bike lane connectivity, improvements to Segment #18 should accommodate bike lanes across the Snake River Bridge to appropriate connection or termination points on the Idaho side of the Snake River.

9. ACCESS MANAGEMENT

Access spacing and access management practices along US-95, US-20/26, and SH-19 within the study area should adhere to Idaho Administrative Procedures Act (IDAPA) 39.03.42: Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way. Canyon County (Association of Canyon County Highway Districts; ACCHD) and Owyhee County development standards have access policies that are stricter in some cases and should also be enforced along state highways.

The purpose of access management is to maintain an appropriate balance between three transportation needs: access, mobility and safety. Unrestricted access to US-95, US-20/26, and SH-19 would make the highways less safe and more congested.

9.1 IDAHO ADMINISTRATIVE PROCEDURES ACT

Table 16 and its accompanying figure (IDAPA 39.03.42) summarizes access spacing rules for ITD highways. Standards that are pertinent to the study area highways are outlined in red.

IDAPA Highway Type and Area Type definitions are as follows:

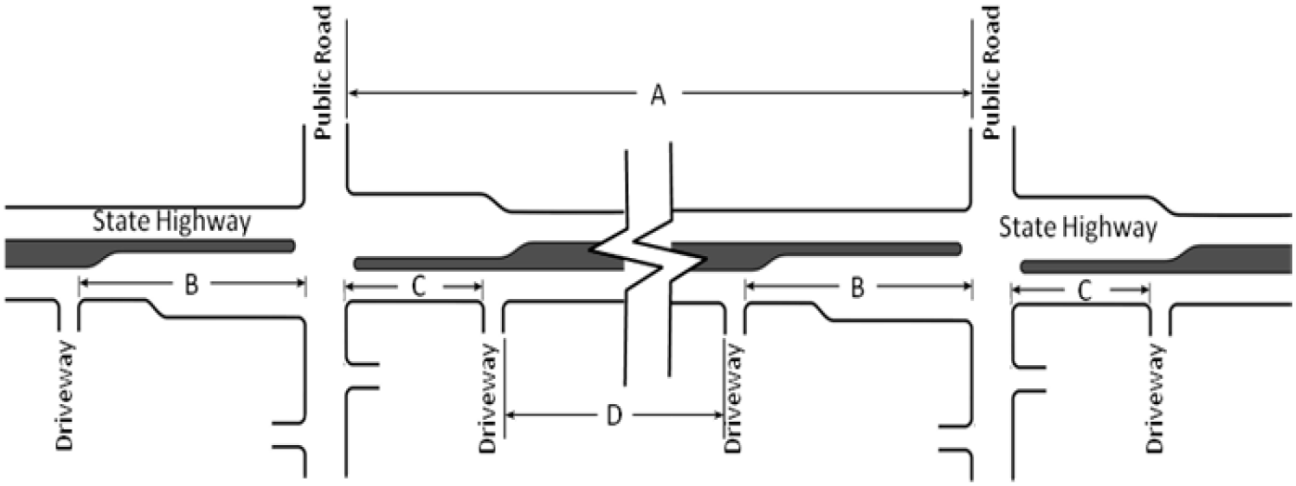
- Statewide Route – A state highway that provides the highest level of mobility and speeds over long distances. Access from a statewide route to communities and major activity centers should be by way of public roads with spacing that supports mobility and speed. ***US-95 within the study area is classified as a Statewide Route.***
- Regional Route – A state highway that accommodates trips of moderate length with a lower level of mobility than a Statewide Route and that provides moderate access to communities, to include providing mobility for people and freight through and between communities and major activity centers of the region**.** ***Within the study area, portions of US-20/26 and SH-19 that do not overlap US-95 (see Figure 1 in Section 1) are classified as Regional Routes.***
- Urban – State highway rights-of-way and right-of-way corridors within the limits of any incorporated city.
- Transitional – State highway rights-of-way and right-of-way corridors within the area of city impact of any incorporated city, or areas designated as an area of city impact by city or county comprehensive plans.
- Rural – State highway rights-of-way and right-of-way corridors outside the limits of Urban and Transitional areas.

Table 16: IDAPA Access Spacing

HIGHWAY TYPE	AREA TYPE	Signalized Road Spacing	Public Road Spacing (A)	Driveway Distance Upstream From Public Road Intersection (B)	Driveway Distance Downstream From Unsignalized Public Road Intersection (C)	Distance Between Unsignalized Accesses Other Than Public Roads (D)
Interstate	All	Accessible only by interchanges (ramps) and requires approval by the Board and Federal Highway Administration.				
Freeway	All	Accessible only by interchanges (ramps).				
Expressway	All	Accessible only at locations specified by the Department.				
Statewide Route	Rural	5,280 ft	5,280 ft	1,000 ft	650 ft	650 ft
	Transitional	5,280 ft	2,640 ft	760 ft	500 ft	500 ft
	Urban >35 mph	2,640 ft	1,320 ft	790 ft	500 ft	500 ft
	Urban ≤35 mph	2,640 ft	1,320 ft	790 ft	250 ft**	250 ft**
Regional Route	Rural	5,280 ft	2,640 ft	1,000 ft	650 ft	650 ft
	Transitional	2,640 ft	1,320 ft	690 ft	360 ft**	360 ft**
	Urban >35 mph	2,640 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban ≤35 mph	2,640 ft	660 ft	660 ft	250 ft**	250 ft**
District Route	Rural	2,640 ft	1,320 ft	760 ft	500 ft	500 ft
	Transitional	2,640 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban >35 mph	1,320 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban ≤35 mph	1,320 ft	660 ft	660 ft	250 ft**	250 ft**

*Distances in table are minimums based on optimal operational and safety conditions such as adequate sight distance and level grade. Definitions of spacing designated by (A), (B), (C), and (D) are represented on Figure 1.

** Where the public road intersection or private access intersection is signalized, the distances in the table are for driveways restricted to right-in/right-out movements only. For unrestricted driveways the minimum distance shall be 500 feet from a signalized intersection.

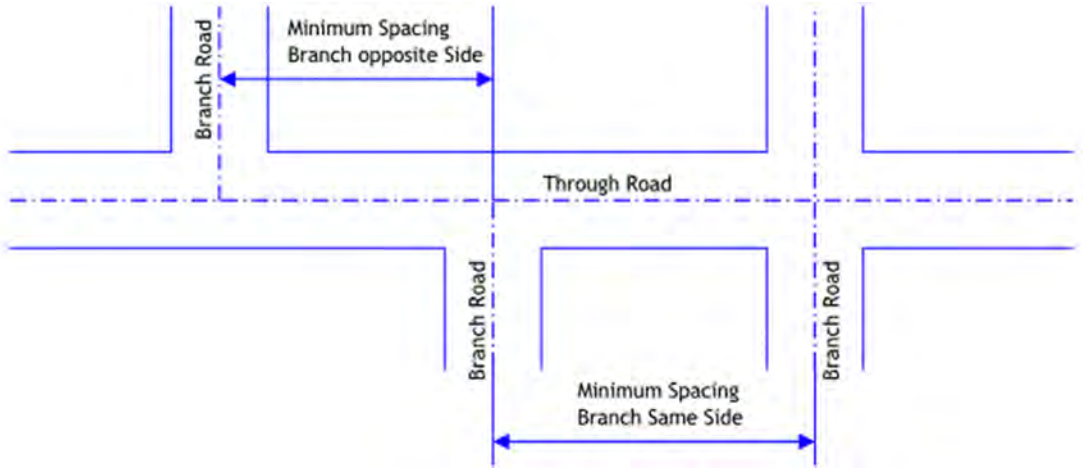


9.2 ASSOCIATION OF CANYON COUNTY HIGHWAY DISTRICTS (ACCHD)

Table 17 and its accompanying figure summarizes ACCHD access spacing policies. Standards that are pertinent to the study area highways are outlined in red.

Table 17: ACCHD Intersection and Approach Policy[18]

Area Type	Through Roadway	Branch Roadway	Minimum Spacing		Driveway Spacing	
			Same Side of Road	Opposite Side of Road	Minor Generator (51-5,000)	Major Generator (5,000+)
Rural Roadway	Principal Arterial	Arterial	5,280 ft	5,280 ft	No New Access	
		Collector	2,640 ft	2,640 ft		
	Minor Arterial	Arterial	2,640 ft	2,640 ft		
		Collector	1,320 ft	1,320 ft		
	Major Collector	Collector	1,320 ft	660 ft	660 ft	1,320 ft
		Local	660 ft	330 ft		
	Minor Collector	Collector	1,320 ft	660 ft	315 ft	405 ft
		Local	660 ft	330 ft		
		Private	660 ft	330 ft		
	Local	Local	660 ft	330 ft	270 ft	360 ft
		Private	660 ft	330 ft		
Urban Roadway	Principal Arterial	Arterial	5,000 ft	5,000 ft	No New Access	
		Collector	2,000 ft	2,000 ft		
	Minor Arterial	Arterial	2,500 ft	2,500 ft		
		Collector	1,300 ft	1,300 ft		
	Major Collector	Collector	1,300 ft	1,300 ft	350 ft	410 ft
		Local	500 ft	250 ft		
	Minor Collector	Collector	1,300 ft	500 ft	175 ft	210 ft
		Local	500 ft	250 ft		
		Private	500 ft	250 ft		
	Local	Local	250 ft	125 ft	100 ft	125 ft
		Private	250 ft	125 ft		



[18] Source: ACCHD Highway Standards & Development Procedures (2017)

9.3 OWYHEE COUNTY

Table 18 below summarizes Owyhee County access spacing policies. Owyhee County does not have policies for arterials because the only arterials in the county are US-95 and SH-55, which are governed by IDAPA.

Table 18: Owyhee County Intersection and Approach Policy[19]

Area Type	Through Roadway	Branch Roadway	Minimum Spacing		Driveway Spacing	
			Same Side of Road	Opposite Side of Road	Minor Generator (51-5,000)	Major Generator (5,000+)
Rural Roadway	Major Collector	Collector	1,320 ft	660 ft	No New Access	
		Local	660 ft	330 ft		
	Minor Collector	Collector	1,320 ft	660 ft	315 ft	405 ft
		Local	660 ft	330 ft		
		Private	660 ft	330 ft		
	Local	Local	660 ft	330 ft	270 ft	360 ft
		Private	660 ft	330 ft		
Urban Roadway	Major Collector	Collector	1,300 ft	650 ft	No New Access	
		Local	500 ft	250 ft		
	Minor Collector	Collector	1,300 ft	650 ft	175 ft	210 ft
		Local	500 ft	250 ft		
		Private	500 ft	250 ft		
	Local	Local	250 ft	125 ft	100 ft	125 ft
		Private	250 ft	125 ft		

9.4 ACCESS MANAGEMENT SUMMARY

Canyon County highways are subject to both IDAPA and ACCHD access policies. Within Canyon County, new roadways, driveways or accesses onto US-95, US-20/26 and SH-19 are not permitted without a variance issued by the appropriate Highway District. Existing accesses that are not compliant with either IDAPA or ACCHD policies should be consolidated or closed when possible.

Owyhee County does not specify an access policy for arterials such as US-95 and SH-55. Therefore, IDAPA policy alone governs US-95 within Owyhee County. New roadways, driveways or access onto US-95 must comply with IDAPA access policy. Existing access that are not compliant should be consolidated or closed when possible.

The potential safety and capacity improvements discussed in **Sections 4 and 6** of this report, respectively, are not expected to conflict with current access management policies. Therefore, no changes to current access management policies are recommended.

[19] Source: Owyhee County Highway Standards & Development Procedures (2017)

10. CONCLUSIONS

10.1 EXISTING CONDITIONS AND IMPROVEMENTS

US-95, SH-19, and US-20/26 are all classified as Regional Corridors in the 2017 COMPASS Freight Study. They serve as the backbone of the freight network and primarily move freight across or through the region. SH-19 and US-20/26 near Caldwell are situated within one of the Treasure Valley's four Primary Freight Clusters, as identified in the 2017 COMPASS Freight Study.

10.1.1 Capacity Improvements

Traffic signal and roundabout improvement options were proposed for the two intersections listed below; they currently have unacceptable level of service (LOS) during the PM Peak Hour, suggesting improvements are currently needed to increase traffic capacity.

- Intersection #5, US-95 & SH-19 / Simplot Blvd
- Intersection #15, SH-19 & Farmway Road

10.1.2 Safety Improvements

SH-19 between Caldwell and US-95 tends to have the highest crash risk in the study area; this includes the major intersections along the segment. US-20/26 from Notus to the US-95 junction has had an unusually high number of fatalities in recent years. Safety improvements were proposed (see **Section 4**) for the highest-risk intersections and segments in the study area:

- Intersection #1, US-95 & SH-55 / Buntrock Road
- Intersection #5, US-95 & SH-19 / Simplot Blvd
- Intersection #12, US-95 & US-20/26 / Anderson Corner Road
- Intersection #14, SH-19 & Notus Road
- Intersection #15, SH-19 & Farmway Road
- Intersection[20], US-95 & Lower Pleasant Ridge Road
- Intersection[20], US-95 & Red Top Road
- Intersection[20], US-20/26 & Wilson Lane[21]
- Segment #2, US-95 (SH-55 to SH-19 / Idaho Ave)
- Segment #7, US-95 (Peckham Road to US-20/26)
- Segment #8, US-95/20/26 (US-95/20/26 Jct to Market Road)
- Segment #14, SH-19 (Main St to US-95)
- Segment #15, SH-19 (US-95 to Notus Road)
- Segment #16, SH-19 (Notus Rd to Farmway Road)
- Segment #17, SH-19 (Farmway Rd to Cleveland Blvd)

[20] Outside of the original 18 study intersections

[21] Wilson Lane is a private road; ITD would not normally make improvements for this intersection.

- Segment #18, US-20/26 (Oregon State Line to US-95)
- Segment #19, US-20/26 (US-95 to Notus Road)

10.2 FUTURE CONDITIONS AND IMPROVEMENTS

Eleven of 18 study intersections are expected to have capacity issues in the 2040 No Build Scenario; see **Section 6** for proposed "Build" improvements.

- Intersection #2, US-95 & SH-19 / Idaho Ave
- Intersection #3, US-95 & Homedale Rd / Batt Corner Rd
- Intersection #5, US-95 & SH-19 / Simplot Blvd
- Intersection #6, US-95 & Peckham Rd
- Intersection #7, US-95 & US-20/26
- Intersection #8, US-95 & Market Rd
- Intersection #9, US-95 & Parma Rd
- Intersection #14, SH-19 & Notus Rd
- Intersection #15, SH-19 & Farmway Rd
- Intersection #17, US-20/26 & Conway Rd
- Intersection #18, US-20/26 & Farmway Rd

Nine of 22 study segments are expected to have capacity issues in the 2040 No Build scenario. Widening to four or five lanes is expected to be needed by 2040.

- Segment #3: US-95 (Idaho Ave to Homedale Rd)
- Segment #8: US-95/20/26 (US-95/20/26 Jct to Market Rd)
- Segment #9: US-95/20/26 (Market Rd to Parma Rd)
- Segment #10: US-95/20/26 (Parma Rd to SH-18 / Roswell Blvd)
- Segment #15: SH-19 (Main St to US-95)
- Segment #19: US-20/26 (US-95 to Notus Rd)
- Segment #20: US-20/26 (Notus Rd to Conway Rd)
- Segment #21: US-20/26 (Conway Rd to Farmway Rd)
- Segment #22: US-20/26 (Farmway Rd to I-84)

Proposed intersection improvements are expected to significantly improve travel times for SH-19 because the westbound left turn delay at US-95 & SH-19 / Simplot Blvd is expected to be reduced from over 300 seconds to less than 16 seconds. Other intersection improvements are expected to slightly increase travel times along US-95 and US-20/26; this is to be expected because Build improvements such as all-way stops, traffic signals and roundabouts introduce small delays to major street traffic in order to reduce large delays for minor street traffic.

10.3 PUBLIC INVOLVEMENT

Key outcomes from stakeholder meetings and input are detailed below:

- Severe crashes at non-study intersections were investigated and improvements developed (see **Table 6** in **Section 3** of this report)
- As part of a summer 2019 resurfacing project, SH-19 within the City of Greenleaf was restriped from a two-lane roadway with on-street parking to a three-lane roadway without parking, following approval from City Council.
- Pavement widening was recommended as part of the proposed "median refuge" improvements (see **Table 13**) at select intersections. This was added to ensure a minimum paved shoulder width of four feet to accommodate bicycles.
- A future Road Safety Audit (RSA) was suggested to refine the safety analysis and improvements proposed in this study.

Key outcomes from public open house meetings held in Wilder, Notus, Homedale, Greenland, Parma are detailed below:

- Rumble strip improvements (see **Table 8**) should be subject to a noise study prior to installation. Public comments were supportive of rumble strips.
- Some meeting attendants were supportive of roundabouts, while others were opposed. The opposition was concerned about accommodating semi-trucks and safety issues caused by other drivers not understanding how to correctly navigate roundabouts.
- Various comments on potential intersection improvements (see Section 8.2)
- Various comments on potential segment improvements (see Section 8.2)
- Several meeting attendants asked about or commented on the need for a US-95/20/26 bypass or alternate route to the east and north of Parma. A bypass may be preferable to widening US-95/20/26 within Parma city limits considering the associated right-of-way and property impacts.
- The Oregon Department of Transportation (ODOT) categorizes US-95 within Idaho as a "paired route" and has committed to the trucking industry to accommodate oversized loads on it when I-84 is restricted. ODOT requests that these oversized loads are considered in the improvement selection process, especially when considering roundabouts or RCUTs.
- The most recent City of Nyssa Transportation System Plan identified a project to extend bike lanes on US-20/26 to Riverfront Park, adjacent to the Snake River ridge and Idaho-Oregon state line. To maintain bike lane connectivity, improvements to Segment #18 should accommodate bike lanes across the Snake River Bridge to appropriate connection or termination points on the Idaho side of the Snake River.

10.4 ACCESS MANAGEMENT

The potential safety and capacity improvements discussed in **Sections 4 and 6** of this report, respectively, are not expected to conflict with current access management policies. Therefore, no changes to current access management policies are proposed.