

Phoenix-Talent School District  
UGB Expansion &  
Minor Comprehensive Plan  
Map Amendment  
Application

Traffic Impact Study

September 16, 2022

Prepared By:



*TRANSPORTATION  
ENGINEERING, LLC*

*SOUTHERN OREGON TRANSPORTATION ENGINEERING, LLC*

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# I. EXECUTIVE SUMMARY

## Summary

Southern Oregon Transportation Engineering, LLC prepared a traffic impact study for a proposed Urban Growth Boundary (UGB) Expansion and Minor Comprehensive Plan Map Amendment from Exclusive Farm Use (EFU) to Parks and Public Facilities (Civic) on approximately 43 acres located at 6100 Colver Road (381W22D, tax lot 1000) in Talent, Oregon. Currently, this property serves as a sports complex and bus barn for the Phoenix-Talent School District. Access is provided on Colver Road in four existing driveways.

A traffic impact study may be required by the City of Talent or Jackson County at the time of UGB amendment to address Goal 14 and Division 12 of the Transportation Planning Rule (TPR). The Applicant has elected to provide this study to avoid delays in reviewing the UGB amendment in the event one or the other jurisdictions require it. Moreover, the District intends to use this study to move forward the actual development approvals for the property following the UGB amendment. The analysis was scoped in June of 2022 with said Agencies and addresses peak hour impacts for proposed development based on the addition of three little league fields, one softball field, a 28,000 square foot (SF) multi-purpose recreational building, and 8,170 SF after school program. Development is planned in two phases. Phase 1 includes construction of three little league fields and one softball field. Phase 2 includes a multi-purpose recreational building and after school program. The design year for Phase 1 development and possibly Phase 2 is year 2027. Full buildout is estimated to generate 1,327 average daily trips (ADT) with 73 trips occurring during the a.m. peak hour and 155 trips during the p.m. peak hour.

Three intersections and all site driveways were included in the study area. Study area intersections and driveways were evaluated under existing year 2022, design year 2027, and future year 2038 conditions.

## Conclusions

The findings of the traffic impact study conclude that the proposed minor comprehensive plan map amendment from EFU to Parks and Public Facilities (Civic) on the subject property (38-01-22D TL 1000) can be approved with proposed mitigation without creating adverse impacts on the transportation system. Results of the analysis are as follows:

1. All study area intersections and driveways are shown to operate within target performance standards under existing year 2022, design year 2027, and future year 2038 conditions with and without proposed development during the p.m. peak hour.
2. 95<sup>th</sup> percentile queue lengths are shown to reach their available storage length at two locations within the study area. This occurs northbound on Talent Avenue at Colver Road and eastbound on Colver Road at OR 99. Both are caused by closely spaced intersections. Neither is considered a safety concern and no mitigation is shown to be necessary.
3. No study area intersection or roadway segment is shown to have a crash rate exceeding the critical crash rate or have reported collisions resulting in severe injury or fatality. No intersection is concluded to require mitigation or further investigation.
4. Criterion for a westbound left turn lane on Colver Road at the planned, future Wagner Creek Road extension is shown to be met under design year 2027 and future year 2038 full build (Phases

1 and 2) conditions. A left turn lane is not warranted under design year 2027 Phase 1 build conditions or future year 2038 conditions without a Wagner Creek Road extension. The trigger for the left turn lane is either Phase 2 development in design year 2027 or with the Wagner Creek Road extension in future year 2038. A center turn lane is, therefore, recommended at the time of full development or at such time Wagner Creek Road is extended to Colver Road.

The proposed development is in compliance with the City of Talent Comprehensive Plan, pursuant to the Public Facilities and Services Element, Section 5.1.2. Streets that serve the subject property will accommodate projected p.m. peak hour traffic volumes without significant impacts.

## II. INTRODUCTION

### Background

Southern Oregon Transportation Engineering, LLC prepared a traffic impact study for a proposed Urban Growth Boundary (UGB) Expansion and Minor Comprehensive Plan Map Amendment from Exclusive Farm Use (EFU) to Parks and Public Facilities (Civic) on approximately 43 acres located at 6100 Colver Road (381W22D, tax lot 1000) in Talent, Oregon. Currently, this property serves as a sports complex and bus barn for the Phoenix-Talent School District. Access is provided on Colver Road in four existing driveways.

A traffic impact study may be required by the City of Talent or Jackson County at the time of UGB amendment to address Goal 14 and Division 12 of the Transportation Planning Rule (TPR). The Applicant has elected to provide this study to avoid delays in reviewing the UGB amendment in the event one or the other jurisdictions require it. Moreover, the District intends to use this study to move forward the actual development approvals for the property following the UGB amendment. The analysis was scoped in June of 2022 with said Agencies and addresses peak hour impacts for proposed development based on the addition of three little league fields, one softball field, a 28,000 square foot (SF) multi-purpose recreational building, and 8,170 SF after school program at full buildout. Development is planned in two phases. Phase 1 includes construction of three little league fields and one softball field. Phase 2 includes a multi-purpose recreational building and after school program. The design year for Phase 1 development and possibly Phase 2 is year 2027. Full buildout is estimated to generate 1,327 average daily trips (ADT) with 73 trips occurring during the a.m. peak hour and 155 trips during the p.m. peak hour.

Three intersections and all site driveways were included in the study area. Study area intersections and driveways were evaluated under existing year 2022, design year 2027, and future year 2038 conditions.

### Project Location

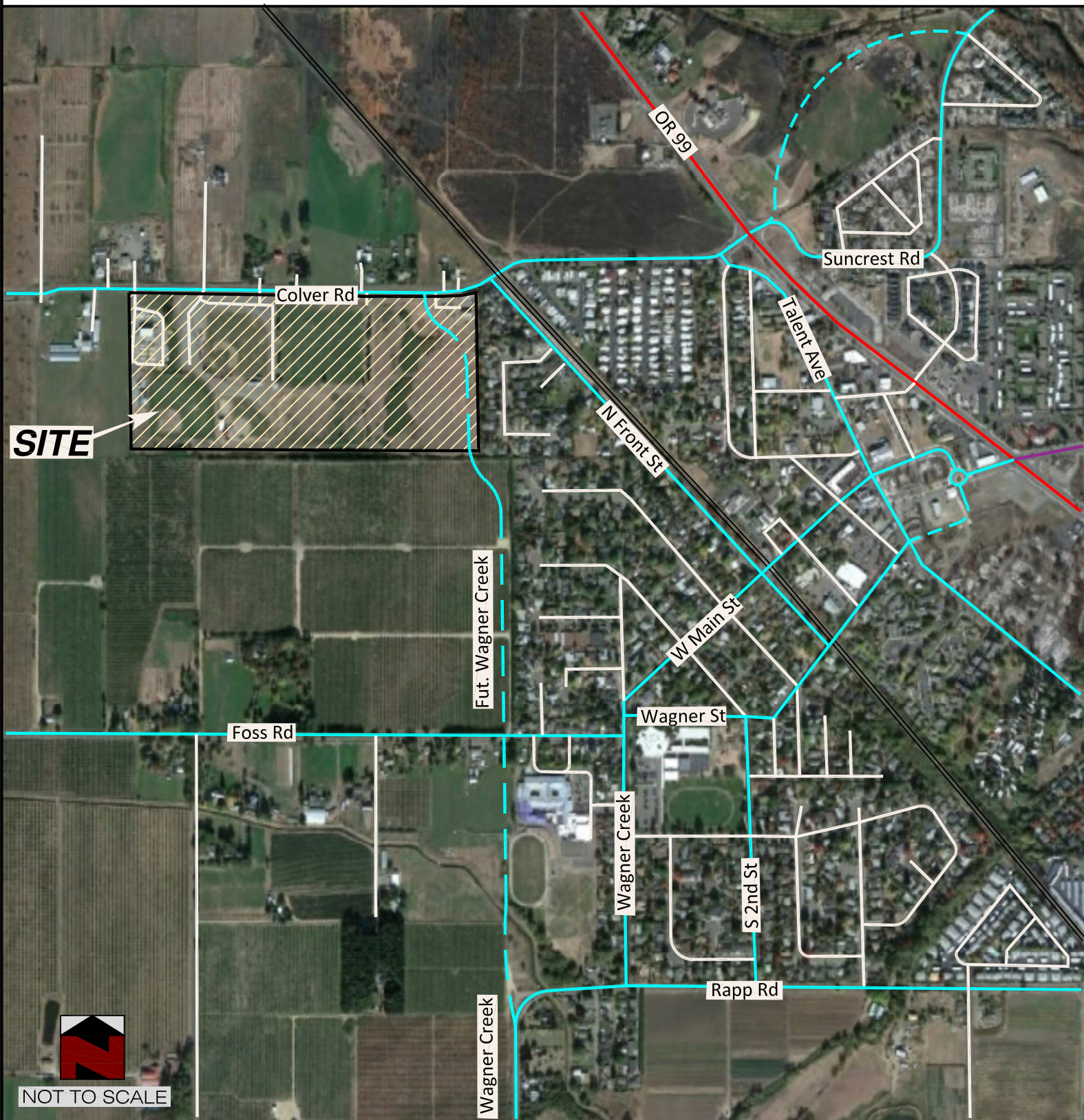
The subject property is approximately 43 acres in size and located at 6100 Colver Road on Township 38S Range 1W Section 22D, tax lot 1000 in Talent, Oregon. Refer to Figures 1 and 2 for a vicinity map and concept plan.

### Project Description

The subject property is zoned Exclusive Farm Use (EFU), which allows the existing and proposed school district uses as conditional uses. The change in comprehensive plan from EFU to Parks and Public Facilities (Civic) is proposed to comply with the City of Talent zoning district for TA-1, which will continue to permit the development of schools and public use. Proposed development is estimated to generate approximately 1,327 ADT with 73 trips occurring during the a.m. peak hour and 155 trips during the p.m. peak hour. Currently, the site includes two baseball fields, two soccer fields, a softball field, a cross-country course, a maintenance building, and a bus barn. Phase 1 development includes three little league fields and one softball field. Phase 2 includes a 28,000 SF multi-purpose recreational building and 8,170 SF after school program.



**Figure 1: Vicinity Map**



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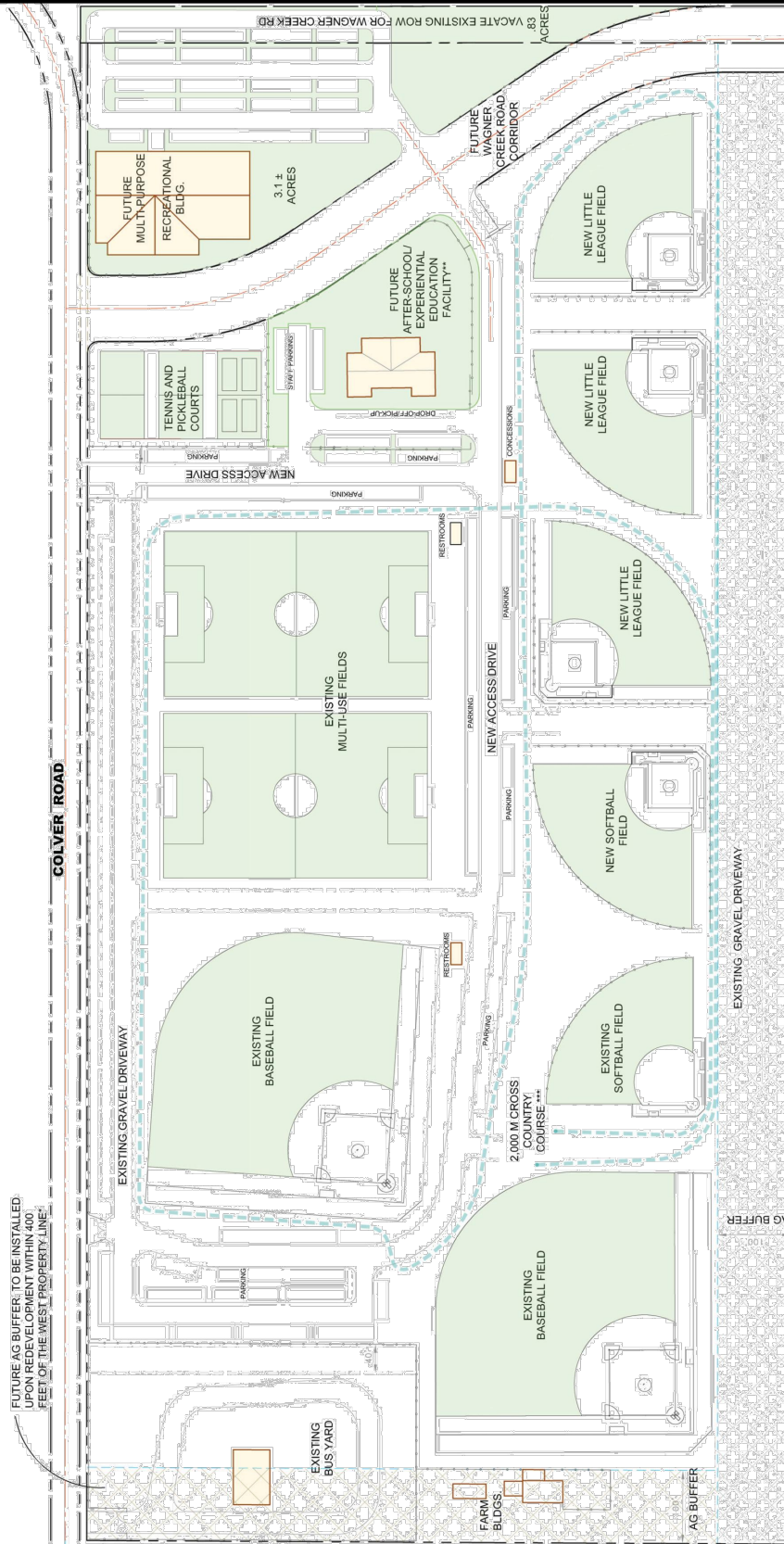
**Phoenix-Talent School District  
Minor Comp Plan Amendment  
Traffic Impact Study  
Talent, Oregon**



# Figure 2: Colver Road Educational Facilities Concept Plan



NOT TO SCALE



FUTURE AG BUFFER: TO BE INSTALLED UPON REDEVELOPMENT WITHIN 400 FEET OF THE WEST PROPERTY LINE.  
 REDEVELOPMENT EXCLUDES REHABILITATION OF EXISTING FIELDS.  
 \*\* CURRENTLY PLANNED TO BE HOME OF OUTDOOR DISCOVERY PROGRAM AND BOYS & GIRLS CLUB  
 \*\*\* CONCEPTUAL EXAMPLE OF CROSS-COUNTRY ROUTE. ACTUAL ROUTE TO BE DESIGNED. BLOCKADES MAY BE NEEDED WHERE ROUTE CROSSES DRIVE ANGLES.

	DATE: 1/4/22 SCALE: NTS	<b>PHOENIX-TALENT SCHOOLS</b>	<b>COLVER ROAD EDUCATIONAL FACILITIES CONCEPT PLAN</b>	OPTIO <b>4</b>
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NOTE: THIS MAP WAS DEVELOPED FOR ILLUSTRATION ONLY AND IS NOT A SURVEY. ACTUAL CONDITIONS MAY VARY.



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### III. EXISTING YEAR 2022 NO-BUILD CONDITIONS

#### Site Conditions

The subject property is located at 6100 Colver Road in Talent, Oregon on Township 38S Range 1W Section 22D, tax lot 1000. The site is currently development with sports fields, a maintenance building, and a bus barn for the Phoenix-Talent School District. Access is provided from Colver Road.

#### Roadway Characteristics

The project study area includes intersections along Colver Road between the bus barn and OR 99. Study area intersections are analyzed in accordance with City of Talent, Jackson County, and ODOT standards.

Table 1 provides a summary of existing roadway classifications and descriptions in the study area.

Table 1 - Roadway Classifications and Descriptions					
Roadway	Jurisdiction	Functional Classification	Lanes	Sidewalks / Bike Lanes	Posted Speed (MPH)
Colver Road	Jackson County	Major Collector	2	No / No	35-45
N Front Street	City of Talent	Collector	2	Yes / No	25
Talent Avenue	City of Talent	Collector	2	Yes / Yes	25
OR 99, north of Colver Rd	ODOT	District Highway	5	No / Yes	40
OR 99, south of Colver Rd	ODOT	District Highway	5	Yes / No	40
Future Wagner Creek Road	City of Talent	Collector	2	Yes / Yes	35

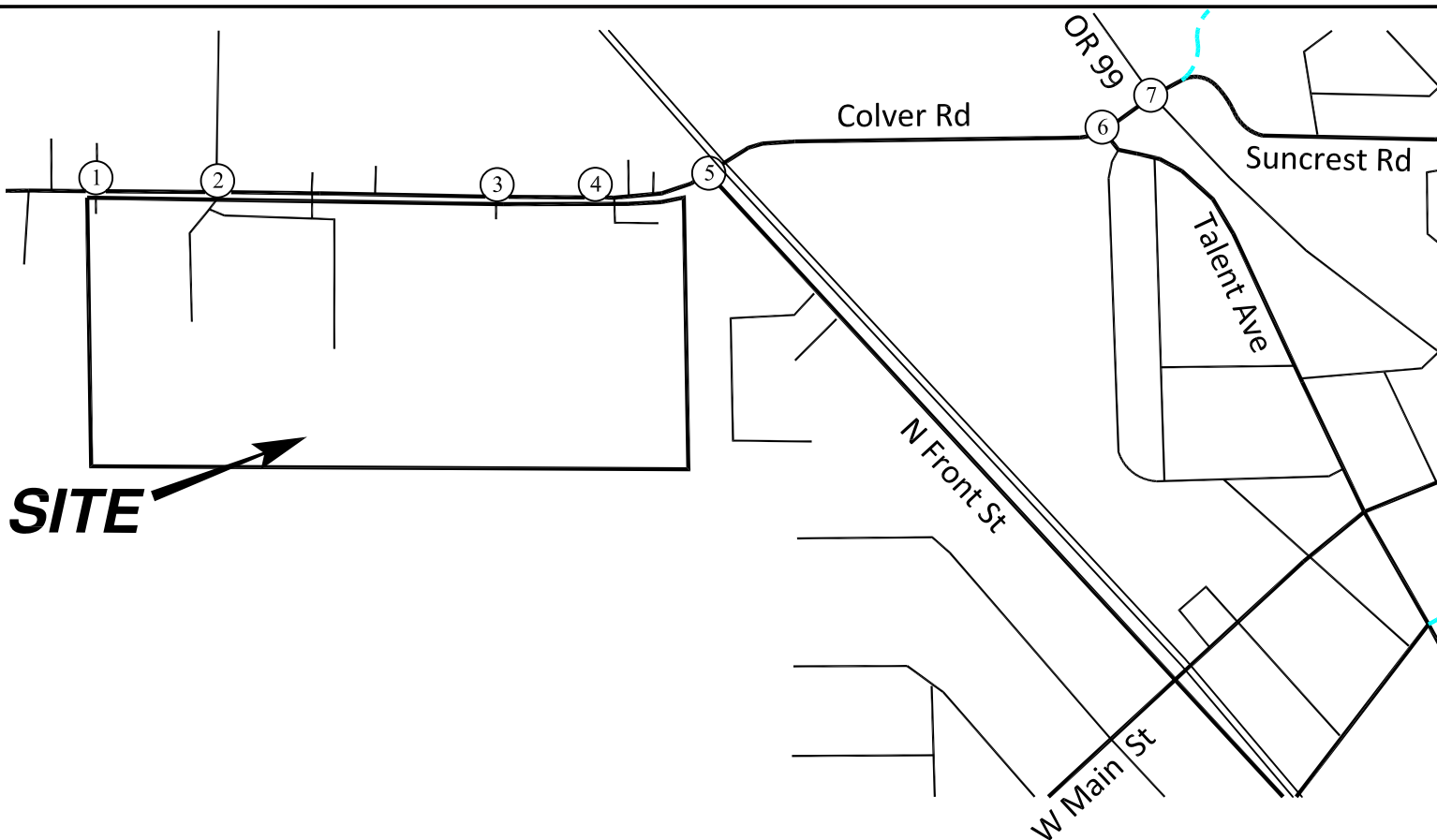
#### Traffic Counts

Manual traffic counts were collected at study area intersections in April of 2021 and June of 2022. Counts were seasonally adjusted and balanced to reflect 30<sup>th</sup> highest hour volumes. The p.m. peak hour was shown to be the higher of the two peak hours and is the peak hour evaluated in the analysis. Refer to Figure 3 for year 2022 no-build traffic volumes. Counts are provided in Appendix A.

#### Pedestrian and Bicycle Facilities

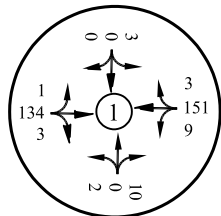
Colver Road is classified as a County Rural Major Collector in the Jackson County Transportation System Plan. It's currently a two-lane facility without curb, gutter, or sidewalk along the property frontage, but it has paved shoulders for pedestrians and cyclists. At the time of development, a multi-use path is proposed along the northern property line. At such time the City of Talent takes over jurisdiction of Colver Road, it will be classified as a City Collector.

**Figure 3: Year 2022 No-Build Traffic Volumes, PM Peak Hour**

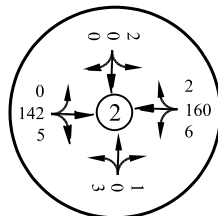


**SITE** →

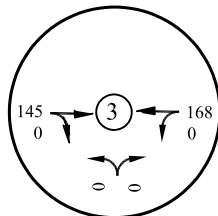
Bus Barn / Colver Rd



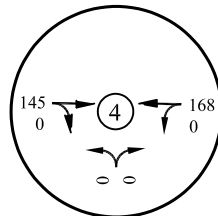
Fields / Colver Rd



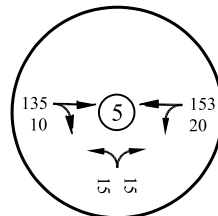
Future New Access / Colver Rd



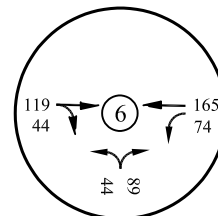
Future Wagner Ck / Colver Rd



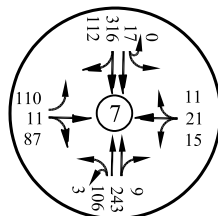
N Front / Colver Rd



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE



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## Intersection Capacity and Level of Service

Intersection capacity calculations were conducted utilizing the methodologies presented in the *Highway Capacity Manual 6<sup>th</sup> Edition*. Capacity and level of service calculations for signalized and unsignalized intersections were prepared using “SYNCHRO” timing software.

Level of service quantifies the degree of comfort afforded to drivers as they travel through an intersection or along a roadway section. The level of service methodology was developed to quantify the quality of service of transportation facilities. Level of service is based on total delay, defined as the total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. Level of service ranges from “A” to “F”, with “A” indicating the most desirable condition and “F” indicating an unsatisfactory condition. The HCM LOS designations for stop-controlled intersections are provided in Table 2. The HCM LOS designations for signalized intersections are provided in Table 3.

Level of Service	Delay Range
A	< 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	> 50

Level of Service	Delay Range
A	< 10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	> 80

Streets within the study area are under City of Talent, Jackson County, and ODOT jurisdiction. The City of Talent requires all study area intersections to operate at acceptable levels of service (LOS). The minimum acceptable level of service for unsignalized and signalized intersections is LOS “D”. Jackson County’s operational standard per the Jackson County Transportation System Plan is a v/c ratio no greater than 0.95 within the boundary of the Metropolitan Planning Organization (MPO). The *1999 Oregon Highway Plan* (OHP) provides mobility standards for ODOT facilities based on their classification. Rogue Valley Highway (OR 99) at Colver Road is classified as a district highway. The mobility standard for a district highway within an MPO is 0.95. Mitigation is required where operational standards are not met, and it can be shown that proposed development trips make conditions significantly worse (beyond target compliance) than they would have otherwise been under no-build conditions.

## Year 2022 No-Build Intersection Operations

Study area intersections were evaluated under year 2022 no-build conditions during the p.m. peak hour to provide a baseline for existing traffic operations. Results are summarized in Table 4.

Table 4 - Year 2022 No-Build Intersection Operations				
Intersection	Jurisdiction	Performance Standard	Traffic Control	PM Peak
OR 99 / Colver Rd	ODOT	V/C 0.95	Signal	0.43
Talent Ave / Colver Rd	City of Talent	LOS D	TWSC	B
N Front St / Colver Rd	City of Talent	LOS D	TWSC	B
Ball Fields / Colver Rd	Jackson County	V/C 0.95	TWSC	0.007 (NB)
Bus Barn / Colver Rd	Jackson County	V/C 0.95	TWSC	0.016 (NB)

LOS = Level of Service, V/C = volume to capacity, TWSC = two-way stop-control, NB = northbound  
 Note: Exceeded performance standards are shown in bold, italic

Results of the analysis show all study area intersections operate within Agency performance targets under year 2022 no-build conditions during the p.m. peak hour. Refer to Appendix C for synchro output sheets.

## Year 2022 No-Build 95<sup>th</sup> Percentile Queuing

Queuing is the stacking up of vehicles for a given lane movement and can have a significant effect on roadway safety and the overall operation of a transportation system. Queue lengths are reported as the average, maximum, or 95<sup>th</sup> percentile queue length. The 95<sup>th</sup> percentile queue length is used for design purposes and is the queue length reported in this analysis. Five simulations were run and averaged in SimTraffic to determine 95<sup>th</sup> percentile queue lengths at study area intersections under year 2022 no-build conditions. Exceeded queue length were rounded up to the nearest 25 feet (single vehicle length) and reported in Table 5 for the p.m. peak hour. A full queuing and blocking report is provided in Appendix C.

Table 5 – Year 2022 No-Build 95 <sup>th</sup> Percentile Queue Lengths			
Intersection / Movement	Available Link Distance (Ft)	PM Peak Queue Lengths (Ft)	Reached / Exceeded
<b><u>Talent Ave / Colver Rd</u></b>			
Northbound Left/Right	50	50	Gibson Street

Note: Exceeded queue lengths shown in bold italic

Results of the queuing analysis show one link distance is reached under existing conditions during the p.m. peak hour. This is the northbound left-shared-right turn movement on Talent Avenue at Colver Road. This movement has a very short storage length (50 feet) before reaching Gibson Street to the south. Under existing conditions, the queue is shown to reach Gibson Street. No other link distances are shown to be reached or exceeded within the study area, but the eastbound left turn movement on Colver Road at OR 99 is near its storage length due to the short spacing between intersections.



## Crash History

Crash data for the most recent 5-year period was provided from ODOT’s crash analysis unit. Results were provided for the period of January 1, 2016 through December 31, 2020. Crash data was analyzed to identify crash patterns that could be attributable to geometric or operational deficiencies, or crash trends of a specific type that would indicate the need for further investigation at an intersection. Study area intersection crash rates were also compared to 90<sup>th</sup> percentile rates using the HCM prediction model. Tables 6 and 7 provide a summary of results. If there were no reported crashes at a study area intersection, then it is not included below. Crash data is provided in Appendix B.

Intersection	2016	2017	2018	2019	2020	Total Crashes	ADT	Crash Rate	ODOT 90 <sup>th</sup> %
OR 99 / Colver Rd	5	1	0	4	1	11	10,600	0.569	0.860
Talent Ave / Colver Rd	0	0	0	1	0	1	5,350	0.102	0.293
Colver Rd MP 0.20-1.20	3	2	0	2	0	7	3,200	1.20	1.27 <sup>1</sup>

1. Table II: Five-Year Comparison of State Highway Crash Rates – Rural Major Collector

Intersection	Collision Type				Severity		
	Rear-End	Turning / Angle	Fixed / Other	Pedestrian/ Bicyclist	Non-Injury	Injury	Fatal
OR 99 / Colver Rd	1	10	0	0	7	4	0
Talent Ave / Colver Rd	0	1	0	0	0	1	0
Colver Rd MP 0.20-1.20	1	0	6	0	2	5	0

The highest crash frequency occurred at the intersection of OR 99 and Colver Road with eleven reported collisions in a five-year period. Nearly all were turning collisions. Sixty percent involved the northbound left turning movement not yielding right-of-way to the southbound through movement. Of the collisions, more than half resulted in property damage only and none involved pedestrians or cyclists.

The only other study area intersection with one or more reported collisions was the intersection of Talent Avenue and Colver Road. This intersection experienced one collision in a five-year period. It occurred in 2019 and was a turning collision (westbound left with eastbound through) caused by inattention and an improper turn. It resulted in non-fatal injury.

A one-mile segment of Colver Road (mile point 0.2 to 1.2) within the study area was shown to have seven reported collisions within a five-year period. Nearly all were single vehicle collisions with fixed objects. Causes included inattention, driver error, defective steering, and driving too fast for the conditions. Over seventy percent resulted in non-fatal injury. None involved pedestrians or cyclists.

No intersection crash rate or roadway segment is shown to exceed the ODOT critical crash rate and no area within the study area is identified as a Safety Priority Index System (SPIS) site. The crash analysis did not identify any safety concerns that require further investigation.

## IV. DESIGN YEAR 2027 NO-BUILD CONDITIONS

### Design Year 2027 No-Build Description

Design year no-build conditions represent time of development no-build conditions for the study area without consideration of proposed development trips. This condition is evaluated to determine how the study area will be impacted by background growth for the build year. Growth was determined using the City of Talent Transportation System Plan (TSP) and the ODOT Future Volumes Table. Growth rates were derived using existing and future year traffic volumes. Annual growth rates on Colver Road, Talent Avenue, N Front Street, and OR 99 ranged from 0.5% to 1.5%. An annual global rate of 1.0% was used within the study area to derive design year 2027 no-build conditions. These are provided in Figure 4 for the p.m. peak hour.

### Design Year 2027 No-Build Intersection Operations

Design year 2027 no-build conditions were evaluated at study area intersections during the p.m. peak hour. Results are summarized in Table 8.

Table 8 – Design Year 2027 No-Build Intersection Operations				
Intersection	Jurisdiction	Performance Standard	Traffic Control	PM Peak
OR 99 / Colver Rd	ODOT	V/C 0.95	Signal	0.45
Talent Ave / Colver Rd	City of Talent	LOS D	TWSC	B
N Front St / Colver Rd	City of Talent	LOS D	TWSC	B
Ball Fields / Colver Rd	Jackson County	V/C 0.95	TWSC	0.010 (NB)
Bus Barn / Colver Rd	Jackson County	V/C 0.95	TWSC	0.018 (NB)

LOS = Level of Service, V/C = volume to capacity, TWSC = two-way stop-control, NB = northbound  
 Note: Exceeded performance standards are shown in bold, italic

Results of the analysis show all study area intersections continue to operate within Agency performance targets under design year 2027 no-build conditions during the p.m. peak hour. No changes in LOS are shown to occur as a result of background growth. Slight increases in v/c ratio occur. Refer to Appendix D for synchro output sheets.

### Design Year 2027 No-Build 95<sup>th</sup> Percentile Queue Lengths

Queue lengths were evaluated at study area intersections under design year 2027 no-build conditions. Exceeded queue lengths were rounded up to the nearest 25 feet (single vehicle length) and summarized in Table 9 for the p.m. peak hour.

Table 9 – Design Year 2027 No-Build 95 <sup>th</sup> Percentile Queue Lengths			
Intersection / Movement	Available Link Distance (Ft)	PM Peak Queue Lengths (Ft)	Reached / Exceeded
<b><i>Talent Ave / Colver Rd</i></b>			
Northbound Left/Right	50	50	Gibson Street

Note: Exceeded queue lengths shown in bold italic

Results of the queuing analysis show one link distance continues to reach or exceed its storage length under design year 2027 no-build conditions during the p.m. peak hour. This is the northbound left-shared-right turn movement on Talent Avenue at Colver Road, which continues to reach Gibson Street to the south. This is due to the short storage length (50 feet) between intersections and would be difficult to avoid. No other link distances are shown to be reached or exceeded within the study area, but the eastbound left turn movement on Colver Road at OR 99 continues to be near its storage length due to the short spacing between intersections. Refer to Appendix D for a full queuing and blocking report.

## V. SITE TRAFFIC

### Trip Generation

Trip generation calculations for the proposed minor amendment to the comprehensive plan (EFU to Park and Public Facilities - Civic) were prepared utilizing the Institute of Transportation Engineers *ITE Trip Generation Manual*, 11<sup>th</sup> Edition. Land Use 488 – Soccer Complex was used for proposed sports fields regardless of type. When generating trips for the proposed 28,000 square foot (SF) multi-purpose recreational building and 8,170 SF after school program building, we combined the two buildings (36,170 SF) and applied Land Use 495 – Recreational Community Center, which is similar to a YMCA. All trips were considered new trips on the transportation system. A summary is provided in Table 10. ITE graphs are provided in Appendix B.

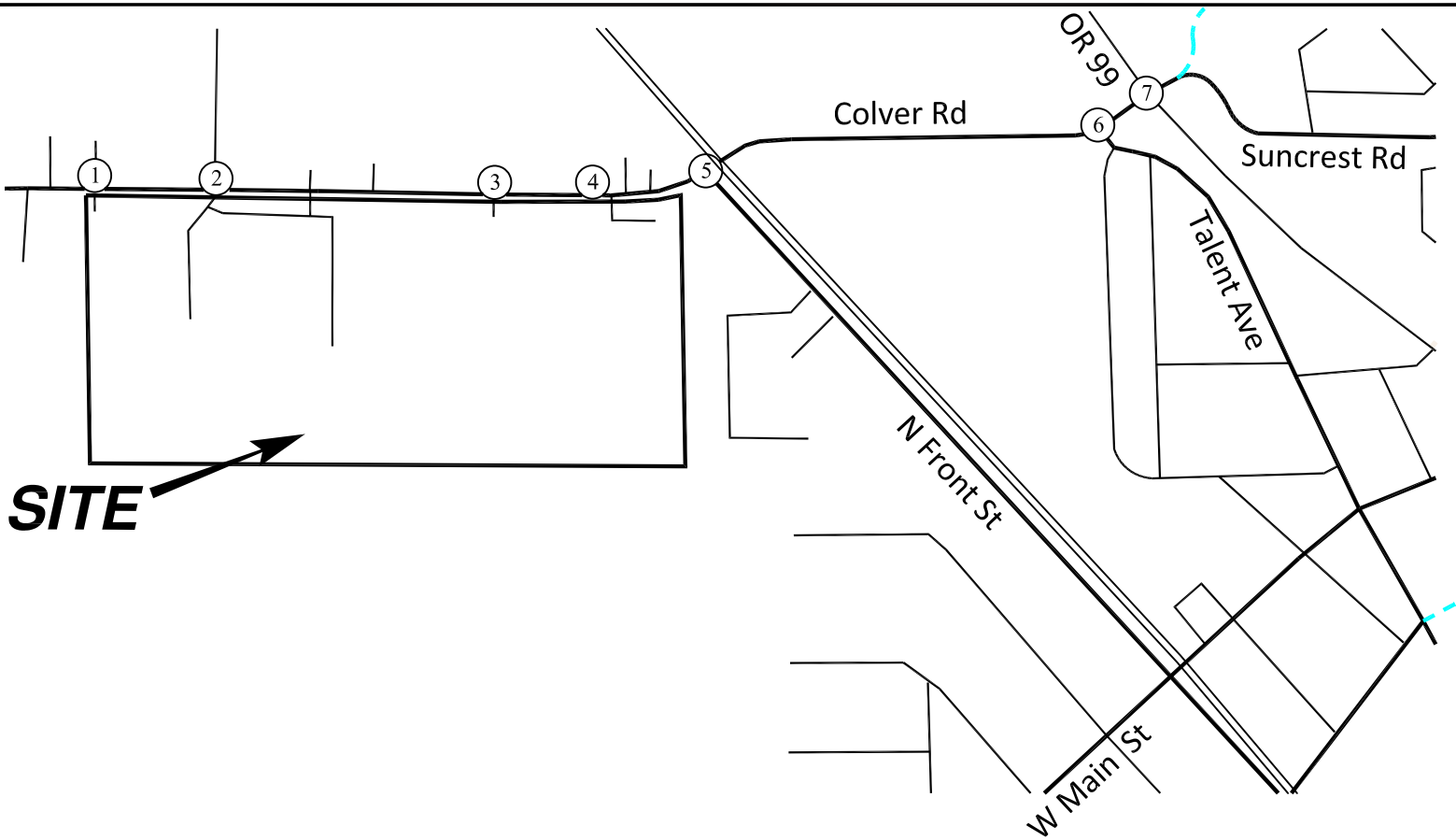
Land Use	Unit	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
488–Soccer Complex	Fields	4	285	4	3	1	65	43	22
495–Recreational Community Center	1000SF	36.17	1042	69	46	23	90	42	48
<b>Total Trips</b>			<b>1327</b>	<b>73</b>	<b>49</b>	<b>24</b>	<b>155</b>	<b>85</b>	<b>70</b>

SF = square feet

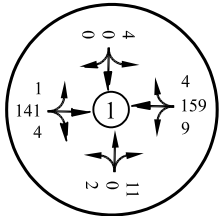
### Trip Distribution and Assignment

Development trips were distributed in accordance with traffic volumes within the study area and engineering judgement. Existing trip distributions to/from the Colver Fields were shown to be approximately 45% to/from the west and 55% to/from the east. Remaining splits at study area intersections east of the site resulted in approximately 4% to/from the south on Front Street, 12% to/from the south on Talent Avenue, 17% to/from the south on OR 99, 3% to/from the east on Suncrest Road, and 19% to/from the north on OR 99. Refer to Figures 5a and 5b for Phase 1 and full development trip distributions during the p.m. peak hour.

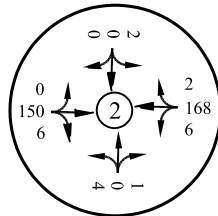
**Figure 4: Design Year 2027 No-Build Traffic Volumes, PM Peak Hour**



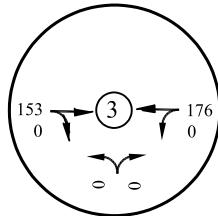
Bus Barn / Colver Rd



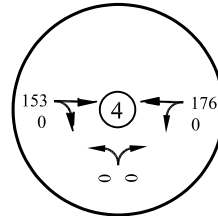
Fields / Colver Rd



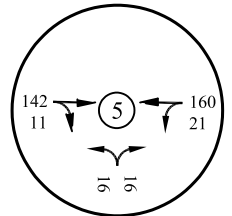
Future New Access / Colver Rd



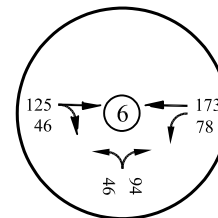
Future Wagner Ck / Colver Rd



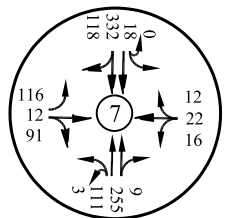
N Front / Colver Rd



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE

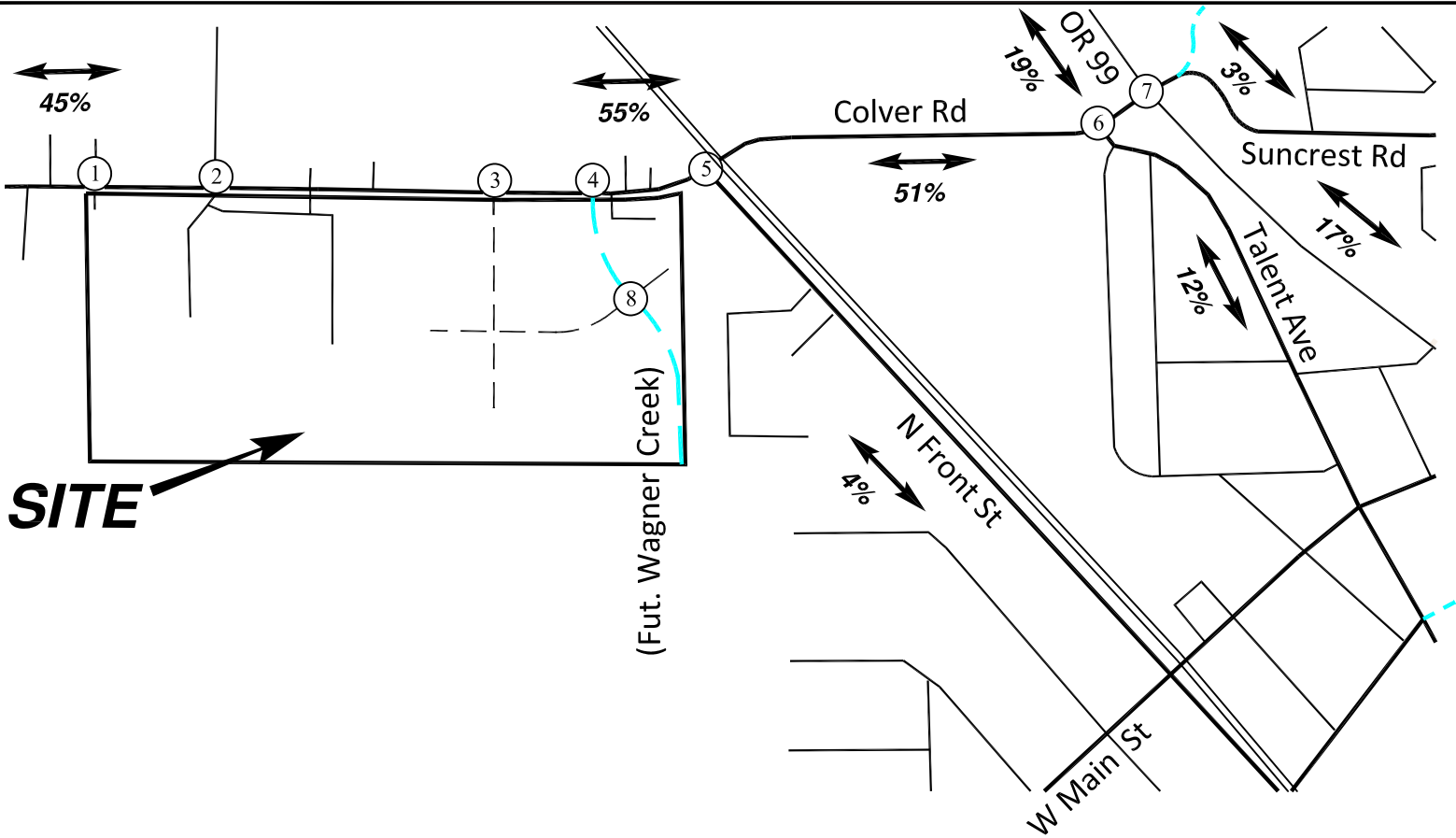


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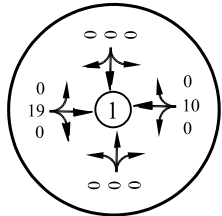
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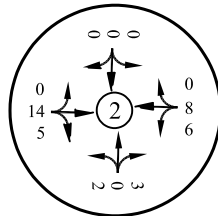
**Figure 5a: Phase 1 Development Trip Distributons, PM Peak Hour**



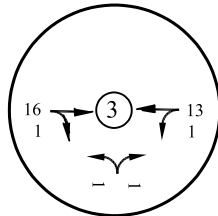
Bus Barn / Colver Rd



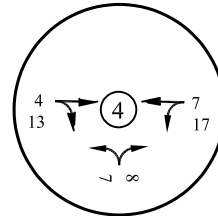
Fields / Colver Rd



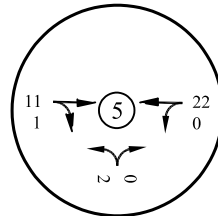
Future New Access / Colver Rd



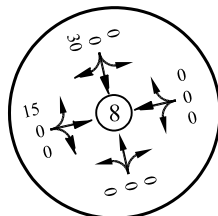
Future Wagner Ck / Colver Rd



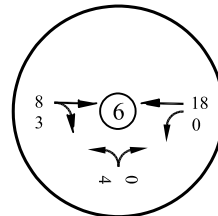
N Front / Colver Rd



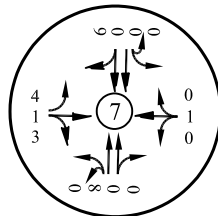
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE



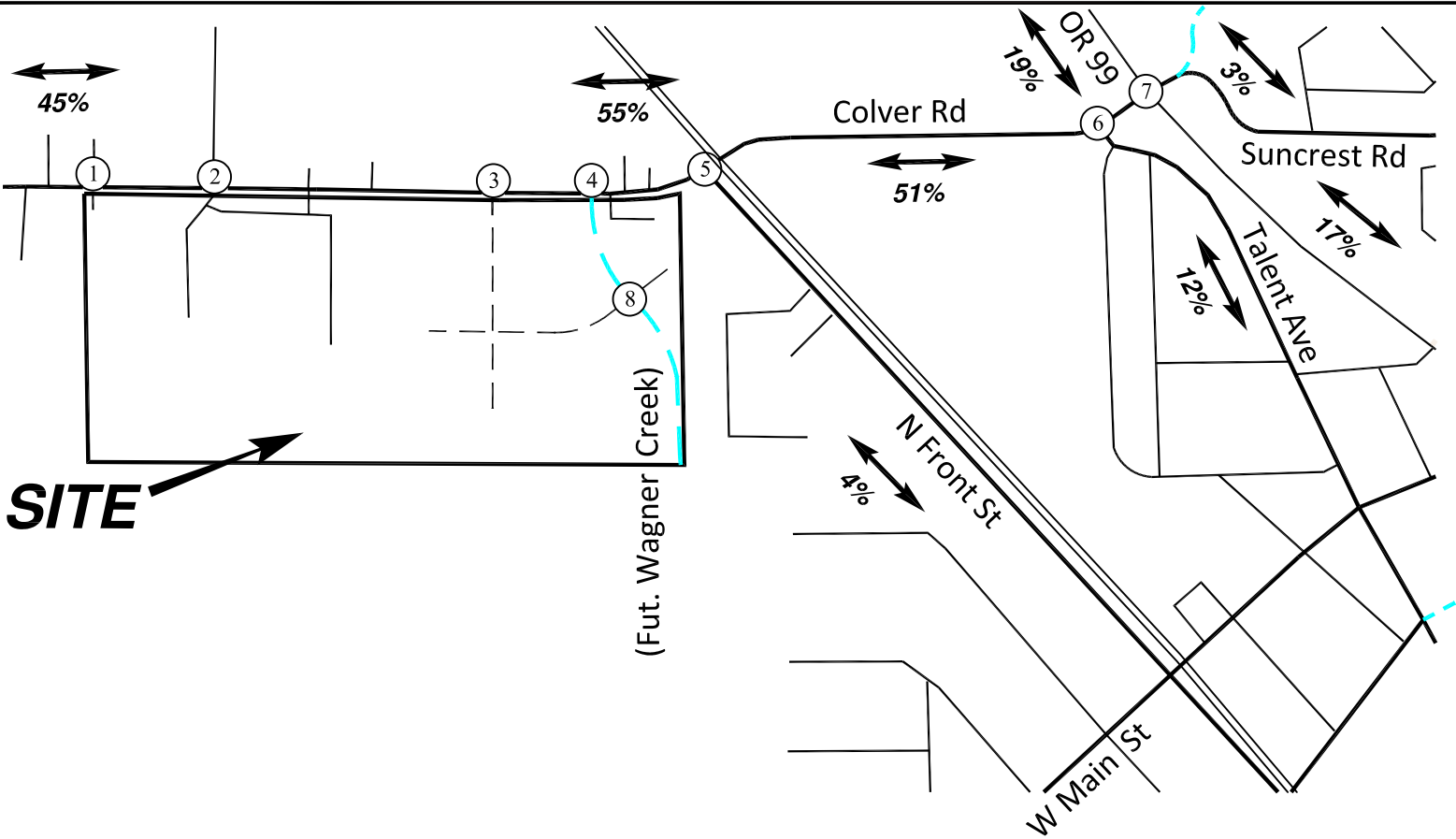
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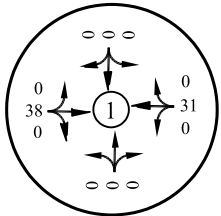
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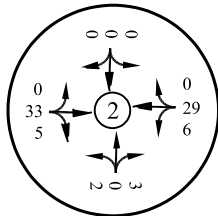
**Figure 5b: Full Development Trip Distributons, PM Peak Hour**



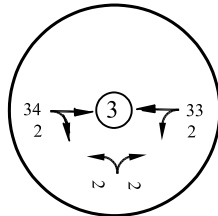
Bus Barn / Colver Rd



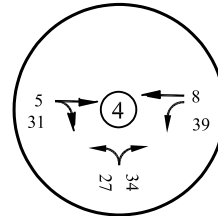
Fields / Colver Rd



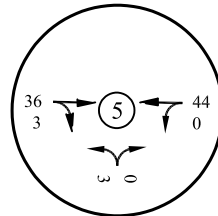
Future New Access / Colver Rd



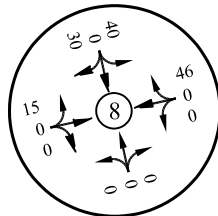
Future Wagner Ck / Colver Rd



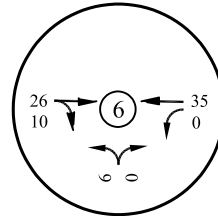
N Front / Colver Rd



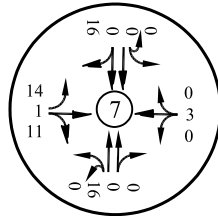
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



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## VI. DESIGN YEAR 2027 BUILD CONDITIONS

### Design Year 2027 Build Description

Build conditions represent no-build conditions for a study area with the addition of proposed development trips considered. Build conditions are compared to no-build conditions to determine what impacts and/or mitigation measures will be necessary as a result of proposed development. Phase 1 build conditions in design year 2027 consider buildout of four new sports fields (3 little league baseball and 1 softball). Phase 2 build conditions consider buildout of a 28,000 SF multi-purpose recreational building and an 8,170 SF after school program facility. Refer to Figures 6a and 6b for design year 2027 Phase 1 and full build traffic volumes.

### Design Year 2027 Build Intersection Operations

Design year 2027 build traffic volumes were evaluated at study area intersections during the p.m. peak hour to determine what impacts, if any, result from proposed development. Results are summarized in Table 11.

Table 11 – Design Year 2027 Build Intersection Operations, PM Peak Hour					
Intersection	Jurisdiction	Performance Standard	Traffic Control	Phase 1	Full Build
OR 99 / Colver Rd	ODOT	V/C 0.95	Signal	0.49	0.51
Talent Ave / Colver Rd	City of Talent	LOS D	TWSC	B	B
N Front St / Colver Rd	City of Talent	LOS D	TWSC	B	B
Future Wagner Creek / Colver Rd	City of Talent	LOS D	TWSC	B	B <sup>1</sup>
Future Wagner Creek / Site	City of Talent	LOS D	TWSC	A <sup>2</sup>	A <sup>2</sup>
New Access / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	0.003 NB B	0.007 NB B
Ball Fields / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	0.019 NB B	0.020 NB B
Bus Barn / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	0.018 NB B	0.019 NB B

LOS = Level of Service, V/C = volume to capacity, TWSC = two-way stop-control, NB = northbound

1. Future Wagner Creek / Colver Road intersection assumed, including center turn lane on Colver Road (no extension from south)

2. Future Wagner Creek / site driveway assumed (no extension from south)

Note: Exceeded performance standards are shown in bold, italic

Results of the analysis show all study area intersections continue to operate within Agency performance targets under design year 2027 build conditions during the p.m. peak hour. No changes in LOS are shown to occur as a result of development trips. New Wagner Creek Road / Colver Road and Wagner Creek Road / site driveway intersections were included under design year 2027 build conditions to account for the future planned Westside Bypass (Project 39 in the City’s TSP), which connects Wagner Creek Road to Colver Road through the Urban Reserve Area TA-1 west of the current city limits. Trips were not distributed to/from the south under this condition, however, because it was assumed the westside bypass would not be fully connected by design year 2027. A center left turn lane on Colver Road at the future Wagner Creek Road connection was not included in the analysis under Phase 1 build conditions but was included under full build conditions because

it is shown to be warranted only under full build conditions. This is further addressed under the design year 2027 build turn lane section of the report. Refer to Appendix E for synchro output sheets.

## Design Year 2027 Build 95<sup>th</sup> Percentile Queuing

Five simulations were run and averaged in SimTraffic to determine 95<sup>th</sup> percentile queue lengths at study area intersections under design year 2027 build conditions. Queue lengths were rounded up to the nearest 25 feet (single vehicle length) and reported in Table 12 for the p.m. peak hour if shown to exceed their available link distance or block/reach a downstream intersection or driveway.

<b>Table 12 – Design Year 2027 Build 95<sup>th</sup> Percentile Queue Lengths, PM Peak Hour</b>				
<b>Intersection / Movement</b>	<b>Available Link Distance (Ft)</b>	<b>Phase 1 Build (Ft)</b>	<b>Full Build (Ft)</b>	<b>Reached / Exceeded</b>
<b><u>Talent Ave / Colver Rd</u></b>				
Northbound Left/Right	50	50	50	Gibson Street

Note: Exceeded queue lengths shown in bold italic

Results of the queuing analysis show one link distance continues to reach or exceed its storage length under design year 2027 build conditions during the p.m. peak hour. This is the northbound left-shared-right turn movement on Talent Avenue at Colver Road, which continues to reach Gibson Street to the south. As stated previously, this is due to the short storage length (50 feet) between intersections and would be difficult to avoid. No other link distances are shown to be reached or exceeded within the study area, but the eastbound left turn movement on Colver Road at OR 99 continues to be near its storage length. This is the same condition that exists under design year 2027 no-build conditions. No significant changes in queuing are shown to occur as a result of proposed development trips. Refer to Appendix E for a full queuing and blocking report.

## Colver Road Capacity

Colver Road is currently classified as a Rural Major Collector in the Jackson County Transportation System Plan. A Major Collector is estimated to carry >4,500 average daily trips (ADT). Under current conditions, Colver Road is estimated to carry approximately 3,130 ADT. Under design year 2027 build conditions, it is estimated to carry 4,120 ADT, which continues to be well within the carrying capacity. At such time the City of Talent takes over jurisdiction of Colver Road, it will be classified as a City Collector with a similar carrying capacity (up to 6,000 ADT).

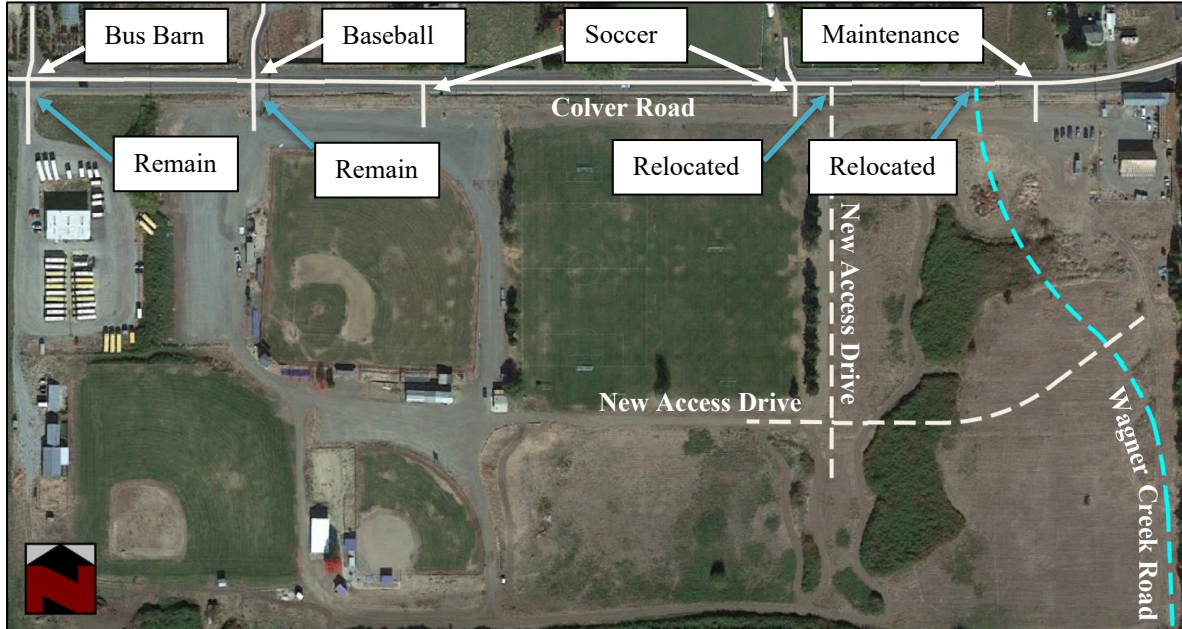
The role of a collector street in the City of Talent TSP is to gather traffic from neighborhood local streets and distribute to/from arterial streets. They're primarily intended to serve abutting lands and local access needs of neighborhoods.

## Access and Spacing

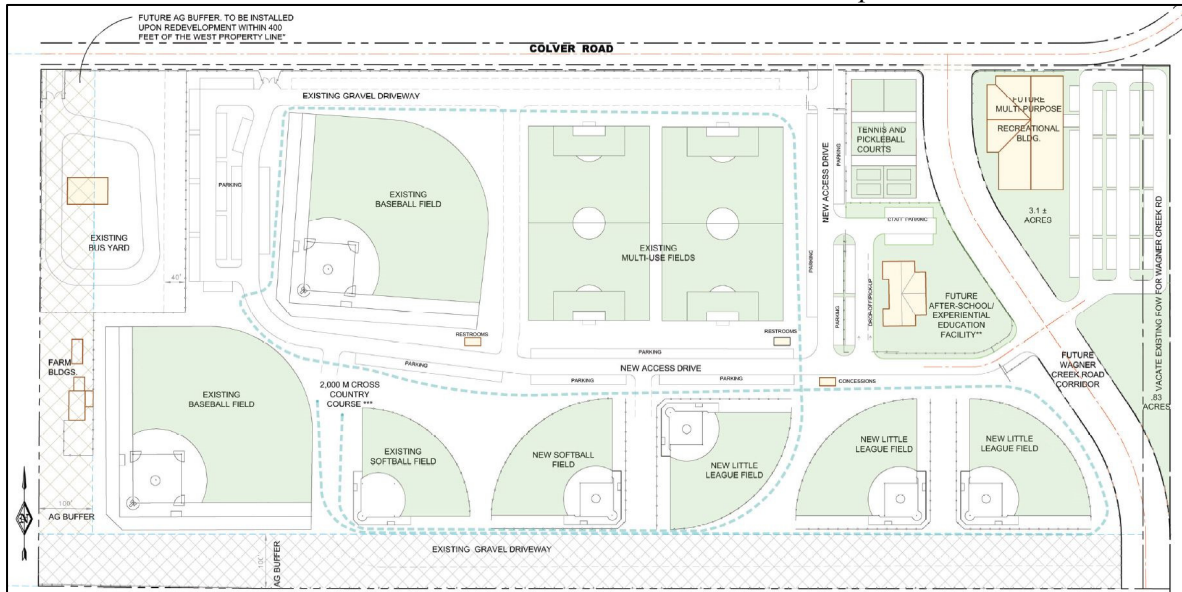
The subject property currently has five access points today, which include locations at the bus barn, baseball fields, soccer fields (2), and maintenance building (see Exhibit 1 on next page). With proposed development, the bus barn and baseball field access points will remain the same. A new Wagner Creek Road access is proposed west of the existing maintenance building access, and another access in between Wagner Creek Road and the baseball fields where there are two access points on either side of the soccer fields. Access spacing requirements will determine the location of the access in between Wagner Creek Road and the baseball fields. The Jackson County minimum spacing

standard on a Major Collector is 300 feet. The City’s access spacing standard between driveways and/or streets on a Collector is 50 feet and 300 feet between intersections. The proposed New Access Drive is approximately 225 feet west of the proposed Wagner Creek Road intersection with Colver Road.

*Exhibit 1: Existing and Proposed Access Points*



*Exhibit 2: Colver Road Educational Facilities Concept Plan*



## Sight Distance

Sight distance was measured in the field at proposed remaining and new access locations along Colver Road. Sight distance is provided at intersections to allow drivers adequate time to perceive other vehicles approaching the intersection and react in time to avoid collisions. The driver of a vehicle



approaching an intersection should have an unobstructed view of the entire intersection. Likewise, stopped vehicles at intersections should have a sufficient view of the intersecting roadway to decide when to enter or cross without colliding with on-coming vehicles. Minimum sight distances are provided by the American Association of State Highways and Transportation Officials (AASHTO).

Departure sight triangles are considered for left, through, and right turn movements. The length of the leg of the departure sight triangle along the major road for all stop-controlled movements is dependent upon the speed of the major roadway and perception-reaction times of drivers. The minimum stopping sight distance (SSD) represents the minimum sight distance required by AASHTO. The intersection sight distance (ISD) is the desirable sight distance by AASHTO. Colver Road has a posted speed of 35 miles per hour (mph) at the east boundary of the subject property and increases to 45 mph to the west. AASHTO recommends a minimum SSD of 250 feet in a 35 mph zone and 360 feet in a 45 mph zone. The desirable ISD is 390 feet and 500 feet, respectively. In addition to the AASHTO standards, Jackson County has a minimum stopping sight distance standard of 315 feet on a Major Collector. Since the AASHTO standards are more stringent, they were used as the minimum requirement in this analysis. We evaluated for both speed zones with the assumption that Colver Road will likely be posted at 35 mph at such time that the City of Talent takes over jurisdiction.

The existing maintenance access is the most easterly access on the property. At this location, Colver Road is flat and straight to the west. To the east there is a horizontal curve. Sight distance was measured in the field to be over 400 feet to the east to the railroad tracks and over 1700 feet to the west past the bus barn. Sight distance is shown to be met in both directions. At the time of development, this access is proposed to relocate to the west which will increase sight distance in the east direction. When that occurs, it is expected that sight distance will continue to be met in both directions. Street views are shown below.

From maintenance access, looking west



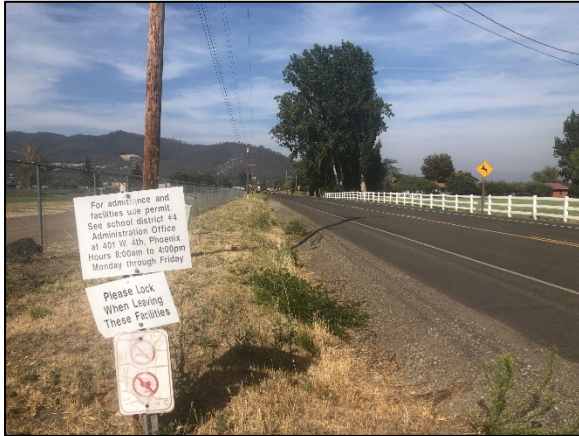
From maintenance access, looking east



The eastern access to the soccer fields is the closest location to the proposed New Access Drive at the time of development. At this location, Colver Road is flat and straight with no visual obstructions. Sight distance is over 600 feet to the east and over 1400 feet to the west past the bus barn. Sight distance is shown to be adequate in both directions. Street views are provided on the following page.



From east soccer field access, looking west



From east soccer field access, looking east



The baseball fields access is proposed to remain at its current location. Sight distance was measured at this location to be over 1500 feet to the east and over 900 feet to the west. Sight distance is shown to be met in both directions. Refer below for street views.

From baseball fields access, looking west



From baseball fields access, looking east



The Bus Barn access is proposed to remain at its current location. Sight distance was measured at this location to be over 1900 feet to the east and over 600 feet to the west. Sight distance is shown to be met in both directions. Refer below for street views.

From Bus Barn access, looking west



From Bus Barn access, looking east



## **Design Year 2027 Build Turn Lane Criterion**

### Left and Right Turn Lanes

Left and right turn lane criterion was evaluated on Colver Road at the proposed Wagner Creek Road intersection with Colver Road and site driveways on Colver Road. The design year 2027 build condition did not assume Wagner Creek Road was extended from the south as part of the Westside Bypass (Project 39) because it was assumed it would not yet be constructed. Results show criterion is not met for a westbound left turn lane at the proposed Wagner Creek Road intersection under design year 2027 Phase 1 build conditions, which includes build out of three little league fields and one softball field. Criterion is met under full build conditions. A center left turn lane at this location, therefore, is recommended at the time of full site development. Left turn lane criterion is not met at any of the other site driveways on Colver Road.

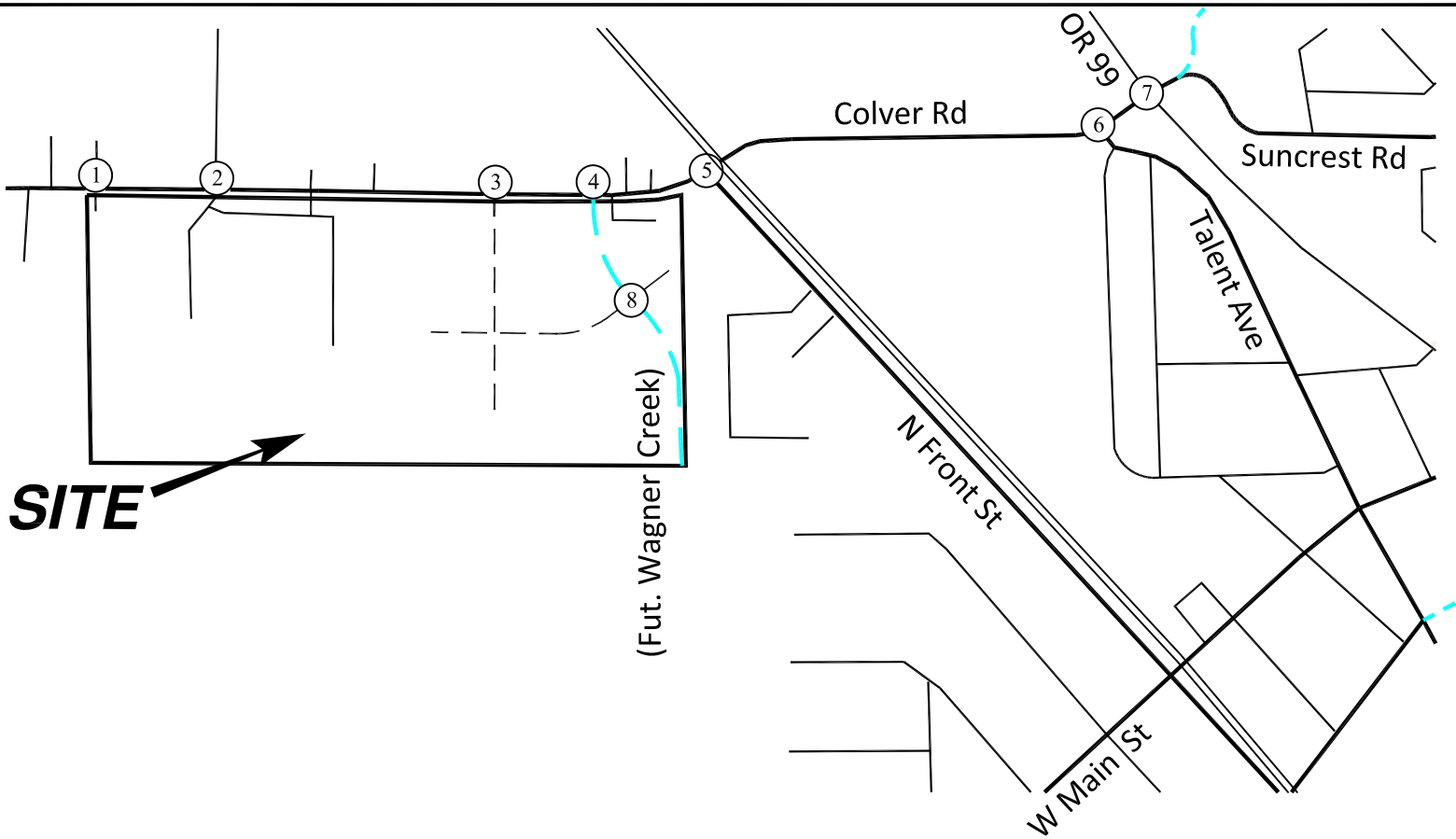
Right turn lane criterion was evaluated at the proposed Wagner Creek Road / Colver Road intersection and site driveways under design year 2027 build conditions. An eastbound right turn lane is not shown to be warranted at Wagner Creek Road or any site driveway. Turn lane graphs are provided in Appendix H.

## **Pedestrian and Bike Connections**

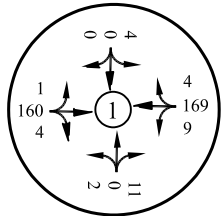
Colver Road has curb, gutter, and striped bike lanes from OR 99 to the west City limits, which is at the eastern boundary of the subject property. Further to the west, Colver Road is rural with no curb, gutter, or sidewalk. It has paved shoulders for pedestrians and cyclists to share. A multi-use path for pedestrians and recreational cyclists is proposed along the north property line at the time of development. Commuting cyclists will continue to use the paved shoulders on Colver Road.

The City of Talent has a Tier 2 project (Project 39) in their TSP that extends Wagner Creek Road from Rapp Road to Colver Road through Urban Reserve Area TA-1, referred to as the Westside Bypass. With this project, Wagner Creek Road will be built to a City Collector standard with curb, gutter, sidewalk, and striped bike lanes. The timing of this project is unknown, however, because it is a Tier 2 project. For purposes of this analysis, we considered the Wagner Creek Road extension to be in place by future year 2038 but did not distribute any development traffic to/from the south in case it is not built by then.

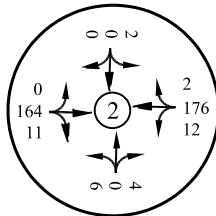
**Figure 6a: Design Year 2027 Phase 1 Build Traffic Volumes, PM Peak Hour**



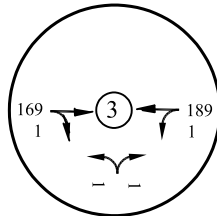
Bus Barn / Colver Rd



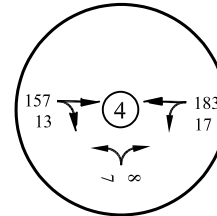
Fields / Colver Rd



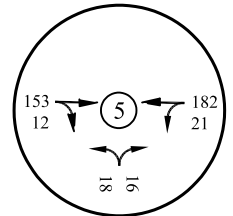
Future New Access / Colver Rd



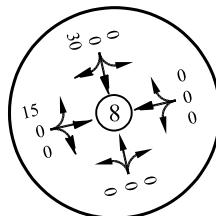
Future Wagner Ck / Colver Rd



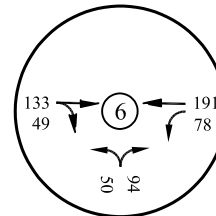
N Front / Colver Rd



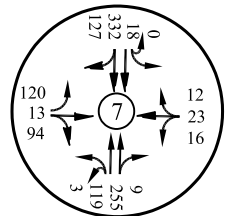
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE

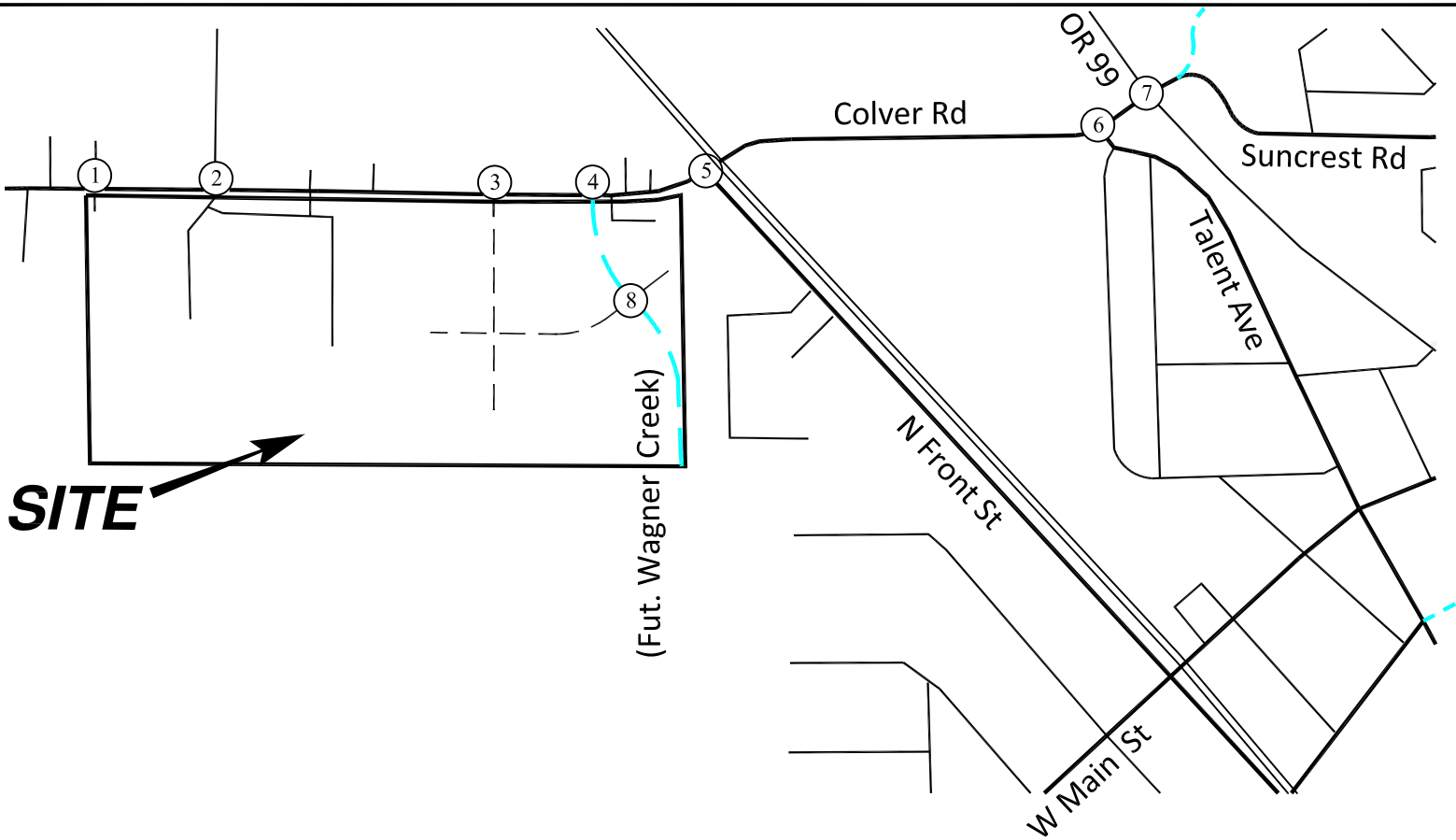


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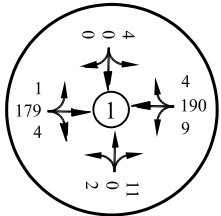
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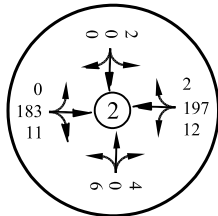
**Figure 6b: Design Year 2027 Full Build Traffic Volumes, PM Peak Hour**



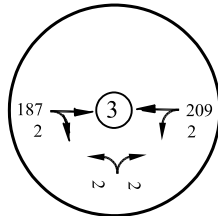
Bus Barn / Colver Rd



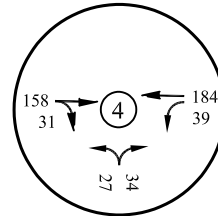
Fields / Colver Rd



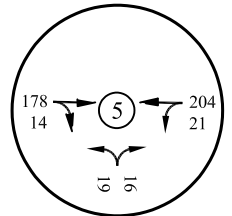
Future New Access / Colver Rd



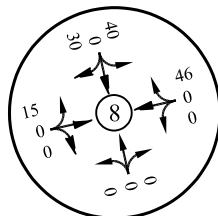
Future Wagner Ck / Colver Rd



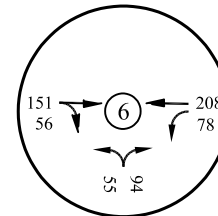
N Front / Colver Rd



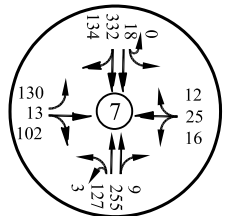
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



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**Phoenix-Talent School District  
Minor Comp Plan Amendment  
Traffic Impact Study  
Talent, Oregon**



## VII. FUTURE YEAR 2038 NO-BUILD AND BUILD CONDITIONS

### Future Year 2038 No-Build Description

Future year 2038 no-build conditions represent future year conditions for a study area without consideration of proposed development trips. This condition is evaluated to determine how a study area will be impacted by future background growth without traffic from proposed development trips. Growth in this analysis followed growth projected in the City of Talent TSP and the ODOT Future Volumes Table. As stated previously in the report, growth rates were derived using existing and future year traffic volumes. Annual growth rates on Colver Road, Talent Avenue, N Front Street, and OR 99 ranged from 0.5% to 1.5%. An annual global rate of 1.0% was used within the study area to develop future year 2038 no-build conditions. Additionally, the future year analysis included the Westside Bypass (Project 39) improvement, which considered an extension of Wagner Creek Road from Rapp Road to Colver Road. Re-routing assumptions were based on projections shown in the City’s TSP. A little over half of projected trips on Wagner Creek Road were re-routed through a new Wagner Creek Road / Colver Road intersection, which decreased traffic on Foss Road west of Wagner Creek Road and on Wagner Creek Road between Foss Road and Rapp Road. Future year 2038 no-build traffic volumes with re-routed Wagner Creek Road trips are shown on Figure 7 during the p.m. peak hour. Volume development is provided in Appendix A.

### Future Year 2038 Build Description

Future year 2038 build conditions represent future conditions for a study area with background growth and proposed development trips considered. Build conditions are compared to no-build conditions to determine what kind of impacts will result from proposed development under future conditions. Future build conditions are evaluated in this analysis for the City of Talent TSP planning year of 2038. Build conditions in future year 2038 include buildout of four new sports fields (3 little league baseball and 1 softball) a 28,000 SF multi-purpose recreational building, and an 8,170 SF after school program facility on the subject property. Future year 2038 build traffic volumes are shown on Figure 8 during the p.m. peak hour.

### Future Year 2038 No-Build and Build Intersection Operations

Future year 2038 no-build and build conditions were evaluated at study area intersections. Results are summarized in Table 13.

Table 13 – Future Year 2038 No-Build and Build Intersection Operations, PM Peak Hour					
Intersection	Jurisdiction	Performance Standard	Traffic Control	No-Build	Build
OR 99 / Colver Rd	ODOT	V/C 0.95	Signal	0.56	0.59
Talent Ave / Colver Rd	City of Talent	LOS D	TWSC	B	B
N Front St / Colver Rd	City of Talent	LOS D	TWSC	B	B
Future Wagner Creek / Colver Rd	City of Talent	LOS D	TWSC	B <sup>1</sup>	B <sup>2</sup>
Future Wagner Creek / Site	City of Talent	LOS D	TWSC	---	B <sup>3</sup>
New Access / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	---	0.008 (NB) B



**Table 13 Continued - Future Year 2038 No-Build and Build Intersection Operations, PM Peak Hour**

Intersection	Jurisdiction	Performance Standard	Traffic Control	No-Build	Build
Ball Fields / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	0.035 (NB) B	0.050 (NB) B
Bus Barn / Colver Rd	Jackson County / City of Talent	V/C 0.95 LOS D	TWSC	0.024 (NB) B	0.026 (NB) B

LOS = Level of Service, V/C = volume to capacity, TWSC = two-way stop-control, NB = northbound

1. Future Wagner Creek / Colver Road intersection assumed (no center left turn lane on Colver Road)
  2. Future Wagner Creek / Colver Road intersection assumed (with center left turn lane on Colver Road)
  3. Future Wagner Creek / site driveway with re-routed Wagner Creek traffic but no development traffic to/from the south
- Note: Exceeded performance standards are shown in bold, italic

Results of the analysis show all study area intersections and site driveways operate within Agency performance targets under future year 2038 no-build and build conditions during the p.m. peak hour. Colver Road was evaluated with a center left turn lane at the future Wagner Creek Road intersection because it is shown to be warranted at the time of full development (Phase 1 and 2) and the future year 2038 build condition assumes full development. Refer to Appendices F and G for synchro output sheets.

## Future Year 2038 No-Build and Build 95<sup>th</sup> Percentile Queuing

Study area queuing was evaluated under future year 2038 no-build and build conditions. Five simulations were run and averaged in SimTraffic. Queues were reported in Table 14 during the p.m. peak hour if shown to exceed their link distance or block/reach a downstream intersection or driveway.

**Table 14 – Future Year 2038 No-Build and Build 95<sup>th</sup> Percentile Queue Lengths, PM Peak Hour**

Intersection / Movement	Available Link Distance (Ft)	No-Build Queue Lengths (Ft)	Build Queue Lengths (Ft)
<b><i>Talent Ave / Colver Rd</i></b> Northbound Left/Right	50	<b><i>75</i></b>	<b><i>75</i></b>
<b><i>OR 99 / Colver Rd</i></b> Eastbound Left	100	<b><i>100</i></b>	<b><i>100</i></b>

Note: Exceeded queue lengths shown in bold italic

Results of the queuing analysis show the northbound left-shared-right turn movement on Talent Avenue at Colver Road exceeds its storage length and blocks Gibson Street to the south under future year 2038 build conditions. This occurs under all analysis scenarios due to the limited amount of spacing between intersections (50 feet). Drivers on Talent Avenue are expected to provide a gap at Gibson Street and not block it, but if they do not then drivers on Gibson Street will need to wait until the queue decreases. This should occur when eastbound traffic on Colver Road is served at the traffic signal on OR 99. Another movement that is shown to be at its storage length is the eastbound left turn movement on Colver Road at OR 99. This is shown to be near its storage length in previous scenarios but reaches 100 feet under future year 2038 no-build and build conditions. Similar to the queues on Talent Avenue, eastbound drivers on Colver Road are expected to provide a gap at Talent Avenue and not block it if queue lengths exceed 100 feet, but if drivers do not, then drivers on Talent Avenue will need to wait until the queue decreases, which should occur during each cycle at the signalized intersection of Colver Road and OR 99.

No other link distances are shown to be reached or exceeded within the study area. The westbound left turn queue length on Colver Road at the future Wagner Creek Road connection is shown to be 50 feet or the equivalent of two vehicles. Refer to Appendices F and G for full queuing and blocking reports.

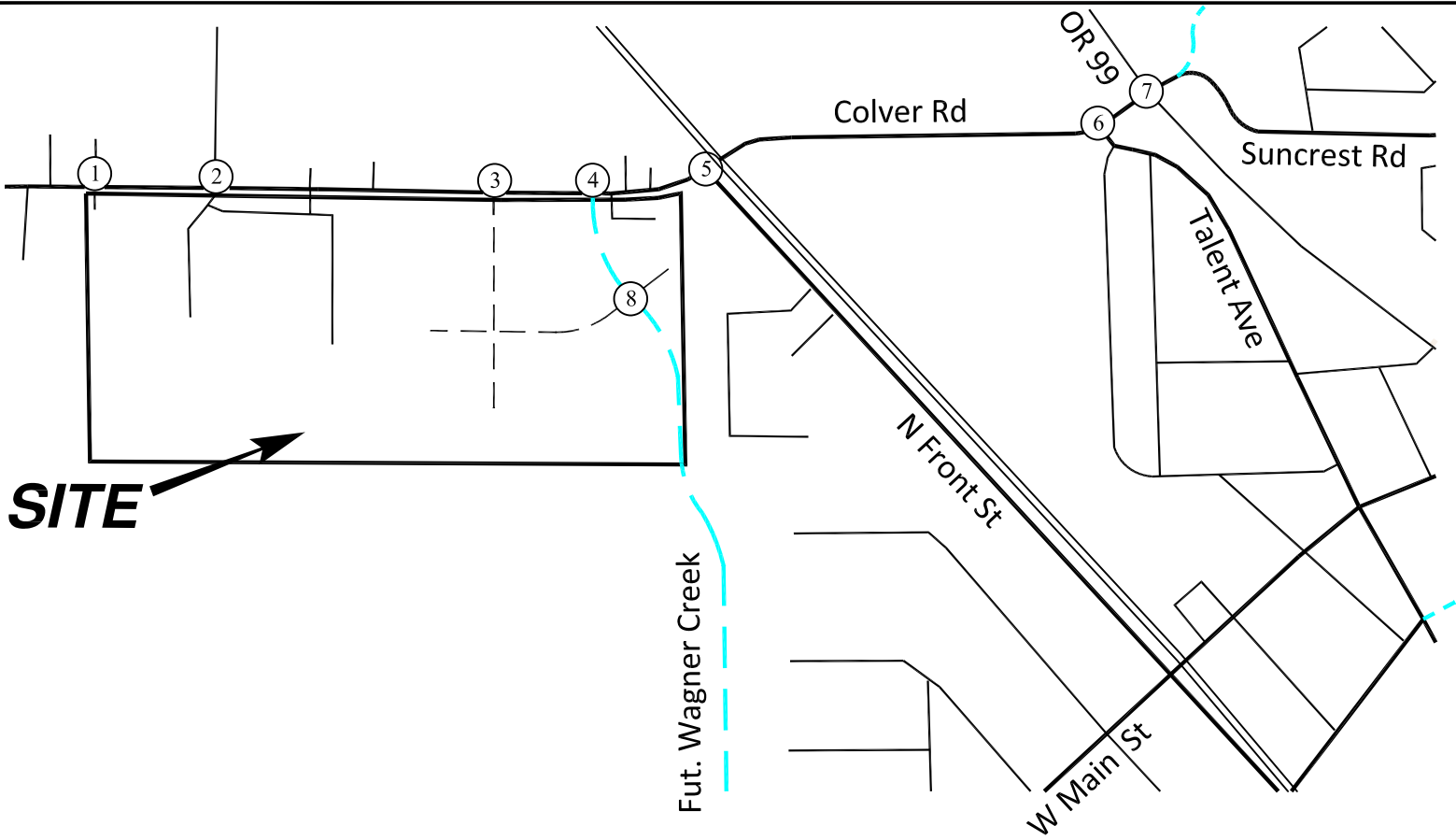
## **Future Year 2038 Build Turn Lane Criterion**

### Left and Right Turn Lanes

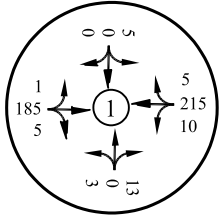
Left and right turn lane criterion was evaluated on Colver Road at the proposed Wagner Creek Road intersection with Colver Road and site driveways on Colver Road under future year 2038 build conditions. Results show criterion is met for a westbound left turn lane at the proposed Wagner Creek Road intersection with full buildout of the site. A center turn lane at this location is recommended at the time of full development. Left turn lane criterion is not met at any of the other site driveways on Colver Road under future year 2038 build conditions.

Right turn lane criterion was evaluated at the proposed Wagner Creek Road / Colver Road intersection and site driveways under future year 2038 build conditions. An eastbound right turn lane is not shown to be warranted at Wagner Creek Road or any site driveway. Turn lane graphs are provided in Appendix H.

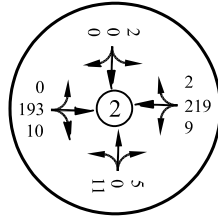
**Figure 7: Future Yr 2038 No-Build w/ Wagner Creek Ext., PM Peak Hour**



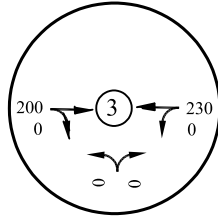
Bus Barn / Colver Rd



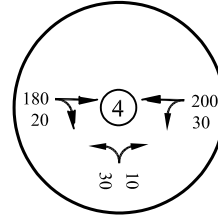
Fields / Colver Rd



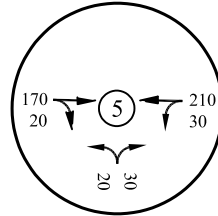
Future New Access / Colver Rd



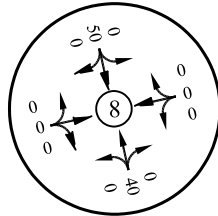
Future Wagner Ck / Colver Rd



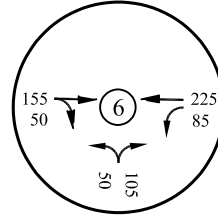
N Front / Colver Rd



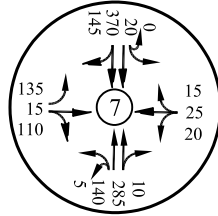
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE

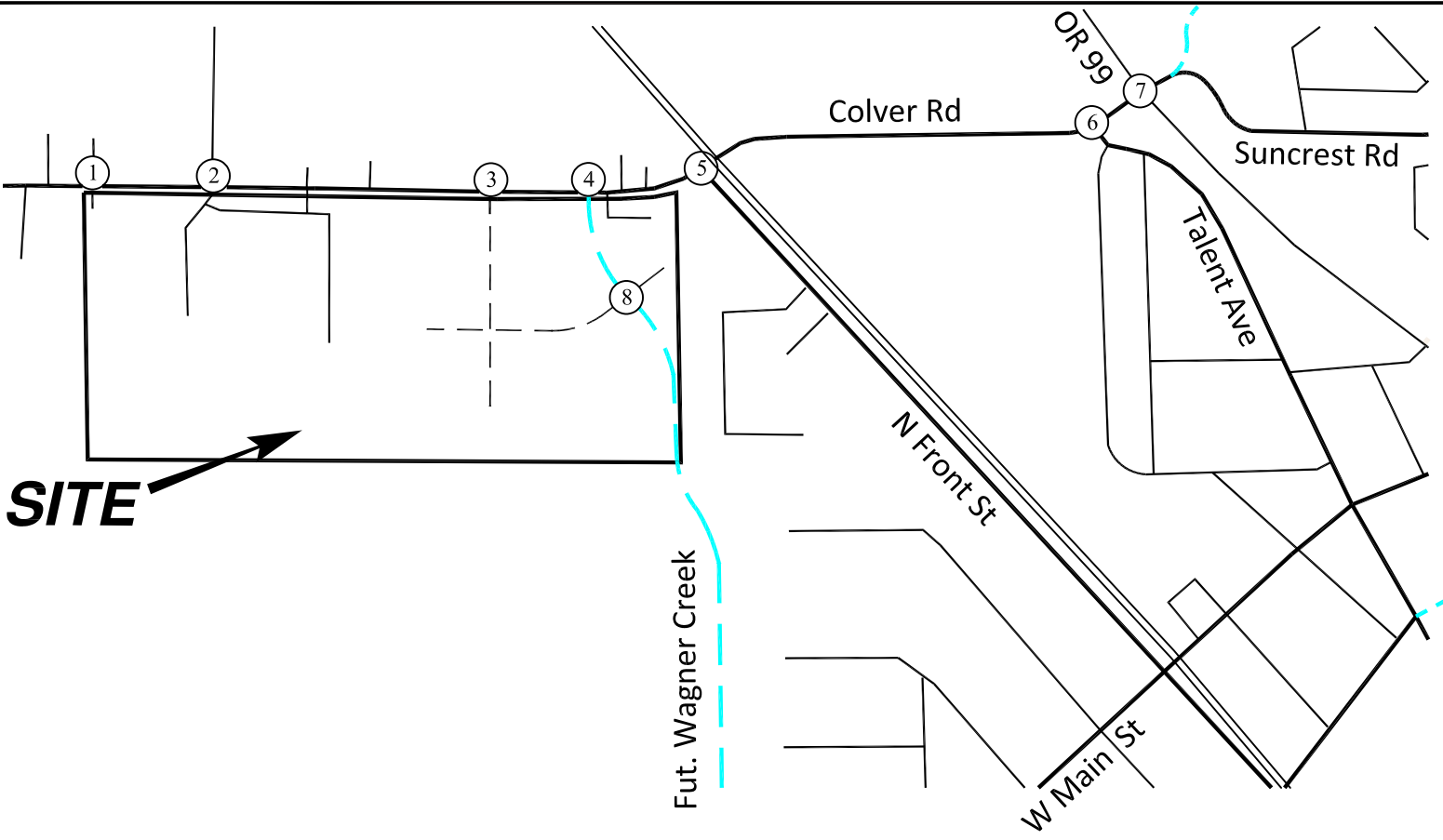


**SOUTHERN OREGON  
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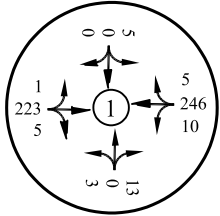
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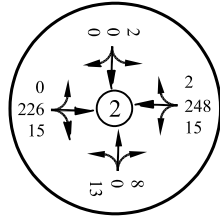
**Figure 8: Future Year 2038 Full Build Traffic Volumes, PM Peak Hour**



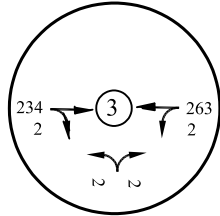
Bus Barn / Colver Rd



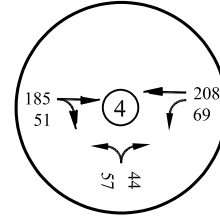
Fields / Colver Rd



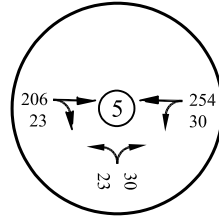
Future New Access / Colver Rd



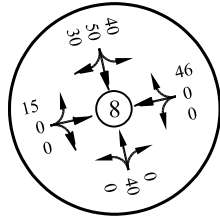
Future Wagner Ck / Colver Rd



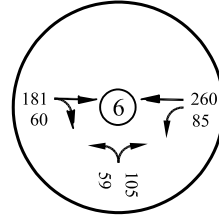
N Front / Colver Rd



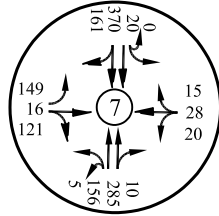
Future Rec Center / Wagner Ck



Talent Ave / Colver



OR 99 / Colver Rd



NOT TO SCALE



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## VIII. CONCLUSIONS

### Conclusions

The findings of the traffic impact study conclude that the proposed minor comprehensive plan map amendment from EFU to Parks and Public Facilities (Civic) on the subject property (38-01-22D TL 1000) can be approved with proposed mitigation without creating adverse impacts on the transportation system. Results of the analysis are as follows:

1. All study area intersections and driveways are shown to operate within target performance standards under existing year 2022, design year 2027, and future year 2038 conditions with and without proposed development during the p.m. peak hour.
2. 95<sup>th</sup> percentile queue lengths are shown to reach their available storage length at two locations within the study area. This occurs northbound on Talent Avenue at Colver Road and eastbound on Colver Road at OR 99. Both are caused by closely spaced intersections. Neither is considered a safety concern and no mitigation is shown to be necessary.
3. No study area intersection or roadway segment is shown to have a crash rate exceeding the critical crash rate or have reported collisions resulting in severe injury or fatality. No intersection is concluded to require mitigation or further investigation.
4. Criterion for a westbound left turn lane on Colver Road at the planned, future Wagner Creek Road extension is shown to be met under design year 2027 and future year 2038 full build (Phases 1 and 2) conditions. A left turn lane is not warranted under design year 2027 Phase 1 build conditions or future year 2038 conditions without a Wagner Creek Road extension. The trigger for the left turn lane is either Phase 2 development in design year 2027 or with the Wagner Creek Road extension in future year 2038. A center turn lane is, therefore, recommended at the time of full development or at such time Wagner Creek Road is extended to Colver Road.

The proposed development is in compliance with the City of Talent Comprehensive Plan, pursuant to the Public Facilities and Services Element, Section 5.1.2. Streets that serve the subject property will accommodate projected p.m. peak hour traffic volumes without significant impacts.