



# AGENDA

## Technical Advisory Committee Meeting #10

**DATE:** January 12, 2023  
**TIME:** 2:00 – 4:00 PM  
**LOCATION:** Virtual – ZOOM platform. To provide public comment, please send an email to Erika Palmer, Planning Manager at [palmere@sherwoodoregon.gov](mailto:palmere@sherwoodoregon.gov) at least 24-hours prior to the meeting to receive instructions on how to participate. Public comments are limited to three minutes. The meeting will be recorded and posted to the City of Sherwood's YouTube Channel: <https://www.youtube.com/user/CityofSherwood>.

### Meeting Purpose

- Review and refine draft Concept Plan maps
- Review/discuss transportation connectivity diagram
- Review full Traffic Impact Analysis

### Agenda

2:00 PM	<b>1. Welcome</b>	Erika Palmer, City of Sherwood
2:05 PM	<b>2. Public Comment</b>	Erika Palmer
2:15 PM	<b>3. Draft Concept Plan Map Summary</b> <i>A draft Concept Plan Map has been prepared based on the CAC's direction from the November meeting. Following a brief presentation, the Committee will discuss the draft land use map, including potential refinements to the North district community park and housing/jobs metrics. Please see the memo in your packet.</i>	Joe Dills and Kate Rogers, MIG APG
3:00 PM	<b>4. Conceptual Transportation Diagram &amp; Narrative</b> <i>The packet includes a draft conceptual transportation diagram and narrative, which are intended to communicate the need for further study of north-south connectivity concepts in Sherwood West. This is included as a separate item in your packet and will eventually be incorporated into the Concept Plan.</i>	Joe Dills, MIG APG

3:20 PM

**5. Traffic Analysis**

Carl Springer, DKS

*Present and discuss the results of the full Traffic Impact Analysis. (Initial results were presented at the November Committee meetings.)*

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3:55 PM

**6. Summarize Next Steps and Adjourn**

Joe Dills, MIG | APG

**Packet Contents:**

1. TAC 9 Meeting Minutes
2. Memo: Draft Concept Plan Map Summary
3. Draft Concept Plan Maps
4. Conceptual Transportation Diagram & Narrative
5. Traffic Impact Analysis Report



# MEETING MINUTES

Technical Advisory Committee (TAC)

**DATE:** November 17, 2022 – Meeting #9

**TIME:** 2:00 PM to 4:00 PM

**LOCATION:** Virtual Online, YouTube Link: <https://www.youtube.com/watch?v=MBtrjWGIw04>

**TAC Members Present:** Chris Faulkner, Glen Bolen (with alternative John Russell), Preston Korst, Tim O'Brien, Bruce Coleman, Jessica Pelz, Mike Weston, Joy Chang, and Erika Palmer.

**Consultants Present:** Joe Dills and Kate Rogers with MIG/APG, Carl Springer with DKS Engineering, and Chris Zahas with LCG.

## Agenda Item

### 1. Welcome and Introductions

Erika Palmer asked if there were any changes or comments to the April 21, 2022, meeting #8 minutes and there were none.

### 2. Public Comment

**Brian Fields** provided comments via the phone provided comments on behalf of the Eastview Road Neighborhood Association. He stated the Association is opposed to the North-South truck bypass on the western edge of the urban growth boundary. He said they were made aware of this plan over a year ago and have not received any specific plans, besides a memo from City Engineer Bob Galati dated November 4, 2022. He noted this memo is included in the meeting packet. He said Mr. Galati minimizes the impact and he explained. He said the memo ignores the existence of their neighborhood.

**Mariann Hyland** provided comments via the phone and said she is the President of the Eastview Road Neighborhood Association. She said they have consulted with a retired Engineer. She referred to the survey comments and said they were overwhelmingly opposed to the bypass over Hwy 99 and the Eastview Road bypass and Elwert Road realignment. She commented on Mr. Galati's proposal and said it is shocking and asked for the North-South bypass to be removed from the plan and it is not viable.

**Chris Clemow**, 2237 SW Tory Pines Drive, Bend, Oregon 97073 provided comments via the phone and said he is a Transportation Engineer hired by the Eastview Road Neighborhood Association. He commented on the justification for improving Eastview Road versus Elwert road.

**Jeff Kleinman**, 1207 6<sup>th</sup> Avenue, Portland, Oregon 97207 provided comments as the Attorney representing the Eastview Road Neighborhood Association. He commented on the explanation that the

North-South truck bypass is just a line on a map and will never be built. He said this effects the property values of the Eastview Road Neighborhood.

### **3. Open House and Survey Results**

Joe Dills summarized the three alternatives for the TAC members.

Kate Rogers provided a presentation (see record, Exhibit A) and Erika Palmer discussed the Sherwood West Re-Look Open House. She said there were 80-90 attendees and said there was also a virtual open house regarding the alternatives. She discussed the online survey results.

### **4. Developer Tour Summary**

Chris Zahas said there was a developer tour on October 24 with three developers, one broker, plus staff and consultants. He said the developers liked Sherwood's E-I zone and discussed the highlights of the conversations. He commented on a potential hospitality zone and said the feedback was there needs to be a destination. He discussed the tour takeaways regarding infrastructure and implementation.

### **5. Alternative Evaluations**

Mr. Dills discussed the housing metrics and said the difference makers are Alternative 2 has the most multifamily and cottage clusters and Alternative 1 has the highest medium/high density. He discussed the employment metrics which range from 4297 to 5017 with Alternative 3 having the highest number of jobs. He commented on the qualitative evaluation using the project goals.

Mr. Dills opened the meeting up for discussion.

### **6. Traffic Analysis**

Carl Springer discussed the Traffic Impact Analysis and said it addressed the following issues: how the current alternative compare with each other, how the current land use concepts compare with previous planning, underlying street and trail networks, and key impact findings so far. He discussed the North-South connector Road and said the expected vehicle volumes are between 1,500 and 4,000 vehicles per day, carrying primarily local traffic. He said regional travelers generally will remain on Elwert for a quicker trip during most times of the day. Mr. Dills clarified that Mr. Springer used a model for the forecasting. Jessica Pelz commented on the Elwert realignment discussion and the feasibility and said that should be discussed before the plan is adopted. Erika Palmer said there will need to be a detailed alternative analysis concerning rerouting Elwert versus keeping it where it is. Discussion followed.

### **7. TAC Input and Discussion Alternatives**

Kate Rogers initiated the Mentimeter Activity and instructed the eight TAC members on how to participate. The following questions were considered.

- The North District Alternative 1-3 and Alternative 2 was supported by five members.
- The Far West District Alternative 1-3 and Alternative 2 was supported by seven members.
- The West District Alternative 1-3 and Alternative 3 was supported by seven members.

- The Southwest District Alternative 1-3 and Alternative 1 was supported by eight members.
- The Elwert realignment concept and five preferred to keep the current alignment.
- The next steps for the Conceptual North-South Connector and five supported keeping it in the Concept Plan and continue to study further. Three members voted to remove it from the concept plan based on cost and amount of proposed use. Discussion followed.

#### **8. Summarize Next Steps and Adjourn**

Ms. Palmer said the next meeting will be in early 2023. The Community Advisory Committee will meeting today at 5:30 to 8 pm.

The meeting adjourned at 4:00 pm



# DRAFT CONCEPT PLAN MAP SUMMARY

TO: Sherwood West Community Advisory Committee and Technical Advisory Committee  
FROM: Sherwood West Concept Plan Project Team  
DATE: January 5, 2023

## Introduction

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This memorandum summarizes the draft land use map for the Sherwood West Concept Plan, which is attached for your review. The draft map responds to input from the community provided via the October open house and online survey, and reflects direction from the CAC and TAC at their November 17, 2022 meetings.

The memo includes the following sections:

- Summary of draft land use map
- Community park options for refinement
- Housing and Jobs metrics

Also included in this agenda packet are the following draft Concept Plan maps:

- Composite Concept Plan Map
- Land Use Map
- Streets Map
- Trails, Parks & Open Space

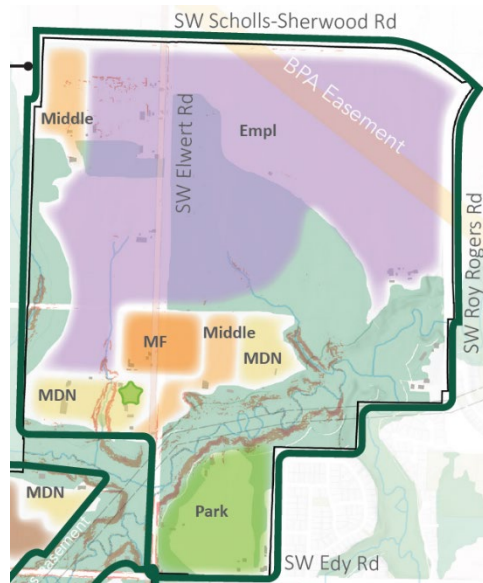
The project team is seeking input from the TAC and CAC on any suggested refinements to the maps before the project team proceeds with drafting the Sherwood West Concept Plan.

## Summary of Draft Land Use Map

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The draft Concept Plan land use map combines the most supported ideas from the three Land Use Alternatives reviewed at the community open house and online survey in October. The alternatives were compared by district (North, Far West, West, and Southwest), rather than as a whole, so that the best ideas from each alternative could be incorporated into the final map. The CAC considered the community's input and provided direction as to which alternative they preferred for each district. They also suggested modifications to the land uses in a few areas. In addition, the project team made further minor refinements to make the housing metrics more consistent with the earlier Alternatives. Below is a summary of the draft Concept Plan map by district, including proposed refinements to the earlier Alternative maps.

## NORTH



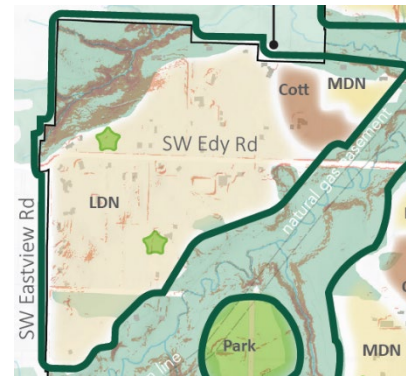
Based primarily on Alternative 1.

Includes a strong employment focus, with housing clustered near Elwert Rd and Chicken Creek. Locates a community park on Edy Rd south of Chicken Creek.

### Refinements to Alt 1:

- Per CAC direction, added a residential (Middle Housing) “buffer” at the northwest corner to separate the employment uses from rural homes and farms to the west.
- Split central Middle Housing area into Medium-Density Neighborhood.
- Potential refinements to the community park are considered in the next section.

## FAR WEST

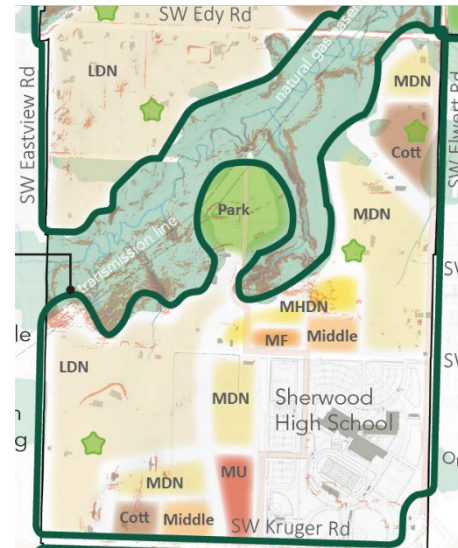


Based primarily on Alternative 1.

Mostly Low-Density Neighborhood with Cottage Cluster and Medium-Density Neighborhood near Edy Rd/Chicken Creek.

Refinement to Alt 1: Adjusted the locations of the neighborhood parks. The park on west Edy Rd takes advantage of views and the other park is in a lower area, avoiding steep slopes.

## WEST



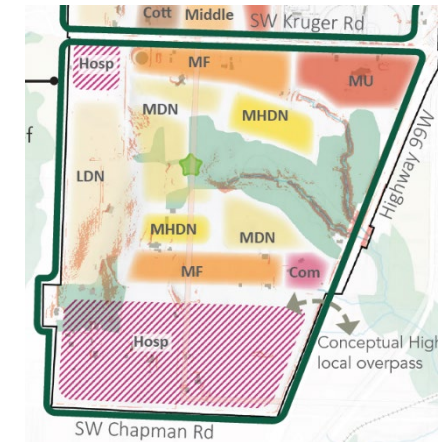
Based primarily on Alternative 2.

Includes Mixed-Use and a mix of housing types west of the high school. Places Cottage Cluster and Medium-Density housing along Elwert Rd. Low-Density Neighborhood along hilltop.

### Refinements to Alt 2:

- Split a large block of Cottage Cluster land along Kruger Rd into Cottage, Middle Housing, and Medium-Density Neighborhood.
- Minor tweaks to designations north of high school.

## SOUTHWEST



Based primarily on Alternative 2.

Includes Mixed-Use, Multi-Family and Hospitality along Kruger Rd. Mix of housing throughout, with Low-Density hilltop. Commercial node along Hwy 99. Large Hospitality area (“Gateway to Wine Country”) north of Chapman Rd.

### Refinements to Alt 2:

- Swapped areas of Multi-Family and Medium-Density Neighborhood.
- Changed the community park west of Goose Creek to Medium-Density Neighborhood (because there are already two community parks on the map). Added a neighborhood park instead.

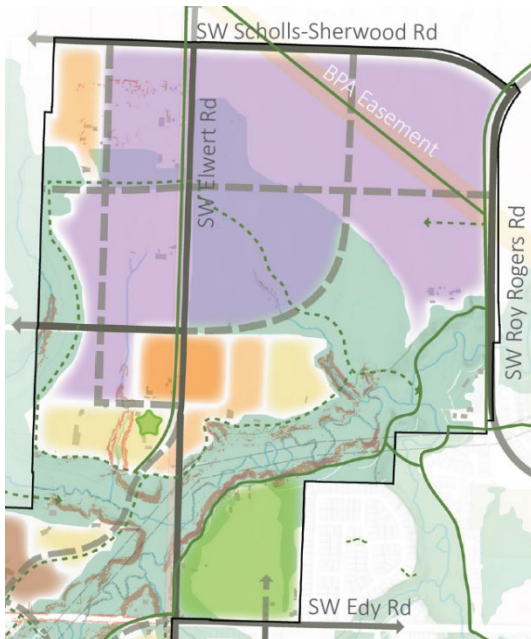


## Potential Refinements to North District Park

The draft Concept Plan map includes two community parks near Chicken Creek. The three Alternatives explored earlier all placed one community park in the West district south of the creek (referred to as the “sand trap”). The location of a second (and sometimes third) community park differed for each alternative. The draft Concept Plan map is based on Alternative 1, which located a community park in the North district north of Edy Rd and south of the creek (see Option A below).

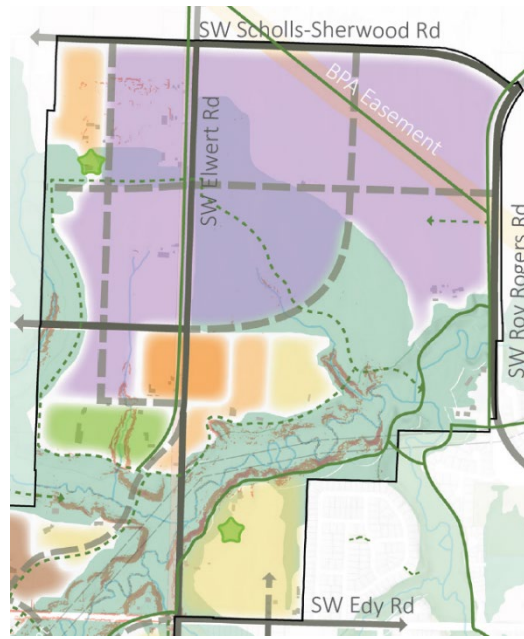
However, the project team had subsequent discussions about the park location, in part, because the owners of the property on Edy Rd have expressed interest in developing their land for residential use. As such, the team explored two alternative options for locating a park in the North district:

**Option A – Draft Concept Plan Map**



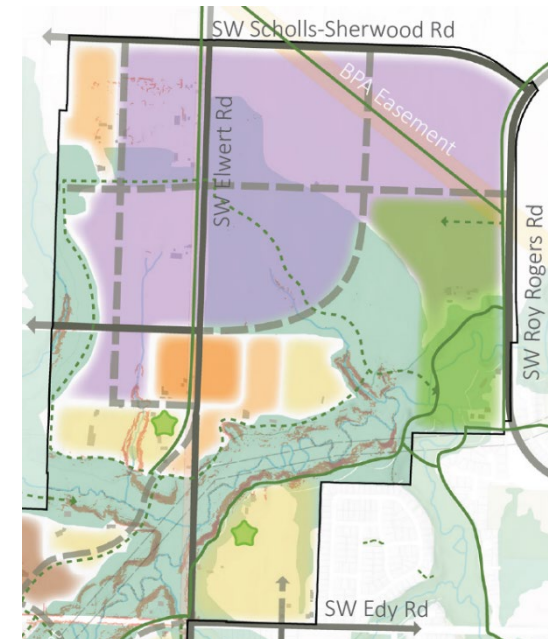
Park on Edy Rd.

**Option B – Park west of Elwert Rd**



This option locates the park west of Elwert Rd and replaces the Edy Rd area with Medium-Density housing. This is in line with the park concepts from Alternative 3.

**Option C – Park on Roy Rogers Rd**



This option locates the park on Roy Rogers Rd. The City recently acquired this property, with the thought that it could be used for civic functions in the future. This option also replaces the Edy Rd area with Medium-Density housing.



Option B has little effect on housing or jobs numbers, as it mostly swaps locations of park and Medium-Density Neighborhood land. However, Option C reduces the Mixed Employment area by approximately 20 net acres, which is estimated to reduce employment numbers by 365 total jobs. Because Option C swaps employment land for Medium-Density housing, it would also increase the total number of housing units slightly by approximately 140 units (or more if a percentage of middle housing is assumed).

**The project team is seeking Committee direction on which option for the second community park is preferred.**

## Land Use Metrics

### HOUSING ESTIMATES

The tables below present estimated housing units and densities based on the draft Concept Plan map. The assumptions regarding residential densities are consistent with previous housing metrics reviewed with the TAC/CAC and are based on existing zone densities in the Sherwood Development Code. The tables present a range of potential housing unit outcomes, depending on how much middle housing is developed in the Neighborhood designations (0-50%). *[NOTE: The “average density with open space” calculations assume an open space set-aside of 15%, integrated into development.]*

	Density Range (Net)	Total Acres (Net)	% of Residential Acres	Total Housing Units (with % of Middle Housing in Neighborhood areas)			
				0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	33	10%	798	798	798	798
Middle Housing	5.5 to 11	25	7%	280	280	280	280
Cottage Cluster	12.8 to 16	21	6%	338	338	338	338
Med/High Density Nbhd	5.5 to 11	23	7%	248	279	311	406
Medium-Density Nbhd	5.6 to 8	99	29%	793	961	1,129	1,635
Low-Density Nbhd	3.5 to 5	144	42%	720	1,008	1,296	2,160
<b>TOTAL</b>		<b>345</b>	<b>100%</b>	<b>3,176</b>	<b>3,664</b>	<b>4,152</b>	<b>5,616</b>
<i>Total Average Density</i>				9.2	10.6	12.0	16.3
<i>Total Average Density with Open Space</i>				7.8	9.0	10.2	13.8

Note: The total number of units and proportion of various housing types in the draft Concept Plan is fairly consistent with the three previous alternatives.

### EMPLOYMENT ESTIMATES

The table below presents the estimated employment potential in Sherwood West, and associated jobs-to-housing ratios, based on the draft Concept Plan map. As in previous employment metrics calculations, the jobs-per-acre estimates are sourced from the Metro 2014 Urban Growth Report and from the scenario planning software Urban Footprint. The jobs-housing ratios are based on three

potential housing scenarios, depending on how much middle housing is developed in the Neighborhood designations (0%, 10% or 50%).

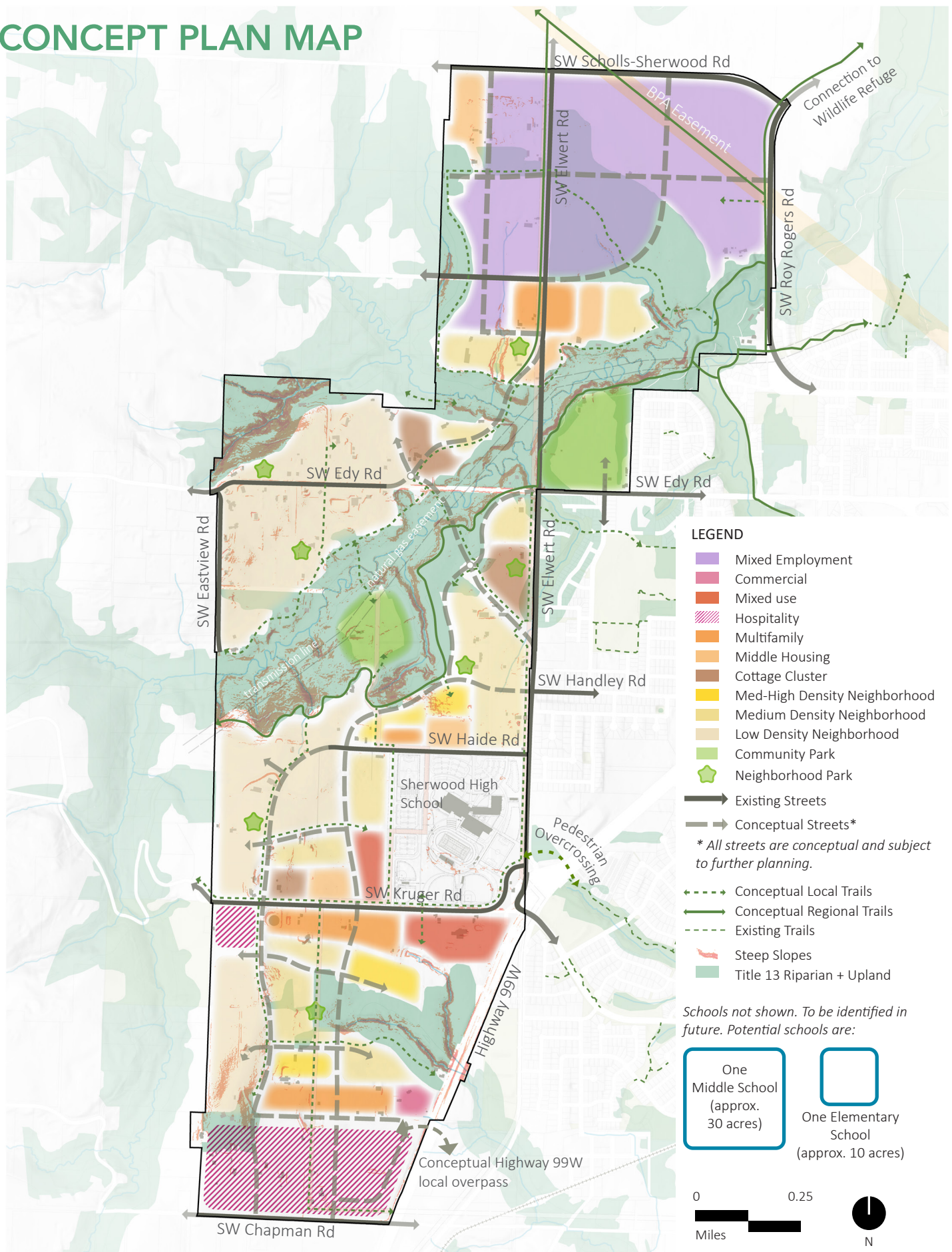
	Total Acres (Net)	Jobs / Net Acre (est.)	Total Jobs	Percent of Jobs	% of Employment Acres
Mixed Employment	121	18	2,219	51%	47%
Commercial	7	36	237	5%	3%
Mixed Use	25	25	638	15%	10%
Hospitality	63	15	938	22%	25%
Schools	40	8	314	7%	16%
<b>TOTAL</b>	<b>255</b>		<b>4,346</b>	<b>100%</b>	<b>100%</b>

### Jobs-Housing Ratio

	Middle Housing Scenario		
	0% MH	10% MH	50% MH
Total housing units	3,206	3,655	5,452
Total jobs	4,346	4,346	4,346
<b>Jobs-Housing Ratio</b>	<b>1.4</b>	<b>1.2</b>	<b>0.8</b>

The total employment estimate of 4,346 jobs is roughly consistent with the previous estimates for Alternative 1. However, the total job count is lower than in Alternative 2 (4,602 jobs) and Alternative 3 (5,017 jobs). Generally speaking, this is because Alternative 2 had more Commercial land in the North District and Alternative 3 had both Employment land in the Southwest district and more Mixed-Use land in the West district. Employment estimates should be viewed as conceptual, sensitive to small changes in assumptions, and changeable over time as actual development occurs.

# CONCEPT PLAN MAP





# CONCEPT PLAN & DISTRICT LAND USE THEMES

## NORTH

- + Employment focus
- + Residential buffer at northwest corner
- + Mix of housing north of Chicken Creek
- + Edy Rd park

## FAR WEST

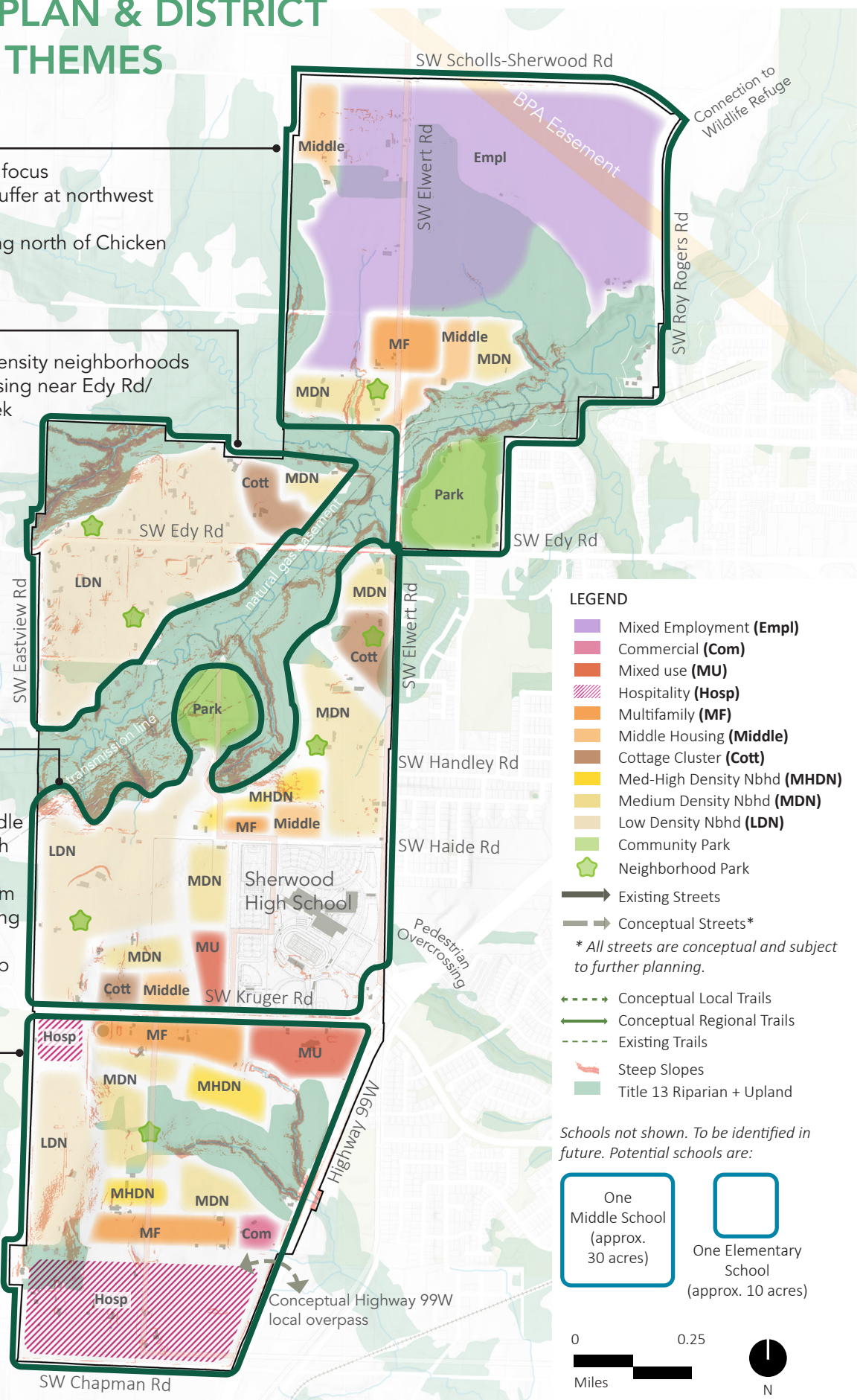
- + Mostly low density neighborhoods
- + Cottage housing near Edy Rd/Chicken Creek

## WEST

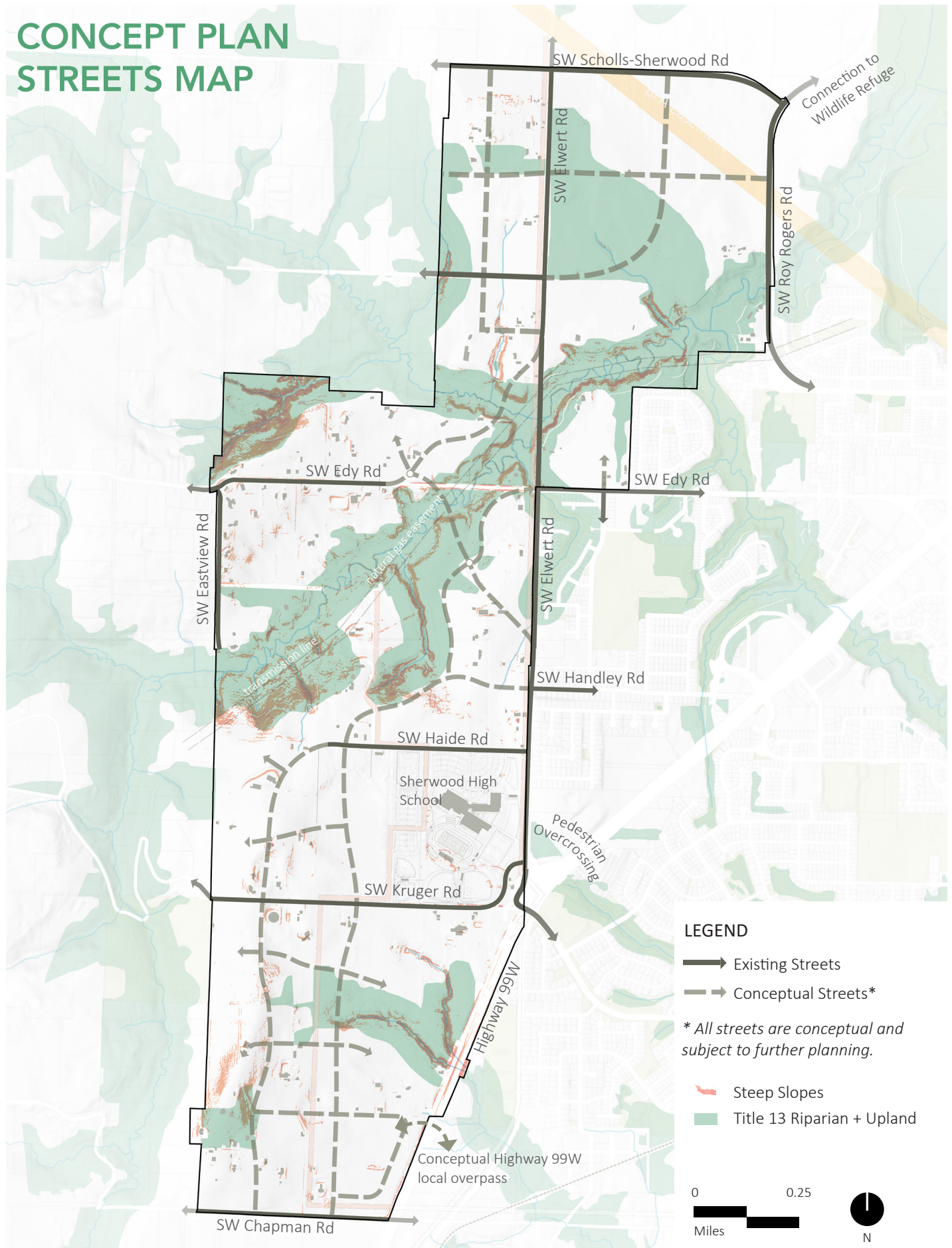
- + Chicken Creek community park
- + Mixed-use and middle housing west of high school
- + Cottage and medium density housing along Elwert Rd
- + Lower density hilltop

## SOUTHWEST

- + Mixed-use and multifamily south of Kruger Rd
- + Mix of housing, lower-density hilltop
- + Hospitality "Gateway to Wine Country" north of Chapman Rd and at western end of Kruger Rd

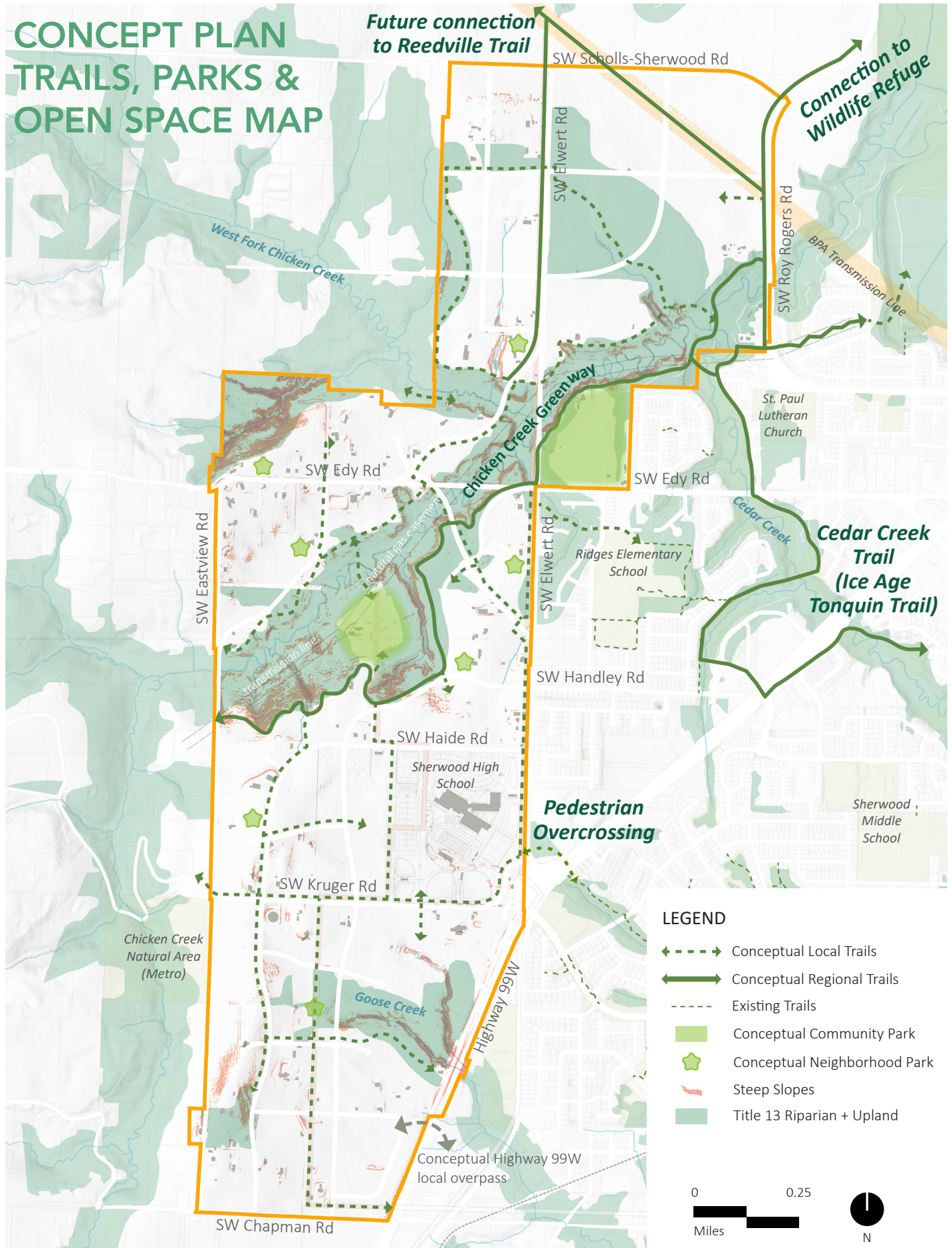


# CONCEPT PLAN STREETS MAP





# CONCEPT PLAN TRAILS, PARKS & OPEN SPACE MAP







## TRANSPORTATION IMPACT ANALYSIS MEMO

DATE: January 5, 2023

TO: Joe Dills, Kate Rogers | MIG  
Erika Palmer, Joy Chang | City of Sherwood

FROM: Carl Springer, Amanda Deering, Alex Haag | DKS Associates

SUBJECT: Sherwood West Concept Plan Traffic Impact Analysis

Project #21057-000

### INTRODUCTION

The Sherwood West Re-Look project will prepare a concept plan for the 1,291-acre Sherwood West area by updating the Sherwood West Preliminary Concept Plan. The Preliminary Plan, which was approved by the Sherwood City Council in 2016, was developed as a long-range planning tool to help guide future community discussions and decisions about the City's long-term growth. The purpose of the Sherwood West Re-Look project is to take another look at the Sherwood West area to address new land use and growth patterns, new transportation plans, new State rules related to housing, and new opportunities for employment and economic growth.

This memorandum summarizes the preliminary findings regarding the transportation impacts of the Sherwood West Concept Plan (Concept Plan) project and transportation network upgrades contemplated for the Plan Area. This memorandum includes:

- Estimated trip generation of the three land use alternatives
- Discussion of potential transportation network changes being contemplated in the Concept Plan, including the realignment of Elwert Road and evaluation of a parallel north-south connector route from Chapman Road to Edy Road.

Note: the north-south connector is not a site-specific proposal. It is a connectivity concept for further study. The memorandum is an initial evaluation of a conceptual connection between Chapman Road and Edy Road.

- Discussion of expected traffic growth in Plan Area
- Initial system performance review on major roadways and at two key study intersections

## STUDY AREA AND LAND USE ALTERNATIVES

The Concept Plan Area, illustrated in **Figure 1**, is bounded by Scholls-Sherwood Road to the north, Roy Rogers Road and OR 99W to the east, Chapman Road to the south, and Eastview Road to the west.

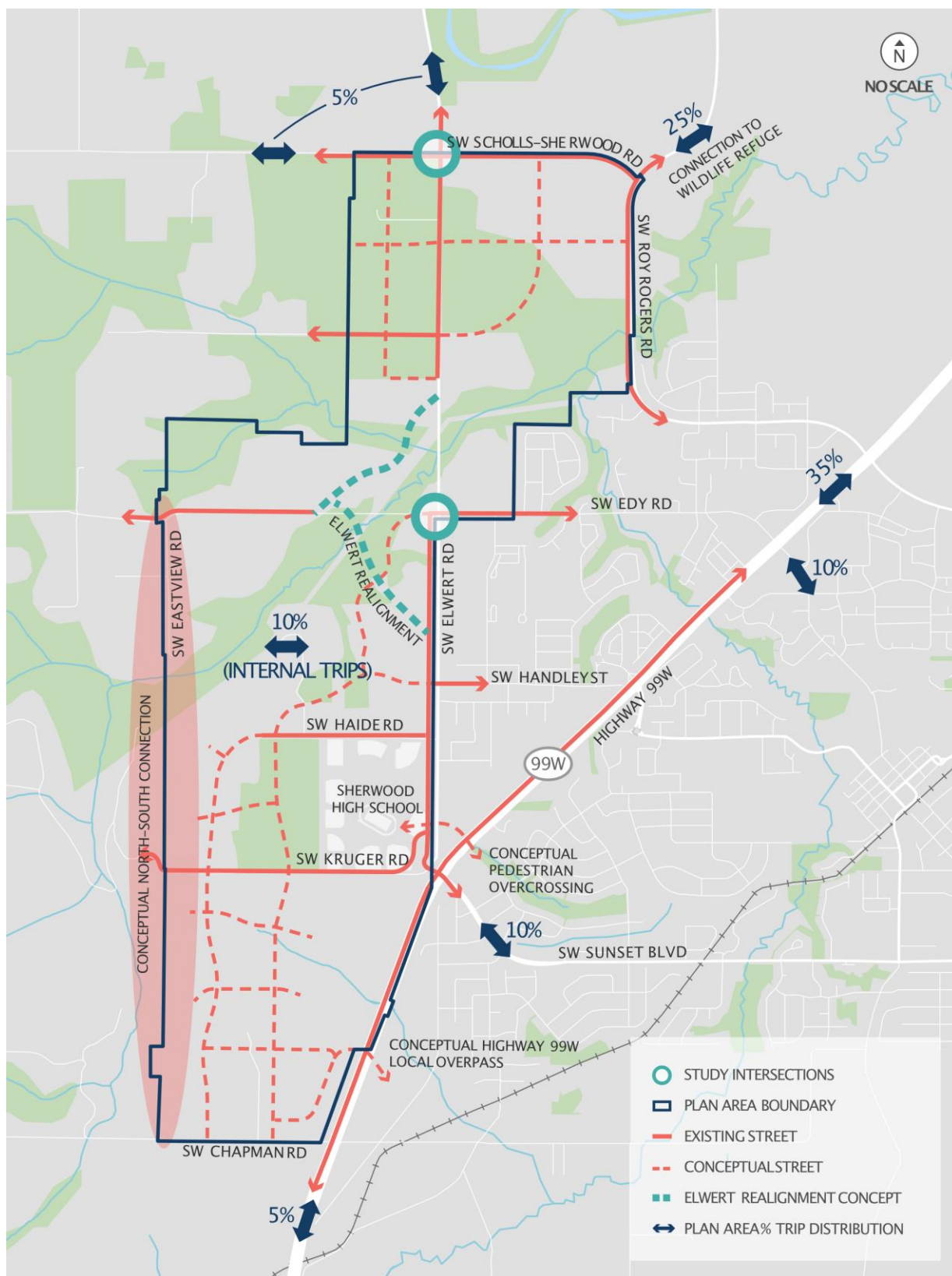
Three land use alternatives for the Concept Plan Area are being developed as part of the Concept Plan Re-Look (**Appendix A**). Land use Alternative 1 has the highest proportion of medium/high-density neighborhood land use of the three alternatives and less cottage zoning and multifamily than the other alternatives. Alternative 2 has the highest proportion of multifamily land use and less middle housing zone than the other two alternatives. In terms of employment acres, Alternative 1 has fewer mixed-use acres than the other two alternatives. In comparison, Alternative 2 has fewer mixed-employment acres but more commercial and hospitality land-use acres than the other two alternatives.

A breakdown of the total jobs and housing units for the three alternatives is summarized in **Table 1**. While the alternatives vary regarding the proportion and location of housing types, all three offer a comparable number of total housing units. For total jobs, Alternative 3 provides the highest number of total jobs, and Alternative 2 provides the least.

**TABLE 1: HOUSING METRICS AND JOBS SUMMARY**

CATEGORY	CONCEPT PLAN ALTERNATIVES		
	ALT 1	ALT 2	ALT 3
TOTAL HOUSING UNITS	3,730	3,845	3,635
TOTAL JOBS	5,245	4,600	5,020

Note: values rounded to the nearest multiple of 5



## PLAN AREA TRAVEL FORECAST

### VEHICLE TRIP GROWTH ESTIMATE

Trip generation for the three land use alternatives is estimated based on the Westside Travel Demand Model and the number of the expected housing units and jobs provided by each alternative. Summarized in **Table 2**, all three land use alternatives are expected to generate a similar number of vehicle trips when the area is fully developed. The values reported in **Table 2** are total vehicle trips during the 2-hour PM peak period. The magnitude of vehicle trips is comparable to the number of anticipated trips estimated by the previously completed Urban Reserve Transportation Study (URTS) for this area. By way of comparison, the URTS assumed land uses included a higher level of households (6,495) and minimal jobs (545) within the planning area.

**TABLE 2: VEHICLE TRIPS DURING 2-HOUR PM PEAK PERIOD**

	ALT 1	ALT 2	ALT 3	URBAN RESERVE TRANSPORTATION STUDY
<b>TOTAL VEHICLE TRIPS (2-HOUR PM PEAK)</b>	6,040	6,725	6,780	6,470

Note: values rounded to the nearest multiple of 5

### REGIONAL TRIP PATTERNS

Regional trip patterns for the Plan Area were estimated using the Westside Travel Demand Model to help understand the primary travel directions for trips that start or end in Sherwood West. As shown in **Figure 1**, most Plan Area travel demand is to/from the northeast of the Plan Area, either on Roy Rogers Road, OR 99W, and to/from the east on Tualatin-Sherwood Highway. Approximately 60% of vehicle traffic that begins or ends within the planning area will use these three routes. About 30% of travel demand crosses OR 99W to/from the rest of the City of Sherwood, while only 5% is to/from south of the Plan Area via OR 99W, and 5% is to/from northwest of the Plan Area on Lebeau Road and Scholls Sherwood Road. The analysis also showed that about 10% of traffic remains internal to the Plan Area, meaning that the trips start and end within the planning area.

## STREET NETWORK AND CONCEPTUAL STREET ALTERNATIVES

Several transportation network improvements were considered as part of the Preliminary Sherwood West Concept Plan and others as part of this subsequent analysis, including:

- The realignment of Elwert Road west of Chicken Creek.
- A conceptual north-south connection between Chapman Road and Edy Road.
- A new pedestrian over crossing near OR 99W at Sunset.
- A new multimodal overcrossing at OR 99W north of Brookman Chapman Road; and

- Several new internal local and connector roadways.

The conceptual locations of these upgrades are illustrated in **Figure 1**. All future facilities would meet current City multimodal street and trail facility standards. Major roadways generally would have one travel lane in each direction with center turn lanes (Scholls-Sherwood Road, Elwert Road, Edy Road, and Kruger Road), while local streets would be one lane in each direction. As noted above, the north-south connector is not a site-specific alignment. For this analysis, a two-lane road is assumed.

## **ELWERT ROAD RE-ALIGNMENT CONCEPT**

Elwert Road from OR 99W to Scholls-Sherwood Road is a two-lane rural arterial. Washington County and the City of Sherwood's Transportation System Plan identify the future build-out condition of Elwert Road as a 3-lane arterial, including sidewalks and bike lanes on both sides of the road. According to the County's Road Design Standards, this type of facility requires 90 feet of road right-of-way which includes 50 feet wide pavement, 2 travel lanes, a center turn lane and 2 bike lanes, plus landscape areas and sidewalks behind the curbs. The existing Elwert Road north of Edy Road has a paved area about 24 feet wide with ditches on both sides. As described in the Preliminary Concept Plan, the existing rural condition of Elwert Road would require significant expansion and upgrading to accommodate the city's adopted roadway design standards. This would include land acquisition for road right-of-way and could include re-grading the vertical alignment to improve driver sight distance. In addition, the portions of Elwert Road constrained by the Chicken Creek watershed would further require large cut-and-fill sections and significant environmental mitigation.

As a result, the Preliminary Concept Plan identified re-aligning Elwert Road west of the creek as being more cost-effective and preferred from a constructability standpoint rather than improving the existing alignment. Re-aligning Elwert Road is a transportation recommendation that has been carried forward as part of the current Sherwood West Concept Plan Re-Look project and is analyzed in this memorandum.

As shown in **Figure 1**, this future re-alignment is preliminary and subject to further study and design. Issues to be addressed in future work should include the following:

- Full or partial closure of existing creek crossings
- Cost and constructability
- Safety for all travel modes
- Local circulation for adjacent property and neighborhood connectivity
- Natural resource impacts and permitting
- The potential for a jurisdictional transfer of SW Elwert Road from the county to the city
- Implementation of an SW Elwert Road Design Concept

This initial study did not evaluate specific designs for the re-alignment – that is left to be addressed during future studies. However, this study did confirm that the existing alignment and traffic controls at Elwert/Edy need to be improved to safely serve the expected growth, as discussed in a later section of this memo. As discussed in the next section, this study also confirms that the re-aligned Elwert Road can function effectively as a two-lane cross-section, with appropriate pedestrian-bike facilities provided and center turn lanes/median where needed.

## **NORTH-SOUTH CONNECTOR**

The core idea of the north-south connector is to connect SW Chapman Road to the north end of Sherwood West, enhancing regional connectivity and providing an option away from neighborhoods. The specific route is conceptual, and its alignment has yet to be identified, as reflected by the wide shaded area in **Figure 1**. The City is aware of challenges – topographic, environmental, and conflicts with existing development – but seeks to continue to study this long-range transportation corridor. This connector would require approximately 1.7 miles of new roadway plus a new bridge structure across Chicken Creek.

## **TRAFFIC PERFORMANCE ANALYSIS**

Based on the initial travel forecast for 2040, the general travel conditions were reviewed to assess the planning street system overall based on expected daily traffic volumes and a more detailed review at two key study intersections during peak hours that have historically had operational issues. After the Sherwood West Concept Plan is approved, a further detailed operational analysis will be made to identify specific geometric and traffic control improvements that will be needed at other intersections as the area develops, which will be incorporated into the capital improvement program and the City's Transportation System Plan. A prior study of the OR 99W intersection at Brookman Road-Chapman Road recommended upgrading that intersection to traffic signal controls as development continues in the south end of Sherwood.

It is recognized that Sherwood West will not be fully built out by 2040, but a horizon year 20 years from the existing conditions was selected for analysis. The analysis includes the existing (2019) and future (2040) conditions. Both horizon year scenarios assume the existing lane configurations and controls of the study intersections. Analysis has been conducted using Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology and Synchro 11 software suite.

As all three land use alternatives are expected to generate a comparable number of total vehicle trips, analysis has been conducted for Alternative 3 since it had the highest vehicle trip estimate. Plan Area generated traffic has been assigned to the study road network based on the regional travel patterns described in the previous section.

## **DAILY TRAFFIC VOLUMES**

The daily traffic volumes on the major roadways within the Plan Area provide a general performance indicator for road segment capacity. Depending on access management and cross-



street spacing, a 3-lane arterial or collector roadway can carry 15,000 to 20,000 vehicles daily. 2040 daily traffic volume forecasts have been reviewed within the planning area, as summarized in **Table 3**. Each roadway was shown to carry below this maximum level and will therefore provide satisfactory service. Further studies will be required during the development review to determine appropriate geometric improvements and traffic control upgrades at significant intersections.

**TABLE 3: DAILY TRAFFIC FORECASTS ON SELECTED ROADWAYS**

ROAD SEGMENT	2040 DAILY TRAFFIC
SCHOLLS-SHERWOOD ROAD BETWEEN ELWERT ROAD AND ROY ROGERS ROAD	13,000
ELWERT ROAD NORTH OF CHICKEN CREEK	10,000
EDY ROAD EAST OF ELWERT ROAD	9,000
EDY ROAD WEST OF CHICKEN CREEK	1,500
NORTH-SOUTH CONNECTOR ROAD	4,000*
CHAPMAN ROAD WEST OF OR 99W	9,000

Note: \*The volume estimate ranged from 1,500 to 4,000 ADT on this facility.

The notable finding from this review was the expected low vehicle traffic usage on the conceptual north-south connector roadway. As shown in **Table 3**, the volumes are expected to range from a low of 1,500 to 4,000 vehicles daily, which is consistent with local street or neighborhood routes. Further study is recommended as the planning advances.

## INTERSECTION OPERATIONS

Summarized in **Table 4**, the results of the traffic operations analysis indicate that the study intersections are found to be operating acceptably under existing conditions. The Elwert Road & Lebeau/Scholls-Sherwood Road intersection, which is controlled by all-way stop signs, is operating at LOS D, with the highest delays experienced by the westbound shared movement. The Elwert Road at Edy Road intersection is currently controlled by a traffic signal and shared approach lanes on all legs. It operates at overall LOS A, and LOS B or better for all individual approaches.

Results of the traffic operation analysis indicate that by 2040, conditions at Elwert Road at Lebeau/Scholls-Sherwood Road intersection would be expected to deteriorate to LOS F if no capacity improvements are made, with significant delays experienced by the westbound and southbound movements. The Elwert Road at Edy Road signalized intersection would be expected to operate acceptably at LOS C through to 2040 with existing capacity (no geometric improvements). However, as noted previously, to comply with the city's urban street design standards, this intersection requires expansion to accommodate safe walking and bicycling, which is important given the proximity of two school campuses. Refer to **Appendix B** for more details on these intersection analyses.

**TABLE 4: EXISTING AND FUTURE INTERSECTION OPERATIONAL ANALYSIS SUMMARY**

INTERSECTION	WORST MOVEMENTS	2019 PM		2040 PM	
		DELAY	LOS	DELAY	LOS
ELWERT ROAD & LEBEAU/SCHOLLS-SHERWOOD ROAD	Westbound Scholls-Sherwood	41.0	E	165.7	F
	Southbound Scholls-Sherwood	23.5	C	46.0	E
	<b>OVERALL</b>	<b>28.8</b>	<b>D</b>	<b>98.1</b>	<b>F</b>
ELWERT ROAD & EDY ROAD	Eastbound Edy	9.0	A	35.3	D
	<b>OVERALL</b>	<b>12.2</b>	<b>B</b>	<b>27.9</b>	<b>C</b>

Note: Worst movements noted have the highest delay for a given roadway approach. In all cases, the approach shares a single lane for all left-turning, through, and right-turning traffic. Refer to Appendix B for calculation details.

## CONCLUSIONS

This memorandum summarizes the preliminary findings of the transportation impacts of the three land use concepts developed for the Plan Area as part of the Sherwood West Concept Plan Re-Look.

All three land use concepts being contemplated as part of the Re-Look have a comparable number of total proposed housing units and total jobs. Despite each alternative varying in terms of housing typology and land use layout, all three would be expected to generate a similar number of overall vehicle trips to the number estimated by the previously completed URTS for this area.

Regional travel patterns identified using the Westside Travel Demand Model indicate that most Plan Area traffic travels to or from outside the Plan Area, with only 10% of travel demand remaining internal. Most travel demand (60%) is to/from the northeast of the Plan Area, and about 30% is traveling to/from the City of Sherwood east of OR 99W. Variations in land use and layout in the three Alternatives would be expected to have a minimal impact on overall travel patterns.

The Sherwood West Concept Plan describes two road network upgrades that are being examined as part of the Re-Look: the realignment of Elwert Road and a new conceptual north-south parallel route that would connect Chapman Road to Edy Road. The realignment of Elwert Road was identified as a preferred option as part of the Preliminary Concept Plan, and this current Re-Look project, due to the required cross-sectional upgrades and the existing alignment's confluence with Chicken Creek.

Results of the intersection operational analysis indicate that conditions at Elwert Road at Lebeau/Scholls-Sherwood Road intersection would be expected to deteriorate to excessive congestion (LOS F) during peak travel hours if no capacity improvements were made. In contrast,

the intersection of Elwert Road at Edy Road would be expected to operate acceptably with its existing signalized configuration through to the 2040 horizon year. However, both locations will need to be improved to accommodate multimodal facilities as required by the county and city's urban street standards.

The Concept Plan includes urban upgrades to significant roadways within the Plan Area, such as Elwert Road, Kruger Road, Chapman Road, and Edy Road. The planned upgrades include two to three-lane cross-sections and upgrading several existing intersections to either roundabouts or traffic signals. Our initial finding is that Sherwood West Growth will be served adequately with the planned street network as described in the Concept Plan. Further study is recommended to develop a more comprehensive list of improvements and associated cost estimates as this area is made ready for urban development.

## **RECOMMENDATIONS**

Based on the high-level findings of this memorandum, the following are recommended:

- The Elwert Road re-alignment concept be advanced with the Sherwood West Concept Plan, and further studies be conducted to determine the best alignment and intersection configurations.
- The Elwert Road corridor should adopt design themes consistent with the city's vision, as represented by the Sunset Road corridor.
- Upgrade Elwert Road to three lane cross-section with bike lanes and sidewalks take place as development occurs.
- Upgrades to the Elwert/Lebeau Road at Scholls-Sherwood Road intersection be made to provide additional capacity to adequately support traffic growth through to the 2040 horizon year. The intersection with Elwert Road will require additional study, reconfiguration, and eventual signalization or roundabout improvement as development occurs.
- Multimodal safety improvements be made to the Elwert Road and Edy Road intersection consistent with the cross-sectional upgrades to these roadways outlined in the Concept Plan. Other intersections should also be reviewed for possible multimodal safety upgrades as development occurs nearby, including the Elwert Road at Handley Road intersection, and the Elwert Road at Haide Road intersection.
- Edy Road between Elwert Road and Borchers Drive is as a 3-lane collector with bike lanes and sidewalks in the city's Transportation System Plan. This project should be included for the portion within the concept planning area.
- Edy Road west of Chicken Creek should be a two-lane collector road without on-street parking within the concept planning area.
- The north-south connector concept should be further studied to better address the cost/benefit trade-offs for this new route. Sufficient north-south connectivity should be incorporated into the growth area to provide direct north-south multimodal service parallel to SW Elwert Road.

## Transportation Concepts for Further Study

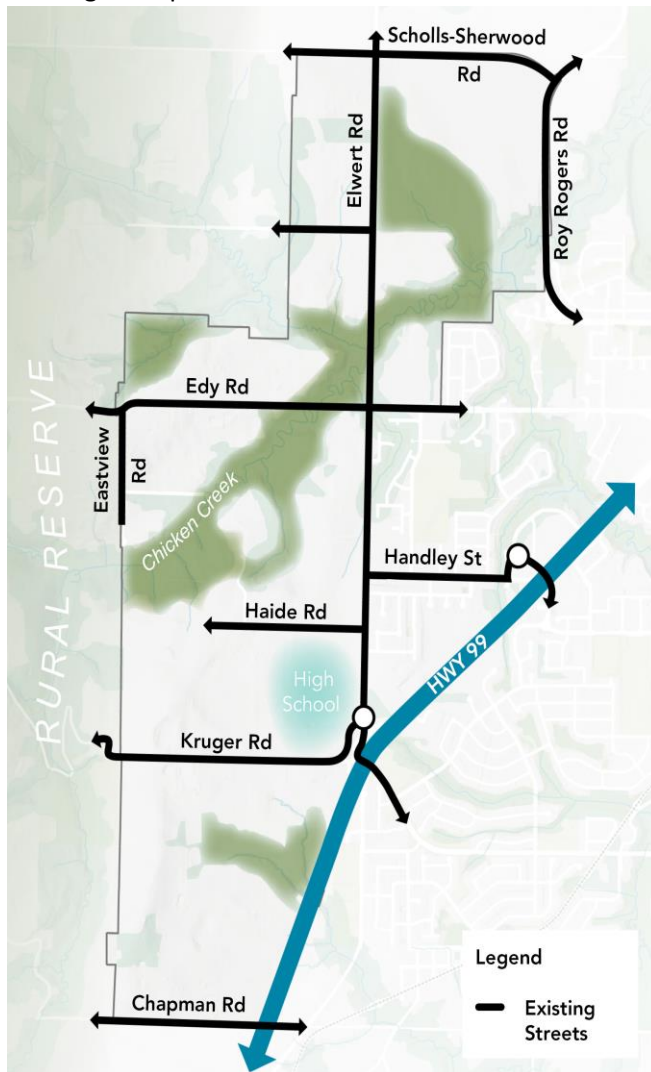
The existing transportation system in Sherwood West is limited to very few routes, rural road conditions, and almost no pedestrian and bicycle facilities. A key challenge is the reliance on Oregon Hwy 99 and SW Elwert Road for north-south travel, particularly for through-trips that do not have an origin or destination in Sherwood. OR 99 is designed for this role; however, SW Elwert is not. SW Elwert's future improvements should support Sherwood West as a livable, walkable part of Sherwood, not a conduit for through traffic. SW Sunset is a model for this type of street.

The transportation network for Sherwood West will serve local travel, provide excellent walking and biking routes, and minimize trips through Sherwood's neighborhoods. Toward this end, the strategies in the Concept Plan are to:

- Plan and develop a well-connected street network that connects existing and new neighborhoods
- Plan and develop a robust, safe and inviting pedestrian and bike network – for all users
- Implement the Chicken Creek Greenway with a regional trail that connects Sherwood West to the existing city and the Tualatin National Wildlife Refuge
- Implement the SW Elwert Design Concept, a vision for great street that connects neighborhoods rather than divides them
- Build the Brookman overpass
- Build the pedestrian overpass over Hwy 99
- Provide additional north-south connectivity that directs traffic away from neighborhoods rather than through them

The diagrams below show a concept for additional north-south connectivity, for further study. The core idea is to connect SW Chapman to the north end of Sherwood West, enhancing local and regional connectivity and providing an option away from neighborhoods. The specific route is conceptual, and its alignment has not been identified. The City is aware of challenges – topographic, environmental, proximity to the rural reserve, conflicts with existing development – but seeks to continue to study this long range transportation corridor.

## Existing Transportation Network



Future Transportation Network  
With Study Corridor

