SW LEVENS ST & W ELLENDALE AVE INTERSECTION

Intersection Improvement Project

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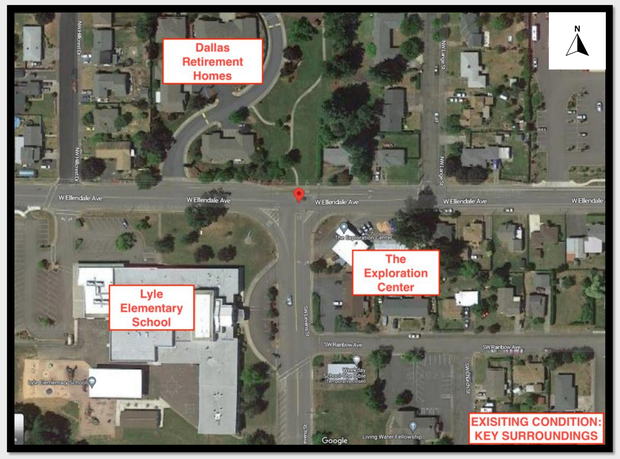
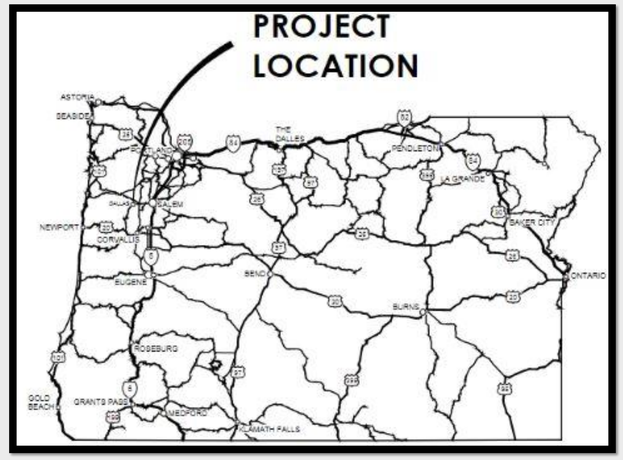
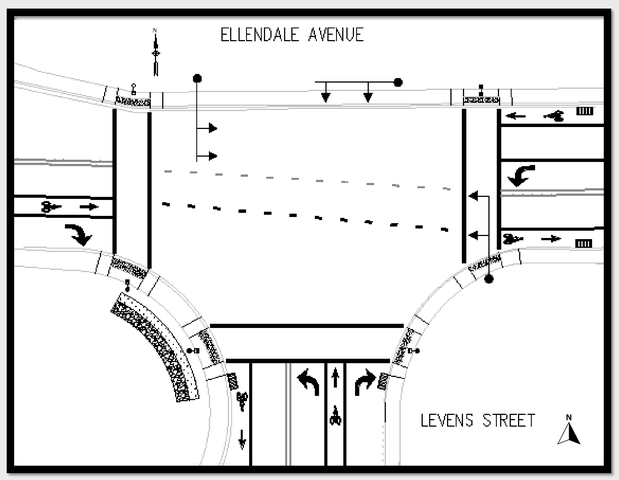


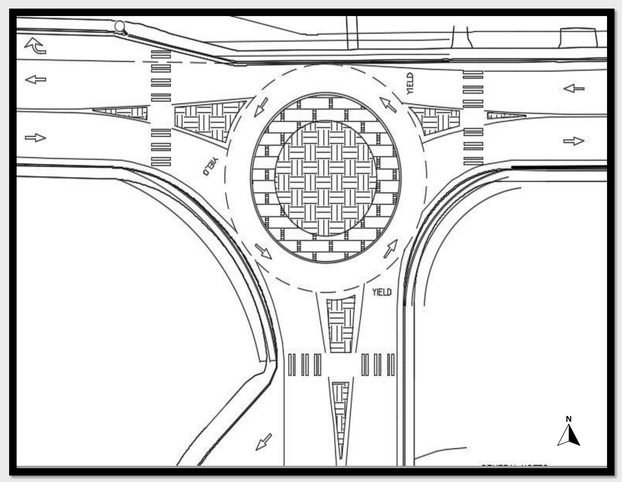


INTRODUCTION

The intersection is located in Dallas Oregon and is currently a stop-controlled T-intersection. Levens St. and the east leg of Ellendale are included in a City-designated truck route. This project is within proximity to an elementary school, causing high queuing during pick-up and drop-off times. The objective of the Levens & Ellendale project is to improve traffic flow at the intersection of SW Levens St and W Ellendale Ave. The client's goal for improvement of traffic flow is to provide enough turning radius for the heavy vehicle traffic and to minimize queuing times. The disciplines contributing to this project are water resources, geotechnical, and transportation engineering.

FINAL DESIGNS





LE1: SIGNALIZED

Geotechnical

Local soil is clayey sand and inorganic clays with clayey gravel. No groundwater table 20 feet below ground surface. Signal Light foundation is a 16 foot deep drilled shaft with a concrete rebar cage. Pavement design concluded that a repavement can be done if within budget.

Water Resources

The goal for water resources was create a storm water system to handle a 100 year storm event. The main method used to capture runoff from the road were catch basins. On top of capturing the water treatment of the water was done by a bioswale in the bottom left of the site. The placement and sizing for the bioswale was governed in part by where property lines were. Water treatment wasn't required so this decision was decided to minimize costs.

Transportation

The intersection will include reduced lane widths from existing lane widths to include 6' bicycle lanes at the intersection. Crosswalks are added with pedestrian signals. Light signals are added to the intersection for vehicle traffic to reduce congestion during peak flow times.

Oregon State University

LE3: ROUNDABOUT

Geotechnical

The design alternatives for the geotechnical discipline were between a flexible and rigid pavement type. The central island of the roundabout design requires a retaining structure.

Water Resources

The main considerations for the water resources design were catch basins with piping and bioswales. To prevent flooding, and improve the safety of the intersection, it was essential to implement a system to drain the water from a 100 year design storm.

Transportation

The roundabout will feature three access points and a 95ft inscribed diameter to ensure a seamless flow of traffic. The 12ft wide lanes and a 12ft apron will facilitate the accommodation of larger vehicles. Clear signage, along with well-defined markings, will be crucial in guiding drivers through the roundabout. The 9.5ft wide sidewalks and three crosswalks will be of immense benefit to pedestrians and cyclists. These enhancements will significantly improve mobility for all users, ensuring a safer and more efficient travel experience.

Decision Matrix Used

	Signalized	Roundabout	Existiting
*Safety	3	4	3
*Mobility	4	5	3
*Resilience	3	4	5
Pedestrian/ Bikes	3	4	2
Trucking	4	4	3
Sustainability	3	4	3
*Cost	4	5	5
Current V/C	0.66	0.57	0.6
Future V/C	1.06	0.92	1.2

5-Excellent 4-Good 3-Neutral 2 Bad 1-Very Bad