



Yamhill County Public Works Site Development

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Background

Yamhill County Public Works (YCPW) is a government agency that maintains and repairs all roads, bridges, ditches, etc. in Yamhill County. Additionally, they are responsible for awarding permits and assisting the public in resolving property disputes. Public Works employees include a road maintenance crew, a shop crew, and the administration.

YCPW is preparing to demolish their existing maintenance facility and construct a new maintenance facility on the old foundation at their property located in McMinnville, Oregon. In addition, they plan to redo the parking lots to the North and West of the building, with the expectation that our senior design team will provide a feasible conceptual design for the site.



Figure 1. Existing YCPW Shop and Adjacent Parking Lot

Objectives

Through initial meetings with YCPW administrators, our team was given a list of objectives for the parking lot design:

- Maintain current entrances & exits
- Design for adequate truck access
- Meet or exceed existing parking capacity for the site
- Relocate security fencing for improved truck access
- Improve aesthetics along road
- Organize & define parking areas for both secured and unsecured parking
- Incorporate islands, landscaping, and an impound lot in design
- Specify location of water fill-up station
- Improve drainage throughout the site
- Provide a plan for lighting the parking lot
- Comply with applicable city codes & requirements



Figure 2. Surveying the existing lot in preparation for the design phase

Final Design

Design Layout

Figure 3 below shows the final parking lot design.

- 165 parking stalls sitewide, up from the existing 128 stalls.
- Five ADA stalls located near the buildings
- Nine trailer stalls along the side of the storage building
- Two entrances from the street and two gates which open to the restricted non-public parking area.



Figure 3. Final Site Design

Designing for Vehicle Access

In the design, considerations were made for the large construction vehicles that will need to navigate the parking lot. Using vehicle tracking software, we made sure that all vehicles will have adequate clearance around corners, and vehicles with the widest turning radii are able to travel around the north parking lot.

Stormwater Management

As can be seen in Figure 4 below, the grading of the lot was designed so that the western half collects stormwater and conveys it directly to Lafayette Ave, and the eastern half collects stormwater and conveys it through the existing storm pipe network on the adjacent fairgrounds property. Our team worked closely with the City of McMinnville Community Development Director in order to ensure that the proposed stormwater plan will be acceptable. The final stormwater management design was decided on due to regulations from the City about where the stormwater could be sent.

Our design calls for the installation of:

- Approximately 400 feet of ductile iron or C900 pipe
- Two catch basins
- Two 24" dome inlet drains.

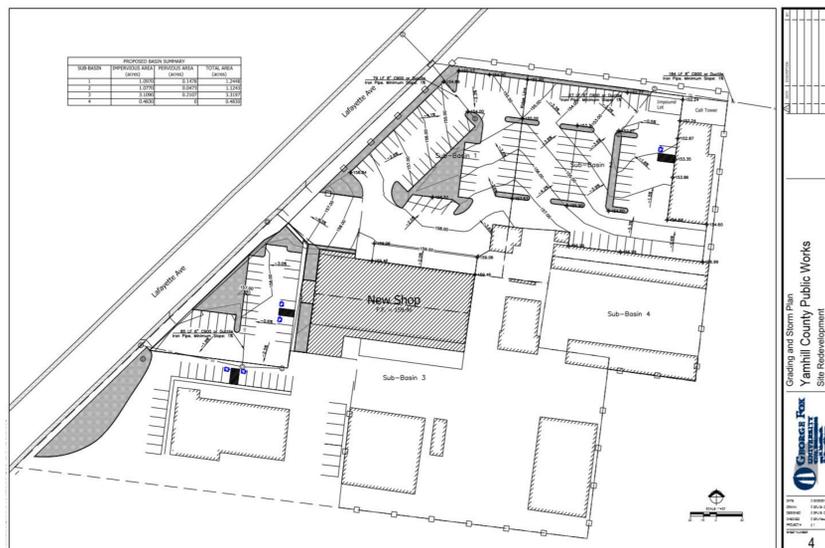


Figure 4. Grading and Stormwater Plan

RIAC Meetings

On November 10th of 2016, our team met with the Yamhill County Road Improvement Advisory Committee (RIAC) to discuss progress on the Yamhill County Public Works Site Redevelopment Project. We outlined the design requirements, client specifications, considerations being made in the design, and several preliminary designs. RIAC engaged with the team in an open discussion about considerations, alternatives, and next steps.



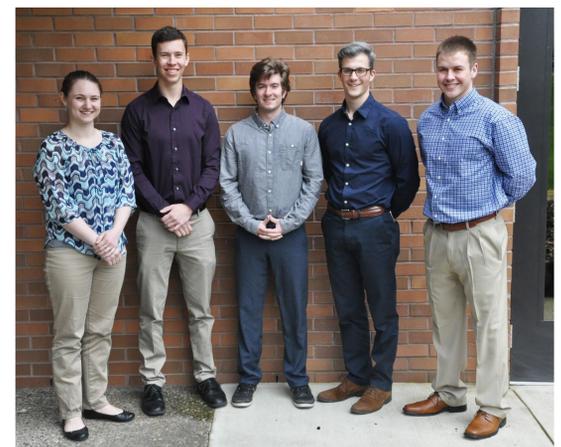
Figure 5. RIAC Presentation

On March 9th of 2017 our team had a follow-up meeting with RIAC to discuss the detailed designs created. Our team presented the detailed designs, covered the design requirements in depth, and fielded questions from the committee members. RIAC was excited about the overall progress of the design and expressed this several times. The committee was particularly pleased to hear that communications with the city, fairgrounds, and private contractors had led to a stormwater management plan that was acceptable to all parties involved.

Deliverables

The final deliverable to our client is a project report and a complete set of CAD drawings which include the following:

- Existing Conditions
- Site Layout
- Grading and Stormwater Plan
- Landscaping Plan
- Lighting Plan
- Results from the vehicle tracking software



From left to right: Emily Klockner, Caleb Cox, Matt Deming, Mikal Pattee, Grant Schroeder

Senior Design