MARTIN WAY PUMP STATION IMPROVEMENTS

Essential Public Facilities Analysis

INTRODUCTION

The LOTT Clean Water Alliance (LOTT) is the regional wastewater utility, servicing the urban growth areas of Lacey, Olympia and Tumwater, and portions of unincorporated Thurston County. LOTT's mission is to protect public health and the environment by cleaning water and recovering resources for our community. LOTT is underway with a project to upgrade the Martin Way Pump Station (MWPS), located at 5750 Martin Way E, Lacey, WA 98516. The pump station is responsible for conveying an average of 4 to 5 million gallons a day of wastewater generated in the Lacey service area to both the Budd Inlet Treatment Plant (BITP) and Martin Way Reclaimed Water Plant (MWRWP) for treatment.

The existing pump station, constructed in the early 1990s, is reaching the end of its service life and needs to be expanded and upgraded or replaced. The pumping capacity must be increased to meet anticipated population growth, which is expected to increase by 30% over the next 20 years.

LOTT conducted a comprehensive engineering analysis, evaluating five potential alternatives to include the following:

1. Refurbish the existing pump station and construct a new pump station along Martin Way.
2. Refurbish the existing pump station and construct a new pump station at the MWRWP site.
3. Refurbish and expand the existing pump station.
4. Construct a new pump station in the driveway of the existing pump station.
5. Construct a new pump station adjacent to the existing pump station.

Alternative 5 was selected as the preferred alternative.

Under Lacey Municipal Code 16.66.060, the project requires an essential public facilities analysis, public review process, and conditional use permit from the City of Lacey. The proposed project will also be brought before the Lacey Hearings examiner for consideration of a final determination of approval, which will include a review of submitted public comment. The following includes the responses to the essential public facilities analysis questions:

1. An evaluation of the site's capability to meet basic siting criteria for the proposed facility, such as: size, physical characteristics, access, and availability of necessary utilities and support services.

The proposed wastewater pump station consists of the following major components: wet well (to receive wastewater), pumps, piping, motors, electrical equipment, solids handling equipment, surge tanks, odor control equipment; site power utilities, vehicle access and stormwater treatment facilities.

The proposed site is of sufficient area to accommodate a 4,600 square foot (sf) building; 4,000 sf stormwater treatment facility; 2,000 sf to site electrical infrastructure, surge tank, odor control equipment and piping systems; and 15,000 sf of vehicle access area sufficient to meet Lacey ingress/egress code requirements for emergency response vehicles. The combined area is approximately 25,000 square feet. As the proposed location is an expansion of the existing pump station, all necessary utilities are already available at the site.

2. An explanation of the need for the proposed facility in the proposed location.

Due to the nature of the gravity sewer collection systems, the pump station must be located at the lowest topographical location within the collection basin. Currently, wastewater flows come from the east along Martin Way and from the south along Desmond Drive.

Alternative 5 meets the topographic need of being in a location where the service area collection system can drain down to the pump station's wet well.

Proposed Project Location

3. The site's relationship to the service area and the distribution of other similar public facilities within the service area or jurisdiction, whichever is larger.

The proposed site is at the topographic low point of the collection system. Wastewater from within the service area flows via gravity to the site through the collection piping system. The City of Lacey owns and operates multiple smaller pump stations within the service area that feed into this collection basin. This includes wastewater flow from the east along Martin Way and from the south along Desmond Drive. The outer limits of the service area extend to the ends of feeder roads of Willamette Drive and the Beach Crest neighborhood, Martin Way to Ridgeview Drive, and Ruddell Road to Yelm Highway. This wastewater must be treated at either the BITP or the MWRWP to meet LOTT's National Pollutants Discharge Elimination System (NPDES) permit discharge requirements. This treatment would not be feasible without the necessary pumping capacity.

4. A general description of the relative environmental, traffic, and social impacts associated with locating the proposed facility at the alternative sites which meet the applicant's basic siting criteria. The applicant shall also identify proposed mitigation measures to alleviate or minimize significant potential impacts.

The proposed project site alternative sits in a depression directly east of the existing pump station and includes upland forest and low-lying wetlands. A critical areas review, completed by Skillings, identified wetlands within the project vicinity, which the project would directly impact. The project will minimize these impacts to the extent possible and LOTT is working with the City of Lacey and the Department of Ecology (Ecology) to identify the required mitigation measures that will need to be taken. The construction activities and necessary mitigation will be completed in accordance with all local, state and federal requirements. No other endangered species or other critical areas of concern were identified.

The project is not anticipated to result in any increase in traffic, noise or odors compared to the existing facility, with the exception of periodic increases of traffic and noise during construction.

5. A brief description of the process used to identify and evaluate the alternative sites. (Ord. 1236 §2, 2005).

LOTT hired engineering consultant, Brown and Caldwell, to conduct an alternatives assessment, which identified and evaluated five options to meet current and future wastewater conveyance requirements within the service area. The minimum requirements included: 1) the ability to receive, via gravity, and pump all existing and future wastewater flows to the BITP; 2) the ability to provide sufficient wastewater screening and pumping capacity to provide sufficient flow to the MWRWP, allowing continuous operation; and 3) the ability to continue to reliably operate the existing pump station during the project's construction. The alternatives evaluation criteria included environmental and social impacts, upfront capital and ongoing operational costs, construction feasibility and overall risk.

Five alternatives were evaluated:

1. Construct a new pump station along Martin Way and refurbish existing pump station.

   This alternative requires the securing of additional property in more developed areas further east on Martin Way for the siting of a new pump station, which would capture the flows coming from the east along Martin Way. This option also requires the rehabilitation of the existing pump station to manage flows from the Desmond Drive sewer line. This option alleviates the need to expand the pumping capacity, and the rehabilitation could take place after the new pump station is online, reducing the risk during construction. However, this option is much more expensive and results in the largest social impact as significant additional piping infrastructure along Martin Way would be required. Ongoing operational costs would increase with the need to maintain two separate facilities. Additional property would also be required, for which a willing seller may be difficult to find.

2. Construct a new pump station at the MWRWP site and refurbish the existing pump station.

   This alternative constructs a new pump station on the LOTT owned property adjacent to the MWRWP. This option also requires the additional conveyance infrastructure as well as rehabilitation of the existing pump station. This alternative is slightly less expensive than alternative 1 and the social impacts resulting from construction along Martin Way are reduced as well. Similar to alternative 1, operational costs would increase with the need to maintain and operate two facilities.

3. Refurbish and expand the existing pump station.

   Through the evaluation process, this option was determined to be infeasible. The risk associated with implementing the necessary capacity expansion improvements, while still maintaining reliable operation during construction, was too great. To complete the work, the pump station would need to be shut down for extended periods of time, requiring extensive temporary bypass pumping, increasing the risk of sewer overflows and expense.

4. Construct a new pump station in the existing driveway.

   Similar to alternative 3, this option was also determined to be infeasible considering the site constraints and the level of risk in trying to maintain reliable pumping capacity during construction. This alternative would require extensive use of retaining walls and shoring in order to construct. In addition, significant utility relocation would be necessary before construction could begin. Temporary and extensive bypass pumps and piping would be required during this time, which increases the risk that pumping would fail and increases the cost of construction.

5. Construct a new pump station adjacent to the existing pump station.

   This alternative expands the footprint of the existing site, allowing for the construction of a new pump station adjacent to the existing pump station. This alternative requires the securing of additional property. The property owner, Saint Martin's Abbey, is agreeable to selling the necessary property.

   Alternative 5 was selected as the preferred alternative. No additional conveyance infrastructure is necessary along Martin Way. Both of the existing sewer lines can flow via gravity to the new pump station. The existing screenings building can be retained. This alternative also provides the benefit of keeping the existing pump station in service during construction, but unlike alternatives one and two, this alternative does not require the refurbishment of the pump station, as the new pump station will include all the necessary capacity. This alternative does impact some wetlands and wetland buffers within the project site. However, LOTT is working with Ecology and based on early discussions, LOTT feels confident that any impacts can be properly mitigated in compliance with all applicable, local, state and federal regulations.