City of Dayton

Population 2,565

Existing WWTP
0.75 MGD
Walla Walla Watershed and WRIA 32
Stakeholders

CITY OF DAYTON WWTP UPGRADE PROJECT TEAM

Water Quality
- Jake Hollopeter, P.E.

Watershed Unit
- Sarah Dynecki
- Ethan Lockwood

Water Resources
- Mayor Zac Weatherford
- City Council
- Dayton City Staff
- Public Works Staff

Walla Walla
- Water Master

SEA Program

Blue Mountain Land Trust

Washington State Department of Commerce

Washington State Legislature

Washington Water Trust

CUUR
Background: WLAs

Walla Walla Watershed TMDL WQIP

• Ecology assigned WLAs based on the Walla Walla TMDLs
• WLAs call for very stringent limits during the critical period for:
  • Temperature: July–August
  • Nitrogen and Phosphorus Nutrients: May–October
• Dayton is not able to reasonably meet these limits with available technology
Environmental Justice

Dayton is eligible for hardship consideration

• Over 50% of community linguistically isolated
• Over 75% of residents over age 64
• Over 50% of residents have less than a high school education
• Median household income (FY22): $44,524
  – Margin of error: +/- $7,784
  – WA State MHI: $70,116
Background: First Proposal

Dayton initially pursued a seemingly ideal opportunity to produce *reclaimed water* to irrigate golf course and other sites (2009)
Proposed Use Sites

- Proposed New Water Reclamation Facility
- Various Proposed Use Sites
Proposed Uses of Reclaimed Water

Total potential area: 67.17 acres
(Golf course, race track, cemetery, baseball field, school, track, city hall, park)

Consumptive use for lawn turf grass: 24”/year

Assumed irrigation efficiency – 85%

Total water requirement – 51.5 MG/year
Reclaimed Water Alternative

• Alternative would have removed effluent flow to Touchet River
• Consumptive use
• WRP staff predicted impairment to downstream water right holders, during meeting in 2010
• WRP relied on knowledge of Walla Walla basin

Impairment issues took priority over beneficial use that would have preserved drinking water
Facility Plan that was required by Compliance Schedule identified **land treatment** as the preferred alternative

- Alternative would remove flow to Touchet River
- No requirement for Impairment Analysis
- Complexities with this alternative included difficulties with topography, farming practices, setbacks, ownership
- Alternative required about 170 acres

Initially promising land purchases fell through
Washington Water Trust discussed discharge options with the City and potential for WWT to provide assistance. WWT brought the Umatilla Tribe (CTUIR) to the table and planned an initial meeting with Ecology in April 2019 to explore innovative alternatives to keep as much water in the Touchet River as possible to meet multiple needs including WLAs.
Ongoing Work

- Initial meeting with interested parties: city, tribes, WWT, consultant, Ecology staff
- Interest group formed that meets monthly to support ongoing progress toward mutual goals
- Dayton’s consultant, WWT and CTUIR submitted preliminary studies to propose
  - **Advanced secondary treatment**
  - **Constructed wetlands** for tertiary treatment with hydraulic connectivity to Touchet River
  - Additional riparian and community improvements
Project Proposal

- Proposal is similar to award-winning project in central Oregon
- Dayton’s consulting firm worked in partnership with Prineville
  - Over 1.2 MGD
  - Multiple safety factors
  - Community amenities
Conceptual Wetland Layout

- Black lines outline six wetland cells for a total of ~30 acres

- Blue outline is area including wetland cells with setbacks for a total of ~40 acres, rough estimate

Anderson Perry & Assoc.
Challenges?

• Ecology’s Orange Book guidance
  – Discourages treatment wetlands; assumes use for only primary/secondary treatment
  – Provides no design guidance and cites lack of experience in WA

• Future compliance
  – Proposed project expected to meet water quality standards, but very unlikely to meet December 2021 timeframe in the TMDL.
  – However, Ecology will not pursue enforcement – good faith efforts

Internal programs and WQ PMT support the wetlands proposal

![Crooked River Wetlands Project, Prineville, Oregon]
Discussion and Questions
Extra slides follow, included to help answer any questions during discussion time...
Climate & Topography

Annual Rainfall - 16 inches
Average High Temperature in Summer - 86° F
Average High Temperature in Winter - 42° F

Elevation of Dayton - 1,660 ft.
Elevation at Oregon Butte - 6,384 ft. (highest point)

From Dayton’s website, City Fact Sheet
Wasteload Allocations

Walla Walla Watershed TMDL WQIP:

Dayton’s current permit includes:
- Compliance Schedule
- Milestones/Targets

Table 6: Wasteload allocations assigned by the Walla Walla TMDLs

<table>
<thead>
<tr>
<th>City</th>
<th>Parameter</th>
<th>Wasteload allocation</th>
<th>TMDL Critical period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dayton Wastewater Treatment Plant</td>
<td>Chlorinated Pesticides &amp; PCBs</td>
<td>Did not include in the study.</td>
<td>January - June</td>
</tr>
<tr>
<td></td>
<td>Fecal Coliform</td>
<td>Current permit limits</td>
<td>June - October</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>21.8 °C</td>
<td>July - August</td>
</tr>
<tr>
<td></td>
<td>pH &amp; Dissolved Oxygen</td>
<td>- 0.28 lb/day for dissolved inorganic nitrogen (sum of nitrate, nitrite, and ammonia)</td>
<td>May - October</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 0.20 lb/day for organic nitrogen.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 0.13 lb/day for soluble reactive phosphorus.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 0.09 lb/day for organic phosphorus.</td>
<td></td>
</tr>
</tbody>
</table>
Compliance Schedules

From the Surface Water Quality Standards
“General allowance for compliance schedules”

- Used to ensure final compliance with water quality standards “as soon as possible”
- Determined on a case-by-case basis
- Interim effluent limits apply until final compliance achieved
- Ecology has authority to determine if a longer time period is needed
S9. COMPLIANCE SCHEDULE

A. Scope of Work Submittal

No later than November 1, 2011, the Permittee must submit to the Department for review and approval at least two copies of a scope of work for the facilities plan or Engineering Report.

B. Facilities Plan or Engineering Report Submittal

No later than August 31, 2016, the Permittee must submit to the Department for review and approval at least two copies of a Facilities Plan or Engineering Report in accordance with WAC 173-240. In addition, submit report online through the WQWebPortal as specified in Section S3.
### Milestones/Targets

**S10. MILESTONES/TARGETS**

<table>
<thead>
<tr>
<th>Deliverables</th>
<th>Milestone Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply for funding for designs and specifications for selected alternative.</td>
<td>FY2018 SRF Funding Cycle – November 2017</td>
</tr>
<tr>
<td>Submission of plans and specifications for Ecology review and approval.</td>
<td>August 31, 2019</td>
</tr>
<tr>
<td>Apply for funding for construction of selected alternative.</td>
<td>FY2020 SRF Funding Cycle – November 2019</td>
</tr>
<tr>
<td>Construction of selected alternative.</td>
<td>By December 31, 2021</td>
</tr>
</tbody>
</table>

- Milestones are considered “goals” and not enforceable.
- Milestone dates used for actions extending beyond the term of the permit.