Agenda

UV Disinfection Project

City of Walford

Tuesday, May 26, 2020 – 7:00 PM

Project Kickoff Meeting

1. Introductions/Call to order
2. Meeting Overview
    a. Iowa DNR WWTP Design, Permitting and Construction Process
    b. Facility Plan
    c. Design
    d. Bidding
    e. Construction
3. Iowa DNR WWTP Design, Permitting and Construction Process
    a. https://www.iowadnr.gov/Portals/idnr/uploads/water/wastewater/wwmanual_full.pdf
    b. https://www.iowadnr.gov/Portals/idnr/uploads/water/wastewater/wwflowchart.pdf
    c.
4. Facility Plan
    a. What is a Facility Plan?
        i. Exhibit 9B – Preliminary Review of Facility Plan Checklist - http://www.iowadnr.gov/Portals/idnr/uploads/forms/5420108.pdf?ver=2017-08-11-134425-940

b. What is included in a Facility Plan?

    i. Iowa Wastewater Facilities Design Standards, Chapter 11 – Project Submittals - http://www.iowadnr.gov/Portals/idnr/uploads/water/wastewater/dstandards/chapter11searchable.pdf?ver=2016-05-04-154834-233

    ii. Exhibit 4 – Facility Plan Scope of Study Checklist - https://www.iowadnr.gov/Portals/idnr/uploads/water/wastewater/ex4.pdf

c. What is excluded from a Facility Plan?

    i. DNR is only concerned about permit compliance and the process to get there. Any work beyond that scope will need to be included in the plans for a construction permit, but is not a result of Facility Plan preparation.

d. Review Walford's Approved Facility Plan

    i. Approved by DNR April 3, 2020

    ii. Current Facility

        1. Built in 2004

        2. New permit issued May 1, 2019 to add e. Coli requirement

        3. Currently serves 1,446 residents, can serve up to 3,658 residents

            a. This would change if more commercial/industrial business comes to town

    iii. Future Facility

        1. No changes to design flows and loads proposed

        2. Addition of UV disinfection to meet compliance with e.Coli

    iv. Evaluated Alternatives

        1. Non-contact Ultraviolet Disinfection System

            a. Capital Cost - $994,000

                i. Annualized over 20 years - $59,333

            b. O&M Cost - $74,333

2. Submersed In Channel Ultraviolet Disinfection System
    a. Capital Cost - $1,045,000
        i. Annualized over 20 years - $62,377
    b. O&M Cost - $77,377
3. Gas Chlorination/Dechlorination System
    a. Capital Cost - $1,238,000
        i. Annualized over 20 years - $73,838
    b. O&M Cost - $135,398

v. Selected Alternative

1. The proposed Non-Contact Ultraviolet Disinfection System has been recommended for implementation for the disinfection of treated wastewater due to relatively lower costs and the preference to avoid handling chemicals. Along with the addition of a disinfection system, upgrades to the existing facility are also being proposed. Those improvements include replacement of the existing plant control system, adding D.O. sensors within the Aero-Mod basins, miscellaneous pipe replacement within the Aero-mod basins and various electrical and mechanical upgrades to the existing facility.

2. Table 5-1 - Alternative A: Non-Contact UV Disinfection System EOPC

Alternative A: Non-Contact UV Disinfection System	
Item	**Total Cost**
Capital Costs	
UV Equipment	$ 144,000
Aero-Mod Modifications	$ 200,000
Mobilization/Installation	$ 40,000
Process Piping	$ 63,000
Building	$ 150,000
Site Restoration	$ 4,000
Electrical and Controls	$ 150,000
Contingency (15%)	$ 113,000
Engineering, Legal, Administration (15%)	$ 130,000
Estimated Construction Subtotal	$ 994,000
Annualized Capital Costs at 1.75% Interest over 20 Years	$ 59,333
Annual Operation & Maintenance Costs	
Electricity	$ 2,500
Supplies	$ 2,500
Labor	$ 10,000
Total Annual Operation & Maintenance Costs	$ 15,000
Total Annual Costs - Non-Contact UV System	**$ 74,333**

3. Cost Analysis
    a. UV Capital Cost - **$547,000**
        i. UV Equipment - $144,000
        ii. Process Piping - $63,000
        iii. Mobilization/Installation - $40,000
        iv. Building (30 x 30') - $150,000
        v. Electrical and Controls - $150,000

1. Generator Replacement - $50,000

b. Everything Else Capital Cost - **$204,000**

c. Engineering, Legal, Administration and Contingencies - **$243,000**

5. Design – May 2020 to December 2020

    a. Primary Design Standards: Iowa DNR Design Standards - https://www.iowadnr.gov/Environmental-Protection/Water-Quality/Wastewater-Construction/Design-Standards

    b. Supplemental Design Standards: Recommended Standards for Wastewater Facilities 2014 Edition - https://www.health.state.mn.us/communities/environment/water/docs/tenstates/wstewtrstnds2014secured.pdf

6. Bidding – January/February 2021

    a. Public Bid, opened out loud at a designated place and time

    b. Project must be awarded to lowest “Responsive, Responsible Bidder”

7. Construction – March/April 2021 to March 2022

    a. City authorizes the Contractor to proceed

    b. City approves S&A Construction Services fee

        i. Based on lowest bidder

        ii. Amount of time City wants S&A on-site

        iii. Contractor Schedule

8. Questions and comments

9. Next Meeting

10. Adjourn