



Nelson Wastewater Treatment Facility Improvement Project

Open House - October 6, 2022

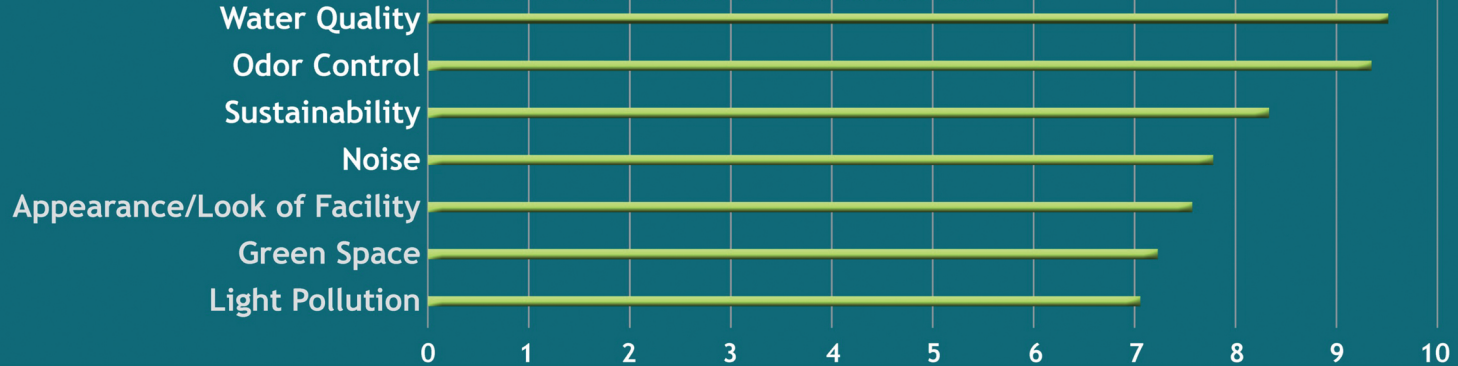
Virtual Recording - Oct. 11, 2022

PRIORITIES & CONCERNS

Public Input Received from Surveys at the In-Person and Online Open Houses in September 2021

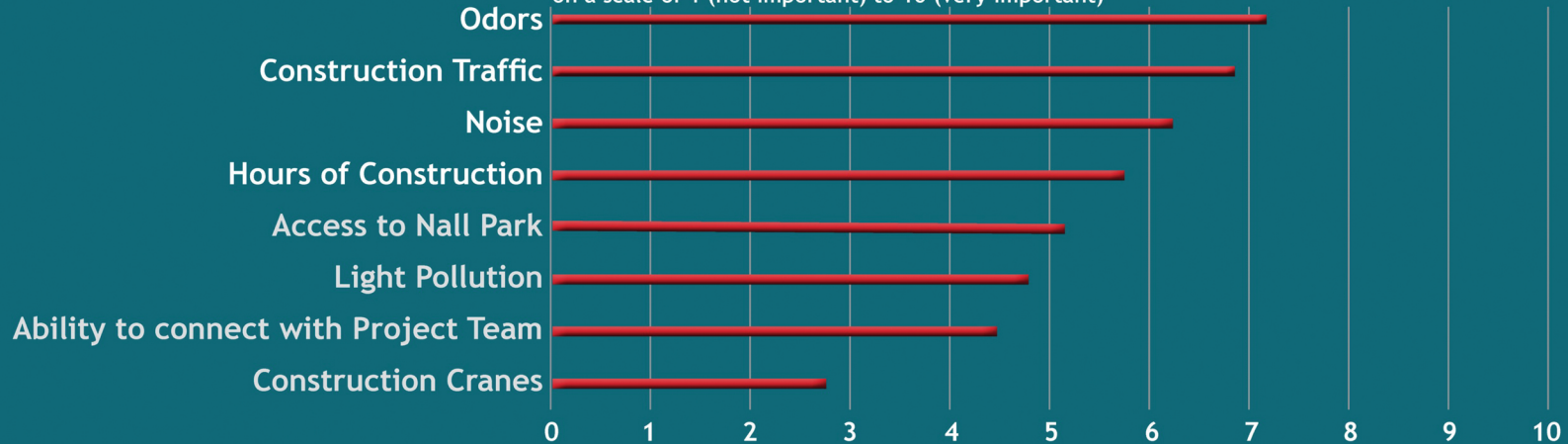
Priorities for Completed Nelson WWTF Improvements

on a scale of 1 (not important) to 10 (very important)

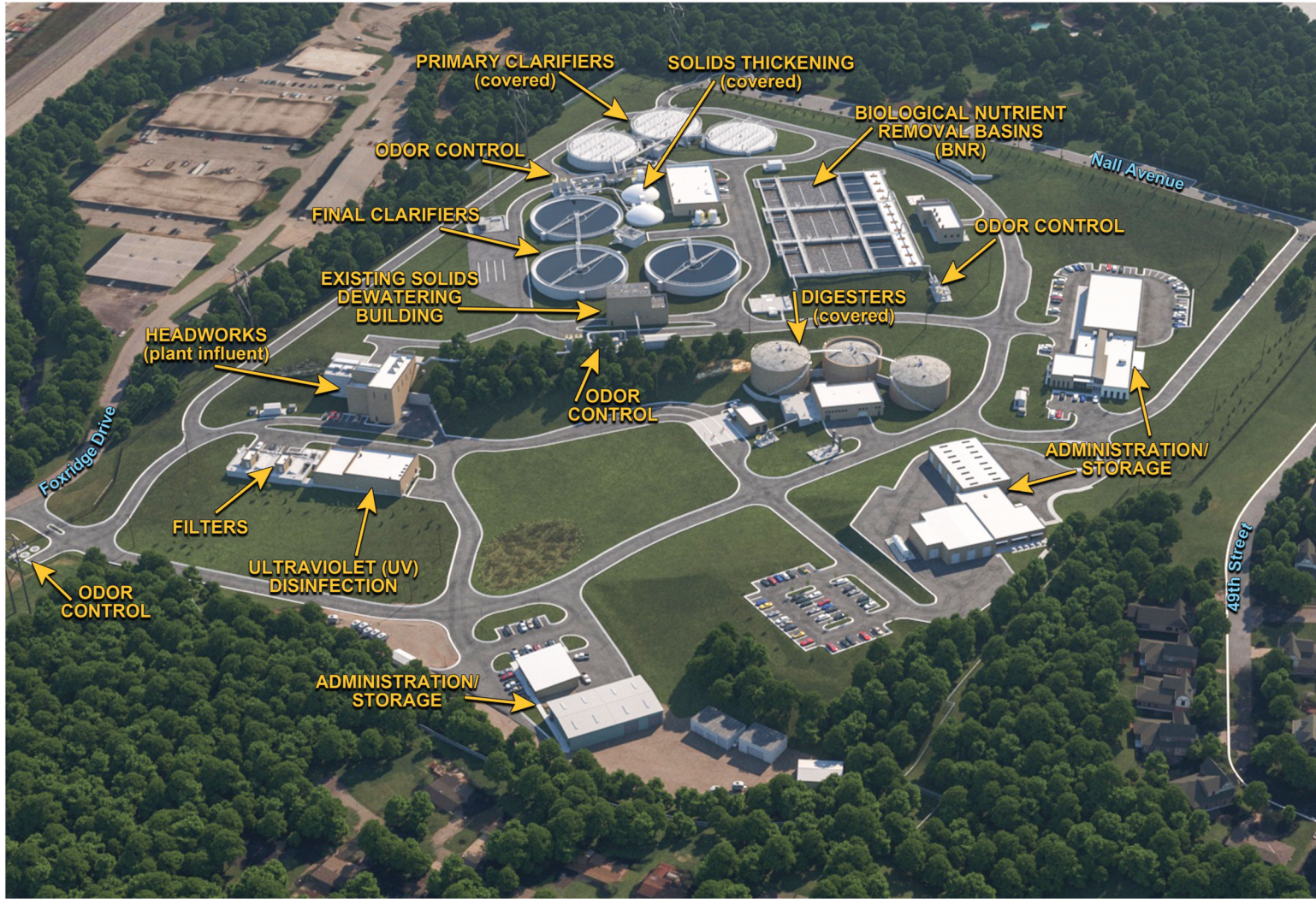


Concerns During Construction

on a scale of 1 (not important) to 10 (very important)



Proposed New Site Rendering

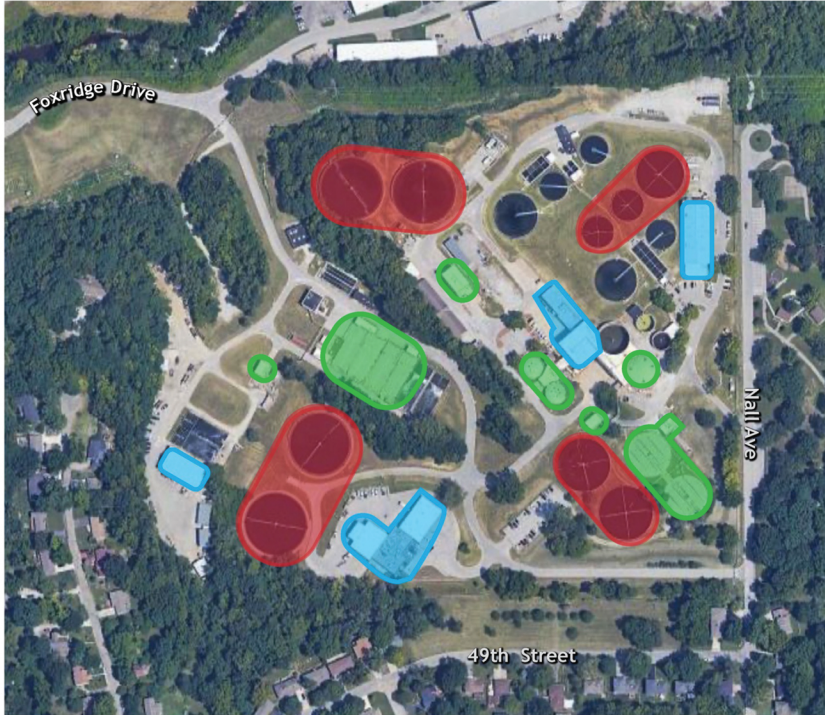


Design Considerations Addressing Priorities for Completed Facility

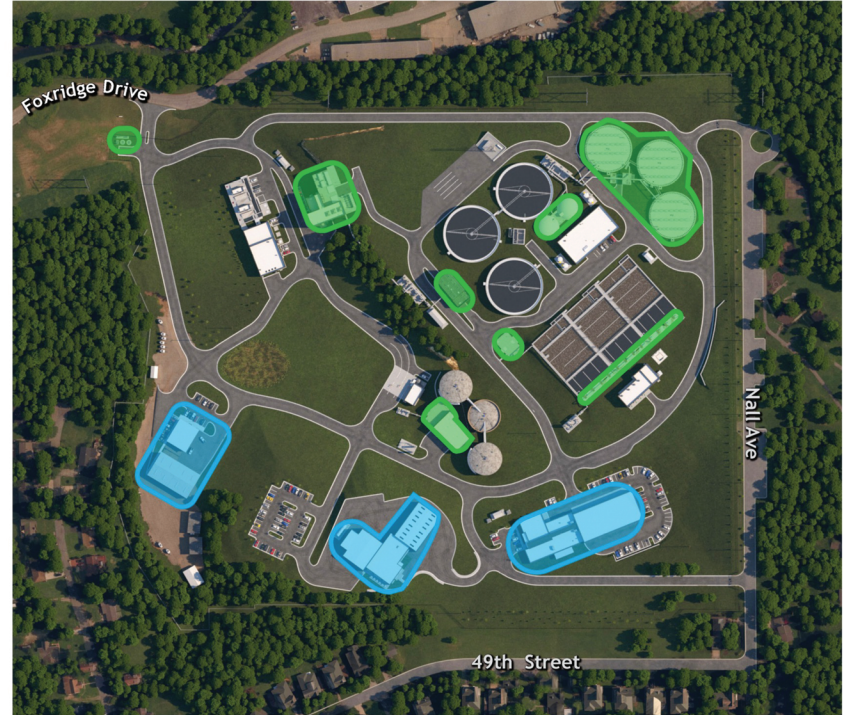
- **WATER QUALITY**
 - nutrient removal
 - filtration
 - UV disinfection
 - reaeration
- **ODOR CONTROL**
 - details next board
- **SUSTAINABILITY**
 - reduced site footprint
 - efficiency
 - minimize energy consumption
- **NOISE**
 - reduced site footprint
 - layout and traffic flow
 - noise study forthcoming
- **APPEARANCE/LOOK OF FACILITY**
 - landscaping
 - screening and berms
 - brick buildings
- **GREEN SPACE**
 - reduced site footprint
 - landscaping
- **LIGHT POLLUTION**
 - reduced site footprint
 - berms and screening
 - lighting study is forthcoming

Odor Control

Current Nelson Facility



Rendering of Proposed Nelson Facility



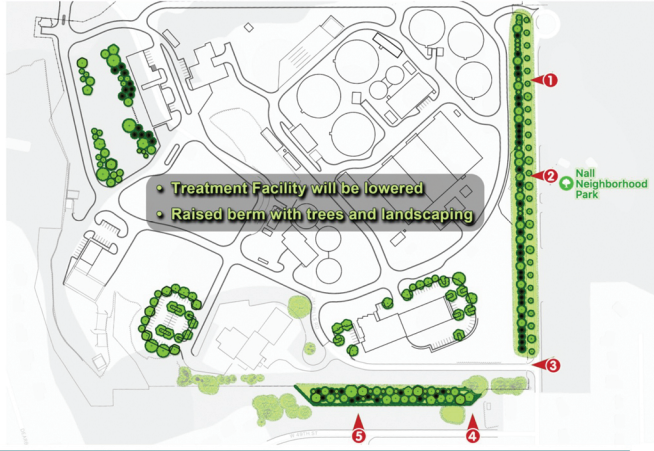
- Existing Facilities with Odor Generation Potential
- Existing Facilities with Odor Control Systems
- Existing Administration/Storage Facilities

ADDRESSING ODOR CONCERNS

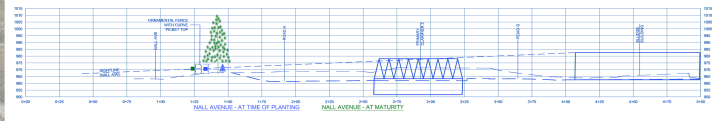
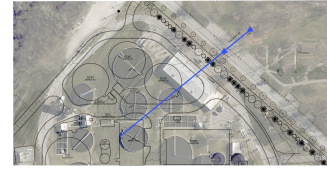
- Proven Technology
 - Use same proven technology used at the new Tomahawk Creek WWTF in Leawood
- Facilities Consolidated
 - Reduced footprint
 - Increased buffer between proposed facilities with odor control systems and residential structures

- Proposed Facilities with Odor Control Systems
- Proposed Administration/Storage Facilities

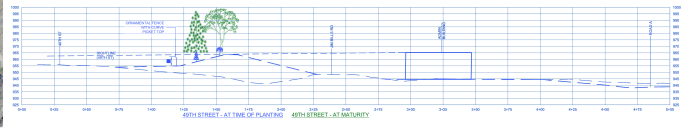
Odor control facilities are mechanical systems, and mechanical systems can fail. JCW has operations and maintenance staff dedicated to the upkeep and maintenance of such systems, and will respond to mechanical failures in a timely manner, should they occur.



Locations 1, 2 & 3 on Nall Avenue



Locations 4 & 5 on 49th Street



BERM/TREES

RENDERINGS

Initial Landscape/Plantings

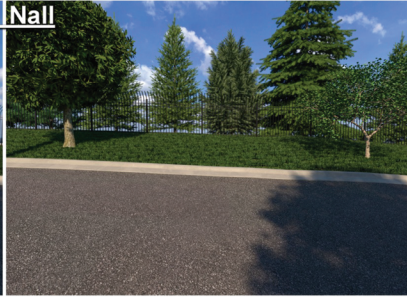
Mature Growth



1 Nall



2 Nall



2-3 Nall



RENDERINGS

Initial Landscape/Plantings

Mature Growth



3 Nall



4 49th

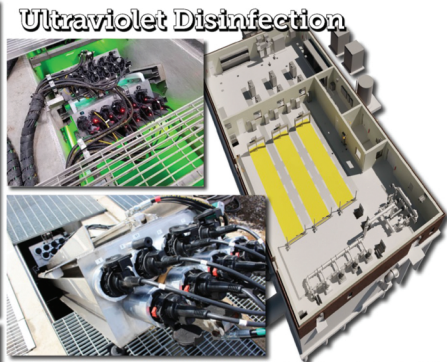


5 49th





Biological Nutrient Removal (BNR) Process



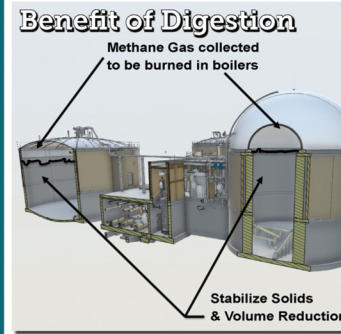
Ultraviolet Disinfection



Filtration



Reaeration



High Efficiency Motors, Equipment, and Lighting



Reuse of Materials



Electric Tower Crane

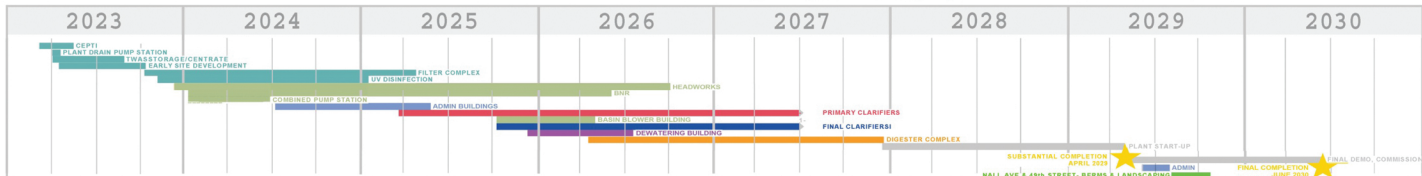
WATER QUALITY

- **Biological Nutrient Reduction**
 - Removes trickling filters - which eliminates filter flies and reduces odors.
 - Uses biology to remove higher levels of organic matter, ammonia, nitrogen, and phosphorus, to meet current and future regulatory requirements to improve water quality.
- **Filtration**
 - Additional removal of small particles and phosphorus after biological treatment, improving water quality.
 - Allows for future wet-weather expansion.
 - Filtered effluent can be disinfected more reliably and at a lower cost.
- **Ultraviolet Disinfection**
 - Utilizes ultraviolet light to inactivate microorganisms in the water without adding chemicals.
 - Cost-effective and reliable method to improve water quality without introducing chemicals into the environment.
- **Reaeration**
 - Simple process to dissolve more oxygen in the treated water which is important to support aquatic plants and animals.

SUSTAINABILITY

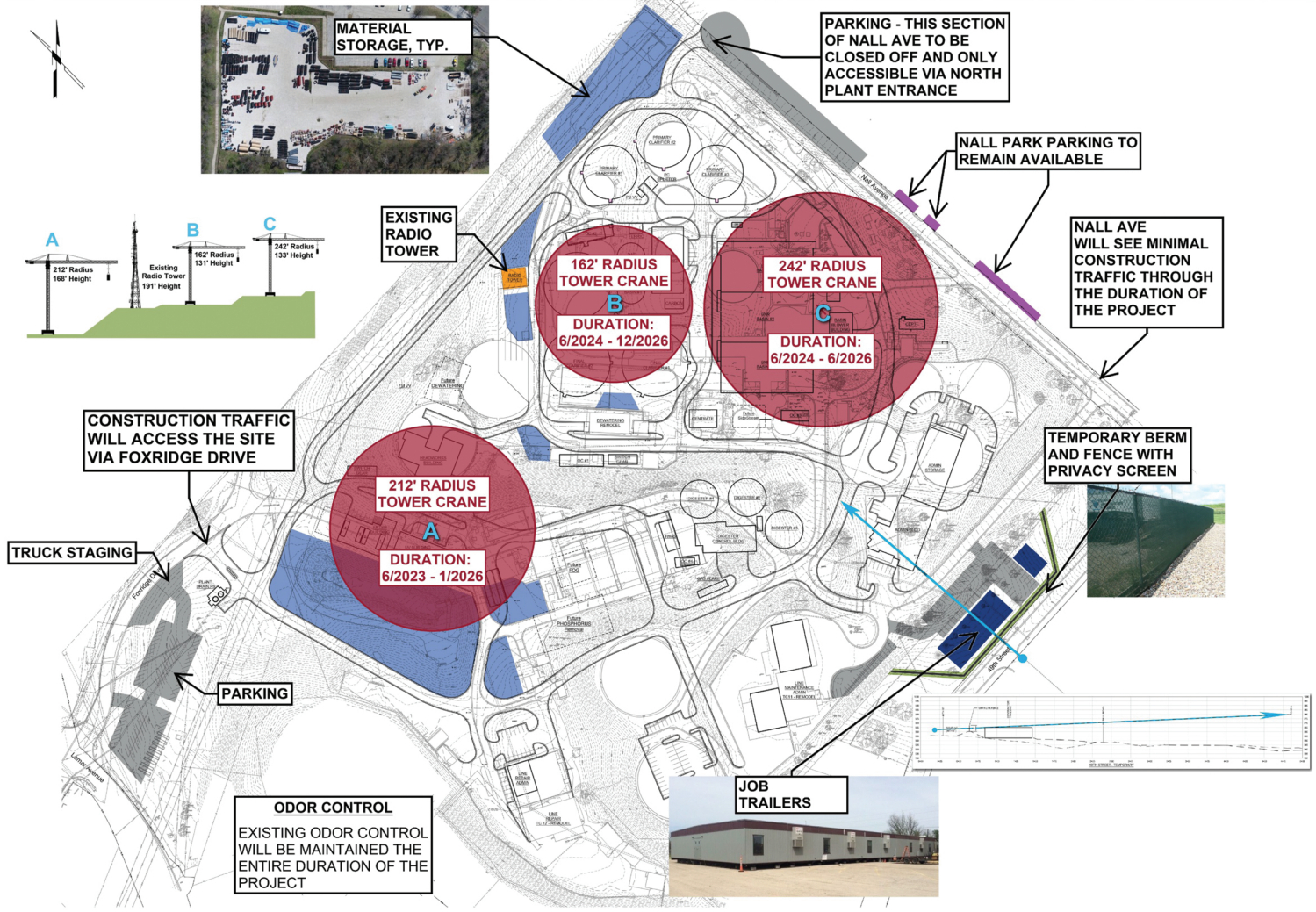
- **Benefit of Digestion**
 - Recovered heat from digestion process used to heat process and building.
- **Efficiency**
 - Implementation of new technologies takes advantage of high efficiency motors, equipment and lighting improvements.
- **Reuse/Recycle**
 - During construction, contractor will find opportunities for reuse of existing facilities.
 - New facility will utilize a recycled plant effluent water system for non-potable uses on-site, reducing costs and conserving potable water.
- **Electric Tower Crane**
 - Reduces noise and pollution impacts during construction.

Nelson Wastewater Treatment Facility Improvements Project Preliminary Construction Schedule



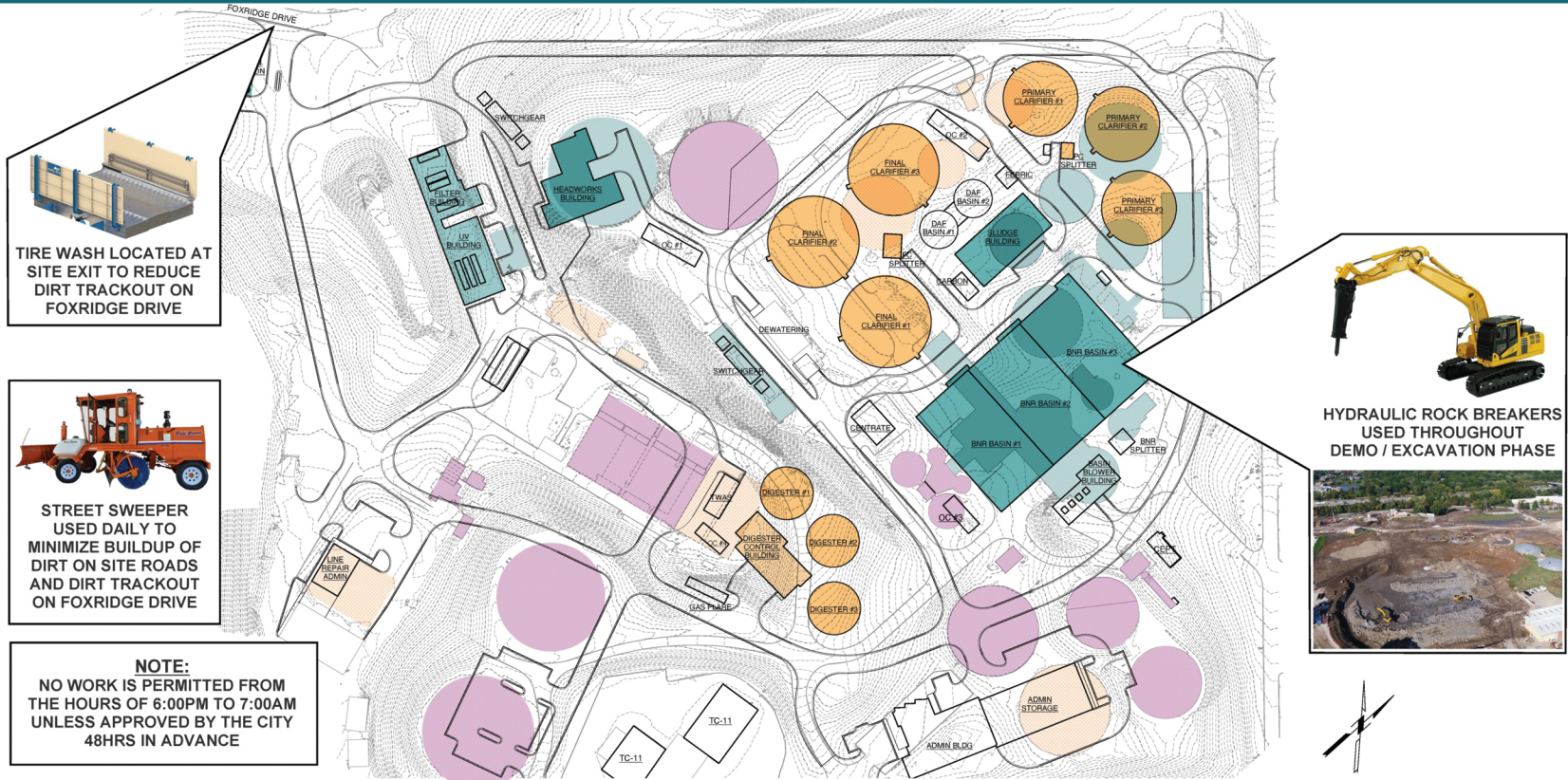
Nelson Wastewater Treatment Facility Improvements Project

What to Expect During Construction



Nelson Wastewater Treatment Facility Improvements Project

Dust & Noise During Construction

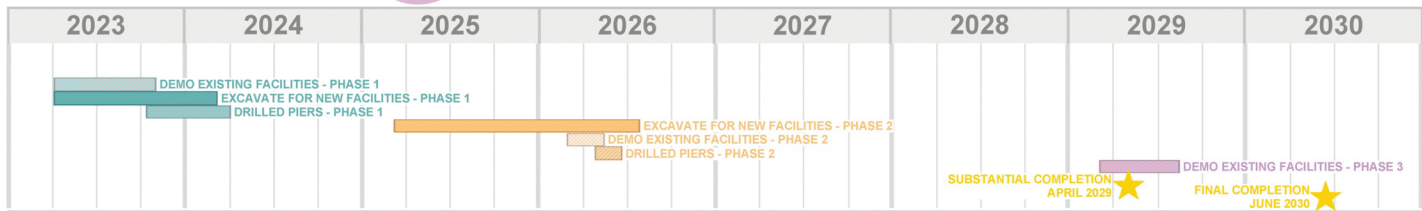


TIRE WASH LOCATED AT SITE EXIT TO REDUCE DIRT TRACKOUT ON FOXRIDGE DRIVE

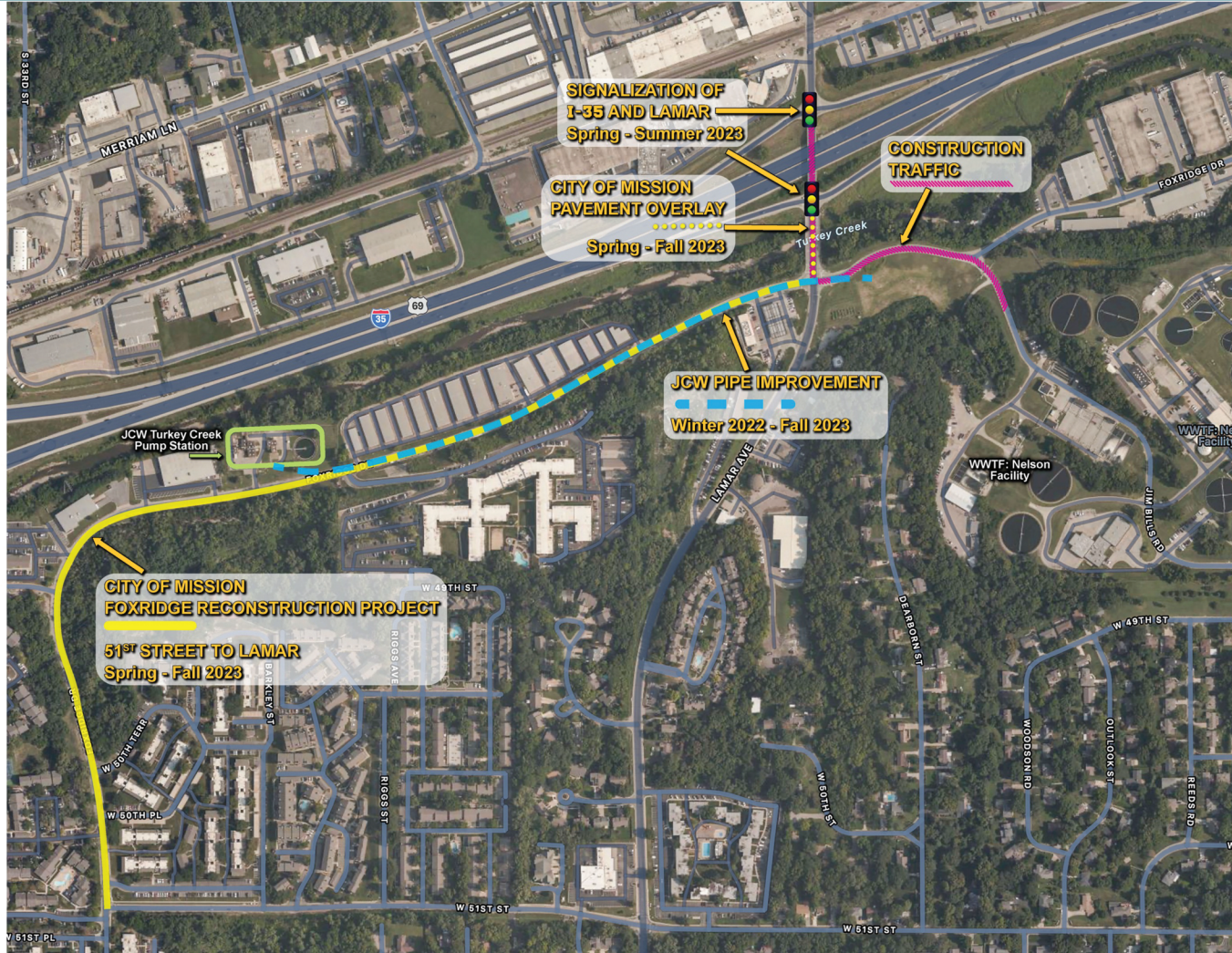
STREET SWEEPER USED DAILY TO MINIMIZE BUILDUP OF DIRT ON SITE ROADS AND DIRT TRACKOUT ON FOXRIDGE DRIVE

NOTE:
NO WORK IS PERMITTED FROM THE HOURS OF 6:00PM TO 7:00AM UNLESS APPROVED BY THE CITY 48HRS IN ADVANCE

HYDRAULIC ROCK BREAKERS USED THROUGHOUT DEMO / EXCAVATION PHASE



Nelson Wastewater Treatment Facility Improvements Project Coordination of Off-Site Improvements



PARTNERSHIP OF:



PROJECT DRIVERS:

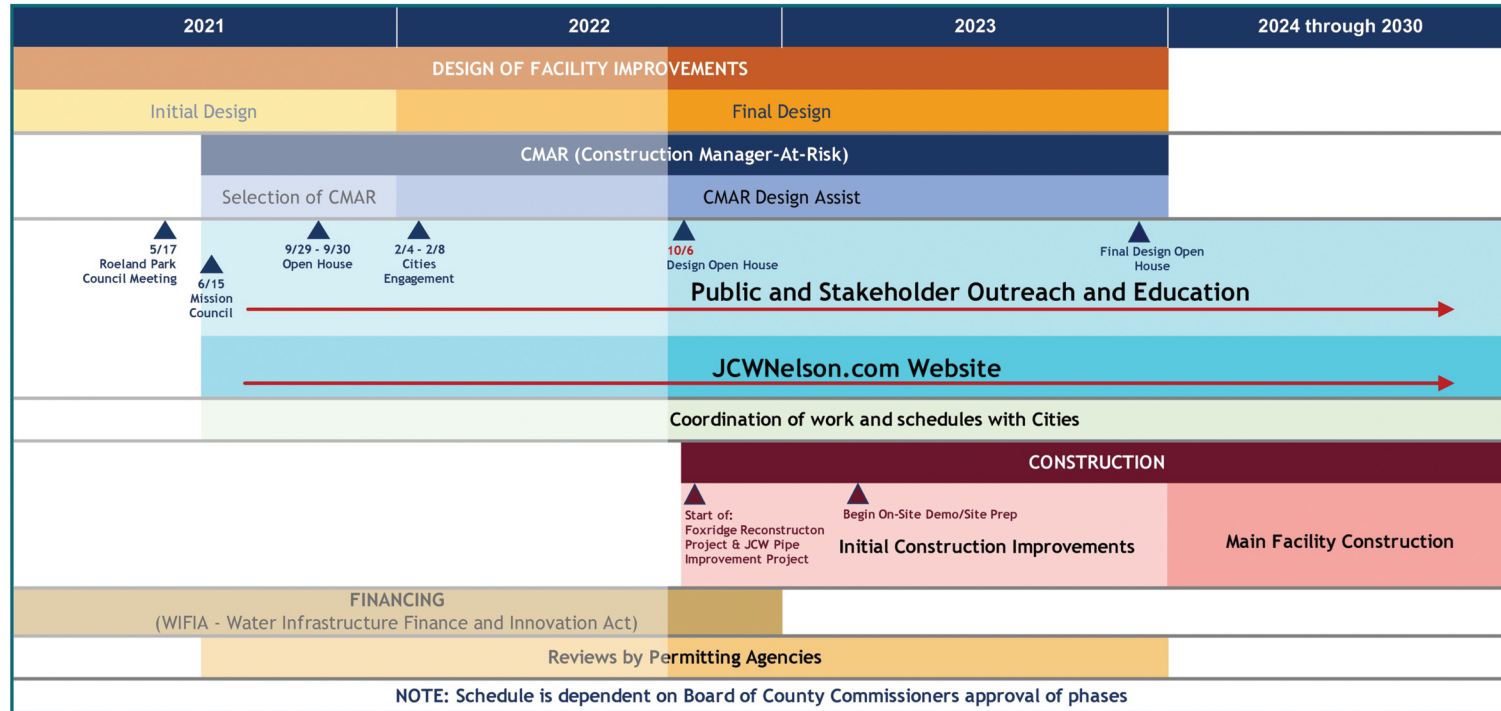
- Nelson WWTF Infrastructure Upgrades Needed
- Planned Mission Project to Address Foxridge Drive
- Address Construction Traffic

RESULTS OF PARTNERSHIP:

- Disturb area one time
- Allow construction traffic/ material deliveries in timely fashion
- Signal provides community benefit even after construction activities
- Coordinating on cost share agreements

Nelson Wastewater Treatment Facility Improvements Project

WHAT'S NEXT?



The Upcoming Year:

- Preliminary Development Plan - November 28, Mission Planning Commission
- Completion of Off-Site Improvements
- Beginning of On-Site Improvements

Make sure to complete the survey and give us your input.

CHECK THE WEBSITE FOR UPDATES AND INFORMATION: [JCWNelson.com](https://www.jcwnelson.com)



JCWNelson.com