Sioux City WWTP Improvements

A Long Range Vision for the Future

Safety and Odors

Operational Reliability

Growth

WWTP Reconstruction and Design Advisory Committee

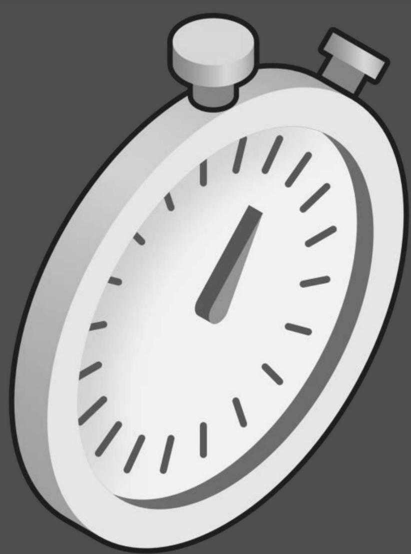
July 31, 2025

Hazen

BLACK & VEATCH

McCLURE™

Agenda



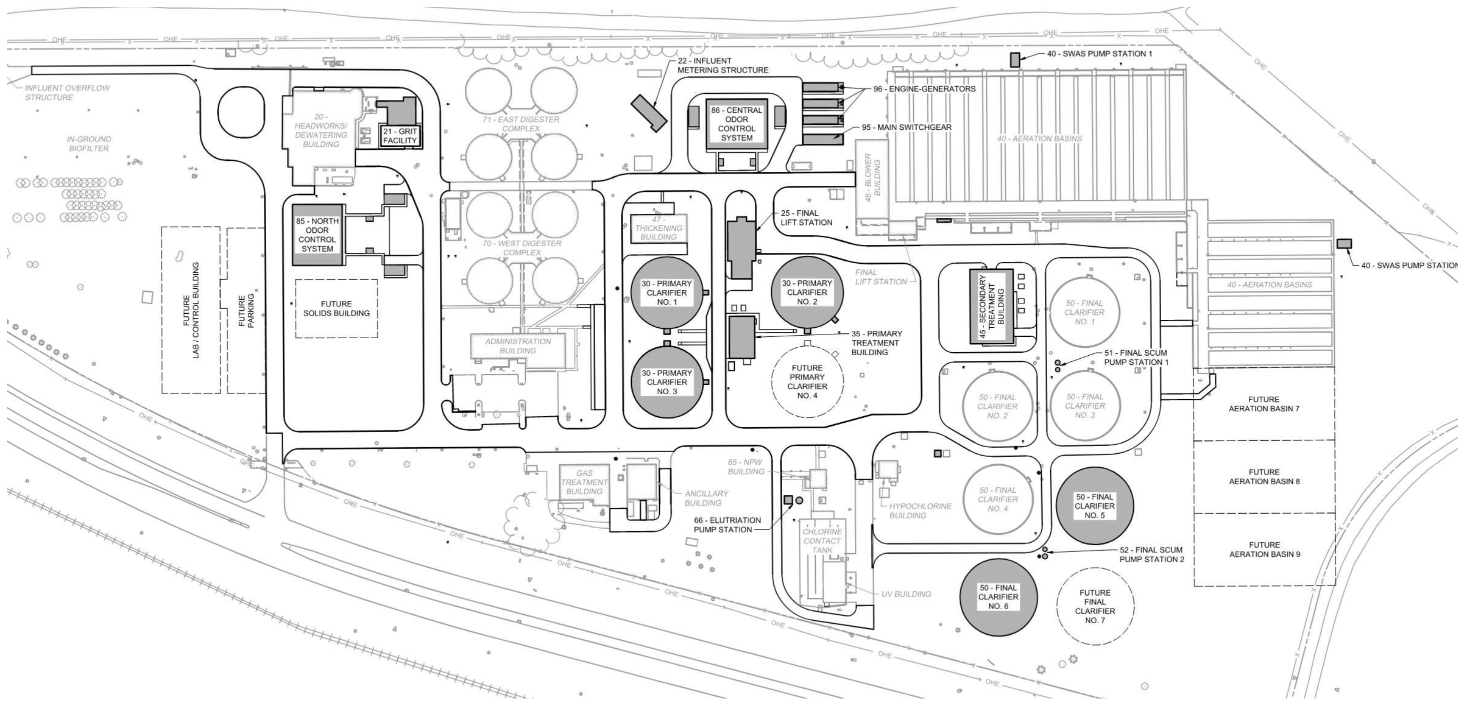
- ✓ Recap of Last Meeting
- ✓ City WWTP Update
- ✓ Emergency Repairs Project Update
- ✓ Digester Project Update
- ✓ WWTP Phase 1 Design Update
- ✓ UV Facility Tour
- ✓ Overview of Upcoming Meetings
- ✓ Open Discussion

Hazen BLACK & VEATCH McCLURE

Meeting 19 Recap / Follow-Up

Notable Updates Since 30% Deliverable

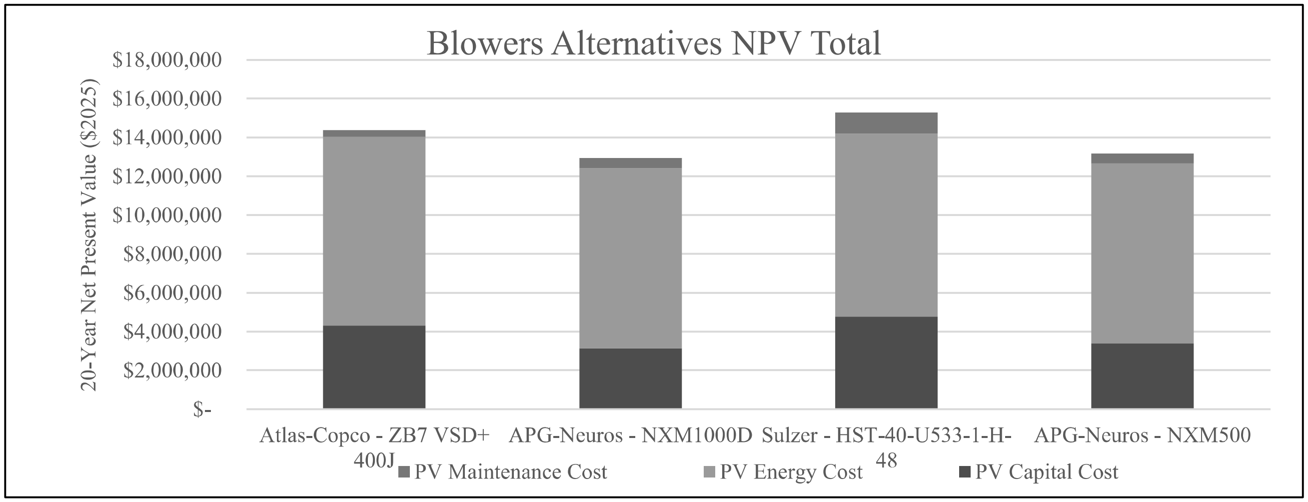
- New structures / process areas
  - Influent Metering Structure
  - SWAS Pump Stations
  - Elutriation (NPW) Pump Station
- Configuration changes
  - Final Clarifier Scum Pump Stations
- Design updates
  - North and Central Odor Control System Layouts
  - Primary clarifier domed covers
  - SD4 design scope development
  - Site paving approach
  - Electrical system updates
    - Radial feed configuration
    - Standby power generator sizing



Aeration Blowers – Pre-Selection Capital and NPV Costs

- Neuros single-core and dual-core both offer significant savings in capital and NPV costs as compared to Sulzer and Atlas Copco.
- Neuros Single-Core blowers require additional Secondary Treatment Building footprint to fit all the blowers in the future scenario with the preferred spacing. Thus, additional building footprint cost has been added to reflect the capital cost impacts.
- NPV costs mirror the capital costs considerations as energy usage and maintenance are similar for all manufacturers

	Single-Core			Dual-Core
	Atlas Copco ZB7 VSD+ 400J	APG-Neuros NXM500	Sulzer HST-40	APG-Neuros NXM1000D
Blower Base Cost (USD)	$4,309,600	$2,764,500	$4,775,440	$3,142,000
Building Footprint Addition (USD)	$0	$617,500	$0	$0
Blower Capital Cost Total	$4,309,600	$3,382,000	$4,775,440	$3,142,000

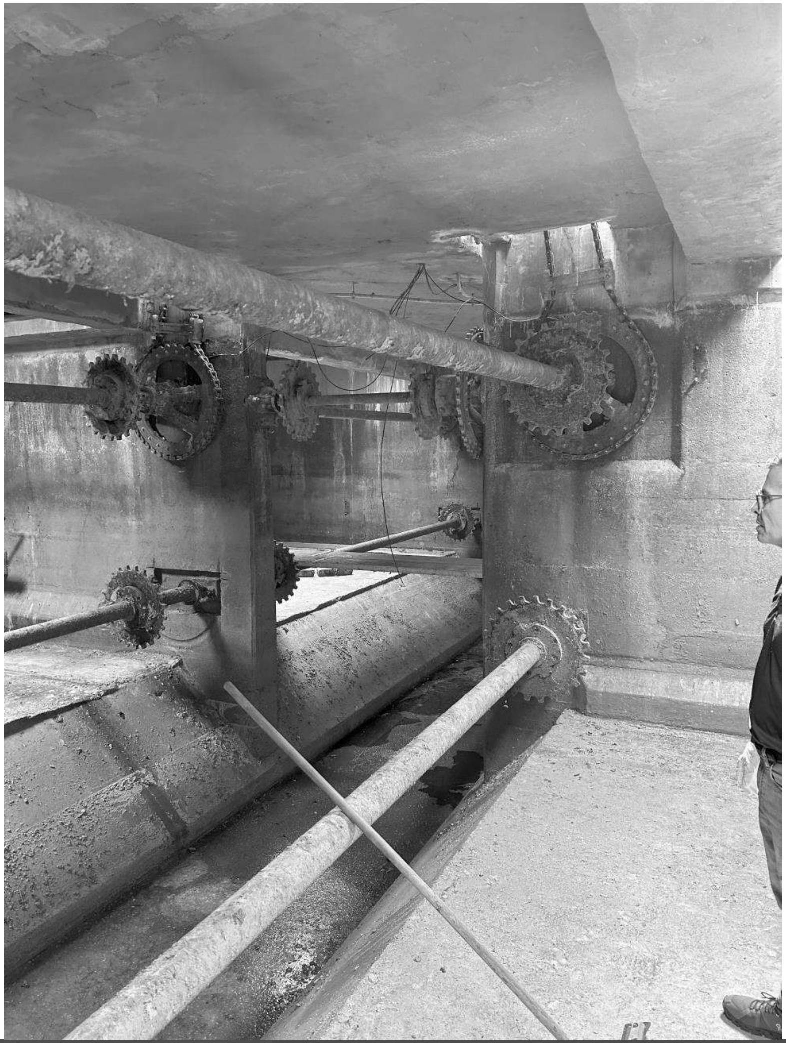


City WWTP Update

Emergency Repairs Project Update

North Primary Clarifier Structural Repairs

- Structural repairs completed on NPC tank 4
  - **Completed by March 31**
  - **Minor repairs and touch completed**
- City staff installing new clarifier equipment on NPC tank 4
  - **New equipment installation underway**
- Structural repair contractor completing work on NPC tank 2
  - **City planning new equipment install next**
- Planned work
  - **Repair on aeration basin expansion joints**
  - **Repairs to bypass channel**
  - **Structural repair to NPC 3 repairs**
- Scope modifications for cost savings
  - **~$700,000 below original project budget and contractor bid**



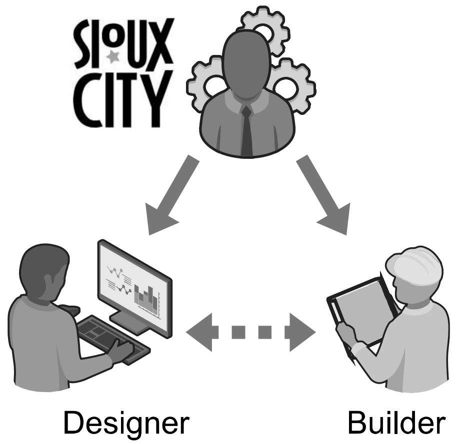
Digester Project Update

WWTP Design Update

Project Delivery Priorities

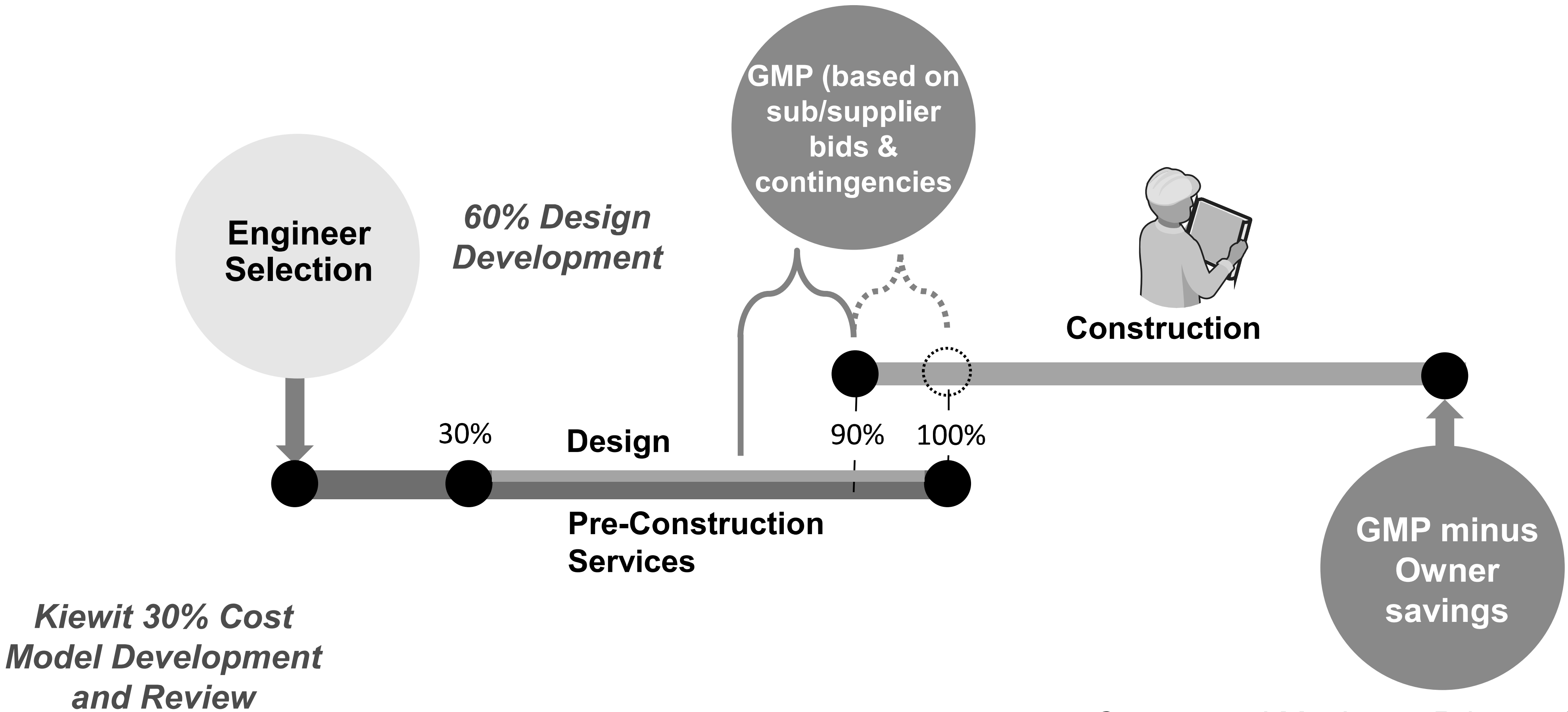
- City and Committee recommendation for CMAR
  - **Control of Contractor Selection / Qualifications**
  - **Contractor Input during Design**
  - **Minimize Risk Construction Change Orders**
  - **Earlier Contractor Cost Input via CMAR Involvement**
  - **Maintain Project Schedule**
  - **Owner's Desired Level of Involvement**
  - **Quality of Finished Product**
  - **Sharing for Risk / Liability**

Construction Management At-Risk (CMAR)



Collaborative Delivery

Construction Management at-Risk (CMAR)



Guaranteed Maximum Price = GMP

Scope Additions / Changes from Facility Plan

Significant impacts to project cost

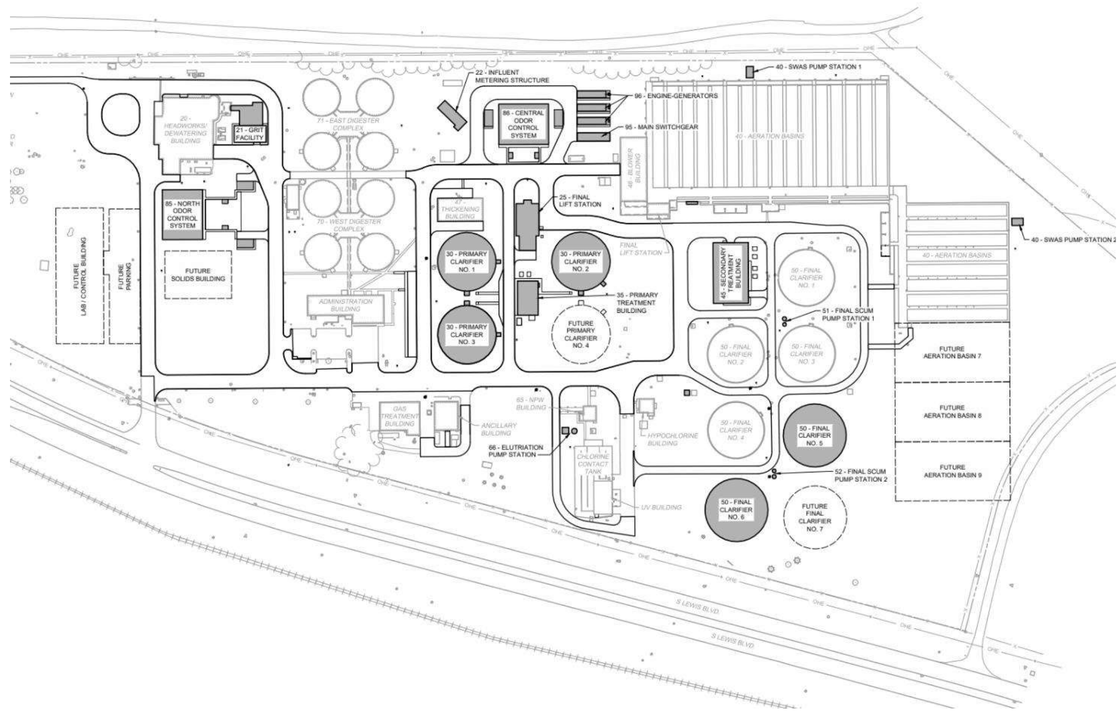
- Aeration diffusers
  - Diffusers added as a part of BODR costs
  - Full aeration piping replacement included in 30% costs
- Odor control
  - Current scope includes conservative conditions for all system design components
    - *Dual stage, extended stack systems across entire site*
    - *Large north odor control system size for future solids building*
    - *Large central odor control system for primary clarifier dome covers*
    - *Vapex systems unsuitable for Sioux City applications (including tank headspaces)*
- CEPT
  - Bulk polymer storage
- FLPS
  - Maintenance building over pump drives
- Plant electrical
  - Large standby power generators and sitewide power upgrades
- Final clarifier scum pumping
  - New dry pit stations added to design
- Final clarifiers
  - Launder covers
- Solids improvements
  - Additional detail on scope of improvements to Digester S4
- SWAS
  - Incorporation into design

WWTP Project Costs Trending Higher

- Labor
  - Phase 1 Improvements will require a large resource pool for both Kiewit and subcontractors
  - Initial analysis by Kiewit showed that premium may need to be paid to attract and keep necessary labor.
- Site conditions
  - Foundation systems are still being evaluated and defined, but costs appear significantly high across the project
- Process-mechanical
  - Ductile iron pipe market costs are high and continue increase
  - Equipment market uncertainty around potential tariffs
- Structural
  - Recent trends indicate increases in costs for excavation, backfill, concrete, steel, coatings, and other components of new structures and facilities
  - Costs may still continue to increase
- CMAR contingency
  - Recommended construction contingency at the higher end of observed range – carried in addition to design contingency

Value for Investment is a Priority for the Project team

- Incorporated changes
  - **Rehab vs. new grit facility**
  - **Primary clarifier covers**
  - **Odor control optimization**
  - **Electrical systems design**
    - *LCSs*
    - *Conduit vs. cable tray*
  - **Coatings optimization**
  - **Primary and final scum pumping systems**
- Under evaluation
  - **Foundation system requirements**
  - **North odor control system in rehab'd primary clarifier structure**
- Future Consideration
  - **Aeration basin diffusers**
  - **Final lift pump station approach**
  - **Other areas for infrastructure re-use**



Cost Model Review and Alignment on Engineer / CMAR Schedules

- Kiewit developed 30% cost model / detailed review and collaboration with project team / Hazen cost estimating group
  - **Scope reconciliation**
  - **“Gray areas” of cost discrepancy under discussion / review for consideration**
- Design advanced to 60%; recently reviewed by the City
  - **Kiewit to review and update cost model**
  - **Incorporate and reflect**
- Next steps: Continuing detailed design; initiation and completion of 60% cost model
- GMP planned at 90%
- City budget: Phase 1: $280M, Phase 2: $170M
  - **Project team is committed to project budget and providing value to City rate payers**

UV Facility Tour

Next Meetings

Upcoming Meetings

TBD

Meeting 20
July 24, 2025

TBD

Meeting 21
August 28, 2025

TBD

Meeting 22
September 25, 2025

TBD

Meeting 23
October 23, 2025

Open Discussion