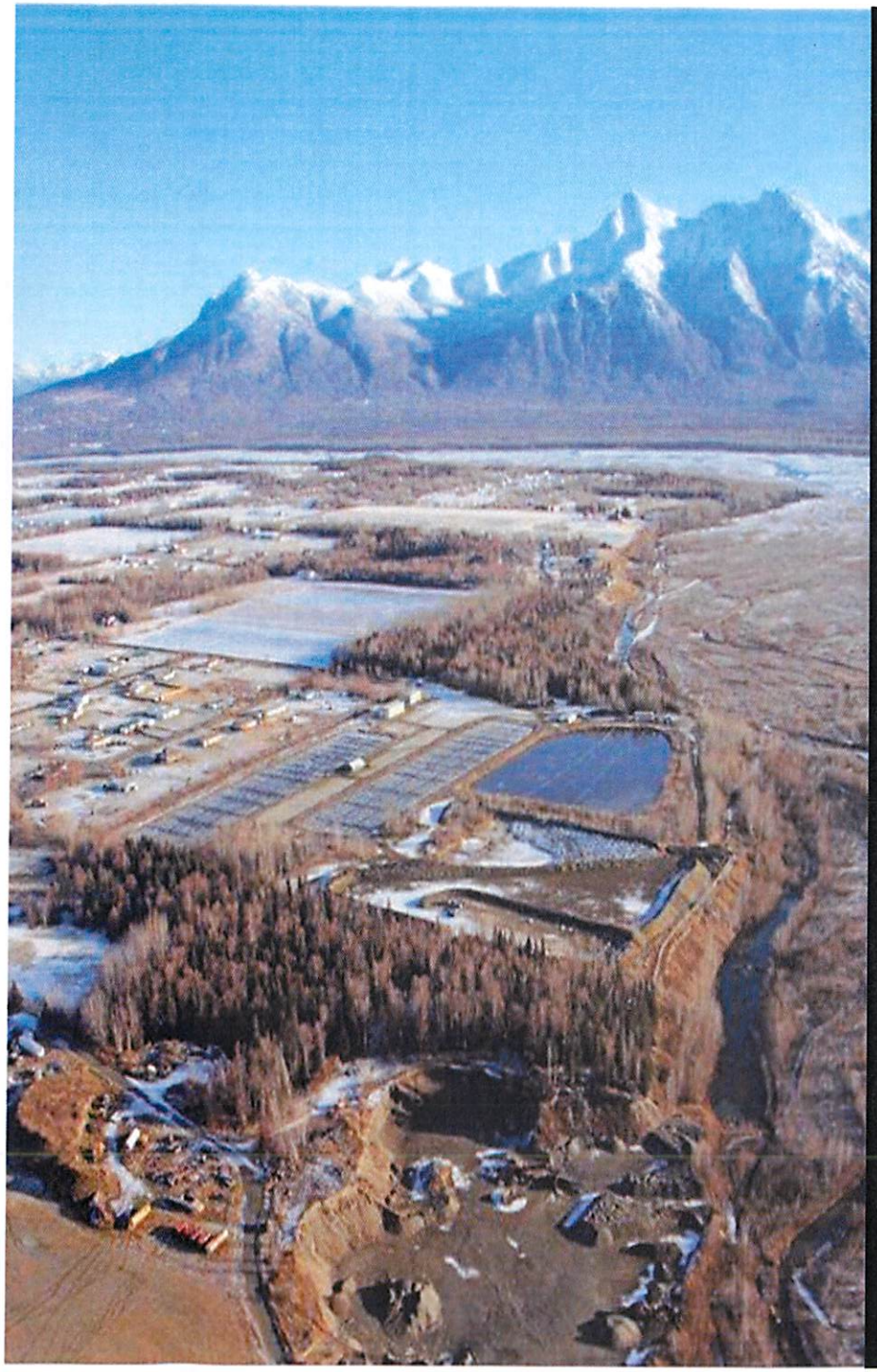


Welcome

Palmer Wastewater Treatment Plant Facility Plan Update

The purpose of this meeting is to provide information about the Facility Plan effort, the recommended upgrade alternative, and next steps.

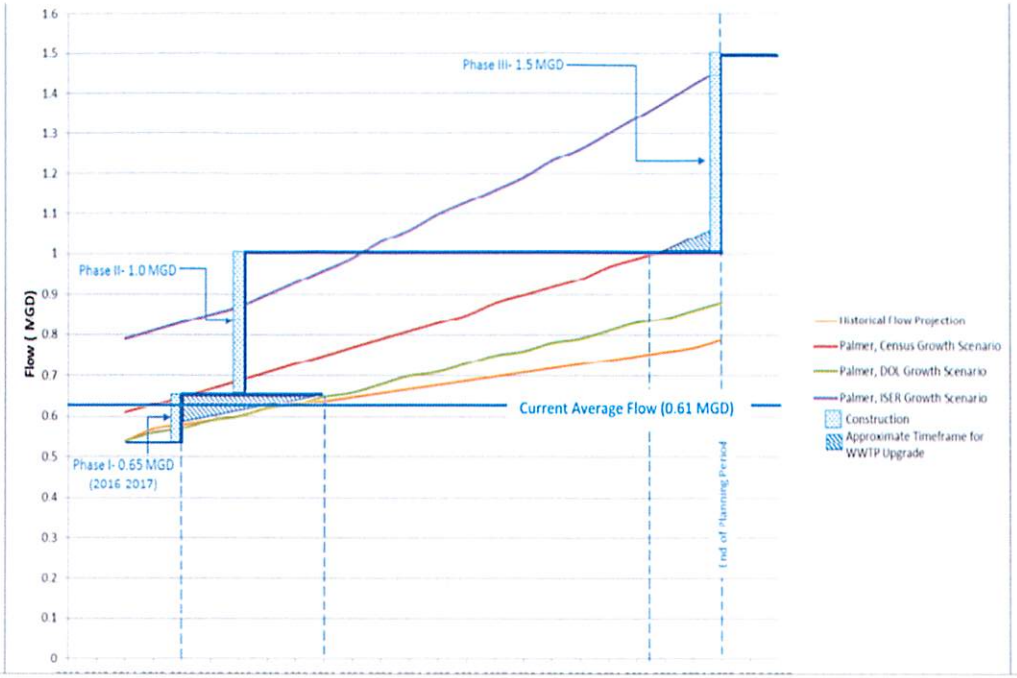
Why do we need to update the wastewater treatment plant?

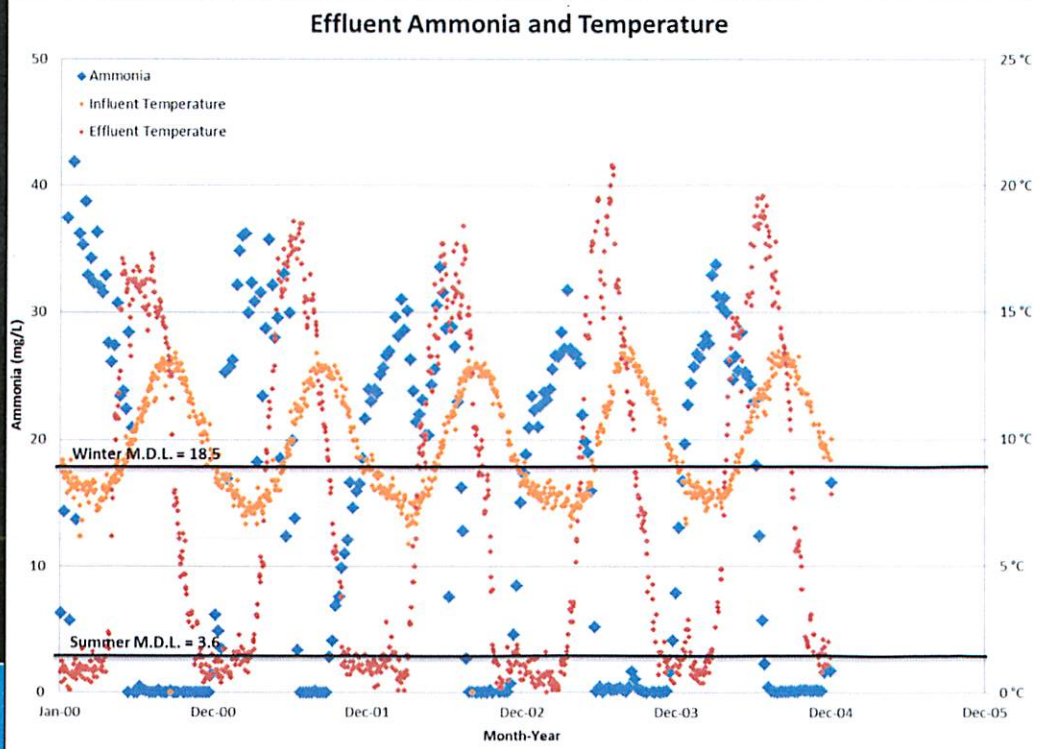
- **Compliance**
  - The current facility does not meet regulatory requirements, specifically ammonia effluent limits
  - Mandatory compliance required by 2018
- **Population Growth**
  - Palmer's served population is expected to grow from 9,200 today to 16,200 by 2035.

Previous Studies/Alternatives

Initial studies began in 2000

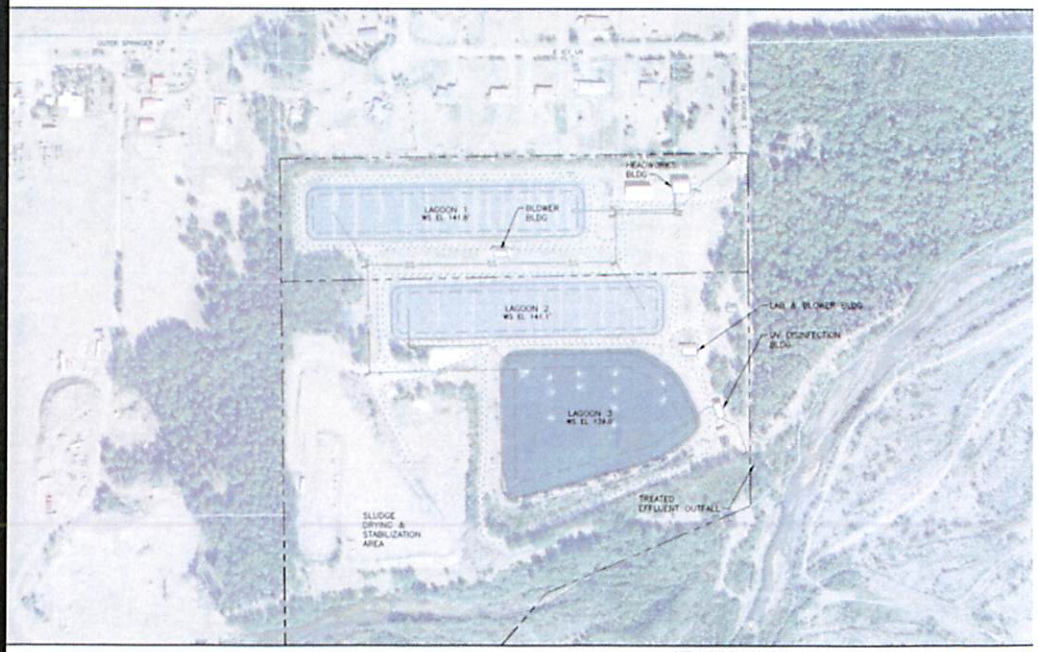
- Looked at a variety of solutions, including subsurface discharge
- Limited phasing opportunities
- Did not address current/future permit requirements
- High cost





Plant History

- Plant was originally constructed in 1950's
- 1972: New pond, concrete chlorine contact chamber, and lab
- 1988: New headworks building and manhole flow control structures
- 1998: New blower building; aeration system updated
- 2001: Baffle curtains installed in ponds
- 2002: New headworks building with new grinder and screen; UV treatment initiated
- 2010: 4 inch insulated panels and baffles installed on Lagoons 1 and 2
- 2010: Second UV treatment system installed; capacity expanded up to 2 MGD if needed
- 2012: New blowers installed – higher efficiency, probe controlled
- 2014: Second grinder installed



HDR

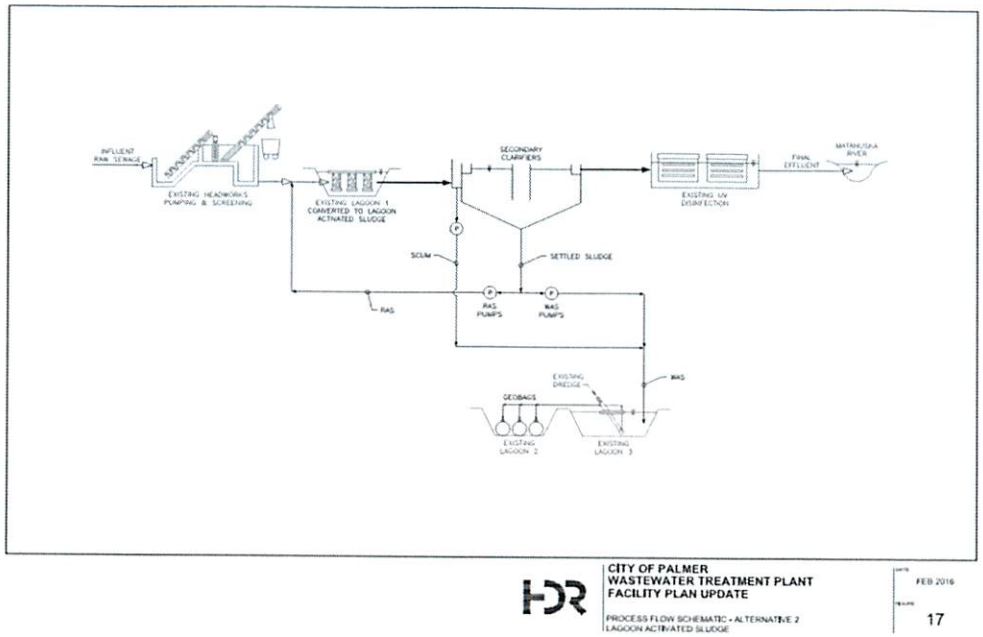
CITY OF PALMER
WASTEWATER TREATMENT PLANT
FACILITY PLAN UPDATE

EXISTING SITE LAYOUT

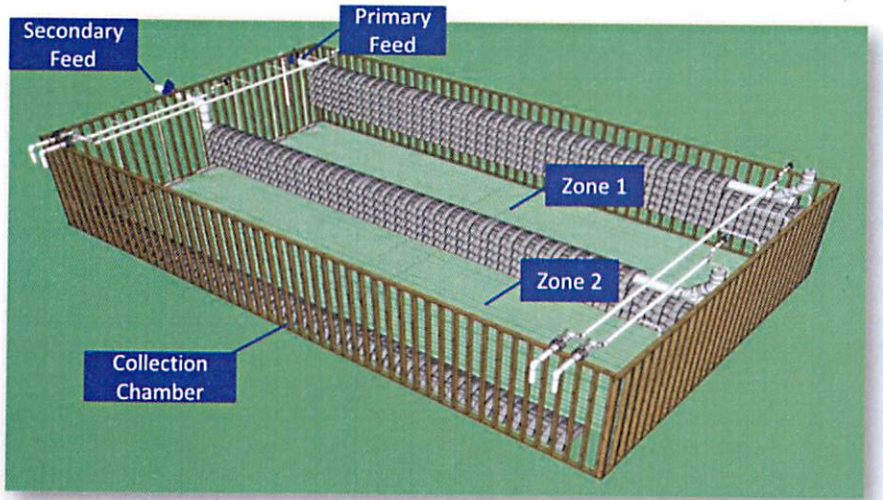
Alternatives Evaluation

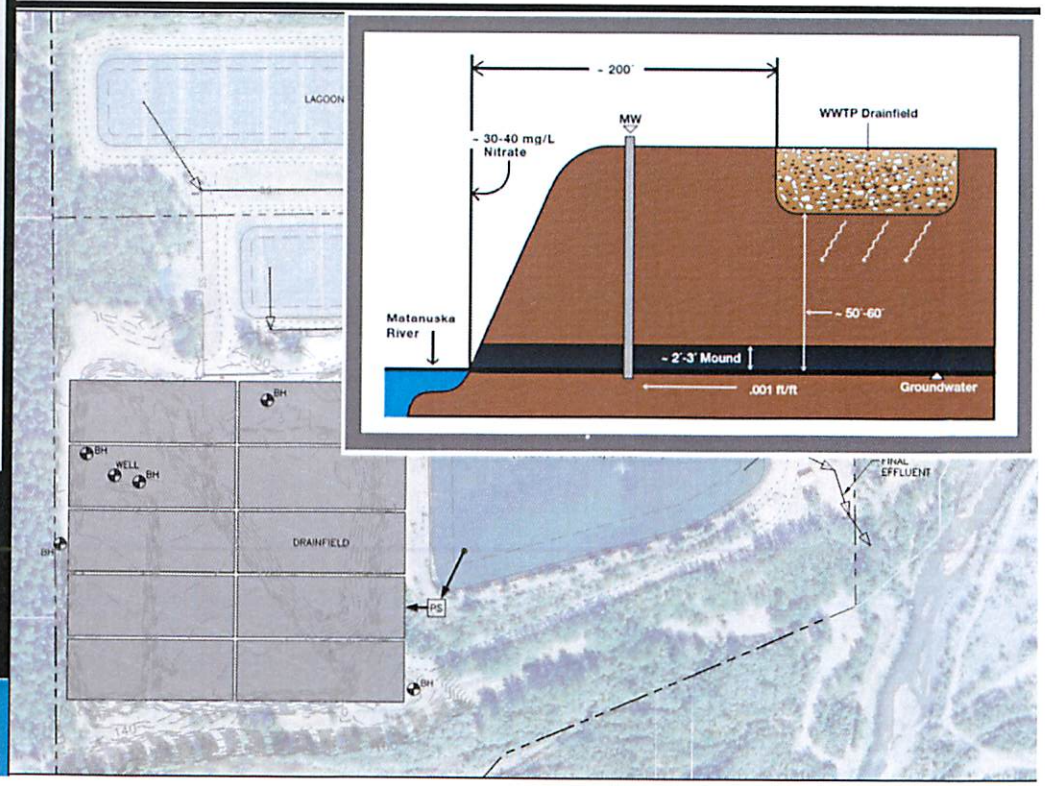
Facility Plan Alternatives

- Subsurface Disposal
- Lagoon Activated Sludge (LAS)
- SAGR Attached Growth Reactor
- Moving Bed Biofilm Reactor (MBBR)

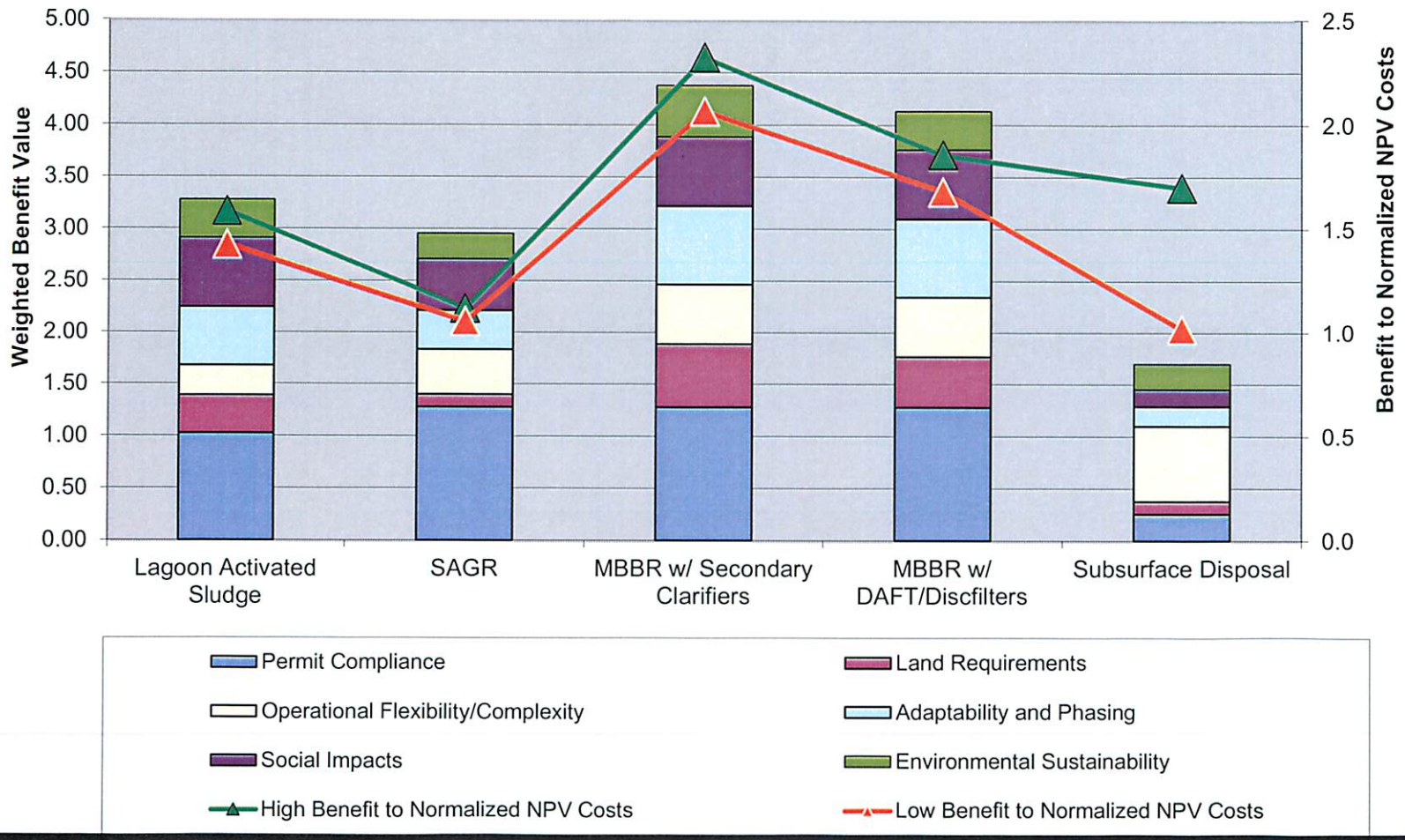


Submerged Attached Growth Reactor





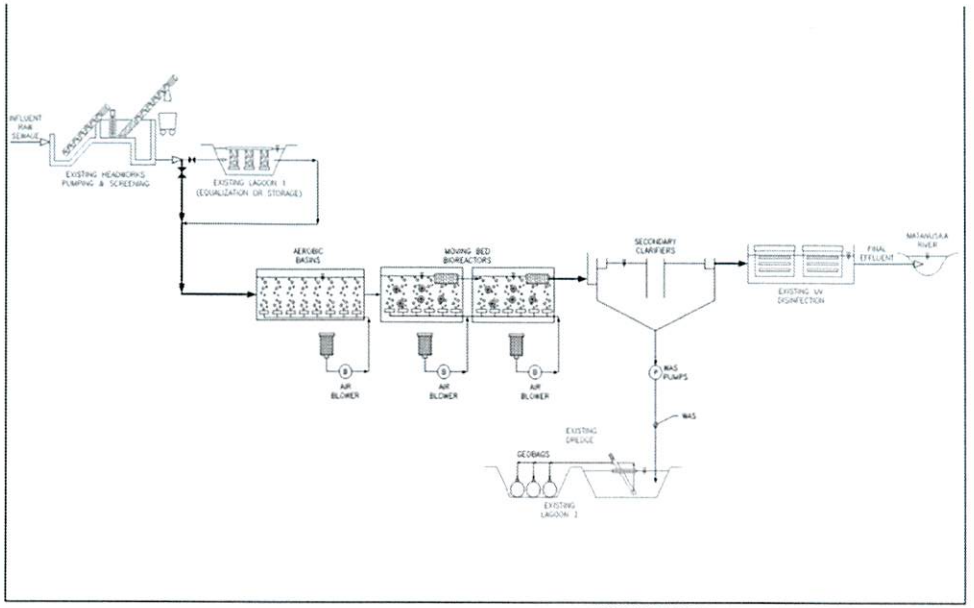
ALTERNATIVES EVALUATION
Palmer WWTP Decision Analysis



Recommended Alternative
Moving Bed Biofilm Reactor (MBBR)

Basic Elements:

- Aeration Diffusers
- Aeration Piping
- Retention Screens
- MBBR Media "Bug Condos"
- Design Coordination
- Secondary clarification (clarifier, DAF)



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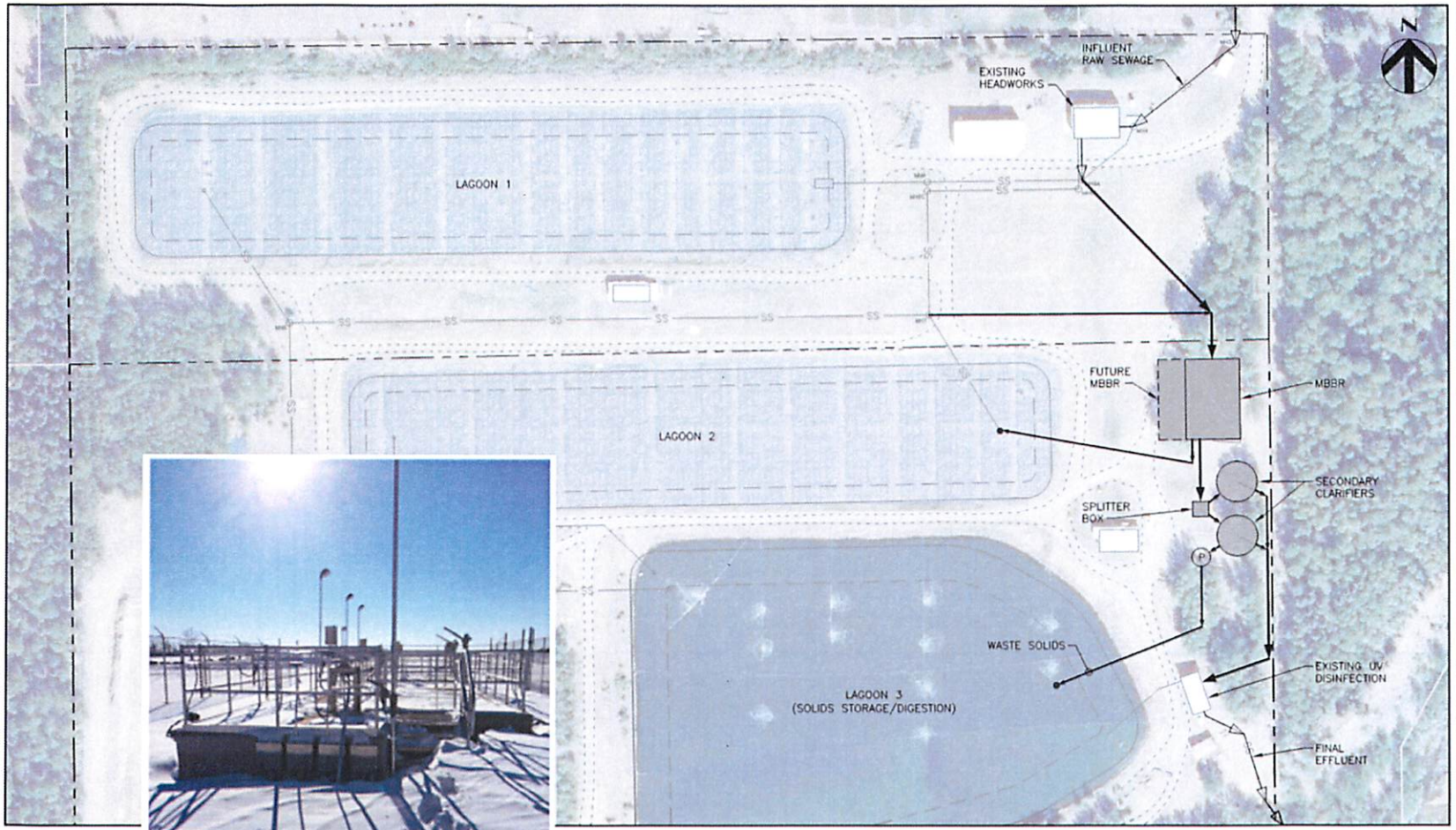
FACILITY PLAN UPDATE

FEB 2018

Advantages:	Disadvantages:
• Complies with current regulatory requirements and flexibility to meet future regulatory requirements. • Ability to phase upgrades , which minimizes initial capital costs. • Treats warmer influent wastewater by bypassing the lagoons. • Operational Cost Savings: ➢ Effluent pumping not required. ➢ Less aeration required (less power). • Smallest footprint (provides the ability for plant expansion) relative to other alternatives. • Operates year round and not subject to seasonal discharge.	• New, mechanical treatment plant replaces existing lagoon infrastructure. • Additional staff training will be necessary.

RECOMMENDED ALTERNATIVE



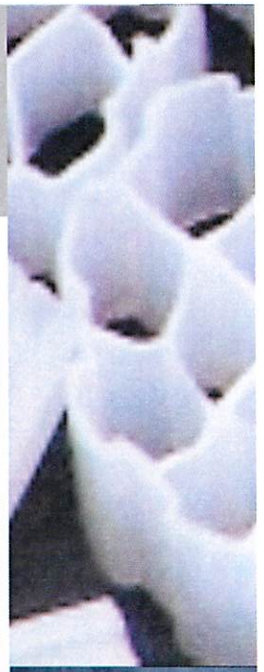
CITY OF PALMER
WASTEWATER TREATMENT PLANT
FACILITY PLAN UPDATE

CONCEPTUAL SITE LAYOUT - ALTERNATIVE 4A
MBBR WITH SECONDARY CLARIFIERS

DATE FEB 2016

FIGURE 26

Cold Weather (-21ºF) MBBR installation in Wisconsin



Next Steps

- Design of the facility plan recommended alternative is currently underway.
- Construction planned for 2017-2018.

- Future informational public meetings will be held during the design and construction process.

Questions?

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