

Pretreatment Plant (PTP) evaluation

Technical recommendations on path forward to PTP 2.0

Lehigh County Authority

Monday, September 22, 2025

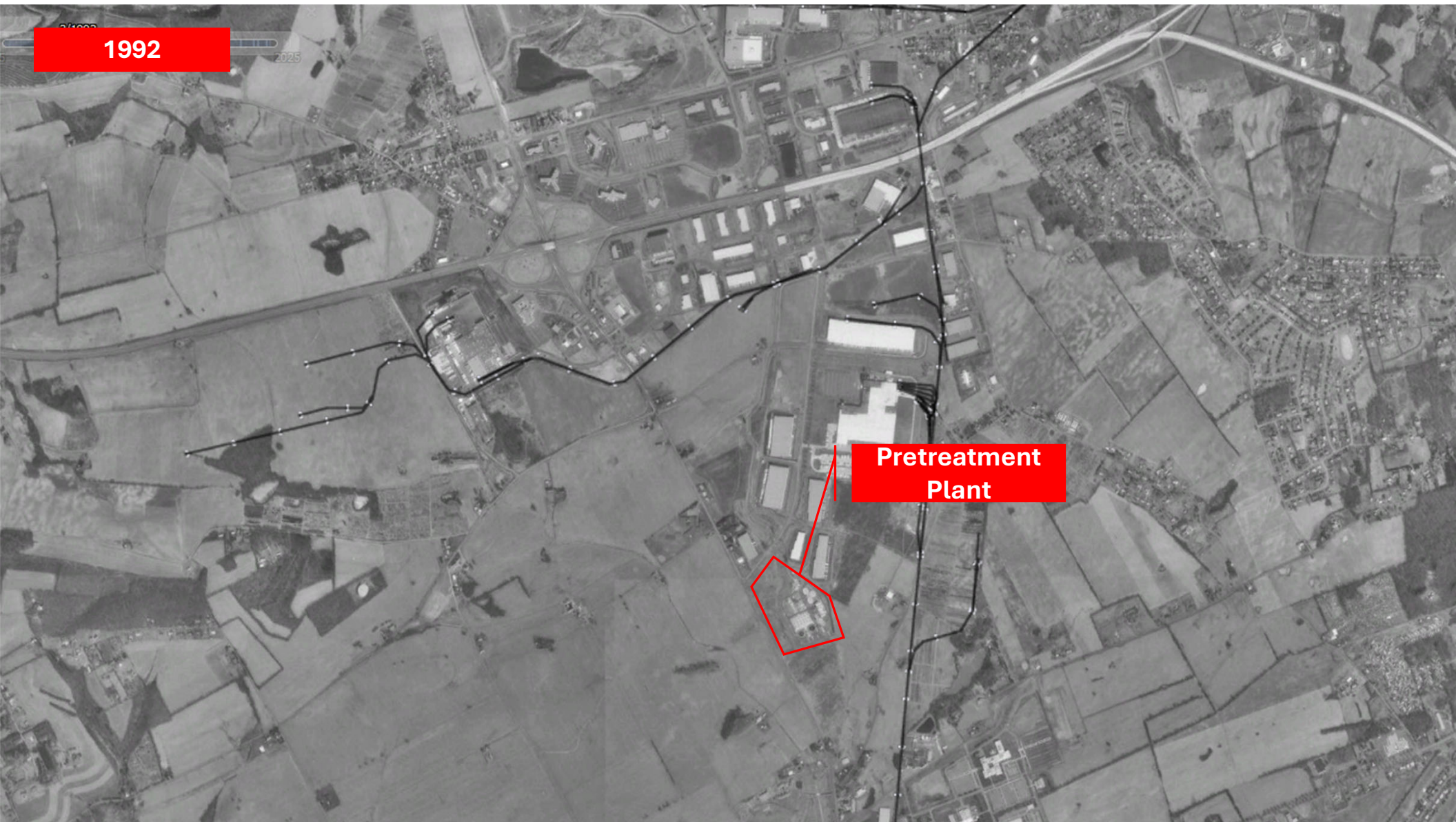


This is an aerial photograph of a wastewater treatment plant. The facility consists of numerous large, rectangular, dark-colored tanks arranged in a grid-like pattern. A red line outlines a specific area within the facility, which is labeled as the 'Pretreatment Plant'. In the top left corner, there are two red boxes containing text: 'Today' and '380,000 PE Capacity'. The surrounding area includes green fields, some residential or commercial buildings, and a road.

Today

380,000 PE
Capacity

Pretreatment
Plant



1992

2025

Pretreatment
Plant

Critical Process Renovations Underway

2025 - 2032

PTP Critical Assets Service Period



Critical Upgrades	Status	Cost \$5.2M	Expected Completion Date
HPO system upgrades	Complete	\$2.13M	7/2025
Clarifier mechanism replacement	Construction	\$1.69M	4/2026
RAS pipeline replacement	Design	\$0.56M	1/2026
Mixer repairs	Design	\$0.8M	10/2026

Prior Evaluations

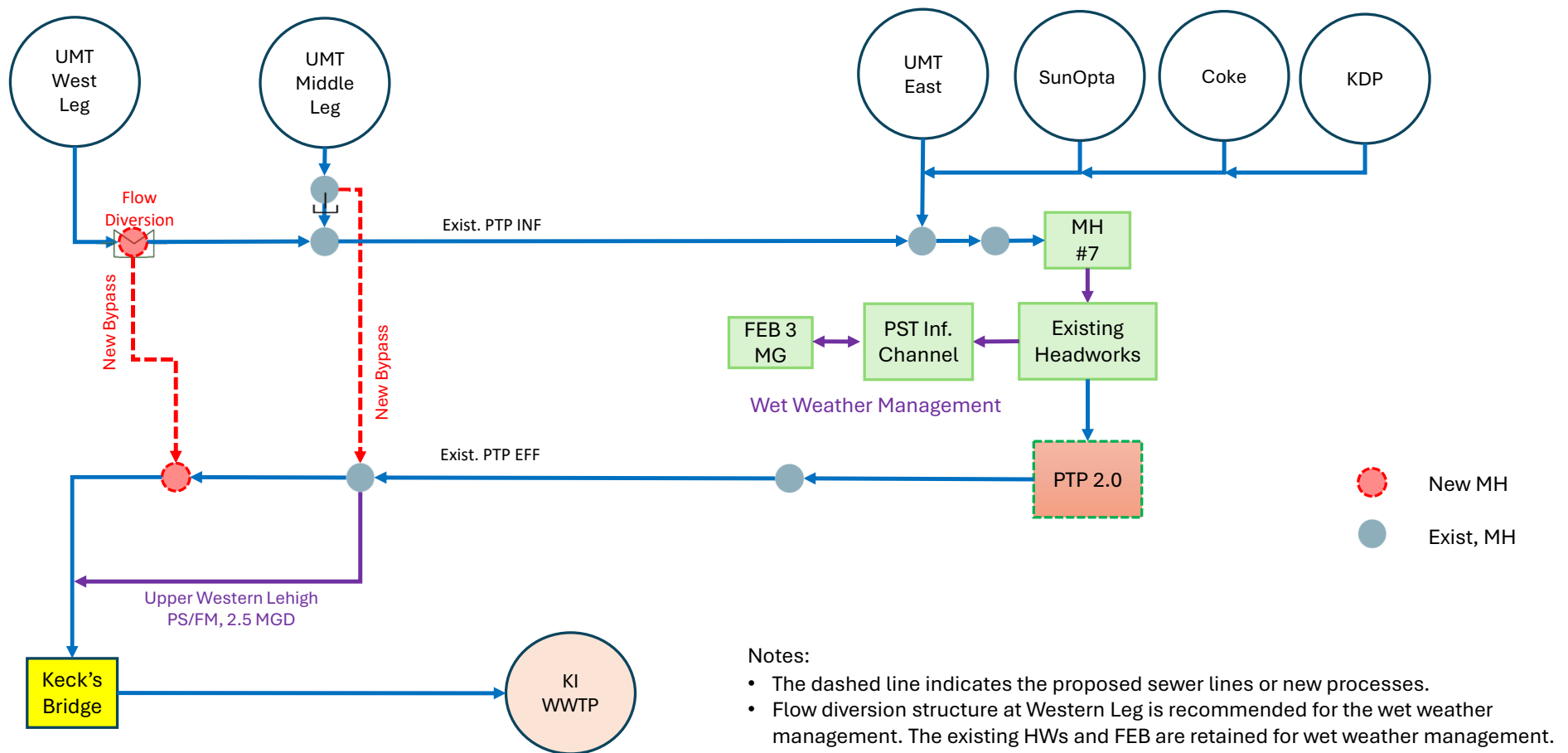


- Pretreatment Plant Master Plan (Jacobs, April 2023)
- Review of Critical Upgrades & Future Alternatives (Technical Advisory Group, 2024)
- PTP Assessment of Hauled Waste Direct to Digesters (AECOM, June 2024)
- Hauled Waste Treatment Evaluation (Mead & Hunt | Symbiont, September 2024)
- Aerobic Granular Sludge Feasibility Investigation (HDR, October 2024)
- PTP Hauled Waste Market Assessment (AECOM, November 2024)

LCA PTP 2.0 Summary Plan September 2025

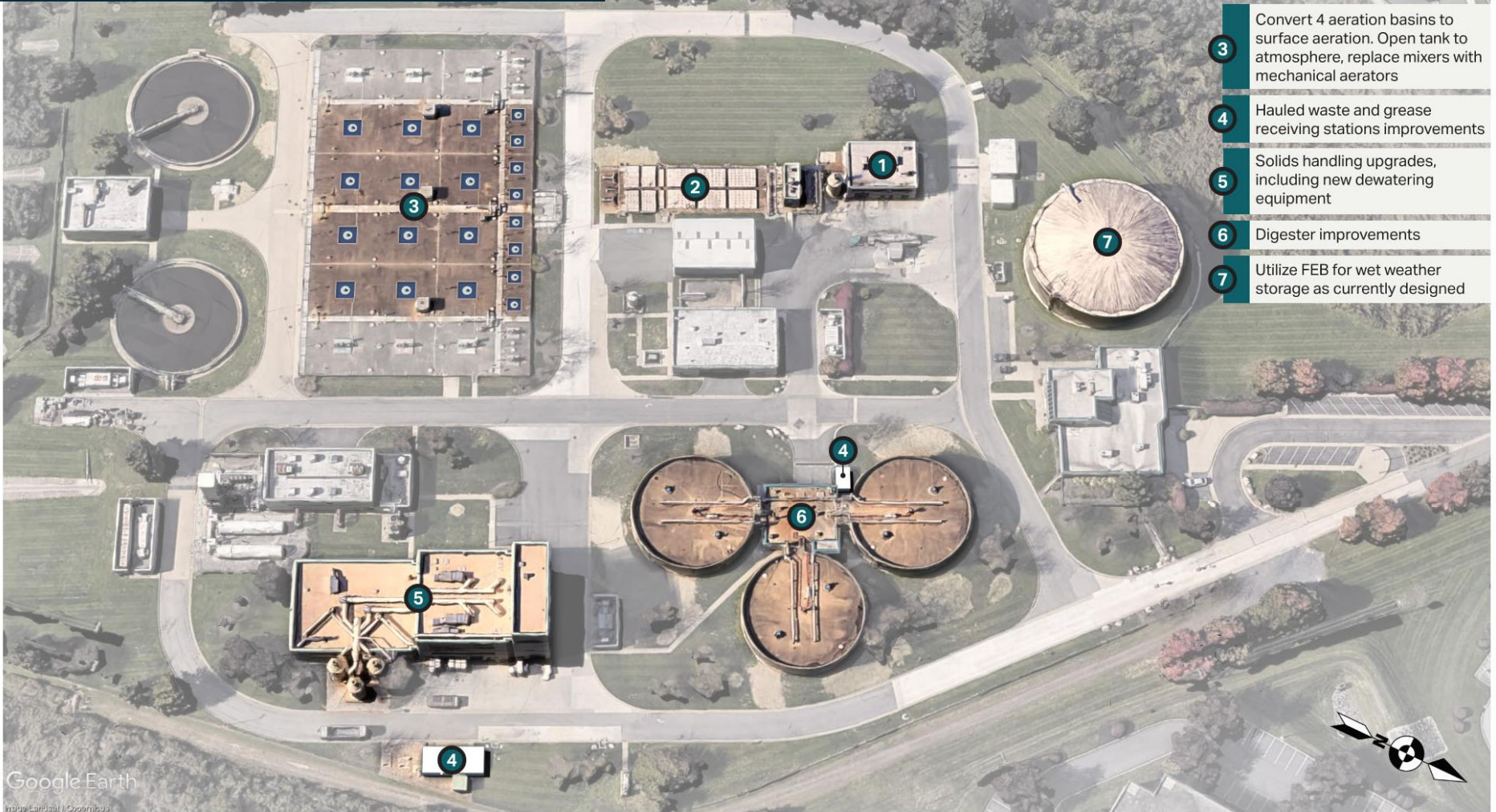
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Scenario A - UMT East, SunOpta, KDP & Coke treated at PTP 2.0

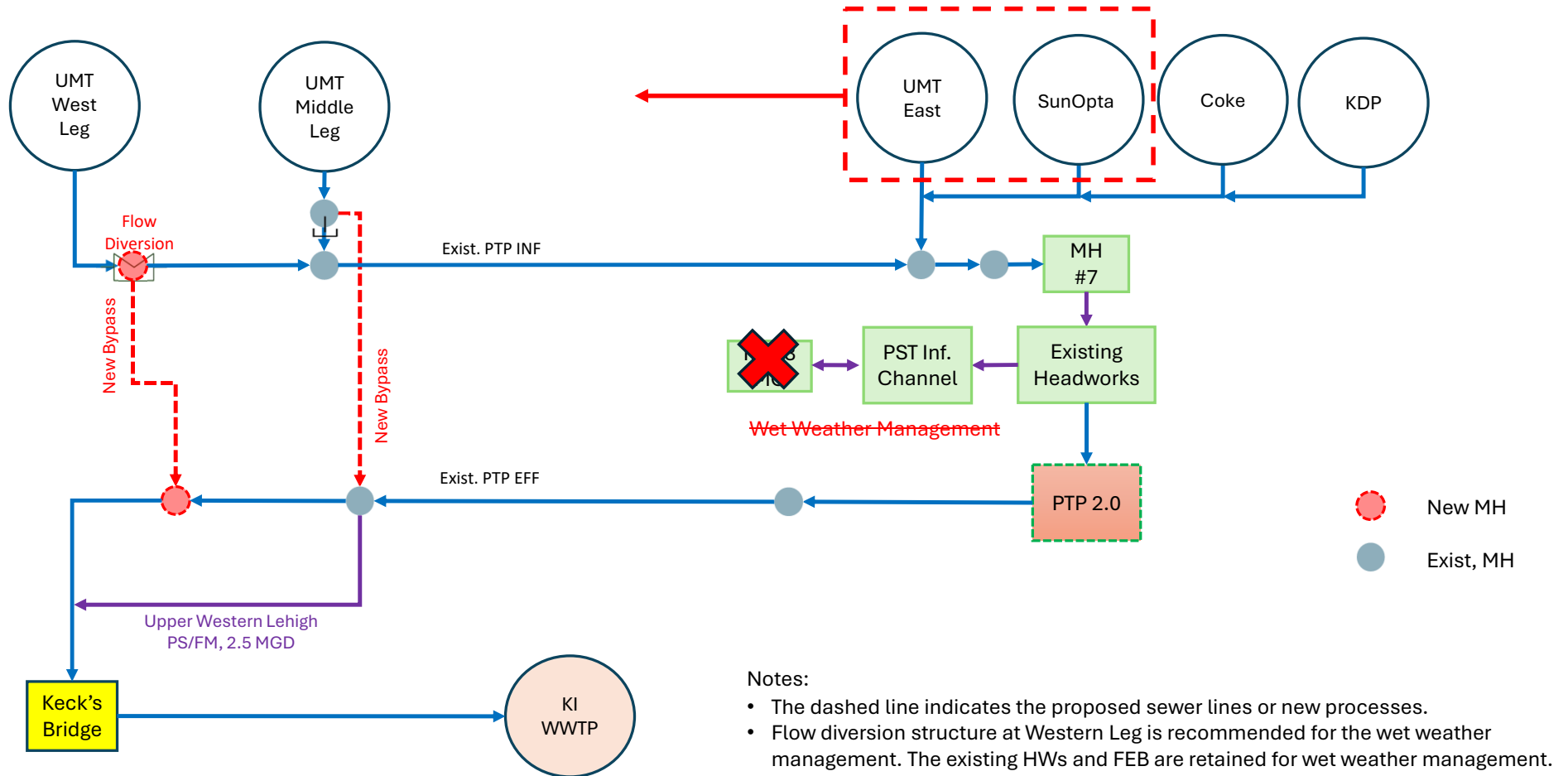


PTP 2.0

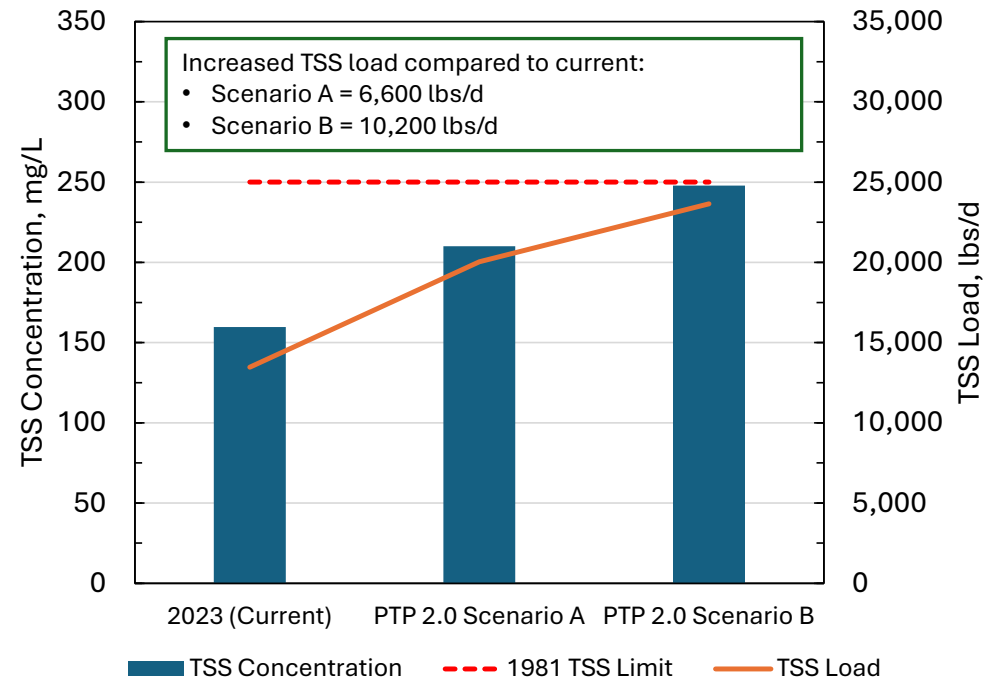
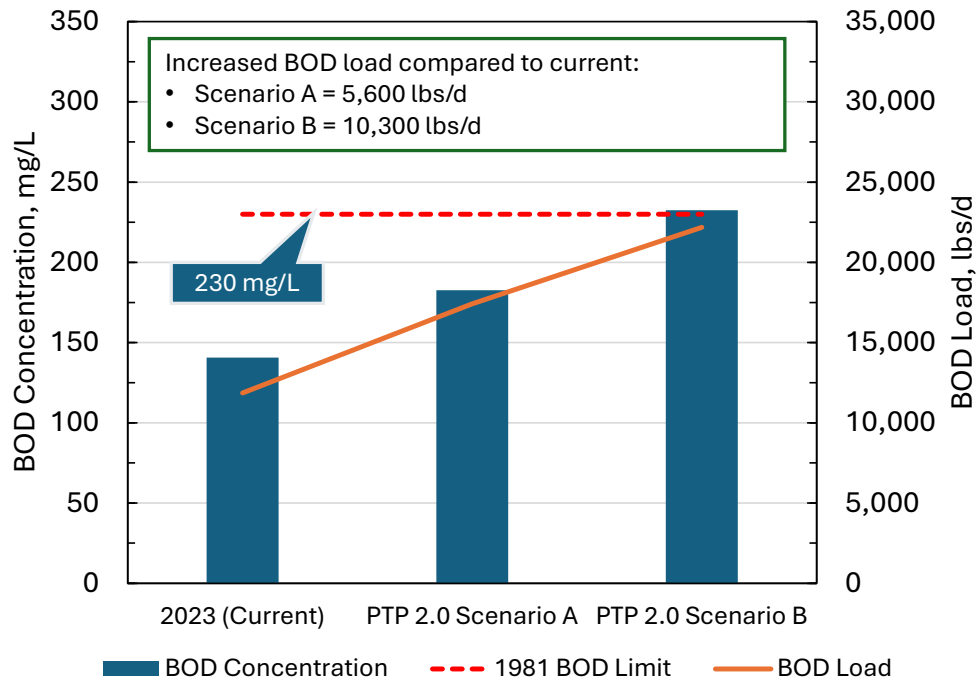
Refurbish Existing Facility and Convert from HPO to Surface Aeration



Scenario B – UMT East & SunOpta added to bypass PTP



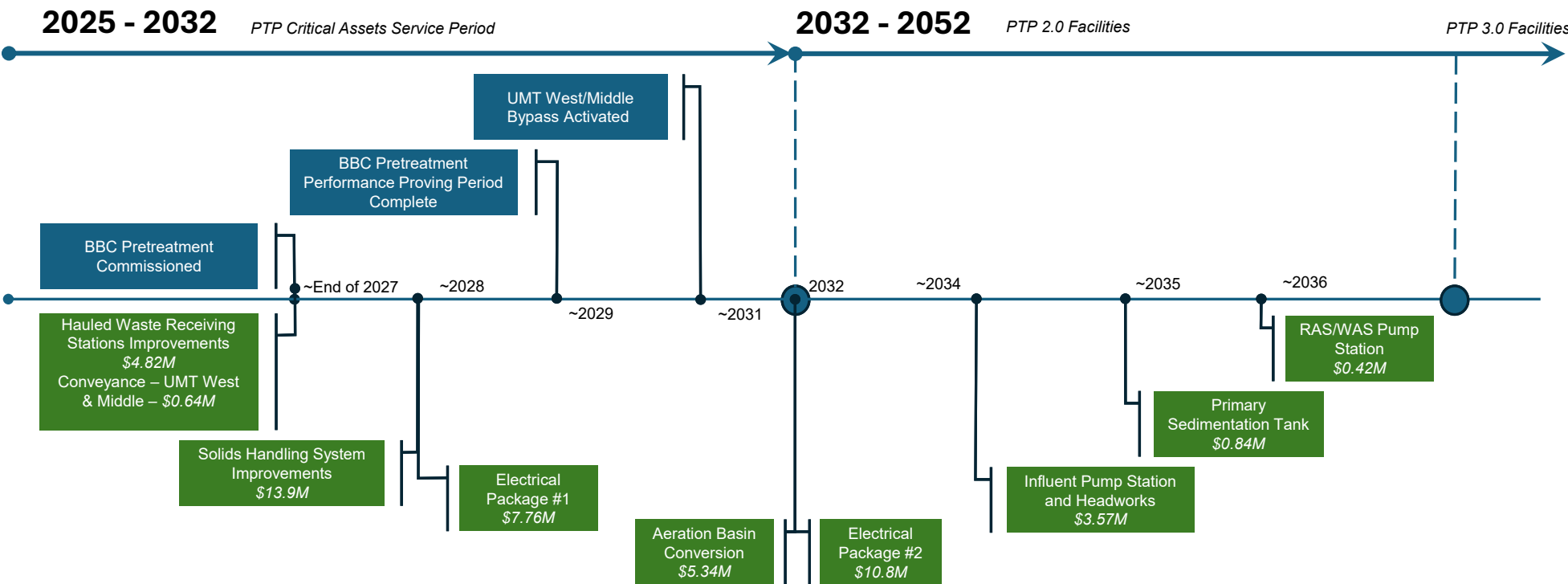
Maximum Month Loading Projection at Keck's Bridge



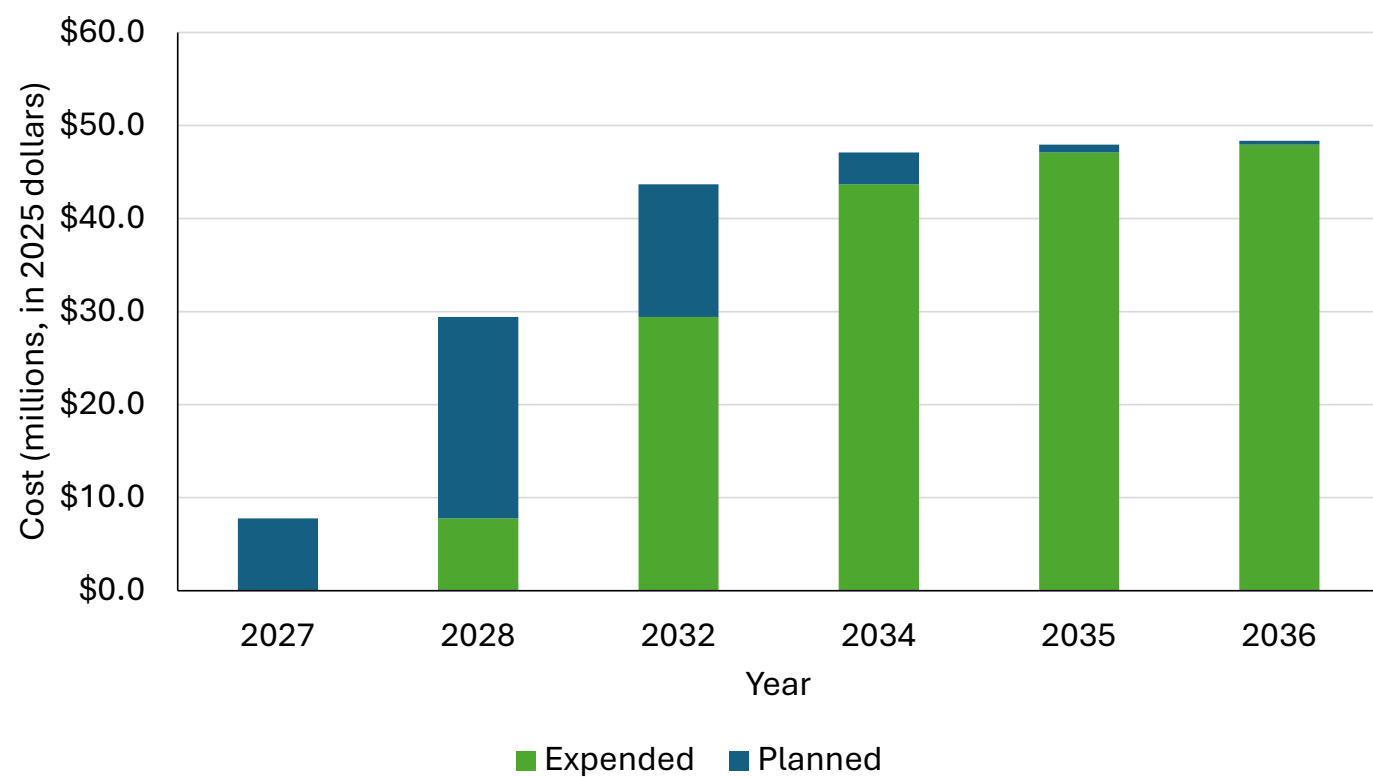
Notes:

- Assumptions: PTP effluent - 25/25, BBC effluent - 250/250, Ocean Spray - 10/10, future growth not considered.
- The results indicate a risk of exceeding the 1981 agreement limits for Scenario B, while Scenario A remains within acceptable limits.

Sequencing Timeline to PTP 2.0



Sequencing Timeline to PTP 2.0



Opinion of Construction Cost

System	Scenario A	Scenario B
Influent Pump Station and Headworks (Including Electrical Improvements)	\$3,570,000	\$3,420,000
Primary Sedimentation Tank	\$840,000	\$840,000
Aeration Basin	\$5,340,000	\$3,430,000
RAS, WAS, Pump Station Building	\$420,000	\$420,000
Solids Handling System (Including Electrical Improvements)	\$13,900,000	\$13,900,000
Hauled Waste Receiving Station	\$4,820,000	\$4,820,000
Electrical Package #1	\$7,760,000	\$7,760,000
Electrical Package #2	\$10,830,000	\$10,830,000
Conveyance Modifications UMT West & Middle	\$640,000	\$600,000
Conveyance Modifications UMT East	-	\$3,480,000
Total Construction Cost	\$48,120,000	\$49,500,000
Total Construction Cost Range (-30%/+50%)	\$33,684,000 - \$72,180,000	\$34,650,000 - \$74,250,000

Hauled Waste Program

Based on evaluation of 15 top contributors to the Hauled Waste Program (AECOM 2024)

- LCA generates 15% more revenue per gallon from regional market average
- There is an opportunity to increase the rate of a subgroup of contributors while still being competitive
- Rates can be decided based on composition in addition to flow
- Analysis of rate changes showed revenue increase of up to \$209,000 annually

Evaluation of capacity of the high-rate digesters suggest 25% additional solids loading capacity

- Currently, the hauled waste program is expected to accept ~16,000 lbs TSS/d following the addition of BBC sludge
- Digester capacity evaluation suggests additional 5,000 to 6,000 lbs TSS/d can be accepted through the hauled waste program

Summary of Recommendations

- **Flow/Loads – Option A - Taking UMT East, SunOpta, Coke, KDP** (vs Option B – Coke and KDP only)
- **Treatment –Modify Current Treatment plant**
Major Upgrades: convert Cryo to aeration, new waste hauling receiving station (all hauled waste to digesters), replace aging electrical facilities, replace solids handling facilities.
- **Total Costs in 2025 Dollars - \$48.1M for Option A**
- **Accept BBC Solids / Continue to Accept Hauled Waste**
- **Costs / Sequencing / Schedule of Work:**
 - 2027 – Waste Receiving – \$4.82M
 - 2027 – Conveyance – UMT West & Middle – \$0.64M
 - 2028 – Solids Handling – \$13.9M
 - 2028 – Electrical Package #1 – \$7.76M
 - 2032 – Aeration – \$5.34M
 - 2032 – Electrical Package #2 – \$10.83M
 - 2034 – Influent Pump Station /Headworks – \$3.57M
 - 2035 – Primary Sedimentation Tank – \$0.84M
 - 2036 – RAS/WAS Pump Station – \$0.42M



Benefits of Recommended Approach

- Reserves Capacity (flow/ Loads) at Keck's Bridge and at PTP to permit future economic development
- PTP 2.0 can take additional flow and loads – 4 of 6 aeration basins used, 2 aeration basins available
- Deals with fats, oils and greases from SunOpta at PTP; prevents deposition in Western Lehigh Interceptor
- Retains Flow Equalization Basin to provide wet-weather buffer
- Hauled waste discharged to digesters frees capacity in liquid stream process



Remaining Questions

- Cost-sharing calculations based on users' flows/loads?
- Financing capacity of hauled waste program?
- Ability to increase hauled waste revenues?
- Buy-in and capital contributions from municipal partners?
- Buy-in and capital contributions from industrial partners?
- Ongoing operational costs & rate setting process?
- Municipal & industrial agreements to support project and ongoing operation?
- Parameters and financial requirements for new users to be added in the future?



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Discussion – Thank You!

