



Licking Regional Water District

Managing Explosive Growth in Distribution and Collection Systems

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Agenda

- 1 District Background**
- 2 Growth in SR-161 Service Area**
- 3 Master Planning**
- 4 Water Treatment and Distribution**
- 5 Wastewater Treatment and Collection**
- 6 Steps Forward**

District Background

Licking Regional Water District

- Formerly Southwest Licking Community Water and Sewer District
- Provides centralized water and wastewater services to residential and commercial customers in the areas of Etna Township, Harrison Township, and Lima Township (City of Pataskala) in Licking County
- Since establishment in 1989, District serves over 6,700 water customers and over 7,000 wastewater customers



Licking Regional Water District

Water

- York Road WTP (3 MGD permitted, 1.4 MGD average)
 - Nano-filtration treatment process.
 - Groundwater supply from adjacent wellfield
- Three elevated water storage tanks
- Two water booster station



Wastewater

- Gale Road ECF (4.3 MGD permitted, 2.65 MGD design capacity)
 - Oxidation ditch/extended aeration basin
- Wagram WWTC (in construction)
- Over 160 miles in collection system
- Forty-three pump stations

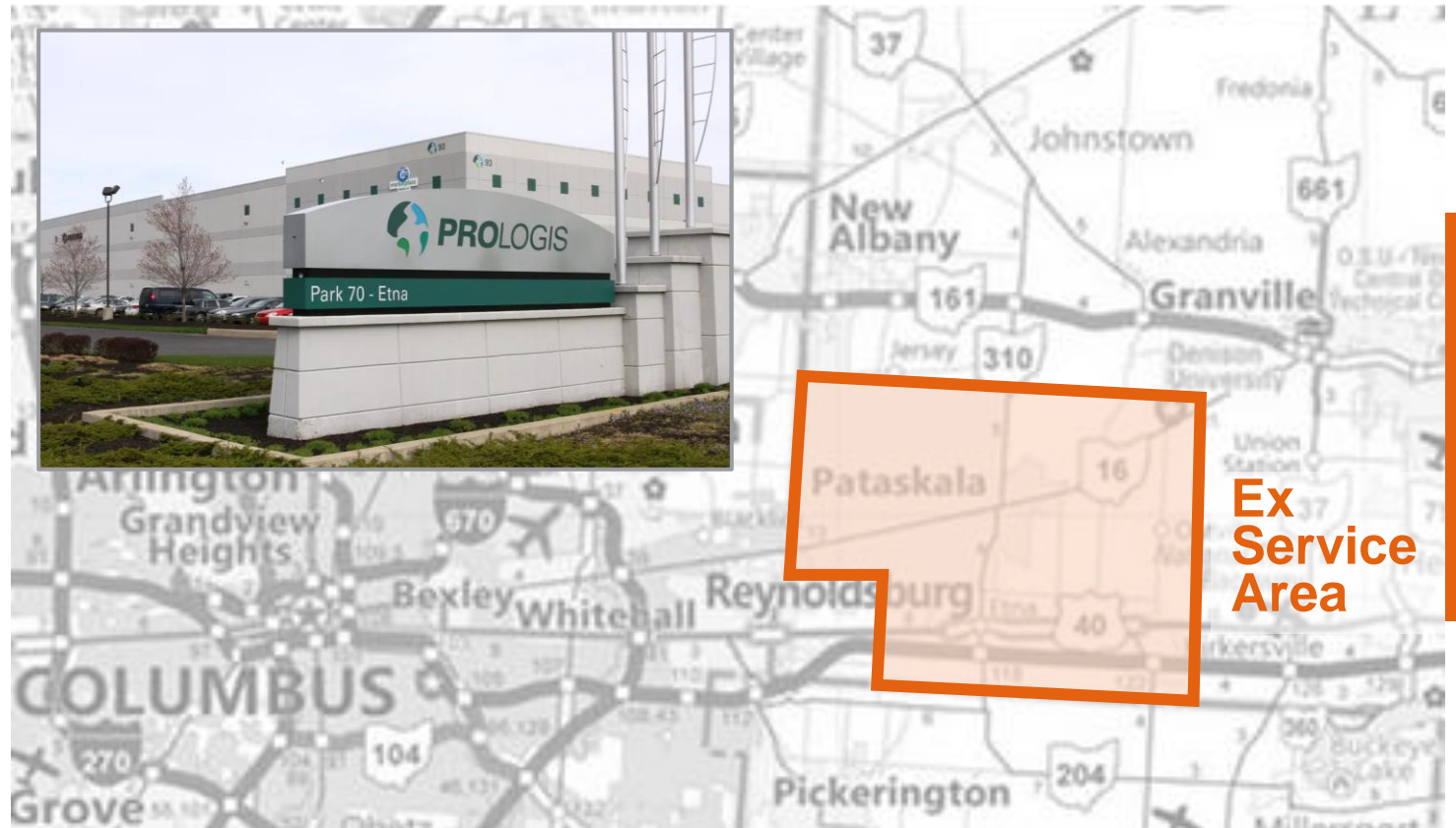


Licking Regional Water District

6119 Regional Water and Sewer District – Flexibility and Autonomy

Serves the residents and businesses in the City of Pataskala, Etna and Harrison Townships

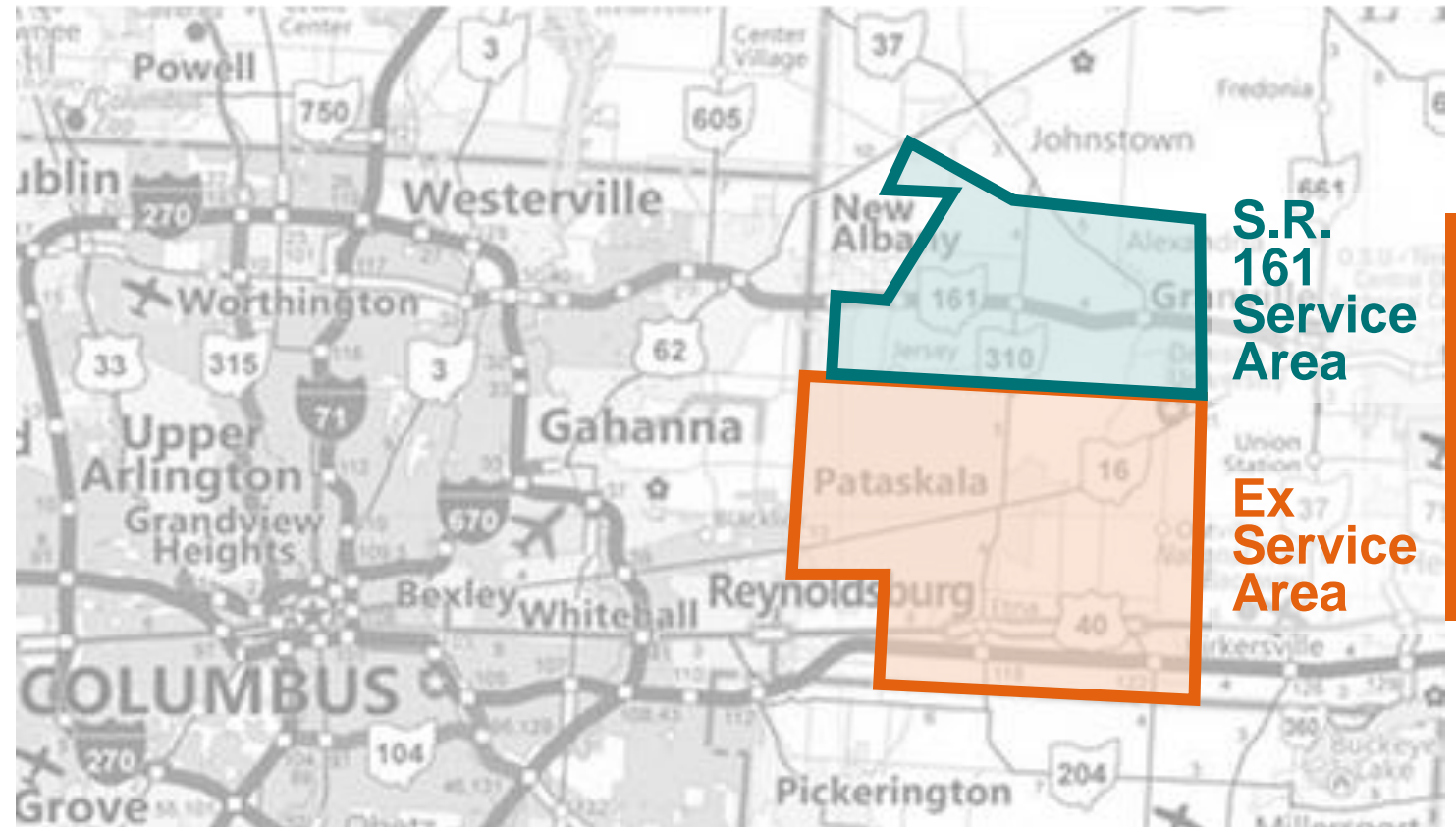
No stranger to manufacturing development



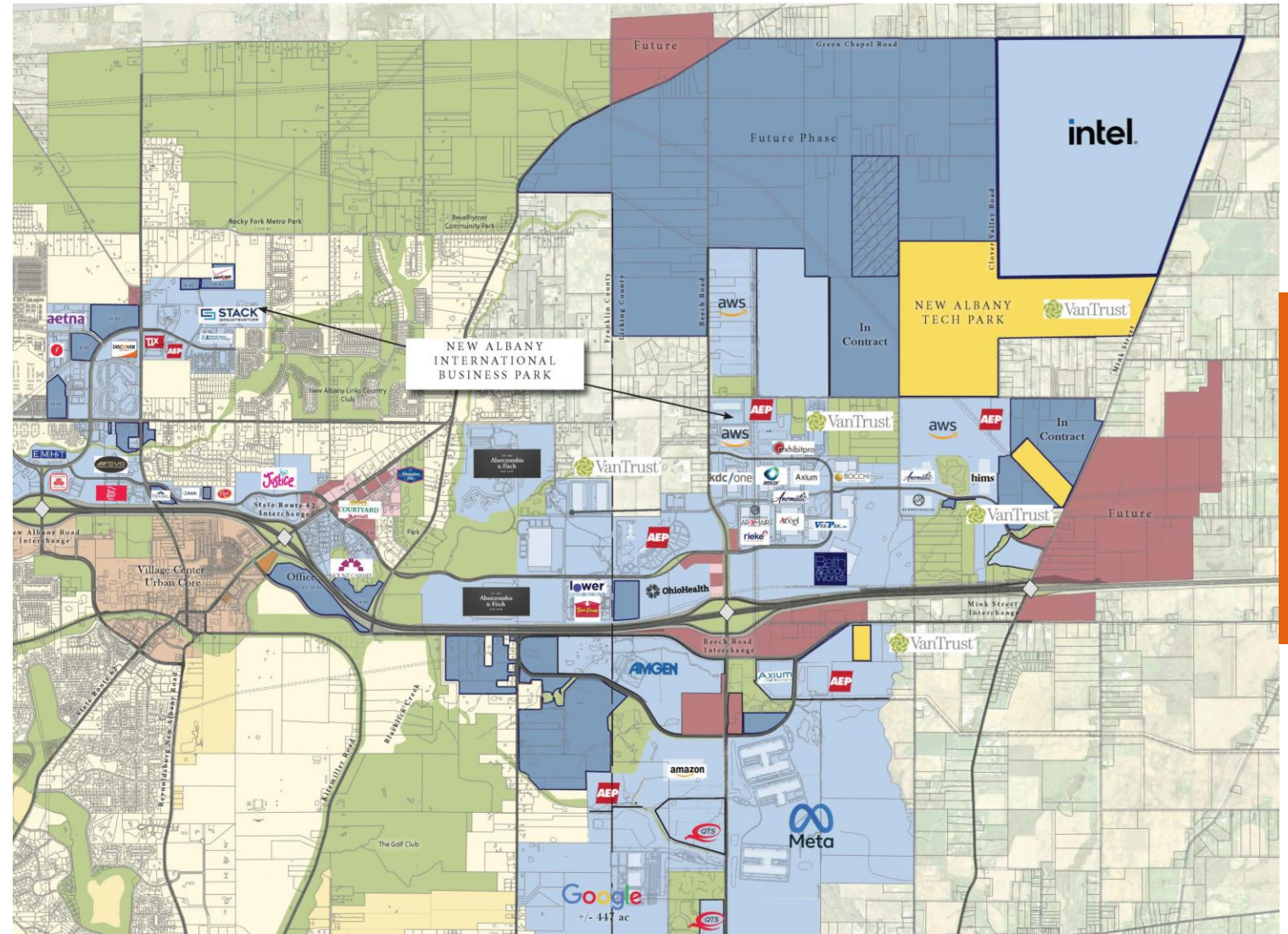
Growth in SR-161 Service Area

Licking Regional Water District

- Contracted to serve SR-161 Service Area per Statewide 208 Plan
- Includes Jersey, St. Albans, and Monroe Townships in Licking County
- Over 10,000 acres of manufacturing and commercial developmental land in Central Ohio



Continuation of New Albany's International Business Park, Tech Park and Intel Development

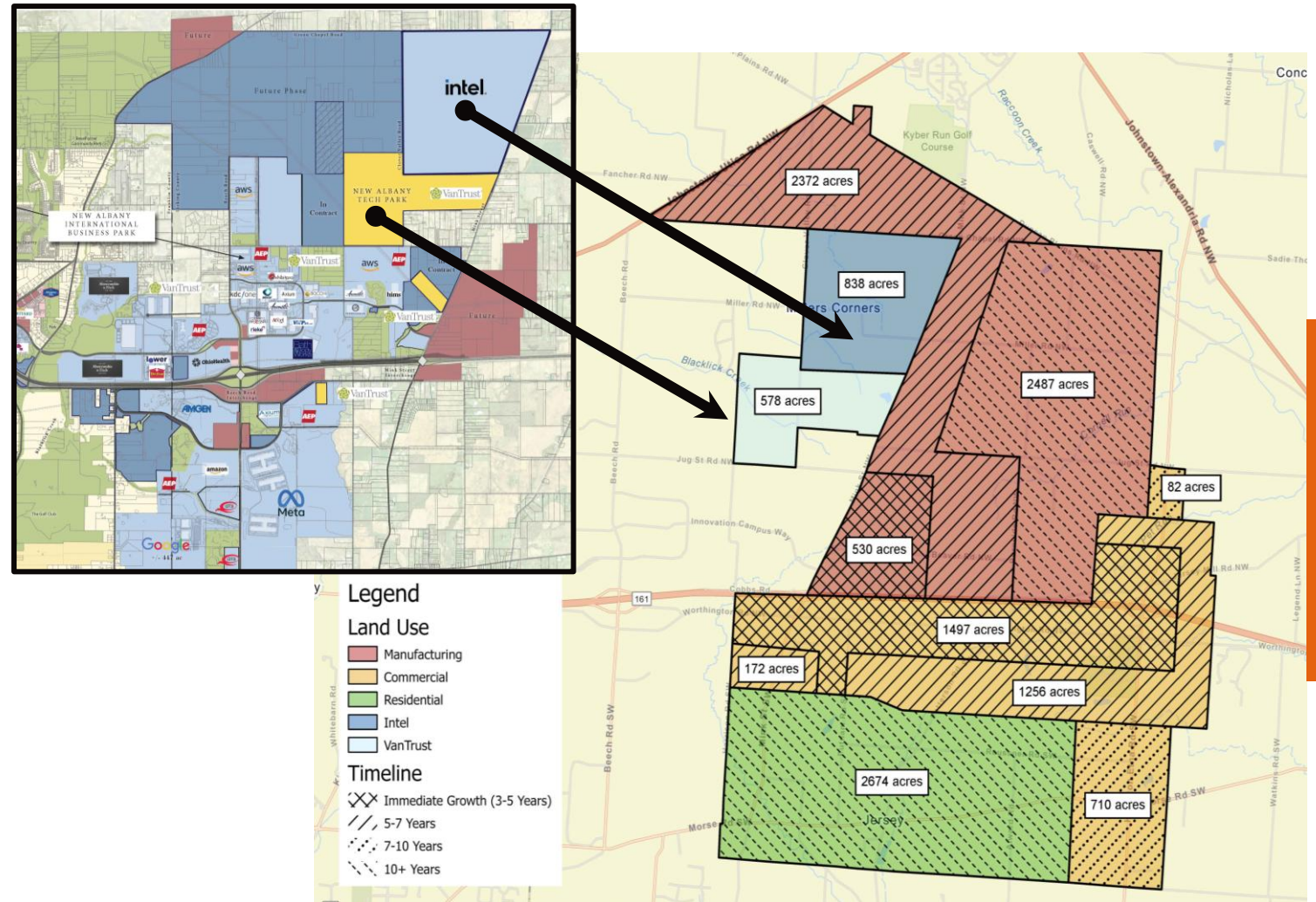


Master Planning

SR 161 Master Plan



- Develop plan to provide water and sewer service
 - 5,000+ acres of prime manufacturing land
 - 5,000+ acres of commercial land
- Collaboration with Licking County and Columbus



Economic Development Opportunity

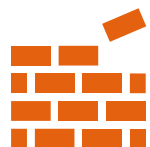
Based on IMPLAN forecast model – Calibrated for Ohio and Licking Co.



70k Jobs | 5k / year
6.2% Annual Growth



13k Residences



47M manufacturing ft²
49M commercial ft²



\$4.2B Labor Income
\$281M / year



\$7B in GDP | \$460M / year
6.4% Annual Growth



\$67M State Income Tax
\$4.5M / year



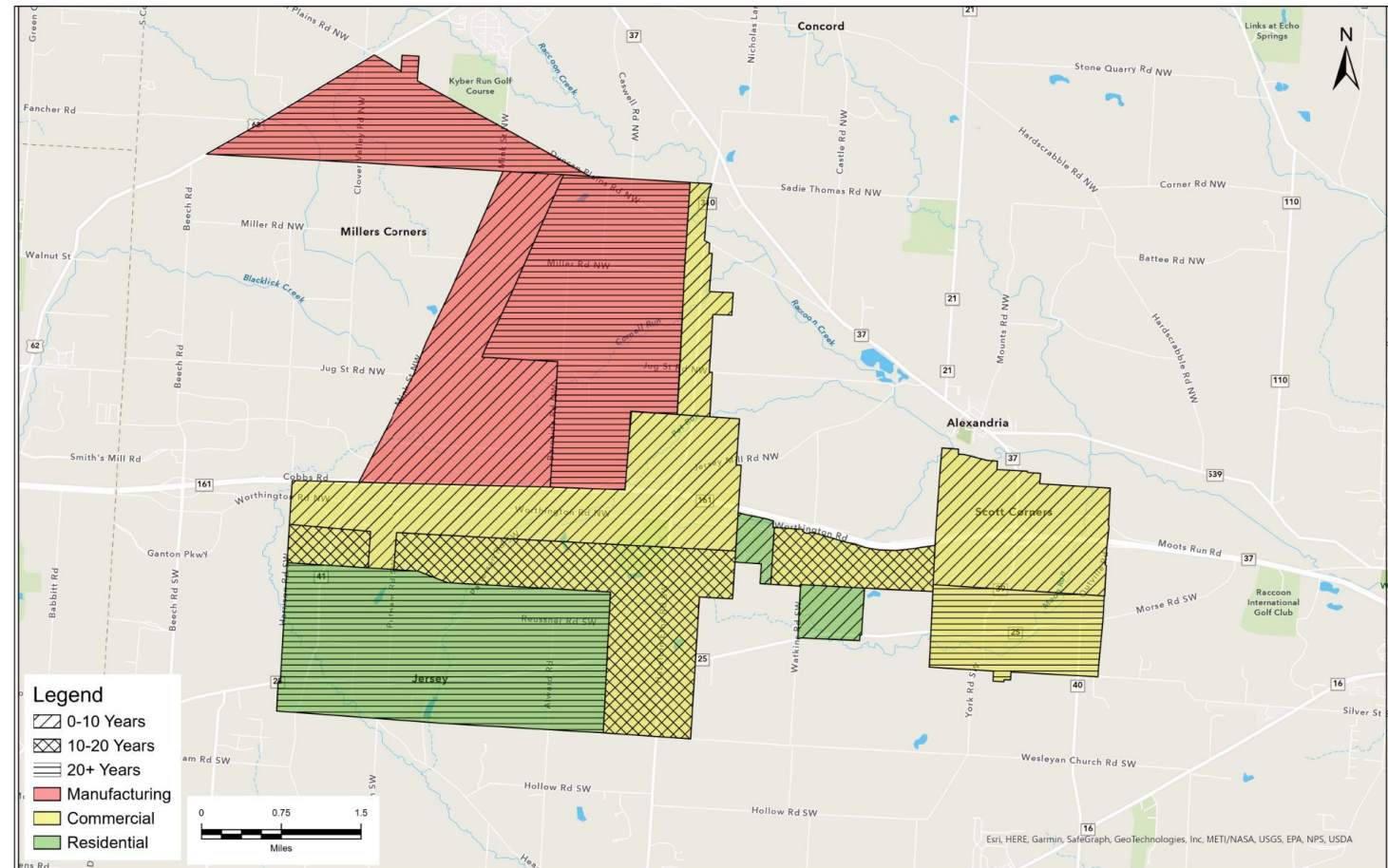
\$200M State Sales Tax
\$18M Other State Tax



\$23M County Sales Tax
\$28M County Property Tax

Phased Approach

- Categorized areas by development and by timeframe for a phased approach to providing service
- Provide immediate service to keep development momentum from Intel
- Work toward flexible, reliable long-range system



Phase 1 (0-10 Years):
Short-Term Development

Phase 2 (10-20 Years):
Intermediate Development

Phase 3 (20+ Years):
Long-Term Development

Additional Planning

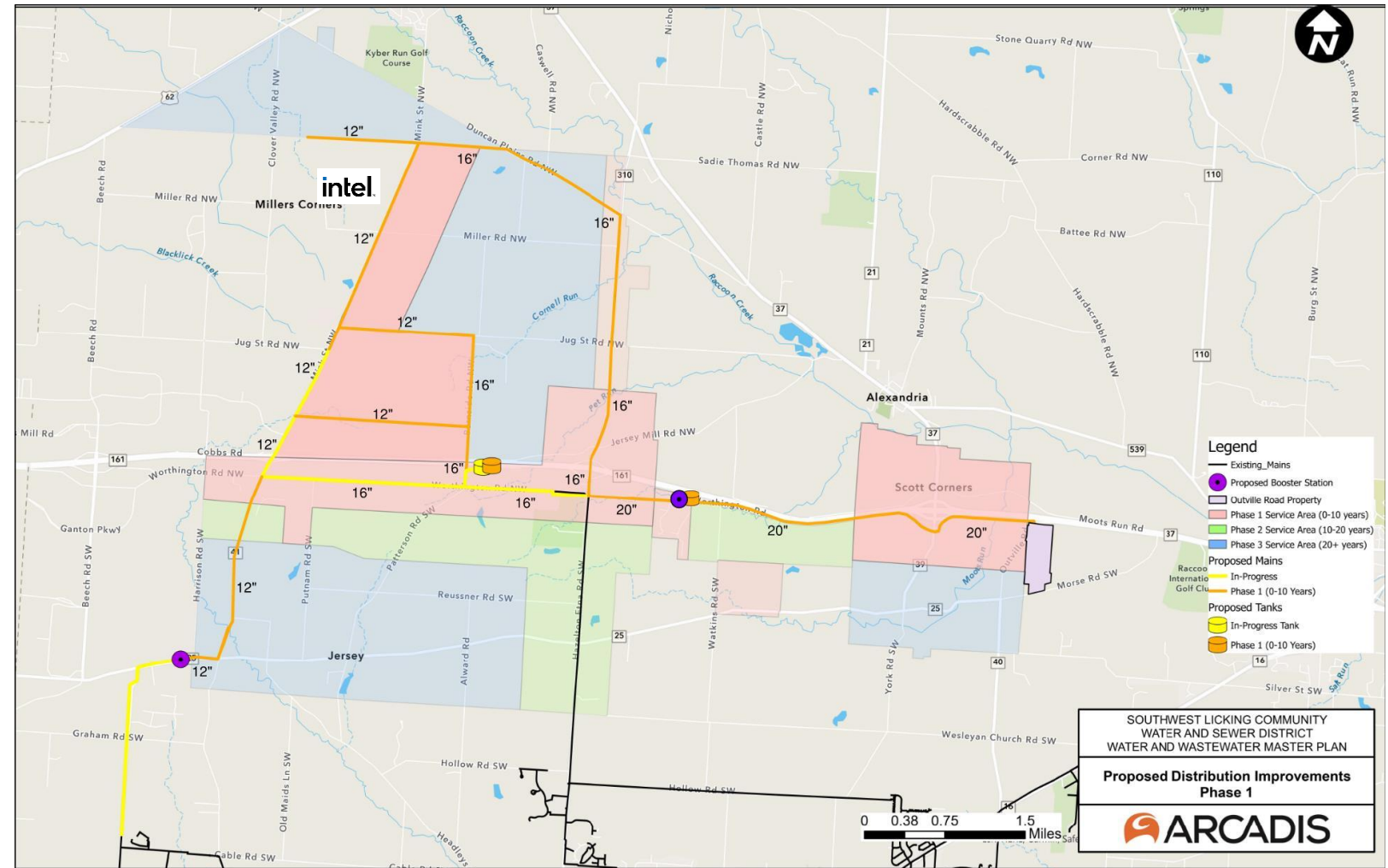
- District purchased 100-acre site to house future water and wastewater facilities in anticipation of projected growth
- Site carefully selected to balance flows throughout the service area



Water Treatment and Distribution

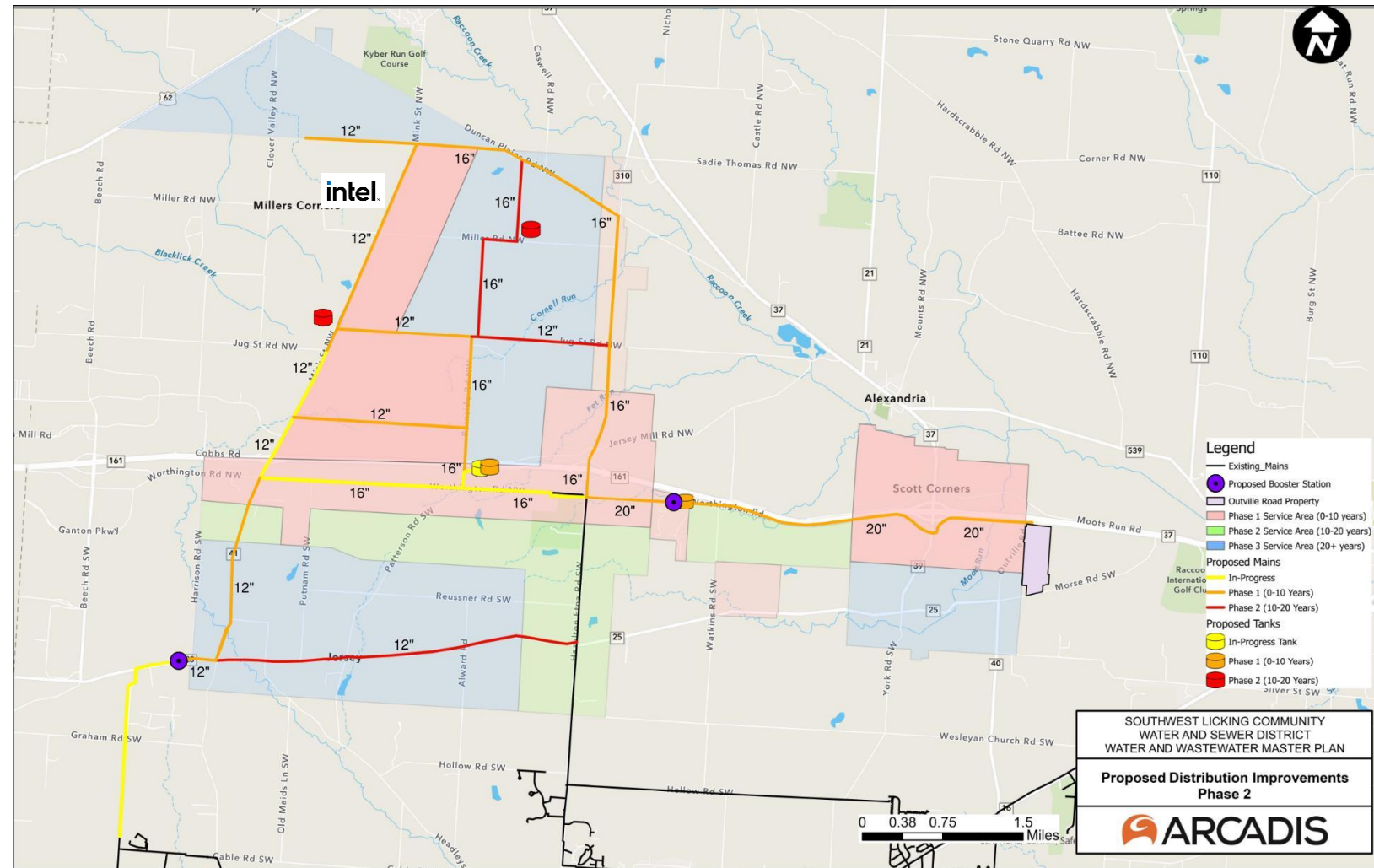
Short-Term Water Distribution Needs (Phase 1)

- Approximately 99,400 LF of transmission mains and extensions
- Two Booster Stations, one in each pressure zone.
- Two elevated storage tanks, one in each pressure zone



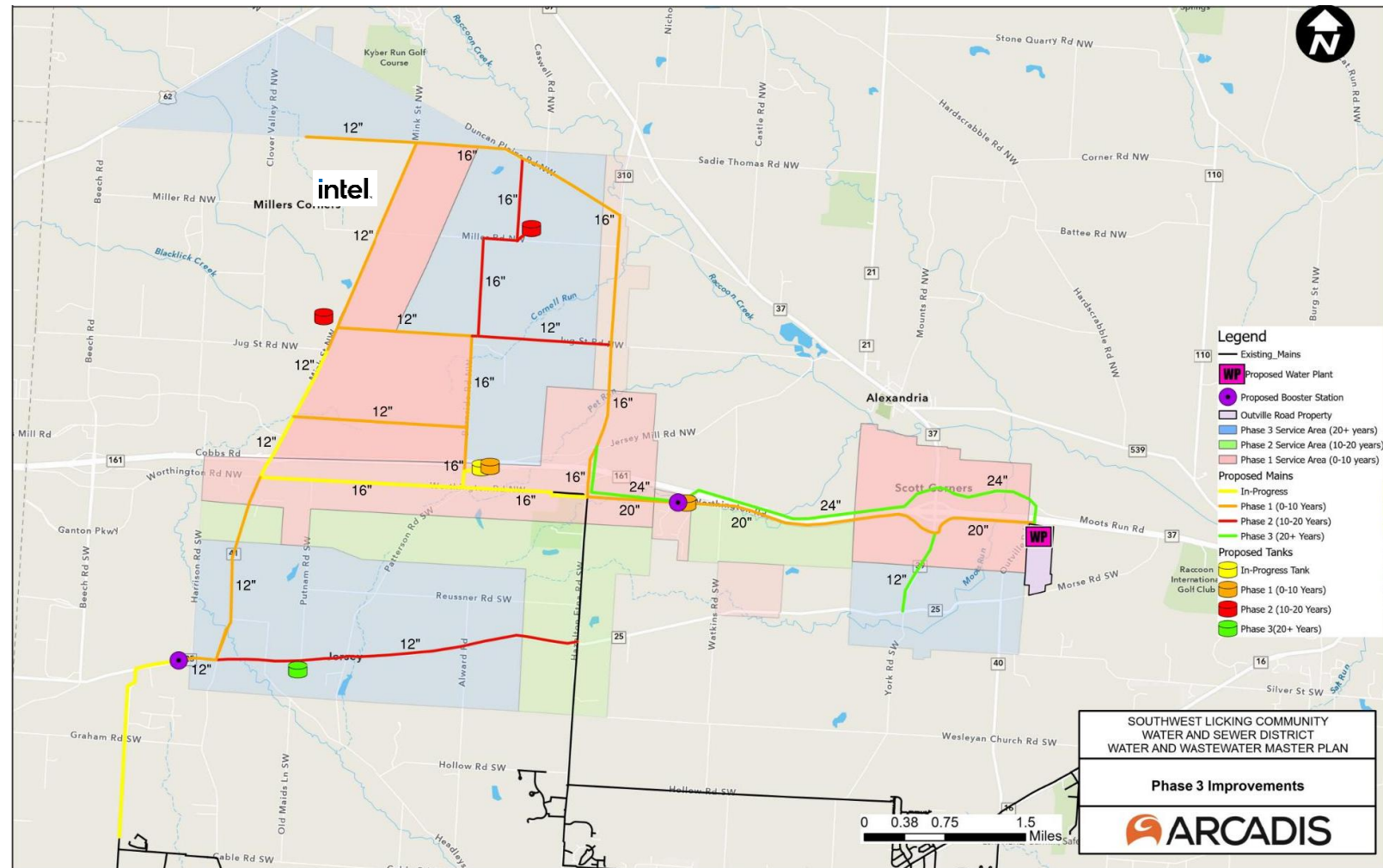
Intermediate Water Distribution Needs (Phase 2)

- Approximately 35,100 LF of transmission mains and extensions
- Upsize Phase 1 Booster Station
- Two elevated storage tanks. Location based on development



Long-Term Needs (Phase 3)

- Approximately 30,400 LF of extensions
- Upsize Phase 2 Booster Station
- Two elevated storage tanks. Location based on development



Water Treatment Plant

- No single raw water source in this watershed can meet peak service area demands
- Combination of groundwater, surface water and regional supply supplement
- Short-Term Development – Groundwater Plant

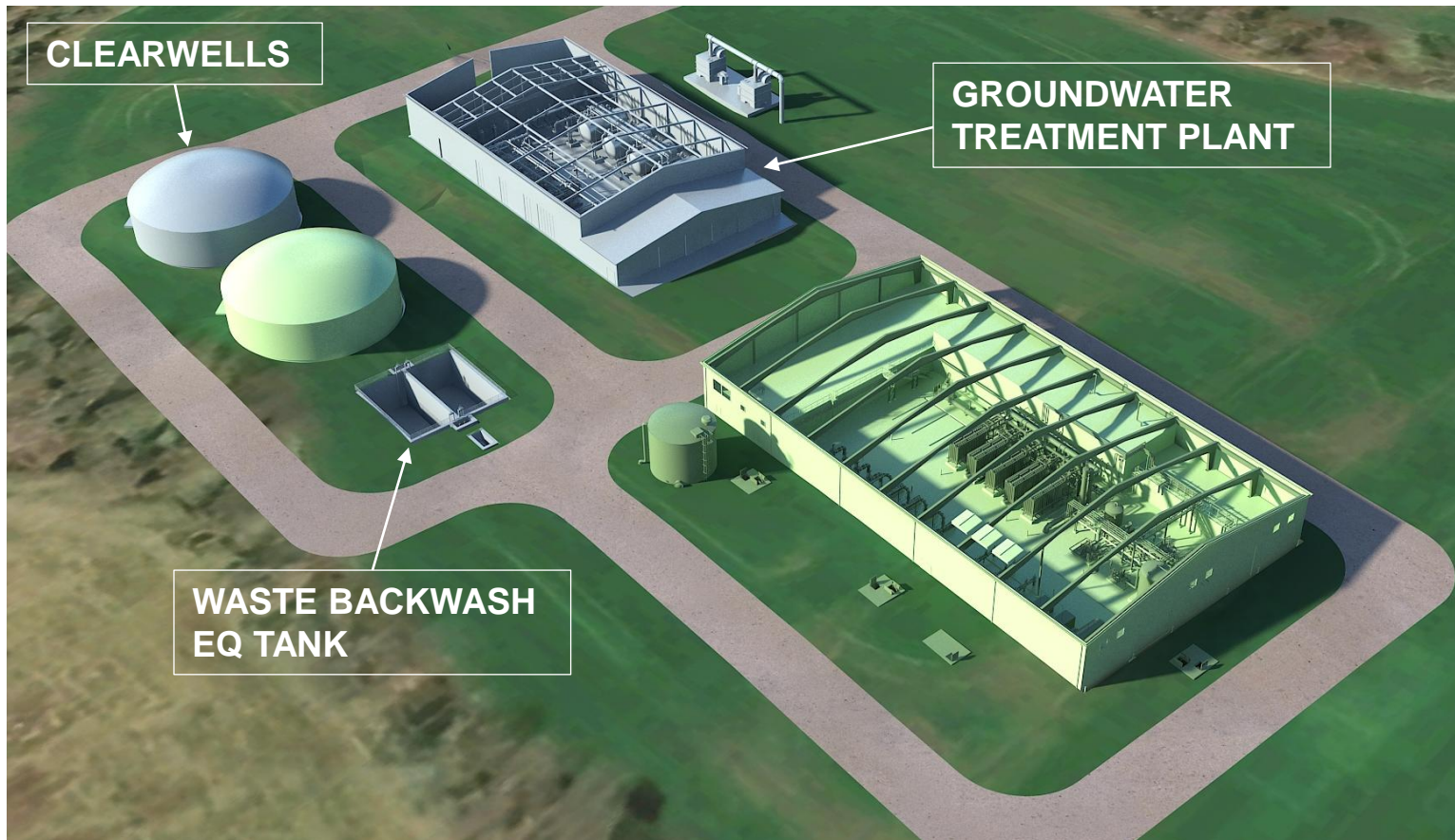


Phase 1 (0-10 Years):
4 MGD

Phase 2 (10-20 Years):
8 MGD

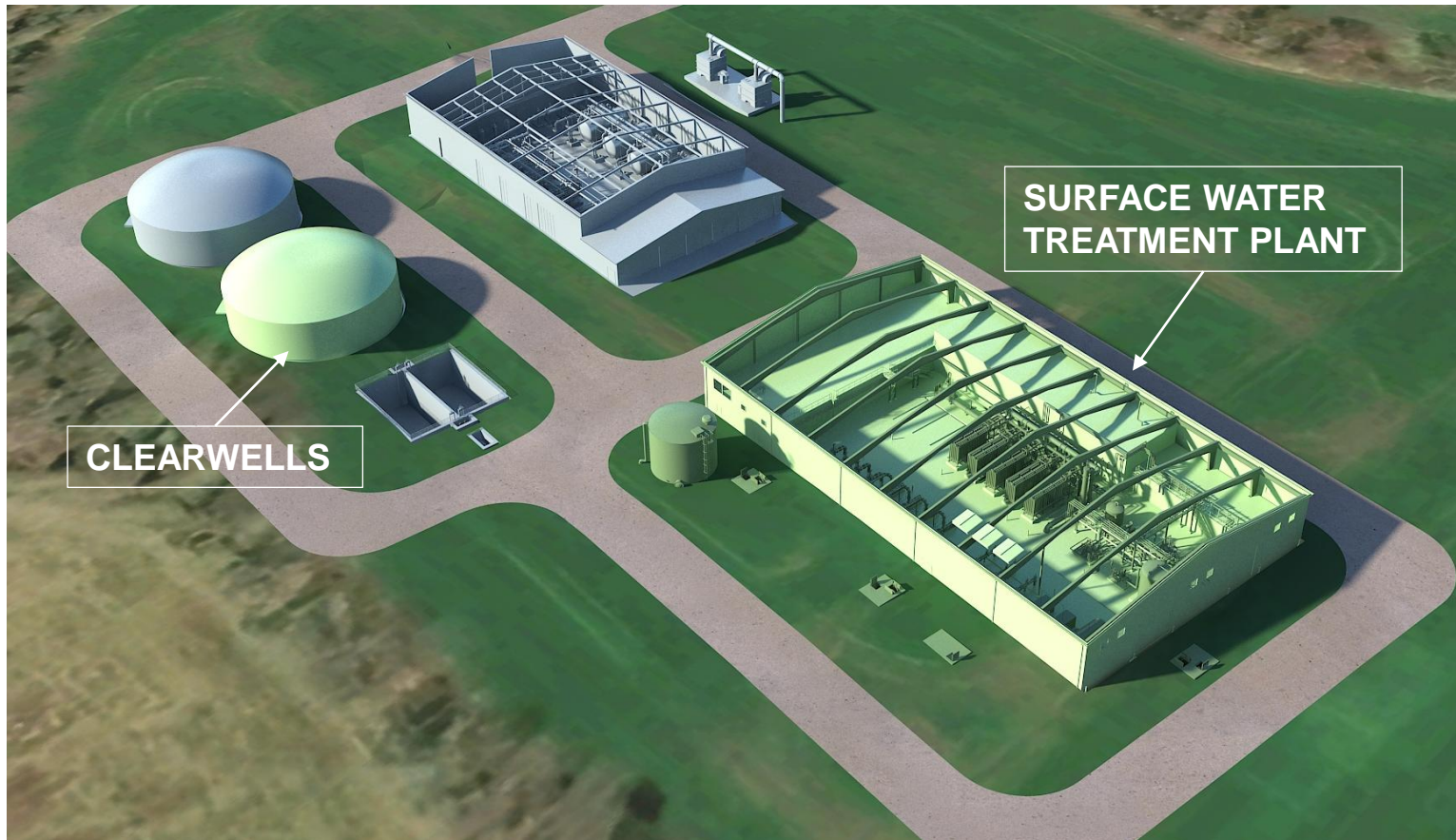
Phase 3 (20+ Years):
12 MGD

Water Treatment – Groundwater Plant



- Oxidation
- Low Service Pumping
- Pressure Filtration
- RO Treatment
- Potabilization
- Clearwell Storage
- High Service Pumping
- Chemical Storage

Water Treatment – Surface Water Plant

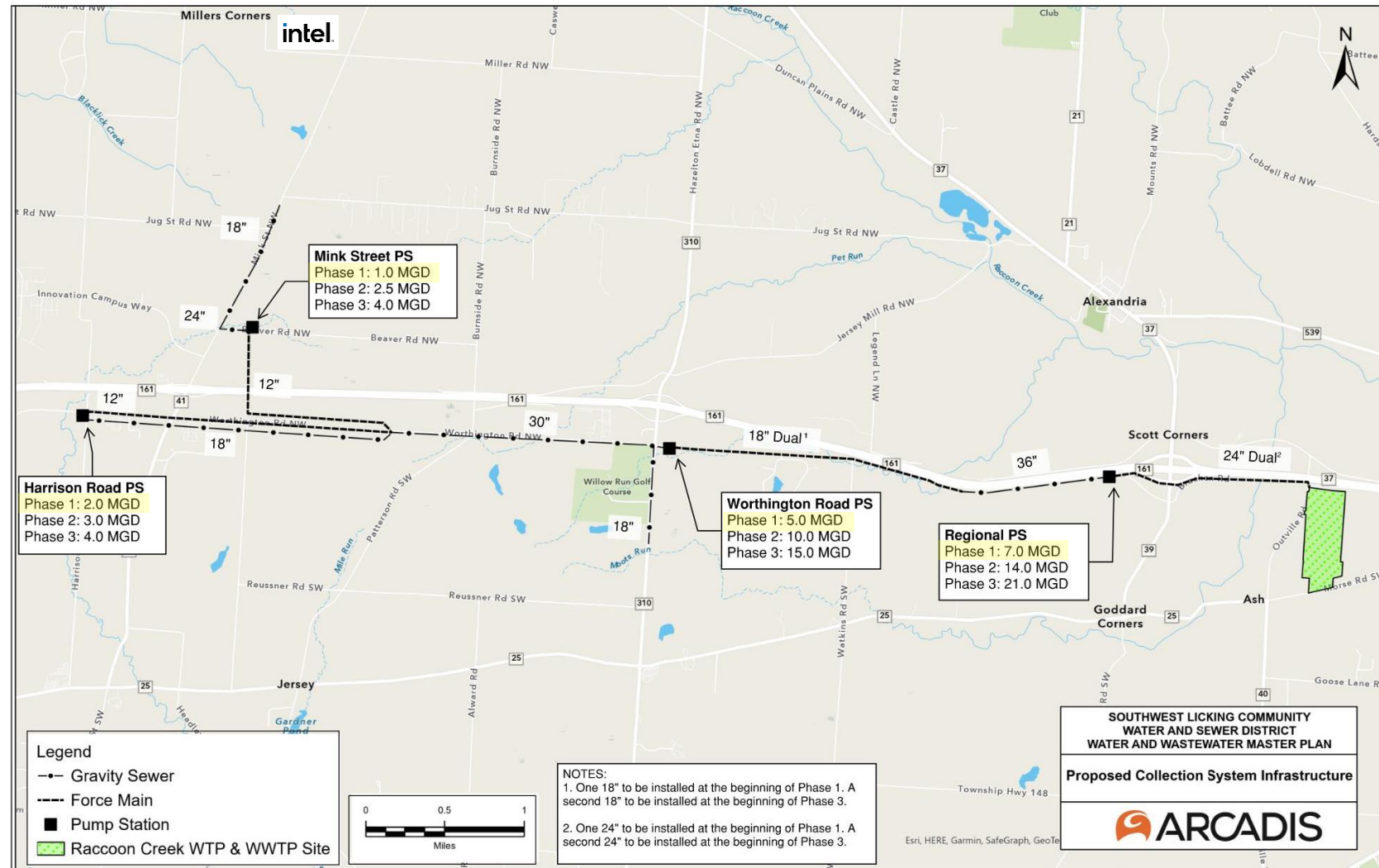


- Reservoir
- Intake and Screening
- Low Service Pumping
- Membrane Filtration
- Chemical Conditioning
- Clearwell Storage
- High Service Pumping

Wastewater Treatment and Collection

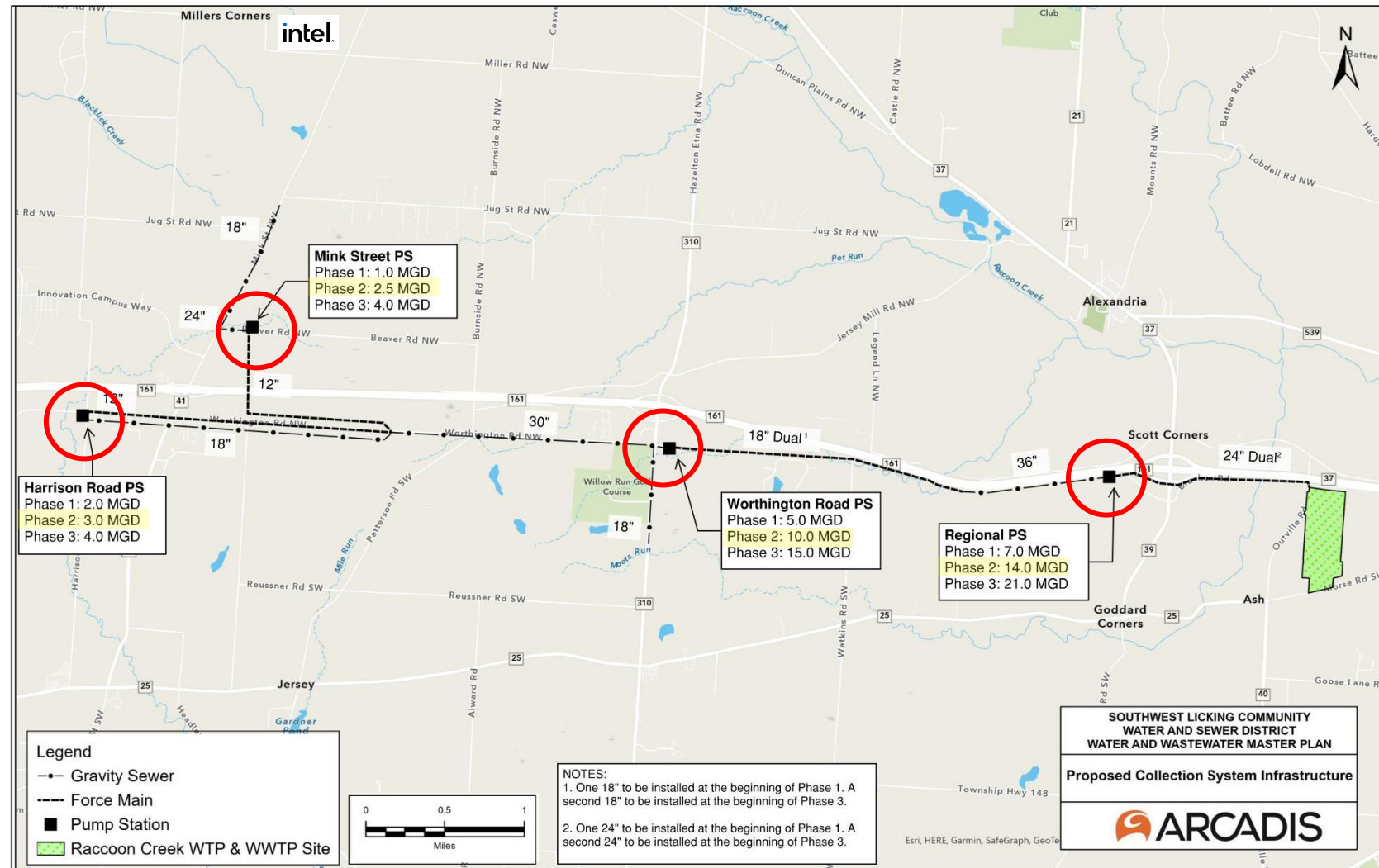
Short-Term Wastewater Collection Needs (Phase 1)

- Construction of four pumping stations
- Approximately 65,000 LF of gravity sewers and force mains



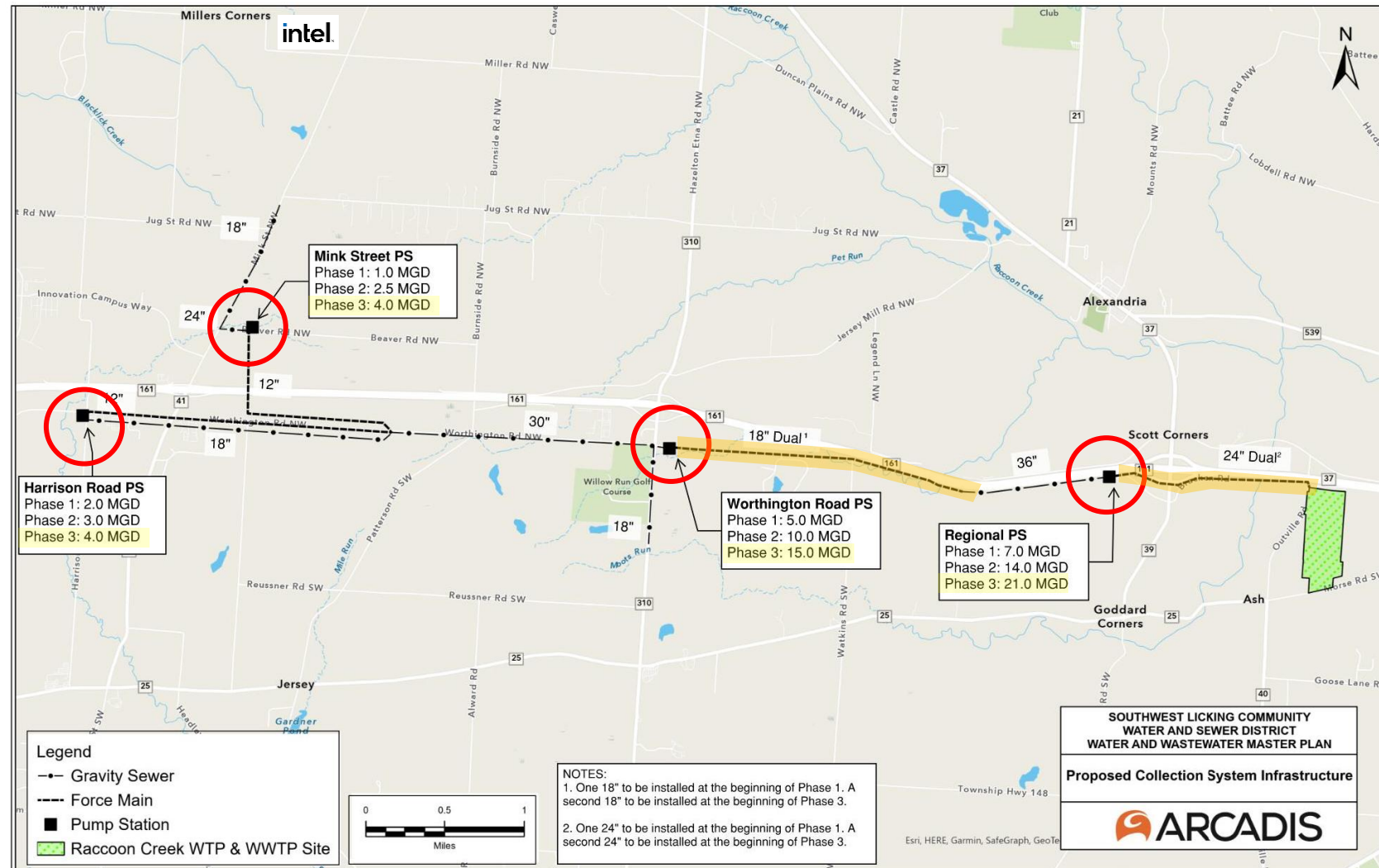
Intermediate Wastewater Collection Needs (Phase 2)

- Phase 1 infrastructure sized to handle Phase 2 needs
- Upsize four existing pumping stations



Long-Term Wastewater Collection Needs (Phase 3)

- Upsize four existing pumping stations
- Upsize force mains for Worthington and Regional PS



Pump Station Approach

- Construct wet well walls sized for full buildout
- Expandable Pumps
- Submersible Pit for smaller PS (<5.0 MGD capacity)
- Either Submersible or Dry-Pit PS for flexible range (5.0 MGD-15.0 MGD capacity)
- Dry-Pit PS for larger PS (+15.0 MGD capacity)



Wastewater Treatment Plant

- Significant complexity given low initial start-up flows (interim treatment strategies)
- Designed to meet permit and discharge limits



Phase 1 (0-10 Years):
3 MGD

Phase 2 (10-20 Years):
6 MGD

Phase 3 (20+ Years):
10 MGD

Wastewater Treatment



- Screening
- Oxidation Ditch Biological Treatment
- Final Clarification
- RAS Pumping
- Tertiary Filtration
- UV Disinfection
- Post-Aeration

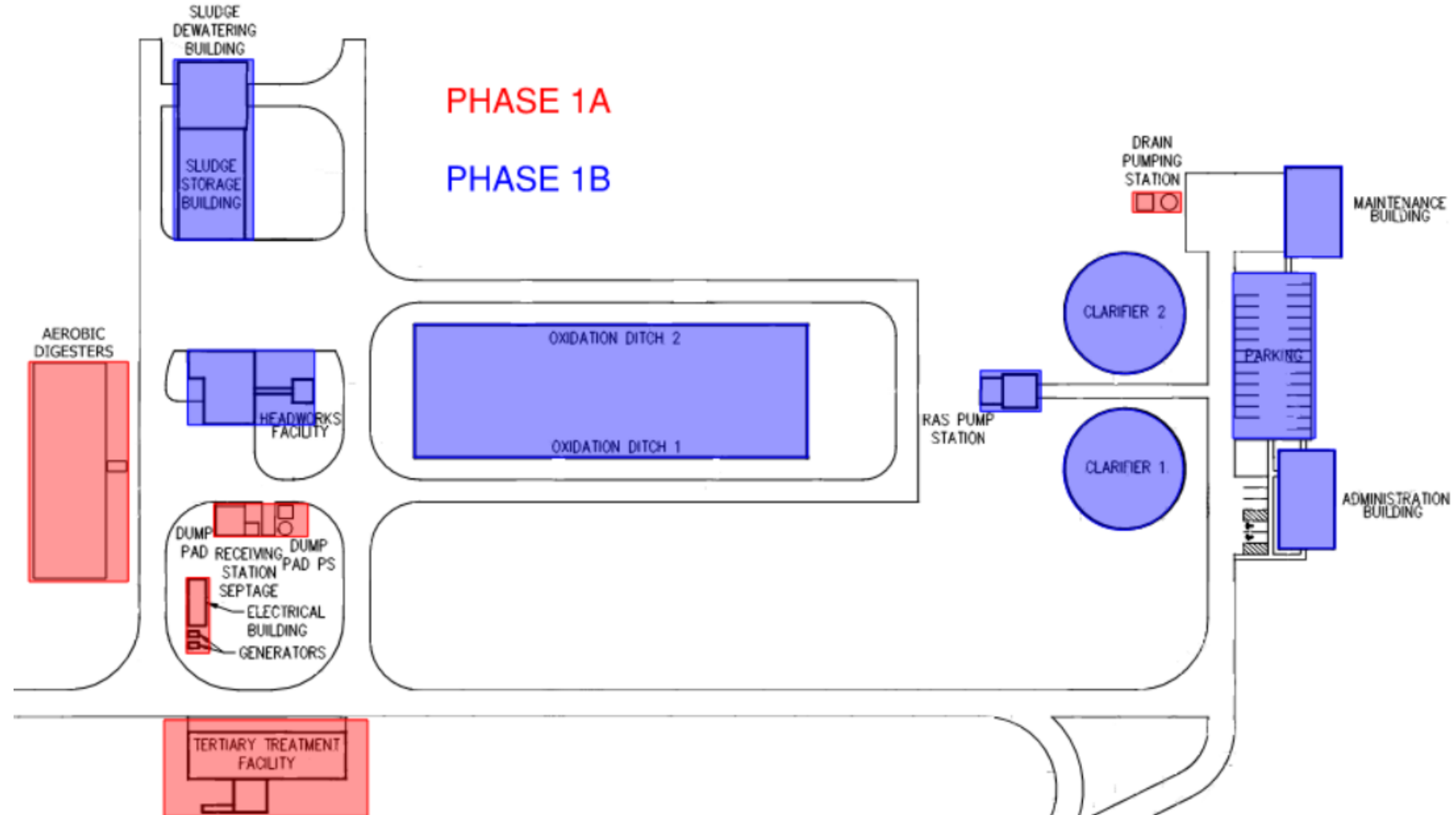
Wastewater Treatment – Sludge Facilities



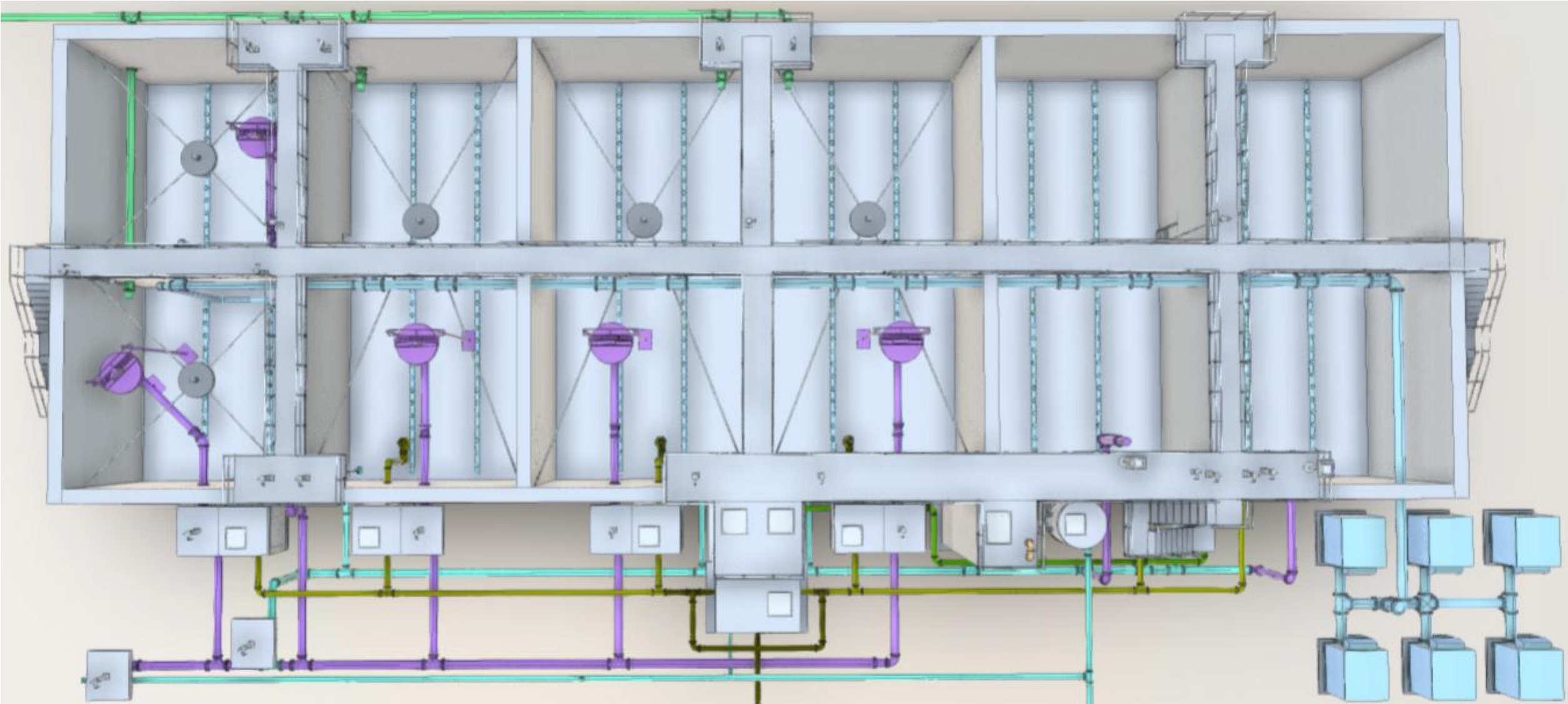
- Aerobic Digestion
- Sludge Pumping
- Sludge Dewatering and Storage
- Septage Receiving

Start-Up Challenges

- Quantity of flow at start-up is dependent upon development
- Oxidation ditch minimum of 0.8 MGD
- Plan to manage flows smaller than Phase 1



Sequencing Batch Reactor & Aerobic Digester

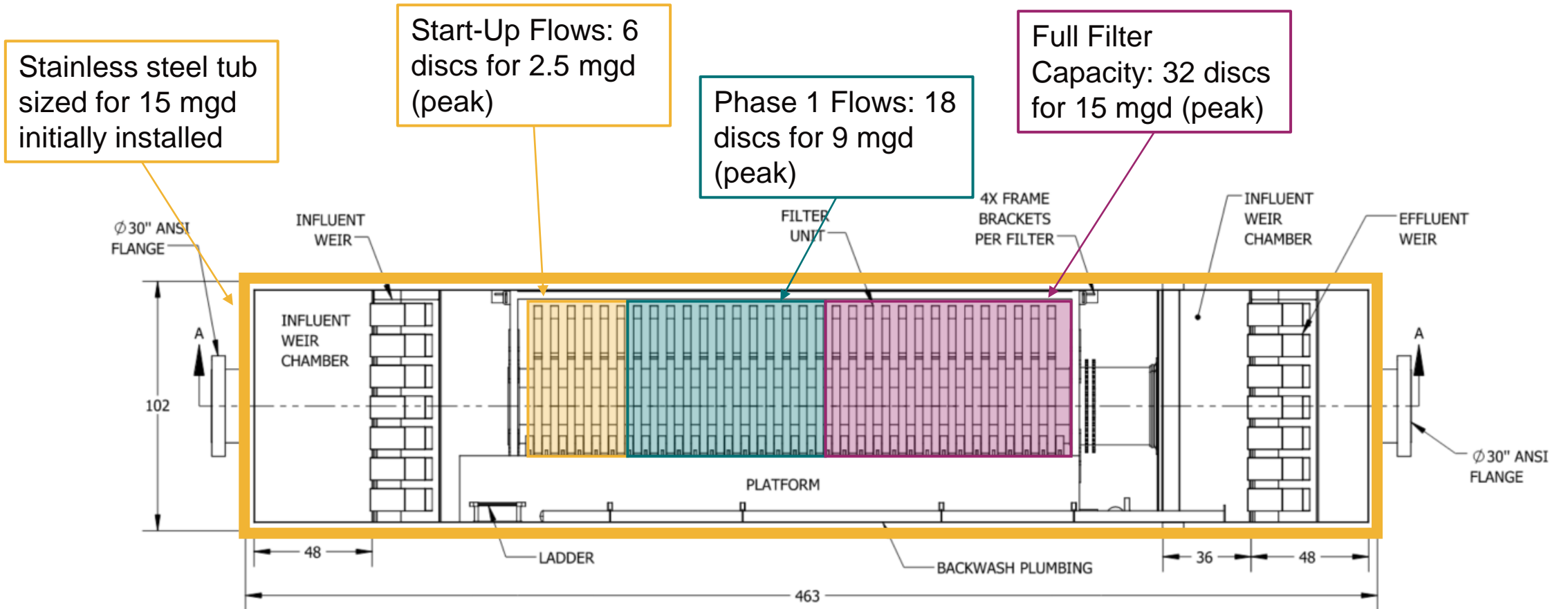


Screening Start-Up Challenges






- Temporary Screening upstream of SBR
- Designed to screen at low flows
- Installed above grade to match hydraulic profile of SBR
- Manual bar screen for overflow/bypass
- Rental or buy-back unit – duration dependent

Tertiary Filtration Start-Up Challenges

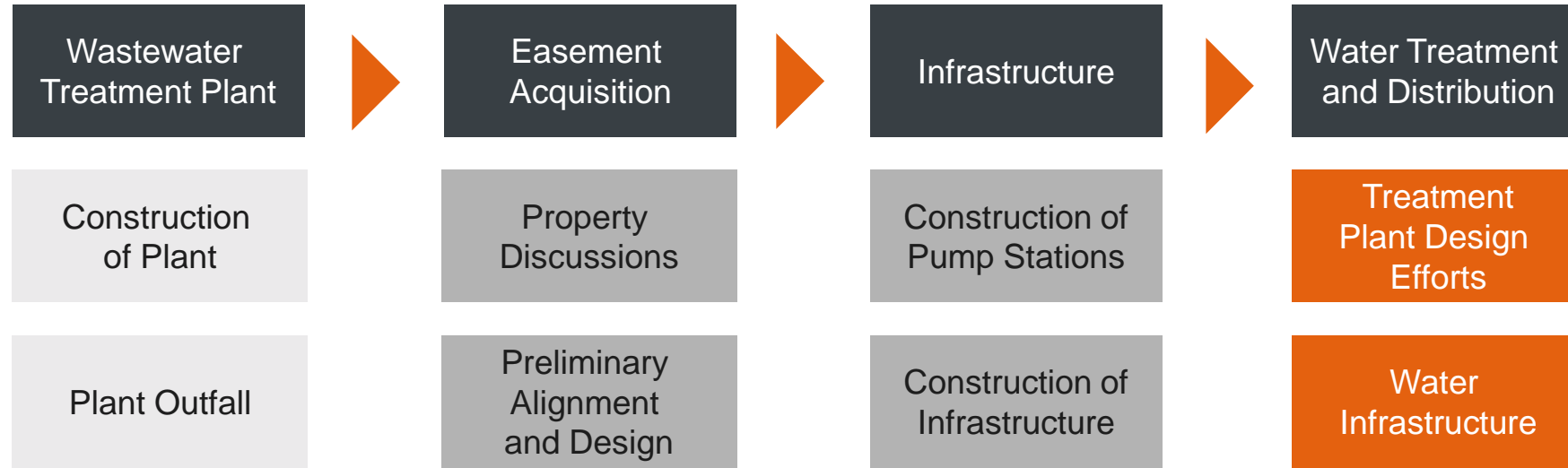


Steps Forward

Master Planning Steps Forward

-  • Capital plan critical in development of a system-wide financial model
-  • Broken up into incremental capacity phases given significant financial investment of anticipated water and wastewater capacities
-  • Built-in flexibility as priority of local infrastructure needs will change and as development occurs

Short Term Development – Phase 1



- Maintain momentum as development grows by transitioning to water treatment and distribution while wastewater infrastructure is in construction

LRWD – SR-161 Service Area Active Projects



Design

- Burnside Rd Waterline Extension Project (Strand)
- Morse/Putnam Rd Waterline Extension Project (Strand)
- Summit Rd Water/Sanitary Sewer Extension Project (Verdantas)
- Outville Rd Elevated Water Storage Tank (1 MG) and Booster Station Project (AECOM)
- York Rd Water Treatment Center Phase II Project (AECOM) – 3 MGD to 5 MGD
- York Rd Water Treatment Center Raw Water Expansion Project (Verdantas) – 6 raw water production wells and distribution lines
- Worthington Rd Sanitary Trunkline Project (CDM Smith)
- Raccoon Creek WWTC Project (Arcadis)



Construction

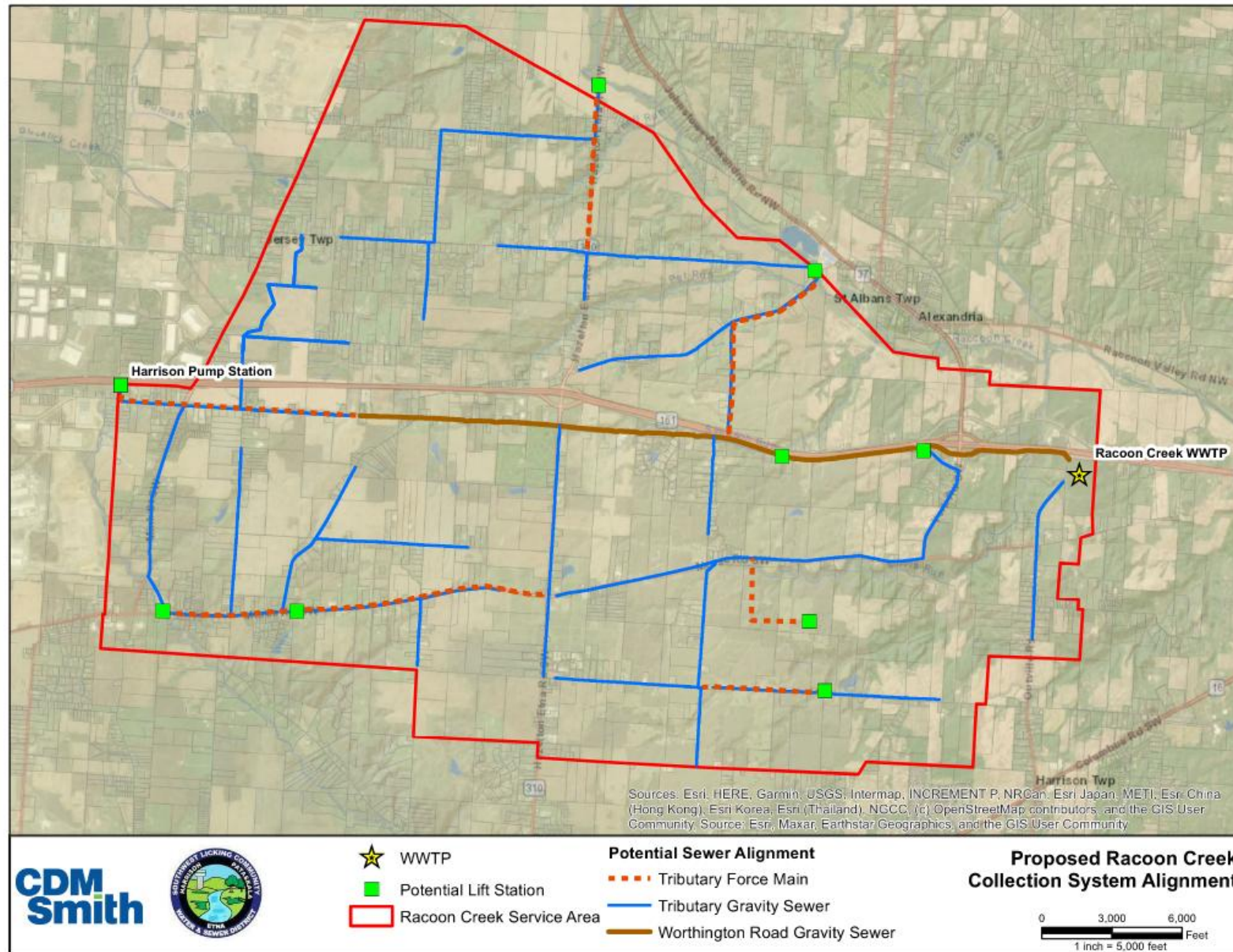
- SR 161 Elevated Storage Tank (0.75 MG) Project (CDM Smith)

Licking Regional Water District

Active Projects



Project Highlight – Worthington Rd Sanitary Trunk Line



Questions And Answers



Contact us



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**Thank You for your Time
and Consideration**