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Discharge Won't Do

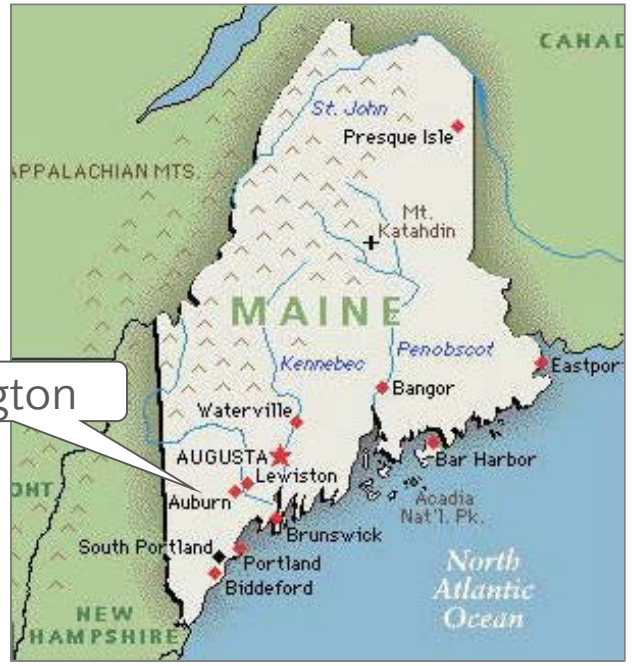
Pressurized Drip Dispersal Opens Up Possibilities in Small Community

NEWEA 2022 Annual Conference

Brent Bridges, P.E & Julianne Page, P.E.

Background

- Lakes Region: Bounded by Highland Lake and Long Lake
- Ski Mountain
- White Mountains
- Population: 5,418



https://www.visitmaine.net/page/122/maine-map

Photo courtesy of Town of Bridgton

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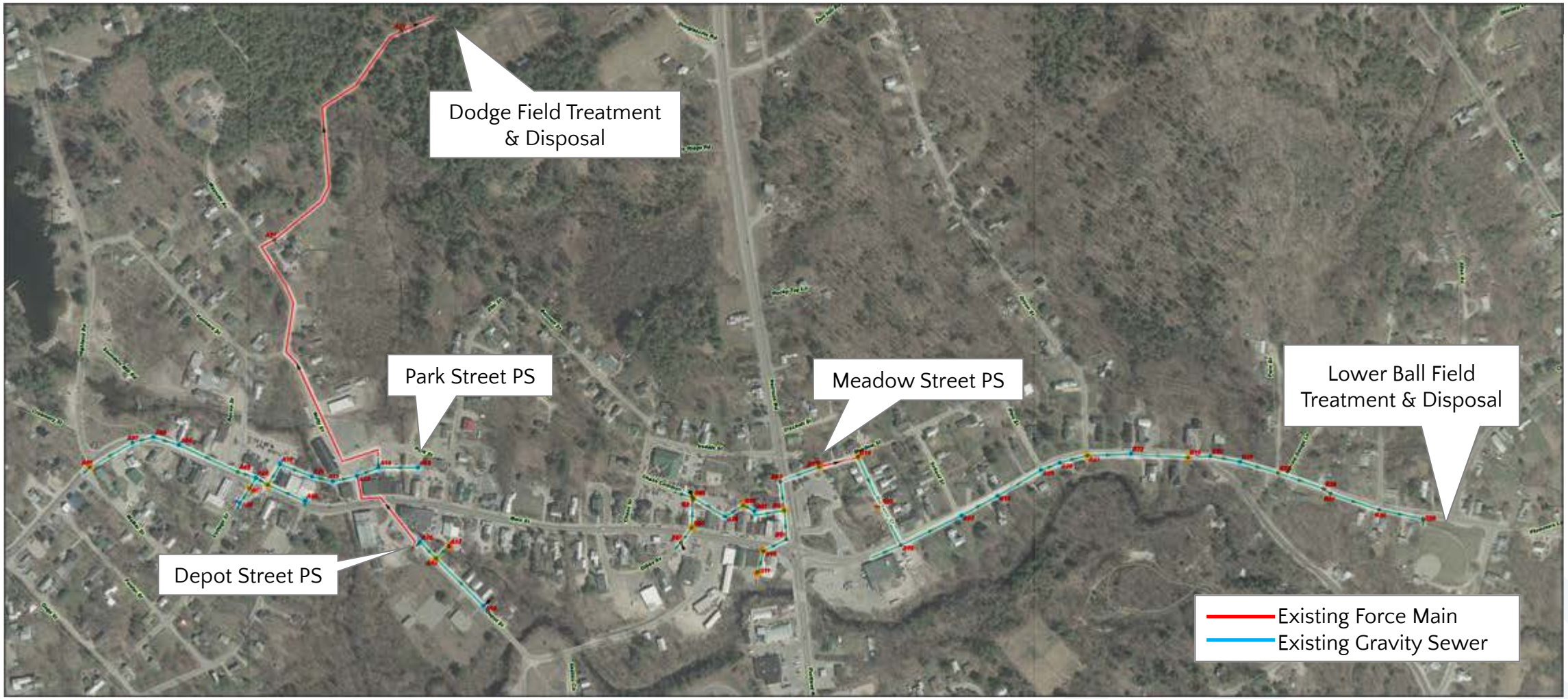
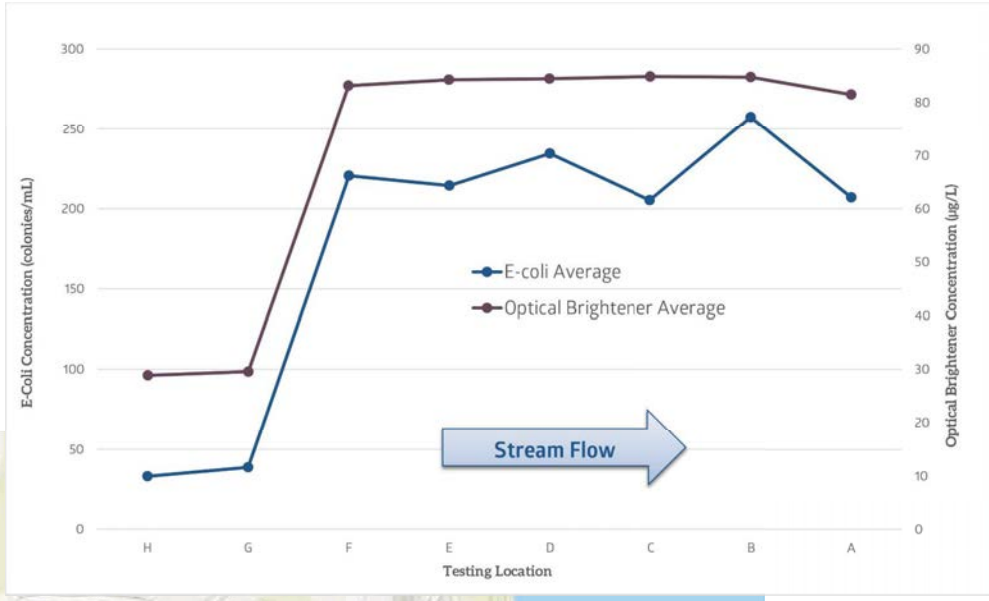
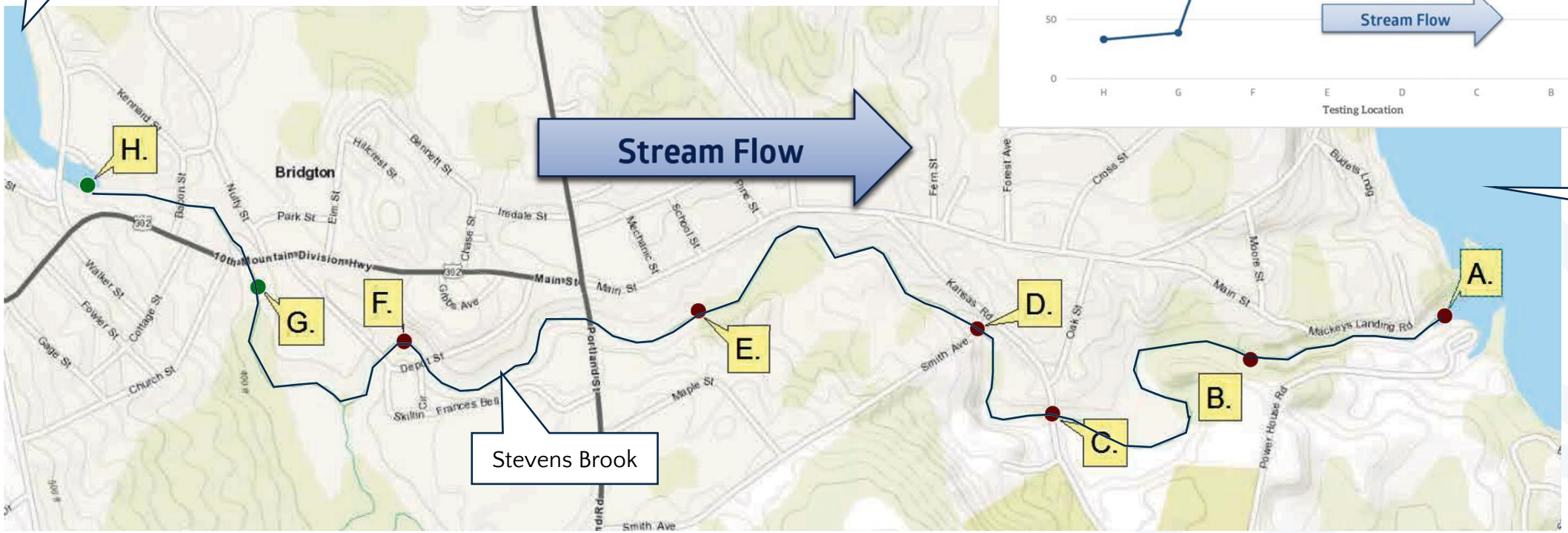
Existing Wastewater System Overview



Stevens Brook Test Locations

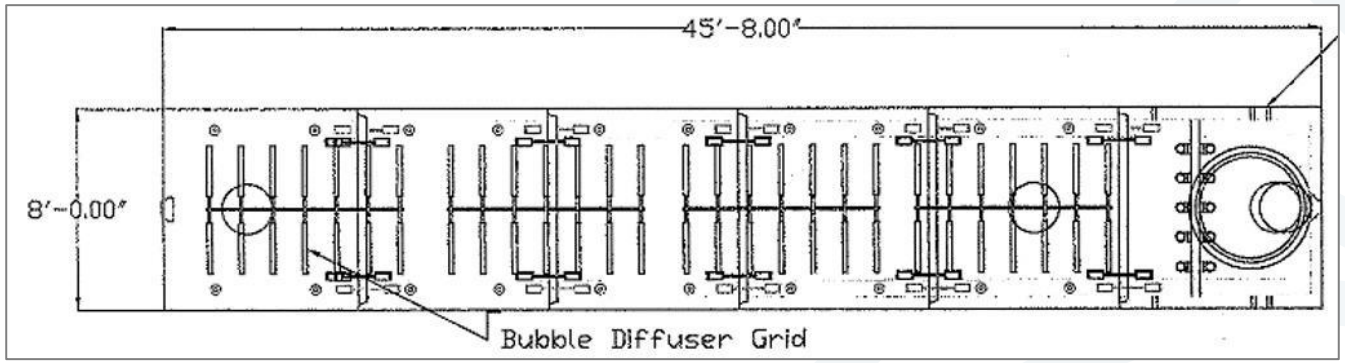


Highland Lake



Project Need & Drivers

- Planned development
- Desire for future development
- Limited capacity of existing treatment and disposal systems
  - Permit violations
  - Capacity reductions by ME DEP
- Water quality issues in Steven's Brook & Long Lake
  - Failing septic systems
  - Beach closures



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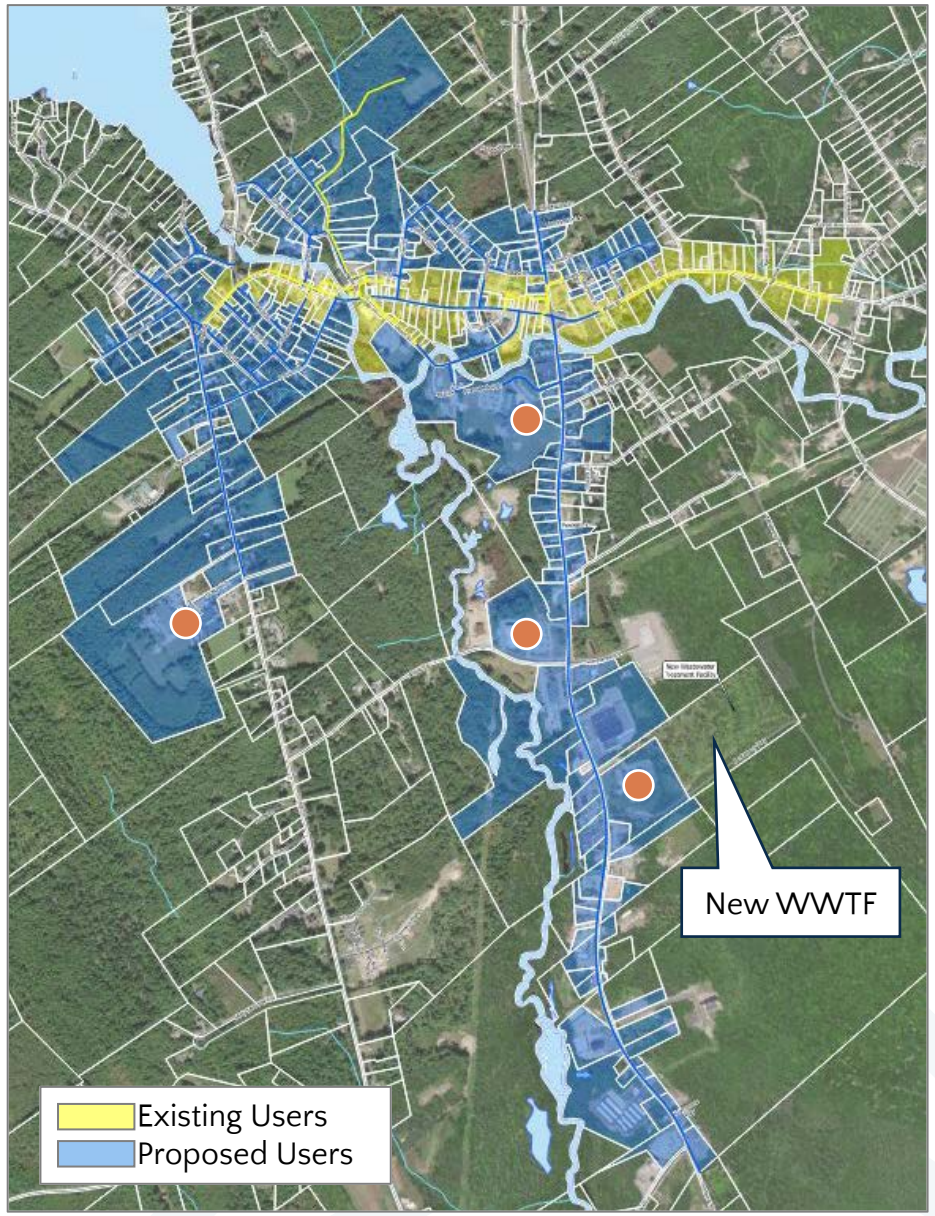
Project Goals

- Improve water quality to protect public health & the environment
- Expand wastewater treatment capacity to more of downtown area
  - Bridgton Hospital
  - Stevens Brook Elementary School
  - Hannaford grocery store
  - Bella Point Nursing Home
  - 448 total new users
- Consolidate treatment to one location
- Provide on-site disposal for treated effluent



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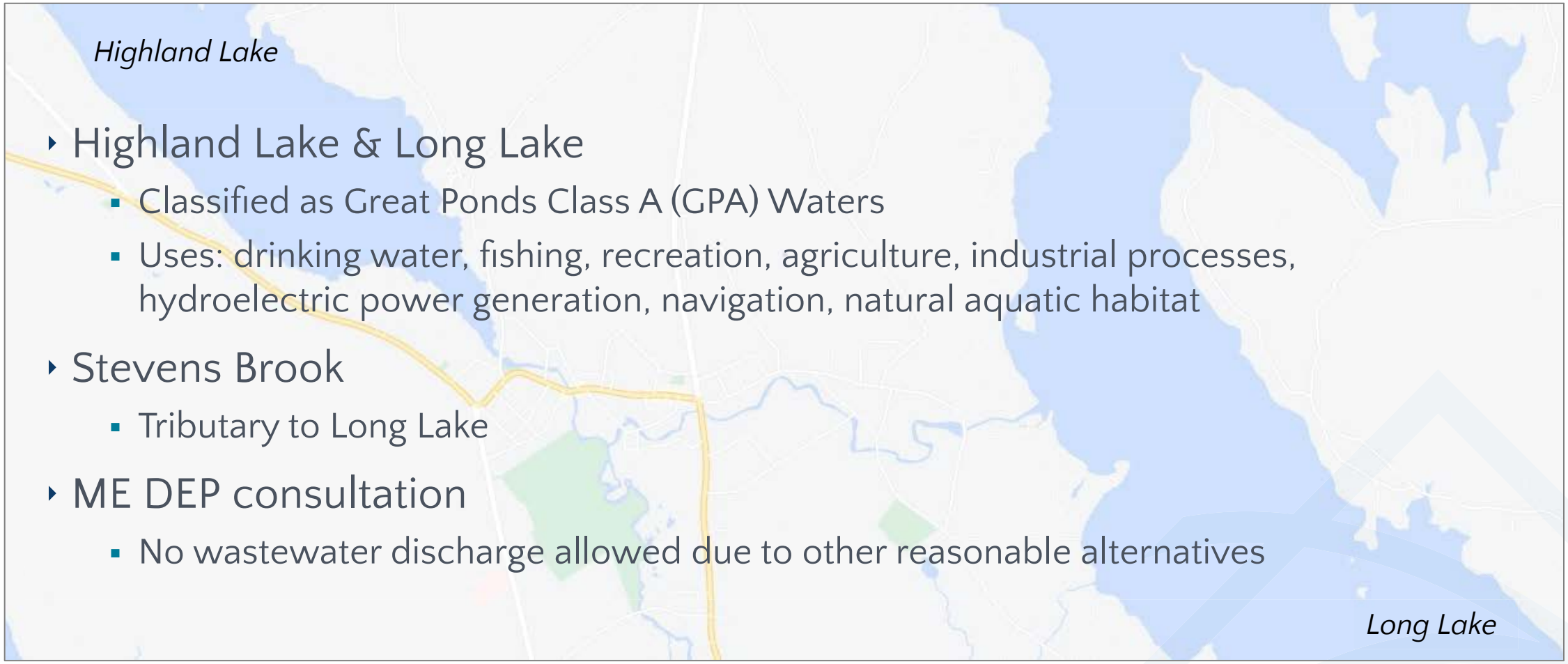
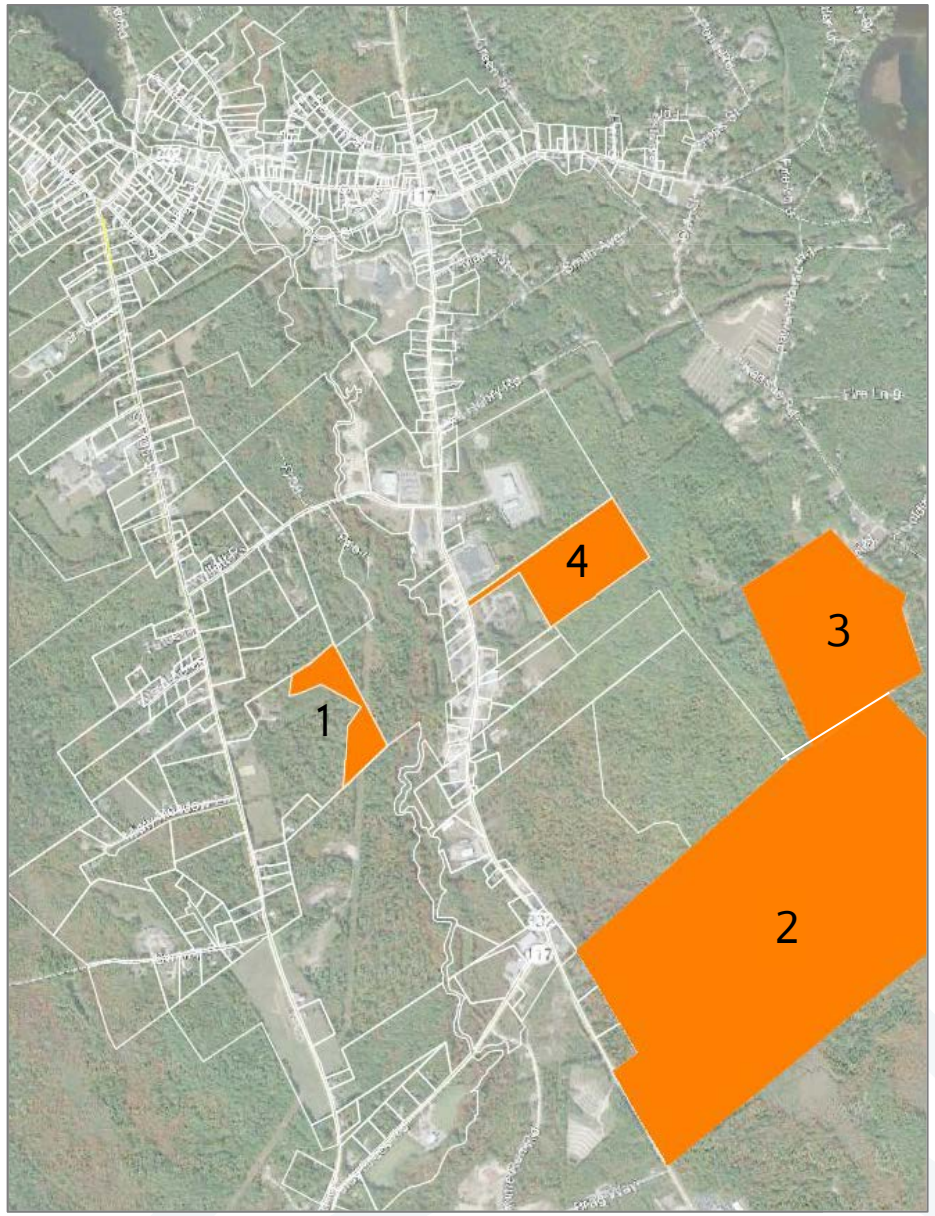
Why No Surface Water Discharge?



- Highland Lake & Long Lake
  - Classified as Great Ponds Class A (GPA) Waters
  - Uses: drinking water, fishing, recreation, agriculture, industrial processes, hydroelectric power generation, navigation, natural aquatic habitat
- Stevens Brook
  - Tributary to Long Lake
- ME DEP consultation
  - No wastewater discharge allowed due to other reasonable alternatives

Site Selection

- Sufficient land area
- Within project boundary
- Acceptable soils



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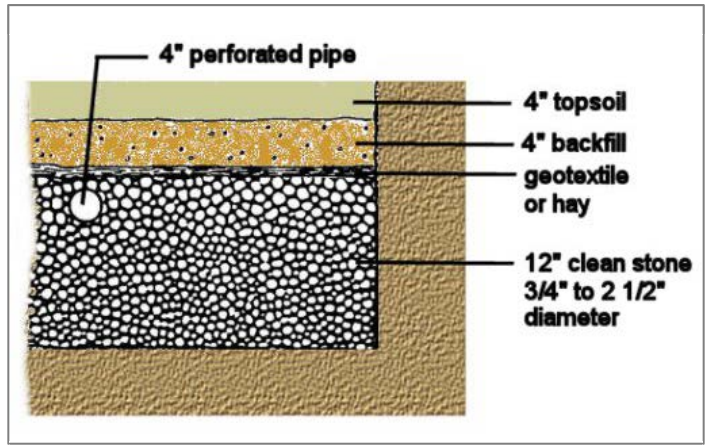
Disposal Alternatives Evaluation



Subsurface Disposal Beds

Rapid Infiltration Basins

Spray Irrigation

Pressurized Drip Dispersal

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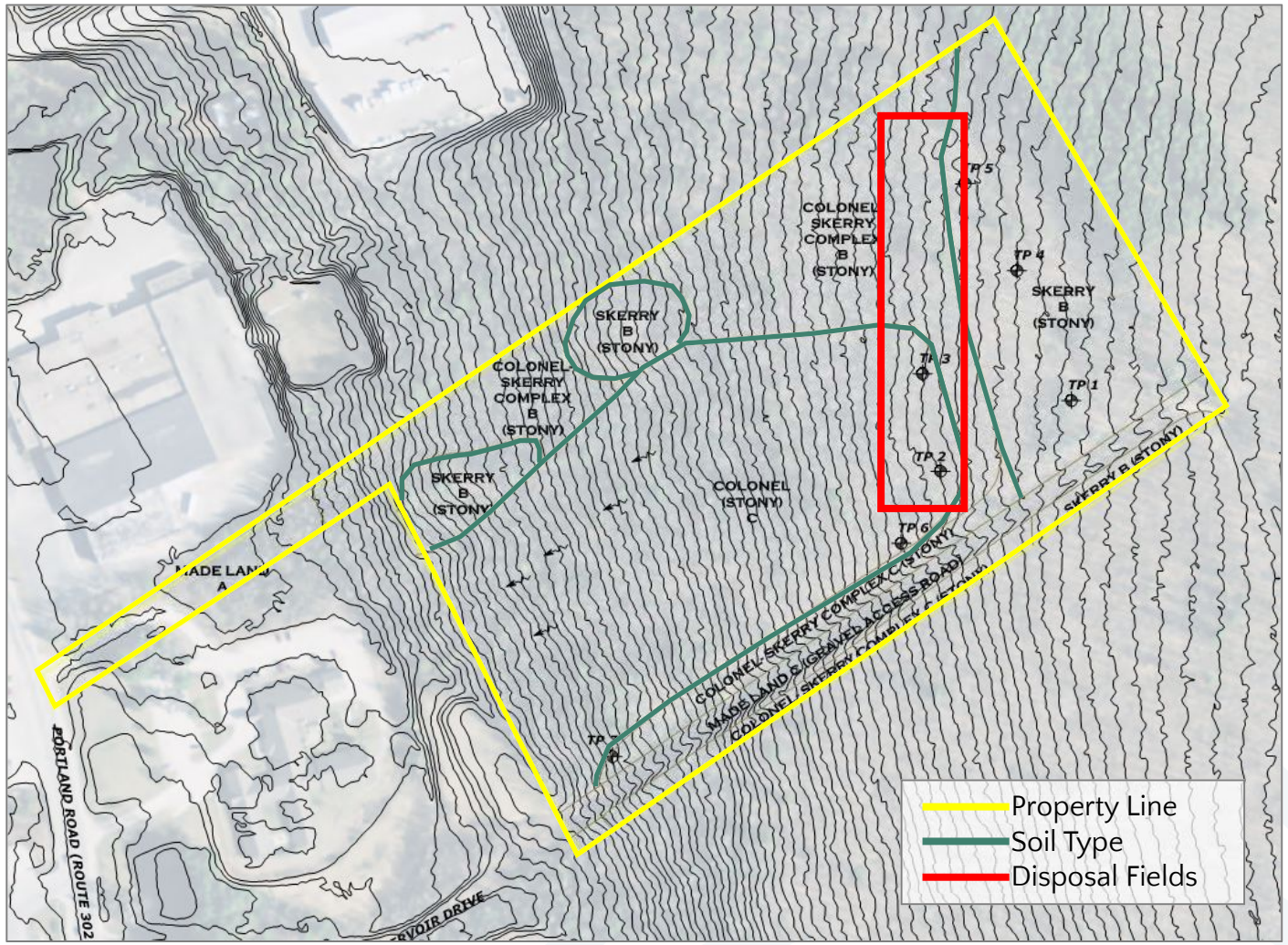
Site Soil Investigations

- Class A high-intensity soil mapping
- Geotechnical borings & ledge probes
- Hydrogeological evaluation



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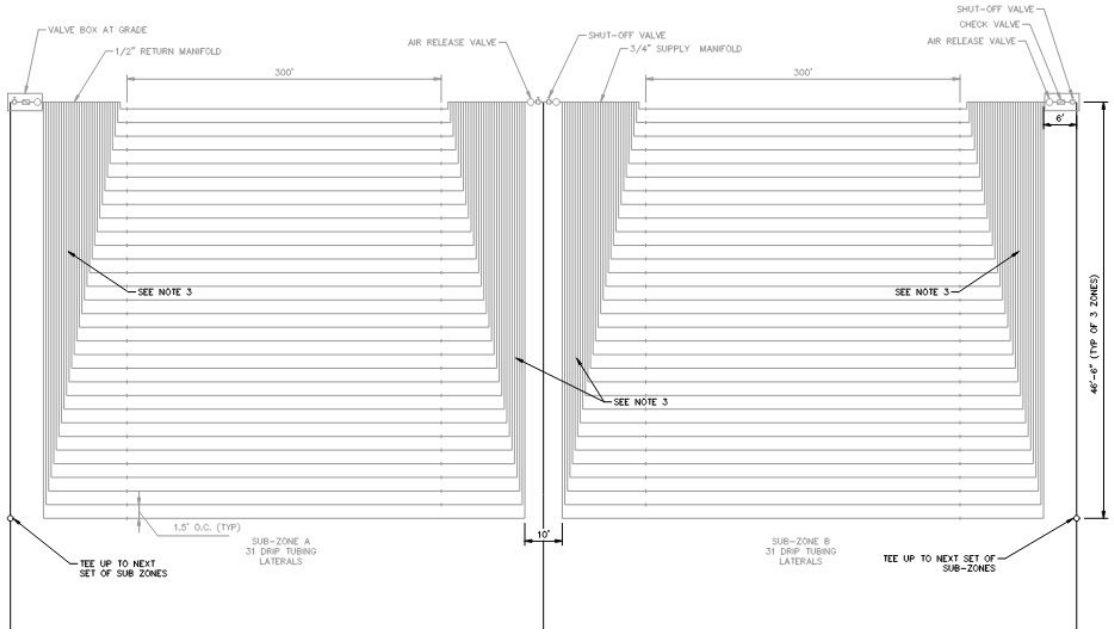
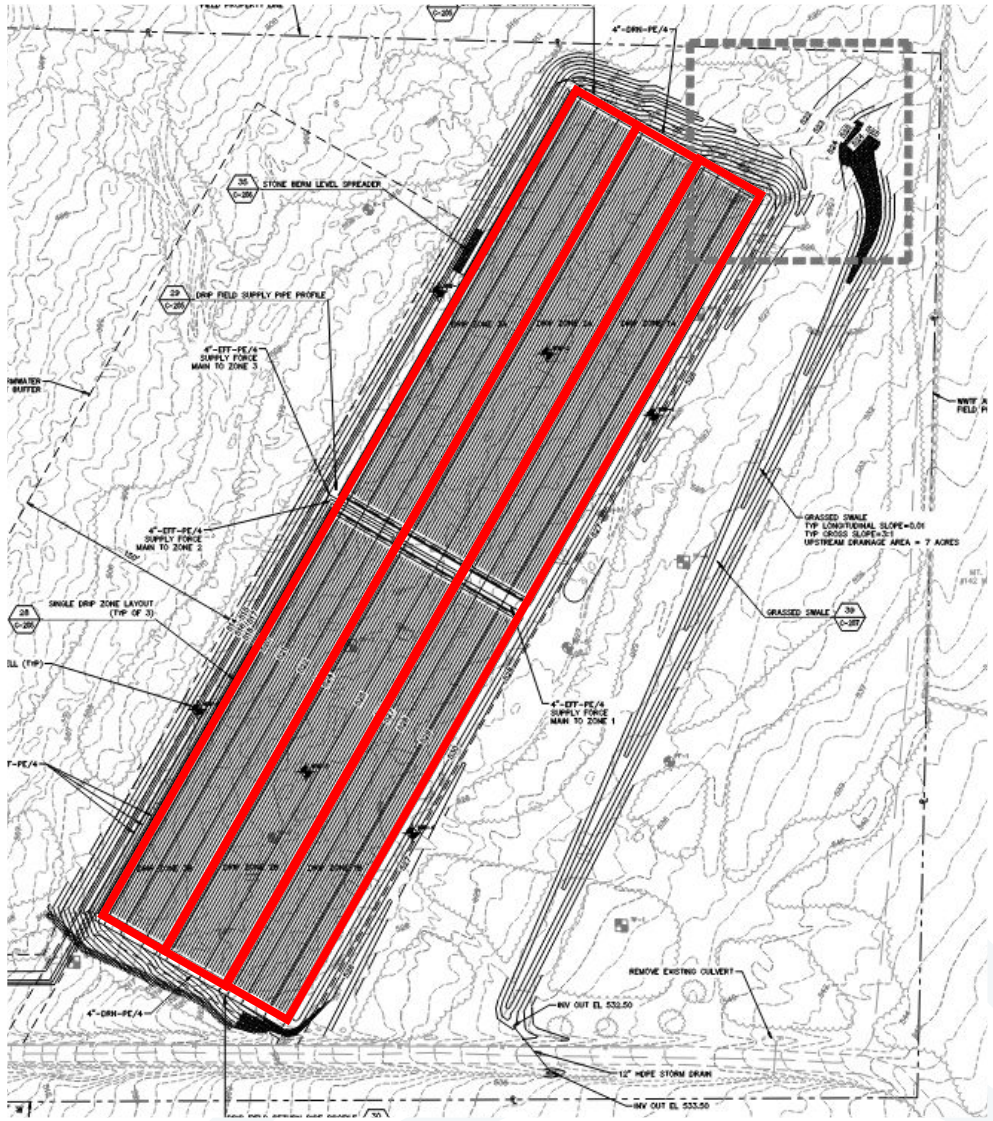
Proposed Layout

- Number of Zones: 3
  - Only 2 in use at a time
- Zone Dimensions: 47 ft x 600 ft
- Loading Rate: 2.0 gpd/sf





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Site Visits

AeroMod System
Pittsford, Vermont

Pressure Dispersal
Crotched Mountain Rehabilitation Center
New Hampshire

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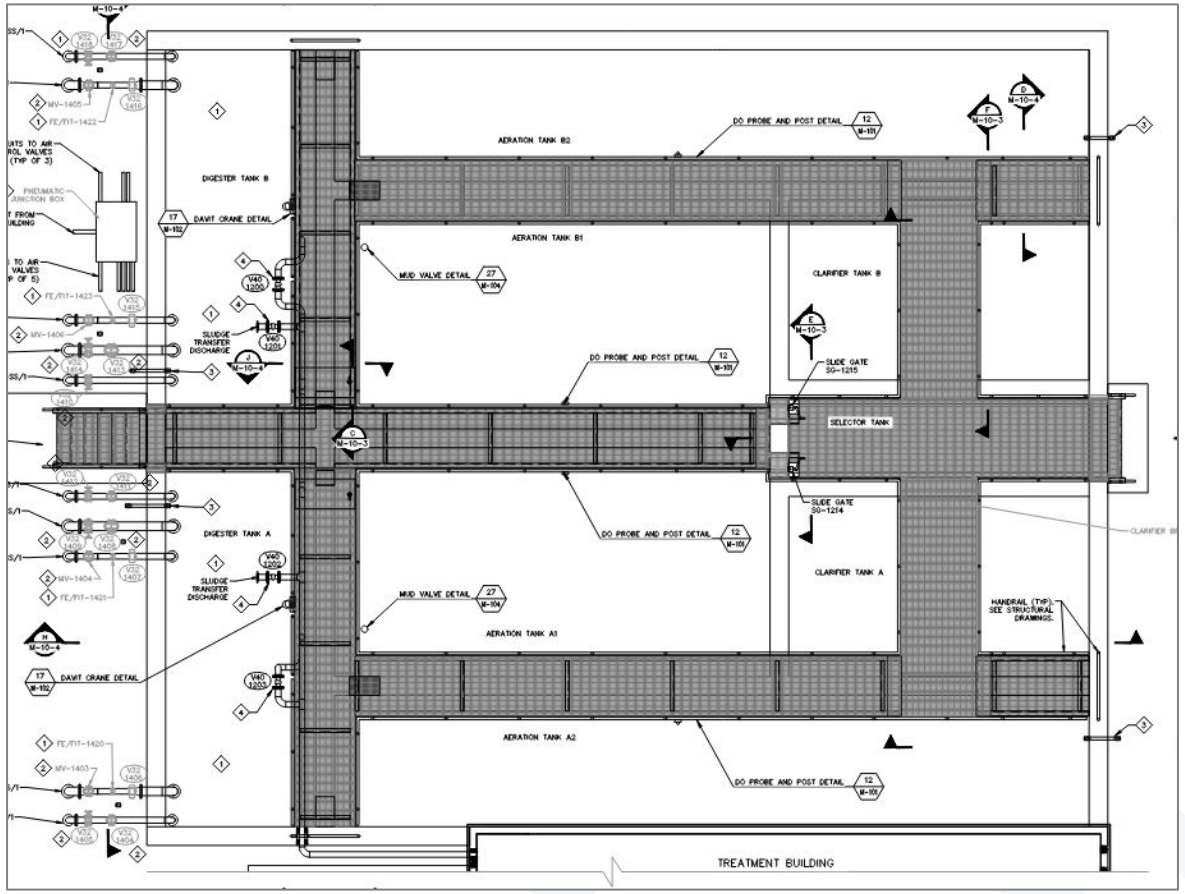
Wastewater Treatment Technology

- AeroMod Technology Selected
  - Anoxic Selector
  - 2-stage Aeration Tanks
  - Secondary Clarifiers
  - Aerobic Digesters
- Ancillary Processes
  - Mechanical Fine Screening
  - Effluent Pumping to Disposal Fields



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Project Funding

$23,000,000	Total Project Budget (Engineering + Construction)
– $11,000,000	DEP/USDA Grants
$12,000,000	DEP/USDA Loan for 30 Years
– $8,000,000	Debt Repaid by Sewer Users
$4,000,000	Tax Impact
– $1,000,000	Tax Increment Funds Applied over 10 Years
$3,000,000	**TAX IMPACT BALANCE**

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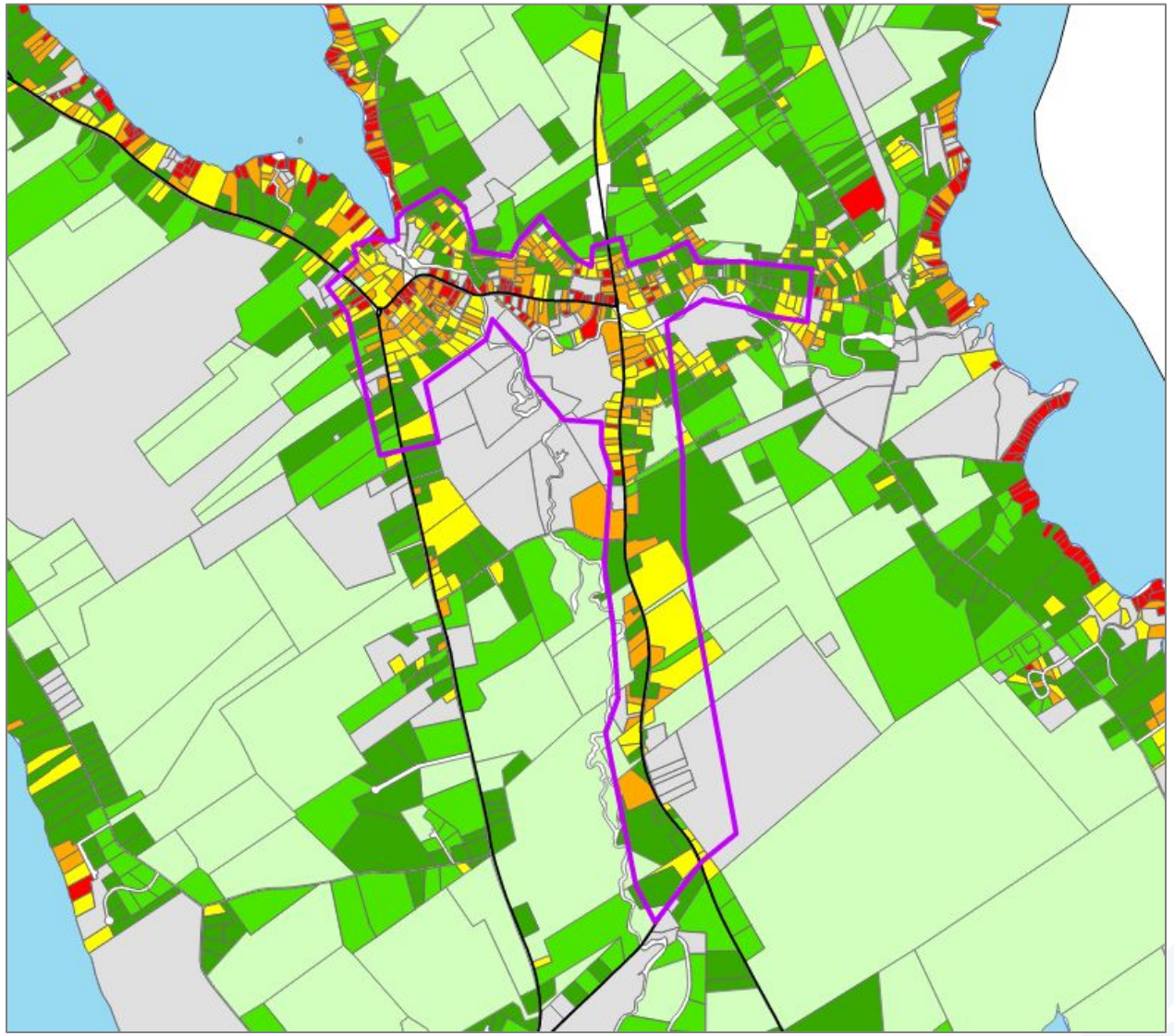
Tax Density Map



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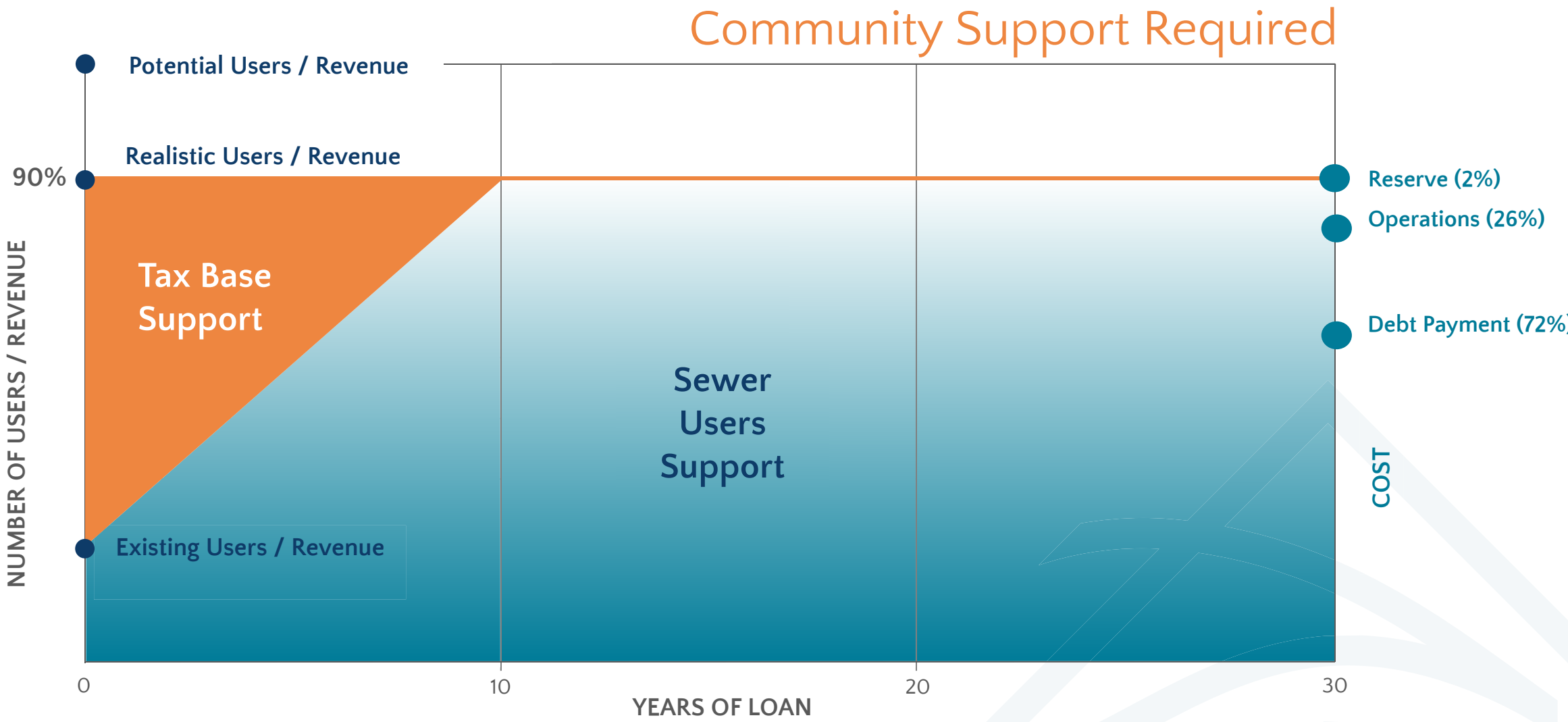
Financing the Shortfall While Users Connect



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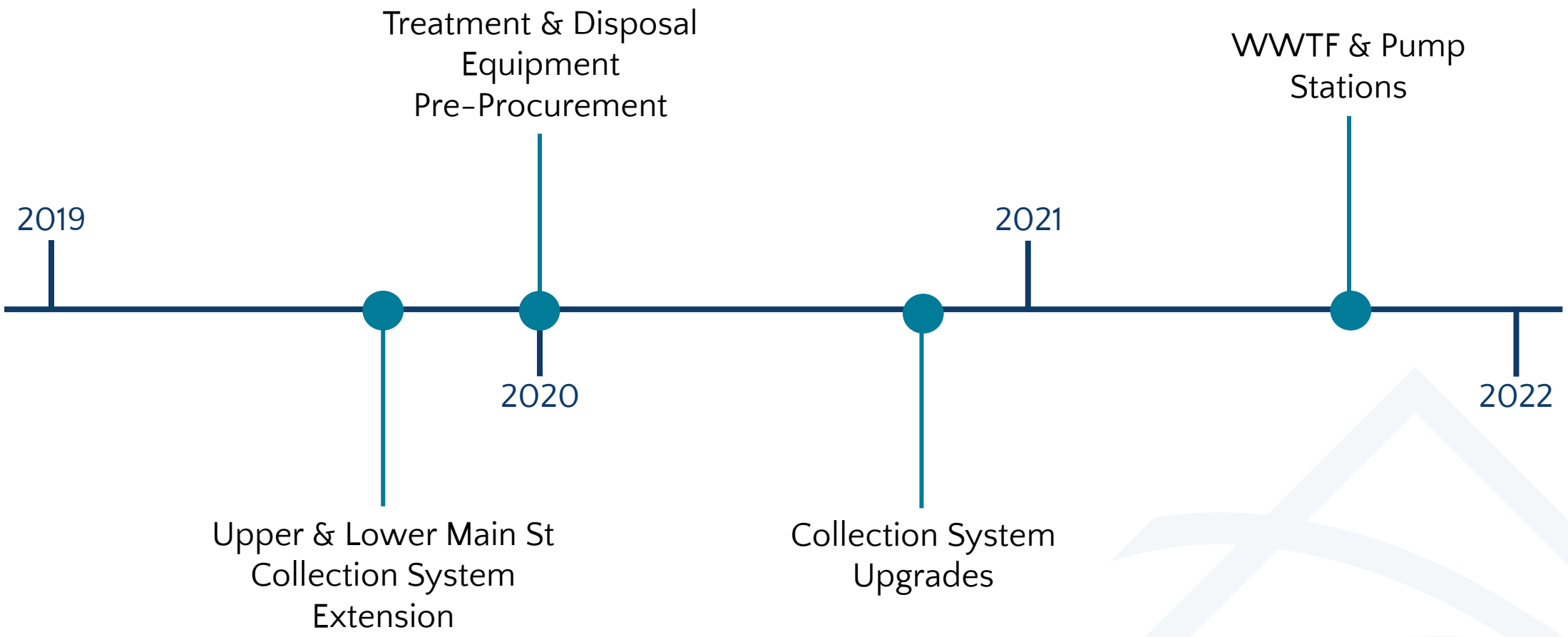
Construction Timeline



Questions?

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