

ALTERNATIVES SUMMARY

Pepperell Water System Extension

Benefits

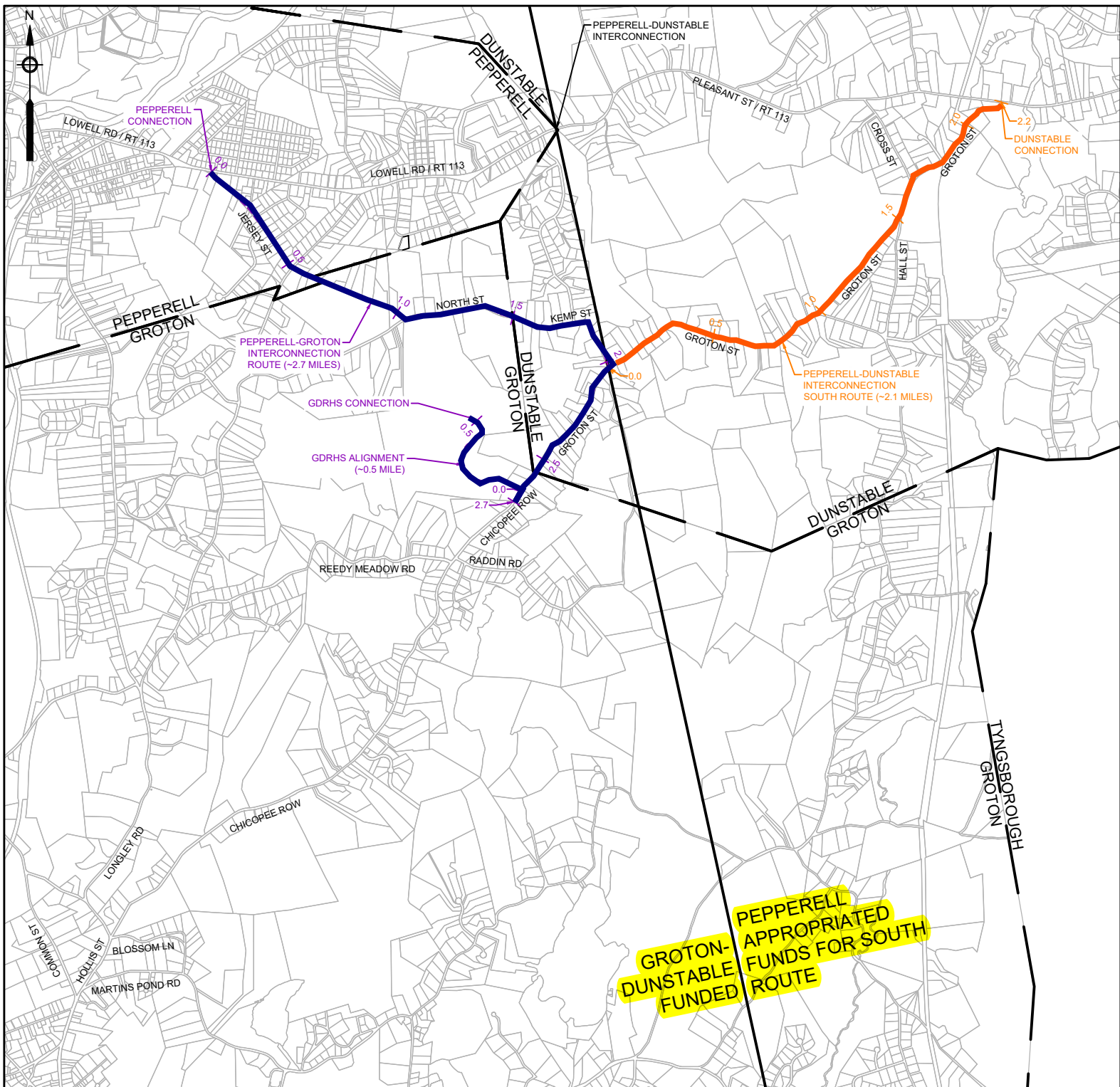
- Enables the completion of the future South route interconnection between Pepperell and Dunstable, which provides a water main in Groton Street to Dunstable in case of contamination of wells that may be in the path of the PFAS plume.
- Inter-basin transfer permit is not needed to provide water to the GDRHS and surrounding properties, although PFAS levels will exceed pending EPA limits.
- Least costly alternative if water is untreated for PFAS.
- Enables a connection to a future Pepperell-Dunstable interconnection (South route).

Challenges

- To provide water with PFAS concentrations below 4 ppt, a new water treatment plant (WTP) is needed in Pepperell. The estimated cost is \$13 million (Estimated cost source: Pepperell). The cost sharing formula is unknown.
- Does not provide fire flow to the GDRHS and residents in Dunstable and Groton.
- Requires a booster station to supplement the new WTP to provide suitable hydraulics to complete the Pepperell-Dunstable interconnection main.
- WTP design process has just begun with pilot testing; startup is 2 to 3 years away.

Summary of Comparable Benefits and Challenges

| Solution Effectiveness | Implementation Timeline | Design, Permitting, and Constructability Challenges | Capital Cost |
|--|--|--|------------------------|
| Domestic water and irrigation demands met. Fire flow needs not met. | Irrigation water could be provided by September 2024. Availability of domestic water is dependent on the WTP construction schedule. | WTP construction and permitting. | \$8.1M plus WTP costs. |



PEPPERELL WATER MAIN TO GDRHS & DUNSTABLE/GROTON PROPERTIES

SCALE: 1"=3000'

Description beginning in Pepperell:

- Replace the 8-inch water main in Jersey Street with a 12-inch water main from Route 113 to East Street near the Pepperell-Groton town line, and
- A new 12-inch water main from East Street to North Street in Groton,
- Then to Kemp Street and Groton Street in Dunstable,
- Followed by a 8-inch water main in Groton Street to Chicopee Row in Groton and the GDRHS.

Opinion of Probable Project Cost for Comparison of Alternatives

| Item No. | Description | Units | Quantity | Unit Price | Extended Amount |
|-----------|---|-------|----------|-------------------|--------------------|
| 1 | MOBILIZATION AND DEMOBILIZATION | | | | |
| 1a | Mobilization and Demobilization | ALLOW | 1 | \$300,000 | \$300,000 |
| 2 | DUCTILE-IRON WATER MAINS | | | | |
| 2a | 6-inch Ductile-Iron Water Main, Class 52 Pipe | LF | 950 | \$150 | \$142,500 |
| 2b | 8-inch Ductile-Iron Water Main, Class 52 Pipe | LF | 6,340 | \$185 | \$1,172,900 |
| 2c | 12-inch Ductile-Iron Water Main, Class 52 Pipe | LF | 10,665 | \$200 | \$2,133,000 |
| 3 | FIRE HYDRANTS | | | | |
| 3a | Fire Hydrants | EA. | 38 | \$6,500 | \$247,000 |
| 4 | DUCTILE-IRON FITTINGS | | | | |
| 4a | Ductile-Iron Fittings | LB. | 3,591 | \$2.00 | \$7,182 |
| 5 | GATE VALVES AND BOXES | | | | |
| 5a | 6-inch Gate Valves and Boxes | EA. | 38 | \$1,750 | \$66,500 |
| 5b | 8-inch Gate Valves and Boxes | EA. | 15 | \$2,500 | \$37,500 |
| 5c | 12-inch Gate Valves and Boxes | EA. | 24 | \$3,500 | \$84,000 |
| 6 | Service Connections | | | | |
| 6a | Service Connections (Corp/Curb/1" PE Tubing) | EA. | 84 | \$3,500 | \$294,000 |
| 7 | EARTHWORK | | | | |
| 7a | Earthwork (Test Pit/Rock/Unsuitable/Select Full) | CY | 4,990 | \$40 | \$199,600 |
| 8 | TEMPORARY PAVEMENT | | | | |
| 8a | Temporary Trench Pavement (3.5" Depth) | SY | 12,276 | \$60 | \$736,575 |
| 9 | PERMANENT PAVEMENT | | | | |
| 9a | Trench Width Mill w/12-inch cutbacks (2" Depth) | SY | 17,401 | \$35 | \$609,050 |
| 10 | ENVIRONMENTAL PROTECTION | | | | |
| 10a | Environmental Protection (Silt Sack/Filter Sock) 1% of items 2 through 9 | LS | 1 | \$57,000 | \$57,000 |
| 11 | TRAFFIC CONTROL | | | | |
| 11a | Uniformed Police Officer Allowance (10 hr. days x \$65 per hr. x 2 officers) | ALLOW | 1 | \$325,000 | \$325,000 |
| 11b | Traffic Management | DAYS | 250 | \$250 | \$62,500 |
| | | | | Subtotal | \$6,474,300 |
| | | | | Engineering (10%) | \$647,430 |
| | | | | Contingency (15%) | \$971,145 |
| | | | | Total | \$8,100,000 |