Article 3 – Drinkwater Road Groundwater Development

Permitting Process

- Large Groundwater Withdrawals (>57,600 gallons over 24-hour period) require a permit from NHDES.
- Designed to ensure that withdrawals are environmentally sustainable and do not negatively impact existing water users or natural resources.
- Withdrawals from wells installed before August 1998 are exempt.

Preliminary Permit Application (Approved March 2024)

- Detailed the intended withdrawal, impact assessment, and a proposed testing program.
- Public Notification and Hearing - application was shared with affected municipalities (Kensington). Public hearing was requested and conducted.
- Public Comment Period - 45-day period following the hearing for stakeholder input.
- Approval of the Preliminary Application - NHDES reviewed public comments and requested additional data before granting approval.

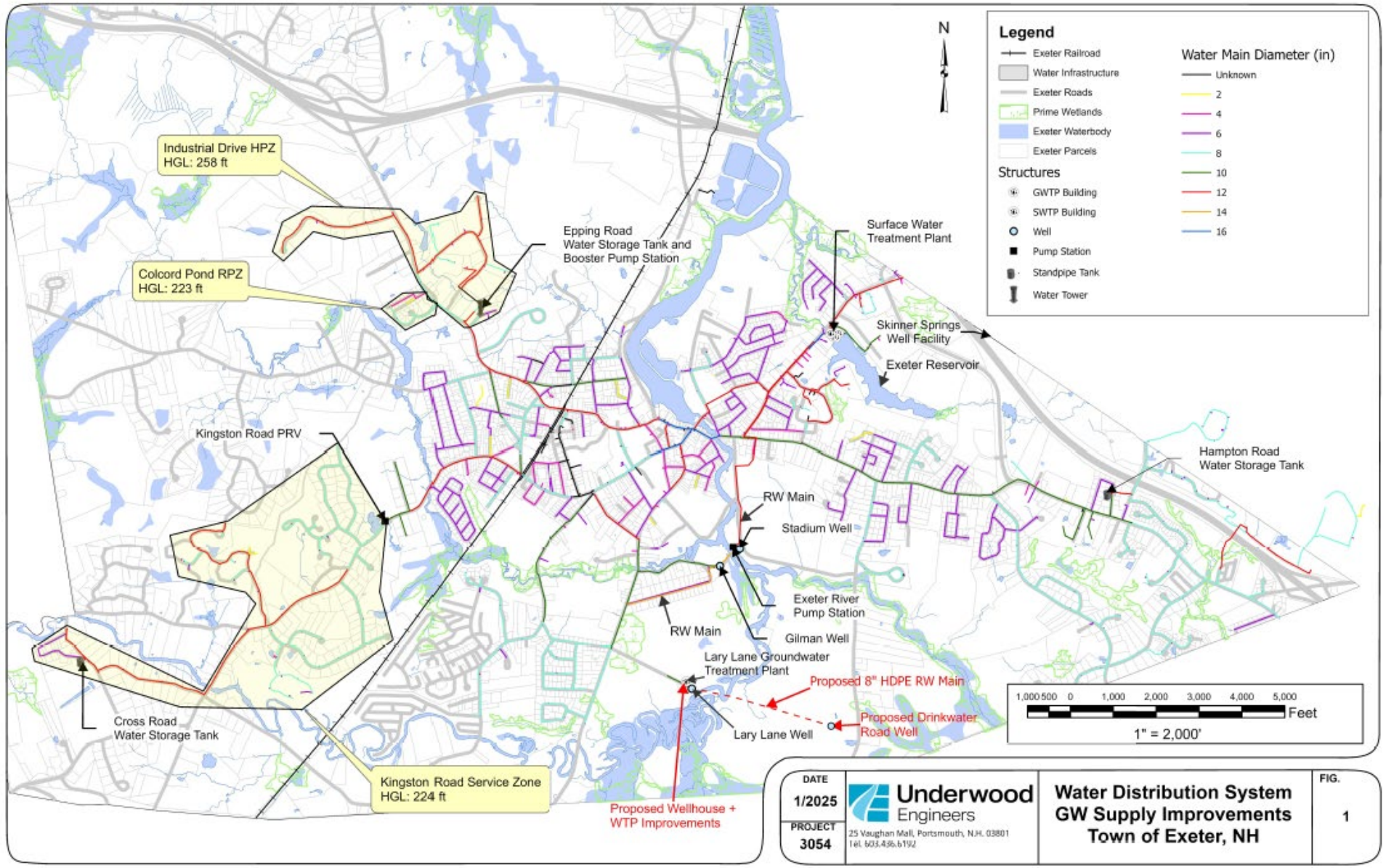
Article 3 – Drinkwater Road Groundwater Development

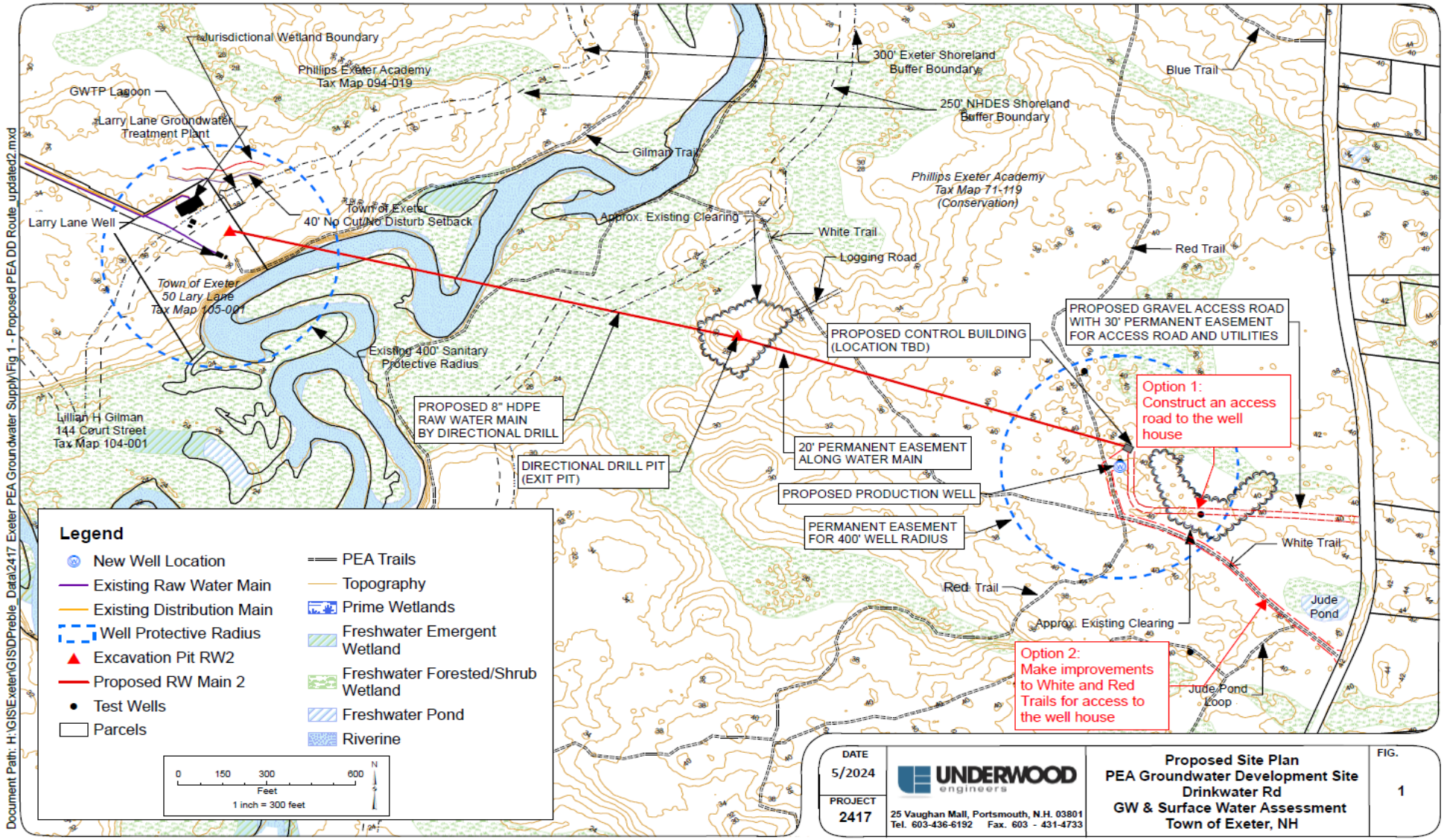
Withdrawal Testing (Completed in November 2024)

- Monitoring network was established, including nearby wells and surface waters.
- 5-day pumping test was conducted to assess impacts.

Final Review & Decision (in Progress)

- A Final Report is submitted, including data analysis, impact assessment, and mitigation plans.
- Another Public Hearing and Comment Period occurs before a Technical Review by NHDES.
- If adverse impacts (such as reduced well capacity or contamination) are identified, mitigation plans are required.
- If the withdrawal meets all criteria, NHDES issues a permit, which is valid for 10 years and subject to renewal.
- Approved permits must be activated within 5 years, or they expire.


N
Legend
Exeter Railroad
Water Infrastructure
Exeter Roads
Prime Wetlands
Exeter Waterbody
Exeter Parcels
Structures
GWTP Building
SWTP Building
Well
Pump Station
Standpipe Tank
Water Tower
Water Main Diameter (in)
Unknown
2
4
6
8
10
12
14
16
Industrial Drive HPZ
HGL: 258 ft
Colcord Pond RPZ
HGL: 223 ft
Epping Road
Water Storage Tank and
Booster Pump Station
Surface Water
Treatment Plant
Skinner Springs
Well Facility
Exeter Reservoir
Kingston Road PRV
Hampton Road
Water Storage Tank
RW Main
Stadium Well
Exeter River
Pump Station
RW Main
Gilman Well
Lary Lane Groundwater
Treatment Plant
Proposed 8" HDPE RW Main
Proposed Drinkwater
Road Well
Lary Lane Well
Cross Road
Water Storage Tank
Kingston Road Service Zone
HGL: 224 ft
Proposed Wellhouse +
WTP Improvements
1,000 500 0 1,000 2,000 3,000 4,000 5,000
Feet
1" = 2,000'
DATE
1/2025
PROJECT
3054
Underwood
Engineers
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603.436.6192
Water Distribution System
GW Supply Improvements
Town of Exeter, NH
FIG.
1


Jurisdictional Wetland Boundary
Phillips Exeter Academy
Tax Map 094-019
GWTP Lagoon
Larry Lane Groundwater
Treatment Plant
Larry Lane Well
Town of Exeter
40' No Cut/No Disturb Setback
Town of Exeter
50 Lary Lane
Tax Map 105-001
Lillian H Gilman
144 Court Street
Tax Map 104-001
Existing 400' Sanitary
Protective Radius
PROPOSED 8" HDPE
RAW WATER MAIN
BY DIRECTIONAL DRILL
DIRECTIONAL DRILL PIT
(EXIT PIT)
Gilman Trail
300' Exeter Shoreland
Buffer Boundary
250' NHDES Shoreland
Buffer Boundary
Blue Trail
Phillips Exeter Academy
Tax Map 71-119
(Conservation)
Approx. Existing Clearing
White Trail
Logging Road
Red Trail
PROPOSED CONTROL BUILDING
(LOCATION TBD)
PROPOSED GRAVEL ACCESS ROAD
WITH 30' PERMANENT EASEMENT
FOR ACCESS ROAD AND UTILITIES
Option 1:
Construct an access
road to the well
house
20' PERMANENT EASEMENT
ALONG WATER MAIN
PROPOSED PRODUCTION WELL
PERMANENT EASEMENT
FOR 400' WELL RADIUS
White Trail
Red Trail
Jude
Pond
Approx. Existing Clearing
Option 2:
Make improvements
to White and Red
Trails for access to
the well house
Jude Pond
Loop
Legend
New Well Location
Existing Raw Water Main
Existing Distribution Main
Well Protective Radius
Excavation Pit RW2
Proposed RW Main 2
Test Wells
Parcels
PEA Trails
Topography
Prime Wetlands
Freshwater Emergent
Wetland
Freshwater Forested/Shrub
Wetland
Freshwater Pond
Riverine
0 150 300 600
Feet
1 inch = 300 feet
N
Document Path: H:\GIS\Exeter\GIS\DPreble_Data\2417 Exeter PEA Groundwater Supply\Fig 1 - Proposed PEA DD Route_updated2.mxd
DATE
5/2024
PROJECT
2417
UNDERWOOD
engineers
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603 - 431-4733
Proposed Site Plan
PEA Groundwater Development Site
Drinkwater Rd
GW & Surface Water Assessment
Town of Exeter, NH
FIG.
1

Article 3 – Drinkwater Road Groundwater Development

Table 4. Existing Sustainable Groundwater Source and Treatment Capacity

Source	Safe Yield MGD	Notes
Stadium & Gilman Wells	0.50	Per *Groundwater Resource Assessment Groundwater Investigations Report* by Emery and Garrett (2020)
Lary Lane Well	0.50	Per *Groundwater Resource Assessment Groundwater Investigations Report* by Emery and Garrett (2020)
Total	**1.00**	
GWTP Efficiency	99%	Raw and finished flow shows little to no significant loss
Finish Water Supply Capacity	**0.99**	Raw capacity multiplied by efficiency
GWTP Capacity	1.55	Per *Lary Lane GWTP O&M Manual* by Weston & Sampson (2014)

From 2021 Supply Options Technical Memo

Article 3 – Drinkwater Road Groundwater Development

Table 5. Existing Sustainable Surface Water Source and Treatment Capacity

Source	Summer Safe Yield (MGD)	Winter Safe Yield (MGD)	Notes
Exeter River	1.0		Estimates range: 1.0 to 1.3 MGD Per *Water Supply Alternative Study,* by Weston & Sampson (January 2010)
Exeter Reservoir		0.3	Estimates range: 0.2 to 0.3 MGD Per *Alternative Sources of Water Supply,* by Weston & Sampson (1968) & *Water System Evaluation Study,* by CDM (2002)
Skinner Springs	0.1	0.1	Estimates range: 0.05 to 0.125 MGD Per *Water System Evaluation Study*, by CDM (2002)
Total Source Capacity	**1.1**	**0.4**	
SWTP Efficiency	83%	83%	3-year average efficiency (2020-2022)
Finished Water Capacity	**0.91**	**0.33**	Based on raw safe yield & plant efficiency

From 2021 Supply Options Technical Memo

Article 3 – Drinkwater Road Groundwater Development

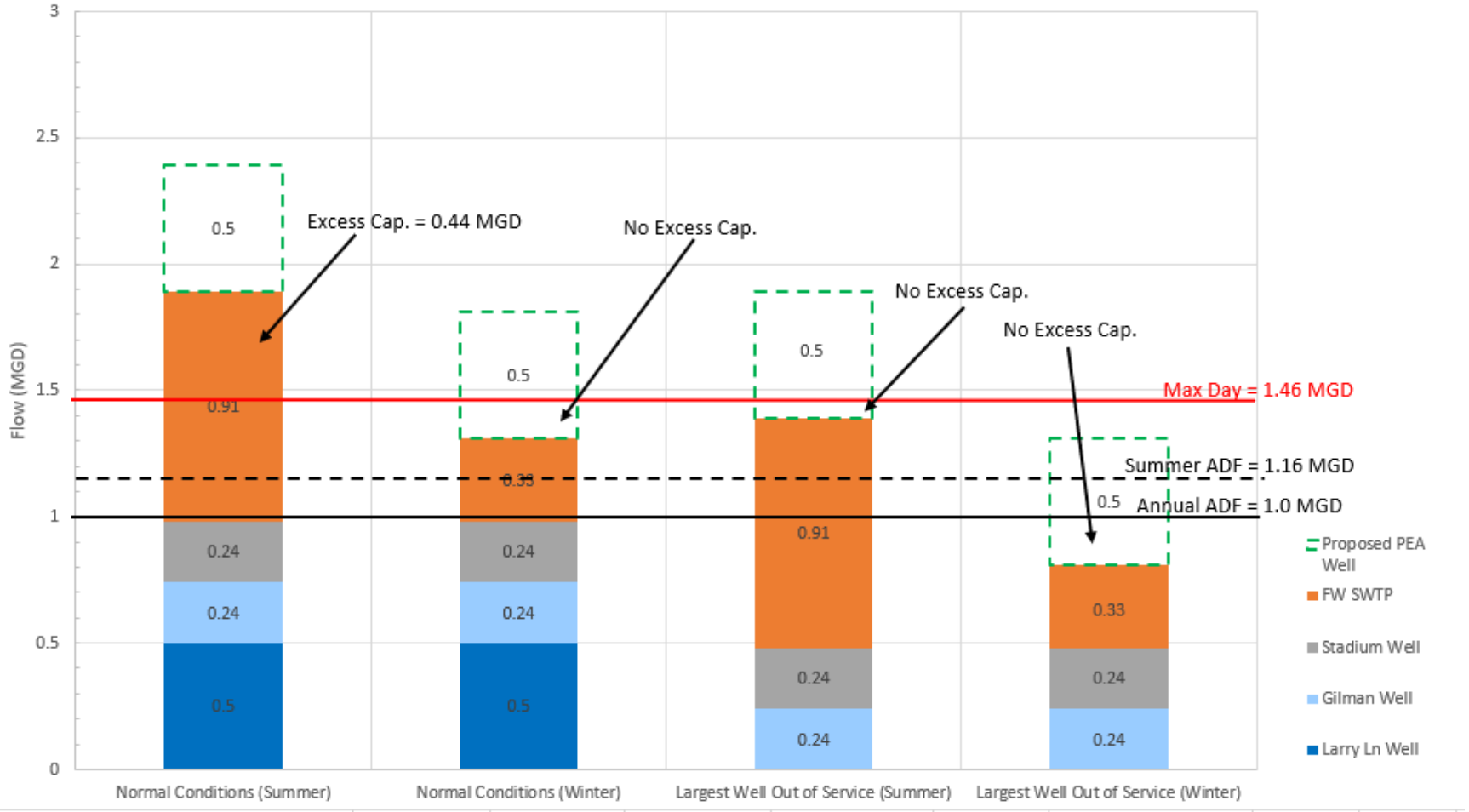
Table 8. Existing Total Seasonal Finished Water Capacity

Source	Summer (MGD)	Winter (MGD)
SWTP	0.91	0.33
GWTP	0.99	0.99
Total All Sources	1.90	1.32
Total largest well out of service (Lary Lane @ 0.5 MGD)	**1.40**	**0.82**

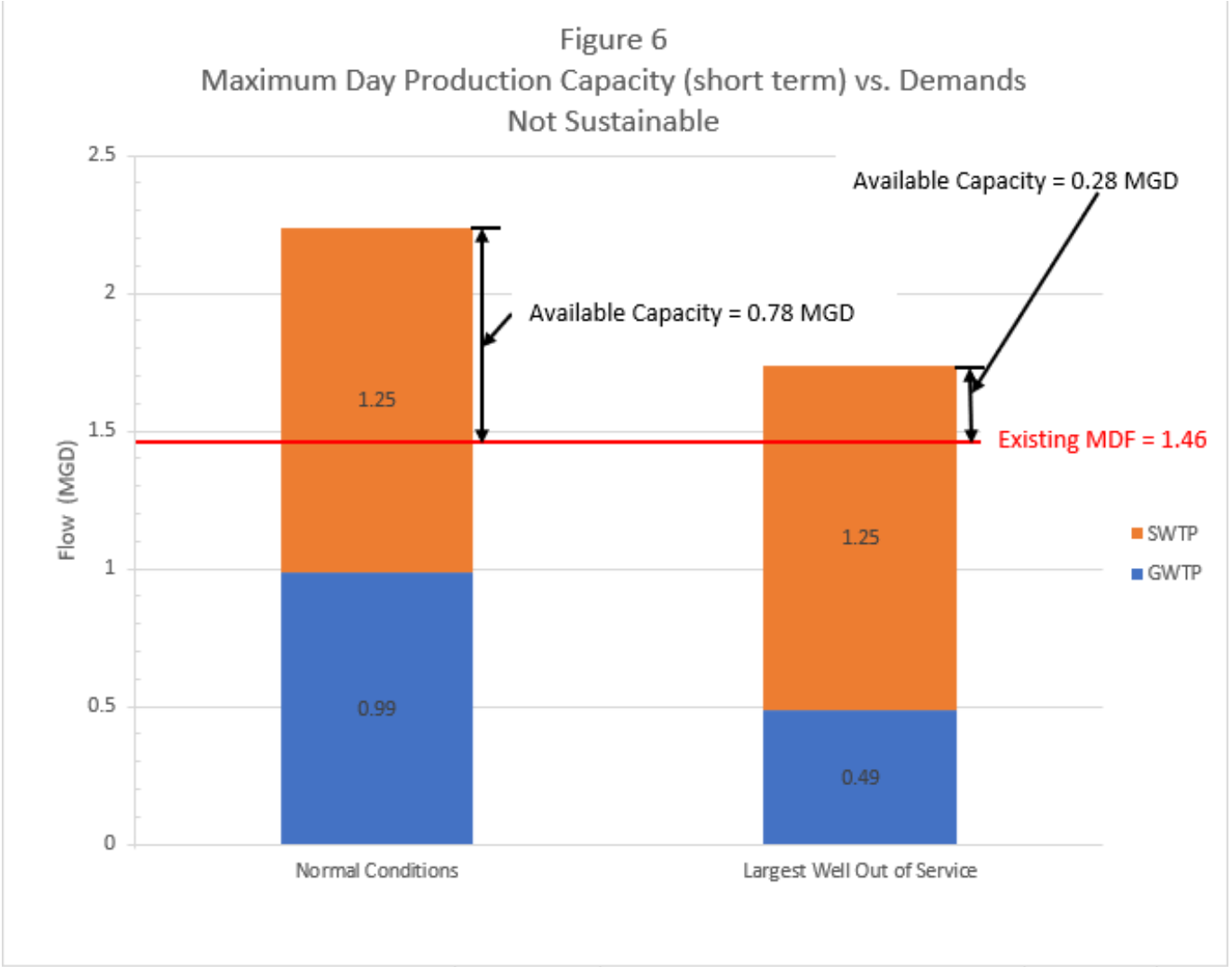
From 2021 Supply Options Technical Memo

Article 3 – Drinkwater Road Groundwater Development

Figure 5
Supply Capacity vs. Existing Demands (Finished Water)
Town of Exeter, NH



Article 3 – Drinkwater Road Groundwater Development



Article 3 – Drinkwater Road Groundwater Development

Table 5. Comparison of Water and Sewer Flow Projections (Year 2040)

Description	Projected Water Demands (MGD) (UE, 2020)	Projected Sewer Flows (MGD) (W-P, 2015)	Notes
Average Day	1.1	0.92	Sewer use 2014, no I/I (W-P, 2015)
Future Growth Allowance	0.48	0.6	2040 Sewer Growth (W-P, 2015)
Future Average Day	**1.58**	**1.52**	
Future Maximum Day	**2.28**	**2.19**	Using UE PF of 1.44

From 2020 Surface Water & Groundwater Assessment Report

Water Supply Improvements Roadmap

Permit & Construct Drinkwater Road Well (2025/2026)

Advance Conceptual Design, Site Investigation, & Safe Yield Analysis for SWTP Replacement (RFQ Issued November 2025)

Design Replacement SWTP (2026/2027)

Construct SWTP (TBD)