Massachusetts Environmental Policy Act (MEPA)

EXPANDED ENVIRONMENTAL NOTIFICATION FORM (EENF)

And

SINGLE EIR REQUEST

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COMMITMENT & INTEGRITY DRIVE RESULTS

Project Number 0231802
Town of Sudbury, MA
December 2021

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Via UPS and Electronic

December 30, 2021

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs (EEA)
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Sudbury, MA Expanded Environmental Notification Form (EENF)

Dear Secretary Theoharides:

On behalf of the Town of Sudbury, I am pleased to submit for your review and approval the enclosed EENF requesting that the Secretary allow a Single Environmental Impact Report (SEIR) to file its Comprehensive Wastewater Management Plan (CWMP).The attached EENF and its contents are what was discussed at a virtual meeting with Woodard & Curran and the Town of Sudbury presenting to MEPA staff in June 2021 with Page Czepiga, MEPA Assistant Director and Environmental Justice Point of Contact , and Kevin Brander, Joseph Nerden and Tenzin Lama from MassDEP. The EENF contains a full Narrative on the CWMP, Alternatives Analysis, EJ Protocols and Climate Change Adaptation and Resiliency summary and Greenhouse Gas Analysis.

When we met with Ms. Czepiga last June, we evaluated the information in hand and based on the Town being well into the process of completing its Comprehensive Wastewater Management Plan (CWMP) and EIR, it made sense to file the EENF and request a Single EIR. The Town began its current wastewater planning effort with an approved Town Meeting vote in May 2019 and is being funded through the Massachusetts State Revolving Fund Loan Program (SRF).

The subject of this EENF is the updated CWMP Report that identified five geographic areas of Town as not long-term sustainable with on-site wastewater systems. The CWMP, which is a 20-year planning document, proposes to phase out the five Needs Areas and lays out a conceptual plan to design and construct municipal sewers to send to a new, proposed WWTF in Town with groundwater disposal. A Capital Improvement Plan/Schedule detailing the timing for each Needs Area is planned to be completed and included in the full CWMP, which will be filed with the SEIR. This Plan meets the on-site needs/constraints of the parcels while also meeting and in some areas exceeding the recommendations in the1996 CWMP Guidance

The Narrative included herein summarizes the CWMP planning to date and shows limited environmental impact throughout the Needs Areas. In all cases, the sewer benefits the environment and most notably preserves and protects the Town's major drinking water supplies.

A full Greenhouse Gas Analysis was completed and is included in both the Project Description and in the CWMP Report to be filed with the SEIR, if approved as such.

The Town of Sudbury acknowledges and addresses the proposed MEPA Amendments at 301 CMR 11.00 in the attached EENF.

Per MEPA requirements, I trust that you will find a complete package with this electronic submittal.

Thank you, in advance, for your time and attention to this important Project. If you have any questions or need anything additional, please contact me direct at 781.613.0644.

Sincerely,

WOODARD & CURRAN. INC.

Rosemary T. Blacquier
Senior Consultant

Enclosure(s)

cc: Kevin Brander, MassDEP/SERO
Henry L. Hayes, Jr., Town Manager
Daniel Nason, Department of Public Works Director

PN: Project Number 0231802.00

SUDBURY, MASSACHUSETTS
EXPANDED ENVIRONMENTAL NOTIFICATION FORM (EENF)
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EENF FORM

Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: *Sudbury* ***Comprehensive Wastewater Management Plan (CWMP)***		
Street Address: *275 Old Lancaster Road*		
Municipality: *Sudbury*	Watershed: *SuAsCo*	
Universal Transverse Mercator Coordinates:	Latitude: *42° 23' 0.35" N* Longitude:*71° 24' 58.21" W*	
Estimated commencement date: *8/2019 (plan)*)	Estimated completion date: *6/2022 (Plan*)	
Project Type: *CWMP*	Status of project design: *5* %complete	
Proponent: *Town of Sudbury DPW*		
Street Address: *275 Old Lancaster Road*		
Municipality: *Sudbury*	State: *MA*	Zip Code:*01776*
Name of Contact Person: *Dan Nason*		
Firm/Agency: *Sudbury DPW*	Street Address:*275 Old Lancaster Road*	
Municipality:*Sudbury*	State: *MA*	Zip Code:*01776*
Phone: *978-440-5490*	Fax:	E-mail:nasond@sudbury.ma.us

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☒Yes ☐No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☒Yes ☐No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes ☒No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Greenhouse Gas included in Narrative and in full as Attachment 8

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

Construction of WWTF >100,000 GPD, five plus miles of new pipe

Which State Agency Permits will the project require?

MassDEP GW Discharge and MassDOT

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

Will apply for SRF funds for construction

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	*15,744*		
New acres of land altered		*6.46*	
Acres of impervious area	*19.76*	*0.73*	*20.49*
Square feet of new bordering vegetated wetlands alteration		*2,834*	
Square feet of new other wetland alteration		*10,223*	
Acres of new non-water dependent use of tidelands or waterways		*0*	
STRUCTURES			
Gross square footage	*0*	*21,945*	*21,945*
Number of housing units	*0*	*0*	*0*
Maximum height (feet)	*0*	*15.5*	*15.5*
TRANSPORTATION			
Vehicle trips per day	*0*	*0*	*0*
Parking spaces	*0*	*3*	*3*
WASTEWATER			
Water Use (Gallons per day)	*0*	*0*	*0*
Water withdrawal (GPD)	*0*	*0*	*0*
Wastewater generation/treatment (GPD)	*0*	*250,000*	*250,000*
Length of water mains (miles)	*0*	*0*	*0*
Length of sewer mains (miles)	*0*	*16.59*	*16.59*

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION: ***See attached "Project Description" for this section.***

Describe the existing conditions and land uses on the project site: ***see attached Project Description*** _____

Describe the proposed project and its programmatic and physical elements: ***see attached Project Description***

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:
see attached Project Description

NOTE*: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:
See attached "Project Description"

If the project is proposed to be constructed in phases, please describe each phase:
Needs Areas and infrastructure are prioritized for construction phasing and included in attached Project Description.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:
Is the project within or adjacent to an Area of Critical Environmental Concern?
☐Yes (Specify_____)
☒No
if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.
_____
Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.
_____

RARE SPECIES:
Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)
☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:
Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
☒Yes (Specify_*See attached "Project Description*"_____) ☐No
If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☒No

WATER RESOURCES:
Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? ___Yes _X__No;
if yes, identify the ORW and its location. _____

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? _X__Yes ___No; if yes,
identify the water body and pollutant(s) causing the impairment:: *Hop Brook-see attached Project Description.*

Is the project within a medium or high stress basin, as established by the Massachusetts
Water Resources Commission? ___Yes _X__No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply
with the standards found in MassDEP's Stormwater Management Regulations:_*See attached "Project Description*"

MASSACHUSETTS CONTINGENCY PLAN:
Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes __
site (including Release Tracking Number (RTN), cleanup phase, and Response
Action Outcome classification):___X___No-*See attached "Project Description" and map, EENF Nos. 14-17*

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No _X__;
if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN?
Yes ___ No _X__ ; if yes, please describe:_____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered
for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:____*N/A*_____

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes ___ No _X__ ;
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment: _*Project will support MassDEP Diesel Retrofit for Construction to reduce emissions per the SRF Program.*

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally
designated Wild and Scenic River or a state designated Scenic River? Yes ___ No X___ ;
if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable"
resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?
Yes ___ No __X_ ; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable"
resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No _X__ ;

if yes,describe the potential impacts to one or more of the “outstandingly remarkable” resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

A. Climate Change Adaptation and Resiliency Forms
1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase) shown on Attachment 4.
5. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
6. List of municipal and federal permits and reviews required by the project, as applicable.
7. Public Notice
8. Green House Gas
9. The Massachusetts Historical Commission Project Notification Form and Response

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
___ Yes _X__ No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	*0*	*0.5*	*0.5*
Internal roadways	*0*	*0*	*0*
Parking and other paved areas	*0*	*0.23*	*0.23*
Other altered areas	*23.00**	*2.38*	*25.38*
Undeveloped areas	*3.11*	*(3.11)*	*0*
Total: Project Site Acreage	*26.11**	*0*	*26.11*

****includes existing pre-disturbed roadways/rights-of-ways***

B. Has any part of the project site been in active agricultural use in the last five years?
___ Yes __X_ No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
___ Yes __X_ No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes __X_ No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes_X__ No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes _X__ No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No _X__; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title: *CWMP and Town Master Plan*
Date *2021*

B. Describe the project's consistency with that plan with regard to:
1) economic development *-meets Master Plan and CWMP*
2) adequacy of infrastructure *-meets Master Plan and CWMP*
3) open space impacts *-Meets Master Plan and CWMP*
4) compatibility with adjacent land uses *-Meets Master Plan and CWMP*

In addition to meeting the requirements of the state's CMWP Planning, the Project has been approved by the Town Master Planning Committee and 2021 Master Plan Report.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: *MAGIC*

Title: *Minuteman Advisory Group* Date *1984-current*

D. Describe the project's consistency with that plan with regard to:
1) economic development *Meets goals*
2) adequacy of infrastructure -*Meets goals*
3) open space impacts -*Meets goals*

MAGIC is a coordinated voice in regional planning initiatives, specifically growth management. The CWMP addresses growth/sprawl as part of the CWMP Guidelines and State's Executive Order 385.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes _XX_ No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes _X__ No.

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes __X__No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes ___ No; if yes, attach the letter of determination to this submission.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

3. Which rare species are known to occur within the Priority or Estimated Habitat?

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes ___ No

4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes ___ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _X__ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

NOTE: The Project Needs Areas were overlain on the most up to date MassGIS mapping layers for NHESP and none of the Project areas impact these resources. Refer to map EENF Nos. 6-9 in Attachment 4 included herein.

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? ___ Yes _X__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? _X__ Yes ___ No; if yes, specify which permit: *Order of Conditions and possibly state wetlands*

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _X__ Yes ___ No; if yes, has a Notice of Intent been filed? ___ Yes _X__ No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a Variance from the Wetlands regulations? ___ Yes ___ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:
There are several wetland impacts with proposed crossings and locations of proposed infrastructure within wetland buffer areas. The layout is currently at the conceptual/planning level in the CWMP with no survey completed nor preliminary design completed. Once preliminary design is commenced, survey will be completed to determine the impact and an RDA/NOI filed with local and state authorities.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	0	0
Designated Port Areas	0	0
Coastal Beaches	0	0
Coastal Dunes	0	0
Barrier Beaches	0	0
Coastal Banks	0	0
Rocky Intertidal Shores	0	0
Salt Marshes	0	0
Land Under Salt Ponds	0	0
Land Containing Shellfish	0	0
Fish Runs	0	0
Land Subject to Coastal Storm Flowage	0	0
Inland Wetlands		
Bank (lf)	*0*	
Bordering Vegetated Wetlands	*2,834*	*Temporary*
Isolated Vegetated Wetlands	*10,222*	*Temporary*
Land under Water	*0*	
Isolated Land Subject to Flooding	*0*	
Borderi ng Land Subject to Flooding	*14,411*	*Temporary*
Riverfront Area		

D. Is any part of the project:

1. proposed as a **limited project**? ___ Yes __X_ No; if yes, what is the area (in sf)?____
2. the construction or alteration of a **dam**? ___ Yes _X__ No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes _X__ No
4. dredging or disposal of dredged material? ___ Yes __X_ No; if yes, describe the volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes _X__ No
6. subject to a wetlands restriction order? ___ Yes _X__ No; if yes, identify the area (in sf):
7. located in buffer zones? _X__Yes ___No; if yes, how much (in sf) *148,279*

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? _X__ Yes ___ No
2. alter any federally-protected wetlands not regulated under state law? ___ Yes X___ No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ___ Yes __X No; if yes, is there a current Chapter 91 License or Permit affecting the project site? ___ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

C. Does the project require a new or modified license or permit under M.G.L.c.91? ___ Yes __XNo; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total ___

If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following:

Area of filled tidelands on the site:_____*0*_____

Area of filled tidelands covered by buildings:____*0*_____

For portions of site on filled tidelands, list ground floor uses and area of each use:

_____*0*_____

Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No _*X*__

Height of building on filled tidelands___*0*_____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? ___ Yes __*X* No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _*X*_ No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? __ Yes ___ *X*No;

(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? ___ Yes __X No; if yes, answer the following questions:

What type of dredging? Improvement ___ Maintenance ___ Both ____

What is the proposed dredge volume, in cubic yards (cys) _____

What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);

Will dredging impact the following resource areas?

Intertidal Yes__ No__; if yes, ___ sq ft

Outstanding Resource Waters Yes__ No__; if yes, ___ sq ft

Other resource area (i.e. shellfish beds, eel grass beds) Yes__ No__; if yes __ sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization

Existing gradation analysis results? __Yes ___No: if yes, provide results.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ____No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment ___

Unconfined Ocean Disposal ___

Confined Disposal:

Confined Aquatic Disposal (CAD) ___

Confined Disposal Facility (CDF) ___

Landfill Reuse in accordance with COMM-97-001 ___

Shoreline Placement ___

Upland Material Reuse____

In-State landfill disposal____

Out-of-state landfill disposal ____

(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? ___ Yes __X No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes _X_ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes __X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___ Yes ___X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? _____Will the project require an increase in that withdrawal? ___Yes ___No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No. If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking

water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? __X_ Yes ___ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? _*X*_ Yes ___ No; if yes, specify which permit: *Massachusetts Groundwater Discharge Permit and WWTF*

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	*0*	*250,000*	*250,000*
Discharge of industrial wastewater	*0*	*0*	*0*
TOTAL	*0*	*250,000*	*250,000*

	Existing	Change	Total
Discharge to groundwater	*0*	*250,000*	*250,000*
Discharge to outstanding resource water	*0*	*0*	*0*
Discharge to surface water	*0*	*0*	*0*
Discharge to municipal or regional wastewater facility	*0*	*0*	*0*
TOTAL	*0*	*250,000*	*250,000*

B. Is the existing collection system at or near its capacity? ___ Yes _X No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes_X_No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve ***construction of a new facility***? _*X*__ Yes ___ No; if yes, describe as follows:

	Permitted (to be)	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	*250,000*	*0*	*250,000*	*250,000*

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new? *N/A*

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes __X No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes _X No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal. *Infiltration and Inflow will be minimal based on a totally new system of pipes and manholes designed and built to today's standards. Smart growth is included within the flow allotments for each parcel-no sprawl with managed growth.*

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management: *All will be operated and maintained under a MassDEP Groundwater Discharge Permit*

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes _X_No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes __X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? __X Yes ___ No; if yes, specify which permit: *MassDOT Permit for All state roadways*

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	*68**	*20*	*88*
Number of vehicle trips per day	*0*	*20*	*20*
ITE Land Use Code(s):	*170*		

** Existing DPW Site current conditions*

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. *Route 20*	*20,000*	*0*	*20,000*
2. *Old Lancaster Road*	*6,000*	*0*	*6,000*
3. *Raymond Road*	*6,000*	*0*	*6,000*

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement*: MassDOT permits and procedures will be followed for all state roadways associated with the Project site.*

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site? *CrossTown Connect serves as the Transportation Management Association (TMA) for the residential and business sectors in the Town of Sudbury and several surrounding communities. Any required coordination with the TMA, including implementation and/or promotion of transit use and pedestrian / bicycle facilities and services providing access to and from Project sites will be conducted during the design phase of the Project.*

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? __X_ Yes ____ No; if yes, describe if and how will the project will participate in the TMA: *CrossTown Connect serves as the Transportation Management Association (TMA) for the residential and business sectors in the Town of Sudbury and several surrounding communities. Any required coordination with the TMA will be conducted during the design phase of the future Project.*

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? ____ Yes __X No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)? *N/A*

III. Consistency
Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:
MassDOT permits and procedures will be followed for all state roadways associated with the Project site (Route 20). CrossTown Connect serves as the Transportation Management Association (TMA) for the residential and business sectors of Sudbury and several surrounding communities. All required coordination with the TMA will be conducted during future design phases.

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes ___X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___X Yes ___ No; if yes, specify which permit: *MassDOT for all state roadways.*

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? *0*
2. Cutting of living public shade trees (number)? *0*
3. Elimination of stone wall (in linear feet)? *0*

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

A comprehensive Traffic Management Plan will be developed in conformance with MassDOT and local requirements once the CWMP begins implementation in a future phase. MassDOT permits and procedures will be followed for all state roadways associated with the Project site (Route 20). CrossTown Connect serves as the Transportation Management Association (TMA) for the residential and business sectors of Sudbury and several surrounding communities. All required coordination with the TMA will be conducted during future design phases.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes __XX_ No; if yes, specify which permit:

B. Does the project require any state permits related to **energy**? ___ Yes ___X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes __X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes _X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? _ Yes _XNo; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? __*X*_ Yes ___ No; if yes, attach correspondence. *(See Attachment 9)* For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? ____Yes __X__ No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? _*X*__ Yes ___ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes _X__ No; if yes, please describe: *There are multiple historic districts in Sudbury and conceptual planning shows all outside of direct impact. However, a PNF response from The Massachusetts Historical Commission (MHC) requests a survey be conducted under their jurisdiction to determine any potential impact to resources unknown at this time to the Project proponent.*

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes __X*No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes __X_ No; if yes, please describe:

**Note: an historical survey will be conducted at a future date to finitely determine any potential for impact.*

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources: *A PNF filed with The Massachusetts Historical Commission (MHC)responded with the need for a Project survey to determine any impact. Once the Project completes its planning/ conceptual stage and moves to preliminary design, This effort with be coordinated with MHC, as well as the Sudbury Historical Commission and Historical District Commission.*

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

The Town will coordinate all future, proposed work with MHC and local historical commissions to comply with all once the planning moves to design/survey stage. At this point in time, no survey has been conducted and CWMP plan is conceptual.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name) *Town Crier* (Date) *December 30, 2021*

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

12/28/21		12/28/21	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)
Daniel Nason		*Rosemary T. Blacquier*	
Name (print or type)		Name (print or type)	
Sudbury DPW		*Woodard & Curran*	
Firm/Agency		Firm/Agency	
275 Old Lancaster RD		*250 Royal Street*	
Street		Street	
Sudbury, MA 01776		*Canton, MA 02021*	
Municipality/State/Zip		Municipality/State/Zip	
978.440.5490		*781.613.0644*	
Phone		Phone	

Project Description

SUDBURY, MA
EXPANDED ENVIRONMENTAL NOTIFICATION FORM
PROJECT DESCRIPTION

PROJECT DESCRIPTION

The Town of Sudbury is completing its Comprehensive Wastewater Management Plan (CWMP) after years of study to determine the long-term sustainability of on-site wastewater systems and their potential impact to environmental resources, but most notably the potential threat to the Town's major drinking water supplies. The Town is proposing to remove on-site wastewater disposal systems from five geographic areas of Town, identified as Needs Areas in the Report, in order to provide resource protection in areas where physical site conditions prohibit the proper operation and maintenance of these systems. The major goal is to remove on-site wastewater systems in areas where there is a threat to degrade the Town's major drinking water supplies in the Raymond Road And Hop Brook Aquifers. The draft recommended plan is to connect these Needs Areas on a phased basis to a new, proposed MBR Wastewater Treatment Facility (WWTF) to be constructed at the existing Department of Public Works site. The wastewater will be treated at the new WWTF and then transported to new groundwater discharge beds located under existing ball fields at the Curtis Middle School. The recommended plan includes approximately 17 miles of sewer collection system and five pumping stations. The sewer is proposed in the CWMP to be designed and constructed over a 20-year planning period, with each Needs Area phased from highest priority to lowest priority throughout the period. The 20-year Project proposes constructing approximately 17 miles of sewer over the planning period. Conceptual designs look to construct all new sewer in existing roadways/rights-of-ways, thus eliminating potential impacts to virginal land areas. A map of the five geographic areas, Needs Areas, shown over the Town's base mapping, "Wastewater Needs and Recommended Solutions", Figure EENF-1 is attached hereto. It is important to note that in the recommended plan, several individual Needs Areas were combined as a Hybrid Needs Area based on potential impact to water resources. Another Needs Area, Route 20 East, is being precluded from the CWMP for further evaluation at a future time through a MEPA Notice of Project Change. So while five geographic areas were identified as needing an off-site solution, actual "Needs Areas" are combined into three named priority areas:

- Hybrid (Raymond Road South and Route 20)
- Goodman Hill
- Raymond Road North

Based on a comprehensive data review, criteria such as soils, groundwater, lot size, environmental constraints pose constraints to the long-term sustainability on on-site wastewater in six geographic areas of Town. Changes in land use, development densities and new development and the continual hardships faced by property owners to adapt on-site systems to severe constraints continue to pose issues in most areas. In addition to reviewing data including soils, groundwater, on-site system records, Assessor, Planning Department, multiple Town Department meetings were held to vet the need for off-site wastewater solutions. These meetings proved invaluable in finalizing the Needs Area delineations.

The CWMP recommends a plan for removal of the on-site wastewater disposal systems for resource preservation and protection, again, most notably for preservation and protection of the Town's major drinking water supplies.

Recommended Plan
Figure EENF-1

Wastewater Needs and Recommended Solutions

CWMP Update
Town of Sudbury, MA

N

Legend

- Groundwater Discharge
- WWTP — Wastewater Treatment Plant
- PS — Pump Station
- Public Wells
- Goodman Hill Project Area
- Raymond Road North Project Area
- Raymond Road South Project Area
- Route 20 Project Area
- Route 20 East Project Area

Onsite Septage Management Plan

- Raymond Road North
- Raymond Road South
- Route 20 East
- Goodman Hill
- Route 20
- Septage Management Plan Areas

Proposed Curtis Middle School Field Groundwater Discharge

WWTP Proposed DPW WWTP

PS

PHASE 2 RAYMOND ROAD NORTH

PHASE 4 GOODMAN HILL Sub-Area A

GOODMAN HILL Sub-Area B

PHASE 3 ROUTE 20 EAST Sub-Area A

WWTP Existing Wayland WWTP

PS Proposed River's Edge Pump Station

PHASE 1 ROUTE 20 Sub-Area A

PHASE 1 ROUTE 20 Sub-Area B

ROUTE 20 EAST Sub-Area B

ROUTE 20 Sub-Area C

PHASE 1A RAYMOND ROAD SOUTH

DUTTON RD/WAYSIDE INN

LANDHAM ROAD

0 500 1,000 2,000 Feet

WOODARD &CURRAN

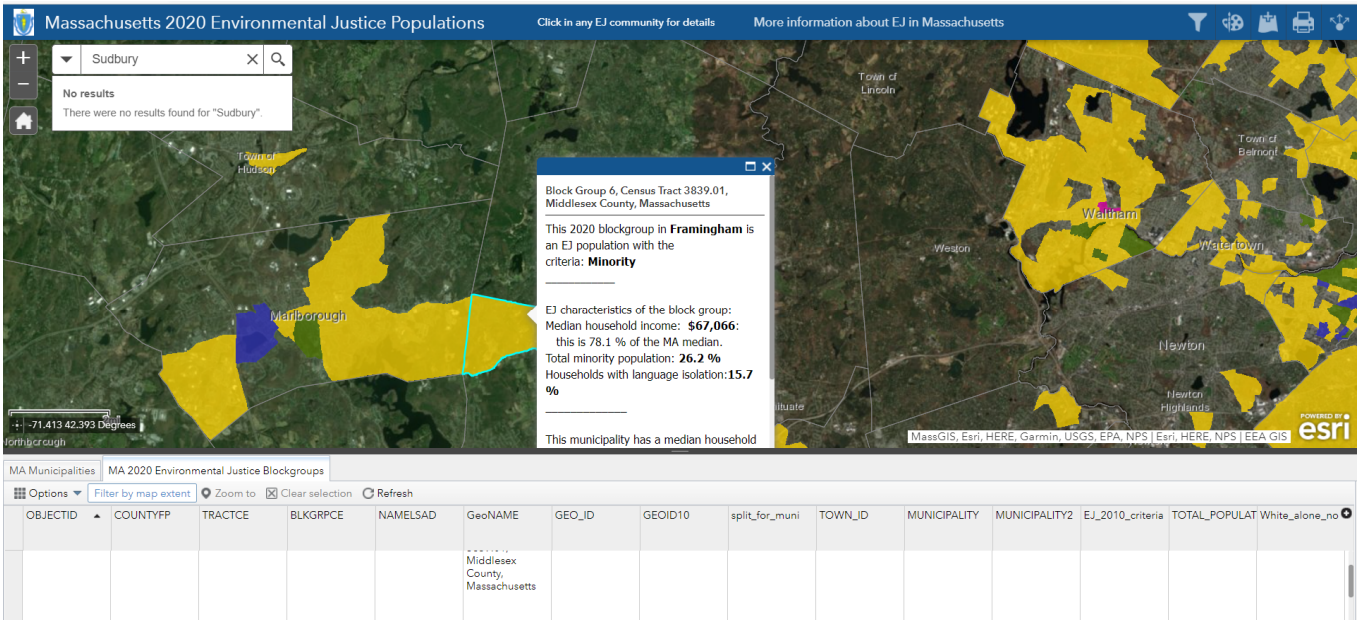
Project #: 0231802.00
Map Created: April 2021

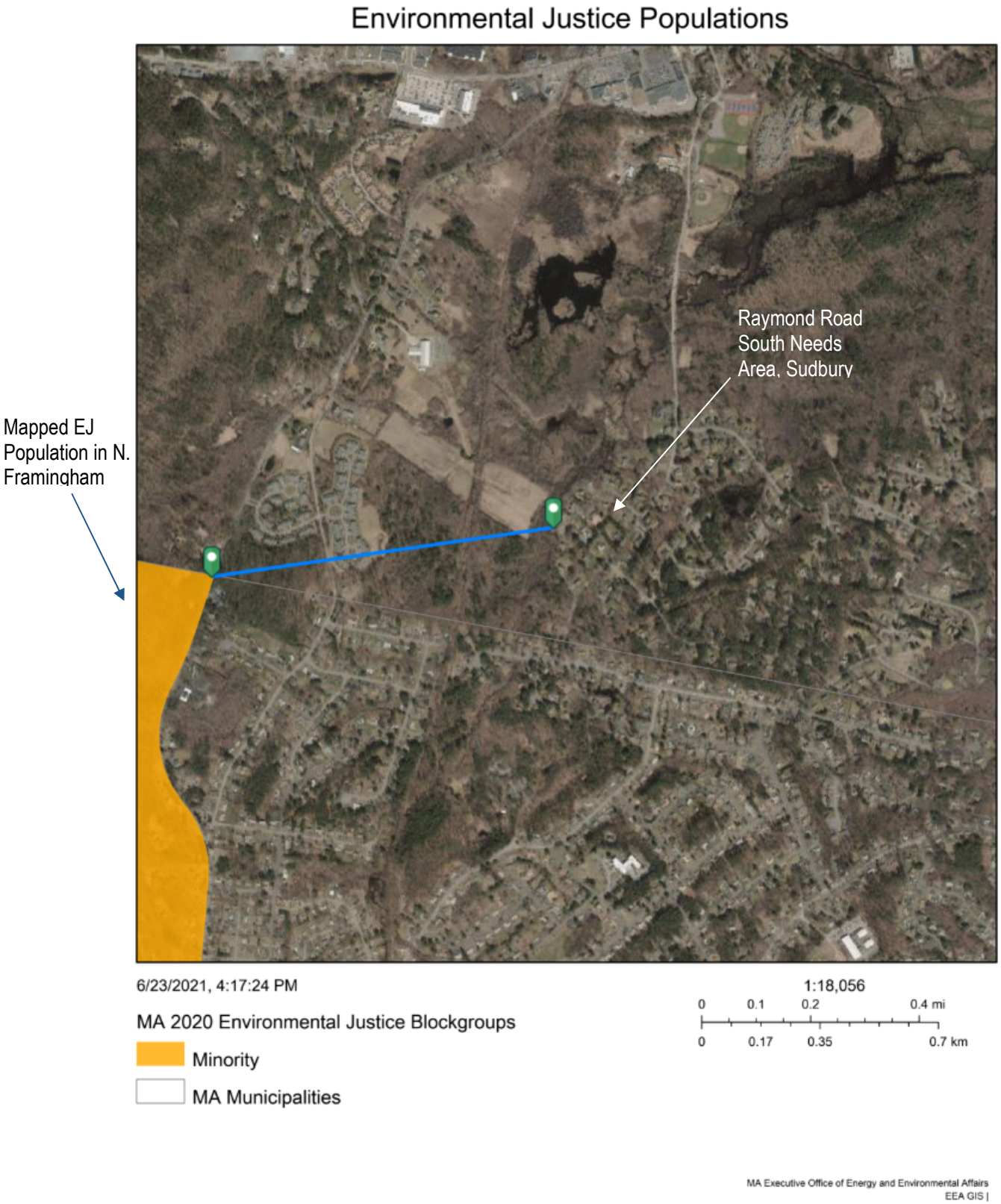
Environmental Justice Policy

The Town of Sudbury acknowledges the updated Environmental Justice Policy currently in effect. While the Environmental Justice Policy (the Policy) was initially enacted in 2002, there have been several updates since then, the most recent in March 26, 2021, with Governor Baker signing *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy*. This law categorizes foundational definitions for environmental justice principles and populations, as well as environmental benefits and burdens, which have been incorporated into the overall Policy. .

The Sudbury Comprehensive Wastewater Management Plan (CWMP) developed and implemented a comprehensive public outreach plan as part of its overall scope of services that is on-going throughout the entire Project. Outreach is a mandatory requirement as part of the Massachusetts Department of Environmental Protection (MassDEP) CWMP Scope and as such, the Sudbury CWMP Scope was approved by the MassDEP for implementation under the State Revolving Fund Loan Program (SRF). This outreach/education plan's goal is to present the work being done as part of the CWMP to the general public, ratepayers, Town Departments and all interested parties and solicit input / comment as the Project progresses. This aligns with the general provisions of the EJ Policy. Utilizing the same provisions included in the CWMP Scope for the Town, the EJ population located in North Framingham can be also included.

Utilizing the Interactive Environmental Justice Map Viewer, it notes that there are no EJ populations designated in the Town of Sudbury. However, there is an EJ designated area in an abutting community, Framingham, located less than one mile from the CWMP proposed Raymond Road South Needs Area. This includes Block Group 6, Census Trac 3839.01, Middlesex County, MA. This Trac is located on the northern edge of Framingham abutting the southern border of Sudbury with Framingham along Edgell Road in North Framingham as it abuts Nobscot Road in Sudbury. The following two maps made using the Interactive Environmental Justice Map Viewer details these areas, with the first noting the geographic location and Census Trac details. The second details the locations of both the EJ Population in North Framingham to the proposed Raymond Road South Needs Area in Sudbury.





The Raymond Road South Needs Area in Sudbury is a geographical area that is a high priority for municipal sewer construction in the CWMP Planning. This will eventually include construction of a sewer collection system in the public roadways / rights-of-

way. As currently proposed in the CWMP, the sewer construction should NOT impact the North Framingham EJ population for a number of reasons. First, there is no direct route from the EJ areas in North Framingham to the Raymond Road South Needs Area, so there is no anticipated traffic concerns. There is no proposed construction above the roadways in this geographic location-all sewer construction is collection system infrastructure below the roadways, so no emissions, odors or associated impacts anticipated. There could be temporary noise during construction activities, but that would be limited times during the day and temporary during construction, but this is a stretch given the location of the EJ population to the proposed sewering.

Given the EJ Policy that deals with significant challenges while attempting to guide how and where development occurs while also preserving the character of their communities, this development has been in place in Sudbury since the early 1950s. There is no loss of farmlands, forests or open spaces, but more environmental protection of drinking water supplies and maintaining of water quality in adjacent water resources. The Framingham EJ Population will not be subjected to living next to sources of pollution and old abandoned, contaminated sites, which can pose risks to public health and the environment. The Sudbury CWMP Planning of municipal sewering to preserve and protect public health and environmental resources will ensure a healthy living environment for Sudbury, Framingham and all Massachusetts communities located within the Sudbury River Watershed.

The EJ Population in North Framingham will be added as an interested party to the full CWMP Outreach Plan. All information developed as part of the CWMP Scope will be made available to the EJ Population. We can do this through the Framingham Public Information Officer and request they assist us in notifying the residents, posting the information on the FraminghamMa.gov website and publishing the information on the Framingham Source using the local blog space. We can also utilize the Framingham Community & Government Facebook pages, so we can share the information there. All outreach information will be shared with the Framingham Public Work's outreach coordinator and request that they share the information with this public as well. All CWMP information is posted on the Town of Sudbury Department of Public Works webpage at Comprehensive Wastewater Management Plan (CWMP) Updates » Department of Public Works (sudbury.ma.us).

Climate Change / Resiliency

This EENF filed on behalf of the Sudbury CWMP planning complies with Executive Order 569 with climate change and resiliency protocols. As directed, the CWMP is incorporating the RMAT Climate Resilience Design Standards Tool per the MEPA Interim Protocol, into this EENF. Refer to Attachment A for the forms and additional information.

As standard practice, the Recommended Plan from this CWMP will be addressing both climate change and resiliency measures in the future preliminary and final design standards for the proposed sewer infrastructure included in the CWMP. This includes a MBR Wastewater Treatment Facility (WWTF) to be located on property currently in use as the Department of Public Works, five (six if a future Wayland connection is realized) pump stations conceptually located in the CWMP that will be located according to future survey efforts in the preliminary and final design, as well as all collection system infrastructure of sewer pipe and manholes. This will be accomplished utilizing the design standard for wastewater facilities in New England, Technical Report #16 ("TR-16") published by the New England Interstate Water Pollution Control Commission. This document was updated in 2016 specifically "to reflect recent experience and thinking in preparing for storm surge and extreme weather events". The panel which reviewed the design standards for the 2016 update included representatives from regulatory agencies (including MassDEP and US EPA), private engineering consultants, municipal agencies, and academia. Specific items addressed will be assuring that all new facilities will be designed to the maximum extent possible to meet flood protection criteria, as well as vulnerability to not only protect environmental resources, but to also ensure uninterrupted wastewater treatment operations and infrastructure protection from damage from any flooding events. This will be addressed for all critical and non-critical components of the proposed wastewater system.

The proposed CWMP Project includes the design and construction of an MBR Wastewater Treatment Facility (WWTF) and five pump stations, along with the collection system of sewer pipes and manholes. The WWTF is proposed to be located at the existing Department of Public Works on a currently tree covered parcel of land. This is the only location where tree cutting is proposed and will be limited to the facility components, parking and entrance and exit. The future preliminary design will survey the parcel and this will determine the exact location so that as many existing trees that offer resource protection, as well as provide buffer to the facility can be saved.

The five pump stations are proposed in existing cleared areas. The majority of the collection system of pipes and manholes are to be located in public roadways/rights-of-ways that are currently pre-disturbed and do not require the cutting of trees.

The proposed groundwater discharge areas, which are the largest expanse of land needed for the Project, are proposed to be constructed under existing ball field-all of which are currently open land. No cutting of trees is proposed here and the fields will be fully restored for continued use as ball fields.

The total of new impervious area is estimated at 0.73 acres, which is minimal and may be able to be reduced based on design survey. The majority of this proposed Project is within existing roadways/rights-of-ways and existing cleared ball fields, thus proving resiliency in limiting extraneous impervious areas.

EXISTING CONDITIONS AND LAND USE

Land Use, Demographic and Population Data

The Town of Sudbury, Massachusetts is located in Northern Middlesex County with a population of 19,655 (July 2019). The Town is approximately 24.6 square Miles, of which 24.4 is land and 0.3 is water. Sudbury is bordered by Wayland to the east, Framingham to the south, Maynard/Marlborough to the west, and Concord to the northeast, Acton to the north and a tip touches the Town of Lincoln. The Town's major economic development area is along Route 20, which traverses through the Town along the southern border. As of this Report writing, the Town relies solely on on-site wastewater disposal systems save for a few developments that have a package Wastewater Treatment Plant that supports the individual parcels. With the exception of a few geographic areas, land use in Sudbury remains primarily residential. Approximately 383 acres in Sudbury are currently zoned commercial or are currently being utilized as a typical commercial use. With the exception of a few acres in other parts of Town, the commercial districts are located in and around the Route 20 corridor.

The Town Assessor's Database shows parcels, with approximately 89 percent in the form of residential. The remainder of land use is small commercial, industrial, tax exempt and state/federal/municipal. Table 1 below delineates the current land uses.

The land use in Sudbury has not changed much over the last two decades, with most data remaining fairly consistent.

Table 1: Breakdown of State Land Use Codes, Land Area and Overall Percentage of Town

Land Use Code	Number of Parcels	Total Acres Town	Percentage of Town Parcels
Residential (developed and undeveloped) and Mixed Use Residential	6,364	8,909	89
Commercial and Mixed Use Commercial (includes commercial condos)	212	372	3
Industrial	22	146	0.30
Open Space/Agricultural	42	648	0.58
Municipal (930)	91	461	1.2
Tax Exempt (900 Series except 930)	349	3,387	5
TOTAL*	**4,712**	**11,943**	**100***

*Some rounding done

Population statistics, as well as build-out projections from a number of sources, including the U.S. Census Bureau Decennial Census (1990 to 2010), the American Community Survey (ACS), as well as the University of Massachusetts Donohue Institute (UMDI) were reviewed. Additional resources include regional planning projections from the Metropolitan Area Planning council (MAPC). All detail continued growth in Sudbury.

One additional resource reviewed, The U.S. Census QuickFacts breaks down Sudbury's statistical population data as of July 1, 2019 as follows:

Total Population July 2018 – 19,627

Total Population April 2010 – 17,675

The average per person household size from the 2010 Census is 2.95. This persons per household was used in determining projected wastewater flows from residential parcels, along with per capita water usage.

Existing environmental conditions in Sudbury were mapped using the most recent GIS layers from MassGIS. These include state listed wetland areas, potable water resource protection areas, surface water resources, Natural Heritage and Endangered Species and Priority Habitat mappings, vernal pools and dedicated conservation resource protection areas. Figures EENF 2 through EENF 17 detail the locations of these resources in relation to the identified Needs Areas. A summary of the environmental impacts from each of the five Needs Areas is included herein.

Historical Resources have also been reviewed and a Project Notification Form (PNF) was filed in September 2019 that contained the specific Needs Areas maps for full review. The MHC completed its review and determined that the Draft Recommended Plan Needs Areas shown on Figure EENF-1 will require future survey to determine and note significant historic or archaeological resources. Refer to Attachment 9 for the all Massachusetts Historical Commission correspondence.

Figures are detailed as follows in this EENF:

EENF 2 through EENF 5 – Needs Areas with Wetlands, Floodplains, Zone I and Zone II

EENF 6 through EENF-9 – Needs Areas and NHESP and Vernal Pools

EENF-10 through EENF_13 –Needs Areas and Historical Resources

EENF 14 through EENF-17 – Needs Areas and AUL and 21E Sites

Wetlands, Floodplains, Zones I & II
Figure EENF-2

Route 20 Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- Wastewater Treatment Plant (WWTP)
- Pump Station (PS)
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Zone 2
- Zone 1
- MassDEP Wetlands
- 100-Year Floodplain
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

N

0 150 300 600 Feet

WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

Figure Exported: 3/11/2021 By: cgriffith Using: \\woodardcurran.net\shared\Projects\0231802.00 Sudbury MA - CWMP Update\wip\GIS\Projects\Sudbury MA - CWMP Update.aprx Layout: Figure X-X - Individual Needs Areas

Wetlands, Floodplains, Zones I & II
Figure EENF-3

Raymond Road South Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Zone 2
- Zone 1
- MassDEP Wetlands
- 100-Year Floodplain
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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Wetlands, Floodplains, Zones I & II
Figure EENF-4

Goodman Hill Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Zone 2
- Zone 1
- MassDEP Wetlands
- 100-Year Floodplain
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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Wetlands, Floodplains, Zones I & II
Figure EENF-5

Raymond Road North Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Zone 2
- Zone 1
- MassDEP Wetlands
- 100-Year Floodplain
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

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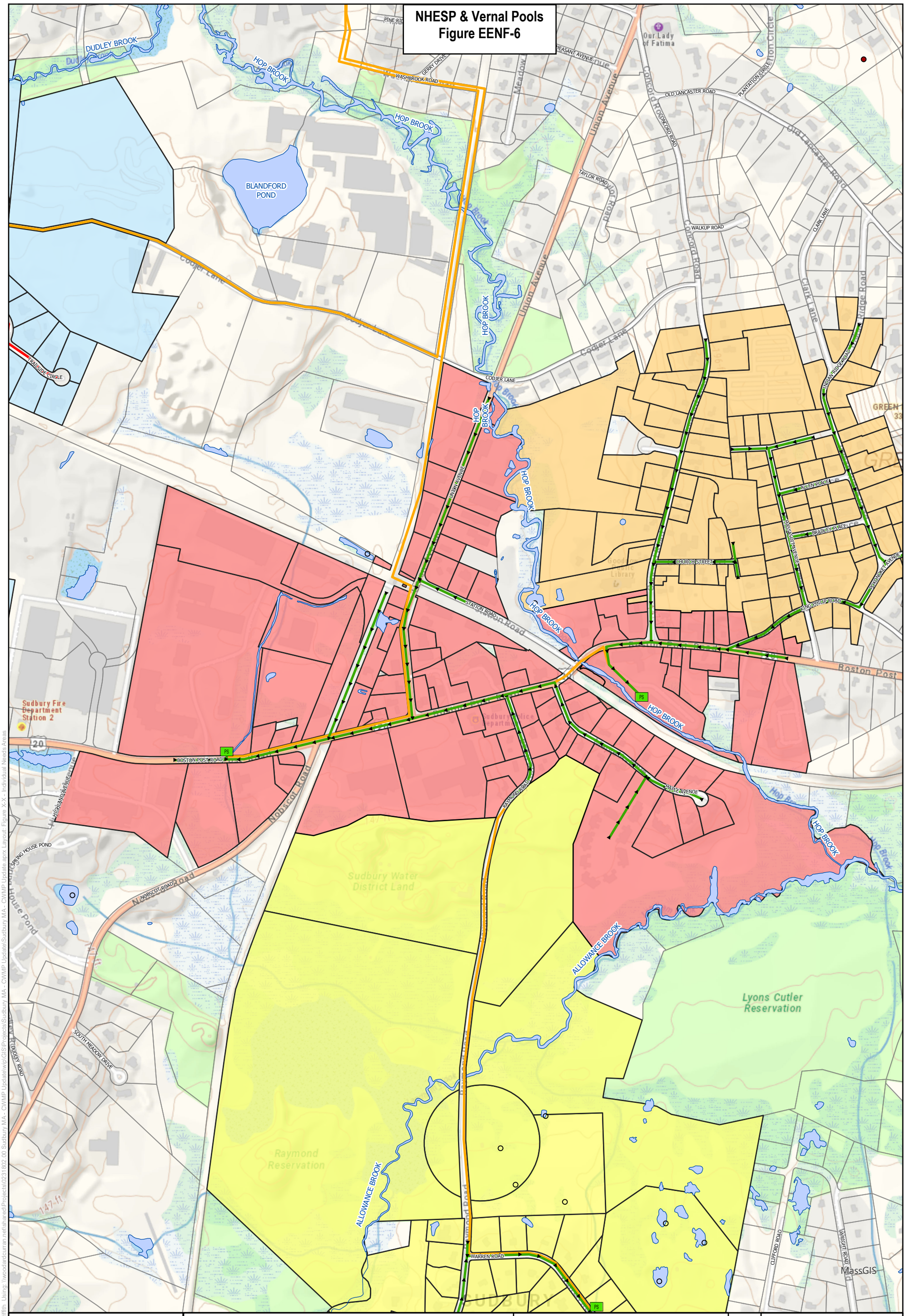
NHESP & Vernal Pools
Figure EENF-6



Route 20 Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Certified Vernal Pools
- Potential Vernal Pools
- Priority Habitats of Rare Species
- Estimated Habitats of Rare Wildlife
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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Project #: 0231802.00
Map Created: March 2021

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Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

NHESP & Vernal Pools
Figure EENF-7

Raymond Road South Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- Wastewater Treatment Plant (WWTP)
- Pump Station (PS)
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Certified Vernal Pools
- Potential Vernal Pools
- Priority Habitats of Rare Species
- Estimated Habitats of Rare Wildlife
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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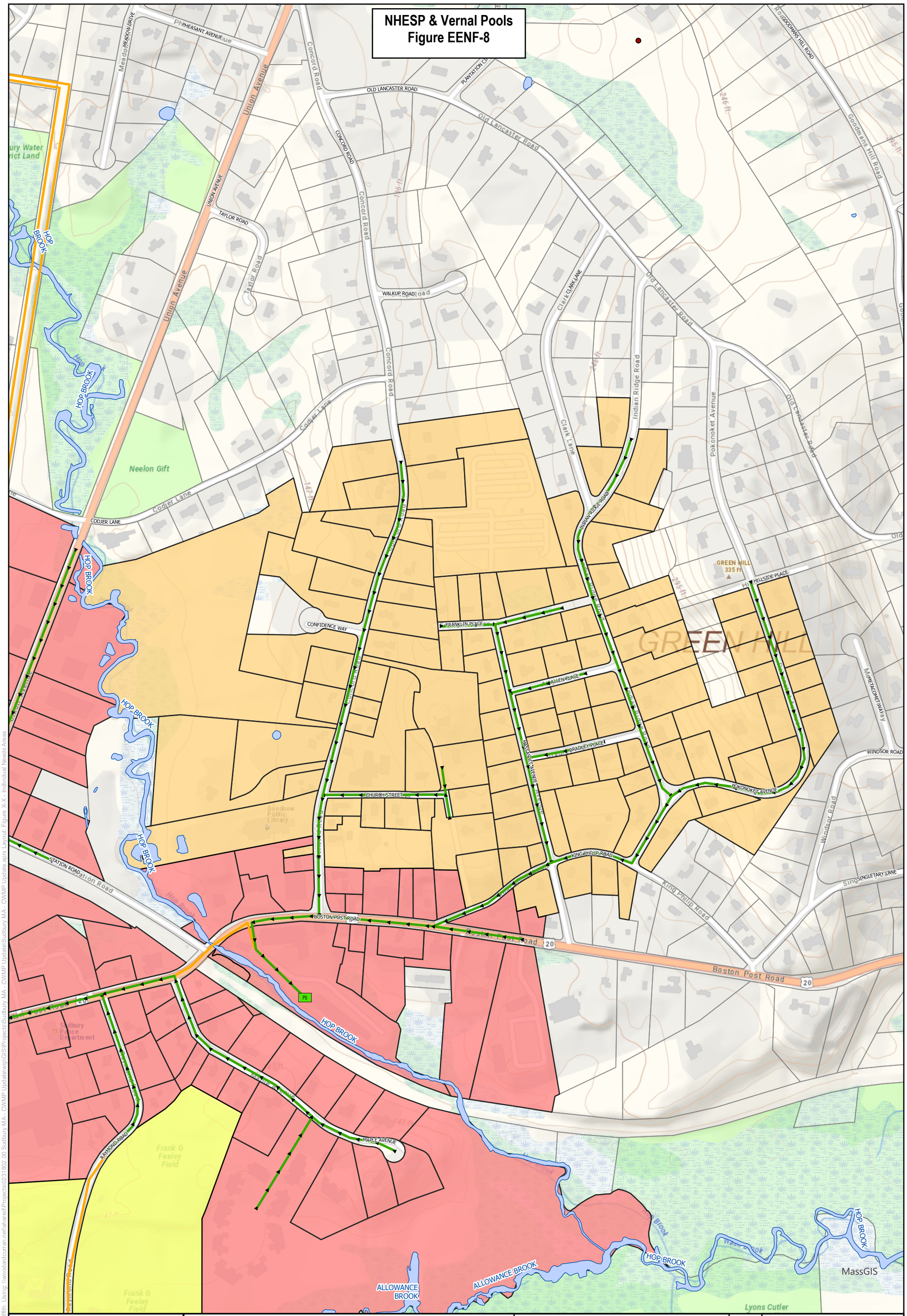
WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

 Data Sources:

NHESP & Vernal Pools
Figure EENF-8



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Goodman Hill Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Certified Vernal Pools
- Potential Vernal Pools
- Priority Habitats of Rare Species
- Estimated Habitats of Rare Wildlife
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

NHESP & Vernal Pools
Figure EENF-9

Raymond Road North Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- Wastewater Treatment Plant
- Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Certified Vernal Pools
- Potential Vernal Pools
- Priority Habitats of Rare Species
- Estimated Habitats of Rare Wildlife
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area

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Project #: 0231802.00
Map Created: March 2021

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Historical Resources
Figure EENF-10

Raymond Road South Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP — Wastewater Treatment Plant
- PS — Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Inventoried & Nationally Registered Historic Sites
- George Pitts Tavern Historic District
- King Philip Historic District
- Old Sudbury Historic District
- Wayside Inn Historic District #1
- Wayside Inn Historic District #2
- Goodman Hill Project Area
- Raymond Road North Project Area
- Raymond Road South Project Area
- Route 20 Project Area
- Route 20 East Project Area

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021

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Historical Resources
Figure EENF-11

Route 20
Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP — Wastewater Treatment Plant
- PS — Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Inventoried & Nationally Registered Historic Sites
- George Pitts Tavern Historic District
- King Philip Historic District
- Old Sudbury Historic District
- Wayside Inn Historic District #1
- Wayside Inn Historic District #2
- Goodman Hill Project Area
- Raymond Road North Project Area
- Raymond Road South Project Area
- Route 20 Project Area
- Route 20 East Project Area

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021

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Historical Resources
Figure EENF-12

Goodman Hill Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP — Wastewater Treatment Plant
- PS — Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Inventoried & Nationally Registered Historic Sites
- George Pitts Tavern Historic District
- King Philip Historic District
- Old Sudbury Historic District
- Wayside Inn Historic District #1
- Wayside Inn Historic District #2
- Goodman Hill Project Area
- Raymond Road North Project Area
- Raymond Road South Project Area
- Route 20 Project Area
- Route 20 East Project Area

0 100 200 400 Feet

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021

Historical Resources
Figure EENF-13

Raymond Road North Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Inventoried & Nationally Registered Historic Sites
- George Pitts Tavern Historic District
- King Philip Historic District
- Old Sudbury Historic District
- Wayside Inn Historic District #1
- Wayside Inn Historic District #2
- Goodman Hill Project Area
- Raymond Road North Project Area
- Raymond Road South Project Area
- Route 20 Project Area
- Route 20 East Project Area

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Project #: 0231802.00
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AUL and 21 E Sites
Figure EENF-14

Raymond Road South Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- Wastewater Treatment Plant (WWTP)
- Pump Station (PS)
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area
- AUL Sites
- 21E Sites
  - Tier I
  - Tier II

0 150 300 600 Feet

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

AUL and 21 E Sites
Figure EENF-15

Route 20
Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area
- AUL Sites
- 21E Sites
  - Tier I
  - Tier II

0 150 300 600 Feet

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

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AUL and 21 E Sites
Figure EENF-16

Goodman Hill Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- WWTP Wastewater Treatment Plant
- PS Pump Station
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area
- AUL Sites
- 21E Sites
  - Tier I
  - Tier II

0 100 200 400 Feet

N

WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

AUL and 21 E Sites
Figure EENF-17

Raymond Road North Needs Area

CWMP Update
Town of Sudbury, MA

Legend

- Groundwater Discharge
- Wastewater Treatment Plant (WWTP)
- Pump Station (PS)
- Gravity Sewer
- Low Pressure Sewer
- Force Main
- Goodman Hill Needs Area
- Raymond Road North Needs Area
- Raymond Road South Needs Area
- Route 20 Needs Area
- Route 20 East Needs Area
- AUL Sites
- 21E Sites
  - Tier I
  - Tier II

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WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

Figure Exported: 3/12/2021 By: cgriffith Using: \\woodardcurran.net\shared\Projects\0231802.00 Sudbury MA - CWMP Update\wip\GIS\Projects\Sudbury MA - CWMP Update\Sudbury MA - CWMP Update.aprx Layout: Figure X-X - Individual Needs Areas

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PROJECT DESCRIPTION AND ALTERNATIVES ANALYSIS

Sudbury has a number of geographic areas that cannot sustain long-term with on-site wastewater systems. This is due to a number of reasons, mainly the severity of the physical characteristics of soil and groundwater conditions. Add small lot sizes, environmental constraints and economic development reasons-these all add to the constraints of properly operating and maintaining on-site wastewater systems. The Town investigated a myriad of alternatives that are briefly summarized in the paragraphs below:

- Continued Use of On-Site Wastewater Disposal Systems (include Innovative/Alternative Systems)
    - On-Site Wastewater systems were eliminated due to the physical constraints of the land including severe soil and groundwater conditions, as well as small lot sizes. This Phase 1 updated data on these constraints, as well as the continued threat to degrade the Town's major drinking water aquifers-Raymond Road and Hop Brook to confirm removal of on-site wastewater disposal systems in the five Needs Areas.
- Neighborhood Septic Tanks/Leach Fields
    - Severe soils and groundwater conditions prevalent throughout the identified five Needs Areas, as well as the fact that land area to support a neighborhood system or system(s) is unavailable. In addition, the Needs Areas are located in and around the Town's major drinking water aquifers and any on-site wastewater disposal will present potential threat to these resources. These make this alternative not an option.
- Regional Sewering Alternative
    - Several regional solutions were considered for treatment and disposal of Sudbury's wastewater. As the Needs Areas with high priorities are located more to the south of Sudbury, on potential connections to Framingham, Wayland, and Marlborough were considered. A connection to another community would require an Inter-Municipal Agreement (IMA) to define the connection(capacity purchase) and ongoing operational cost structure. Typically both communities benefit with such an agreement because the cost burden of various utility assets and fixed costs are shared. Negotiating an inter-municipal connection is typically on the order of a few years from beginning to end and requires active participation at the leadership of both communities. Political challenges can be a hurdle to establishing such a connection. Discussions with Framingham and Marlborough about regionalizing with Sudbury were turned down based on:
        - Complexity of the legislative approval process
        - Up-front connection costs of the I/I mitigation
        - The need to purchase water for the sewer district properties (or Inter-basin Transfer)
        - Uncertainty of future capital improvements to the complex Framingham/MWRA transport network
        - Overall capacity and permit limits
- Low Pressure Sewers and Vacuum Sewers
    - There may be a few geographic areas suited to the Low-Pressure Sewer Alternative that the Town determined as a solid wastewater alternative and will further review during preliminary design and after survey has been completed. The majority of the Needs Areas are well suited to flow by gravity and thus technically and fiscally this is the most feasible alternative.
    - Areas with rolling topography and ledge make use of the Vacuum Sewer Alternative more technically feasible and these are not widespread enough in Sudbury to confirm the use of these systems.
- Conventional Gravity Sewers
    - The physical site conditions, long-term sustainability and life cycle of the gravity sewer makes this alternative the most feasible. The gravity system has a proven track record for performance, costs and maintenance with an overall 50-year service life or greater. With all options on the table, the gravity sewer system continues to provide the Town with the options it needs to meet all requirements and provides the necessary tools to preserve and protect the groundwater resources found throughout the proposed Needs Areas, while providing protection to the Town's drinking water supplies. Sudbury's Department of Public Works (DPW) Director maintains a Grade 6C Wastewater License and it makes sense that a municipal sewer system can be under this jurisdiction. The assessment determined that after thoughtful review of each of the above options, gravity sewers were the recommended plan.

Thus, the alternatives analysis completed for Sudbury determined that on-site wastewater disposal systems are not an option for the Needs Areas identified on Figure EENF-1 with the gravity sewers the final recommendation.

SUMMARY PROJECT DESCRIPTION AND ALTERNATIVES ANALYSIS

The CWMP recommends sewering the following detailed Needs Areas, with collection, transmission, treatment and discharge through a proposed new Membrane Biological Reactor (MBR) Wastewater Treatment Facility (WWTF) to be designed and built at the current DPW Site on Old Lancaster Road with groundwater discharge of highly treated effluent under a Massachusetts Department of Environmental Protection Groundwater Discharge Permit under existing ballfields at the Curtis Middle School on Pratts Mill Road. A future Preliminary Design phase will look at each Needs Area on an individual basis as the Town moves forward with implementation throughout the 20-year planning period, starting with the top priority, Hybrid Needs Area and following with subsequent Needs Areas. After comprehensive review of all data, the Study Areas were noted as either long-term sustainable with on-site wastewater systems or recommended as Needs Areas with the intention of providing municipal sewer. The priority Needs Areas are as follows:

- Hybrid Needs Area – Needs Area 1
- Goodman Hill Needs Area – Needs Area 2
- Raymond Road North Needs Area– Needs Area 3
- Route 20 East Needs Area – Needs Area 4

The following is a summary of each fully studied Needs Area

HYBRID NEEDS AREA

This Needs Area is located along Route 20 at the intersection with Union Avenue and Raymond Road South-a combination of several Study Areas. The CWMP shows this Needs Area as the top priority for sewering given its location within the Zone II for the Raymond Road Aquifer and containing both residential and commercial properties. It is important to note, that the Route 20 Business District, which is the major commercially zoned area in Sudbury, is operating on septic systems, (with the exception of a couple of small package treatment plants), which pose imminent threats to the Raymond Road Aquifer and limits the economic development potential in Town. The Title 5 failure rate in this area alone is 23 percent. The major land use is non-residential, which could relate to a higher wastewater load. In addition, many of the commercial uses are located within business condos, which are much more densely developed than in typical uses, thus more heavily discharging areas.

Review of all data confirmed that the top priority was a combination of properties along the Route 20/Union Avenue area and Raymond Road South Study Areas. This area directly abuts the Raymond Road Aquifer-the Town's major drinking water wells-and includes both residential and non-residential properties all currently on on-site wastewater systems. The area of this Hybrid Needs Area, as shown on Figure ES-1, details the areas limits with portions from two larger Study Areas. The Hybrid Needs Area encompasses the Zone II for the Raymond Road Aquifer. Removing the on-site wastewater systems from within this sensitive area will preserve and protect the drinking water supplies from potential threat of degradation of wastewater and the pollutants it contains. In support of this, a review of groundwater and soil conditions was completed utilizing the National Resources Conservation Service (NRCS) soils and groundwater maps, as well as any data found during the Board of Health file review, such as percolation rates and soils and groundwater data on any existing plans and are shown on the several of the attached figures and clearly detail fast percing soils, groundwater, and environmental resources throughout the Hybrid Needs Area.

The physical constraints of the land area, lot sizes, soil, and groundwater conditions, in conjunction with Board of Health discussions and file review, determine this Hybrid Needs Area as the Town's top priority for removal of on-site wastewater systems.

Details for Raymond Road North and South Needs Areas (Needs 1 and 3)

This Study Area encompasses two geographic areas; Raymond Road North and Raymond Road South and is divided through the middle by the Route 20 Study Area (see detail below as part of Hybrid Needs Area). It includes the Raymond Road South where the Town's major potable wells and Raymond Road Aquifer area lies, as well as the portion to the north, which is within the Zone II of the Raymond Road wells. The southern portion is where the Zone I for the wells are located - yellow color on Figure EENF-1. This Study Area encompasses approximately 895 acres in total land area, with a total of 519 parcels. Of the total parcels, the land use is 90 percent residential with the remaining 10 percent a mixture of municipal, agricultural and a mix of other tax exempt parcels. Of the total number of parcels, over 87 percent is developed, with 13 percent undeveloped with a mix of developable, undevelopable residential, undeveloped land devoted to agriculture and a number of tax exempt parcels.

The average lot size in this Study Area out of 406 developed parcels is 1.1 acres. All condominium developments were excluded from the calculation due to the density of development on common land area.

This Study Area's soils and groundwater conditions were reviewed using the Web Soil Survey at the NRCS. Raymond Road North Study Area maps the majority soil association as Windsor Loams soils, which are well drained with no flooding/ponding and groundwater up to 80 inches below the surface and Udorthent Urban Land that are developed lands with groundwater shown up to 80 inches below surface. There are small areas of Freetown Mucks that run along Dudley Brook. Soil conditions appear suitable for on-site wastewater systems in limited geographic areas. Other geographic areas, together with environmental resources in the area are determined not long-term sustainable with on-site wastewater systems.

Raymond Road South Study Area are a mixture of Windsor Loams, which are well drained with no flooding/ponding and groundwater up to 80 inches below the surface. A significant portion of the land area is mapped as Deerfield Loam and is non-developed land masses in the Zone I and II for the Raymond Road Aquifer. The majority of this area is determined as not long-term sustainable with on-site wastewater systems.

Board of Health records detail severe soil and groundwater conditions throughout the Study Areas. There are areas of this Study Area that are of concern due to Title 5 failures, ages of existing systems and location to the Raymond Road wells. Soils in the general area support fast percolations, which remain a threat to the Raymond Road Aquifer. Records detail these, as well as major on-site system replacements, as well as many properties still maintaining original systems. Records indicated ages of systems dating back to the 1950s, far before Title 5 was enacted. On-site system records also showed tight tanks, I/As and small package WWTF located throughout the Study Area adjacent to the Raymond Road Aquifer. There are some areas within this Study Area that records show are long-term sustainable with on-site wastewater systems and are located further from the wells, thus this Study Areas has been further delineated to recommend both off-site and on-site wastewater as long-term recommendations as a Hybrid Needs Area. Figure EENF-18 details the geographic areas recommended for off site wastewater, as well as that that is recommended for a Septic Management Plan (SMP). With the proposed phasing of the sewer implementation, if any of those areas under a SMP change conditions, additional sewer phases can be added. Based on records in the files, the overall Title 5 Failure rate in this overall Study Area is approximately 23 percent.

Environmental resource areas were mapped in Figures EENF-2 through EENF-17, and show certified vernal pools, wetland and flood plain areas associated with the Sudbury River in the southern portion and Hop Brook in the northern section of the Study Area. The major environmental resource in this area are the Town's major drinking water wells in the Raymond Road Aquifer.

Details for Route 20 Needs Areas

This Study Area is located along the southern border of Sudbury, north of the Town of Framingham and east of the City of Marlborough. It contains the largest number of non-residential parcels in Town and has been the subject area of sewer discussion for decades. It is shown as the dark pink color on Figure EENF-1. This Study Area includes a total of 370 parcels. Of the total parcels, the land use is 50 percent residential with the remaining 50 percent a mixture of small commercial, industrial, US Government, municipal and a mix of other tax exempt parcels. Of the total number of parcels, over 90 percent is developed, with 10 percent undeveloped with a mix of developable, undeveloped land devoted to residential, commercial, industrial, some agricultural and a number of tax exempt parcels.

The average lot size in this Study Area out of 293 developed parcels is 1.5 acres. This includes a mixture of residential and non-residential, with multiple commercial parcels sharing land area in malls, office buildings, etc. A closer look at density of systems detailed that within the commercial zoning, there are a number of individual businesses along the Route 20 corridor set up on common/shared land areas-similar to business condominiums. Thus, the density of systems is greater than those commercial entities located on a separate parcel and not shared space. All condominium developments were excluded from the calculation due to the density of development on common land area. More important than trying to figure an average lot size, is looking at the non-residential uses located here and the fact that many are operating on shared parcels, thus the density of systems supports a higher density wastewater currently going into the ground from on-site wastewater systems.

This Study Area's soils and groundwater conditions were reviewed using the Web Soil Survey at the NRCS. The major soil associations in this Study Area are Windsor Loams and Udorthents Urban Lands, which are developed lands with groundwater up to 80 inches below surface. There are also some Hollis Rock Outcrops shown on the mapping, which are not suited for on-site wastewater systems. The soils may be suited for limited on-site wastewater systems, but considering the commercial zoning and location to the Raymond Road Aquifer, may be better suited for long-term sustainability and environmental preservation and protection with off-site wastewater systems.

Board of Health records detail this Study Area as having some areas long-term sustainable with on-site wastewater systems and other geographic locations closer to the Raymond Road Aquifer as not long-term sustainable with on-site wastewater systems-a Hybrid Needs Area. Records detailed areas where on-site systems are conducive to long-term sustainability on the western side of the Study Area and the central portion that is closets to the Raymond Road wells as not long-term sustainable with on-site wastewater systems. With the sewer implementation planned in phases, the priority Hybrid Needs Area will be addressed first, with the remainder of the area recommended for maintenance under a Septic Management Plan (SMP) with on-site wastewater systems as the long-term recommendation.

Environmental resource areas were mapped in Figures EENF-2 through EENF-17 and show sections of this Study Area within the Zone II for the Raymond Road wells. This is a major environmental concern as the area is zoned for commercial use and many on-site systems currently sit in the Zone II resource area.

These Needs Areas were combined to form the "Hybrid Needs Area" and are shown on Figure EENF-1.

Study Areas
Figure EENF 18 -Study Areas

ACTON
CONCORD
MAYNARD
STOW
HUDSON
MARLBOROUGH
SOUTHBOROUGH
FRAMINGHAM
WAYLAND
LINCOLN

NORTH SUDBURY
PINE LAKES
PRATTS MILL ROAD
PEAKHAM ROAD
DUTTON RD/ WAYSIDE INN
NORTH RAYMOND ROAD
GOODMAN HILL
ROUTE 20
ROUTE 20 EAST
SOUTH RAYMOND ROAD
LANDHAM ROAD

ASSABET RIVER NATIONAL WILDLIFE REFUGE
GREAT MEADOWS NATIONAL WILDLIFE REFUGE
LINCOLN-SUDBURY REGIONAL HIGH SCHOOL
NIXON SCHOOL
HAYNES SCHOOL
CURTIS MIDDLE SCHOOL
LORING SCHOOL
NORTH FIRE STATION
CENTER FIRE STATION
SOUTH FIRE STATION
HIGHWAY DEPT/DPW
WATER DISTRICT OFFICE
GOODNOW LIBRARY
LORING PARSONAGE
HOSMER HOUSE
FLYNN BUILDING
CTR & ATKINSON POOL
THE WAYSIDE INN (HISTORIC SITE)

CRANBERRY CIRCLE, MAYNARD FARM ROAD, POWDER MILL ROAD, MARY CATHERINE LANE, POWERS ROAD, CEDAR CREEK ROAD, WILLARD GRANT ROAD, DAWN ROAD, NORTHWOOD DRIVE, GREYSTONE LANE, CANTICLEER ROAD, LONGFELLOW ROAD, FORD ROAD, PUFFER LANE, NORTH ROAD, OLD COACH ROAD, MOSSMAN ROAD, BELCHER DRIVE, WITHERELL DRIVE, FRYHILL ROAD, RUDDOCK ROAD, THUNDER ROAD, PANTRY ROAD, CONCORD ROAD, MAYNARD ROAD, CUDWORTH LANE, WIDOW RITES LANE, WILLIS ROAD, WOODMERE DRIVE, RIDGE HILL ROAD, MARLBORO ROAD, PHILIPS ROAD, FAIRBANK ROAD, CAMP BROWN LANE, MARNESS LANE, BUTLER ROAD, WILLIS LAKE DRIVE, HUDSON ROAD, MORSE ROAD, ROBIN ROAD, WEIR HILL ROAD, LINCOLN ROAD, LINCOLN LANE, WATER ROW, NEWBRIDGE ROAD, PLYMPTON ROAD, FIRECUT LANE, ATKINSON LANE, GOODNOW ROAD, CHURCHILL STREET, NORMANDY DRIVE, SHONDY PARK, MOORE ROAD, BARTON DRIVE, SURREY LANE, PINE STREET, WILLOW ROAD, PRATT'S MILL ROAD, TANBARK ROAD, EMLOCK ROAD, MEADOWBROOK CIRCLE, HORSE POND ROAD, PEAKHAM ROAD, COLONIAL ROAD, OLD LANCASTER ROAD, OLD SUDBURY ROAD, AUSTIN ROAD, DUTTON ROAD, OLD GARRISON ROAD, ROBERT BEST ROAD, JARMAN ROAD, GODJER LANE, UNION AVENUE, POKONOKET AVENUE, WARDRIDGE ROAD, GREENHILL ROAD, GOODMANS HILL ROAD, OLD COUNTY ROAD, KING PHILIP ROAD, JACK PINE DRIVE, PRIDES CROSSING ROAD, FRENCH ROAD, BENT ROAD, HICKORY STONE ROAD, ROBBINS ROAD, WASHINGTON DRIVE, POST ROAD, DUDLEY ROAD, NOBSCOT ROAD, WAYSIDE INN ROAD, BRIMSTONE LANE, BIGELOW DRIVE, OLD FRAMINGHAM ROAD, LANDHAM ROAD, CUTLER FARM ROAD, VICTORIA ROAD, SHADOW OAK DRIVE, STOCK FARM ROAD, WAGONWHEEL ROAD, BROOKDALE ROAD, AMES ROAD, EDDY STREET, RAYMOND ROAD, CIDER MILL ROAD, HOPESTALL ROAD, WOODSIDE ROAD, BROWN ROAD, CLIFFORD ROAD, GREEN ROAD, PANTRY ROAD

Study Areas
CWMP Update
Town of Sudbury, MA

Legend
- Surrounding Towns
- Town Boundaries

Study Areas
- Dutton Rd/Wayside Inn
- Goodman Hill
- Landham Road
- North Sudbury
- Peakham Road
- Pine Lakes
- Pratts Mill Road
- Raymond Road
- Route 20
- Route 20 East

N

0 0.15 0.3 0.6 Miles

WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2020

GOODMAN HILL NEEDS AREA

This Needs Area is located on the eastern border of Sudbury and directly abuts the Town of Wayland to the east. It includes the area just north of Boston Post Road (Route 20) and the area south of the North Sudbury Study Area-gold color on Figure EENF-1. This Study Area encompasses approximately 742 acres in total land area, with a total of 485 parcels. Of the total parcels, the land use is 87 percent residential with the remaining 13 percent a mixture of small commercial, US Government, municipal and a mix of other tax exempt parcels. Of the total number of parcels, over 71 percent is developed, with 29 percent undeveloped with a mix of developable, undeveloped land devoted to conservation/recreation/open and a number of tax exempt parcels.

The average lot size in this Study Area out of 436 developed parcels is 1.2 acres. There are no condominium developments in this Study Area.

This Study Area's soils and groundwater conditions were reviewed using the Web Soil Survey at the NRCS. This Study Area showed a significant amount of Hollis Rock / Charlton Hollis Rock Outcrops, which would be indicative of the Goodman Hill area. There were some Saco Silty Mucks found along the Landham Brook area, which would be expected abutting the water body. The mapping also showed some Windsor Sandy Loams, Deerfield Loams and Merrimac Urban Land Complex. The Deerfield Loams tend to have high groundwater conditions, with water appearing at 15-37 inches below surface, but this area accounted for only 11 percent of the total land area. The Merrimac Urban Land Complex was up to 34 percent of the total Study Area-showed a significant amount of the developed land area here. This soil is conducive to on-site wastewater conditions with groundwater greater than 80 inches below surface with no flooding/ponding conditions. There are a mixture of soil conditions throughout this Study Area. Some areas will have no constraints in siting and operating on-site wastewater systems, but there are areas that may not be long-term sustainable with on-site wastewater due to the soil and groundwater conditions. Both the Board of Health Director, as well as records on file, confirmed this.

Board of Health records detail a mixture of areas suitable for long-term sustainability, with the western portion of this Study Area detailing on-site issues. There was a mixture of geographic areas where records detail on-site wastewater systems are long-term sustainable, as well as a limited areas where there are chronic issues with both severe soils and groundwater conditions. This Study Area was delineated further with both a western portion of the geographic area deemed a Needs Area where conditions for on-site wastewater systems are not long-term sustainable, as well as a delineation where the area outside of the western portion is recommended for maintenance under a Septic Management Plan (SMP) with on-site wastewater systems as the long-term recommendation. Refer to Figure EENF-18 for this delineation.

Environmental resource areas were mapped in Figures EENF-2 through EENF-17, and show a certified vernal pool and areas of mapped Natural Heritage and Endangered Species.

ROUTE 20 EAST – DEFERRED NEEDS AREA FOR FUTURE CONSIDERATION (Not part of this CWMP)

This Study Area is located along the southern border of Sudbury along Route 20 closest to the Wayland Town line. It includes a mix use of land uses from residential, commercial, industrial, municipal and tax exempt. This Study Area is reflected in the blue color on Figure EENF-1. This Study Area with a total of 171 parcels. Of the total parcels, the land use is 63 percent residential with the remaining 37 percent a mixture of mixed use, small commercial, industrial, a nursing home, municipal and other tax exempt parcels. There are a number of office buildings, as well as condominiums located within this Study Area. Of the total number of parcels, over 87 percent is developed, with 13 percent undeveloped with a mix of developable and undevelopable parcels in commercial, industrial, and municipal land uses.

The average lot size in this Study Area out of 80 developed parcels (mix of residential and non-residential along Rote 20 to the Wayland Town line) is approximately 1.64 acres. All condominium developments were excluded from the calculation due to the density of development on common land area.

This Study Area's soils and groundwater conditions were reviewed using the Web Soil Survey at the NRCS. The majority soils are Udorthents Urban Lands with a mixture of Montauk Fina Sandy Loams and Canton Loams. The Udorthents, which are developed lands have groundwater up to 80 inches below surface. The soils may be suited for limited on-site wastewater systems, but considering the commercial zoning, may be better suited for long-term sustainability and environmental preservation and protection with off-site wastewater systems.

Board of Health records detailed ages of systems dating back to the 1950s- far before Title 5 was enacted. Systems throughout the Study Area include tight tanks, I/As and WWTF. While not an immediate priority, this Study Area is recommended for off-site wastewater management. Until this area is sewered, this Study Area is recommended for maintenance under a Septic Management Plan (SMP) with on-site wastewater systems.

Environmental resource areas were reviewed and show some small areas of wetlands and flood plains associated with the Sudbury River and a small section in the southeast corner mapped with resources from the Natural Heritage and Endangered Species Program.

While initially determined to be a Needs Area, this geographical area will remain with on-site systems until a future date and conditions determine an off-site solution. Sudbury has engaged discussion with the Town of Wayland to regionalize in this area, but that effort will not be included as part of the CWMP, but rather completed as a "Notice of Project Change".

DRAFT OF ENVIRONMENTAL IMPACT REPORT AND PROPOSED MITITGATION MEASURES

PRELIMINARY ENVIRONMENTAL REVIEW FOR EACH NEEDS AREA

Note, the completion of this section will be done once the Secretary of Environmental Affairs issues the MEPA Certificate on this EENF request for a Single EIR (SEIR). The following information prefaces this SEIR with data on hand to describe the potential environmental impact and proposed mitigation measures.

When determining the recommended plan for each Needs Area, it is important to take into consideration, identify, and mitigate any environmental impacts. Massachusetts's Executive Order 385 was signed into law by then Governor William F. Weld and states in general that the citizens of Massachusetts have a constitutional "right to clean air and water and the natural, scenic, historic, and aesthetic qualities of their environment." It also states that the "conflict between environmental quality and economic activity ultimately puts at risk environmental resources as well as economic opportunity; thus threatening, for example, public water supplies, clean air, swimmable and fishable waters, flood protection, open space, agricultural lands, historic sites, and community character; but also affecting the timely provision of needed infrastructure, financial assistance and regulatory approvals for appropriately sited and designed development." With the provisions of Executive Order 385 in effect, the conflicts of the environment should and can be avoided to a great extent through proactive and coordinated planning oriented towards both resource protection and sustainable economic activity, known as growth management, or basically sustainable development. So, Executive Order 385 is the State's direction for all planning, such as this CWMP Update, to account for sustainable development in the crafting of this Draft Recommended Plan. While this Report has not officially completed a formal EIR filing with MEPA, the evaluation was completed in order to supplement an Extended Environmental Notification Form (EENF) and distinguish any areas of environmental impact and provide mitigation measures for moving forward.

Each Needs Area was mapped with the most up to date MassGIS environmental layers and are included as Figures EENF-2 through EENF-17.

This following section presents potential environmental impacts and associated mitigation measures of the Recommended Plan in each of the identified needs Areas, in accordance with Executive Order 385. Figures EENF-2 through EENF-17 delineates each individual Needs Area with any environmental constraints that are discussed in detail throughout this section.

Direct Impacts

Historical, Archaeological, Cultural, Conservation and Recreation

There are a significant number of historical/archaeological resources inventoried in Sudbury. A Project Notification Form (PNF) was filed with the Massachusetts Historical Commission in April 2021 to identify areas within Sudbury of historical and/or archaeological significance in relation to the identified Needs Areas. The Massachusetts Historical Commission PNF response received on April 22, 2021, concluded that due to the significant number of sensitive historical and archaeological resources located throughout the Town, a Reconnaissance Survey, conducted under 950 CMR 70, will need to be conducted ahead of any proposed construction. As this CWMP provides a conceptual, planning level effort, we would propose to coordinate with the Massachusetts Historical Commission during Preliminary Design when more detailed information on where infrastructure, as well as staging and all construction related activities would be planned, and use this more defined information to support a Survey. As part of preliminary design, a full survey would be conducted, which will afford a more detailed plan of the area and surrounding resources, in relation to proposed construction. While we reviewed existing resource information, including those noted in the paragraphs below, Sudbury's historic resources are plentiful and well noted. The overall goal of the CWMP Recommended Plan contained herein is to meet all technical and environmental goals, while also striving to eliminate any potential impact to historical/archaeological resources. We are confident we can meet these goals with coordination with the Sudbury Historical Commission, Sudbury Historical District Commission and the Massachusetts Historical Commission. The complete PNF can be found in Attachment 9.

A comprehensive review of the "Inventory of Historic Buildings, Structures and Places 200726" contains over 458 historic, pre-1940 buildings and structures, with 403 of these being houses. The National Register of Historic Places inventories buildings, places, as well as a number of Milestone Markers located in Sudbury. There are four identified Historic Districts located within Sudbury:

1. King Phillip Historic District

2. George Pitts Tavern Historic District
3. Sudbury Centre Historic District
4. Wayside Inn Historic Districts

Only two of the Historic Districts are included in the "National Register of Historic Places":

1. Sudbury Centre Historic District*
2. Wayside Inn Historic Districts*

None of the CWMP Needs Areas are located within either of these Historic Districts.

The CWMP recommended plan has sewer infrastructure proposed within two of the four Historic Districts:

1. King Philip Historic District – This area was the site of the Indian Wars of 1676 where Captain Samuel Wadsworth and his troop were killed in an ambush and later buried in the Wadsworth Cemetery. The Wadsworth Monument was erected in 1852 in memory of the gallant men who fought the Battle of Green Hill and appears on the Town Seal of Sudbury. Also in the District is the Goodnow Library, included in the National Register of Historic Places, as well as homes of 17th and 18th century construction, including the Goulding House, Sudbury's oldest existing home, 1720. In the area of Mill Village is the site of the west-side Grist Mill, erected in 1659.

2. George Pitts Tavern Historic District – In 1721 at the George Pitts Tavern (located on Maple Avenue) a meeting was held to petition the Colonial Legislature for permission to erect a meeting house west of the Sudbury River, thereby separating the towns of Sudbury and Wayland. The outcome of this historic gathering effectively created the Town of Sudbury. According to maps of the 1800s, even the Old Boston Post Road passed along a portion of this street. Today, the architecture and structure of Maple Avenue showcases Sudbury's evolution throughout time. Many of the homes standing today were built between 1882 and 1920.

The CWMP recommended plan in response to historical/archaeological resources in Town is as follows with no expected impacts due to sewer implementation:

Sewer Piping and Pump Stations

The CWMP overall recommended Plan, as shown in PNF Figure 1 in Attachment 9, details the proposed areas of sewer infrastructure. All sewer pipe is proposed within existing pre-disturbed, roadway,- areas. There are five proposed pump stations included in the overall plan. The pump stations' locations as detailed below, were all checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places" to ensure none were located on an historic resource area. All pump proposed stations are located outside of historic resource areas and are shown on PNF Figures 4 through 8. Proposed pump station locations are as follows:

1. **Route 20 Pump Station:** MBL K07-0018, 490 Boston Post Road
2. **Raymond Road South Pump Station:** MBL M08-0126, 82 Warren Road
3. **Raymond Road North Pump Station:** MBL J06-0500, Tall Pine Drive (no number)
4. **Route 20 East Pump Station:** MBL K11-0052, 26 Goodmans Hill Road
5. **Goodman Hill / Route 20 Sub-Area B Pump Station**: MBL K08-0037, 378 Boston Post Road

All historic locations from the Inventory are shown on PNF Figures 4-8, which identifies all historic properties, building and markers in Town and clearly show all proposed pump stations outside of any inventoried properties.

Wastewater Treatment Facility

The recommended Municipal Wastewater system proposes to design and construct a Wastewater Treatment Facility (WWTF) at the existing Department of Public Works at 275 Old Lancaster Road. This location was checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places", to ensure the parcel was not included in an historic resource area. The facility will be housed with the existing Department of Public Works that also includes additional land use departments including Highway Department and Health Department. This area is also outside of any of the four historic districts noted in Town and at a pre-disturbed location. See PNF Figure 2 in Attachment 9.

Groundwater Discharge Beds

The groundwater discharge beds are proposed to be located subsurface to the ball fields at the Curtis Middle School at 22 Pratts Mill Road. This location was checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places", to ensure the parcel was not included in an historic resource area. This area is pre-disturbed, cleared land currently being utilized as ball fields. This area is also outside of any of the four historic districts noted in Town and at a pre-disturbed location. See PNF Figure 3 in Attachment 9.

Review of all data in the CWMP confirmed that the top priorities are a combination of properties along the Route 20/Union Avenue area and Raymond Road South Study Areas. These four Needs Areas directly abut the Raymond Road Aquifer-the Town's major drinking water wells- and includes both residential and non-residential properties all currently on on-site wastewater systems. The Needs Areas encompass the Zone II for the Raymond Road Aquifer.

The following summarizes the Needs Areas within noted historic districts:

- The George Pitts Tavern Historic District is along Maple Avenue with three parcels included along Route 20. This District is within the Route 20 Needs Area as shown on PNF Figures 4 and 7. All proposed sewer infrastructure in the Historic District is within pre-disturbed, existing roadway / right of way areas.
- The King Phillip Historic District is along portions of the Route 20 Needs Area and the Goodman Hill Needs Area. Refer to PNF Figures 4 and 7 for a map of this location. All proposed sewer infrastructure in the Historic District is within pre-disturbed, existing roadway / right of way areas.
- PNF Figure 5 details the Raymond Road North Needs Area. This area is not within a defined Historic District. All proposed sewer infrastructure is within pre-disturbed, existing roadway / right of way areas.
- PNF Figure 6 details the Raymond Road South Needs Area. All proposed sewer infrastructure is within pre-disturbed, existing roadway / right of way areas.
- PNF Figure 8 details the Route 20 East Needs Area. All proposed sewer infrastructure in the Historic District is within pre-disturbed, existing roadway / right of way areas.

It is noted that a positive impact to the myriad of historic buildings and places with the design and construction of Municipal Wastewater infrastructure is that all properties within the Needs Areas limits can be serviced with Municipal sewer and avoid failing septic systems, many of which fail due to high groundwater and require a mounded system. These mounded systems raise the on-site wastewater system above groundwater and create a negative aesthetic to the property. Location could be in the front yard, side yard or back yard with the mound clearly visible. A mounded system many times decreases the overall property values. Parcels located along Union Avenue and Goodman Hill Road detail high groundwater and severe soil conditions for long-term sustainability of on-site systems. Municipal sewer in these areas will offer these historic resources a pleasing alternative to a failed septic that would otherwise require a mounded system and avoid structures that impact the overall aesthetics of these valuable areas.

In addition to positively impacting aesthetics to the historic resources, removing the on-site wastewater systems from within this sensitive area will preserve and protect the drinking water supplies from potential threat of degradation of wastewater and the pollutants it contains. A fifth Needs Area, Route 20 East, Phase 3, is located along the Wayland Town border. This Needs Area is outside of any historic districts. Refer to PNF Figures 4 through 8 for maps of Needs Areas in relation to historic districts.

Septic to sewer will ensure that public health threats from on-site wastewater will be eliminated. Even an on-site that is considered "properly operating and maintained" has the ability to degrade water resources with the documented soil and groundwater conditions affording faster transport of improperly cleansed wastewater to water resources.

With the removal of the on-site wastewater systems in the proposed areas, the threat of continued degradation to the water resources is eliminated. The preservation and protection of the drinking water supplies is the major goal, with the overall environmental benefiting as well. This positive approach also benefits the historical resources.

With the CWMP under the jurisdiction of Town Administration and Public Works, every effort will be expended to work with the local Historical Commission(s) during Preliminary Design to avoid noted historical resources.

Wetlands, Flood Plains, and Agricultural Lands

Implementation of the proposed Recommended Plan may temporarily impact wetlands. No long term or permanent impacts to wetlands are anticipated. There is potential for construction of future sewer pipe and pump stations within the 100-foot buffer zone as the Project follows within pre-disturbed roadways and rights-of-way. The design process will include a survey and wetlands flagging, and the collection systems will be designed in a manner to avoid wetland resource areas and minimize proximity to wetlands where technically feasible.

Any impacts will be temporary and associated with construction of the collection system. Impacts will be mitigated by erosion and sedimentation control during construction and by any other means deemed necessary by the local Conservation Commission and MassDEP through the wetlands permitting process. The Massachusetts Stormwater Management Standards and Handbook will be followed as necessary.

While this Report is based on conceptual design, the Final Design will determine the exact location, and if necessary, design will include watertight appurtenances. All of the identified Needs Areas show potential wetland impacts to be evaluated and mitigated during the preliminary design phase. There may be areas where sewer pipe cross wetland areas/buffers, as well as Flood Plain areas, and in all of these cases it will be specified that water-tight covers are to be used. Per industry standards, precast manholes and other underground structures will be designed to resist flotation during a flooded condition, and pipe materials will be chosen to reduce the possibility of infiltration and inflow. All manholes and sewer lines will be pressure tested for water tightness prior to acceptance to confirm they have been installed in accordance with these requirements.

Resiliency measures will be utilized in any wetland/flood prone areas to mitigate any existing and/or projected issues and design measures taken beforehand to avoid these areas altogether.

None of the Needs Areas contains Agricultural Preservation Restriction lands. The methodology utilized to determine future wastewater flows excludes agricultural land based on the State Land Use Code. There will be no impact to agricultural lands.

All potential vernal pools mapped are located outside of all Needs Areas.

Coordination of design and construction will be conducted with the Sudbury Conservation Commission and local/regional Board of Health, to identify any wetlands or flood plain resource issues and identify any necessary mitigation measures. In addition, the Town will work with the Conservation Commission to determine the need for Requests for Determination of Applicability (RDAs) and Notice of Intents (NOIs) as the recommended plan progresses.

Any areas that could be recommended for Low-Pressure sewer will take the process of design and construction with directional drilling of sewer infrastructure into account with potential to avoid resource impact.

Zones of Contribution of Existing and Proposed Water Supply Sources

The proposed Recommended Plan contained in the CWMP were developed to preserve and protect the Town's wellhead areas from on-site wastewater systems that have been well noted over decades as a threat to these resources. Figures EENF 2 through 5 detail these areas where sewer is planned. While construction is planned within these resource areas, the Recommended Plan to remove on-site wastewater systems is protection from failing and/or improperly operating systems that could potentially pollute the groundwater resources. The following identifies the care and thought that will be used during construction to further protect these valuable resources.

There are no direct negative impacts anticipated to any water protection areas, as the sewer mains are proposed to be installed within existing roadways. Any proposed sewers in wellhead protection areas will be designed in accordance with DEP requirements for such construction and will include stringent measures to guard against exfiltration of untreated wastewater. Furthermore, steps will be taken to minimize indirect environmental impacts during preliminary design and construction.

Removal of onsite wastewater disposal systems will benefit the environment and preserve and protect the drinking water source in these areas. As previously stated, the sewer mains are proposed be constructed within existing roadways, thereby minimizing potential environmental impacts. The installation and connection of residences to a centralized wastewater collection system will

divert wastewater from the public water supply aquifers, having a beneficial impact to the groundwater quality within the wellhead protection area.

In all areas within the Zones of Contributions, design will include provisions from DWS Policy 88-02 (copy of on following page) where MassDEP mandates that all existing and potential water supplies be protected from potential sewer leaks. All manholes will be designed with water-tight covers and sewer shall all be tested according to the above reference Policy. This Policy is effective state-wide and is a solid reference for various water resource areas. This Policy is reprinted in its entirety on the following page. There are no direct, negative impacts to these resources from any other Needs Areas.

Surface and Groundwater Resources

No negative impacts associated with the recommended plan are anticipated to surface and groundwater resources. The proposed Project will serve to remove failing and/or improperly operating septic systems that have the potential to degrade these water resources. The CWMP Recommended Plan for Needs Areas of constructing a Wastewater Treatment Facility, groundwater discharge beds and associated collection system infrastructure will reduce violations of water quality standards in and around the water resources of Town. Most notable are from the "Massachusetts Year 2016 Integrated List of Waters, which documents Hop Brook Segments MA82A-05 and MA82A-06 (these waters include Allowance Brook, Stearns Mill Pond, Carding Mill Pond, sections of the Sudbury River and Wash Brook) with the following impairments:

- Algae
- Non-native aquatic plants and aquatic plants
- Dissolved Oxygen
- E. Coli
- Phosphorus, Total
- Turbidity
- NUTRIENTS* (major contribution from septic systems)

The CWMP plan to remove on-site wastewater systems, as proposed in the CWMP Recommended Plan, will eliminate degradation to the water resources in these areas and serve to reduce the nutrient loading. The elimination of all on-site wastewater systems in these areas will restore water quality and designated uses in the named water bodies by reducing the overall degradation in the resource areas. Removal of septics will also reduce the impacts to sensitive and environmental resources documented in the area, which includes two major Zone II Areas-Hop Brook and Raymond Road. Sewering, removing all on-site wastewater from leaching into all of the water resources, will greatly reduce the E. Coli, as well as a host of pollutants not included in the 303(d) List-most notably personal care products, hosts of pharmaceuticals and in today's world, COVID 19 and its variants. These areas are well documented with fast percolating soils and high groundwater conditions, which afford wastewater from on-site wastewater systems to travel faster and potentially uncleansed, to the water resources contributing to the degradation. Refer to the following figures for mapping of all resources.

Septic to sewer will ensure that public health threats from on-site wastewater will be eliminated. Even an on-site that is considered "properly operating and maintained" has the ability to degrade water resources with the documented soil and groundwater conditions affording faster transport of improperly cleansed wastewater to water resources.

With the removal of the on-site wastewater systems in the proposed Needs Areas, the threat of continued degradation to the water resources is eliminated. The preservation and protection of the drinking water supplies is the major goal, with the overall environmental benefiting as well.

DWS POLICY 88-02
DEPARTMENT OF ENVIRONMENTAL PROTECTION
POLICY FOR REVIEW OF SEWER LINE/WATER SUPPLY PROTECTION

The Department of Environmental Protection seeks to protect existing and potential water supplies from the potentially negative effects of leaking sewer lines through the adoption of a Department policy on this subject. The following restrictions will apply to new sewer construction statewide:

Gravel Packed Wells

- Within the 400 foot radius protective distance around gravel packed wells, all sewer lines and appurtenances are prohibited, unless they are necessary to eliminate existing and/or potential sources of pollution to the well.

Tubular Wells

- Within the 250 foot radius protective distance around tubular wells, all sewer lines and appurtenances are prohibited, unless they are necessary to eliminate existing and/or potential sources of pollution to the well.

Gravel Packed and Tubular Wells

- Within a minimum radius of 2,640 feet or unless otherwise documented by an appropriate study specifically defining the area of influence and approved by the Division of Water Supply, all sewer lines and appurtenances will be designed and constructed for maximum water tightness.
- Force Mains or Pressure Sewers: shall be tested at 150% above maximum operating pressure or 150 p.s.i. whichever is greater. Testing shall conform to the requirements of the American Water works Association (AWWA) standard c 600.
- Gravity Sewers: shall be tested by approved methods which will achieve test results for infiltration or exfiltration of less than 100 gallons/inch diameter/mile/24 hours.
- Manholes: shall be installed with watertight covers with locking or bolted and gasketed assembles. Testing for infiltration/exfiltration shall conform to the same standards as the maximum allowed for pipes in the manhole as required for gravity sewers, indicated above.
- Satisfactory test results for Force Mains, Manholes and Gravity Sewers shall be performed prior to the expiration of the contractor's one-year guarantee period.
- All pumping stations within this zone shall have standby power high water alarms telemetered to an appropriated location that is manned at all times. An emergency contingency plan must be developed by the owner and approved by the BWR.
- A minimum of Class B bedding as defined by WPCF-MOP9 must be used for all piping.
- Service connections (laterals and house connections) shall be rigidly inspected by the appropriate municipal official. Certified inspection reports shall be submitted to the BWR.

Displacements of Households, Businesses, and Services

None of the Recommended Plan will cause displacement of households or businesses. Final design of sewer infrastructure and pump station locations will be developed to prevent displacements of households, businesses and services. There may be temporary disturbances during construction, but the Town will work to develop a plan to notify any properties well in advance of the actual construction and work together to develop a plan that has the least impact.

Future sewer construction will have a plan developed well before actual construction, including traffic mitigation.

Noise Pollution, Air Pollution, Odor and Public Health Issues Associated with Construction and Operation

There may be temporary noise pollution and air pollution (dust) during construction involved with the Recommended Plan. Limiting the hours and the days of construction will mitigate the construction noise impacts, and employing dust control during construction will mitigate any adverse impacts to the air.

There is the potential for odor issues associated with operation of a collection system. During design, sewers and pump stations will be evaluated for inclusion of odor control. If necessary, odor control mechanisms will be installed.

No public health issues associated with the construction of the draft recommended plan are anticipated, as a wastewater collection system is constructed to solve the public health issue of contamination of groundwater by septic systems. Any impacts associated with these alternatives will be mitigated during final design.

Violation of Federal, State, or Local Environmental and Land Use Statutes or Regulations and Plans Imposed by Such Statues and Regulations

Implementation of the Recommended Plan will not violate any federal, state or local environmental and land use statues/regulations, nor will it violate any plans imposed by these statutes/regulations.

Indirect Impacts

Changes in Development and Land Use Patterns

All Needs Areas' collection systems that are part of the Recommended Plan have been sized for wastewater flows that were estimated from existing developed lots and those designated as buildable in the future according to the current State Land Use Code recorded at the Town Assessor Office and local zoning. Based on this methodology, no major changes in land use patterns are expected with the proposed Plan. The Town has evaluated land use in evaluating each Needs Area, with the majority consisting of residential parcels with a few smaller commercial parcels interspersed. The Town should look towards regulating any future potential changes through the Zoning Board.

While the introduction of sewer infrastructure in itself does not serve to promote or deny growth, the local regulatory mechanisms and Zoning Board will. The intent of this CWMP is to solve the problems of the existing development and existing environmental concerns, while concurrently serving to discourage unconstrained and unregulated development.

Pollution Stemming from Changes in Land Use

There will be no pollution stemming from changes in land use.

Damage to Sensitive Ecosystems

Sensitive Ecosystems include wetlands, priority habitats of rare species, estimated habitats of rare wildlife, and vernal pools. There is a potential for temporary impacts to sensitive ecosystems during construction of collection systems (sewer lines and pump stations), but these will be mitigated during design and construction. No permanent or long term impacts are anticipated.

As depicted in Figures EENF 2 through EENF 17 that detail each Needs Area with all Environmental Constraints, there are portions of Needs Areas that impact wetland resource areas , Zones I and II. There are no mapped impacts to NHESP, Vernal Pools or AUL and 21 E Sites using MassGIS layers.

Based on the on-going degradation Town-wide due to failing and/or improperly operating onsite wastewater disposal systems, it has been determined that optimizing these onsite wastewater disposal systems are a larger and more detrimental threat to resources in this area. With the proposed sewer plan, the water resources degradation from onsite systems, as well as potential threat to drinking water supplies, will be eliminated thus affording the area to rebound and the species now located within this area will be protected from possible further degradation.

Socioeconomic Pressures for Expansion

Connection of the five identified Needs Areas should not affect socioeconomics, as all proposed sewering will be a flow-based system for those parcels included in the Needs Analysis and clearly identified in the planning process. There will be some small amount of "in-building" expected with parcels that are designated as developable in the State land Use Codes. While some "in-building" could lead to additional development in this area, it is negligible and would not increase budget needs for school systems, roadway maintenance, fire protection, and other Town services. In addition, the design of the system with connection to the new WWTF is a managed system based on the flow projections in the CWMP. The Town will develop a flow neutral policy and regulations to address any future flows outside of CWMP identified Needs Areas.

The proposed collection system will be constructed in phases, with full build out not expected until well after the 20-year planning period. With the methodology utilized to estimate future wastewater flows, using the current State Land Use Codes, only those properties that currently exist and those categorized as developable now under the State Land Use Codes detailed in the Town Assessor Database will be allotted flows. If a property is coded as non-developable now with onsite wastewater system, it will remain undevelopable when municipal sewer is brought to the area. This conforms to the State's sustainability goals.

The proposed route of the sewer infrastructure for the five Needs Areas is conceptually designed in the CWMP Update Report. Based on these elements, the following items are discussed:

Effect On Land Use

- The Sudbury Sewer Project will not have a permanent negative impact on any land use. The CWMP does not include any land uses other than residential, commercial, industrial and municipal. All agricultural lands or Conservation Commission lands are excluded from the CWMP. The only land impacted will be existing roadways and locations for wastewater treatment facility and pump stations. There will be temporary impacts during construction that will reviewed with a mitigation plan in place during the design period. The Town will work with the commercial properties located along Route 20 for planning before any construction begins. Traffic management will be coordinated and approved through MassDOT. While there may be temporary traffic impacts during construction, a sound traffic management plan prepared in advance that includes input from impacted properties will serve as a smooth transition. There may be temporary impact to all properties as the major portion of the collection system is proposed in existing roadways, but a traffic management plan, as well as public outreach plan will be in place for notices to be sent to any areas during construction of any potential impacts.

Effects On Streams and/or Inter-basin Transfers

- There are no negative impacts to streams with the proposed sewering plan. The proposed sewering will remove failing and/or improperly operating septic systems, which will preserve and protect water quality in Town. The sewer will meet and exceed the recommendations contained in the Massachusetts Year 2016 Integrated List of Waters by reducing and/or eliminating nutrient degradation coming from on-site wastewater systems throughout the major Watersheds in Sudbury that impact the surface water resources in Sudbury as noted.

Limitations For Future Expansion

- The Sewer System will be limited to future expansion based on the flow-based design and construction of the WWTF and associated infrastructure. The wastewater system is designed as “flow-based” to meet the current Needs. This will also serve to meet Executive Order 385 as “Sustainable” and limit any potential sprawl.

Reliability, Operation and Maintenance

- The proposed WWTF system will be designed to be reliable with the appropriate on-going operation and maintenance standards.

Legal and/or Municipal Agreements And Permitting

- All legal, municipal and permitting required as part of the systems implementation will be attained according to the requirements of MassDEP. The Town of Sudbury will work to develop all appropriate sewer user rules and regulations/bylaws that details the conditions required to meet with regards to the wastewater system.

GREENHOUSE GAS EMISSIONS POLICY

Greenhouse Gas Emissions Policy and Sustainable Design

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) issued the 2007 Greenhouse Gas Emissions Policy (GHG Policy) after determining after determining that the phrase "damage to the environment" as used in the Massachusetts Environmental Policy Act (MEPA) includes the emission of greenhouse gases" ("Summary of the Final Revisions to the MEPA Greenhouse Gas Policy and Protocol," EEA, May 5, 2010). This project requires an environmental impact report (EIR) per 301 CMR 11.01(2)(a)(2), and the GHG Policy is therefore applicable. The current revision of the GHG Policy which is considered by this report is the "Final Revised MEPA GHG Emissions Policy and Protocol" which became effective as of May 5, 2010.

The purpose of this section, in accordance with the GHG Policy, is to discuss and quantify the greenhouse gas emissions for the existing and planned sewer infrastructure within the Town of Sudbury, as well as measures to avoid, minimize, or mitigate such emissions.

The existing sewage infrastructure in the Town of Sudbury consists of on-site sewage disposal systems.

The proposed infrastructure which is evaluated herein consists of installing gravity sewers, three pump stations, and a new wastewater treatment plant.

Design Standards

These sustainable design standards in this section are intended to provide for GHG reductions where possible by maximizing energy efficiencies. These standards shall be implemented where they are determined to be feasible and appropriate. This determination shall occur during the design phase of future expansion and rehabilitation projects.

Building Design and General Site Selection

The following standards will be reviewed and applied to the extent practicable for building rehabilitation and new construction. These considerations are anticipated to be applicable to all new construction; their practicability for building rehabilitation will be limited.

- Avoid buildings where practicable by using an outdoor controls cabinet instead. This will substantially reduce electricity usage due to heating, as well as overall project cost, materials usage, pump station footprint, and stormwater impacts.
- Duct Installation shall include sealing ducts with mastic, testing, and then insulating to prevent unnecessary duct leakage.
- Pump station buildings are intended for temporary occupancy, so heating shall be minimized such as to only be warm enough to protect equipment, and air conditioning will not be provided, aside from ventilation.
- High-albedo roofing material shall be implemented to reduce ventilation requirements due to heat management.
- Roof and wall insulation shall utilize the highest R-value insulation feasible for the specific type of building construction.
- Energy efficient lighting shall be used for all construction.
- High efficiency heating systems shall be utilized. Use natural gas heating if practicable.
- On-site renewable energy shall be considered in building siting, design, and construction. This includes constructing buildings to support future solar photovoltaic systems and orienting new buildings to maximize the solar benefit.

Equipment/Process Design

The following standards are applicable to all new equipment installations. These standards will be evaluated when large pieces of equipment are replaced.

1. New or replacement motors greater than 10 HP for pumps, blowers, fans, mixers and other drives shall consider Variable Frequency Drivers (VFDs) where variable speed operation can reduce energy consumption. VFDs will typically be provided in lieu of Soft Start devices for pumps, to access the operational flexibility and efficiency potential that a VFD offers.
2. SCADA controls will be remotely accessible via radio or other network connection to reduce need for operators and maintenance personnel to travel to the pump station sites, allow for better analysis of station efficiency and optimization, and access other logistical benefits of remote accessibility.
3. Pump sizes and combinations to maximize average efficiency shall be evaluated at preliminary/final design.

4. Sewer force mains shall be sized, designed, and routed in preliminary design to optimize for minimal maintenance and lower average pumping power required to convey sewer flow.
5. New or replacement motors greater than 1 horsepower (HP) for pumps, blowers, fans, mixers and other drives shall be premium efficiency duty. New or replacement equipment shall incorporate high efficiency models where cost-effective.
6. Review flows and loads with Town to mitigate issues with sizing pumps and stations from unrealistically high buildout flows. Areas proposed to be sewered in this report are largely developed already and the delta between near-term and buildout flows is small relative to other sewer projects, so actual water use data should be used to guide this effort.
7. Considerations shall be when selecting equipment and designing the wetwell to prevent ragging of the pump and excessive scum buildup, which would cause inefficient pump operation.

Maintenance and Public Policy

The following standards are potentially applicable to all sewered areas.

1. Maintain the collection system to prevent infiltration and inflow by putting in place a replacement and rehabilitation schedule. This will reduce the required pumping, mitigate the risk of sanitary sewer overflows, and prevent costly emergency repairs.
2. Encourage reduction in sewer flows. In the future, evaluate cost-incentive programs for businesses to reduce their sewer fees, and clearly communicate how sewer fees are assessed so residents understand and have a cost incentive to be careful with their water usage.

GHG Emissions Quantification

This section provides the calculated quantities of GHG emissions for the existing sewer infrastructure, proposed sewer infrastructure without proposed improvements, and proposed sewer infrastructure with proposed improvements. Basis GHG emissions were calculated based solely on electricity usage. Note all proposed plants are assumed to have electric unit heaters. Table 1, below, provides the factors used to convert electricity usage to carbon dioxide equivalents (CO_2e).

Table 1: Greenhouse Gas Emissions Factors

Gas	Emissions Rates, lbs/MWH [1]	GWP [2]	CO_2e, tons/MWH [2]
CO_2	488.9	1	0.24
NO_x [2]	0.343	298	0.05
Total	--	--	**0.30**

1: Emissions rates are included per EPA estimates provided via the EPA Power Profiler (https://www.epa.gov/energy/power-profiler#/NEWE, extracted Dec 8, 2021) for the NEWE eGrid Subregion (NPCC (Northeast Power Coordinating Council) New England). The EPA also includes an emissions rate for sulfure dioxide of 0.1 lbs/MWH, but as sulfur dioxide is generally not considered a greenhouse gas, this is omitted.
2: CO_2 equivalent (CO_2e) is found by multiplying the quantity of the gas by the Global Warming Potential (GWP). Global Warming Potential for nitrous oxide utilized is upper limit per https://www.epa.gov/ghgemissions/understanding-global-warming-potentials, as extracted July 23, 2019.

Electricity usage for pumps was calculated based on the following calculations:

Hydraulic Horsepower (HP) = Flow [gpm] x Total Dynamic Head [ft] / 3956

Power Delivered to Motor [HP] = Hydraulic HP / (Efficiency of Motor x Efficiency of Pump)

Input Power Required, kW = Power Delivered to Motor x 0.7457 kW/HP

For pump stations, motor efficiencies were assumed as 85%. Proposed pump station usage was calculated as a range. For the high end of electricity consumption and GHG emissions, a pump efficiency of 65% was assumed and buildout flows were used. For the low end, a pump efficiency of 75% was assumed, and existing flows were used.

Electricity usage for unit heaters was calculated by assuming:

1. Each unit heater would run eight hours per day in January
2. Each unit heater would run a number of hours prorated off of the January runtime, based on the maximum heating-degree-days for each respective month as taken from degreedays.net, based on Hanscom Field in Bedford, MA (KBED) data from Dec 2019-Nov 2021, with a base temperature of 60°F.

3. Unit heaters for buildings would be 3kW each, with one heater per room. Unit heaters for an exterior control cabinet would be 0.5kW each.

For the wastewater treatment plant, projected energy usage was taken from data provided by Transcend, which provides package treatment plant designs. Additional detail can be found in Appendix 8.

Baseline GHG Emissions

GHG emissions for existing septic systems was calculated assuming 0.11 tons/CO2e per capita-yr, per the *Evaluation of Greenhouse Gas Emissions from Septic Systems* report from the Water Environment Research Foundation (WERF), dated December 2011 (note: converted from metric tons). The 'capita equivalent' for each phase of the project was calculated by dividing the flow from that phase of the project by 59 gpd, the per capita sewage flow calculated as discussed in Section 2.8 Baseline GHG emissions are included in Table 2, below.

Table 2: Baseline GHG Emissions

	Low Estimate (Existing)			High Estimate (Buildout)		
Area Served By:	Near Term ADF, gpd	Equivalent in Capita	CO2e, tons/yr	Buildout ADF, gpd	Equivalent in Capita	CO2e, tons/yr
Phase 1: Route 20 Sub-Area A PS	38,692	656	72	146,150	2,477	273
Phase 1A: Raymond Road South	25,857	438	48	34,283	581	64
Phase 2 - Raymond Hills North PS	31,253	530	58	41,072	696	77
Phase 4: Route 20 Sub-Area B PS	27,482	466	51	54,589	925	102
Total	**123,285**	**2,090**	**230**	**276,095**	**4,680**	**516**

Projected GHG Emissions

GHG emissions for proposed pump stations and wastewater treatment plant were calculated based on projected electricity usage. Low and high estimates are provided.

For pump stations, the low and high estimates differ in their assumption regarding heating requirements and pump efficiency. Heating requirements will vary based on the size of the building. The low estimate assumes the following: Heating for control room only for Phase 1 PS. Heating for exterior control cabinets for other stations. The high end assumes all pump stations will have buildings with two small rooms. The inclusion of buildings will depend on final site selection. Low estimates assume a pump efficiency of 65%, high estimates assume a pump efficiency of 75%. This will vary based on final pump selection. Higher efficiency equipment will be sought, but may not be practicable, in particular for the smaller pump stations which may need grinder pumps. These low and high end estimates represent design standards being implemented to various degrees.

For the wastewater plant, the energy usage is calculated by prorating the energy usage estimated by Transcend against the flow associated with an individual phase. The low and high estimates vary based on whether the near term or buildout flow was being used.

Table 3 provides the estimated expanded GHG emissions. Additional detail is provided in Attachment 8 .

Table 3: Expanded GHG Emissions

Phase	Energy Usage, MWH/yr			GHG Emissions (tpy CO2e)		
	Pump Stations	WWTP	Total	Baseline	Proposed	Delta
Phase 1: Route 20 Sub-Area A PS	50 to 61	8 to 31	58 to 92	72 to 273	17 to 27	-45 to -256
Phase 1A: Raymond Road South	15 to 25	6 to 7	21 to 32	48 to 64	6 to 9	-39 to -58
Phase 2 - Raymond Hills North PS	30 to 42	7 to 9	37 to 51	58 to 77	11 to 15	-43 to -66
Phase 4: Route 20 Sub-Area B PS	16 to 26	6 to 12	22 to 37	51 to 102	6 to 11	-40 to -96
Total	**111 to 153**	**26 to 59**	**137 to 212**	**230 to 516**	**41 to 63**	**-168 to -475**

Conclusions

GHG Emissions are estimated to be reduced by eliminating on-site septic disposal, and replacing it with conveyance and treatment. Taking into consideration the various other environmental benefits realized by removing on-site sewage treatment in densely populated areas as discussed elsewhere in this report, this report does confidently conclude that the project has a positive impact on reducing greenhouse gas emissions.

Greenhouse gas reductions may be maximized by employing the efficiency recommendations discussed in this section. However, as sewage pump stations are generally utilitarian and therefore inherently efficient, these reductions are not substantial and will need to be considered relative to their cost efficacy.

Sudbury is committed to reducing GHG as it moves forward. The additional costs savings to the O&M brings additional benefit to the Town.

ATTACHMENT 1
LIST OF ATTACHMENTS TO THIS EENF

Attachment 1	List of Attachments
ATTACHMENT A	Climate Change Adaptation & Resiliency Form
Attachment 2	U.S.G.S. Map of Project Location
Attachment 3	Existing Conditions Maps
Attachment 4	Environmental Constraints Maps
Attachment 5	Distribution List
Attachment 6	List of Permits Required
Attachment 7	Public Notice
Attachment 8	Green House Gas
Attachment 9	Massachusetts Historical Commission PNF

ATTACHMENT A
CLIMATE CHANGE ADAPTATION & RESILIENCY FORM

RMAT Climate Resilience Design Standards Tool Project Report

Sudbury CWMP
Date Created: 12/15/2021 12:04:47 PM

Created By: rblacquier

Project Summary

Link to Project

Estimated Construction Cost: $93300000.00
Useful Life: 2050 - 2059

Ecosystem Benefits	Scores
Project Score	Moderate
Exposure	**Scores**
Sea Level Rise/Storm Surge	Not Exposed
Extreme Precipitation - Urban Flooding	Low Exposure
Extreme Precipitation - Riverine Flooding	High Exposure
Extreme Heat	High Exposure

Asset Summary

Number of Assets: 2

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Wastewater Treatment Facility	Low Risk	Low Risk	High Risk	High Risk
Pump Stations	Low Risk	Low Risk	High Risk	High Risk

Project Outputs

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Wastewater Treatment Facility					
Pump Stations					
Extreme Precipitation					
Wastewater Treatment Facility	2050			25-yr (4%)	Tier 2
Pump Stations	2050			10-yr (10%)	Tier 2
Extreme Heat					
Wastewater Treatment Facility	2050		90th		Tier 2
Pump Stations	2050		50th		Tier 2

Scoring Rationale - Exposure

Sea Level Rise/Storm Surge

This project received a "Not Exposed" because of the following:

- Not located within the predicted mean high water shoreline by 2030
- No historic coastal flooding at project site
- Not located within the Massachusetts Coastal Flood Risk Model

Extreme Precipitation - Urban Flooding

This project received a "Low Exposure" because of the following:

- No historic flooding at project site
- Minor projected increase in rainfall within project's useful life
- No increase to impervious area

Extreme Precipitation - Riverine Flooding

This project received a "High Exposure" because of the following:

- Exposed to riverine flooding within the project's useful life
- No historic riverine flooding at project site

Extreme Heat

This project received a "High Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Tree removal
- Located within 100 ft of existing water body

Scoring Rationale - Asset Risk Scoring

Asset - Wastewater Treatment Facility
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable during natural hazard event, but must be accessible/operable within one day after natural hazard event
- Less than 1,000 people would be directly affected by the loss/inoperability of the asset
- Some alternative programs and/or services are available to support the community
- Cost to replace is less than $10 million
- Spills and/or releases of hazardous materials would be relatively easy to clean up

Asset - Pump Stations
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Loss/inoperability of the asset would have impacts limited to the location of infrastructure only
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is less than $10 million
- Spills and/or releases of hazardous materials would be relatively easy to clean up

Project Design Standards Output

Asset: Wastewater Treatment Facility — Building/Facility

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Tidal Benchmarks: No
Stillwater Elevation: No
Design Flood Elevation (DFE): No
Wave Heights: No
Duration of Flooding: No
Design Flood Velocity: No
Wave Forces: No
Scour or Erosion: No

Extreme Precipitation — Low Risk

Target Planning Horizon: 2050
Return Period: 25-yr (4%)

Applicable Design Criteria

Tiered Methodology: Tier 2 (Link)

Total Precipitation Depth for 24-hour Design Storms: Yes

Peak Intensity for 24-hour Design Storms: Yes
Riverine Peak Discharge: Yes
Riverine Peak Flood Elevation: Yes
Duration of Flooding for Design Storm: Yes
Flood Pathways: Yes

Extreme Heat — High Risk

Target Planning Horizon: 2050
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2 (Link)

Annual/Summer/Winter Average Temperature: Yes
Heat Index: Yes
Days Per Year With Max Temperature > 95°F: Yes
Days Per Year With Max Temperature > 90°F: Yes
Days Per Year With Max Temperature < 32°F: Yes
Number of Heat Waves Per Year: Yes
Average Heat Wave Duration (Days): Yes
Cooling Degree Days (Base = 65°F): Yes
Heating Degree Days (Base = 65°F): Yes
Growing Degree Days: No

Asset: Pump Stations — Infrastructure

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Tidal Benchmarks: No
Stillwater Elevation: No
Design Flood Elevation (DFE): No
Wave Heights: No
Duration of Flooding: No
Design Flood Velocity: No
Wave Forces: No
Scour or Erosion: No

Extreme Precipitation — Low Risk

Target Planning Horizon: 2050
Return Period: 10-yr (10%)

Applicable Design Criteria

Tiered Methodology: Tier 2 (Link)

Total Precipitation Depth for 24-hour Design Storms: Yes
Peak Intensity for 24-hour Design Storms: Yes
Riverine Peak Discharge: Yes
Riverine Peak Flood Elevation: Yes
Duration of Flooding for Design Storm: Yes
Flood Pathways: Yes

Extreme Heat — High Risk

Target Planning Horizon: 2050
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2 (Link)

Annual/Summer/Winter Average Temperature: Yes
Heat Index: Yes
Days Per Year With Max Temperature > 95°F: Yes
Days Per Year With Max Temperature > 90°F: Yes
Days Per Year With Max Temperature < 32°F: Yes
Number of Heat Waves Per Year: Yes
Average Heat Wave Duration (Days): Yes
Cooling Degree Days (Base = 65°F): No
Heating Degree Days (Base = 65°F): No

Growing Degree Days: No

Project Inputs

Core Project Information

Name:	Sudbury CWMP
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2050 - 2059
Location of Project:	Sudbury
Estimated Capital Cost:	$93,300,000
Entity Submitting Project:	Sudbury
Is this project being submitted as part of a state grant application?	No
Which grant program?	
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process?	Yes
Brief Project Description:	20-year Comprehensive Wastewater Management Plan to identify areas not long-term sustainable with septic systems. Preserves drinking water supplies. Being Filed as part of MEPA.

Project Ecosystem Benefits

Provides flood protection through green infrastructure or nature-based solutions	No
Provides storm damage mitigation	Yes
Provides groundwater recharge	Yes
Protects public water supply	Yes
Filters stormwater	No
Improves water quality	Yes
Promotes decarbonization	No
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	Yes
Prevents pollution	Yes
Remediates existing sources of pollution	Yes
Protects fisheries, wildlife, and plant habitat	Yes
Protects land containing shellfish	No
Provides pollination	No
Provides recreation	No
Provides cultural resources/education	No

Project Climate Exposure

Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	No
Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	Unsure
Are existing trees being removed as part of the proposed project?	Yes

Project Assets

Asset: Wastewater Treatment Facility
Asset Type: Typically Unoccupied
Asset Sub-Type: Wastewater treatment plant
Construction Type: New Construction
Construction Year: 2023
Useful Life: 30

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable during natural hazard event, but must be accessible/operable within one day after natural hazard event

Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts limited to site only

Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Less than 1,000 people

Identify if the building/facility is located within an environmental justice community or provides services to vulnerable populations.
The building is not located in an environmental justice community and does not provide services to vulnerable populations

If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries

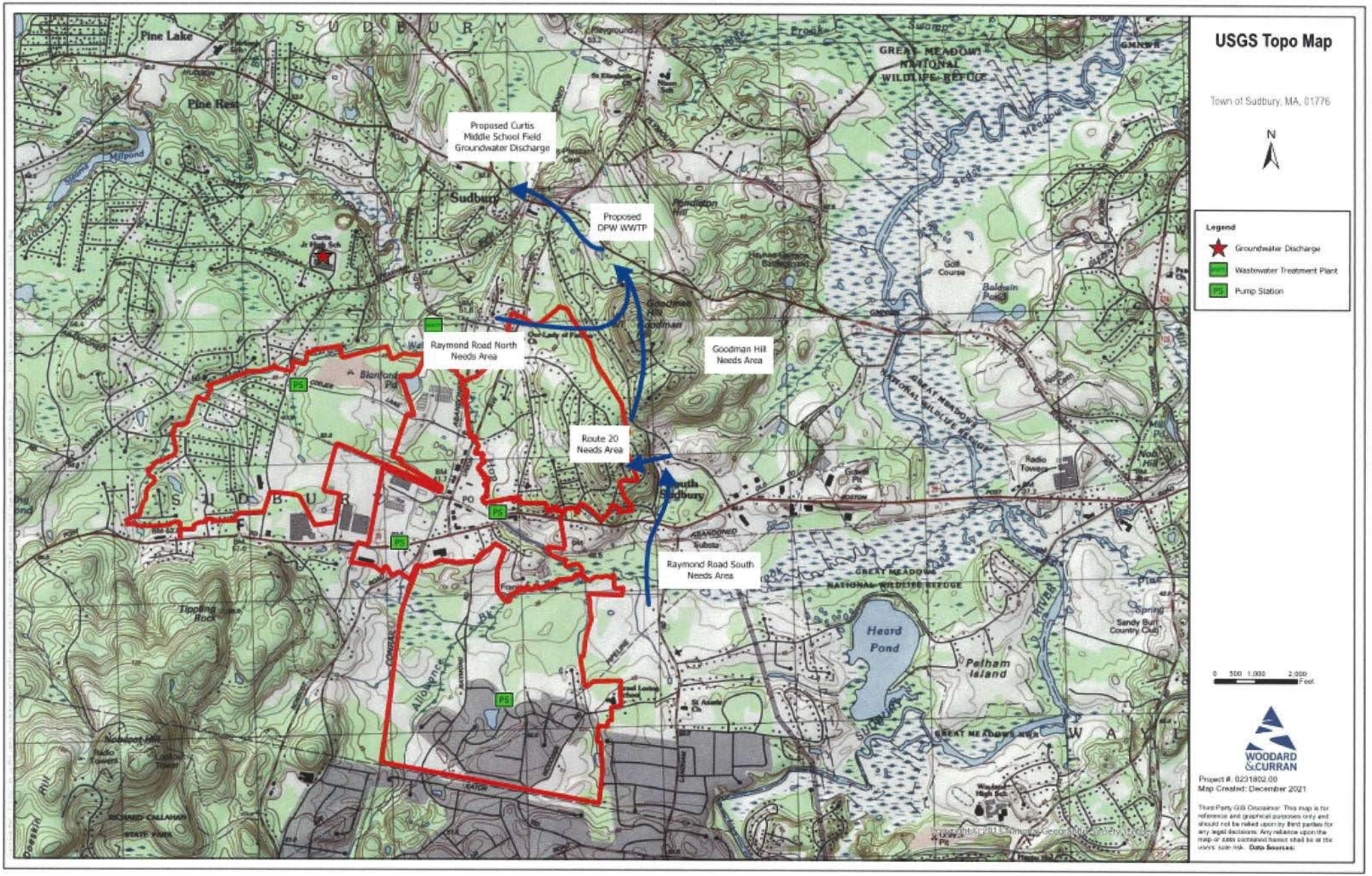
What are the environmental impacts related to spills/releases of hazardous materials as a result of loss of the building/facility functionality?
Spills and/or releases of hazardous materials would be relatively easy to clean up

What are the impacts on other facilities, assets, and/or infrastructure as a result of loss of the building/facility functionality?
Minor – Inoperability will not likely affect other facilities, assets, or buildings

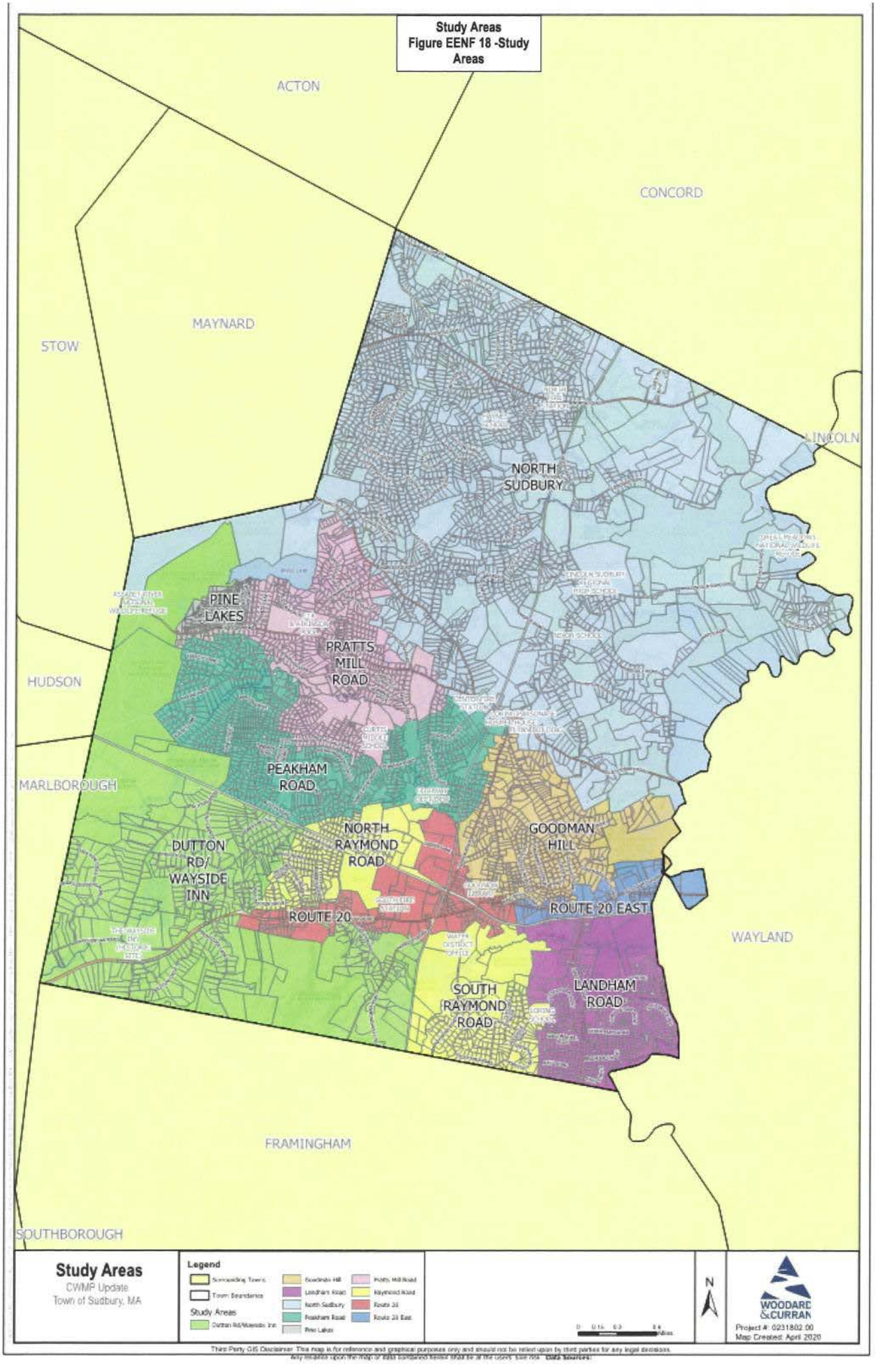
What are the direct costs to replace the loss of the building/facility?
Less than $10 million

Is this a recreational facility which can be vacated during a natural hazard event?
No
If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Some alternative programs and/or services are available to support the community
If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
Impact on natural resources can be mitigated naturally
What are the impacts to government services as a result of loss of building functionality (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building is not expected to reduce the ability to maintain government services.
What are the impacts to loss of confidence in government resulting from loss of building functionality (i.e. the building asset is not able to serve or operate its intended users or function)?
No Impact
Asset: Pump Stations
Asset Type: Utility Infrastructure
Asset Sub-Type: Wastewater
Construction Type: New Construction
Construction Year: 2023
Useful Life: 30
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard without consequences.
Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts limited to location of infrastructure only
Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Less than 5,000 people
Identify if the infrastructure is located within an environmental justice community or provides services to vulnerable populations.
The infrastructure is not located in an environmental justice community and does not provide services to vulnearble populations
Will the infrastructure reduce the risk of flooding?
No
If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would not be expected to result in injuries
If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials are expected with relatively easy cleanup
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Minor – Inoperability will not likely affect other facilities, assets, or buildings
If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Less than $10 million
Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
Impact on natural resources can be mitigated naturally
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure is not expected to reduce the ability to maintain government services
What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
No Impact

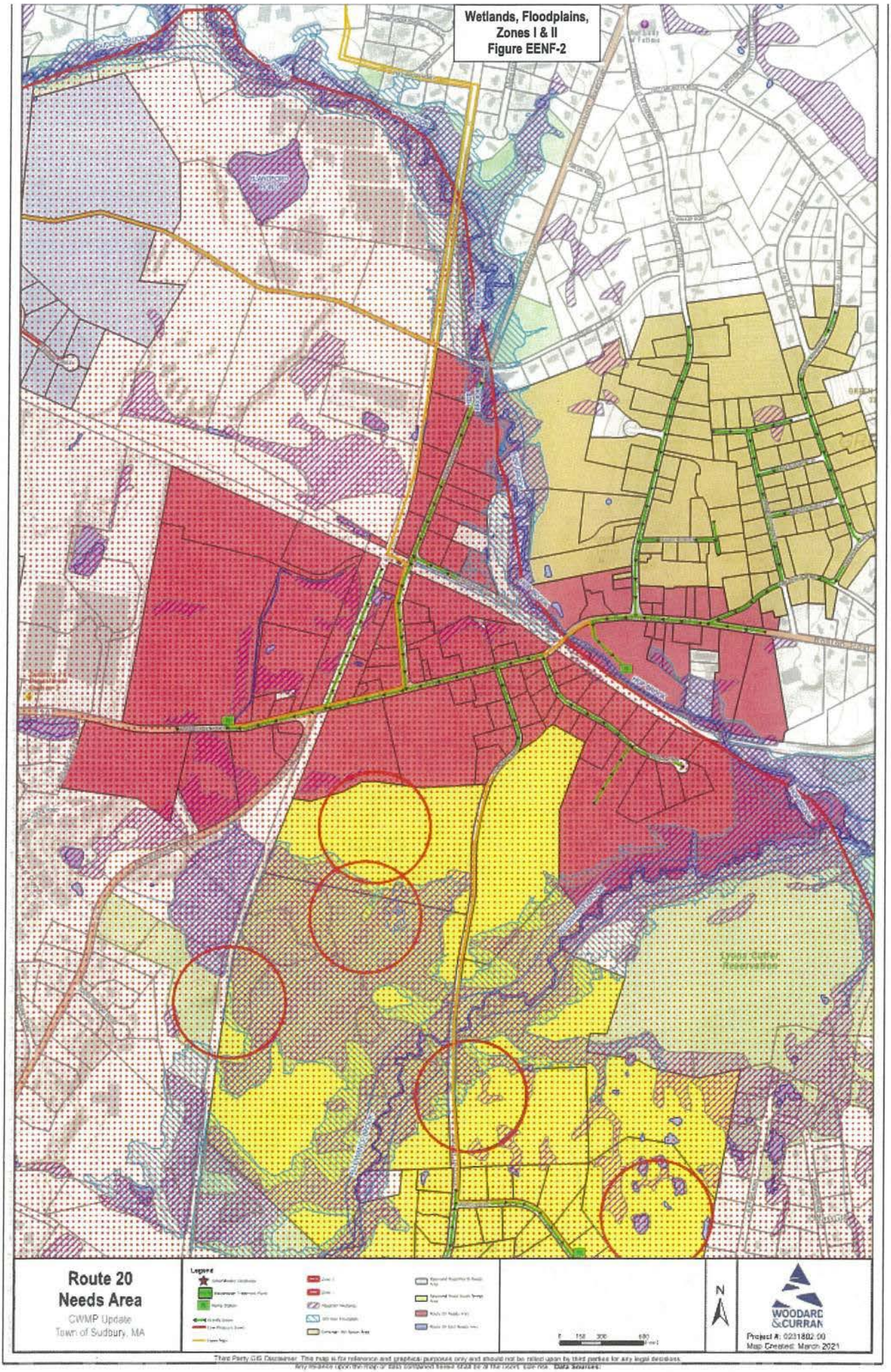
ATTACHMENT 2
USGS MAP PROJECT SITE

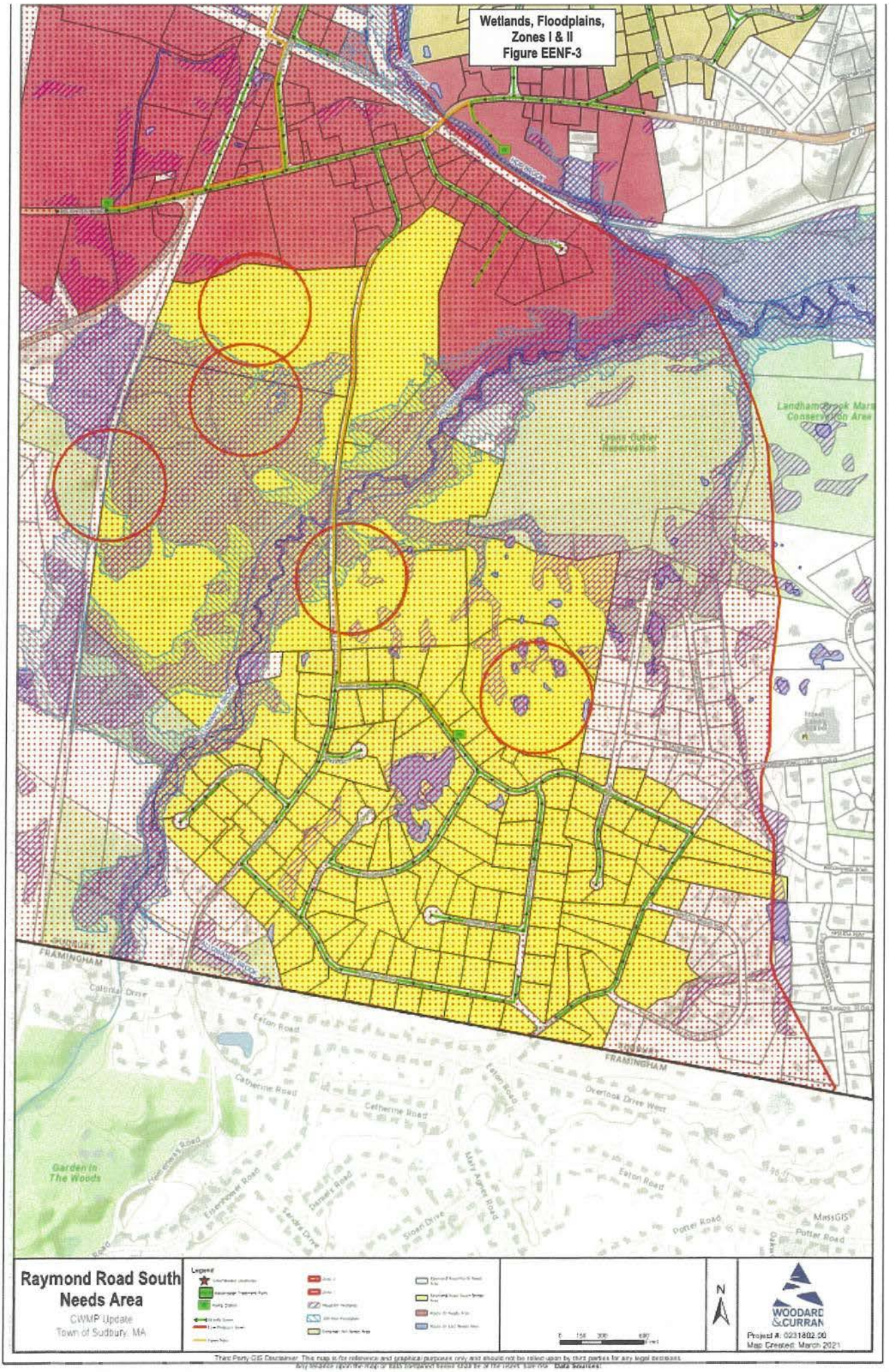

Proposed Curtis Middle School Field Groundwater Discharge
Proposed DPW WWTP
Raymond Road North Needs Area
Goodman Hill Needs Area
Route 20 Needs Area
Raymond Road South Needs Area
Pine Lake
Pine Rest
Sudbury
South Sudbury
GREAT MEADOWS NATIONAL WILDLIFE REFUGE
Heard Pond
Pelham Island
Tippling Rock
Nobscot Hill
Radio Towers
Sandy Burr Country Club
Baldwin Pond
Golf Course
Radio Towers
Wayland High Sch
USGS Topo Map
Town of Sudbury, MA, 01776
N
Legend
Groundwater Discharge
Wastewater Treatment Plant
Pump Station
0 500 1,000 2,000 Feet
WOODARD &CURRAN
Project #: 0231802.00
Map Created: December 2021
Third-Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained hereon shall be at the users' sole risk. Data Sources:

ATTACHMENT 3
PLAN OF EXISTING CONDITIONS – FIGURE EENF 18

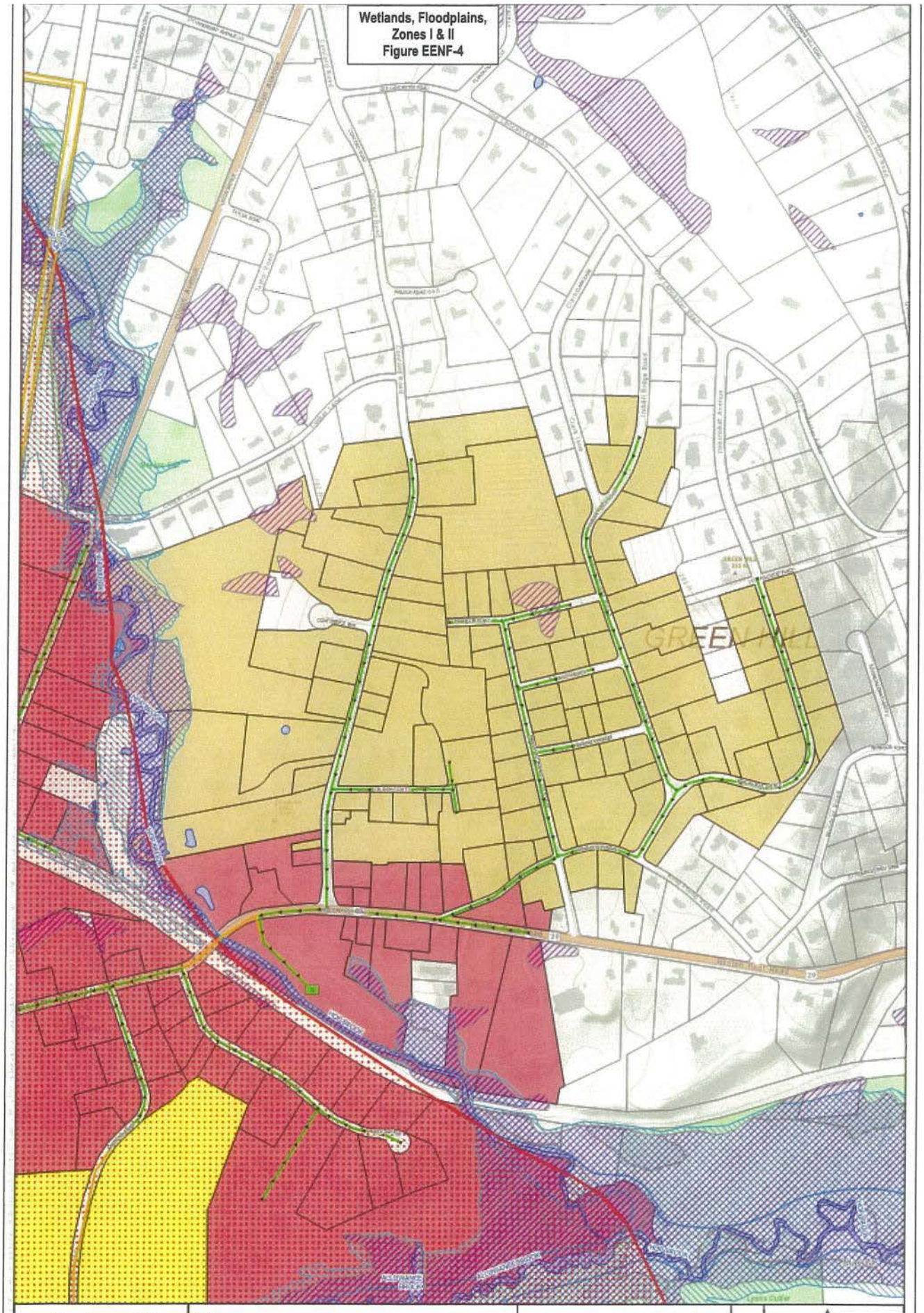

Study Areas
Figure EENF 18 -Study Areas
ACTON
CONCORD
MAYNARD
STOW
LINCOLN
NORTH SUDBURY
PINE LAKES
PRATTS MILL ROAD
HUDSON
PEAKHAM ROAD
MARLBOROUGH
NORTH RAYMOND ROAD
GOODMAN HILL
DUTTON RD/ WAYSIDE INN
ROUTE 20
ROUTE 20 EAST
WAYLAND
SOUTH RAYMOND ROAD
LANDHAM ROAD
FRAMINGHAM
SOUTHBOROUGH
Study Areas
CWMP Update
Town of Sudbury, MA
Legend
Surrounding Towns
Town Boundaries
Study Areas
Dutton Rd/Wayside Inn
Goodman Hill
Landham Road
North Sudbury
Peakham Road
Pine Lakes
Pratts Mill Road
Raymond Road
Route 20
Route 20 East
N
WOODARD &CURRAN
Project #: 0231802.00
Map Created: April 2020
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon the map or data contained herein shall be at the users' sole risk. Data Sources:

ATTACHMENT 4
PLAN OF ENVIRONMENTAL CONSTRAINTS FIGURES EENF-2 THROUGH EENF 17


Wetlands, Floodplains,
Zones I & II
Figure EENF-2
Route 20
Needs Area
CWMP Update
Town of Sudbury, MA
Legend
N
WOODARD &CURRAN
Project #: 0231802.00
Map Created: March 2021
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.



Wetlands, Floodplains,
Zones I & II
Figure EENF-4



Goodman Hill Needs Area

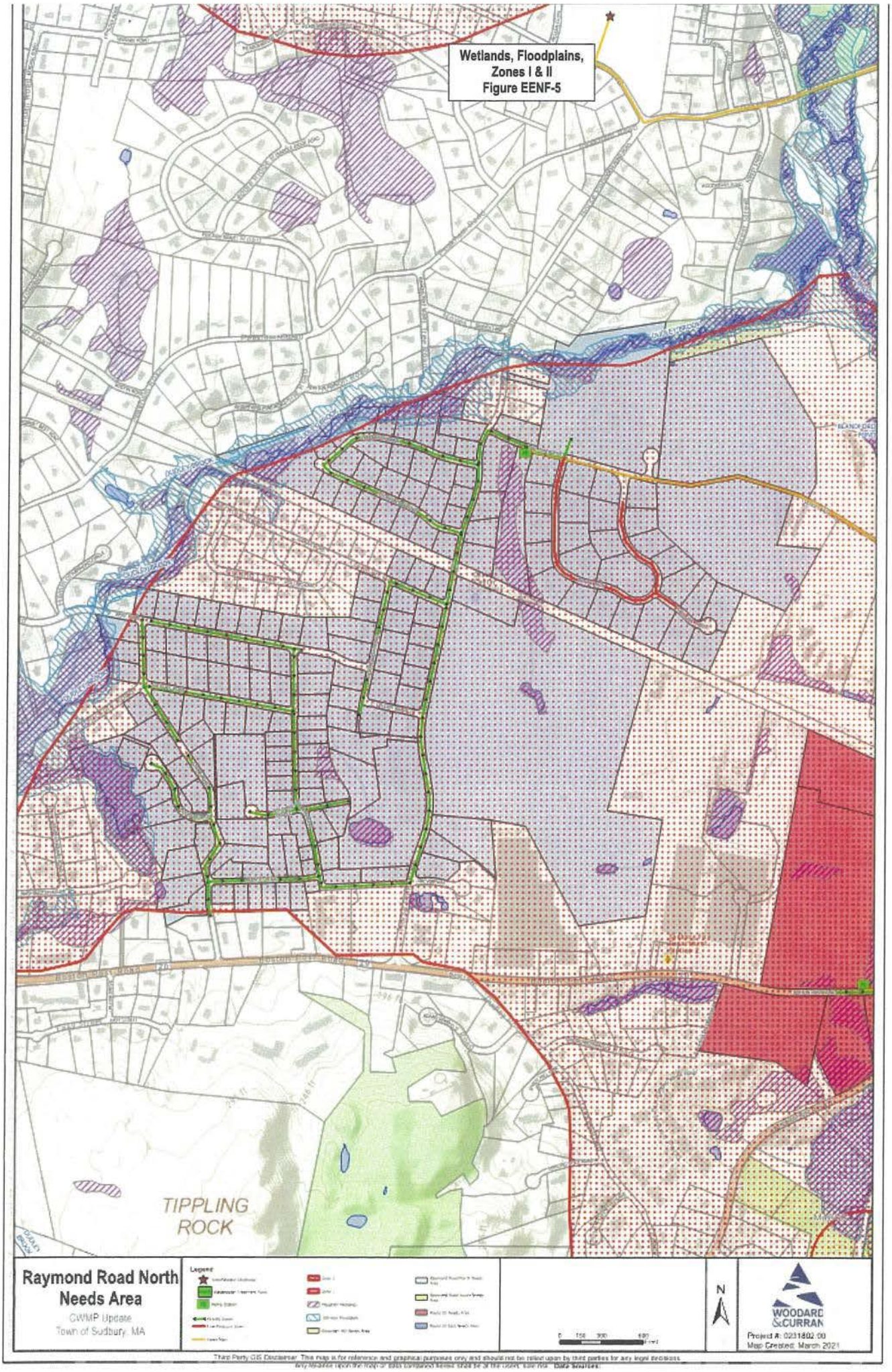
CWMP Update
Town of Sudbury, MA

Legend

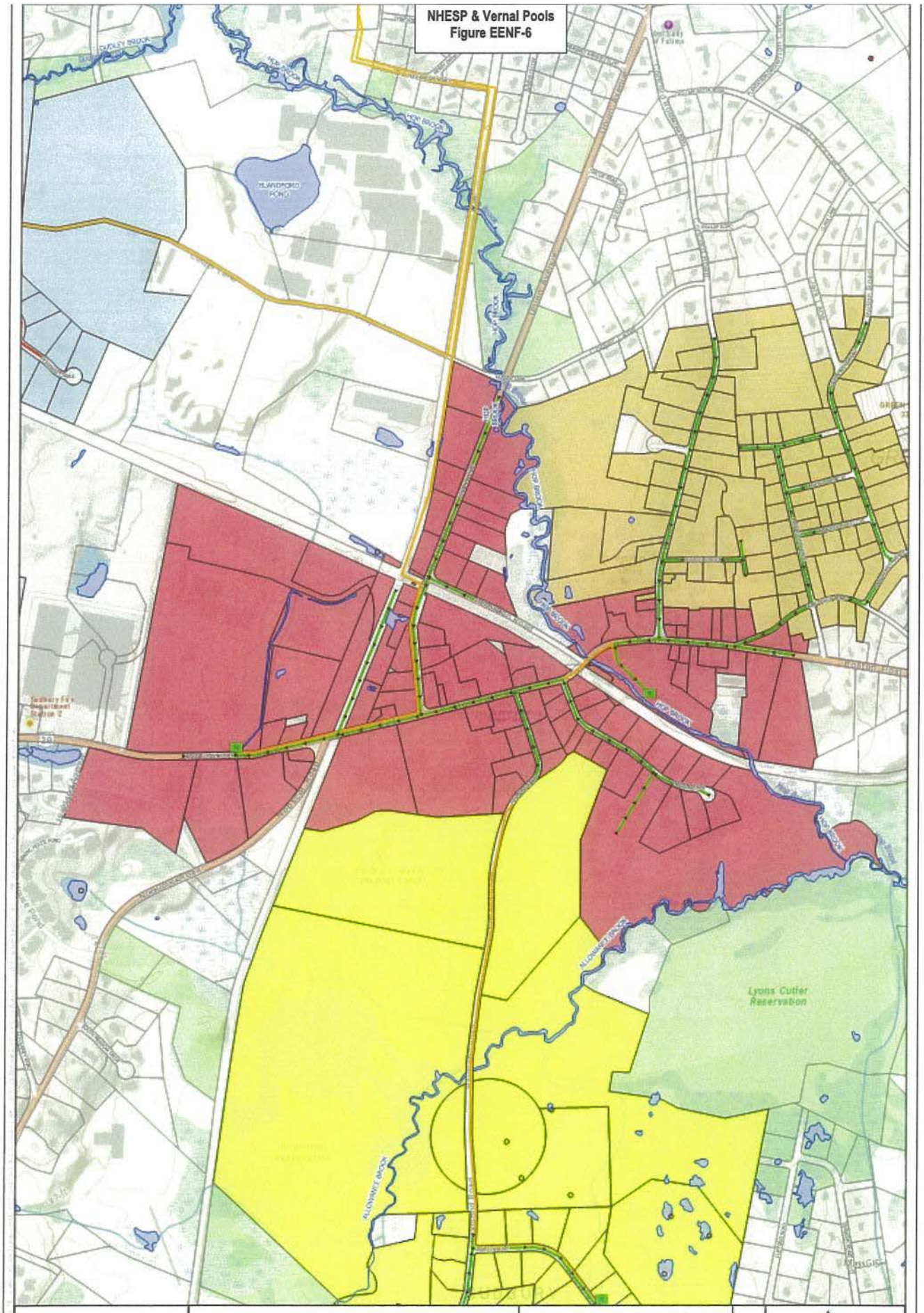
N

WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021


Wetlands, Floodplains,
Zones I & II
Figure EENF-5
TIPPLING
ROCK
Raymond Road North
Needs Area
CWMP Update
Town of Sudbury, MA
Legend
N
WOODARD
&CURRAN
Project #: 0231602.00
Map Created: March 2021
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.

NHESP & Vernal Pools
Figure EENF-6



Route 20 Needs Area

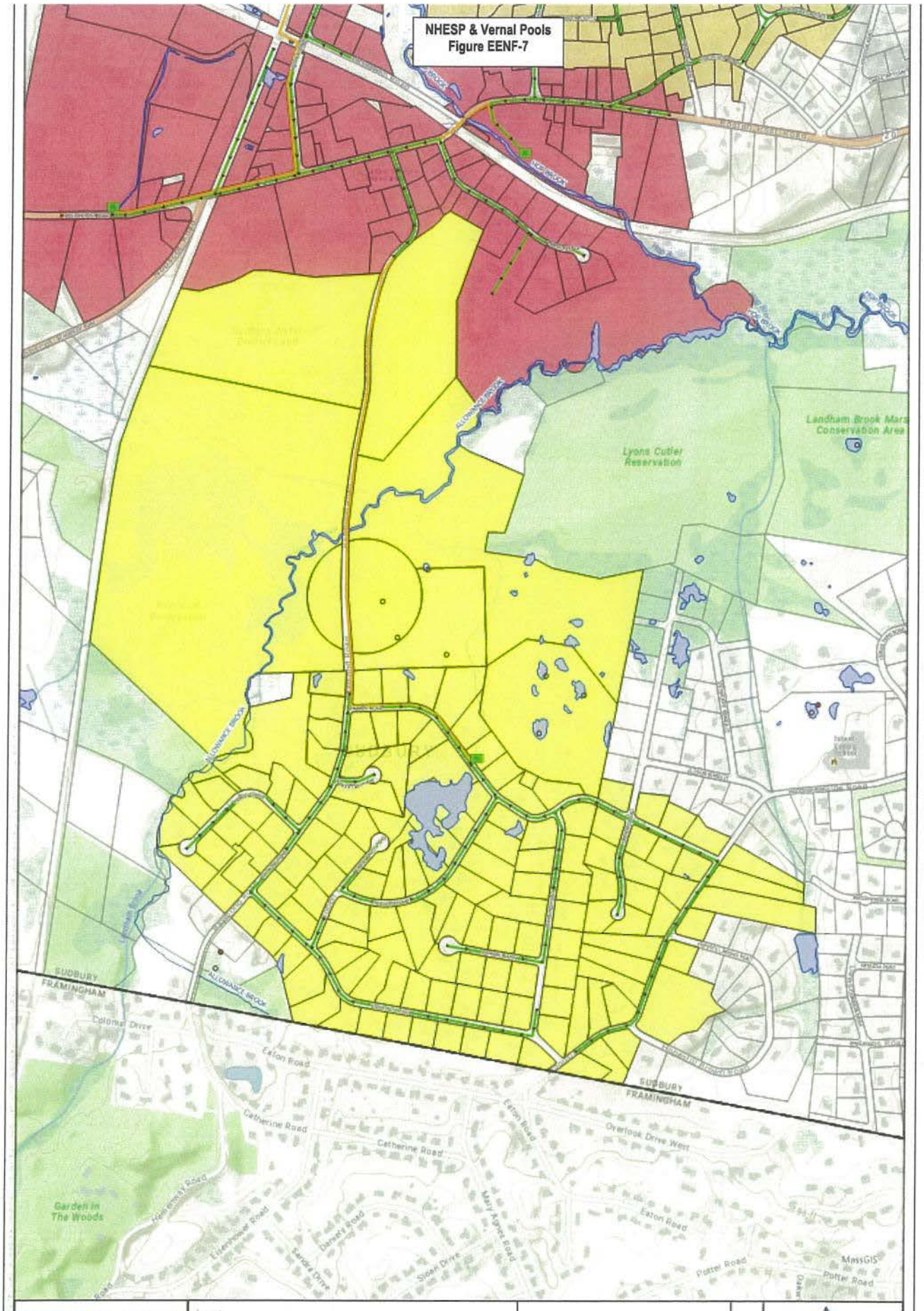
CWMP Update
Town of Sudbury, MA

Legend

N

WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021



Raymond Road South Needs Area

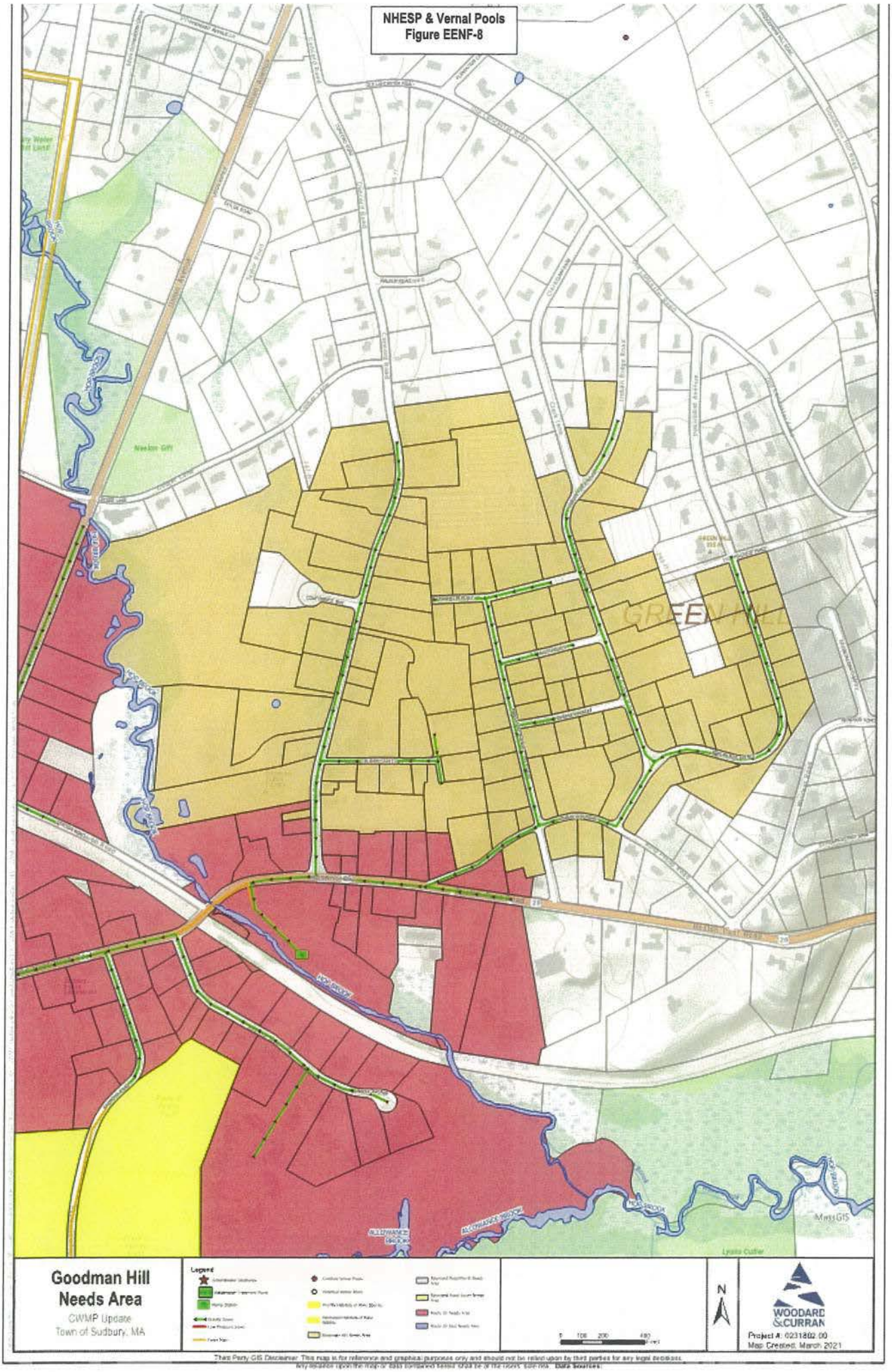
CWMP Update
Town of Sudbury, MA

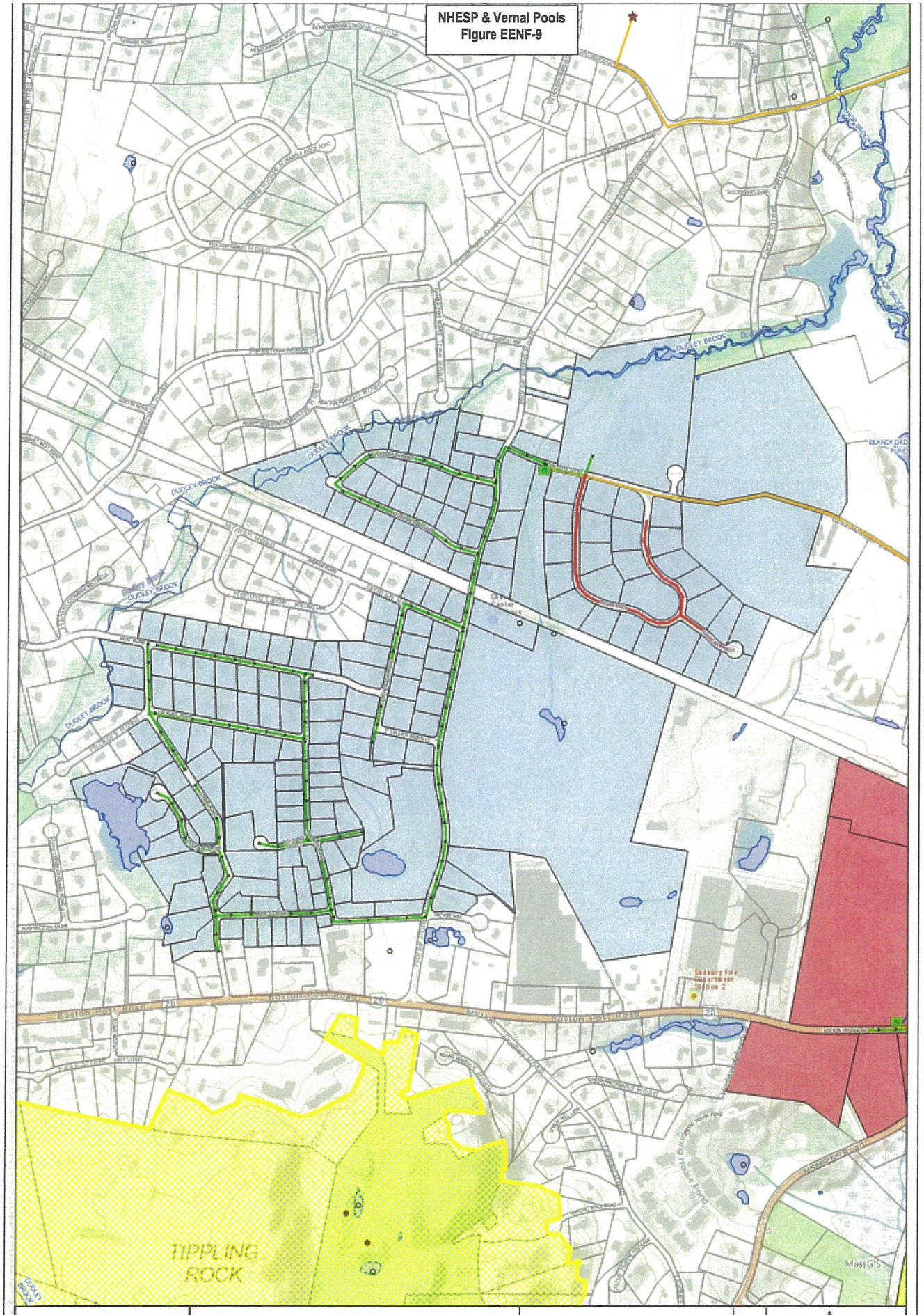
Legend

N

WOODARD & CURRAN

Project #: 0231800.00
Map Created: March 2021


NHESP & Vernal Pools
Figure EENF-8
Goodman Hill
Needs Area
CWMP Update
Town of Sudbury, MA
Legend
N
WOODARD &CURRAN
Project #: 0231802.00
Map Created: March 2021
MassGIS



Raymond Road North Needs Area

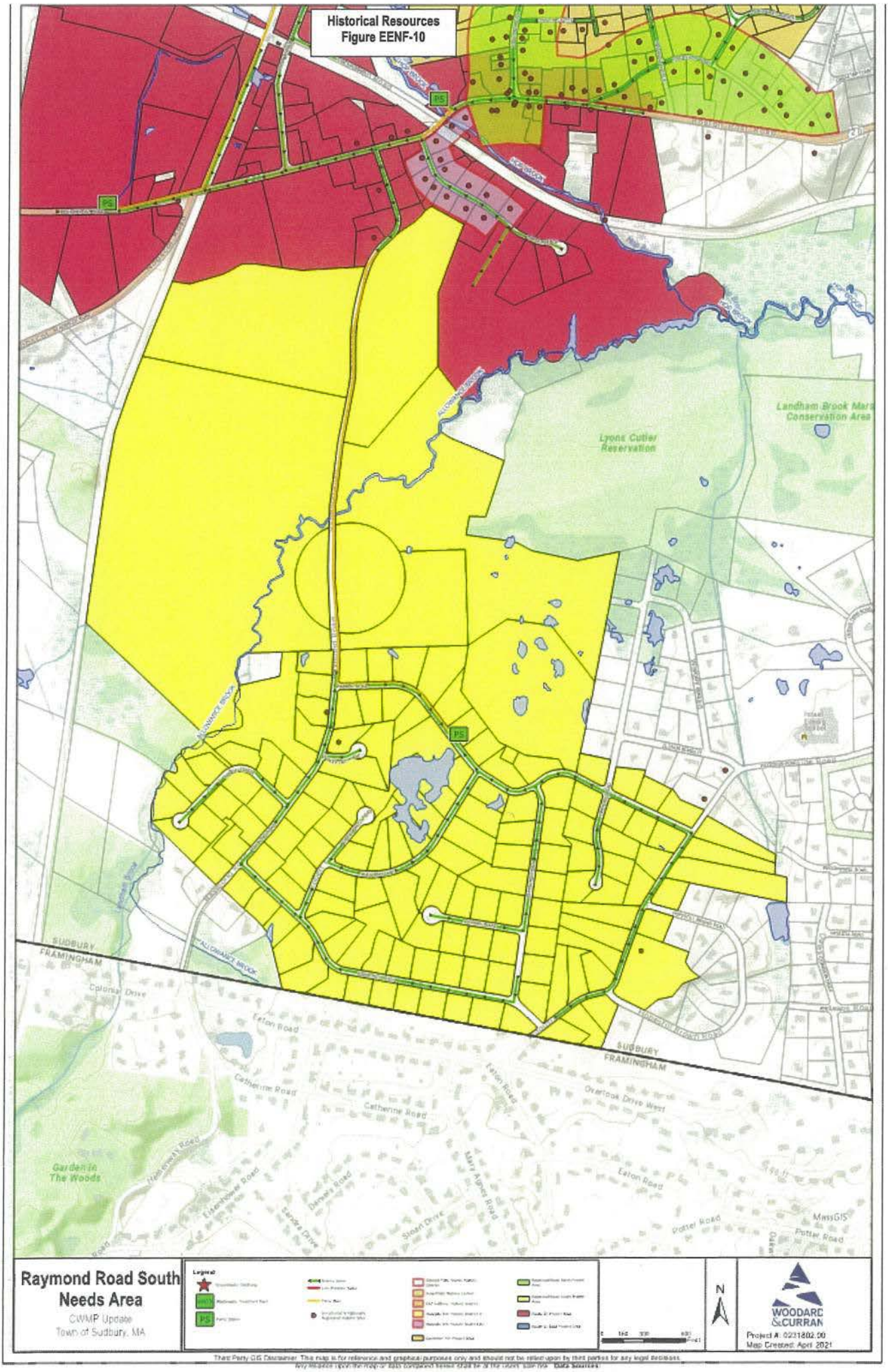
CWMP Update
Town of Sudbury, MA

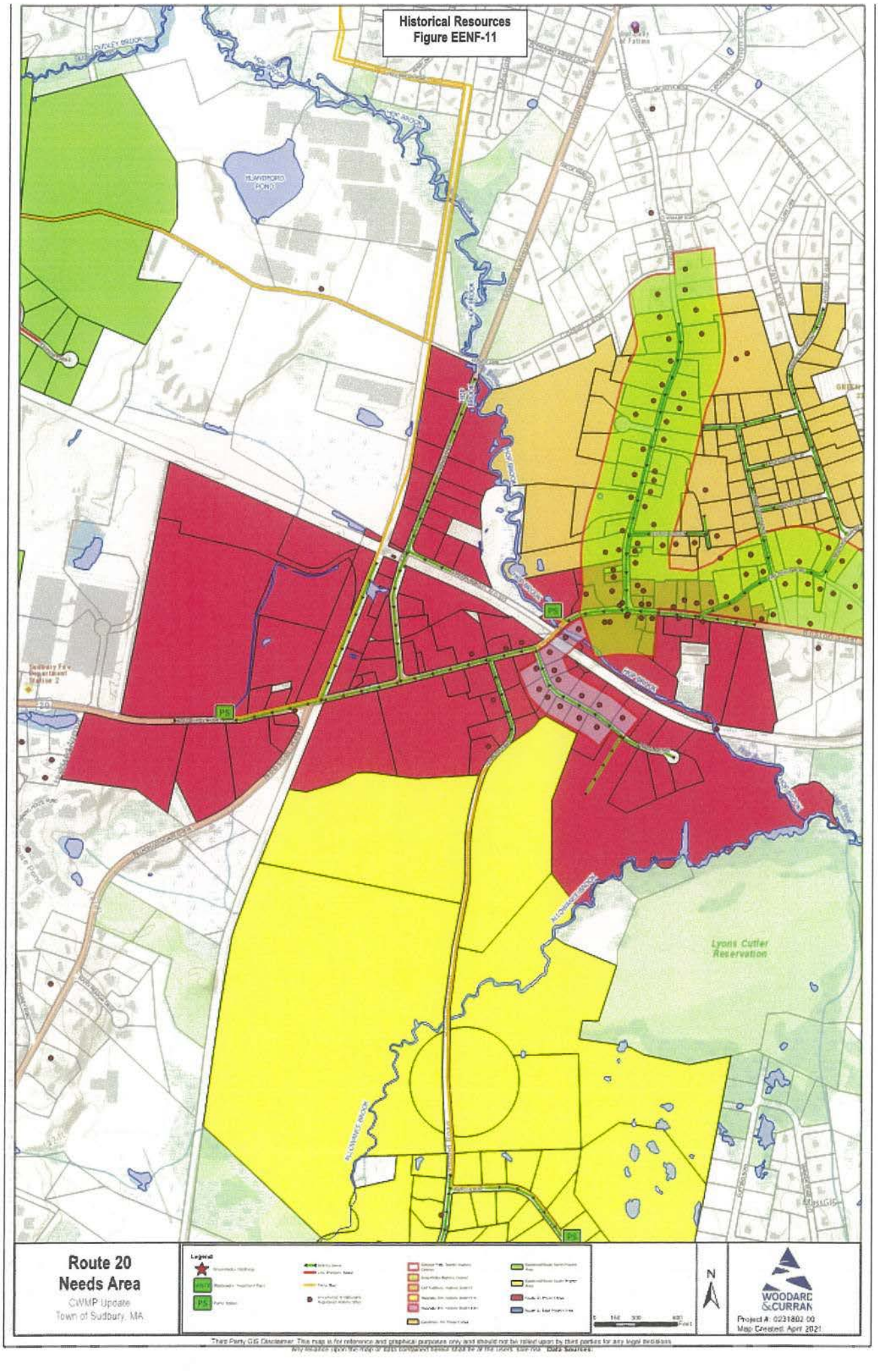
Legend

N

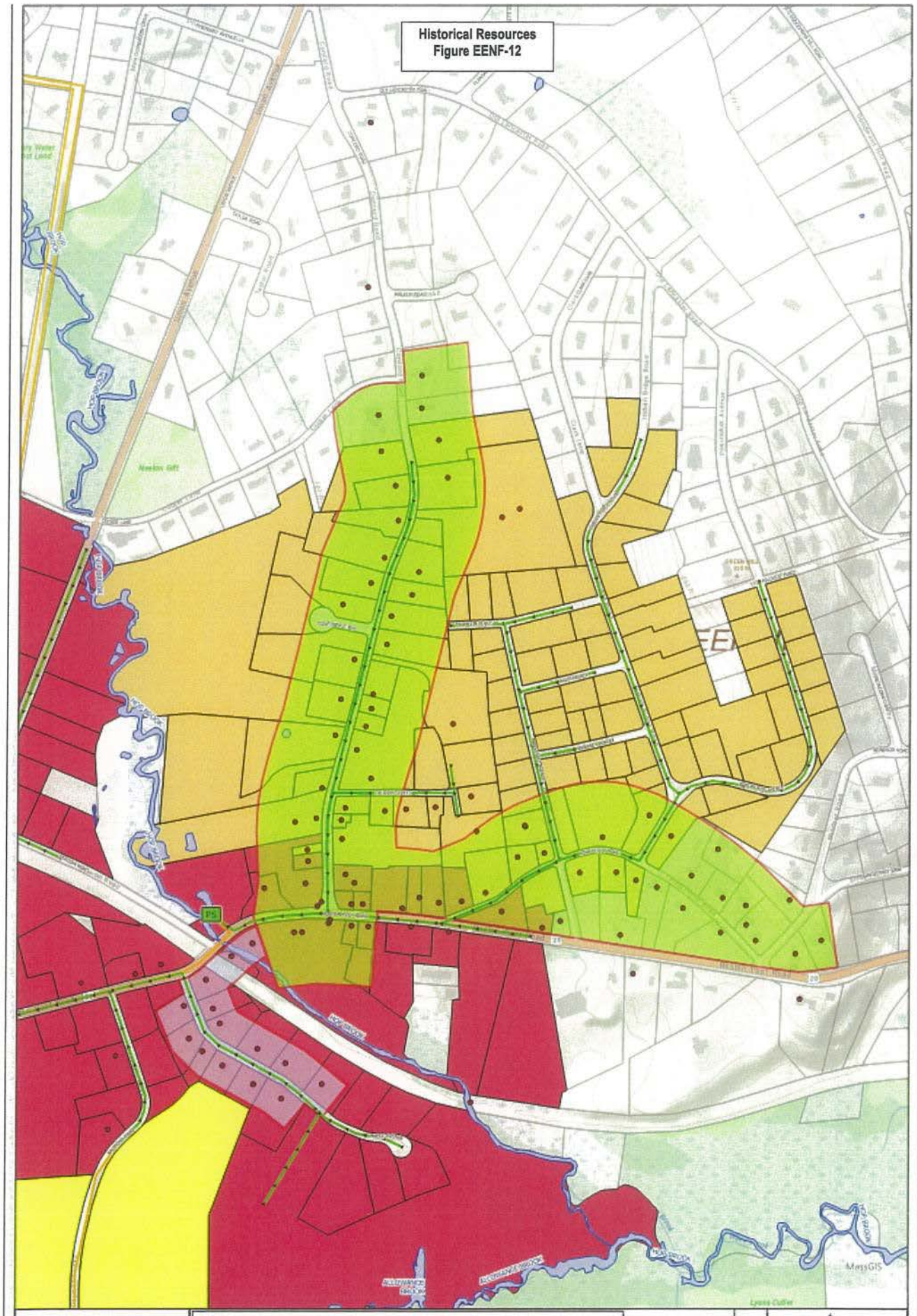
WOODARD &CURRAN

Project #: 0231802.00
Map Created: March 2021

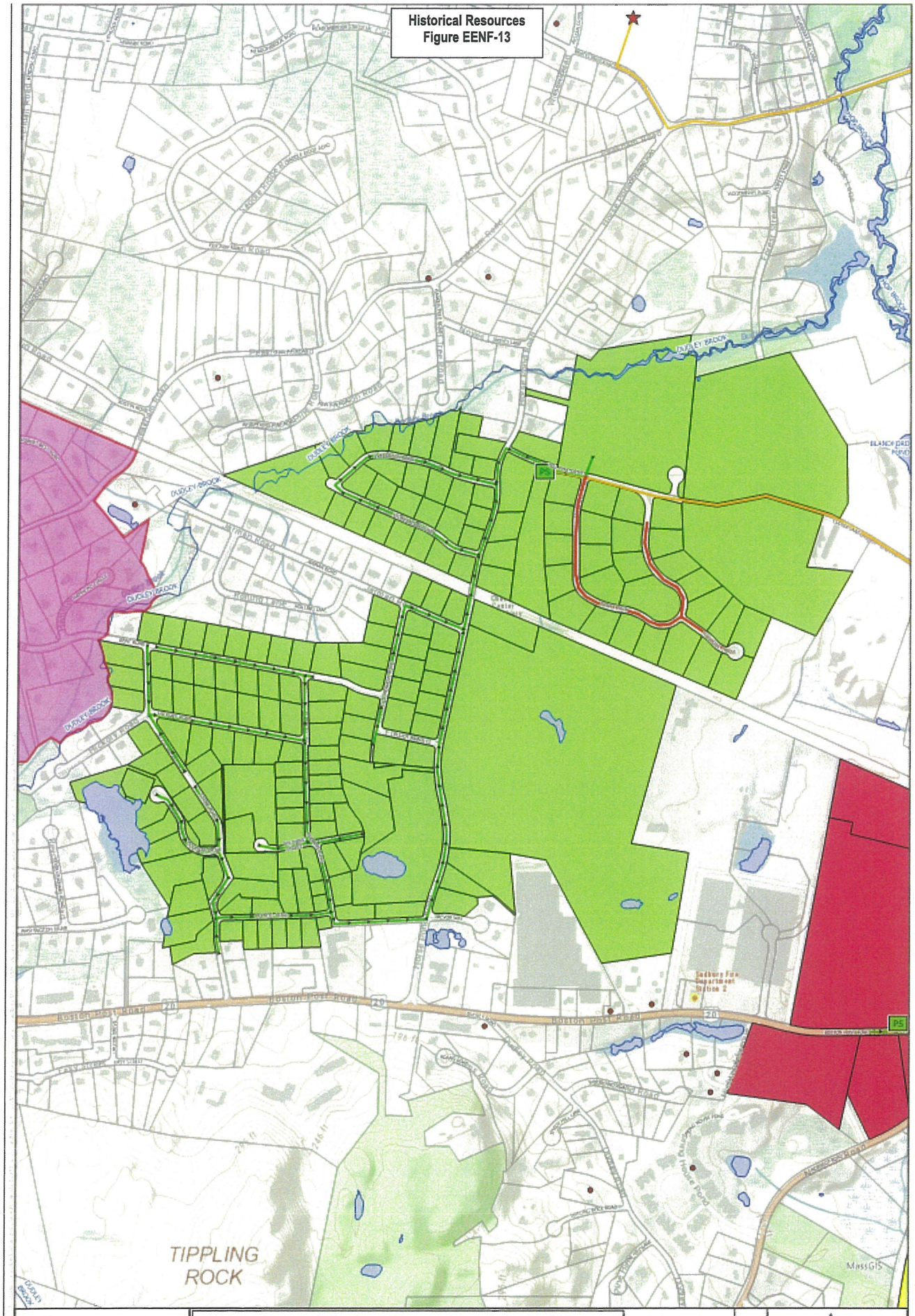



Historical Resources
Figure EENF-11
Route 20
Needs Area
CWMP Update
Town of Sudbury, MA
Legend
Lyons Cutler
Reservation
N
WOODARD
&CURRAN
Project #: 0231802.00
Map Created: April 2021
Third Party GIS Disclaimer. This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon this map or data contained herein shall be at the users' sole risk. Data Sources:

Historical Resources
Figure EENF-12



Historical Resources
Figure EENF-13



Raymond Road North Needs Area

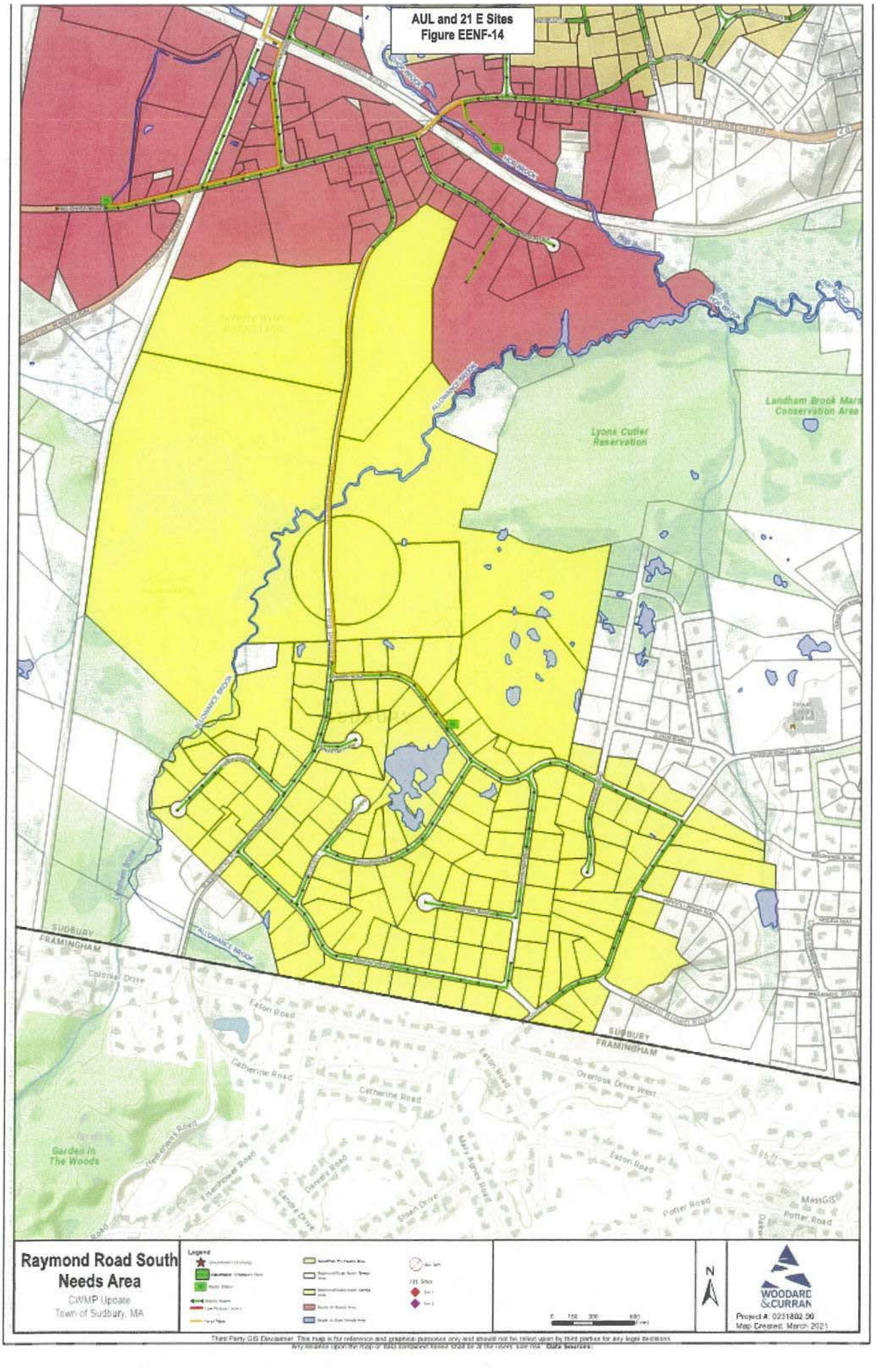
CWMP Update
Town of Sudbury, MA

Legend

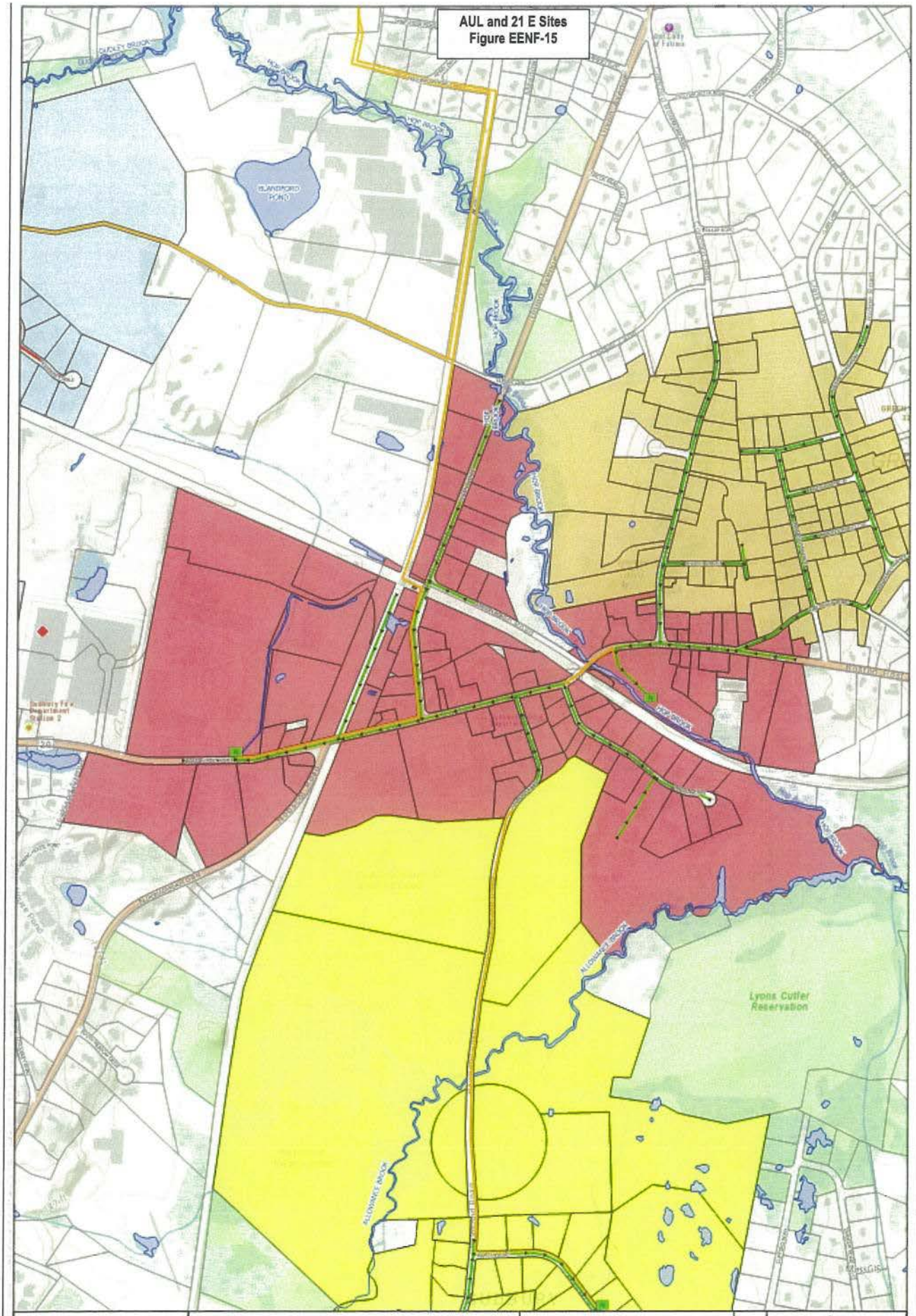
N

WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021



AUL and 21 E Sites
Figure EENF-15



Route 20 Needs Area

CWMP Update
Town of Sudbury, MA

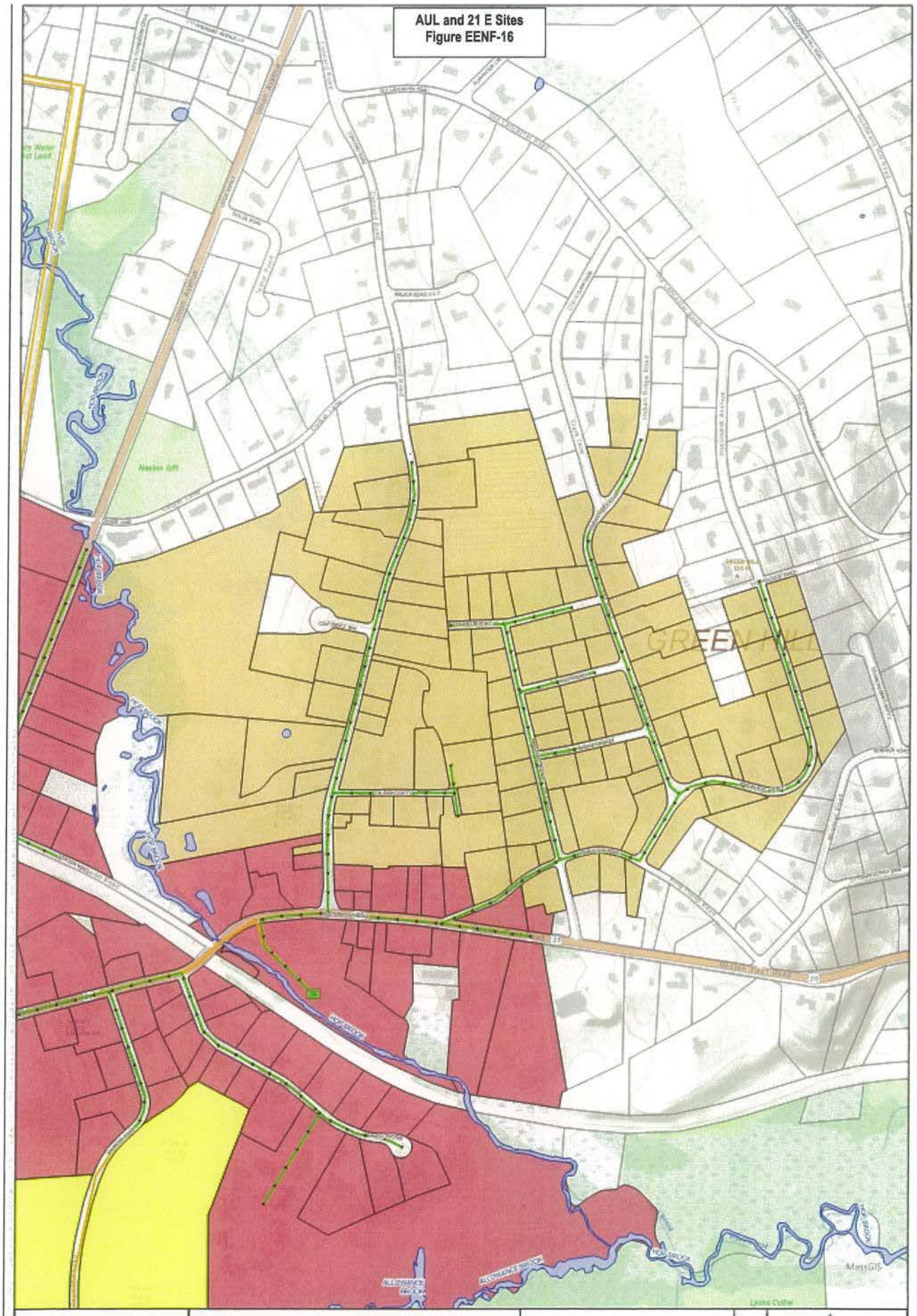
Legend

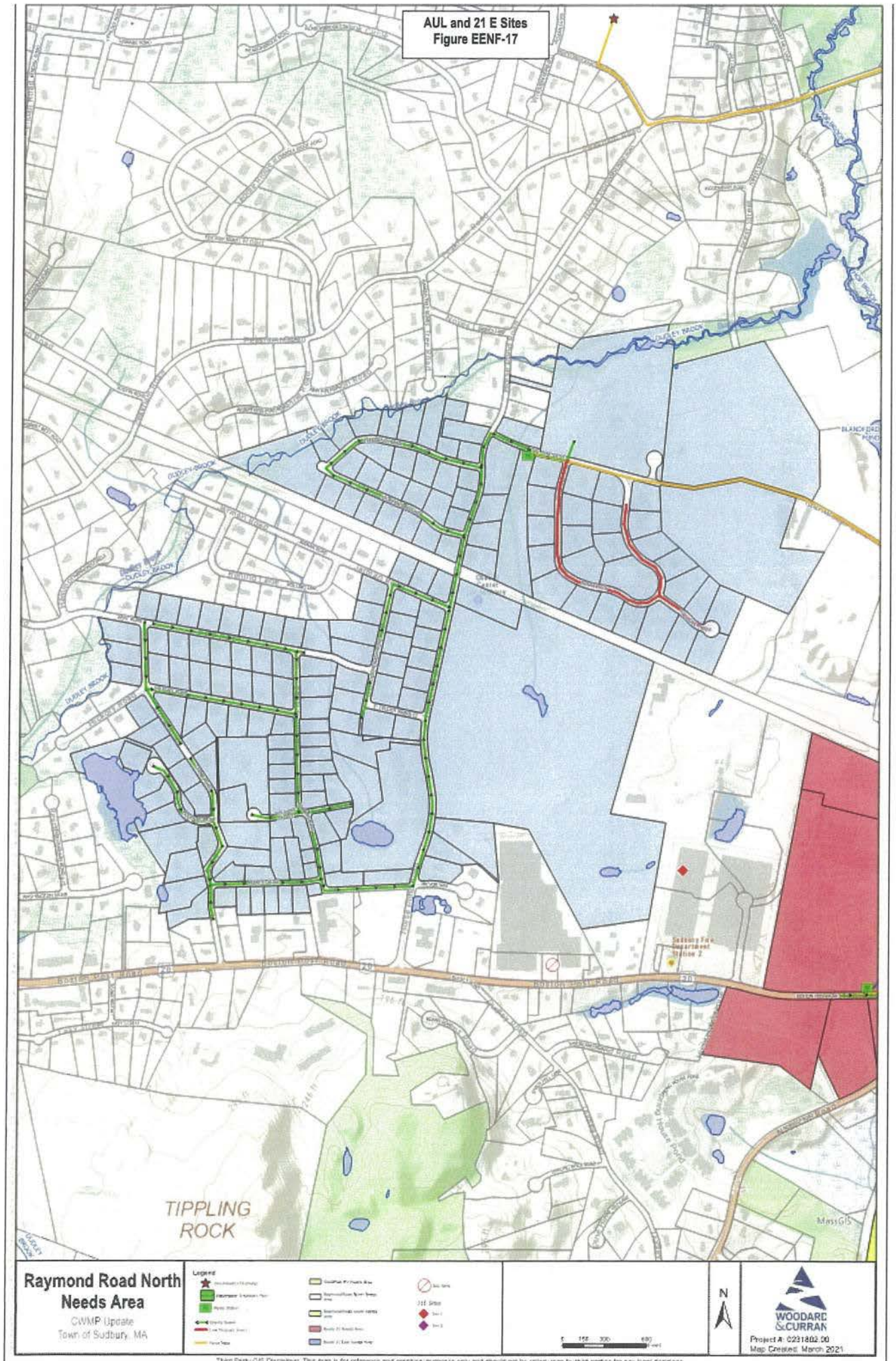
N

WOODARD & CURRAN

Project #: 0231802.00
Map Created: March 2021

AUL and 21 E Sites
Figure EENF-16





ATTACHMENT 5
DISTRIBUTION LIST

EENF Distribution List
Comprehensive Wastewater Management Plan

Agency	Email Address	Address
Massachusetts Environmental Policy Act (MEPA) Office	MEPA@mass.gov	**MEPA Office** 100 Cambridge Street, Suite 900 Boston, MA 02144
Department of Environmental Protection, Boston Office	helena.boccadoro@mass.gov	**Commissioner's Office** One Winter Street Boston, MA 02108
Department of Environmental Protection, Regional Office	john.d.viola@mass.gov	**DEP/Northeast Regional Office** Attn: MEPA Coordinator 205B Lowell Street Wilmington, MA 01887
Department of Environmental Protection, Regional Office	kevin.brander@mass.gov Joseph.nerden@mass.gov Tenzin.lama@mass.gov	**DEP/Northeast Regional Office** 205B Lowell Street Wilmington, MA 01887
Massachusetts Department of Transportation - Boston	MassDOTPPDU@dot.state.ma.us	**Public/Private Development Unit** 10 Park Plaza, Suite #4150 Boston, MA 02116
Massachusetts Department of Transportation - Regional	jeffrey.r.gomes@dot.state.ma.us	**District #3** Attn: MEPA Coordinator 499 Plantation Parkway Worcester, MA 01605
Massachusetts Historical Commission	**Mail a hard copy of the filing to MHC.**	**The MA Archives Building** 220 Morrissey Boulevard Boston, MA 02125
Metropolitan Area Planning Council (MAPC)	Marc Draisen, Executive Director mdraisen@mapc.org	Metropolitan Area Planning Council 60 Temple Place Boston, MA 02111
MUNICIPALITIES AFFECTED BY OR ABUTTING PROJECT		
Town of Sudbury	Henry L. Hayes, Jr. Town Manager hayesh@sudbury.ma.us	**Board of Selectmen / Town Administration**
	Adam Duchesneau, Director of Planning duchesneaua@sudbury.ma.us	**Planning Board / Historic Districts Commission, Historical Commission**
	Lori Capone, Conservation Coordinator Concom@sudbury.ma.us	**Conservation Commission**
	Bill Murphy, Health Director murphyb@sudbury.ma.us	**Board of Health**

EENF Distribution List
Comprehensive Wastewater Management Plan

City of Framingham	George King, City Council Chair gking@framinghamma.gov	**City Council or Board of Selectmen**
	Erika Olive Jerram, Acting Director eoj@framinghamma.gov	**Planning Board/Department**
	Robert McArthur, Commissioner rdm@framinghamma.gov	**Conservation Commission**
	Alexandra DePalo JHealth@framinghamma.gov	**Department/Board of Health**
Town of Sudbury	Henry L. Hayes, Jr. Town Manager hayesh@sudbury.ma.us	**Board of Selectmen / Town Administration**
	Dan Nason, Public Works Director nasond@sudbury.ma.us	**Department of Public Works**
	Adam Duchesneau, Director of Planning duchesneaua@sudbury.ma.us	**Planning Board / Historic Districts Commission, Historical Commission**
	Lori Capone, Conservation Coordinator Concom@sudbury.ma.us	**Conservation Commission**
	Bill Murphy, Health Director murphyb@sudbury.ma.us	**Board of Health**
Town of Wayland	Louise Miller, Town Administrator lmiller@wayland.ma.us	**Board of Selectmen / Town Administration**
	Sarkis Sarkisian, Town Planner ssarkisian@wayland.ma.us	**Planning Board**
	Linda Hansen, Administrator lhansen@wayland.ma.us	**Conservation Commission**
	Julia Junghanns, R.S, C.H.O., Director jjunghanns@wayland.ma.us	**Board of Health**
	Tom Holder, Director tholder@wayland.ma.us Paul Brinkman, Town Engineer pbrinkman@wayland.ma.us	**Department Public Works**

EENF Distribution List
Comprehensive Wastewater Management Plan

Town of Maynard	Gregory Johnson, Town Administrator gjohnson@TownofMaynard.Net	**Board of Selectmen / Town Administration**
	Bill Nemser, Director bnemser@TownofMaynard.Net	**Planning Board**
	General Mailbox conservation@TownofMaynard.Net	**Conservation Commission**
	John Robertson, Director jrobertson@TownofMaynard.Net	**Public Health**
	Justin DeMarco, Director jdemarco@TownofMaynard.Net	**Department of Public Works**
Town of Concord	Stephen Crane, Town Manager scrane@concordma.gov	**Board of Selectmen / Town Administration**
	Marcia Rasmussen, Director mrasmussen@concordma.gov	**Planning Board**
	Delia Kaye, Director dkaye@concordma.gov	**Natural Resources Department**
	Susan G. Rask, Director srask@concordma.gov	**Board of Health**
	Alan H. Cathcart, Director acathcart@concordma.gov Jeffrey Murawski, Wastewater Superintendent jmurawski@concordma.gov	**Department of Public Works**
If the Project site is within or contains designated significant or estimated habitat, or priority sites of endangered or threatened species or species of special concern in accordance with the Massachusetts Endangered Species Act	melany.cheeseman@mass.gov emily.holt@mass.gov	**Natural Heritage and Endangered Species Program** Division of Fisheries & Wildlife 1 Rabbit Hill Road Westborough, MA 01581
If the Project affects DCR roadways, watersheds or other properties or an ACEC	andy.backman@mass.gov	**DCR** Attn: MEPA Coordinator 251 Causeway St. Suite 600 Boston MA 02114

EENF Distribution List
Comprehensive Wastewater Management Plan

If the Project implicates public health impacts	DPHToxicology@State.MA.US	**Department of Public Health** Director of Environmental Health 250 Washington Street Boston, MA 02115
If the Project is subject to Greenhouse Gas Emissions Policy or to review by Energy Facilities Siting Board	andrew.greene@mass.gov geneen.bartley@mass.gov	**Energy Facilities Siting Board** Attn: MEPA Coordinator One South Station Boston, MA 02110
	paul.ormond@mass.gov brendan.place@mass.gov	**Department of Energy Resources** Attn: MEPA Coordinator 100 Cambridge Street, 10th floor Boston, MA 02114

ATTATCHMENT 6
LIST OF PERMITS REQUIRED

COMPREHENSIVE WASTEWATER MANAGEMENT PLAN
LIST OF PERMIT

The following is a list of potential permits that may be required for the CWMP implementation. Once the CWMP transfers from conceptual planning to preliminary design/survey, these agencies will be contacted and permitting processes begun.

Permit	Agency	Reason
Wetlands, RDA and NOI	MassDEP and Local Conservation Commission	Wetland crossing, buffer areas
State Road Work	MassDOT	State jurisdiction roadway work
Road Opening	Town of Sudbury DPW	Local road work
Construction of WWTF and Groundwater Discharge BRP-83 et al as needed	MassDEP	Construction of Wastewater Treatment Facility and Groundwater Discharge Fields

Although not a permit, the Town will coordinate through The Massachusetts Historical Commission, as well as the two local historical groups, to coordinate survey work required as part of the Project Notification Form.

ATTACHMENT 7
PUBLIC NOTICE

PUBLIC NOTICE OF ENVIRONMENTAL REVIEW

PROJECT: Comprehensive Wastewater Management Plan

LOCATION: Town of Sudbury, MA

PROPONENT: Board of Selectmen and Department of Public Works

The undersigned is submitting an Expanded Environmental Notification Form ("EENF") to the Secretary of Energy & Environmental Affairs on or before: December 31, 2021

This will initiate review of the above project pursuant to the Massachusetts Environmental Policy Act ("MEPA", M.G.L. c. 30, s.s. 61-62I). Copies of the ENF may be obtained from:

Woodard & Curran, Inc.
250 Royall Street, Suite 200E
Canton, MA 02021

Copies of the EENF are also being sent to the Department of Public Works 275 Old Lancaster Road, Sudbury, MA where they may be inspected.

The Secretary of Energy & Environmental Affairs will publish notice of the EENF in the Environmental Monitor, will receive public comments on the project for 20 days, and will then decide, within ten days, if an environmental Impact Report is needed. A site visit and consultation session on the project may also be scheduled. All persons wishing to comment on the project, or to be notified of a site visit or consultation session, should write to the Secretary of Energy & Environmental Affairs, 100 Cambridge St., Suite 900, Boston, Massachusetts 02114, Attention: MEPA Office, referencing the above project.

By: Sudbury Board of Selectmen and Department of Public Works

From: Hoyen, Carol <CHoyen@localiq.com>
Sent: Tuesday, December 21, 2021 10:05 AM
To: Barter, Denise
Subject: Re: CWMP Posting

REC'D FOR 12/30/21

Please note with the approaching Christmas & New Year Holidays, our deadlines will move up.

Thank-you,

Carol Hoyen
Legal Advertising Representative - Classified Business Solutions

Office : 800-624-7355 - option 3 - ext. 1074
Direct: 781-433-7903
Dept: 781-433-6930 - option 3

Email Addresses to submit a Legal Notice ad:
Legal Advertising: legals@wickedlocal.com
Patriot Ledger Legal Adv. (only): legals@patriotledger.com
Brockton Enterprise Legal Adv. (only): legals@enterprisenews.com

From: Barter, Denise <barterd@sudbury.ma.us>
Sent: Tuesday, December 21, 2021 8:37 AM
To: MA-Legals <legals@wickedlocal.com>
Subject: CWMP Posting

Good Morning,

Please see the attached ad that we would like to advertise in the next Town Crier.

We would also like to request a tear sheet of the ad be sent to us and a confirm receipt of this email.

Please let me know if you have any questions.

Thank you,
Denise

DENISE BARTER
Management Analyst | DPW

TOWN OF SUDBURY
Department of Public Works
275 Old Lancaster Rd
Sudbury, MA 01776

T 978.440.5422
F 978.440.5404

ATTACHMENT 8
GREEN HOUSE GAS

GREENHOUSE GAS EMISSIONS POLICY

Greenhouse Gas Emissions Policy and Sustainable Design

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) issued the 2007 Greenhouse Gas Emissions Policy (GHG Policy) after determining after determining that the phrase "damage to the environment" as used in the Massachusetts Environmental Policy Act (MEPA) includes the emission of greenhouse gases" ("Summary of the Final Revisions to the MEPA Greenhouse Gas Policy and Protocol," EEA, May 5, 2010). This project requires an environmental impact report (EIR) per 301 CMR 11.01(2)(a)(2), and the GHG Policy is therefore applicable. The current revision of the GHG Policy which is considered by this report is the "Final Revised MEPA GHG Emissions Policy and Protocol" which became effective as of May 5, 2010.

The purpose of this section, in accordance with the GHG Policy, is to discuss and quantify the greenhouse gas emissions for the existing and planned sewer infrastructure within the Town of Sudbury, as well as measures to avoid, minimize, or mitigate such emissions.

The existing sewage infrastructure in the Town of Sudbury consists of on-site sewage disposal systems.

The proposed infrastructure which is evaluated herein consists of installing gravity sewers, three pump stations, and a new wastewater treatment plant.

Design Standards

These sustainable design standards in this section are intended to provide for GHG reductions where possible by maximizing energy efficiencies. These standards shall be implemented where they are determined to be feasible and appropriate. This determination shall occur during the design phase of future expansion and rehabilitation projects.

Building Design and General Site Selection

The following standards will be reviewed and applied to the extent practicable for building rehabilitation and new construction. These considerations are anticipated to be applicable to all new construction; their practicability for building rehabilitation will be limited.

- Avoid buildings where practicable by using an outdoor controls cabinet instead. This will substantially reduce electricity usage due to heating, as well as overall project cost, materials usage, pump station footprint, and stormwater impacts.
- Duct Installation shall include sealing ducts with mastic, testing, and then insulating to prevent unnecessary duct leakage.
- Pump station buildings are intended for temporary occupancy, so heating shall be minimized such as to only be warm enough to protect equipment, and air conditioning will not be provided, aside from ventilation.
- High-albedo roofing material shall be implemented to reduce ventilation requirements due to heat management.
- Roof and wall insulation shall utilize the highest R-value insulation feasible for the specific type of building construction.
- Energy efficient lighting shall be used for all construction.
- High efficiency heating systems shall be utilized. Use natural gas heating if practicable.
- On-site renewable energy shall be considered in building siting, design, and construction. This includes constructing buildings to support future solar photovoltaic systems and orienting new buildings to maximize the solar benefit.

Equipment/Process Design

The following standards are applicable to all new equipment installations. These standards will be evaluated when large pieces of equipment are replaced.

1. New or replacement motors greater than 10 HP for pumps, blowers, fans, mixers and other drives shall consider Variable Frequency Drivers (VFDs) where variable speed operation can reduce energy consumption. VFDs will typically be provided in lieu of Soft Start devices for pumps, to access the operational flexibility and efficiency potential that a VFD offers.
2. SCADA controls will be remotely accessible via radio or other network connection to reduce need for operators and maintenance personnel to travel to the pump station sites, allow for better analysis of station efficiency and optimization, and access other logistical benefits of remote accessibility.
3. Pump sizes and combinations to maximize average efficiency shall be evaluated at preliminary/final design.

4. Sewer force mains shall be sized, designed, and routed in preliminary design to optimize for minimal maintenance and lower average pumping power required to convey sewer flow.
5. New or replacement motors greater than 1 horsepower (HP) for pumps, blowers, fans, mixers and other drives shall be premium efficiency duty. New or replacement equipment shall incorporate high efficiency models where cost-effective.
6. Review flows and loads with Town to mitigate issues with sizing pumps and stations from unrealistically high buildout flows. Areas proposed to be sewered in this report are largely developed already and the delta between near-term and buildout flows is small relative to other sewer projects, so actual water use data should be used to guide this effort.
7. Considerations shall be when selecting equipment and designing the wetwell to prevent ragging of the pump and excessive scum buildup, which would cause inefficient pump operation.

Maintenance and Public Policy

The following standards are potentially applicable to all sewered areas.

1. Maintain the collection system to prevent infiltration and inflow by putting in place a replacement and rehabilitation schedule. This will reduce the required pumping, mitigate the risk of sanitary sewer overflows, and prevent costly emergency repairs.
2. Encourage reduction in sewer flows. In the future, evaluate cost-incentive programs for businesses to reduce their sewer fees, and clearly communicate how sewer fees are assessed so residents understand and have a cost incentive to be careful with their water usage.

GHG Emissions Quantification

This section provides the calculated quantities of GHG emissions for the existing sewer infrastructure, proposed sewer infrastructure without proposed improvements, and proposed sewer infrastructure with proposed improvements. Basis GHG emissions were calculated based solely on electricity usage. Note that all existing plants have electric unit heaters, and all proposed plants are assumed to also have electric unit heaters. Table 1, below, provides the factors used to convert electricity usage to carbon dioxide equivalents (CO_2e).

Table 1: Greenhouse Gas Emissions Factors

Gas	Emissions Rates, lbs/MWH [1]	GWP [2]	CO_2e, tons/MWH [2]
CO_2	488.9	1	0.24
NO_x [2]	0.343	298	0.05
Total	--	--	**0.30**

1: Emissions rates are included per EPA estimates provided via the EPA Power Profiler (https://www.epa.gov/energy/power-profiler#/NEWE, extracted Dec 8, 2021) for the NEWE eGrid Subregion (NPCC (Northeast Power Coordinating Council) New England). The EPA also includes an emissions rate for sulfure dioxide of 0.1 lbs/MWH, but as sulfur dioxide is generally not considered a greenhouse gas, this is omitted.
2: CO_2 equivalent (CO_2e) is found by multiplying the quantity of the gas by the Global Warming Potential (GWP). Global Warming Potential for nitrous oxide utilized is upper limit per https://www.epa.gov/ghgemissions/understanding-global-warming-potentials, as extracted July 23, 2019.

Electricity usage for pumps was calculated based on the following calculations:

Hydraulic Horsepower (HP) = Flow [gpm] x Total Dynamic Head [ft] / 3956

Power Delivered to Motor [HP] = Hydraulic HP / (Efficiency of Motor x Efficiency of Pump)

Input Power Required, kW = Power Delivered to Motor x 0.7457 kW/HP

For pump stations, motor efficiencies were assumed as 85%. Proposed pump station usage was calculated as a range. For the high end of electricity consumption and GHG emissions, a pump efficiency of 65% was assumed. For the low end, a pump efficiency of 75% was assumed.

Electricity usage for unit heaters was calculated by assuming:

1. Each unit heater would run eight hours per day in January
2. Each unit heater would run a number of hours prorated off of the January runtime, based on the maximum heating-degree-days for each respective month as taken from degreedays.net, based on Hanscom Field in Bedford, MA (KBED) data from Dec 2019-Nov 2021, with a base temperature of 60°F.

3. Unit heaters for buildings would be 3kW each, with one heater per room. Unit heaters for an exterior control cabinet would be 0.5kW each.

For the wastewater treatment plant, projected energy usage was taken from data provided by Transcend, which provides package treatment plant designs. Additional detail can be found in Appendix 8.

Baseline GHG Emissions

GHG emissions for existing septic systems was calculated assuming 0.11 tons/CO2e per capita-yr, per the *Evaluation of Greenhouse Gas Emissions from Septic Systems* report from the Water Environment Research Foundation (WERF), dated December 2011 (note: converted from metric tons). The 'capita equivalent' for each phase of the project was calculated by dividing the flow from that phase of the project by 59 gpd, the per capita sewage flow calculated as discussed in Section 2.8 Baseline GHG emissions are included in Table 2, below.

Table 2: Baseline GHG Emissions

	Low Estimate (Existing)			High Estimate (Buildout)		
Area Served By:	Near Term ADF, gpd	Equivalent in Capita	CO2e, tons/yr	Buildout ADF, gpd	Equivalent in Capita	CO2e, tons/yr
Phase 1: Route 20 Sub-Area A PS	38,692	656	72	146,150	2,477	273
Phase 1A: Raymond Road South	25,857	438	48	34,283	581	64
Phase 2 - Raymond Hills North PS	31,253	530	58	41,072	696	77
Phase 4: Route 20 Sub-Area B PS	27,482	466	51	54,589	925	102
Total	**123,285**	**2,090**	**230**	**276,095**	**4,680**	

Projected GHG Emissions

GHG emissions for proposed pump stations and wastewater treatment plant were calculated based on projected electricity usage. Low and high estimates are provided.

For pump stations, the low and high estimates differ in their assumption regarding heating requirements and pump efficiency. Heating requirements will vary based on the size of the building. The low estimate assumes the following: Heating for control room only for Phase 1 PS. Heating for exterior control cabinets for other stations. The high end assumes all pump stations will have buildings with two small rooms. The inclusion of buildings will depend on final site selection. Low estimates assume a pump efficiency of 65%, high estimates assume a pump efficiency of 75%. This will vary based on final pump selection. Higher efficiency equipment will be sought, but may not be practicable, in particular for the smaller pump stations which may need grinder pumps. These low and high end estimates represent design standards being implemented to various degrees.

For the wastewater plant, the energy usage is calculated by prorating the energy usage estimated by Transcend against the flow associated with an individual phase. The low and high estimates vary based on whether the near term or buildout flow was being used.

Table 3 provides the estimated expanded GHG emissions. Additional detail is provided in Attachment 8 .

Table 3: Expanded GHG Emissions

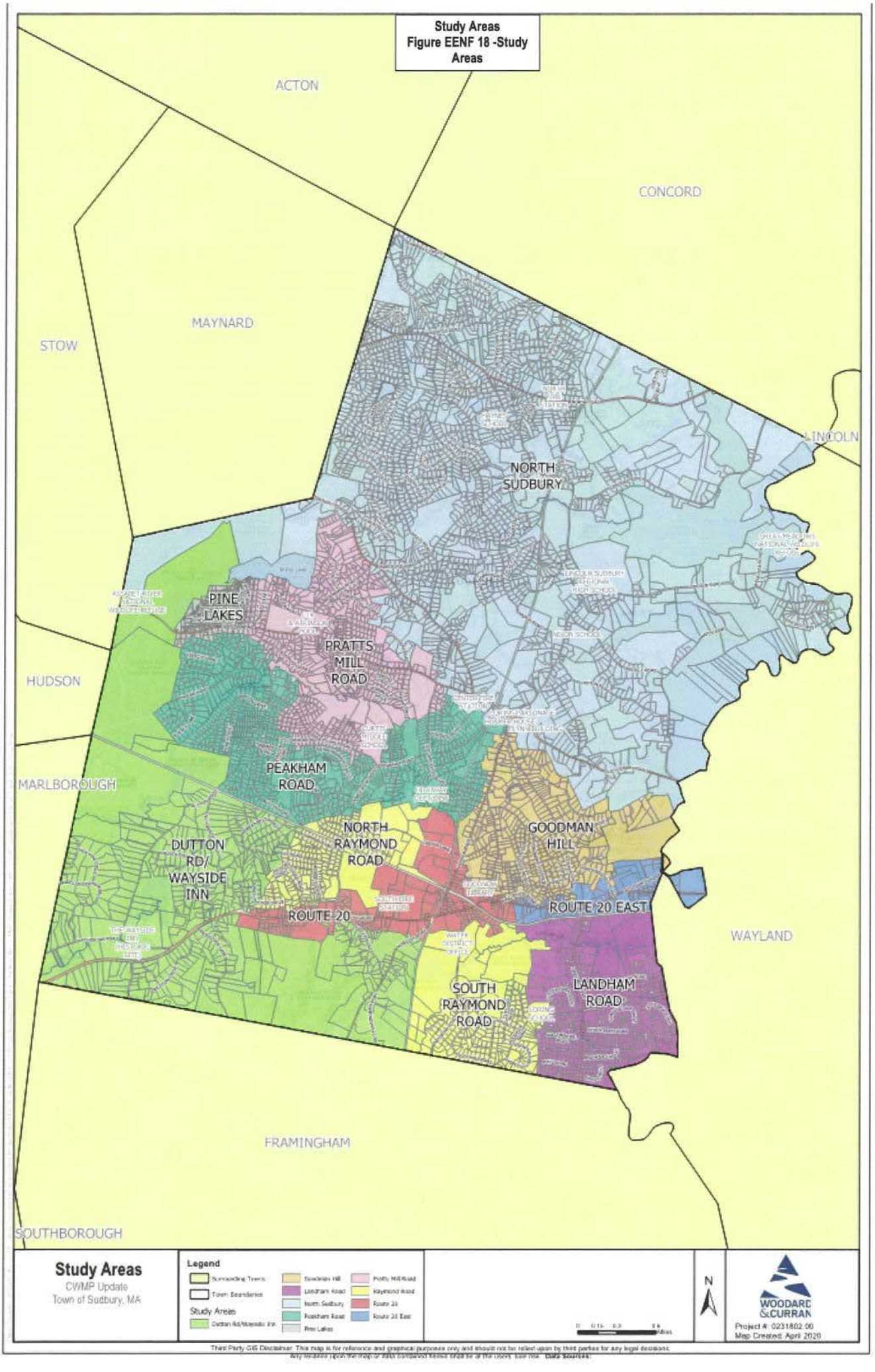
Phase	Energy Usage, MWH/yr			GHG Emissions (tpy CO2e)		
	Pump Stations	WWTP	Total	Baseline	Proposed	Delta
Phase 1: Route 20 Sub-Area A PS	50 to 61	8 to 31	58 to 92	72 to 273	17 to 27	-45 to -256
Phase 1A: Raymond Road South	15 to 25	6 to 7	21 to 32	48 to 64	6 to 9	-39 to -58
Phase 2 - Raymond Hills North PS	30 to 42	7 to 9	37 to 51	58 to 77	11 to 15	-43 to -66
Phase 4: Route 20 Sub-Area B PS	16 to 26	6 to 12	22 to 37	51 to 102	6 to 11	-40 to -96
Total	**111 to 153**	**26 to 59**	**137 to 212**	**230 to 516**	**41 to 63**	**-168 to -475**

Conclusions

GHG Emissions are estimated to be reduced by eliminating on-site septic disposal, and replacing it with conveyance and treatment. This reduction does not consider the carbon emissions due to construction (temporary), and assumes that the biosolids and effluent from the WWTP are dealt with such that they do not off-gas, and is therefore not conservative. However, taking also into consideration the various other environmental benefits realized by removing on-site sewage treatment in densely populated areas as discussed elsewhere in this report, this report does confidently conclude that greenhouse gas emission considerations should, at a minimum, not discourage this project from proceeding.

Greenhouse gas reductions may be maximized by employing the efficiency recommendations discussed in this section. However, as sewage pump stations are generally utilitarian and therefore inherently efficient, these reductions are not substantial and will need to be considered relative to their cost efficacy.

Sudbury is committed to reducing GHG as it moves forward. The additional costs savings to the O&M brings additional benefit to the Town.


Study Areas
Figure EENF 18 -Study Areas
ACTON
CONCORD
MAYNARD
STOW
LINCOLN
NORTH SUDBURY
PINE LAKES
PRATTS MILL ROAD
HUDSON
PEAKHAM ROAD
MARLBOROUGH
NORTH RAYMOND ROAD
GOODMAN HILL
DUTTON RD/ WAYSIDE INN
ROUTE 20
ROUTE 20 EAST
WAYLAND
SOUTH RAYMOND ROAD
LANDHAM ROAD
FRAMINGHAM
SOUTHBOROUGH
Study Areas
CWMP Update
Town of Sudbury, MA
Legend
Surrounding Towns
Town Boundaries
Study Areas
Dutton Rd/Wayside Inn
Goodman Hill
Landham Road
North Sudbury
Peakham Road
Pine Lakes
Pratts Mill Road
Raymond Road
Route 20
Route 20 East
N
WOODARD &CURRAN
Project #: 0231802.00
Map Created: April 2020
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon the map or data contained hereon shall be at the users sole risk. Data Sources:

Baseline

Description of Work

Estimate GHG emissions from existing septic systems.

Assume GHG emissions from septic systems = 0.10 tonne CO2e/capita-yr. Evaluation of Greenhouse Gas Emissions from Septic Systems, Water Environment Research Foundation, December 2011.

= 0.11 tons CO2e/capita-yr

Per capita sewage flow = 59 gpd

Name	Low Estimate (Existing)			High Estimate (Buildout)		
	Near Term ADF, gpd	Equivalent in Capita	CO2e, tons/yr	Buildout ADF, gpd	Equivalent in Capita	CO2e, tons/yr
Phase 1: Route 20 Sub-Area A PS	38,692	656	72	146,150	2,477	273
Phase 1A: Raymond Road South	25,857	438	48	34,283	581	64
Phase 2 - Raymond Hills North PS	31,253	530	58	41,072	696	77
Phase 4: Route 20 Sub-Area B PS	27,482	466	51	54,589	925	102
Total	**123,285**	**2,090**	**230**	**276,095**	**4,680**	**516**

Proposed Pump Stations

Description of Work

Estimate electrical usage for proposed pump stations.

Usage from Pumps

Pump Stations

Assumed pump efficiency, high usage = 65%
Assumed pump efficiency, low usage = 75%
Assumed motor efficiency = 85%

	Determine Flow						Determine TDH										Estimate Energy Usage						
	From service Parcels			From Upstream PS			Major Losses					Static Head											
Name	Buildout Average Daily Flows (gpd)	Peaking Factor	Peak Hourly Flows (gpm)	Upstream Pump Stations	Upstream Pump Station Flow, gpm	Conceptual Design Pump Capacity, Q, gpm	FM Length, L, ft	Assumed Diameter, d, Inches	Flow Velocity, fps	Hazen-Williams Coefficient, Assumed	Major Losses: $Q[gpm]^{1.85} \times 10.44 \times L[ft] / (C^{1.85} \times d[in]^{4.87})$	Assumed Wetwell Level	Discharge Pt	Assumed Discharge HGL, ft	Static Head, ft	TDH: Major Losses + Static Head, ft (Neglect Minor Losses)	Pump HP, min	Assumed Pump HP	P,m,kW	Anticipated Runtime, hours/day	Energy Usage, kWh/day	HIGH USAGE Energy Usage, MWH/yr	LOW USAGE Energy Usage, MWH/yr
Phase 1: Route 20 Sub-Area A PS	147,000	5.6	572	Phase 1A & Phase 4	375	1,000	7,700	10	4.1	120	55	105	Prop WWTP	200	95	150	68.5	75	56	2.5	137	50.0	43.3
Phase 1A: Raymond Road South	35,000	5.6	136			150	5,600	4	3.8	120	103	106	Raymond Road to Phase 1 PS	137	31	134	9.2	15	11	3.9	43	15.9	13.8
Phase 2 - Raymond Hills North PS	42,000	5.6	163			175	7,900	4	4.5	120	194	125	Prop WWTP	200	75	269	21.5	30	22	4.0	89	32.7	28.3
Phase 4: Route 20 Sub-Area B PS	55,000	5.6	214			225	1,500	4	5.7	120	59	102	Boston Post Rd to Phase 1 PS	127	25	84	8.6	15	11	4.1	46	16.6	14.4

Usage from Unit Heaters

Determine number of hours heater will run.

Assume unit heater runs eight hours per day in January, and scale all other usage off of that assumption based on heating-degre-days, per degreedays.net:

Month	Max HDD (1)	Hrs/day (2)	Hrs/mo.
Jan	959	8.0	248
Feb	777	6.5	181
Mar	768	6.4	199
Apr	479	4.0	120
May	194	1.6	50
Jun	46	0.4	12
Jul	75	0.6	19
Aug	24	0.2	6
Sep	45	0.4	11
Oct	275	2.3	71
Nov	528	4.4	132
Dec	912	7.6	236
		Total (Hrs/year) =	1,286

1. Max HDD represents the maximum heating-degree-day values for the respective month taken from degreedays.net, based on Hanscom Field in Bedford, MA (KBED) data from Dec 2019-Nov 2021, with a base temperature of 60°F.

2. The unit heater is assumed to run 1/3 of the day in January. The remainder of the year is scaled off of this assumption based on the max HDD.

Calculate usage for a typical pump station building, and for a typical cabinet.

Usage of a Building

Unit heater size = 3.0 kW/room. Small room assumed.

Energy usage / unit heater = 3.9 MWH/yr/unit heater

Usage for a Exterior Control Cabinet

Unit heater size = 0.5 kW

Energy usage / unit heater = 0.6 MWH/yr/unit heater

Assumptions

NEWE Emission Rates per https://www.epa.gov/egrid/power-profiler#/ retrieved 128/8/2021

GHG	Emission, lbs/MWh	Assumed GWP	CO2e, lbs/MWH	CO2e, tons/MWH
CO_2	488.9	1	488.9	0.24
SO_2	0.107	0	0	0.00
NO_x	0.343	298	102.214	0.05
Total			**591.114**	**0.30**

Proposed Pump Stations, Summary

Calculate usage for a typical pump station building, and for a typical cabinet.

Name	Pump Size (for Comparison)	Low Estimate						High Estimate					
		Pump Usage, MWH/yr	Heating Usage, MWH/yr	Desc.	Other (5% Assumed)	Total	GHG Emissions (tpy CO2e)	Pump Usage, MWH/yr	Heating Usage, MWH/yr	Desc.	Other (5% Assumed)	Total	GHG Emissions (tpy CO2e)
Phase 1: Route 20 Sub-Area A PS	75	43.3	3.9	Controls room provided; generator on exterior slab.	2.4	49.6	14.6	50.0	7.7	Pump station with control room and generator room.	2.9	60.6	17.9
Phase 1A: Raymond Road South	15	13.8	0.6	Exterior Control cabinet; generator on slab	0.7	15.1	4.5	15.9	7.7		1.2	24.8	7.3
Phase 2 - Raymond Hills North PS	30	28.3	0.6		1.4	30.4	9.0	32.7	7.7		2.0	42.4	12.5
Phase 4: Route 20 Sub-Area B PS	15	14.4	0.6		0.8	15.8	4.7	16.6	7.7		1.2	25.6	7.6
						110.9	**32.8**					**153**	**45.3**

Proposed WWTP

Values from Transcend Package Plant Design Materials

Design Average Flow = 1,420 m^3/d
= 375,124 gpd
Daily Average Consumed Power = 79.85 kW

Phase	Power Consumed At Plant, Prorated by Flow (See Baseline Section), kW		Corresponding GHG Emissions (tpy CO2e)	
	Low Estimate (Existing)	High Estimate (Buildout)	Low Estimate (Existing)	High Estimate (Buildout)
Phase 1: Route 20 Sub-Area A PS	8.2	31.1	2.4	9.2
Phase 1A: Raymond Road South	5.5	7.3	1.6	2.2
Phase 2 - Raymond Hills North PS	6.7	8.7	2.0	2.6
Phase 4: Route 20 Sub-Area B PS	5.8	11.6	1.7	3.4
Total	**26.2**	**58.8**	**7.8**	**17.4**

Total Summary

Phase	GHG Emissions (tpy CO2e)									
	Baseline - Low Estimate	Proposed - High Estimate			Delta - Low	High Estimate	Proposed - Low Estimate			Delta - High
		PS	WWTP	Total Proposed			PS	WWTP	Total Propc	
Phase 1: Route 20 Sub-Area A PS	72	17.9	9.2	27.1	-45.2	273	14.6	2.4	17.1	-256.0
Phase 1A: Raymond Road South	48	7.3	2.2	9.5	-38.8	64	4.5	1.6	6.1	-58.0
Phase 2 - Raymond Hills North PS	58	12.5	2.6	15.1	-43.3	77	9.0	2.0	11.0	-65.8
Phase 4: Route 20 Sub-Area B PS	51	7.6	3.4	11.0	-40.4	102	4.7	1.7	6.4	-95.6
Total	**230.3**	**45.3**	**17.4**	**62.7**	**-167.6**	**515.8**	**32.8**	**7.8**	**40.5**	**-475.3**

ATTACHMENT 9
MASSACHUSETTS HISTORICAL COMMISSION PNF

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

April 22, 2021

Daniel Nason
Director of Public Works
Sudbury Department of Public Works
Public Works Building
275 Old Lancaster Road
Sudbury, MA 01776

RE: Sudbury Comprehensive Wastewater Management Plan, Sudbury, MA. MHC #RC.69626.

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Project Notification Form (PNF), prepared and submitted by Woodward & Curran, received April 14, 2021, for the project referenced above.

The MHC proposes to review phased wastewater management projects as they are designed. Project planners should submit scaled project plans, sized no larger than 11" by 17", showing existing and proposed conditions to the MHC for review and comment for each phase of improvements or expansion projects, including wastewater treatment plant location(s), recharge areas, pump stations, equipment storage and materials staging areas, and cross-country sewer right-of-ways.

The PNF indicates that the project requires federal funding through the use of State Revolving Fund funding administered by the Massachusetts Department of Environmental Protection. The MHC will continue to review the project pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) in consultation with the involved state and federal agencies.

Project planners should consider feasible design and locational considerations that meet the engineering requirements, while also seeking to avoid or minimize impacts to historic and archaeological properties. The preliminary cultural resources identification effort presented in the PNF is insufficient to identify historic and archaeological resources and evaluate potential project effects.

Project planners should consult the MHC's *Inventory of Historic and Archaeological Assets of the Commonwealth* for identified historic and archaeological properties. Proposed above-ground construction (e.g. pump stations) in historic areas should be designed in consultation with the Sudbury Historical Commission and/or Historic District Commission to be compatible and sensitive to the historic characteristics of the surroundings as appropriate. Design elements for new construction in historic areas should consider size, scale, massing, height and materials in developing the specifications, and also consider vegetative screening to minimize visual effects.

Sewer lines and associated infrastructure are proposed primarily within existing paved roads. Review of the Inventory indicates that multiple archaeological sites associated with ancient and historical period land use and occupation in Sudbury are recorded in proximity to the current road network.

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Project impact areas, including pump stations, pipeline within cross-country easements and/or unpaved roadways, effluent recharge sites, and equipment storage and vehicle staging areas proposed within areas that may have minimal previous ground disturbance are archaeologically sensitive. This archaeological sensitivity is primarily due to proximity to recorded archaeological sites and environmental setting, with level, sandy, well-drained soils in proximity to the wetlands and water resources of Sudbury, favorable for ancient and historical period land use and occupation.

The MHC requests that an archaeological reconnaissance survey (950 CMR 70) be conducted for the project. The goal of the investigation is to provide a detailed archaeological sensitivity assessment for the project, and to provide recommendations for further archaeological testing, if any, that may be required to locate and identify any significant archaeological resources that could be affected by the project, well in advance of project construction.

The archaeological survey is conducted under a State Archaeologists Permit (950 CMR 70) and an application should be submitted to the MHC by a professional archaeological consulting firm with previous experience in this region of Massachusetts. The scope should include limited subsurface testing to assist in the sensitivity assessment and implementation of a contingency for archaeological monitoring during construction as necessary. The maximum project impact area for each phase of the project should be staked in the field prior to conducting the investigation. The results of survey(s) will be used in consultation in order to avoid, minimize, or mitigate adverse effects to identified significant archaeological resources.

The MHC encourages project planners to consult with the Mashpee Wampanoag Tribe, Wampanoag Tribe of Gay Head (Aquinnah), Nipmuc Tribal Nation, Sudbury Historical Commission, and Historic District Commission, as project planning proceeds. The MHC looks forward to reviewing the information requested above and to consultation to avoid, minimize or mitigate adverse effects to significant historic and archaeological resources.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), and Massachusetts General Laws, Chapter 9, Sections 26-27C (950 CMR 70-71). If you have questions or require additional information, then please contact Jonathan K. Patton at this office.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc:
Maria Pinaud, DEP-SRF
David Weeden, Mashpee Wampanoag Tribe
Bettina Washington, Wampanoag Tribe of Gay Head (Aquinnah)
Cheryl Toney Holley, Nipmuc Tribal Nation
Sudbury Historical Commission
Sudbury Historical District Commission
Rosemary T. Blacquier, Woodward & Curran

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Town of Sudbury, MA Comprehensive Wastewater Management Plan Update

Location / Address: Various locations in Town-see attached PNF Figures 1 through 8

City / Town: Sudbury

Project Proponent

Name: Sudbury Department of Public Works

Address: 275 Old Lancaster Road

City/Town/Zip/Telephone: Sudbury, MA 01776 978.440.5490

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)
MassDEP and Mass Clean Water Trust	State Revolving Funds

Project Description (narrative):

See attached.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

No

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

No

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

The Planning Project proposes to design and construct municipal sewer piping infrastructure in existing roadways, a Wastewater Treatment Facility at the existing DPW on Old Lancaster Road, five pump stations, and groundwater discharge beds under existing ballfields at the Curtis Middle School at 22 Pratts Mill Road. At this time, there are no record plans.

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

There are a number of historic districts within the Needs Areas, none of which have any negative potential impact. Sewer along these areas will alleviate aesthetic impacts from mounded septic systems. See attached Narrative and PNF Figures.

What is the total acreage of the project area?

Woodland	0	acres	Productive Resources:		
Wetland	0.30	acres	Agriculture	0	acres
Floodplain	0.40	acres	Forestry	0	acres
Open space	3.24	acres	Mining/Extraction	0	acres
Developed	20.03	acres	Total Project Acreage	0	acres

What is the acreage of the proposed new construction? 23.96 acres

What is the present land use of the project area?

The majority of are are existing roadways. The Wastewater Treatment facility is proposed to be constructed at the existing Public Works site at 275 Old Lancaster Road and the groundwater discharge beds are to be located at the Curtis Middle School under existing ball fields.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

Attached

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: Rosemary T. Blacquier Date: April 13, 2021

Name: Rosemary T. Blacquier, Woodard & Curran

Address: 250 Royall Street

City/Town/Zip: Canton, MA 02021

Telephone: 781.613.0644

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

ATTACHMENT 1 - PNF NARRATIVE

Town of Sudbury, Massachusetts
Massachusetts Historical Commission
Project Notification Form Narrative

The Town of Sudbury is in the process of completing a Comprehensive Wastewater Management Plan (CWMP) to identify the long-term sustainability of on-site wastewater disposal systems. The CWMP identified five geographic areas of Town that are not long-term sustainable on on-site wastewater disposal systems and are recommended for Municipal sewer- refer to Figure PNF 1. The CWMP recommends a Wastewater Treatment Facility & Collection System that includes the design and construction of the Town's first municipal Wastewater Treatment Facility, associated groundwater discharge and collection system infrastructure to support removing failing and/or improperly operating septic systems to preserve public health, as well as environmental resources, specifically nutrient degradation to the Town's major drinking supplies in the Raymond Road and Hop Brook Aquifer areas.

A comprehensive review of both the local Historic District Commission's "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places" was completed to identify historic resources located in Sudbury, most specifically any within the CWMP recommended plan.

The "Inventory of Historic Buildings, Structures and Places 200726" contains over 458 historic, pre-1940 buildings and structures, with 403 of these being houses. The National Register of Historic Places inventories buildings, places, and a number of Milestone Markers located in Sudbury.

There are four identified Historic Districts located within Sudbury:

1. King Phillip Historic District
2. George Pitts Tavern Historic District
3. Sudbury Centre Historic District (Old Sudbury Historic District)
4. Wayside Inn Historic Districts

Only two of the Historic Districts above referenced are included in the "National Register of Historic Places":

1. Sudbury Centre Historic District*
2. Wayside Inn Historic Districts*

None of the CWMP Needs Areas are located within either of these Historic Districts.

The CWMP recommended plan has sewer infrastructure proposed within two of the four Historic Districts:

1. **King Philip Historic District** – This area was the site of the Indian Wars of 1676 where Captain Samuel Wadsworth and his troop were killed in an ambush and later buried in the Wadsworth Cemetery. The Wadsworth Monument was erected in 1852 in memory of the gallant men who fought the Battle of Green Hill and appears on the Town Seal of Sudbury. Also in the District is the Goodnow Library, included in the National Register of Historic Places, as well as homes of 17th and 18th century construction, including the Goulding House, Sudbury's oldest existing home, 1720. In the area of Mill Village is the site of the west-side Grist Mill, erected in 1659.
2. **George Pitts Tavern Historic District – I**n 1721 at the George Pitts Tavern (located on Maple Avenue) a meeting was held to petition the Colonial Legislature for permission to erect a meeting house west of the Sudbury River, thereby separating the towns of Sudbury and Wayland. The outcome of this historic gathering effectively created the Town of Sudbury. According to maps of the 1800s, even the Old Boston Post Road passed along a portion of this street. Today, the architecture and structure of Maple Avenue showcases Sudbury's evolution throughout time. Many of the homes standing today were built between 1882 and 1920.

The CWMP recommended plan is as follows:

Sewer Piping and Pump Stations

The CWMP overall recommended Plan, as shown in PNF Figure 1, details the proposed areas of sewer infrastructure. All sewer pipe is proposed within existing pre-disturbed, roadway- areas. There are five proposed pump stations included in the overall plan. The pump stations' locations as detailed below, were all checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places" to ensure none were located on an historic resource area. All pump proposed stations are located outside of historic resource areas and are shown on PNF Figures 4 through 8. Proposed pump station locations are as follows:

1. **Route 20 Pump Station:** MBL K07-0018, 490 Boston Post Road
2. **Raymond Road South Pump Station:** MBL M08-0126, 82 Warren Road
3. **Raymond Road North Pump Station:** MBL J06-0500, Tall Pine Drive (no number)
4. **Route 20 East Pump Station:** MBL K11-0052, 26 Goodmans Hill Road
5. **Goodman Hill / Route 20 Sub-Area B Pump Station**: MBL K08-0037, 378 Boston Post Road

All historic locations from the Inventory are shown on PNF Figures 4-8, which identifies all historic properties, building and markers in Town and clearly show all proposed pump stations outside of any inventoried properties.

Wastewater Treatment Facility

The recommended Municipal Wastewater system proposes to design and construct a Wastewater Treatment Facility (WWTF) at the existing Department of Public Works at 275 Old Lancaster Road. This location was checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places", to ensure the parcel was not included in an historic resource area. The facility will be housed with the existing land use departments, including the Highway Department. This area is also outside of any of the four historic districts noted in Town and at a pre-disturbed location. See PNF Figure 2.

Groundwater Discharge Beds

The groundwater discharge beds are proposed to be located subsurface to the ball fields at the Curtis Middle School at 22 Pratts Mill Road. This location was checked with the "Inventory of Historic Buildings, Structures and Places-200726", as well as the "National Register of Historic Places", to ensure the parcel was not included in a historic resource area. This area is pre-disturbed, cleared land currently being utilized as ball fields. This area is also outside of any of the four historic districts noted in Town and at a pre-disturbed location. See PNF Figure 3.

Review of all data in the CWMP confirmed that the top priorities are a combination of properties along the Route 20/Union Avenue area and Raymond Road South Study Areas. These four Needs Areas directly abut the Raymond Road Aquifer-the Town's major drinking water wells- and includes both residential and non-residential properties all currently on on-site wastewater systems. The Needs Areas encompass the Zone II for the Raymond Road Aquifer.

The following summarizes the Needs Areas within noted historic districts:

- The George Pitts Tavern Historic District is along Maple Avenue with three parcels included along Route 20. This District is within the Route 20 Needs Area as shown on PNF Figures 4 and 7. All proposed sewer infrastructure in the Historic District is within pre-disturbed , existing roadway / right of way areas.
- The King Phillip Historic District is along portions of the Route 20 Needs Area and the Goodman Hill Needs Area. Refer to PNF Figures 4 and 7 for a map of this location. All proposed sewer infrastructure in the Historic District is within pre-disturbed , existing roadway / right of way areas.
- PNF Figure 5 details the Raymond Road North Needs Area. This area is not within a defined Historic District. All proposed sewer infrastructure is within pre-disturbed , existing roadway / right of way areas.
- PNF Figure 6 details the Raymond Road South Needs Area. All proposed sewer infrastructure is within pre-disturbed , existing roadway / right of way areas.
- PNF Figure 8 details the Route 20 East Needs Area. All proposed sewer infrastructure in the Historic District is within pre-disturbed , existing roadway / right of way areas.

It is noted that a positive impact to the myriad of historic buildings and places with the design and construction of Municipal Wastewater infrastructure is that all properties within the Needs Areas limits can be serviced with Municipal sewer and avoid failing septic systems, many of which fail due to high groundwater and require a mounded system. These mounded systems raise the on-site wastewater system above groundwater and create a negative aesthetic to the property. Location could be in the front yard, side yard or back yard with the mound clearly visible. A mounded system many times decreases the overall property values. Parcels located along Union Avenue and Goodman Hill Road detail high groundwater and severe soil conditions for long-term sustainability of on-site systems. Municipal sewer in these areas will offer these historic resources a pleasing alternative to a failed septic that would otherwise require a mounded system and avoid structures that impact the overall aesthetics of these valuable areas.

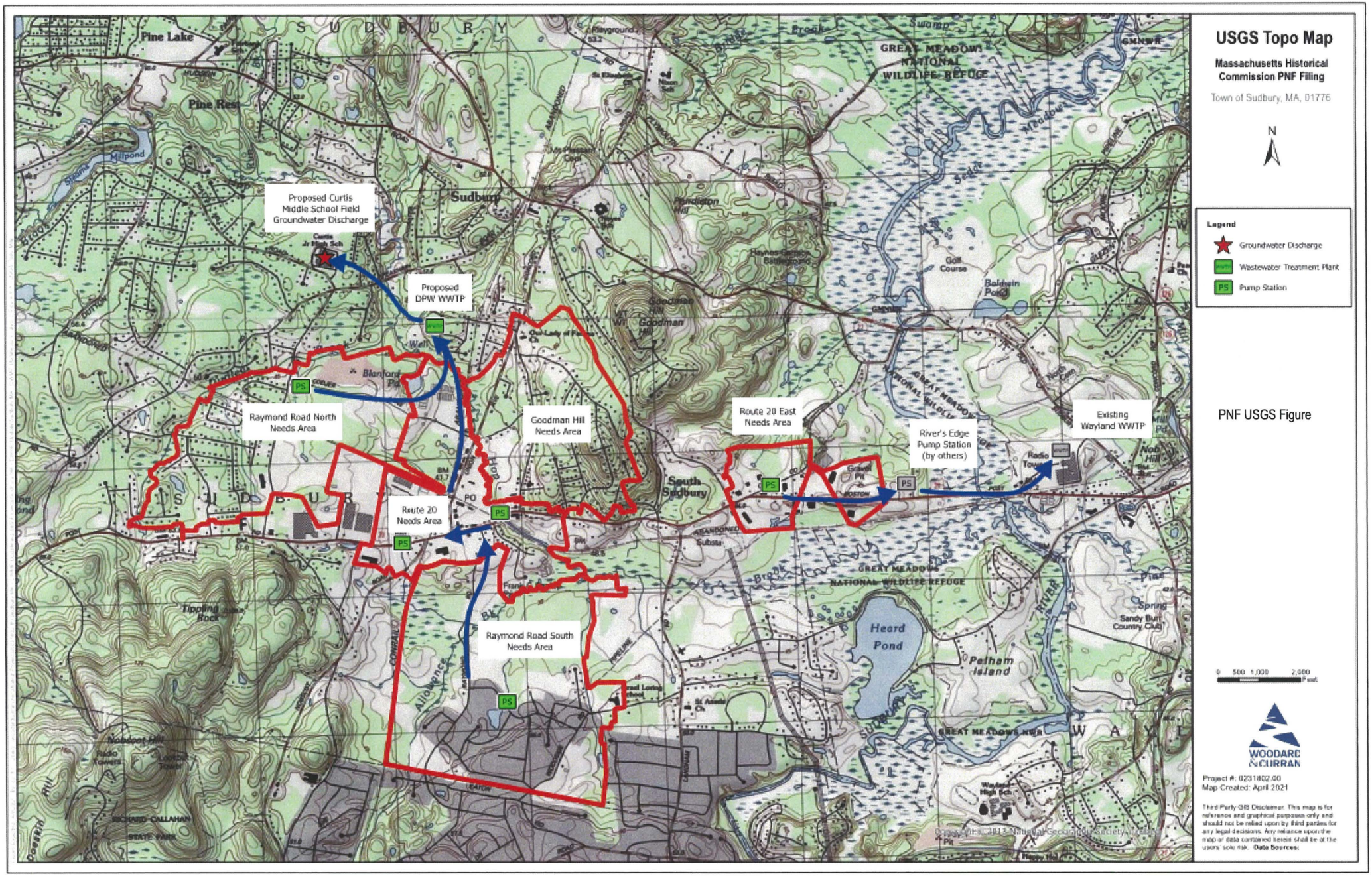
In addition to positively impacting aesthetics to the historic resources, removing the on-site wastewater systems from within this sensitive area will preserve and protect the drinking water supplies from potential threat of degradation of wastewater and the pollutants it contains. A fifth Needs Area, Route 20 East, Phase 3, is located along the Wayland Town border. This Needs Area is outside of any historic districts. Refer to PNF Figures 4 through 8 for maps of Needs Areas in relation to historic districts.

Septic to sewer will ensure that public health threats from on-site wastewater will be eliminated. Even an on-site that is considered "properly operating and maintained" has the ability to degrade water resources with the documented soil and groundwater conditions affording faster transport of improperly cleansed wastewater to water resources.

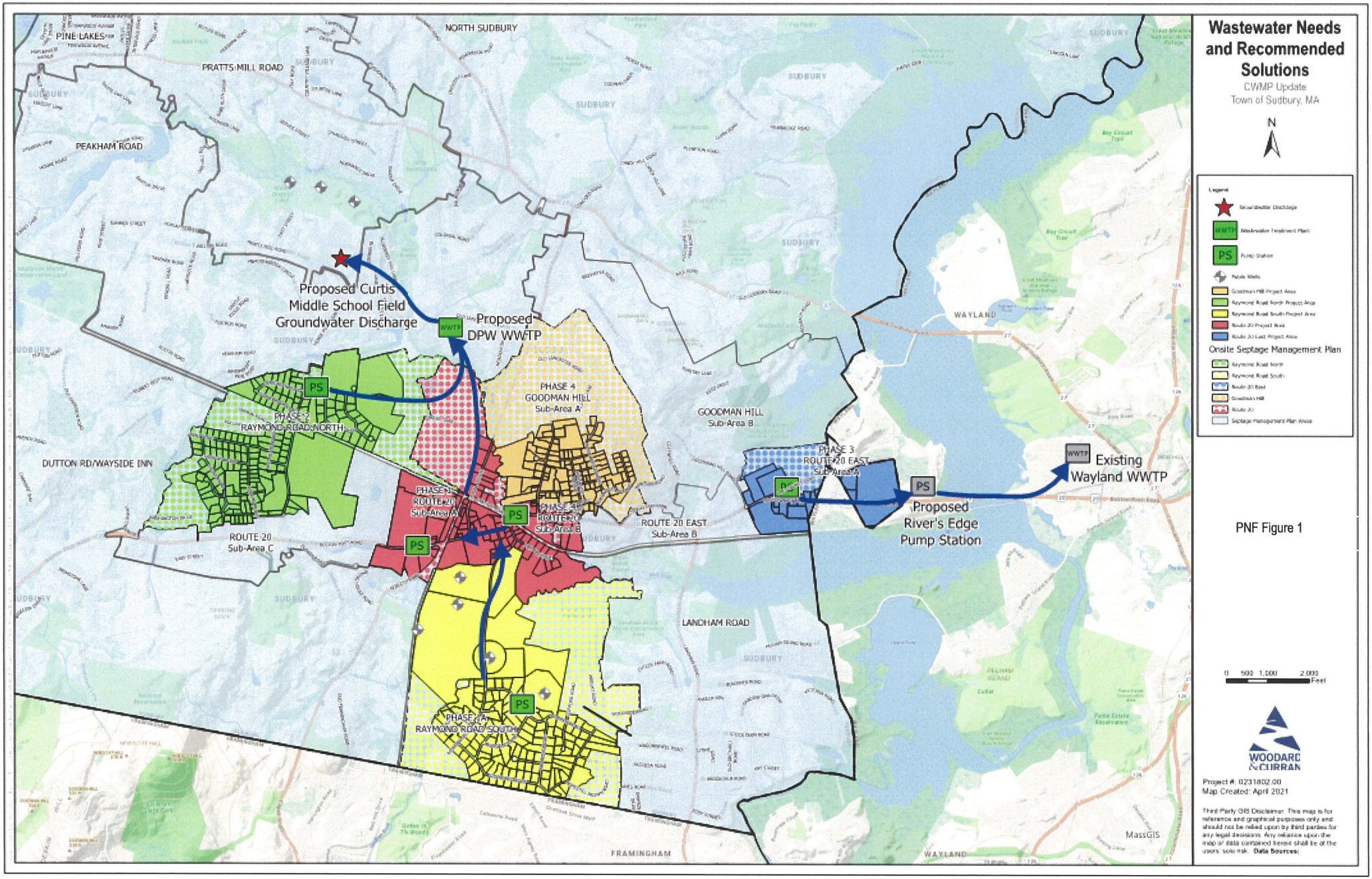
With the removal of the on-site wastewater systems in the proposed areas, the threat of continued degradation to the water resources is eliminated. The preservation and protection of the drinking water supplies is the major goal, with the overall environment benefiting as well. This positive approach also benefits the historical resources.

With the CWMP under the jurisdiction of Town Administration and Public Works, every effort will be expended to work with the local Historical Commission during Preliminary Design to maintain planned avoidance within noted historical resources.

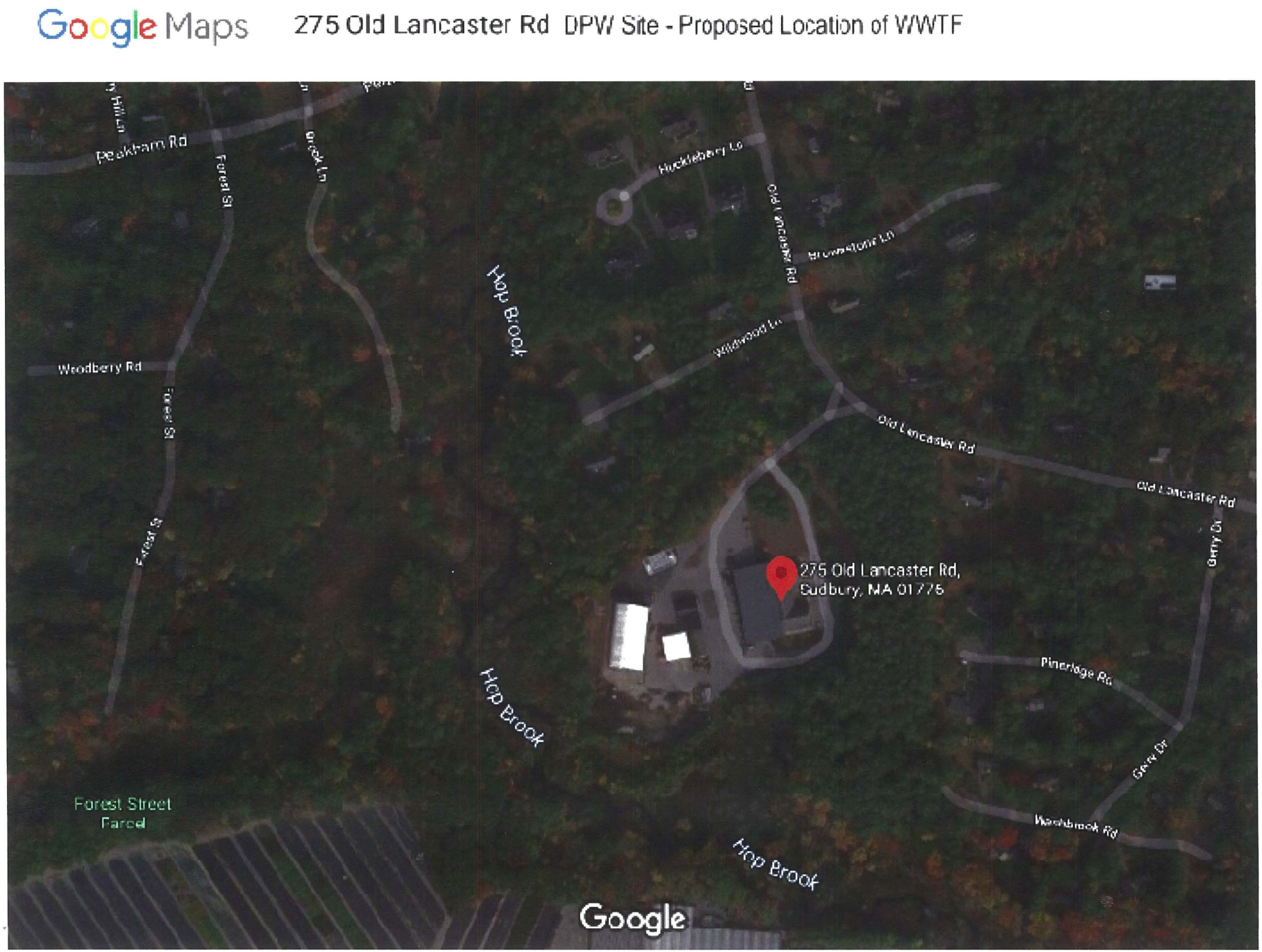
ATTACHMENT 2 - USGS MAP WITH PROJECT LIMITS


USGS Topo Map
Massachusetts Historical Commission PNF Filing
Town of Sudbury, MA, 01776
N
Legend
Groundwater Discharge
Wastewater Treatment Plant
PS Pump Station
PNF USGS Figure
Proposed Curtis Middle School Field Groundwater Discharge
Proposed DPW WWTP
Raymond Road North Needs Area
Goodman Hill Needs Area
Route 20 East Needs Area
Existing Wayland WWTP
River's Edge Pump Station (by others)
Route 20 Needs Area
Raymond Road South Needs Area
Sudbury
South Sudbury
Pine Lake
Pine Rest
GREAT MEADOWS NATIONAL WILDLIFE REFUGE
Heard Pond
Pelham Island
Sudbury River
Wayland
0 500 1,000 2,000 Feet
WOODARD & CURRAN
Project #: 02318002.00
Map Created: April 2021
Third Party GIS Disclaimer. This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained hereon shall be at the users sole risk. Data Sources:

ATTACHMENT 3 - PNF FIGURES 1 THROUGH 8

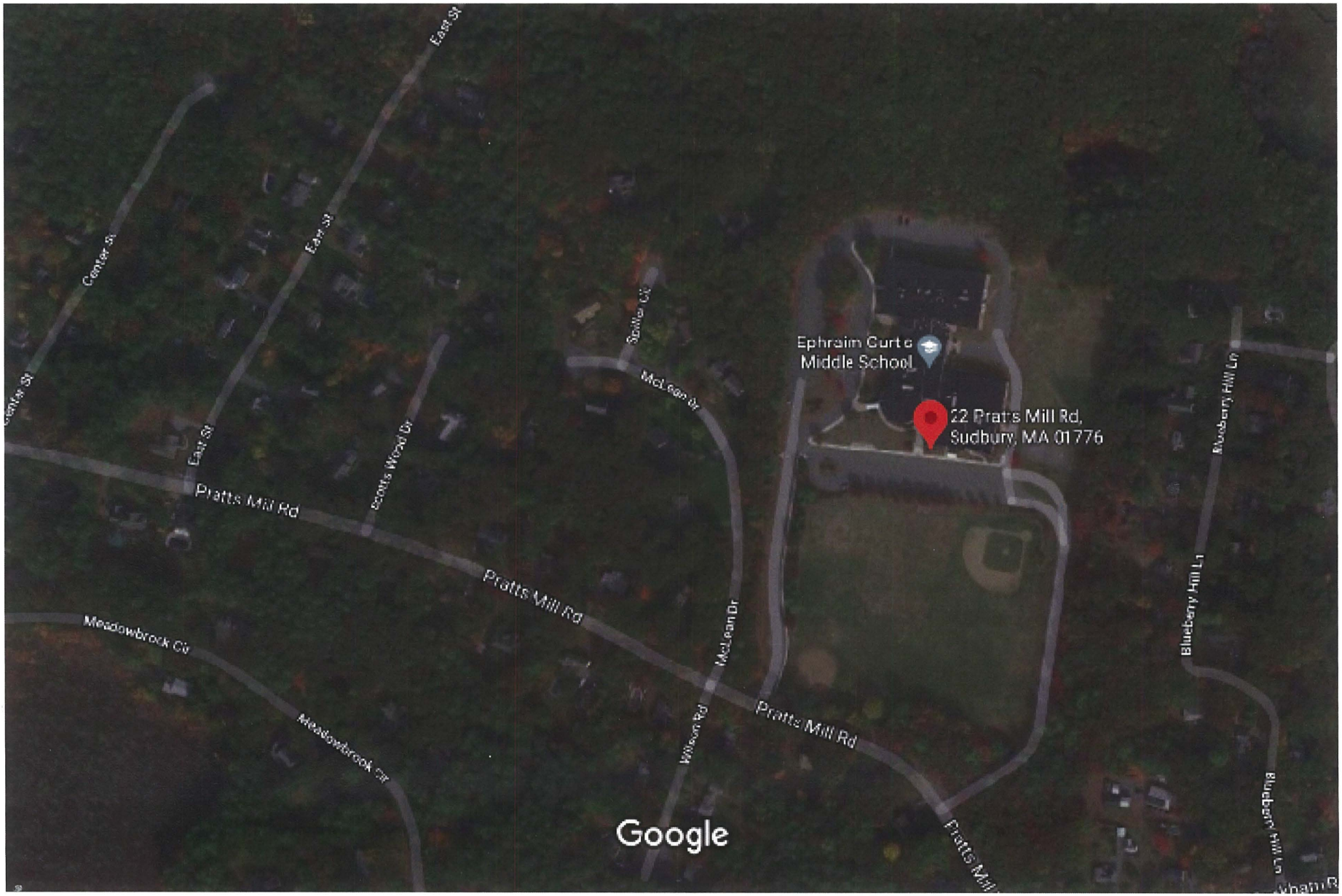

Wastewater Needs and Recommended Solutions
CWMP Update
Town of Sudbury, MA
N
Proposed Curtis Middle School Field Groundwater Discharge
Proposed DPW WWTP
Existing Wayland WWTP
Proposed River's Edge Pump Station
PHASE 1 ROUTE 20 Sub-Area A
PHASE 2 RAYMOND ROAD NORTH
PHASE 3 ROUTE 20 EAST Sub-Area A
PHASE 4 GOODMAN HILL Sub-Area A
PHASE 4 ROUTE 20 Sub-Area B
PHASE 4 RAYMOND ROAD SOUTH
GOODMAN HILL Sub-Area B
ROUTE 20 EAST Sub-Area B
ROUTE 20 Sub-Area C
DUTTON RD/WAYSIDE INN
PEAKHAM ROAD
PRATTS MILL ROAD
LANDHAM ROAD
NORTH SUDBURY
SUDBURY
WAYLAND
FRAMINGHAM
Onsite Septage Management Plan
PNF Figure 1
0 500 1,000 2,000 Feet
WOODARD & CURRAN
Project #: 0231802.00
Map Created: April 2021
Third Party GIS Disclaimer. This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained hereon shall be at the users sole risk. Data Sources:
MassGIS

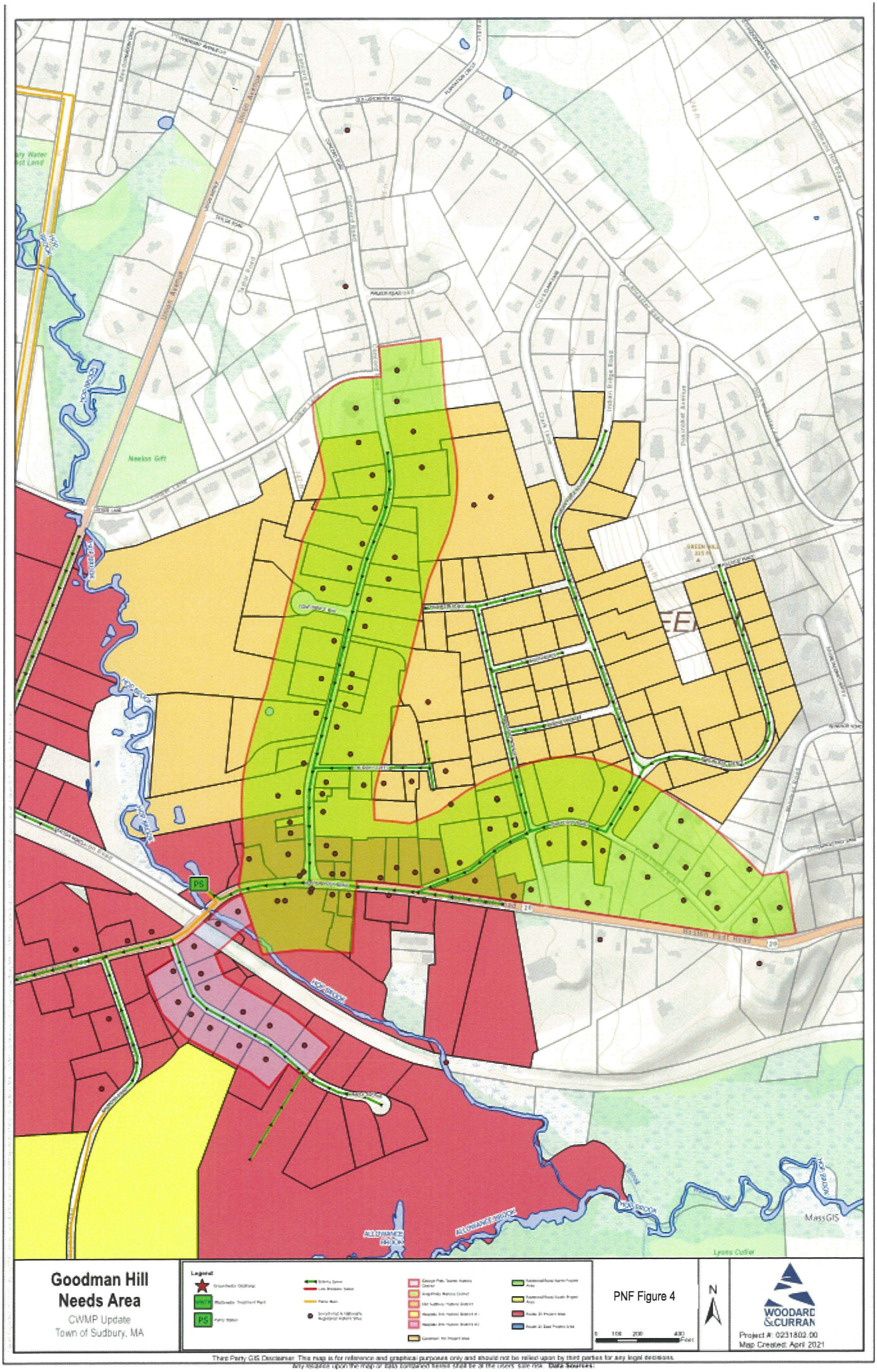
PNF Figure 2 - DPW Site for Wastewater Treatment Facility



PNF Figure 3 – Curtis Middle School Site of Groundwater Discharge Beds

Google Maps 22 Pratts Mill Rd Proposed Location of Sub-Surface Groundwater Discharge Beds




Goodman Hill
Needs Area
CWMP Update
Town of Sudbury, MA
Legend
PNF Figure 4
N
WOODARD &CURRAN
Project #: 02318.02.00
Map Created: April 2021
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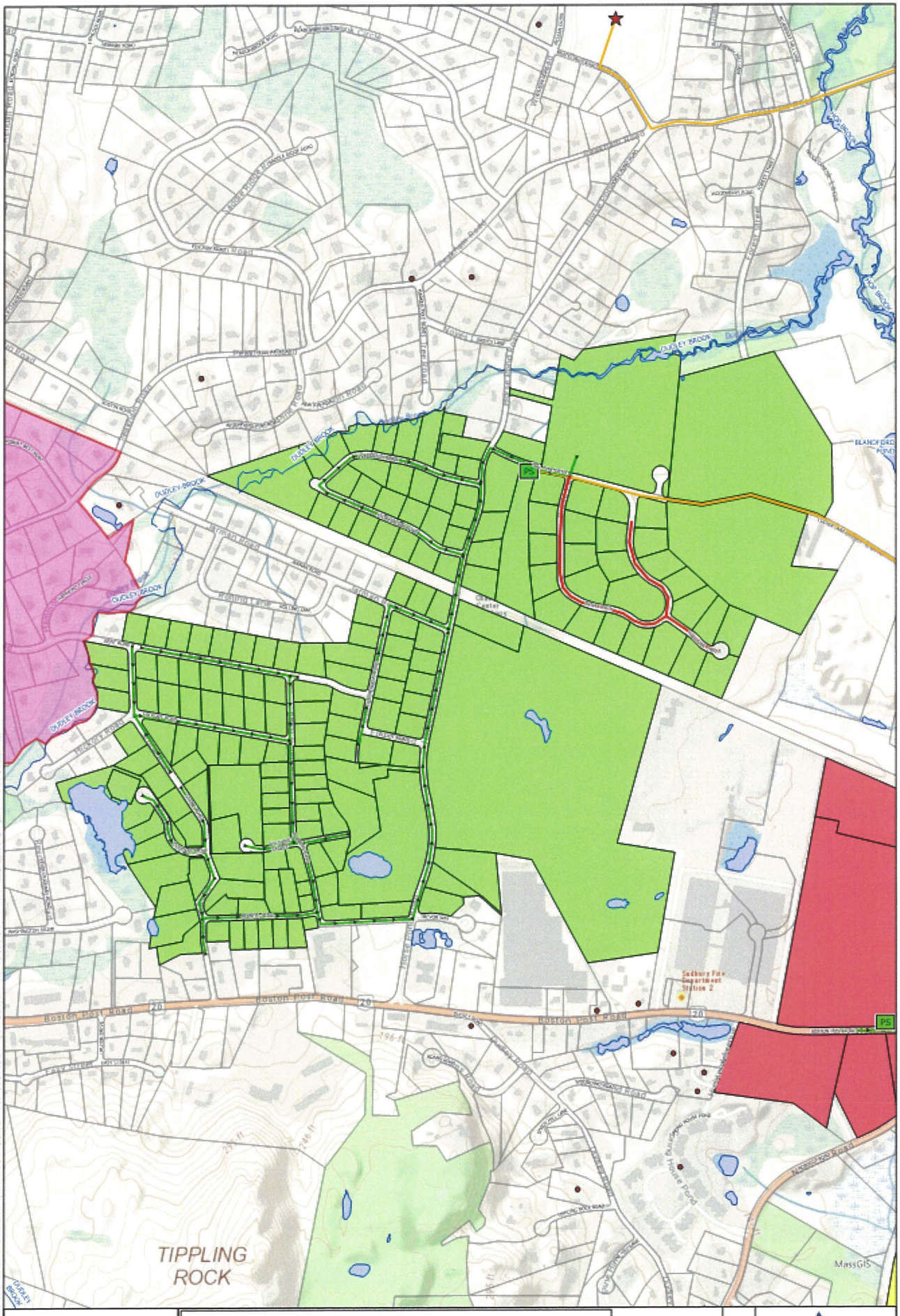

Raymond Road North Needs Area

CWMP Update
Town of Sudbury, MA

Legend

PNF Figure 5

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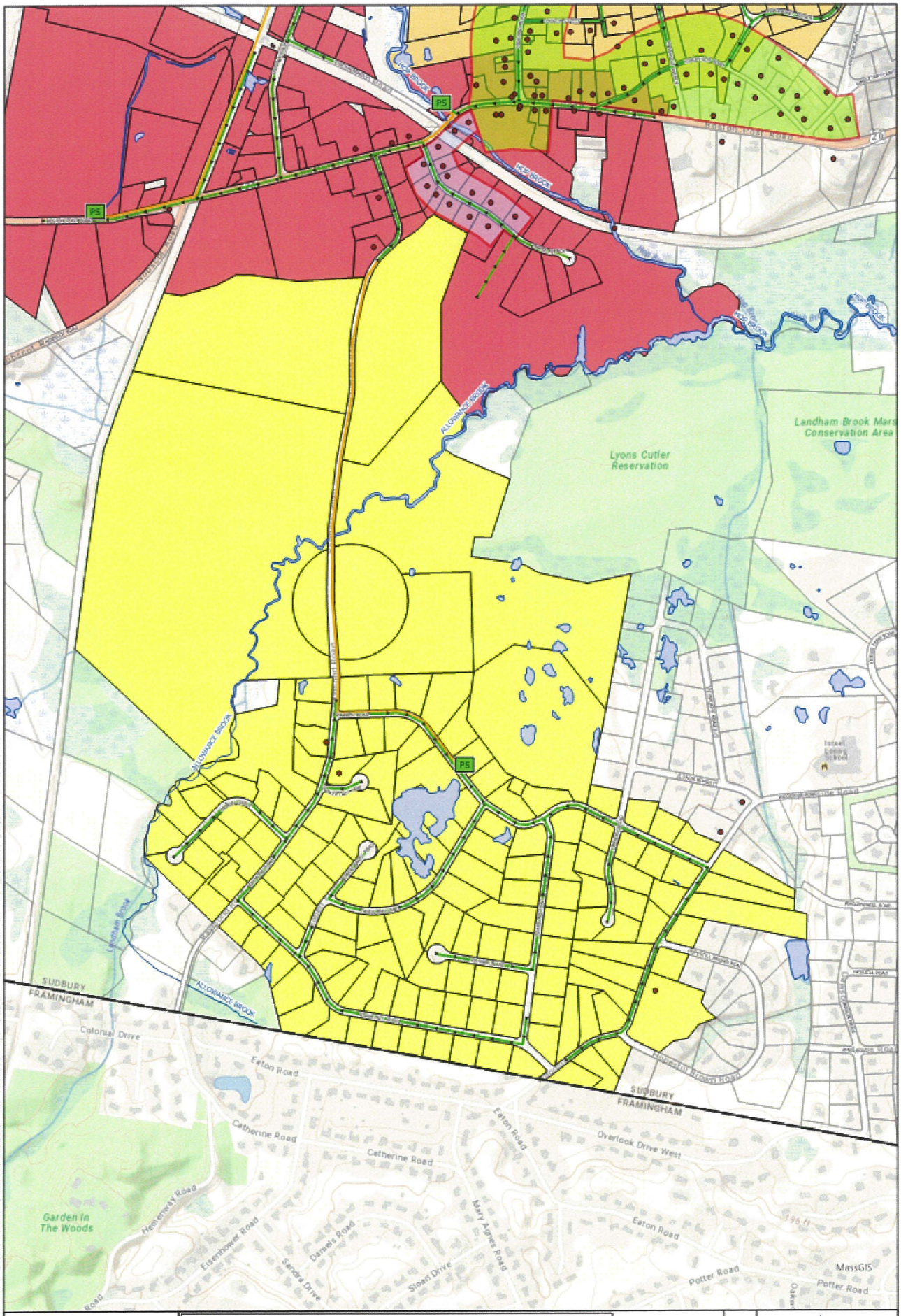
WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021



Raymond Road South Needs Area

CWMP Update
Town of Sudbury, MA

Legend

PNF Figure 6

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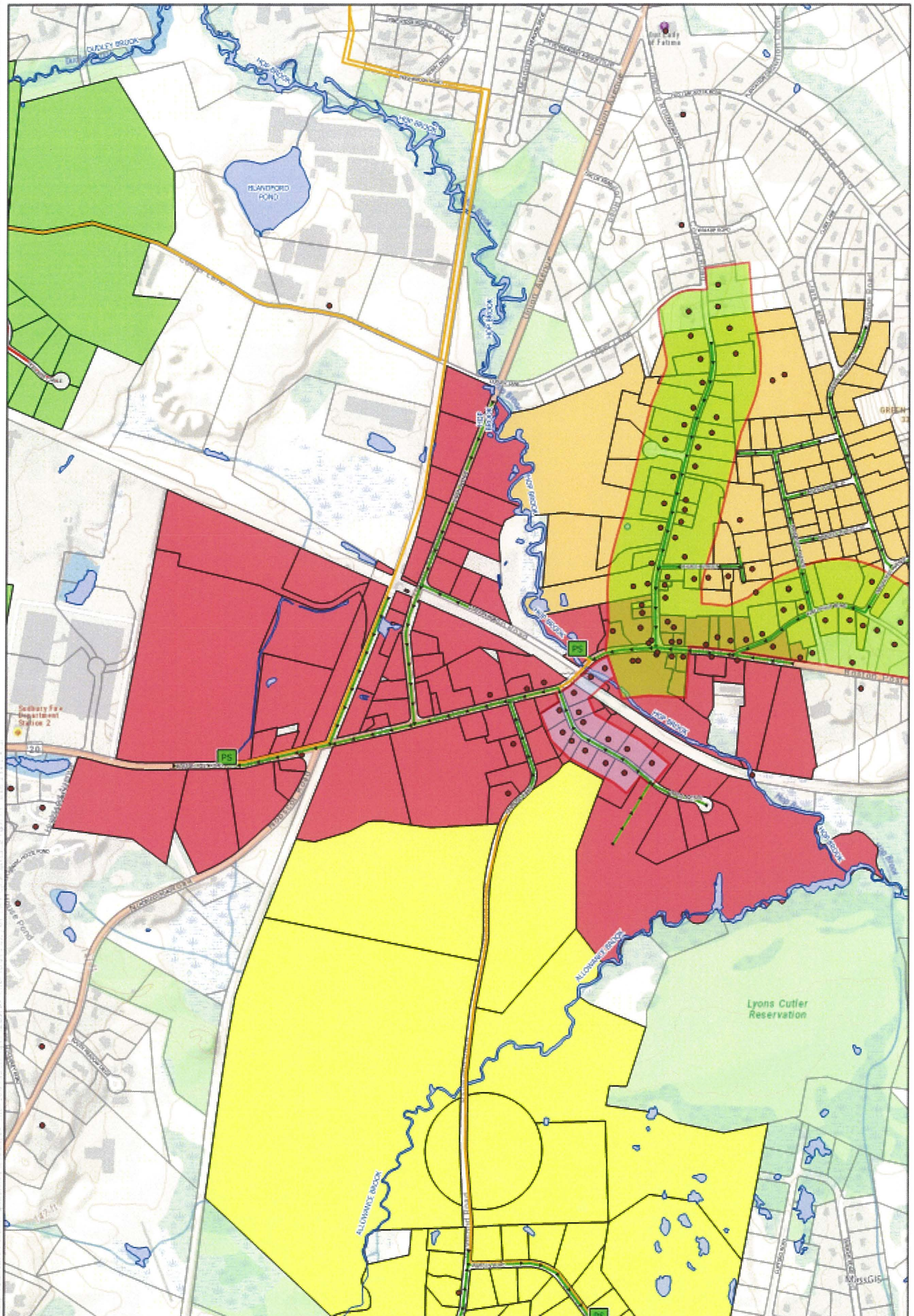
WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021



Route 20
Needs Area

CWMP Update
Town of Sudbury, MA

Legend

PS

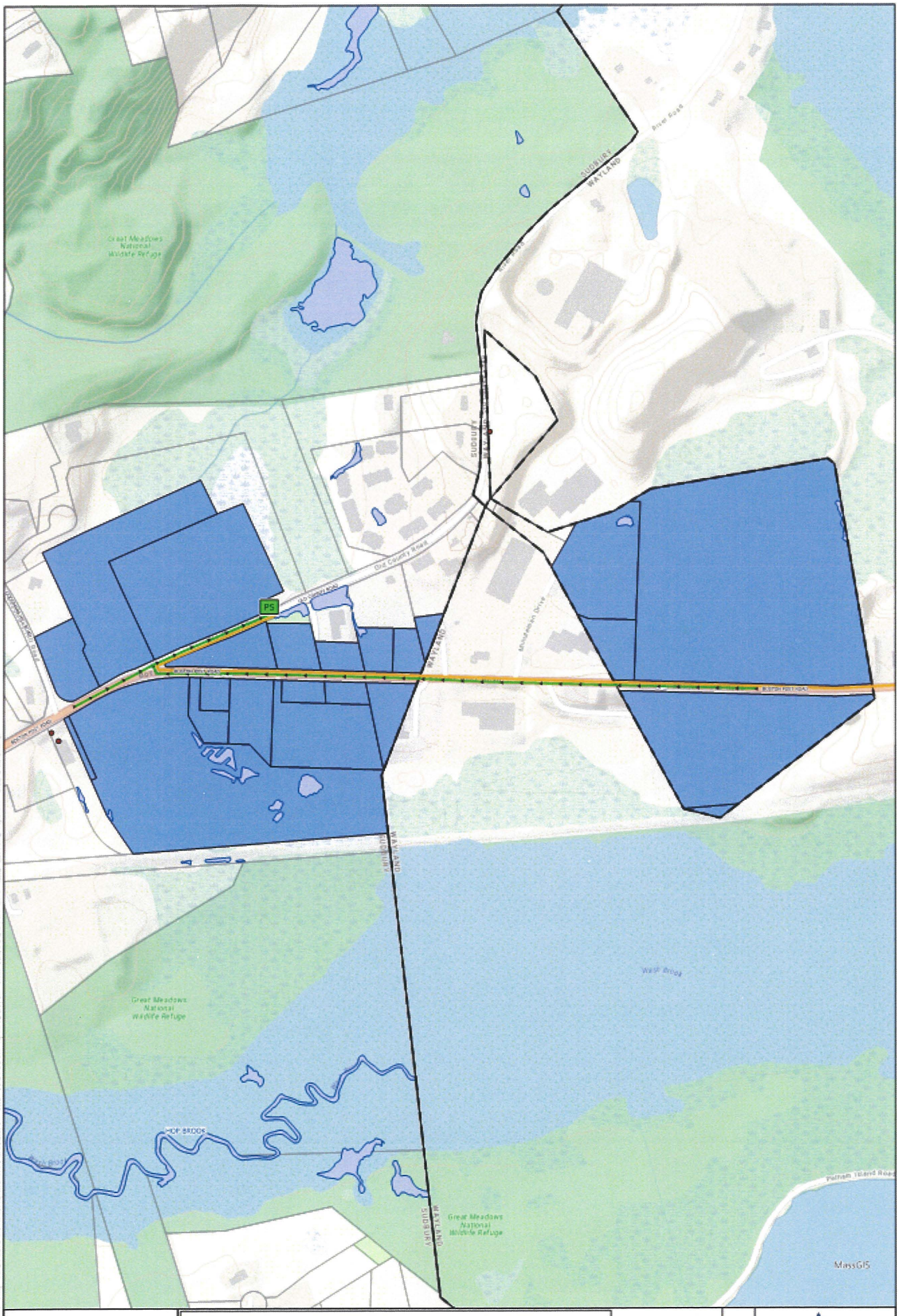
PNF Figure 7

0 150 300 600 Feet

N

WOODARD & CURRAN

Project #: 0231802.00
Map Created: April 2021



Route 20 East Needs Area

CWMP Update
Town of Sudbury, MA

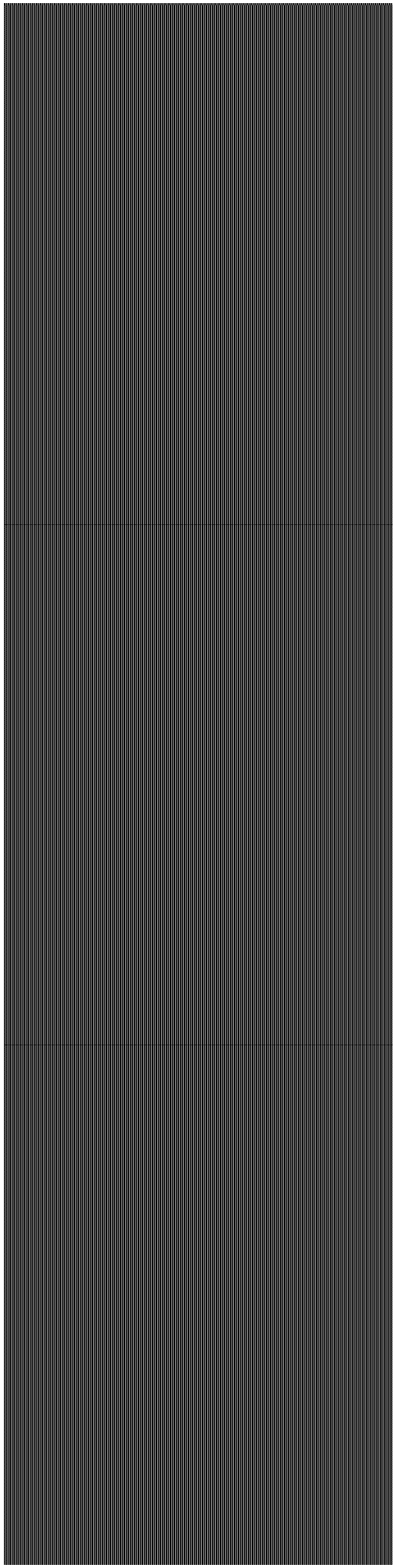
Legend

PNF Figure 8

N

WOODARD &CURRAN

Project #: 0231802.00
Map Created: April 2021



woodardcurran.com

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