

# Harwich Community Meeting

Update on Design of the East Harwich Sewer System

Chris Clark  
Dan Pelletier  
Meggan Eldredge  
Peter Hughes  
David Young, P.E.  
Michael Guidice, P.E.

*April 19, 2018*

**CDM  
Smith**





# AGENDA

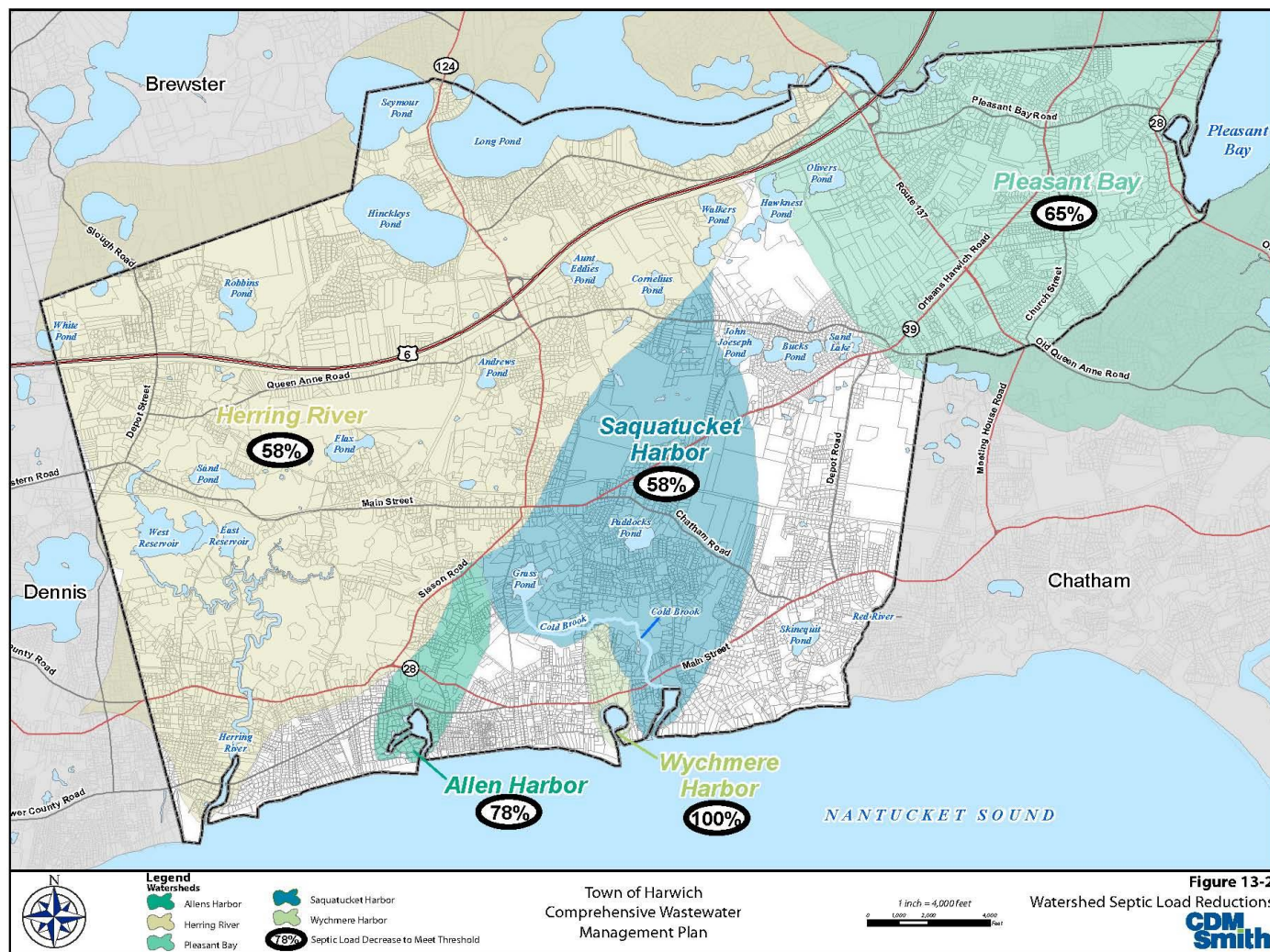


- |   |              |
|---|--------------|
| ■ Project Overview and Schedule         | D. Young     |
| ■ Sewer System Design and Cost Estimate | M. Guidice   |
| ■ House Connections                     | D. Pelletier |
| ■ Health Department Involvement         | M. Eldredge  |
| ■ House Connection Financing Options    | C. Clark     |
| ■ Communications                        | P. Hughes    |
| ■ Questions and Comments                | All          |
| ■ Summary and Closing Remarks           | C. Clark     |



# Project Overview and Schedule





**Figure 13-2**  
Watershed Septic Load Reductions  
**CDM Smith**





# Schedule

- Town Meeting Construction Funding Vote May 7, 2018
- Town-Wide Ballot Construction Funding Vote May 15, 2018
- SRF Application and 90% Design to MassDEP October 2018
- Project Advertised for Bidding Early 2019
- Construction Start Spring 2019
- Construction Completed Spring 2021
- Sewer Connections Start/Flow to Chatham Summer 2021

# East Harwich Sewer System Phase 2 Proposed Draft Schedule



Task	2017					2018												2019					2020					2021					2022					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Project Schedule																																						
Contract Award																																						
Surveying (Topographic)																																						
Design Alternatives Analysis/ Preliminary Design																																						
Final Intended Use Plan (IUP) Issued by MassDEP																																						
Update Cost Estimate																																						
Town Funding Request¹																																						
Funding Authorization Required by MassDEP																																						
90% Design (Design Plans, Specifications, Borings)																																						
Project Permitting Completed																																						
SRF Application and 90% Design to MassDEP																																						
Final Design																																						
Bidding																																						
Construction²																																						
Properties Connect to Sewer																																						

## Notes

1. May 2018 Town Meeting Articles (FY 19):

- Article A: Phase 2 Construction,
- Article B: DHY Special Legislation,
- Article C: Hinkleys Pond.

2. Potential summer shutdown between Memorial Day and Labor Day.





# Sewer System Design and Cost Estimate

STREET NAME	HOUSE NUMBERS	STREET OWNERSHIP
Alexander's Chase	All	Private
Auston Road	All	Private
Bay Road	#6 to #101	Town
Brewster-Chatham Road (Route 137)	#9 to #310	County
Cemetery Road	All	Town
Chickadee Lane	All	Private
Chris Jobeth Circle	All	Private
Church Street	#1 to #207	County
Compass Drive	All	Town
Continental Drive	All	Town
Deer Meadow Road	All	Town
Ellis Drive	All	Town
Fredericksburg Avenue	All	Town
Halls Path	#1356 & #1360	Town
Harden Lane	All	Town
Herndon Road	All	Town
Huckleberry Path	All	Town
Johanna's Path	All	Private
Landron Way	All	Private
Liberty Trail	All	Town
Lily Lane	#4	Private
Locust Grove Road	All	Town
Marsh View Road	All	Town
Mary Beth Lane	#1 & #2	Town
Nickerson Road	All	Town
North East Drive	All	Town
Old Carriage Drive	All	Town
Old Heritage Way	All	Town
Old Sally Lane	All	Private
Orleans-Harwich Road (Route 39)	#1343 to #1585	County
Partridge Lane	#3 to #32	Town
Queen Anne Road	#1000 to #1154	Town/County
Reliance Way	All	Private
Round Cove Road	#134 to #160	Town
Ruddy Duck	#5	Private
Sadie's Way	All	Private
Scotch Pine Farm	All	Private
Sherwood Road	All	Town
Somerset Road	All	Town
Sou'West Drive	All	Town
Sparrow Hawk Road	#6	Private
Spence's Trace	All	Private
Spruce Grove	All	Private
Sugar Hill Drive	All	Town
Tern Road	All	Town
Vicksburg Avenue	All	Town
Whidah Drive	All	Town
White Pine Circle	All	Town
Williamsburg Avenue	All	Town



## Phase 2 Sewer System

- 61,000 linear feet (11.5 miles) of gravity sewer
- 6,200 linear feet (1.2 miles) of force main
- 6 pumping stations
- 400 linear feet of pressure sewer
- 690 parcels served (639 developed parcels)

# Design Process

- Topographical Survey (completed)
- Plan/Profile Development (completed)
- Pumping Station Siting
- Easement Identification/Negotiation
- Subsurface Investigations
- Permitting (local)
- Coordination with Chatham (ongoing)
- Contract Documents/Technical Specifications
- Final Cost Estimate
- Bidding (2 Contracts)



# Construction Cost Estimate

- Based on 50 percent design drawings
- Professional cost estimators
- Includes:
  - Labor, equipment and materials
  - Contractor overhead & profit
  - Construction contingency
  - Escalation to mid-point of construction



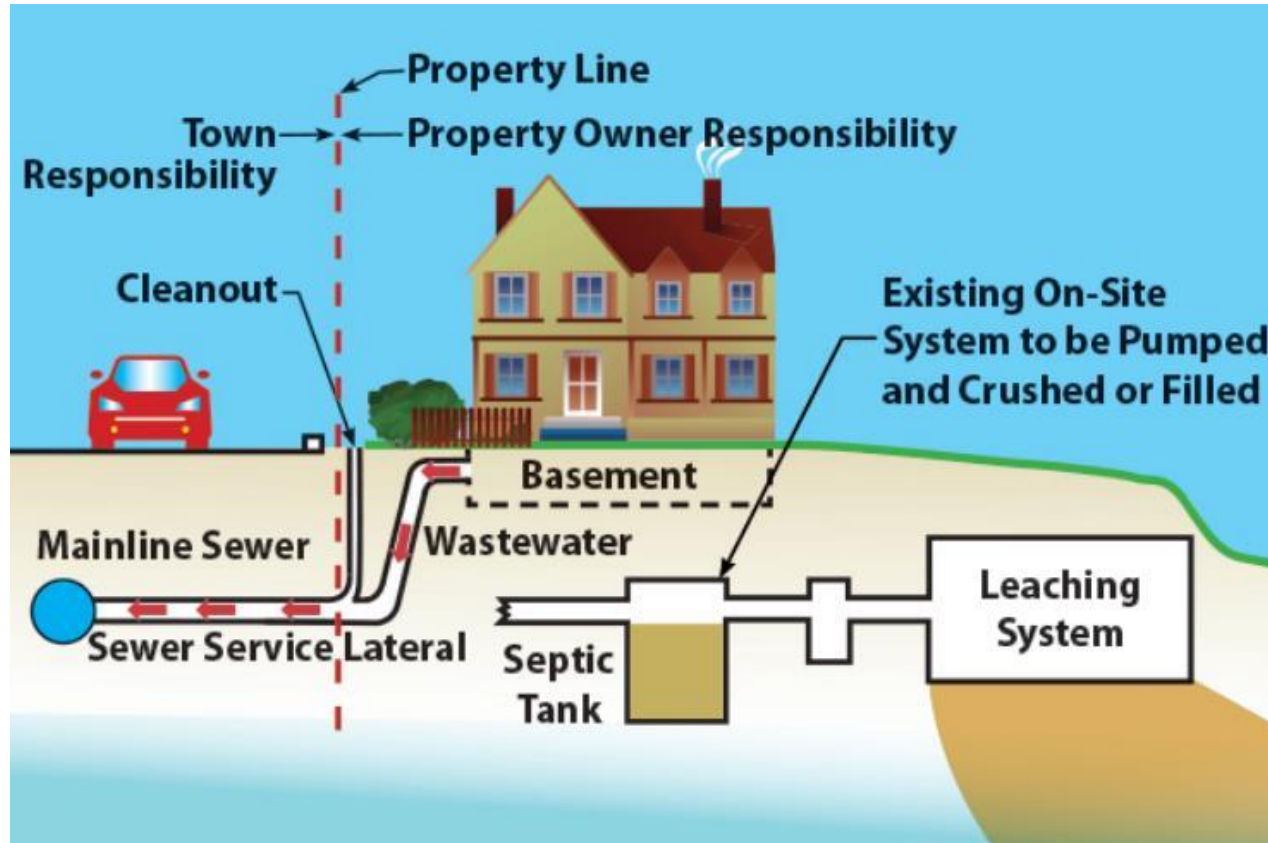
## Phase 2 Cost Summary

■ Phase 2 Construction	\$18,500,000
■ General Services During Construction	\$610,000
■ On-Site Resident Engineer Inspection	\$1,680,000
■ Other Town Costs	\$1,035,000
■ Town share of Chatham facilities	<u>\$2,950,000</u>
Total:	\$24,775,000



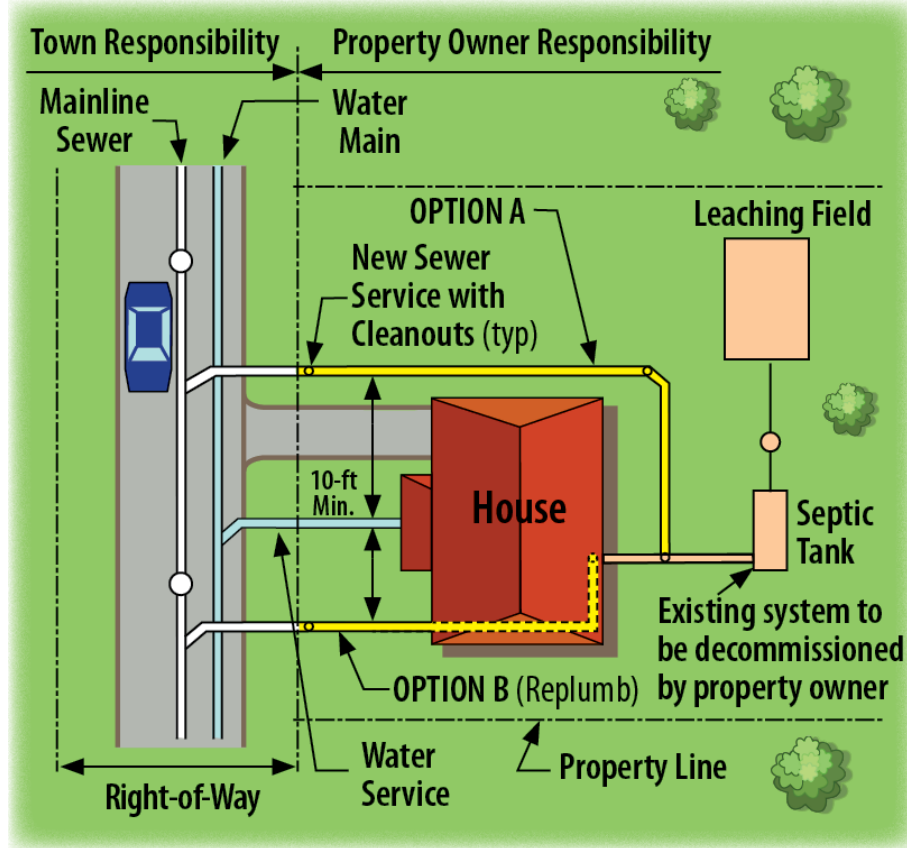
# Sewer Service Connections

# Sewer Service Connection

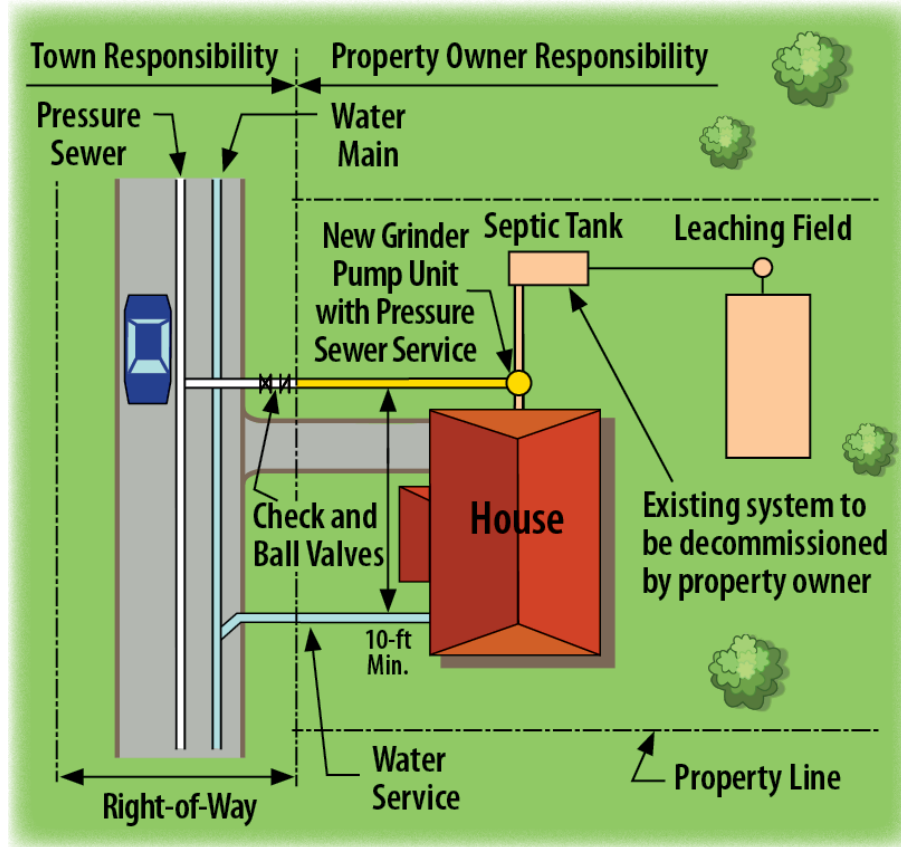




# Gravity Sewer Service Connection



# Pressure Sewer Service Connection



# How do I fill out this form?

- Things to consider BEFORE completing the form
  - Do you have plans to finish your basement?
  - Where does the waste pipe currently exit my basement?
  - Where is my water service located?
  - Where is my existing septic system?
  - What impacts will the sewer service have on my property?
  - Will I be expanding my home's building footprint?



**TOWN OF HARWICH, MASSACHUSETTS  
SERVICE CONNECTION LOCATION FORM  
PHASE 2 / CONTRACT NO. 1**

1. MARK AND CLEARLY DIMENSION WHERE YOU PLAN TO HAVE THE SANITARY SEWER SERVICE CONNECTION ENTER YOUR HOME/PROPERTY.
2. PLEASE FILL IN THE APPROPRIATE SPACES LISTED BELOW INCLUDING OWNER'S NAME, STREET NAME, HOUSE NUMBER, DAY/EVENING PHONE NUMBER, AND THE HOMEOWNER'S SIGNATURE
3. IF YOU NEED ANY ASSISTANCE OR HAVE ANY QUESTIONS, PLEASE CONTACT: \_\_\_\_\_



PROPERTY LINE \_\_\_\_\_

\_\_\_\_\_  
(TOWN SEWER PIPE IN THE STREET)  
\_\_\_\_\_

PROPERTY LINE \_\_\_\_\_

OWNER'S NAME: \_\_\_\_\_  
(PRINT)

HOUSE NUMBER: \_\_\_\_\_

STREET NAME: \_\_\_\_\_

PHONE NUMBER (DAY): \_\_\_\_\_

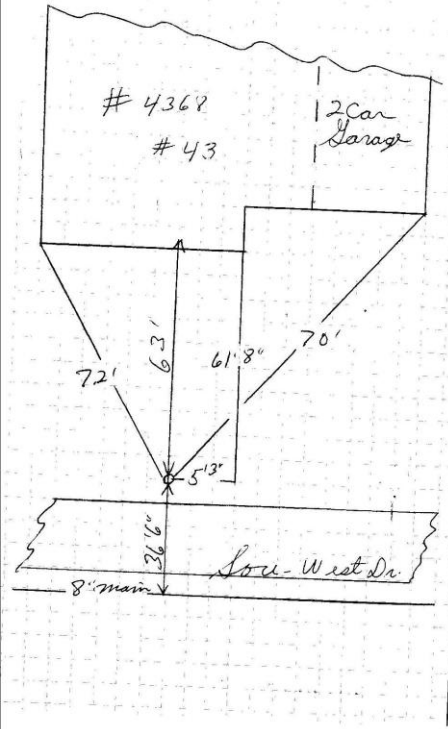
PHONE NUMBER (EVENING): \_\_\_\_\_

OWNER'S SIGNATURE: \_\_\_\_\_

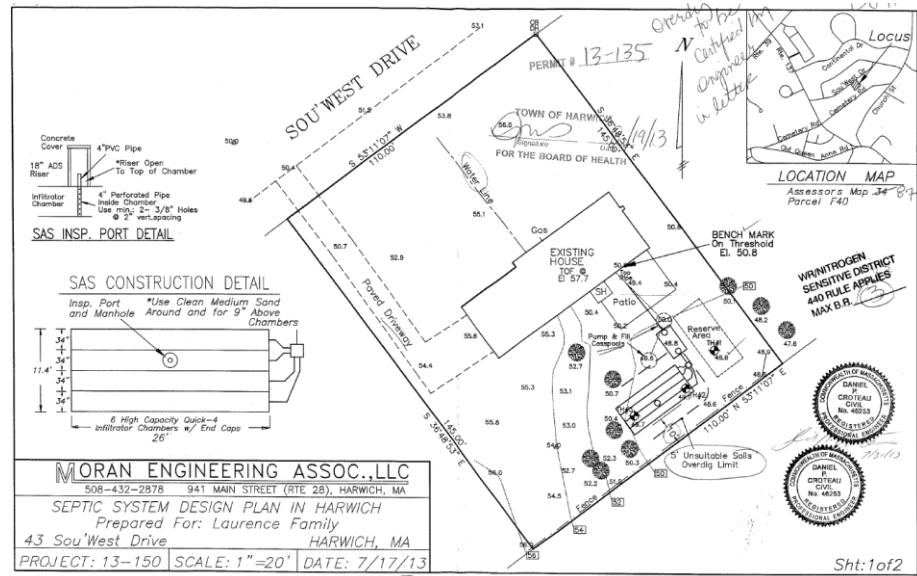
DATE: \_\_\_\_\_

Please show and dimension any underground utilities you are aware of on your property (e.g., Buried sprinkler system, electrical, etc.).

# Existing Condition Information



## Water Service Tie Card



## Septic System Site Plan

These documents can be obtained either in person or requested electronically

- Water Service Tie Card- [Customerservice@harwichwater.com](mailto:Customerservice@harwichwater.com)
- Septic System Site Plans- [Health@town.Harwich.ma.us](mailto:Health@town.Harwich.ma.us)

The Water & Health Departments are currently in the process of making the files accessible through a single online search portal

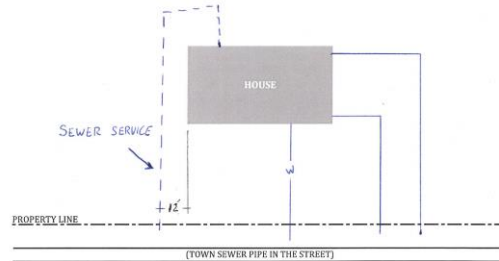


# Completed Form Examples



## TOWN OF HARWICH, MASSACHUSETTS SERVICE CONNECTION LOCATION FORM PHASE 2 / CONTRACT NO. 2

1. MARK AND CLEARLY DIMENSION WHERE YOU PLAN TO HAVE THE SANITARY SEWER SERVICE CONNECTION ENTER YOUR HOME/PROPERTY.
2. PLEASE FILL IN THE APPROPRIATE SPACES LISTED BELOW INCLUDING OWNER'S NAME, STREET NAME, HOUSE NUMBER, DAY/EVENING PHONE NUMBER, AND THE HOMEOWNER'S SIGNATURE
4. IF YOU NEED ANY ASSISTANCE OR HAVE ANY QUESTIONS, PLEASE CONTACT: \_\_\_\_\_



PROPERTY LINE

OWNER'S NAME: TAMMY TUTONE  
(PRINT)

HOUSE NUMBER: 43

STREET NAME: SOUTHWEST DRIVE

PHONE NUMBER (DAY): 867-5309

PHONE NUMBER (EVENING): \_\_\_\_\_

OWNER'S SIGNATURE: TT

DATE: 4/2018

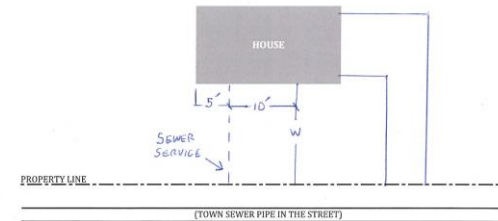
Please show and dimension any underground utilities you are aware of on your property (e.g. Buried sprinkler system, electrical, etc.).

### As Is Location



## TOWN OF HARWICH, MASSACHUSETTS SERVICE CONNECTION LOCATION FORM PHASE 2 / CONTRACT NO. 2

1. MARK AND CLEARLY DIMENSION WHERE YOU PLAN TO HAVE THE SANITARY SEWER SERVICE CONNECTION ENTER YOUR HOME/PROPERTY.
2. PLEASE FILL IN THE APPROPRIATE SPACES LISTED BELOW INCLUDING OWNER'S NAME, STREET NAME, HOUSE NUMBER, DAY/EVENING PHONE NUMBER, AND THE HOMEOWNER'S SIGNATURE
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Please show and dimension any underground utilities you are aware of on your property (e.g. Buried sprinkler system, electrical, etc.).

### Reconfigure Interior Plumbing



# Health Department Involvement

# Phase 2 Sewer Project – Next Steps

- Board of Health Involvement
  - Order to connect - time frames
  - Waivers and variances
    - Real Estate Transfer Inspections
    - Recent or Needed Upgrades
- Health Department Involvement
  - How to access your property information
  - Obtaining permits for construction
  - Sewer connection construction details
  - Decommissioning your existing Title 5 system

# Board of Health Involvement

- **Mandatory Sewer Connection**
  - Once the sewer main is ready to accept flow (approximately 2021), the Board of Health will issue an order to connect
  - The order will allow a one year connection time frame
- **Variances, Waivers and Time Extensions**
  - The Board of Health may allow for time extensions on a case-by-case basis
  - Requires a hearing before the Board of Health
  - Must show what the hardship is to support the request



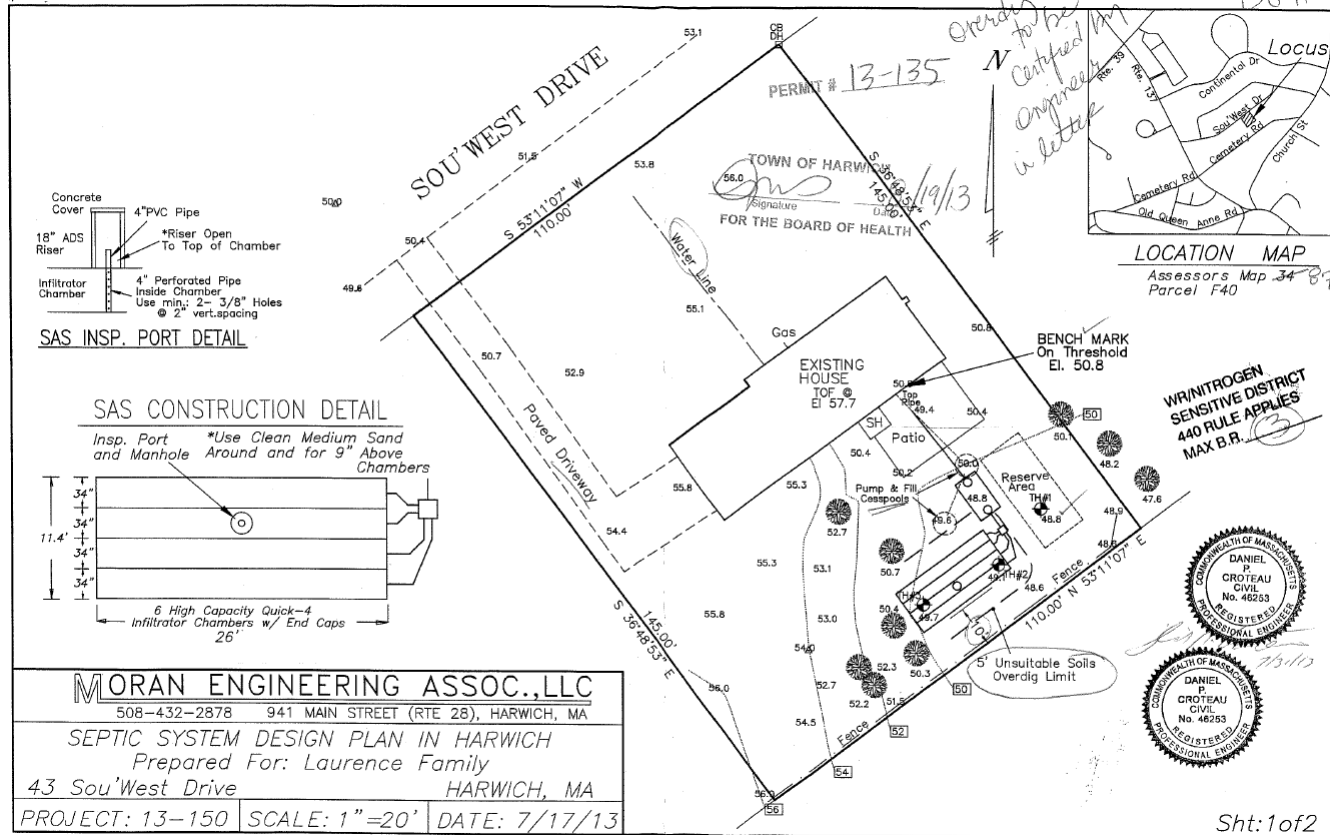
# Variances, Waivers and Time Extensions

- Real Estate Transfers
  - Title 5 requires an inspection of the septic system prior to sale of real estate
  - Systems that fail typically require upgrade within 45 days
  - This is a situation where a waiver from upgrade may be granted if sewer connection is imminent
- Recently Installed Title 5 Systems
  - Sewer connection is mandatory; however, the Board of Health will consider time extensions on a case-by-case basis
- Failed or Failing Septic Systems
  - If sewer connection is imminent and you are having issues with an existing system, the Board of Health will consider allowing the use of the failed system until the sewer connection can be made

# Health Department Involvement

- What you need to know when planning for your sewer connection
  - Location of your current septic system
  - Location of your current sewer line exiting your foundation
  - Location of your water service line from the street to your dwelling
  - This information is needed BEFORE the sewer line is placed in the street in order to provide for proper lateral placement in the street
- Accessible via the Health Department Website, in person at the Health Department, or by email

# Septic System Site Plan

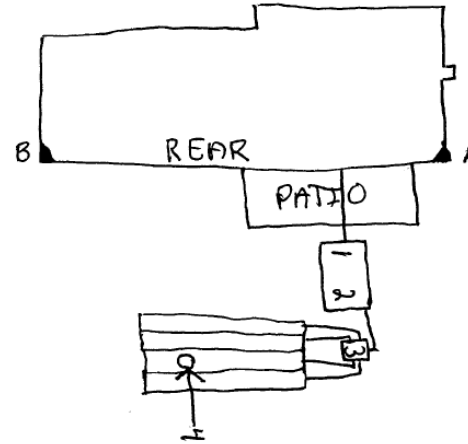


# Septic System “As-Built”

Occasionally a septic system will be installed in a different location than shown on the proposed design plan

Subsurface Sewage Disposal System Diagram

PLEASE PRINT CLEARLY



	A	B	D	
1	28'4"	57'4"		
2	35'4"	61'10"		
3	42'3"	64'		
4	56'8"	49'		

# Sewer Connection – Obtaining a Permit

- Start with an engineer to design the sewer connection
- Select an installer to do the work – installers must be licensed with the Town
- The installer will pull the permit to construct the new sewer connection
- The construction will also include the decommissioning of the existing Title 5 septic system
- The Town will inspect the work and issue a certificate of compliance once complete



# Sewer Construction

- Prep-work may include interior plumbing changes
- Installer will dig the trench to lay the new sewer line and required cleanout
- Installer will connect the new line to the service connection installed at the property line by the Town's sewer contractor
- Installer will disconnect the existing waste pipe from your septic system and connect your main sewer line to the new sewer line
- Installer will crush/fill your existing septic system



# What to Expect

- You can expect the installation to take about a day, with very little wastewater disruption
- You do not need to vacate your home during installation
- Heavy equipment will be required to dig the trench for the sewer line; your yard will be disturbed.



# Benefits of Sewer

- Once connected to a municipal sewer, your Title 5 system will be decommissioned
- Pumping of septic tank will no longer be needed
- Inspection of the sanitary sewerage system for real estate transfer is not required
- Setbacks from the septic system will no longer apply if you are planning an addition or renovation



# Contact Information

Meggan Eldredge, Health Director

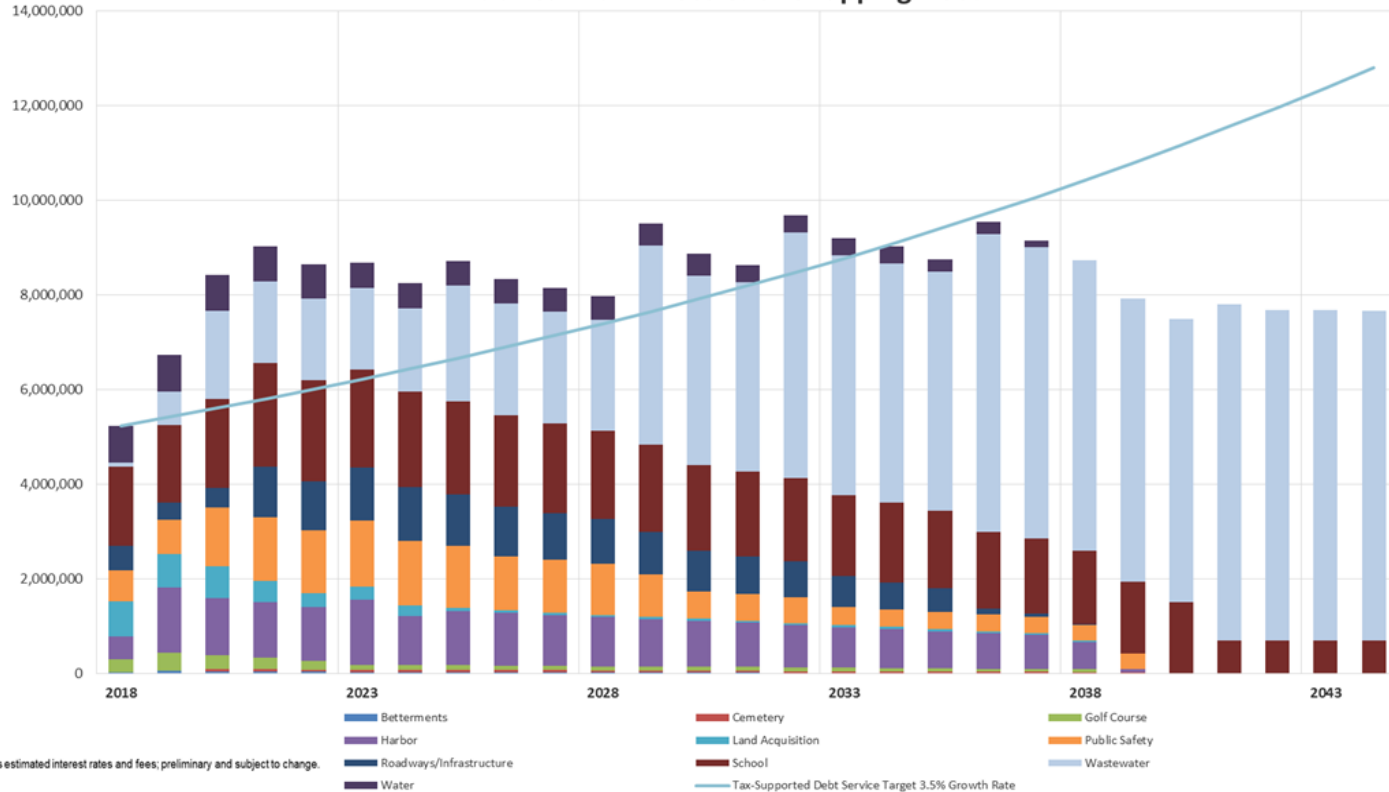
508-430-7509

[health@harwich.ma.us](mailto:health@harwich.ma.us)



# House Connection Financing Options

# Town of Harwich, Massachusetts Annual Debt Obligations by Major Category Existing, Authorized Unissued and Proposed Debt Service\* Includes MCWT Fees & Overlapping Debt



\*Assumes estimated interest rates and fees; preliminary and subject to change.



# Property Owner Costs

- Payments to Town
  - Title 5 Decommissioning and Plumbing Inspection TBD (one-time fee)
  - Tax Rate Increase               \$150 (yearly, based on \$350K assessed value)
  - Sewer User Cost               \$510 (yearly, based on 70,000 gals/year)
- Payments to Private Contractors
  - Connection Plan by Professional Engineer       \$500 to \$1,500 +/-
  - Sewer Connection by Licensed Drain Layer       \$3,500 to \$6,500 +/-  
(varies depending on length, depth and individual property conditions)

# Funding Opportunities

- Barnstable County Community Septic Management Loan Program (5% interest rate)
  - Betterment per MGL 83 goes with Property
  - Based upon \$7,000 home connection at 5% Interest over 15 years the annual cost is \$675 or \$56.25 per month.
  
- Bank Loans
  - Mortgage Refinance
  - Home Equity Loan
  - Home Equity Line of Credit (HELOC)

# Safety Net Concepts

- Town of Harwich Board of Assessors
  - MGL Chapter 59 Section 5 & 5K
    - Senior Exemption (Income Eligible – Up to \$1,500 per year)
    - Volunteer Services (Income Eligible – Up to \$1,500 per year)
      - Angel Provision being requested at May 2018 ATM Article 42
    - Tax Deferral Option for Certain Homeowners
    - Law allows for up to 90% of Tax bill to be offset by above concepts.  
(Based upon an FY 18 Tax Rate of \$8.80 on a \$350K Home the total amount of \$2,772 could be exempted)



# Communications

# Wastewater Support Committee – Purpose

- The Wastewater Support Committee (WSC) will advise the BOS on implementation progress & issues with special attention to effective public outreach including resident input and discussions, sources/uses of funds and implementation of appropriate adaptive management measures.
- The WSC will also monitor critical implementation deadlines.

# WSC – Major Responsibilities

- Coordinate & assist with public outreach
- Coordinate & assist public dialogue to ensure Harwich residents have input into the CWMP & its implementation
- Continue oversight of the ongoing water monitoring program
- Review & update the CWMP as needed
- Support database of existing & emerging technologies



## WSC – Major Responsibilities (continued)

- Advise BOS on wastewater cost allocation policies & methodologies
- Recommend Charter revisions, special legislation & zoning changes which may be needed to implement proposed alternative technologies, organization & funding strategies
- Aid in preparation of required Town Meeting Articles
- Monitor implementation of the CWMP for regulatory compliance & seek external funding

# WSC - Membership

- Five members appointed by the BOS for staggered terms
- Sharon Pfleger – Chair
- Chris Harlow – Vice Chair
- Noreen Donahue - Clerk
- Ann Howe
- Peter Hughes
- Larry Ballantine – Selectmen's Liaison

# WSC - Organization

- Full committee in place January 2018
- Meets 1<sup>st</sup> & 3<sup>rd</sup> Tuesday at 8:30 am Donn B. Griffin Room at Town Hall
- Meets 3<sup>rd</sup> Thursday at 6:00 pm Donn B. Griffin Room at Town Hall
- All meetings are open to the public
- All meetings are recorded by Channel 18 and played on a regular basis

# WSC – Activities to Date

- Comprehensive reorganization & updating of the Wastewater website
- Identification of interest cost savings via the State Revolving Fund (SRF) Loan Program
- Initial publication listing of Pleasant Bay Watershed Phase 2 streets to be sewerred
- Met with Harwich Health Agent to identify issues needing BOH attention (variances, sale of property, inspections, etc.)

## WSC – Activities to Date (continued)

- Several meetings with the Town Administrator
- Met with David Young of CDM Smith
- Identified steps/actions required of property owners regarding connection to the sewer main
- Reached out to local banks to solicit interest in loan programs
- Met with Barnstable County Septic Loan Program Manager
- Mailed letters to Phase 2 property owners regarding plan
- Developing step-by-step guide to connecting to sewer

# How to Connect with the WSC

- Attend our meetings
- Watch us on Channel 18
- Visit the Wastewater Website: [harwich-ma.gov](http://harwich-ma.gov)
- Email the WSC: [wastewater@townofharwich.us](mailto:wastewater@townofharwich.us)



# Communications



- Town Administrator's Office: (508) 430-7513

# Questions and Comments





# Summary and Closing Remarks