



Barnstable Town Council

Update on Wastewater Efforts In Barnstable

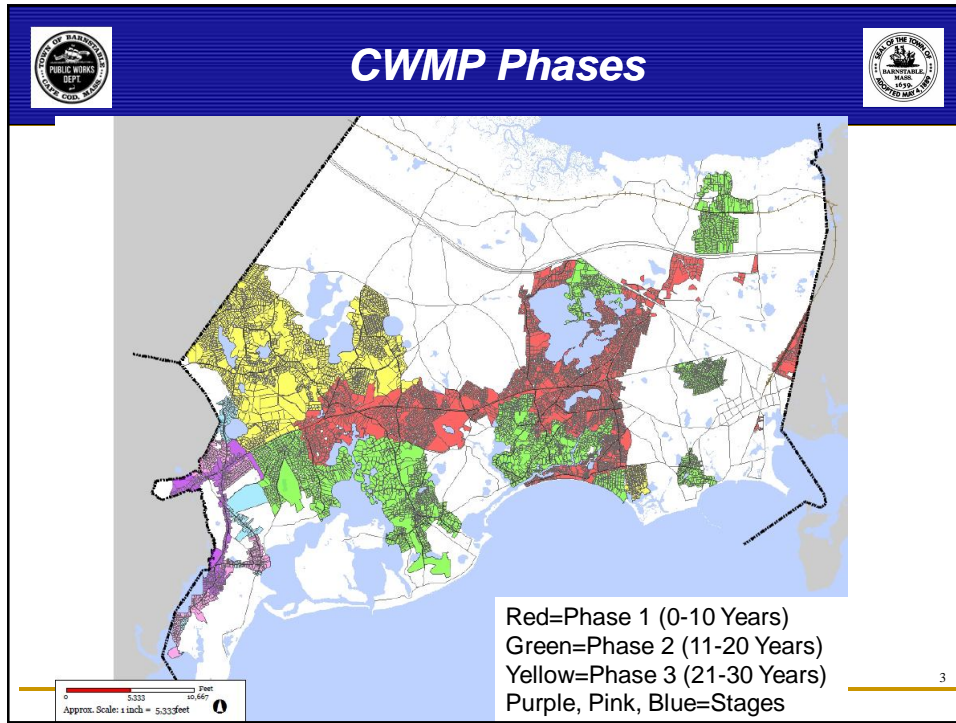
Department of Public Works
January 21, 2021



Update Since December



- *Comprehensive Wastewater Management Plan and Environmental Impact Report approved by MEPA*
 - *Certificate from Secretary of Energy and Environmental Affairs states that the Plan “adequately and properly complies with the Mass. Environmental Policy Act and its implementing regulations”.*
 - *Next/final step: Petition Cape Cod Commission for 208 Consistency Determination.*
 - *Download document at:*
https://www.townofbarnstable.us/WaterResources/CWMP_Final.asp



CWMP Phases

Table 5-1: Sewer Expansion Plan - Phasing Statistics

	Phase 1 (0-10 Years)	Phase 2 (10-20 Years)	Phase 3 (20-30 Years)	Total
WW Captured (gpd)	798,900	810,700	372,900	1,982,500
Load N Removed (kg/day)	79	81	37	197
Number of Parcels Affected	4,735	3,820	2,377	10,932
Approximate Road Miles	75	60	38	173
% of N Removed by Plan	40%	41%	19%	100%

Table 5-2: Sewer Expansion Plan - Staging Statistics

	Stage 1	Stage 2	Stage 3	Total
WW Captured (gpd)	37,200	84,500	22,800	144,500
Load N Removed (kg/day)	4	8	2	14
Number of Parcels Affected	253	483	155	891
Approximate Road Miles	5	8	3	16

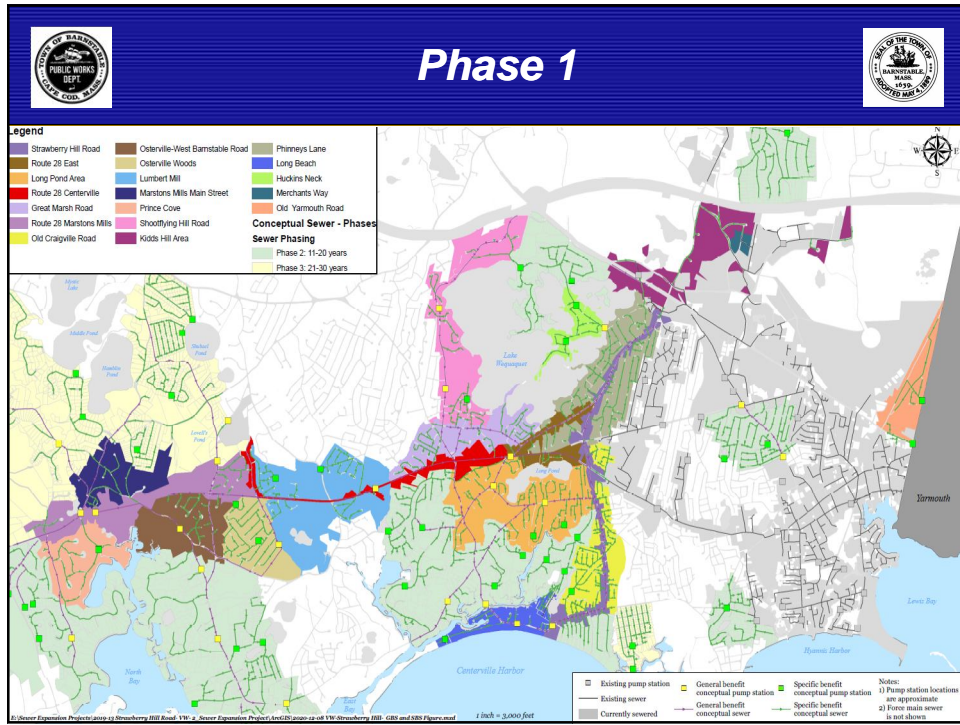
Number of PS in Sewer Phase

Sewer Phase & Stage	Large	Medium	Small	Total PS
Phase 1	4	5	19	28
Phase 2	1	8	27	36
Phase 3		3	14	17
Stage 1		2		2
Stage 2		1	3	4
Grand Total	5	19	63	87

KEY TAKEAWAYS:
 ±189 miles of road
 ± 11,823 parcels
 ± 87 pump stations

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Phase 1

Table 6-1: Phase 1 Traditional Project Statistics


Project	Number of Parcels	Wastewater Captured (gpd)	Total N Removed (kg/day)	% of Total N Removed in Phase 1	Watershed ¹
Merchants Way ²	7	0	0.0	0.0%	BH
Strawberry Hill Road	237	46,467	4.6	5.8%	CR
Route 28 East	120	19,102	1.9	2.4%	CR
Old Yarmouth Road	131	22,603	2.2	2.8%	LB
Phinneys Lane	591	85,138	8.5	10.7%	CR & HC
Long Beach	203	37,647	3.7	4.7%	CR & UN
Route 28 Centerville	80	36,324	3.6	4.5%	CR
Huckins Neck	148	21,506	2.1	2.6%	CR
Long Pond Area	606	114,599	11.4	14.4%	CR
Great Marsh Road	378	51,355	5.1	6.4%	CR
Old Craigville Road	441	49,234	4.9	6.2%	CR & HC
Route 28 Marstons Mills	161	36,429	3.6	4.5%	3B
Osterville Woods	331	60,719	6.0	7.6%	CR & 3B
Shooting Hill Road	383	57,583	5.7	7.2%	CR & BH
Lumbert Mill	350	50,374	5.0	6.3%	CR
Osterville-West Barnstable Road	154	32,787	3.3	4.2%	3B
Main Street Marstons Mills	144	24,123	2.4	3.0%	3B
Prince Cove	158	32,972	3.3	4.2%	3B
Kidds Hill Area	97	18,354	1.8	2.3%	BH
Unassigned	14	1,613	0.2	0.3%	LB
Total	4,734	798,929	79.3	100.0% ³	

Number of PS in Phase 1 Sewer Projects


Sewer Project	Large	Medium	Small	Total PS
1 Strawberry Hill Road		1		1
2 Route 28 East	1			1
3 Long Pond Area		1	3	4
4 Route 28 Centerville	1			1
5 Great Marsh Road				
6 Route 28 Marstons Mills	1		2	3
7 Old Craigville Road			1	1
8 Empty				
9 Osterville-West Barnstable Road			1	1
10 Osterville Woods	1		2	3
11 Lumbert Mill			2	2
12 Marstons Mills Main Street				
13 Prince Cove			1	1
14 Shooting Hill Road		1	2	3
15 Kidds Hill Area				
16 Phinneys Lane			1	1
17 Long Beach		1	1	2
18 Huckins Neck			2	2
19 Merchants Way				
20 Old Yarmouth Road		1	1	2
Grand Total	4	5	19	28

1. BH=Barnstable Harbor, CR=Centerville River, LB=Lewis Bay, HC=Hull Creek, 3B=Three Bay, UN=Undeveloped
 2. Parcel to be served by this project are currently undeveloped.
 3. Phase 1 is 40% of the Plan.

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Phase 1 Schedule



Sewer Expansion Collection System Projects - Phase 1															
Project	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	TOTAL
Merchants Way															\$0
Strawberry Hill Road															\$13,255,000
Route 28 East															\$14,540,000
Long Beach															\$9,800,000
Phinney's Lane															\$22,290,000
Old Yarmouth Road															\$7,970,000
Route 28 Centerville															\$11,200,000
Long Pond Area															\$33,545,000
Old Craigville Road															\$19,090,000
Great Marsh Road															\$15,200,000
Route 28 Marston Mills															\$17,745,000
Osterville Woods															\$16,830,000
Hockley Neck															\$8,825,000
Lambert Mill															\$13,285,000
Shoubyng Hill Road															\$21,680,000
Osterville-West Barnstable Road & South County Road															\$9,975,000
Marston Mills Main Street															\$7,360,000
Prince Cove															\$8,870,000
Almacks Lane - Kings Hill Area															\$7,670,000
NEW PARCELS CONNECTED	0	7	0	0	237	120	263	722	80	0	1,425	637	887	399	4,717
COMBINED FLOW (GPD)	1,670,000	1,670,000	1,670,000	1,670,000	1,716,000	1,735,000	1,773,000	1,881,000	1,917,000	1,917,000	2,132,000	2,250,000	2,391,000	2,466,000	796,000


Legend

Installation and/or Preliminary Design	
Final Design	
Construction	
Currently Funded Project	\$409,000
Currently Unfunded Project	\$500,000


Note: All Costs are in 2020 Dollars

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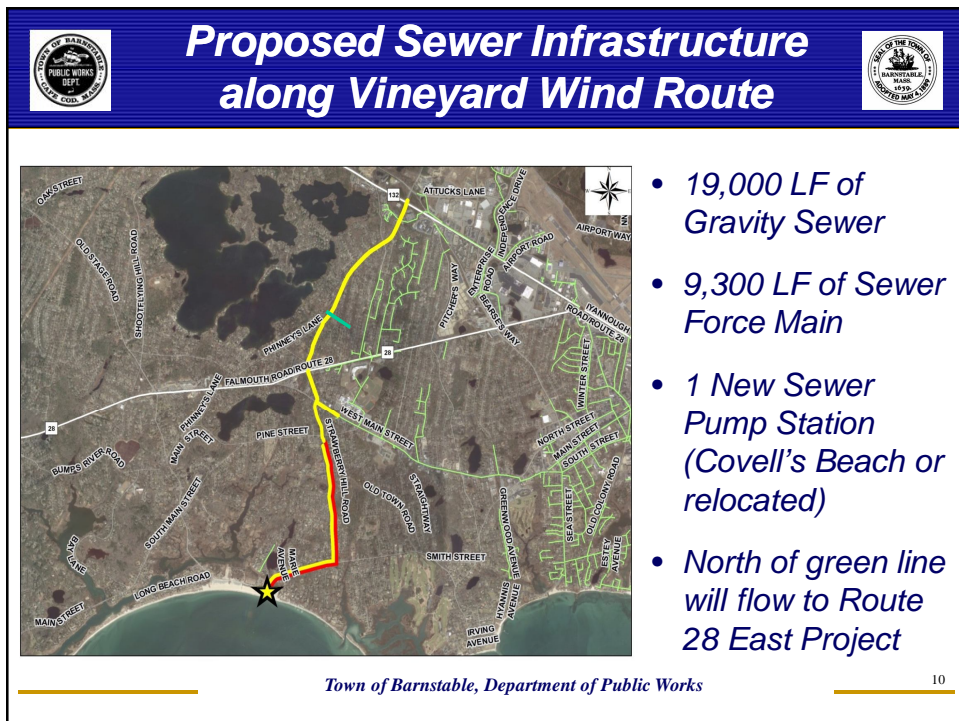
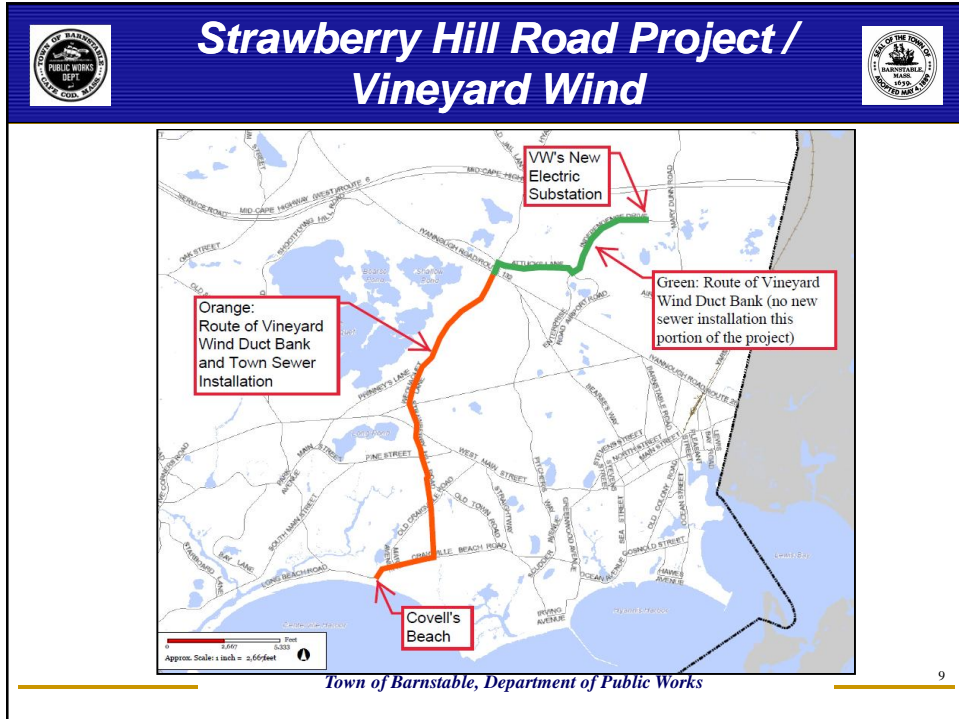
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Active Projects



- Strawberry Hill Road Sewer Expansion
 - Route 28 East Sewer Expansion
 - Phinney's Lane Sewer Expansion
 - Long Pond Sewer Expansion (includes Mother's Park)
 - Route 28 Centerville Sewer Expansion (includes MMWWTF)
 - MassDOT - Route 28 / Yarmouth Road Intersection
 - Cape Cod Five Pump Station
 - 10 Hyannis Avenue Sewer Extension
 - Solids Handling Facility Upgrade
 - Effluent Disposal Studies
 - Denitrification Improvements
 - Inter-municipal Update (JBCC, Sandwich, Yarmouth)
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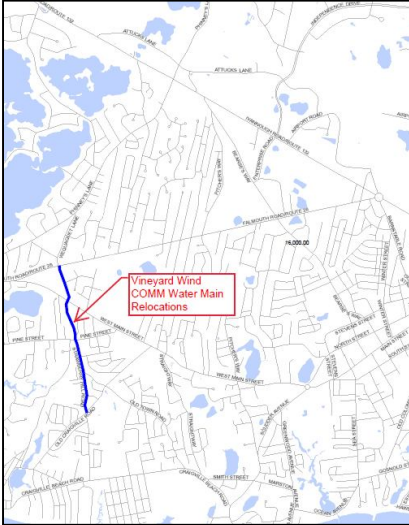
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VW Construction Schedule Spring 2021






- **Vineyard Wind**
 - Relocate about 5,200 LF of COMM Water Main on Strawberry Hill Road from Rte 28 to Old Craigville Road.
 - Start drainage system relocations along route (various locations)
 - Possibly start work at Covell's Beach and in Independence Park
- **Barnstable Sewer**
 - No construction anticipated
 - Award contract
 - Project kickoff, submittal review, etc.

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Proposed Timeline – Strawberry Hill Road Pump Station



- **Timeline to Securing Easement**
 - Review w/ Councilors - December 21, 2020
 - Meet w/ Centerville Civil Association – Anticipate 1st week in January
 - Direct mailings to property owners w/in 400' – Anticipate 1st week in January
 - Town Council First Read – January 21, 2021
 - Town Council Second Read - February 4, 2021
 - 30 Day Appeals Period Ends / Taking Recorded – March 8, 2021
- **Timeline for Bidding / Construction**
 - Submit final documents to SRF - ± February 5, 2021
 - Receive Final Project Approval Certificate from SRF - ± Week of March 15
 - Advertise – March 24, 2021
 - Bids Due – April 15, 2021
 - Award - ± May 15
 - Town Construction commences Summer/Fall



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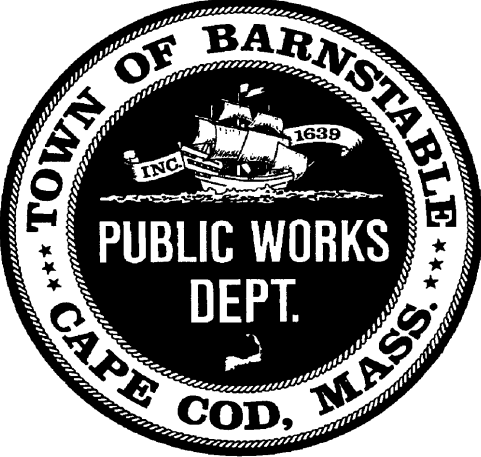
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 **CWMP Civic Engagement** 


- *Ridley Associates – Harwich*
- *Carole Ridley, Principal*
- *Develop Strategic Communications Plan*
 - *Evaluation*
 - *Stakeholder Assessment*
 - *Messaging*
 - *Methods, strategies, timelines*
 - *Implementation*

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 **Discussion?** 



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Strawberry Hill Road Project - Why Should the Pump Station be Relocated?




- To install sewer to Covell's Beach requires very deep excavation depths (up to 30' deep) in Craigville Beach Road.
 - In 15'+ of groundwater.
 - Extremely disruptive, slow and costly
 - Long-term maintenance issues
 - Infiltration and inflow into the system (groundwater entering system)
- A pump station at the intersection of Craigville Beach Road and Strawberry Hill Road significantly reduces excavation depths to around ±10' deep.
- Pump Station at Covell's Beach has been designed to be raised above the flood elevation by bringing in fill and creating a hill for the station to be sited on --- Alternate sites are above the flood elevation
- Savings = Estimated to be ±\$500K


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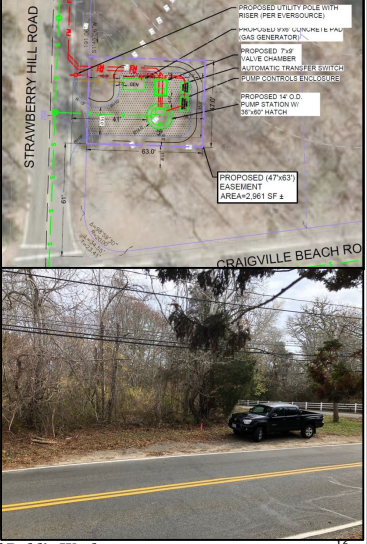
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Strawberry Hill Road Project Pump Station @ 528 SHR








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Town of Barnstable Public Works Dept. 1998 EOD. 2019

Similar Pump Station in Lexington, MA

Town of the Town of Barnstable, Massachusetts 1858 - 1958 - 2019



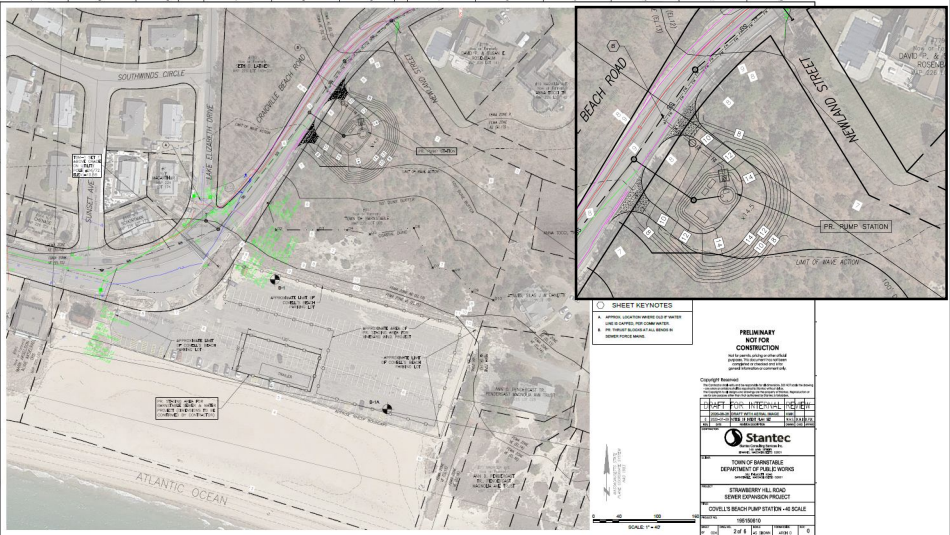
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Town of Barnstable Public Works Dept. 1998 EOD. 2019

Strawberry Hill Road Project Pump Station @ Covell's Beach

Town of the Town of Barnstable, Massachusetts 1858 - 1958 - 2019



KEYNOTES

- 1. APPROX. LOCATIONS INDICATED BY NUMBER
- 2. APPROX. LOCATIONS INDICATED BY NUMBER
- 3. APPROX. LOCATIONS INDICATED BY NUMBER

PRELIMINARY NOT FOR CONSTRUCTION

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Stantec

TOWN OF BARNSTABLE
DEPARTMENT OF PUBLIC WORKS
1000 STATE STREET
LEXINGTON, MA 01846

STRAWBERRY HILL ROAD
SEWER IMPROVEMENT PROJECT

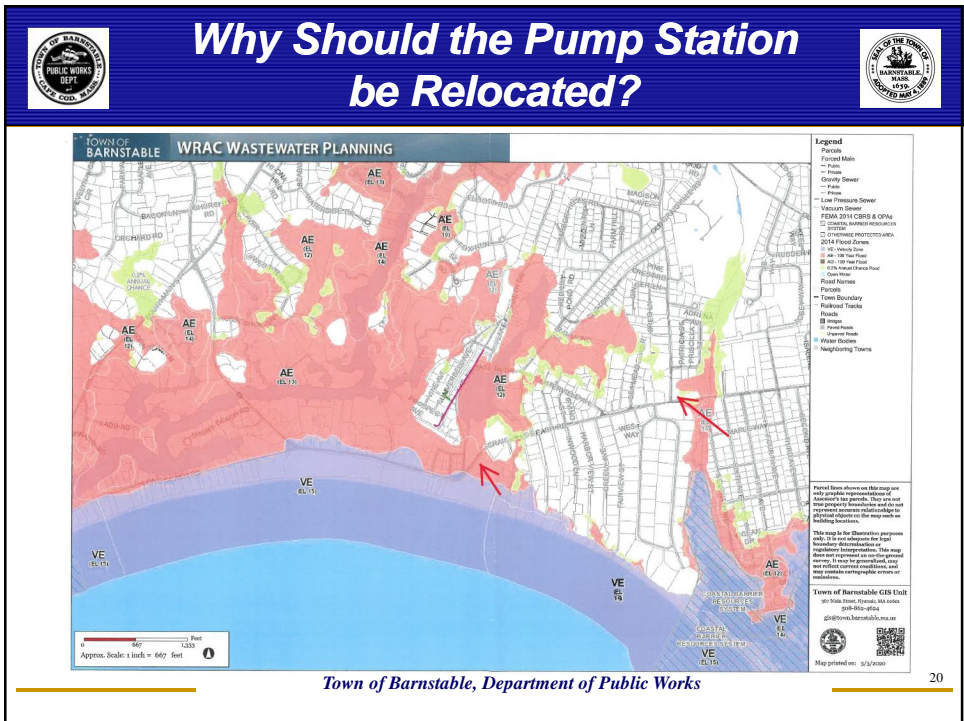
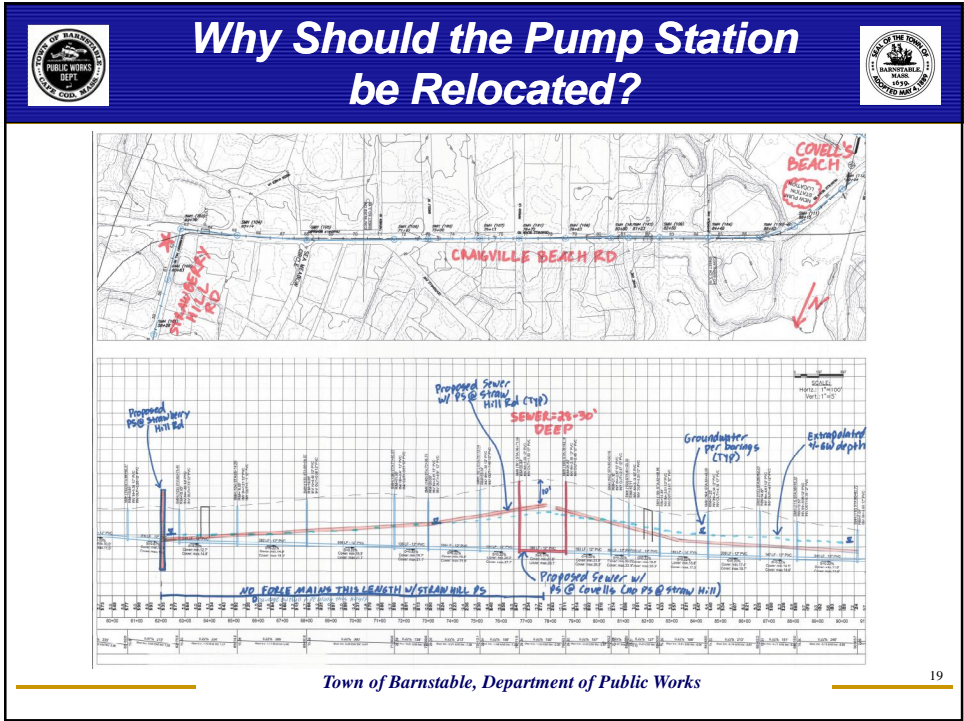
COVELL'S BEACH PUMP STATION - 4E SCALE


PROJECT: 181258-01

SCALE: 1" = 40'


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Update Since October




- **Projects**
 - Rte 28 East (pump station & Sewering at Phinney's Lane and 28)
 - Preliminary Design continues
 - Coordinating/partnering with Hyannis Water to remove “dead-ends” in water system as part of project.
 - Winter 2022 Construction Start Target
 - Long Pond, Phinney Lane, and Rt 28 to Rt 149 survey commenced
 - Survey completion Target March 2021
 - Strawberry Hill Road Project
 - Strawberry Hill Pump Station Easement, First Read this evening (2021-067)
 - Continuing design and coordination with Vineyard Wind designers
 - Anticipating Fall construction start
 - Coordinating SRF paperwork

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Phase I Projects - East



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