



Walsh Property Community Planning Committee (WPCPC)

Remote Meeting: April 19, 2023 | 6:00 – 8:00 PM

Please join the meeting from your computer, tablet or smartphone:

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MEETING AGENDA

1. Welcome and Roll Call
2. Review and Approve March 29, 2023 Meeting Minutes
3. Public Comment – (5 min.)
4. Town Staff Updates – (5 min.)
5. Update on Water Tower Siting – (10 min.)
6. Revised Workplan – (15 min.)
7. Visual Survey Launch – (10 min.)
8. Discussion of Draft Public Outreach Plan – (20 min.)
9. Revised draft concept plan – (30 min.)
10. Outline of Master plan report (10 min.)
11. Recap Meeting Points, Agreements, and Action Items – (5 min.)
12. Review Next Meeting Agenda – (5 min.)
13. Public Comment – (5 min.)
14. Other Business
15. Adjourn



If you are unable to attend the meeting, please contact Liz Sturdy at: esturdy@truro-ma.gov

Walsh Property Community Planning Committee (WPCPC)

Meeting Minutes

March 29, 2023 | 6:00 p.m.

Members Present

Co-Chairs Eileen Breslin and Ken Oxtoby; Members Paul Wisotzky, Fred Gaechter, Russ Braun, Morgan Clark, Betty Gallo, Jane Lea, Christine Markowski, Todd Schwebel, Steve Wynne, Jeffrey Fischer, Raphael Richter

Members Absent N/A

Also Present

Consultants (Carole Ridley, Sharon Rooney, Allie Koch), Stephanie Rein, Violet Rein Bosworth, Chris Lucy, Ellen O'Connell, Ginny Frazier, Daniel Mierlak

Welcome, Roll Call and Agenda Review

Co-chair Oxtoby read the remote meeting access instructions.

Co-chair Breslin read the roll call and committee members present identified themselves.

Co-chair Breslin led discussion of the minutes of March 1, 2023. Member Fischer commented on his previous inquiry regarding the Parks Services' involvement as public outreach continues. To be added to last meeting's minutes. Motion to approve meeting minutes as amended by Member Lea, seconded by Member Wisotzky.

Unanimously approved.

Tonight's agenda was reviewed.

Public Comment

None.

Recap of March Focus Groups

Meetings were well advertised through Truro Engagement, direct invitations, and networking to encourage participation. Each session contained about 20 participants, prompted with the primary question of what Truro needs in terms of use (commercial, rec, housing, mixed, etc.) and what is in short supply? Opportunities highlighted in the feedback included support for commercial or mixed-use spaces that would be compatible with residential use (i.e. trade spaces/shared live-work; food pantry; affordable grocery artist studios; commercial kitchen; human services; cemetery; early childhood center (TCS), and project learning space for student). Consultants discussed how the feedback collected from the focus groups factors into master planning efforts. While many of these are good ideas and are no doubt needed, there needs to be additional economic and market analysis and studies to justify what is feasible.

Ms. Ridley recommended that the WPCPC consider developing an envelope that would be available to house any of these particular uses as they are further assessed by consultants and developer(s) for viability. The consultants recommend the WPCPC consider an envelope of possible uses for the site, integrated with the planned residences. This envelope would detail options for the amount (sf) of non-residential workspace or trades space/workspace to be included in addition to the existing housing plans. An envelope would inform the developer so that they can efficiently plan for infrastructure that would be needed to support the development. For the purposes of the master plan, there needs to be an understanding about possible uses, and therefore the master plan needs this information to assess traffic studies, etc.

Ms. Ridley presented two draft options for consideration by the committee to begin the discussion:

Option #1 (12,500 sf): 2,500 sf nonresidential space, and 10 units of 1,000 sf trades/workspace.

Option #2 (20,000 sf): 5,000 sf nonresidential space, and 15 units of 1,000 sf trades/workspace.

Co-chair Breslin was struck by focus group themes of questions asking how will this master plan work for the community as it relates to human development; questions such as how do we take care of children, young adults, and elders? How do we assess leisure activities for full and part time residents? What types of planning and considerations are being completed for that?

Co-chair Oxtoby reminded the committee that its charge is to make recommendations for appropriate uses in addition to housing that are needed within the community. Generally, there was not appetite for industrial or storage spaces. Something lower in intensity would be more fitting. Ms. Rooney commented there was a fair amount of feedback in support of community spaces or flex-space uses. Ms. Ridley highlighted intent to reach consensus on the suggested options above of a range/possible organization of non-residential uses.

A discussion ensued between the Co-chairs and Members; questions, comments, and feedback to the envelopes/options presented above were discussed. Members generally expressed support of the designation of nonresidential space in addition to the housing areas, with later economic analysis to support the viability. Members reflected on the fact that the Walsh site cannot host every possible use brought to the table. Members generally agreed that so long as it is possible to include a designated amount of nonresidential space without taking away from the housing needed, they would be comfortable. Additional discussion regarding whether or not the nonresidential workspaces, makers space, or the like would be designated only for residents of the Walsh Site, or if those would be made available to the public. Small trades space would make this attractive to home buyers or renters of the Walsh site. However, if the charge of the WPCPC is to support master planning efforts to support the entire community, the nonresidential uses cannot be limited to residents only. Additional support was expressed for an early childhood center associated with the school. Generally, members supported this idea as it will allow for intergenerational mixing and growth. Member Wisotzky, Clark, and others encouraged the committee to make a list of proposed accessory uses (4-5) which could be integrated into different concept plans within the master plan. Member Clark agreed with Wisotzky that the committee doesn't need to identify exact uses. Member Clark proposed two larger areas (ex. one for a grocery store or community kitchen, one for a childhood center), up to 10 office spaces (individual, small), and up to 10 studios and or trades spaces with more open spaces.

Conversation continued with increasing support of community spaces such as a childcare or food pantry center. Member Gaechter recommended that the committee discuss and determine a maximum square footage that could be built out eventually, which could be wrapped into future/potential project design/development phasing. Other members agreed that it would make sense to come to a decision on max sf. The consultants reminded the committee that use types and their amount will need to be determined upon before trip generation calculations can be completed. Coming to a consensus on a number of mixed-use square footages will inform future studies. It seems preferable to give a range of square footage to the consultants and they will determine how these can be integrated into the development.

Clarity was provided on the purpose of Options 1 and 2 from the slide presented earlier. Whatever range, 20-40,000 sf, etc., should be a determination on the total sf of nonresidential space that would be possible within the acreage without taking away from housing.

Member Markowski encouraged the committee to consider the proposed sf/envelope details while keeping in mind that the committee should ensure homes can have gardens and outdoor space. Little units are not equity. Commercial space is being discussed with such passion, and WPCPC isn't talking about the size of the housing spaces. Member Braun provided insight on his previous experience as an architect and developer, noting that it is very possible to develop a high number of units that also include open and fair space. He can speak to a project he worked on that involved close to 300 units of housing on roughly the same area, with

surprisingly lots of open space, areas to grill, grow gardens, and more. It is critical to support those vulnerable populations, and design and development has advanced quite a bit.

Consensus was determined, indicating the consultants can move forward with research and calculations using up to 30,000 - 40,000 sf of nonresidential use in Area A. This is the most nonresidential sf the committee wants to consider without taking away from the housing units. The housing density envelope maximum will be determined in another discussion at a later date.

Visual Survey

Ms. Rooney noted that a revised draft visual survey has been sent to a few of the WPCPC members who expressed interest in assisting with feedback. Feedback and comments will be presented at the next meeting, along with a copy of the revised slides. Suggestions on the prior version have been incorporated based on member feedback. Slides explaining density have been re-incorporated, as well as a brief description of the WPCPC and the site's characteristics. Additional photos of mixed uses will be incorporated. Committee members expressed concern for tiny homes due to limitations on building codes, requirements on head room, stairways, living room sizes, etc.

Updated Work Plan

Modifications have been prepared for the workplan. Consensus has been reached on residential uses, but outdoor event space requires input from town staff to identify space needs and parameters, and status of DPW facility. The workplan is a good guide to plan our meetings based on what information is available to date. Member Wisotzky expressed concerns about draft master plan going to the Select Board before it goes out to the community. Ms. Ridley noted this revision.

Member Richter has expressed past concern on the timeline of committee, but believes WPCPC needs to move quickly and continue at a rapid pace. He encourages the committee to ask consultants to come back with a revised plan, perhaps with a few outreach meetings, so we can target late September for a special town meeting. Member Clark Agrees we can move at an accelerated pace but not at the cost of outreach. Agrees we could have a decent master plan with a lot of community output by September. Member Wisotzky agrees we need to move quickly. It costs money for the town to have a special town meeting. We need to have the conversation now to get this going.

Generally, members agree that it is feasible to move quickly. The LCP is looking at late October for Town Meeting. Ms. Rooney noted September is probably unrealistic for the LCPC.

Preparation for next meeting

Co-chairs and consultants are in the process of updating the work plan; committee reached some consensus on next steps to gather information from public outreach meetings (focus groups); Co-Chairs and Members Clark and Braun will work with Tighe & Bond on Engage Truro, TruroTalks newsletter, visual survey, and other outreach programming needed.

Public Comment

None.

Adjourn

A motion to adjourn meeting made by Member Wisotzky, seconded by Member Fischer. All in favor.
Adjourned at 7:45pm.

Horsley Witten Group

Sustainable Environmental Solutions

90 Route 6A • Sandwich, MA • 02563
Tel: 508-833-6600 • Fax: 508-833-3150 • www.horsleywitten.com



MEMORANDUM

TO: Jarrod Cabral, Director of DPW, Town of Truro

FROM: Tom Lee, P.E.

COPY TO: Emily Beebe, Town of Truro
Cody Salisbury, Water Superintendent, Provincetown DPW – Water Division

DATE: April 12, 2023

RE: Truro - Potential Water Storage Tank Site

This memorandum summarizes Horsley Witten’s analysis to-date of potential locations of a water storage tank in the Town of Truro.

The Town of Truro’s drinking water is supplied by the Provincetown Department of Public Works (DPW) - Water Department. Based on the 2022 water supply data, the Town of Truro used 21,000,000 gallons. Currently, the water meter reading for Truro usage is taken once every six months. The 2022 summer consumption was approximately 16,000,000 gallons for six months, between April 15 and October 15. The average day demand (ADD) is averaged to be approximately 90,000 gallons per day (gpd). The historical max day demand (MDD) factor to the ADD is 2.54 while the peaking hour factor is 2.5 times MDD. The current WaterCAD model is provided by Environmental Partners Group, Inc. (“Environmental Partners”) via Provincetown DPW – Water Department. Horsley Witten Group, Inc. (“HW”) has used the same WaterCAD software to provide the additional modeling work for the Pond Road extension and water tank alternative site evaluation.

Water Demands:

Before HW used the WaterCAD model to work on the Pond Road extension, we noticed that there was no water demand assigned for the Clover Leaf Development in the existing model. Therefore, we added the water demand for the Clover Leaf Development and Pond Road extension to the WaterCAD model. The model result shows that the 8-inch watermain on the Pond Road extension will provide sufficient system pressure and meet the fire flow requirement. The design of the 8-inch watermain was completed.

In evaluating a suitable location and design for a tank, the Town requested the addition of the future water demand for the proposed Walsh property and the additional buildout of 250 homes

in Truro to the model. The Walsh property will consist of 260 two-bedroom homes. Based on the information, we estimated the ADD as 172,843 gallons per day (gpd) as show below:

- Summer demand (2022): 90,000 gpd
- Clover Leaf Development: 6,305 gpd
- Pond Road Extension: 10,238 gpd
- Future Walsh Property: 32,500 gpd
- Future Buildout: 33,800 gpd
- Total ADD: 172,843 gpd

Note: HW used the estimated population times 65 gallons per capita per day (gcpd) as the ADD. Sixty-five gcpd is an acceptable water demand according to Massachusetts Department of Environmental Protection and Massachusetts Department of Conservation and Recreation.

For the proposed Walsh Property, we added the water demand on one junction (J-999) in the WaterCAD model. As for the future buildout, we added 50% of the future demand to the south end of Truro (J-249) and 50% of the future demand to Pond Road (J-987).

Minimum Water Tank Volume:

The minimum water tank volume is estimated to include the MDD plus the allowable fire flow storage. The MDD is estimated at 439,021 gallons (=2.54 x 172,843 gallons) or 440,000 gallons while the fire flow storage is estimated at 240,000 gallons (=2,000 gpm x 120 minutes). The total volume is 680,000 gallons. Based on a typical elevated water storage tank configuration, the minimum tank volume is 750,000 gallons. Assuming a typical composite column tank, the expected tank diameter is 64 ft with an operating head of 40 ft.

System Pressure or Hydraulic Grade Line:

The existing operating hydraulic grade line (HGL) provided by the Provincetown DPW - Water Department is at 171.58 ft.

Table 1: Estimated Highest Elevation Served

| Highest Elevation Served | Existing Pressure Zone | Proposed high pressure zone |
|-------------------------------|------------------------|-----------------------------|
| HGL, ft | 173.58 | 220 |
| Min system pressure, psi | 40 | 40 |
| Min system pressure, ft | 92.4 | 92.4 |
| Estimated system headloss, ft | 20 | 10 |
| Highest elevation served | 61.18 | 117.6 |

The Provincetown DPW – Water Department selected 40 psi as its minimum system pressure even though MassDEP recommends a minimum system pressure as 35 psi, which is a conservative minimum system pressure. The highest elevation served would be approximately

61ft. Truro has parcels with elevations between 100 and 120 ft. For the new water storage tank, we used the fire protection volume to set as the minimum water level, which is 220 ft. The bottom of the proposed tank would be at 212 ft.

In this study, there are two potential tank sites to be evaluated. They are shown in Figure 1 as location A and location B. Location A is located at the Police Station at an elevation of 115 ft while location B is located at the proposed Walsh Property Development at an elevation of 138 ft. We selected the location at the Walsh Property Development as the proposed water storage tank location in our WaterCAD model scenarios. The new tank would be 112 ft above the ground elevation.

Fire Flow:

Without the benefit of any fire flow requirements from the International Standards Organization (ISO) and the fire department, we have assumed a commercial fire flow requirement of 1,500 gpm and a residential fire flow requirement of 800 gpm. However, we used 2,000 gpm in the WaterCAD model for various scenarios. We will review the fire flow available to determine if the system conditions meet the fire flow requirements.

Model results:

We set up and conducted four WaterCAD model scenarios including ADD and MDD with fire flow for the proposed water storage tank on the Walsh Property.

With the projected water demand under the MDD and fire flow conditions, the result showed 15 model junctions that were below 40 psi. The lowest pressure was 32 psi. If 35 psi is acceptable, there would be only 7 model junctions that were below 35 psi. They are all located in the existing pressure zone. As for the fire flow, the results indicate six model junctions that had available fire flow less than 800 gpm. The six model junctions are J-770, J817, J-825, J-963, J-986 and J-987. Twenty-two model junctions showed less than 1,500 gpm. There were seven model junctions that were not assigned with fire flow (based on the original WaterCAD Model).

Potential Water Storage Tank Engineering and Construction Cost:

The minimum water storage tank volume of 750,000 gallons seems to be adequate. However, a small incremental cost would allow for a 1,000,000 gallons tank. The additional storage volume will allow for additional future water demand or water connections.

We prepared the following cost estimate for 750,000 gallons and 1,000,000 gallons tank as a comparison. If this project is to proceed, it may take up to four (4) years or more for the completion of the future water demand study, updating and confirmation of the WaterCAD model, detailed design, and construction.

Table 2: Potential Water Storage Tank Cost

| Composite Elevated Tank | 750,000 gallons | 1,000,000 gallons |
|-------------------------|-----------------|-------------------|
| Water Storage Tank Cost | \$3,250,000 | \$ 4,200,000 |
| Interior Valve Room | \$ 300,000 | \$ 300,000 |
| Tideflex Mixing System | \$ 150,000 | \$ 150,000 |

| | | |
|-----------------------------------|-------------|--------------|
| Subtotal | \$3,700,000 | \$ 4,650,000 |
| Foundation | \$ 500,000 | \$ 750,000 |
| Site Related Work | \$ 500,000 | \$ 500,000 |
| Detailed Design Engineering (15%) | \$ 705,000 | \$ 885,000 |
| Construction Observation (10%) | \$ 470,000 | \$ 590,000 |
| Contingency (50%) | \$2,937,500 | \$ 3,687,500 |
| Inflation (3% for 4 years) | \$1,001,100 | \$ 1,256,700 |
| Total Budget (2023\$) | \$9,343,600 | \$11,729,200 |

Note: Elevated water storage tanks have many style options, such as multi-column, pedesphere, and composite elevated tank. The storage tank costs vary between \$2,340,000 and \$3,250,000 for a 750,000 gallons tank and \$2,900,000 and \$4,200,000 for a 1,000,000 gallons tank.

Conclusion:

1. Without knowing the exact location of the future water demand, we assigned 50% of the demand to the south end of the Town (J-249) and 50% of the demand to Pond Road (J-987). If more information is available that would place the demands in different model junctions, the model results may be different regarding the system pressure and fire flow available.
2. The existing water system is primarily along Route 6A. There is not much pipe looping to the existing water system. Any future watermain extension should consider watermain looping.
3. If two pressure zones are likely scenario, a more detailed WaterCAD model should be conducted with possible pressure reducing valves.
4. Confirm the pump curves for booster pumps (BP-1, DP-1 and DP-2).
5. When the future water demand study is completed by Environmental Partners, the WaterCAD model should be confirmed and updated as needed.
6. The Town should consider whether there might be any other future water demands, such as PFAS affected private or public water supplies needing replacement within the Town of Truro.
7. The high point at elevation 138 on the Walsh property is a potential location for an elevated water storage tank site. The access to this potential location is important. However, we do not yet know if any housing layout is being considered.
8. The overflow and draining of the water storage tank should be part of the site consideration. A site visit to the area is highly recommended before any decision is made.
9. The Provincetown Public Work – Water Department should review the WaterCAD model and may consider other operating parameters to be part of the WaterCAD model.



Potential Water Tank Locations

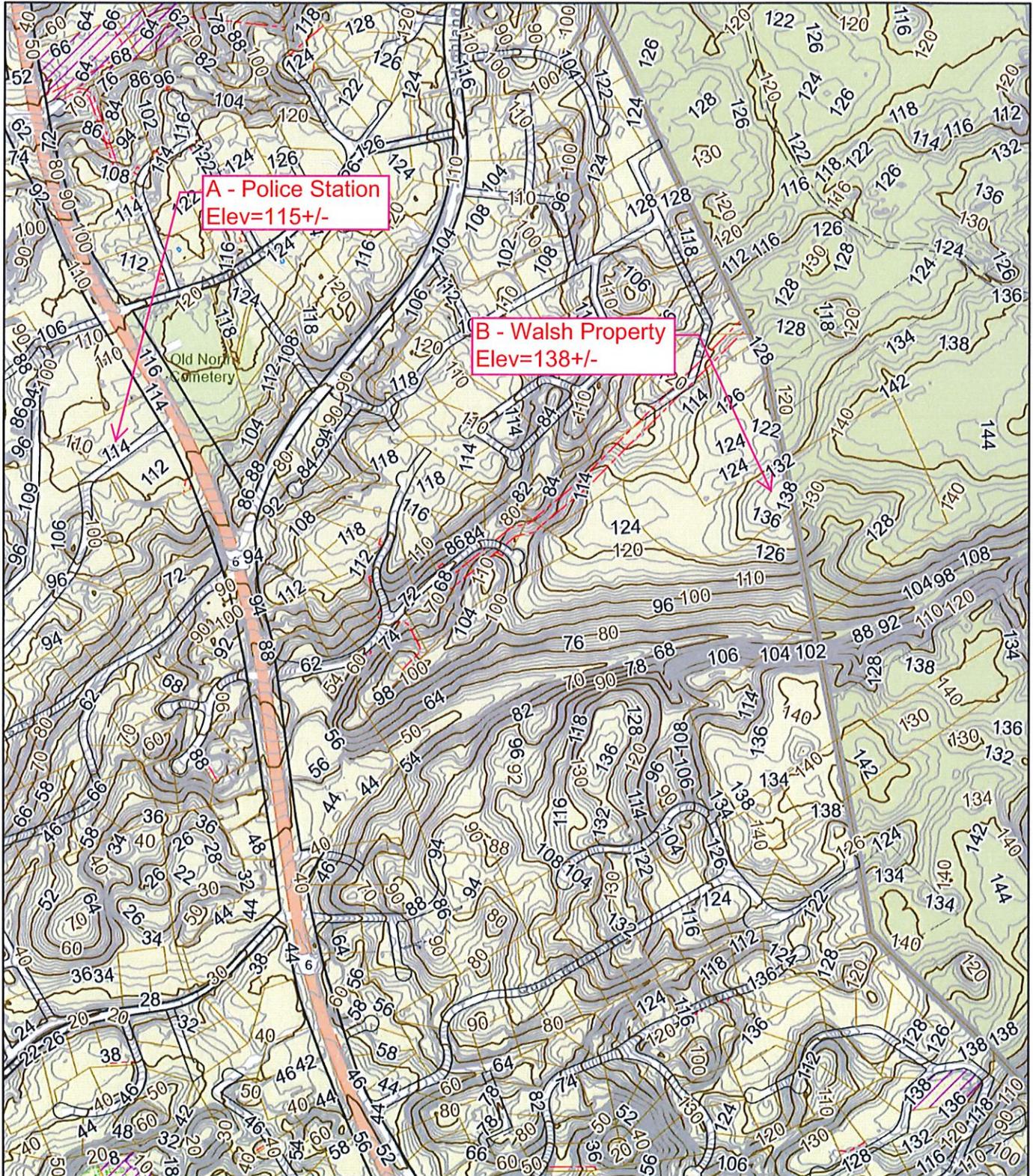
Town of Truro, MA

1 inch = 700 Feet



www.cai-tech.com

April 10, 2023



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

Figure 1

| Meeting Date | Meeting Prep & Tasks | Outreach Prep & Tasks | Consensus/Understanding |
|--|--|---|--|
| Achieve Consensus on Draft Masterplan | | | |
| Apr 19 | <ul style="list-style-type: none"> Review progress on draft masterplan concept and draft outline of summary report Review water tank siting information | <ul style="list-style-type: none"> Discuss outreach plan for draft masterplan | <ul style="list-style-type: none"> Discuss draft master plan concept and outline of summary report Consensus to incorporate water tank siting into master plan |
| April 25 ATM | | | |
| May 17 | <ul style="list-style-type: none"> Discuss preliminary results of Cape Cod Commission traffic analysis. Consultation with Police and Fire Depts. re traffic and access Submit draft preliminary impact assessment of water, wastewater, traffic generation and community fiscal impacts Review draft masterplan and draft report | <ul style="list-style-type: none"> Finalize Outreach Plan for draft masterplan and discuss implementation | <ul style="list-style-type: none"> Consensus on outreach plan for public review of draft masterplan |
| May 31 | <ul style="list-style-type: none"> Discuss and finalize draft master plan and report Meetings with regulators: Cape Cod Commission, NHESP, etc. Meetings with development interests | <ul style="list-style-type: none"> Prep for outreach for draft masterplan | <ul style="list-style-type: none"> Consensus on draft masterplan and report for public comment |
| Public Outreach on Draft Masterplan | | | |
| June 14 | <ul style="list-style-type: none"> Meetings with regulators: local boards, Cape Cod Commission, NHESP, etc. No WPCPC meeting | <ul style="list-style-type: none"> Implement outreach plan – draft masterplan available for public comment no later than June 14 | <ul style="list-style-type: none"> Public outreach occurring |

*Town officials to lead task

| Meeting Date | Meeting Prep & Tasks | Outreach Prep & Tasks | Consensus/Understanding |
|---|---|--|---|
| June 28 | <ul style="list-style-type: none"> Meetings with regulators: local boards, Cape Cod Commission, NHESP, etc. Discuss public review of draft masterplan | <ul style="list-style-type: none"> Implement outreach plan for draft masterplan Discuss outreach for recommended masterplan and report | |
| July 26 | <ul style="list-style-type: none"> Meetings with regulators: local boards, Cape Cod Commission, NHESP, etc. Summary of public comment on draft masterplan Discuss summary of comments on draft masterplan Discuss potential refinements to draft masterplan | <ul style="list-style-type: none"> Implement outreach plan for draft masterplan Finalize outreach plan for recommended masterplan and report | <ul style="list-style-type: none"> Consensus on public outreach for recommended masterplan and report |
| Recommend Final Masterplan | | | |
| Aug 16 | <ul style="list-style-type: none"> Submit final masterplan and report Finalize masterplan and report | <ul style="list-style-type: none"> Implement outreach plan for recommended masterplan and report | <ul style="list-style-type: none"> Consensus on recommended masterplan and report |
| Aug 30 | Discuss status of public review of recommended masterplan | <ul style="list-style-type: none"> Implement outreach plan for recommended masterplan and report | <ul style="list-style-type: none"> Public outreach occurring |
| Public Outreach for Recommended Masterplan | | | |
| Sep 20 | <ul style="list-style-type: none"> Meetings with regulators: local boards, Cape Cod Commission, NHESP, etc. Review comment on recommended masterplan and report Discuss/finalize presentation for Town Meeting | | <ul style="list-style-type: none"> Public outreach occurring Consensus on presentation for Town Meeting |
| Oct 11 | | | <ul style="list-style-type: none"> Town Meeting approval of recommended masterplan and report |
| Oct 25 | | | |

*Town officials to lead task

Possible Types of Housing for the Walsh Property

Introduction

In 2019, the Town of Truro purchased approximately 69 acres located along Walsh Way in Truro. The goal was to develop all or a portion of the site for future community uses that could include housing, recreation, commercial, and/or other municipal uses.

The Truro Select Board appointed the Walsh Property Community Planning Committee (the Committee) to conduct a community-based process to plan for future uses of the property.

This survey seeks to understand what types of housing the community may want to see on the Walsh property.

Currently the Walsh property is primarily wooded and undeveloped.

There are small seasonal cottages in the southwestern portion of the site that are not suitable for housing and will be removed.

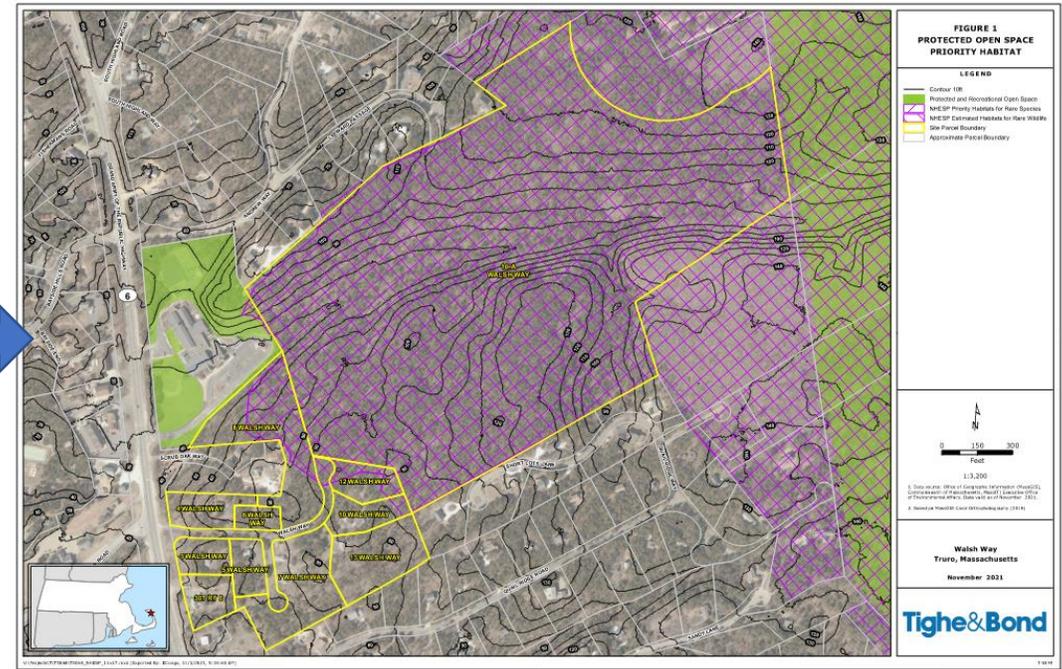


Site limitations

Developing the Walsh property is limited by factors such as water supply protection, rare species habitat, and topography, or the forms and features of the landscape. The next few slides illustrate these limitations.

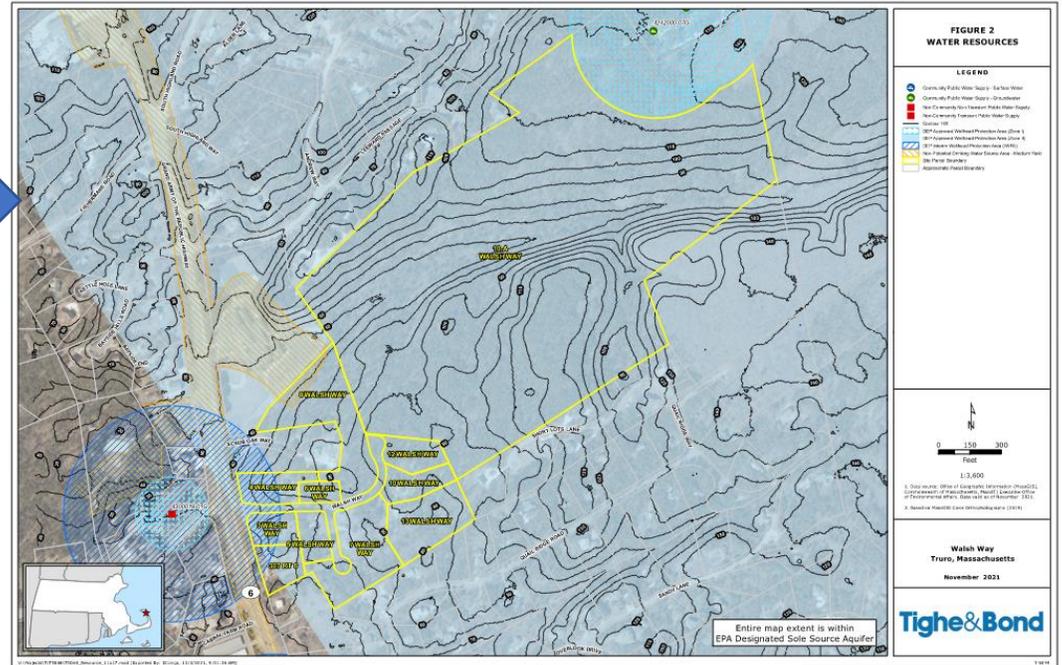
Rare Species Habitat

The majority of the Walsh property is mapped by the MA Natural Heritage and Endangered Species program as priority habitat for rare species. Using good design principles the Master Plan can continue to offer habitat for rare species and allow use of the site.



Public Water Supply

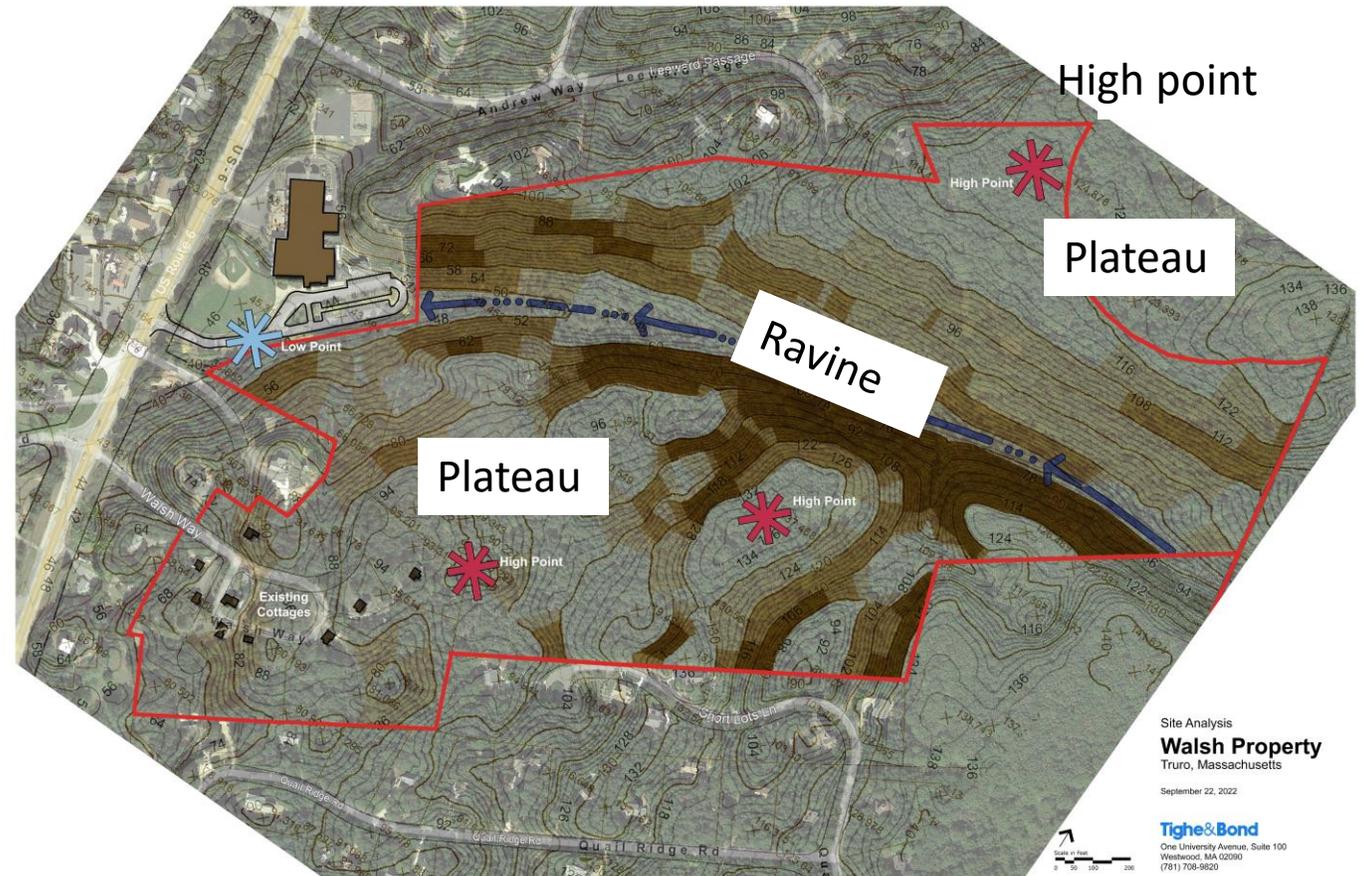
The Walsh property is entirely within a Zone II water supply protection area and potential future public water supply area. Using good design principles the Master Plan can offer new uses, and still protect drinking water quality in the area.



Site Features/Topography

The Walsh property has two broad plateaus (one on NE and one on SW of Site) with a large, steep ravine running from the National Seashore in a NW direction towards the school property.

Challenging topography may limit development potential and require extensive earth work and clearing.

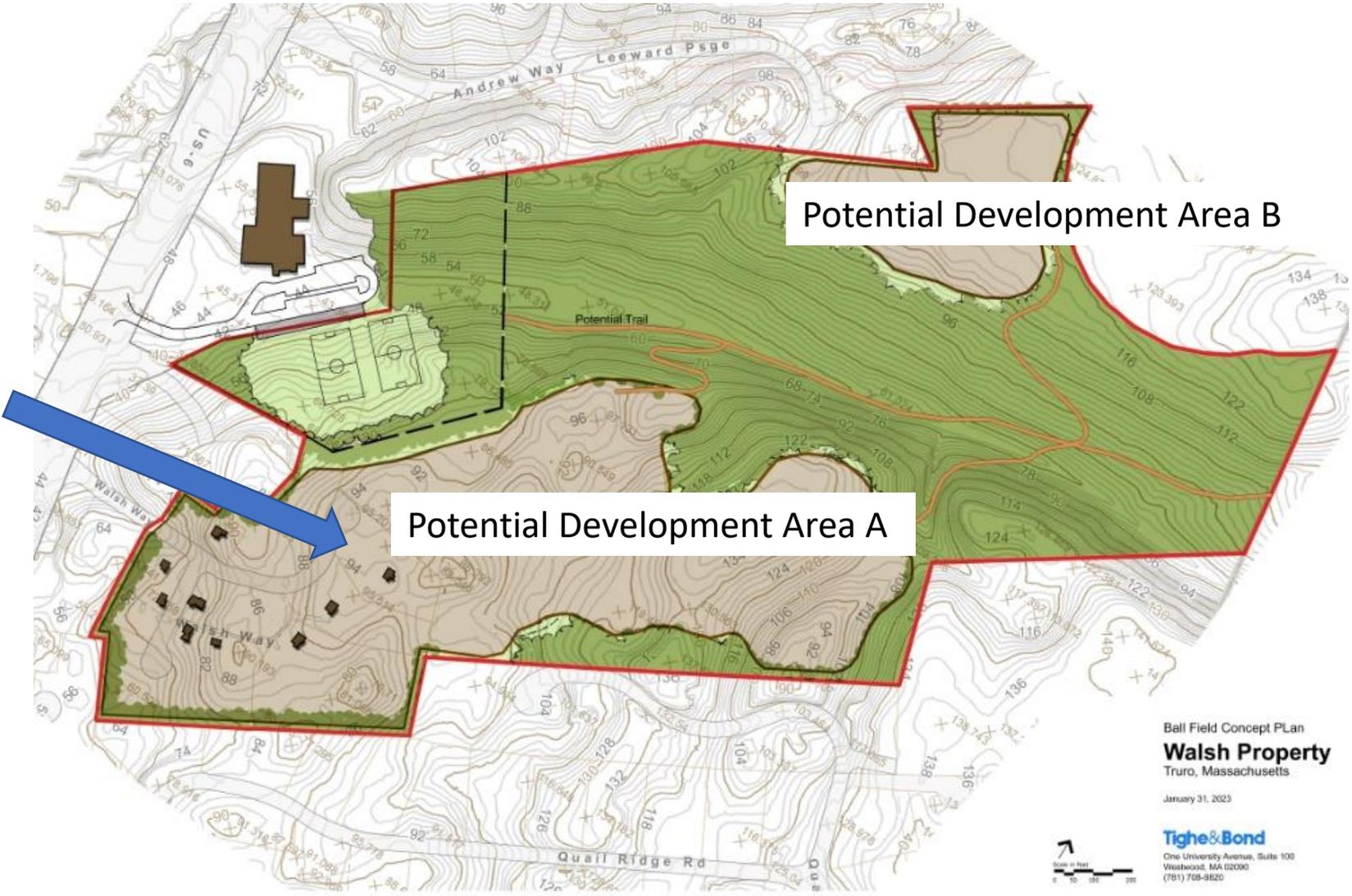


Slopes 10%-15%
Slopes 15%-25%
Slopes >25%



Site Analysis
Walsh Property
Truro, Massachusetts
September 22, 2022
Tighe & Bond
One University Avenue, Suite 100
Westwood, MA 02090
(781) 708-9620

The Committee agreed to focus initial development of the master plan on the 28-acre Potential Development Area A shown below because of the limitations including the topography, regulatory requirements for open space, and public input received to date.



The Committee wants the housing on the Walsh property to work for Truro residents at different income levels and life stages. This goal is supported by the Truro Housing Production Plan.

This will require buildings with higher density than is typically found in Truro.

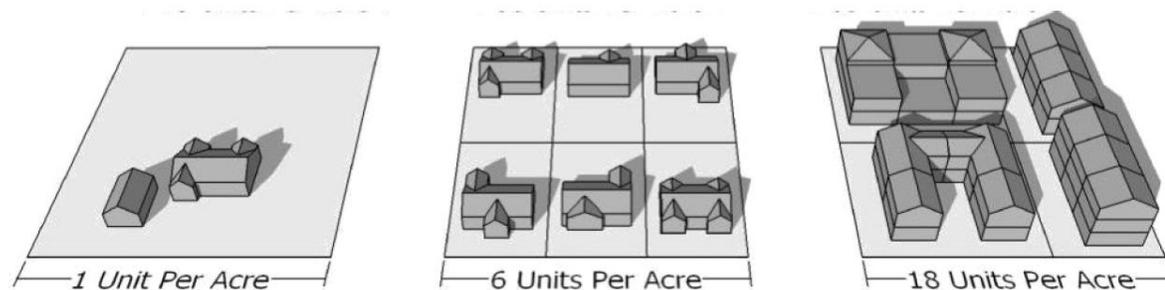
The purpose of this survey is to show what higher density housing can look like, so the Committee can understand which examples the community may like best.

Understanding density

Density can take many forms.

What is density?

*When discussing housing, this is typically described in terms of how many **residential units** are included **per acre of land**.*



The next few slides give examples of different approaches to density. On those slides, **du** means **dwelling unit** (like an apartment).



Which one has a higher density?



Which one has a higher density?



Typical Single Family Home

Cape Cod

*1 unit on 0.25 - 0.5 acre =
2 - 4 du/ac*

Mansion Apartments

West Falmouth Highway, Falmouth

*5 units on 0.5 acres =
10 du/ac*



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

Which one has a higher density?



Which one has a higher density?



Bayberry Village

Old Colony Way, Orleans

*42 units on 4 acres =
10 du/ac*

Mansion Apartments

West Falmouth Highway, Falmouth

*5 units on 0.5 acres =
10 du/ac*



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

Which one has a higher density?



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

Which one has a higher density?



Stacked Flats

Glenwood Ave & Chancery Lane, Falmouth

*9 units on 0.4 acres =
22 du/ac*

Rock Harbor Village

Main Street, Orleans

*100 units on 6 acres =
16 du/ac*



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

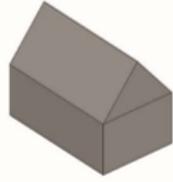
The previous [slides? Pages?] showed examples of how density can look different depending on the design of a building.

The following [slides? Pages?] ask for your input. They show different types of housing, all of which are found on Cape Cod.

Which of the housing types shown do you think would fit on the Walsh property?

You can pick as many housing types as you like. More than one housing type can be on the same property.

Cottage



- 1-2 stories
- Basic rectangular shape
- Typical dimensions range from 700 square feet to 1100 square feet
- Density can be achieved by arranging in clusters (“cottage courts”)

Is this housing type a good fit for the Walsh property?

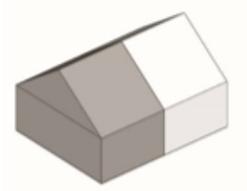
Y

N

Comments:



Duplex



- Two nearly identical units are in a building, sharing a common wall in the middle
- Separate, private entrances
- Semi-private outdoor space

Is this housing type a good fit for the Walsh property?

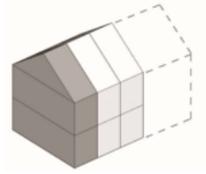
Y

N

Comments:



Townhouse



- Typically 2-3 stories
- A series of single-family homes that share common walls
- Can be designed to look like individual units or as a single larger building



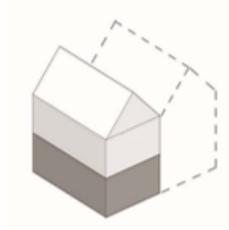
Is this housing type a good fit for the Walsh property?

Y

N

Comments:

Stacked Flats



- Attached dwellings
- Multiple units in each building
- Each with own front door
- Typically 2-3 stories
- Single story flat units are stacked on one another



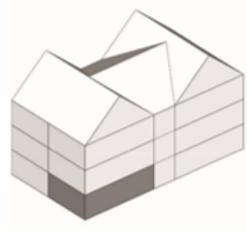
Is this housing type a good fit for the Walsh property?

Y

N

Comments:

Multiplex



- Typically 2-3 stories
- Typically 4-12 units per building
- A series of flats with shared interior hallways
- Multiplexes may stand alone (top image) or be combined (bottom image)



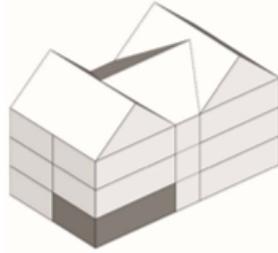
Is this housing type a good fit for the Walsh property?

Y

N

Comments:

Large House with Apartments



- Single structure containing more than two dwelling units
- May be 2 – 3 stories
- Connected by interior hallway
- Apartments can range from one to several rooms



Is this housing type a good fit for the Walsh property?

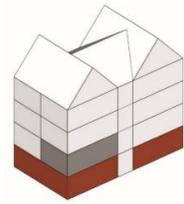
Y

N

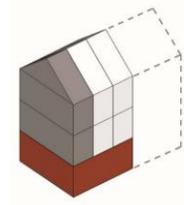
Comments:

Mixed-Use

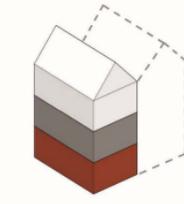
- Typically 2-3 stories
- Residential units are on top of commercial/non-residential units
- Multiple units are located above that may share common walls
- Can be designed to look like individual units or as a single larger building



Multiplex over commercial



Townhouses over commercial



Stacked flats over commercial



Is this housing type a good fit for the Walsh property?

Y

N

Comments:

Is there anything else you would like the Walsh Committee to know as they develop a draft master plan?

Leave room for Open ended response

Thank you for participating!

Draft Masterplan Public Outreach Ideas

1. Host town-wide Kick-off Presentation and Q&A session – Truro Central School?
2. Neighbors meeting(s)
3. Media briefing (s)
4. Post information on Town website WPCPC page
5. Post information on Engage Truro
6. Truro Talks – include summary, ways to send comments or questions
7. Speakers' bureau – develop a Power Point/talking points for members to use at small scale events:
 - Neighborhood association annual meetings
 - Farmer Market table
 - Backyard/living room gatherings
8. Displays
 - Display at Truro Library and Community center
 - Display where beach/transfer station stickers are sold
9. Meet with Town Boards and Committees: Planning Board, Board of Health, LCPC , Fin Com
10. Materials:
 - Display boards
 - PowerPoint
 - Summary/Fact sheet/Talking points
 - Brochure mailing to households (budget for this?)



Plan Data

| | |
|---------------------------|------------|
| Commercial | |
| - 1-Story | |
| - 10,000 SF | |
| Live/Work | 15 |
| - 2-story | |
| - Average 1,800 SF | |
| Flats | 80 |
| - 1-Story | |
| - 950 SF | |
| Townhouses | 88 |
| - 2-Story | |
| - 1,250 SF | |
| Single Family | 41 |
| - 1 1/2 Story | |
| - 1,600 SF + 1 Car Garage | |
| Total | 224 |

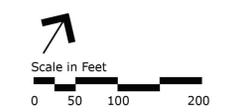
Notes:
 1. Topography shown is from MassGIS.
 2. Secondary egress/access may be required depending on the rights of the town.

**DRAFT
 FOR DISCUSSION
 PURPOSES ONLY**

Conceptual Master Plan
Walsh Property
 Truro, Massachusetts

April 10, 2023

Tighe&Bond
 One University Avenue, Suite 100
 Westwood, MA 02090
 (781) 708-9820



Walsh Property Technical Memorandum

Date

The summary memorandum for the Walsh property will contain recommendations on the following:

Proposed development types and land use(s)

Economic and community impact analysis

Estimated Housing Production

- The estimated number of housing units to be generated by the masterplan will be identified.
- Units (~159) specifically designated to address demand identified in the Housing Production Plan will be described by unit size and income level in proportion to the HPP.
- Recommendations for size/configuration of market rate units (~100) will be developed based on input from interviews with regional housing developers.

Estimated Jobs

- The estimated number of jobs supported by a commercial space on the property (these may not be new jobs in the community).

Municipal Services (fire, police, schools)

- Emergency services considerations will be identified based on discussions with Police and Fire Departments.
- Estimated number of school age children that could live on the property will be identified (these may not be new to the community).

Property Values and Municipal Tax Impact

- Current assessed value of the property.
- Average valuation of comparable units and/or commercial space in Truro or nearby towns based on input from Town Assessor.
- Estimated range of tax levy based on projected development.

Natural Resources

- Potential impacts to priority and estimated habitat as defined by MA Natural Heritage and Endangered Species Program.

Noise

- Identify receptors sensitive to construction noise (school, adjacent residential areas)
- Identify best management practices to limit construction-related noise (work hour limitations, prohibit use of jake brakes, etc.)

Traffic

- Tighe & Bond: trip generation estimates based on proposed land uses
- Cape Cod Commission transportation analysis
 - Conduct safety analysis – crash history
 - Provide traffic counts available from regional or corridor studies prepared by CCC or others.
 - Conduct traffic counts at the intersection of Route 6 at the Great Hollow Way/Truro Central School driveway to complete LOS/Capacity Analysis
 - Prepare LOS/Capacity analysis for existing and future build conditions for the potential access points onto Route 6 (intersection with Scrub Oak Way/Truro Central School driveway and the intersection with Great Hollow Road/Walsh Way).
 - Provide inventory of existing and/or planned alternative transportation modes/facilities in the project area (transit, on and off-road bike paths, etc.)
 - Attendance at up to two (2) public meetings

Water and Wastewater

- Identify Zone I and II to public water supply
- Estimate water consumption based on proposed uses
- Estimate wastewater generation based on proposed uses

Phasing strategy and timeline

Final conceptual plan and rendering

Estimate of probable construction costs for infrastructure associated with master plan

Recommended regulatory approach and/or zoning changes associated with the final master plan

Phasing strategy and timeline

Final conceptual plan(s)

One perspective rendering



Town of Truro New Public Works Facility



Feasibility Study - Update Presentation

January 10, 2023

Town of Truro
New Public Works Facility

High-Level Recap of the Feasibility Study

Town of Truro
New Public Works Facility

Public Works Responsibilities

Town of Truro New Public Works Facility

The DPW touches the lives of the residents everyday by maintaining the infrastructure that the community relies on including...

- Town roads ←
- Storm drainage system ←
- Street sweeping
- Sidewalks
- Roadside brush cutting
- Public buildings ←
- Vehicle Maintenance
- Beaches ←
- Transfer Station operations
- Management of capital improvement projects ←



Town of Truro

New Public Works Facility

The DPW touches the lives of the residents everyday by maintaining the infrastructure that the community relies on including...

On call 24 hours a day to handle incidents & emergencies including:

- Snow and ice removal operations
- Hurricane / windstorm cleanup
- Flooding
- Removal of road hazards
- Oil spills / accidents
- Emergency road repairs
- Emergency response / consequence management
- The support of other emergency departments



Town of Truro
New Public Works Facility

Why Does the Town Need a New Facility?

Town of Truro

New Public Works Facility

Why does the Town need a new Public Works facility?

- Operating out of multiple buildings ranging from 40 - 70 years old
- Responsibilities have increased significantly but facility has not
- The facilities no longer serve the needs of the Town
- Facility does not meet current codes
- Large portion of multi-million dollar fleet is stored outdoors impacting vehicle life expectancy, maintenance costs, and operations
- Efficiency of operations and employee safety are negatively impacted



Town of Truro
New Public Works Facility

Facility Programming

Town of Truro

New Public Works Facility

Proposed Program

| <u>Space Needs Assessment</u> | <u>Initial Needs</u> | <u>Rev 1</u> | <u>Rev 2</u> |
|-------------------------------|----------------------|----------------------------|----------------------------|
| • Office / Office Support | 2,035 SF | 1,525 SF | 1,300 SF |
| • Employee Facilities | 2,144 SF | 1,936 SF | 1,700 SF |
| • Workshops | 3,929 SF | 3,192 SF | 2,900 SF |
| • Vehicle Maintenance | 7,279 SF | 5,532 SF | 5,400 SF |
| • Wash Bay | 1,750 SF | 1,350 SF | 1,350 SF |
| • Vehicle & Equipment Storage | 19,551 SF | 18,953 SF | 16,958 SF |
| Subtotal: | 36,689 SF | 32,487 SF | 29,608 SF |
| | | 11.5% Reduction | 19.3% Reduction |

Town of Truro

New Public Works Facility

Proposed Program

| <u>Space Needs Assessment</u> | <u>Initial Needs</u> | <u>Rev 1</u> | <u>Rev 2</u> |
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| • Vehicle & Equipment Storage | 19,551 SF | 18,953 SF | 16,958 SF |
| Subtotal: | 36,689 SF | 32,487 SF | 29,608 SF |

Vehicle storage garage is 57% of the facility - so why does the DPW need to put the equipment indoors

Town of Truro

New Public Works Facility

Why put the vehicles and equipment indoors.....

- 1. Employee Safety**
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Employee safety is compromised when trying to clear off large equipment in inclement weather conditions as shown above

Town of Truro New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
- 2. Public Safety**
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



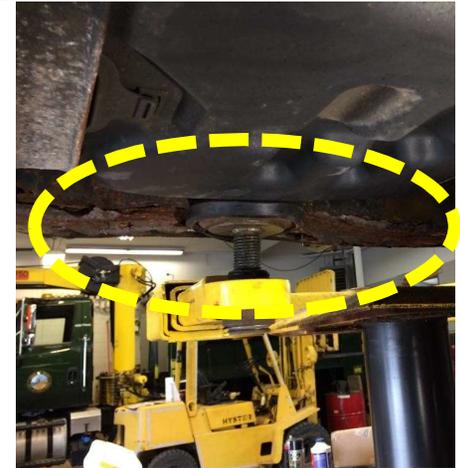
Vehicles / equipment which are covered by snow or ice may take longer to respond to the needs of the community which could result in unsafe conditions for the public



Town of Truro New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
- 3. Protection of Equipment**
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Outdoor storage contributes to accelerated equipment deterioration

Town of Truro

New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
- 4. Stormwater Pollution Control**
5. Cost Effective Operations
6. Efficient Operations



Vehicles stored outdoors on the existing site
have inadequate environmental control
measures

Town of Truro New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
- 4. Stormwater Pollution Control**
5. Cost Effective Operations
6. Efficient Operations



Any drips or spills from vehicles stored inside will be collected in a closed floor drain system preventing them from reaching the environment

Town of Truro

New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
- 5. Cost Effective Operations**
6. Efficient Operations

Cost to Construct Storage Garage

- Construction
- Maintenance
- Operation

VERSUS

Cost Associated with Exterior Storage

- Increased Vehicle Maintenance
- Decrease in Vehicle Life Expectancy
- Non-Productive Labor
- Operational impacts
- Employee Safety & Environmental

Analyses has shown that it will cost 2 times more to store equipment outdoors over the life of a building

Town of Truro New Public Works Facility

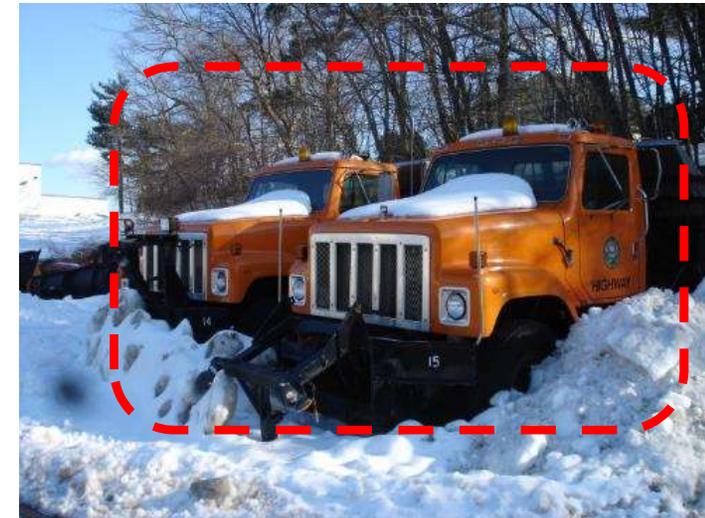
Why put the vehicles and equipment indoors.....

Case Study for increased vehicle life expectancy associated with storage of equipment indoors

- A Town purchased three large dump trucks
- Town only had room to store one indoors
- Remaining two vehicles were stored outdoors
- Two vehicles stored outdoors were removed from service early due to equipment deterioration. Equipment conditions were so poor that they were sold as scrap.
- The vehicles which was stored indoors **remained in service for three more years** and was in suitable condition when it reached its service life that it was able to be sold at auction



Only room to store one (1) new dump truck indoors



Two (2) vehicles stored outdoors due to limited availability of covered storage

Town of Truro
New Public Works Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
- 6. Efficient Operations**

Town of Truro
New Public Works Facility

Why put the vehicles and equipment indoors.....



Vehicle starting when stored indoors – minimally heated garage

Town of Truro
New Public Works Facility

Why put the vehicles and equipment indoors.....



Vehicle starting when stored outdoors

Town of Truro
New Public Works Facility

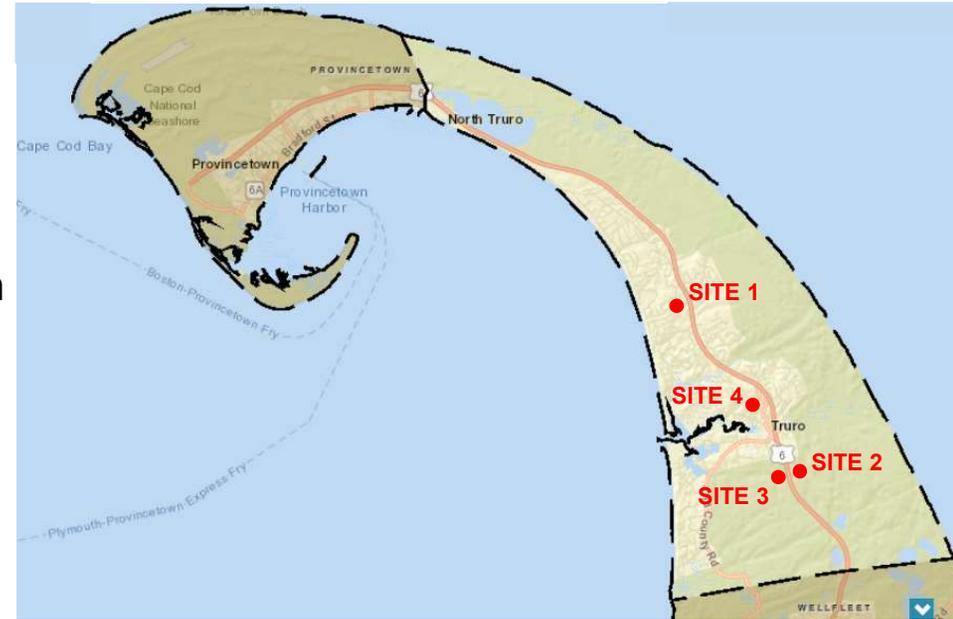
Site Selection Process

Town of Truro New Public Works Facility

Initial Site Selection Process

- Worked with the Town to identify potential sites

- Site 1** – 340/344 Route 6 (Town owned)
- Site 2** – 5 Town Dump Road Transfer Station (Town owned)
- Site 3** – Lot 104 Route 6 Adjacent State Parcel (State owned)
- Site 4** – 24 Town Hall Road Existing DPW Site (Town owned)



- Conducted a screening analysis of the parcels

- Size** – Prepared conceptual generic “test-fit” site plans to determine if site can meet DPW operational requirements.
- Environmental Receptor Maps** – Prepared receptor maps to identify potential permitting restrictions which could hinder development.

- Site 1 – 340/344 Route 6 passed the size and environmental receptor map screening



Town of Truro New Public Works Facility

Site Selection Process

- Site 1 – 340/344 Route 6
 - Size: **Passed**
 - Environmental Receptors: **Passed**



Town of Truro
New Public Works Facility

Project Inquiries & Responses

Town of Truro
New Public Works Facility

Summary of Previous Presentations

- Initial Select Board presentation of feasibility study in December 2019
- Follow up Select Board presentations to address questions / comments
 - February 2020
 - February 2022
- Responded to numerous project inquiries

Town of Truro

New Public Works Facility

Summary of Previous Presentations

- Summary of Project inquiries discussed in prior presentations
 - Site analysis and rankings
 - Water for domestic and fire protection
 - Environmental protective measures for salt shed and fuel system
 - Environmental protective measures for the new building
 - Stormwater management system
 - Existing buildings evaluation
 - Noise / visual barriers around the site
 - Rotation or reconfiguration of facility at existing site
 - Relocation from existing site to Snow's Field or to abutting parcels
 - Relocation of the salt storage structure to alternate locations
 - Cost-benefit analysis on indoor vs. outdoor vehicle storage
 - Explored variance and regulatory options that might open up other sites.
 - Reviewed cell tower fall zone and potential impact to the proposed concept.
 - Reviewed Zone II restrictions
 - Discussed traffic and other studies at proposed Rt 6 site
 - Discussed impacts associated with moving portion of operations to another location
 - Discussed Public discussion related to long-term regionalization plans for the DPW
 - Discussed endangered species / priority habitat status for all proposed sites

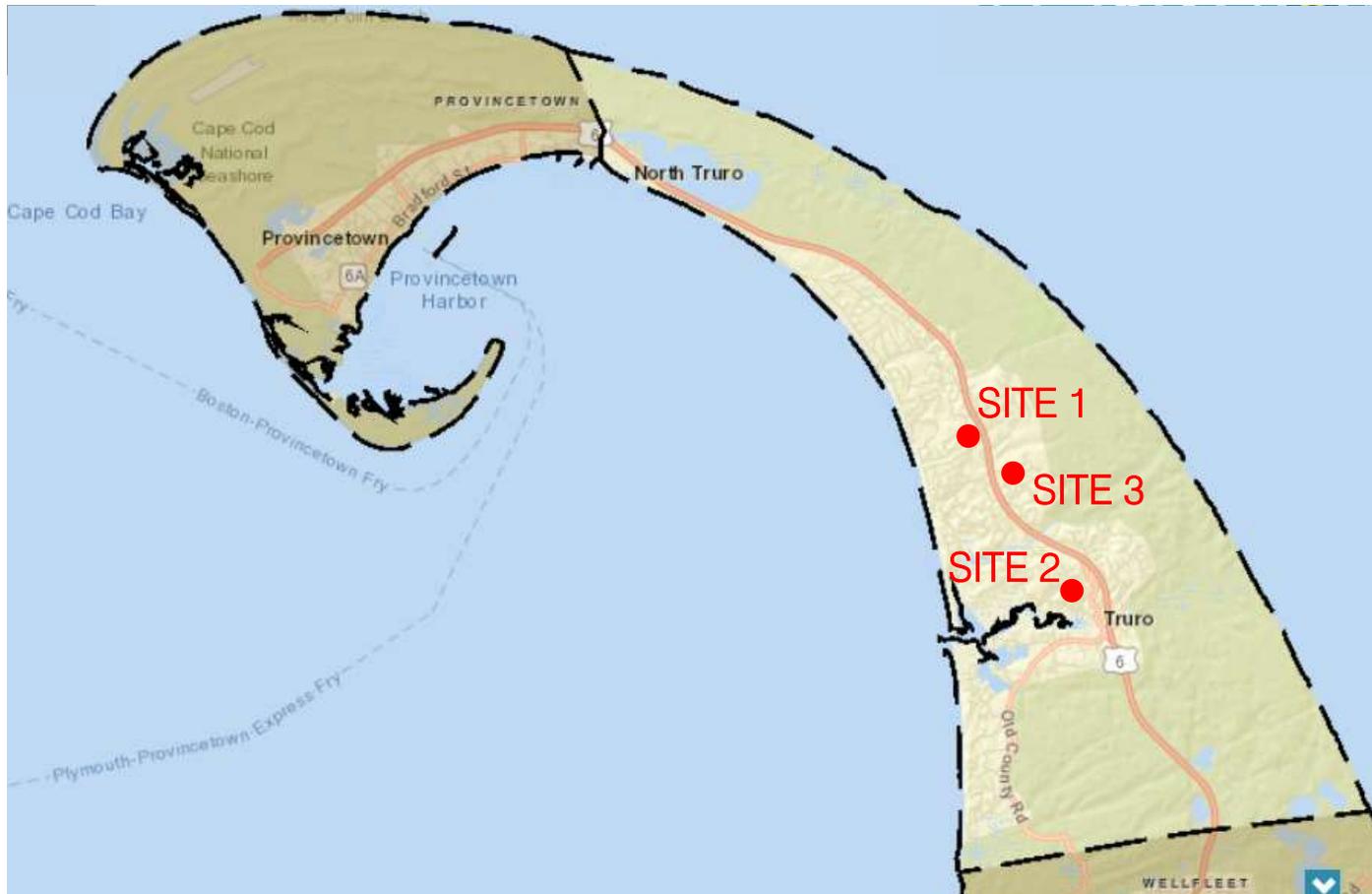
Town of Truro
New Public Works Facility

**Additional Site Analysis
Completed in 2022**

Town of Truro New Public Works Facility

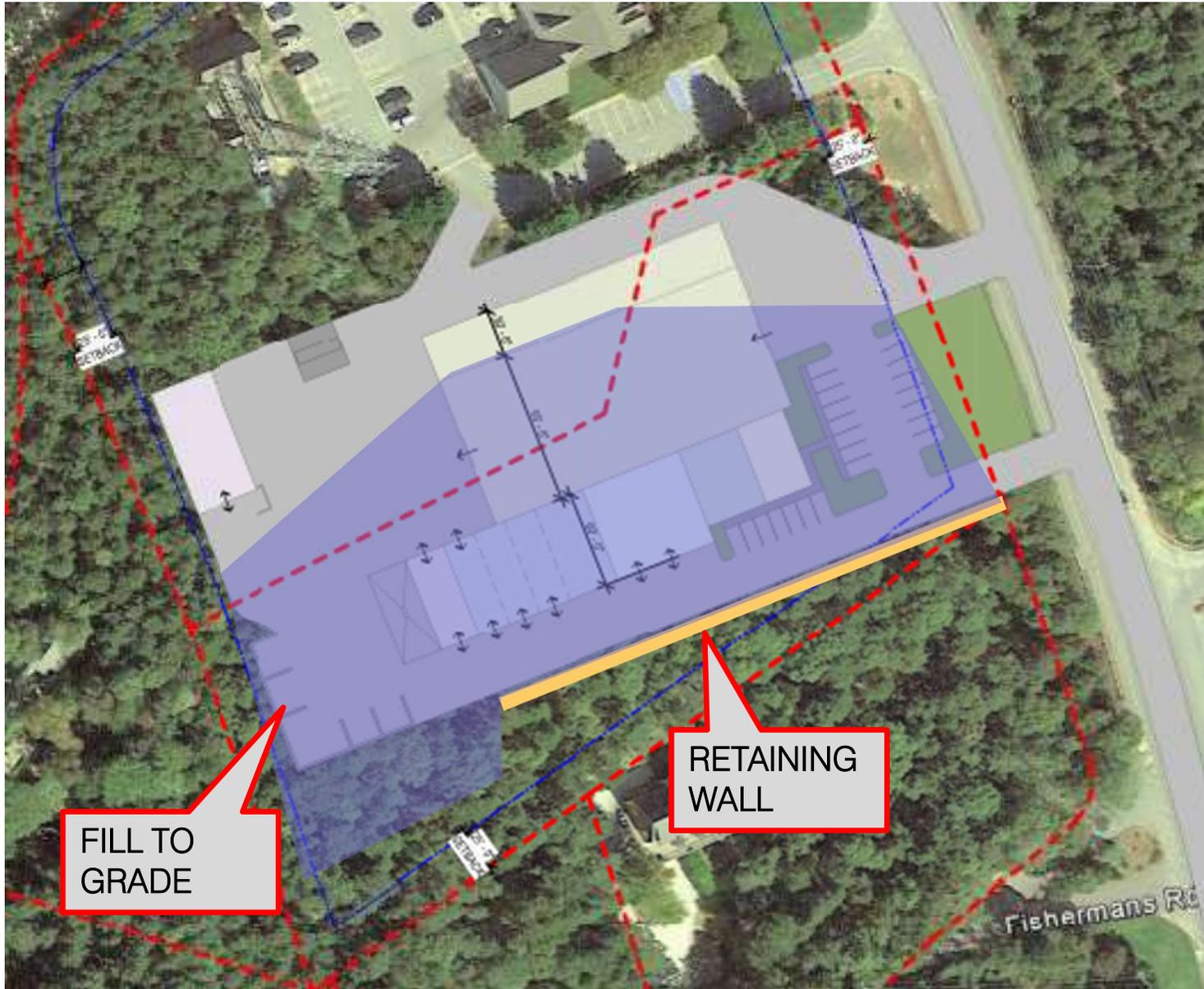
Site Comparison

- Site 1 – 340/344 Route 6 (Town owned)
- Site 2 – 24 Town Hall Road Existing DPW Site (Town owned)
- Site 3 – Walsh Way (Town owned)



Town of Truro
New Public Works Facility

SITE 1 - 340/344 Route 6



SITE SPECIFIC COST DRIVERS:

- Fill to grade
- Retaining wall
- Fire pump

Town of Truro
New Public Works Facility

SITE 2 – 24 Town Hall Road



SITE SPECIFIC COST DRIVERS:

- Fill to grade
- Retaining wall
- New off-site well and force main
- Fire pump and cistern system
- Temporary facilities during construction

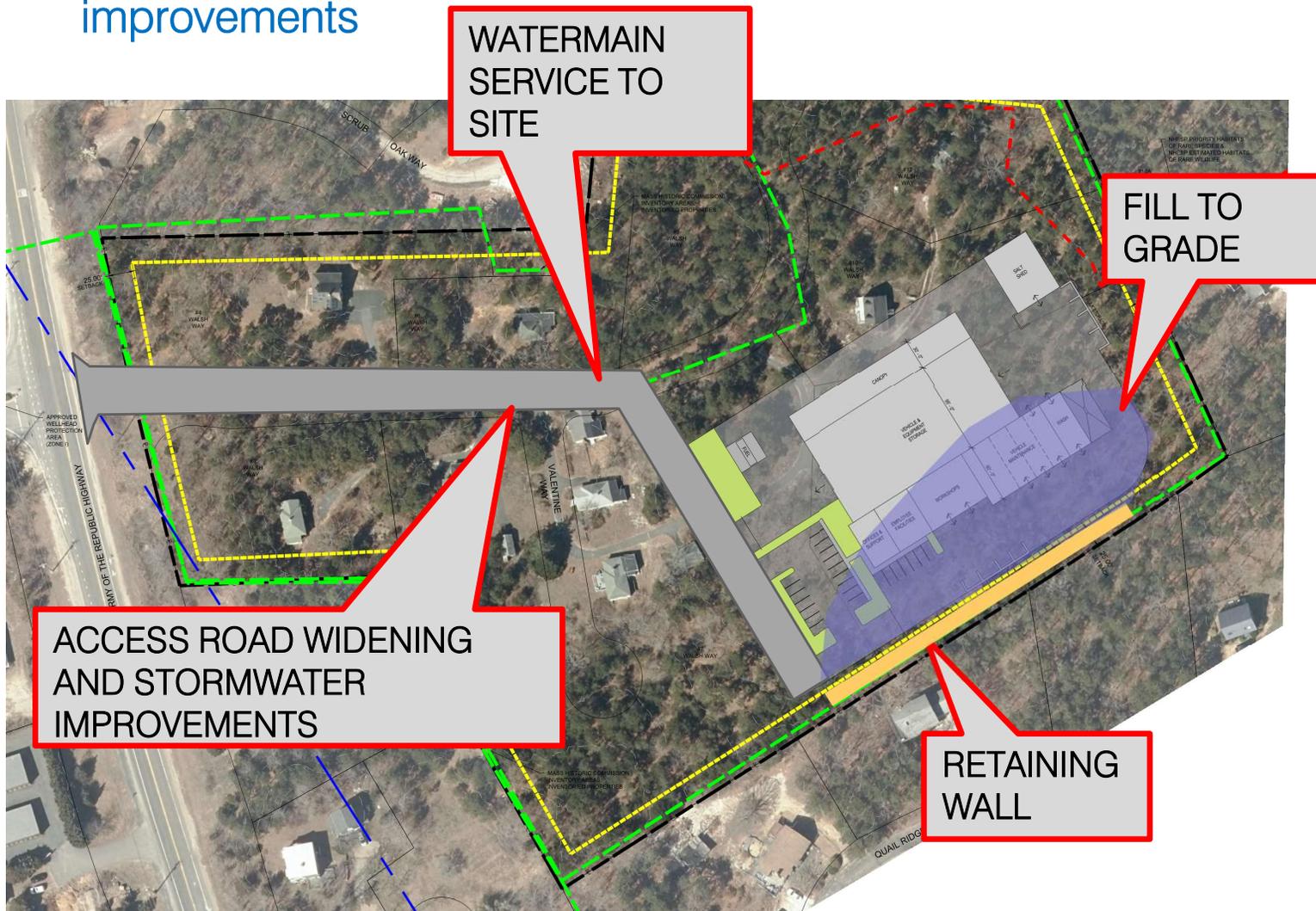
Town of Truro New Public Works Facility

SITE 3 – Walsh Way

SITE SPECIFIC COST DRIVERS :

- Access road widening
- Access road stormwater structures & improvements

- Fire pump and cistern system



Town of Truro

New Public Works Facility

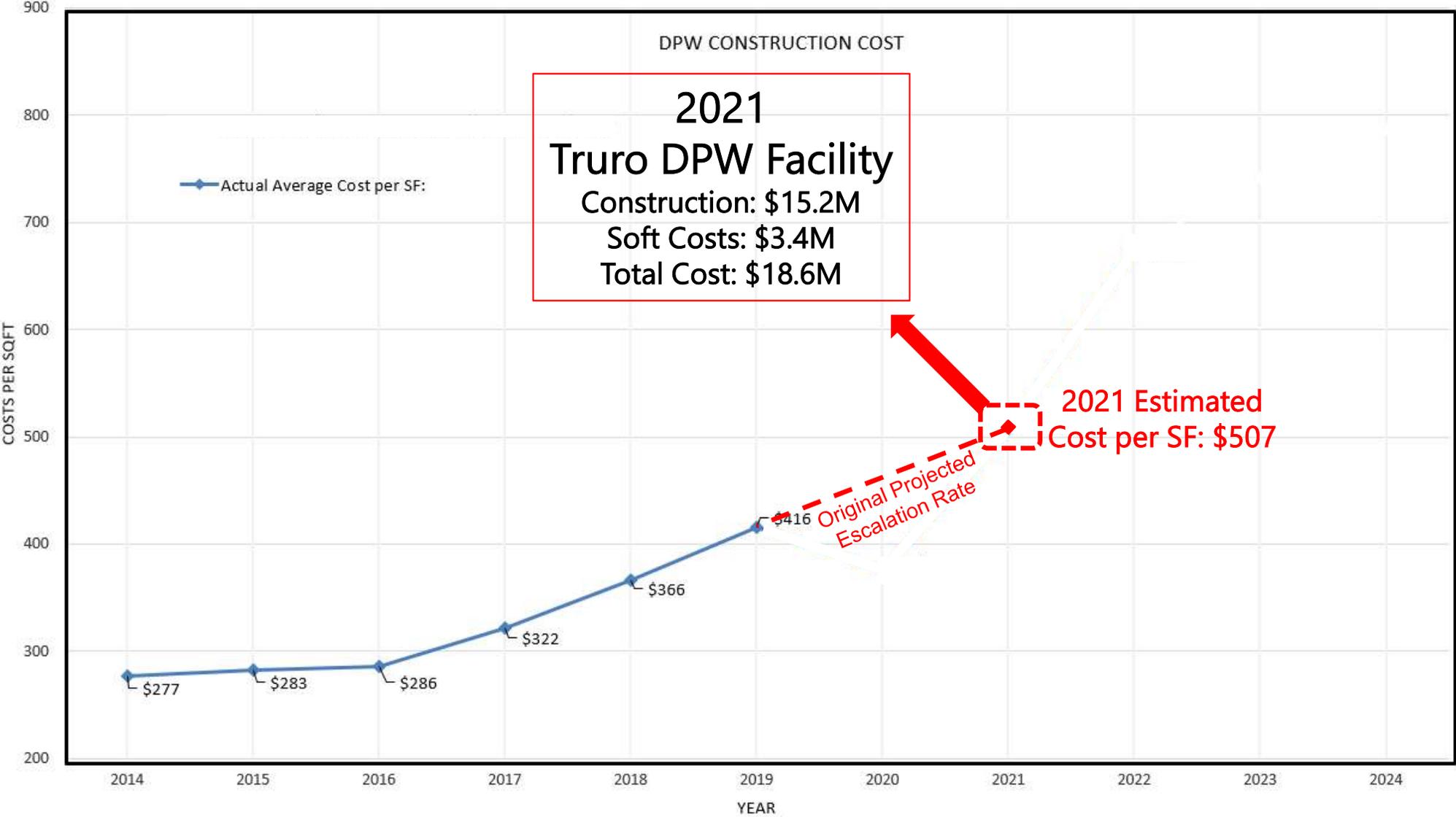
SITE SPECIFIC COST DRIVERS SUMMARY:

| Item Description | 340 Rt 6 Property | Town Hall Rd Property Well @ Snows Field | Town Hall Rd Property Alternative well site | Walsh Property |
|--|---------------------|---|--|---------------------|
| Site Preparation (site specific) | \$ 1,264,000 | \$ 346,000 | \$ 346,000 | \$ 314,000 |
| Retaining Wall | \$ 271,000 | \$ 485,000 | \$ 485,000 | \$ 155,000 |
| Site Access | \$ 14,000 | \$ - | \$ - | \$ 97,000 |
| Stormwater Improvements | \$ 278,000 | \$ 243,000 | \$ 243,000 | \$ 333,000 |
| Water Distribution | \$ 74,000 | \$ 74,000 | \$ 74,000 | \$ 633,000 |
| Additional Fire Suppression Pump System | \$ 43,000 | \$ - | \$ - | \$ - |
| Water Line Construction from New Well | \$ - | \$ 400,000 | \$ 210,000 | \$ - |
| Cistern (20,000 gal tank and piping) | \$ - | \$ 120,000 | \$ 120,000 | \$ 120,000 |
| Fire Pump and Vault | \$ - | \$ 70,000 | \$ 70,000 | \$ 70,000 |
| Snow's Field Modifications and Fencing for Well Relocation | \$ - | \$ 905,000 | \$ - | |
| Temporary Operations/Conditions | \$ - | \$ 250,000 | \$ 250,000 | \$ - |
| Subtotal Site Specific Cost Difference: | \$ 1,944,000 | \$ 2,893,000 | \$ 1,798,000 | \$ 1,722,000 |
| Design Contingency (4%): | \$ 77,760 | \$ 115,720 | \$ 71,920 | \$ 68,880 |
| Escalation - Yr 1 (11% per year): | \$ 222,394 | \$ 330,959 | \$ 205,691 | \$ 196,997 |
| Escalation - Yr 2 (6% per year): | \$ 134,649 | \$ 200,381 | \$ 124,537 | \$ 119,273 |
| Location Factor (4%): | \$ 95,152 | \$ 141,602 | \$ 88,006 | \$ 84,286 |
| <i>Site Specific Escalation & Design Contingency:</i> | <i>\$ 529,955</i> | <i>\$ 788,662</i> | <i>\$ 490,154</i> | <i>\$ 469,435</i> |
| Site Specific Construction Cost Difference: | \$ 2,473,955 | \$ 3,681,662 | \$ 2,288,154 | \$ 2,191,435 |
| A&E Fees (design, bid, const.); Assume 10% of Const. Value | \$ 247,395 | \$ 368,166 | \$ 228,815 | \$ 219,144 |
| Construction Contingency (6%) | \$ 148,437 | \$ 220,900 | \$ 137,289 | \$ 131,486 |
| Rounded Total | \$ 2,870,000 | \$ 4,271,000 | \$ 2,654,000 | \$ 2,542,000 |

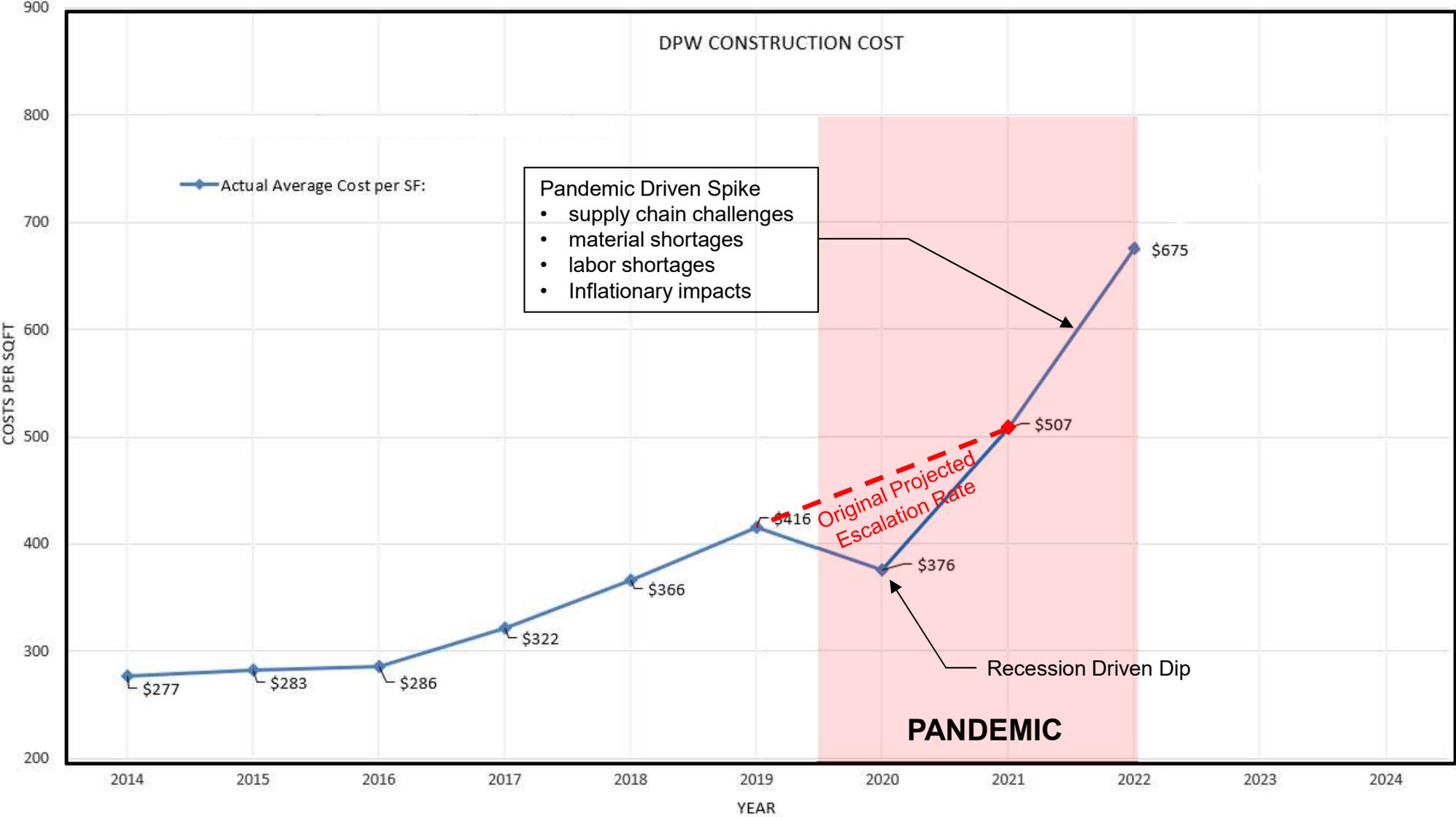
Town of Truro
New Public Works Facility

Updated Cost Analysis

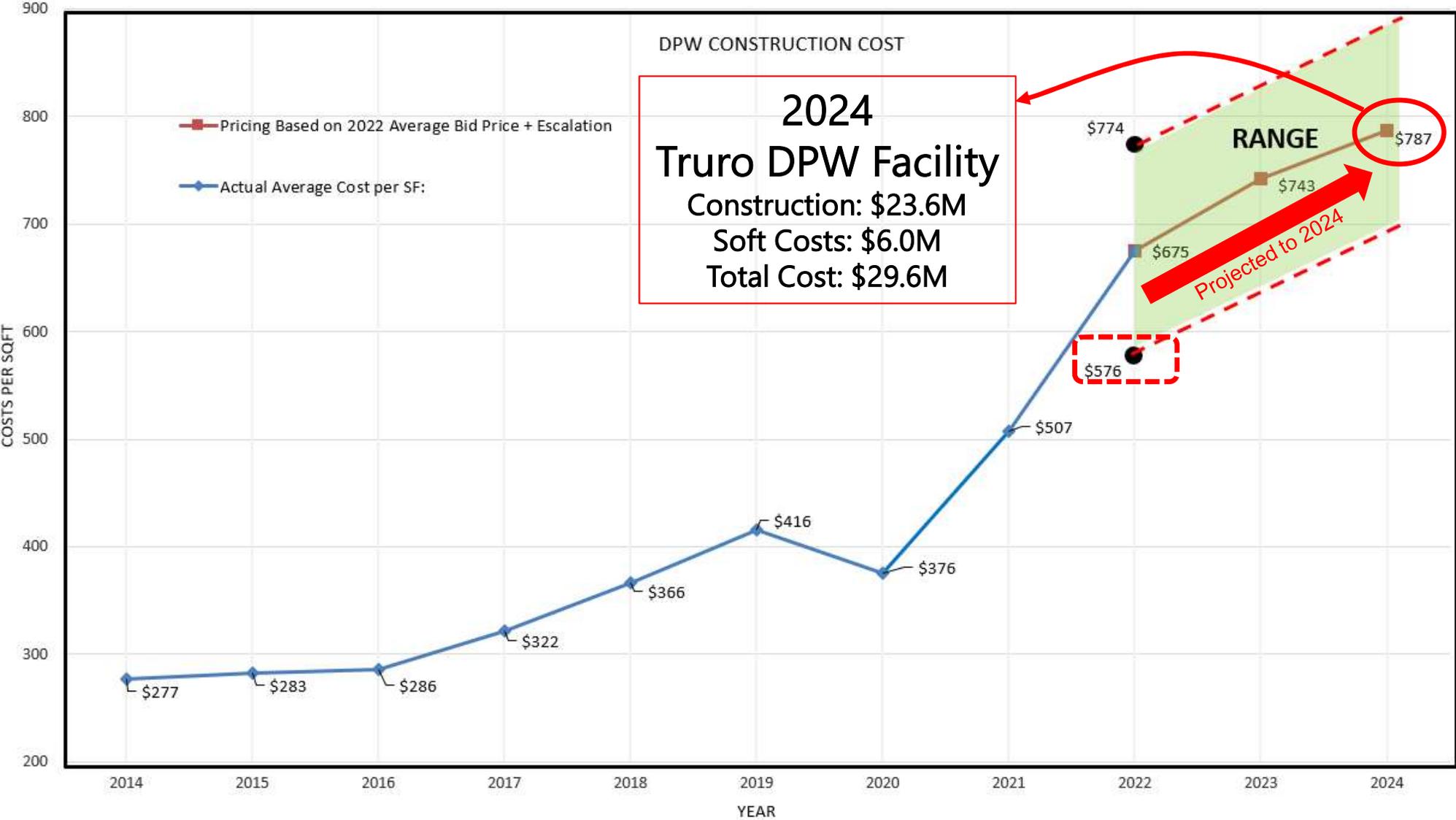
Town of Truro New Public Works Facility



Town of Truro New Public Works Facility



Town of Truro New Public Works Facility



Town of Truro
New Public Works Facility

Cost of Inaction

- **Temporary Repairs**
- **Escalation**
- **Vehicles & Equipment Long Term Costs**
- **Non-Tangible Items**

Town of Truro New Public Works Facility

Cost of Inaction

Temporary Repairs

- Band-aiding 5-7 years
- Typically Ranges between \$63/sf - \$180/sf
- Results in anticipated costs \$352,00 - \$1,011,000

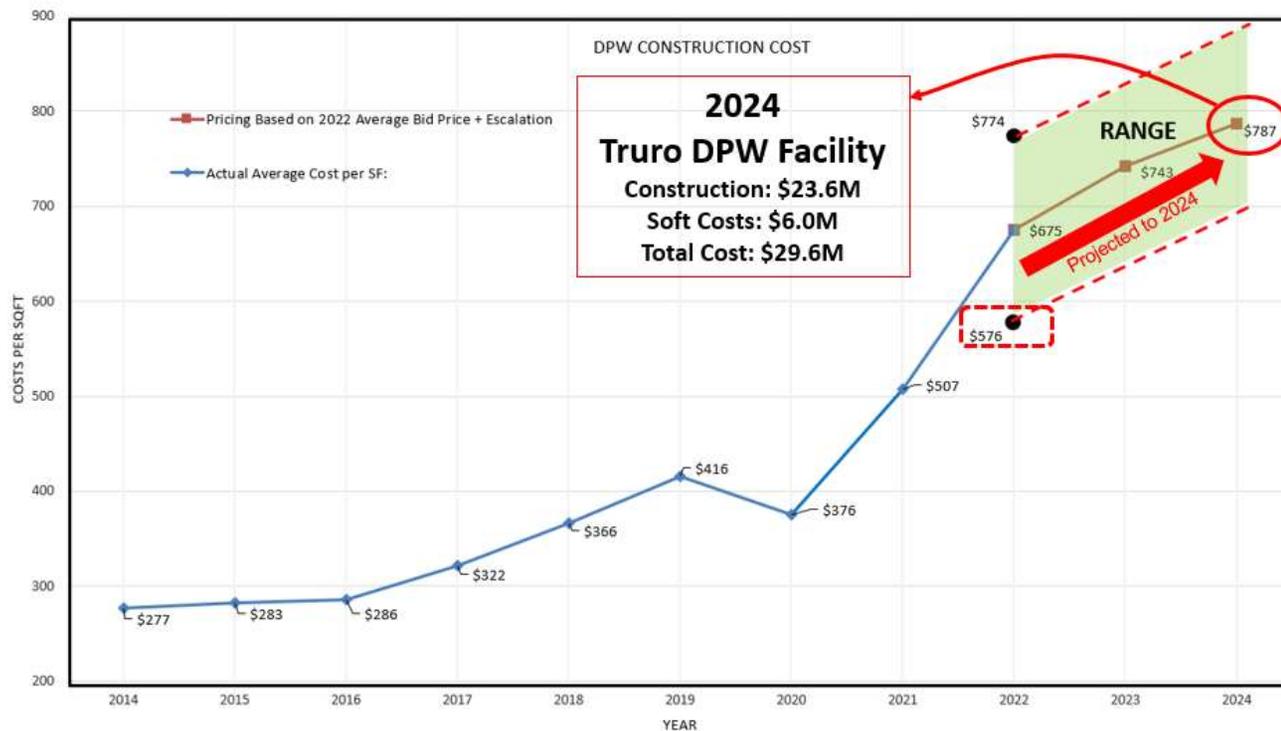
| Cost Type | Typical Upgrades | |
|--|-------------------|---------------------|
| | Min | Max |
| Accessibility | \$ 1.61 | \$ 1.61 |
| Life Safety | \$ 9.49 | \$ 30.57 |
| Site Improvements | \$ 4.73 | \$ 7.17 |
| Building Utilities | \$ 3.66 | \$ 3.66 |
| Building Envelope | \$ 1.83 | \$ 8.04 |
| Building Interior | \$ 1.15 | \$ 2.44 |
| Building Systems | \$ 4.37 | \$ 7.98 |
| DPW Operations | \$ 10.56 | \$ 42.56 |
| | | |
| Sub TOTAL | \$ 36.25 | \$ 104.02 |
| GC Overhead (20%) | \$ 7.25 | \$ 20.80 |
| SUBTOTAL CONSTRUCTION COSTS | \$ 43.50 | \$ 124.82 |
| | | |
| Escalation (to 2023) | \$ 4.79 | \$ 13.73 |
| Escalation (to 2024) | \$ 2.90 | \$ 8.31 |
| Owner's Soft Costs (26%) | \$ 3.58 | \$ 10.28 |
| Design & Estimating Contingency (30%) | \$ 3.83 | \$ 11.00 |
| Small Project Adjustment (15%) | \$ 4.10 | \$ 11.77 |
| Subtotal Potential Project Cost (\$/sf) | \$ 62.71 | \$ 179.92 |
| Existing Building (sf) | 5,620 | 5,620 |
| TOTAL Potential Project Cost (rounded) | \$ 352,000 | \$ 1,011,000 |

Town of Truro New Public Works Facility

Cost of Inaction

Escalation

- Industry Cost Estimators Recommendations
 - CY '23 11%
 - CY '24 7%
 - CY '25 6%
 - CY '26 5%
 - CY '27 4%
- Result is approximately \$1,000,000/year



Town of Truro New Public Works Facility

Cost of Inaction

Vehicles & Equipment Long Term Costs

- Impacts:
 - Additional vehicle maintenance costs
 - Additional vehicle life reduction
 - Non-productive labor
 - Environmental impacts
- Impact to Town is approximately \$20 Million over the typical life of a new building



Town of Truro New Public Works Facility

Cost of Inaction

• Non-Tangible Items

- Staff retention
- Ability to attract new / talented staff
- Staff morale and production
- Long term health impacts
- Staff safety



Town of Truro
New Public Works Facility

Questions