Welcome to the City of St. Petersburg City Council Public Services & Infrastructure Committee Meeting. The agenda and supporting documents are available on the City’s website at http://www.stpete.org/meetings or by emailing city.clerk@stpete.org.

NOTE: City buildings are closed to the public due to the COVID-19 emergency. Accordingly, the meeting location has been changed from in-person to a “virtual” meeting by means of communications media technology pursuant to Executive Order Number 20-69, issued by the Governor on March 20, 2020, and Executive Order 2020-30 issued by the Mayor on July 8, 2020.

The public can attend the meeting in the following ways:
- Watch live on Channel 15 WOW!/Channel 641 Spectrum/Channel 20 Frontier FiOS
- Watch live online at WWW.stpete.org/TV
- Watch on your computer, mobile phone, or another device at: https://zoom.us/j/91541005841
- Listen by dialing any one of the following phone numbers and entering - 915 4100 5841 #
Members: Committee Chair Darden Rice, Committee Vice-Chair Amy Foster, Council Chair Ed Montanari, and Council Member Deborah Figgs-Sanders

Alternate: Council Member Robert Blackmon

Support Staff: Jayne Ohlman - City Council Legislative Aide

1) Call to Order

2) Approval of Agenda

3) Approval of September 10, 2020 Minutes

4) New Business – September 24, 2020

   a) Capital Improvement Assessment Update – Claude Tankersley, Brejesh Prayman, Dianna Rawleigh, Carlos Frey, Evan Mory, & Evan Birk
      1) Sidewalks
      2) Seawalls
      3) Bridges
      4) Development of a Citywide Capital Asset Management Program (“CAMP”)

Upcoming Meeting Dates & Tentative Agenda Items

October 22, 2020


   b) Presentation on the Design and Construction Plans for the New Sanitation Department Facility – Raul Quintana, Rob Gerdes

General Attachments:
Minutes of the September 10, 2020 PS&I Committee Meeting
Pending and Continuing Referral List
Agenda Item Support Material
City of St. Petersburg
Public Services & Infrastructure Committee
September 10, 2020 Meeting Minutes
Zoom Virtual Meeting

Present: Committee Members – Committee Chair Darden Rice, Committee Vice-Chair Amy Foster & Council Member Deborah Figgs-Sanders

Absent: Council Chair Ed Montanari & Council Member Robert Blackmon (Alternate)

Also Present: Council Vice-Chair Gina Driscoll, City Administrator & Deputy Mayor Dr. Kanika Tomalin, Assistant City Administrator Tom Greene, Chief Assistant City Attorney Jeannine Williams, Engineering & Capital Improvements Director Brejesh Prayman, Transportation & Parking Management Director Evan Mory, Planner III Tom Whalen, Planner I Kyle Simpson, Brad Miller (PSTA), Abhishek Dayal (PSTA), & Henry Lukasik (PSTA)

Support Staff: Jayne Ohlman - City Council Legislative Aide

1. Call to Order – 9:29 AM
2. Approval of Agenda – CM Figgs-Sanders moved approval, all members voted in favor.
3. Approval of August 27, 2020 Minutes – CM Figgs-Sanders moved approval, all members voted in favor.
4. New Business – September 10, 2020

Update from City Staff and PSTA on Plans to Add and Replace Bus Shelters in the City – Evan Mory, Tom Whalen, Kyle Simpson, Abhishek Dayal (PSTA), & Brad Miller (PSTA)

Transportation and Parking Management Director Evan Mory began by introducing PSTA’s CEO Brad Miller, as well as PSTA’s Director of Project Management, Abhishek Dayal. Mr. Mory then introduced the City staff members that make up the Transportation Department’s Regional Transportation Division, Senior Planner Tom Whalen and Planner Kyle Simpson. Mr. Mory explained that the Regional Transportation Division acts as the primary liaison to agencies such as PSTA and Forward Pinellas.

Mr. Mory reminded the committee of the investments made so far for transit shelters in the City. For example, in the Skyway Marina District, the City has invested approximately $200,000 to increase and update the transit shelters in the district. There is also an estimated $200,000 that was previously allocated from Penny for Pinellas funds (FY19). Mr. Mory stated that there is approximately $160,000 remaining to spend on shelters, which the City and PSTA are in the process of evaluating.

Prior to presenting the committee with the details of PSTA’s bus shelter deployment program, Mr. Dayal introduced Henry Lukasik, PSTA’s Director of Facilities and Maintenance. Mr. Dayal began with a brief overview of PSTA’s existing shelter deployment plan, which serves as a roadmap for the agency to identify the need for new and/or replacement shelters. Mr. Dayal stated that PSTA currently has 658 bus stops with shelters throughout Pinellas County. Mr. Dayal explained that the primary challenges for shelter deployment are limited availability of right-of-way (“ROW”) specifically in dense urban areas, as well as local permitting requirements. Mr. Dayal explained that some municipalities have more onerous permit approval processes than others and in turn, this can increase costs and prolong the timeframe for a project. However, Mr. Dayal noted that PSTA is working with partner municipalities, such as the City of St. Petersburg, to streamline the permitting process. In addition, Mr. Dayal explained that shelter
placement must also meet design standards and consider the surrounding environment, for example, shelter pads and nearby sidewalk slopes must meet Americans with Disabilities Act ("ADA") requirements and planning must consider the presence of utilities and drainage structures.

Mr. Dayal then explained the funding process for transit shelters that fall into three categories of ridership. Transit stops with 25 or more boarding passengers on average per day are considered high ridership and those shelters are fully funded by PSTA. Stops with less than 25, but more than 10, are funded through partnerships with local governments (e.g., shelter match program.) Stops with fewer than 10 average daily boarding passengers are typically funded by local governments, with some technical assistance from PSTA if necessary.

Tom Whalen, Senior Planner (Regional Transportation Division) provided an overview of the most recent interlocal agreement (February 2019) between the City and PSTA to deploy transit shelters in the Skyway Marina District. Mr. Whalen noted that of the 12 shelter locations addressed in the interlocal agreement, six are funded by the City and the other six are funded through a PSTA/City match program. Mr. Whalen explained that the interlocal agreement is a five-year agreement but can be amended to add new shelters if necessary. Mr. Whalen then reviewed the City and PSTA’s total cost of the agreement and the total cost to date, $205,610.26, and $212,618.28, respectively.

Kyle Simpson, Planner I (Regional Transportation Division) reviewed the site locations of the new shelters in the Skyway Marina District and noted the various upgrades necessary to improve shelter locations and comply with ADA requirements. Mr. Simpson then provided a status update of the City funds that have been budgeted to date for transit shelters, as well as the phase of each relevant project.

Committee Chair Rice asked if staff had a list of sites where the lack of ROW was the primary obstacle for shelter deployment and PSTA CEO Brad Miller responded that they did not have a list prepared but most of the locations are located either in downtown St. Petersburg or just outside of the downtown core.

Committee Member Figgs-Sanders asked how PSTA evaluates the need for transit shelters while balancing the need for bus stops. Mr. Miller responded that PSTA has approximately 4,500 bus stops county-wide and modifications to bus stops are evaluated three times per year. Mr. Miller explained that evaluating bus stops is inextricably linked with evaluating transit shelter locations. CM Figgs-Sanders asked PSTA to confirm that in evaluating potential sites for transit shelters, previous sites where bus stops or shelters have been removed due to safety reasons are not considered if the issue of safety has not been remedied. Mr. Miller confirmed that once a site has been deemed unsafe or a hazard due to visibility issues, PSTA would not consider that site for a new stop or shelter. CM Figgs-Sanders inquired how PSTA handles the maintenance of the existing shelters, regardless of the funding mechanism or agreement. Mr. Miller responded that PSTA spends approximately $700,000 a year on maintaining their existing shelters. Mr. Miller explained that PSTA contracts their maintenance services to an outside company and that company is responsible for daily maintenance and sanitation upkeep of the shelters and bus stops.

Committee Vice-Chair Amy Foster expressed concern with the condition of the transit shelters, bus stops, and bus depots in the City, specifically as it relates to maintenance and sanitation. CM Foster stated that by observing the condition of some of the bus shelters and specifically the bus depot on Central Ave., it is obvious that daily maintenance and sanitation upkeep is not enough. CM Foster noted that although the COVID-19 pandemic may be partially
responsible for the influx of trash and loitering recently, the issue is only growing increasingly worse and while CM Foster recognizes that it cannot be fixed overnight, she hopes that PSTA has some ideas in mind for how to remedy the issue as much as possible. Mr. Miller responded that PSTA is considering procuring a new contractor to help with the maintenance and sanitation services, as well as increased investment in the maintenance cost of existing shelters. Mr. Miller explained that PSTA is taking steps to partner with the Homeless Leadership Alliance and the City’s Police Department to prioritize helping the homeless population in the City.

In referencing the unintentional obstacles created by some of the City’s permitting requirements, Council Vice-Chair Driscoll inquired how the City could be of service to remedy or “streamline” those specific permit processes. Mr. Dayal responded that the City and PSTA have been working together to streamline the engineering design requirement process as much as feasible, as well as waiving the building permit requirement when PSTA needs to “swap out” a transit shelter for maintenance reasons. Mr. Mory added that PSTA’s new shelters do not require an external electrical connection because all lighting components (solar and LED) are integrated into the shelter, therefore no electrical permit is required. Specifically, in response to VC Driscoll’s inquiry, Mr. Mory explained that the City and PSTA have made sufficient progress in helping to streamline some of the more onerous permit requirements. VC Driscoll concurred with the concerns raised by both CM Figgs-Sanders and CM Foster regarding maintenance issues at PSTA shelters. VC Driscoll noted that the maintenance issue may be an opportunity for the City and PSTA to join together to increase cleanup at transit shelters in order to make transit a more desirable option for residents. Deputy Mayor Tomalin agreed with VC Driscoll and stated that the City would be following up with Mr. Miller and PSTA to ensure that PSTA and the City are maintaining not only the level of service but the standards that PSTA ridership expects.

CM Rice thanked PSTA staff and City staff for the presentation and asked that they return to the committee in two to three months with updates on the maintenance issues raised by the committee, the streamlining efforts for design/permitting, and any other relevant updates.

*CM Rice adjourned the meeting at 10:30 AM*
<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
<th>Return Date</th>
<th>Referral Date</th>
<th>Prior Meeting</th>
<th>Referred By</th>
<th>Staff</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1 | Capital Improvement Assessment (Maintenance & Hurricane/Tropical Storm Preparedness) | 9/24/20     | 2/2/17        | a. 7/20/17 b. 8/24/17 c. 11/9/17 d. 11/15/18 | Kennedy, Gerdes | a. Prayman b. Palenchar c. Prayman d. Prayman e. J. Norris f. Palenchar g. Tankersley i. Tankersley, Mory | a) Bridges – Staff to bring back analysis of long-term and pedestrian bridge funding. CM Kennedy asked to have noted that between 2021 and 2025 there is a $50 million shortage on funding for bridges.  
b) Reclaimed Water – Report provided by J. Palenchar. Items b), e), f) & h) are in Integrated Master Plan.  
c) Roads/Sidewalks – Power point by B. Prayman & J. Norris. Staff to report to committee on updated numbers for annual sidewalk repair & replacement with the numbers based on new technology. Funding for brick streets replacement as a recurring maintenance cost needs to be considered.  
e) Stormwater – J. Norris updated committee on Stormwater infrastructure, challenges, and ongoing projects.  
d) Seawalls/Living Shorelines – B. Prayman, C. Frey, & C. Tankersley updated the committee on seawall repairs/replacements & living shorelines |
|   | Development of a Citywide Capital Asset Management Program (CAMP)       |             |               |                           |             |                 | 1/16/20 – Committee requested continued updates in 2020.                                                                               |
|   | a. Bridges                                                              |             |               |                           |             |                 |                                                                                                                                         |
|   | b. Reclaimed Water                                                     |             |               |                           |             |                 |                                                                                                                                         |
|   | c. Sidewalks                                                           |             |               |                           |             |                 |                                                                                                                                         |
|   | d. Seawalls                                                            |             |               |                           |             |                 |                                                                                                                                         |
|   | e. Stormwater                                                          |             |               |                           |             |                 |                                                                                                                                         |
|   | f. Potable Water                                                       |             |               |                           |             |                 |                                                                                                                                         |
|   | g. Buildings                                                           |             |               |                           |             |                 |                                                                                                                                         |
|   | h. Wastewater (if needed)                                              |             |               |                           |             |                 |                                                                                                                                         |
| 2 | Presentation by Sanitation Department staff on the progress of the Management Evaluation Study (2019) | 10/22/20    | 3/12/20       |                           | Rice (Staff Request) | W. Joseph R. Gerdes |                                                                                                                                         |
| 3 | A presentation from staff on the design & construction plans for the new Sanitation Department facility | 10/22/20    | 5/21/20       |                           | Montanari R. Quintana W. Joseph |                                                                                                                                         |
| 4 | Quarterly Report on Grow Smarter Sites                                 | 2/15/18 2/18 | 3/8/18 5/31/18 | 9/13/18 6/13/19 11/7/19 | Foster Driscoll | A. DeLisle | 5/31/18 – Update on Innovation District, Police Station Site, Tropicana Field Site, and Tangerine Plaza Site  
9/13/18 – A memo from A. DeLisle was distributed to the committee in lieu of a verbal update on Tangerine Plaza. See minutes of 9/13 for full memo  
6/13/19 – Update on Innovation District, Former Police Station Site, & Tangerine Plaza |
<p>|   | a) Port Site                                                           |             |               |                           |             |                 |                                                                                                                                         |
|   | b) Innovation District Site                                            |             |               |                           |             |                 |                                                                                                                                         |
|   | c) 800 Block Site                                                      |             |               |                           |             |                 |                                                                                                                                         |
|   | d) Police Station Site                                                 |             |               |                           |             |                 |                                                                                                                                         |
|   | e) Tropicana Field Site                                                |             |               |                           |             |                 |                                                                                                                                         |
|   | f) Commerce Park Site                                                  |             |               |                           |             |                 |                                                                                                                                         |
|   | g) 22nd Street Sites                                                   |             |               |                           |             |                 |                                                                                                                                         |
|   | h) Tangerine Plaza Site                                                |             |               |                           |             |                 |                                                                                                                                         |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>A discussion regarding the process &amp; benefits of live streaming the City Council meetings on Facebook Live for more citizen engagement</td>
<td>5/21/20</td>
<td>Blackmon, M. Smith, L. Flanagan</td>
<td>9/12/19 – T. Greene indicated staff would like return to PS&amp;I for a check-in once the plan became fully staffed</td>
</tr>
<tr>
<td>6</td>
<td>Update on the City's Facility Maintenance Plan</td>
<td>6/7/18 5/9/19</td>
<td>Foster, Admin, A. Wendler, L. Glover-Henderson</td>
<td>9/26/19 – Committee requested staff to explore potential mechanical noise mitigation incentives &amp; return to PS&amp;I to present options.</td>
</tr>
<tr>
<td>7</td>
<td>Discussion of an ordinance that will set standards for mechanical noise, such as HVAC systems</td>
<td>4/18/19 9/26/19</td>
<td>Driscoll, L. Abernethy, D. Goodwin</td>
<td>9/26/19 – Committee requested staff to explore potential mechanical noise mitigation incentives &amp; return to PS&amp;I to present options.</td>
</tr>
<tr>
<td>8</td>
<td>Update on Albert Whitted Airport Master Plan, potential runway expansion, &amp; general operational improvements</td>
<td>5/17/18 8/9/18 2/13/20</td>
<td>Staff Request, R. Lesniak, C. Ballestra</td>
<td>8/9/18 – R. Lesniak and C. Ballestra presented the committee with an update on the airport’s runway feasibility study, an economic impact study, and an update on the airport master plan 2/13/20 – R. Lesniak, C. Ballestra, &amp; D. DiCarlo (ESA) updated the committee on results from master plan working paper #1 and continued operational improvements at AWA. Staff indicated they would like to return in the Fall to provide further updates.</td>
</tr>
<tr>
<td>9</td>
<td>Update: Unused alleys &amp; potential changes to the vacation process for alleyways</td>
<td>January 2021 7/16/20</td>
<td>Staff, L. Abernethy, M. Dema</td>
<td>7/16/20 – Committee requested an update in 6 months (Jan. 2021)</td>
</tr>
<tr>
<td>10</td>
<td>Annual Update by Water Resources on Recommendations from the 2017 Management Evaluation &amp; Consent Order Update</td>
<td>January 2021 12/7/17 1/10/19 2/27/20</td>
<td>Council, C. Tankersley, J. Palenchar</td>
<td>12/7/17 – PS&amp;I to manage the 57 recommendations made by LA Consulting. 1/10/19 – C. Tankersley &amp; J. Palenchar updated committee on progress of implementation of the 57 recommendations 2/27/20 – Committee received updates on consent order &amp; 2017 management evaluation recommendations</td>
</tr>
<tr>
<td>11</td>
<td>Update from City Staff &amp; PSTA on Plans to Add/Replace Bus Shelters in the City</td>
<td>9/3/20 9/10/20</td>
<td>Rice, E. Mory, T. Whalen, PSTA Staff</td>
<td>9/10/20 – CM Rice asked staff/PSTA to return to committee to update on progress in 2-3 months, specifically related to maintenance issues raised by CM Figg-Sanders &amp; CM Foster.</td>
</tr>
</tbody>
</table>
Infrastructure Update

Sidewalks, Seawalls, and Bridges

PSI Committee Meeting
September 24, 2020
Sidewalks

Fast Facts

• 800 miles of existing sidewalk (approximately)
• 20-60 years – life span to failure (34 years average)
• $540M\textsuperscript{1} – initial investment in existing sidewalk network
• $320M – replacement value of existing sidewalk network
• $675,000/LM\textsuperscript{2} – new\textsuperscript{3} sidewalk where one never was
• $400,000/LM – replacement of existing sidewalk
• $68,000/LM – repair existing sidewalk defects (preservation)

Notes: 1. In 2020 dollars; 2. LM = linear mile; 3. Includes survey, clearing, excavation, and construction of sidewalks and ADA ramps
**Sidewalks**

How do we compare?

<table>
<thead>
<tr>
<th></th>
<th>St Pete</th>
<th>Tampa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles</td>
<td>800</td>
<td>825</td>
</tr>
<tr>
<td>Annual Budget¹</td>
<td>$468,000</td>
<td>$870,000</td>
</tr>
<tr>
<td>Backlog</td>
<td>3-12 months²</td>
<td>6-9 months³</td>
</tr>
</tbody>
</table>

Notes:
1. 2021 Budget from city websites
2. Depending on whether request is to repair or replace
3. tampagov.net retrieved 09/08/2020
Sidewalks

Cracking

Vertical Displacement

Spalling
Sidewalks

Sidewalk Deterioration Curve

Pavement Replacement Model
Total Cost over 68 Years
$800,000 per linear mile

State of Failure

Replace $400,000

Replace $400,000

Pavement Condition Index

Pavement Age

0 10 20 30 40 50 60 70 80 90
Sidewalks

Sidewalk Deterioration Curve

Pavement Condition Index

Pavement Age

State of Failure

Repair... $68,000

Repair... $68,000

Repair... $68,000

Repair... $68,000

Replace... $400,000

Pavement Preservation Model
Total Cost over 87 Years
$672,000 per linear mile
Sidewalks

How are we doing? | Sustainable Investment | Actual Investment (Unsustainable) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With Preservation</td>
<td>Without Preservation</td>
</tr>
<tr>
<td>Annual Budget</td>
<td>$6.2M</td>
<td>$9.4M</td>
</tr>
<tr>
<td>Life Span to Failure per Mile</td>
<td>87 yrs</td>
<td>34 yrs</td>
</tr>
<tr>
<td>Preservation Miles per Year</td>
<td>37</td>
<td>0</td>
</tr>
<tr>
<td>Rehab Miles per Year</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>Years to Replace 800 Miles</td>
<td>87</td>
<td>34</td>
</tr>
</tbody>
</table>
Sidewalks

Sidewalk Underinvestment

Annual Investment ($Millions)

Years

$6.2M/yr Sustainable Investment

$5.8M/yr

$504.6M over 87 years

$0.4M/yr Actual Investment
Sidewalks

Potential Funding Sources

• General Fund (preventative maintenance or minor repair)
• Penny for Pinellas (replacement only)
• Adjacent property owners (not currently enforced – conflicts with Resolution 96-55)
  • City Ordinance Sec. 25-191. - Duty of abutting owner to maintain.
    It shall be the duty of the abutting property owner to keep in repair the sidewalk abutting such owner’s premises, and upon refusal or neglect to do so within 30 days after the service of written notice to repair the sidewalk, the property owner shall be guilty of maintaining a nuisance and the maintenance of such a nuisance shall be unlawful.
Sidewalks

Conclusion

• At current levels of annual investment ($400,000/yr), our existing sidewalk network will crumble before all 800 miles can be rehabilitated

• We need to re-evaluate our sidewalk program for:
  • Priority locations/corridors
  • Sustainable level of funding/expenditures for preventative maintenance and replacement of targeted corridors
  • Resolve the conflict between Ordinance Sec. 25-191 and Resolution 96-55 on abutting property responsibility
Seawalls

Fast Facts

• 13.6 miles of existing seawalls (City-owned only\(^1\))
• 60-120 years – life span to failure (not accounting for SLR\(^2\))
• 78 years\(^3\) – average age of existing City seawalls
• $179M\(^4\) – initial investment in existing seawall network
• $380M – replacement value (not adjusted for SLR)
• $27.9M/LM\(^5\) – repair existing seawall (not raising elevation)

Notes:
1. 117 miles total for all owners
2. SLR = Sea Level Rise
3. From Fixed Asset database (Finance Dept)
4. In 2020 dollars
5. LM = linear mile
Seawalls

<table>
<thead>
<tr>
<th>Owner</th>
<th>Length (miles)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>0.5</td>
<td>1%</td>
</tr>
<tr>
<td>County</td>
<td>0.9</td>
<td>1%</td>
</tr>
<tr>
<td>State</td>
<td>2.4</td>
<td>2%</td>
</tr>
<tr>
<td>St Pete</td>
<td>13.6</td>
<td>11%</td>
</tr>
<tr>
<td>Private</td>
<td>99.9</td>
<td>85%</td>
</tr>
</tbody>
</table>
Seawalls

Why are City-owned seawalls so expensive?

Residential seawalls (private access):
  • $650 - $2,000 per linear foot
  • Built to last 20-35 years and support minor loads from:
    • Residential lawns, patios, fire pits, pools, utility sheds

City-owned seawalls (public access):
  • $3,825 - $5,125 per linear foot
  • Built to last 60-120 years and support major loads from:
    • Public parks, sidewalks, parking lots, roads, structures, bridge abutments, airport runways, boat ramps, drainage structure penetrations
Seawalls

Spalling/Exposed Rebar

Wall Rotation

Voids/Foundation Failure
Seawalls

Seawall Deterioration Curve

Seawalls

Seawall Deterioration Curve

## Seawalls

### How are we doing?

<table>
<thead>
<tr>
<th></th>
<th>Sustainable Investment&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Actual Investment (Unsustainable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50-year Cycle</td>
<td>40&lt;sup&gt;2&lt;/sup&gt;-year Cycle</td>
</tr>
<tr>
<td>Annual Budget</td>
<td>$4.5M</td>
<td>$5.7M</td>
</tr>
<tr>
<td>Preservation LF&lt;sup&gt;3&lt;/sup&gt; per Year</td>
<td>430</td>
<td>538</td>
</tr>
<tr>
<td>Replacement LF per Year</td>
<td>1,004</td>
<td>1,254</td>
</tr>
<tr>
<td>Preservation Cycle&lt;sup&gt;1&lt;/sup&gt;</td>
<td>50 yrs</td>
<td>40 yrs</td>
</tr>
</tbody>
</table>

**Notes:**
1. A sustainable investment employs a preservation cycle of 70% replacement and 30% preservation. This **does not** include costs to raise elevation of seawall cap.
2. Max Life – Current Age = 120 years – 78 years = 42 years
3. LF = linear feet
Seawalls

Seawall Underinvestment

Annual Investment ($Millions)

$3.7M/yr

$4.5M/yr Sustainable Investment

$0.8M/yr Actual Investment

$185.0M over 50 years

Years

0 5 10 15 20 25 30 35 40 45 50 55
To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td>2.33</td>
<td>4.56</td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td>3.90</td>
<td>8.50</td>
</tr>
</tbody>
</table>

Source: CSAP SLR Recommendation 2019, Table 1
Seawalls

To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td>2.33</td>
<td>4.56</td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td>3.90</td>
<td>8.50</td>
</tr>
</tbody>
</table>
Seawalls

To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td><strong>2.33</strong></td>
<td><strong>4.56</strong></td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td><strong>3.90</strong></td>
<td><strong>8.50</strong></td>
</tr>
</tbody>
</table>

50-year planning period

80-year planning period
To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td>2.33</td>
<td>4.56</td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td>3.90</td>
<td>8.50</td>
</tr>
</tbody>
</table>

- **50-year planning period**
- **80-year planning period**
- **St. Pete Pier™**
Seawalls

To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td>2.33</td>
<td>4.56</td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td>3.90</td>
<td>8.50</td>
</tr>
</tbody>
</table>

50-year planning period

80-year planning period

St. Pete Pier™

FEMA guidance
To plan for sea level rise, how high should we raise seawalls?

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NOAA INT-LOW (FEET)</th>
<th>NOAA INTERMEDIATE (FEET)</th>
<th>NOAA HIGH (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>0.56</td>
<td>0.79</td>
<td>1.25</td>
</tr>
<tr>
<td>2040</td>
<td>0.72</td>
<td>1.08</td>
<td>1.77</td>
</tr>
<tr>
<td>2050</td>
<td>0.95</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>2060</td>
<td>1.15</td>
<td>1.87</td>
<td>3.48</td>
</tr>
<tr>
<td>2070</td>
<td>1.35</td>
<td>2.33</td>
<td>4.56</td>
</tr>
<tr>
<td>2080</td>
<td>1.54</td>
<td>2.82</td>
<td>5.71</td>
</tr>
<tr>
<td>2090</td>
<td>1.71</td>
<td>3.38</td>
<td>7.05</td>
</tr>
<tr>
<td>2100</td>
<td>1.90</td>
<td>3.90</td>
<td>8.50</td>
</tr>
</tbody>
</table>
Seawalls

What would raising seawalls look like? (Existing height)
Seawalls

What would raising seawalls look like? (50-year planning period)
Seawalls

What would raising seawalls look like? (St. Pete Pier™)

3.0 feet
Seawalls

What would raising seawalls look like? *(80-year planning period)*
Seawalls

What would raising seawalls look like? (FEMA Guidance)

6.0 feet
Seawalls

What would raising seawalls look like? (FEMA Grant Eligible)
Seawalls

What would raising seawalls look like?

We must carefully evaluate this!

9.0 feet
Seawalls

Alternative to tall wall: Waterfront Levee Trail/Park
Seawalls

Conclusion

• At current levels of annual investment ($800,000/yr), our existing seawall network will fail before all 13.6 miles can be rehabilitated

• We need to re-evaluate our seawall program for:
  • Impacts of sea level rise (how high do we go?)
  • Impacts of non-City-owned seawalls on effectiveness of raising City seawalls
  • Sustainable level of funding/expenditures for preventative maintenance and replacement
Bridges

Fast Facts

• 159 bridges (City-owned only)
  • 80 vehicular bridges
  • 79 pedestrian bridges

• Design life span (vehicular bridges)
  • 50 years (for bridges built between 1920-1994)
  • 75 years (for bridges built after 1994)

• Age (vehicular bridges)
  • 100 years – oldest bridge (MLK S. bridge being replaced 2021)
  • 52 years – average age (41 bridges older than 50 years)
Bridges

Fast Facts (cont.)

Asset Value:

• Vehicular bridges – $259M (80 bridges)
• Pedestrian bridges – unknown (79 bridges)

Rehabilitation/Replacement Costs (vehicular bridges over 40 yrs)

• $ 26M\textsuperscript{1} – preventative maintenance of 20 bridges
• $176M – rehabilitation of 41 bridges
• $186M – replacement of 20 bridges

Notes:
1. In 2020 dollars
# Bridges

How do we compare?

<table>
<thead>
<tr>
<th></th>
<th>St Pete</th>
<th>Tampa(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicular</td>
<td>81</td>
<td>41</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>79</td>
<td>3</td>
</tr>
<tr>
<td>Annual Budget(^2)</td>
<td>$5.0M</td>
<td>$1.0M</td>
</tr>
</tbody>
</table>

Notes:
1. tampagov.net retrieved 09/18/2020
2. 2021 Budget from city websites
Bridges

Wall Rotation

Void

Spall with Exposed Rebar

Missing Rebar
Bridges

Bridge Deterioration Curve

- **Preventive Maintenance**
- **Bridge Rehabilitation Program**
- **Bridge Replacement Program**

Condition:
- Good
- Fair
- Poor
- Severe

Time
## Bridges

### How are we doing?

<table>
<thead>
<tr>
<th>Vehicular Bridges Only</th>
<th>Sustainable Investment</th>
<th>Actual Investment (Unsustainable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Budget(^1)</td>
<td>$9.7M</td>
<td>$5.0M</td>
</tr>
<tr>
<td>Increased Service Life(^2)</td>
<td>40 yrs</td>
<td>0 yrs</td>
</tr>
<tr>
<td>Preservation Cycle(^3)</td>
<td>40 yrs</td>
<td>120 yrs</td>
</tr>
</tbody>
</table>

**Notes:**
1. Combination of preventative maintenance, rehabilitation, and replacement
2. Years of life added to bridge before complete replacement necessary
3. Years to service/replace all 81 bridges
Bridges

Bridge Underinvestment

Annual Investment ($Millions)

$4.7M/yr

$188M over 40 years

$9.7M/yr Sustainable Investment

$5.0M/yr Actual Investment

Years
Conclusion

• At current levels of annual investment ($5M/yr), our existing bridge network will fail before all 81 bridges can be replaced

• We need to re-evaluate our vehicular bridge program for:
  • Impacts of sea level rise
  • Impacts of hotter temperatures and more intense storms
  • Sustainable level of funding/expenditures for preventative maintenance, rehabilitation, and replacement

• Establish a pedestrian bridge planning, preventative maintenance, rehabilitation, and replacement program
Conclusion
• At current levels of annual investment ($6.2M/yr), our existing sidewalk, seawall, and bridge networks will fail before they can be fully rehabilitated/replaced
• We need to re-evaluate our citywide capital asset management program (CAMP):
  • Encompass all assets in unified, data driven, life-cycle driven, planning, maintenance, and replacement program
  • Impacts of sea level rise, hotter temperatures, and more intense storms on assets
  • Sustainable level of funding/expenditures for preventative maintenance, rehabilitation, and replacement of all assets
Capital Asset Management Program

CAMP is Coming Soon!
Capital Asset Management Program

- Asset management planning will be done strategically.
  - Across all departments in a holistic and integrated way.
  - Full life-cycle costs will be evaluated to ensure the best long-term options for the City are developed.
- The City will plan for climate and environmental change.
- The City will evaluate cost-of-service delivery and set priorities for the types and levels of services
  - Engage residents about the types and levels of services they are willing to pay for.
  - Infrastructure work will be coordinated and priorities set through a proactive process
  - This will better position the City to sustainably support the economy and our resident’s quality of life. The health of the City’s assets is central to achieving these goals.