



*Florida Department of Transportation*

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**ROADWAY DESIGN MEMORANDUM 23-01**

DATE: August 28, 2023

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Pavement Design Engineers, District Consultant Project Management Engineers, District Structures Design Engineers, District Maintenance Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, District Program Management Engineers, District Drainage Engineers, District Materials Engineers, District Safety Engineers, District Safety Administrators

FROM: Derwood Sheppard, P.E., State Roadway Design Engineer DocuSigned by:  
Derwood Sheppard  
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COPIES: Will Watts, Dan Hurtado, Huiwei Shen, Jennifer Fortunas, Lance Grace, Lora Hollingsworth, Tim Lattner, Jennifer Marshall, Stephanie Maxwell, Rudy Powell, Michael Shepard, Will Potter, Paul Hiers, Khoa Nguyen (FHWA), Bren George (FHWA), Rafiq Darji (FHWA)

SUBJECT: ProjectSuite Enterprise Edition Resilience Tracker Release

This Memorandum announces the release of a new “Resilience Tracker” module within ProjectSuite Enterprise Edition (PSEE).

Language will be added to the FDOT Design Manual (FDM) to require the use of the PSEE Resilience Tracker module with the release of the 2024 FDM; however, the Resilience Tracker may be used immediately at the discretion of the Districts.

A help document for this new module is included as an Attachment to this Memorandum and is also available within the PSEE module.

**BACKGROUND**

Resilience improvements are those components of a project that address hazards such as flooding, sea level rise, storms, winds, or others. The PSEE module will include a list of various types of resilience improvements along with a field to enter the estimated cost of the resilience improvement. This data can be updated and revised as the project is developed and designed.

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The information gathered in the PSEE Resilience Tracker module will identify and summarize types of resilience improvements included in projects and their associated costs, will help project managers and other district staff identify projects eligible for PROTECT Formula Funding, and will provide information that could lead to updates to policies or standards. The reports may also help to identify potential candidate projects for federal discretionary resilience grants, including the PROTECT Discretionary Grant. It will ultimately help identify the Department's investments related to Resilience.

### **CONTACT**

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Attachments: PSEE Resilience Tracker Help Document

DS/mjh

# **ATTACHMENT**

# PSEE RESILIENCE TRACKER MODULE

**Access:** Project Suite Enterprise Edition

**Purpose/Contents:**

The PSEE Resilience Tracker Module tracks the implementation of and prioritizes the inclusion of resilience improvements regardless of the funding source. Use of the tracker will ensure that all necessary resilience improvements are considered, reviewed, or implemented within a project. This provides a clearly defined resilience component to the project's scope.

**Tips to keep in mind about using the PSEE Resilience Tracker Module:**

- Resilience improvements can be entered into the PSEE **Resilience Tracker** Module as soon as the project is present in PSEE.
- It is important to complete the PSEE **Resilience Tracker** Module as soon as possible so accurate project costs can be determined. It is required to be complete by the end of the design phase. The project manager and the engineer of record have ultimate responsibility for the completion and accuracy of the module.

THIS TRAINING IS ALSO AVAILABLE  
IN VIDEO FORMAT ON THE

Coming Soon!

# PSEE RESILIENCE TRACKER MODULE

## USING THE MODULE

The screenshot shows the ProjectSuite Enterprise Edition interface. At the top, the user is identified as Jeffrey Diemer. Below the header is a navigation bar with buttons for DASHBOARD, PROJECT, SEARCH, MONTHLY SCHEDULE UPDATE, CREATE A PROJECT, MY ASSIGNMENTS, RUN REPORTS, CHANGE REQUEST LIST, UTILITIES, and PS&E PACKAGES. A 'Go To Project' field is highlighted with a red box. Below the navigation bar, the 'Project Info [424026-1]' section is expanded, showing details for District 2, Version G1, and Item Segment Description: I-95(SR9) FROM INT'L GOLF PARKWAY TO I-295. A table below shows location details for two roadway segments.

County	Roadway ID	Roadway Side	Number of Lanes	MP From/To	Section Work Length
DIST/ST-WIDE	72280000	COMPOSITE	6	0 / 4.790	4.790
	78080000	COMPOSITE	6	26.434	

## STEP 1

Navigate to the proper project using the “Go To Project” field.

Then expand the Module Menu and toggle on “Resilience Tracker.”

The screenshot shows the Module Menu with the 'Resilience Tracker' option selected. The menu is organized into 'View' and 'Manage' sections. The 'Resilience Tracker' option is checked, and a red arrow points to it.

- View
  - Contracts
  - Documents
  - ERC
  - Financial
  - GIS
  - Item Segment Change History
  - Project Impacts
  - Project Scheduling (PSM)
  - Related Projects
- Manage
  - Address Book
  - Approved Scope
  - Commitments
  - Design Approval Requests
  - Design Development Documentation
  - Environment
  - External Agency
  - Permits
  - Phase Review
  - Project Fact Sheet
  - Project Status
  - PS&E Package
  - Resilience Tracker
  - Resolution Tracking
  - Safety Countermeasures
  - Survey Work Order
  - Utilities
- Change Requests

# PSEE RESILIENCE TRACKER MODULE

## STEP 2

Designate the status of each improvement. Improvements are organized into seven menus inside the module. As you can see, each design feature has a radio button in four columns: Included, Not Included, N/A, and To Be Evaluated. There is also space for comments. Once a feature is selected, indicate status by selecting appropriate column.

Safety Countermeasures (Click to collapse)					
INCREASED RAINFALL VOLUME (Click to collapse)					
Measures	Included	Not Included	N/A	To Be Evaluated	Comment
Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Increase capacity of ditches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Increase hydraulic opening to prevent roadway overtopping in 0.2% chance (500-year) storm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

### Available Statuses

- INCLUDED – Measure has been included in at least one instance somewhere in the project.
- NOT INCLUDED – Measure was evaluated and while it could be included, it was not to be included. Must be justified.
- N/A – Measure cannot be included in project due to features of project.
- TO BE EVALUATED – This is the default setting of each measure. Each measure must be addressed and moved from this setting before the project reaches final design.
- COMMENT – Justification to not include a measure that could be placed in project must be written here.

# EXAMPLE

This segment of roadway has a history of overtopping and flooding during storm events that lead to periodic road closure hindering recovery efforts. An effective resilience measure for this roadway is to elevate it during roadway reconstruction. Specifically raising the roadway above the 500-year floodplain will increase the facility's resilience.

- A** Navigate to “Increased Rainfall Volume.”
- B** Select “Included” for “Elevate roadway profile above the 0.2% chance (500-year) floodplain.”
- C** Navigate to the “Comment” section and enter the appropriate supporting information for the selected resilience improvement. When the comment is saved, it will appear in the comment section. The Estimated Cost of Improvement is only the incremental cost of the improvement itself. It is not the total project cost.

**Resilience Improvements** (Click to collapse)

**INCREASED RAINFALL VOLUME** (Click to collapse)

Mark this whole section N/A

Improvements	To Be Evaluated	Included	Not Included	N/A	Estimated Cost of Improvement	Comment
Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Increase capacity of ditches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Increase hydraulic opening to prevent roadway overtopping in 0.2% chance (500-year) storm event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Elevate roadway profile above the 1% chance (100-year) floodplain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Elevate roadway profile above the 0.2% chance (500-year) floodplain	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ 1,000,000	Roadway elevation is recommended to support resilience of the facility.
Enhance shoulders in floodplains for roadway overtopping (e.g., turf reinforcement mats)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
Install flood detection and warning systems within floodplains	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	\$ 150,000	Not applicable
Modify roadway profile to address nuisance flooding due to increased rainfall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		

**Improvement:** Elevate roadway profile above the 0.2% chance (500-year) floodplain

**Evaluation Criteria:**  To be Evaluated  Included  Not Included  N/A

**Estimated Cost of Improvement:**

**Comment:**  71 of 600

This improvement covers only one portion of the project. Other measures may also be selected if they were planned at other locations of the project area. For the resilience improvements not selected, please provide a justification.

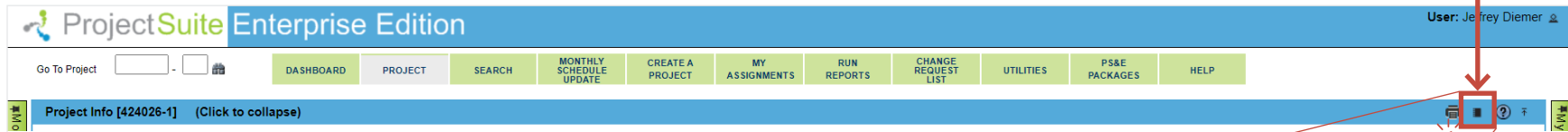
# PSEE RESILIENCE TRACKER MODULE

## REPORTING OPTIONS FOR THE RESILIENCE TRACKER MODULE

### TO VIEW CHANGES IN JOURNAL LOG

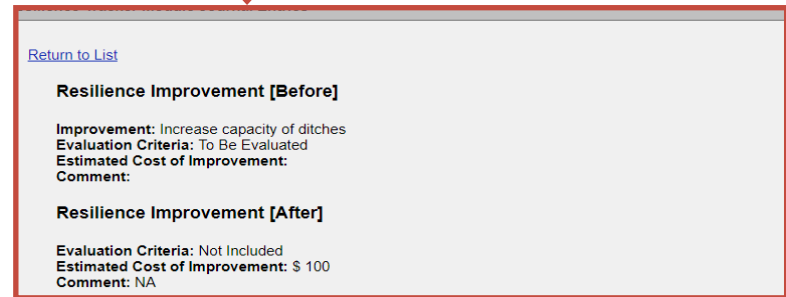
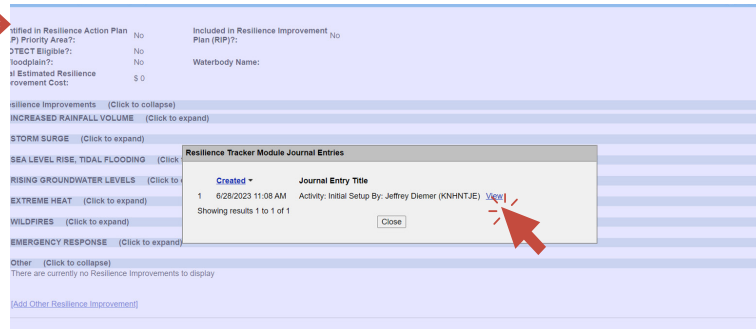
## STEP 1

Click on the "Journal Entry" icon within the Resilience Tracker module to open the "Resilience Tracker Module Journal Entries" window, reporting each change.



## STEP 2

Clicking on "View" will bring up a dialogue box showing what was changed.

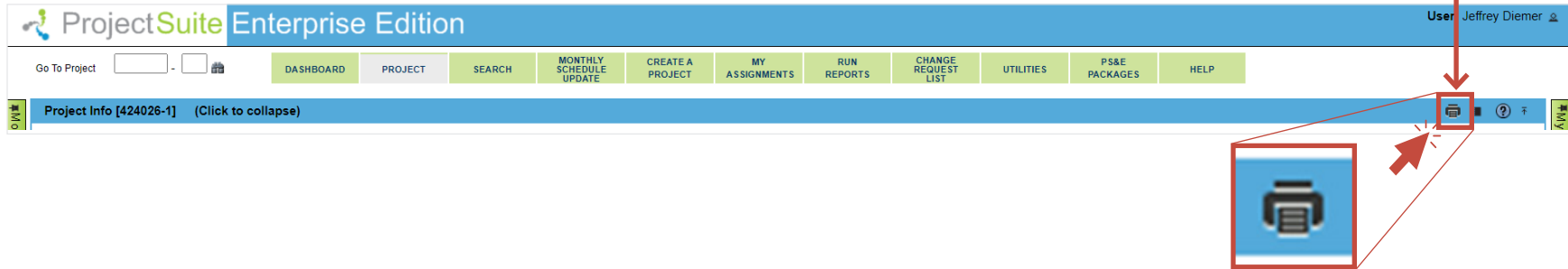




# PSEE RESILIENCE TRACKER MODULE

## TO CREATE A REPORT

Click on the "Report" icon within the Resilience Tracker module to generate a report in Microsoft Word . The report provides a table of the resilience improvements planned for the project. This reports the selection of all resilience improvements, and lists any additional design features present in the project.



This is what a report looks like. As you can see, it shows every improvement in a table, with the status of the improvement and the justification for its status.

PSEE		Resilience Tracker Report for Project 430132-1 (SR 35 (US 301) FROM CR 525E TO FLORIDA'S TURNPIKE )				7/10/2023
Resilience Tracker for [430132-1]						
Resilience Tracker Report for Project 430132-1 (SR 35 (US 301) FROM CR 525E TO FLORIDA'S TURNPIKE )						
<b>Identified in Resilience Action Plan (RAP) Priority Area?</b>	No	<b>Included in Resilience Improvement Plan (RIP)?</b>	No			
<b>PROTECT Eligible?</b>	No	<b>Waterbody Name</b>				
<b>In Floodplain?</b>	No					
<b>Total Estimated Resilience Improvement Cost</b>	\$ 0					
Resilience Improvements						
INCREASED RAINFALL VOLUME						
Improvements	To Be Evaluated	Included	Not Included	N/A	Estimated Cost of Comment Improvement	
Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)	X					
Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)	X					
Increase capacity of ditches	X					

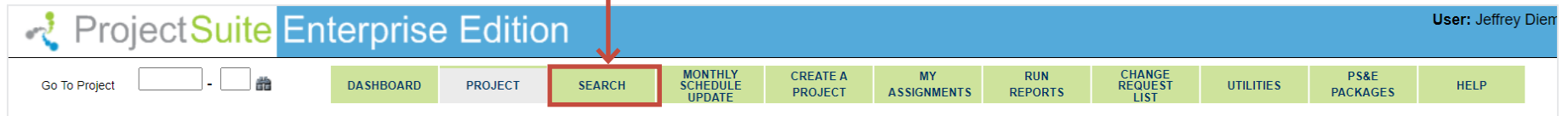
# PSEE RESILIENCE TRACKER MODULE

## TO SEARCH RESILIENCE IMPROVEMENTS

The Search Menu provides an option to view and export a list of projects that have identified resilience improvements.

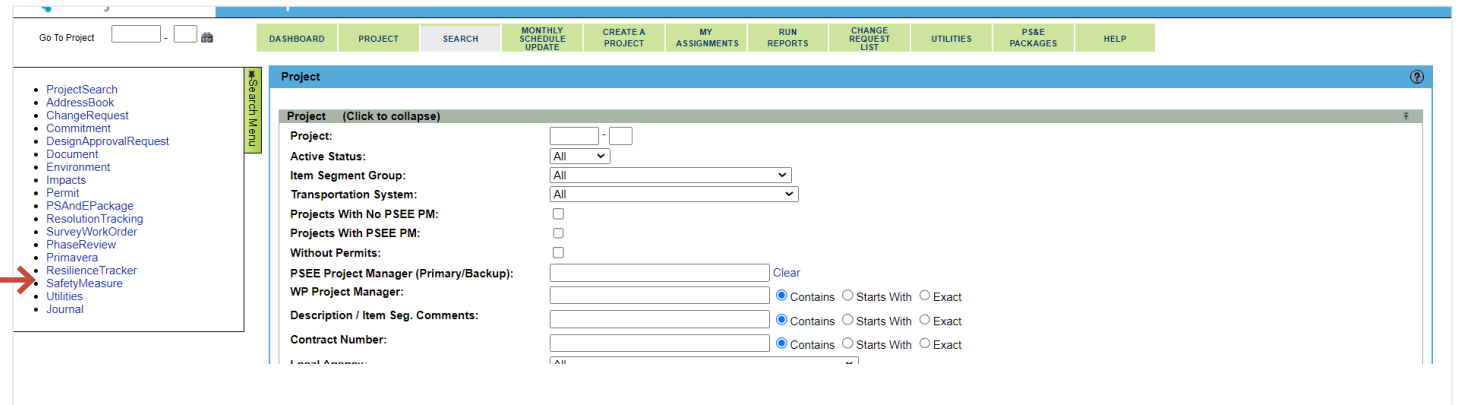
### STEP 1

Click on "Search" from the main menu.



### STEP 2

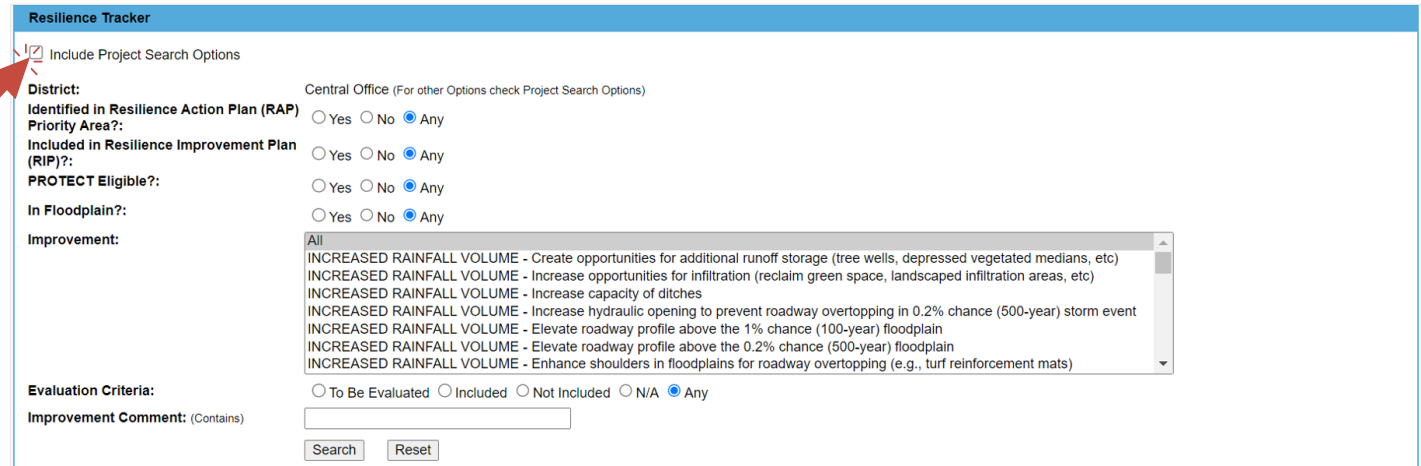
Select the "Resilience Tracker" from the expanded Search Menu to open the Resilience Tracker search fields.



# PSEE RESILIENCE TRACKER MODULE

## STEP 3

To select different Districts, select the "Include Project Search Options" at the top left corner of the Resilience Tracker Box, then select the appropriate District and the improvement options you are interested in.



**Resilience Tracker**

Include Project Search Options

District: Central Office (For other Options check Project Search Options)

Identified in Resilience Action Plan (RAP) Priority Area?:  Yes  No  Any

Included in Resilience Improvement Plan (RIP)??:  Yes  No  Any

PROTECT Eligible?:  Yes  No  Any

In Floodplain?:  Yes  No  Any

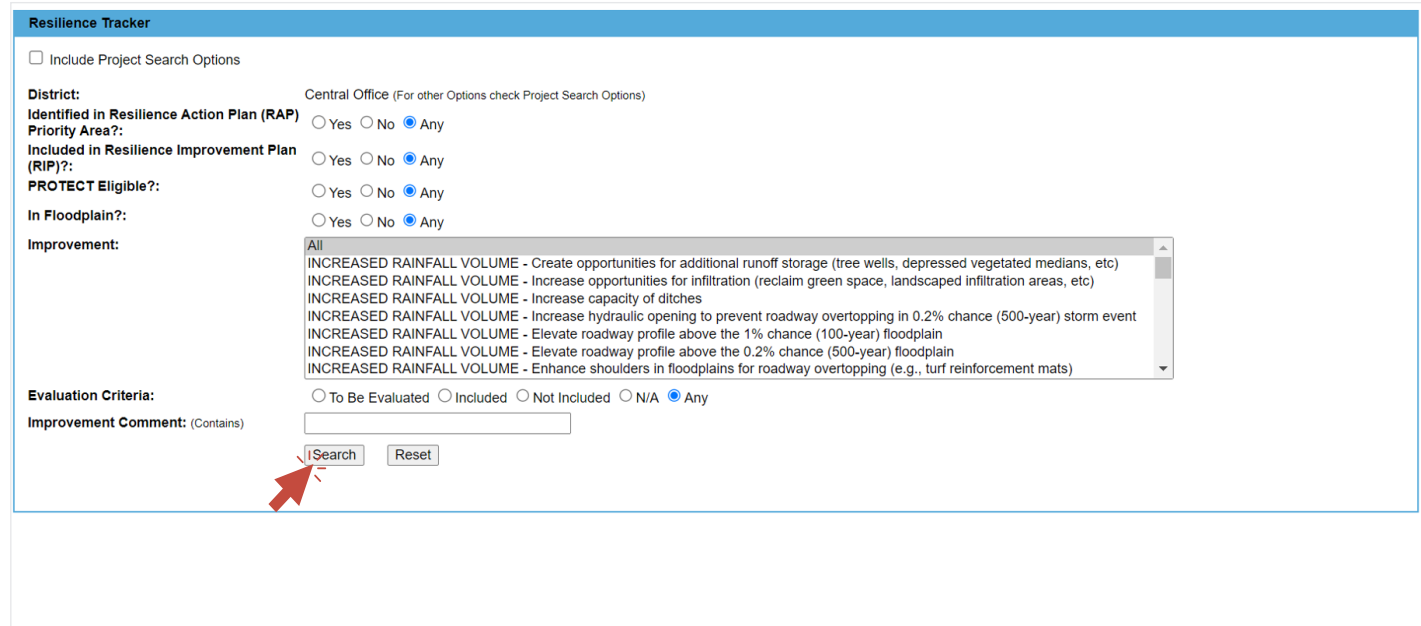
Improvement: All  
 INCREASED RAINFALL VOLUME - Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)  
 INCREASED RAINFALL VOLUME - Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)  
 INCREASED RAINFALL VOLUME - Increase capacity of ditches  
 INCREASED RAINFALL VOLUME - Increase hydraulic opening to prevent roadway overtopping in 0.2% chance (500-year) storm event  
 INCREASED RAINFALL VOLUME - Elevate roadway profile above the 1% chance (100-year) floodplain  
 INCREASED RAINFALL VOLUME - Elevate roadway profile above the 0.2% chance (500-year) floodplain  
 INCREASED RAINFALL VOLUME - Enhance shoulders in floodplains for roadway overtopping (e.g., turf reinforcement mats)

Evaluation Criteria:  To Be Evaluated  Included  Not Included  N/A  Any

Improvement Comment: (Contains)

## STEP 4

Select criteria and click on "Search" to generate an output. "Reset" will clear selections.



**Resilience Tracker**

Include Project Search Options

District: Central Office (For other Options check Project Search Options)

Identified in Resilience Action Plan (RAP) Priority Area?:  Yes  No  Any

Included in Resilience Improvement Plan (RIP)??:  Yes  No  Any

PROTECT Eligible?:  Yes  No  Any

In Floodplain?:  Yes  No  Any

Improvement: All  
 INCREASED RAINFALL VOLUME - Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)  
 INCREASED RAINFALL VOLUME - Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)  
 INCREASED RAINFALL VOLUME - Increase capacity of ditches  
 INCREASED RAINFALL VOLUME - Increase hydraulic opening to prevent roadway overtopping in 0.2% chance (500-year) storm event  
 INCREASED RAINFALL VOLUME - Elevate roadway profile above the 1% chance (100-year) floodplain  
 INCREASED RAINFALL VOLUME - Elevate roadway profile above the 0.2% chance (500-year) floodplain  
 INCREASED RAINFALL VOLUME - Enhance shoulders in floodplains for roadway overtopping (e.g., turf reinforcement mats)

Evaluation Criteria:  To Be Evaluated  Included  Not Included  N/A  Any

Improvement Comment: (Contains)

# PSEE RESILIENCE TRACKER MODULE

## STEP 5

As a result of Step 4, the program will output search results based on the criteria that was selected. Clicking "Export Results" will download a Microsoft Excel file containing the information shown in the search results.

Resilience Tracker										
<a href="#">[Modify Search]</a>										
Resilience Search Results (Click to collapse)										
	<a href="#">Project</a>	<a href="#">County</a>	<a href="#">Identified in RAP Priority Area</a>	<a href="#">Included in RIP</a>	<a href="#">PROTECT Eligible?</a>	<a href="#">In Floodplain?</a>	<a href="#">Improvement</a>	<a href="#">Evaluation Criteria</a>	<a href="#">Estimated Cost of Improvement</a>	<a href="#">Improvement Comment</a>
1	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	RISING GROUNDWATER LEVELS - Use different base materials (e.g. B-12.5 or graded aggregate base) for higher SHWT	To Be Evaluated		
2	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	RISING GROUNDWATER LEVELS - Deeper root vegetation to lower groundwater and stabilize slopes	To Be Evaluated		
3	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	RISING GROUNDWATER LEVELS - Salt tolerant vegetation in coastal areas	To Be Evaluated		
4	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	RISING GROUNDWATER LEVELS - Underdrains for high groundwater mounding at roadway where positive outfall can be achieved	To Be Evaluated		
5	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	RISING GROUNDWATER LEVELS - Reconstruct base to mitigate future water damage	To Be Evaluated		
6	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	EXTREME HEAT - Drought tolerant shoulder vegetation	To Be Evaluated		
7	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	WILDFIRES - ITS signs for high potential for fire	To Be Evaluated		
8	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	EMERGENCY RESPONSE - Emergency Shoulder Use	To Be Evaluated		
9	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	Other - Other	Included	\$ 1,000	Other test Resilience Improvement
10	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	INCREASED RAINFALL VOLUME - Create opportunities for additional runoff storage (tree wells, depressed vegetated medians, etc)	N/A		
11	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	INCREASED RAINFALL VOLUME - Increase opportunities for infiltration (reclaim green space, landscaped infiltration areas, etc)	Not Included	\$ 100	Test-Not included
12	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	INCREASED RAINFALL VOLUME - Increase capacity of ditches	Included	\$ 1,000	
13	<a href="#">View</a> 000101-1	Pinellas	Yes	Yes	Yes	Yes	INCREASED RAINFALL VOLUME - Increase hydraulic opening to prevent roadway	To Be Evaluated		

Showing results 1 to 250 of 289 [Next 39 results](#)

From:  To:  [Export Results](#)