



ATTENUATOR (Crash Cushions) INSPECTION

(using ArcGIS Applications)

Training

Created by

DELLIS STANBERRY

District Maintenance Office

March 2022



Field Data Collection:
ArcGIS Field Maps



View Collected Data:
ArcGIS Dashboards



Generate Reports:
ArcGIS Experience Builder

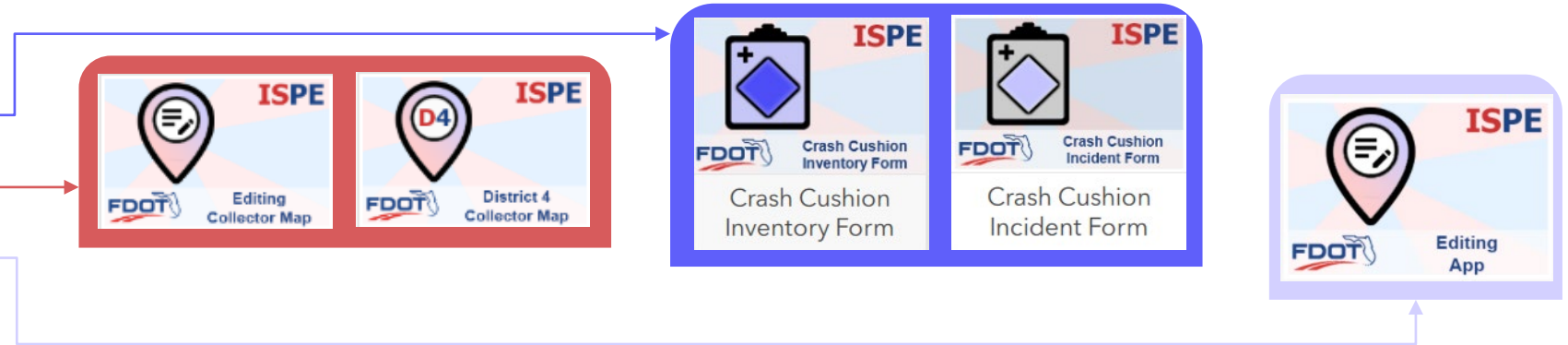
ATTENUATOR (CRASH CUSHIONS)

Central Office (CO) vs District Four (D4)

ISPE - CO does ■ Collection ■ Incident Reports

Using...

- Survey123
- Field Maps
- Web Editor Apps



D4 does ■ Inspections

Using...

- Field Maps
 - Related Tables
- Operations Dashboard
- Experience Builder (Report)



PROPOSED FLOWCHART

All FDOT ATTENUATOR Data from
ISPE
(CRASH CUSHION)

A

D4
Data in
GIS

B

Inspection Related Table

- Type I Inspection info
- Type II Inspection info
- Other info

C

1

2



FIELD

Inspection is
done in the
field using
ArcGIS Field
Maps

CREW

SIGNATURES

Use DocuSign to get official signatures.

3

4

EDMS

Final Inspection PDF can be uploaded to EDMS
(Document Group and Type to be determined)

Notes:

The Inspection
related table is
filled out for
each inspection.

A

CO/GIS/DMO
Tasks

1

AM/Operation
Center Tasks

PDF of Inspection Report Generated from GIS App

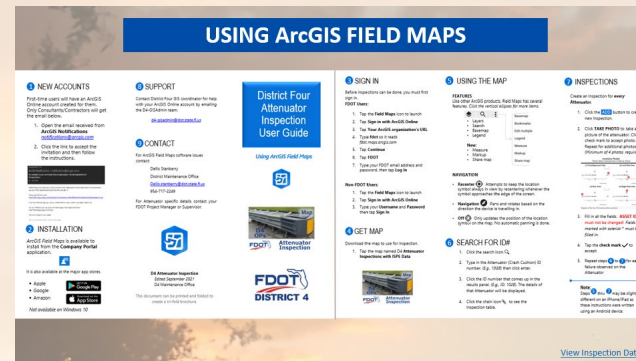
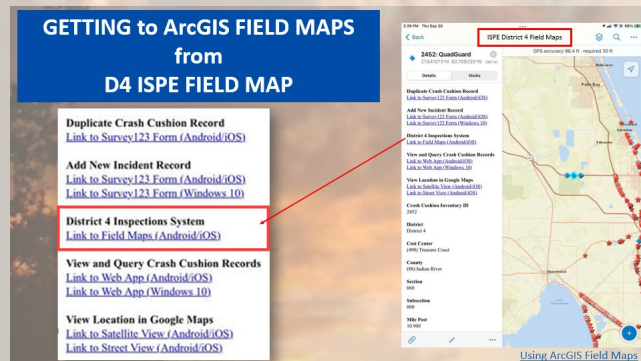
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION CRASH CUSHION INSPECTION REPORT						
Maintenance Unit: _____						
CO SECT NO	SR NO	US NO	MP STA	VEH DIR	LOC	LOCATION REMARKS
CRASH CUSHION TYPE		MODEL NO		INSPECTION TYPE		
Type I Inspection						
1. Hit Damage or Misalignment		Yes	No			
2. Damaged Concrete Pad		<input type="checkbox"/>	<input type="checkbox"/>			
3. Vegetation/Debris Build-up		<input type="checkbox"/>	<input type="checkbox"/>			
4. Damaged or Missing Parts		<input type="checkbox"/>	<input type="checkbox"/>			
5. Other		<input type="checkbox"/>	<input type="checkbox"/>			
Inspected Condition						
<input type="checkbox"/> GOOD						
<input type="checkbox"/> FAIR						
<input type="checkbox"/> POOR						
<input type="checkbox"/> CRITICAL						
Type II Inspection						
1. Hit Damage or Misalignment		Yes	No	N/A		
2. Damaged Concrete Pad		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. Vegetation/Debris Build-up		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4. Functional Cartridges		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5. Functional Nose Assembly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6. Functional Guide Cables/Rail		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7. Secure Anchor Chains/Bolts		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8. Functional Diaphragms		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9. Secure Fender Panels		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
10. Vandalism		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
11. Other		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Comments/Corrective Action: _____						
Inspector: _____						
Print	Signature	Date				
Unit Manager: _____						
Print	Signature	Date				
Corrections Completed: _____						
Print	Signature	Date				

COLLECTING INSPECTION DATA

- Use **ArcGIS Field Maps** to collect Inspection Data in the field.
- Data can be sent immediately with internet connection or sent later when there is internet connection.
- Detailed information on using **ArcGIS Field Maps** is in a PDF guide.
- **New!** There is a link to the *D4 Attenuator Inspections with ISPE Data Map* from the ISPE D4 Field Maps.



Using ArcGIS Field Maps



GETTING to ArcGIS FIELD MAPS from D4 ISPE FIELD MAP

Duplicate Crash Cushion Record

[Link to Survey123 Form \(Android/iOS\)](#)

Add New Incident Record

[Link to Survey123 Form \(Android/iOS\)](#)

[Link to Survey123 Form \(Windows 10\)](#)

District 4 Inspections System

[Link to Field Maps \(Android/iOS\)](#)

View and Query Crash Cushion Records

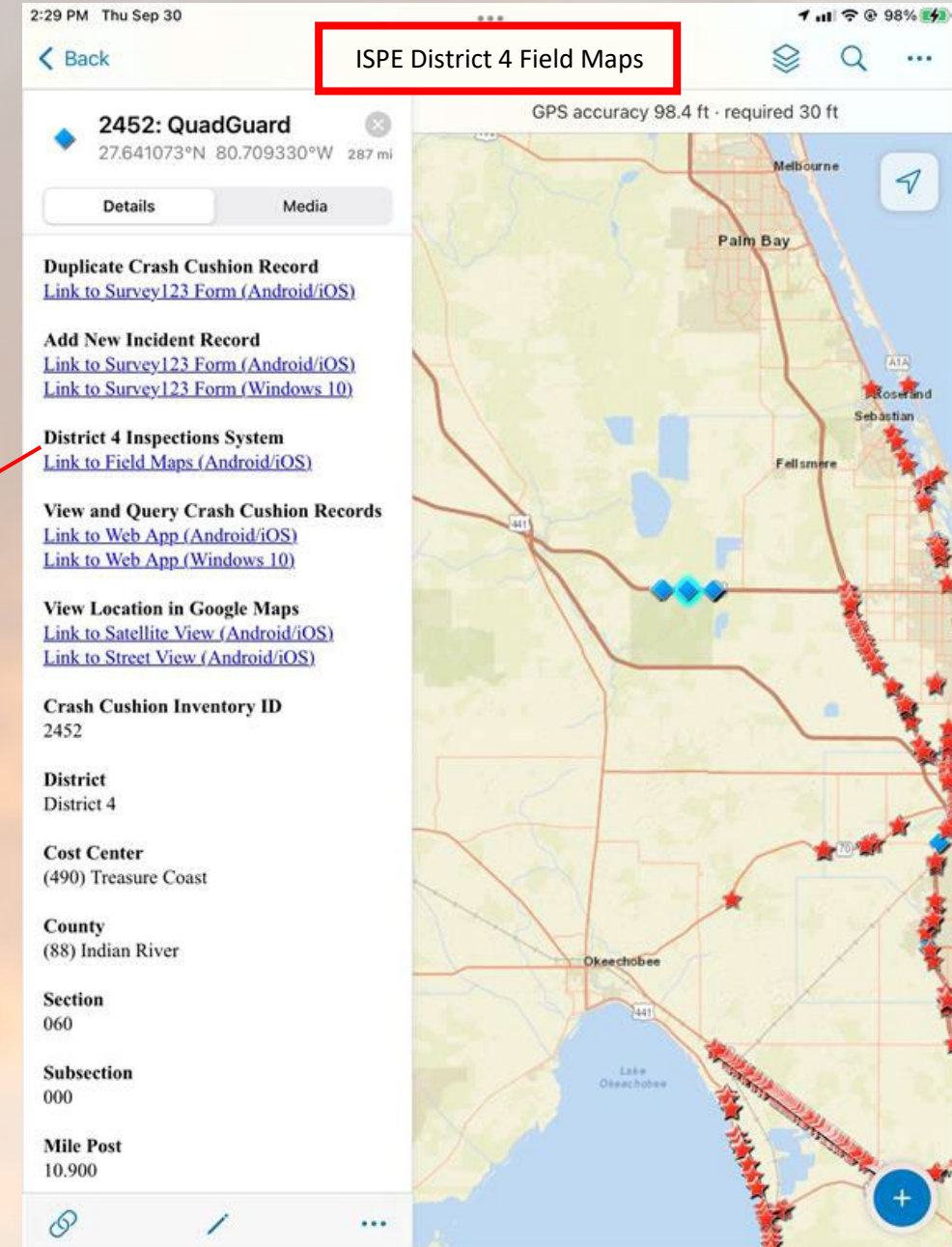
[Link to Web App \(Android/iOS\)](#)

[Link to Web App \(Windows 10\)](#)

View Location in Google Maps

[Link to Satellite View \(Android/iOS\)](#)

[Link to Street View \(Android/iOS\)](#)



[Using ArcGIS Field Maps](#)

USING ArcGIS FIELD MAPS

1 NEW ACCOUNTS

First-time users will have an ArcGIS Online account created for them. Only Consultants/Contractors will get the email below.

1. Open the email received from **ArcGIS Notifications** notifications@arcgis.com
2. Click the link to accept the invitation and then follow the instructions.



Without having first invited you to join an account, your Organization, Florida Department of Transportation, cannot receive updates and cannot share data with you.

Please click the link to join:
<https://dot.maps.arcgis.com/home/page.html?organization=dot&invitation=dot>

If you have difficulty logging in, please contact William Hays (william.hays@dot.state.fl.us)

For your reference, you can access the home page of this organization here:
<https://dot.maps.arcgis.com/home>

This link will expire in 14 days.

This is an automated email. Please do not reply.

2 INSTALLATION

ArcGIS Field Maps is available to install from the **Company Portal** application.



It is also available at the major app stores.

- Apple
- Google
- Amazon



Not available on Windows 10

8 SUPPORT

Contact District Four GIS coordinator for help with your ArcGIS Online account by emailing the D4-GISAdmin team.

d4-gisadmin@dot.state.fl.us

9 CONTACT

For ArcGIS Field Maps software issues contact:

Dellis Stanberry

District Maintenance Office

Dellis.stanberry@dot.state.fl.us

954-717-2249

For Attenuator specific details contact your FDOT Project Manager or Supervisor.



D4 Attenuator Inspection
Edited September 2021
D4 Maintenance Office

This document can be printed and folded to create a tri-fold brochure.

District Four Attenuator Inspection User Guide

Using ArcGIS Field Maps



3 SIGN IN

Before inspections can be done, you must first sign in.

FDOT Users:

1. Tap the **Field Maps** icon to launch
2. Tap **Sign in with ArcGIS Online**
3. Tap **Your ArcGIS organization's URL**
4. Type **fdot** so it reads dot.maps.arcgis.com
5. Tap **Continue**
6. Tap **FDOT**
7. Type your FDOT email address and password, then tap **Log In**

Non-FDOT Users:

1. Tap the **Field Maps** icon to launch
2. Tap **Sign in with ArcGIS Online**
3. Type your **Username** and **Password** then tap **Sign In**

4 GET MAP

Download the map to use for inspection.

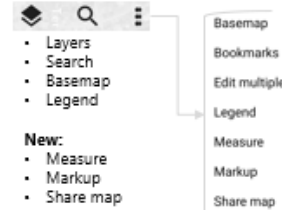
1. Tap the map named **D4 Attenuator Inspections with ISPE Data**



5 USING THE MAP

FEATURES

Like other ArcGIS products, Field Maps has several features. Click the vertical ellipses for more items.



NAVIGATION

- **Recenter** (Icon: Target) Attempts to keep the location symbol always in view by recentering whenever the symbol approaches the edge of the screen.
- **Navigation** (Icon: Compass) Pans and rotates based on the direction the device is travelling in.
- **Off** (Icon: Off) Only updates the position of the location symbol on the map. No automatic panning is done.

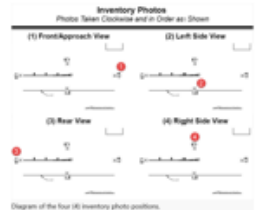
6 SEARCH FOR ID#

1. Click the search icon.
2. Type in the Attenuator (Crash Cushion) ID number. (E.g., 1028) then click enter.
3. Click the ID number that comes up in the results panel. (E.g., ID: 1028). The details of that Attenuator will be displayed.
4. Click the chain icon to see the inspection table.

7 INSPECTIONS

Create an Inspection for **every Attenuator**.

1. Click the **ADD** button to create a new Inspection.
2. Click **TAKE PHOTO** to take a picture of the attenuator. Click the check mark to accept photo. Repeat for additional photos. (Minimum of 4 photos required).



3. Fill in all the fields. **ASSET ID must not be changed!** Fields marked with asterisk * must be filled in.
4. Tap the **check mark** to accept.
5. Repeat steps 6 to 7 for each failure observed on the Attenuator

Note:
Steps 5 thru 7 may be slightly different on an iPhone/iPad as these instructions were written using an Android device.

VIEWING INSPECTION DATA

- Use the D4 Attenuator Inspections **Dashboard** to view details of Inspections.
- Quick instructions are at the top of the **Dashboard**.

HOW TO USE THE D4 ATTENUATOR INSPECTIONS DASHBOARD & REPORT GENERATOR (Click arrow group at top right corner to expand)

FILTERS on TOP MENU: MAP & INSPECTIONS

(use steps 1 to 5 below individually or together)

1. Choose Operation Center (Map).
2. Choose Roadway ID (Map).
- 3a. Choose Attenuator ID (Map).
Map will show points only on Operation Center/Roadway/Attenuator ID selected and zoom map to selected attenuator.
- or
- 3b. On the Map, click the selection tool to draw a box around points on the selected roadway.
The Inspection List and Details will filter. Click the X next to the filter to clear filter.
4. Click the Attenuator ID (Inspections) to filter Map, Inspections List, Inspection Details, and Inspection Images.
5. Choose the Inspection Date Range to filter inspections within a time frame.

RIGHT PANEL: INSPECTIONS ONLY

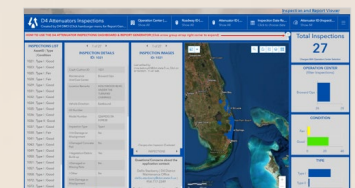
1. Click on any of the names in the bar charts on the right panel to filter the panels on the left:
 - Inspections List
 - Inspection Details
 - Inspection Images
 - Also the Total Inspections on the right, along with the other bar charts on the right.
2. Click any list item in the **Inspections List** to see the Inspection Details or Inspection Images.

Notes:

- Click the four way arrow at the top right in each panel to expand.
- Click the hamburger menu on the top right to get to Report Generator.



Using ArcGIS Dashboards



- **Dashboard Link:**

<https://fdot.maps.arcgis.com/apps/dashboards/341624a3d6ad44098620d76ca5a8724e>



D4 Attenuators Inspections

Created by D4 DMO (Click hamburger menu for Report Gen...)

Operation Center (...)
Show AllRoadway ID (...)
Show AllAttenuator ID (...)
Show AllInspection Date Ra...
Click to choose dateAttenuator ID (Inspecti...
Show All

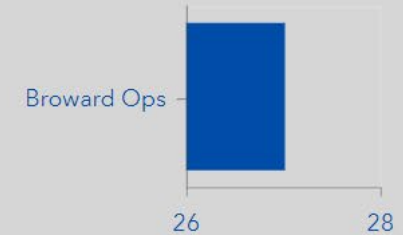
HOW TO USE THE D4 ATTENUATOR INSPECTIONS DASHBOARD & REPORT GENERATOR (Click arrow group at top right corner to expand)



Total Inspections

27

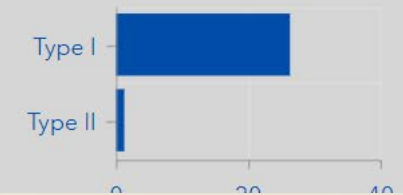
Changes With Operation Center Selection

OPERATION CENTER
(filter Inspections)

CONDITION



TYPE



INSPECTIONS LIST

AssetID | Type
| Condition

1021	Type I	Good
1023	Type I	Good
1025	Type I	Fair
1028	Type I	Fair
1029	Type I	Good
1031	Type I	Good
1032	Type I	Good
1034	Type I	Good
1035	Type I	Good
1036	Type I	Good
1036	Type II	Good
1037	Type I	Good
1038	Type I	Fair
1041	Type I	Good
1043	Type I	Good
1049	Type I	Good
1050	Type I	Good
1051	Type I	Good
1057	Type I	Good
1058	Type I	Good
1072	Type I	Good
1073	Type I	Good

INSPECTION DETAILS

ID: 1021

Crash Cushion ID	1021
Maintenance Unit/Cost Center	Broward Ops
Location Remarks	HOLLYWOOD BLVD. UNDER THE TURNPIKE OVERPASS
Vehicle Direction	Eastbound
US Number	
Model Number	QS6903G SN H39838
Inspection Type	Type I
I-Hit Damage or Misalignment	No
I-Damaged Concrete Pad	No
I-Vegetation/Debris Build-up	Yes
I-Damaged or Missing Parts	No
I-Other	No
II-Hit Damage or Misalignment	
II-Damaged	

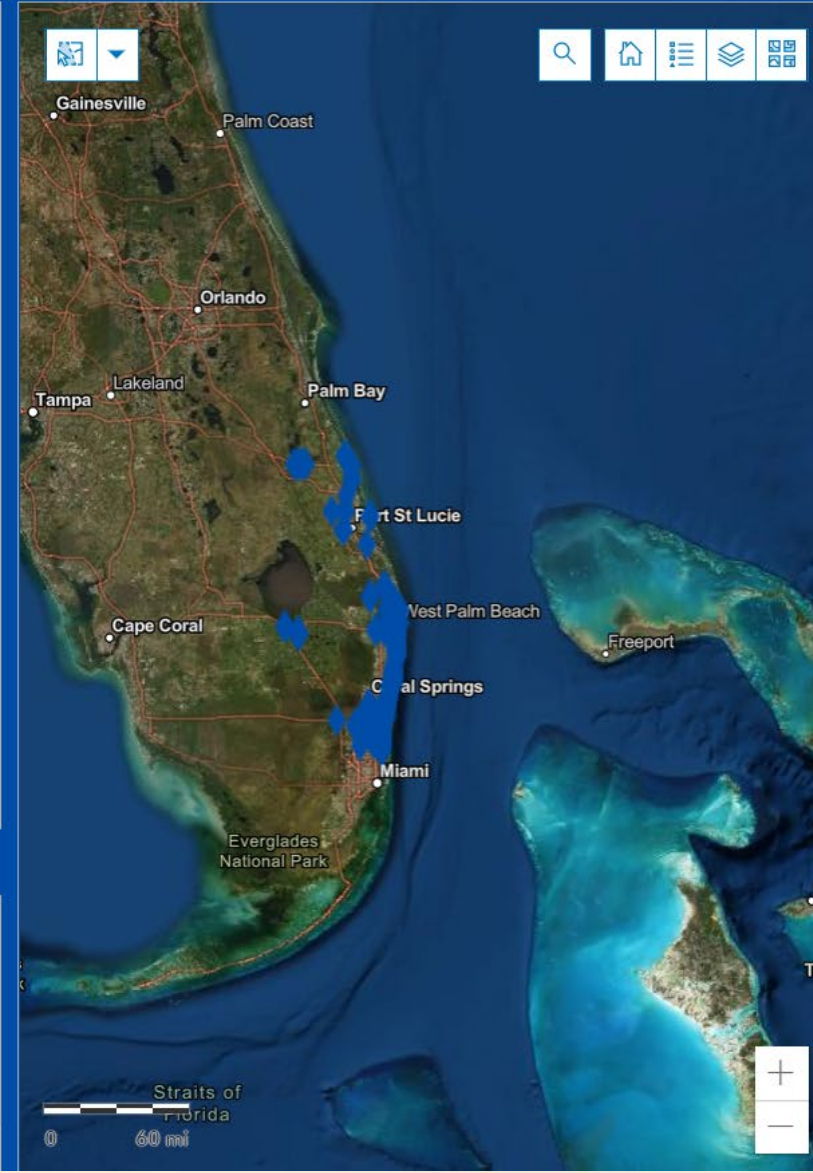
INSPECTION IMAGES

ID: 1021

Last edited by
inna.leskovykh@dot.state.fl.us_fdot on
8/10/2021, 11:47 AM.

Changes when Inspection ID selected.

INSPECTIONS

Questions/Concerns about the
application contact:Dellis Stanberry | D4 District
Maintenance Office
dellis.stanberry@dot.state.fl.us |
954-717-2249For Attenuator Inspection specific
information, please contact the D4 District

INSPECTION REPORT & IMAGE VIEWER

- To get a Report of the D4 Attenuator Inspections for your records you can generate a single PDF and print relevant Inspection Images.
- Click the hamburger menu on the Dashboard, then go to REPORT GENERATOR
- Follow instructions on the REPORT GENERATOR to get Report and Images.

QUICK GUIDE

REPORT GENERATOR:

1. Follow steps 1 - 4 below to select required inspection. Click slider to turn on filter (orange when on).
2. On Report & Picture List on right, click arrows at the top of page to select desired report if more than one is shown.
3. Click the View Report button to see the Inspection Report, then follow steps outlined in the Report Viewer section.
4. Click the Image Viewer button to see Inspection Images

REPORT VIEWER:

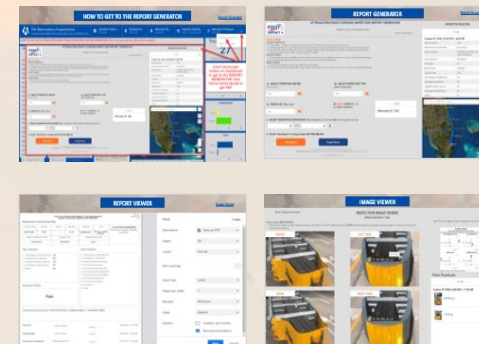
1. Print the report by pressing **Ctrl P** (*uncheck headers and footers and set margins to minimum in the print dialog More settings*).
2. Hover at the top right to see button to click to return to the Report Generator.

IMAGE VIEWER:

1. Choose the images for each view according to the label.
2. Print the images by pressing **Ctrl P** (*uncheck headers and footers and set margins to minimum in the print dialog More settings*).





Using ArcGIS Experience
Builder





HOW TO GET TO THE REPORT GENERATOR


[Report Generator](#)


**D4 Attenuators Inspections**
Created by D4 DMO (Click hamburger menu for Report Gen...)


Operation Center (...)
Show All

Roadway ID (...)
Show All


Attenuator ID (...)
Show All

Inspection Date Ra...
Click to choose date


Attenuator ID (Inspecti...
Show All





HOW TO USE THE D4 ATTENUATOR INSPECTIONS DASHBOARD & REPORT GENERATOR (Click arrow group at top right corner to expand)

**ATTENUATOR/CRASH CUSHIONS INSPECTION REPORT GENERATOR**
Brought to you by D4 Maintenance Office
[Back to Dashboard](#)


QUICK GUIDE
REPORT GENERATOR:
1. Follow steps 1 - 4 below to select required inspection. Click slider to turn on filter (orange when on).
2. On Report & Picture List on right, click arrows at the top of page to select desired report if more than one is shown.
3. Click the View Report button to see the Inspection Report, then follow steps outlined in the Report Viewer section.
4. Click the Image Viewer button to see Inspection Images
REPORT VIEWER:
1. Print the report by pressing **Ctrl P** (uncheck headers and footers and set margins to minimum in the print dialog More settings).
2. Hover at the top right to see button to click to return to the Report Generator.
IMAGE VIEWER:
1. Choose the images for each view according to the label.
2. Print the images by pressing **Ctrl P** (uncheck headers and footers and set margins to minimum in the print dialog More settings).

1a - SELECT OPERATION CENTER
(filters map)
- All - 

1b - SELECT INSPECTION TYPE
(filters Inspections)
- All - 

2a - SEARCH ID (filters map):
- All - 

2b - MUST CLICK ID ---> :
(to Select Inspection)
Attenuator ID: 1021

3 - SELECT INSPECTION DATE RANGE (filters Inspections. Click the slider on the right to turn on)
[] and [] 

4 - CLICK View Report or Image Viewer BUTTON BELOW

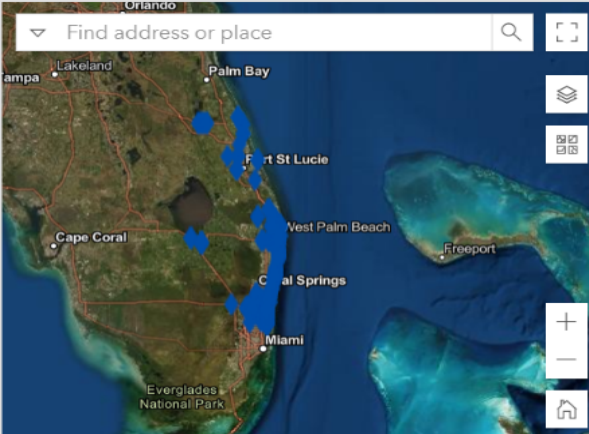
View Report

Image Viewer

For questions/comments about the application contact:
Dellis Stanberry D4 District Maintenance Office | dellis.stanberry@dot.state.fl.us | 954-717-2249
Last updated September 2021

INSPECTION SELECTED
1 of 26
Cushion ID 1036 | 3/30/2021, 6:04 PM

Crash Cushion ID	1036
Maintenance Unit/Cost Center	Broward Ops
Location Remarks	UNIVERSITY DR. NORTH OF SOUTHGATE BLVD
Vehicle Direction	Northbound
US Number	817
Model Number	QS2403G
Inspection Type	Type I
I-Hit Damage or Misalignment	No
I-Damaged Concrete Pad	No
I-Vegetation/Debris Build-up	Yes
I-Damaged or Missing Parts	No
I-Other	No



CONDITION

Fair	0
Good	20

TYPE

Type I	20
Type II	0

REPORT GENERATOR

D4 GIS Launch Pad

Click hamburger button on Dashboard to get to the REPORT GENERATOR then follow Quick Guide to get PDF

INSPECTIONS INSPECTIONS ATTENUATOR

For Attenuator Inspection specific details contact your FDOT Project Manager or Supervisor

Earthstar Geographics | Esri, HERE, Garmin, FAO, NOAA, USGS, EP... Powered by Esri

REPORT GENERATOR

[Report Viewer](#)

ATTENUATOR/CRASH CUSHIONS INSPECTION REPORT GENERATOR

Brought to you by D4 Maintenance Office

[Back to Dashboard](#)

QUICK GUIDE

REPORT GENERATOR:

1. Follow steps 1 - 4 below to select required inspection. Click slider to turn on filter (orange when on).
2. On Report & Picture List on right, click arrows at the top of page to select desired report if more than one is shown.
3. Click the View Report button to see the Inspection Report, then follow steps outlined in the Report Viewer section.
4. Click the Image Viewer button to see Inspection Images

REPORT VIEWER:

1. Print the report by pressing **Ctrl P** (uncheck headers and footers and set margins to minimum in the print dialog More settings).
2. Hover at the top right to see button to click to return to the Report Generator.

IMAGE VIEWER:

1. Choose the images for each view according to the label.
2. Print the images by pressing **Ctrl P** (uncheck headers and footers and set margins to minimum in the print dialog More settings).

1a - SELECT OPERATION CENTER

(filters map)

- All - ☒

1b - SELECT INSPECTION TYPE

(filters Inspections)

- All - ☒

2a - SEARCH ID (filters map):

- All - ☒

2b - **MUST** CLICK ID ----> :

(to Select Inspection)

< 1 of 258 >

Attenuator ID: 1021

3 - SELECT INSPECTION DATE RANGE (filters Inspections. Click the slider on the right to turn on)

and ☐

4 - CLICK View Report or Image Viewer BUTTON BELOW

View Report

Image Viewer

For questions/comments about the application contact:
Dellis Stanberry D4 District Maintenance Office | dellis.stanberry@dot.state.fl.us | 954-717-2249

Last updated September 2021

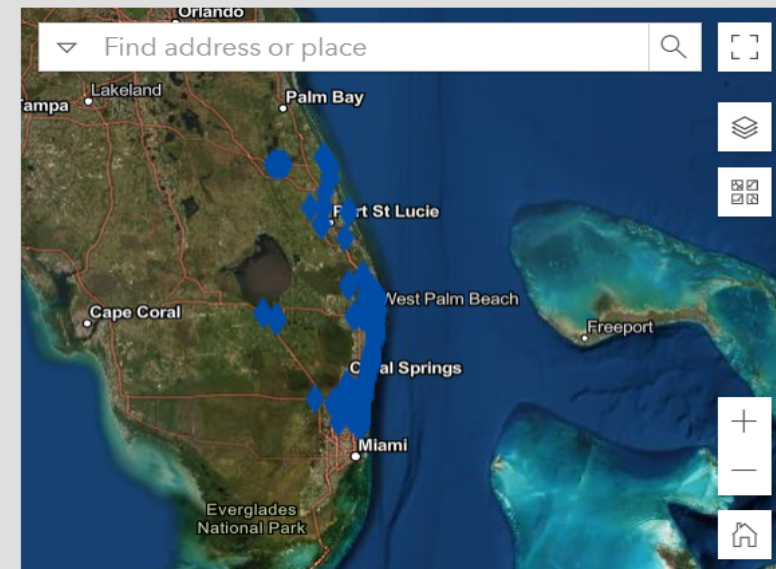
INSPECTION SELECTED

< 1 of 26 >



Cushion ID 1036 | 3/30/2021, 6:04 PM

Crash Cushion ID	1036
Maintenance Unit/Cost Center	Broward Ops
Location Remarks	UNIVERSITY DR. NORTH OF SOUTHGATE BLVD
Vehicle Direction	Northbound
US Number	817
Model Number	QS2403G
Inspection Type	Type I
I-Hit Damage or Misalignment	No
I-Damaged Concrete Pad	No
I-Vegetation/Debris Build-up	Yes
I-Damaged or Missing Parts	No
I-Other	No



REPORT VIEWER

[Image Viewer](#)

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
CRASH CUSHION INSPECTION REPORT

850-055-12
MAINTENANCE
10/19

Maintenance Unit: Broward Ops

CO SECT NO	SR NO	US NO	MP STA	VEH DIR	LOC	LOCATION REMARKS GRIFFIN RD. UNDER TURNPIKE OVERPASS
86015000	818		6.12	Northbound	ID: Insp. 1028 M 1028	
CRASH CUSHION TYPE		MODEL NO		INSPECTION TYPE		
Quadguard		QS2403G		Type I		

Type I Inspection

Type II Inspection

1. Hit Damage or Misalignment	Yes	1. Hit Damage or Misalignment
2. Damaged Concrete Pad	No	2. Damaged Concrete Pad
3. Vegetation/Debris Build-up	Yes	3. Vegetation/Debris Build-up
4. Damaged or Missing Parts	No	4. Functional Cartridges
5. Other	No	5. Functional Nose Assembly
		6. Functional Guide Cables/Rail
		7. Secure Anchor Chains/Bolts
		8. Functional Diaphragms
		9. Secure Fender Panels
		10. Vandalism
		11. Other

Inspected Condition


Fair

Comments/Corrective Action: REPLACED NOSE, 2 FUNDER PANELS, 1 CARTRIDGE. RESET

Inspector:	LUIS F. ROJAS	Signature	3/30/2021 11:05 AM
Unit Manager:	LUIS F. ROJAS	Signature	4/9/2021 11:06 AM
Corrections Completed:	INNA LESKOYKH	Signature	4/12/2021 11:06 AM

Print

1 page

Destination	 Save as PDF
Pages	All
Layout	Portrait

More settings

Paper size	Letter
Pages per sheet	1
Margins	Minimum
Scale	Default

Options	<input type="checkbox"/> Headers and footers
	<input checked="" type="checkbox"/> Background graphics

IMAGE VIEWER

[Back to Report Generator](#)

INSPECTION IMAGE VIEWER

CRASH CUSHION ID: 1028

How to use the IMAGE VIEWER:

1. Choose the images for each view according to the label. Print the images by pressing **Ctrl P** (*uncheck headers and footers and set margins to minimum in the print dialog More settings*).

FRONT



LEFT SIDE



AFTER.jpg

REAR



RIGHT SIDE



Take Four (4) image for Type II Inspections as outlined below.

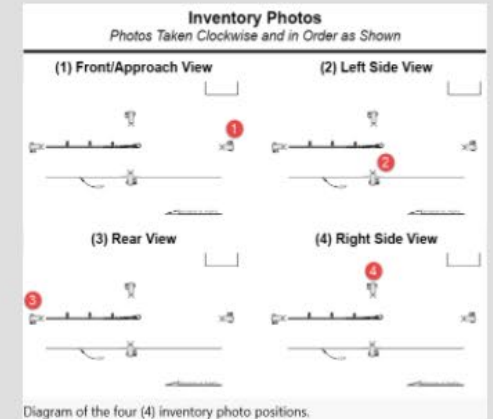


Diagram of the four (4) inventory photo positions.

Photo Thumbnails

< 15 of 26 >

Cushion ID 1028 | 3/30/2021, 11:05 AM



BEFORE.jpg



AFTER.jpg

QUESTIONS/COMMENTS



CONTACT US

For Application Specific Info:

Dellis Stanberry

District Maintenance Office



dellis.stanberry@dot.state.fl.us



954-717-2249

For Attenuator Inspection Specific Info:

FDOT AM PM or FDOT Supervisor

- Broward Operations: [Christopher Chanel](#)
- Palm Beach Operations: [Richard Edwards](#)
- Treasure Coast Operations: [Vikrant Srivastava](#)
- Asset Maintenance (FDOT AM PM):
 - [John Deemer](#)
 - [Raquel Salvato](#)
 - [Flavia Magalhaes](#)
 - [Stephanie Torres](#)
 - [Maria Marquez](#)