

# VIRGINIA DOT: STATEWIDE HIGHWAY MAINTENANCE MANAGEMENT SYSTEM

JULY 28, 2016

**Tom Wesp**

Vice President Strategic Accounts

[twesp@dtsgis.com](mailto:twesp@dtsgis.com)

210-997-6961

**Brian Sovik**

GIS Solutions

[bsovik@dtsgis.com](mailto:bsovik@dtsgis.com)


407-382-5222


[www.dtsgis.com](http://www.dtsgis.com)



MAKERS OF **vueworks**.

# TODAY'S AGENDA

- **Introductions**
  - **DTS and VUEWorks / MobileVUE Overview**
  - **VUEWorks / MobileVUE Demo**
- 



**DTS AND  
VUEWORKS / MOBILEVUE  
OVERVIEW**

150+

Cities and Counties

50+

Regional Governments

25+

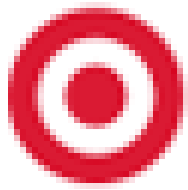
State Governments



U.S. Department of Transportation  
**Federal Highway  
Administration**



**WAUKESHA**



Reedy Creek  
Improvement District



# VUEWorks – Performance-Based Asset Management

- Forecast capital budget needs
- Create & manage capital projects
- Analyze different tactics using “what-if” scenarios

**Plan Management**

Forecasts

Projects

Reporting-Dashboard

Citizen Request Portal

**Work Management**

Service Requests

- Document & track requests for action
- Create & track work orders

Work Orders

**ASSETS**

ArcGIS Server Services  
Facilities  
Fleet  
Non-spatial Assets

Personnel

**Resource Management**

Equipment

Risk

Valuation

Condition

Inventory

- Manage time & expenses for labor & equipment
- Manage quantity, expenses & location for inventory

**Risk-Based Asset Management**

- Track condition, depreciation & value
- Analyze & prioritize consequences of failure

**Handling the life cycle of assets**

- ❖ **Web-based application / Easy to use**
- ❖ **GIS-Centric**
- ❖ **Web Services Integration – API driven**
- ❖ **Configuration NOT Customization**
- ❖ **“All Assets” Approach (ANY Asset can be managed)**
- ❖ **Enterprise Level Budget Forecasting against one to many asset types**
- ❖ **Can handle both LRS and Non-LRS data in same application**
- ❖ **Mobile Solution compliant with Android and iOS devices.**  
**(Full VUEWorks can be run on a laptop)**

**What Makes VUEWorks Special?**

- The Core Module manages the GIS Inventory of Assets
- Asset Inventory Collection is the first step in any Asset Management Process
- Accurate inventory of Asset Class and Asset Type becomes the foundation for your Asset Management Program
- Solution modules interact with the GIS-based Inventory created for the VUEWorks software

**Core**



Welcome, Administrator

- Administration
- Document Link
- Service Requests
- Work Orders
- Resource Manager
- Facilities
- Fleet
- Land
- Meters
- Parks
- Pavement**
- Permitting
- Sewer
- Traffic

10 Assets Selected

Asset ID	Layer	Location
10226	Centerlines	143RD AVE - 10779
12255	Centerlines	YORK ST - 11985
12452	Centerlines	142ND AVE - 840
12494	Centerlines	142ND AVE - 13358
4744	Centerlines	142ND PL - 11445
5294	Centerlines	143RD AVE - 3788
6886	Centerlines	YORK ST - 9334
7077	Centerlines	YORK ST - 9811
7619	Centerlines	142ND AVE - 8070
9185	Centerlines	141ST PL - 9359

Map Scale: 1:36,111

# MAP-CENTRIC ASSET INVENTORY

Welcome, Administrator

Map Scale: 1:36,111

**Manage Facilities**  
Filter is OFF - 2 of 2 Facilities in Asset Class

Facility | Table | Filter | Reports

Views: Primary View | Location | Enviro | Life - Safety

Details: A Attributes

Save Cancel

Field Name	Value
Make	Wall Vacuum
Model	1st Ever
Install Year	07/07/2012
Cost	1500
Manufacturer	Hoover
Air Flow (CFM)	50

Facility Type: Building GIS Layer: No association

Delete Facility New Facility Close

1 of 2

Multi-Edit

# FACILITIES - GIS REFERENCED

**Mass DOT**

- Welcome, Administrator
- Administration
- Document Link
- Service Requests
- Work Orders
- Resource Manager
- Signals**
  - Administer Facilities
  - Administer Facility Settings
  - Manage Facilities
  - Condition
  - Valuation
  - Signs**

Signals: INTN-40006

**A** Attributes

Cancel Save

Location*	INTN-40006
Description	Intersection 40006, Route 129 (Salem St.), U.S. 1 Ramps, LYNNFIELD
Signal ID	40006
Signal Type	Intersection
Municipality	LYNNFIELD
Major Route	Route 129 (Salem St.)
Minor Route	U.S. 1 Ramps
Landmark	
District	4
Parent	D4-SIG-INTN
MassDOT.DBO.Signal	4

1 of 1 Show All

Map Scale: 1:2,256

## Traffic Ancillary Structures

**Manage Facilities**

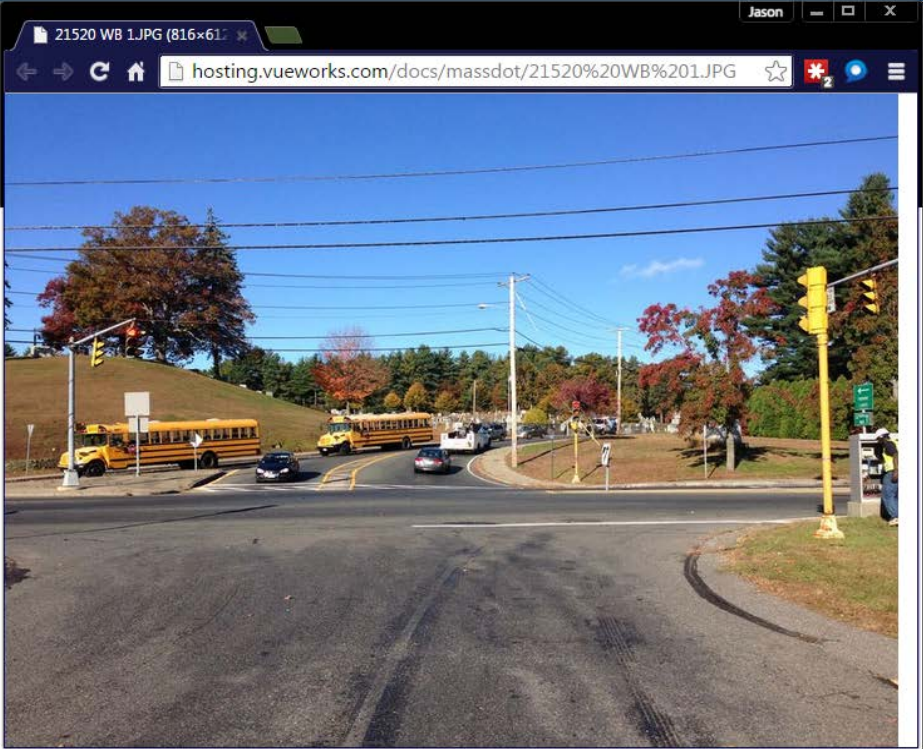
Filter is OFF - 100 of 1530 Facilities in Asset Class

Facility Table Filter Reports

Views

Primary View View 1 View 2 View 3

- INTN-21520
  - Retired Assets
  - Cabinet-CNT
  - Pole-SGNLSTR01
    - Signal-0009
  - Pole-SGNLSTR02
    - Signal-0010
  - Pole-SGNLSTR03
    - PPB-0012
    - Signal-0013
    - Signal-0014
    - Signal-0015



Roll-up Documents from level below

Facility Type: Intersection GIS Layer: Signals Linked To asset: [INTN-21520](#) [Remove GIS Link](#)

[Delete Facility](#) [New Facility](#) [Close](#) 1 of 100

# Traffic Ancillary Structures

Facility

Filter is OFF - 2 of 1 Facilities in Asset Class

Facility Table Filter Reports

Views

Primary

20-064/00-058.61

- 62 - Culverts
- 61 - Channel Protection
- 60 - Substructure
- 58-Deck-1
- 59 - Superstructure-1

Details

Pictures

GIS Attributes Bridge ID Condition Documents Work Orders

WV\_Kanawha\_Bridg

Field	Value
OBJECTID	273
BARSID	20A405
LAT	38.36008623
LONG_	-81.63273597
NOTES	LOWER DECK
OLDBARS	40520A
ID	2651.00000000
BRNUM	20-064/00-058.61
DIR	NB
LOCNAME	BIGLEY AVE I-64E - I-77N
FEATINT	I-77N - I-64W US-119S
LOCATION	0.36 MI E OF US 60
BRTYPE	STEEL BX BM/GIR
LENGTHft	1560.00000000
WIDTHft	52.50000000
VEHIC	V

**CULVERTS**

Welcome, Administrator  
 Administration  
 Document Link  
 Service Requests  
 Add New Service Request  
 Find / Manage / Report  
 Open My Service Requests  
 Archive / Restore / Undelete  
 Administer Settings  
 Work Orders  
 Resource Manager  
 Facilities  
 Fleet  
 Land  
 Meters  
 Desktop

H Home Page

**Search by Address Information:**  
 Meter Number:  
 Address:  
 Locate Select Clear  
 Help Service Calls Work Orders  
 Operations Dashboard

Map Scale: 1:36,111

Select From

### Manage Service Requests

Filter is ON - Current list contains 13 out of 83 Service Requests

Form View Table View Filter Reports Assets

ID: 022715-5 Logged By: Administrator 02/27/2015 08:27 AM  
 Type \* Quick Response  
 Department \* Stormwater  
 Group Maintenance  
 Issue \* Flooding  
 Location: 0 - 040000  
 Assigned To: SW User 02/27/2015 8:27 AM

Status: Open Date / Time Occurred: 02/27/2015 8:27 AM  
 Date / Time Responded To: Now

Send Email to Notification List on Save

Details Linked Calls Documents Work Orders Assets Comments

Description: Localized flooding in the neighborhood  
 Response: Investigated Flooding and found a clogged storm water inlet.

**Caller Information** Copy from  
 Name of Caller: Jason Amadori  
 Address of Caller: 3680 Avalon Park Blvd East, Suite #200, Suite #  
 Relation to Owner: Self  
 Phone: Mobile (407) 382-5222  
 Email: jamadori@dtsgis.com Auto Send

**Occupant Information**  
 Occupant: Jason Amadori  
 Address: 0 - 040000  
 Phone: Home (407) 382-5222  
 Email: info@vvieworks.com Auto Send

**Owner Information**  
 Owner: Jason Amadori  
 Ref #: 1234  
 Address: 3680 Avalon Park Blvd East, Suite #200, Suite #200, Ori  
 Phone: Home (407) 382-5222  
 Email: info@vvieworks.com Auto Send

**Linked Calls**  
 Duplicate Calls Reporting the same incident of Flooding
 

- 022715-6 Caller: Kirsten Koehn
- 022715-7
- 030315-4 Caller: Kirsten Koehn
- 051215-1

\* Required Fields

Save Delete New Print... Close

1 of 13

# SERVICE REQUEST

- **Any number of Labor Types and Equipment Types can be added**
- **Can Track Estimated vs. Actuals**
- **Can be automated based on triggers from Service Requests or executed Manually**
- **Can be set up as preventative maintenance or quick response work orders**

**WORK ORDER**

**MDOT**

Scale: 1:1,128 Base Map: World\_Imagery

Network (LRM): Route-MP

- Log Out
- Set Preferences
- Launch Dashboard
- Help
- Administration
- Document Link
- Service Requests
- Work Orders**
  - Add New Work Order
  - Add Work Orders to Selected Assets
- Find / Manage / Report
- Open My Work Orders
- Open Work Order Calendar
- Archive / Restore / Undelete
- Administer Settings
- Resource Manager
- MobileVUE
- Culverts

Route Location

Network (LRM): Route-MP  
Unit of Measure: esriMiles  
Status: OK

Location

Route ID: 2089\_01  
Measure: 7.30616942413671

**Add Work Orders directly from the spatial view**

The image shows a web-based interface for MDOT. On the left is a navigation menu with 'Work Orders' highlighted in yellow. The main area is a satellite map of a road intersection. A yellow line with a red arrowhead is drawn on the road, representing a work order. A pop-up box on the right provides details for the 'Route Location' and 'Location'. A text box at the bottom of the map area says 'Add Work Orders directly from the spatial view'.

# WORK ORDER



Filter is OFF - Current list contains 155 out of 190 Work Orders

- Select Field -

Apply Filter

Form View Table View Filter Reports Assets

Delete All Close All Open All Assign All Calendar

1 of 50

ID	Activity Description	Log Date	Assigned To	Status	Logged By	Location
18	070115-002 Pothole Filling	07/01/2015 04:13 PM		Closed	Dylan Froman	
19	070115-001 Pothole Filling	07/01/2015 08:46 AM		Closed	Dylan Froman	
20	063015-003 Railroad Crossing - Close Clearance Insp	06/30/2015 04:22 PM		Closed	Administrator	
21	063015-002 Right-of-Way Permit	06/30/2015 04:16 PM		Closed	Administrator	
22	063015-001 Right-of-Way Permit	06/30/2015 04:11 PM		Closed	Administrator	
23	062915-001 Crack Sealing	06/29/2015 07:17 PM	Dylan Froman	Closed	Dylan Froman	SECOND ST - 8916
24	061815-001 Sign Maintenance	06/18/2015 11:22 AM	Streets	Open	Administrator	0 - L-18009
25	051215-002 Clear Debris	05/12/2015 10:17 AM	Administrator	Closed	Administrator	139TH AVE - 3680
26	042415-002 Clear Debris	04/24/2015 05:02 PM		Closed	Administrator	
27	042415-001 Inspect Pipe	04/24/2015 08:44 AM		Closed	Administrator	Milwaukee Ct - MILWAUKE
28	042315-001 Inspect Pipe	04/23/2015 08:44 AM		Closed	Administrator	AVOCET CIR - 12855
29	040215-002 Mill & Overlay	04/02/2015 05:12 PM	Administrator	Closed	Administrator	
30	040215-001 Plowing	04/02/2015 12:31 PM	Administrator	Closed	Administrator	
31	033115-007 Pipe Inspection	03/31/2015 10:04 PM	Administrator	Closed	Administrator	G08014
32	033115-006 Pothole Filling	03/31/2015 09:57 PM	Administrator	Closed	Administrator	DOWNING ST - 11182
33	033115-005 Inspections	03/31/2015 09:38 PM	Administrator	Closed	Administrator	Test

Columns Save Layout Restore Layout Export To Excel

1 of 4

\*Required To Close

Save Close

# WORK ORDER

**Manage Work Orders**

Filter is ON - Current list contains 65 out of 66 Work Orders

Form View | Table View | Filter | Reports | Assets

ID: 120314-4 | Logged By: Jason | 12/03/2014 10:01 AM

Type\*: General

Region\*: Grand

Activity Description\*: Sign - Inspect

TSC\*: Ann Arbor

Location: [ ]

Description: [ ]

Assigned To: Unassigned | 12/03/2014 10:01 AM

Status: Open | Priority: 1

Begin Date / Time: 12/03/2014 9:00 AM

End Date / Time: 12/03/2014 10:00 AM

Send Email to Notification List on Save

Set Recurring | Calendar

Form: Sign Install

Details | Costs | **Tasks** | Labor | Equipment | Inventory | Assets | Documents | Work Orders | Comments

	Order	Completed	Task Description	Notes	Date	Time
1	1	<input checked="" type="checkbox"/>	Field Mobilization		12/03/2014	09:02 AM
2	2	<input checked="" type="checkbox"/>	Initial Field Check		12/03/2014	09:01 AM
3	3	<input checked="" type="checkbox"/>	Support Inspection		12/03/2014	09:01 AM
4	4	<input checked="" type="checkbox"/>	Panel Inspection		12/03/2014	09:01 AM
5	5	<input type="checkbox"/>	Select Contractor			
6	6	<input type="checkbox"/>	Close Work Order			
7		<input type="checkbox"/>				

**Required Tasks are highlighted in Red and must be closed out before Work Order can be closed.**

\*Required \*To Close

Save | Delete | New Copy | New | Print... | Close

Rec 1 of 65

# WORK ORDER

Centerlines: 6347

**C Condition**

Select Record: 12/9/2014

**Record Documents**

Asset updated successfully

**Asset Condition**

Asset Class: **Pavement**  
 Asset Type: **Centerlines**  
 Form: [Simple PCR](#)  
 Pavement Condition Rating: 73

Potholes	NR
Visible Patches	80
Transverse Longitudinal Cracks	70
Alligator Cracks	70
Spider Cracking	50
Surface Ravelling	70
Rutting	80
Deflection	70
Rideability	NR

**Inspection**

By Inspection  Assigned  Override

Record Date: 7/27/2015 1:49 PM

Recorded By: Administrator

Potholes: 9 / 90

Visible Patches: 8 / 80

1 of 1 Show All

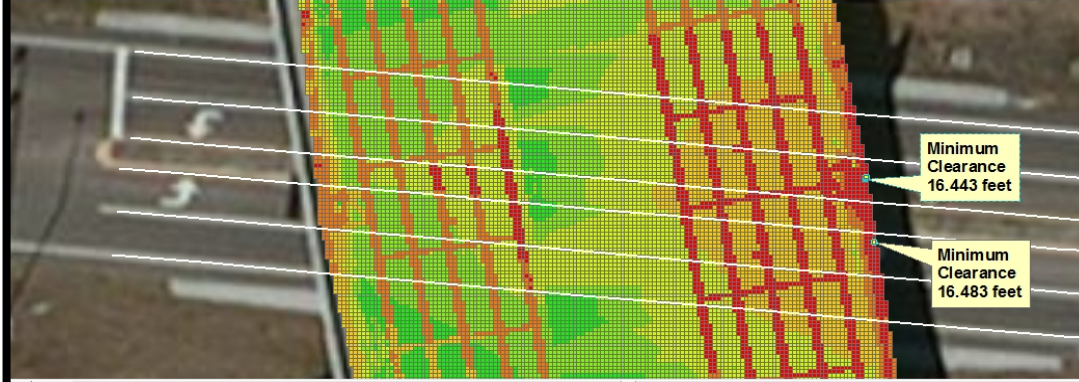
Select From: All Layers

- Add to selection
- Replace selection
- Remove from selection
- Keep

Click on map to select assets...

Map Scale: 1:18,055

# Condition



FID	Shape	XMIN	XMAX	YMIN	YMAX	POINTID	GRID_CODE	ELEV	XMIN_1	XMAX_1	YMIN_1	YMAX_1	POINTID_1	GRID_CODE	MINIMUM
2214	Polygon	47951	47951	137984	137984	15282	74.666748	74.666748	479516	479517	1379842	1379843	18717	58.222752	16.443
2232	Polygon	47951	47952	137982	137982	17622	74.766182	74.766182	479518	479519	1379825	1379826	23218	58.283001	16.483

Condition Rating		Roll-up	
Roll-up Values		Settings	
Condition Date			
4/11/2013		<a href="#">Recalculate for this F</a>	
<input checked="" type="checkbox"/> Timber	74	100%	37
Timber Trusses, Covered Bridges, and 70 Arches 1		100%	14
Special Inspections - Timber Covered Bridges 1	80	100%	16
Timber Multi-Beam 1	90	100%	18
Rods and Cables used in Timber 1	60	100%	12
Timber Slab 1	70	100%	14

**Details**

Attributes | Work Orders | **Condition** | Data Link | Documents | Pictures

**Condition Rating**

Delete [New] [Clear] [Save] [Cancel] [View]

Previous: 6/8/2003 Next: N

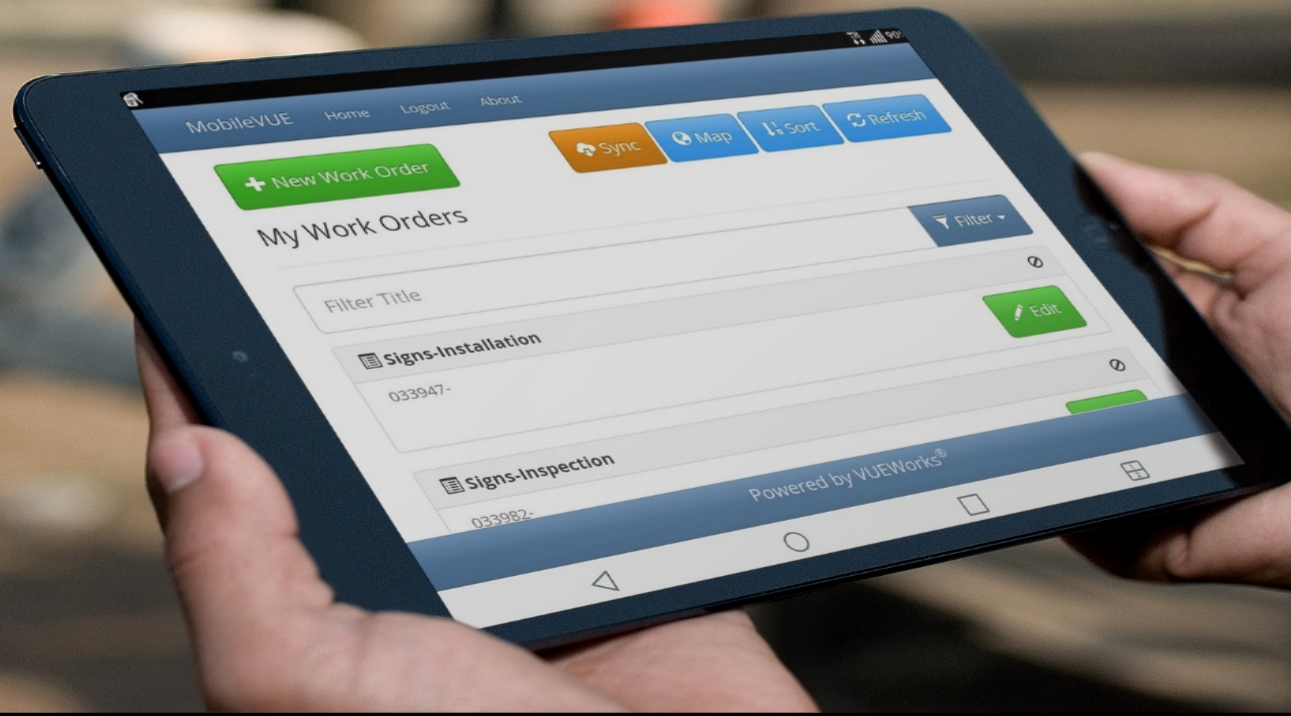
**Defect Ratings**

Defect	Severity	Extents	Deduct
Corrosion	15	4%	1
Cracking - Fatigue	20	20%	4
Connections	40	10%	4
Scour	10	50%	5
Settlement	NR	100%	0
Load Capacity	NR	100%	0

# Condition

## Tunnels and Movable Bridges

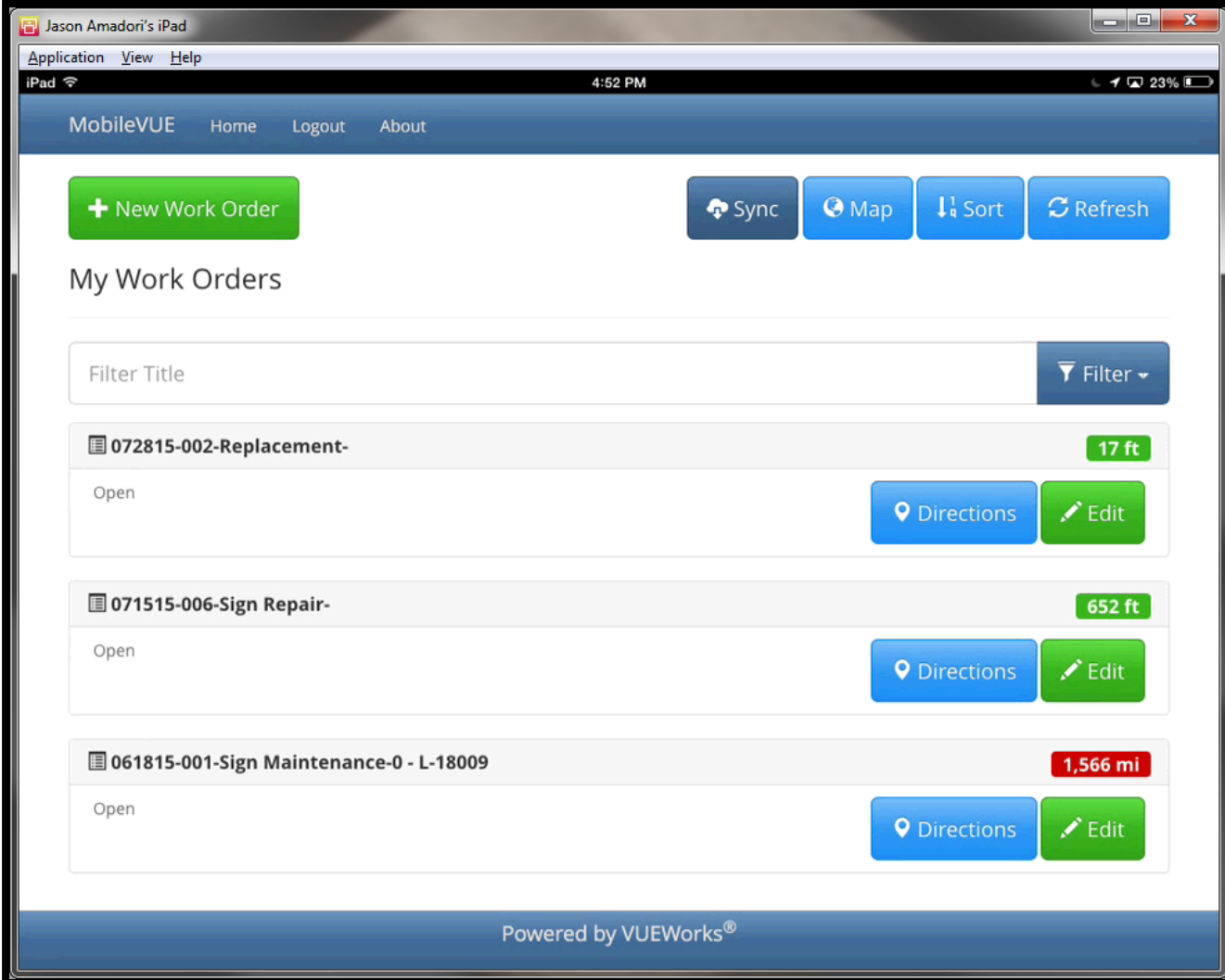
**MOBILEVUE**



Get the asset information

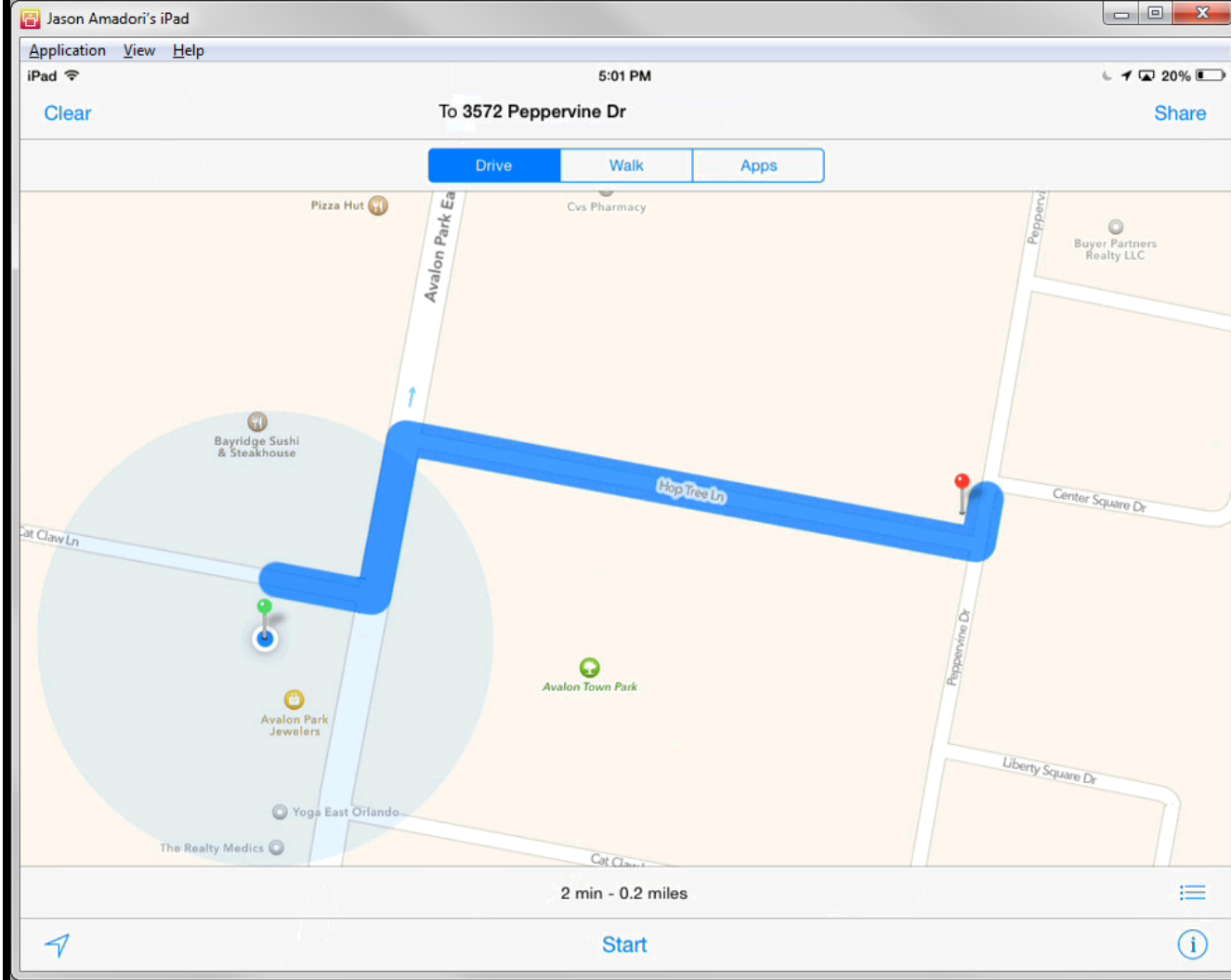


Retrieve Work Order Information –  
Asset, Geo Location, Work Order

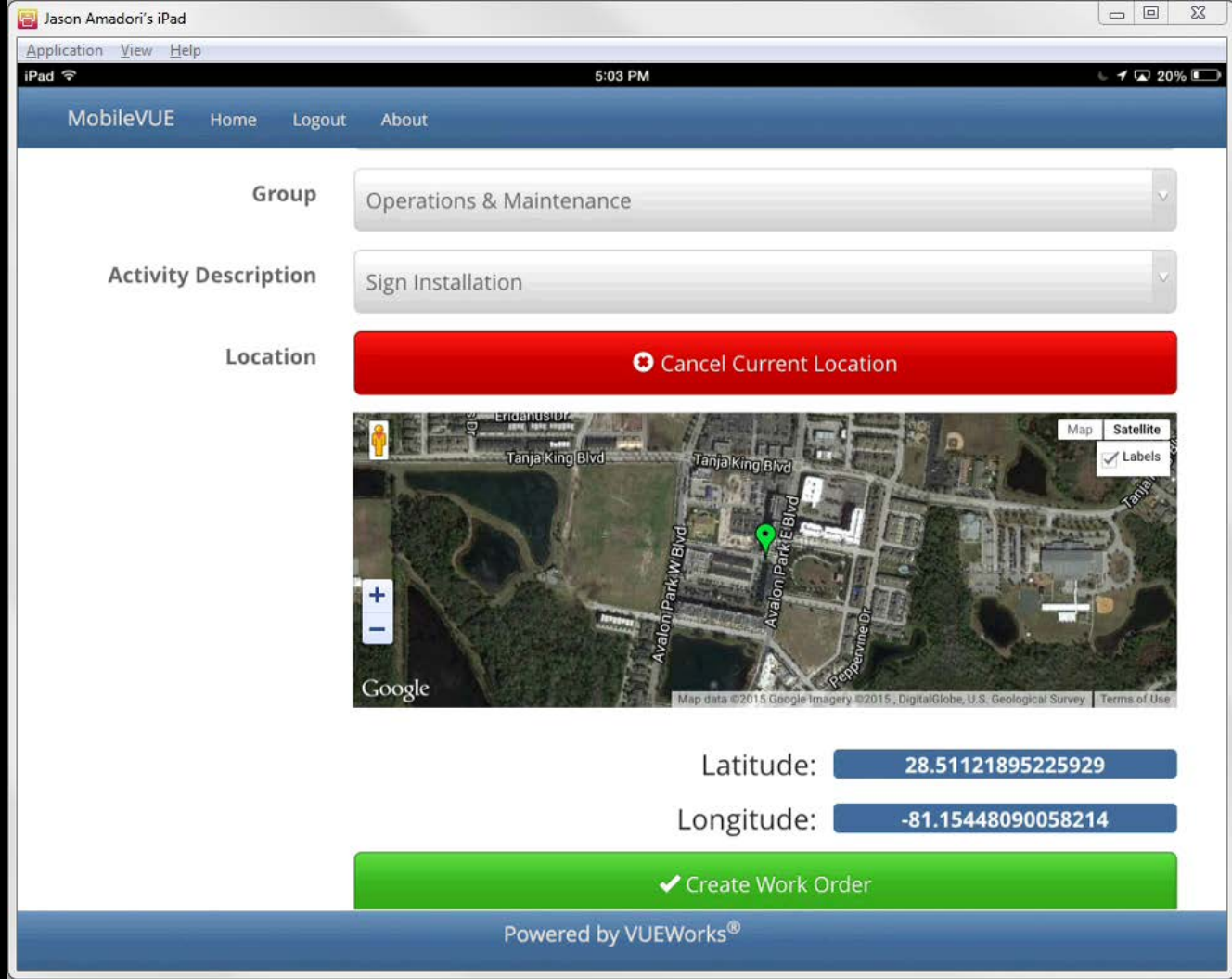


# Work Orders

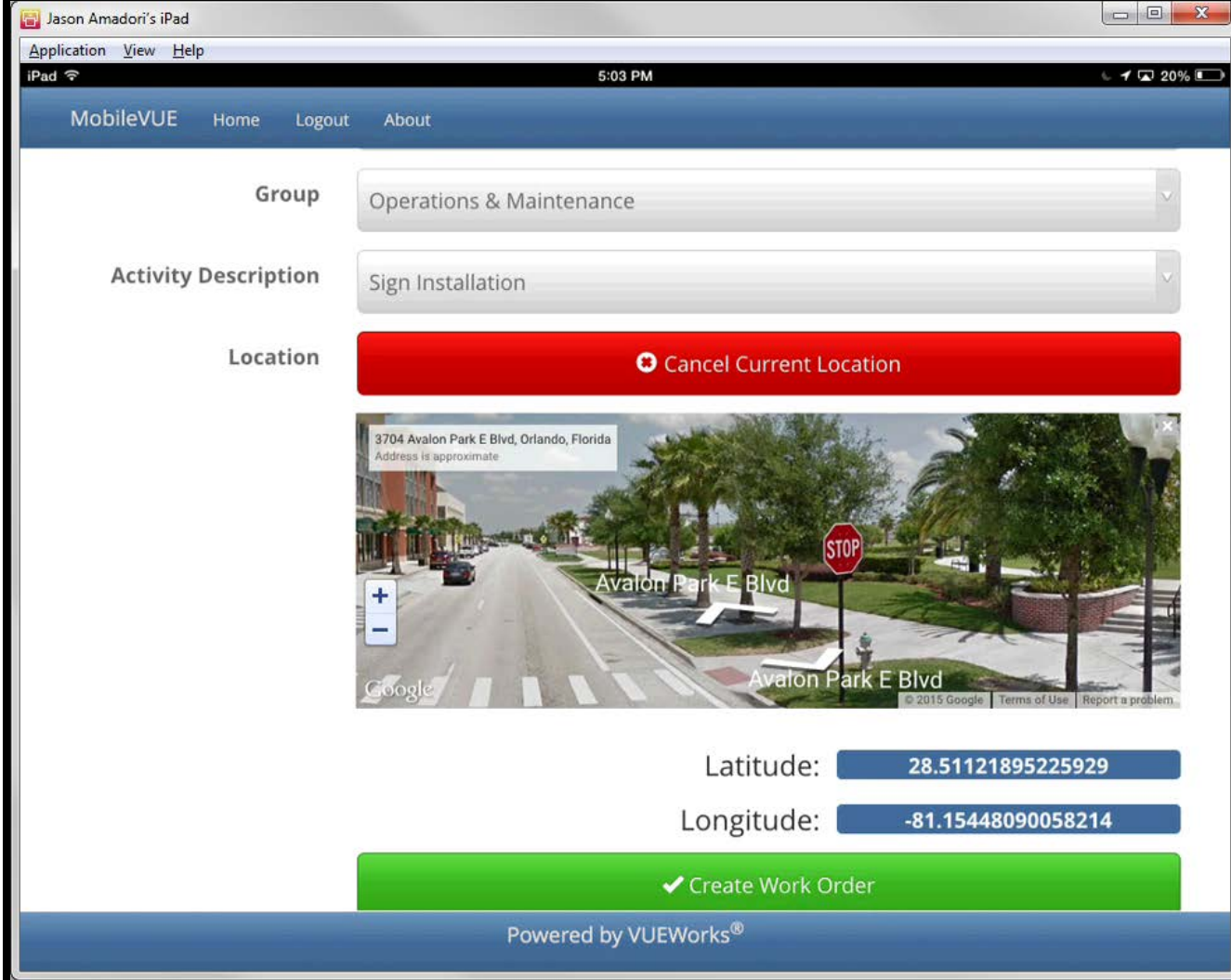




Driving directions



Driving directions



Street View from Google