UC751
Story Maps, Waze, and More Help Drivers Navigate
Major Freeway Improvements
Agenda

1) What is the I-405 Improvement Project
2) Interactive (Story) Map
3) Waze / Connected Citizens Program
4) Integrating GIS with Waze
5) Keys to Success
• Reduce congestion
• Increase mobility
• Improve trip reliability
• Minimize environmental impacts
PROJECT IMPROVEMENTS

- One new regular lane in each direction
- Two Express Lanes in each direction
- New, replaced and widened bridges
- Interchange reconfigurations
- New and replaced soundwalls
- Merge lane improvements
- New bike lanes and sidewalks
Interactive (Story) Map

- Tells a story
- Dynamic
- Mobile-friendly
Everyone has a story to tell

Construction information can be inundating. Using a Story Map to combine narrative text with maps, images, and multi-media content in an engaging, full-screen scrolling experience.
OCTA in cooperation with Caltrans is widening the San Diego Freeway (I-405) between SR-73 and I-605. The project will improve 16 miles of I-405 between the SR-73 freeway in Costa Mesa and I-605 near the L.A. County line.
I-405 Improvement Project

Ward St

Talbert Ave

Anticipated Start: 2019
Bridge CLOSED during construction

Project Improvements:
- 2 new lanes of travel
- New bike lanes on both sides of the bridge

Talbert Avenue

Anticipated Start Date: 2019
Bridge Will be Closed During Construction.

Brookhurst St

Slater Ave

Bushard St
Mobile App in Development:

- Access the project information
- E-blast notifications
- Current traffic conditions
- Interactive (Story) Map
- Launch or Ask to install Waze App
3

Waze / Connected Citizens Program

- Actionable data
- Be PROACTIVE
- Leverage Kleinfelder’s agreement with Waze
ArcGIS Online + Waze

- Share data with everyone
- Leverage an app already popular with constituents & commuters
Sharing data with Waze

User-reported incidents:
Accidents, traffic jams, hazards, construction, potholes, stopped vehicles, objects on road

Waze Map Editor: Browser based waze map

Data feed from ArcGIS Online:
Closures and Construction attributes become actionable for navigation on Waze
ArcGIS Online & Waze Integration Lessons Learned

Data Service Feed:
- Hosted vs. Published
- Time zone Issues
- Data Formatting
- Anomalies
- Persistent Closures
<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Time</th>
<th>Status</th>
<th>Result</th>
</tr>
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<tbody>
<tr>
<td>4/24 - 4/25/18</td>
<td>NB 405 Harbor Blvd. On-Ramp</td>
<td>4/24: 10:00am – 2:00pm</td>
<td>4/24: No</td>
<td>4/24: Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4/24: Not Visible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remained Visible After 2:00pm</td>
</tr>
<tr>
<td>4/24</td>
<td>1:21pm</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4/25</td>
<td>1:22pm</td>
<td>4/25:</td>
<td>4/25:</td>
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<tr>
<td>4/25</td>
<td>3:45pm</td>
<td></td>
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</tbody>
</table>
ArcGIS Online & Waze Integration Lessons Learned

Hosted Feature Service:

• **Prevented data updates** after REST Admin schema changes page

• **Appending limits** to hosted feature layer checkout

• **Losing sync functionality** when zooming during desktop edits on checkout
  (Esri Support Ticket – possible bug)

• **Time zone synchronization** issues between Input vs. database vs. Waze
ArcGIS Online & Waze Integration Lessons Learned

- Timezone sync issues – shows up too early or staying on too late
- Waze – preferred format: yyyy-MM-dd'T'HH:mm:ss+HH:mm
- Daylight Savings Time shift Los Angeles GMT = -8 hrs. DST = -7 hrs.
ArcGIS Online & Waze Integration Lessons Learned

- Original hosted web service data feed: Used the default date/time field

ArcGIS Online View

JSON View

```json
{
    "attributes": {
        "OBJECTID": 5125,
        "ST_NAME": "Exit 15A: Warner Ave E",
        "ST_NM_BASE": "SB Warner Off-ramp",
        "ST_TYP_AFT": "RAMP",
        "ST_ID": "Exit 15A: Warner Ave E_RAMP_5284",
        "location_description": "SB Warner Off-ramp",
        "TYPE_": "ROAD_CLOSED",
        "description": "I-405 Improvement Project",
        "FULLCLOSE": "Yes",
        "DIRECTION": "Southeast",
        "BLOCKOCCUR": "Recurring",
        "ACTIVE": "Yes",
        "STARTDATE": 1513666800000,
        "ENDDATE": 1514287400000,
        "CONTACT": "TEST LOCATION 5",
        "created_user": "BMyers_KLF",
        "created_date": 1510250461000,
        "last_edited_user": "LSelleck_KLF",
        "last_edited_date": 1510252936000,
        "Shape_Length": 0.004000671,
        "GlobalID": "212aea00-03ad-4264-acb0-5fe3e6891e9f",
    }
}
```
ArcGIS Online & Waze Integration Lessons Learned

- Testing Input on ArcGIS Online from Eastern Daylight Savings Time (EDT)
- Posted timestamp were not converting properly

Waze Time Conversion

start_time ➔ 04-30-2018 16:00:00 GMT (-8 hrs) – No Daylight Savings
expected_end_time ➔ 05-04-2018 22:00:00 GMT (-2 hrs) - incorrect time
ArcGIS Online & Waze Integration Lessons Learned

Data Service Feed Solution:

- Published Service
- Set Timezone
- Parsed Date and Time

- Success!?!?
- More predictable output
- Still have a few anomalies
ArcGIS Online & Waze Integration

Lessons Learned

Data Service Feed:
- Segment Geometry and Direction
- Street Name Matching
- Persistent Closures

GIS Data Clean Up

Segments and Direction

HOV Lanes Added

Street Name Matching
ArcGIS Online & Waze Integration Lessons Learned

Data Service Feed: Persistent Closures

- Turned off service
- Checked Waze Map Editor (WME)
- Closures unexpectedly migrated to WME
- Eventually allowed to delete
Keys to Success
Keys to Success

- Leverage data thru ArcGIS Online
- Plan ahead and test
- Don’t reinvent the wheel
- Be inspired to try something new
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