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

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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
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.
Overview

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/SR-73 Connector

Fairview Rd

Harbor Blvd

Santa Ana River
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

Anticipated Start Date: 2019

Bridge Will be Closed During Construction.

Brookhurst St

Slater Ave

Bushard St

Los Alamos Park

La Tortola Ave

La Despensia Ave

2019

2020

2021

Future Connector

Closures

Detours
Mobile App in Development:

- Access the project information
- E-blast notifications
- Current traffic conditions
- Interactive (Story) Map
- Launch or Ask to install Waze App
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
# ArcGIS Online & Waze Integration Lessons Learned

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Time Period</th>
<th>4/24:</th>
<th>4/25:</th>
<th>4/25:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/24 – 4/25/18</td>
<td>NB 405 Harbor Blvd. On-Ramp</td>
<td>10:00am – 2:00pm</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/25:</td>
<td>10:00pm – 2:00am</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4/24: Not Visible remained visible after 2:00pm

4/24: 1:21pm

4/25: 1:22pm

![Map and Screenshots](image-url)
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": 1547287400000,
    "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": "212aae00-03ad-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
DISCUSSION & QUESTIONS