Partnership Towards Sustainable South Florida

U.S. DOT TIGER University City Prosperity Project
http://cake.fiu.edu/TIGER2013

Institutional Lead: Kenneth Jessell
- Senior Vice President and Chief Financial Officer

Principal Investigator: Naphtali Rishe
- Director, NSF Industry-University Collaborative Research Center at FIU and FAU
- TerraFly technology funded at $50M
- The Inaugural Outstanding FIU Professor

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Lead Coordinator: Thomas Gustafson
- Former Speaker, Florida House of Representatives
- Director of Research Programs, FIU Office of Finance

University of Illinois Lead on Intelligent Transportation: Ouri Wolfson
- Director, NSF Program in Computational Transportation Science (CTS) a UIC
- Recognized as Founder of CTS by Fellowships in ACM, IEEE, and AAAS
- Keynote speaker at major conferences on computational transportation
- University of Illinois System Scholar
Crowdsourcing: Parking navigation

How Can Your Smartphone Use Game-Theory to Valet-park Your Car?

Problems to address:

- Average cruise-time for parking: 8 minutes
- 30% of congestion in major cities
- 1,825 vehicle miles traveled per year per slot
TerraFly 1: Data Search (Example: Parcels)

![Map of Miami Beach area with property details]

Change location by browsing and double-clicking the map or browse local towns or zipcodes or FL or World.

<table>
<thead>
<tr>
<th>Folio</th>
<th>Use</th>
<th>Just Value (US$)</th>
<th>County assessed value (US$)</th>
<th>Land Value (US$)</th>
<th>Land area (sq.ft.)</th>
<th>Year improved</th>
<th>Owner</th>
<th>County</th>
<th>Address</th>
<th>USD/sqft (US$)</th>
<th>Sale history</th>
</tr>
</thead>
<tbody>
<tr>
<td>232220170080</td>
<td>Residential--Single-family</td>
<td>$751K</td>
<td>$264K</td>
<td>$415K</td>
<td>9700</td>
<td>1946</td>
<td>JOSE GALDO 8W NANCY</td>
<td>NURSERY SUB PB 23-66</td>
<td>4266 CHASE AVE</td>
<td>$257.462</td>
<td>2917</td>
</tr>
</tbody>
</table>

Data is from terranode-246.cs.fiu.edu...
TerraFly 2: Route Dissemination & Analysis (AutoPilot)
TerraFly-ALTA
Informed Traveler Program & Applications (ITPA)

Personalized, predictive, situation-aware multi-modal routing suggestions

- Automotive roadway re-routing
- Transit alternatives
- Alternate destinations and times
- Interface with Smart Parking Garages
ITPA Technologies

- Advanced Information Technology Platform
- Intelligent Transportation Systems
- Smartphone apps
UniversityCity ITPA Prototype

Intelligent Travelers

Console, Dashboard

Analytics, Reports
Mobile
Workflow
Prediction
Rules, Decisions, Events
Provisioning

MQ - Traffic
SQL - Events
SQL - Accidents
MQ - Weather
HTTP - Maps
MQ - Parking
HTTP/MQ - HOT (Notification)
MQ - Parking Sensor

SQL - Database

LTPA/JACC - LDAP, Access Control, Identity

Apple App Store
Google App Store

NSFCAKE - National Science Foundation Industry-University Cooperative Research Centers for Advance Knowledge Ecosystem
Informed Traveler Program & Applications

PHASES

0. Work Plan Development
   (MDX; Dr. Hadi et al 12/2013-1/2014)

1. Parking, Transit Feeds
   (US DOT; Dr. Rishe et al 2/2014-)

2. ITPA System Development

3. Localized Robust ITPA Deployment