Westpark Tollway

University of Hawaii at Manoa
CEE 491 – Group Project 2
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Overview

- Project Description & Cost
- Project Use and Social Benefits
- Economic Benefits
- Awards and Innovations
- Technical Issues
- Social and Policy Issues
General Information

- Texas
- 2002 - 2005
- Harris County Toll Road Authority
  - Westpark Tollway
  - Maintains & Operates Tollway
- Fort Bends County Toll Road Authority
  - Fort Bend Westpark Tollway
- Funded
  - Existing Toll Road Funds
  - Bond Sales
Westpark Specifications

- 20 miles
  - Westpark Tollway – 14 miles
  - Fort Bend Westpark Tollway – 6 miles
- Approximately 46 Million Users
- Electronic Tollway
  - EZ Tag, TollTag, & TxTag
Westpark Map

Grand Parkway to I-610
Cost

- 260 Million Dollars
- Tollway Cost
  - Axle Amount
  - Sections
- 2 Axle Total Cost
  - West Bound - $5.40
  - East Bound - $6.40
# East Bound: I-10 to Grand Parkway

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>2 Axles</th>
<th>3 Axles</th>
<th>4 Axles</th>
<th>5 Axles</th>
<th>6 Axles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peek Road Mainlane (Fort Bend)</td>
<td>pass through</td>
<td>$0.60</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.60</td>
<td>$3.25</td>
</tr>
<tr>
<td>Harlem / Grand Mission Mainlane (Fort Bend)</td>
<td>pass through</td>
<td>$0.60</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.60</td>
<td>$3.25</td>
</tr>
<tr>
<td>Wilcrest East Mainlane</td>
<td>pass through</td>
<td>$1.25</td>
<td>$3.00</td>
<td>$4.00</td>
<td>$5.00</td>
<td>$6.25</td>
</tr>
<tr>
<td>Beltway 8 (to southbound Sam Houston)</td>
<td>exit</td>
<td>$0.50</td>
<td>$1.25</td>
<td>$1.75</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>Gessner Road East</td>
<td>exit</td>
<td>$0.35</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.10</td>
<td>$2.45</td>
</tr>
<tr>
<td>Fondren Road</td>
<td>exit</td>
<td>$0.50</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>Fondren East Mainlane</td>
<td>pass through</td>
<td>$1.25</td>
<td>$3.00</td>
<td>$4.00</td>
<td>$5.00</td>
<td>$6.25</td>
</tr>
<tr>
<td>Fondren Eastbound</td>
<td>on ramp</td>
<td>$0.65</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.60</td>
<td>$3.25</td>
</tr>
<tr>
<td>South Post Oak Blvd</td>
<td>exit</td>
<td>$0.35</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.10</td>
<td>$2.45</td>
</tr>
<tr>
<td>Westpark Drive East</td>
<td>exit</td>
<td>$0.35</td>
<td>$1.00</td>
<td>$1.50</td>
<td>$2.10</td>
<td>$2.45</td>
</tr>
</tbody>
</table>
Project Use and Social Benefits

- Used as a limited-access toll road; restricted to vehicles having a transponder unit attached
- Uptown Houston is the second largest business district in Houston and hosts nearly 200,000 office workers and shoppers each day
- Rapidly growing west and southwest Houston communities receive direct and exclusive access to the central part of the city, including Uptown Houston
Economic Benefits

- Total revenues:
  - $292,193,930 (2004 fiscal year)
  - $336,552,690 (2005 fiscal year)
  - $373,271,267 (2006 fiscal year)
  - $437,860,519 (2007 fiscal year)
  - $487,129,967 (2008 fiscal year)

- Portions of the revenues collected are used to pay back the bond that financed the construction of the tollways within Harris County and maintenance.

- Major county industries (i.e. manufacturing, shipping, and tourism) benefit from the tollway.
Awards and Innovations

- 2005 – International Bridge, Tunnel and Turnpike Association President’s Award for Technology
  - First all-electronic toll road
  - Toll plazas are equipped with TAG readers, violation lights, and cameras
  - Transponder units (EZ TAGs) adhere to the inside of the windshield
    - Electronically deducts tolls
    - Pre-paid and rechargeable
  - Provides a safer toll road
  - Allows for non-stop, highway speed travel
Awards and Innovations

- 2007 – Texas Outstanding Civil Engineering Achievement Award
  - Electronic toll system
  - Limited width of the right-of-way
    - Constructed many types of retaining walls
      - Mechanically stabilized with geo piers
      - Depressed retaining walls with compression struts
      - Drilled shafts, sheet piles, tie-backs
  - Over 300 utility conflicts
    - Installed conduits between drill shafts and through bridges
    - Pave over existing utilities
Technical Issues

- **Two Large Cracks**
  - 300 feet and 100 feet long
  - Possibly caused by soil erosion from problems with the detention basin
  - Repair Cost ~ $2 million

- **Drainage Problem**
  - Cause is unknown
  - Roadway is constantly wet
  - Depressed section
  - Water table rise, groundwater leakage, nearby lake
Technical Issues

- Drainage Problem
  - Wetness has caused accidents
  - Section has to be redone, leading to closure
  - Repair cost ~$3.1 million
Social and Policy Issues

- Repairs and Reconstruction
  - No authorization without explanation
  - Close two sections of tollway for 45 days

- Toll Increase
  - 2007 – Suggestion to double the toll during peak hours to “decongest” was cancelled
  - But $0.25 increase implemented for all toll roads in Houston

- EZ TAGs
  - Out-of-state travelers
  - Lack on information
  - Situation has improved
Thank You!