AGENDA

PROJECT HISTORY

PROJECT OVERVIEW

THE VALUE ENGINEERING PROCESS

THE RESULTS
I-4 BEYOND the ULTIMATE PROJECT HISTORY

1961 Construction

Mid 1970s HOV Lanes Designated

1990 Received Auxiliary Lanes

Early 1990s Reached Capacity

2012 Ban on Tolls Expired
I-4 ULTIMATE PROJECT LOCATION AND LIMITS

53 Bridges to be ADDED

71 Bridges to be REPLACED
I-4 BEYOND the ULTIMATE
I-4 BEYOND the ULTIMATE

PROJECT OVERVIEW

CURRENTLY in PD&E

SCOPE

RECONSTRUCT the 41 Miles of Roadway

135 bridges and total length = 17.7 miles of bridge

ADD Two Express Lanes in Each Direction

Interchange Reconstruction

Multiple Design & Construction Contracts

NEPA APPROVAL

22 Reconstructed Interchanges
# DESIGN CHALLENGES

<table>
<thead>
<tr>
<th>535</th>
<th>VIADUCT</th>
<th>528</th>
<th>WEKIVA PARKWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the Main Access Points to Disney</td>
<td>Numerous Hotels Adjacent to the Right of Way</td>
<td>Connectivity to Toll Lanes and Nearby Convention Center</td>
<td>System to System Interchange with Express Lane to Toll Facility Connectivity</td>
</tr>
<tr>
<td>17/92 Interchange</td>
<td>Saxon Interchange</td>
<td>472</td>
<td>Typical Section</td>
</tr>
<tr>
<td>Grade Separate over the SunRail and CSX Corridor</td>
<td>Significant Residential Relocations Required</td>
<td>Proposed Medical Center and Shopping Area</td>
<td>Future Maintenance Considerations</td>
</tr>
</tbody>
</table>
SR 535 TODAY

- Heavily Commercialized All Around the Interchange
- Entry to Downtown Disney
- Partial Diamond Interchange
- Intersection Failure Causing Traffic to Back Up to the Main Line
Challenged the VE Team to Think Outside the Box for an Innovative Solution
> I-4 is at Grade with Drainage Swales on Each Side

> Multiple Hotels, Restaurants and Other Retail Establishments Located Adjacent to the Westbound/Eastbound Lanes

> Outlet Mall Located Adjacent to the Eastbound Lanes
Shown I-4 at Grade

Significant Impacts to a Number of Hotels
I-4 Beyond the Ultimate

Project Overview

SR 528

Today

- System-to-System Interchange
- Two-and-a-Half Level Interchange
SR 528 PROPOSED

BASE DESIGN

Four-Level Interchange

Direct Connections from Express Lanes to Toll Lanes
WEKIVA PARKWAY TODAY

> System-to-System Interchange

> Major Interchange Located One Mile South

> Major Interchange Located One Mile North
WEKIVA PARKWAY
PROJECT OVERVIEW

BASE DESIGN

Required all New Ramp Connections to International Parkway

- Direct Connections Provided from Toll to Express Lanes
- Much of the Recently Constructed Interchange will be Disregarded
Multiple Loop Ramps

Gateway to the Central Florida Zoo and Botanical Gardens and Central Florida Regional Hospital

Significant Weave Issues in the Peak PM Hour

Commuter and Freight Rail Corridor in the Interchange
Various Ramp and Intersection Improvements

Various Alternatives were Evaluated
SAXON BOULEVARD TODAY

> Four-Lane Urban Roadway with a Two-Way Left Turn Lane in the Middle

> Residents Located on both Sides Adjacent to the Corridor

Legend
● indicates Transmission Power Pole
SAXON BOULEVARD
PROPOSED

BASE DESIGN

- Impacted Residents on Both Sides of the Road
- Also Impacted Seven Transmission Power Poles
> Partial Diamond Interchange with a Loop
Provided a Loop Ramp

- Not Pedestrian or Bicycle Friendly
- Significant Amount of Commercial Development Planned for the Area
- Hospital Planned for the Northeast Quadrant of the Interchange
Existing I-4 is a Six-Lane Facility

Asphalt Travel Lanes and Ramps
TYPICAL SECTION
PROPOSED

BASE DESIGN

Provided Asphalt Express Lanes
THE VALUE ENGINEERING PROCESS

FDOT District 5, Value Engineering Coordinator

Value Engineering Performed on Each Individual Segment

High-Profile Project with Many Agencies, Governments and Businesses that will be Affected.

Identify Key Project Functions

Multi-phased Studies to Refine the Concepts and Alternatives
PARTICIPANTS

FDOT Personnel
- Design
- Construction
- Maintenance
- Traffic Operations
- Structures
- Drainage/Permitting
- Right of Way
- Utilities

Consultants
- Right of Way
- Structures
- Drainage

Planning & Environmental Management
- Design
- Construction
- Maintenance
- Traffic Operations
- Structures
- Drainage/Permitting
- Right of Way
- Utilities
VALUE ENGINEERING (VE) TEAM EVALUATION

- 73 Recommendations
- 47 ACCEPTED
- 26 NOT ACCEPTED
PROJECT OVERVIEW

SR 535 PROPOSED

BASE DESIGN

Minor Ramp Improvements

Challenged the VE Team to Think Outside the Box for an Innovative Solution
SR 535

- VE Team Recommended Utilizing a Heavily Damaged Parcel to Construct a Grade Separated Intersection with Hotel Plaza Boulevard

- Grade Separated Intersection

- Make use of Remnant Parcel

VALUE ADDED

$8.4M
*VIADUCT PROPOSED*

**BASE DESIGN**

Shown I-4 at Grade

Significant Impacts to a Number of Hotels
VIADUCT

> VE Team Proposed to Elevate the Collector-Distributor Road

> Right of Way Impacts Eliminated at Six Major Hotels Fronting I-4

> Base Design Right of Way Cost $72.5M

VALUE ADDED
$27.1M
PROJECT OVERVIEW

SR 528 PROPOSED

BASE DESIGN

Four-Level Interchange

Direct Connections from Express Lanes to Toll Lanes
SR 528

> VE Team Proposed to Shift the Interchange West so Right of Way is Only Required from One Side

> Right of Way Impacts on West Side of I-4 Only

> Eliminated Impacts to 136 Parking Spaces and Five Office Complexes

> VE Proposed to Combine some of the Ramps to Provide a 3-Level Interchange

COST SAVINGS
$15.8M
PROJECT OVERVIEW

WEKIVA PARKWAY
PROPOSED

BASE DESIGN

Required all New Ramp Connections to International Parkway

- Direct Connections Provided from Toll to Express Lanes
- Much of the Recently Constructed Interchange will be Disregarded
The Value Engineering Process

WEKIVA PARKWAY

- VE Team Proposed to Reuse the Existing Interchange and Ramps Recently Constructed
- Eliminate Six Ramps Including Two Long Flyover Ramps

COST SAVINGS $162.1M
Various Alternatives were Evaluated

Various Ramp and Intersection Improvements

PROJECT OVERVIEW

US 17-92 INTERCHANGE

PROPOSED
US 17-92 INTERCHANGE

ALTERNATIVES
US 17-92 INTERCHANGE

> VE Team Proposed to Re-align US 17-92 with Monroe Road

> Re-alignment of Two Major Roads

VALUE ADDED
$12.1M
US 17-92 INTERCHANGE

> Re-align US 17-92 with Monroe Road

> Grade Separate Over Rail Corridor
I-4 BEYOND the ULTIMATE IMPACTED RESIDENTS ON BOTH SIDES OF THE ROAD

- Impacted Residents on Both Sides of the Road
- Also Impacted Seven Transmission Power Poles
SAXON BOULEVARD

- VE Team Proposed to Shift the Alignment to Impact Parcels on the South Only
- Eliminated Impacts to 12 Homes
- Eliminated Impacts to Five Transmission Power Poles

COST SAVINGS $2.6M
BASE DESIGN

Provided a Loop Ramp

- Not Pedestrian or Bicycle Friendly
- Significant Amount of Commercial Development Planned for the Area
- Hospital Planned for the Northeast Quadrant of the Interchange
The Value Engineering Process

**SR 472**

- VE Team Proposed a Single Point Diamond Interchange to Reduce Right of Way Impacts
- Pedestrian and Bicycle Friendly – Area is Becoming More Urban
- Less Environmental Impacts

**VALUE ADDED**

$6.6M
TYPICAL SECTION
PROPOSED

BASE DESIGN
Provided Asphalt Express Lanes

PROJECT OVERVIEW
I-4 BEYOND the ULTIMATE
TYPICAL SECTION

- VE Team Proposed the Use of Concrete to Reduce Long-Term Maintenance
- Less “Downtime” for Tolled Lanes

LIFE CYCLE COST SAVINGS
$40.5M
## COST SAVINGS SUMMARY

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>Construction Cost (Millions)</th>
<th>Right of Way Cost (Millions)</th>
<th>VE Saving (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$555.1</td>
<td>$265.1</td>
<td>$21.7</td>
</tr>
<tr>
<td>2</td>
<td>$229.0</td>
<td>$35.7</td>
<td>$15.9</td>
</tr>
<tr>
<td>3</td>
<td>$202.2</td>
<td>$56.4</td>
<td>$10.7</td>
</tr>
<tr>
<td>4</td>
<td>$317.4</td>
<td>$22.0</td>
<td>$15.9</td>
</tr>
<tr>
<td>5</td>
<td>$188.2</td>
<td>$7.5</td>
<td>$38.8</td>
</tr>
<tr>
<td>Wekiva Parkway/SR 417</td>
<td>$203.9</td>
<td>$10.5</td>
<td>$198.4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$1,695.8</strong></td>
<td><strong>$397.2</strong></td>
<td><strong>$301.4</strong></td>
</tr>
</tbody>
</table>
COST SAVINGS SUMMARY

Construction Cost: $1,695.8M
Right of Way Cost: $397.2
VE Savings: $301.4M
VE Savings: 14.4%
QUESTIONS