Design
DESIGNERS
Spoiler Alert

• Mission
• Reconnaissance
• Best Practices from Other States
• Agents of C.H.A.N.G.E.
DESIGNERS

• Tom Hepler
• Jeff Moore
• Jose Davila
• Katrina Feltes
• Brenda Moore – NCDOT
• Brad Hibbs – FHWA
• Tracy Hood – FDOT
Our Mission

Develop Design Process Guidance

• One Process
• Simple and Flexible
• Standard of Care
• Integrated
The Adventure Begins

Existing process?
Laws/Policies?
Risks?
Bidding?
Other DOTs?
Other IPDs?
Reconnaissance

- PMU
- Roadway
- Hydraulics
- Geotechnical
- Utilities
- Right-of-Way
- Location & Surveys
- Photogrammetry
- Contracts & Standards
- Various Division Project Development groups
- Construction
Reconnaissance

• Existing Modifications
• Expedite Critical Path
• Early Stakeholder Involvement
• Constructability Review
• Continuity
If you could change one thing about the Design Process what would it be?

A. Reduce the number of submittals
B. Standardize guidelines for reviews and review time limits
C. Advance technical services in process: e.g. geo-tech, hydro, utilities, pavement
D. Constructability reviews early and often
E. Design support during construction
Best Practices from Other States
The Process

- Discover
- Interview
- Compare
- Share
- Integrate
Compare

- Major Submittals
- Early & Continuing Coordination & Communication
- Constructability Reviews
- Early Maintenance of Traffic
<table>
<thead>
<tr>
<th>Katrina Feltes, PE</th>
<th>Tracy Hood, PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Project Supervisor</td>
<td>District 7 Consultant Engineer</td>
</tr>
<tr>
<td>WisDOT</td>
<td>FDOT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brenda Moore, PE</th>
<th>Brad Hibbs, PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Roadway Design Engineer</td>
<td>Operations Engineer</td>
</tr>
<tr>
<td>NCDOT</td>
<td>FHWA</td>
</tr>
</tbody>
</table>
IPD Goals

• Streamline process
• Coordinate and collaborate
• Enhance communication
• Promote teamwork
• Deliver quality projects
What Made IPD Successful

- Process and Procedure changes
- Culture change
What did success look like?

• Developed/Enhance trust and respect
• Expedited delivery of projects
• Developed higher quality products in shorter time frame
• Increased capability to minimize surprises.
• Honest feedback
• Refine Process improvements
Team Work
Agents of C.H.A.N.G.E.

Change Helps Achieve New Goals Effectively
The Current Process

- Environmental
- Final Design
- Construction
The Current Process

- **FDFI Plans**
  - 15% Conceptual
  - 25% Functionals
  - 65% Preliminary

- **PLFI Plans**
  - 75% Functionals
  - 90%
  - 100%
  - Let
The Current Process

FDFI Plans

Preliminary

Conceptual

Functional

PLFI Plans

Let
New Ideas – Design Process

- Environmental
- Design
- Construction
New Ideas – Design Process

30%  60%  90%
New Ideas – Design Process

30%  60%  90%  Final PS&E  LET
New Ideas – 30% Plans Include:

- Risk Assessment
- Maintenance Review
- Utility Coordination Kickoff Meeting
- Municipal Agreement Initiation
New Ideas – 30% Plans Include:

- Geotechnical – Geo-Environmental Reports
- Pavement Design
- Drainage Crossings
- Significant Hydraulic Features
What is the single biggest issue that delays your projects?

A. Insufficient Risk Assessment During Design
B. Right-of-Way Acquisition
C. Utility Relocations
D. Constructability
E. Other
New Ideas – After 30% Plans

- Combined Field Inspection
- First Constructability Review
- Value Management
New Ideas – 60% Plans Include:

- Utility Coordination Integration
- Preliminary Permit Drawings
- Stormwater Management Plan
New Ideas – After 60% Plans

Second Constructability Review

Pre-Let Plans
Short-Term Ideas

- Risk Assessment
- Maintenance Review
- Utility Coordination
- Kickoff Meeting
- Municipal Agreement Initiation
- Drainage Crossings
Medium-Term Ideas

• 30-60-90
• Combined Field Inspection
• Constructability Reviews
• Geotechnical/Geo-Environmental
• Utility Coordination Integration
• Significant Hydraulic Features
• Preliminary Permit Drawings
Long-Term Ideas

• Pavement Design
• Value Management
• Pre-Let Plans
What elements of a revised process would benefit you the most?

A. Less Submittals and Reviews
B. Integration of Hydraulics and Utilities Earlier
C. One Field Inspection
D. Constructability Reviews
E. Other
Thank You