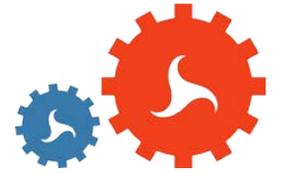


March 26, 2019



# Design

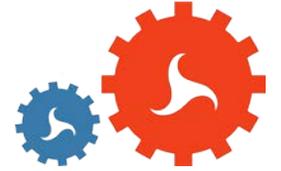
DESIGNERS



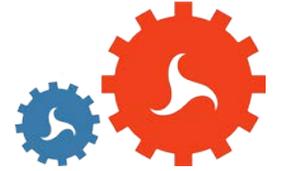
# Spoiler Alert

- 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?

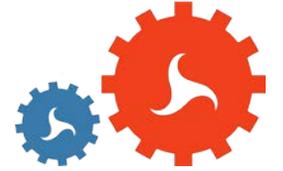
Other DOTs?

Other IPDs?



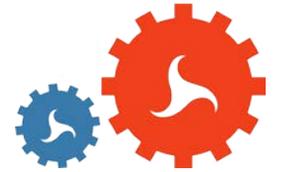
# Reconnaissance

- 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?

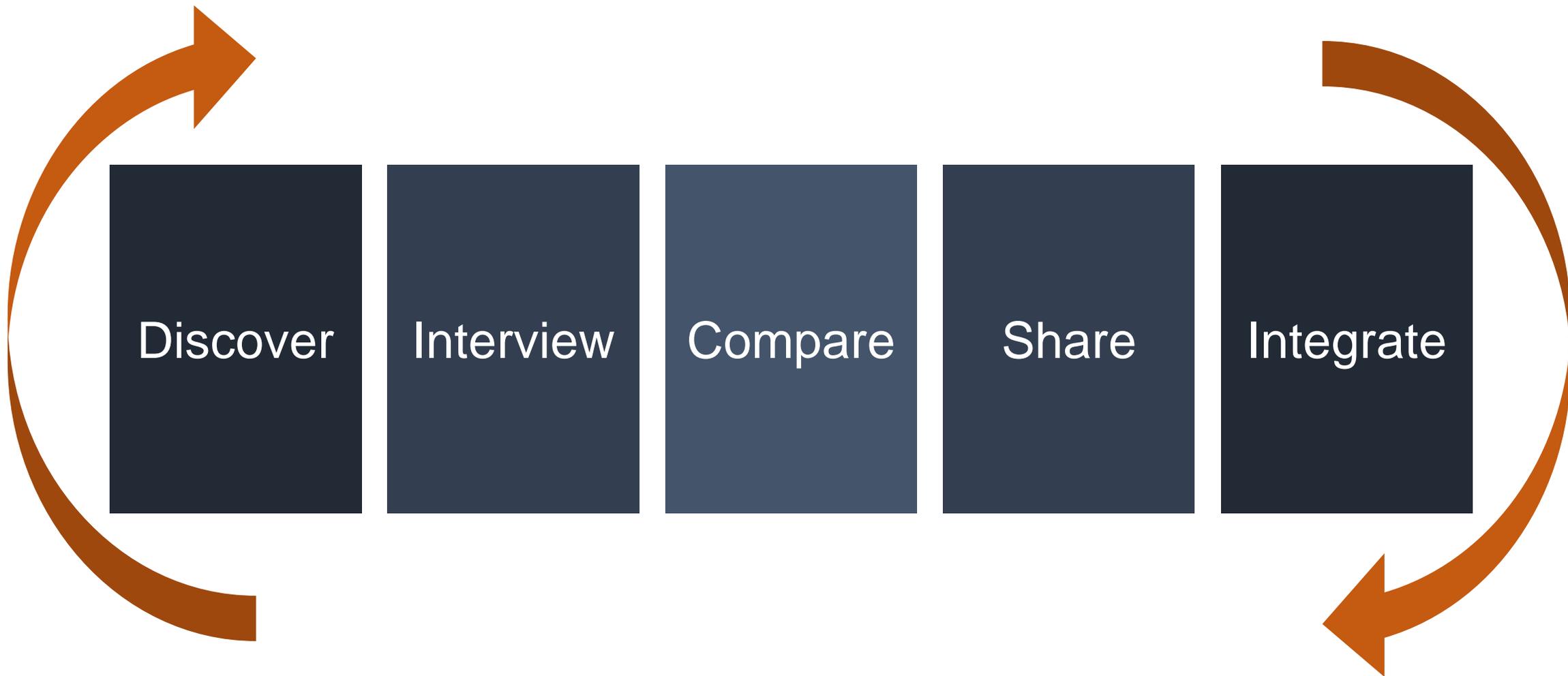
- A. Reduce the number of submittals
- B. Standardize guidelines for reviews and review time limits
- C. Advance technical services in process: e.g. geo-tech, hydro, utilities, pavement
- D. Constructability reviews early and often
- E. Design support during construction



# Best Practices from Other States



# The Process



# Discover



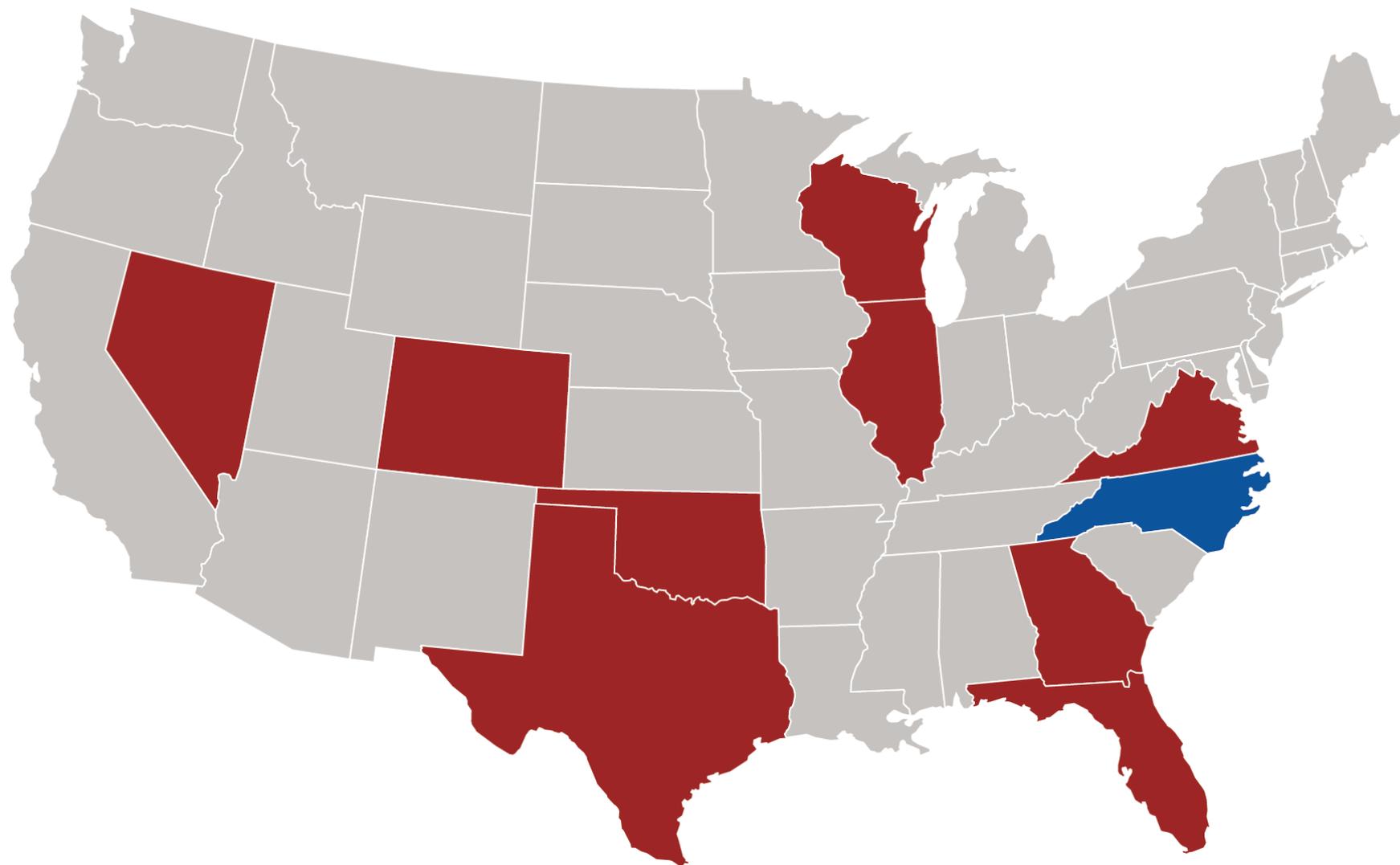
Questions ?



Approach



Interviews



# Compare



Major  
Submittals

Early & Continuing  
Coordination & Communication

Constructability  
Reviews

Early Maintenance of  
Traffic

# Share



Katrina Feltes, PE  
Former Project Supervisor  
WisDOT

Tracy Hood, PE  
District 7 Consultant Engineer  
FDOT

Brenda Moore, PE  
State Roadway Design Engineer  
NCDOT

Brad Hibbs, PE  
Operations Engineer  
FHWA



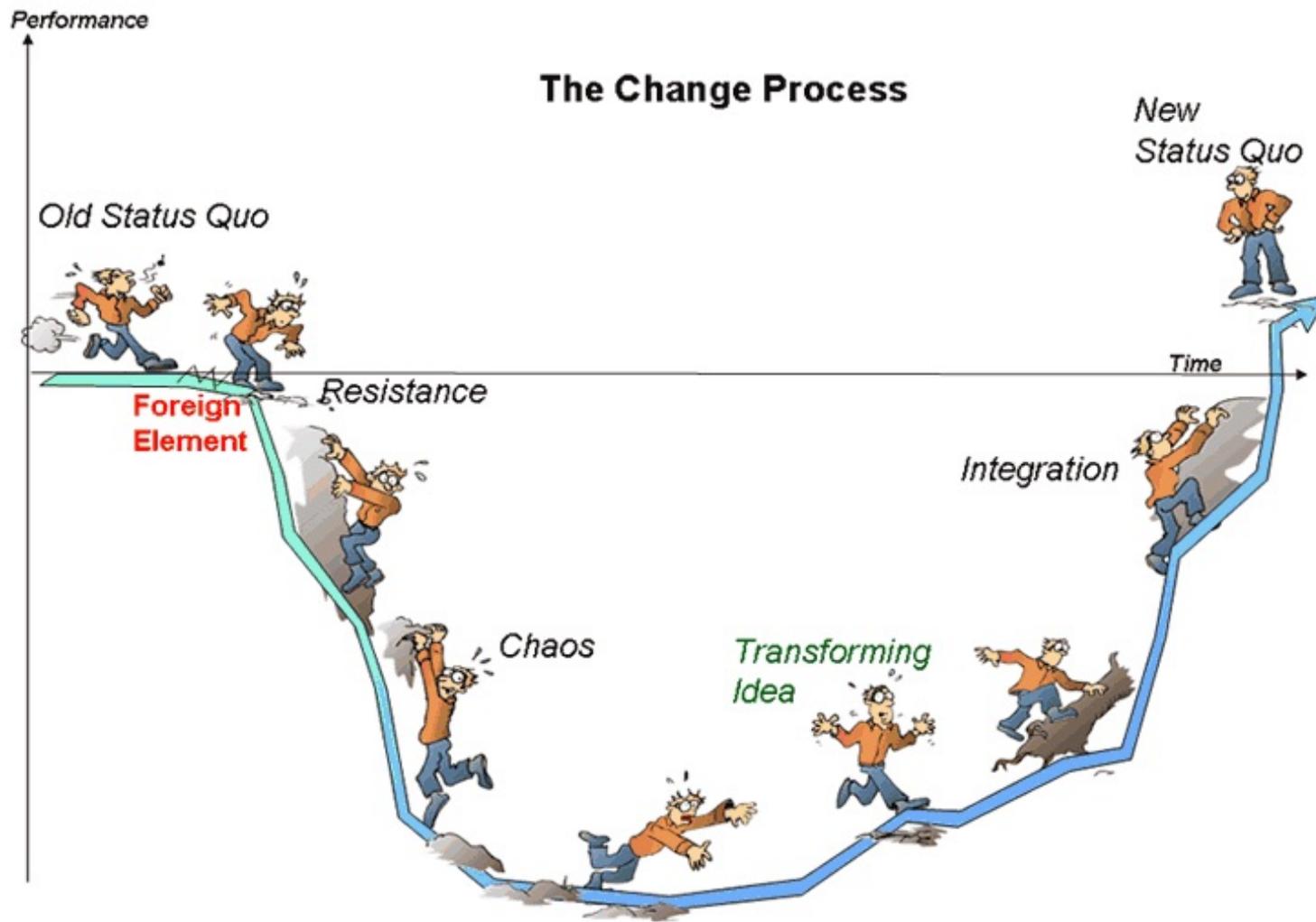
# IPD Goals

- Streamline process
- Coordinate and collaborate
- Enhance communication
- Promote teamwork
- Deliver quality projects



# What Made IPD Successful

- Process and Procedure changes
- Culture change

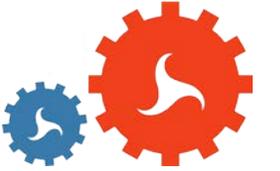




# What did success look like?

- 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***





**Federal Highway  
Administration**



# Agents of C.H.A.N.G.E.

**C**hange **H**elps **A**chieve **N**ew **G**oals **E**ffectively

# The Current Process



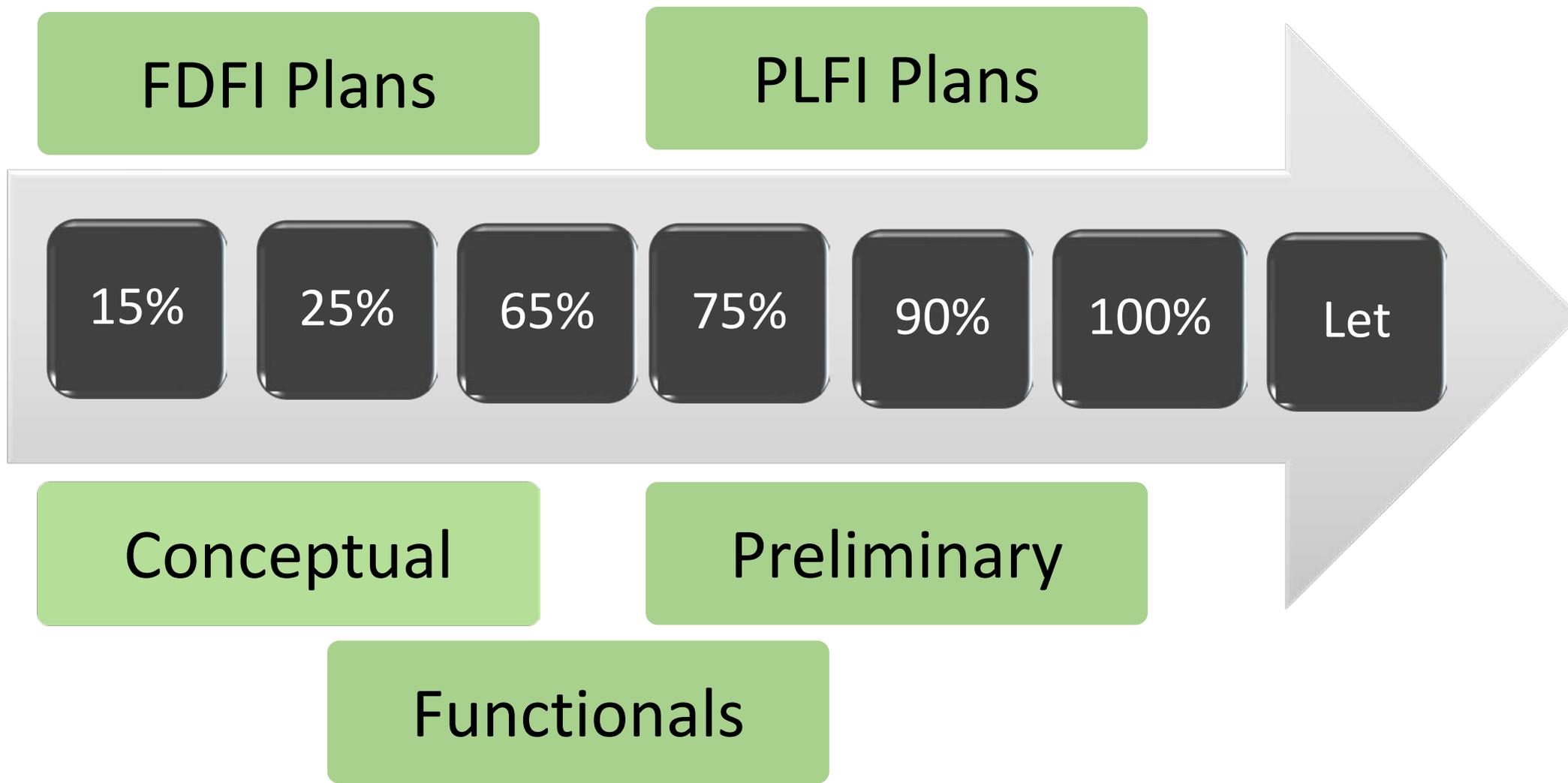
Environmental

Final Design

Construction

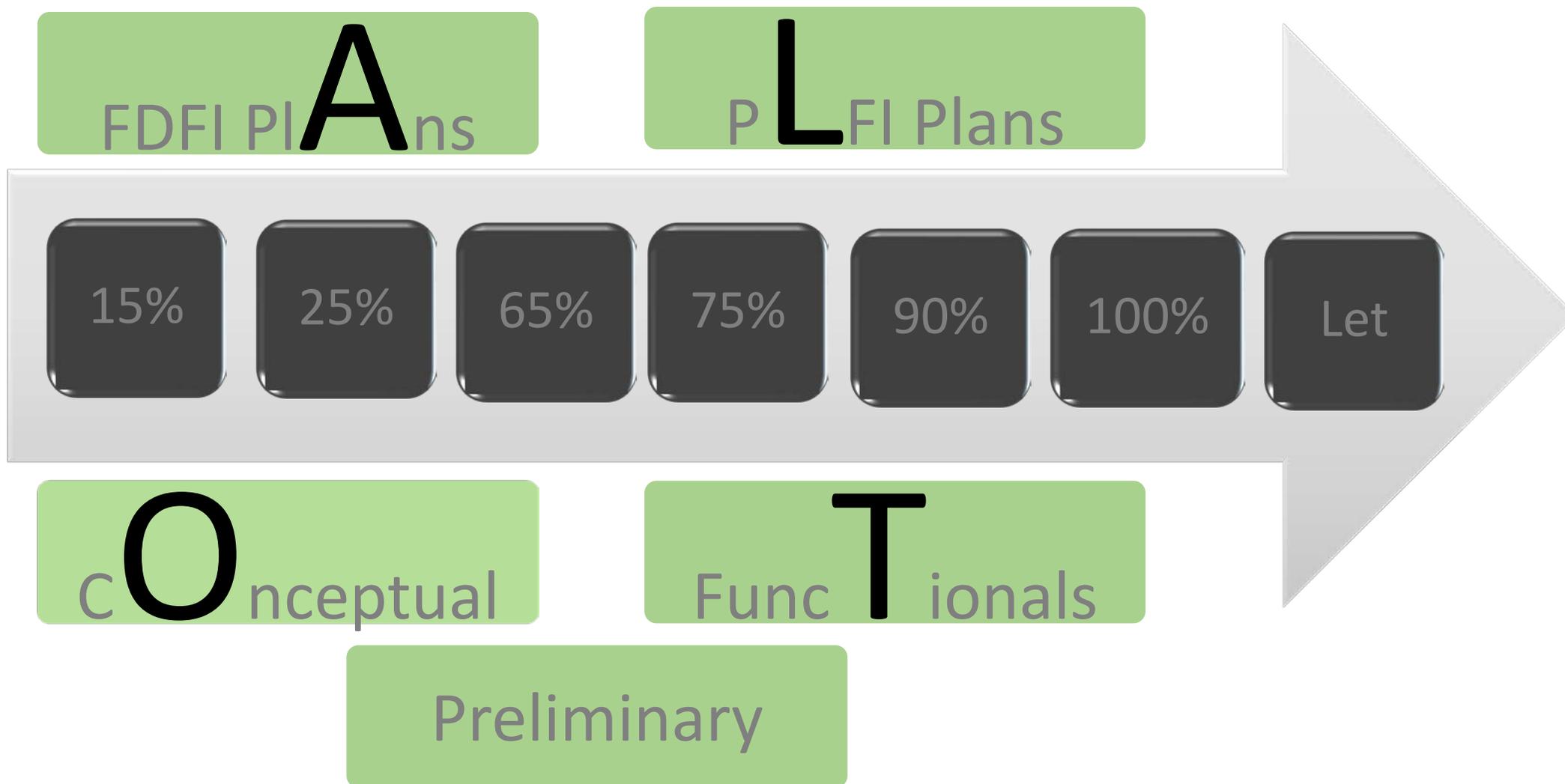


# The Current Process





# The Current Process





# New Ideas – Design Process

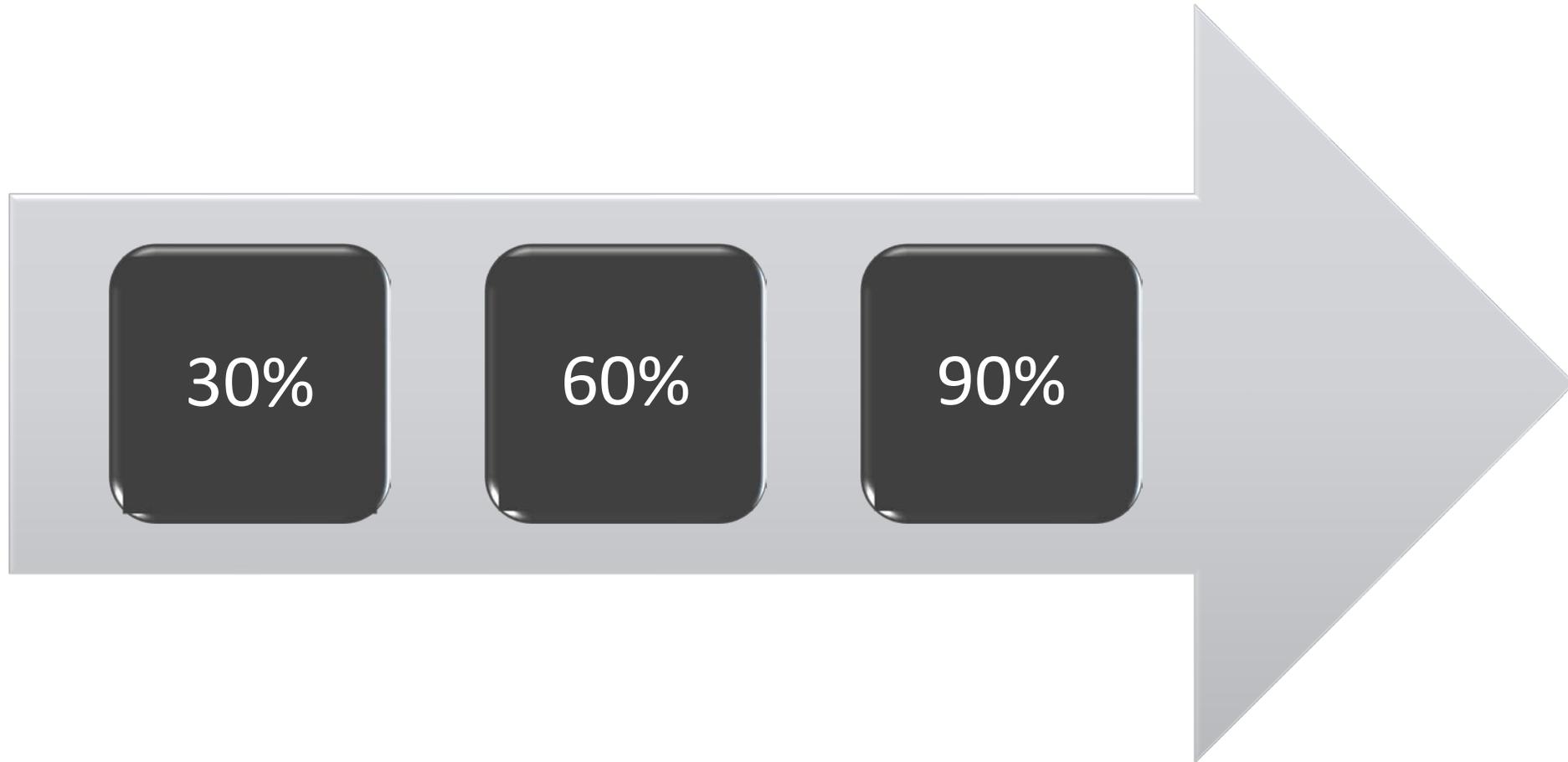
Environmental

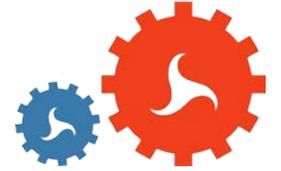
Design

Construction

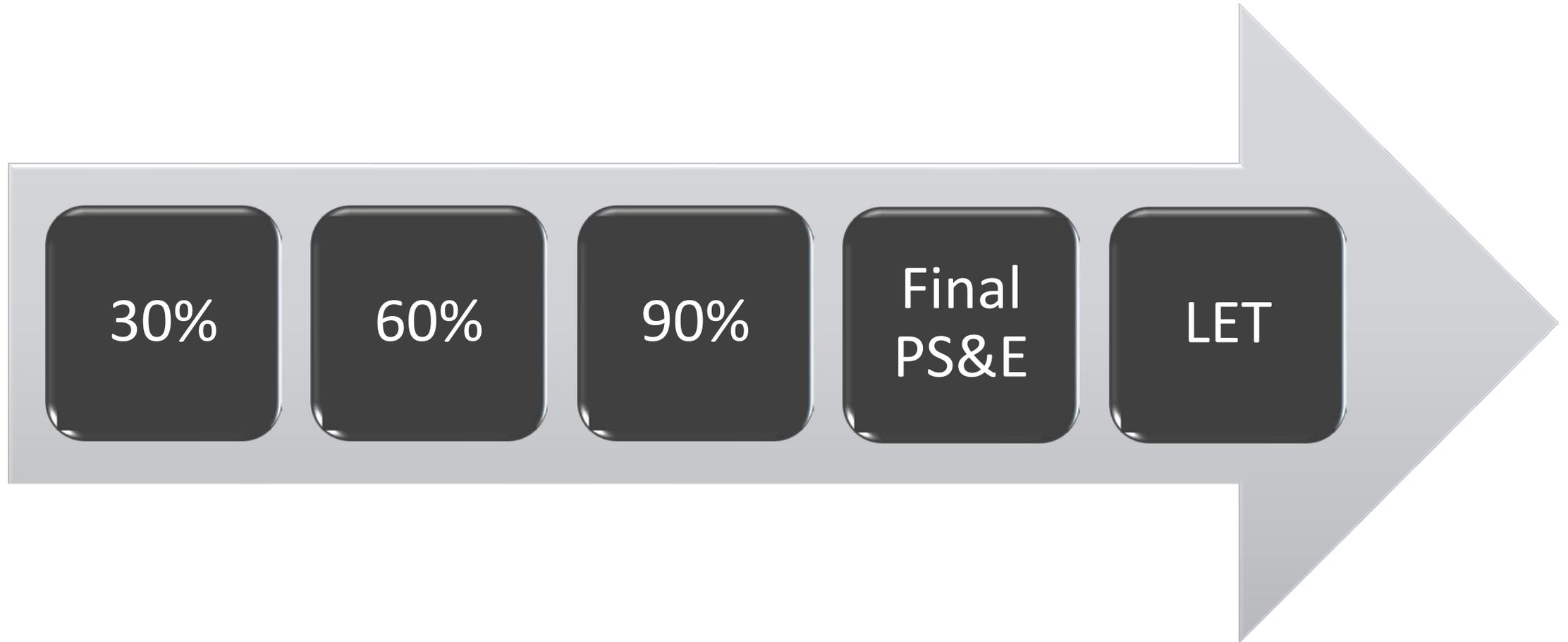


# New Ideas – Design Process



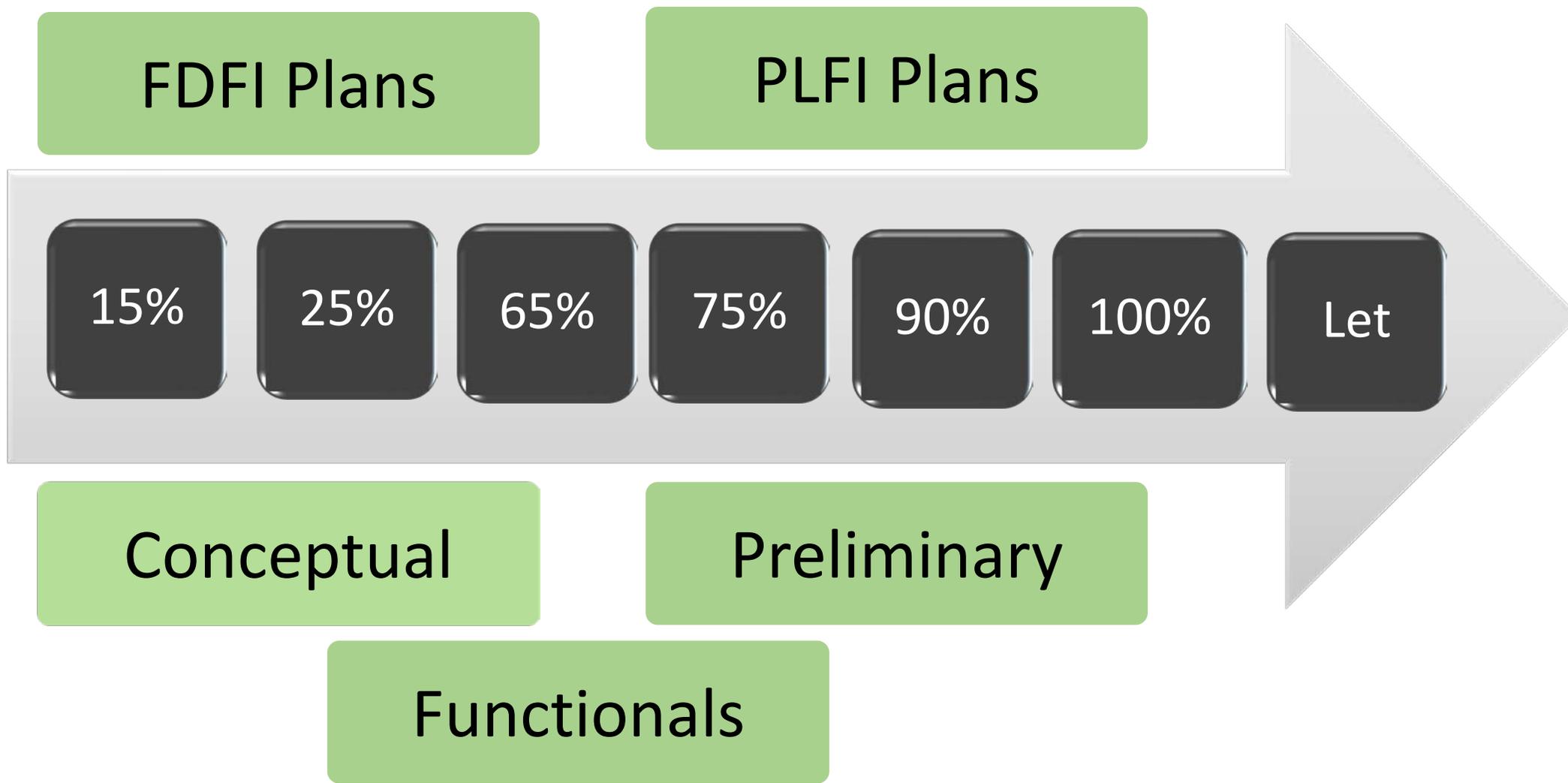


# New Ideas – Design Process

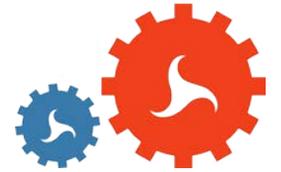




# The Current Process



# New Ideas – 30% Plans Include:



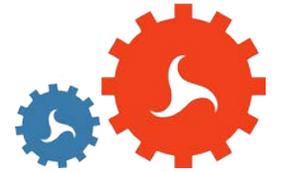
**Risk Assessment**

**Maintenance Review**

**Utility Coordination Kickoff Meeting**

**Municipal Agreement Initiation**

# New Ideas – 30% Plans Include:



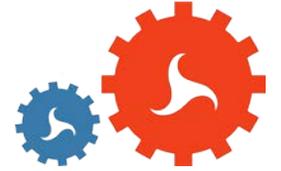
**Geotechnical – Geo-Environmental Reports**

**Pavement Design**

**Drainage Crossings**

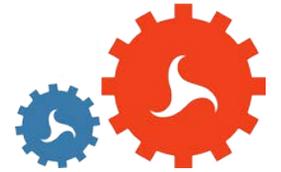
**Significant Hydraulic Features**

# 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

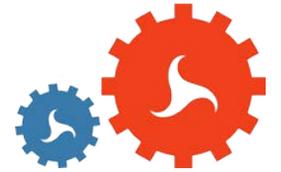


**Combined Field Inspection**

**First Constructability Review**

**Value Management**

# New Ideas – 60% Plans Include:

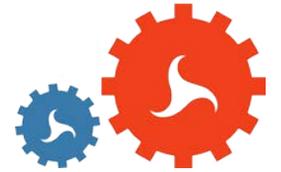


**Utility Coordination Integration**

**Preliminary Permit Drawings**

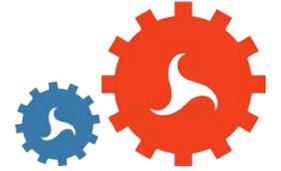
**Stormwater Management Plan**

# New Ideas – After 60% Plans



**Second Constructability Review**

**Pre-Let Plans**



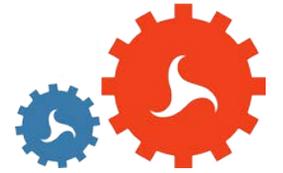
# Short-Term Ideas

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



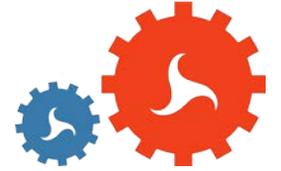
# Medium-Term Ideas

- 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



<https://tinyurl.com/NCDOTIPD>