Planning, Design, and Construction Overview

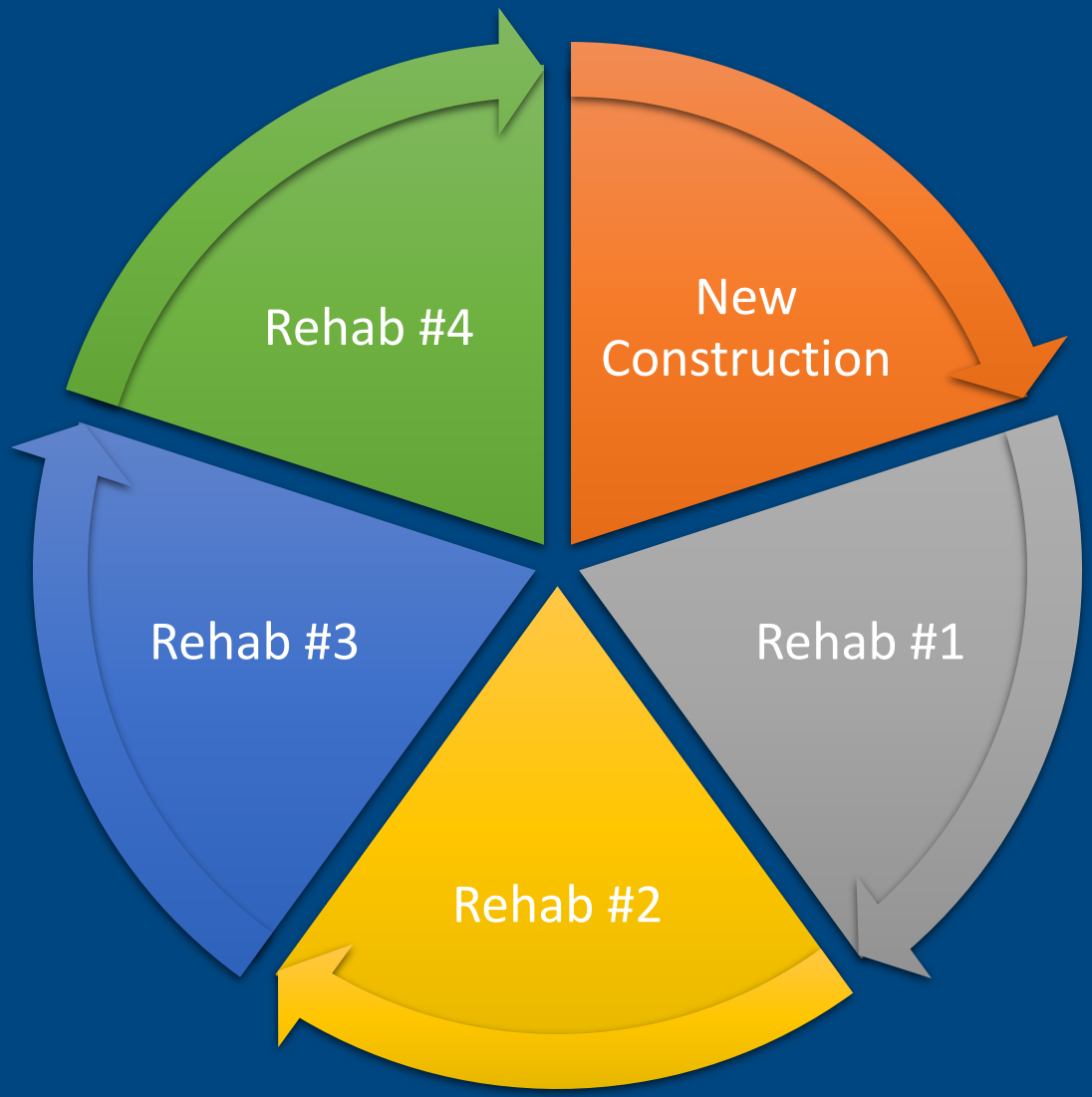
2024 WAPA Conference

December 3, 2024

Roadway Life Cycle

- New Construction – Year 1
- Rehab #1 *
- Rehab #2 *
- Rehab #3 *
- Rehab #4 *
- New Construction ~ Year 60

* Pending pavement condition, will receive a treatment every 10-20 years

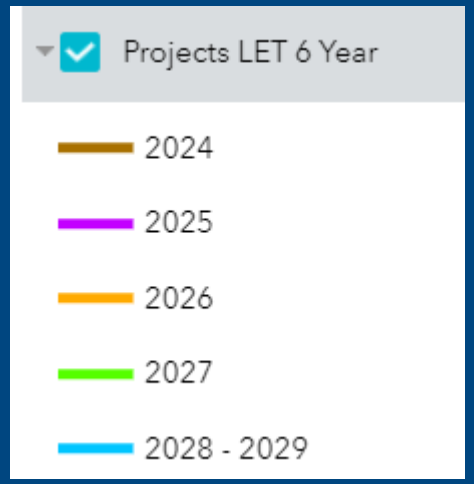


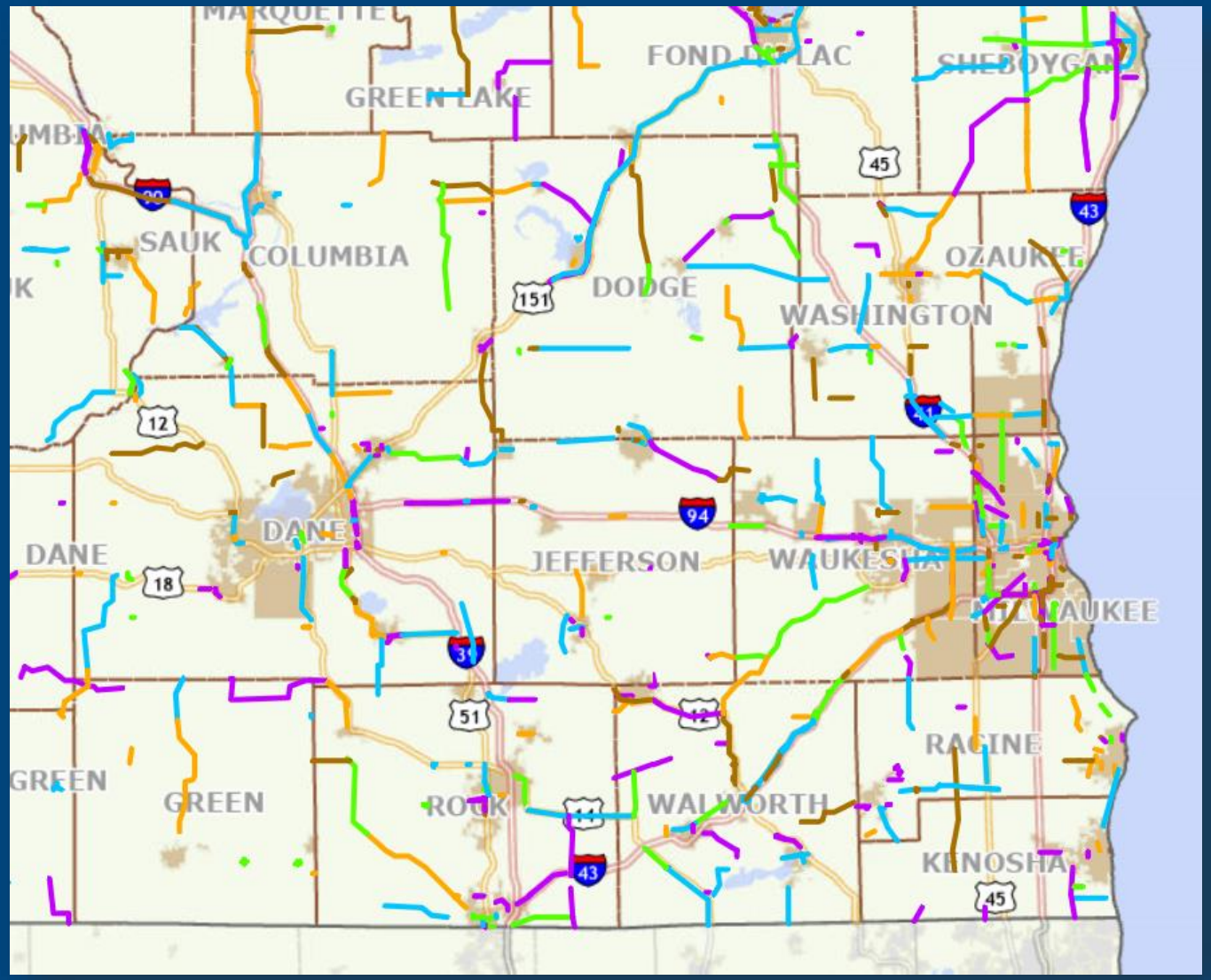
Various Treatment Types

Preservation	• PSRS20, PSRS30, PSRS40
Resurfacing	• RSRF10, RSRF15, RSRF20, RSRF25, RSRF30
Pavement Replacement	• PVRPLA, RECST, RECSTE
Bridge Rehabilitation	• BRRHB
Bridge Replacement	• BRRPL
Miscellaneous	• MISC

6-year Program Map

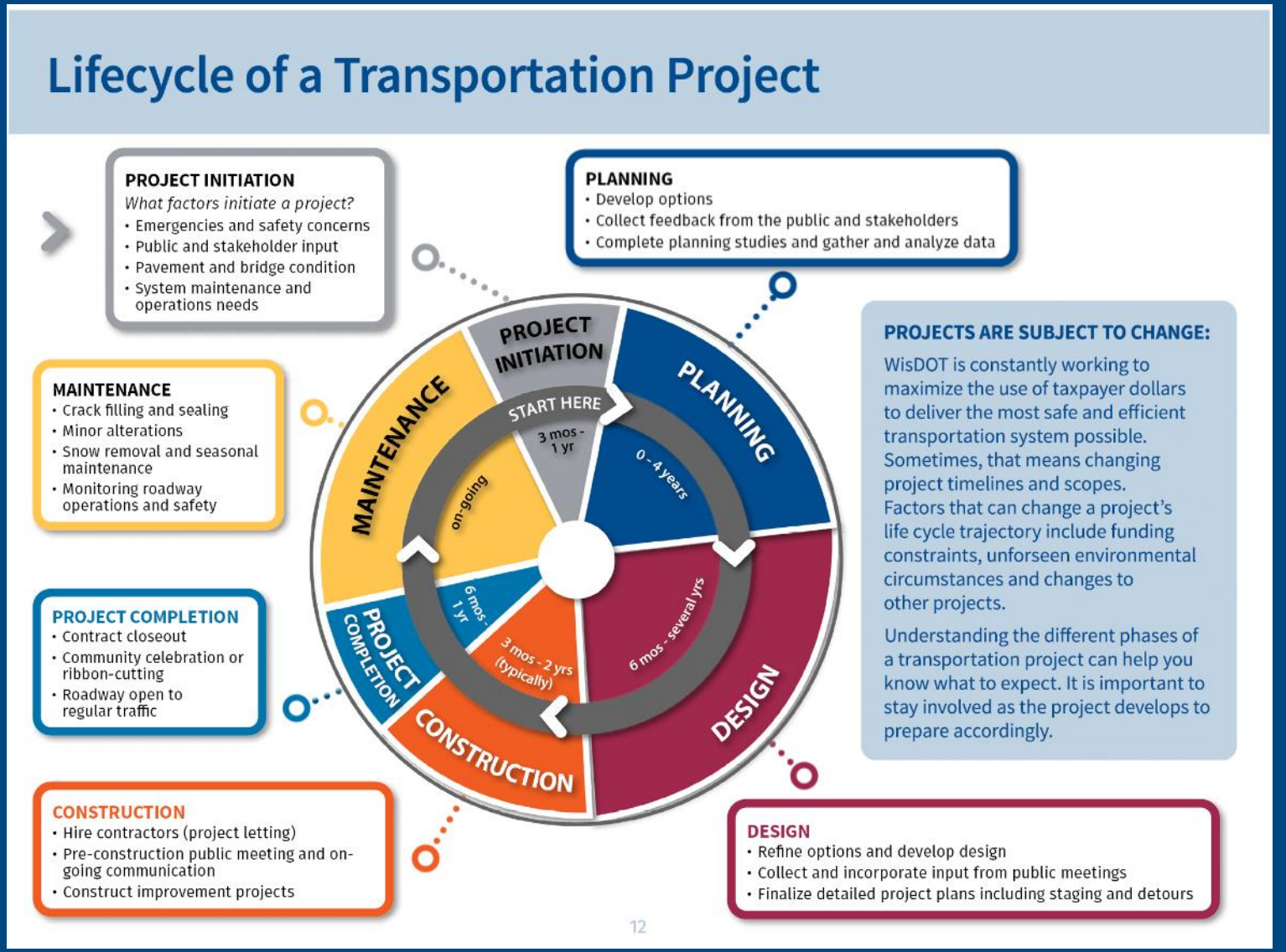
https://wisdot.maps.arcgis.com/apps/webappviewer/index.html?id=f9096bc93a1a4ff38b3c9fad0c77f058&showLayers=LET_6YR





Project Life

- Project Initiation
- Planning
- Design
- Construction
- Maintenance

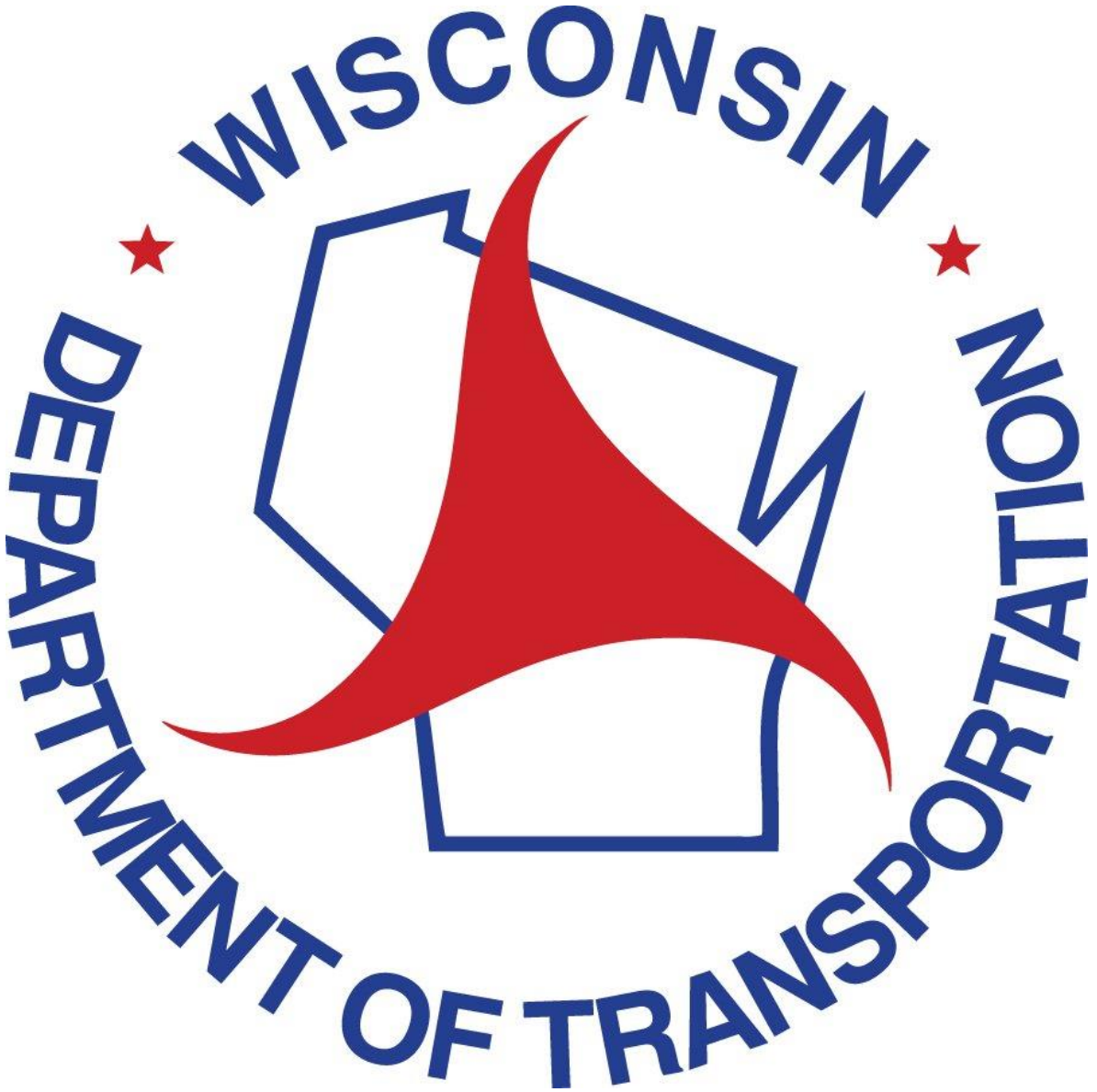


Design Overview

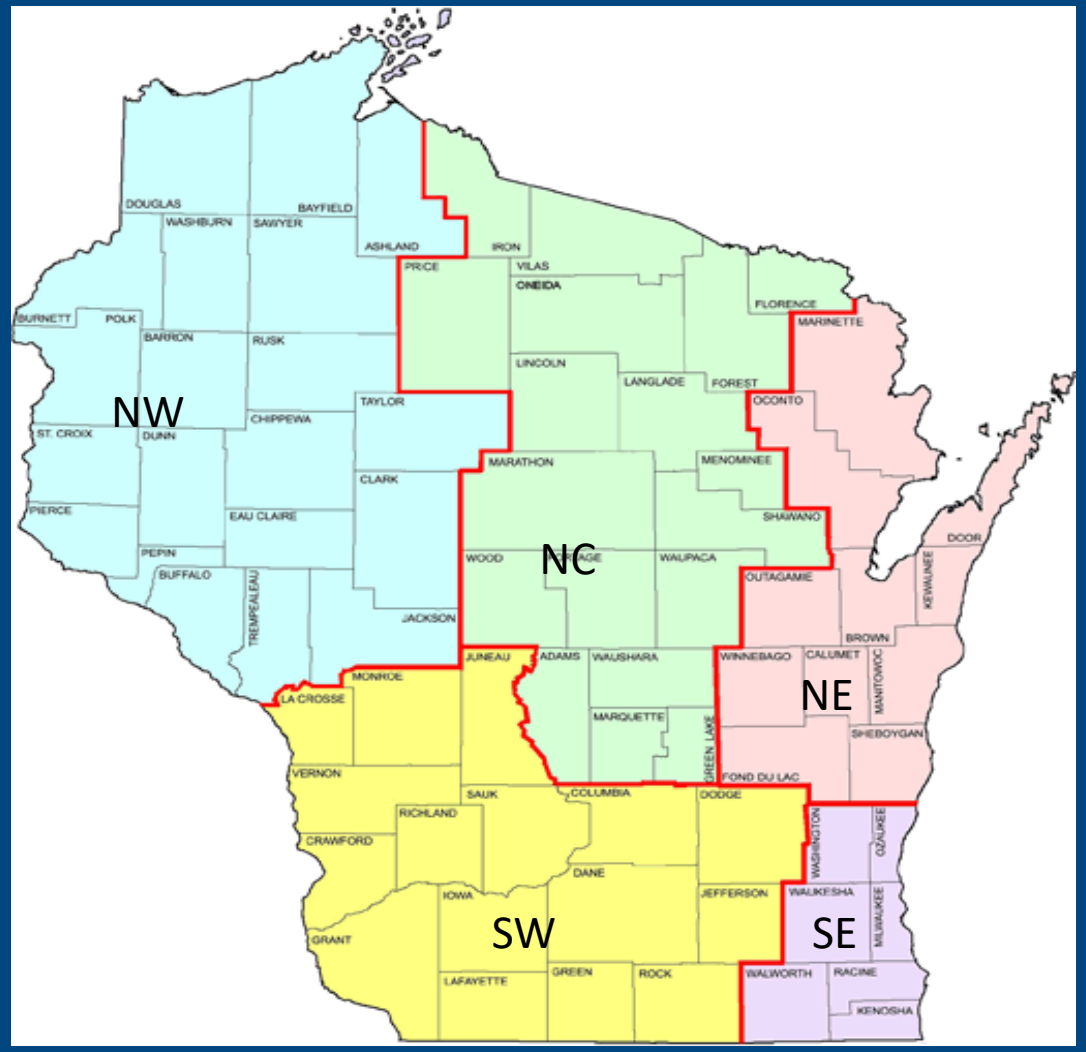
Presented by

Rielly O'Donnell

Proposal Management Section Chief



Division of Transportation System Development (DTSD)



5 Regions of Operation

- Northwest (NWR)
  - Eau Claire, Spooner & Superior
- North Central (NCR)
  - Wisconsin Rapids & Rhinelander
- Northeast (NER)
  - Green Bay
- Southeast (SER)
  - Waukesha
- Southwest (SWR)
  - La Crosse & Madison

Improvement Types

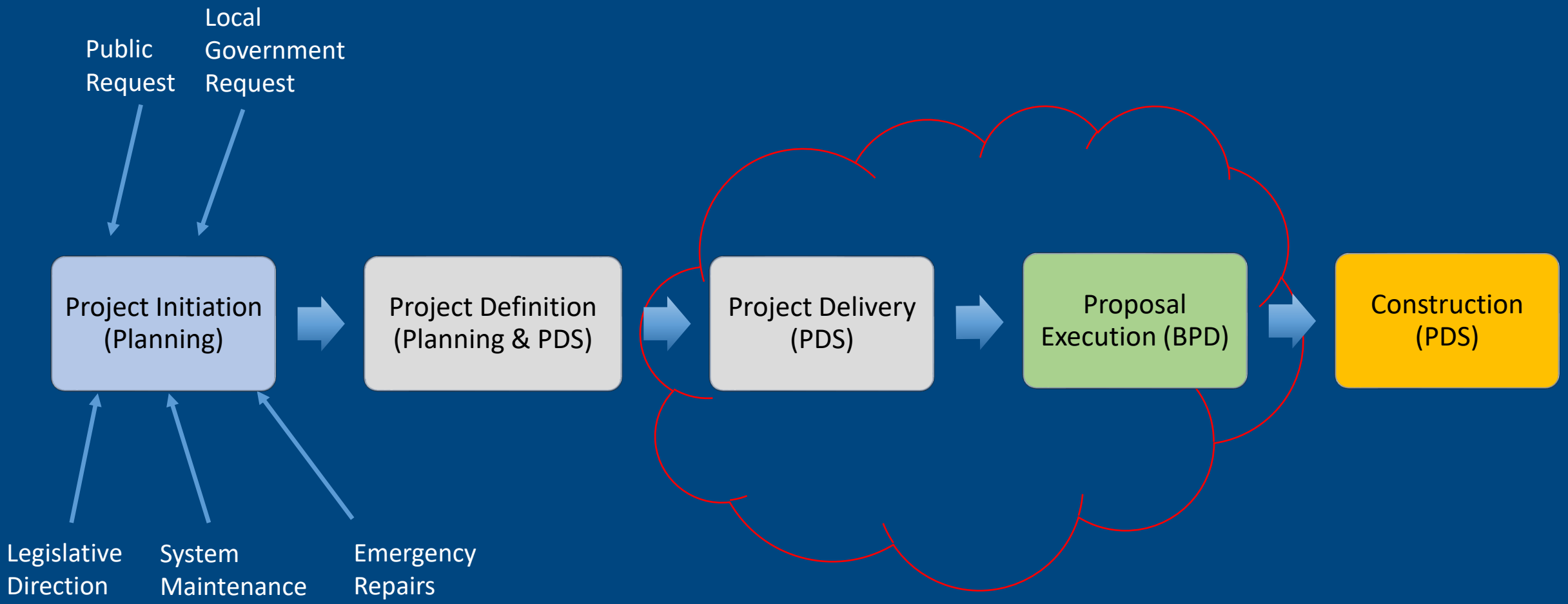
Improvement Type	Improvement Concept	Type of Work Items
Preservation/Restoration	Preservation/restoration of existing pavement to address cracks, joints and surface imperfections, seal and protect the road surface, improve friction and/or remove and apply a minimal riding surface	Asphalt and concrete base patching, diamond grinding, joint and crack repair, high friction surface treatment, sawing, traffic control, traffic signals, pavement marking and signing
Resurfacing	Place a new surface on an existing pavement. May add surface layer or mill/replace or cold in-place recycle a portion of the existing pavement.	Asphalt milling, HMA paving, beam guard, CABC shoulders, traffic control, traffic signals, lighting, concrete curb and gutter, structure work, sawing, pavement marking and signing, erosion control, landscaping, plantings
Pavement Replacement	Remove or mill/relay all paving layers from existing roadway and provide a new paved surface. Can include replacement or improvements to the base and subgrade.	Asphalt milling or removing pavement, HMA paving or concrete pavement, beam guard, CABC, traffic control, traffic signals, lighting, concrete curb and gutter, sidewalk, structure work, sawing, pavement marking and signing, erosion control, landscaping, plantings
Reconstruction	Work in addition to perpetuation pavement replacement that can be justified by safety, operations, environmental or ancillary factors which alters the existing roadway type or footprint for the entire length of the project.	Grading, removing pavement, HMA paving or concrete pavement, beam guard, CABC, traffic control, traffic signals, lighting, concrete curb and gutter, storm sewer, culverts, sidewalk, structure work, sawing, pavement marking and signing, erosion control, landscaping, plantings
Expansion	Construction of new a highway or structure, or reconstruction of existing highway that includes the construction of additional through travel lanes.	Similar to reconstruction
Bridge Preventative	Preservation of existing structure by treatments that decelerate future deterioration, and maintain or improve its functional condition	Deck sealing, bridge painting, concrete deck repair, deck overlay, traffic control, pavement marking
Bridge Rehabilitation	Preservation or restoration of the structural integrity of an existing structure, or work to correct safety defects on existing structure.	Deck sealing, bridge painting, deck replacement, traffic control, pavement marking
Bridge Replacement	Removal and replacement of an existing bridge, or removal of an existing bridge without replacement.	Deck sealing, bridge removal/construction, bridge painting, traffic control, landscaping, pavement marking

What is the Design Process and Why?

Benefits of having a consistent process

- Statewide consistency
- Builds trust with our partners and the public
- Ensures better defined project scope, schedule and budgets
- Provides defined deliverables with checkpoints

Project Stages



Project Delivery

- Resource project
  - Perform public outreach
    - Prepare Environmental Document
      - Develop Traffic Management Plan (TMP)
        - Start Railroad coordination
          - Begin Right-of-way Plat
            - Develop 60% plan and estimate
              - Prepare Design Study Report (DSR) to document design and decisions

Project Delivery

60%

Final Design

Prepare Final Plan, Specifications and Estimate

PSE

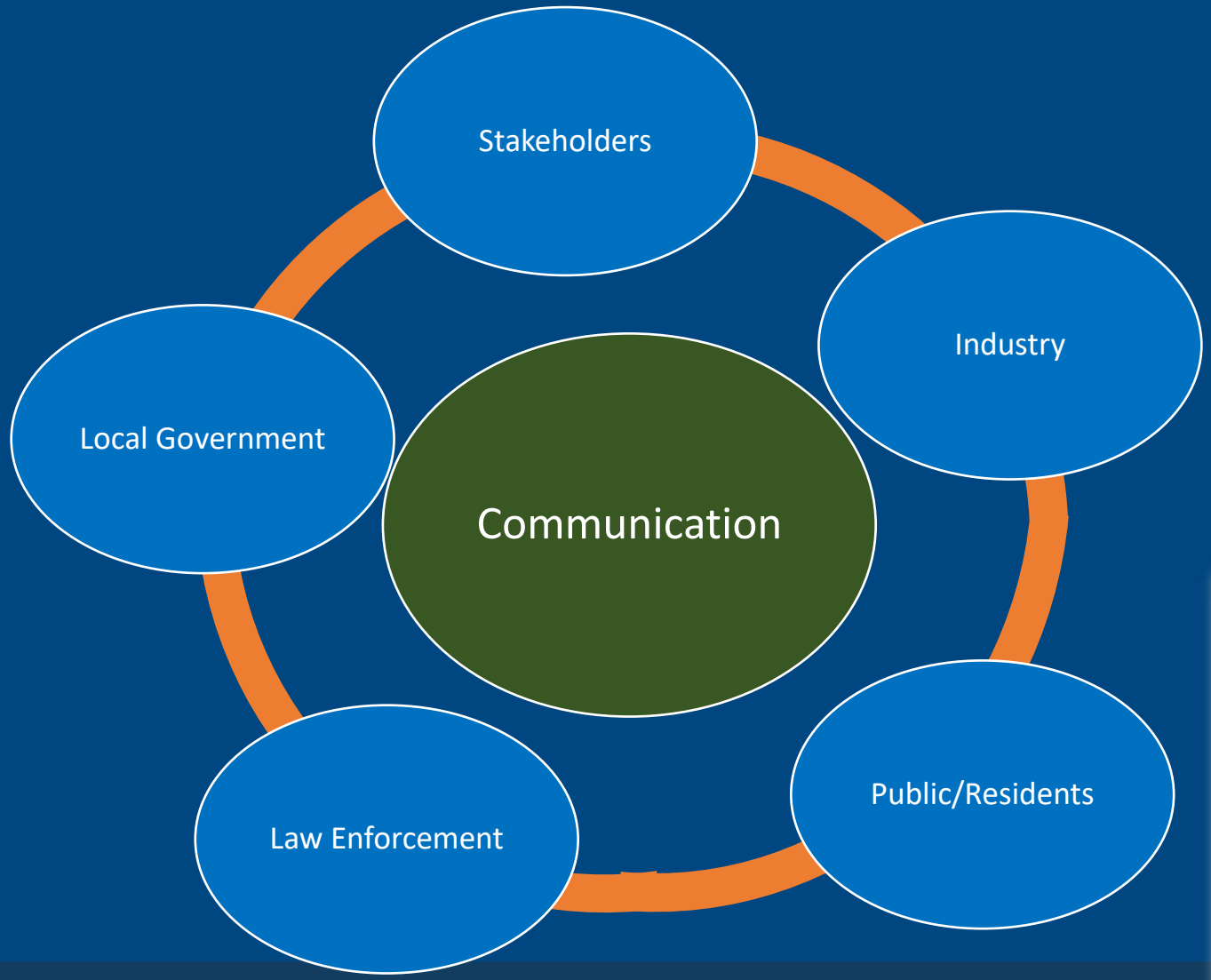
- Continue public outreach
  - Complete Right-of-way Plat
    - Acquire real estate -can take up to 24 months
      - Finalize Traffic Management Plan (TMP)
        - Coordinate utility work plans for relocations (1078 process)
          - Complete drainage plans, signal plans, signing and marking plans, structure plans
            - Prepare and obtain resource agency permits and approvals
              - Prepare final PSE documents -plans, special provisions and estimate
                - Submit PSE package to Bureau of Project Development

Who do we Partner with during design?

Internal

- Planning
- Operations and Maintenance
- Materials, Soils, and Finals
- Environmental, Railroads, and Utilities
- Survey, Real Estate and Bureau of Structures
- Program Controls and Consultant Services
- Public Relations

External


Stakeholders
Industry
Local Government
Communication
Public/Residents
Law Enforcement


SOUTH EAST
51 16
ROAD CLOSED TO THRU TRAFFIC


PUBLIC RELATIONS

Industry Outreach during Design

WisDOT may contact WTBA (Wisconsin Transportation Builders Association) to discuss complex or unique project specific items during the design phase both in preliminary and final design.

Constructability/Best practices
Traffic staging/access/work zone
Schedules
Complex/unique issues
Bridges/retaining walls

Proposal Execution

During this phase project PS&E documents are reviewed by Bureau of Project Development and the project is advertised and let to bid.

Proposal Advertised

5 weeks

Advertised 5 weeks ahead of the letting

WisDOT's HCCI Site

https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/default.aspx

Wisconsin Department of Transportation (WisDOT) Highway Construction Bid Lettings occur on the second Tuesday of each month.

2025 bid lettings information by date

January 14 (December 10)	February 11 (January 07)	March 11 (February 4)	April 08 (March 4)
May 13 (April 08)	June 10 (May 6)	July 08 (June 3)	August 12 (July 8)
September 09 (August 5)	October 14 (September 9)	November 11 (October 7)	December 09 (November 4)

https://www.infotechinc.com/bidx/

Bidx.com

Built specifically for the highway construction industry, Bidx.com is used by agencies from 39 states and 1 Canadian province to manage their bidding process. With tools to streamline proposals and empower contractors to win more bids, Bidx.com sets the standard for transportation project bidding.

Preliminary Plan Posting

1 – 2 Months ahead of advertisement

- 50,000 cubic yards of earthwork
- Complex structural components
- Greater than $20 Million
- Other unique reasons

"NOT FOR BIDDING PURPOSES"

Advertisement Timeline

Begin Question and Answer Period	• 5 Weeks before the letting
Begin Addendum Period	• 5 Weeks before the letting
Late Addendum	• Begins second Thursday (12 days) before the letting
Emergency Addendum	• Begins Friday (4 days) before the letting

Standard Specification
102.5 Examining Contract Documents and Work Site

(1) The bidder cannot take advantage of an error or omission in the contract. Carefully examine the contract documents and notify the department immediately upon discovering errors or omissions. Also perform a reasonable site investigation before submitting a proposal. Submitting a proposal is an affirmative statement that the bidder has examined the contract documents, investigated the site, and is satisfied as to the character, quality, quantities, and the conditions the bidder will encounter in performing the work that the bidder could determine by walking the project site. A reasonable site investigation also includes investigating borrow sites, hauling routes, and all other locations related to the performance of the work.

Questions and Answers

- Asking for additional information
- Notifying of errors or omissions, including quantity errors
- Confirming work processes or material requirements

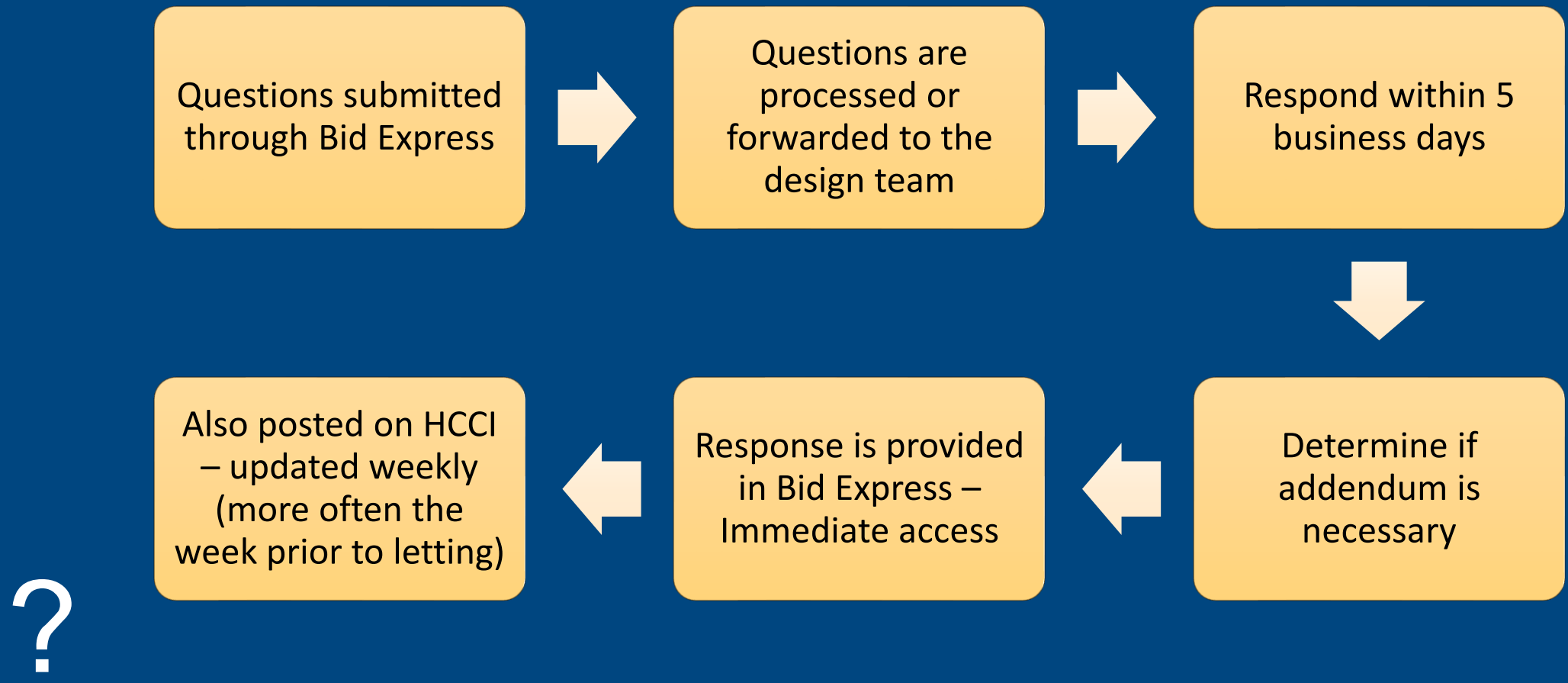
THE EARLIER, THE BETTER

Questions and Answers

ANSWERS ARE NOT A CONTRACTUAL ITEM

- Only if corrected through an addendum
- Otherwise, plans and specifications control the work

Questions and Answers



November 2024 Letting

(55 Proposals)

229 Questions

48 Addenda (3 Emergency)

How to Improve and Reduce the Number of Questions and Addenda

Fewer Special Provisions – Try to follow/modify Standard Specifications

Provide more information in the Construction Data Packets

Reduce vagueness and ambiguity

Try not to require materials that are difficult to procure

Don't deviate from Standard Specifications (Ex: Weather related Special Provisions)

DESIGNERS CONTRACTORS

Communication During Construction

Preconstruction Meeting

- **First opportunity to meet the engineer/staff and begin communication**
  - Staging
  - Work Timeline
  - Materials
  - Communication Process

Weekly Progress Meetings

- Attend all meetings, even as a subcontractor
- Early communication
- Resolution oriented communication
- Be involved; ask questions

Request for Information (RFI) Process

- Goal is to obtain clarification
- Helps ensure communication continues

218.3.2 Request for Information (RFI)

218.3.2.1 Purpose

The purpose of a request for information (RFI) is to obtain clarification of the plans, specifications, special provisions, or other contract documents, with the intent of avoiding contract disputes and claims. RFIs provide a systematic collection of the analysis and resolution of questions that arise during the construction of the project. RFIs should not be construed to be a request for change order or to change any requirement of the contract documents.

The engineer and contractor work together to ensure that RFIs are appropriate and to control the number of RFIs. Contract documents should be reviewed first and if a question can be answered through research and clarification, do so and follow up with a conversation record in the daily diary.

218.3.2.2 Submittal

The contractor typically initiates the development of an RFI, however, either the contractor or department can submit an RFI for clarification of an issue.

Although subcontractors may initiate issues that lead to an RFI, they should not submit RFIs directly to the department. Subcontractors should submit the RFI to the prime contractor, who will then forward the issue to the department.

The contractor notifies the engineer of an RFI using DT2502. The contractor must clearly and concisely describe the issue for which clarification or interpretation is sought and why a response is needed. Appropriate references to specifications, plans, or drawings facilitate a timely response.

Cost Reduction Incentive (CRI) Process

- Benefit to both parties
- CRI Process

104.10.1 General

(1) Subsection 104.10 specifies a 2-step process for contractors to follow in submitting a cost reduction incentive (CRI) for modifying the contract in order to reduce direct construction costs computed at contract bid prices. The initial submittal is referred to as a CRI concept and the second submittal is a CRI proposal. The contractor and the department will equally share all savings generated to the contract due to a CRI as specified in 104.10.4.2(1). The department encourages the contractor to submit CRI concepts for the following situations:

1. The contractor generates the original cost savings idea and formulates it into a concept.
2. The department generates the original cost savings idea and obtains the contractor's assistance to formulate the idea into a concept.

(2) Follow the procedures specified in 104.10.2 for submitting a CRI concept. If the department determines a CRI concept has merit, the department will encourage the contractor to submit a CRI proposal. Follow the procedures specified in 104.10.3 for submitting a CRI proposal.

(3) The contractor may submit a CRI concept from a subcontractor. Subcontractors may not submit a CRI except through the contractor.

(4) The contractor may submit a CRI concept only after the execution of the contract. Do not base bid prices on the anticipated approval of a CRI proposal. If the department rejects a CRI proposal, complete the contract as specified in the original terms or as otherwise modified.

(5) The department will consider a CRI that changes but does not impair the essential functions or characteristics of the project. These functions or characteristics include, but are not limited to, appearance, service life, economy of operations, ease of maintenance, design, and safety of structures and pavements, construction phasing or procedures, or other contract requirements. The department will not consider a CRI that changes the following:

- Permanent pavement type.
- Permanent structural cross section above the subgrade.

(6) The department will decide whether or not to approve a CRI. The department will bear no liability for causing a delay to the project in considering a CRI or for refusing to approve a CRI. The department may consider a noncompensable time extension as specified in 104.10.2(3). The department will

104.3 Contractor Notification

- Contractual communication for contract revisions identified by the contractor
- Does not necessarily lead to a claim

104.3 Contractor Notification

104.3.1 General

(1) Subsection 104.3 specifies the step-by-step communication process to be followed to expedite the resolution of potential contract revisions identified by the contractor. Both contractor actions and department responses are outlined. The contractor's non-compliance with the requirements of 104.3 may constitute a waiver of entitlement to a pay adjustment under 109.4 or a time extension under 108.10. The department and contractor can mutually agree to extend any time frame specified throughout 104.3.

Communication Leads to Success

- Proactive
- Early communication
- Use contractual processes
- Positive resolution bases communication

Common Materials Issues

When should the ride specification be waived?

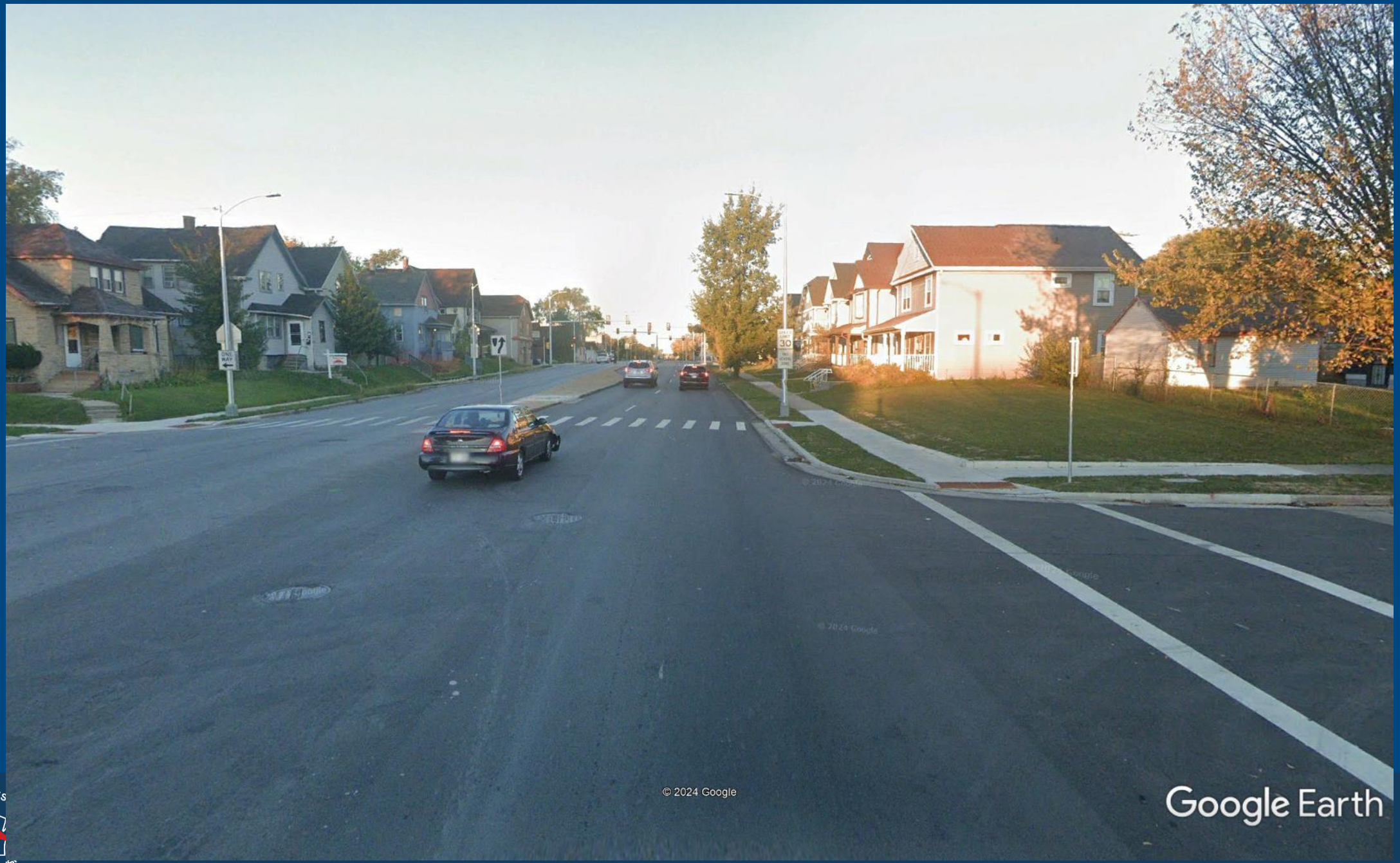
Standard specification 740

Per 740 QMP Ride

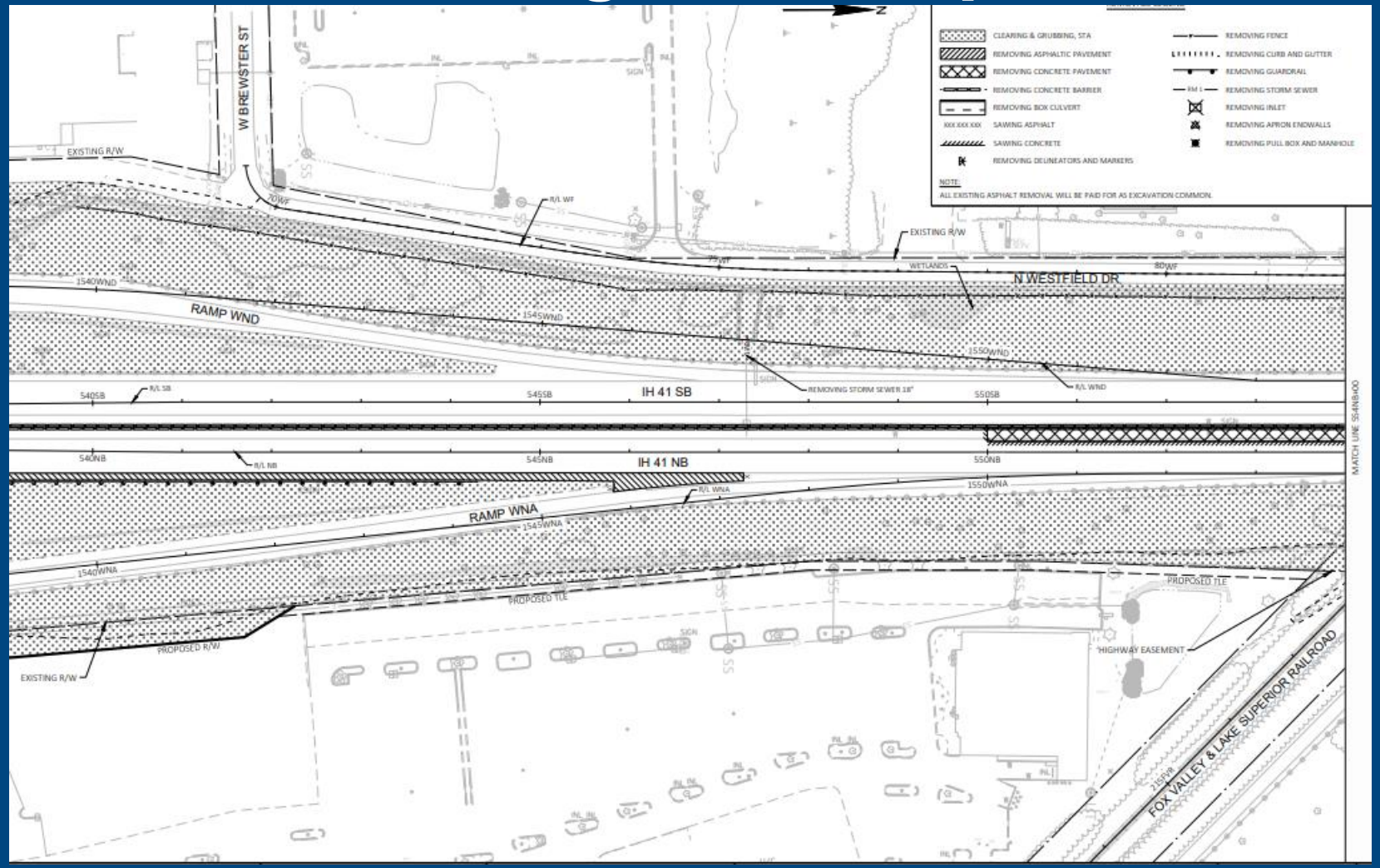
(2) Profile final riding surfaces greater than 1500 feet in continuous length, that are full width, and typically carry moving vehicles. Include the following when they meet the criteria:

- Auxiliary lanes.
- System interchanges that carry traffic from one freeway to another via ramps or connectors.
- Entance ramps, exit ramps, and turn lanes.
- Mainline pavement on county, state, or U.S. highway crossroads reconstructed under the contract.

What if the incentive bid item is not in the proposal/plans?


© 2024 Google
Google Earth

How long is a ramp?



Scenario #2

- A contractor places 100 tons of material with an unapproved mixture design.
- After a discussion, the engineer allows the contractor to continue placing with the unapproved mixture design.
- At 500 tons, a project manager disagrees with the engineer and directs a switch in mixture design.
- The contractor paves with an approved mixture design for the remainder of the 10,000 ton project.
- Question: Should the department administer a non-performance credit and, if yes, for what quantity should the credit represent?

Key take away is emphasizing the importance of pre-work communication.

Follow the specifications. If you don’t, gain concurrence before the work begins. Document how the specification is not being followed and why.