

Intermodal ODOT

What does it mean to front-line employees in the Region Tech Centers & Technical Services?

2015 ODOT Transportation Engineering Conference

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ODOT

April 29, 2014





ODOT Mission Statement

To provide a safe, efficient transportation system that supports economic opportunity and livable communities for Oregonians.

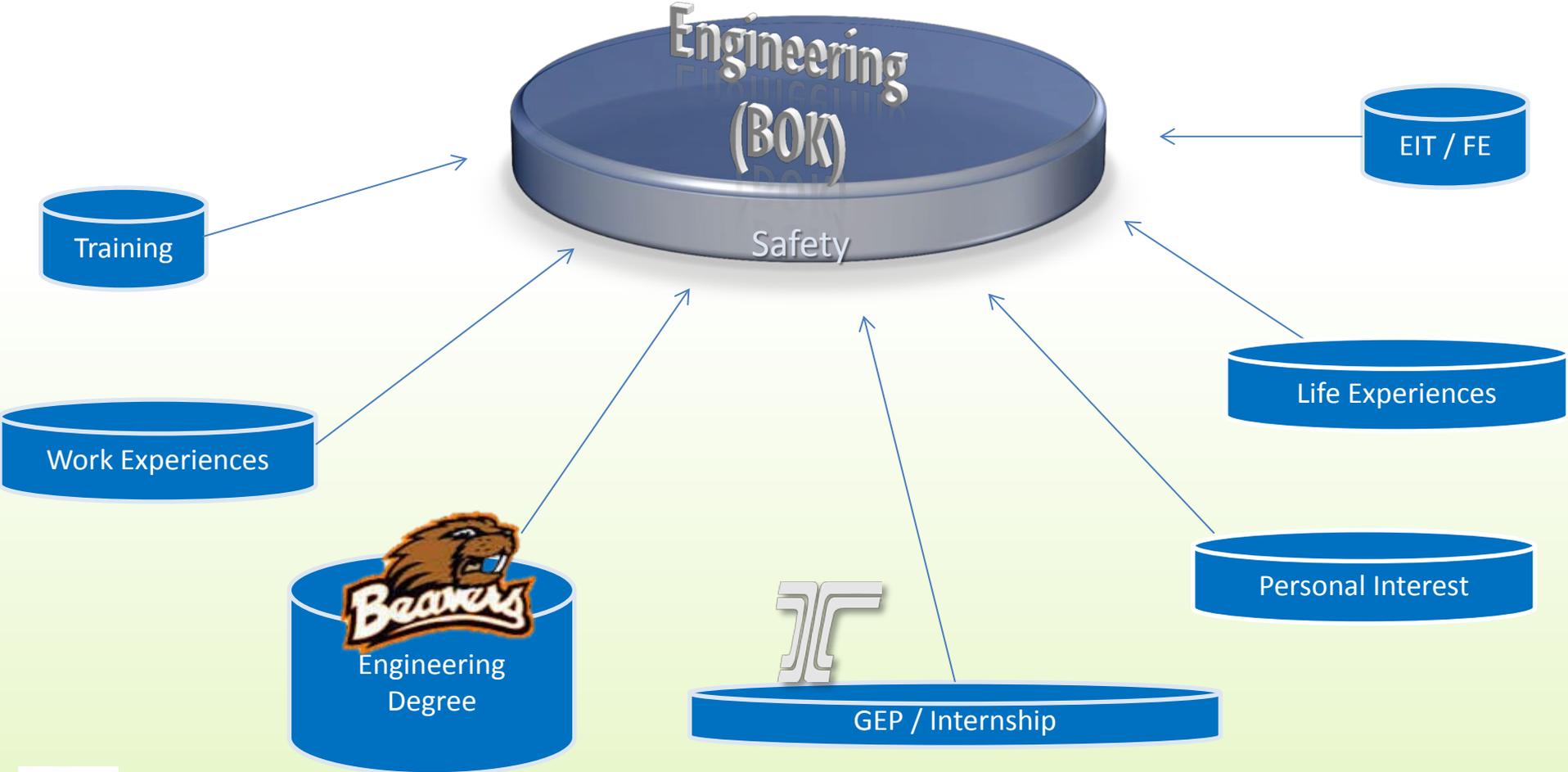


ODOT Mission Statement

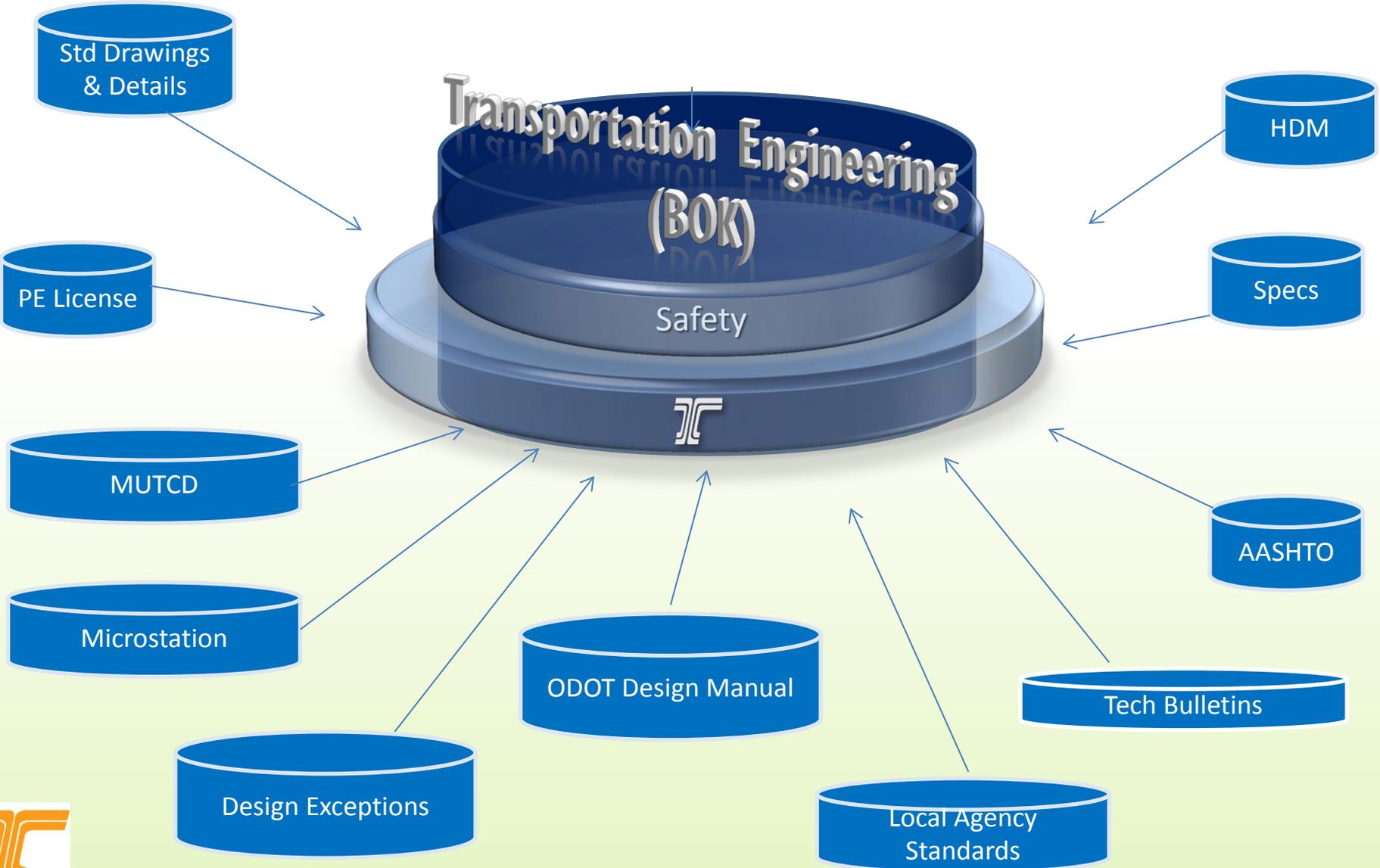
To provide a **safe, efficient transportation system** that supports economic opportunity and **livable communities** for Oregonians.



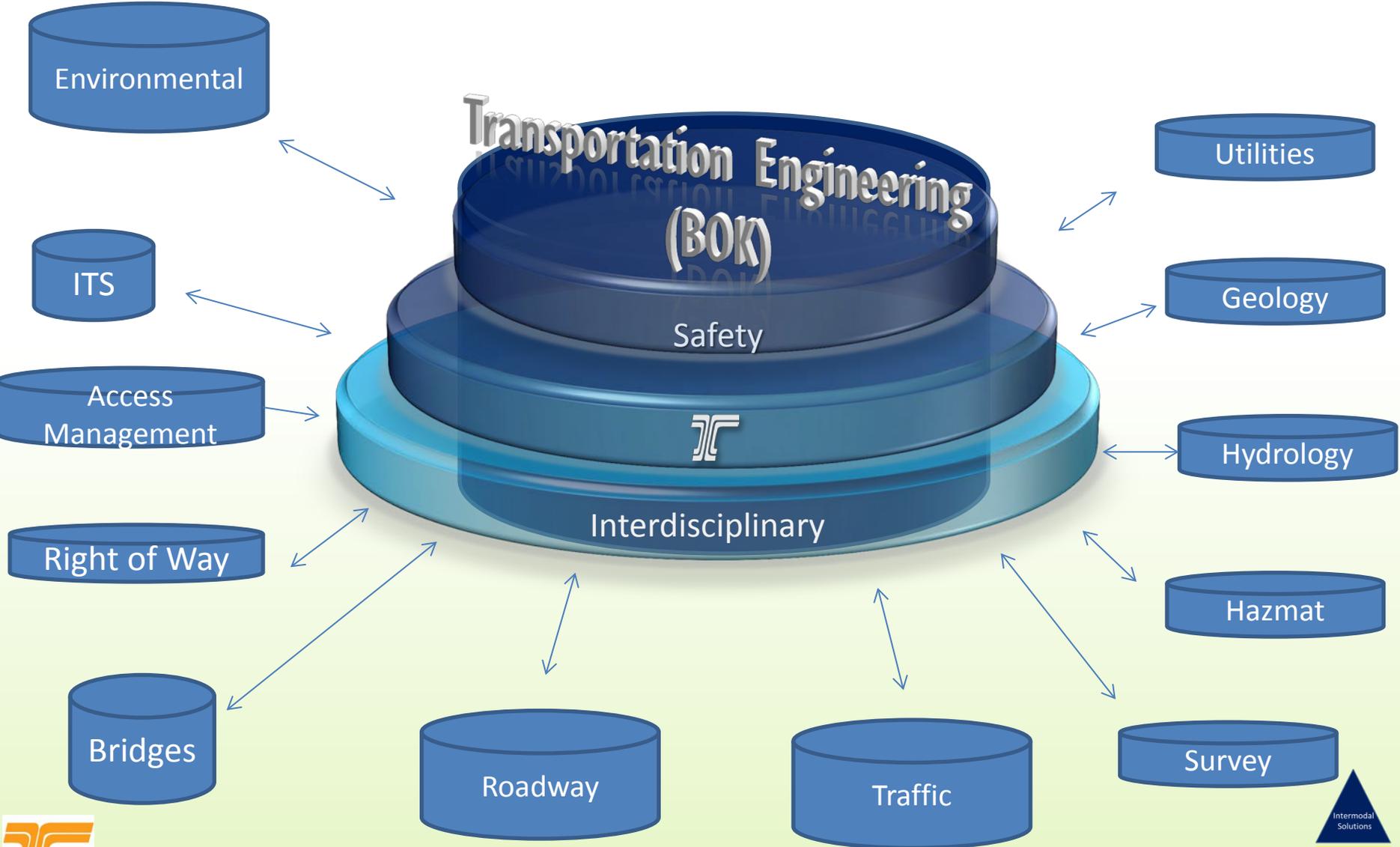
Engineer Body of Knowledge (BOK)



Discipline Specific Engineer Body of Knowledge (BOK)



Interdisciplinary Engineer Body of Knowledge (BOK)

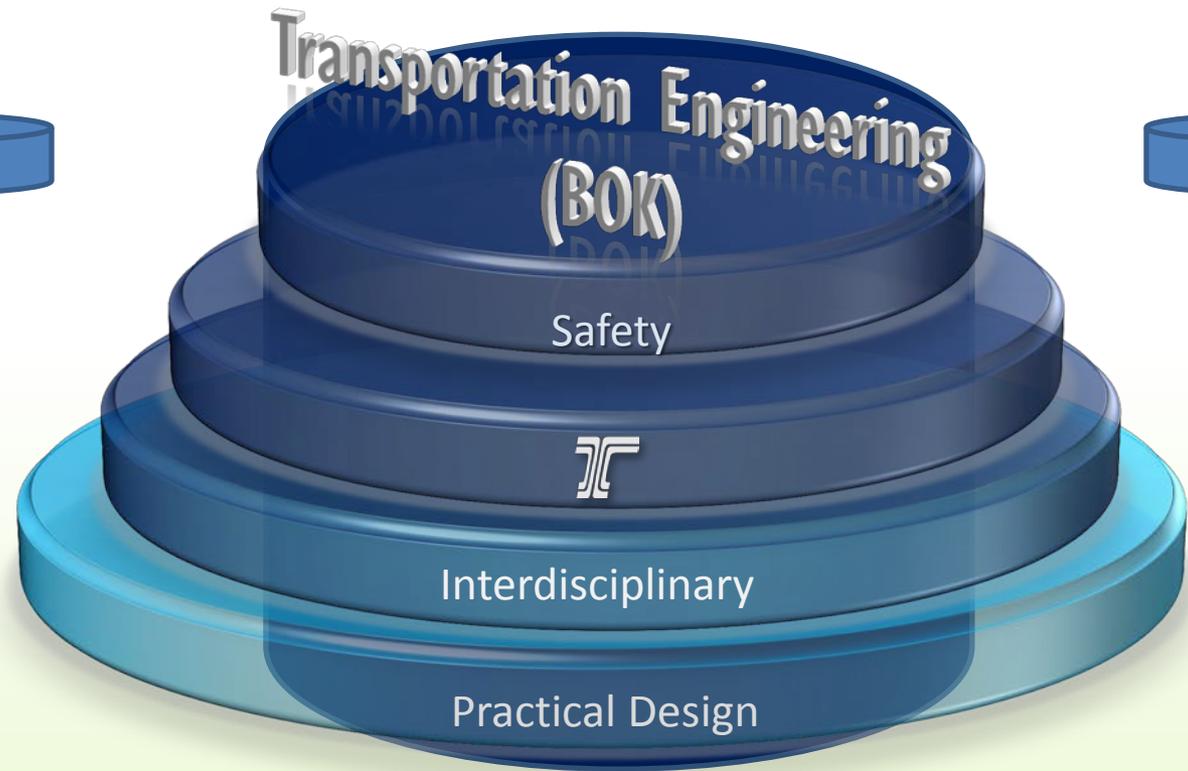


ENVIRONMENTAL

- Land Use
- Socioeconomics
- Environmental Justice
- Clean Water Act Section 404/Wetlands/Waters of the State
- Water Quality/Water Quality Treatment/New Impervious Surface
- Federal Endangered Species Act (ESA)/State Threatened & Endangered Species
- Federal Lands Survey & Manage Species
- Federal Lands NEPA requirements
- Historical and Archeological Resources (Cultural Resources)
- Visual Resources
- Section 4(f) – Parks and Recreational Resources
- Section 6(f)(3) – Property and/or amenities purchased through federal park funds
- Air Quality
- Noise
- Hazardous Materials/Contaminated Roadside Materials (unclean fill)
- Tribal Coordination
- Public Outreach



ODOT Engineer



Safety

Cost

Environment

Stakeholders

Efficiency

Public Involvement

Dev/Rev

S.C.O.P.E.

Planning

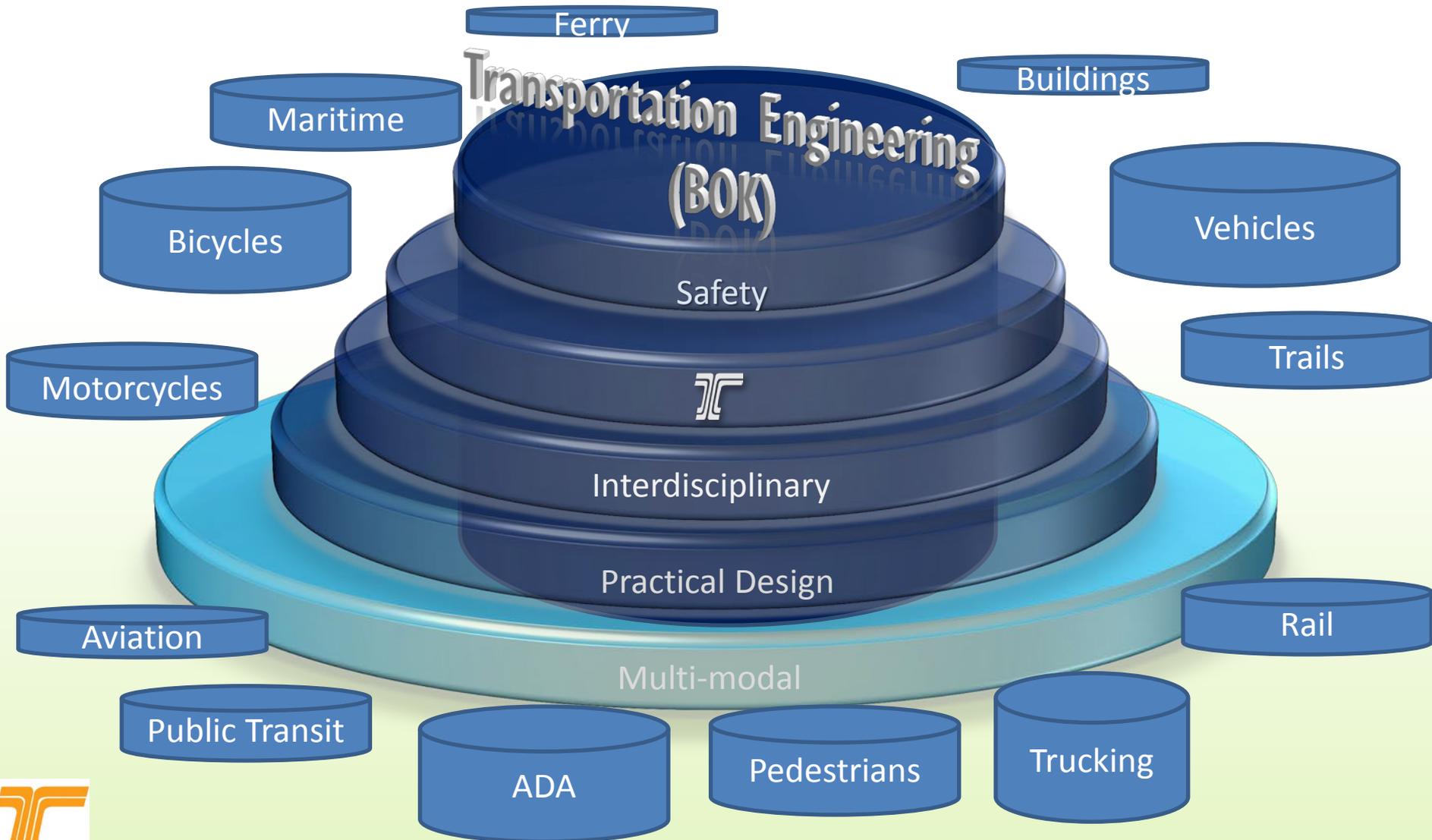
Maintenance

Construction

Local Agencies



Interdisciplinary Multi-modal Transportation Engineer



Rail

- If project is within **500 feet** of any railroad track, regardless of whether there is a railroad crossing, contact the **Rail & Public Transit Division**. (Project may not have a crossing impact, but may have a different unforeseen railroad impact)
- Any proposed alteration of a public road, within **the safe stopping distance** of the crossing, requires that a crossing application be submitted to Rail & Public Transit Division (Crossing Safety). The specified alterations must be authorized by the Division Administrator, through a crossing Order, prior to any construction being initiated.
- **Crossing Orders** involve, at a minimum, three parties (road authority [at least one but could be more], railroad [at least one but could be more], and Crossing Safety section).
- There are many instances where a rail line is owned by one railroad and leased to, and operated by, another. In these instances both railroads are parties. They both have equal say in the crossing order process. Don't communicate with only one railroad and assume that they are speaking for the other railroad or are passing on any information.
- The Crossing Safety section should like to be involved in **conceptual design** and be given the opportunity to review at **30% plans**.
- Draft crossing application can be submitted at **60% plan completion**.
- Official crossing application should be submitted at no less than **90% plan completion**. Crossing Orders are based on the submitted plans. If the plans change, then another crossing application must be submitted to alter what was authorized in the previous crossing Order. Each time the plans change it opens up another round of negotiation and review by all parties, which may lead to delays.
- **Diagnostics (scoping meeting)** will involve all the parties (or their designated representative) associated with the proposed crossing Order. The Crossing Safety section may request a diagnostic upon receiving a crossing application. These are typically onsite meetings, and the parties have the ability to discuss concerns, options, and designs.
- **Rail signal preemption – Interconnection** between crossing signals and nearby traffic signals are required if the intersection is within **215 feet** of the crossing. There are locations in Oregon where this distance is greater, where a diagnostic team determined that an interconnection was needed. At interconnected crossing, any changes in traffic signal timing must be coordinated with the railroad. The Crossing Safety section should be involved as well as this may require a new crossing Order.
- Target improved safety for the railroad
- It costs railroads to maintain crossings, which are of no net benefit to them
- Most railroads are protective of their **right of way**, and do not want it used by others
- Railroads want to be paid for their time, expect fees associated with plan reviews (local representative may need to send plans to corporate headquarters)
- To successfully work with the railroads requires respect and a good relationship
- Identify who is the correct contact with the railroad for the work being proposed
- Have the railroad identify what you need to do before they will participate
- Identify what needs to be done prior to entering upon railroad property
- Know the risks to the railroad and identify how the proposed project mitigates, or reduces, the railroads liability



Public Transit

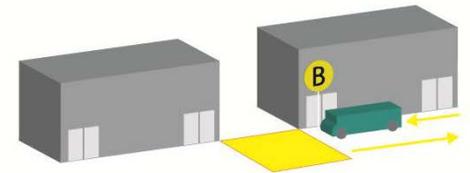
Transit Stop Locations

- Operational issues (e.g., interaction with other vehicles, bicycles, and other modes)
- Passenger accessibility and safety issues
- Ridership potential/destinations to be served.
- Transit stop placement: near-side, far-side or mid-block.

Factors to consider when selecting a bus stop location:

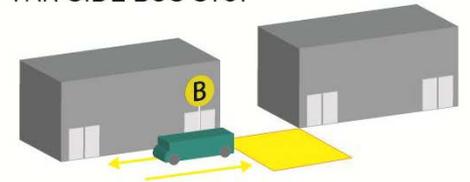
- Adjacent land use and activities
- Bus route (for example, is bus turning at the intersection?)
- Impact on intersection operations
- Intersecting transit routes
- Intersection geometry
- Parking restrictions and requirements
- Passenger origins and destinations
- Transit rider accessibility
- Physical constraints (e.g., trees, poles, etc.)
- Potential ridership
- Traffic control devices

NEAR-SIDE BUS STOP



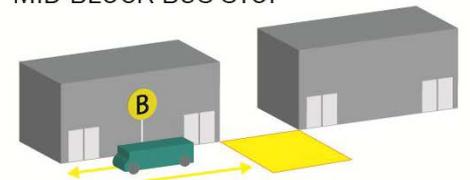
Bus stops immediately prior to intersection

FAR-SIDE BUS STOP



Bus stops immediately after passing through intersection

MID-BLOCK BUS STOP



Bus stops within the block



Public Transit

12.0 Design Guidelines for Public Transportation

12.1 Design Considerations

12.2 Bus Stops

- Bus Stop Location Selection
- Bus Stop Layout and Delineation
- Guidelines for Special Treatment

12.3 Passenger Accessibility and Other Amenities

- Sidewalks
- Providing for the Disabled
- Amenities for Waiting Passengers
- Security and Safety

12.4 General Roadway and Intersection Design for Buses

- General Roadway Design for Buses
- Intersections
- Bus Pads

12.5 Park and Ride Facilities

- Needs Assessment
- Site Selection
- Site Design

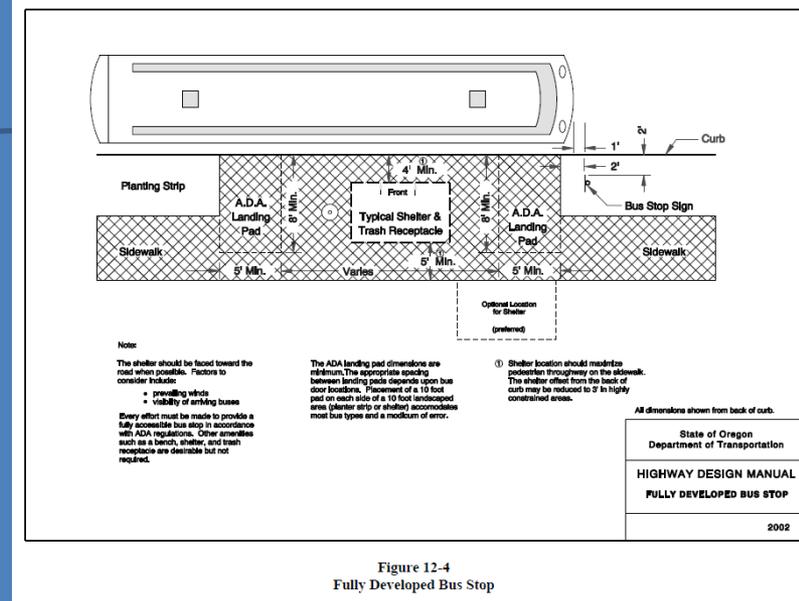


Figure 12-4
Fully Developed Bus Stop

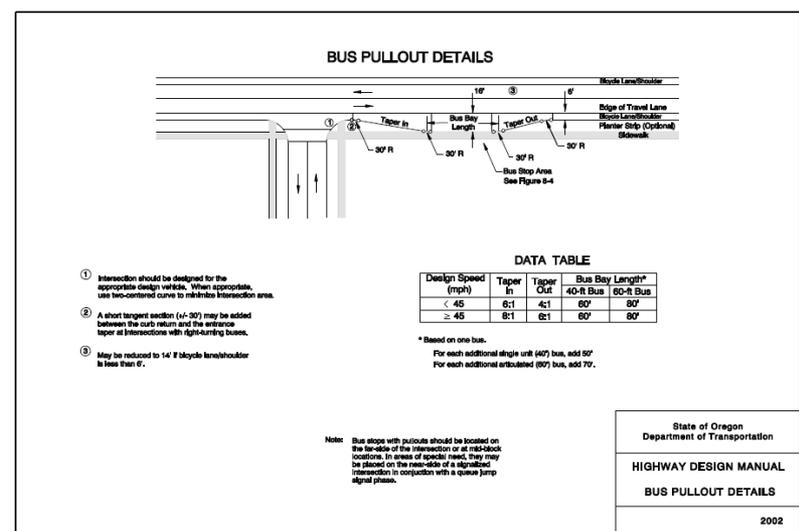
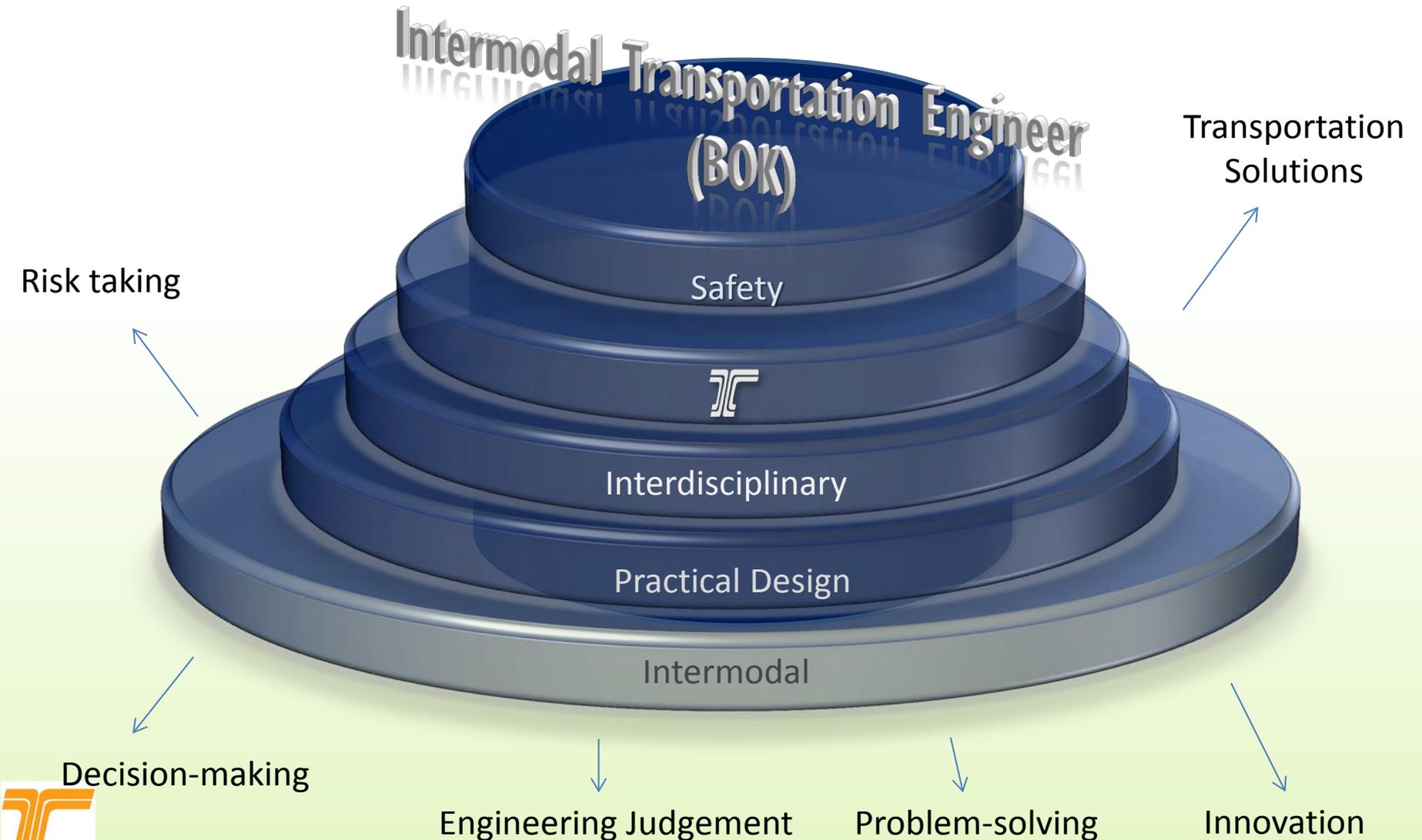
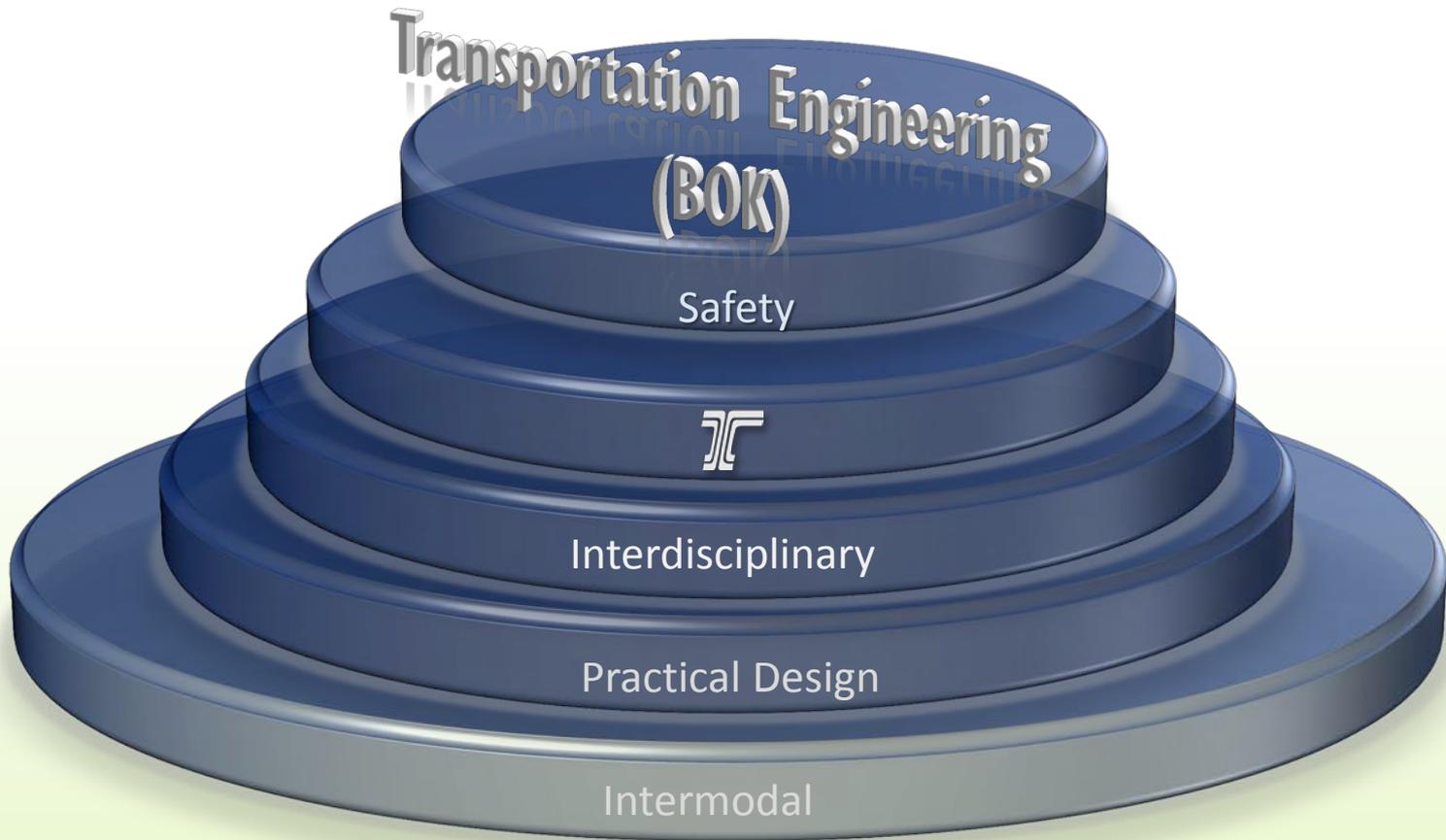


Figure 12-1

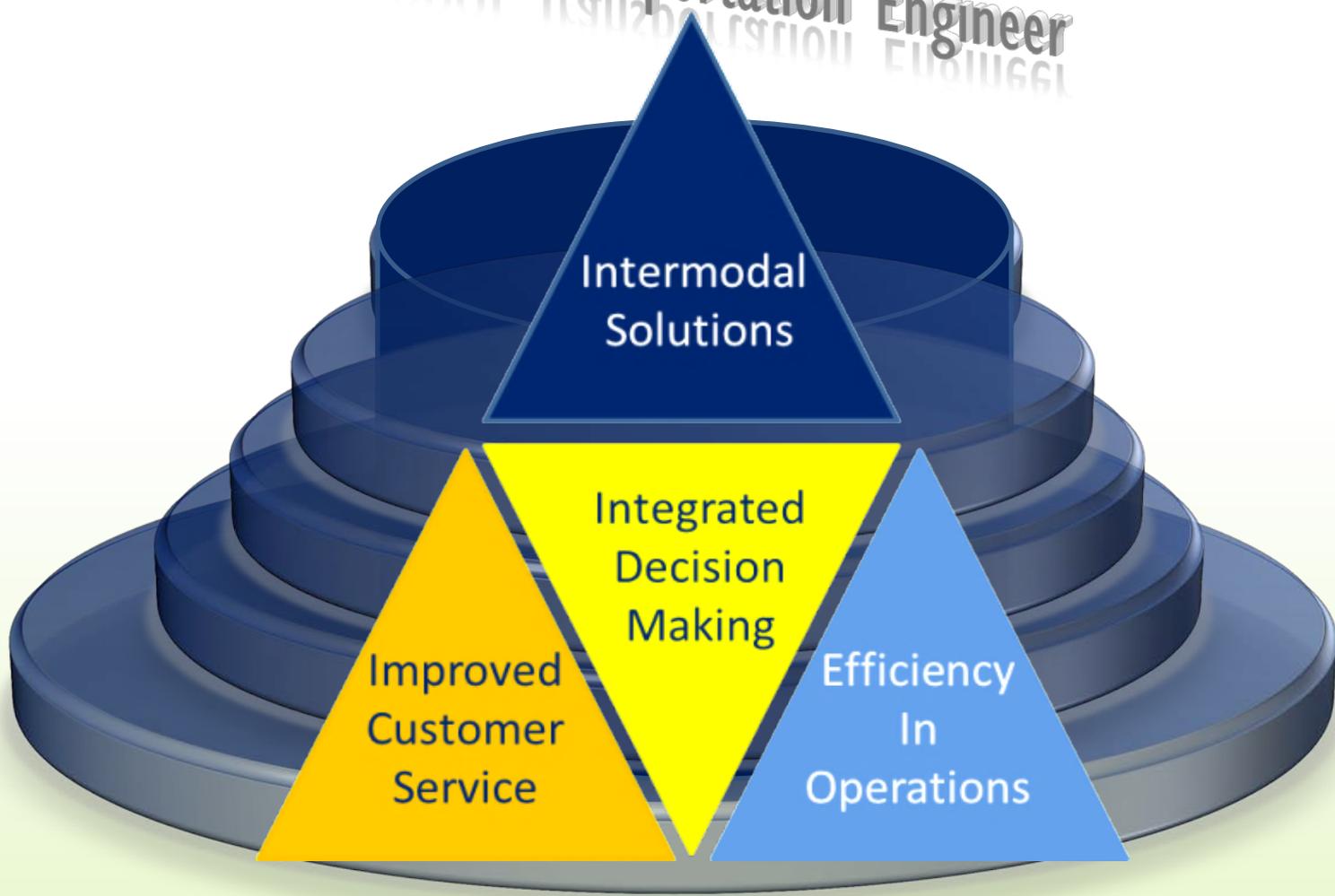
Interdisciplinary Intermodal Transportation Engineer

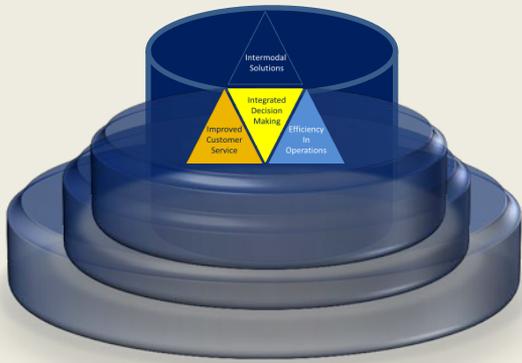


ODOT Transportation Engineer

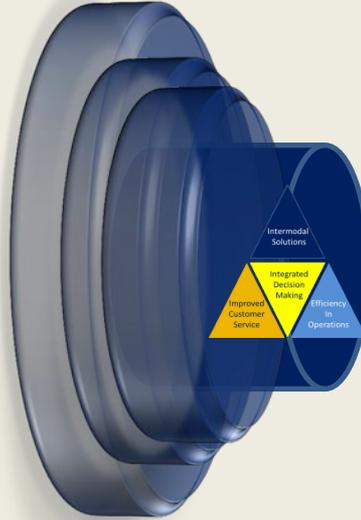


ODOT Transportation Engineer

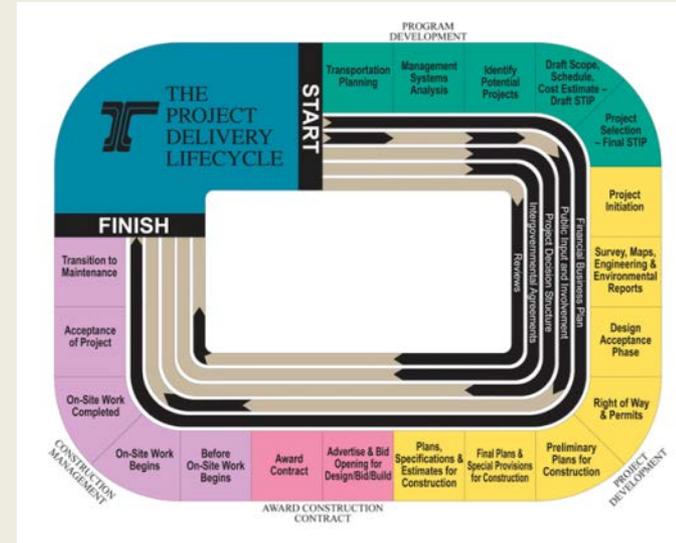




Body of Knowledge



Intermodal Lens

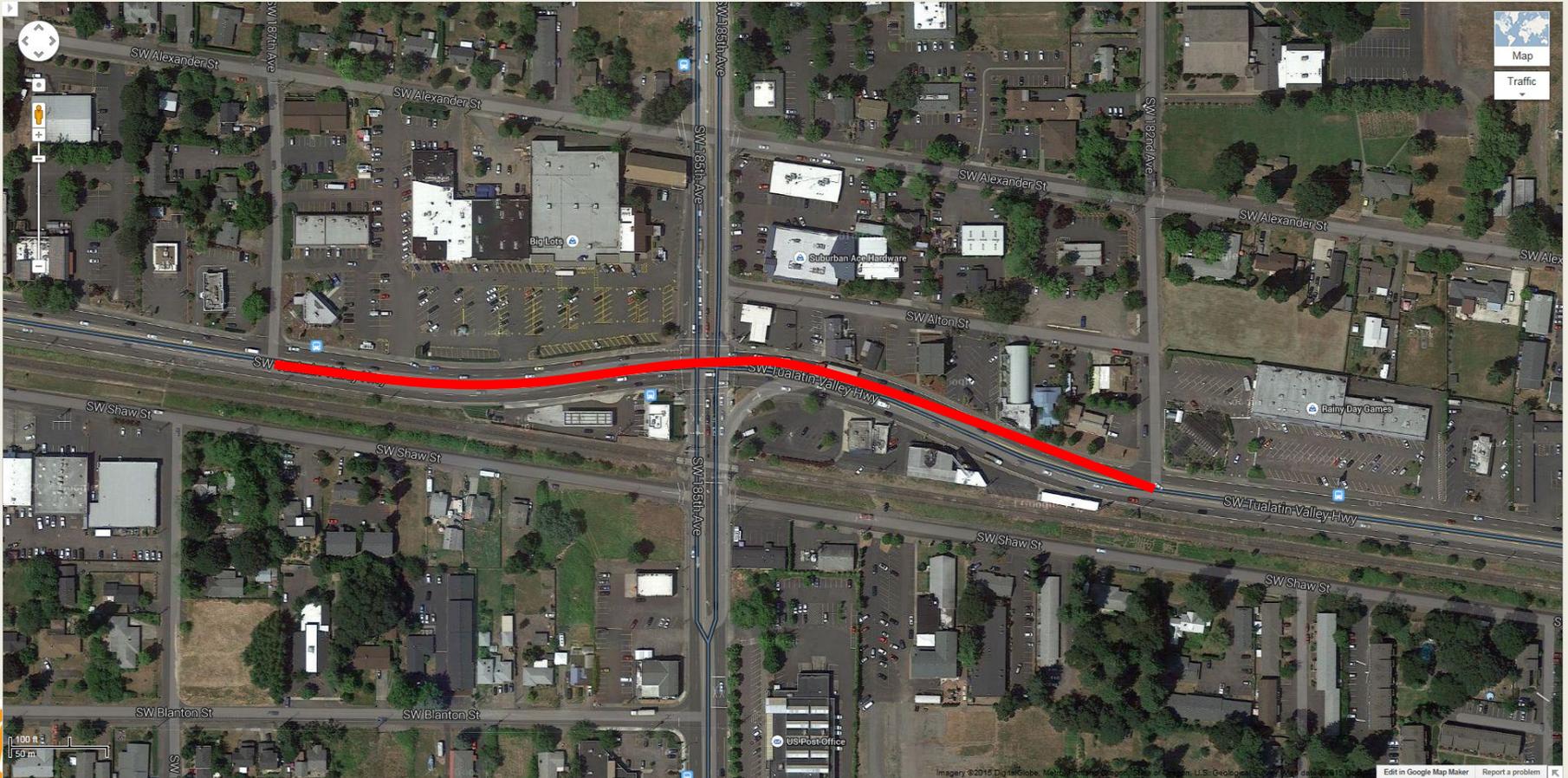


Body of Work



KN 17704 - OR8 (TV Highway): SW 185th Ave

- Project Purpose
 - Reduce rear-end and turning related crashes



OR8 TV Highway: SW 185th Ave

Business Case: Reduce rear-end and turning related crashes

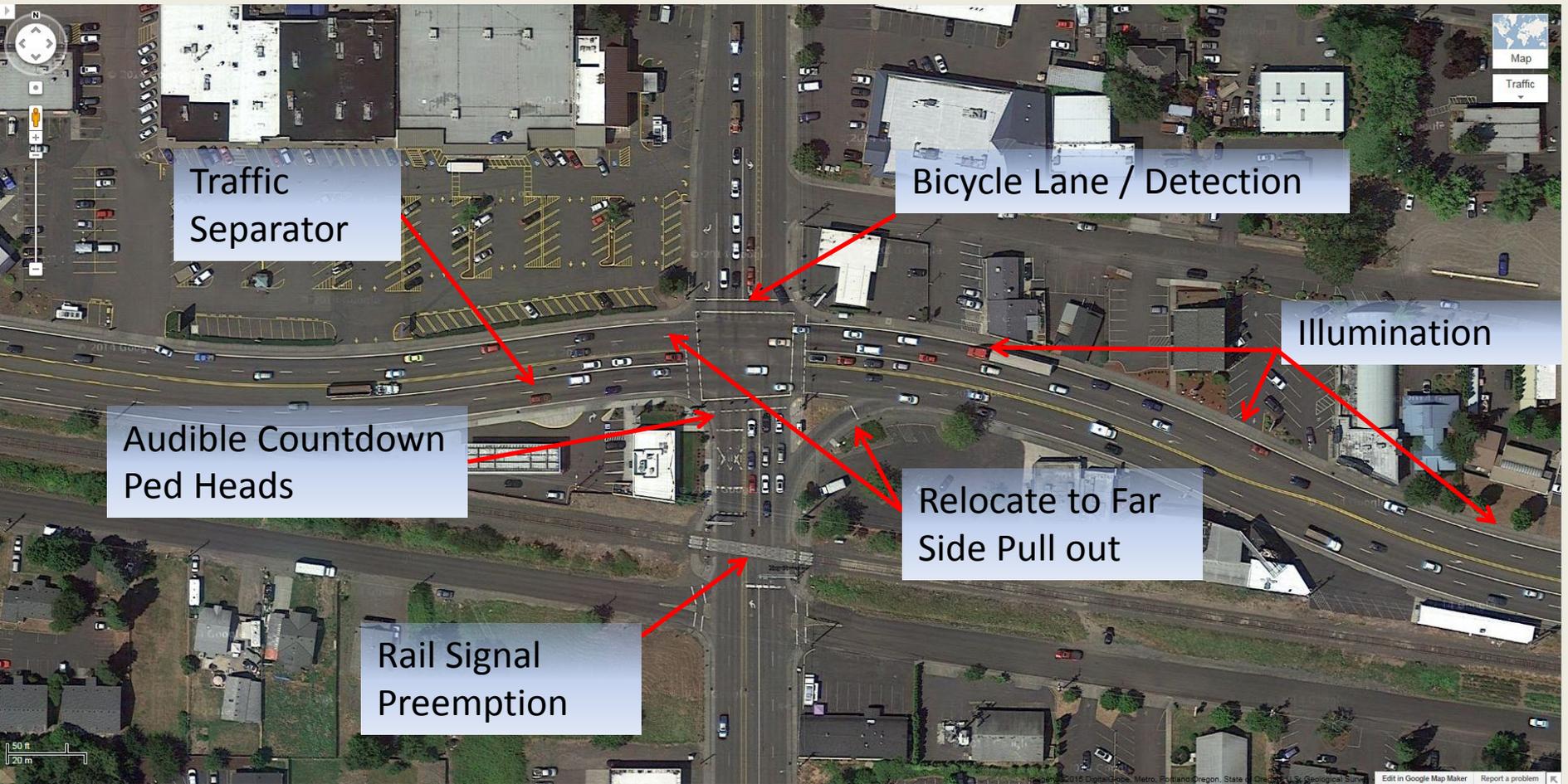


OR8 TV Highway: SW 185th Ave

Body of Work: Intermodal Project Scope



Design Considerations



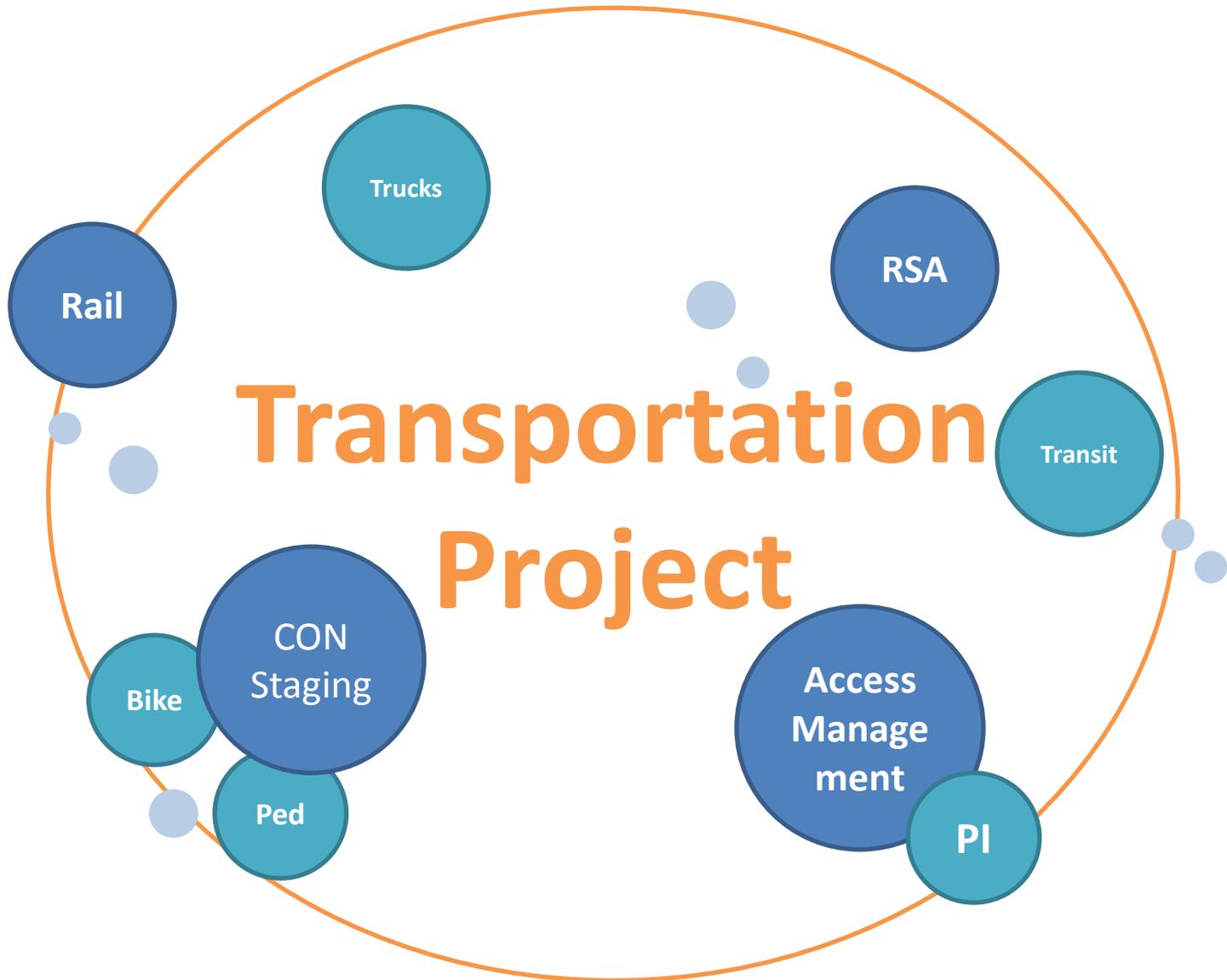
OR8 TV Highway: SW 185th Ave

Business Case: Reduce rear-end and turning related crashes

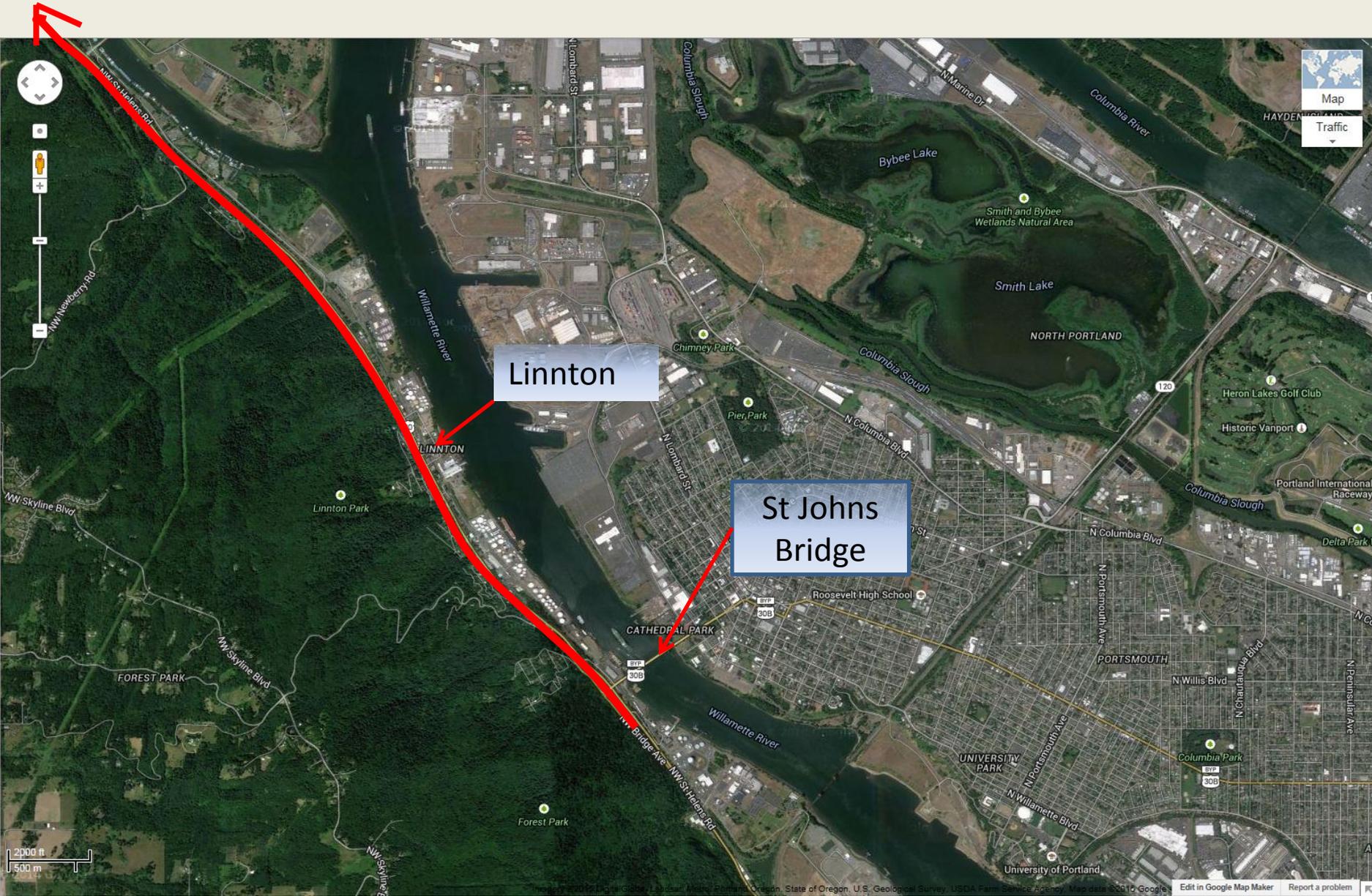


OR8 TV Highway: SW 185th Ave

Body of Work: **Intermodal** Project Scope

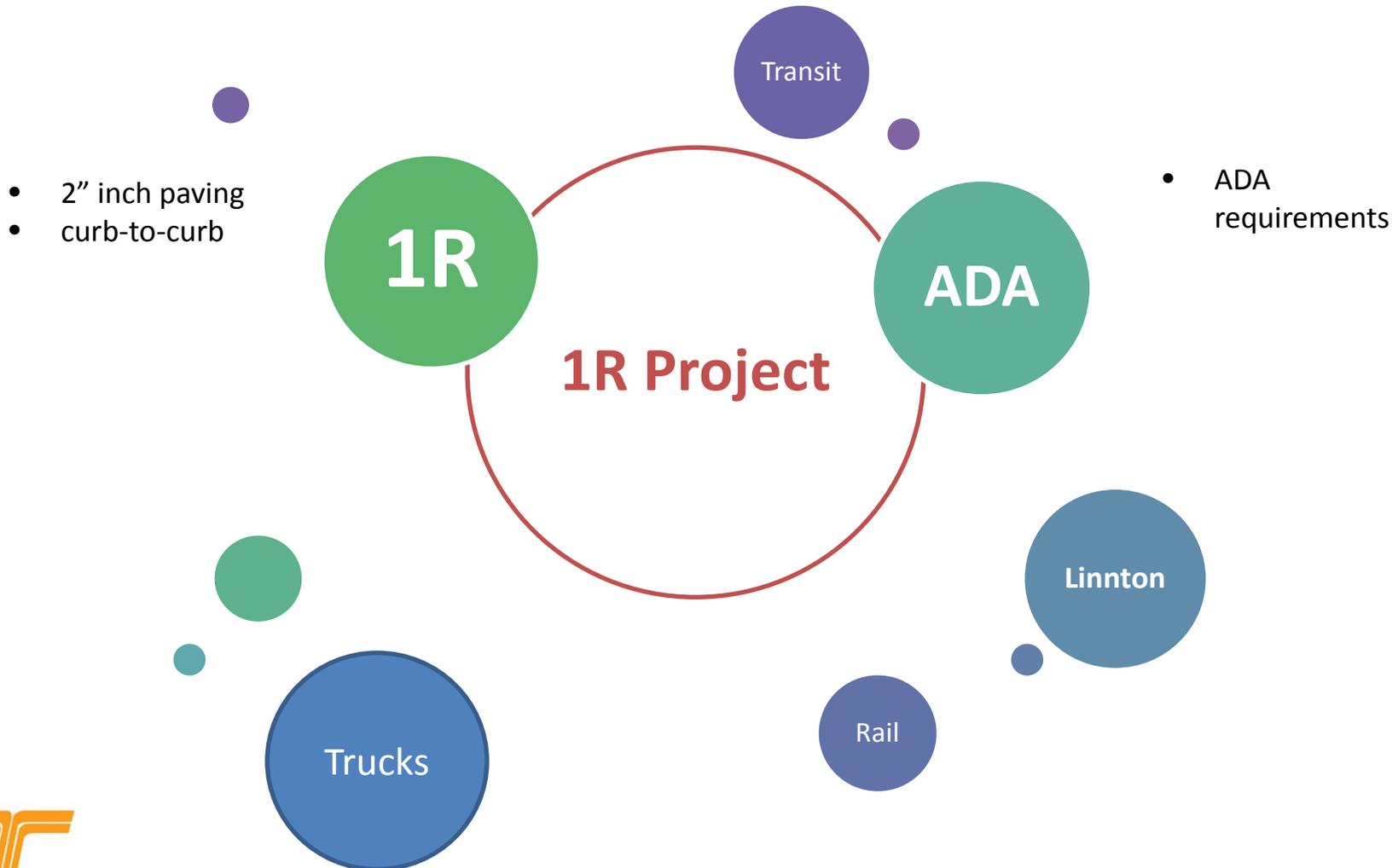


KN 18778 - US30: McNamee to Bridge



US30: McNamee to Bridge

Business Case: Rehabilitate existing pavement to extend the service life of the roadway



Design Considerations

- What opportunities exist here?



Design Opportunities?

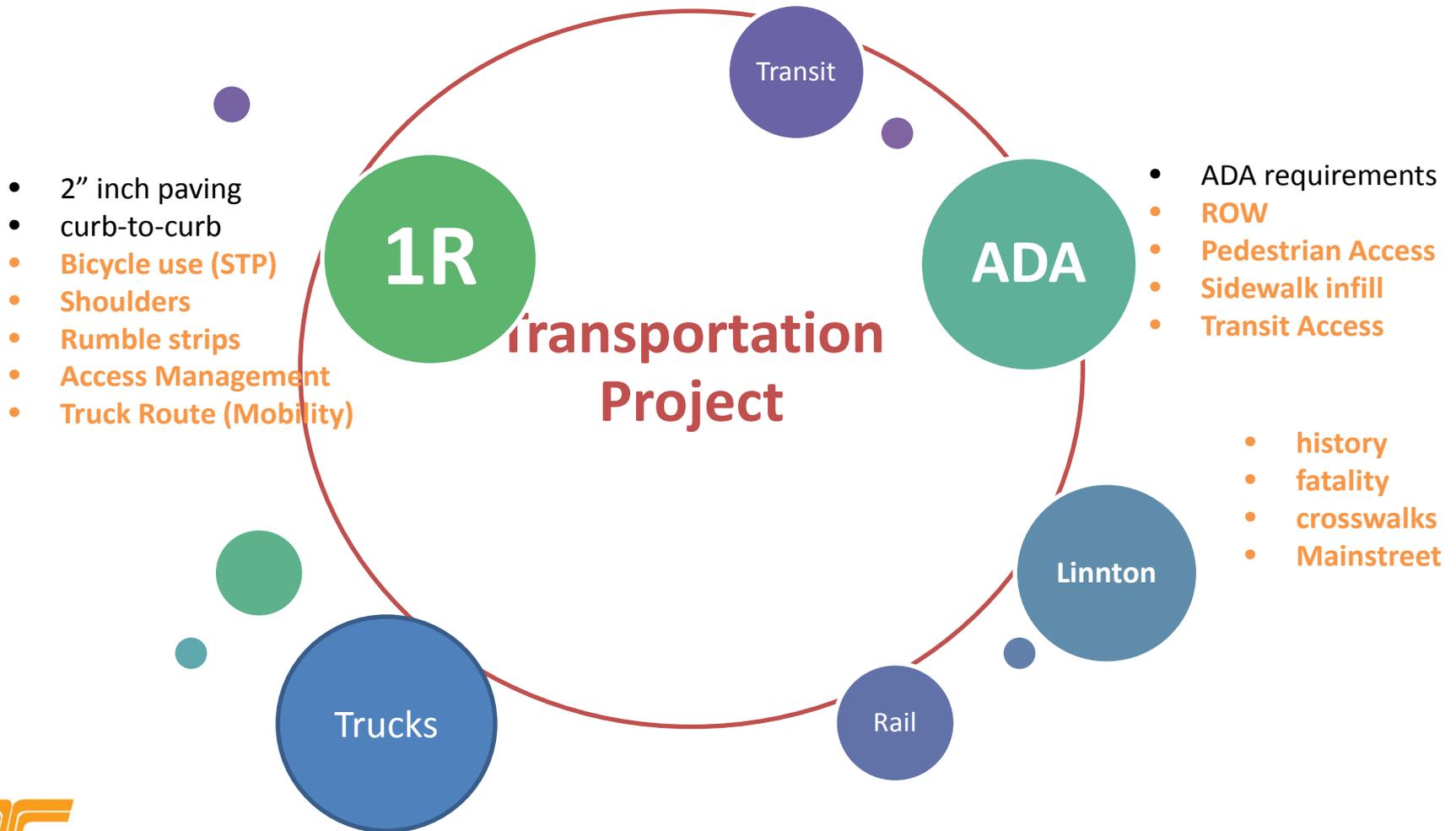


- 200 LF of sidewalk infill using SWIP funds connects more than 2 miles of sidewalk to the St. Johns Bridge



US30: McNamee to Bridge

Body of Work: **Intermodal** Project Scope



What does your Body of Knowledge get you today?

ODOT Transportation Engineer
(BOK)

Safety

Interdisciplinary

Practical Design

Intermodal Solution

Machine Control

Autonomous Vehicles

Drones

Connected Vehicles

Digital Signatures

Smart Roadways

3D Design



Thank you

