

# 2016

# FRA Rail Program Delivery Meeting

## FRA Capital Cost Estimation Guidance

Seema Javeri

# Objectives

- ▶ New FRA Cost Estimating Guidance
- ▶ Estimate Checks/Risks
- ▶ Characteristics of a Good Estimate
- ▶ Estimate Development Resources
- ▶ Questions



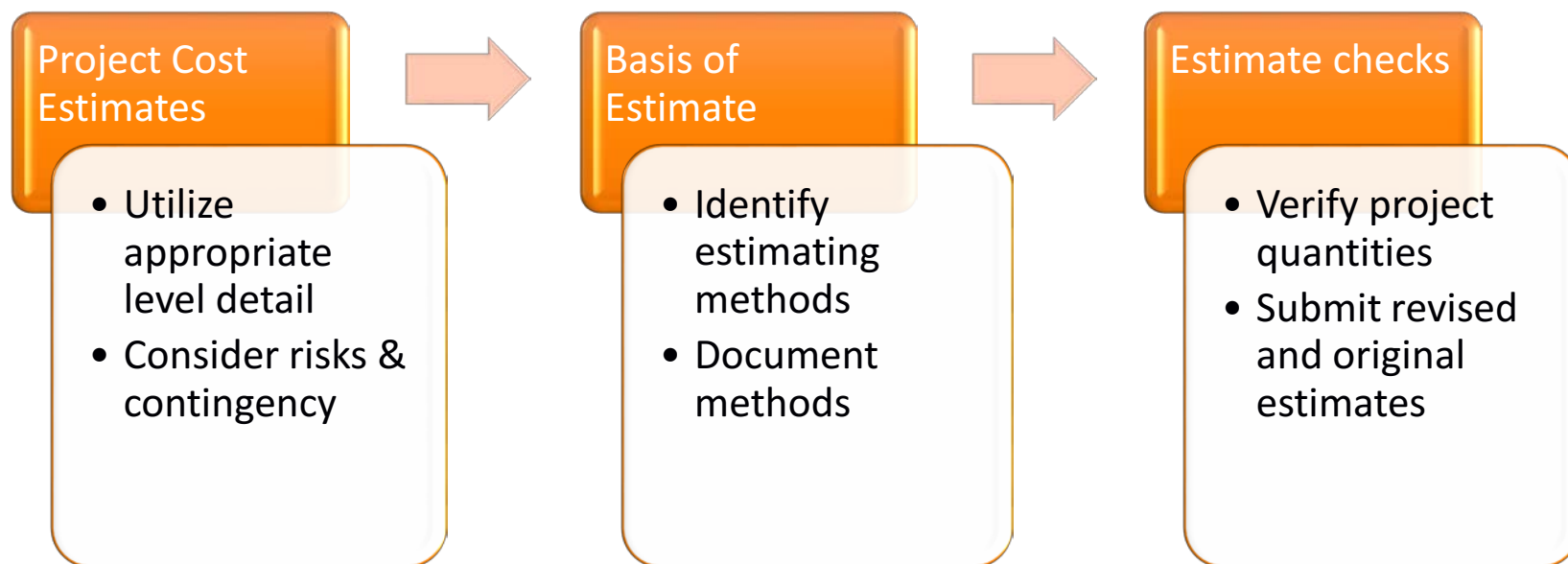
# New FRA Cost Estimating Guidance

# Why did FRA create the cost estimation guidance?

- ▶ US Government of Accountability Office prompted FRA to develop a guidance
- ▶ To help Grantees compensate for uncertainties, unforeseen conditions, and unknowns in capital cost estimates
- ▶ Responses to NOFO/NOFA must include cost estimates, Estimator's Methodology Memo, and estimate checks

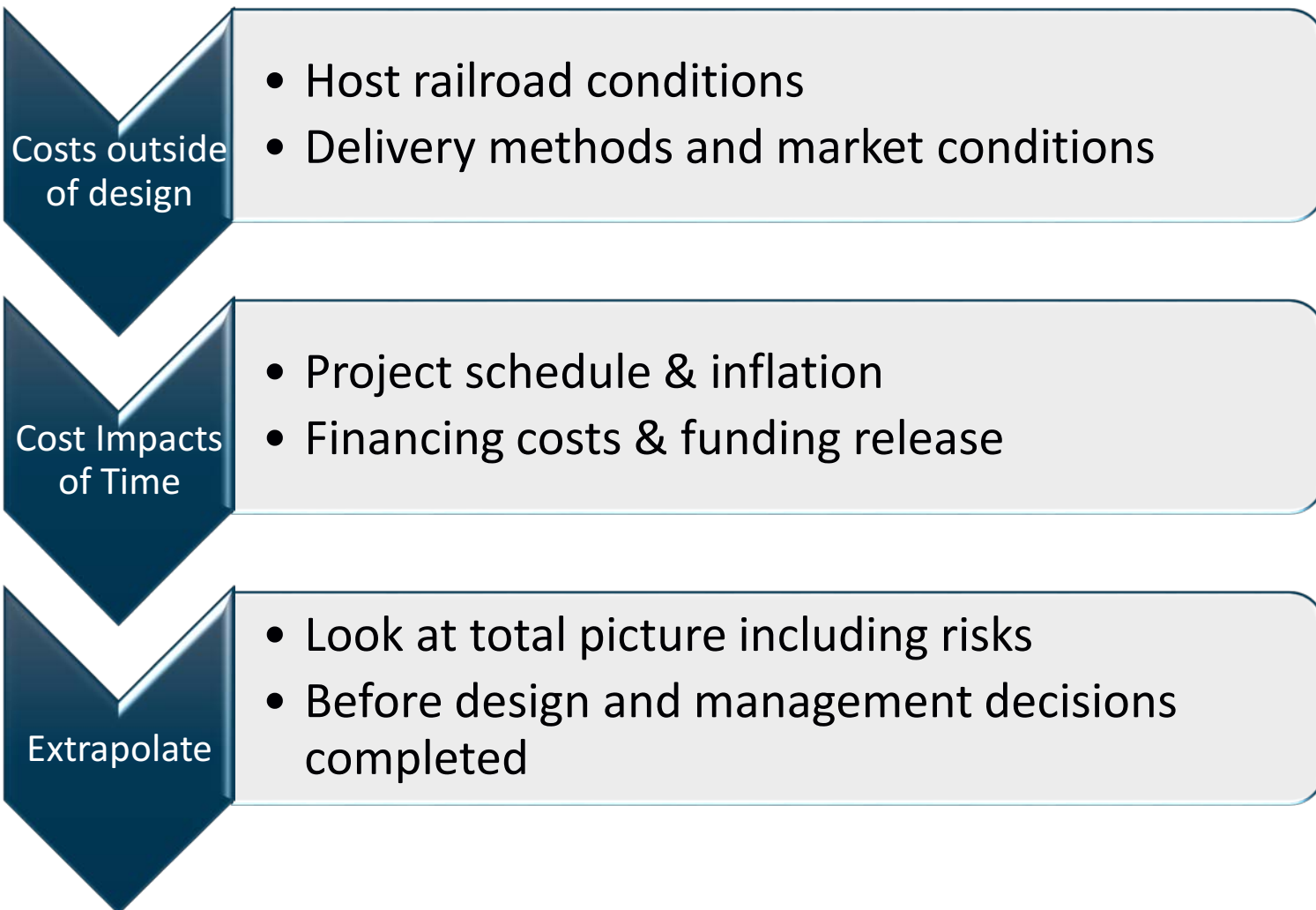


# FRA Estimates



# Estimating Considerations

6



# Preparing Basis of Estimate Memo

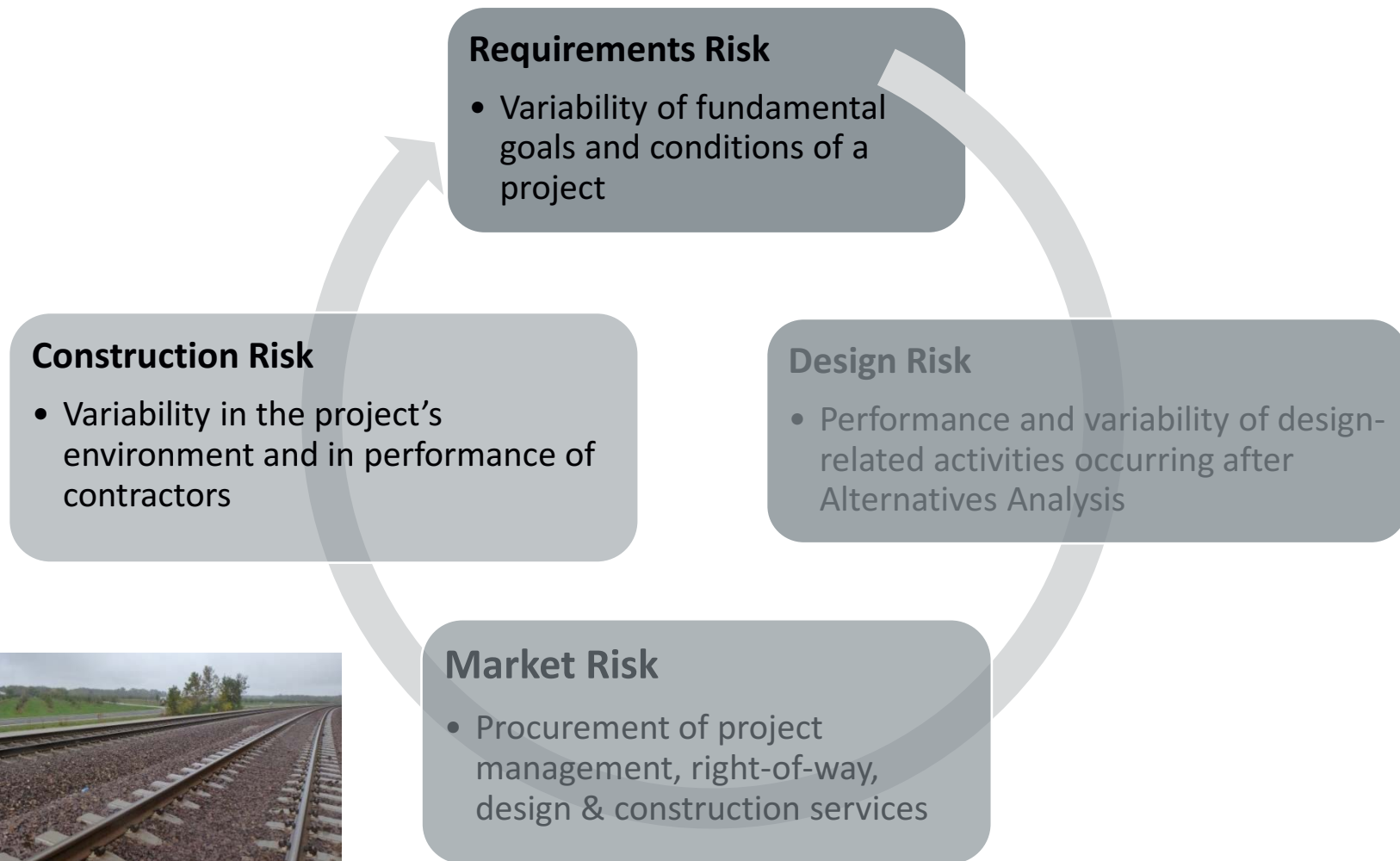
1. Introduction And Project Description
2. Project Technical Baseline
3. Estimating Methodologies And Standard Cost Categories
4. Supporting Assumptions/Ground Rules
5. Estimate Limitations/Risks
6. Estimate Checks



# Estimate Checks/ Risks



# Types of Risks



# Railroad Specific Issues

- ▶ Understanding scope and responsibilities
- ▶ Vehicle procurements - requirements coordination, schedule
- ▶ Davis Bacon/ prevailing wage
- ▶ Utility changes
- ▶ Station ADA requirements



# Railroad Specific Issues cont'd

- ▶ Closure Windows
- ▶ Construction staging under operating railroad conditions
- ▶ Work site access agreed early in the design process
- ▶ Grade crossings



# Host Railroad Costs

- ▶ Costs of stopping, diverting, or slowing existing trains
- ▶ Costs and risks associated with line closure windows
- ▶ Costs to the host railroad for personnel for construction, flagging, roadway worker protection



# Host Railroad Costs cont'd

- ▶ Flaggers and signals crews availability
- ▶ Labor rates, per diem/travel time guarantees
- ▶ Time and labor to inspect, commission, and accept the work



# Signals And Special Track

14

- ▶ Lead times for special track work items (double slip switches, crossing diamonds, and size of turnouts)
- ▶ Signal lead time and ripple effect to the existing system
- ▶ Spare parts availability if materials are lost or stolen at the job site
- ▶ Buy America requirements



# Characteristics of a Good Estimate

# Characteristics of a Well-Developed Cost Estimate

1. Consistent estimating approach
2. Based on a schedule with all phases
3. Well documented and traceable - include assumptions and ground rules
4. Includes contingencies and risk review





# Characteristics of a Well-Developed Cost Estimate cont'd

- ▶ Justifiable inflation rates
- ▶ Sums to a Total Project Cost in YOE dollars
- ▶ Includes management reserve, if necessary
- ▶ Formally approved by the project sponsor



# Good Practices

- ▶ Track and document bid estimates
- ▶ Update the estimate to reflect current market conditions
- ▶ Use a risk based approach to evaluate future market conditions



# Common Omissions

- ▶ Flagging – costs can quickly grow if not estimated correctly.
- ▶ Archeological or environmental issues
- ▶ Wider footprints have more room for errors
- ▶ Buy America
- ▶ Grade crossings
- ▶ Utility relocations
- ▶ Right of Way



# Estimate Development Resources

# Estimating Resources

FRA Capital Cost Estimating Guidance [FRA Capital Cost Estimating Guidance](https://www.fra.dot.gov/Page/P0926)  
<https://www.fra.dot.gov/Page/P0926>

FRA Standard Cost Category spreadsheet  
[FRA Standard Cost Category spreadsheet](https://www.fra.dot.gov/eLib/details/L16055)  
<https://www.fra.dot.gov/eLib/details/L16055>



# FRA 10 Standard Cost Categories

22



Guideway & Track Elements

Stations, Stops, Terminals, Intermodels

Support Facilities: Yards, Shops, Admin. Bldgs

Sitework & Special Conditions

Systems

# FRA 10 Standard Cost Categories (cont'd)

23



Row, Land, Existing Improvements

Vehicles

Professional Services

Unallocated Contingency

Finance Charges

# Estimating Resources

Risk and Contingency Review and Other FRA  
Monitoring Procedures

Risk and Contingency Review and Other FRA  
Monitoring Procedures

FTA Capital Cost Database

FTA Capital Cost Database





# Cost Estimating Session Takeaways

25

1. New FRA Cost estimating guidance
2. New requirements: basis of estimate & estimate checks
3. Online estimating resources



# Questions

# 2016

# FRA Rail Program Delivery Meeting

# Thank you!

Seema Javeri

General Engineer

Seema.Javeri@dot.gov

202-493-0136

<https://www.fra.dot.gov/Page/P0926>