U.S. Department of Transportation
Federal Highway Administration

Project Bundling

Saves Bundles!

(Version 12-December 22, 2021)

<College/University name>
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Agenda

1. What is project bundling?
2. Why project bundling?
3. How is project bundling done?
4. Examples/Case Studies.
5. Resources.

Learning Objectives

Students should be able to:

1. Define project bundling (what) for public agencies (who).
2. Understand and define success for project bundling (why).
3. Describe how and when to create a project bundle.
4. Apply and evaluate project bundling.
5. Enumerate resources that are available for project bundling.

Agenda item #1

What is project bundling?

Learning objective:
Define what is meant by project bundling.

What is Project Bundling?

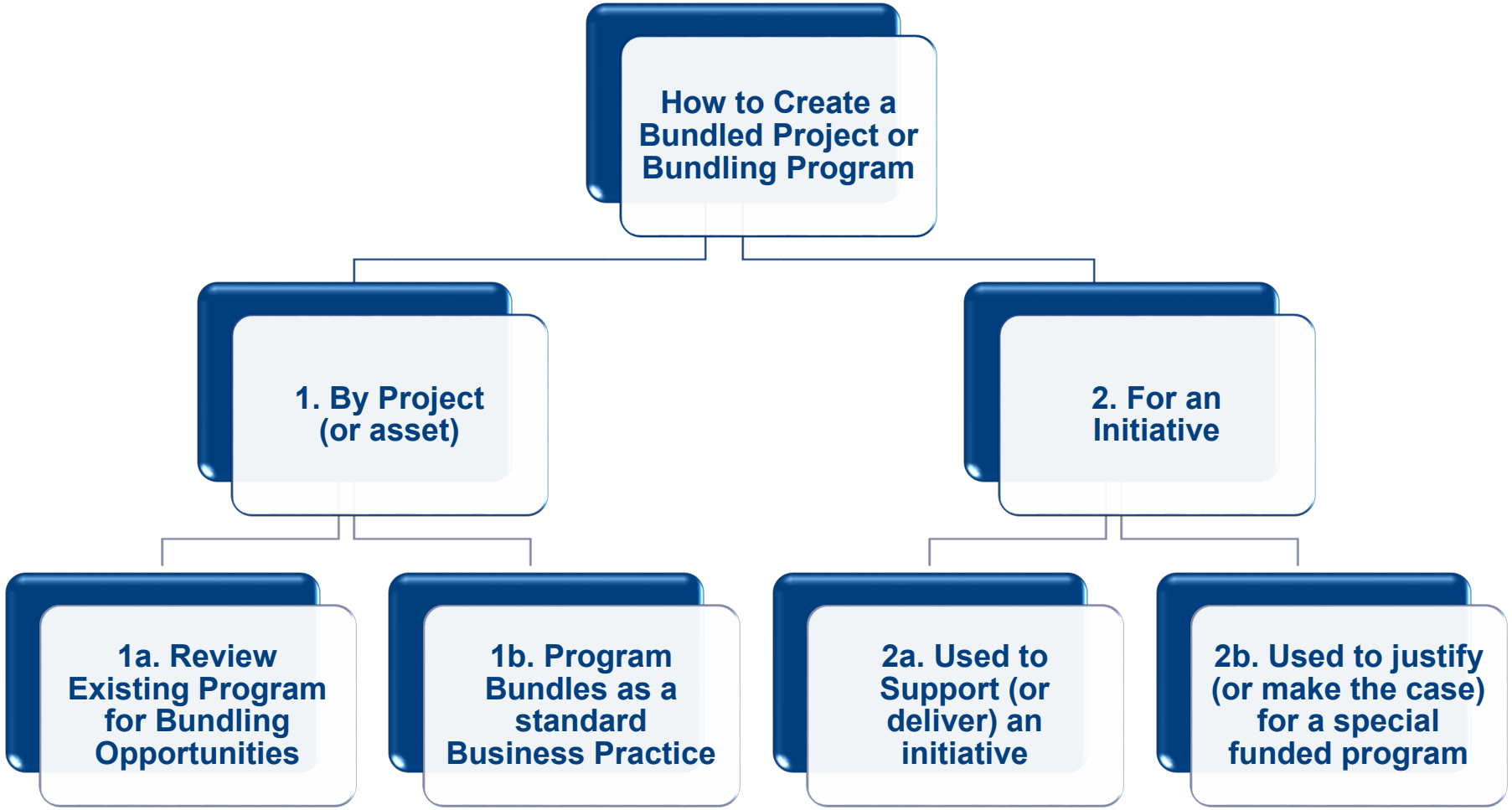
Project bundling is a process by which a single contract award is used to deliver multiple projects.

Source: FHWA

Basis for Advanced Project Bundling

- **Use Cases**
  - ✓ Traditional / Specialty
  - ✓ Initiative Based / Incidental
  - ✓ Last Minute
  - ✓ Catch-All
  - ✓ Advanced / Optimized

Agency Approaches to Bundling



Source: FHWA

Agenda item #2

Why project bundling?

Learning objective:
Understand and define project bundling success (why).

Why bundle?

Saves Cost!

Saves Time!

Saves Resources!

Source: FHWA

Why bundle projects?

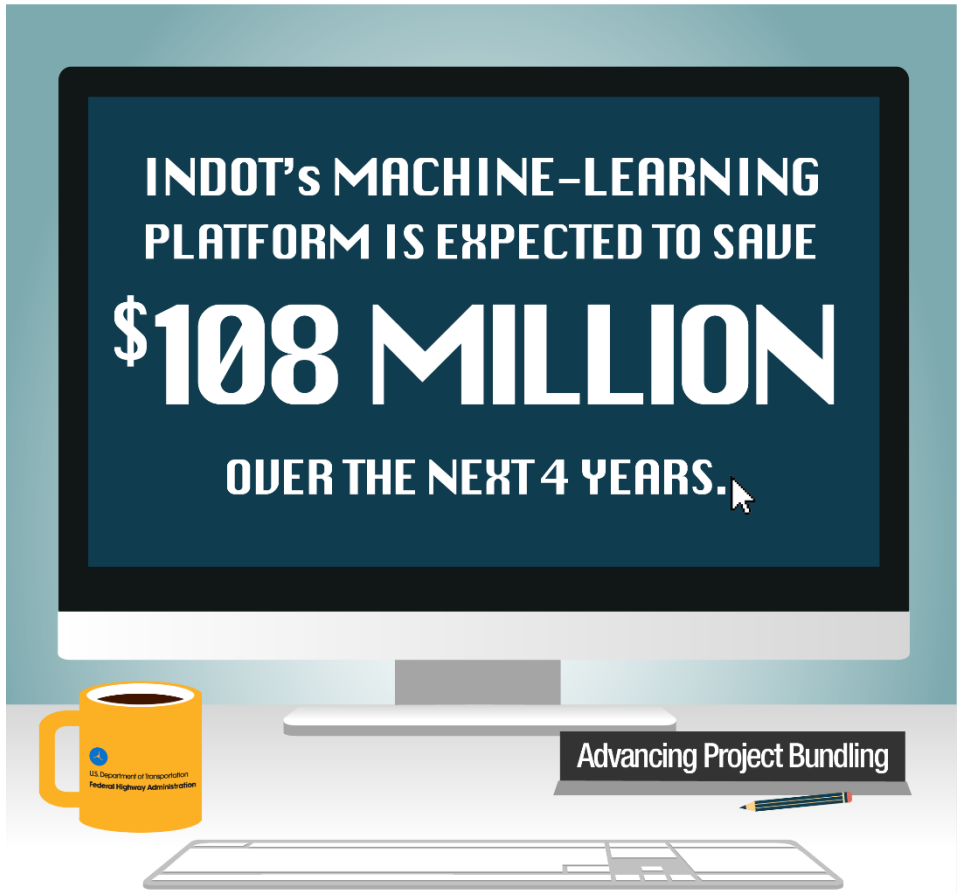
- **Streamlines** environmental analysis, design, contracting, and construction.
- **Allows** agencies to capitalize on **economies of scale** to increase efficiency.
- **Improves quality** through repetition.
- **Supports greater collaboration** during project delivery and construction.

Source: National Asphalt Pavement Association

Why is project bundling important?

- US infrastructure in poor condition
  - 2021 American Society of Civil Engineers (ASCE) Report Card = C-
  - Need more projects built faster.
- Some agencies are short of funds and are looking for ways to save money.
  - Can use economies of scale to pay less for each project than if they did each one individually.
- Some agencies have funds that must be spent quickly, or they lose the funds.
  - Need more projects built faster.

Savings



Source: Indiana Department of Transportation

Source: City of Oakwood, Georgia

More on why to bundle projects

- A question of achieving agency goals & objectives.
- Answer can be different for different agencies.
- Must consider benefits listed earlier against costs.
  - ✓ Political
  - ✓ Necessary education/training
  - ✓ Effort necessary in getting anything new “off the ground.”
  - ✓ “We’ve never done this before.”

What is success for you? (1 of 2)

- Speed? Getting several projects done quickly?
  - ✓ Answer can be different for different agencies.
  - ✓ Infrastructure needs are great.
  - ✓ Political pressure to broadly improve asset conditions.
  - ✓ Needs great and broad.
- Cost savings?
  - ✓ Repetition
  - ✓ Less paperwork / smaller support staff
  - ✓ Economies of scale

What is success for you? (2 of 2)

- Efficiency?
  - ✓ Fewer staff resources needed
  - ✓ Repetition.
- Quality?
  - ✓ Repetition
- Other?

Summary of Benefits and Considerations

BENEFITS	CONSIDERATIONS
• Save costs (economies of scale). • Coordinate NEPA approval. • Expedite project delivery. • Start construction earlier • Coordinate construction staging. • Reduce burden on agency staff. • Use project delivery and procurement innovation. • Apply technical/engineering innovation. • Capitalize on funding and finance innovation. • Benefit from local partnering-shared services. • Increase construction workforce opportunities. • Increase opportunities for small and disadvantaged businesses.	• Finance costs. • Mutual dependence. • State procurement restrictions. • Funding-annual program impact. • Local industry capacity. • Agency capacity. • Federal fund use.

Agenda item #3

How is project bundling done?

Learning objective:
Describe how and when to create a project bundle.

Project Bundling Process

1. Define successful project bundling
2. Determine goals and objectives for the bundle
3. Identify funding or financing for the bundle
4. Build a coalition and outreach to inform and train about bundling
5. Perform risk assessment on proposed bundles
6. Select projects for bundle
7. Select delivery method for the bundle contract
8. Determine environmental review and preliminary design considerations for the proposed bundle
9. Bundle & let contract(s)
10. Conduct quality assurance, close-out and celebrate

Objective

Tools

Outcome

Introduction: Defining Success

1. **Define successful project bundling**
2. Determine goals and objectives for the bundle
3. Identify funding or financing for the bundle
4. Build a coalition and outreach to inform and train about bundling
5. Perform risk assessment on proposed bundles
6. Select projects for bundle
7. Select delivery method for the bundle contract
8. Determine environmental review and preliminary design considerations for the proposed bundle
9. Bundle and let contract(s)
10. Conduct quality assurance, close-out and celebrate!

Objective:

- To be able to define a successful bundling project or program

Tools:

- Definition
- Case studies
- List of lessons learned

Outcome:

- Improved understanding of the range of successful bundling projects and programs

Potential Success Indicators

- Achieving performance targets.
- Completing preservation/preventive maintenance actions.
- Rehabilitating assets.
- Replacing assets.
- Achieving economies of scale.
- Reducing cost.
- Accelerating project schedules.
- Deploying innovation.

Goals and Objectives

1. Define successful project bundling
2. **Determine goals and objectives for the bundle**
3. Identify funding or financing for the bundle
4. Build a coalition and outreach to inform and train about bundling
5. Perform risk assessment on proposed bundles
6. Select projects for bundle
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9. Bundle and let contract(s)
10. Conduct quality assurance, close-out and celebrate!

Objective:

- To establish goals and objectives for a bundling project or program

Tools:

- Case studies
- List of common goals, benefits, and objectives
- Work types

Outcome:

- Documented project goals and objectives

Potential Goals and Objectives (1 of 2)

- Achieve national goals and performance management measures.
- Address transportation asset management plan objectives.
- Save time—accelerate work that would not advance as rapidly with traditional methods.
- Save design costs.
- Save construction costs.
- Take advantage of economies of scale—improve production.
- Maximize use of available funding.
- Take advantage of financing.
- Deploy innovation.

Potential Goals and Objectives (2 of 2)

- Expedite project delivery—achieve public improvements sooner.
- Utilize ACMs.
- Coordinate construction staging—reduce public disruption.
- Start construction of multiple bridges simultaneously.
- Maintain and improve bridge condition.
- Improve surrounding land value and economic benefits.
- Partner with other agencies to achieve efficiencies.
- Create jobs in the construction industry.
- Increase pool of bridge contractors in a geographic area.
- Create opportunities for small and disadvantaged businesses.
- Create on-the-job training opportunities.

Coalition Building and Outreach

1. Define successful project bundling
2. Determine goals and objectives for the bundle
3. Identify funding or financing for the bundle
4. **Build a coalition and outreach**
5. Perform risk assessment on proposed bundles
6. Select projects for bundle
7. Select delivery method for the bundle contract
8. Determine environmental review and preliminary design considerations for the proposed bundle
9. Bundle and let contract(s)
10. Conduct quality assurance, close-out and celebrate

Objective:

- To identify a project implementation team and develop an internal and external outreach plan

Tools:

- Example communication plan
- Tables of communication topics

Outcome:

- Communication plan

Project Selection

1. Define successful project bundling
2. Determine goals and objectives for the bundle
3. Identify funding or financing for the bundle
4. Build a coalition and outreach
5. Perform risk assessment on proposed bundles
6. **Select projects for bundle**
7. Select delivery method for the bundle contract
8. Determine environmental review and preliminary design considerations for the proposed bundle
9. Bundle and let contract(s)
10. Conduct quality assurance, close-out and celebrate

Objective:

- To identify a project selection criteria and candidate projects

Tools:

- Selection matrix
- Table of contract sizes
- Table of contract durations

Outcome:

- List of candidate bridges for bundling

Why should a project be part of a bundle?

- Goal: NOT to “bundle as many projects as we can.”
  - Goal is to be strategic, to achieve an agency objective.

- Goal: find projects that will . . .
  - become more efficient within a bundle.
  - make the other projects in a bundle more efficient.
  - become more attractive to bidders if it is part of a bundle.

Project Selection (1 of 2)

- Geographic Location / Proximity
- Similar Road Type
- Similar Bridge Size
- Similar Bridge Type

Project Selection (2 of 2)

- Similar Work Types
- Funding
- National Environmental Policy Act[1] (NEPA) process and environmental permitting

[1]42 U.S.C. §4321 et seq. (1969)

Select Delivery Method

1. Define successful project bundling
2. Determine goals and objectives for the bundle
3. Identify funding or financing for the bundle
4. Build a coalition and outreach to inform and train about bundling
5. Perform risk assessment on proposed bundles
6. Select projects for bundle
7. **Select delivery method for bundle contract**
8. Determine environmental review and preliminary design considerations for the proposed bundle
9. Bundle and let contract(s)
10. Conduct quality assurance, close-out and celebrate

Objective:

- To identify the most appropriate project delivery and procurement method

Tools:

- Comparison tables of project delivery & procurement methods

Outcome:

- Selected project delivery & procurement method

Delivery Systems and Bundling

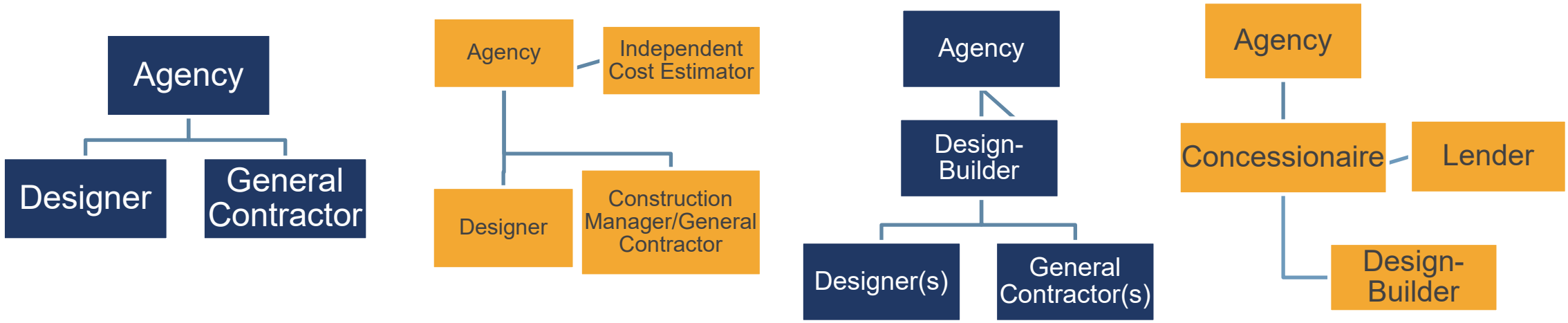
- Project bundling works with any delivery system
- Design-bid-build (D-B-B)
- Construction manager / General contractor (CM/GC)
- Design-build (D-B)
- Public private partnership (P3)

Project Delivery Methods

Bundling projects, depending on the agencies' governing laws, may allow for use of innovative project delivery methods such as Construction Manager/General Contractor (CM/GC), Design-Build (D-B), and Public-Private Partnerships (P3) and procurement methods such as best value and qualifications-based selection.

Traditional

Alternate Project Delivery and Contracting Methods

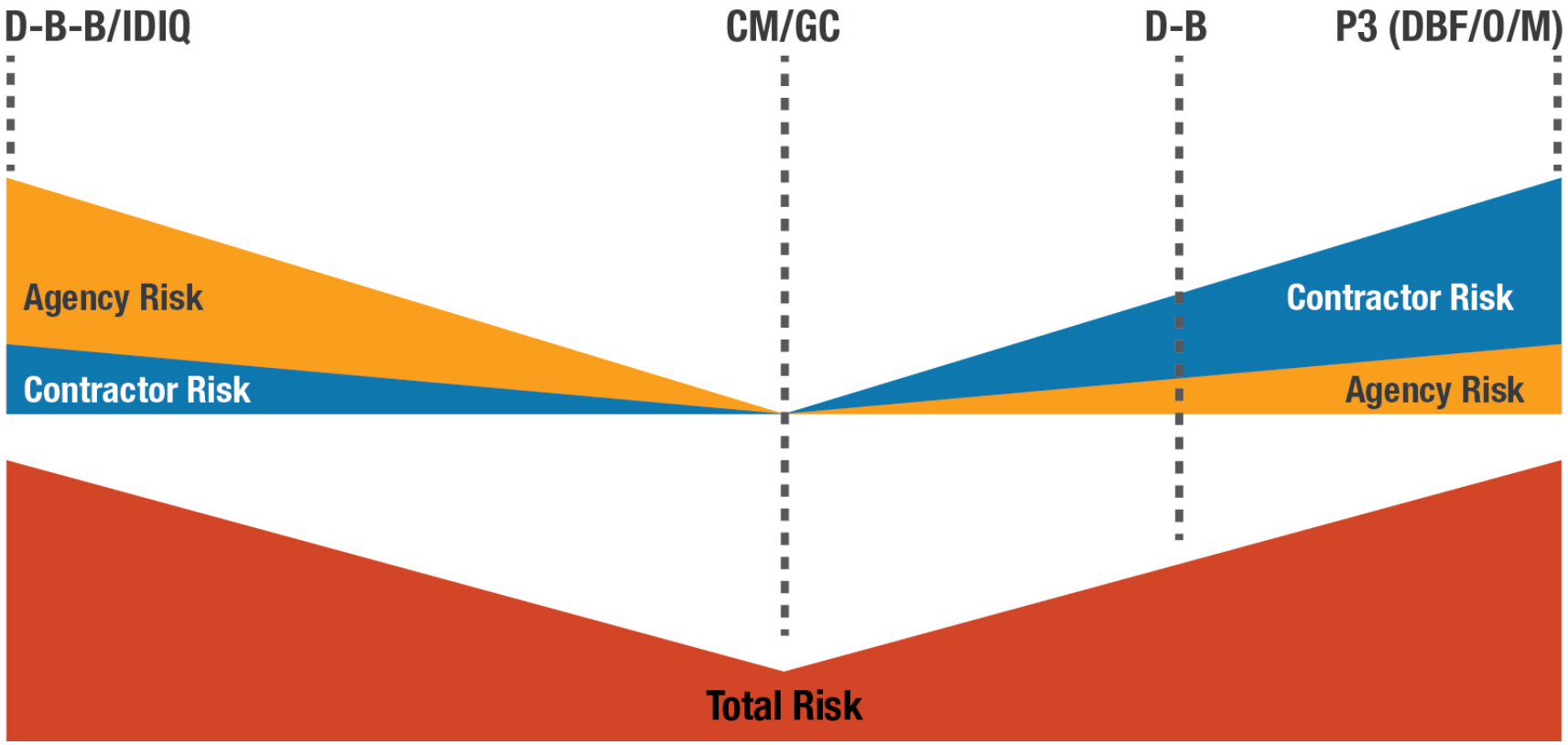


Design-Bid-Build & IDIQ | CM/GC | Design-Build | P3

Source: FHWA

Risk Allocation and Management

by Project Delivery Method



Source: FHWA

Lessons Learned

- Best if there are no (or minimal) right-of-way acquisitions
- Best if minimal environmental constraints
- Complete hydraulic analysis in advance
- Procure sufficient advance geotechnical information
- Best if no railroad involvement
- Best if one local public agency leads
- Must have industry (construction) outreach
- Use alternative contracting methods (based on goals/risk analysis)

Agenda item #4

Examples/Case Studies

Learning objective:
Apply and evaluate project bundling.

Case Studies

https://bit.ly/PB_CaseStudies

Osceola County, Florida

Success = Speed

Source: FHWA

- New county administration team
  - Inherited a program . . .
  - New team was given 12 months to have 7 projects under construction or they would be replaced (Success = Speed?)
- Team turned to two methods they had never used:
  - CM/GC project delivery and project bundling.
- Bundled 18 projects under 6 contracts.
- 11 projects underway by deadline.

Erie County, NY

Success = Preventative maintenance activities by work type and location

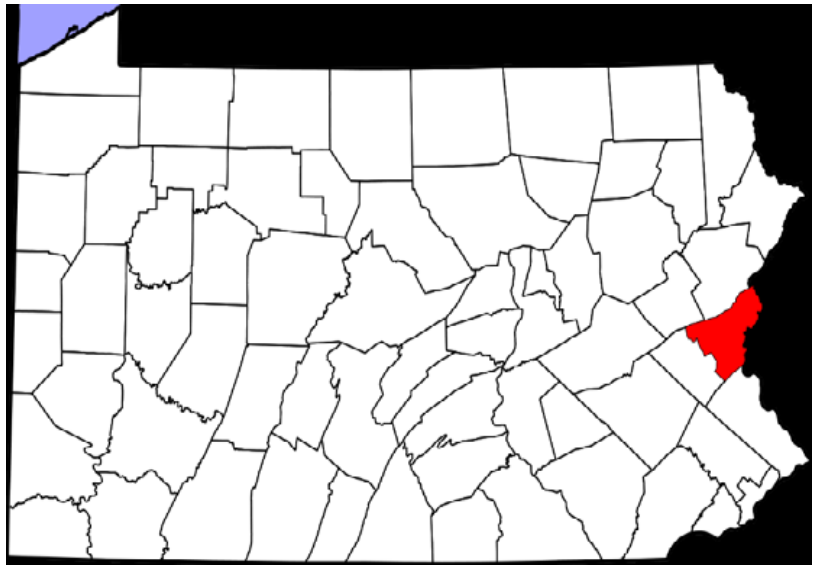
- Steel Repairs - $1M every 2 years
- Deck Repairs - $1M every 2 years
- Bridge Washing - $250K every 2 years
- Deck Sealing - $200K per year (6-year cycle)

Source: FHWA

Northhampton County, PA

Success = Improve bridge conditions using private funds

- Owns 119 bridges
- Significant percent in poor condition
- Estimated 20 years to replace
- Public private partnership (P3)
- $37.5M in construction paid over 12 years
- $1M in maintenance for 10 years, beginning year 5
- 33 bridge replacements over 14 years

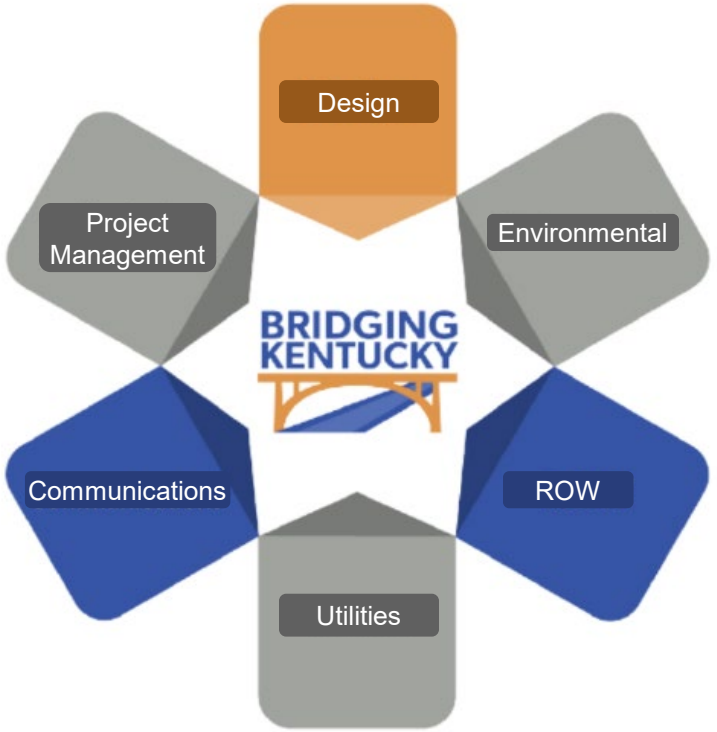


Source: FHWA

Bridging Kentucky

Success = Use innovation to improve local bridge conditions

- Statewide Program
  - State, county, and municipal bridges
  - Estimated $700M over 6 years
  - Rehabilitate, repair, or replace bridges
- District 5/6 Bundle
  - 13 bridges bundled
  - 4 bidders
  - $1.4M saved (14% under engineer's estimate)



BridgingKentucky.com

Source: Kentucky Transportation Cabinet

DelDOT Culvert Replacement Program

Success = Maximize flexibility to delivery systems and permitting

- Years: 2006-Present
- Cost: $1M-$3M/Year
- Goal: Replace hundreds of culverts in poor condition
- Bundled using D-B-B, IDIQ, and DB
- Environmental permitting handled differently for each method

Source: FHWA

Minnesota DOT

Success = Attain quick ADA compliance

- ADA bundle project
- $2.5M
- 200 +/-ramps and sidewalk
- DB project delivery
  - Integrate design and construction
  - Better quality
- Issues encountered
  - Contractor not used to being prime
  - Scoping RFP well without over specifying

Source: Accessible Curb Ramp, U.S. Access Board

Pawnee Nation

Success = Maximum flexibility in combining vertical and horizontal construction

Pawnee – Groundbreaking same day as notice to proceed.

Source: Pawnee Nation

Agenda item #5

Resources

Learning objective:
Identify project bundling resources.

Agency Self-Assessment Tool

Capability Level Criteria

Level	Description	EDC Definition	Definition applied specifically to bundling
1	Not Implementing	The agency is not using the innovation anywhere and is not interested in pursuing the innovation.	Project bundling is not considered.
2	Development Stage	The agency is collecting guidance and best practices, building support with partners and stakeholders, and developing an implementation process.	No formal policy, process or tools. Ad hoc approach to project bundling is applied when required.
3	Demonstration Stage	The agency is testing and piloting the innovation.	Basic project bundling process and tools are repeatedly used but not standardized. Approach varies from project to project.
4	Assessment Stage	The agency is assessing the performance of and process for carrying out the innovation and making adjustments to prepare for full deployment.	Draft organizational standard process for developing project bundling strategy is documented. Supporting methods, tools, and staff training are being assessed.
5	Institutionalized	The agency has adopted the innovation as a standard process or practice and uses it regularly on projects.	Organizational standard process for developing project bundling strategy documented. Supporting methods, tools, and staff training are established and documented.
6	Optimized	-not applicable-	Lessons learned and best practices are applied for continuous improvement. Performance metrics have been established to enable quantitative feedback.

Agency Self-Assessment Tool

25 Practices

#	Practice
1	Early bundling decision during planning/programming
2	Determine optimum bundle size
3	Limit bundle by work type
4	Limit bundle by geographic proximity
5	Outreach - Industry
6	Outreach - stakeholders
7	Local partnering
8	Identify Federal-aid eligible work types
9	Use innovative finance
10	Use state funding only
11	Bundle to reduce number permit actions
12	Programmatic permit

#	Practice
13	Assign permitting tasks to industry
14	Consolidated utility agreement
15	Assign utility coordination to industry
16	Stage ROW acquisition sequence
17	Use IDIQ to stage ROW/permits/utilities
18	Assign ROW tasks to industry
19	Use ACM
20	Use ATC
21	Coordinate construction staging
22	Coordinate MOT
23	Progressive GMP
24	Open-end contract
25	Use IDIQ for emergency contracts

Project Bundling Resource Database

Case Studies

Contracts

References

Research

https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/project_bundling.cfm

Case Studies (1 of 2)

Bundling scope of work for

- Preservation/Preventive maintenance
- Rehabilitation
- Replacement/New

Bundled by

- State owners
- Local owners
- Combined owners (State & Local)

Funding and financing by

- Federal funds
- State funds
- Local funds
- Private sector

Case Studies (2 of 2)

Project Delivery by

- Design-Bid-Build
- Indefinite Delivery/Indefinite Quantity
- Construction Manager/General Contractor
- Design-Build
- Public-Private Partnerships (Design-Build-Finance-Operate)

Procurement by

- Low Bid
- Best Value
- Qualifications-Based Selection

Webinar Series

Series 1:
Advanced Project Bundling:

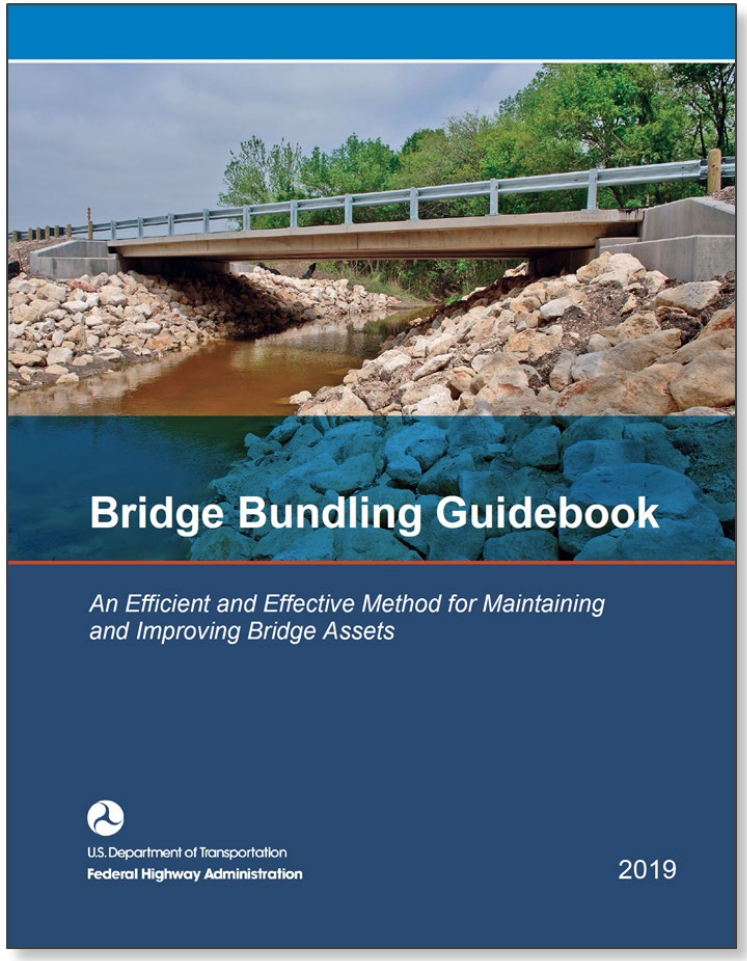
- Examples Beyond Bridges
- Key Characteristics of Lead Agencies
- Making the Business Case
- Project Bundling for Local Public Agencies
- How To
- Overcoming Hurdles

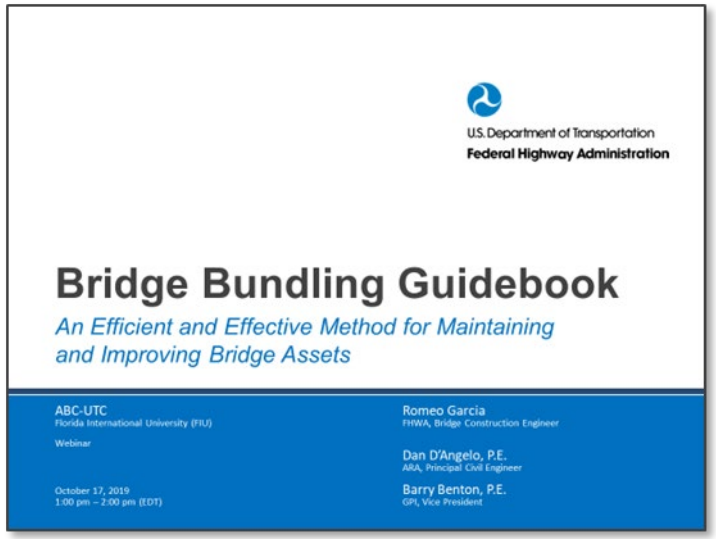
Series 2:
A Strategic Approach to Project Bundling:

- What Does Success Look Like?
- The Business Process
- Planning and Capital Programming
- Preconstruction
- Local Agency Partnering
- Construction and Contract Considerations

https://www.fhwa.dot.gov/ipd/alternative_project_delivery/defined/bundled_facilities/webinar_series.aspx

Bridge Bundling Guidebook





Available for download at:
https://bit.ly/FHWA_BBG

Guidebook Content

Federal legislation

Noteworthy practices from agencies, including case studies

Other resources from agencies or professional organizations

Federal guidance

Video clip from State or local agency representative offering his or her perspective

Source: FHWA Bridge Bundling Guidebook

Training

U.S. Department of Transportation
Federal Highway Administration

CENTER FOR
LOCAL AID SUPPORT

Online Training Library

PROJECT BUNDLING

Project Bundling Series – Course 1: Fundamentals

Project Bundling Series – Course 2: Staging the Bundle

Project Bundling Series – Course 3: Creating and Contracting the Bundle

https://www.fhwa.dot.gov/clas/ttap/online_training.aspx

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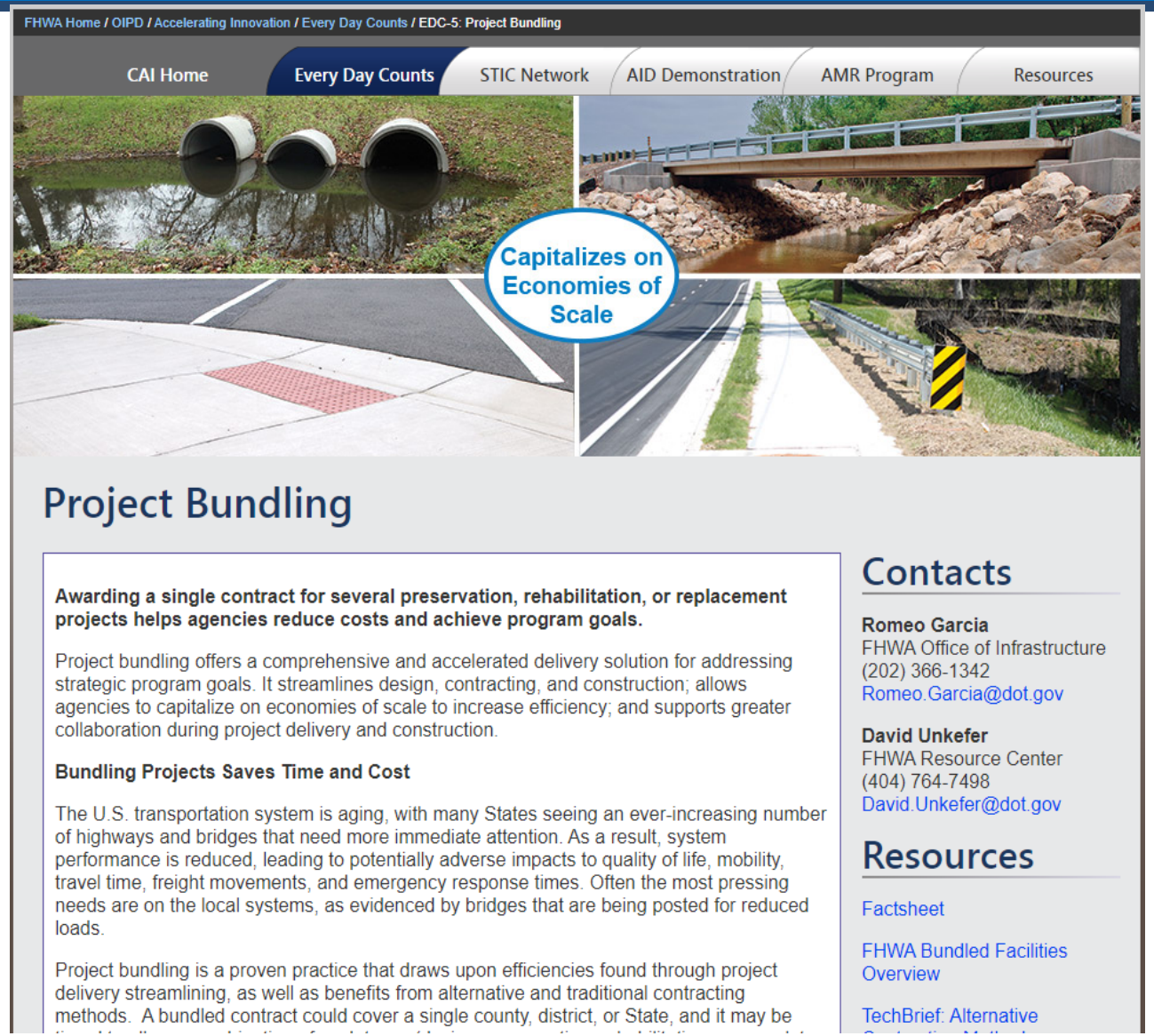
FHWA EDC-5 Website

Search for

"FHWA EDC-5"

https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/project_bundling.cfm



Learning Objectives Recap

1. Define what is project bundling.
2. Understand why agencies bundle projects.
3. Describe how agencies create project bundles.
4. Apply and evaluate project bundling.
5. Identify project bundling resources.

Key take-aways?
Questions?

Activity – Create a Bundle

Handout - a list of projects with key information about each and instructions.

Work in teams and use the information you learned in this lecture to identify potential project bundles.