

Project Bundling: A Strategic Program Delivery Solution that Saves Bundles

Resource Guide

Every Day Counts | Innovation Initiative

National Webinar | September 20, 2018



U.S. Department of Transportation
Federal Highway Administration



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Background on EDC-5 Project Bundling Initiative

What is Project Bundling?

The Federal Highway Administration (FHWA) is promoting the implementation of **Project Bundling** through the Every Day Counts (EDC-5) initiative. EDC is a state-based model to identify and rapidly deploy proven but underutilized innovations to shorten the project delivery process, enhance roadway safety, reduce congestion and improve environmental sustainability.

Project bundling is a process by which a single contract award is used to contract for the preservation, rehabilitation, or replacement of multiple projects. The contract may be procured in several different ways and may include both design and construction in the overall scope, depending on the procurement method. The contract could cover a single county, district, or State, and it may be tiered to allow a combination of work types (design, preservation, rehabilitation, or complete replacement). In some cases, the contract may include option years.

A **project bundling program** targets a defined set (or bundle) of projects that are planned by an agency in a timely and efficient manner through a series of project bundling contracts with the support of various funding options and/or partnerships and may include a program completion time frame. The size of the bundling program will vary depending on the agency's needs.



A tribal bridge repair and pavement project, two of 9 successfully bundled projects by the Pueblo of Acoma.

Why Project Bundling?

There are many reasons why we need to consider project bundling. At the basic level, it is about improving or maintaining our assets and services. Transportation infrastructure needs are increasing, but funding and staffing are not sufficient to meet all the needs. Project bundling can be used for all types of projects to maximize agency resources.

A **project bundling program** should have the following characteristics:

- **Strategic** to achieve agency goals;
- **Pro-active** and not reactive, constantly looking for opportunities to bundle;
- **Decided early** in the program planning and project development process to see the full benefits;
- **Continual**, not a one-time activity, but becomes part of your project delivery decision making process.

Project bundling offers the potential for cost and time savings directly beneficial to reducing the transportation project backlog and achieving agency goals. It allows the opportunity to address many projects facing similar needs using common or innovative rehabilitation and replacement strategies and tactics in a cost-effective manner. It can also be a valuable tool to address poor asset performance measures. A list of common benefits of a **project bundling program** are in Figure 1.



Figure 1: Benefits of Bundling Projects

BENEFIT	DESCRIPTION
Maintain or Improve Performance Measures	The NHPP (23 U.S.C 119) established a national goal to maintain the highway infrastructure asset system in a state of good repair. Examples are:
<ul style="list-style-type: none"> • Maintain Assets in Good Condition 	Agencies can bundle preservation activities to maintain assets in good condition.
<ul style="list-style-type: none"> • Improve assets in Fair Condition 	Agencies can bundle rehabilitation activities to maintain assets in fair condition.
<ul style="list-style-type: none"> • Reduce Assets in Poor Condition 	Agencies can bundle replacement projects to reduce assets in poor condition.
Reduced Cost	Bundling projects with shared features leverages design expertise and achieves economies of scale.
Coordinate NEPA Approvals	Although separate NEPA approvals are still required for all locations when using Federal Aid, efficiencies can be gained by coordinating multiple locations with environmental oversight agencies.
Expedited Project Delivery	Using a single contract award for several similar projects streamlines design and construction, saves procurement time, and helps deliver the national issue of backlogged transportation projects.
Coordinate Construction Staging	Projects in close proximity allow a contractor to maximize his work force and reduce traffic impacts.
Reduce Burden on Agency Staff	Project bundling can reduce management workload with fewer contracts to manage.
Increase Innovation Opportunities	When combined with alternative contracting methods, it creates opportunities for technical and financial innovations for smaller projects that wouldn't normally have that chance.
Increase Quality	By bundling specialized work, specialty contractors have a chance to act as the prime and produce quality work through repetition (i.e. curb ramps).
Benefit from Local Partnering	Smaller agencies can team up to form bundles of projects and enjoy the benefits.

Many agencies already recognize the benefits of project bundling and have historically bundled projects sporadically out of necessity or convenience;

however, most states have not approached project bundling as a strategic program delivery solution.

FHWA is encouraging a more comprehensive approach to program delivery where use of project bundling is evaluated for all areas including:

- New Construction;
- Asset Replacement Transportation Projects;
- Major Rehabilitation Transportation Projects; and
- Preservation and Preventive Maintenance Contracts

As such, FHWA is assisting agencies in implementing a 'new' project bundling by targeting several focus areas:

- Improve awareness that project bundling is a fast and efficient method to reduce the number of assets in poor condition across the nation. Project bundling is rapidly increasing reliability and service for the traveling public, while saving agencies time and money.
- Increase knowledge that project bundling works well for many work types: preventive maintenance, preservation, rehabilitation, and replacement.
- Improve awareness of available funding and revenue sources, innovative financing tools, and the ability to package these tools to cover the costs of bundling projects.
- Highlight project development and delivery efficiencies for implementing project bundling to maximize time and cost savings (e.g. environment/permitting, design, contracting, construction).

In addition to promotion of Project Bundling as part of EDC-5, FHWA plans to support this initiative by offering:

- Case Study success stories;
- Peer-to-peer exchange workshops;
- Regional Project Bundling workshops;
- Nationwide webinars; and
- Bridge Bundling Guidebook; and
- Other resources on the web.

Bridge Bundling Guidebook

To help with the implementation of project bundling, FHWA plans to soon publish the Bridge Bundling Guidebook. Although the focus of the guidebook was bridges, the information in the manual is transferrable to all types of projects (e.g. safety, pavements, traffic ops).

Outlined in the Bridge Bundling Guidebook, which is set up as a how-to manual, are ten steps to setting up a bundling program. These steps can be utilized by agencies looking to set up or advance their project bundling efforts. They are outlined below, recognizing that the steps may be more iterative than sequential.

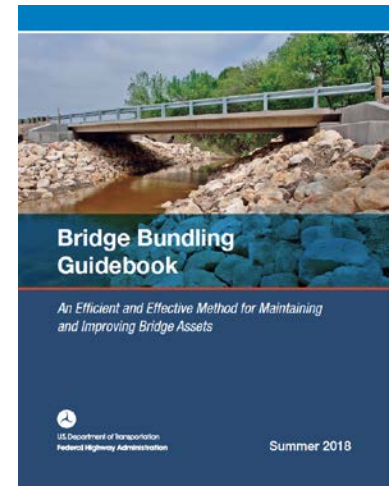


Figure 1. Ten Steps to Developing a Project Bundling Program



The Bridge Bundling Guidebook is a great resource to an agency starting a bundling program. It guides the user through the necessary steps and helps avoid pitfalls and streamline the process.

Current State of Practice

Below are some highlights of past project bundling efforts by State and Local Agencies as well as Tribal Governments.

Delaware Department of Transportation (DelDOT)

The Delaware Department of Transportation (DelDOT) uses a series of bridge bundling contracts to address preventive maintenance issues on bridges in good and fair condition. Work is prioritized by the Bridge Management Section and the contracts are administered by the DelDOT Maintenance Districts. Actions include deck sealing, bridge painting, deck patching, and joint repair.

New York State Department of Transportation (NYSDOT)

The New York State DOT has bundled bridges for preventive maintenance, rehabilitation, and replacement. For several years, New York has bundled specific bridges in close proximity for preventive maintenance actions such as painting, washing, and joint replacement. The New York Works program rehabilitated 116 bridges by replacing their decks. The Critical Bridges over Water program was a fast-paced program to replace 106 scour-critical bridges.

Nebraska Department of Transportation (NDOT)

The Nebraska DOT (NDOT) County Bridge Match Program dedicates up to \$40 million total in State funds through June 2023 to promote innovative repair and replacement of structurally deficient bridges on county road systems. NDOT specified bridge bundling as an example of an innovative technique shown to generate cost efficiencies and project delivery time savings among peer agencies. The majority of applications have proposed bundled approaches.

Pennsylvania Department of Transportation (PennDOT)

The Pennsylvania DOT (PennDOT) Rapid Bridge Replacement Project, which will replace 558 bridges statewide, is using a single design-build-finance-maintain (DBFM) public-private partnership (P3) availability-payment concession (Federal Highway Administration, 2017a). In addition, PennDOT has a bridge bundling program, begun in 2012, which bundles similar locally owned bridges into smaller contracts in order to gain efficiency and reduce the financial burden on LPAs.

Ohio Department of Transportation (ODOT)

The Ohio Bridge Partnership Program replaced or rehabilitated 220 county bridges over 3 years. It was funded through \$120 million in Grant Anticipation Revenue Vehicle (GARVEE) bonds and toll credits (Federal Highway Administration, 2017a). The Ohio DOT placed the bridges into one large bundle for financing, but broke them into smaller bundles for design and construction.

Missouri Department of Transportation (MoDOT)

The Missouri DOT (MoDOT) \$685 million Safe & Sound Bridge Improvement Program either replaced or rehabilitated 802 State bridges over 3.5 years, including 554 bridges via a single design-build (D-B) contract. The other 248 bridges were designed and constructed using small bridge bundles and the design-bid-build (DBB) delivery method. MoDOT sold revenue bonds to finance the project.

Oregon Department of Transportation (ODOT)

The Oregon Transportation Investment Act (OTIA) State Bridge Delivery Program provided \$1.3 billion over 10 years to either repair or replace more than 270 bridges using 87 project bundles. The projects were grouped into logical bundles along each highway corridor. Oregon DOT issued Build America Bonds to finance the program.

Georgia Department of Transportation (GDOT)

The Georgia DOT (GDOT) D-B Bridge Bundling Program in 2016 accelerated the replacement of 25 local bridges valued at almost \$40 million. GDOT awarded five D-B contracts that bundled four to six bridges each geographically, allowing each contractor to streamline delivery by combining design and construction for the bridges in its area.

Indiana Department of Transportation (INDOT)

The Indiana DOT (INDOT) practice of grouping (or bundling) projects into multiple-project contracts has usually resulted in lower unit costs. A recent study of 1,997 bridge projects in 715 INDOT bridge contracts over 9 years confirmed and documented the benefits of bundling.

As mentioned earlier, project bundling in some form is practiced by nearly all public agencies. The case studies cited above show some of the more advanced efforts in project bundling. This initiative is aimed at building off the past successes and using project bundling as a strategic program delivery solution. As this is a new initiative introduced in EDC-5, the first effort to track progress is to establish a baseline for implementation.

The EDC-5 initiative will establish the following guidelines for evaluating

Innovation Implementation Stages:

Not Implementing	The state is not pursuing the innovation.
Development	The state is collecting guidance and best practices, building support with partners and stakeholders, and developing an implementation process.
Demonstration	The state is testing and piloting the innovation.
Assessment	The state is assessing the performance of and process for carrying out the innovation and making adjustments to prepare for full deployment.
Institutionalized	The state has adopted the innovation as a standard process or practice and uses it regularly on projects.

FHWA is considering a goal to assist 30 states to move one stage along towards institutionalizing Project Bundling as a Strategic Program Delivery Tool. In order to assist States with implementation of Project Bundling, FHWA sponsored this Webinar to share information about benefits, lessons learned, and how to find additional information and resources during EDC-5.

Additionally, FHWA is serving as an information clearinghouse for DOTs, Local Public Agencies, and others interested in project bundling by sharing case studies and other guidance documents, providing technical assistance, and developing training materials.


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Project Bundling:
A Strategic Program Delivery Solution
that Saves Bundles

Source: FHWA, Caltrans, Indiana DOT, Accessible Curb Ramp, U.S. Access Board

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Introductions and Background


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FHWA Resource Center



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Ohio DOT



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Local Projects
former Deputy Public Works
Administrator




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Poll Questions 1

Source: FHWA, Caltrans, Seawater WOT, Accessible Curb Ramp, U.S. Access Board

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Agenda

- What is EDC-5? (FHWA)
- Project Bundling Overview and Benefits (FHWA)
 - Save Cost, Time, much more
- Ohio DOT Case Study (Andrea)
- Local Project Case Study (Gregg)
- FHWA Role for Project Bundling Innovation (FHWA)
- Q&A

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What is “Every Day Counts”(EDC)?

State-based model to identify and rapidly deploy proven but underutilized innovations to:

- ✓shorten the project delivery process
- ✓enhance roadway safety
- ✓reduce congestion
- ✓improve environmental sustainability

- EDC Rounds: two year cycles
- Initiating 5th Round (2019-2020) - 10 innovations
- To date: 4 Rounds, over 40 innovations

For more information: <https://www.fhwa.dot.gov/innovation/>

FAST Act, Sec.1444

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What is Project Bundling?

Project bundling is a process by which a single contract award is used to deliver multiple preservation, rehabilitation, or replacement projects.

...and so much more....

Traffic Bottlenecks Bridge Deficiencies

Alternative Contracting


Reduced Staff Time Safety Hot Spots

High Risk Rural Roads

Funding Strategies Innovation

Signing Updates ADA Programs Smoother Pavements

Source: FHWA




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What is a Project Bundling Program?


- Series of project bundling contracts
- Strategic
- Pro-active, not reactive
- Decided early in the program planning and project development process
- Continual


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EDC-5 Goals for Project Bundling

Take this familiar approach to a level of effectiveness not seen before.



 Source: Stock image 8

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Why Project Bundling?

Bundling projects leverages design and construction expertise and achieves economies of scale.



Source: FHWA, Culverts, Delaware DOT, Accessible Curb Ramp, U.S. Access Board



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Why? To help achieve program goals!

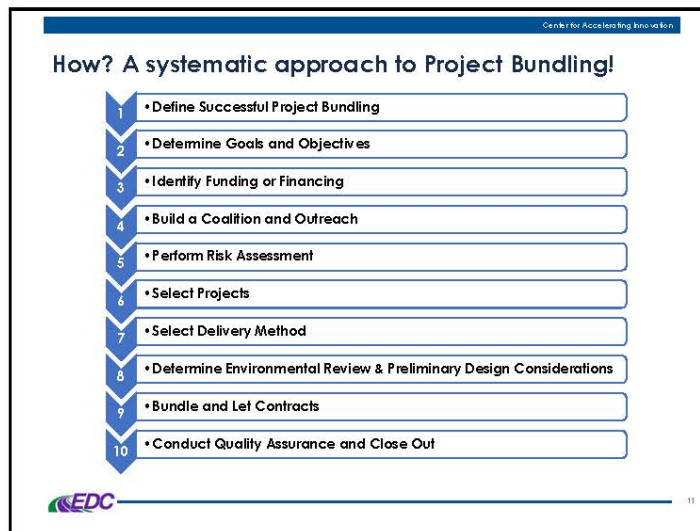
- ✓ Improve assets, improve performance measures
- ✓ Address infrastructure needs (pavements, bridges, safety hardware)

Goals Project Bundling can help achieve:

- Maximize use of existing funding
- Utilize existing agency staff efficiently
- Improve project and program delivery time
- Reduce design costs and construction costs
- Take advantage of economies of scale
- Take advantage of financing opportunities
- Deliver transportation benefit to public faster - Reduce disruption



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Project Bundling Saves Money


Indiana DOT Study by Purdue University

Factors that affect cost

1. Economies of scale
2. Economies of competition (# of bidders)
3. Economies of bundling similar project types

Cost savings can vary greatly, depending on bundling strategies.


All showed cost savings over individual contracts - as much as 35% cost savings could be achieved with strategic project bundling.

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Project Bundling Saves Time

- Shortens delivery timeframes
 - Streamlines design (standardize designs for like work)
 - Saves procurement time
 - Streamlines various project delivery requirements (i.e. programmatic environmental agreements, utility coordination, etc.)
- Gets multiple projects into construction at one time
- Rapidly improves performance measures
- Can be enhanced by other EDC innovations

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Project Bundling Saves Bundles

PennDOT Local Bridges – Pilot Project

- Design & Construction completed in less than 18 months
- Similar details in 3 bundling contracts
- Saved up to 50% on design cost
- Saved up to 15% on construction cost



Source: PennDOT


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Poll Question 2


Source: FHWA, Culverts, Delaware DOT, Accessible Curb Ramp, U.S. Access Board






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Additional Benefits of Project Bundling

Source: FHWA, Caltrans, Delaware DOT, Accoridite Out, Reno, U.S. Access Road

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Additional Benefits of Project Bundling

Flexibility in construction staging allows the Contractor to:

- Minimize impacts to traffic – reduced WZ – improved safety
- Maximize the efficiency of his work force
- Lower mobilization costs
- Deliver projects quicker





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Additional Benefits of Project Bundling

Reduces burden on Agency staff.

- Reduce management oversight
- A single procurement
- One contractor



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Additional Benefits of Project Bundling

Small agencies can partner to achieve economies of scale

- Local Public Agencies partner together
- Local Public Agencies partner with their State Agency



NDOT County Bridge Match Program sites.

Source: NDOT

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Project Bundling is enhanced by other EDC innovations

- Local projects stakeholder partnering
- Integrating NEPA and permitting
- Alternative Contracting Methods (ACMs)
- Innovative Financing Solutions
- Others mentioned in the Bridge Bundling Guide, Appendix K

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Poll Questions 3


Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, B.S. Access Board

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Andrea Stevenson, Ohio DOT


**Ohio DOT Case Study
Project Bundling**

Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, S.D. Access Board

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Gregg Hostetter, Local Projects
former Deputy Public Works Administrator

**Local Project Case Studies
Project Bundling**

Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, S.D. Access Board

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Project Bundling Summary



Capitalizes on Economies of Scale

Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, U.S. Access Board


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Poll Question 4


Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, U.S. Access Board

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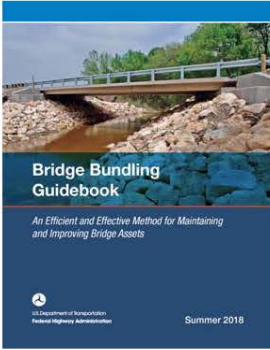
FHWA Role for the Project Bundling Initiative

Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, U.S. Access Board

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How to Bundle Projects to overcome challenges

- 1 • Define Successful Project Bundling
- 2 • Determine Goals and Objectives
- 3 • Identify Funding or Financing
- 4 • Build a Coalition and Outreach
- 5 • Perform Risk Assessment
- 6 • Select Projects
- 7 • Select Delivery Method
- 8 • Determine Environmental Review & Preliminary Design Considerations
- 9 • Bundle and Let Contracts
- 10 • Conduct Quality Assurance and Close Out



Bridge Bundling Guidebook
An Efficient and Effective Method for Maintaining and Improving Bridge Assets
U.S. Department of Transportation
Federal Highway Administration
Summer 2018

Source: FHWA


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Project Bundling Resources

- Fact Sheet
- Resource Guide
- Bridge Bundling Guidebook
- Clearinghouse for best practices/lessons learned
 - ✓ https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/project_bundling.cfm
- Federal Legislation
 - ✓ FAST Act
 - ✓ CHBP

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Project Bundling Activities

- Webinars
- Workshops
- Peer Exchanges/Reviews
- Case Studies
- Sponsorships (local, regional, & national events)
- Technical Assistance
- Training
- Local Outreach


Project Bundling
A Strategic Program Delivery
Solution that Saves Bundles

Implementation Plan
Every Day Counts | Innovation Initiative
September 2018




Source: FHWA

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Question & Answer Session

Source: FHWA, Caltrans, Delaware DOT, Accelerate Out, Ramp, U.S. Access Road

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**Wrap up
Saving Bundles!**

Source: FHWA, Caltrans, Delaware DOT, Accelerate Out, Ramp, U.S. Access Road

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EDC-5 Funding Opportunities:

- ❑ **State Transportation Innovation Council (STIC) Incentive**
 - ✓ Up to \$100,000 per STIC per year to standardize an innovation
 - ✓ <https://www.fhwa.dot.gov/innovation/stic/>
- ❑ **Accelerated Innovation Deployment (AID) Demonstration**
 - ✓ Up to \$1 million available per year to deploy an innovation not routinely used
 - ✓ <https://www.fhwa.dot.gov/innovation/grants/>

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Innovation Deployment News



EDC News
Weekly Newsletter

Weekly newsletter



INNOVATOR
Bi-monthly magazine

Bi-monthly magazine

To Subscribe:

Email: <https://www.fhwa.dot.gov/innovation/>

Text: Send "FHWA Innovation" to **468311**







Source: FHWA

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Project Bundling:
A Strategic Program Delivery Solution
that Saves Bundles

Source: FHWA, Caltrans, Delaware DOT, Accessible Curb Ramp, I.D., Access Board

Project Bundling Maturity Matrix Tool

This maturity matrix tool is designed to allow users to assign ratings to an organization's current practices. The tool will help assess activities, identify actions and priority areas for improvement, establish a baseline, allow for monitoring of changes over time, and facilitate sharing of practices among transportation professionals.

Consider the elements of the assessment tool during the session and complete the handout worksheet; revisit your responses annually to monitor implementation of Project Bundling. This tool can be shared with others within your organization or completed using a facilitated team meeting.

Scoring

Using the following scoring guidelines, score each question on a scale of 1 to 10, with a rating of 6 representing that the agency has implemented the item:

Phase	Rating and Characteristics
Initiation	<p><i>Agency has acknowledged the need for this item (scoring range: 1-2)</i></p> <ul style="list-style-type: none"> • Does agency management acknowledge the need for a particular item? • Has exploratory research taken place to assess the benefits of this item? • Does management support further development of this item's requirements?
Development	<p><i>Agency has developed a plan or approach to address this item (scoring range: 3-4)</i></p> <ul style="list-style-type: none"> • Has the agency developed a plan or approach to address the item's requirements? Has the agency started to investigate the feasibility of implementation? • Does the agency have standards and guidance to enable the item's implementation? • Does the agency have the approvals necessary for implementation? • Are resources in place to support the adoption of this item?
Plan Execution / Demonstration	<p><i>Agency is executing or has executed a plan or approach to address this item (scoring range: 5-6)</i></p> <ul style="list-style-type: none"> • Is the agency implementing/carrying out the requirements of this item? • Has the agency allocated financial or staff resources necessary for the item's execution?

	<ul style="list-style-type: none"> • Have appropriate personnel been trained to execute the item's requirements? • Has a process owner been established?
Assessment	<p><i>Agency has assessed this item's performance and its success in achieving agency goals and objectives (scoring range: 7-8)</i></p> <ul style="list-style-type: none"> • Has the agency assessed how well this item performs in reducing costs, time, and improving quality? • Has the agency assessed the process for carrying out this item? • Has the agency implemented appropriate changes to the requirements of this item based on performance assessments?
Adoption / Institutionalization	<p><i>Agency has institutionalized this item into its project execution process and culture (scoring range: 9-10)</i></p> <ul style="list-style-type: none"> • Has the agency integrated the requirements of this item into quality improvement processes? • Are the requirements of this item integrated into agency culture? • Are the requirements of this item included as part of the employee performance rating system?

Using the following table, score each statement based on the above rating guidelines and record the score in the box to the right of each question. For example, if the agency has implemented digital signatures but is not yet evaluating the process to generate ideas for improvement, consider assigning a rating of 5. A rating of 6 or above means that the agency has implemented the item in the statement.

Project Bundling Maturity Matrix

Organization: _____

Name/Title/email: _____

Please complete the loose page version of this maturity matrix and turn it in to the session facilitator and keep the workbook version for future use.

Project Bundling Statements My Agency...	Rating (1-10)
1. Bundles projects on a regular basis to achieve some or all the benefits mentioned in this initiative.	
2. Looks to bundle all types of projects, including preventative maintenance/preservation, rehabilitation, and replacement of assets.	
3. Has bundled engineering activities and/or environmental and permitting processes for a group of projects (and let projects individually)	
4. Looks to bundle projects at the programmatic level.	
5. Has combines bundled projects with alternative contracting methods.	
6. Has combined bundled projects with innovative financing.	
7. Has strategically analyzed data from bundled projects to determine optimum bundling by project types and size	
8. Has recognized project bundling as an effective strategy to address agency risks (e.g. to achieve risk-based transportation asset management plan objectives).	
9. Has partnered with stakeholder groups to develop a project bundling program (e.g. AGC, ACEC, ARTBA, NACo, APWA).	
10. Has reviewed project bundling case studies from other agencies to better understand the breadth of project bundling.	

Project Bundling Resource Link

The soon to be published Bridge Bundling Guidebook and other helpful material can be found at the FHWA Every Day Counts website

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

Technical Working Group Members

We would like to acknowledge the input and participation from the following Technical Working Group members and subject matter experts in Project Bundling:

	Peter Davich Minnesota DOT	Larry Hummel Van Buren County, MI
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