



Florida Department of Transportation

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OFFICE OF THE
SECRETARY

STRUCTURES DESIGN BULLETIN C11-04 **ROADWAY DESIGN BULLETIN 11-06**

DATE: April 5, 2011

TO: District Directors of Operations, District Directors of Production, District Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers

FROM: Robert V. Robertson, P. E., State Structures Design Engineer
David O'Hagan, P.E., State Roadway Design Engineer

COPIES: Brian Blanchard, David O'Hagan, David Sadler, Charles Boyd, Jeffrey Ger (FHWA), Derek Soden (FHWA)

SUBJECT: FHWA Every Day Counts Initiative – Precast Bridge Components

REQUIREMENTS

Plans Preparation Manual, Volume 1

1. Replace Section 26.9.2.9 with the following:

Precast Bridge Options: Investigate the use of either partial or full precast bridge alternate(s) with the specific purpose of accelerating bridge construction and reducing user impacts. As part of this investigation:

- A. Conduct a feasibility assessment responding to questions similar to those listed in Exhibit 26-F.
- B. Based on responses to the feasibility questions, explain whether a precast alternate should be considered an advantage on the project or what site constraints, economic impacts, or other factors (e.g., haul distance from precast yard, project variability, etc.) precluded or limited its application. If precasting is determined not to be applicable for the project, provide a statement in the BDR indicating so and the reasons why. This statement fulfills the requirements of this section.
- C. Only if precasting is found to be viable, evaluate preliminary precast alternates and associated MOT schemes against conventional methods using the assessment matrix and referenced links given in Exhibit 26-F. Provide enough detail in the preliminary evaluation in order to estimate total direct and indirect costs. Indirect costs, typically referred to as road user costs, include fuel use and man-hour losses resulting from detours, anticipated traffic

flow reduction, and reduced speed limits. Determine indirect costs using the Department's software at the following link:

<http://infonet.dot.state.fl.us/tlconstruction/SchedulingEng/AddSoftwareScheduling.htm>.

At this stage, a meeting with the District Structures Design Engineer is recommended to discuss the preliminary evaluation and cost estimates before finalizing the alternates for inclusion in the BDR.

- D. Report the estimated total direct costs and estimated total indirect costs, as well as the sum of both, for *each* alternate as three separate dollar amounts in a summary table in the same section as the completed assessment matrix (see "Alternate Cost Summary table in Exhibit 26-F).

Commentary: Providing both the direct and indirect costs of the project in the BDR enables Department management to make informed decisions to maximize construction dollars while at the same time minimizing construction time and economic impacts to Florida's traveling public.

Also, demonstrate in the BDR text that consideration was given to identify and employ other innovative techniques aimed at reducing costs, shortening project delivery time, enhancing safety during construction, and protecting the environment.

2. Insert Exhibit 26-F:

As attached to this Structures Design Bulletin.

COMMENTARY

The primary purpose for investigating the use of precast elements versus conventional construction is to determine the best balance between direct and indirect costs while delivering the bridge project in a timely manner and minimizing impact to the traveling public.

Additional direction regarding determining the direct cost implications of the precast approach will be forthcoming in a future release of the *Structures Manual*. Some of the topics will include savings associated with: (1) labor rates and insurance costs for reduced time working from a barge on a large water project; (2) structural efficiencies resulting from precasting (e.g., composite dead loads in the case of shored deck casting); and, (3) increased productivity rates of precasting.

BACKGROUND

The FHWA and FDOT support use of accelerated project delivery techniques, such as precast/prefabricated elements and systems, as an economical way to increase quality, reduce costs and time to construct, and support safety.

The FHWA has deployed a new initiative, entitled “Every Day Counts,” which is intended to highlight some advantages of accelerated project delivery. Prefabricated bridge elements and systems may offer time savings, cost savings, safety advantages, and convenience for travelers. The use of these innovative concepts can aid in solving many constructability challenges while potentially revolutionizing bridge construction in the United States and should be investigated.

More information on the Federal Highway Administration’s “Every Day Counts” accelerated project delivery initiative can be found at the following website:
<http://www.fhwa.dot.gov/everydaycounts/>.

IMPLEMENTATION

This revision to *PPM* Vol. 1, Section 26.9.2.9 is effective immediately for all projects still in the BDR stage and all future projects.

This Structures Design Bulletin is intended to clarify current policy. Prior to negotiating man-hours or finalizing the BDR scope of services, the District should perform an informal feasibility assessment in order to determine if precast alternates should even be considered. See Exhibit 26-F for the Feasibility Assessment Questions.

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Attachment