

Program Delivery – Searching For A Roadmap to Success

Every state highway department faces hurdles to efficient delivery of their program(s), for a variety of reasons: politics, limited funding (plus erosion of the buying power of gas tax revenues), regulatory agency reviews, public dissent, and so on. North Carolina is no exception. As one of the fastest growing states in the country, and with the second largest state-maintained highway system, the North Carolina DOT (NCDOT) faces these delivery challenges on many fronts.

Recently, NCDOT discussed “program delivery” with representatives of the design and construction community: the American Council of Engineering Companies (ACEC) and the Association of General Contractors (AGC). The three formed a steering committee to engage other states, ultimately leading to the idea of a **program delivery “think tank”** – a forum for exchanging ideas on what works and what doesn’t. Three states were invited to attend a day-long roundtable discussion, held in Raleigh, NC on May 11th.

- ✓ **Florida** – a decentralized state DOT which has enjoyed significant success in meeting their delivery objectives,
- ✓ **Missouri** – a commission-managed agency which has recently implemented significant improvements to their business practices,
- ✓ **Virginia** – a trendsetter for innovative delivery such as public-private partnerships, and recognized for their web-based “dashboard” information system

Each state, including North Carolina, responded to a questionnaire relative to program delivery. The questionnaires set the agenda for the “think tank” session:

1. What “metrics” do you use to measure program delivery?
2. What incentives do you use to enhance delivery?
3. How is accountability addressed/measured/rewarded?
4. How do you balance the use of in-house and private sector sources for delivery, and what are the pros and cons?
5. How have you dealt with external factors such as (a) political influences?, (b) inter-agency involvement, (c) funding shortfalls?

On May 11th 2006, eighteen delegates convened in Raleigh for the program delivery “think tank”. Attendees included the following:

North Carolina DOT: Len Sanderson, State Highway Administrator; Debbie Barbour, Director of Pre-Construction; Steve DeWitt, Director of Construction; Art McMillan, State Design Engineer; Steve Varnedoe, Chief Engineer, Operations

Florida DOT: Ananth Prasad, Chief Engineer

Missouri DOT: Kevin Keith, Chief Engineer; Dave Nichols, Director, Program Delivery

Virginia DOT: Byron Coburn, State Scheduling/Contract Engineer; Tom Pelnik, Director, Innovative Project Delivery Systems

AGC: Berry Jenkins, Director; Drew Johnson, representing Barnhill Contracting; Dan Peter, representing Granite Construction

ACEC: Kathryn Sawyer, Executive Director; Gene Conti, representing PBSJ; Henry Liles, representing HNTB; Stu Matthis, representing Ralph Whitehead Associates; Steve Thomas, representing Mulkey

Virginia – VDOT's \$3,000,000,000 transportation budget has seen challenges recent inadequate funding, resulting in program delays. Nonetheless, the department has been a for various delivery techniques, especially public-private initiatives (PPTA).

Metrics for program delivery include on-time construction (goal of 65%) and maintenance 75%), on-schedule construction (goal of 80%) and maintenance (90%), and environmental compliance (100% target). They offer incentives such as fixed date bonuses, shared from value engineering innovations, and the like.

VDOT unveiled their interactive "Dashboard" web based program in 2004, affording visually-friendly measuring tool for their various operations. It shows performance in areas as construction, safety, environmental compliance, and so on. The web link follows:

<http://dashboard.virginiadot.org/default.aspx>

Following the formal presentations and Q&A, each delegate was asked to list ONE program delivery concept they had heard which was, to them, most significant. Then each delegate given three "votes" as to the top concepts on the list of individual program delivery concepts. Listed below are the results of the voting, along with the number of votes received (in parentheses) and a group assessment of how difficult this concept would be to successfully implement {easy, moderate, difficult}

Educate the public and constantly reaffirm their mindset (16) {difficult} – The need for change in public perception and knowledge of transportation funding is paramount; even if legislative bodies will not become receptive to our pressing needs.

Establish a more predictable TIP (12) {difficult} – The benefits from a predictable TIP flow from improved credibility to a more stable business climate.

Implement more judgment-based design practices (11) {moderate} – The concept of "practical design" was discussed, where there is more reliance on common sense in design applications. Examples cited include code requirements for wide shoulders on bridge approaches with very low ADT – planners and designers need to adapt the design model to the site specific conditions.

Maintain a single Project Manager throughout the PE phase of the work {difficult} – The advantages of continuity from concept development through environmental documentation through design were deemed as significant in achieving expedited delivery. Knowing the "past history" as it relates to a job evolves is critical to decision-making.

Each state DOT made a brief presentation on their philosophy for successful program delivery, summarized as follows:

Florida – FDOT uses several key metrics for measuring their program delivery:

- ✓ construction lettings – 95% of construction contracts actually let, as per STIP
- ✓ construction costs – 10% variance; plus 90% of all contracts within 10% of budget
- ✓ construction delays – 20% variance; plus 80% of all contracts within 20% of schedule
- ✓ maintenance – deliver 90% of plan

FDOT also uses various incentives such as "no excuse" bonuses, lump sum construction contracts (such as maintenance of traffic). They also employ a "tool box" concept for expedited delivery as the project needs dictate, such as "fast response" contracting and design build.

FDOT recently completed a 5-year phased "reduction in force" (RIF), and currently utilizes the private sector for 80% of PE work and 100% of CEI work. Private firm utilization is heavily based on past performance. They enjoy a successful delivery rate and enjoy a relatively healthy relationship with the legislature and regulatory agencies.

Missouri – MoDOT is a decentralized agency governed by a commission, and with a separate transportation budget. They have a "development" transportation plan and a "delivery" STIP (5-years (2006-2011), \$6.8 billion, 820 projects). MoDOT uses "cash flow" budgeting, recognizing a 3% inflation factor in their financial modeling.

MoDOT publishes a quarterly document called "Tracker" which rates their performance against various metrics:

- ✓ estimated construction cost versus final construction cost
- ✓ years from programming (i.e., STIP inclusion) to ribbon-cutting
- ✓ % projects within budget
- ✓ % projects on time
- ✓ % change orders

Their success rate has been impressive: 157% of their FY05 program (345 programmed projects, 543 awarded). Additionally, since 2001, MoDOT's variance on actual vs. estimated projects is within 0.2% of budget.

North Carolina – NCDOT is in the midst of several program delivery modifications aimed at enhanced program delivery, including:

- ✓ a 2-part TIP: developmental and delivery
- ✓ department-wide scheduling via their "PMII" programming system
- ✓ department-wide work plan

NCDOT has had recent successes relative to dealing with the various resource agencies, including their "Merger 01" process and establishment of their "Ecosystem Enhancement Program". Interagency leadership teams meet periodically with a common theme of balancing mobility, environmental protection, and economic vitality.

Incentives come in the form of "no excuse" bonuses, A+B contracting, and other methods. NCDOT is also aggressive relative to alternate delivery, particularly with a well-established design-build program.

Implement a management model that all staff will buy into enthusiastically {difficult} – Discussion centered around getting "buy-in" at the rank-and-file levels when change is introduced into a business model, whether that be a state DOT or a private engineering firm.

Utilize Private Engineering Firms (PEF's) more proactively {moderate} – Given that PEF's function in a highly competitive market, the utilization of PEF's via "qualification-based selection" has been demonstrated in several of the states.

Utilize accelerated techniques such as lane rentals, "rapid construction" {easy} – Programs such as "Highways for Life", for example, focus on getting into and out of a construction site quickly, and the resulting savings in cost, not to mention improved safety.

Make past performance a more substantial selection criteria {moderate} – PEF's who do good work should be rewarded with subsequent selections. Those who don't, vice versa.

The following items received lower priority rankings, but were discussed nonetheless:

Be more diligent in matching a given project with a given delivery method – The various delivery tools (design-build, public private, rapid construction, etc.) are not all applicable to the same projects, and due consideration should be given to choosing the best method.

Utilize more "performance-based" contracting – The longstanding mindset of "low bid wins" may achieve the lowest up-front cost, but in considering life-cycle costing and the cost of delays, it may be desirable to reward performance (i.e., incentives for early delivery, "no excuse" bonuses, etc.).

Utilize more "menu bidding" options – An example cited was asphalt versus concrete pavement options as a matter of practice in one state.

Focus more on end results specifications as opposed to "how to" specifications – That is, tell the contractor what you desire as the end product, then let them achieve it.

Consider decentralization of state DOT's – The advantage of decentralization was to push the system down to local levels where ownership of decision-making might be more focused. A variation mentioned was state infrastructure banking (SIB) programs, such as in South Carolina.

Other concepts included:

- ✓ Use more "cash flow" financing
- ✓ Get rid of the mindset that a design exception is a BAD thing
- ✓ Consider more incentive-based contracting for design and construction

The steering committee representatives (NCDOT, AGC, and ACEC/NC) have agreed to form a leadership team to study how these ideas can be implemented into the management model of NCDOT.

In closing, the attendees noted a common thread amongst the diverse attendees: **Regardless of one's perspective, everyone** – most notably the traveling public – **benefits from enhanced program delivery**. While program delivery requires buy-in on a multitude of fronts (some internal, some external), cooperative partnering, accountability, and incentive-based performance are keys to accomplishing expedited program delivery.