

## **APPENDICES**



**APPENDIX A**  
**STAGE 1 SURVEY**





Outsourcing of Highway Project Development, Design, and Construction Administration  
and Inspection  
(ESTIMATED COMPLETION TIME is **less than 5 MINUTES**)

The Oregon Department of Transportation and Oregon State University have embarked upon an investigation of alternative methods for delivering transportation projects. Limitations of ODOT staffing levels mean that traditional methods of project delivery will not always be possible or desirable. Alternative methods will be used.

An important part of the information gathering activity is determining what other departments of transportation and state highway agencies have already learned about outsourcing project development, project engineering, and construction engineering and inspection. In addition to searching the literature, we are surveying state DOTs to obtain the most relevant, current information possible. A two-step survey approach is being used. This survey is intended to, as briefly and quickly as possible, determine which state DOT's have significant experience with outsourcing of any or all of the project delivery functions, and identify specific individuals who may be contacted for in-depth interviews.

This initial survey should be completed by an individual familiar with the staffing and contracting approach for project development, project design, and administration and inspection of construction for highway or other transportation projects. If you are not the correct person to complete this brief questionnaire, please forward immediately to that individual. The 13 question survey may be completed by return e-mail, fax, or by USPS mail. Please return by January 31, 2003. The survey follows.

1. How much has your agency investigated or practiced outsourcing of traditional agency functions related to project delivery? (Outsourcing means contracting to consulting firms or other entities to perform functions traditionally done by agency staff.)
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much

IF YOU CHOSE a), YOUR SURVEY IS NEARLY COMPLETE. Please skip to #12 and return this survey form to the address indicated. Thank you for your time and effort.

2. How much has your agency investigated or practiced outsourcing of environmental studies?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much

3. How much has your agency investigated or practiced outsourcing of right-of-way acquisition?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
4. How much has your agency investigated or practiced outsourcing of project design?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
5. How much has our agency investigated or practiced outsourcing of obtaining required permits?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
6. How much has your agency investigated or practiced outsourcing of surveying functions?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
7. How much has your agency investigated or practiced outsourcing of construction engineering (or construction contract administration)?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
8. How much has your agency investigated or practiced outsourcing of construction inspection?
  - a. Not at all
  - b. A little
  - c. Some
  - d. Very much
9. Program management is defined as oversight of project delivery of agency projects. Has your agency outsourced program management to deliver part or all of your capital improvement program?
  - a. No
  - b. Yes, for large projects
  - c. Yes, for a significant number of projects
10. Do you have an organizational unit specifically responsible for investigation of, or practices for, effective use of outsourcing agency functions?
  - a. Yes
  - b. No

11. ODOT uses “outsourcing” to support Project Delivery in two ways:

- Use of technical discipline specific flexible service or on-call contracts (right of way, environmental services, traffic design, bridge design, roadway design, geo/hydro design, geometronic services) to augment our preliminary engineering teams. This is defined as our In-House Delivery Program.
- Use of full service on-call contracts (the delivery of an entire project including project development activities, preliminary engineering, construction engineering and inspection, and contract administration. This is defined as our Alternative Delivery Program.

Do you have any experience utilizing either or both approaches?

- a. Yes
- b. No

12. Primary contact for outsourcing information:

Name \_\_\_\_\_

Title \_\_\_\_\_

E-mail \_\_\_\_\_

Voice telephone     \_\_\_ - \_\_\_ - \_\_\_\_

Fax                     \_\_\_ - \_\_\_ - \_\_\_\_

13. CONTACT INFORMATION

Person completing survey (if not already supplied in #10 and if different from #10):

Name \_\_\_\_\_

Title \_\_\_\_\_

E-mail \_\_\_\_\_

Voice telephone     \_\_\_ - \_\_\_ - \_\_\_\_

Fax                     \_\_\_ - \_\_\_ - \_\_\_\_

THANK YOU FOR YOUR TIME AND EFFORT, PLEASE RETURN BY E-MAIL,  
FAX, OR U.S.P.S. MAIL TO:

Dr. David F. Rogge  
Department of Civil Engineering  
OSU  
Corvallis, OR 97331  
541.737.3300 (fax)  
541.737.4351 (voice)  
[david.rogge@orst.edu](mailto:david.rogge@orst.edu)

Please return by JANUARY 31, 2003.

THANK YOU.

## **APPENDIX B**

### **STAGE 2 SURVEY/INTERVIEW QUESTIONS AND RESPONSES**



CONSTRUCTION ENGINEERING MANAGEMENT PROGRAM



OREGON STATE UNIVERSITY  
DEPARTMENT OF CIVIL ENGINEERING  
CORVALLIS, OR 97331-2302  
541-737-4351 (VOICE)  
541-737-3300 (FAX)  
[David.Rogge@orst.edu](mailto:David.Rogge@orst.edu)  
<http://www.engr.orst.edu/~rogged>

Subject: Evaluation of outsourced project delivery

Dear Transportation Professional:

As I indicated in our telephone discussion, you have been identified as the best primary contact at your agency for data gathering for the Oregon Department of Transportation (ODOT) – Oregon State University (OSU) study of outsourced Design-Bid-Build (ODBB) and Design-Build (DB). This document summarizes the questions that we would like to have answered and the data that we believe are important to collect, in order that we may achieve the objectives of the study.

Your willingness to supply quality, timely information should be very helpful to ODOT. The legislature is in session. The funding of a very large bridge repair or replacement program may be influenced by the legislators' perception of ODOT's ability to efficiently deliver the projects. This data gathering does not duplicate recent outsourcing surveys to which you may have contributed. This data gathering deals specifically with how to effectively outsource project delivery of capital projects. I know that you are extremely busy, so my objective is to collect the best data possible with the least inconvenience for you. You can easily and quickly respond at the following web address:

[http://engr.oregonstate.edu/survey/survey.php?name=ODOT PROJECT DEL.](http://engr.oregonstate.edu/survey/survey.php?name=ODOT_PROJECT_DEL)

Alternately, you may respond by email, fax, or by mailing a hard copy back using the instructions at the end of the survey form. If the easiest way for you to supply information is simply to have me take notes while we discuss it on the telephone, I'd be happy to do this.

After reviewing the questions, please respond in the manner that is easiest for you. Please call me at 541.737.4351 with any questions or concerns that you may have, or to schedule a time to discuss the questionnaire. Our goal is to have all the responses no later than May 1. Thanks in advance for your assistance.

Sincerely,

Dr. David F. Rogge  
Principal Investigator, ODOT Project Delivery Research  
Program Coordinator, Construction Engineering Management  
Dept. of Civil Engineering  
Oregon State University

# Questionnaire for Evaluation of Outsourced Project Delivery

**Please:**

1. Schedule a time with me ([david.rogge@orst.edu](mailto:david.rogge@orst.edu) or 541.737.4351) for a telephone interview where I can record your responses, **OR . . .**
2. Complete this questionnaire on-line at [www.engr.orts.edu/~rogged/](http://www.engr.orts.edu/~rogged/), **OR . . .**
3. Complete this questionnaire by adding your comments, saving, and e-mailing back to me at [david.rogge@orst.edu](mailto:david.rogge@orst.edu), **OR . . .**
4. Print this questionnaire, complete it, and
  - a. Fax to me at 541.737.3300, **OR . . .**
  - b. Mail to me by USPS at

Dr. David F. Rogge  
Civil, Construction, and Environmental Engineering  
Oregon State University  
Corvallis, OR 97331

Thank You.

## STUDY OBJECTIVES:

So that you may understand what we're trying to accomplish, here are our objectives for the study:

- Evaluate methods used to deliver ODOT capital improvement projects
- Assess resource requirements and implications of implementing different types of project delivery models
- Develop guidelines for ODOT staff to make informed decisions on which delivery method is best suited for a particular project

## PROJECT DELIVERY DEFINED:

We consider the starting point for project delivery to be “project structuring and detailed feasibility analysis.” The ending point for project delivery is when the constructed facility (road, bridge, etc.) is available to the owner agency to make available for use by the public. All project management, engineering, contract administration, and construction oversight and inspection activities required to take place during this time frame represent the project delivery function. Many DOTs use the terminology preliminary (PE) and construction engineering (CE or CEI) to cover the functions traditionally executed by agency personnel during project delivery.

## OUTSOURCING DEFINED:

Outsourcing is the practice of an agency contracting with one or more entities (private businesses or other agencies) to provide services which are the responsibility of the agency.

## QUESTIONNAIRE ORGANIZATION

The questionnaire is broken into three separate sections as follows:

- A. Outsourced Design-Bid-Build, including outsourced Program Management
- B. Outsourced Design-Build
- C. General wrap-up

If you have experience with each of the first two methods of project delivery, information is requested in all areas. If you do not, the survey format will direct you to skip over non-applicable sections.

#### A. OUTSOURCED DESIGN-BID-BUILD, INCLUDING PROGRAM MANAGEMENT:

The following questions apply if you are using any of the following approaches to outsourcing project delivery:

- Program management (see definition below)
- Outsourced Design-Bid-Build similar to the approach taken by the Oregon Department of Transportation (see characteristics below)
- Outsourcing preliminary engineering (PE) functions and/or construction engineering and inspections (CE or CEI) functions

**Program Management** is defined as follows:

Program Management: Contracted oversight of project delivery of agency projects.

Textbook Definition: “The program manager serves as the single point of contact to the owner to coordinate and manage the various other parties involved in planning, design, procurement, and construction.” – Barrie & Paulson, *Professional Construction Management*, 1992

**Outsourced Design-Bid Build (ODBB)** as practiced by the Oregon Department of Transportation is characterized as follows:

- Similar to agency DBB except the owner (agency) establishes a relationship with supplier (vendor) to deliver an entire project or program
- Supplier has internal management and technical capability to deliver the entire project or program
- Supplier (vendor) does not accept construction risk
- Supplier designs project; agency selects construction contractor and enters into contract with contractor; supplier manages construction contractor
- Supplier (vendor) is responsible for the functions that the Oregon Department of Transportation refers to as PE (preliminary engineering) and CE (construction engineering), which includes inspection.

**1. Is your agency currently using outsourced program management for project delivery?**

- a.  Yes
- b.  No

**CT, YES.** We have corridor projects – section of I-95 running through Bridgeport – 3 or 4 miles long – series of four or five projects – hired consultant to coordinate. Oversight of PE and CE

-- doing same thing in new haven area with five projects -- \$987 million corridor contract broken down into five contracts. DOT chooses design consultants as well as oversight consultants. Usually different consultant for CE than PE.

**OK, YES** – specifically targeted – i.e. state-funded general revenue and bond package – capital improvement program (CIP) where did outsource project delivery. Garvey Federal Provisions federal bond program. Consultant on contract for this one. Utilize firms from HNTB down to local type firms.

CIP essentially complete. Started implementation in 97/98. Just wrapping up between now and July. Roughly about billion dollar program. Have 8 districts. Each district had a program management consulting engineer (PMCE). For most part very successful in delivering what they said they would. No formal analysis of overall program. Head person for program manager reported to district engineer. Great flexibility for district engineer to determine what was or was not included.

**NM, NO.** No turn key. Do use them for contracting, but NM oversees them. Parsons or HNTB will do project engineering and occasionally project management.

**2. Is your agency outsourcing both the PE and CE parts of project delivery in some way similar to the approach being undertaken by the Oregon Department of Transportation (see description prior to question A.1)?**

- a.  Yes
- b.  No

**NM, PE** and do CE through construction bureau. Will have consultants do PE and and phase 3 engineering (rfi replies, as-built drawing review). Set-up phase 3 services with project development engineer from consultant design services who coordinates with district.

**OK,** Normally would not contract PE and CE to same person – can do it but has to be under separate solicitations.

**SC, YES.** Outsource about 50% of right-of-way Pe, RW, and CE. Have good program on utilities. Folding many utility relocations in with construction contracts. Conducting subsurface utility engineering (SUE) processing on the front end. When send survey

crew out, also do certain amount of subsurface utility investigation. Use on-call consulting engineering extensively – have 3 subsurface engineering firms on call.

**ID**, Except that different firms are used for PE than are used for CEI.

**IN**, Only local agency contracts where local agency either does it or uses consultant – sometimes the consultant that does PE.

**KA**, Both PE and CEI

**LA**, DOT has tended to do CE themselves.

**MD**, Only PE. State highway in-house responsible for managing and leading team and using the consultants to do design work.

**NY No.** Policies restrict doing this.

**3. Is your agency outsourcing only the PE part of project delivery, but retaining the CE work in-house?**

a.  Yes

b.  No

**NM, YES. BOTH.**

**OK**, Yes. Also do demand services contracts i.e. survey, hydraulics. Access and write work orders against.

**ID**, But “most of the time” it is done this way.

**KA**, Mostly done this way

**MD**, Predominantly

**4. Is your agency outsourcing only the CE part of project delivery, but retaining the coordination and oversight of PE work in-house?**

a.  Yes

b.  No If “No,” please skip to Section B. Outsourced Design-Build.

**NM**, Relates to staffing in the various districts. Central design office. Districts responsible for construction maintenance aspects .

**OK**, “We do.” Could be project produced in-house for which might not have the construction resources and may outsource CE.

**SC**, Had not outsourced CE until about 2 years ago. When they bonded back in 98, metropolitan planning organizations (MPO’s) – have 10 mpo’s and 10 rural and many of them elected to bond. Each gets a share a year. If got 10 million a year could drive a 50 million program. In a few years that entity that gets 10 million will only

get 5 million with the rest going to pay bonds. Because of this bonding program tripled overnight. TEA-21 bought us 92 cents of dollar -- before that only got 52 cents. To drive the increased dollars, had to take from maintenance.

**ID,** But rarely

**IN,** Very small amount -- very selected -- if INDOT doesn't have enough people in local area -- sort of leave it to districts -- Indiana has 6 districts -- districts administer the contracts --not related to bad experiences in the past -- 15-20 years did some pilot projects to see how it would work -- never had serious problem.

**KA,** Yes -- not as common

**MD,** Hiring inspectors from consultant plus one pilot of truly outsourced CE.

**NY,** But NY retains oversight

**5. Currently, about what percentage of your agency's capital projects' budgets is delivered this way (outsourced)?**

- a.  less than 10%
- b.  11-20%
- c.  21-30% CT,
- d.  31-40%
- e.  41-50% LA, NY,
- c.  51-60% NM, OK,
- d.  61-70% SC, MD,
- f.  71-80% ID, KA, FL
- g.  81-90% CT, IN,
- h.  91-100%

**CT,** about 25% on program management; 81-90% inspection and/or design

**NM,** between 50 and 60 -- probably will decrease -- available budget out of funding is decreasing

**OK,** from annualized basis -- 50-60% of annual capital projects budget. Outsource high number of large urban freeway work. Would be probably 30-40% if based on number of projects.

**SC,** between 60 and 80 based on \$.

**IN,** 90% of design work; probably about 50% of scoping and r/w outsourced

**KA,** (approximately 75%)

**LA**, bridges – 50%, roads about 80% -overall about 70% outsourced, which includes program management.

**MD**, higher by dollar value maybe

**NY**, PE approximately 50% also about 50% for CEI

## **6. Why did your agency choose to use this approach?**

**CT** : Resources – only way to get the work done.

**NM**: Relates to capacity/demand curve. If you do outsourcing. Current program level. If double budget of construction, you need to do something with staff. –either outsource, or build up staff.

**OK**, See above for program management

**PE** – He hired in to ODOT in 1990 about 3250 employees – outsourced about 10% -- today at 2400 employees --outsource 50-60% of work.

**SC**, Couldn't add people

**ID**, Not enough staff/resources to accommodate the capital projects program. In 1994, approximately 35% of the PE was done by consultants. At that time consultants were used predominantly on specialized projects.

**IN**, When Interstate began – before that did most in-house – as programs accelerated in early 60's they couldn't keep up so they started outsourcing

**KS**, Not enough staff/resources to provide the capital projects program. With sufficient staff/resources, KDOT has outsourced as low as 50% of the PE and CEI work. The amount of outsourcing has traditionally been higher with peaks in the program.

**LA**, Wilmot did study of consultant vs. in-house design. In late 60's did study to see how much they should outsource. In the last 10 years pressure from state legislature to contract out and cut down DOT workforce. They've reduced staff from about 7000 to about 4000. Only about 400 engineers left.

Australia privatized their entire department of transport. Didn't take long for Dept. of Transport to become ineffective. Have to retain Max Lay used to head up Australia DOT but now is a consultant doing what he did before but being paid more. He said it only took about 3 years for organization to lose its effectiveness.

**MD**, staff limited over the years –haven't been able to add positions.

**NY**, more palatable to tax payer and keeps industry happy and employee unions relatively happy. – if too far away from that, lose in-house expertise

**FL**, More efficient use of resources

**7. How are consultants qualified for potential selection for project delivery oversight responsibilities?**

**CT** : Same for all – prequalified on an annual basis. Selection process for each assignment

**NM**: PE Final Design and Phase 3 – use QBS – one step selection process – no prequal. Procurement code on website. Consultant procedures manual on website. Location study procedures manual on website. Budget identified – then advertise RFP. Pre-proposal meeting. Proposals due in a month. Review proposals and rate – follows Brooks Law.

**OK**, Program management – did research into consulting firms they thought could do it – had targeted solicitation allowing them to respond – had narrowed down to about a dozen – and all responded and came in and interviewed. Resulted in 8 – one for each district. Were concerned about ability to staff more than one district.

**SC**, PE, right-of-way and CE – do not prequalify. Advertise, receive proposals, committee chooses based on qualifications. One-step process.. used to shortlist and interview because of time consumption and expense for the process.

CRM's chosen by request for proposals – about half a dozen submitted. Held interviews with those six. Had executive directors and state highway engineers. 2 days with each entity. Voted. Recommendation made to commission and commission chose.

**ID**, Two possible ways: RFP solicitation, or term agreement.

- RFP solicitation:** Specific to a project. RFP distributed for a specific project. Consultants who reply to the RFP are evaluated and the most qualified is selected.
- Term agreement:** Every two years, a term list is developed of qualified consultants. Consultants must meet some initial pre-qualification requirements to get on the list. Up to \$750,000/year of PE work (\$250,000 per task) can be outsourced to consultants on this list. When a project comes on line, the list is reviewed for a consultant who is best suited for the specific duties of the project.

**IN**, Consultants are not pre-qualified. Put out PSBs. Keep track of what consultant's have done.

Any consultant can submit a statement of interest. PSB's – public service bulletins.

**KS**, Consultants are required to complete an annual qualification form on which they indicate their qualifications. Also, for those consultants that have previously worked on KDOT projects, the annual performance review conducted during their contract is used for future qualification.

**MD**, **g.e.c.** – post advertisement. Prequalify firms == then technical proposals == then oral interviews. Rated – best score chosen. G.E.C. = general engineering consultant.

**on routine projects** – mostly open-end contracts. Advertise fixed amount of money. Rate tech proposal develop short list

**NY**, for PE have electronic process starting with short-listing based on experience. Then qualifications based designation process. –on website [www.dot.state.ny.us](http://www.dot.state.ny.us) go to doing business with -- choose consultants and contractors. Limit number on short-list –3-5 -- project by project basis. Do have where and when contracts to maintain staff of capability. Start short-listing process for each project.

**FL**, Qualification based pre-qualifications.

## **8. How does your agency select these consultants?**

**CT** : Notice that are seeking services by type of job and category. Firms submit proposals – brief description of who they're going to staff it with and how. Goes before selection panel – shortlists down to 5-7 firms – then actual ranking based on half-hour interview related to specifics about the assignment followed by 5-minute overview by consultants. Do them all back to back in a morning or afternoon -- submit ranking to commissioner for choice. Panel has chairmen and 2 permanent members plus whatever office is going to be overseeing consultant.

**OK**, QBS – by OKDOT managers

**SC**, QBS

**ID**, Consultants are selected based on the project scope. The consultant who is considered most qualified to provide the desired scope is selected.

**IN**, Keep track of how much experience each consultant has – try to keep all with some work. INDOT has general oversight people -- put a list of people together who could do the job – send to executive committee (people from design and exec staff and some in-house PM).

Consultant is the engineer of record.

**KS,** An advertisement is placed in the Kansas Register (newspaper), and notification is sent to all current consultants. Consultants respond to these solicitations, and a short list is developed based on selecting the “most qualified”. Interviews of the short-listed firms are conducted and then the top qualifier is selected. Negotiations are entered into with the top qualifier. If the negotiations fail, then the second qualifier is contacted, and so on.

**NY,** selection based on the more detailed proposal they submit for the project, there is scoring mechanism. Evaluations are made in the absence of \$’s. Same for CEI

**FL,** Consultants submit letter to get prequalified....required by Florida Statutes.

### **9. What type of contract does your agency enter into with these consultants?**

**CT :** Design pretty much lump sum. Construction inspection is time and materials with maximum limiting amounts and fixed fee for profit and indirect costs. Program management contract is more or less time and materials. Length of contract is length of project or program

**NM:** Two basic types of contracts. Fixed price lump sum by phase initial engineering evaluation, preliminary engineering (evaluation of alternatives), detailed engineering analysis (phase 1 b), environmental documentation (phase 1 c), phase 1d is construction plan design to 30%, phase 2 is final design and complete construction documents, phase 3 is engineering technical support services during construction. During construction it’s a certified unit rate (fully loaded hourly rate – audit their overhead and not greater than 15% profit) with not to exceed. Phasing is well described in “location study procedures manual”

**OK,** QBS – by OKDOT managers

**SC,** Fixed fee. Have done some lump sum. But lump sum is too locked in -- so prefer fixed fee. Used to limit overhead to 135% -- released that --- some run as high as 150%-160% overhead. Delineate number of hours.

CRM’s – looked at program—did some figuring on what was involved. Guaranteed payment amount every 2 weeks. Other fees for PE and CE paid as they’re done. Their director is an attorney – took 6 months to negotiate. Allowed to perform PE work up to 65% complete – last step before prepare final right-of-way plans. Waived that cut-off point at 65%. Appendix A to contract has code 1, 2, and 3. code 1 – dot did all the work. Code 2 were projects already underway with consultants. Code 3 were projects untouched to be driven by CRM’s completely – this is where they had to hand-off at 65%. Some CE is by DOT people and some by consultants.

**ID,** Most are negotiated cost plus a fixed fee. Some are negotiated fixed cost, but this is rare.

**IN, Negotiated – cost plus fixed fee with audited overhead amount with a not to exceed -- Answers to 7,8, and 9 are same for CE consultants.**

**KS,** Approximately 90% of outsourced contracts are based on actual cost plus a fee. The cost is based on hourly rates and the number of hours expended, along with any other costs (equipment, travel, etc.)

**MD,** g.e.c. cost plus fixed fee annual work plans control expenditures  
**outsourcing PE** – for each task negotiate amount.

**NY,** cost plus fixed fee for both PE and CE and map (maximum amount payable).  
NYDOT adds a contingency that NYDOT has to agree to spend.

**FL,** Professional Services Contract

**10. Does your agency’s contract with the oversight consultant or program manager have a provision for retainage of fee?**

a.  Yes

b.  No

**CT, YES.** usually on lump sum’s retain 2.5%; on time and material retain 10% of profit only, until assignment complete and final audit done

**NM, YES** 5% by phase

**OK,** statutorily prohibited from doing so. Would like to have the tool if it were available.

**SC,** not on PE and right-of-way. Monitor progress of the work.

**IN,** doesn’t think they’ve ever tried

**MD,** no retainage

**NY,** did in the past – back in the 70’s -- have unit in main office in charge of outside consultants 9 of 11 regions handle. No longer done. Since then had revolving security agreement – an escrow account. Went away from that. Rely on good selection and oversight

**11. If yes, how much retention is allowed to be held and has the provision been used?**

**NM:** Use on every contract. Gives a little bit of a hammer. Also use a liquidated damages clause related to milestone dates i.e. phase 1 b, also draft environmental document, also PSE 95-100% complete. Also delivery of right-of-away

**ID,** Agency can pay 95% of fee. No record of it being implemented.

**KA,** 5% is retained until the scope of work is completed. After the scope of work is completed, 4% is given back to the consultant and the remaining 1% is held until the completion of an audit (which could take up to 1 year). After the audit is finished, the remaining 1% is released. This occurs on all outsourced contracts.

## **12. What types of decisions can be made by the consultants or program manager, and what types of decisions must be made by your agency?**

**CT :** Normal day to day stuff they can make decisions. If its procedure or policy thing contrary to what manuals say must clear with DOT. Have continuing dialogue. On bigger jobs full time project engineer (DOT) assigned. Centralized with 4 district offices (day to day contract admin in districts)

**NM:** Decision breaking point – consultant responsible for developing project and coordination and their qc. Agency decisions where consultant does not have control of any of design or budget issues. Consultant stamps the plans.

**OK,** Program managers given specific instructions from district engineer – expected to exercise standard of care as far as engineering of specific project is concerned. Scope, schedule or budget decisions handled by district engineer.

**SC,** CRM's pretty much given same authority as DOT people. Pretty much same for PE. CRM's and DOT try to align. 2 project development engineers report to mr. Pratt and are prime contact for PE. For right-of-way, director of right-of-way works with CRMS. Director of Construction deals with CRM's for CE. CRM's have offices pretty much located with DOTs (but not co-located)

**ID,** In general, consultant makes engineering decisions such that the project meets the governing building code. Agency makes all decisions regarding project cost and schedule.

**IN,** Review process where other consultants review – in old days DOT did review of design features – don't have the personnel to do this now. Critical element review. Will bridge fall down? Etc.

**KS,** All decisions related to engineering are expected to be made by the consultant. KDOT makes decisions related to environmental impacts, cost, and schedule.

**MD**, 40 million G.E.C. for about 15 intersections. GEC set-up to help him manage various section designers. Md SHA person handles budget items and add or subtract work from contracts.

**29 GEC contract** – major decisions have to come from state highway -- also true for Woodrow Wilson bridge. It is speculated that the reason for lack of bids (only one bid, and it was well over estimate) on Wilson was perception that GEC could only say no – wouldn't be able to say yes.

**md sha is pretty centralized (for design)** – for construction its more regional. Also have in each district a special projects group for design also.

**outsourcing PE** – consultant provides plans 30% reviews 70% reviews – on consultant design project;

**NY**, view consultant as extension of staff – not as DOT managers and supervisors. They do engineering judgement role -- do not do management role involving budget-- true for CEI – literally an extension of DOT workforce. They use consultants because of staff shortages and for expertise.

**FL**, Time and money retained by Agency....all else to Consultants.

### **13. What insurance coverage is the consultant or program manager required to have?**

**CT**: Same for all – general liability, prof. liability, workers comp. And name state to protect state as well.

**NM**: Need to look at particular state law. General liability – have them name NM as additional insured. On professional liability never name NM DOT. Professional liability is “errors and omissions.”

**OK**, Program manager \$1million in general liability. Million in automobile liability. 100,000 per occurrence for workers' comp. Million in professional liability (includes e\*o) \$50,000 per project valuable paper – covers costs of loss or destruction of document – consultants say this last one is difficult to come by.

**SC**, Engineer of record is person responsible – licensed engineer must sign and seal plans – that person or company much have the professional liability insurance.

**ID**, General liability, and errors & omissions insurance.

**IN**, Errors and omissions

**KA**, None. Awhile back, KDOT legal counsel wanted KDOT to be named in the general liability policies and provided protection within the policies. This ended up being too costly. As a result, they have dropped the requirement for insurance coverage altogether. Most consultants carry greater than \$1 million general liability policy anyway.

**MD,** GEC -- standard design contract liability errors and omissions with each section designer

outsourced PE –standard contract liability; errors and omissions

**NY,** PE and CEI both : consultant liability insurance (includes errors and omissions), professional liability, workers comp., bodily injury, liability of subcontractors, protective liability coverage that covers the people and state of NY and the department – one of these they reimburse them for (protective liability)

**FL,** Professional Liability insurance.

**14. What determines the compensation that the consultant or program manager receives?**

**NM:** Negotiate percentage of profit. Do argue about overhead. NM typically uses FAR acquisition regulations. Negotiate on man-hours. Federal Acquisition Regulations = FAR.

**OK,** Negotiated on each task order. Lump sum if comfortable with ability to define scope of services – use extensively. In some cases go with hourly rate.

**SC,** CRM schedule E biweekly payments all based on schedule of hourly rates. Set by contract. CRMS's are five-year with option to extend two more.

**ID,** A payment milestone schedule is developed for each project. At each milestone, the payment is based on negotiated prices for labor, indirects, etc. and the amount of each that were expended. The consultant is required to submit actual costs within each milestone period. These costs are monitored and verified by the agency, and payment is made accordingly. One pay increase per year is allowed for salaries.

**KA,** KDOT maintains a database of old projects containing time spent and hourly rates. When a pay request is made, KDOT compares the pay request to the database to verify that it is reasonable. If it is considered reasonable, payment is made. If it is felt to be unreasonable, negotiations are entered into with the consultant. In the past, the pay amounts have been increased and decreased following negotiations.

**NY,** negotiated cost plus fee contract –look at tasks and negotiate by hours by title and contracts people put dollars on it.

**FL,** Negotiated rates for compensation.

**15. What types of training programs does your agency have for consultant or program manager personnel?**

**CT:** No special training for dot people on how to manage consultants.

Do have annual project engineer and inspection school – available to consultant inspectors – 2-3 day program during the winter. Current issues and new technology, etc. not required.

**NM:** Consultants invited – but must pay. No specific training for dealing with consultants. But do send people to PM and contract management training.

**OK,** No special training for OKDOT people – did initiate materials testing certification program for construction people doing material sampling and testing.

**SC,** Negotiating training program in next month for DOT. Don't require that program managers are licensed, but all are. Most have learned through experience.

Have done a good job of keeping DOT employees. Program managers are paid very well. Consultants can't compete with DOT. Have 11 month training program. Get raises for FE and PE. Have lost one or two to consultants and one or two have come back. No overtime payment, but do allow compensatory overtime.

**ID,** For consultants providing PE services: none.  
For consultants providing CEI services: training provided on quality requirements, inspection, and testing.

**IN,** Not any real formal training program – if INDOT is doing some technical training with their people, consultants invited

**KA,** No training provided.

**MD,** no special training  
**general project management training available** –3-day project management course that consultants are invited to attend.  
**recent initiative to partner between ODOT PM and consultants** – to do on all projects.

**NY,** no. staff with people with much field experience.

**FL,** For inspection/testing, we have Construction Training Qualification Program (CTQP). For Administration of these kinds of contracts, we have a training class.

**16. What type of performance appraisal does your agency have for the consultants or program managers, and may it be used to terminate work or extend the scope of work?**

**CT:**Annual evaluation form on all consultants.  
No project by project.

We've had some debarments where had to terminate agreements because of federal requirements. If there are problems DOT puts pressure on consultant. If you want more assignments, better perform.

**NM:** Yes. Including in consultant management unit manual – Doing business with NM DOT

**OK,** Just the normal objective. Have evaluation form for consulting engineer's performance. Have similar form for construction contractors. Working on revamping forms. Potentially a factor in awarding work. Looking toward using more in the selection projects for future work.

**SC,** Meeting Wednesday to discuss CRM contract. – might have to retain beyond the five – things have stayed on schedule. Progressed very well. Could probably run the program a year from now but for outside initiatives they've helped with. Five years is a year from July. Both CRM's use PRIMAVERA. Two CRM's work together, particularly on outside activities they've been involved. Have over 1.8 billion under contract right now.

DOT had half of right-of-way and CRM about half.  
Of about 200 right-of-way, only about 40 to do  
About 125 of 200 PE done  
About 25-30% of CE complete.

Performance appraisal for consultants is done quarterly. Appendix C of CRM contract details 6 month review and interim review at 3 months. There's a little pot of money their – incentive and disincentive. Its so small though that they wonder if its worth the trouble.

**ID,** An evaluation program has been established with the Consulting Engineers Association of Idaho in which consultant performance is reviewed. The program evaluates a variety of PE-related measures, including constructability. This information is used to determine if the consultant should be hired again, and is presented to the consultant for their information.

**IN,** Rating sheet – plans are rated in the field by construction people and by contractors. Reviewed by design people and used to categorize consultants. It has some bearing on how much work they get and what kind of work they get. In process of coming up with better rating system. – trying to eliminate subjectivity.

**KA,** A Project Evaluation Team (PET) is developed that consists of KDOT and consultant personnel. The PET conducts three reviews at different points during the project: office check, field check, and post-construction check. Each review is used to evaluate the performance of the consultant, and can be used to terminate the consultant.

**MD**, standard annual rating form for all consultants –timeliness , technical ability, public involvement, errors, by group that manages all consultant contracts – haven't used to terminate –does affect future assignments

**NY**, every year at close out of project rate on administrative and technical – goes into file for selection for future projects -- on rare occasions, can be used to terminate.

**FL**, Evaluate quarterly and can be used to terminate work or extend scope of services.

**17. To whom within your agency does the consultant or program manager report?**

**CT**: Project engineer – design all out of headquarters – program managers out of headquarters – job inspection out of district office – all called project engineers.

**NM**: Project Development Engineer in Consultant Design Section. These people also deal with internal staff. Do not directly supervise roadway engineers or bridge engineers. Project Development Engineers have participated in a variety of DOT assignments. Had retirement binge about three year ago. Some from within and some from outside.

**SC**, CRM's report to 2 SC DOT project development engineers. Each project dev engineer has about 10 program managers under those 2. Each program manager (program manager) has an assistant –drive projects from A-Z. Some oversight for construction – keep a watch on add-ons.

Director of construction – seven districts – district construction engineer – resident construction engineer.

**ID**, To the project manager. The project manager may be located within different offices in the DOT depending on the nature of the project.

**IN**, PE – design people in design division –design development section manager (four) -- they're engineers

CE – reports to district construction engineer just like INDOT project engineers report to him, sometimes through area manager.

**KA**, Road Squad Leader (a.k.a. Project Manager)

**NY**, PE– NYDOT has consultant manager –individual in the special unit to which they do technical and administrative reporting to a Project Manager. If project is managed out of main office PM is from consultant management unit. In one region highway design squad leader would manage design consultant and in-house design

CEI is a little different ==negotiations for contract are with DOT construction supervisor – after under way consultant reports to dot EIC who is onsite representative. EIC = Engineer-in-charge

FL, A Department Project Manager who reports to a Department Resident Engineer.

**18. Do any of your agency employees work under the direction of the consultant (or program manager)?**

- a.  Yes
- b.  No

NM, SOME STATE LAWS

MD, some under G.E.C. – seemed to work OK on 29 project -- all section designers were consultants

**19. If yes to Question 18, please describe below.**

**20. How are change orders and claims by construction contractors or design consultants administered? What is the role of the oversight consultant or program manager?**

CT: Any construction contract change orders – consultant on job would prepare them under direction of DOT project engineer. Treat consultant like DOT employees. Change in consultant’s lump sum contract -- negotiate change. T&M with additional work -- adjust max amount accordingly. If changes in title etc.-- negotiate.

NM: Project Development Engineer through contract amendment for engineering – change in level of scope. No change in field.

OK, OKDOT would assume primary role in construction contract. If they had design consultant subconsulting to program manager, OKDOT would leave that to program manager to resolve.

SC, Construction claims handled same as inhouse – director of construction makes final ruling.

ID, Construction change orders and claims are administered by regional engineers located in the region in which the project is located. In design, changes to the scope are made through the DOT’s project manager, with the DOT’s program manager providing oversight on larger changes that affect the capital project program.

IN, PE – if change something in scoping or add some big design do change order to consultants’ contract.

Construction contractor changes – project engineer in construction office

**KA**, For PE, changes to the design scope of work are administered by the Road Squad Leader (Project Manager). For CEI, a different procedure is implemented with administration done within each District.

**MD**, on Wilson bridge do have SHA for consultants definitely back to sha

**NY**, When consultant does PE, consultant stamps plans, but DOT still approves.  
Construction contracts – review for technical –dot does cost, etc. review.  
Design consultant change order – supplemental agreements –by dot PM.

**FL**, Review, analyze, and make recommendation to the Department.

**21. Have you had to add additional agency employees to provide oversight of the consultants (or program manager)?**

- a.  Yes **OK, ID,**
- b.  No **CT, NM, IN, KA, MD, NY, FL**
- c. **if no, skip to “28” below**

**NM**, the reason its “no” is judgment between supply and design.

**OK**, a little bit – but may not have been due to program management -- probably due to the program in general.

**SC**, didn’t add any staff to manage the CRM’s – they’re highly sophisticated consultants – hasn’t been easy. Since CRM’s could negotiate contracts with consultants instead of DOT people having to do it.

**ID**, when additional work came about with the increase in funds from TEA-21.

**MD**, use of GEC requires less agency management

**NY**, bring consultants in and manage them but don’t bring in additional dot people.

**22. Are the positions that the individuals fill new job descriptions or just more people filling previously existing job descriptions?**

- a.  New position descriptions
- b.  Previously existing job descriptions **OK, ID,**

**23. Please add any additional comments regarding Question 22 above in relation to job positions and descriptions:**

**OK**, we had a firm that was earthtek (used to be Kaiser) that was contracted to chief engineer that was the primary contact between all of the PMCE's and the chief engineer who had responsibility for entire project

**24. Are the new agency positions blended into existing administrative units, or has a new administrative unit been created?**

- a.  Blended in **OK, ID**,
- b.  New administrative unit
- c.  Other?

**25. Have these new individuals been reassigned from other positions, hired from outside the agency, or both?**

- a.  Reassigned **OK**,
- b.  Hired from outside
- c.  Both **ID**,

**26. Additional comments related to Questions 25 above?:**

**OK**, In 2000 -- wasn't really related to CIP program. Created project management division -- have 7 PM's and 3 people working in unit called contract administration. PM's handle general oversight of projects in the work plan, whether outsourced or produced in house. Contract administration unit oversees the professional services contracts -- separate unit handles construction contracts. PM's handle through PS&E submittal -- if district engineer requires some level of assistance during construction they may assist if requested, but not regular part of duties.

**27. How can the magnitude of the addition of new agency personnel be quantified? i.e. how many FTE's for how large an annual program, or how much cost as a % of annual construction contract volume, etc. and what is the value for your measurement?**

**OK**, Probably can't do.

**ID**, With the addition of new funds from TEA-21, it was assessed that each project manager can manage approximately \$8,000,000 worth of work, usually multiple projects totaling to this value. The number of individuals hired was based on this rate and the amount of funds received from TEA-21.

**28. Please list any specific practices that you have found are important for your agency's method of outsourced project delivery to work.**

**CT:** Process they have has worked pretty well. Pluses of consultants – specialty projects. They have more flexibility in bringing people in and out, i.e. they had major bridges with caissons – could bring in people very familiar with caisson construction. They do all of their rehab bridge painting with consultants because of environmental health complexities. Also just completed vertical lift bridge. Still have in-house technical expertise, but not enough to cover everything. Still provide checks and balance on consultants.

**NM:** If you're going to outsource – look at budget and set it as your baseline – then project forward with budget impacts – complete design – right of way – everything related to project delivery – look at what consultant market is charging – if you force them to staff up you'll pay the price. This shouldn't take more than six months to do.

**OK,** Most important thing is that you take great care in defining roles and responsibilities of agency personnel and the consulting personnel. i.e. you can get into situation where your internal personnel may not want to release things they've normally had and may end up doing it twice – just have to have a good understanding about who's going to do what and how its going to operate.

**SC,** From pre-construction standpoint, CRM program has worked very well. At onset, were outsourcing much work. Entities signed bonding agreements. After that took over 14 moths to advertise and negotiate CRM's. Because of lead time required for environmental, etc., had to hire others and pulled work away from CRM's. On construction end 100% support.

On front end gearing up of on-call consultants might have worked better. One of CRM's set up pool of funds so they could cut a check right on the spot for right-of-way. Takes much longer through normal channels. A lot of initiatives and systems have come out of the program.

Why was 65% thing in there? SC civil engineers partner with them – lobbied.

**ID,** The structured process is a benefit. The ability to pre-qualify consultants using the term agreements has also helped speed up the process.

**IN,** Better make sure that you have what you've scoped the right way – PE CE – report just like INDOT district people do – no additional level like in their initial pilots

**KA,**

- Partnering
- Overhead procedures have been changed to accommodate outsourcing
- Utilizing a “discovery phase” at the beginning of the design effort before negotiating the consultant contract. The PE contract is broken up into 4 phases: Discovery, Design, Delay, and Construction Services. The Delay phase is only used if the project is put on

hold for a period of time after the design is complete. At the end of each phase, the phase is closed out before moving onto the next phase. This has helped to resolve problems early and then move on with a clean slate.

**MD,** GEC's – spend more time upfront defining roles and responsibilities  
**Section designers** – GEC managing them caused some problems – brought GEC on after work was in progress.

**NY,** know what you're hiring consultant for – what you want them to accomplish for you. They have a lengthy time frame from when they want a consultant and when they get them on board – takes ¾ of a year to a year. DOT doesn't like surprises. In initial meeting with consultants start with an assumptions. This has been very beneficial.

**FL,** In the process of developing a Overall Department Project Management Guidelines for Consultant Project Management to provide guidance to all of the internal office of the Department utilizing Consultants.

**29. Please list any specific “lessons learned” from delivering projects by your agency’s method of outsourced project delivery.**

**ID,** Consultants usually already know how to do the engineering (or they would not be on the pre-qualification list), but they do not know the DOT's process for project delivery. Training needs to be provided to get the consultants informed about how the DOT delivers projects.

**KA,**

- Over the past 10 year capital projects program, grouping similar projects into a single consultant contract. This allows for continuity between projects and cuts down on the amount of interviewing required to bring in new consultants.

- Conduct joint training, where required, of KDOT and consultant personnel.

**MD,** See 28

**30. For how many years has your agency used outsourced project delivery for projects?**

- a.  less than one year
- b.  1–2 years
- c.  2-3 years
- d.  3-4 years
- e.  more than 4 years

**CT,** Bridgeport is in fifth year – that was the first.

Outsourcing of PE – were doing a certain amount in '66 – probably 30-40% on major jobs. Today about 80% consultants. This is probably a pretty good max. number to retain technical expertise. Still do all own right-of-way, utilities, hydraulics, soils, foundations, material testing.

**NM**, Since 80's

**SC**, 20 entities that view for upgrade – 16 of 20 opted for bonding. Had 68 million bridge replacement that went to 89 million. Same thing happening with safety pot of money. A big push for additional gas tax.

**ID**, More that the time that he has been employed (30 years).

**IN**, about 40 years for PE; 15-20 years for CE pilot part

**KA**, ever since he has been employed at KDOT (over 30 years)

**MD**, **3-4 years** – GEC – one started about 6 years ago, and another 3 or 4 years ago  
**more than 4 years** - more than 20

**NY**, about 30

**31. Approximately what dollar volume of construction contracts has your agency delivered with outsourced project delivery?**

- a.  < 100 million **NM**,
- b.  100 million – 499 million **CT, ID, MD**,
- c.  500 million – 1 billion **NY**,
- d.  1 billion – 1.5 billion **OK**,
- e.  more than 1.5 billion **SC, IN, KA, MD, FL**

**CT**, 430-450 million per year out to bid. About 360million of that is consultant work.

**NM**, normal consultant design program has been \$10 million. For a while was up around \$80 million because of bonding program. \$10 million in design divided by .12 (many bridges) = construction dollars. For open roadways use 0.08 instead. Don't use ACEC curves for estimating – haven't been updated since '78.

**OK**, Program management – CIP about a billion

**SC**, 7 in 27

**ID**, Approximately \$115 million per year. (approximately 60% of all contracts; approximately \$190 million in contracts per year)

**KA**, 1989-1997 capital projects program: approx. 75% of \$3.2 billion total = \$2.4 billion

2000-2009 capital projects program: approx. 75% of \$5.3 billion total = \$ 3.97 billion

**MD, 100 million – 499 million** - GEC w/o wilson

**more than 1.5 billion** - GEC including wilson, but Woodrow is most ; xx

**NY**, about \$600 million a year

**32. In general, what is your agency's level of satisfaction with outsourced project delivery?**

- a.  **Very dissatisfied**
- b.  **Dissatisfied**
- c.  **Neutral/No opinion** IN, NY,
- d.  **Satisfied** CT, NM, OK, SC, ID, IN, KA, NY,
- e.  **Very Satisfied** FL

**CT**, program management; outsourced PE (pretty much); outsourced CE (pretty much)

**NM**, between neutral and satisfied – some might say very satisfied.

**OK**, program management overall fairly successful ; similar for PE and CE

**ID**, but not ecstatic about it

**IN**, Neutral/No opinion – CE has very limited experience

Satisfied - it's the only way they could do the job; want to keep some in-house staff that still know how to design projects.

**MD**, Satisfied – outsourced PE – satisfied to very satisfied  
Very Satisfied --gec

Comments: no way to do work without help from consultants

**NY**, Neutral/No opinion - pe and cei

Satisfied - pe and cei if reality is that they're never going to be able to do it in-house

**33. Additional comments on you level of satisfaction as rated in Question 32 above?**

**CT**, easier to terminate consultant than employee.

**NM**, put demands on consultants that you wouldn't put on internal staff.

**OK**, by and large couldn't deliver program without consultants. Insure high level of communication between field folks and consultant personnel.

**SC**, CRM I think good – could say excellent but have been struggles along the way. Gong to have good product for the public. We're getting our money's worth.

**ID**, Their goal is to outsource approximately 60% of PE and CEI work. This has been successful so far and they are satisfied with the product.

**IN**, How decide what gets done in-house - he can't answer – try to retain some jobs with complexity – can't do real big jobs

**KA**, Satisfaction depends on the firm and the personnel within the firm. Not all firms, and not all personnel within the firms, perform to the same level. Mostly dependent on the experience of the personnel involved. Not really dependent on the project.

**LA**, Establishing some career path for young engineers.

What happened in CALTRANS. Legislature tried to outsource. Employees union sued and won and only about 12% now outsourced.

**NY**, how choose in house or out – do we need to do this project in house to keep our expertise up. What skills and talents are needed, so we have them. If we have to do it quick, we have to do it in house

## **B. OUTSOURCED DESIGN-BUILD (DB)**

The following questions deal with Outsourced Design-Build (DB) characterized as follows:

- Variation of the traditional DBB where the owner (transportation agency) establishes a relationship with supplier (vendor) to deliver an entire project or program
- Supplier has internal management and technical capability to deliver the entire project or program
- Supplier (vendor) accepts construction risk

### **34. Is your agency using an outsourced DB approach for project delivery?**

a.  Yes

b.  No **If no, please skip to Section C. General Wrap-Up**

**NM**, – 2 projects, us-70 Honda Valley; new mexico 528 in Albuquerque trial projects. Us-70 was \$129 million; nm 528 were \$21 million

**OK**, Statutorily prohibited from doing design-build.

**SC**, done 9 projects over the last six years. CRM's not involved.

**IN**, have design-build project- started policy and work plan in 1997.

**MD**, since 1998 –11 projects with 8 completed

**35. If yes, about what percentage of your agency's capital projects' budgets is delivered this way?**

- a.  less than 10% NM, AZ, IN, MD,
- b.  11-20%
- c.  21-30%
- d.  31-40%
- e.  41-50%
- f.  51-60%
- g.  61-70% FL
- h.  71-80%
- i.  81-90%
- j.  91-100%

**NM**, On total project number

**SC**, had \$531 million project in 01. \$665 million in active design and construction now.

**IN**, Most have been very large contracts

**MD**, 5% has been goal – don't want to overtake traditional

**36. Why did your agency choose to use DB?**

**NM**, Decision by executive management

**SC**, Accelerate the projects. On some can't say there's been significant cost savings – but always have schedule savings.

**AZ**, State legislation was passed allowing DB as an alternative contracting system and the decision was made to use it on a limited basis and study the benefits compared to DBB contracting.

**IN**, When they need to get the job done – big advantage is its quickest way to get them done

**MD,** how select projects that go DB –at first, large political push to get job out or big safety issue mainly used because of speed of delivery –way of reducing PE dollars up front; DB used about 60% of traditional PE costs. Majority have been considered successes. There have been issues on a couple that have made them complicated. One benefit has been control of cost once project goes to construction. Less than 1% cost growth vs 5%-10%.

**FL,** The efficiency of combining design, construction, and in some cases, the CEI into one contract.

Also, while this was an available alternative contracting method available to the Department, its use was accelerated post 9/11/01 as a result of the Governor's Economic Stimulus Package.

### **37. How are companies qualified for potential selection as DB contractor?**

**NM,** Very lengthy project selection process – letter of interest statement == rfq – shortlisted to no more than 5 – rfp's from those 5 – interview process – firm with best value presented was selected. When setting up evaluation criteria – evaluate federal requirements for DB

**SC,** On individual project basis. For each project separate committee set up by executive director. Work up RFQ – ask folks to submit qualifications. Some have been one-step two-step. Select between 3 and 6 in 2-step process. Only project where they paid a stipend was one they didn't go to contract on. – coastal bridge in Charleston county. Five made short list – 4 were in the range of \$46 million and they didn't have that much to do it. Only paid \$30,000 3 each on stipend.

**AZ,** Contractors must meet standard pre-qualification requirements and consultants must be registered with the state.

**IN,** Do it under low bid process. Must have minimum qualifications to submit. For contractor part must be pre-qualified contractor (same list as for LS traditional). Prior to bid, open technical proposal – and must have 80 pts to have bid opened. As of today, let and completed seven, and getting ready to let another large one.

**MD,** no true pre-qual. – have 2-step process – advertise like any other project contractor and designer must submit technical proposal – draft cpm – resume's for key staff – rate technical proposals –based on rating, draw line between those in the game and those not. Top firms are short-listed and invited to submit bid –awarded based on low bid. Stipend is 25,000 to firms that have been shortlisted but not winners – just started -- about a year into process.

**FL,** Prequalification selection as is the case with Consultants.

### **38. How does your agency select the DB contractor?**

**NM,** Best score on evaluation criteria including price

**SC,** Using a low bid process once get through qualifications process. Most recent one in RFP stage used an A&B process. \$531 project was low bid. In some previous ones used cost and technical score. In one, told them up front how much money that they had and they bid the scope – six lane new location freeway type facility 22 miles. DOT will take care of environmental approvals/permits in place before bidding. Not always right-of-way before bid. In three projects put responsibility for right-of-way on contractor. Cap the contractors risk on right-of-way. Share in savings at 25% or in cost at 25% until hit cap where DOT picks up 100%. Contract says that contractor acts as agent for DOT for right-of-way – DOT has ultimate decision on imminent domain.

**AZ,** We use a two step process where a Request for Qualifications/Request for Proposals (RFQ/RFP) is advertised and prospective DB teams submit a Statement of Qualifications (SOQ). A panel evaluates the SOQ based on the qualification criteria included in the RFQ/RFP and we shortlist a minimum of three and no more than five teams. Those shortlisted teams are asked to submit a technical proposal, cost proposal and schedule based on the technical criteria included in the RFQ/RFP. Another technical panel evaluates the technical proposal based on the technical criteria and gives each proposal a numerical score. A final section is made based on a best value formula of “A+B”/Technical Score. Where “A” is the construction cost in dollars and “B” is the time value in dollars and the technical score is a numerical value. The “B” value is based on a cost factor per day that is related to the average user costs associated with the volume of traffic on that roadway multiplied by the length of construction days of each shortlisted team’s schedule.

**IN,** See above

**FL,** Letters of interest are received post advertisement of the project and a Technical Review Committee evaluates, scores, and makes selection recommendation to Selection Committee.

### **39. What type of contract does your agency enter into with the DB contractor?**

**NM,** Lump sum contract – unit prices agreed to (only if changes needed) for changes

**SC,** Lump sum contract – no unit prices. Provide schedule of values in proposal. More detailed schedule wht sign the contract. Cost load the CPM. Generally require PRIMAVERA.

**AZ,** We make minor modification to our standard construction contract to address design-build related actions.

**IN**, Lump sum contract with no pay items.

**MD**, just like construction contract but includes design – lump sum

**FL**, Professional Services contract.

**40. What types of decisions can be made by the DB, and what types of decisions must be made by your agency?**

**NM**, Management structure established – typically need to use performance-based need to have structure to oversee – they use NM people and consultant people as a team to oversee. Reviewed for conformity to performance spec's – don't say verify because you're accepting the risk.

**SC**, DOT involved if contractor wants to change design criteria – wants to change scope of project – decrease roadway widths. Typically DOT specifying pavement design up front.

**AZ**, ADOT has the final approval on the design and any changes to the scope of work outlined in the RFQ/RFP. The contractor is allowed to use innovation in his ways and means provided the final product is within scope and technical criteria. Having written that this area is the most disputed in the design-build process. We continually have discussion related to the contractor's perspective that even though his ways and means may not exactly meet design criteria the end product is the same.

**IN**, What types of decisions does INDOT have to make? If there are change order questions, INDOT has to become involved – otherwise no.

**MD**, state makes financial decisions – SHA provides conceptual design and minimum standards; there is an issue resolution ladder similar to with construction contracts.

**FL**, DB firms submit technical proposals to the Department (plans, staffing plans, specifications, drawings, etc) for approval.

**41. What insurance coverages is the DB required to have?**

**NM**, Complete Wrap-up insurance. Talk to company that does complete wrap-up.

**SC**, Comprehensive general Liability insurance, workers comp., automobile liability, builders' risk (\$50 million on \$200,000) project, errors and omissions. Go through schedule of values and identify what needs to be bonded – don't bond the rest.  
Performance and payment bonds

First one was Michigan model (back in 96). First project was \$3 million – couple at \$8 million. Florida is trying to do more of a mass delivery, so they haven't worried about them.

**AZ,** On most of our DB projects they must meet the standard coverage required for all construction projects and as outlined in the Standard Specifications. On one DB project ADOT used an Owner Controlled Insurance Program (OCIP) where we provided most of insurance, with the exception of automobile and off-site work areas. The project where we used the OCIP is not quite complete and at this time ADOT has not made a decision whether or not to use an OCIP in the future.

**IN,**

- a. Designer must have E&O
- b. Other is just like any construction contract

**MD,** standard liability performance and payment bond – nothing additional beyond what consultant and contractor would have to provide untraditional process

**FL,** Professional Liability insurance.

**42. Does your agency have training programs available for DB personnel?**

**NM,** PE within the department were sent to DB training. – training provided by DB institute.

**SC,** No. Except will put some inspectors and put them through certification.

**AZ,** No.

**IN,** Same as for outsourced PE.

**MD,** no formal design-build training program -- meet semi-annually with contractors and consulting engineers council

**FL,** CTQP mentioned above is requirement for project construction personnel performing QC of concrete, earthwork, asphalt, Maintenance of Traffic, Final Estimates, etc.

**43. What type of performance appraisal does your agency have for DB performance, and may it be used to prevent competing for future contracts?**

**NM,** Required to evaluate for legislature. What were benefits. Should use it again. If consultant involved in development they couldn't team – up for DB contract

**SC,** No.

**AZ**, None.

**IN**, Designers the same as PE. Contractors the same as for traditional – hasn't kept anyone from bidding thus far.

**MD**, do not have a standard process for rating detail-build team – districts do have rating on contractor --have been tracking costs and schedule performance

**FL**, Performance is evaluated on a monthly basis. Designers' and Construction Contractors' performance are Evaluated separately.

**44. To whom within your agency is the DB contractor directly responsible?**

**NM**, Project Manager on site, which for US 70 is a Parsons person – then to project manager with NM DOT – primarily a construction person at district level.

**SC**, DOT assigns resident engineer to each project. He's on the site. Inspection and QC for small project its contractor QC and QA – DOT bought a video camera to check-up.

On big ones, doing QA that's about 20% of full QC. Have hired consultant to help with QA oversight.

**AZ**, Resident Construction Engineer for construction activities and the Project Manager for technical issues

**IN**, Works for INDOT project engineer -- have special project section that has developed d-b policies and procedures – that keeps track

**MD**, contract admin to district construction office -- from design standpoint communication goes through central design

**FL**, Construction Project Manager.

**45. How are change orders and claims by DB contractors administered?**

**NM**, Better not be any. Contract says how to deal with it.

**SC**, Procedure not a lot different, but don't have unit prices to work with. So negotiating from a weak position – change orders tend to be on the expensive side. But see less of the smaller change orders. Tends to be scope changes initiated by DOT

**AZ**, Change orders follow the same process as standard construction projects. A scope is established and the DB contractor prepares a cost proposal that is negotiated to an agreed upon cost and time extension, if required. I would have to say that any claims would

probably follow our standard process as well. With the partnering program that we use I know of no claims from any of our DB projects.

**IN**, No difference from traditional

**MD**, process is same; in ideal world would have no change orders – where they’ve had them most have been owner driven.

**FL**, DB CEI develops change orders and makes recommendation to oversight CEI or Consultant on non-DB CEI projects prepares and makes recommendation. In either case, Department approves changes.

**46. Please list any specific practices that your agency has found are important for DB to work.**

**NM**, Avoid projects with many subsurface utilities or projects with environmental challenges.

**SC**, Have environmental and permits complete. OK to include Right-of-Way in project, but limit contractor’s risk in some way. Monitor payment versus progress – now use cost-loaded CPM – will continue to do so on large projects. Use partnering on design-build projects – always establish lines of communication – within the community too. Have used on every design-build – have not used a lot on traditional projects – although moving more in that direction. Ask for a warranty and you’ll get something. It’s a pain to specify all the details of a warranty so they leave it pretty open-ended.

**AZ**, With the speed and volume of work required ADOT has hired a General Consultant to provide technical oversight and construction administration assistance on all of our DB contracts.

**IN**, Scope definition is critical. Have to tell them what you want.

**MD**, associate PM with project that has experience with complex projects –commitment by all to open communication – short review period for SHA. (21 days). Utility relocations and environmental issues need to be resolved before it goes out. Clear in what you want is very important.

**47. Please list any specific “lessons learned” from delivering projects by DB.**

**AZ**, It is important to define a good scope of work that clearly details the final product. Include specific criteria that must be adhered to and even more important is to define what is not acceptable if the agency has a history of a failed system or one that has not performed to expectation. You’re your Maintenance sections and other technical sections involved during the project and if possible get commitments from them early on as to how much involvement they want and will provide. Co-locating the whole team, to

include owner, DB contractor, designer, and general consultant is critical to timely and accurate coordination. If you have outside agencies and stakeholders, especially utility companies, railroads, Indian communities, cities, etc., get them involved during the development of the scope of work to ensure they are aware of the project and know what to expect. One of the first meetings that need to take place between the owner and the DB contractor is to discuss their interpretation of the scope of work and try to identify any difference in their approach to the project and the owner's expectation of the finished project. If this can be done before design progresses to far it will save a lot of stress and tension for the whole team.

**MD**, We had issue come about 2 years ago when communication between SHA and consultants conflict of interest issue arose – now specifically identify tasks that do not cause conflict of interest – consultants can participate in design and in construction; acceptable design services prior to advertisement that would not preclude bidding on project. Consultants would like to know of upcoming db projects so they can decide if they want any of the design work. When we are selecting projects for DB, clear to SHA PM's to communicate to consultants and minimize number of consultants on preliminary engineering. Typically on contracts, package sent out is 30% complete – horizontal / vertical alignment. No traffic engineering items in package – some structural items 100%

**48. For how many years has your agency used DB to delivery projects?**

- a.  less than one year NM,
- b.  1–2 years
- c.  2-3 years
- d.  3-4 years
- e.  more than 4 years SC, AZ, IN, MD, FL

NM, us 70 had notice to proceed august 2002; October 2002

SC, first one was \$3million in 97.

IN, First job let in may of 97

MD, for 5 years

**49. Approximately what dollar volume of construction contracts has your agency delivered with DB?**

- a.  < 100 million
- b.  100 million – 499 million NM, AZ, IN, MD,
- c.  500 million – 1 billion FL
- d.  1 billion – 1.5 billion
- e.  more than 1.5 billion SC, IN,

NM, 129 +21

SC, about 1.5 billion.

IN, more than 1.5 billion – more or less

MD, 150 million

**50. In general, what is your agency's level of satisfaction with DB?**

- a.  Very dissatisfied
- b.  Dissatisfied
- c.  Neutral/No opinion
- d.  Satisfied SC, IN, FL
- e.  Very Satisfied

NM, too early to tell.

SC, satisfied (wouldn't say very satisfied)

IN, got some jobs on the road that wouldn't have gotten there as quickly

C. WRAP UP SECTION:

**51. Does your agency have performance measures that you use for all projects, regardless of method of project delivery?**

- a.  Yes NM, OK, SC, ID, KA, FL
- b.  No NM, IN, MD, NV, NY,

NM, yes and no -- design delivery – have two evaluation sheets in procedures manual.

OK, they have some they've worked on ; on schedule on scope & on budget. Categories.

SC, we are checking scope creep. Are within budget. Have to track every month. Have a very detailed financial system. Either in black, or cautionary period, or in the red -- On a project by project basis and on a program basis.

IN, now looking at how they might do performance measures for the way they do.

MD, track change orders and claims – estimate out of project planning when start design and when complete. Not schedule so much – districts may track those.

**52. If yes, please list below:**

**ID**, Their goal is to get within 4% of the scheduled capital project budget for the year. The measures are basically cost and schedule. Currently they make this target about 65-70% of the time.

**KA**, KDOT tracks cost and schedule for its projects.

**NY**, in two years will have something in place.

**FL**, Not in any particular order - Time, Money, Performance, Quality.

**53. Does your agency have any cost comparisons for project delivery by traditional agency procedures versus outsourced project delivery options?**

a.  Yes

b.  No

**NM**, be careful with even doing that. Relates to capacity and demand.

**OK**, talking about right now – haven't done yet.

**MD**, Nothing formal. informal process of comparing cost of project – savings in construction due to design. Costs after award more successful for detail –build than traditional

**54. If yes, please describe below:**

**SC**, yes and no. tried to develop dot's overhead rate, but not a published number.

**IN, Yes** - in construction area direct cost comparisons all jobs through 2000 (this is for CE) cost about twice as much money as if had done it with their position

**No** - don't know about design.

**KA**, Cost comparisons are made based on cost, and the \$ amount of change orders. For change orders, the dollar amount of change orders is similar for traditional agency procedures and when projects are outsourced. In both cases, change orders run approximately 4% – 4.5% of the construction cost over the last 10 years.

**NY**, no definitive answers yet. Biggest question is how to treat dot overhead.

**FL**, Innovative Contracts: 231 Contracts  
2.8% time decrease  
8.6% cost increase

All Contracts: 461 Contracts

10.7% time increase  
10.7% cost increase

**55. Are there methods of outsourcing project delivery that your agency has investigated, but chosen not to employ?**

- a.  Yes
- b.  No

**OK**, try to retain latitude

**ID**, They just have not been able to implement them yet. They are in the process of trying to get design-build approved within their legislature.

**IN, Yes** - at one time considered maintenance activities – tried to bid – but couldn't get numbers within 5% of what cost would be – snowplowing i.e.

**No** - looked at program management – had outside consultant review indot procedures for mainly construction contracts – consultant recommendation for program managers – but all they've done is put high priority on this for some high profile projects – but only through design—no construction -- all in-house people.

**56. If “yes,” please discuss below**

**NM**, turnkey – but probably can't do by law

**KA**, There was consideration of using lump sum contracts, and also using outsourcing on design-build projects. Current state contracting laws do not allow the use of design-build, although this may change in the near future.

**MD**, best value procurement – would like to investigate as alternative to DB –regularly go to DBIA conferences. SC Cal, NM getting into pavement warranties – did advertise one project and only received one bidder -- try detail-build on smaller projects –safety and resurfacing projects for example – most a million or less – because percentage overruns on those has been high.

**57. Is there any publication or non-published write-up that would provide useful information about the way you do project delivery? If so, what is it and how can I obtain a copy?**

**OK**, Nothing that provides specific information.

IN, NO

**KA,** Outsourcing helps to improve the relationship between KDOT and consultants. Also, many problems have been solved though partnering with consultants.

**58. Please provide any additional overall comments below:**

**NM,** Things are the same -- just changes in contract volume (with respect to FHWA – FLH.

**OK,** Policy and procedure type stuff and consultant evaluation. He'd be interested in seeing results.

**ID,** He is not aware of any publications or other documents besides what is publicly available on their website.

**KA,** None available.

**MD,** GEC is General Engineering Consultant -- Parsons in joint venture with local firm is one of the GEC's they're dealing with. Woodrow Wilson bridge is a \$2.5 billion project jointly administered by Va. And MD. MD does about \$1.5 billion of that.

CONTACT INFORMATION:

Name of person supplying information: \_\_\_\_\_

State \_\_\_\_\_ E-mail address \_\_\_\_\_

Phone \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Thank You.

**APPENDIX C**  
**GLOSSARY OF TERMS**



## GLOSSARY OF TERMS

<b>A/E or A&amp;E</b>	Architectural and Engineering
<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>ACEC</b>	American Consulting Engineers Council
<b>ADOT</b>	Arizona Department of Transportation
<b>ASDB</b>	Adjusted Score Design Build. The adjusted score method factors technical score along with both cost and planned project time into a combined value that rewards the lowest adjusted score. This is accomplished by multiplying the DOT-assigned daily project time value by the DB firm bid number of days and adding this to the estimated project cost for a combined score that is then divided by the technical score to provide the adjusted score.
<b>ATA</b>	Agreement to Agree. ATA is a written document of understanding negotiated between a Contracting Agency and the consultant for the provision of services on a single project, or on more than one project, which contains contract clauses that will apply to future contracts during its term to be established through work orders and which will incorporate the required and applicable clauses of the Agreement-To-Agree. (OAR 125-025-0040) An agreement-to-agree is a nonbinding document that sets forth the contractual provisions that can be used in future contracts created through issuance of purchase orders. See OAR 137-045-0010(4). An agreement-to-agree is not a contract, and is therefore, not subject to legal sufficiency approval. However, each purchase order issued under the agreement-to-agree is a separate contract and is subject to legal sufficiency review if it calls for payment in excess of the applicable threshold.
<b>ATMS</b>	Advanced Traffic Management System
<b>B&amp;A</b>	Bid and Award
<b>BAFO</b>	Best and Final Offer
<b>BHR</b>	Bridge Hydraulic Report
<b>BOOT</b>	Build Own Operate Transfer. A BOOT funding model involves a single organization, or consortium (BOOT provider) designing, building, funding, owning and operating the scheme for a defined period of time and then transferring this ownership across to an agreed party. Customers enter into long term supply contracts with the BOOT operator and are charged accordingly for the service delivered. The service charge includes capital and operating cost recovery and project profit. BOOT schemes are becoming an increasingly popular means of financing large-scale infrastructure development such as roads, bridges and hydro dams in Australia and developing countries.
<b>BOO</b>	Build Own and Operate (and sometimes Maintain). A method of procuring capital projects, to enable enhanced service delivery, but

where capital expenditure in the present is converted to an expenditure commitment in the future. An external company or entity, which will usually design, build and operate the facility, sponsors a project and holds an equity stake in it.

**BOT**

Build Operate and Transfer. The essence of the BOT structure is that the private sector takes responsibility for the detailed design, construction, commissioning and operation of a particular project. In return it receives a payment for providing the services once operational, either from the public sector or from users, in the form of a long-term contract. After an agreed period (typically of between 10 and 30 years) the project is transferred back to the public sector. Equity investors usually include strategic investors such as the private construction or equipment companies, and public sector partners may also take an equity holding.

**CALTRANS**

California Department of Transportation

**CCO**

Contract Change Order

**CE**

Construction Engineering

**CEI**

Construction Engineering and Inspection

**CEM**

Construction Engineering Management

**CI**

Cost Index

**CII**

Construction Industry Institute

**CIP**

Capital Improvement Program

**CPM**

Consultant Project Manager or Critical Path Method

**CRM**

Construction and Resource Manager

**DB**

Design Build. Design/Build means a form of Competitive Negotiation which results in a Public Improvement Contract in which the construction Contractor also provides or obtains specified design services, participates on the project team with the Agency, and manages both design and construction. In this form of Contract, a single entity provides the Agency with all of the services necessary to design and construct the project. OAR DOJ 137-040-0510

**DBB**

Design Bid Build. In the traditional design-bid-build process, preliminary plans, working drawings, and construction are all separate phases of the project and they run consecutively. This form of project delivery consists of an owner who places separate, independent contracts with the project designer and the constructor.

**DBE**

Disadvantaged Business Enterprise

**DBFO**

Design Build Finance and Operate. This method of project delivery involves a private entity, usually a consortium of private or public-private-partner (P3) sponsors, which designs, finances, constructs and operates the facility for public use for a specific period of time. The entity is usually able to collect revenue from the users of the facility.

**DBIA**

Design Build Institute of America

**DBOM**

Design Build Operate & Maintain. Similar to DBFO. At its essence,

these systems involve a private entity, usually a consortium of private sponsors, which designs, builds, operates and maintains the facility for public use for a specific period of time. During this time the entity is usually able to collect revenue from the users of the facility.

<b>DCR</b>	Design Cost Ratio
<b>EIC</b>	Engineer in Charge
<b>EWO</b>	Extra Work Order
<b>FAR</b>	Federal Acquisition Regulation
<b>FDOT</b>	Florida Department of Transportation
<b>FHWA</b>	Federal Highway Administration
<b>FLH</b>	Federal Lands Highway
<b>FLMA</b>	Federal Lands Management Agency
<b>FO</b>	Force Order. Order for Force Work (work performed by public forces, utilities, or railroads) that would otherwise be let on external contract. “Documents the work efforts by those other than contract forces on a project.”
<b>FTE</b>	Full Time Employee
<b>GEC</b>	General Engineering Consultant
<b>IA</b>	Independent Assurance
<b>INDOT</b>	Indiana Department of Transportation
<b>KDOT</b>	Kansas Department of Transportation
<b>LADOTD</b>	Louisiana Department of Transportation and Development
<b>LBDB</b>	Low Bid Design Build. The low bid approach to classic Design Build. It is used on projects where the design and construction criteria are concise, clearly defined, and innovation or alternatives are not sought but fast delivery is beneficial. An example would be bridge projects with a specified foundation type, span lengths and beam type.
<b>LOI</b>	Letter of Intent
<b>LWCIR</b>	Lost-workday-cases incidence rate
<b>MAP</b>	Material Acceptance Program
<b>MBE</b>	Minority Business Enterprise
<b>MPO</b>	Metropolitan Planning Organization
<b>MS</b>	Master of Science
<b>NCHRP</b>	National Cooperative Highway Research Program
<b>NMDOT</b>	New Mexico Department of Transportation
<b>NRC</b>	National Research Council
<b>OBM</b>	Oregon Benchmark
<b>OCIP</b>	Owner Controlled Insurance Program
<b>ODBB</b>	Outsourced Design-Bid-Build. ODOT definition: Similar to standard in-Agency DBB except where ODOT establishes a relationship with the vendor (contractor/consultant/consortium) to deliver the entire project or program with ODOT retaining the construction risk. Supplier designs

	the project, ODOT selects the contractor and supplier manages the contractor.
<b>ODOT</b>	Oregon Department of Transportation
<b>OKDOT</b>	Oklahoma Department of Transportation
<b>OPD</b>	Office of Project Delivery (ODOT)
<b>OPHQ</b>	Oregon Partnership for Highway Quality
<b>OSHA</b>	Occupational Safety and Health Administration
<b>OSU</b>	Oregon State University
<b>OTIA</b>	Oregon Transportation Investment Act
<b>OUTSOURCING</b>	Outsourcing is the practice of an agency contracting with one or more entities (private businesses or other agencies) to provide services which are the responsibility of the agency. When referring to projects, this term usually refers to major portions of project delivery such as PE, CE or the full project.
<b>PB</b>	Parsons Brinckerhoff
<b>PE</b>	Preliminary Engineering or Professional Engineer
<b>PEB</b>	Proposal Evaluation Board
<b>PET</b>	Project Evaluation Team
<b>PFMAC</b>	Privately Financed Managing Agent Contractor
<b>PM</b>	Project Manager or Program Manager
<b>PMCE</b>	Program Management Consulting Engineer
<b>PPP</b>	Pre-Project Planning
<b>PROJECT DELIVERY</b>	The starting point for project delivery is “project structuring and detailed feasibility analysis” (Oregon Department of Transportation, 2000). The ending point for project delivery is completion of the constructed facility (road, bridge, etc.) and final acceptance by the agency (third note). All project management, engineering, contract administration, and construction oversight and inspection activities required to take place during this time frame represent the project delivery function. Many DOTs use the terminology PE and CE or CEI to cover the functions traditionally executed by agency personnel during the project delivery period.
<b>PS&amp;E or PSE</b>	Plans, Specifications and Engineering
<b>PSB</b>	Public Service Bulletin
<b>PSMC</b>	Performance Specified Maintenance Contract
<b>Q&amp;Q</b>	Quality and Quantity
<b>QA</b>	Quality Assurance
<b>QBS</b>	Quality Based Selection or Qualification Based Selection
<b>QC</b>	Quality Control
<b>QCE</b>	Quality Control Engineering
<b>QCR</b>	Quality Control Reporting
<b>QI</b>	Qualitative Index

<b>RFP</b>	Request for Proposals
<b>RFQ</b>	Request for Quotes
<b>RIR</b>	Recordable Incident Rate
<b>RL</b>	Revision Letter
<b>ROW or R/W</b>	Right of way
<b>SCDOT</b>	South Carolina Department of Transportation
<b>SEP</b>	Special Experimental Project
<b>SHA</b>	State Highways Administration (Maryland)
<b>SOQ</b>	Statement of Qualifications
<b>SOW</b>	Statement of Work
<b>SPR</b>	State Planning and Research (Project)
<b>STIP</b>	State Transportation Improvement Program
<b>SUE</b>	Subsurface Utility Engineering
<b>TAC</b>	Technical Advisory Committee
<b>T&amp;M</b>	Time and Materials
<b>TEA-21</b>	Transportation Equity Act for the 21st Century
<b>TIMED</b>	Transportation Infrastructure Model for Economic Development
<b>TRC</b>	Technical Review Committee
<b>TREX</b>	TRansportation EXpansion project (Denver Metro)
<b>UDOT</b>	Utah Department of Transportation
<b>USPS</b>	United States Postal Service
<b>VE</b>	Value Engineering
<b>VECP</b>	Value Engineering Change Proposal
<b>WISDOT</b>	Wisconsin Department of Transportation
<b>WOC</b>	Work Order Contract
<b>WSDOT</b>	Washington State Department of Transportation

