King County

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MEMORANDUM

DATE: November 5, 2008

TO: Metropolitan King County Councilmembers

FROM: Cheryle A. Broom, County Auditor

SUBJECT: Alternative Capital Project Delivery Methods Study

Attached for your review is the Alternative Capital Projects Delivery Methods Study. The traditional method of delivering public capital projects involves a sequential process of contracting for the design of the facility and then contracting with the lowest responsible bidder for construction. This method is known as design-bid-build. State law authorizes alternatives to the design-bid-build process, and King County has made extensive use of some of the available alternatives. The objective of the study was to assess the county's experience using alternative methods for delivering capital projects.

The general study conclusion was that the availability of alternative capital project delivery methods provides valuable flexibility. King County has been particularly successful with the use of public-private partnerships in constructing major capital projects on time and within budget. However, the county's experience with other alternative capital project delivery methods has been mixed.

The County Executive concurred with the recommendations of the report. The executive's official response is included in the appendices of this report.

The auditor's office appreciates the cooperation received from the executive branch.

LB:jl

SPECIAL STUDY

ALTERNATIVE CAPITAL PROJECT DELIVERY METHODS

King County

Presented to
the Metropolitan King County Council
General Government and Labor Relations Committee
by the
County Auditor's Office

Cheryle A. Broom, King County Auditor
Larry Brubaker, Senior Principal Management Auditor

Report No. 2008-02
November 5, 2008

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We are committed to producing substantive work of the highest quality and integrity that results in significant improvements in accountability, performance, and efficiency of county government. We share a commitment to our mission, to our profession, and to a collaborative work environment in which we challenge ourselves to accomplish significant improvements in the performance of the King County Auditor's Office.

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EXECUTIVE SUMMARY

This study examines King County's experience using alternatives to the traditional method of contracting with the private sector for constructing county capital projects. Using case studies of twenty county construction projects constructed by three county agencies using various project delivery methods, we examined the performance of these projects in achieving the scope, schedule, and budget that were identified when the project was first proposed to the council. [Note: Several caveats to this measure of performance are described in Chapter 4.]

The study found that King County has had consistently good results using public-private partnerships to construct county capital projects. For such projects, the county contracts with a private developer who manages the construction process from design through construction and delivers the building to the county at a guaranteed price. The Facilities Management Division has constructed several large projects in recent years using public-private partnerships and each example in our study resulted in the facility being delivered on time and within budget.

The county's experience using projects constructed using other delivery methods, including the traditional "Design-Bid-Build" method (which involves a sequential process of designing a facility, and then contracting with the lowest responsible, responsive bidder for construction) has been mixed. Some projects of each type have performed well and others have not.

The study concludes that having alternative methods for delivering capital projects adds valuable flexibility and makes three recommendations that are intended to improve the county's performance in developing, implementing, and overseeing capital projects.

Introduction

King County has made extensive use of alternative capital project delivery methods. State public works contracting law specifies the processes for public agencies to use when contracting with the private sector for designing and constructing capital projects. The traditional public works contracting process, known as Design-Bid-Build, involves a sequential process in which a facility is designed (whether by in-house or external design professionals), followed by a competitive bid process for construction services in which the public agency is required to select the lowest responsive and responsible bidder for construction services. Over time, due to perceived limitations with the traditional public works contracting process, the Washington State Legislature has authorized various alternatives to the traditional Design-Bid-Build process.

This study was initiated when the council became concerned that some county construction projects using alternative delivery methods were facing problems with cost overruns and/or schedule delays. This study evaluates the experiences of a sample of county capital construction projects that were delivered using both the traditional Design-Bid-Build process and various alternatives to that process.

For this study, we conducted case studies of a sample of twenty county construction projects constructed by three county agencies (Facilities Management Division, Solid Waste Division, and Transit Division) using a variety of project delivery methods. We developed a measure of project performance in which the final scope, schedule, and budget of each project is compared with the estimated scope, schedule, and budget when the project was first proposed to the council.

While this measure provides a rough indicator of project performance, there are many caveats to the comparison. For example, a project's final cost may have been higher than the original estimate due to council-approved scope changes that made good business sense to add to the project. Further, comparing a project's performance to its original budget and schedule says nothing about whether the initial budget and schedule were optimal. However, due to the unique nature of each project, external benchmarks for project performance are not available. Therefore, while our measure of project performance is less than ideal, it was the best measure possible given the available data.

Observations and Recommendations

Given the caveats mentioned above, following are our observations and recommendations.

1. **Having alternative methods for delivering capital projects can provide valuable flexibility**. The report notes one instance in which a project that was suffering from scope and budget problems while being constructed using one delivery method was restructured using another delivery method in a manner that was very favorable to the county.
2. **The county's experience with using public-private partnerships to deliver capital projects has been favorable.** The Facilities Management Division (FMD) has made extensive use of public-private partnerships to deliver capital projects. The performance of these projects with respect to achieving scope, schedule, and budget has been consistently favorable.
3. **Agency use of alternative project delivery methods varies**. While FMD has extensive experience using alternative capital project delivery methods, the other agencies participating in the study, Transit Division and Solid

Waste Division, have no experience with alternatives to the Design-Bid-Build process. Solid Waste, however, is proposing to use an alternative delivery method for an upcoming project. We believe FMD's experience with alternative methods can be useful to other county agencies considering those approaches.

Recommendation 1: Agencies without experience in the use of alternative project delivery methods should consult with FMD on how to best make use of those measures and/or provide training to project managers.

4. **Criteria for selecting a project delivery method.** None of the agencies participating in the study had formal criteria for selecting a project delivery method. We think the presence of those criteria will assist in the decision-making process for selecting an appropriate delivery method.

Recommendation 2: Agencies using alternative project delivery methods should develop policies and procedures which contain criteria for selecting a delivery method.

5. **The performance of projects using alternative project delivery methods varies**. While FMD has had consistently good results delivering projects using public-private partnerships, the performance of projects constructed by the three agencies using other delivery methods, including the traditional Design-Bid-Build method, varies.
6. **For projects that did not perform well, the reasons for the poor performance seems to be unrelated to the delivery method.** Of the twenty projects selected for this study, three (the Integrated Security Project at the King County Correctional Facility, the King County Airport Terminal Remodel, and the First Northeast Transfer Station project) stood out as poorly performing projects. These projects all

suffered from problems that began during the planning phase of the project and continued through design and construction. The choice or implementation of the project delivery method does not appear to be a factor in the problems these projects incurred.

Recommendation 3: The auditor's office Capital Projects Oversight program should work with the council to identify high-risk capital projects for oversight during the planning phase of the project, and the auditor's office oversight of those projects should begin during the planning phase and continue through subsequent phases as warranted based on remaining project risks.

7. **FMD had difficulty producing basic project information for this study.** While Transit and Solid Waste were able to produce the project data we requested without difficulty, FMD was unable to produce the information we requested in a timely manner, which required us to reduce the scope of our data request. This had an impact on the analysis we were able to conduct for the study. However, we did not make a recommendation in this area because any recommendation we would have made would have been duplicative of previous recommendations of the 2007 FMD performance audit and the 2007 report from PMA Associates, the auditor's office's consultant retained to assist us in developing our approach to the capital projects oversight function we are currently implementing.

Acknowledgement

The auditor's office appreciates the assistance it has received by staff from the Office of Management and Budget, the Facilities Management Division, the Solid Waste Division, and the Transit Division.

1 INTRODUCTION

Background

State law specifies the methods for contracting with the private sector to construct public works projects. Prior to 1991, the legislatively prescribed process for contracting for public works projects required state and local government entities to complete the project design (either using in-house or by contracting with design firms) and then issue a Request for Proposals (RFP) for bids to construct the project based on the completed design. Under this traditional *Design-Bid-Build* process, agencies are required to select the lowest responsive bidder for construction services.

Due to perceived problems with the traditional public works contracting process, beginning in 1991, the Washington State Legislature authorized several alternative project delivery methods. These include the General Contractor/Construction Manager (GCCM) and Design-Build methods. In addition to the above alternatives to traditional public works contracting processes, state law authorizes, and King County makes use of public-private partnerships to procure capital assets. These include leasing private buildings in which substantial tenant improvements are constructed for the county by the landlord, or lease-leaseback arrangements in which a new facility is constructed by a private developer on behalf of the county, with the county leasing the facility and then taking ownership at the end of the lease.

Chapter 39.10 RCW specifies a process that must be followed in order for agencies to use the GCCM and Design-Build methods. In general, Chapter 39.10 RCW requires that a public body must

be approved by the Project Review Committee of the state Capital Projects Advisory Review Board for permission to use the Design-Build or GCCM methods.

Chapter 39.10 also specifies the types of projects that are eligible for approval for use of the Design-Build and GCCM methods. For Design-Build, the types of projects listed include projects that cost over $10 million and where the design and construction activities, technologies and schedule are highly specialized, or the project design is repetitive in nature, or for parking garages regardless of cost. GCCM may be used when implementation of the project involves complex scheduling, phasing or coordination, when construction involves an occupied facility which must continue to operate during construction, when the involvement of the general contractor/construction manager during the design phase is critical to the success of the project, when the project involves a complex or technical work environment, or when the project requires specialized work on a building of historical significance.

Among county agencies, Facilities Management Division (FMD) has made the most extensive use of alternative project delivery methods. Due to recent issues of cost and schedule overruns with certain alternatively-procured projects, the council asked the auditor's office to conduct a study of the county's use of alternative capital project delivery methods.

Scope and Objectives

The study scope was to summarize the theoretical advantages and disadvantages of alternative capital project delivery methods, determine whether county agencies use criteria to select project delivery methods that are consistent with the theoretical advantages and disadvantages of such methods, and

develop project performance indicators to assess the county's

experience with alternative capital project delivery methods.

The study objectives were to:

- Summarize the theoretical advantages and disadvantages of alternative project delivery methods.
- Identify the criteria used by county agencies to select a method for procuring capital assets and assess whether these criteria are consistent with the theoretical advantages and disadvantages.
- Develop project performance indicators for facilities acquired under the various project delivery methods.
- Evaluate whether the county's experiences with projects using various acquisition methods is consistent with the theoretical advantages of such methods.
- Conduct case studies with a small sample of projects and evaluate whether any problems with the project relate to the acquisition method used.

Methodology

The auditor's office conducted a literature review of studies of alternative project delivery methods to identify the theoretical advantages and disadvantages of such methods.

We worked with Office of Management and Budget (OMB) and Facilities Management Division (FMD) staff to identify a list of major capital projects constructed by various county agencies, using different project delivery methods for inclusion in this study. Through this process, we identified a list of twenty capital projects constructed by four agencies to include in this study.[1]

[1] The four agencies managing the projects in this study are Facilities Management Division, Solid Waste Division, and Transit Division. The study includes one project at Harborview Medical Center, the Inpatient Expansion Building, which is being constructed under the management of the University of Washington Capital Projects Office. The project was included in the study because county bonds were used to finance the project, and the King County Facilities Management Division had an oversight role in the project. The project list also includes the Ninth and Jefferson Building project at Harborview. This project was originally under the management of the University of Washington, but after the project was restructured in 2007, it is now a public-private partnership being managed by Wright Runstad with oversight by King County.

For the list of 20 capital projects, we obtained project performance data from the responsible agency, and when possible, verified project costs using data from the county financial systems. We compiled this information into a "project scorecard" in which the final scope, schedule, and budget was compared to the original scope, schedule, and budget.

We interviewed the agencies with projects that were participating in the project to learn more about the projects themselves and to identify the criteria that agencies use to select a procurement method.

We do not consider this study to be a performance audit because we did not audit the performance of agency capital programs or individual projects. Instead, we attempted to develop a general assessment of the county's experience with alternative capital project delivery methods using available data on the final scope, schedule, and budgets of the study projects in comparison to the scope, schedule, and budgets of these projects when they were first proposed to the council. There are several reasons why such an approach is an incomplete measure of project performance, and these caveats to our measure are discussed in the report. Due to these caveats, this report discusses our "observations" rather than "findings" concerning the performance of projects using alternative capital project delivery methods. Also, our assessment of internal controls was limited to a review of agency policies and procedures for selecting a capital project delivery method.

Nevertheless, where applicable, we followed Generally Accepted Government Auditing Standards in conducting the study, including standards for independence, evidence, testing the reliability of data, and reporting.

2 ALTERNATIVE PROJECT DELIVERY METHODS AND THEIR THEORETICAL ADVANTAGES AND DISADVANTAGES

Chapter Summary

This chapter describes the various capital project delivery methods authorized by state public works contracting law. It describes other alternatives for developing or acquiring capital assets which are not subject to the public works contracting law but use public-private partnerships. This chapter also summarizes the theoretical advantages and disadvantages of the alternative capital project delivery methods and evaluates the criteria agencies use to select a capital procurement method.

DESCRIPTION OF ALTERNATIVE PROJECT DELIVERY METHODS UNDER PUBLIC WORKS CONTRACTING LAWS

Design-Bid-Build

Historically, Washington public works contracting law has required a single approach for contracting for the construction of capital assets by public entities in the state. The traditional method is known as Design-Bid-Build, and this method is still widely used for public works contracting. Under Design-Bid-Build, the owner (the agency managing the construction project) follows a sequential process that involves:

1. Procuring an architect/engineering (A/E) firm to design the project through a competitive request for proposal/qualifications process.
2. Based on the design specifications completed by the A/E firm, solicit competitive bids for the construction of the project.
3. Selecting the construction contractor based on the responsive bid with the lowest cost.

There were many perceived problems with the traditional public works procurement process that led to the state legislature authorizing alternatives. Some of these problems include:

- The sequential Design-Bid-Build process can be time consuming, since distinct steps must be completed before the next step can begin.
- The selection of a contractor is based primarily on price and not on qualifications or experience.
- The price is not established until bidding is completed.
- There are frequent disagreements between project designers and contractors involving the interpretation of project specifications and contract documents, which can lead to additional cost through change orders or claims.

Following is a description of the alternative public works contracting methods that were authorized by the state legislature, beginning in 1991.

General Contractor/ Construction Manager (GCCM)

Under the GCCM method, the owner contracts with an A/E firm for design, as is the case under the traditional method. During the design process, the owner also retains the services of a GCCM through a preconstruction services contract. The GCCM acts as the general contractor for the project, and the early procurement during the design phase allows for the GCCM to provide value engineering, constructability reviews, and cost estimating services as the project is being designed. The GCCM is selected based on best value, including qualifications, experience, approach, and fees, but not based on a bid for constructing the project. After the design has sufficiently progressed, the owner *negotiates* a Maximum Allowable Construction Cost (MACC) and Guaranteed Maximum Price (GMP) with the GCCM.

Design-Build

Under the Design-Build process, the owner selects one firm to both design and construct a project for a fixed price. The Design-Build team is competitively selected based on qualifications and price.

DESCRIPTION OF ALTERNATIVE PROJECT DELIVERY METHODS USING PUBLIC-PRIVATE PARTNERSHIPS

Public-Private Partnerships

Under this approach, the county contracts with a developer to develop a facility to meet the county's requirements under a public-private partnership. The developer constructs the facility at an agreed-to price, and the county pays rent sufficient to pay for the building and its financing costs over a period of time. After that period of time, ownership of the building transfers to the county. The private partner is able to take advantage of tax-exempt debt using Certificates of Participation (COP's), or private debt issued under Internal Revenue Code 63-20. The county has made extensive use of these arrangements using 63-20 tax-exempt financing, and these are commonly referred to as "63-20 projects."

Improvements Constructed by Private Building Owners

On occasion, the county arranges for construction of necessary improvements to buildings which it leases, or plans to purchase, by the owners of the buildings. The building owner contracts for the construction of the improvements outside of the public works contracting process.

THEORETICAL ADVANTAGES AND DISADVANTAGES OF ALTERNATIVE PROJECT DELIVERY METHODS

The auditor's office conducted a literature review to identify the theoretical advantages and disadvantages of various capital project delivery methods. We refer to these advantages and

disadvantages as *theoretical*, because we were not able to find a definitive study using empirical research that proves which project delivery method works best in which situations. Each project is unique, and different project management teams have different levels of expertise with the various project delivery methods. These factors make it extremely difficult to identify the impact of a project's procurement method on its cost or performance with respect to achieving scope, schedule, or budget. The advantages and disadvantages set forth in Exhibit A are best described as the best judgments of experts in the field.

When we shared Exhibit A with the three agencies that participated in this study, they had their own comments about the advantages and disadvantages of the different project delivery methods, some of which differed from the sources we cited. We have included the agency in the exhibit.

Exhibit A summarizes the results of our literature review and the comments by FMD, Solid Waste Division, and Transit Division.

EXHIBIT A

Theoretical Advantages and Disadvantages of Alternative Project Delivery Methods

	Traditional Design-Bid-Build (DBB)	General Contractor/ Construction Manager (GCCM)	Design-Build (DB)	Public Private Partnerships (63-20)*
Advantages	▪ Familiar delivery method ▪ Distinct design phase increases agency input into facility design ▪ Defined project scope ▪ Single point of responsibility ▪ Open bid competition	▪ Selection based on qualifications as well as cost ▪ Single point of responsibility for construction ▪ Subcontract packages still subject to competitive bidding ▪ Team approach to design and construction aids constructability ▪ Reduced overall schedule	▪ Design and construction integration lowers owner's risk and likelihood of claims – generally shifts burden of design defects from owner to DB (though owner may assume design risk with overly prescriptive specifications) ▪ DB offers early certainty about cost and schedule ▪ Price and product competition may offer lower project cost ▪ Potentially shorter schedule	▪ Allows construction of public buildings with tax-exempt financing free from constraints of public works *laws that do not add value or transparency (FMD comment: in italics)* ▪ Potential to achieve construction cost savings ▪ Financial risk is transferred to the developer (construction risk determined by construction method not financing method) ▪ Expedited completion ▪ Substitution of private resources and personnel for public resources (i.e., for project development, asset management)

EXHIBIT A

Theoretical Advantages and Disadvantages of Alternative Project Delivery Methods

	Traditional Design-Bid-Build (DBB)	General Contractor/ Construction Manager (GCCM)	Design-Build (DB)	Public Private Partnerships (63-20)*
				FMD Comments: ▪ *Allows the use of Design-Build for major subcontracts* ▪ *Promotes more use of value engineering through the Design-Build elements* ▪ *Allows for multiple uses (public/private that allow for economies of scale in development and operation (e.g. NJB project)* ▪ *Provides for more transparency (open book, competitive bidding on construction, and identification of contractor fees)* ▪ *Reduces the potential for contractual disputes created by change orders and other changed conditions*
Dis-advantages	▪ Selection based solely on price ▪ High degree of risk borne by owner *(SWD comment: there are ways to shift risk in the contracts)* ▪ Frequent disagreements over interpretation of contract documents *(SWD comment: this may be true if the documents are not prepared properly)* ▪ Potentially longer schedule duration ▪ Price not established until bidding is complete ▪ Lack of flexibility for change *(SWD comment: change order processes exist regardless of the delivery method used)*	▪ Complexity of process ▪ Difficult for public owner to evaluate validity of the Guaranteed Construction Cost ▪ Potential adversarial relationship with A/E ▪ Delayed cost certainty since MACC not established until later in process ▪ GCCM process often involves payment of a premium for additional time and investment by GCCM	▪ Surrender of control over design process ▪ Risk transfer may mean higher project cost ▪ DB procurement may limit competition ▪ DB requires a considerable expenditure of time and resources from proposing teams	▪ More costly than traditional debt tools (interest rates, costs of issuance, and ongoing fees) ▪ Because project is controlled by a non-profit entity, possibly less transparency of governance

EXHIBIT A

Theoretical Advantages and Disadvantages of Alternative Project Delivery Methods

	Traditional Design-Bid-Build (DBB)	General Contractor/ Construction Manager (GCCM)	Design-Build (DB)	Public Private Partnerships (63-20)*
Projects Best Suited to Method	▪ Projects that are not schedule sensitive ▪ Projects that are not subject to potential change	▪ Larger complex projects that are schedule sensitive, difficult to define, or subject to change ▪ Projects with complex phasing ▪ Projects where contractor input during design is critical ▪ Projects where the owner wants to both retain control through final design and to have continuing influence during construction	▪ Projects where construction activities or technologies are highly specialized – automated industrial processes, clean rooms, laboratories ▪ Projects with repetitive designs that are incidental to installation or construction	▪ Standalone projects of high complexity

* The public-private partnership structure described in Exhibit A refers to the structure of public-private partnerships using 63-20 financing (which is used if the county owns the land on which the structure is built). Public-private partnerships using COP financing are used if the county does not own the land on which structure is built. The structure of the partnership is different for COP projects, but the capital procurement method is very similar because in both cases, a developer, rather than the county, manages the project and the county leases the building until it takes over ownership after the construction cost is paid off.

SOURCE: This information was compiled by King County Auditor staff from the following sources:

- King County Council Capital Budget Committee Staff, "Briefing: Alternative Capital Project Delivery Methods," PowerPoint presentation, August 30, 2006.
- Preston, Gates, Ellis LLP, Government Contracts, Construction and Procurement Policy Practice Group, "Washington State's Alternative Procurement Methods," PowerPoint presentation.
- Oregon Public Contracting Coalition, Oregon Public Contracting Coalition Guide to CM/GC Contracting.
- State of Washington Office of State Treasurer, Report on 63-20 Capital Projects Financing, January 23, 2006.
- State of Washington Joint Legislative Review and Review Committee, An Assessment of General Contractor/Construction Manager Contracting Procedures, June 22, 2005.
- King County Facilities Management Division
- King County Solid Waste Division

3 AGENCY CRITERIA FOR SELECTING A PROCUREMENT METHOD

Chapter Summary

This chapter evaluates the criteria that agencies use for selecting a capital project delivery method. Two of the agencies studied, have made little or no use of alternative capital project delivery methods and have no formal policies and procedures in place. FMD makes extensive use of alternative capital project delivery methods, and while FMD has informal criteria it considers when selecting a delivery method, it has no formal policies and procedures for selecting project delivery methods.

We asked the three King County agencies participating in the study, FMD, Transit, and Solid Waste, for their policies and procedures or other criteria that are used for selecting a procurement method for their capital projects. None of the agencies had formal policies and procedures for selecting a procurement method. Two of the agencies, Transit and Solid Waste, have made little or no use of alternatives to the traditional Design-Bid-Build process to date and have no informal criteria for selecting alternative project delivery methods. Solid Waste is considering using alternative project delivery methods for a future project (Bow Lake Transfer Station), and is using a consultant report to assist them in making a decision about the procurement process. Transit stated that it considers the criteria set forth in state law when considering project delivery methods, but has not had a situation in which a project met the criteria and Transit expected to get a better outcome than using the Design-Bid-Build delivery method.

FMD, which makes extensive use of alternative project delivery methods, provided a list of criteria they use to select a procurement method. FMD emphasized that their goal is to select a method that is most cost-effective given the individual circumstances of each project.

The criteria FMD cited include:

- Project risk
- Project complexity
- Project economics
- Construction type (new construction vs. renovation)

FMD indicated that the decision of the selection of a procurement method is documented in the written documents produced to guide council and executive decision-making for individual projects, but did not provide these documents. Therefore, we were unable to evaluate the extent to which individual project procurement method decisions adhered to the theoretical advantages and disadvantages stated above. However, in Chapter 5, we discuss our observation that FMD's selection of project delivery methods appears to be consistent with the theoretical advantages and disadvantages of the various project delivery methods and with the criteria in state law.

4 PERFORMANCE OF STUDY PROJECTS

Chapter Summary

This chapter describes the methodology we used to measure project performance, the caveats to the methodology we used, and the results of applying our performance measure to the study projects. Applying this methodology to the study projects, we observed that the public-private partnership projects all performed well, but the performance of projects using other delivery methods was mixed. Chapter 5 discusses our observations about the study projects in more detail.

Of the 20 projects that were included in this study, Facilities Management Division (FMD) managed 13, Transit Division managed 4, Solid Waste Division managed 2, and the University of Washington Capital Projects Office managed 1 with oversight by FMD. These 20 projects included nine projects that used the Design-Bid-Build procurement method, six projects that were public-private partnerships using a build to suit/lease to own arrangement, three were GCCM projects, and two projects were tenant improvements managed by the owners of space being leased or purchased by the county.

Exhibit B is a list of the study projects, the type of facility, the agency managing construction, and the procurement method used.

EXHIBIT B
List of Study Projects

Project Name	Agency Responsible for Construction	Type of Facility	Project Type	Procurement Method
Chinook Building	FMD	Office	New Construction	Public Private Partnership (63-20)
Goat Hill Parking Garage	FMD	Parking Garage	New Construction	Public Private Partnership (63-20)
King Street Center	FMD	Office	New Construction	Public Private Partnership (63-20)
Regional Communications and Emergency Coordination Center	FMD	Secure Communications Facility	New Construction	Design-Bid-Build
Issaquah District Court	FMD	Courthouse	New Construction	Public Private Partnership (COP)
Courthouse Seismic Project	FMD	Courthouse	Renovation	GCCM
Harborview Pat Steel Building	FMD	Office	New Construction	Public Private Partnership (63-20)
Harborview Viewpark Garage	FMD	Parking Garage	New Construction	Design--Build
Harborview Inpatient Expansion Building	UW Capital Projects Office (FMD Oversight)	Hospital	New Construction and Renovation	GCCM
Harborview Ninth and Jefferson Building	FMD	Medical and Office	New Construction	Public Private Partnership (63-20)
Airport Terminal Remodel	FMD	Office	Renovation	Design-Bid-Build
Integrated Security Project	FMD	Jail	Renovation	GCCM
Orcas Building	FMD	Warehouse	Tenant Improvements	Owner Contractor
Black River Building	FMD	Office	Tenant Improvements	Lease TI Allowance
Transit Communications and Control Center	Transit Division	Office	New Construction	Design-Bid-Build
Eastgate Park & Ride	Transit Division	Parking Garage and Site	New Construction	Design-Bid-Build
Issaquah Park & Ride	Transit Division	Parking Garage	New Construction	Design-Bid-Build
Redondo Park & Ride	Transit Division	Parking Lot	New Construction	Design-Bid-Build
Vashon Transfer Station	Solid Waste Division	Solid Waste Transfer Station	New Construction	Design-Bid-Build
1st NE Transfer Station	Solid Waste Division	Solid Waste Transfer Station	New Construction	Design-Bid-Build

Measuring Study Project Performance

We measured project performance by comparing outcomes to original expectations: the final scope, schedule, and budget of each project with the estimate of the project scope, schedule, and budget when the project was first proposed to the council. This is not an optimal measure of a project's performance but was the best choice given the data available. For example, even if a project achieved its original expectations for scope, schedule, and budget, that achievement says nothing about whether a project could have cost less, could have been completed more quickly, or was of high quality. On the other hand, there may have been good reasons why a project's final cost exceeded the original estimate when it was first proposed to the council. To answer these kinds of questions, it is helpful to have external benchmarks for comparison; however, due to the unique circumstances of each capital project, it is very difficult to develop these benchmarks.

In addition to comparing the final scope, schedule, and budget to the scope, schedule, and budget when a project was first proposed to the council, we would have also liked to compare the final scope, schedule, and budget to the scope, schedule, and budget at interim steps in a project (e.g., prior to design, prior to construction). Such a comparison would focus on those project changes that occurred after a delivery method had been selected. While we originally asked for the data to do these additional comparisons, FMD had a significant amount of difficulty providing the data we requested in a timely manner. Thus, we reduced the scope of our data request in order to complete the study. This resulted in limitations in our analysis of the performance of the study projects.[2]

[2] A more comprehensive project scorecard illustrating project performance against scope, schedule, and budget is provided in Appendix 1.

Caveats to Methodology Used to Measure Project Performance

As mentioned above, measuring a project's performance against its initial expectations is not the best indicator of whether the cost of a project was reasonable, or whether it could have been constructed more quickly, or was of high quality. There are other caveats to this method of measuring project performance, such as:

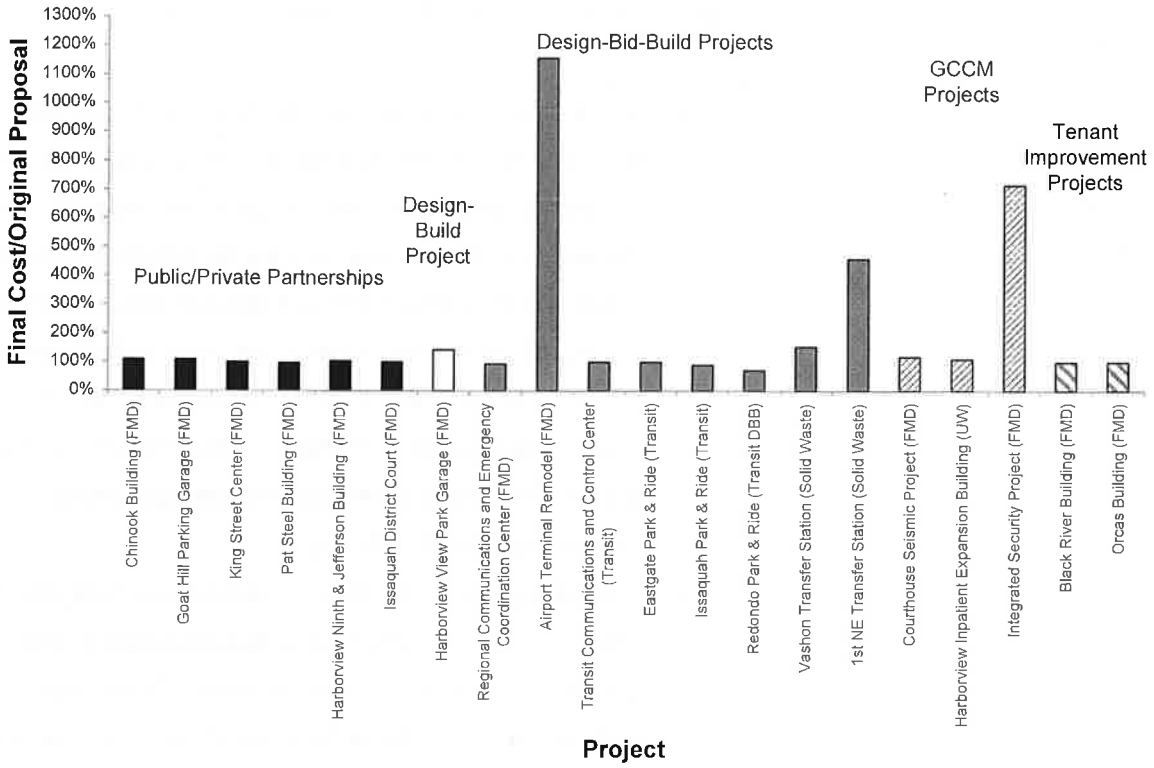
- In the case of several projects, the only reason why the final cost exceeded the original estimate was due to scope changes during the course of the project. Some of the scope changes (e.g., adding an additional floor to the Harborview Viewpark Parking Garage, which generates additional revenue to Harborview) may actually improve the economics of the project. Others (e.g., adding major maintenance projects to the Courthouse Seismic Project) may result in cost savings by combining several necessary projects into one.
- Comparing the final scope, schedule, and budget to the estimates when a project was first proposed to the council captures changes to scope, schedule, and budget through the entire life of the project, including changes that may have occurred long before design or construction began. Therefore, the measurement includes changes to a project that may be entirely unrelated to the development method that was used.

In light of these caveats, the measurement we used should be considered only a rough indicator of project performance.

Exhibit C below shows the performance of the study projects as measured by each project's final cost in comparison to the estimated cost when the project was first proposed to the council. The same information is also shown in tabular form in Appendix 1. Chapter 5 discusses our observations regarding the performance of the study projects.

EXHIBIT C

Performance of Study Projects
Final Cost/Original Estimate



SOURCE: King County Auditor's Office analysis of data provided by agencies.

5 OBSERVATIONS AND RECOMMENDATIONS

Chapter Summary

This chapter discusses our observations relating to the performance of the study projects in relation to the project delivery methods used. We observed that county projects constructed using public-private partnerships performed well, but the performance of projects using other delivery methods was mixed. For projects that performed poorly, the problems began during the planning phase, continued through design and construction, and appeared to be unrelated to the project delivery method that was used. This chapter includes three recommendations that are intended to encourage agencies to benefit from the experience of other agencies in using alternative delivery methods, to add rigor to an agency selection of a project delivery method, and to improve council oversight over high-risk capital projects.

Observation 1: Having Options for Project Delivery Methods Provides Valuable Flexibility

The restructuring of the Ninth and Jefferson Building (NJB) project from a GCCM project to a 63-20 project illustrates the value of having different project delivery methods available to county construction managers.

The NJB project was part of the Harborview Bond projects (which also include the Inpatient Expansion Building (IEB) project and the future demolition of Harborview Hall) that were financed by $191 million in bonds authorized by the taxpayers of King County in 2000. These projects were being managed by the University of Washington Capital Projects Office (with oversight by FMD

and Harborview) and were using the GCCM procurement method.

Both the IEB and NJB projects incurred cost overruns when construction bids significantly exceeded estimates. Because there were not sufficient funds available to pay for the overruns, and because the IEB was the higher priority project, the council approved transferring $15 million from the NJB project to the IEB to keep the IEB project going, while a new approach was developed for the NJB.

FMD's approach for restructuring the NJB was to significantly increase the project scope from 150,000 to 450,000 square feet and to reformulate it as a public-private partnership using 63-20 financing. This approach provided several advantages:

- Because the restructured building will be financed by private debt, no additional taxpayer money was needed to complete the project. Harborview agreed to pay the rent on the completed building.[3]
- The increase in scope allowed the building to take full economic advantage of the land. Some of the tenants that will be in the building are outside entities that will pay rent to Harborview.
- The cost per square foot of the larger project is significantly less than the cost per square foot of the original project.
- The Harborview Master Plan had originally contemplated building out the NJB site in two phases. By fully building out the site in one phase, the cost and disruption of a second construction phase is avoided.

[3] Initially, Harborview verbally agreed to pay rent on the NJB Building. At the council's insistence, Harborview further agreed to memorialize this agreement in a written contract.

The situation of the NJB project suffering from problems while a GCCM project, that were resolved by its restructuring as a 63-20 project, illustrates the value of having different project delivery methods available to the county. The construction of the restructured NJB project is scheduled for completion in 2009, and the project is progressing within schedule and budget.

Observation 2: The County's Experience With Public-Private Partnerships Has Been Favorable

While the final cost of the Chinook Building and the NJB projects exceeded the original estimates when these projects were first proposed to the council, in both cases, this was attributable to scope changes that made good business sense and were approved by the council. With the exception of these two scope changes, all of the projects constructed via a public-private partnership have been completed within schedule and budget. In some instances, cost savings from the construction of the shell and core has allowed for enhancements in tenant improvements, equipment budgets, or resulted in reductions in rental payments.

Observation 3: Agency Use of Alternative Project Delivery Methods Varies

While FMD makes extensive use of alternative project delivery methods, Transit and Solid Waste have used the traditional Design-Bid-Build method exclusively and have no experience with alternative project delivery methods.[4] Transit states that it has not had an instance in which a project meeting the state criteria for using alternative delivery methods would be expected to benefit from those methods. Solid Waste is considering alternative project delivery methods for an upcoming transfer station project. While we considered a recommendation that

[4] We are aware that the Wastewater Treatment Division is using alternative project delivery methods for the Brightwater Project, but that project was not included in the scope of this study.

agencies not using alternative project delivery methods further explore the use of such methods, we note that Transit has a track record of completing projects within budget using the traditional Design-Bid-Build method. Therefore, we decided not to make such a recommendation. However, we believe agencies considering the use of alternative project delivery methods could benefit from FMD's experience in the use of such methods.

RECOMMENDATION 1 Agencies contemplating the use of alternative project delivery methods for future projects, without experience in those methods, should consult with FMD for guidance on how to best make use of those methods and/or provide training to its project managers.

Observation 4: Criteria for Selecting a Procurement Method

None of the agencies included in this study have formal policies and procedures for the selection of a procurement method. FMD cited informal criteria that they use on a case-by-case basis, and their criteria are aligned with the theoretical advantages and disadvantages of the various project delivery methods that we compiled through our literature review. Also, when reviewing the characteristics of the projects that were included in this study in conjunction with FMD's criteria for selecting a procurement method, and with the theoretical advantages and disadvantages of the various project delivery methods, FMD appears to be applying appropriate project delivery methods to projects. For example, GCCM is considered to be a desirable method to be used for projects of high complexity and was used by FMD for the two most complex projects included in this study, the Courthouse Seismic Project and the Integrated Security Project.

RECOMMENDATION 2 Agencies using alternative project delivery methods should develop policies and procedures for selecting a delivery method.

Observation 5: Performance of Projects Using Various Project Delivery Methods

As measured by the final cost of the study projects in comparison to the estimated cost when each project was first proposed to the council (and subject to the caveats of that measurement methodology mentioned previously), there was no clear pattern concerning the performance of projects utilizing the various project delivery methods, with the exception that all of the 63-20 projects included in the study performed well (i.e., accomplished the original scope within schedule and budget).[5]

For the other project delivery methods, some projects performed well and some did not. As noted in Observation 1, all of the Transit projects used the Design-Bid-Build method and all were completed within budget. However, Solid Waste projects using the Design-Bid-Build method did not perform well. FMD's Regional Emergency Communication and Coordination project used the Design-Bid-Build method was completed within the budget, while FMD's Airport Terminal Remodel Project used the Design-Bid-Build method and significantly exceeded the budget. FMD's Courthouse Seismic Project using the GCCM method performed well while FMD's Integrated Security Project and UW's Inpatient Expansion Building project using the GCCM method had significant cost increases.

[5] While the final cost of a few of the 63-20 projects exceeded the original estimate when the project was first proposed to the council, in each case the increase was associated with council-approved scope changes that appeared to make good business sense. Once the final scope of the project was determined, the 63-20 projects have all been delivered within schedule and budget.

Observation 6: For Projects That Did Not Perform Well, the Reasons Seem to be Unrelated to the Procurement Method

Of our study projects, the projects that performed the worst with respect to the final cost in comparison to the cost when proposed to the council were the Airport Terminal Remodel (FMD, Design-Bid-Build), the Integrated Security Project (FMD, GCCM), and the 1st NE Transfer Station (Solid Waste, Design-Bid-Build). While the procurement method used for these projects differed, all three projects were first proposed to the council before their scope was fully defined, and all three projects had problems that began during the planning phase and continued during design and construction.

Project Scopes Not Fully Developed

When the Airport Terminal Remodel project was first proposed to the council, it was a seismic retrofit project only. It later became a full renovation of the building. When the Integrated Security Project (ISP) was first proposed to the council, the scope of the jail health remodel component of the project had yet to be defined and the cost of the remodel was not included in the estimated cost of the ISP. The 1st NE Transfer station was first proposed to the council as a partial implementation of a Facility Master Plan that later became a much bigger project. In all three cases, the eventual project was considerably different (and much more costly) than the project that was initially proposed to the council. Thus, much of the cost increases of these projects in comparison to the estimated cost of the project when proposed to the council are entirely unrelated to the construction procurement method.

Problems Continued During Design and Construction

Another common characteristic of each of these poor-performing projects is that there were many other problems that resulted in cost increases in addition to the fact that the initial scope was not fully defined when the project was first proposed to the council. For example, the Airport Terminal remodel encountered

unforeseen conditions and design changes that drove the project cost up. The 1st NE Transfer Station incurred lengthy delays as the Solid Waste Division was rethinking its approach to transfer station upgrades, and then when it went out to bid, the bids exceeded the engineer's estimates by a wide margin. The ISP has been subject to a variety of problems including unforeseen conditions, scope changes, lengthy delays resulting in increases in both construction and capitalized operating costs, and coordination issues between FMD and the Department of Adult and Juvenile Detention.

It is questionable whether any of these reasons for project cost increases or schedule delays are related to the procurement method used or how the procurement method was applied. In the case of the ISP, the theoretical advantages of the GCCM method would seem to make it the ideal procurement method for the project, given its complexity. Further, we note that PMA Associates, the consultant used by the auditor's office to develop a strategy for implementing its new capital project oversight responsibility, looked at the ISP in some depth. PMA noted some shortcomings in the management of the project including the lack of a project management plan describing the roles of the various parties influencing the project, and the lack of a risk register for the project, but these shortcomings were not related to the procurement method selected or its application by FMD.

To summarize, the worst-performing projects in our study had problems that began during the planning phase and continued through the design and construction phases. When the council created the capital projects oversight function within the auditor's office, it directed the auditor's office to oversee four projects: the Harborview Ninth and Jefferson Building, the Brightwater project, the Integrated Security Project, and the Accountable Business Transformation project. Three of these projects were already in

the construction phase when oversight started. The fact that the worst-performing projects in this study had problems that began during the planning phase, and continued through the design and construction phases, suggests that council oversight of high risk capital projects should begin during the planning phase.

RECOMMENDATION 3

The auditor's office Capital Projects Oversight program should work with the council to identify high-risk capital projects for oversight during the planning phase of the project, and the auditor's office oversight of those projects should begin during the planning phase and continue through subsequent phases as warranted based on remaining project risks.[6]

Observation 7: FMD Had Difficulty Producing Basic Project Performance Data for This Study

While Solid Waste and Transit promptly produced project information in response to our requests, FMD had significant difficulty producing basic project performance data in a timely manner. Due to the difficulties FMD was having in responding to our request, we scaled back the project data we requested from them. This resulted in limitations to the analysis we could conduct on the study projects. While we understand that FMD's priority is to plan for proposed projects and manage existing projects, we also think that FMD could maintain better accessibility to basic performance information of completed and ongoing projects.

This observation is similar to the findings of the auditor's office's 2007 FMD Performance Audit with respect to improvements needed in FMD's performance measurement. The 2007 FMD Performance Audit included recommendations for improvements

[6] The PMA report identifies a process for prioritizing projects for oversight.

in FMD's performance measurement efforts. Also, the 2007 PMA Report prepared for the auditor's office recommending a capital project oversight strategy, provided recommendations for the type of information that should be available for project reporting. Any recommendations we might make as a result of this observation would be redundant to the recommendations made in previous reports, so we simply re-iterate Recommendation 11 of the 2007 FMD Performance Audit and the Reporting Recommendations of the 2007 Part A Report by PMA Associates.

APPENDICES

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APPENDIX 1

Performance* of Study Projects
Final Cost/Original Cost

Agency/Project/ Acquisition Method	Estimated Cost When First Proposed to Council	Final Cost	Final Cost/Original Estimate	Clarifying Comments
FMD/Chinook Building/63-20	$75.7 million	$82.7 million	109%	Increase due to Council-approved scope changes prior to the initiation of construction. No increase after final project agreement with Developer in place.
FMD/Goat Hill Parking Garage/63-20	$16.7 million	$18.3 million	109%	Increase due to Council-approved scope changes prior to the initiation of construction. No increase after final project agreement with Developer in place.
FMD/King Street Center/63-20	$61.8 million	$61.8 million	100%	
FMD/Regional Communications and Coordination Center/DBB	$30.6 million	$28.6 million	93%	
FMD/Issaquah District Court/COP	$5.9 million	$5.9 million	100%	
FMD/Courthouse Seismic Project/GCCM	$88.9 million	$104.9 million	118%	Core seismic project completed on schedule and budget. Increase due to several council-approved scope changes.
FMD/Pat Steel Building/63-20	$62.5 million	$60.5 million	97%	
FMD/Harborview Viewpark Garage/DB	$7.8 million	$11.1 million	142%	Significant portion of increase due to scope change to add an additional floor to the garage.
UW/FMD Harborview Inpatient Expansion Building/ GCCM	$149.2 million	$164.2 million	110%	$15 million increase associated with construction bids that exceeded estimates (construction inflation, competitive environment).
FMD/Harborview Ninth and Jefferson Building/63-20	$178.2 million	$184.2 million	103%	Increase due to council-approved scope change.
FMD/Airport Terminal Remodel/DBB	$0.7 million	$8 million	1,156%	Original cost estimate was for a seismic repair project. Project eventually became a full renovation and the estimated cost at design initiation was $5.1 million. Unforeseen conditions and redesigns resulted in the final $8 million project cost.

APPENDIX 1 (Continued)

Agency/Project/ Acquisition Method	Estimated Cost When First Proposed to Council	Final Cost	Final Cost/Original Estimate	Clarifying Comments
FMD/Integrated Security Project/GCCM	$7.3 million	$52.3 million	716%	Several reasons for cost increases include: original estimate did not include the cost of Jail Health renovation, scope changes, unforeseen conditions, project delays, and increases in capitalized operating costs.
FMD/Orcas Building/TI	$2.2 million	$2.2 million	101%	
FMD/Black River Building/TI	$1.3 million	$1.3 million	100%	
Transit/Transit Communications and Control Center/DBB	$8.5 million	$8.5 million	100%	
Transit/Eastgate Park & Ride/DBB	$23.1 million	$23.1 million	100%	
Transit/Issaquah Park & Ride/DBB	$27 million	$24.3 million	90%	
Transit/Redondo Park & Ride/DBB	$17.9 million	$12.8 million	71%	
Solid Waste/Vashon Transfer Station/DBB	$3.8 million	$5.9 million	153%	
Solid Waste/1st NE Transfer Station/DBB	$8.5 million	$39.2 million	459%	Original cost estimate was for partial completion of a 1994 Facility Master Plan. Full implementation was anticipated to cost $16 million at that time. A new Facility Master Plan was developed and approved in 2003. Cost increases are attributable to several factors including: delays, scope changes, and construction bids that significantly exceeded estimates.

Source: King County Auditor's Office analysis of project data provided by agencies. This information should be considered in light of the caveats to the comparison noted immediately prior to the table.

*Caveats to this measure of performance are noted in Chapter 4.

LIST OF FINDINGS, RECOMMENDATIONS & IMPLEMENTATION SCHEDULE

Finding: Some agencies have little or no experience with using alternative capital project delivery methods.

Recommendation 1: Agencies contemplating the use of alternative project delivery methods for future projects, without experience in those methods, should consult with FMD for guidance on how to best make use of those methods and/or provide training to its project managers.

Implementation Date: 6/30/09

Estimate of Impact: Agencies without experience using alternative capital project delivery methods should benefit from "lessons learned" by the Facilities Management Division. Ideally this will result in the more effective delivery of capital projects.

Finding: Agencies do not have policies and procedures for selecting a capital project delivery method.

Recommendation 2: Agencies using alternative project delivery methods should develop policies and procedures for selecting a delivery method.

Implementation Date: 12/31/09

Estimate of Impact: The use of policies and procedures should help agencies apply the appropriate delivery method to the circumstances of the project.

Finding: The projects that were most problematic had problems that began during the planning phase and continued through the design and construction phases.

Recommendation: The auditor's office Capital Projects Oversight program should work with the council to identify high-risk capital projects for oversight during the planning phase of the project, and the auditor's office oversight of those projects should begin during the planning phase and continue through subsequent phases as warranted based on remaining project risks.

Estimate of Impact: Waiting until the construction phase to begin Council oversight would have been too late to address many of the problems with the projects that were most problematic. Beginning oversight sooner in a project's lifecycle will allow for earlier identification and resolution of problems.

EXECUTIVE RESPONSE

King County

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October 21, 2008

Cheryle A. Broom
King County Auditor
Room 1033
C O U R T H O U S E

Dear Ms. Broom:

Thank you for the opportunity to review and respond to the proposed final report of the study entitled *Alternative Capital Project Delivery Methods*. I concur with the study recommendations. The enclosed attachment addresses recommendations one and two, which are specifically directed to county agencies.

King County has consistently and successfully used the traditional design-bid-build process for public works projects. We appreciate that the auditor noted that King County has had consistently good results using public-private partnerships, as well.

The Revised Code of Washington (RCW) allows public agencies, such as the county to use alternative public works contracting procedures for select construction projects, but continues to emphasize the traditional process of awarding public works contracts in lump sum to the lowest responsive, responsible bidder, as the preferred method. It is desirable to have an array of contracting strategies available to meet particular project needs. As the report suggests, agencies should not be judged according to how many different strategies they employ but rather whether the projects are successfully completed.

If, in the future, we have a project where alternative public works contracting procedures would best serve the public interest, agencies will consult with Facilities Management Division, Procurement and Contract Services Section, and the Prosecuting Attorney's Office, as appropriate to evaluate which alternate project delivery method(s) is applicable to a given project. We will also develop policies and procedures and train project managers in the use of the selected alternative project delivery methods.

We appreciate the work of your staff during this study, and look forward to working with your staff on the implementation of the recommendations.

Sincerely,

Ron Sims
King County Executive

Attachment

cc: Kurt Triplett, Chief of Staff, Office of the King County Executive
Bob Cowan, Director, Office of Management & Budget
Jim Buck, County Administrative Officer, Department of Executive Services (DES)
Kathy Brown, Director, Facilities Management Division (FMD), DES
Harold Taniguchi, Director, Department of Transportation (DOT)
Theresa Jennings, Director, Department of Natural Resources and Parks (DNRP)
Jim Burt, Manager, FMD, DES
Judy Riley, Manager, Design & Construction Section, Transit Division, DOT
Neil Fuji, Managing Engineer, Solid Waste Division, DNRP
Caroline McShane, Deputy Director, Finance and Business Operations Division, DES

Attachment

Response to Proposed Final Report – *Alternative Capital Project Delivery Methods Study*

Recommendation	Agency Position	Schedule for Implementation	Comments
1. Agencies without experience in the use of alternative project delivery methods should consult with FMD on how to best make use of those measures and/or provide training to project managers	Concur	**Solid Waste Division (SWD):** SWD will consult with FMD by 06/30/09. Training will be made available for major capital improvement project management staff on alternative project delivery methods on an ongoing basis.	
	Concur	**Transit Division:** Transit will consult with FMD by 06/30/09. Training will be made available for major capital improvement project management staff on alternative project delivery methods on an ongoing basis.	
	Concur	**Facilities Management Division (FMD):** FMD will provide assistance as requested by SWD and Transit by 6/30/09	
2. Agencies using alternative project delivery methods should develop policies and procedures which contain criteria for selecting a delivery method.	Concur	**Solid Waste Division:** SWD will develop division policies and procedures for alternative project delivery methods (coordinating with FMD and PCSS as appropriate) by 12/31/09. Staff will be trained on the new policies and procedures.	
	Concur	**Transit Division:** Transit will develop division policies and procedures for alternative project delivery methods (coordinating with FMD and PCSS as appropriate) by 12/31/09. Staff will be trained on the new policies and procedures.	
	Concur	**Facilities Management Division:** PCSS will work with FMD, SWD, Transit, PCSS and others, to assist in the development of policies and procedures as appropriate for alternative project delivery methods with the goal to have policies and procedures developed by 12/31/09.	