

MEMORANDUM

DATE: July 28, 2010

TO: Members of the Metropolitan King County Council

FROM: Cheryle A. Broom, ^{CB} King County Auditor

SUBJECT: Capital Project Risk Scoring Instrument

On March 1, 2010, the council adopted an ordinance (16764) to provide for greater oversight and accountability of the county's high-risk capital projects. The ordinance required the Capital Projects Oversight (CPO) program in the auditor's office to develop a risk scoring instrument which would identify high-risk projects based on a number of relevant factors.

The risk scoring process represents a significant milestone in the county's continuing efforts to promote successful project delivery and improve the transparency and accountability of the performance of the county's capital improvement program. It not only objectively assesses the relative risk of diverse types of capital projects, it also collects important information valuable for continued oversight of those projects.

This memorandum summarizes the content and the development of the risk scoring instrument, which was approved for use by the Joint Advisory Group (JAG)¹ on June 29, 2010. JAG, in consultation with CPO, will determine which capital projects will be considered high risk and therefore subject to the greater scrutiny and controls identified in the ordinance.

BACKGROUND

Council ordinance (16764) directed the auditor's office to develop a risk scoring instrument for assessing whether an eligible capital project is a high-risk project. It also mandated that the instrument be submitted to JAG for its approval, and required the County Executive to transmit risk score results each year to the Clerk of the Council for all eligible capital projects having a total project cost estimate of over ten million dollars.² Other earlier origins for this ordinance include:

- Council established a Capital Projects Oversight program within the auditor's office in 2006, which was initially funded in the 2007 annual budget;
- In 2007, PMA Consultants and Saybrook Associates, hired by the auditor's office, developed a legislative oversight model for major capital projects;
- The State Auditor's June 2009 Accountability Audit Report of King County expressed concerns about the county's oversight of capital projects; and
- Council Motion 13026, passed in July 2009, called for legislation requiring phased funding appropriation for high-risk capital projects and standard reporting and cost estimating requirements for all capital projects.

¹ The real estate and major capital project review group created in section 4.06 of the King County Code.

² These provisions were codified in section 4.04.245 of the King County Code.

SCORING INSTRUMENT DEVELOPMENT

To develop a scoring instrument that could objectively and efficiently assess project risks across the county's diverse capital improvement programs, we obtained input from a joint working group, including council staff and capital program managers from the Office of Management and Budget and the Roads, Transit, and Wastewater Treatment divisions. We also sought feedback and incorporated input from PMA Consultants, JAG, the prosecuting attorney's office, the Clerk of the Council, and the State Auditor's Office. Finally, we received assistance from the council's information technology staff to automate the data collection process and generate the executive's project risk scoring results each year.

The scoring instrument was refined through two testing rounds involving 17 sample projects from a variety of capital improvement programs. The tests were successful, with stakeholders confirming that the test results aligned with their experience and perception of the relative risks for their projects and that the instrument was user friendly, both for data collection and producing automated reporting results.

JAG considered the risk scoring instrument during three public meetings. They approved the instrument on June 29, 2010.

PROJECT RISK SCORING

The approved instrument evaluates 15 risk factors (see table below), each with a relative weight in terms of its impact on the overall risk score.

Risk Evaluation Factors	Relative Impact on Project Risk Score
1. Project Phase	Average
2. Total Project Cost Estimate	High
3. Cost Estimate Class	Average
4. Schedule Constraints	High
5. Property Acquisition and Use	High
6. Permitting	Average
7. Public Impact During Implementation	Average
8. Public Interest	Average
9. Project Delivery Method	Low
10. Number of Prime Contractors Managed	Low
11. Unusual Design or Engineering Challenges	High
12. Unusual Construction Challenges	High
13. Market Conditions	Low
14. Agency Commitment to Project	High
15. Agency Experience with Project Type	Low

Scores are automatically calculated based on agency answers to questions about each of these risk factors. This information, along with background scope, schedule and budget details, is collected via an electronic questionnaire (Attachment A) and is compiled in a database for JAG's use and ongoing oversight purposes.

ONGOING AUDITOR'S OFFICE INVOLVEMENT

CPO will consult with JAG during their annual process for determining high-risk capital projects, which will include utilizing the risk score results for guidance. Information gathered through the electronic questionnaire may also be useful in defining the auditor's work program for direct oversight of capital projects.

CPO will be working with JAG to define expectations for this consultation. The risk scoring instrument was designed to support the consultation process, including automatically generating a detailed project summary sheet for each project scored (Attachment B). Ad hoc reporting and analysis to assist the high-risk project determination process is also from the database of all project scoring information.

CPO will be re-convening the joint working group and seeking input from JAG after the 2010 high-risk project determination to evaluate if any changes should be made to the scoring instrument going forward.

The auditor's office, in consultation with JAG, will also be conducting a review of the effectiveness of the risk scoring process after two years of experience, with a report due to the council by April 15, 2012.

Cc: Dow Constantine, County Executive
Rhonda Berry, Assistant Deputy County Executive
Dwight Dively, Director, Office of Management and Budget
Joint Advisory Group
Ken Guy, Director, Finance and Business Operations Division, Department of Executive Services
Caroline McShane, Deputy Director, Finance and Business Operations Division, Department of Executive Services
Tom Kuffel, Senior Deputy Prosecuting Attorney, Prosecuting Attorney's Office
Anne Noris, Clerk of the Council
Nick Wagner, Principal Legislative Analyst, King County Council, Committee of the Whole
Chris Cortines, Washington State Auditor's Office
Tom Bernard, Washington State Auditor's Office

ATTACHMENTS

- Attachment A – Risk Assessment Instrument
- Attachment B – Project Summary Sheet

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

PROJECT MANAGER (PM) QUESTIONNAIRE

INSTRUCTIONS

Answer the questions in "Project Manager Part One" and "Project Manager Part Two" below, using the drop down menus where provided. Please note that, when answered "yes", questions 11 and 12 require narrative responses. This questionnaire is best viewed at 100% magnification or higher.

PROJECT MANAGER PART ONE: BASIC PROJECT INFORMATION

A. PROJECT NUMBER (6 digit number used for project in ARMS or IBIS) (KCC 4.04.247.A):

B. PROJECT TITLE (As it appears in capital improvement budget) (KCC 4.04.247.A.):

C. PROJECT DESCRIPTION: Provide a brief description of this project using the box below. Where possible, quantifiable descriptors (i.e., building square footage, number of floors, bridge span lengths, etc.) should be included. Please provide enough detail for this project to be understood by someone outside of your department/agency (KCC 4.04.247.A.2):

D. PROJECT BASELINE: Please use the drop down menu provided below to indicate if the project baseline scope, schedule, and budget has been established for this project (KCC 4.04.245.8):

A) The project baseline has been established.

B) The project baseline has not yet been established.

E. PROJECT SCHEDULE: Record the start and completion dates your department / agency has established for this project using the boxes below. If a project start date is not included in your records, use the date when expenditures were first charged to the project number recorded in this questionnaire. The current time estimate at completion date should reflect when the project is expected to be ready for beneficial use. The project baseline schedule shall be the completion date used for the project baseline:

Start Date (Mo / Yr)	<input type="text"/>
Current Time Estimate at Completion (Mo / Yr) (KCC 4.04.245.4)	<input type="text"/>
Project Baseline Completion Date (Mo / Yr) (KCC 4.04.245.8)	<input type="text"/>

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

F. PROJECT MANAGER (PM):

Name	Department / Implementing Agency
Phone Number	Email

G. CLIENT AGENCY* (*IF DIFFERENT THAN PM DEPARTMENT)

Client Department / Agency Drop Down Menu

H. PERSON COMPLETING FORM IF NOT PM:

Name	Phone Number	Email

I. DATE FORM COMPLETED (MO/DAY/YEAR):

PROJECT MANAGER PART TWO: RISK EVALUATION QUESTIONS

1. PROJECT PHASE: Indicate the current phase of this project using the King County Code Chapter 4.04 phase definitions provided below:

A) Preliminary Design: Includes evaluation of project alternatives, selection of preferred alternative, and establishment of project baseline based on 30 - 40% design. (KCC 4.04.245.D.1)
B) Design: Includes completion of design work for preferred alternative, development of bid packages, and permitting. (KCC 4.04.245.D.2)
C) Construction: Includes construction and implementation activities, including testing, inspection, adjustment, correction, and certification of facilities and systems. Ends at final acceptance of project. (KCC 4.04.245.D.3)
D) Closeout: Includes administrative processes and accounting activities to close out all contracts. May include multi-year monitoring. Should be less than 3% of total project cost. (KCC 4.04.245.D.4)

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

2. PROJECT COST:

2A. CURRENT COST ESTIMATE AT COMPLETION: Enter the current total cost estimate at completion for this project in the boxes below. In case the current total cost estimate is stated as a range, separate boxes are provided for the low and high end of the range. If the current total project cost estimate is not stated as a range, please record it in the high end box. All previously incurred and forecast costs necessary through project closeout should be included (KCC 4.04.245.A.4):

Low End of Range

High End of Range

2B. BASELINE COST ESTIMATE: If the baseline cost estimate for this project has been established, enter it below. If not, ignore this question. In case the baseline cost estimate is stated as a range, separate boxes are provided for entering the low and high cost estimates. If the baseline cost estimate is not stated as a range, please record it in the high baseline cost estimate box. All previously incurred and forecast costs necessary through project closeout should be included (KCC 4.04.245.A.8 and KCC 4.04.245.A.12):

Low End of Range

High End of Range

2C. REASON FOR COST ESTIMATE RANGE: If either the current cost estimate at completion or the project baseline cost for this project is stated as a range, please explain why using the drop-down menu below:

A) Not Applicable.

B) Inflation.

C) Still Evaluating Project Alternatives.

D) Other (Explain in box below)

3. COST ESTIMATE CLASS: Indicate which Association for the Advancement of Cost Estimating International (AACEi) class most closely matches the level of detail and accuracy associated with the current cost estimate for this project:

A) Class 5 ("Ballpark" or "Rough Order of Magnitude" Estimates per KCC 4.04.245.A.11): Project definition is 0% to 2% complete. Expected accuracy range is - 50% to + 100%.

B) Class 4 ("Feasibility" Estimate): Project definition is 1% to 15% complete. Expected accuracy range is -30% to +50%.

C) Class 3 ("Basic Engineering" Estimate): Project definition is 10% to 40% complete. Expected accuracy range is -20% to +30%.

D) Class 2 ("Engineering" Estimate): Project definition is 30% to 70% complete. Expected accuracy range is -15% to +20%.

E) Class 1 ("Bid" Estimate): Project definition is 50% to 100% complete. Expected accuracy range is -10% to +15%.

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(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

4. SCHEDULE CONSTRAINTS:

4A: Indicate which schedule situation most closely matches this project:

A) Soft Deadline: Projects without a deadline or with a deadline which can be missed without causing adverse financial, operational, or public service delivery impacts.

B) Internal Deadline: Projects having an internally published deadline which can't be missed without causing adverse financial, operational, or public service delivery impacts.

C) Public Deadline: Projects having a publicly committed deadline which can't be missed without causing adverse financial, operational, or public service delivery impacts.

D) Externally Imposed Deadline: Projects having a deadline which can't be missed without violating the terms of a court order, grant, or other legally enforceable agreement involving a substantial financial impact.

4B: Indicate how much extra time, float, or contingency is still available in the schedule for completing this project. Do not include the closeout phase:

A) Not Yet Determined.

B) Less Than 6 Months.

C) 6 to 12 Months.

D) 12 to 18 Months.

F) 18 to 24 Months.

G) Over 24 Months.

5. PROPERTY ACQUISITION AND USE:

5A: Does completing this project involve the acquisition of property (purchase or lease of real estate, rights-of-way, easements or other use agreements) not currently owned or leased by King County?:

A) Not yet determined.

B) Yes.

C) No.

5B: Please indicate which property acquisition situation most closely matches your project and site:

A) All properties have been identified and business terms agreed-to.

B) Some properties still require identification or negotiation, but no unusual challenges (whole parcel acquisition, tribal interests, contamination with environmental cleanup, cemeteries, federal or state approval, relocation of residential or commercial occupants, etc.) exist. Impacts to land uses surrounding the project site are possible, but they can be addressed within the project budget.

C) Many properties still require identification or negotiation, or unusual challenges (whole parcel acquisition, tribal interests, contamination with environmental cleanup, cemeteries, federal or state approval, relocation of residential or commercial properties, etc.) exist. Impacts to land uses surrounding the project site are possible and it may not be possible to address them within the project budget.

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

6. PERMITTING: Indicate which permitting situation most closely your project and site:

A) Not yet determined.

B) No permits are required (or all permits are already in hand). The site has been surveyed sufficiently enough to assure that unforeseen conditions involving (additional) permit approval are highly unlikely.

C) Permits are required but they do not involve environmental, zoning, or other issues making the condition or timing of approval uncertain. The site has been surveyed sufficiently enough to understand the permitting situation faced.

D) Permits are required involving environmental, zoning, or other issues making the condition or timing of approval uncertain. The site has not been fully surveyed yet or, if it has been, the presence of hazardous materials or other conditions were noted increasing the complexity of the permitting situation faced.

7. PUBLIC IMPACT DURING IMPLEMENTATION: Indicate which public impact situation during implementation most closely matches this project and site:

A) Not yet determined.

B) No Public Impacts: Projects which do not involve: (1) disruptions to the availability of public facilities, services, or infrastructure; or (2) construction noise, dust, fumes or other public annoyances.

C) Routine Public Impacts: Projects which involve: (1) moderate levels of construction noise, dust, fumes or other public annoyances; or (2) limited disruptions to the availability of public facilities, services, or infrastructure. Impacts to users of adjacent properties may occur, but they should be moderate in nature. All foreseeable impacts can be mitigated within the project budget.

D) Significant Public Impacts: Projects which involve: (1) major disruptions to the availability of public facilities, services, or infrastructure; or (2) high levels of construction noise, dust, fumes or other public annoyances. Impacts to users of adjacent properties are likely, and they will be significant in nature. Impacts may occur which cannot be mitigated within the project budget.

8. PUBLIC INTEREST IN PROJECT: Indicate which public interest situation most closely matches this project and site:

A) Low Public Interest: Projects which are unlikely to become of interest to community or business groups, regulatory agencies, elected officials, the news media, and/or adjacent property owners.

B) Routine Public Interest: Projects which may become of interest to the news media, elected officials, regulatory agencies, community and business groups, and/or adjacent property owners.

C) High Public Interest: Projects which are already of interest to community or business groups, the news media, elected officials, regulatory agencies, and/or adjacent property owners.

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

9. PROJECT DELIVERY METHOD: Indicate the primary delivery method which will be used for the largest portion of the construction/implementation work planned for this project:

A) Not Yet Determined
B) Design-Bid-Build
C) General Contractor / Construction Manager (GC at Risk)
D) Design-Build
E) Cost + Fixed Fee
F) Time and Materials

10. NUMBER OF PRIME CONTRACTORS MANAGED: Please indicate how many prime contractors will be directly managed by your agency or your project management consultant in order to complete this project. Do not include sub-contractors managed by the primes:

A) Not Yet Determined
B) 1 to 2
C) 3 to 4
D) 5 or More

11. UNUSUAL DESIGN OR ENGINEERING CHALLENGES: Please indicate if this project includes any unusual design or engineering challenges due to site conditions, the project scope, or any other reason:

A) Not yet determined.
B) Yes
C) No

If you answered "**B) Yes**" above, briefly describe the unusual design or engineering challenges faced by this project using the box below:

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12. UNUSUAL CONSTRUCTION CHALLENGES: Indicate if this project includes any unusual construction challenges due to site conditions, materials availability, or any other reason.

A) Not yet determined.
B) Yes.
C) No.

If you answered "**B) Yes**" above, briefly describe the unusual construction challenges faced by this project using the box below:

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13. MARKET CONDITIONS: Indicate how soon this project is expected to go to bid:

A) Not Yet Determined
B) Expected within 6 Months from Today
C) Expected within 7 - 11 Months from Today
D) Expected between 12 to 24 Months from Today
E) Expected between 25 to 36 Months from Today
F) Expected more than 36 Months from today

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

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*****STOP. YOU HAVE COMPLETED THE PROJECT MANAGER QUESTIONNAIRE. PLEASE REVIEW YOUR ANSWERS FOR COMPLETENESS AND ACCURACY, SAVE A COPY OF THE QUESTIONNAIRE FOR YOUR RECORDS, THEN EMAIL IT TO THE DESIGNATED SCORING REPRESENTATIVE FOR YOUR DEPARTMENT / AGENCY FOR FURTHER ACTION.*****

DEPARTMENT / AGENCY SCORING REPRESENTATIVE REVIEW

INSTRUCTIONS

- (1) Please review the answers provided by the project manager. If any information is missing or you don't agree with their input, please discuss this with them or with other agency personnel as needed to accurately represent this project to the Joint Advisory Group (JAG).
- (2) Please provide your answers to all agency scoring representative questions requested below.
- (3) Please review the completed capital project risk scoring questionnaire with the management of your department / implementing agency in accordance with your internal quality control procedures.
- (3) Once this review is completed, please provide your contact information, then: (a) make a copy of the questionnaire for your records; and (b) click the "Submit Questionnaire" button at the bottom of this page. This will email the questionnaire to the executive for review and processing prior to submitting it to the County Clerk.
- (4) If you have any questions, please feel free to contact Tom Wood, Capital Projects Oversight Program, at (206) 296-2011. This questionnaire is best viewed at 100% magnification or higher.

A1. CAPITAL IMPROVEMENT FUND NUMBER: Please provide the capital improvement fund number your department / agency is using for this project in the box below:

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A2. PROJECT APPROPRIATION AND EXPENDITURE SUMMARY: Record the appropriation and expenditure amounts to date for this project using the boxes below. Use the "as of month / year" instructions issued by the executive as the reference date for this information. Also record the original project cost estimate in the box provided:

A2(a). Appropriation Amounts to Date (KCC 4.04.247.A.6)	
A2(b). Expenditure Amounts to Date (KCC 4.04.247.A.6)	
A2(c). Year of First Appropriation (The year council first granted expenditure authorization) (KCC 4.04.030.A.2.i)	
A2(d). Original Project Cost Estimate ("As included in the capital budget document and remains fixed from year to year") (KCC 4.04.030.2.i)	
A2(e). Appropriation Amount (In year of first appropriation)	
A2(e)1. Agency Comment:	

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

A3. AGENCY COMMITMENT TO PROJECT: Please identify your agency's level of commitment to supporting progress on schedule and completing this project:

- A) My agency's commitment is unconditional. The project is of the highest priority, offers proven benefits, and all necessary funding is in place.
- B) My agency's commitment falls between description "A" and description "C".
- C) My agency's commitment could change. The project offers well documented benefits and, although
- D) My agency's commitment to completing this project falls between description "C" and description "E".
- E) My agency's commitment is uncertain. The potential benefits of the project have not been demonstrated and/or additional funding is required and the likelihood of full funding approval cannot be predicted.

A4. AGENCY EXPERIENCE WITH PROJECT TYPE: Please indicate your agency's experience with this type of project:

- A) This type of project is routinely completed by my agency.
- B) This type of project is occasionally completed by my agency.
- C) This type of project is rarely completed by my agency.

A5. AGENCY EXPERIENCE WITH PROJECT DELIVERY METHOD: Please indicate your agency's experience with the primary delivery method being used for this project:

A5.1. Delivery Method Stated by PM:

Shows answer from question 9

A5.2. Agency Experience Level:

- A) Unknown - Project delivery method has not yet been determined.
- B) Low - This type of delivery method has rarely, if ever, been used by my agency before.
- C) Moderate - This type of delivery method has occasionally been used by my agency before.
- D) High - This type of delivery method is regularly used by my agency.

A6. RISK ASSOCIATED WITH UNUSUAL DESIGN OR ENGINEERING CHALLENGES: Please evaluate the risk associated with the following design and/or engineering challenges identified by the project manager:

Shows answer from question 11.

A6.1: Agency Scoring Representative Evaluation:

- A) Low Risk Potential
- B) Moderate Risk Potential
- C) High Risk Potential

A7. RISK ASSOCIATED WITH UNUSUAL CONSTRUCTION CHALLENGES: Please evaluate the risk associated with the following construction challenges identified by the project manager:

Shows answer from question 12.

A7.1: Agency Scoring Representative Evaluation:

- A) Low Risk Potential
- B) Moderate Risk Potential
- C) High Risk Potential

ATTACHMENT A: RISK ASSESSMENT QUESTIONNAIRE

(V.1.4, 06/28/10, KCAO Capital Projects Oversight Program)

A8. SUBMITTAL: *By submitting this questionnaire, I indicate that I have reviewed the answers provided herein and that they accurately portray the subject project for risk evaluation purposes to the best of my knowledge :*

Name	Phone Number	Email

DATE REVIEWED (MO/DAY/YR):

Attachment B – Project Summary Sheet

CAPITAL PROJECT RISK SCORE SUMMARY

(Release V.1.0, Joint Advisory Group Approved, 06/29/2010)

Scoring Date: 7/10/10

PROJECT TITLE: Sample Project

RISK SCORE: 147.91

PROJECT NUMBER: 111111

CIP FUND: 5380

DEPARTMENT - DIVISION OF PROJ MANAGER: DOT - Airport

PROJECT DESCRIPTION:

Project Scope and Background Information

CURRENT PHASE: Design

DELIVERY METHOD: Design-Build

BUDGET SUMMARY

Appropriation Amount to Date (\$)	Year of First Appropriation	Expenditure Amount to Date (\$)	Expenditure Reference Date
\$ 20,000,000	2009	\$ 9,000,000	May-2010

CURRENT COST ESTIMATE AT COMPLETION		PROJECT BASELINE COST ESTIMATE		
Low End of Range	High End of Range	Low End of Range	High End of Range	Year Established
\$ 20,000,000	\$ 23,000,000	\$ 23,000,000	\$ 25,000,000	2010

SCHEDULE SUMMARY

Actual Start Date	Current Time Estimate at Completion (current completion date)	Project Baseline Schedule (baseline completion date)
Jan-2009	Jan-2016	Jan-2016

RISK EVALUATION QUESTIONNAIRE RESULTS

Question	Answer	Rating	Question	Answer	Rating
1. Project Phase	B	13.50	8. Public Interest	B	13.50
2. Total Project Cost	23,000,000	3.16	9. Delivery Method	D C	11.25
3. Cost Estimate Class	C	13.50	10. No. Prime Contractors	B	0.75
4. Schedule Constraints	B C	24.00	11. Des/Eng Challenges	C U	0.00
5. Property Acquisition	R R	18.00	12. Construction Challenges	C U	0.00
6. Permitting	C	10.13	13. Market Conditions	C	3.00
7. Public Impact	C	10.13	A3. Agency Commitment to Proj	C	18.00
			A4. Agency Exper w/ Project Type	B	9.00