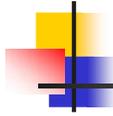




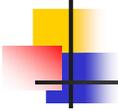
CRD CORE AREA WASTEWATER MANAGEMENT PROGRAM BUSINESS CASE

PEER REVIEW REPORT
March 10, 2010



PEER REVIEW PURPOSE

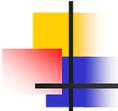
- Independent review of Business Case
- Based on Business Case dated February 23, 2010 and related documents



PEER REVIEW TEAM (PRT)

- Gordon Culp, Chair
- Arn van Iersel
- Don Lidstone
- Eric Petersen
- George Raftelis

Broad experience with technical, legal,
procurement and financial aspects



PROJECT DELIVERY METHODS

Traditional

Design Bid Build (DBB)

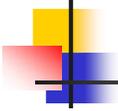
Construction Manager at Risk (CMAR)

Alternative Project Delivery Methods

Design Build (DB)

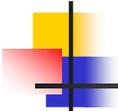
Design Build Operate (DBO)

Design Build Finance Operate (DBFO)



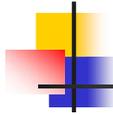
BUSINESS CASE OPTIONS

- Traditional – DBB, CMAR for all elements
- Public Private Partnership (PPP) – DBFO for all elements except conveyance system, tunnel and outfalls
- Hybrid –Mixture of above plus DB
- DBO – not evaluated



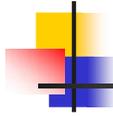
EVALUATION OF OPTIONS

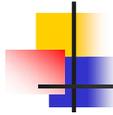
- Social, environmental, economic criteria
- Social and environmental – qualitative
- Economic - quantitative



ECONOMIC EVALUATION

	Traditional	Hybrid	PPP
Design & Construction Costs	\$941,810,000	\$876,593,000	\$865,789,000
Savings	-	\$65,217,000	\$76,021,000
Annual O&M Costs	\$18,606,000	\$18,379,000	\$17,601,000
Annual Savings	-	\$227,000	\$1,005,000
Net Present Cost	\$923,787,000	\$924,566,000	\$929,139,000

- 
- ## ESTIMATES OF SAVINGS LOW
- Efficiencies gained from DB and DBFO are conservatively low
 - Estimates of total project risks and risks transferred are conservatively low
 - Estimates of savings from risk transfer are conservatively low
 - No estimate of cost using DBO



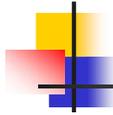
EVALUATION RECOMMENDATION

- In addition to social and environmental evaluation, in economic evaluation
 - DBO should receive equal consideration, retains most of benefits of DBFO without disadvantages of DBFO
 - Sensitivity analysis for range of less conservative assumptions



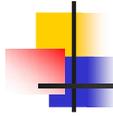
PROCUREMENT

- DBB appropriate for conveyance system and outfalls
- DBB, DB, DBO and DBFO should receive equal consideration
- In Hybrid, DBO should be considered for McLoughlin as well as DB
- DB for McLoughlin has advantages over DBB



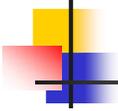
DBFO CONSIDERATIONS

- Transfers risk to equity holders and lenders
- Limited number of firms, less competition
- DBFO teams led by equity holder
- If issues, deal with financial company not designer or operator
- Termination requires the CRD to refinance the privately funded portion of project



RISK QUANTIFICATION

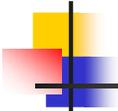
- Significant because cost differences for project options are less than 0.6%, risk adjustment can determine low cost option
- Business Case risk quantifications are 6-7% of project costs
- Other projects – 16-26%
- Business Case risk quantification is low



RISK TRANSFERRED

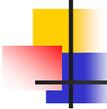
- Business Case estimates bidders will include 64-69% of transferred risks in their bids
- Adjustments by bidders are lower
 - They believe they can control them
 - Pricing them in competitive situation, can't be conservative

Result - cost of Hybrid and PPP is conservatively high



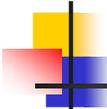
DELIVERY METHOD EFFICIENCIES

- Business Case estimates 7-8% savings in capital cost, 1-5% savings in O&M for Hybrid and PPP
- Experience on other alternative delivery projects is 6-30% savings in capital and 10-30% savings in life cycle costs
- Business Case estimates are in low end of range
- Sensitivity analysis recommended



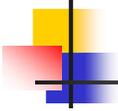
FINANCIAL CONSIDERATIONS

- Cost estimates likely to change, -15% +25%
- Economics sensitive to discount rate
- GOC and Provincial funding key to affordability – meet with them early, often
- Reevaluate inflation assumptions
- Identify insurance adjustment separately
- Do financial market sounding
- Conduct affordability analysis



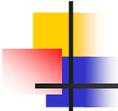
MULTIPLE CRITERIA EVALUATION

- Environmental and social criteria- many points of agreement with PRT
- Some suggestions from PRT
 - Permitting issues
 - Recruiting and retaining staff
 - Cost/savings from risk transfer
 - Scheduling issues



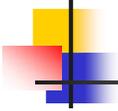
BUSINESS CASE PROCESS

- Consistency with Liquid Waste Management Plan
- Address Provincial expectations
 - Environmental protection
 - Climate action
 - Resource recovery and reuse
 - Seeking partnerships
 - Smart growth
 - Cost effectiveness
 - Innovation and leadership



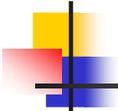
REGULATORY CONSIDERATIONS

- Assent of electors issue
- Legislative requirements
 - Loan authorization by Inspector
 - Approval of exemption from elector approval, if sought
 - Consent of each municipality
 - Approval of PPP agreements exceeding 5 years
 - Loan and other liabilities included in financial plan subjected to public consultation



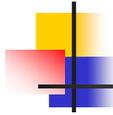
GOVERNANCE

- Options for development period
 - Incorporated company
 - Non-profit society
 - Commission
 - Joint venture
 - Partnership
 - Utility



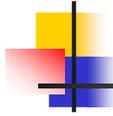
GOVERNANCE

- During Operations
 - Direct Service
 - Commission
 - Non-profit society
 - Special purpose company
 - Joint venture
 - Utility



COST ALLOCATION STRATEGIES

- User pay approach
- Greater Vancouver SDD approach



LABOUR CONSIDERATIONS

- Successorship issue
- Contracting out provisions of collective agreement

THANK YOU FOR THIS
OPPORTUNITY

