THE DELTA TUNNELS: BENEFITS, COSTS, FINANCING AND ALTERNATIVES

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UOP CBPR *Benefit-Cost Analysis of Delta Tunnels, July 2012*

- **Found 40 cents in benefits for each $1 of costs.**

"Financing the tunnels will either require a subsidy for agricultural users from urban ratepayers or taxpayers, or significant sales of water from agricultural to urban water agencies... But urban agencies and the government are adamant that there will be no ratepayer or taxpayer subsidies for farmers. And farmers insist that they have no intention of selling their water supplies to urban areas."

Key Assumptions for WaterFix Benefit-Cost Analysis

- Export Water Yield: annual average of 225,432 acre feet per the January 2016 WaterFix Biological Assessment
- Timeline: Construction 2017-2031, Operation benefits valued from 2032 to 2131(100 year useful life)
- Real Discount Rate: 3.5%
- Two Scenarios:
  - Optimistic: Values from 2013 BDCP Analysis.
  - Base: Values from other state reports that are not promoting the tunnels.

Results of August 2016 Benefit-Cost Analysis of WaterFix

	Base scenario	Optimistic Scenario
Benefits		
Export Water Supply	$1,319,521,208	$2,822,409,124
Export Water Quality	$1,677,361,307	$1,677,361,307
Earthquake Risk Reduction	$0	$435,796,554
Total Benefits	$2,996,882,515	$4,935,566,984
Costs		
Construction and Mitigation	$11,676,474,531	$11,676,474,531
Operation and Maintenance	$591,658,075	$591,658,075
Ecosystem	$0	$0
In-Delta Municipal	$111,279,332	$37,093,107
In-Delta Agriculture	$682,807,143	$293,953,421
In-Delta Transportation	$132,205,755	$132,205,755
Total Costs	$13,194,424,836	$12,731,384,889
Net Benefit	**($10,197,542,281)**	($7,795,817,905)
Benefit/Cost ratio	**0.23**	0.39

The Base Scenario Still Includes Some Pro-Tunnel Biases

- No Risk of Cost Escalation.
- Excludes some areas of potential social costs.
  - Delta recreation and upstream reservoirs
- Assumes no environmental costs.
- Assumes no technological improvements in alternative water supplies and conservation.
- Long-time horizon and relatively low discount rate.

Benefit-Cost Conclusions

- WaterFix is much worse than the "status quo" as defined by its EIR/EIS.
  - Net Benefit is -$10 billion, and b-c ratio is 0.23 under base scenario.
  - No Pessimistic Scenario

- "Break-Even" (Benefit-Cost = 1) Requires Either
  - Cost to decline to $2 billion, or
  - Water yield to increase to 2 million af annually.

DWR Has Failed To Complete Financial Feasibility Analysis

From the DWR Economic Analysis Guidebook:

"The objective of financial analysis is to determine financial feasibility (that is, whether someone is willing to pay for a project and has the capability to raise the necessary funds). The test of financial feasibility is passed if

(a) beneficiaries are able to pay reimbursable costs for project outputs over the project's repayment period,

(b) sufficient capital is authorized and available to finance construction to completion, and

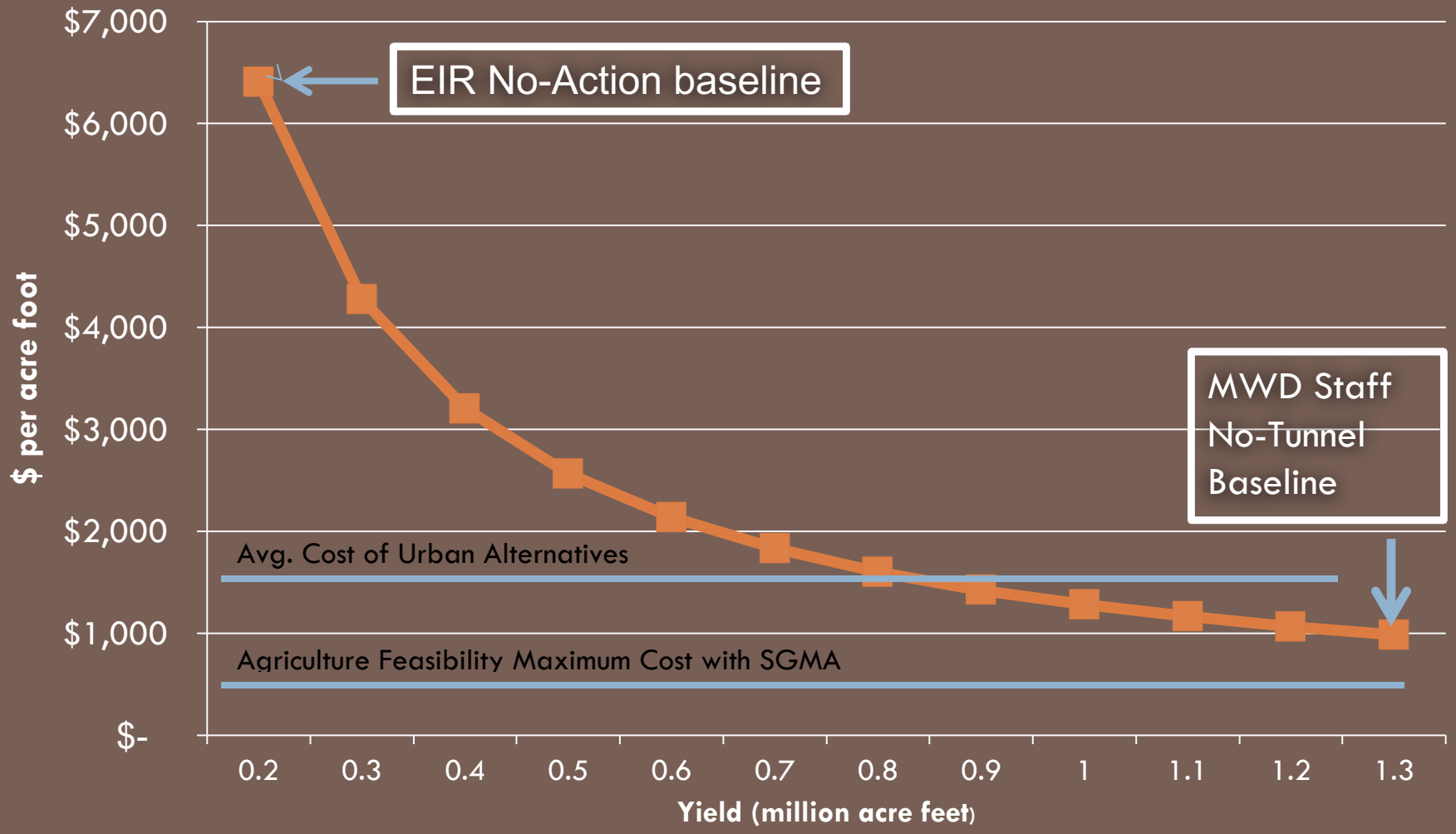
(c) estimated revenues are sufficient to cover allocated costs over the repayment period. "

Environmental and Public Interest Risks From Ignoring Financial Feasibility

- State General Fund and Ratepayer Risk
- Risk of funds diverted from other environmental programs
- Inadequate funding of mitigation actions
- Creates large economic and financial need for increased water exports that will weight against environmental needs in future regulatory decisions.
  - Dry-year TUCPs.
  - Bay-Delta Water Quality Control Plan
  - Reconsultation on Biological Opinions

WaterFix Cost versus Yield

2014 dollars. Source: Stratecon, Dr. Rodney Smith



Recent Water Agency Votes Show Project Is Not Financially Feasible

- Westlands Water District Vote 7-1 Against WaterFix: find project is "not financially viable"
- Reclamation Announces Will Not Fund WaterFix (DWR had assumed 45% share)
- Kern County Water Agency
  - Only approved funding half their share.
- Santa Clara Valley District
  - Conditionally approved a concept that is extremely different than the WaterFix proposal.
- Metropolitan Water District
  - Approved paying 26% of project cost.

One Tunnel Doesn't Solve The Financial Problem

- Lowers total cost, but not enough.
- Does not solve the cost allocation problem.
- Raises cost per unit, and thus is even less viable for agriculture.
- Without all state and federal water contractors participating, project could be impossible to manage.
  - Large conflicts over how future water exports allocated between WaterFix participants and non-participants.

Alternatives Are a Better Investment

- Levees
- Recycling: Indirect Potable and Non-potable.
- Desalination: Seawater and Brackish
- Stormwater Capture
- Storage: Surface and Underground
- Efficiency/Conservation
- New Technology, R&D
- West Delta Conveyance? Move intakes to Sherman Island?
  - Reduce costs and increase trust by cutting length of tunnels in half, not cutting the number of tunnels in half.
  - Interesting concept needs further development and feasibility study.

Conclusion

- DWR Has Failed To Follow It's Own Guidelines for Economic and Financial Analysis
  - As a result, time and money has been wasted on an unviable project.
- Analysis demonstrates
  - WaterFix is worse than the status quo.
  - Shifting investment from WaterFix to alternatives will have higher benefits and reduce conflict.