The Costly Risks of Mega-projects like the Columbia River Crossing

Evan Manvel

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The Columbia River Crossing highway mega-project is the most expensive public works project in the region's history. But just how much will it cost to construct this highway builder's wet dream?

Project backers offer some numbers: $3.2 to $3.6 billion – or 3,600 million dollars – plus billions more in interest costs, meaning more than $6,000 total for every household in the region. Here's the rub: as jaw-dropping as those numbers should be, they're almost certainly low – by hundreds of millions of dollars, if not billions.

The CRC is our first attempt at building a mega-project this scale. Such projects have been built around the world for decades, allowing academics to study them. The key findings? 90% of mega-projects go over budget. Projections haven't improved over the past 70 years, or across 20 nations. Bridge projects go over budget by an average of 34%. On just the CRC base $3.6 billion, that's $1.224 billion.

Oxford University's Bent Flyvbjerg is a worldwide expert in mega-projects, who distilled the numbers above. He summarizes how such projects get approved:

> there seems to be a formula at work: underestimated costs + overestimated revenues + undervalued environmental impacts + overvalued economic development effects = project approval

Flyvbjerg notes major projects usually having the following characteristics (edited slightly for clarity, emphasis mine):

- Inherent risk due to long planning horizons and complex interfaces.
- Technology and design are often non-standard.
- Decision-making, planning, and management are typically multi-actor processes with conflicting interests.
- Often there is 'lock in' or 'capture' of a certain project concept at an early stage, leaving analysis of alternatives weak or absent.
- The project scope or ambition level will typically change significantly over time.
- Statistical evidence shows that such unplanned events are often unaccounted for, leaving budget and time contingencies sorely inadequate.
- Misinformation about costs, benefits, and risks is the norm throughout project development and decision-making, including in the business case.
- **The result is cost overruns and/or benefit shortfalls during project implementation.**

For those who have watched the CRC plans develop, this sounds eerily familiar. A lock-in to a project concept, little analysis of alternatives, conflicting interests, lots of risks, pushing forward a non-standard design, bad information throughout… it's as if Flyvbjerg is Carnac the Magnificent, opening the envelope to read, "How would you describe the CRC?"

Here's what we should learn from the costly errors of other mega-projects: irrational exuberance is common, even standard. Flyvbjerg considers why forecasts are off so consistently, including psychological and technical errors, and finds less data to support those arguments than another: "Political-economic explanations and strategic misrepresentation account well for the systematic underestimation of costs and overestimation of benefits found in the data."

He argues, "project manager and planners… are busy not with getting forecasts and business cases right … but with getting projects funded and built. And accurate forecasts are often not an effective means for achieving this objective. Indeed, accurate forecasts may be counterproductive."

Remember the Tram debacle? It was projected to cost between $15.5 and $28.5 million, and ended up costing $57 million. Several people knew the tram would be much more expensive than the original cost estimate, but withheld that information from city leaders. And we all should remember the Big Dig – a $2.8 to $6 billion Boston highway project that exploded into a $22 billion project.

Economist Joe Cortright recently looked at data on recent big Oregon highway projects. What he found was sobering. **The largest current ODOT projects will cost more than twice what ODOT projected they would cost.** The seven-mile long rebuild of US 20 between Corvallis and Newport was estimated to cost $110 million. We've spent $234 million to date and the project is still incomplete. ODOT estimated the Newberg-Dundee bypass would cost $222 million. It's now projected to cost between $752 and $880 million. And the cost of the relatively small rebuild of the Grand Ave-MLK-Highway 99 viaduct has ballooned from $36 to over $71 million.

ODOT's crystal ball is broken, with very costly consequences. Faulty projections mean other roads go unmaintained, potholes go unfixed, sidewalks go unbuilt, and projects around the state lose out. In this case, it could mean several parts of the CRC mega-project go unbuilt, decreasing its limited functionality, or that we grab key pots of state money to backfill the gaps. The desire to think the CRC cost projection is uniquely accurate is the same hubris mega-project backers have made throughout history.

From Flyvbjerg: "A key recommendation for decision-makers, investors and voters… is they should not trust the budgets, patronage forecasts, and cost-benefit analyses produced by promoters of major infrastructure projects." We've already seen major errors in the project's traffic projections, errors that pre-date the recession (more on that in a future column).

Perhaps the experience we should learn most from is the Oregon Wireless Interoperability Network (OWIN). There, project managers claimed to "need" $400 to $600 million to meet federal guidelines and build a functional network. Caught short of money, apparently a $49 million upgrade will actually suffice. From *The Oregonian*: "Legislators say they only now understand previous OWIN managers sold a far bigger project than was necessary."

Hopefully, that's a lesson we can take to heart. We can push aside the extremely costly and risky plans from the highway departments, take a fresh look at the problems at hand, and focus our resources more efficiently. We can move forward with an approach that meets the needs of the community, the impacted neighborhoods, and the taxpayer. We did it with the Mt. Hood Freeway and the Prescott Freeway, and we're doing it now with OWIN.

Being a good steward of our resources, be they financial, human, or environmental, is simply the Oregon way. The current CRC plan is not.

Note: Cortright's work led me to read Flvybjerg and inspired this piece. Cortright's full report - which projects the likely actual cost of the CRC at $10 billion, is a valuable read.

As a side note, the Oregon House Transportation and Economic Development Committee is considering HJM 22 on Monday. The bill is a press release combined with a plea for the Federal government to please send money for the CRC.

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  For those who want to read more, here are the citations:

  Flyvbjerg, B. (2005). Machiavellian Megaprojects. Antipode, 37(1), 18-22.

  Flyvbjerg, B. (2009). Survival of the unfittest: why the worst infrastructure gets built–and what we can do about it. Oxford Review of Economic Policy, 25(3), 344-67.

  Impresa, Inc. (2010). Financial Analysis of the Columbia River Crossing. Portland, OR: Cortright.

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  Oh, and full disclosure: I've done some paid work for the Coalition for a Livable Future on the CRC. This is not part of that work.

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