

Employment Impacts for Proposed Bay Delta Water Conveyance Tunnel Options

Presented to:
BDCP

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Agenda

Project Assumptions

Modeling Approach

Employment Measures

Results

Qualifications

Project Assumptions

- ◆ 15,000 cfs Option
 - Five screened intakes
 - Construction period cost of \$12.5 billion including imports
 - Operating period cost of \$82.6 million per year
- ◆ 3,000 cfs Option
 - One screened intake
 - Construction period cost of \$7.2 billion including imports
 - Operating period cost of \$40.5 per year
- ◆ Both Options
 - 7.5 year construction period
 - 50 year operating period
 - Tunnel boring machine and large pumps are imported

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Modeling Approach

- ◆ IMPLAN (IMpact analysis for PLANning)
 - Economic impact modeling system with input-output core
 - Widely used, especially among state and federal agencies
 - Advantages
 - Transparent
 - Regional disaggregation
 - Disadvantages
 - Static
 - Provides detailed first approximation of employment impacts

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Employment Measures

- ◆ **Direct Employment** – Jobs created in sector(s) of initial spending as a result of initial spending
- ◆ **Indirect Employment** – Jobs created as a result of purchases of goods, services, energy and labor from supporting industries by the sector(s) where initial spending occurred
- ◆ **Induced Employment** – Jobs created when households who see increased income as a result of direct and indirect employment creation purchase goods and services such as groceries and healthcare
- ◆ All employment impacts are converted to *full-time equivalent (FTE)* employment for reporting purposes

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Results: California

Statewide FTE Employment Impacts of Proposed Conveyance Tunnel Options

	15,000 cfs Option		3,000 cfs Option	
	Construction Period	Operating Period	Construction Period	Operating Period
Direct FTE Employment	13,938	100	8,130	75
Indirect FTE Employment	75,689	177	43,109	87
Induced FTE Employment	39,566	302	22,636	148
Total FTE Employment	129,193	579	73,875	310

Sources: IMPLAN v3; *The Brattle Group* 2011

Notes:

All impacts are based on cost estimates in 2010 dollars.

Construction period employment is given for the entire 7.5 year construction phase while operating period employment is given on an annual basis.

FTE or full-time equivalent is defined as the number of total hours worked divided by the maximum number of compensable hours in a work year as defined by law. For example, an FTE of 1.0 means that the position is equivalent to 1 full time worker, while an FTE of 0.5 means the position is equivalent to a half time worker.

Results: California

Top Ten IMPLAN Sectors In Terms of Total Construction Period Employment Creation

IMPLAN Sector	15,000 cfs Option (FTE Jobs)	3,000 cfs Option (FTE Jobs)
Construction of other new nonresidential structures	35,842	22,724
Architectural, engineering, and related services	13,487	7,867
Other concrete product manufacturing	9,838	4,337
Food services and drinking places	4,591	2,611
Wholesale trade businesses	3,878	2,107
Real estate establishments	3,160	1,787
Employment services	2,844	1,438
Offices of physicians, dentists, and other health practitioners	2,561	1,192
Plate work and fabricated structural product manufacturing	2,084	1,102
Transport by truck	1,727	967

Sources: IMPLAN v3; *The Brattle Group* 2011

Notes:

FTE Jobs includes direct, indirect and induced employment.

Results: County-Level

County Level FTE Employment Impacts of 15,000 cfs All Tunnel Option

	Contra Costa County		Sacramento County		San Joaquin County	
	Construction Period	Operating Period	Construction Period	Operating Period	Construction Period	Operating Period
Direct FTE Employment	182	13	663	46	583	41
Indirect FTE Employment	5,157	14	21,665	67	35,893	49
Induced FTE Employment	1,571	21	8,416	113	13,976	101
Total FTE Employment	6,910	47	30,744	227	50,451	191

Sources: IMPLAN v3; *The Brattle Group* 2011

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FTE or full-time equivalent is defined as the number of total hours worked divided by the maximum number of compensable hours in a work year as defined by law. For example, an FTE of 1.0 means that the position is equivalent to 1 full time worker, while an FTE of 0.5 means the position is equivalent to a half time worker.

County Level FTE Employment Impacts of 3,000 cfs All Tunnel Option

	Contra Costa County		Sacramento County		San Joaquin County	
	Construction Period	Operating Period	Construction Period	Operating Period	Construction Period	Operating Period
Direct FTE Employment	102	10	373	35	328	31
Indirect FTE Employment	3,236	7	13,705	33	19,070	24
Induced FTE Employment	975	10	5,256	56	7,425	50
Total FTE Employment	4,314	27	19,334	123	26,823	104

Sources: IMPLAN v3; *The Brattle Group* 2011

Notes:

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Construction period employment is given for the entire 7.5 year construction phase while operating period employment is given on an annual basis.

FTE or full-time equivalent is defined as the number of total hours worked divided by the maximum number of compensable hours in a work year as defined by law. For example, an FTE of 1.0 means that the position is equivalent to 1 full time worker, while an FTE of 0.5 means the position is equivalent to a half time worker.

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Limitations

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- ◆ Actual employment will depend on the capital mix
- ◆ In addition, our estimate
 - Does not account for technological changes that might arise prior to or during construction phase
 - Does not include jobs related to other activities such as habitat restoration
 - Does not explicitly account for transactions related to land acquisition
 - Does not account for lost income to households as a result of interest payments on bond financing of this project