

- **Board of Directors**  
**Engineering and Operations Committee**

July 11, 2006 Board Meeting

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**Subject**

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Status report for the Inland Feeder Program for activities through May 2006 [**Any discussion of litigation to be heard in closed session. Conference with legal counsel--existing litigation (Shank/Balfour Beatty, a Joint Venture vs. Metropolitan Water District of Southern California, LASC Case No. BC 283438); to be heard in closed session pursuant to Gov. Code Section 54956.9(a). Conference with legal counsel--potential litigation relating to contractor claims on Contract No. 1542 for the Arrowhead Tunnels; to be heard in closed session pursuant to Gov. Code Section 54956.9(b) (one potential case)**]

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**Description**

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**Work Completed to Date**

The Inland Feeder Program consists of 44 miles of pipeline and tunnels that will enable Metropolitan to convey up to 1,000 cubic feet per second of State Water Project supplies from Devil Canyon Afterbay to Diamond Valley Lake. To date, eight of nine construction contracts totaling \$542 million have been completed. These completed contracts represent 36.3 miles or 82% of the Inland Feeder's length. Remaining program work includes completion of the Arrowhead East and West Tunnels, which are presently under construction by a joint venture of Shea/Kenny.

**Arrowhead Tunnels**

Arrowhead East Tunnel – In May, tunnel boring machine (TBM) mining advanced at a consistent pace due to the improved rock conditions. The contractor performed alternating cycles of mining and grouting to proceed 505 feet in May, while another 240 feet were mined in the first week of June. The total length of tunnel mined to date is 12,675 feet (56% of the tunnel's length).

Arrowhead West Tunnel – As of May 31, the TBM had not moved forward as the contractor continued to deal with a shear/fault zone feature accompanied with the presence of high water in-flows. The loose blocky ground in this area resulted in the TBM cutterhead becoming jammed in place. The contractor undertook ground-stabilization grouting ahead of the TBM to consolidate the ground and alleviate the cutterhead jamming issues. Mining recommenced on June 7 and advanced 40 feet through June 9. The total length of tunnel mined to date is 6,195 feet (31% of the tunnel's length).

**Program Management Team**

Teamwork and cooperation remain high among Metropolitan and contractor personnel, at both the management and working levels. This heightened level of cooperation has been beneficial in dealing with the difficult mining conditions encountered in April and May on Arrowhead West Tunnel. The second full-team partnering session since the new management teams were installed was held between Metropolitan and contractor personnel in April. The sessions refined procedures and cooperative practices between both parties.

**Budget and Schedule**

As of May 31, 2006, the projected cost to complete the Inland Feeder Program is \$982.3 million. This amount is under review, however, and will be updated over the next several months. Total expenditures through May 2006 are \$855.4 million (see [Attachment 1](#) for a budget comparison and schedule summary for the entire Inland Feeder Program, and budget status for the Arrowhead Tunnels construction contract). The board-approved budget for the entire program remains at \$1.186 billion.

The on-line date for the Inland Feeder is dependent upon completion of the Arrowhead Tunnels. The estimated completion date of late 2008 for the Arrowhead Tunnels was reported to the Board in October 2005. However, that date is currently under review. A revised project completion date, and costs associated with the schedule impacts, will be brought to the Board when the review has been completed.

Upon completion of construction, environmental mitigation measures will continue along the Arrowhead Tunnels alignment for up to two years in accordance with the Environmental Impact Report.

## Policy

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Submitted per request of the Board

## Fiscal Impact

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Refer to [Attachment 1](#).

 Roy L. Wolfe Manager, Corporate Resources	6/19/2006 Date
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 Jeffrey Kightlinger General Manager	6/22/2006 Date
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## **Attachment 1 – Inland Feeder Program Budget Comparison and Schedule Summary, and Arrowhead Tunnels Construction Contract Budget Status**

BLA #4218

<b>Inland Feeder Program Budget Comparison and Schedule Summary (\$ in Millions)</b>				
	Total Program Estimate (FY 2005/6 CIP)	Projected Cost to Complete (Updated May 2006)	Expenditures to Date (May 2006)	% Complete Based on Expenditures (May 2006)
<u>Active Construction</u>				
Arrowhead Tunnels	\$ 289.3	\$ * 265.7	\$ 158.9	55%
Construction Inspection and Support	\$ 39.1	\$ * 39.1	\$ 27.9	71%
<b>Subtotal, Active Construction</b>	<b>\$ 328.4</b>	<b>\$ 304.8</b>	<b>\$ 186.8</b>	<b>57%</b>
<u>Other Components</u>				
Completed Projects	\$ 576.9	\$ 576.4	\$ 573.3	99%
Others (R/W, Env., Prog. Mgt.)	\$ 101.1	\$ 101.1	\$ 95.3	99%
<b>Subtotal, Other Components</b>	<b>\$ 678.0</b>	<b>\$ 677.5</b>	<b>\$ 668.6</b>	<b>99%</b>
Expended To Date			\$ 855.4	72%
Subtotal, All Projects	\$ 1,006.4	\$ 982.3		
Remaining Budget	\$ 180.0	\$ 204.1		
Board-Authorized Budget	\$ 1,186.4	\$ 1,186.4		

\* Under review

NOTE: Overall completion = 36.3 of 44.2 miles (82%)

<b>Arrowhead Tunnels Construction Contract Budget Status (\$ in Millions)</b>			
Construction Contract No. 1542	Current Contract Amount (May 2006)	Amount of Contract Committed (May 2006)	% of Contract Committed
Mobilization	\$ 7.6	\$ 7.3	96%
Plant equipment / materials	\$ 76.2	\$ 60.2	79%
<u>Arrowhead East</u>			
Portal / pipeline work	\$ 10.9	\$ 6.4	59%
Excavation / final lining	\$ 64.2	\$ 31.0	48%
Grouting	\$ 11.6	\$ 4.4	38%
<u>Arrowhead West</u>			
Portal / pipeline work	\$ 6.6	\$ 1.4	21%
Excavation / final lining	\$ 53.8	\$ 18.7	35%
Grouting	\$ 11.6	\$ 7.9	68%
Subtotal	\$ 242.5	\$ 137.3	57%
Authorized Change Orders	\$ 28.0	\$ 28.0	100%
<b>Construction Contract Total</b>	<b>\$ 270.5</b>	<b>\$ 165.3</b>	<b>61%</b>
Length of Tunnels Mined Through 6/9/06			
Arrowhead East	12,675 ft of 22,458 ft (56%)		
Arrowhead West	6,195 ft of 19,884 ft (31%)		
Total	18,870 ft of 42,342 ft (45%)		

NOTE: Contractor invoices paid through May 2006 = \$159M