

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

June 13, 2006 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through April 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)**]

Description

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 – Since moving past a shear/fault zone with high water pressure, high flow rates, and unconsolidated rock in March, the tunnel boring machine (TBM) advanced into good rock conditions in April. Minor repairs to the cutterhead and equipment maintenance were conducted in late March/early April. Since mining resumed, the contractor has performed alternating cycles of mining and grouting to proceed 320 feet in April, while another 250 feet were mined in the first two weeks of May. The total length of tunnel mined to date is 12,180 feet (54% of the tunnel's length).

Arrowhead West Tunnel – The TBM advanced a total of 30 feet in early April before loose blocky ground conditions ahead of the TBM caused jamming of the cutterhead and stopped mining operations. The contractor undertook ground stabilization grouting ahead of the TBM to consolidate the ground and alleviate the cutterhead jamming issue. Mining is expected to commence again by the end of May. The total length of tunnel mined to date is 6,155 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 on Arrowhead West Tunnel. The second full-team partnering session since the new management teams were installed was held between Metropolitan and contractor personnel on April 20. The sessions refined procedures and cooperative practices between both parties.

Budget and Schedule

As of April 28, 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 April 2006 are \$852.9 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

Submitted per request of the Board

Fiscal Impact


Refer to [Attachment 1](#).



Roy L. Wolfe
Manager, Corporate Resources

5/25/2006

Date



Jeffrey Kightlinger
General Manager

5/26/2006

Date

Attachment 1 – Inland Feeder Program Budget Comparison and Schedule Summary, and Arrowhead Tunnels Construction Contract Budget Status

BLA #4217

Inland Feeder Program Budget Comparison and Schedule Summary (\$ in Millions)				
	Total Program Estimate (FY 2005/6 CIP)	Projected Cost to Complete (Updated Apr 2006)	Expenditures to Date (Apr 2006)	% Complete Based on Expenditures (Apr 2006)
<u>Active Construction</u>				
Arrowhead Tunnels	\$ 289.3	\$ * 265.7	\$ 158.0	55%
Construction Inspection and Support	\$ 39.1	\$ * 39.1	\$ 26.7	68%
Subtotal, Active Construction	\$ 328.4	\$ 304.8	\$ 184.7	56%
<u>Other Components</u>				
Completed Projects	\$ 576.9	\$ 576.4	\$ 573.3	99%
Others (R/W, Env., Prog. Mgt.)	\$ 101.1	\$ 101.1	\$ 94.9	99%
Subtotal, Other Components	\$ 678.0	\$ 677.4	\$ 668.2	99%
Expended To Date			\$ 852.9	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%)

Arrowhead Tunnels Construction Contract Budget Status (\$ in Millions)			
Construction Contract No. 1542	Current Contract Amount (Apr 2006)	Amount of Contract Committed (Apr 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	\$ 30.1	47%
Grouting	\$ 11.6	\$ 4.0	34%
<u>Arrowhead West</u>			
Portal / pipeline work	\$ 6.6	\$ 1.4	21%
Excavation / final lining	\$ 53.8	\$ 18.7	35%
Grouting	\$ 11.6	\$ 7.6	66%
Subtotal	\$ 242.5	\$ 135.7	56%
Authorized Change Orders	\$ 28.0	\$ 28.0	100%
Construction Contract Total	\$ 270.5	\$ 163.7	61%
Length of Tunnels Mined Through 5/14/06			
Arrowhead East	12,180 ft of 22,458 ft (54%)		
Arrowhead West	6,155 ft of 19,884 ft (31%)		
Total	18,335 ft of 42,342 ft (43%)		

NOTE: Contractor invoices paid through April 2006 = \$158M