

- **Board of Directors**
Engineering and Capital Programs Committee

July 10, 2007 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through May 2007

Description

Work Completed to Date

The Inland Feeder Program consists of 44 miles of pipelines and tunnels that will enable Metropolitan to convey up to 1,000 cubic feet per second of State Water Project (SWP) supplies from Devil Canyon Afterbay to Diamond Valley Lake (DVL). To date, eight of nine construction contracts totaling \$542 million have been completed. These completed contracts represent 36.3 miles or 82 percent 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.

The completed portion of the Inland Feeder has been in service since 2003 via an interconnection that was constructed between the Inland Feeder and San Bernardino Valley Municipal Water District's Foothill Pipeline. This connection allows Metropolitan to convey SWP supplies from the East Branch of the California Aqueduct to the Inland Feeder for delivery to DVL. Over 550,000 acre-feet of SWP water have been delivered to DVL to date through this connection.

Arrowhead Tunnels

Arrowhead East Tunnel – In May, the contractor continues guiding the tunnel-boring machine (TBM) through a 1,400-foot curve in the tunnel alignment. When the curve is completed, the TBM will be on a 3,500-foot direct path to its final destination, the previously completed 8,000-foot tunnel section at City Creek. As the machine mines through this curve, probing distances have been reduced, resulting in more frequent grouting and mining cycles. As the contractor mines through the curve, pockets of poor ground have been encountered which require additional grouting. Despite the difficulties of mining in the curve, and the additional grouting, the contractor generated a favorable month of mining and advanced 340 feet in May and another 180 feet through June 12. The total length of tunnel mined to date is 18,120 feet (81% of the tunnel's length).

Arrowhead West Tunnel – The contractor successfully mined through a short 400-foot-long curve in the alignment during May. Ground conditions remained favorable but periodic increases in groundwater flows required periods of intensified grouting. In mid-May, the contractor performed a planned replacement of the TBM's screw auger and relocated some train-track switches in the tunnel within a 10-working-day period. The TBM advanced a total of 315 feet in May and another 275 feet through June 12. The six-month average for mining progress continues favorable at more than 500 feet per month. The total length of tunnel mined to date is 11,475 feet (58% of the tunnel's length).

Program Management

At its June meeting, the Board authorized an increase of \$1.8 million to the agreement with Parsons Water & Infrastructure to continue Parson's project controls services through completion of the Arrowhead Tunnels in late 2010. Project controls services consist of cost/schedule control and reporting, contract administration, contractor and consultant invoice review, document control and other administrative and clerical support. Funds will be moved from the program's remaining budget to cover the amount of the amendment.

Budget and Schedule

Following board authorization of a settlement agreement and contract amendment with the Arrowhead Tunnels contractor in August 2006, staff conducted a complete review of the program budget to estimate the total projected cost to complete the Inland Feeder Program. Based on the revised September 2010 completion date of the Arrowhead Tunnels as presented to the Board in August 2006, the updated total projected cost for the Inland Feeder is estimated to be \$1.131 billion. Total expenditures through May 2007 are \$936 million (see [Attachment 1](#) for the Projected Cost/Expenditures). The board-approved budget for the entire program remains at \$1.186 billion. [Attachment 2](#) shows the actual mining progress and cash flow on both tunnels compared to the planned progress and expenditures set forth in the August 2006 contract amendment.

The payments on the contractor's incentive/risk program are discussed with the Board on a regular basis at the Engineering and Capital Programs Committee meetings. The incentive plan is part of the contract amendment approved by the Board in August 2006. The incentive payment to the contractor for the month of May 2007 is shown in [Attachment 1](#).

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

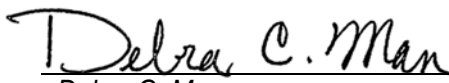
Submitted per request of the Board

Fiscal Impact

Refer to [Attachment 1](#).


 Roy L. Wolfe
 Manager, Corporate Resources

6/19/2007
Date


 Debra C. Man
 for Jeffrey Kightlinger
 General Manager

6/20/2007
Date

Attachment 1 – Inland Feeder Program Projected Cost/Expenditures and Incentive Plan Payments

Attachment 2 – Arrowhead Tunnels Actual vs. Planned Mining Progress and Actual vs. Planned Cash Flow

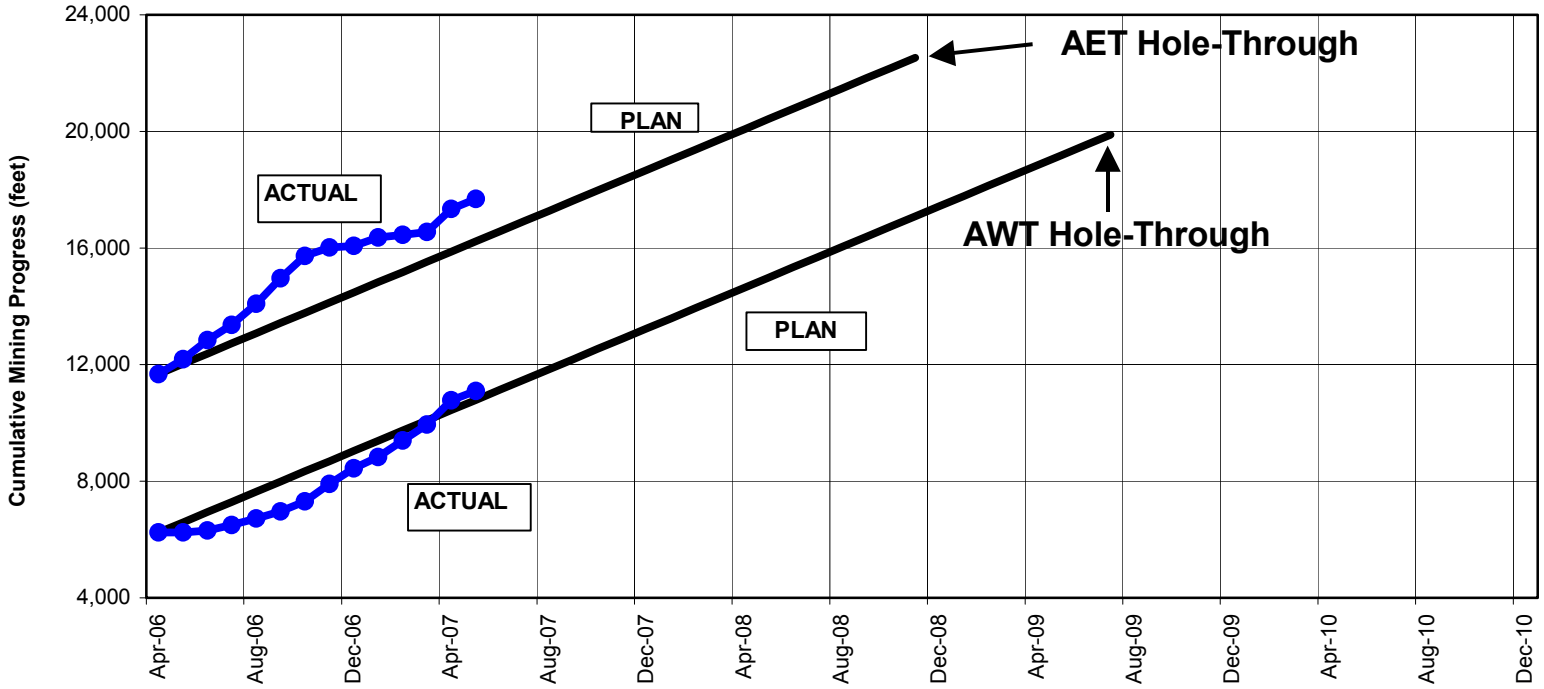
Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)				
	Projected Cost To Complete (Updated May 2007)	Expenditures This Month (May 2007)	Expenditures To Date (May 2007)	% Complete Based on Expenditures (May 2007)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 5.7	\$ 223.8	56%
Construction Inspection and Support	\$ 55.0	\$ 0.2	\$ 37.2	68%
Subtotal, Active Construction	\$ 452.0	\$ 5.9	\$ 261.0	58%
<u>Other Components</u>				
Completed Projects	\$ 578.0	\$ 0.1	\$ 576.3	100%
Others (R/W, Env., Prog. Mgmt.)	\$ 101.2	\$ 0.3	\$ 98.7	98%
Subtotal, Other Components	\$ 679.2	\$ 0.4	\$ 675.0	99%
Expended To Date		\$ 6.3	\$ 936.0	79%
Subtotal, All Projects	\$ 1,131.2	← Projected Cost to Complete		
Remaining Budget	\$ 55.3			
Board-Authorized Budget	\$ 1,186.5	← Total Project Budget		
Length of Tunnels Mined Through 6/12/07				
Arrowhead East	18,120 ft	of 22,458 ft	(81%)	
Arrowhead West	11,475 ft	of 19,884 ft	(58%)	
Total	29,595 ft	of 42,342 ft	(70%)	

NOTE: Contractor invoices paid through May 2007 = \$220.8M
Overall completion = 36.3 miles of 44.2 miles (82%)

Inland Feeder Program – Arrowhead Tunnels Incentive Plan Payments				
	East/West Tunnels Cumulative Feet Mined	East Tunnel	West Tunnel	Total
May 2006 - Apr. 2007 (Previously Reported)	10,330	\$ 977,100	\$ 1,261,193	\$ 1,965,593
May 2007 (3)	880	\$ 129,300	\$ 95,400	\$ 224,700
TOTALS	11,210	\$ 1,106,400	\$ 1,356,593	\$ 2,462,993 (2)

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 66% (57% Arrowhead East Tunnel, 75% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 4/26/06 to 5/25/07 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Mining Progress



Arrowhead Tunnels Actual vs. Planned Cash Flow

