

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

June 12, 2007 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through April 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 540,000 acre-feet of SWP water have been delivered to DVL to date through this connection.

Arrowhead Tunnels

Arrowhead East Tunnel – Through the month of April, the contractor has worked to address flowing ground conditions ahead of the tunnel boring machine (TBM). This geology is characterized by finely crushed rock under high water pressure. The contractor installed drain holes ahead of the TBM to reduce the water pressure and continued grouting operations to strengthen the highly degraded ground in front of the TBM. In late March, the Contractor successfully advanced the TBM through the initial zone of poor ground. The cautious grouting and mining program appears to be successful. Through April, the contractor advanced 790 feet through this difficult ground and mined another 110 feet in early May. The total length of tunnel mined to date is 17,710 feet (79% of the tunnel's length).

Arrowhead West Tunnel – Good ground conditions with low groundwater were encountered in March and continued into April. The contractor continued to produce favorable mining performance through the systematic mining and grouting program. In early April, work was performed on the TBM to replace worn tail-shield brushes. The TBM advanced a total of 835 feet in April and another 130 feet were mined in early May. The six-month average for mining progress continues to be favorable at more than 500 feet per month. The total length of tunnel mined to date is 11,015 feet (55% of the tunnel's length).

Program Management

In March, Metropolitan successfully negotiated settlement of a claim by the construction contractor for the Highland Pipeline portion of the Inland Feeder. This negotiated settlement was achieved via a mediation process, ending the litigation that had been filed by the contractor against Metropolitan. The Highland Pipeline portion of the Inland Feeder was completed in 2003 and is now in service as it conveys water from the interconnection with San Bernardino Valley Municipal Water District. The settlement agreement was approved by Metropolitan's Board at its April meeting. Funds will be moved from the program's remaining budget to cover the amount of the settlement. **Attachment 1** reflects these adjustments. At the April board meeting, an amendment to the Jacobs

consulting agreement was also authorized to extend the duration of that agreement to coincide with the revised completion date of the Arrowhead Tunnels.

Budget and Schedule

Following board authorization of the settlement agreement and contract amendment 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, (see [Attachment 1](#) for the Projected Cost/Expenditures), the updated total projected cost for the Inland Feeder is estimated to be \$1.131 billion. Total expenditures through April 2007 are \$929.8 million. 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 April 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

5/17/2007
Date



Jeffrey Nightlinger
General Manager

5/25/2007
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

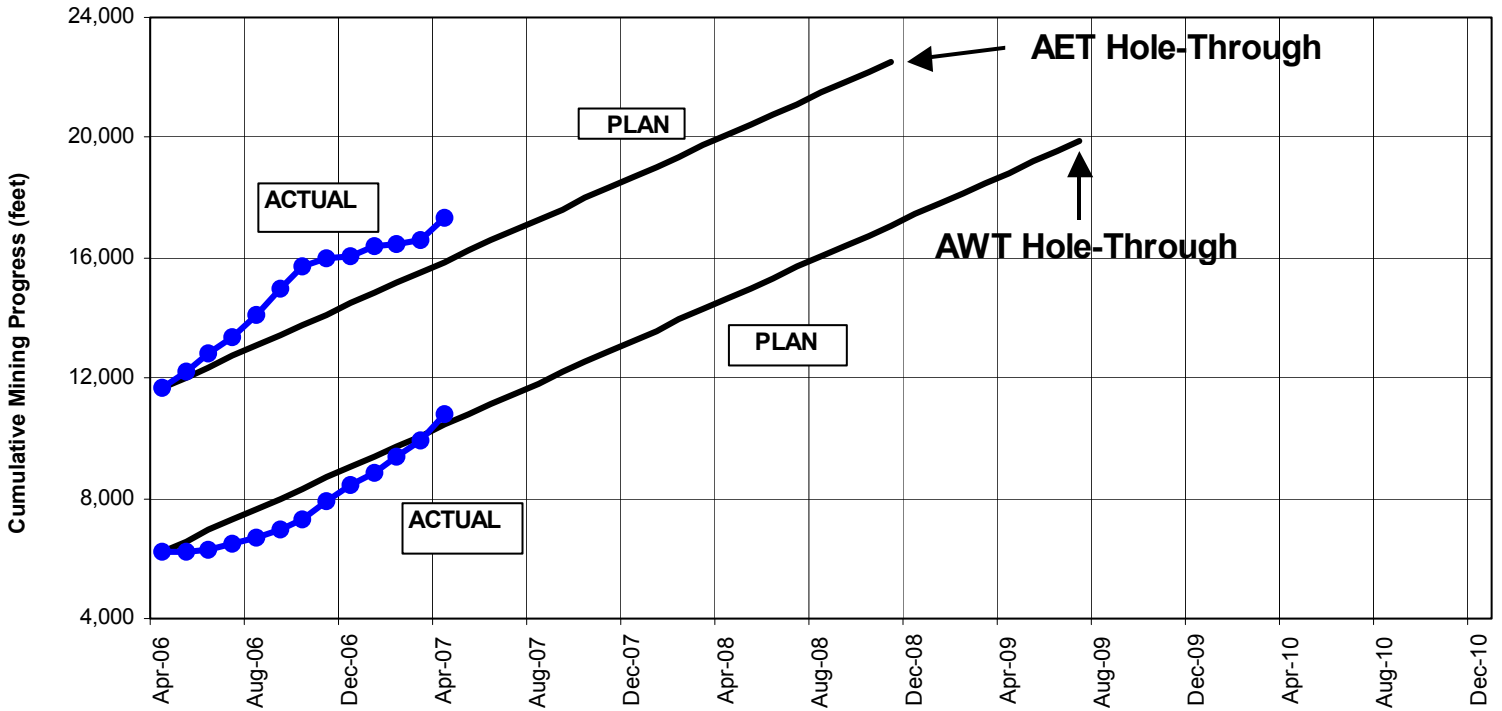
Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)				
	Projected Cost To Complete (Updated April 2007)	Expenditures This Month (April 2007)	Expenditures To Date (April 2007)	% Complete Based on Expenditures (April 2007)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 4.2	\$ 218.6	55%
Construction Inspection and Support	\$ 55.0	\$ 0.8	\$ 36.6	67%
Subtotal, Active Construction	\$ 452.0	\$ 5.0	\$ 255.2	56%
<u>Other Components</u>				
Completed Projects	\$ 577.8	\$ 0.8	\$ 36.6	100%
Others (R/W, Env., Prog. Mgmt.)	\$ 101.2	\$ 0.3	\$ 98.4	97%
Subtotal, Other Components	\$ 679.0	\$ 1.1	\$ 674.5	99%
Expended To Date		\$ 6.1	\$ 929.8	78%
Subtotal, All Projects	\$ 1,131.0	← Projected Cost to Complete		
Remaining Budget	\$			
Board-Authorized Budget	\$ 55.5	← Total Project Budget		
	1,186.5			
Length of Tunnels Mined Through 5/06/07				
Arrowhead East	17,710 ft	of 22,458 ft	(79%)	
Arrowhead West	11,015 ft	of 19,884 ft	(55%)	
Total	28,725 ft	of 42,342 ft	(68%)	

NOTE: Contractor invoices paid through April 2007 = \$218.6M
 Overall completion = 36.3 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 – Mar 2007 (Previously Reported)	8,825	\$ 842,100	\$ 1,123,493 (1)	\$ 1,965,593
April 2007 (3)	1,505	\$ 135,000	\$ 137,700	\$ 272,700
TOTALS	10,330	\$ 977,100	\$ 1,261,193	\$ 2,238,293 (2)

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 65% (54% Arrowhead East Tunnel, 76% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 3/26/06 to 4/25/07 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Mining Progress



Arrowhead Tunnels Actual vs. Planned Cash Flow

