

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

May 8, 2007 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through March 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 527,000 acre-feet of SWP water have been delivered to DVL to date through this connection.

Arrowhead Tunnels

Arrowhead East Tunnel – In late February through early March, the contractor 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 has tackled these conditions with extensive grouting operations aimed at consolidating the ground to stem water flows in front of the TBM. In addition, modifications were made to the TBM which will ultimately aid the TBM in advancing through the highly crushed rock zone. Through March, mining advanced 100 feet and another 150 feet were mined in early April. The total length of tunnel mined to date is 16,960 feet (76% of the tunnel's length).

Arrowhead West Tunnel – Good ground conditions were encountered in February and continued into March. The contractor produced a favorable month of mining performance by employing new drilling methods. The TBM advanced a total of 550 feet in March and another 265 feet were mined in early April. The six-month average for mining progress is nearly 500 feet per month, the highest value on record for this tunnel drive. The total length of tunnel mined to date is 10,315 feet (52% of the tunnel's length).

Program Management

In late February, Metropolitan received a fully executed permit extension for the Arrowhead Tunnels project from the U.S. Forest Service. This action extended the sunset date of the existing permit to December 2012. Staff from Metropolitan and the contractor continue to work closely to develop innovative grouting methodologies to improve performance in poor ground conditions. In late February, Metropolitan's Board of Consultants for the project convened a series of meetings at the job site to review the project and to plan potential improvements with the contractor.

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 \$1.13 billion. Total expenditures through March 2007 are \$923.7 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 March 2007 is shown in [Attachment 1](#).

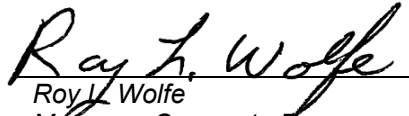
Upon completion of construction, environmental mitigation measures will continue along the Arrowhead Tunnels alignment for up to two years in accordance with the Environmental Impact Report.

Policy

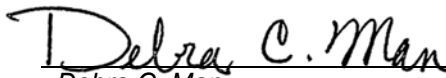
Submitted per request of the Board

Fiscal Impact

Refer to [Attachment 1](#).


Roy L. Wolfe
Manager, Corporate Resources

4/16/2007
Date


Debra C. Man
for Jeffrey Kightlinger
General Manager

4/19/2007
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

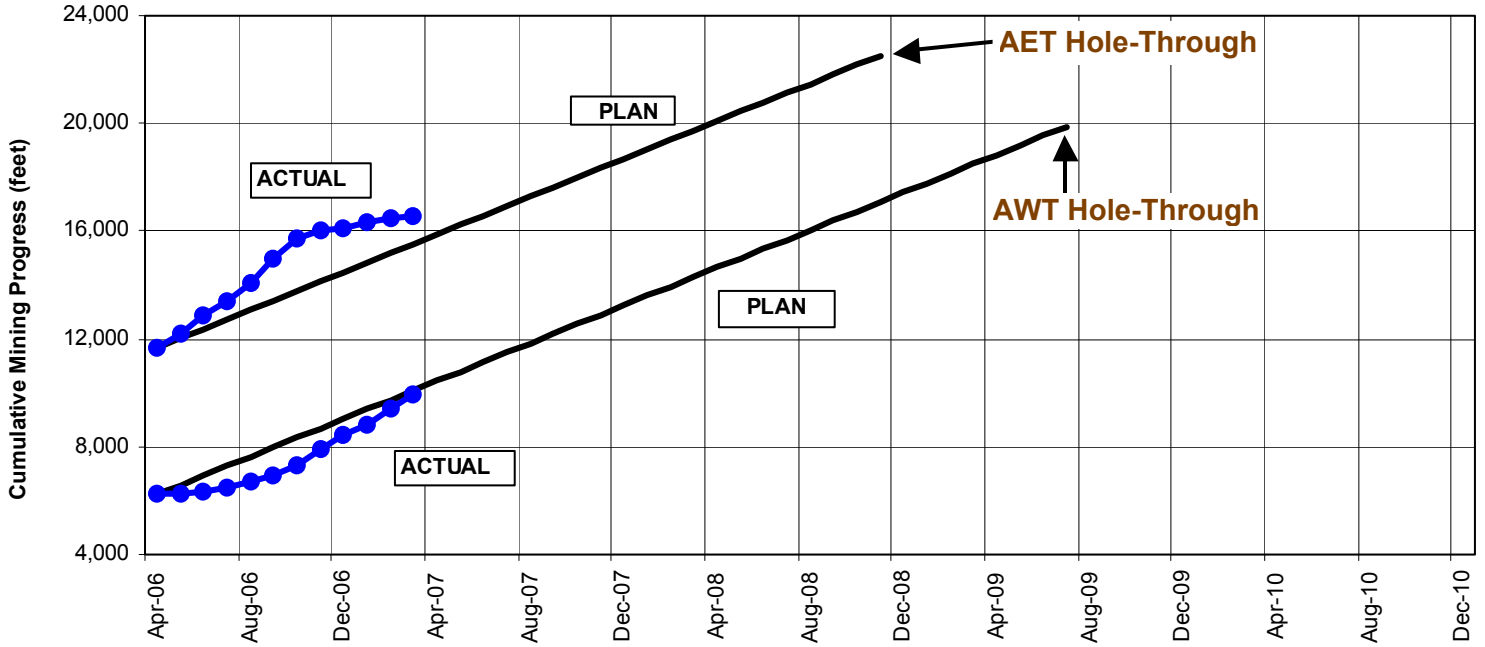
Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)				
	Projected Cost To Complete (Updated Mar. 2007)	Expenditures This Month (Mar. 2007)	Expenditures To Date (Mar. 2007)	% Complete Based on Expenditures (Mar. 2007)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 4.1	\$ 214.4	54%
Construction Inspection and Support	\$ 55.0	\$.5	\$ 35.7	65%
Subtotal, Active Construction	\$ 452.0	\$ 4.6	\$ 250.1	35%
<u>Other Components</u>				
Completed Projects	\$ 577.0	\$ 0.1	\$ 575.5	100%
Others (R/W, Env., Prog. Mgmt.)	\$ 101.2	\$ 0.1	\$ 98.1	97%
Subtotal, Other Components	\$ 678.2	\$ 0.2	\$ 673.6	99%
Expended To Date		\$ 4.8	\$ 923.7	78%
Subtotal, All Projects	\$ 1,130.2	← Projected Cost to Complete		
Remaining Budget	\$ 56.3			
Board-Authorized Budget	\$ 1,186.5	← Total Project Budget		
Length of Tunnels Mined Through 4/10/07				
Arrowhead East	16,960 ft	of 22,458 ft	(76%)	
Arrowhead West	10,315 ft	of 19,884 ft	(52%)	
Total	27,275 ft	of 42,342 ft	(64%)	

NOTE: Contractor invoices paid through February 2007 = \$211.4M
 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 - Feb. 2007 (Previously Reported)	8,225	\$ 788,700	\$ 1,001,693	\$ 1,567,993
March 2007 (3)	600	\$ 53,400	\$ 121,800	\$ 175,200
TOTALS	8,825	\$ 1,017,300	\$ 1,123,493	\$ 1,743,193 (2)

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 58% (51% Arrowhead East Tunnel, 75% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 2/26/06 to 3/25/07 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Mining Progress



Arrowhead Tunnels Actual vs. Planned Cash Flow

