



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

April 14, 2009 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through February 2009

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. To date, over 620,000 acre-feet of SWP water have been delivered to DVL through this connection.

Arrowhead Tunnels

Arrowhead East Tunnel (AET) – In February, the contractor continued transporting reinforced concrete cylinder pipe (RCCP) from the storage area at Metropolitan's Etiwanda Reservoir to the Waterman Canyon and Strawberry Creek portals under a hauling permit issued by the city of San Bernardino. The permit allows the delivery of 24 pipe segments per day, which meets the project's needs in order to proceed on budget and within schedule. The early prolonged delay by San Bernardino in issuing a hauling permit resulted in a delay in the initiation of pipe lining in the AET by nearly ten weeks.

In February, the contractor increased the average number of segments installed per day from 7 to 11. This increase was primarily due to the transition to thinner-walled RCCP pipe that requires less welding time. The contractor installed 4,390 feet of pipe in February and another 1,881 feet in the first few weeks of March. The total length of pipe installed through March 11 is 10,717 feet (48 percent of the tunnel's length). Pipe lining progress is shown in [Attachment 2](#). Cellular grouting operations also continued from the City Creek portal. This process involves the injection of concrete to fill the void between the RCCP and the concrete segments installed during the mining. Through March 11, approximately 6,100 feet (27 percent of the tunnel's length) of the tunnel had been grouted.

Arrowhead West Tunnel (AWT) – AWT pipe is shipped to the Waterman Canyon portal under the same hauling permit described above. In February, the contractor installed an average of 11 segments per day. The contractor installed 4,066 feet of pipe in February and another 2,157 feet in the first few weeks of March. The total length of pipe installed through March 11 is 12,032 feet (61 percent of the tunnel's length). The contractor mobilized cellular grouting equipment at the Devil Canyon Portal in late February and began grouting in early March. The contractor completed backfilling the soils around the Devil Canyon access structure, and successfully

completed a hydrostatic test of the pipeline between the access structure and the connection with the Department of Water Resources facilities.

Program Management

Staff and the U.S. Forest Service continued to coordinate activities related to monitoring tunnel water inflows into the Arrowhead East Tunnel. In addition, staff continued negotiations with representatives from the San Manuel Band of Mission Indians regarding potential compensation for their activities related to the AET.

Budget and Schedule

Due to the delays in obtaining the AET pipe hauling permit, the AET and AWT are on virtually identical schedules, with construction completion expected in early 2010. This date is approximately six months ahead of the September 2010 target set forth in the revised contract. The overall on-line date for the project has not yet been affected by the hauling permit issues with San Bernardino.

In February, the Board approved a settlement agreement with the San Manuel Band of Indians which reimburses the Tribe for its costs incurred to monitor construction of the Arrowhead East Tunnel since the inception of construction in 1997 to the present. A total of \$6.5 million for this settlement agreement has been transferred from the program's Remaining Budget into the active portion of the budget.

On December 10, 2008, the Legal Department filed an eminent domain action to acquire an additional four years on the construction easement over 7.5 acres of land at the AWT Waterman Canyon portal. The land is owned by the Campus Crusade for Christ, and the easement area is needed for muck storage from the tunnel excavation and equipment staging area. The prior easement expired at the end of December 2008. Metropolitan's Legal Department is pursuing this action while it also continues to work with outside counsel on the re-trial of the prior eminent domain action to acquire the land on which the portal site is located, and easements for the pipeline across Campus Crusade's property. In February, \$500,000 was transferred from the program's Remaining Budget into the active portion of the budget for staff and outside counsel labor supporting this litigation. Because the final amount of compensation owed to Campus Crusade is dependent on court decisions, the total cost for these actions are unknown and are not reflected in the updated total projected cost for the Inland Feeder as discussed below. As court decisions are rendered and costs are finalized, staff will update the Board. No additional funds are required to be appropriated, as sufficient funds are available within the program's Remaining Budget.

The first auction of surplus equipment from the mining of the Arrowhead Tunnels is scheduled to be held at Ritchie Bros. Auctioneers in May 2009. Proceeds from the sale will be returned to the Inland Feeder Program appropriation.

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 for the Arrowhead Tunnels as presented to the Board in August 2006, the updated total projected cost for the Inland Feeder is estimated to be \$1.146 billion. Total expenditures through February 2008 are \$1.067 billion (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 lining 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. This 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 January 2009 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 program Environmental Impact Report.

Policy

Submitted per request of the Board



Roy L. Wolfe
Manager, Corporate Resources

3/19/2009
Date



Jeffrey Lightlinger
General Manager

3/30/2009
Date

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

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

BLA #6405

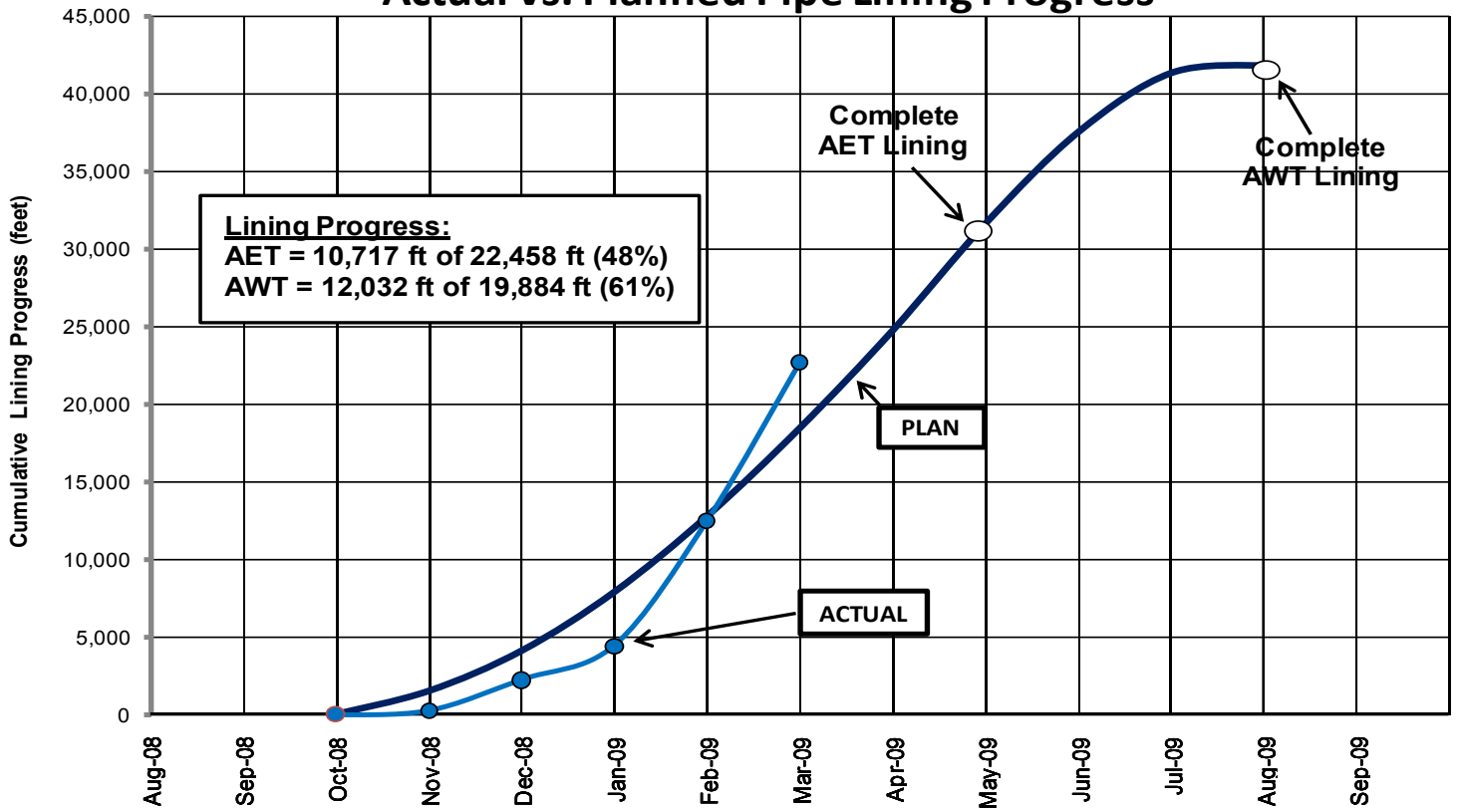
Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)				
	Projected Cost To Complete (Updated Feb. 2009)	Expenditures This Month (Feb. 2009)	Expenditures To Date (Feb. 2009)	% Complete Based on Expenditures (Feb. 2009)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 4.8	\$ 331.8	84%
Construction Inspection and Support	\$ 58.0	\$ 0.8	\$ 51.7	89%
Subtotal, Active Construction	\$ 455.0	\$ 5.6	\$ 383.5	84%
<u>Other Components</u>				
Completed Projects	\$ 578.9	\$ 0.0	\$ 575.0	99%
Others (R/W, Env., Prog. Mgmt.)	\$ 112.3	\$ 6.6	\$ 108.1	96%
Subtotal, Other Components	\$ 691.2	\$ 6.6	\$ 683.1	99%
Expended To Date		\$ 12.1	\$ 1,066.5	90%
Subtotal, All Projects	\$ 1,146.2	← Projected Cost to Complete		
Remaining Budget	\$ 40.3			
Board-Authorized Budget	\$ 1,186.5	← Total Project Budget		
Length of Pipe Installed in Tunnels Through 3/11/09				
Arrowhead East	10,717 ft	of 22,458 ft	(48%)	
Arrowhead West	12,032 ft	of 19,884 ft	(61%)	
Total	22,749 ft	of 42,342 ft	(54%)	

NOTE: Contractor invoices paid through January 2009 = \$328.8M
Overall completion = 40.6 of 44.2 miles (92%)

Inland Feeder Program – Arrowhead Tunnels Incentive Plan Payments				
	East/West Tunnels Cumulative Feet Lined with Pipe	East Tunnel	West Tunnel	Total
June 2006 – Dec. 2008 (Previously Reported)	3,428	\$ 3,065,425	\$ 3,859,543	\$ 6,924,968
January 2009 (3)	6,669	\$ 49,875	\$ 54,375	\$ 104,250
TOTALS	10,097	\$ 3,115,300	\$ 3,913,918	\$ 7,029,218 (2)

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 76% (68% Arrowhead East Tunnel, 83% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 12/26/08 to 1/25/09 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Pipe Lining Progress



Arrowhead Tunnels Actual vs. Planned Cash

