



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

June 9, 2009 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through April 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 significant work includes completion of the Arrowhead East and West Tunnel contract, which is 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 April, a significant milestone was achieved as the contractor installed the tunnel's remaining 6,600 feet of pipe liner from the Strawberry Creek Portal. The pipe installation was completed approximately six weeks ahead of schedule. Pipe lining progress is shown in [Attachment 2](#). Cellular grouting (grout injected between the pipe and the outer bolted-gasketed mining segments) continued from the City Creek portal and is approximately 85 percent complete. The final stage of grouting, termed contact grouting, will continue through June to fill any voids in the cellular grout. In June, the contractor began installation of the pipe outside of the tunnel at Strawberry Creek. This pipe will connect the tunnel to the previously constructed pipeline running between the AET and AWT. The contractor also initiated demobilization activities at the Strawberry Creek portal.

Arrowhead West Tunnel (AWT) – In April, a significant milestone was achieved as the contractor installed the tunnel's remaining 4,200 feet of pipe liner from the Waterman Canyon Portal. As with AET, this was also completed approximately six weeks ahead of schedule. Cellular grouting continued from the Devil Canyon Portal and is approximately 75 percent complete. Grouting work will continue through July as the contractor conducts contact grouting to fill voids that remain after cellular grouting. Construction continued on the access structure at the Waterman Canyon Portal.

Program Management

Staff and the U.S. Forest Service continued to coordinate activities related to monitoring and minimizing tunnel water inflows into the Arrowhead East Tunnel.

Over the past several years, the pipe liner for the AET and AWT was stored at Metropolitan's Etiwanda Reservoir site on a temporary basis until mining was completed and the pipe could be installed in the two tunnels. Since the pipe has now been removed from Etiwanda, a number of repairs are necessary to return the storage area at Etiwanda to its original condition. The contractor is currently repairing the existing asphalt roads and is replacing

curbs and gutters which were damaged during the pipe handling. A separate contract is planned to be issued in late 2009 to perform additional necessary site-work to fully restore the site's grading, landscaping, and lighting features.

Budget and Schedule

The AET and AWT are on virtually identical schedules, with final completion of the construction contract expected in early 2010. This date is approximately six months ahead of the September 2010 target set forth in the amended contract. Staff presently anticipates that the tunnel will be ready for water deliveries by November 2009. Follow-on activities including site grading and landscaping will be completed in early 2010.

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 for easements for the pipeline across Campus Crusade's property. 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 inform 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 late 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 April 2009 are \$1.083 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 March 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

5/19/2009

Date



Jeffrey Kightlinger
General Manager

5/21/2009

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 #6652

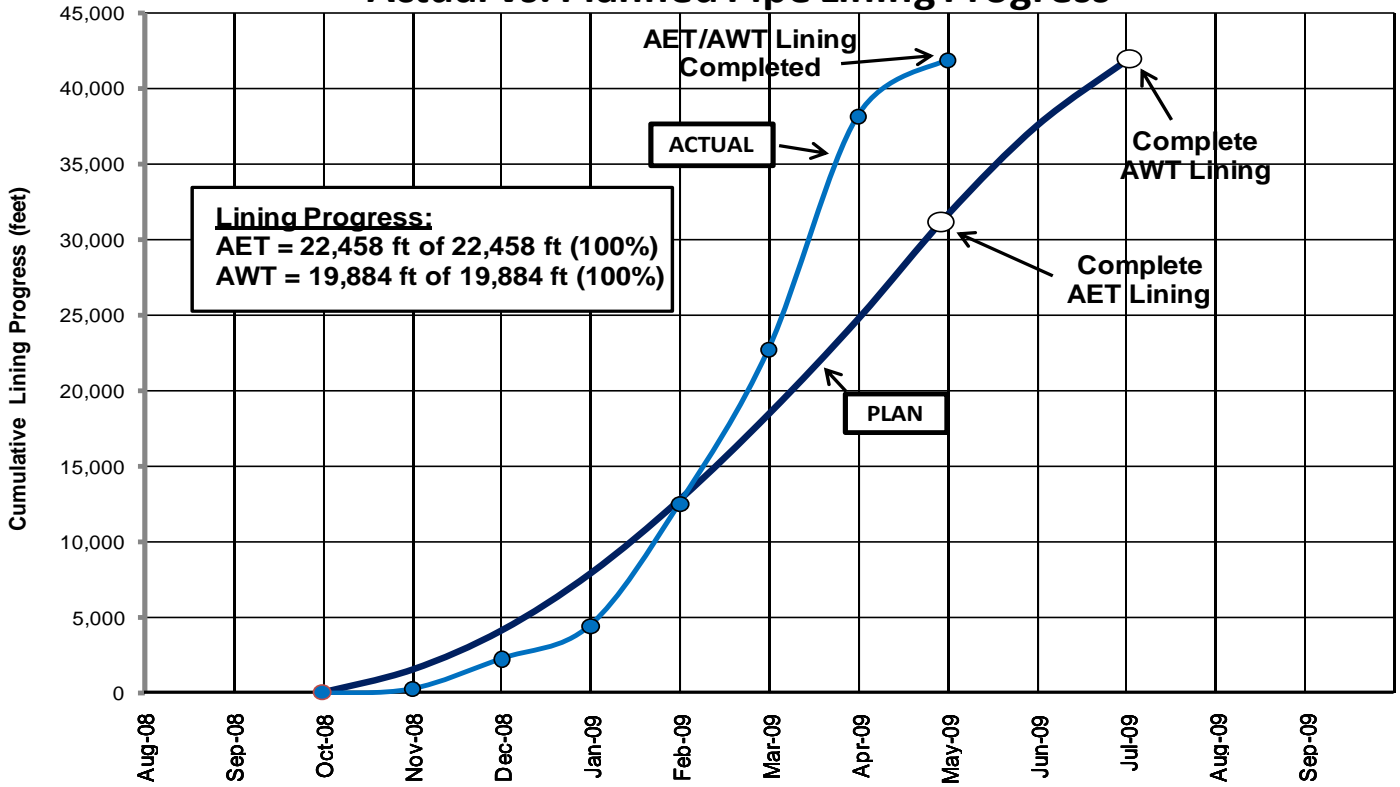
Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)				
	Projected Cost To Complete (Updated April 2009)	Expenditures This Month (April 2009)	Expenditures To Date (April 2009)	% Complete Based on Expenditures (April 2009)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 9.8	\$ 347.4	88%
Construction Inspection and Support	\$ 58.0	\$ 0.1	\$ 52.2	90%
Subtotal, Active Construction	\$ 455.0	\$ 9.9	\$ 399.6	88%
<u>Other Components</u>				
Completed Projects	\$ 578.9	\$ 0.0	\$ 575.0	99%
Others (R/W, Env., Prog. Mgmt.)	\$ 112.3	\$ 0.2	\$ 108.5	96%
Subtotal, Other Components	\$ 691.2	\$ 0.2	\$ 683.5	99%
Expended To Date		\$ 10.1	\$ 1,083.1	91%
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 4/30/09				
Arrowhead East	22,458ft	of 22,458 ft	(100%)	
Arrowhead West	19,884ft	of 19,884 ft	(100%)	
Total	42,342ft	of 42,342 ft	(100%)	

NOTE: Contractor invoices paid through March 2009 = \$328.8M
 Overall completion = 36.3 of 44.2 miles (82%)

Inland Feeder Program – Arrowhead Tunnels Incentive Plan Payments				
	East/West Tunnels Cumulative Feet Lined with Pipe	East Tunnel	West Tunnel	Total
June 2006 – Feb. 2009 (Previously Reported)	18,553	\$ 3,185,425	\$ 3,982,243	\$ 7,167,668
March 2009 (3)	11,635	\$ 72,375	\$ 71,288	\$ 143,663
TOTALS	30,188	\$ 3,257,800	\$ 4,053,531	\$ 7,311,331 (2)

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 76% (69% Arrowhead East Tunnel, 83% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 2/26/09 to 3/25/09 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Pipe Lining Progress



Actual vs. Planned Cash Flow

