



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

July 14, 2009 Board Meeting

9-1

---

**Subject**

Status report for the Inland Feeder Program for activities through May 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. Principal remaining 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 up to 200 cfs of 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. Due to recent increases in allotments of SWP supplies to Metropolitan, it is expected that initial deliveries through the Inland Feeder in November 2009 (once the Arrowhead tunnels are completed) will range up to 600 cfs.

**Arrowhead Tunnels**

**Arrowhead East Tunnel (AET)** – In April, the contractor completed installation of the tunnel's remaining pipe liner from the Strawberry Creek Portal, 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) from the City Creek portal was completed in late May. The contractor continued contact grouting to fill voids that typically remain after cellular grouting. In June, the contractor began installation of pipe outside the tunnel at Strawberry Creek, which connects the tunnel to the previously constructed pipeline running between the AET and AWT. The contractor continued demobilization activities at the Strawberry Creek portal.

**Arrowhead West Tunnel (AWT)** – In April, the contractor completed installation of the tunnel's remaining pipe liner from the Waterman Canyon Portal. As with AET, this was also completed approximately six weeks ahead of schedule. Cellular grouting from the Devil Canyon portal was completed in late May. Contact grouting work continued to fill voids remaining from the cellular grouting. In May, construction commenced on the access structure at the Waterman Canyon portal.

**Etiwanda Reservoir Pipe Storage Area** – 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 tunnels. Now that the pipe has been removed from Etiwanda, repairs are required to return the storage area to its original condition. The contractor is currently repairing asphalt roads at Etiwanda and replacing curbs and gutters damaged during the pipe handling. A separate contract will be issued in late 2009 to perform additional necessary site-work to fully restore site grading, landscaping, and lighting.

**Arrowhead Tunnels Surplus Equipment Auction** – On May 20-22, a sale was held at Ritchie Bros. Auctioneers to auction surplus AWT and AET equipment. During the three-day period, over 2,000 lots (which

contained multiple similar items that were bundled together and sold as one item) were sold at approximately \$1.2 million. Of that total, Metropolitan received slightly over \$1 million, after the commission and equipment preparation/refurbishing expenses were paid to Richie Bros. Including surplus material and equipment that has been sold by Metropolitan, total sales for the AWT and AET surplus material and equipment exceed \$1.5 million. Additional auctions are planned as equipment becomes available during the final months of construction. All proceeds from these sales will be credited to the Inland Feeder Program appropriation.

### **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.

### **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 6 months ahead of the September 2010 target established in August 2006 with the revised 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 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 is unknown and is 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 it is estimated that sufficient funds are available within the program's Remaining Budget.

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 May 2009 are \$1.091 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 April 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

6/19/2009  
Date

  
\_\_\_\_\_  
Jeffrey Knightlinger  
General Manager

6/26/2009  
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 #6653

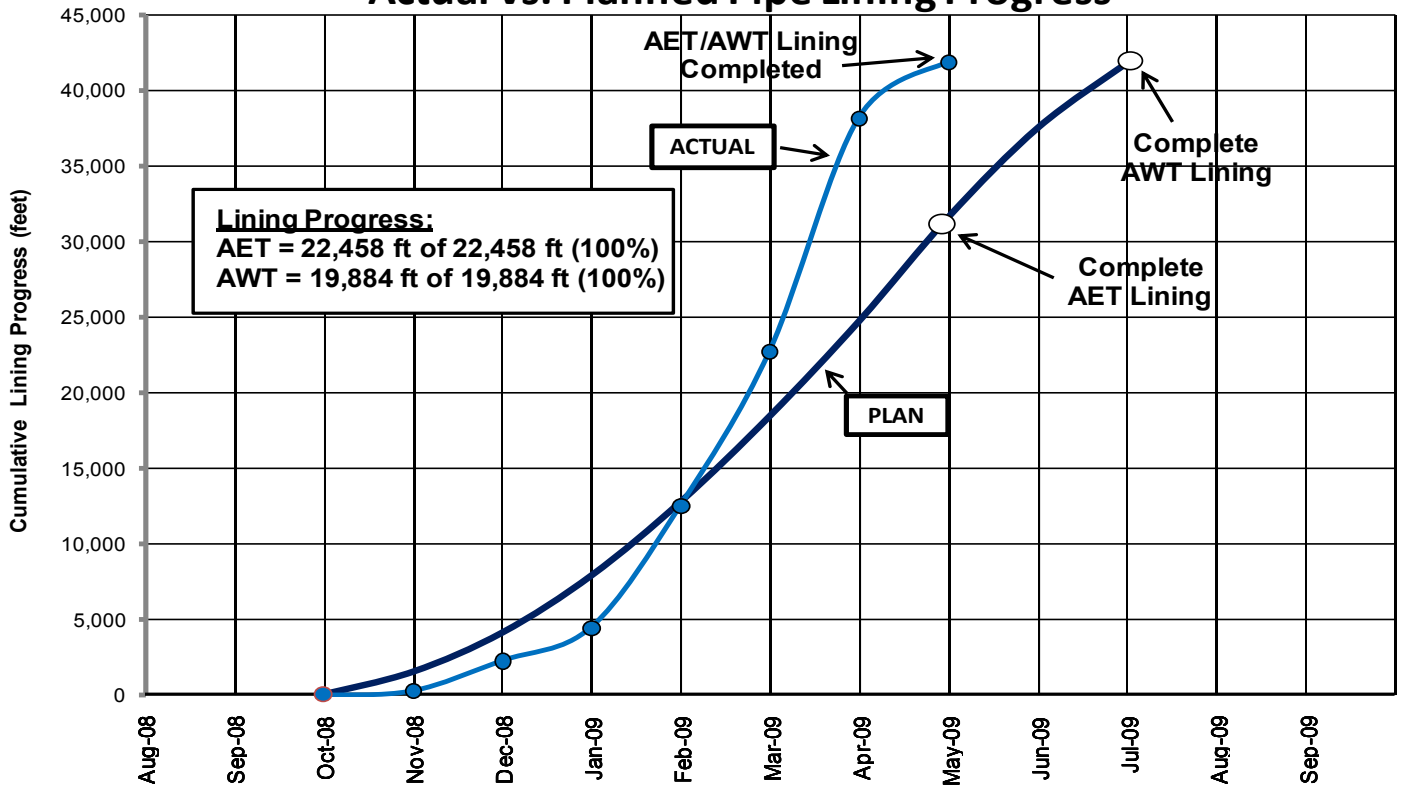
<b>Inland Feeder Program Projected Cost/Expenditures (\$ in Millions)</b>				
	Projected Cost To Complete (Updated May 2009)	Expenditures This Month (May 2009)	Expenditures To Date (May 2009)	% Complete Based on Expenditures (May 2009)
<u>Active Construction</u>				
Arrowhead Tunnels Const. Contract	\$ 397.0	\$ 7.0	\$ 354.5	89%
Construction Inspection and Support	58.0	0.6	52.8	91%
<b>Subtotal, Active Construction</b>	<b>\$ 455.0</b>	<b>\$ 7.6</b>	<b>\$ 407.3</b>	<b>90%</b>
<u>Other Components</u>				
Completed Projects	578.9	0.0	575.0	99%
Others (R/W, Env., Prog. Mgmt.)	112.3	0.1	108.5	96%
<b>Subtotal, Other Components</b>	<b>\$ 691.2</b>	<b>\$ 0.1</b>	<b>\$ 683.5</b>	<b>99%</b>
Expended To Date		\$ 7.7	\$ 1,090.8	92%
Subtotal, All Projects	<b>\$ 1,146.2</b>	← <b>Projected Cost to Complete</b>		
Remaining Budget	\$ 40.3			
Board-Authorized Budget	<b>\$ 1,186.5</b>	← <b>Total Project Budget</b>		

NOTE: Contractor invoices paid through May 2009 = 350.6M  
 Overall completion = 36.3 of 44.2 miles (82%)

<b>Inland Feeder Program – Arrowhead Tunnels Incentive Plan Payments</b>				
	East Tunnel	West Tunnel (1)	Total	
June 2006 – Mar. 2009 (Previously Reported)	\$ 3,257,800	\$ 4,053,531	\$ 7,311,331	
April 2009 (3)	68,850	68,550	137,400	
<b>TOTALS</b>	<b>\$ 3,326,650</b>	<b>\$ 4,122,081</b>	<b>\$ 7,448,731</b>	<b>(2)</b>

(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 3/26/09 to 4/25/09 (differs from progress in calendar month).

### Arrowhead Tunnels Actual vs. Planned Pipe Lining Progress



### Arrowhead Tunnels Actual vs. Planned Cash Flow

