

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

February 12, 2008 Board Meeting

9-1

Subject

Status report for the Inland Feeder Program for activities through December 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 604,000 acre-feet of SWP water have been delivered to DVL to date through this connection.

Arrowhead Tunnels

Arrowhead East Tunnel (AET) – In mid-November, the contractor encountered very weak rock in front of the tunnel boring machine (TBM). During the month of December, the contractor's mining efforts continued in these difficult conditions. An extensive grouting program, followed by short and measured mining cycles, allowed the TBM to advance 180 feet in December and another 220 feet through January 16. The total length of tunnel mined to date is 21,800 feet (97 percent of the tunnel's length) with 658 feet remaining. Staff anticipates that the TBM hole-through into the completed section of the Arrowhead East Tunnel will occur in February/March 2008. The contractor completed installation of utilities in the City Creek tunnel portal, and successfully drained water from behind the bulkhead which is located more than 8,000 feet inside the City Creek portal.

Arrowhead West Tunnel (AWT) – Stable geologic conditions continued through December and into early January, which resulted in good mining progress. The TBM advanced 720 feet in December and another 260 feet through January 16. The total length of tunnel mined to date is 15,990 feet (80 percent of the tunnel's length) with 3,984 feet remaining.

Total combined mining progress between the AET and AWT for the calendar year 2007 was 12,355 feet. This represents the single most productive calendar year of mining in the history of the project. It is anticipated that mining will be completed on both tunnel headings within calendar year 2008.

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 in December.

Budget and Schedule

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 of

the Arrowhead Tunnels as presented to the Board in August 2006, the updated total projected cost for the Inland Feeder is estimated to be \$1.139 billion. Total expenditures through December 2007 are \$977 million (see [Attachment 1](#) for the Projected Cost/Expenditures). Staff will continue to report on the status of ongoing discussions with the San Manuel Band of Mission Indians and of litigation with Campus Crusade for Christ. 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. 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 December 2007 is shown in [Attachment 1](#).

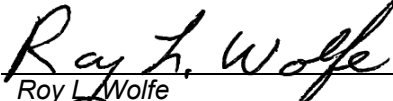
Upon completion of construction, environmental mitigation measures will continue along the Arrowhead Tunnels alignment for up to two years in accordance with the program Environmental Impact Report.

Policy

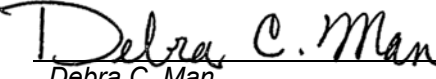
Submitted per request of the Board

Fiscal Impact

Refer to [Attachment 1](#).


Roy L. Wolfe
Manager, Corporate Resources

1/18/2008
Date


Debra C. Man
for Jeffrey Kightlinger
General Manager

1/28/2008
Date

[Attachment 1 – Inland Feeder Program Projected Cost/Expenditures](#)

[Attachment 2 – Arrowhead Tunnels Actual vs. Planned Mining Progress and Actual vs. Planned Cash Flow](#)

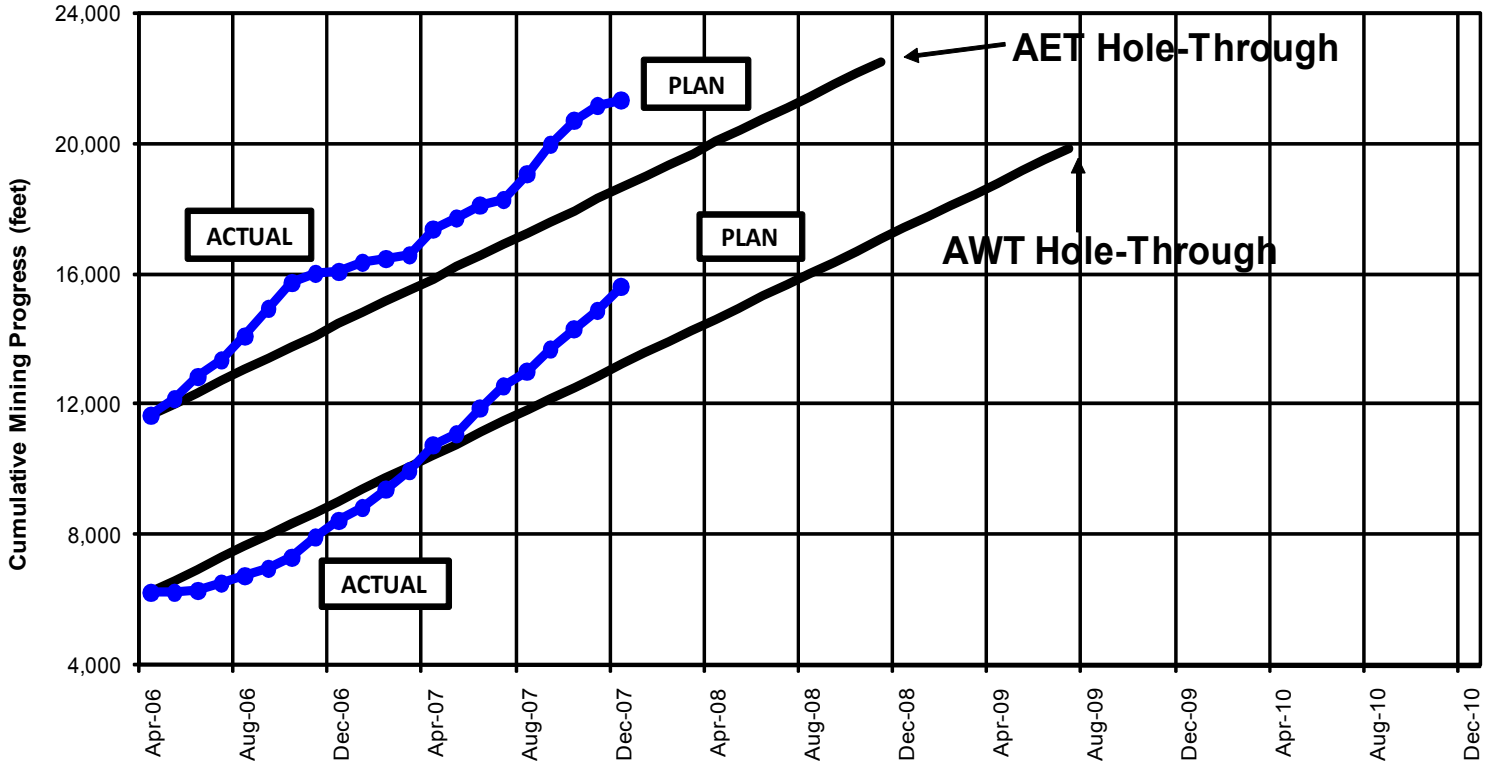
| Inland Feeder Program Projected Cost/Expenditures (\$ in Millions) | | | | |
|---|---|--|---------------------------------------|---|
| | Projected Cost To Complete (Updated Dec 2007) | Expenditures This Month (Dec 2007) | Expenditures To Date (Dec 2007) | % Complete Based on Expenditures (Dec 2007) |
| <u>Active Construction</u> | | | | |
| Arrowhead Tunnels Const. Contract | \$ 397.0 | \$ 5.1 | \$ 258.1 | 65% |
| Construction Inspection and Support | \$ 58.0 | \$ 1.0 | \$ 42.4 | 73% |
| Subtotal, Active Construction | \$ 455.0 | \$ 6.1 | \$ 300.5 | 66% |
| <u>Other Components</u> | | | | |
| Completed Projects | \$ 578.2 | \$ 0.0 | \$ 576.4 | 100% |
| Others (R/W, Env., Prog. Mgmt.) | \$ 106.1 | \$ 0.2 | \$ 100.1 | 94% |
| Subtotal, Other Components | \$ 684.3 | \$ 0.2 | \$ 676.5 | 99% |
| Expended To Date | | \$ 6.3 | \$ 977.0 | 82% |
| Subtotal, All Projects | \$ 1,139.3 | ← Projected Cost to Complete | | |
| Remaining Budget | \$ 47.1 | | | |
| Board-Authorized Budget | \$ 1,186.4 | ← Total Project Budget | | |
| Length of Tunnels Mined Through 1/16/08 | | | | |
| Arrowhead East | 21,800 ft | of 22,458 ft | (97%) | |
| Arrowhead West | 15,990 ft | of 19,884 ft | (80%) | |
| Total | 37,790 ft | of 42,342 ft | (89%) | |

NOTE: Contractor invoices paid through December 2007 = \$255.1M
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 |
| June 2006 - Nov 2007 (Previously Reported) | 18,280 | \$ 1,847,400 | \$ 2,194,783 | \$ 4,042,193 |
| December 2007 (3) | 955 | \$ 120,000 | \$ 137,700 | \$ 257,700 |
| TOTALS | 19,235 | \$ 1,967,400 | \$ 2,332,483 | \$ 4,299,893 (2) |

(1): For Arrowhead West Tunnel, incentive program evaluation commenced in June 2006.
 (2): Percent of maximum possible combined incentive: 74% (66% Arrowhead East Tunnel, 82% Arrowhead West Tunnel)
 (3): Incentive Plan based on work performed during contractor monthly pay period from 11/26/07 to 12/25/07 (differs from progress in calendar month).

Arrowhead Tunnels Actual vs. Planned Mining Progress



Arrowhead Tunnels Actual vs. Planned Cash Flow

