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M T A REVIEW

March 1995



Message from the MTA

Welcome to MTA Review. This monthly magazine replaces the former newsletter Metro Moves. Its purpose is to update the public about the latest MTA activities, programs and projects.

This new format and name is designed to present a timely, condensed digest of the latest MTA board actions and decisions. Because MTA meetings are

normally on the last Wednesday of each month, MTA Review will be distributed about two weeks later.

New and future MTA programs and services, and the agency's accomplishments toward reaching its goals and objectives, will also be featured. All MTA perspectives will be covered — from its planning and programming division to its rail construction and operations units.

We hope you will enjoy this new publication and find it a quick and easy review of the MTA's progress in providing the traveling public with practical transportation choices.

Your comments and suggestions are welcome and should be directed to: MTA Review, Managing Editor, 818 W. 7th St., Los Angeles, CA 90017.

*Metro
Green Line
Summer
1995*

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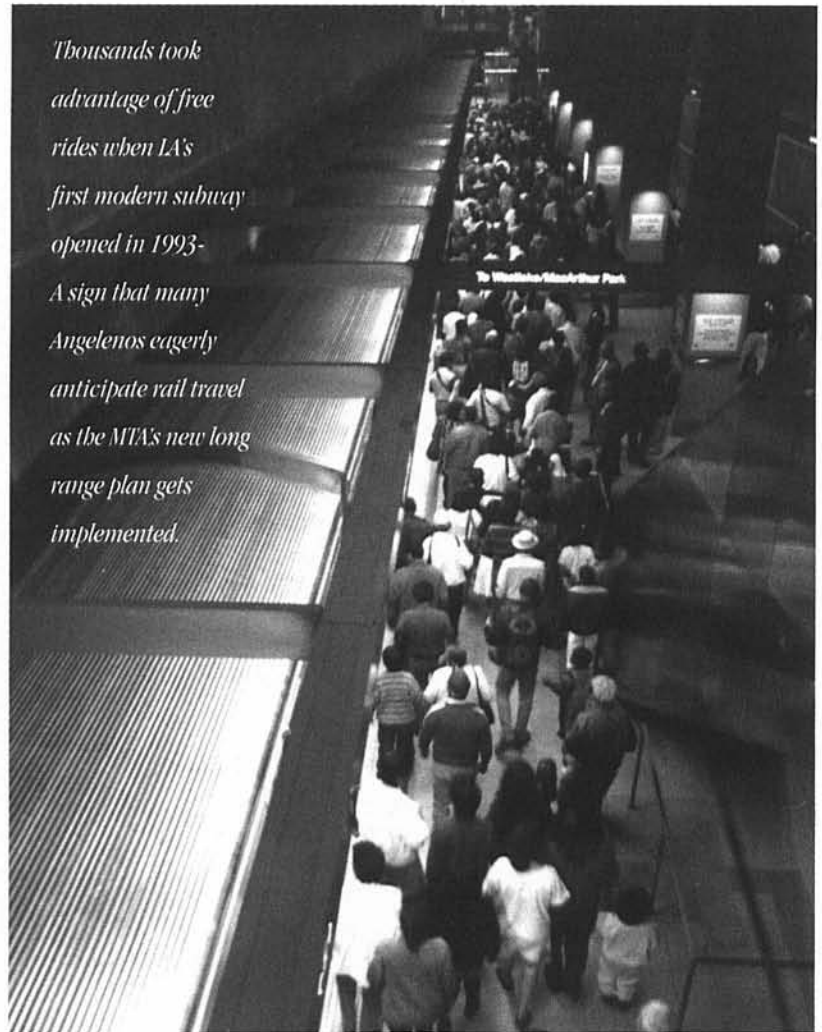
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Franklin E. White

MTA Chief Executive Officer



*Thousands took
advantage of free
rides when LA's
first modern subway
opened in 1993-
A sign that many
Angelenos eagerly
anticipate rail travel
as the MTA's new long
range plan gets
implemented.*

The Board Report *MTA Board Actions in February and March*

20-Year Transportation Plan Adopted

A long-range transportation plan for Los Angeles County that presents a balanced mix of rail construction and additional buses and service, while acknowledging the reality of the fiscal constraints facing the agency, was adopted by the MTA Board of Directors at its March 22 meeting.

The cost of the transportation programs outlined in the plan is estimated to be \$72.4 billion. This includes about \$67 billion in MTA-planned projects and services, and \$5.4 billion in local return funds (local return funds are provided through the MTA to Los Angeles County and its 89 cities for local transportation-related projects).

The plan has been in development

since last August. In addition to six public workshops, more than 120 briefings were conducted by MTA staff to provide ample opportunity for comments from MTA board members and the community.

Rail lines, more regional bus service and numerous other traffic mitigation and air quality improvement measures play a major role in the plan. Specifically, the plan calls for:

- Maintaining existing revenue sources and aggressively pursuing new ones. The MTA seeks to maintain at least a 50% federal contribution to the cost of building its future rail projects.

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Metro View

By Franklin E. White, MTA CEO

Reality Sets Parameters for New 20-Year Plan

This month, the MTA Board approved the 20-year long-range transportation plan for Los Angeles County. This new long-range plan has been in the making since last August. The plan provides a balanced mix of rail, additional buses and expanded bus service, while acknowledging the reality of the MTA's financial constraints over the next 20 years.

The new plan envisions spending about \$67 billion on buses, trains, carpool lanes and other transportation programs. The options call for 300 more buses countywide, funding construction of the East-West Valley rail line, a western extension of the Red Line to Westwood and an eastern extension to Atlantic Boulevard. In all, the proposed new plan provides for a 295-mile rail system by the year 2015.

In developing the plan, tough choices were required that will not make everyone happy. But the new long-range plan does provide a strategic vision and a balanced approach for those who are interested in an effective transportation system for this county.

Economic resources are slim

As we've been saying for the two years since the MTA was formed, economic resources are simply not there for us to implement the original 30-year plan that was drafted by the former Los

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The children of Norwalk's New River Elementary School sing "I've been working on the Green Line."

Public Previews Green Line on St. Patrick's Day

They started lining up at 8 in the morning — for an event that was publicized to start at 10. Mostly, they were families, with children in tow, along with an assortment of small shopkeepers and representatives from larger, local businesses. About 5,000 in all showed up at the Norwalk terminus of the Metro Green Line on St. Patrick's Day for a chance to find out how it feels to ride in a train down the middle of a busy freeway.

The entire length of the line runs about 20 miles from the I-605 Freeway in Norwalk to Marine Avenue in Redondo Beach. Once the line is completed, the trip from end to end will take approximately 35 minutes, including stops at each of its 14 stations. Most of the alignment runs down the center of the I-105 Glenn Anderson Freeway. At Imperial/Aviation the line curves three-and-one-half miles south on its own elevated guideway.

Future users of the Green Line will be able to make connections to LAX, Hollywood Park, The Forum, El Segundo employment area, the Metro Blue and Red Lines and the Harbor Freeway Transitway.

The MTA provided free rides to the public for a few hours at a public celebration on March 17. Due to the

size of the crowd, rides were limited to the four-mile stretch between the Norwalk/I-105 Station and Lakewood Boulevard Station.

"This is the public's first chance to experience L.A.'s newest rail system," said Franklin White, chief executive officer of the MTA. "The Green Line is built to help handle the traveling needs of Los Angeles in the future, and it will serve the public for the next 100 years."

Hot dogs, sodas, balloons and Metro memorabilia were the order of the day, punctuated by a formal ceremony at noon when White and some of the MTA's board members talked about the Green Line's significance. There also were kudos from the local officials who were present on behalf of the cities and districts that populate the Green Line's alignment; they included

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Bagpipes lead off the formal ceremony on St. Paddy's Day.

Riding up front with MTA operators Rick Flores (partially hidden) and

Arnold Johnson (front) are (l to r), Assemblywoman Grace Napolitano (58th District), Norwalk Mayor Michael Mendez and the MTA's Franklin White.



The Board Report, continued

- Adding 300 buses to the total countywide peak bus fleet; eliminating duplicative bus routes; reallocating transit service in low-ridership areas to high-ridership areas to alleviate overcrowding; and a Mobility Allowance to fund alternative transit services such as SMART shuttles, subscription services, shared-ride taxis and jitneys.
- Building 279 more miles of high-occupancy vehicle (HOV) lanes and freeway gap closures on freeways and major streets; adding 130 miles of arterial bus lanes on surface streets to improve service; and improving traffic signal synchronization on major thoroughfares.
- Better identifying customer needs, and implementing programs and services that directly meet those needs. This will be done with market research of transit and non-transit users and improved passenger information systems.
- Using existing rights-of-way to provide lower-cost alternatives, like railbus technology, in corridors such as Glendale/Burbank and the Pasadena Line extension.
- Promoting changes in commuting behavior by advancing policies such as ridesharing (corporate vans and shuttles), telecommuting and greater reliance on transit to reduce single-occupancy vehicle use.
- Implementing cost savings measures within the MTA to increase cost-efficient delivery of service and capital projects.
- Continuing development of the county's rail network by opening the Metro Green Line system later this year; completing the Pasadena

Line; building a rail line in the San Fernando Valley; and completing the eastern and western extensions of the Red Line.

Six additional rail lines were identified as possible candidates for construction; one or more of these lines could be built in the second decade if necessary funding becomes available.

Five of the lines were identified in staff's recommendation; an extension of the east-west San Fernando Valley rail line westward from the I-405 freeway to Warner Center was also added to the list.

The board also adopted the following additions to the 20-year plan:

- No MTA funds will be allocated to the Alameda Corridor Project until MTA is given representation on the Alameda Corridor Transportation Authority (ACTA) Finance Committee. A value engineering review will be conducted to find ways to cut costs.
- MTA will develop a rail cost containment plan that reports on design and construction savings, potential new revenues, and provides a 20-year operational cost forecast. MTA staff was also directed to prepare a five-year implementation plan for how the MTA would apply the savings identified in the cost savings plan. MTA will develop an implementation strategy for the Mobility Allowance program, and coordinate its efforts with the Southern California Association of Governments to ensure that the 20-year plan conforms with the Regional Mobility Element.
- MTA will work to provide for a rail connection between the Metro Green Line and the LAX central terminal area.

- Caltrans will present its future soundwall programs to the MTA Planning and Programming Committee to include funding scenarios to accelerate the program in Los Angeles County.
- MTA funds programmed for the I-710 Gap Closure Project will not be released until environmental issues raised by the city of El Sereno and other cities are fully addressed.
- The Canoga right-of-way, which extends from the Chatsworth Metrolink station to Warner Center, will be included in the plan as a study corridor for diesel multiple unit (DMU) rail-bus use.

"Our projections show an estimated 3 million more people will reside in Los Angeles County by the year 2015," said Judith Wilson, the MTA's executive officer for planning and programming. "This plan will result in an improved mode split, in terms of transit versus auto use, in the county."

Other Board Actions

Bus/Rail Interface Plan Adopted for Metro Green Line

The MTA Board adopted a Bus/Rail Interface Plan that modifies 46 MTA bus lines and creates 13 new feeder routes to provide connections for future Metro Green Line passengers. This means that once the line opens next summer, it will be easy for riders to transfer to and from the Green Line to other modes of transportation. The goal of the plan is to connect the stations with as many north-south bus lines as possible and to coordinate MTA bus and rail lines with those of municipal bus operators. Route changes and new bus lines will enhance transportation options for

residents of the communities of Norwalk, Bellflower, Downey, Paramount, Lakewood, Lynwood, South Gate, Compton, Willowbrook, Watts, Gardena, Hawthorne, Inglewood, El Segundo, Manhattan Beach, Hermosa Beach and Redondo Beach.

“The approved plan neither adds nor reduces costs,” said Franklin White, the MTA’s CEO. “Some lines will be rerouted, others will be shortened and others will be extended. These modifications will save money on some lines, and add costs on others,” he said.

The master plan, known as the Full Access Plan, calls for 59 MTA lines to serve 14 stations. It is planned to be implemented gradually as funding becomes available. The Intermediate Access Plan, also called Phase 1, will be implemented on June 25.

Operation of new feeder lines will cost \$2.7 million. The first two years of their operation will be financed by federal Congestion Mitigation and Air Quality Improvement funds. These funds, which can only finance new services, will provide 89% of the cost. The remaining 11% will be allocated from the MTA operations’ budget. After the first two years, a more permanent source of funding must be identified.

No bus lines will be canceled as a result of the Metro Green Line service. Line 120 (Imperial Highway—LAX Bus Center/Brea Mall) is the only bus line that duplicates the Green Line for a significant distance. This line will be broken up and segmented to serve passengers taking shorter local trips.

In addition to MTA buses, Green Line passengers will be served by several municipal operators, including Norwalk Transit, Long Beach Transit,



Filler Up!
Paul Rankin, MTA warranty equipment technician, attaches a CNG nozzle to the gas valve of the bus for fueling. It only takes 10 minutes to fill an empty bus with 16,000 standard cubic feet of compressed natural gas using the “fast-fill” method developed by the MTA and Southern California Gas Company.

Orange County Transportation Authority, L.A. DOT, Torrance Transit, Gardena Bus Lines, MAX and Los Angeles County.

Procurement of 98 CNG Buses Approved

The purchase of 98 more compressed natural gas-powered buses, in keeping with its policy to buy only alternatively-fueled buses in the future, was approved.

By purchasing the buses manufactured by Neoplan USA Corporation at a cost of \$33.4 million, the MTA Board exercised an option placed into an earlier contract with Neoplan in which the MTA purchased 196 CNG buses in July, 1994.

“These new buses are needed to improve our bus system by replacing 15-year-old diesel buses that are no longer cost-effective to operate or maintain,” said L.A. County Supervisor Michael Antonovich, MTA’s chairman. “We expect to begin receiving our first new CNG buses in the next few weeks.”

The CNG buses are well below the national standards in all emissions categories, including particulates. In addition to helping improve Los Angeles County’s air quality, the new buses will feature numerous design

changes, said MTA Chief Executive Officer Franklin White.

“The new buses will include a brighter interior that features light gray upholstery and flooring, stainless steel seating similar to that on the Blue Line trains, plus a special protective coating that makes graffiti and vandalism removal easier,” White noted.

To assist the MTA with its compressed natural gas program, the Southern California Gas Company is providing three technicians to operate MTA’s three CNG fueling facilities during the first year of operation. The technicians will help facilitate fueling station procurement and installation.

“MTA’s action to replace 98 diesel buses with clean-burning natural gas-powered buses will mean the avoidance of 150 tons of pollution annually going into the air we breathe,” said John Weber, manager of transportation at Southern California Gas Company.” At the same time, MTA will be helping to reduce our country’s reliance on foreign oil by powering their vehicles with safe, economical and domestically produced natural gas.”

MTA Adopts Cost-Saving San Fernando Valley Bus Restructuring Plan

After extensive public review, the MTA Board has approved a major bus service restructuring plan for the San Fernando Valley. The plan, which will create new travel opportunities for thousands of people, will also reduce operating costs.

“Two years from now, when the restructuring plan is scheduled to be fully implemented, the MTA will save about \$4 million a year,” said Franklin White, the MTA’s CEO.

“New transportation techniques will also be applied as part of the plan,” said Art Leahy, the MTA’s executive officer for operations. “These include operating buses off their fixed routes to pick up and deliver passengers closer to their destinations.”

(For details of the plan, see the article on Page 8.)

MTA Approves Two New Inner City Transit Services

An Inner City Connector bus line and a Flexible Destination Shuttle will soon be available for the transit dependent in the South Central region of Los Angeles County.

The two new demonstration transit services will begin later this summer. The new bus line will follow a diagonal route from the Blue Line and future Green Line Imperial Station to West Hollywood, while the shuttle will test the idea of a flexible, community-oriented service.

The Inner City Connector will link major transit corridors and operate limited service during peak hours. The route proceeds northwest from Willowbrook through Watts, South Central, then north through the mid-

city area, the Fairfax District and the Wilshire District.

Designated as Line 305, it will connect the Broadway/Manchester transit way and a proposed transit center site in the Leimert Park area and the Baldwin Hills areas, and feature faster service with fewer stops and fewer customers needing transfers.

The Flexible Destination Shuttle introduces a concept known as “checkpoint deviation” service. Vans carrying 8 to 15 passengers will serve checkpoints located on Crenshaw Boulevard, 42nd Street, Normandie Avenue and 48th Street on a regular schedule.

Between stops, the van will take passengers to their specific destinations, within 1/4 mile of the checkpoint. Passengers also can flag the shuttle and board between stops. The service will operate in a clockwise direction every 30 minutes between 6 a.m. and 6 p.m., and is wheelchair accessible.

The MTA will evaluate both the Inner City Connector and the shuttle service over a 24-month period. These new services were items identified by the MTA’s Inner City Needs Assessment Study of July, 1993.

MTA To Contract Seven Bus Lines with Private Operator—Possible \$15-Million Savings

The MTA Board has approved the contracting of seven MTA bus lines to a Cypress firm later this year, in keeping with a labor agreement with the United Transportation Union (UTU) reached last summer.

The contracting of the seven high-subsidy lines to low bidder ATE Management and Service Co. of Cypress could save MTA \$16.1 million in

operating costs over the three-year life of the contract.

“MTA’s cost to operate the seven lines is about \$21.5 million a year,” noted Franklin White, MTA’s chief executive officer. “MTA’s annual costs could be reduced to about \$15.5 million a year, resulting in a saving of \$16.1 million over three years.”

The action would remove about 60 MTA buses from its peak-hour fleet.

The seven lines to be transferred are as follows:

Line 125
 (Rosecrans Avenue)

Line 130
 (Artesia Boulevard)

Line 205
 (Willowbrook-Harbor City-San Pedro)

Lines 225/226
 (Aviation Blvd.-Palos Verdes Peninsula)

Line 232
 (Long Beach-LAX)

Line 266
 (Lakewood Blvd.-Rosemead Blvd.)

Line 270
 (Monrovia-El Monte-Cerritos)

The agreement with the UTU allows MTA to contract out or transfer a total of 13 MTA bus lines (seven during the first two years) to other operators during the three-year contract period.

MTA staff will negotiate specific terms of the agreement with ATE Management and Service Co. Full contractor operation of the seven lines is expected within the next six to eight months.

Red Line Station Contract for Hollywood/Highland Awarded

In February, the MTA Board approved the award of construction contracts for Metro Red Line subway station at Hollywood/Highland.

Metro Operations Overview

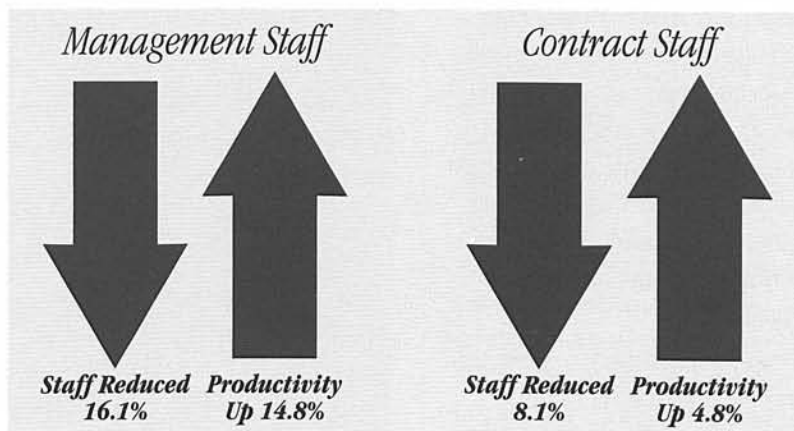
Performance is Up and Costs are Down in Operations

MTA Operations has published its first and second quarter 1995 performance reports, and the statistics are impressive. The report reveals that the MTA's operations unit has substantially reduced its costs and improved employee productivity since fiscal year 1993. Among the statistics cited:

- Operations has improved bus service while reducing the cost of providing it. Since Fiscal Year 1993, the unit has reduced its expenditures by 12.33%, or by \$68.8 million.

The reductions are a direct result of internal reorganization efforts in the operations unit, the success of pilot programs to introduce new management processes and an overall effort by the workforce to streamline work processes. Some actual numbers are as follows:

- Management staff in bus operations has been reduced by 16.1%



- Management productivity in bus operations has increased by 14.8%
- Contract staff in bus operations has been reduced 8.1%
- Contract productivity in bus operations has increased by 4.8%

In short, the MTA's bus operations unit currently provides 15% more bus service per management employee, and 5% more service per unionized employee than it did in 1993. All of this has substantially reduced overall operating costs for the agency.

Some specific performance improvements include:

- A significant reduction in the frequency of MTA bus-involved traffic accidents. The year-to-date number is 3.2 accidents per 100,000 miles, which is remarkable considering that the goal set 10 years ago was 5.5. A seasoned workforce — fewer new operators are hired — and an ongoing emphasis on safety are two likely reasons for the improvement.
- The bus and equipment maintenance department has continued to improve mechanical reliability. In fact, it showed a 52.8% improvement over Fiscal Year 1993's performance.
- Customer complaints are down. The MTA's service improvement programs have made a positive impact on complaints about cleanliness, graffiti and fleet reliability. In fact, complaints per 100,000 boardings have improved for the fourth consecutive year.



New MTA Mascots Take a Bow

The MTA's award-winning graffiti and vandalism abatement program, "Take Pride—Stop Tag," has introduced three new mascots to help spread the word to schoolchildren. The Papa Bus, Mom Bus and Son Bus were on hand at the Metro Green Line event on St. Patrick's Day; looks like Son Bus is getting his nose tweaked by an eager fan!

One final note regarding graffiti. The MTA is in the process of implementing a window guard and window replacement program to combat the graffiti etchings on windows and bus interiors.

Operations Overview, continued

Details of the San Fernando Valley Bus Restructuring Plan

Last month the MTA Board approved a major bus service restructuring plan for the San Fernando Valley. The plan provides that, beginning in April, eight new bus lines will be added, thirteen lines will be canceled, and 30 others will experience schedule or route modifications.

To be implemented in two phases, the plan was developed from a San Fernando Valley Transit Restructuring Study, a cooperative effort with the city and county of Los Angeles, completed over a two-year period. Phase 1 begins in April and will be completed in June. Phase 2 begins this December, and is scheduled to be completed by December, 1997.

Approval of the restructuring plan was a long time in coming. It took two years of extensive community review and public input by virtue of about 70 meetings between the MTA and community groups, elected officials, staff members of cities, the riding public and the general public. Several line modifications and additions were included in the plan following more than 140 comments received by the MTA at a public hearing on Jan. 14.

The restructured area includes the communities bounded by Glendale and La Canada-Flintridge on the east; Sylmar, Granada Hills, Porter Ranch and Chatsworth on the north; the Ventura County line on the west and the Santa Monica Mountains and Mulholland Drive on the south.

Phase 1 changes to be implemented by June include creation, cancellation and modification of the following lines:

Creation of Line 411 - Operating from Warner Center Transit Center to Burbank Transit Center, primarily via

Victory Boulevard to Burbank Transit Center, then express to Colorado Street in Glendale and then taking the Glendale and I-5 freeways to the Financial District in downtown Los Angeles.

Cancellation of the following lines:

Line 406 - L.A. - Sunland Express via Pennsylvania Avenue. (April)

Line 407 - L.A. - Sunland Express via La Crescenta Avenue. (April)

Line 412 - L.A. - Burbank - Media District - North Hollywood - Valley Plaza freeway express. (April)

Line 97 - L.A. - Burbank - North Hollywood via Riverside Drive. This line will be canceled in Phase 1 of the plan, but the exact date has not been determined yet.

Line 240 - Reseda Boulevard. (June)

Line 560 - LAX - San Diego Freeway - Van Nuys Boulevard. (June)

Route Modification of the following lines:

Line 96 - L.A. - Burbank - Sherman Oaks via Riverside Drive. This route will be modified to operate on Riverside Drive in Sherman Oaks and to Burbank Transit Center via Olive Avenue, First Street to the Transit Center and via Verdugo Avenue and San Fernando Road to Alameda Avenue.

Line 163 - Sherman Way - Sun Valley - Hollywood Way. Beginning in June the western terminal will be extended to Warner Center via Owensmouth Avenue, and the eastern terminal will be modified to operate primarily via Hollywood Way through the Cahuenga Pass to Hollywood and Vine.

Line 164/165 - Victory Boulevard - Vanowen Street. Beginning in June Line 164 will be slightly modified to enter the Warner Center.



Line 169 - Saticoy Street - Sunland Boulevard. The route will be modified to eliminate loop around B-G-P Airport and extended eastern terminal to Mt. Gleason Avenue. (June 1995)

Line 177 - Glendale - La Canada - Pasadena - Monrovia - Duarte. The line will operate as three segments: (1) Glendale Galleria to JPL; (2) JPL to Hastings Ranch Center; and (3) Hastings Ranch Center to City of Hope. Implementation date has not been determined.

Line 180/181 - Hollywood - Glendale - Pasadena via Colorado Boulevard - Yosemite Drive. The eastern terminal of Line 181 will be extended to Pasadena City College, beginning in June 1995.

Line 212 - La Brea Avenue. Northbound route will end at Hollywood and Vine, beginning in June 1995.

Line 233 - Sherman Oaks - Van Nuys - Lake View Terrace. It will



restructure local service of Line 560 between Eldridge Avenue and Terra Bella Street to Van Nuys and Ventura boulevards. (June 1995)

Line 236 - Balboa Boulevard - Woodley Avenue. Northbound route will be extended on Balboa Boulevard via Pineridge Drive, Knollwood Road, Shamhart Drive, Gothic Avenue to Woodley Avenue. Southbound route will be modified to operate via Victory Boulevard to Van Nuys Boulevard. (June 1995)

Line 418 - L.A. - Roscoe Boulevard - Northridge Express. Westbound service will be extended on Roscoe Boulevard to Topanga Canyon Boulevard. (June 1995)

Line 424/425 - L.A. - Ventura Boulevard - Warner Center express. Western terminal will be shortened to end at Warner Center. Will operate with new Line 522. (June 1995)

Line 522 — Ventura Boulevard - Reseda Boulevard. Will restructure Line 240 service along Reseda Boulevard, then will operate along the route of lines 424/425 to Los Angeles City College. (June 1995)

Line 561 - Sylmar- Van Nuys - Sherman Oaks - Westwood - LAX. Will restructure limited stop service of Line 560 from Sylmar/San Fernando Transit Center primarily along Truman Street, San Fernando Road and Van Nuys Boulevard, then will offer local service along the route of former Line 560 to LAX. Service will be extended to the Green Line Aviation Station. (June 1995)

The additional changes to be implemented starting in December, which won't be completed until late 1997, will be discussed in future issues of MTA Review. •

Angeles County Transportation Commission. I understand how frustrating this must be to some of our citizens, especially for those who have devoted so much time to planning transportation improvements in their neighborhoods.

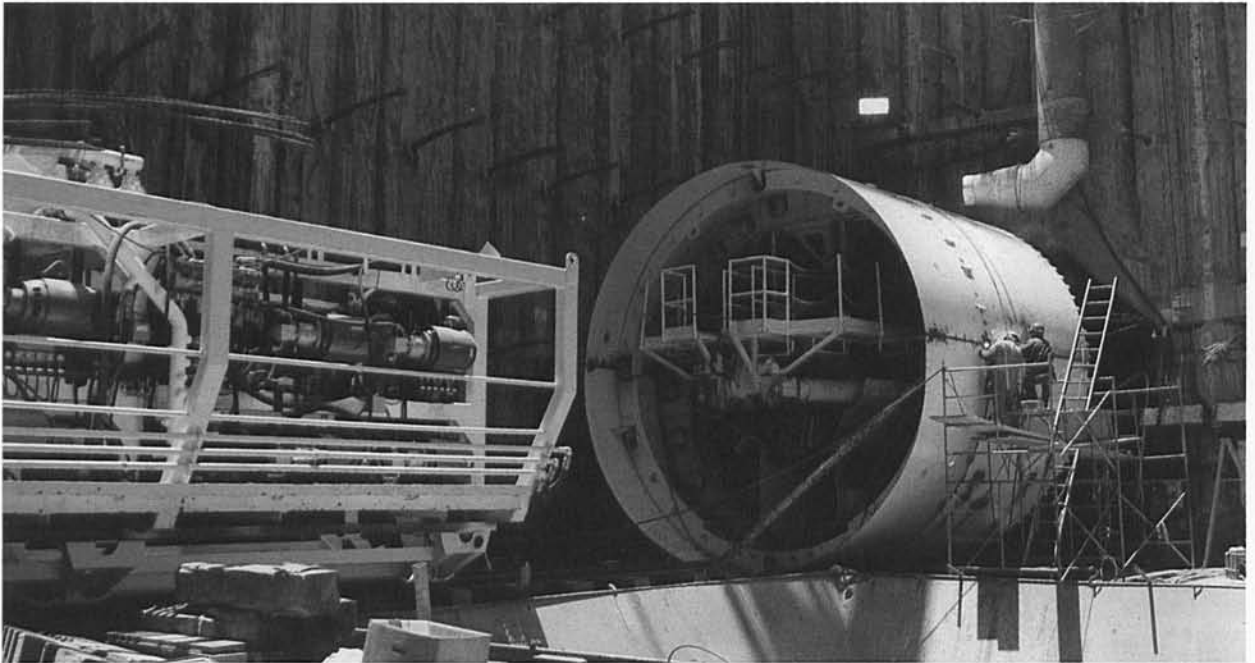
I came here to help Los Angeles develop one of the finest transportation programs in the country. The way I see it, this plan can bring our ambition in line with our capability. This month, as the board met a second time to consider the plan's adoption, some of our critics asked the board to delay its vote yet another month. My response to them was that there is no point in waiting until we have a perfect plan, because we never will. But this gives us a place to start.

Not written in stone

I want to emphasize that some of the rail lines included in the original plan may still be built in the second decade, should funding become available. The proposed plan will be reviewed every two years. The new 20-year plan is merely a blueprint, and it's not etched in stone.

This plan is based on the basic premise that county residents will use public transportation because it is safe, convenient, clean, on time and affordable. The MTA intends to make sure that the system is all of these, and more.

We remain committed to fostering an MTA mission and vision to create practical transportation alternatives for the traveling public that will increase mobility, reduce congestion and improve the quality of life in Los Angeles. •



How to Dig a Subway Tunnel

In the complex world of rail construction, the business of rail building is understandably far from easy. One only has to follow the stories about such projects as BART in San Francisco and the long-time-incoming tunnel under the English Channel.

Subways are probably the most enigmatic of all rail building projects, considering that in most major cities, they must be dug from 50 to more than 100 feet under densely-populated ground.

Have you ever wanted to know how subway tunnels actually get dug? Or, what happens to all that dirt? We asked John Sohn, an MTA construction manager.

"First of all," said Sohn, "it takes a crew of about 20 to operate the giant tunnel machines and lift the dirt out of the ground. These men and women work in two or three shifts a day, six

days a week, averaging 60 to 70 feet of tunneling a day."

The tunnel machine consists of a giant, circular shield that is about 22 feet in diameter and about 20 to 25 feet long, with a digger and about 200 feet of trailing gear behind it. The trailing gear contains the power to run the shield, which is mostly made up of hydraulic-powered jacks and rams.

"Think of it as a giant cookie cutter, pushing against a wall of dirt," said Sohn. "It has a conveyor system that loads the soil into box rail cars (called muck cars in construction jargon). The muck train then carries the dirt to a shaft, where the dirt is lifted up to the surface and transferred to a temporary storage area via a second conveyor system."

While the tunnel machine is advancing, a precast, 8-inch concrete primary liner is set into place; the liner has four sections, and each section is lifted with

robot-like arms that put the segments in place to provide the initial tunnel liner. Later, crews install plastic liner, rebar, build form and pour the concrete for the finished, final liner.

"The technology for a tunnel machine goes back about 60 years," said Sohn. "It's still considered the most efficient, cost-effective method for projects of this size."

How much dirt are we talking about? Considering the fact that a tunnel machine digs about 60 feet a day, and every foot of tunnel contains 14 cubic yards of dirt — the amount of dirt removed from the North Hollywood tunnel could fill dodger Stadium with 20 feet of dirt.

And where does it all go? In keeping with environmental regulations, once the dirt is brought to the surface, it's stored at the construction site in large piles, and later trucked away to various landfills throughout Southern California.

Digging Resumes in Hollywood Boulevard Tunnel

Metro Rail workers have fired up the giant tunneling machine beneath Hollywood Boulevard again. Excavation of the Metro Rail Number 2 (south) tunnel resumed on Feb. 23 after a two-week pause in the project. Tunneling was halted Feb. 8, when ground subsidence behind the tunnel digging machine surpassed 1.5 inches. Additional compaction and chemical grouting was inserted into the ground above the machine to minimize further subsidence. Settlement has stabilized at about two inches (2.028 inches). "All parties involved in the decision to resume tunneling agree that the additional grouting has made a difference in underground conditions," said Charles Stark, MTA project manager.

When tunneling resumed, the south machine was some 120 feet east of Cherokee Avenue, about three blocks east of Highland Avenue. In the vicinity of Highland Avenue, the machine will begin digging out of the loose, sandy "young alluvium" formation and into the "old alluvium," a harder, more compact formation.

The machine digging the Number 1 (north) tunnel is located some 220 feet west of Orange Drive North, west of Mann's Chinese Theater and the Hollywood Roosevelt Hotel. Extensive chemical grouting has been inserted to minimize settlement in the street fronting the two properties and minimal ground subsidence has been noted.

Excavation of the Number 1 (north) tunnel will resume when remedial work in that tunnel — replacement of wooden wedges with steel struts — has been completed.

Nationwide Certificate Program Developed for Quality Inspectors

Ten Metro Rail inspectors were honored recently as the first in the nation to receive certification as Rail/Subway Construction Quality Control inspectors.

Under development for the past year, the training and certification program was created by the MTA's Metro Rail quality organization in cooperation with the National Institute for Certification in Engineering Technologies (NICET), an industry organization that evaluates the qualifications and competence of engineering technicians.

The joint MTA/NICET program includes an examination to test the knowledge and experience of rail construction inspectors. Both the exam and certification should be available in 1996 to inspectors nationwide.

"Creating a comprehensive training program in such a complex field as subway construction is quite an accomplishment in itself," said John Adams, MTA acting executive officer, construction. "To develop a technical certification program that will be used throughout the construction industry is especially significant and a credit to Metro Rail's concern for quality."

A five-member team of Metro Rail quality managers developed an extensive curriculum to train quality assurance and quality control inspectors in all aspects of their work. Instrumental in creating the program were Bud Boyd, Metro Rail training manager; Malcolm Ingram, director, quality (now retired); Ron Trepp, manager, quality assurance; Mark Latch, manager, quality control; and George Morschauer, Parsons-

Dillingham construction manager. "The NICET certificate program is the most significant element of a five-part training program for MTA quality inspectors," said Boyd, the team's facilitator. "The entire curriculum is designed to continuously increase the knowledge and effectiveness of MTA inspectors who must ensure the quality of the highly technical work of rail and tunnel construction."

Two elements taught by the American Concrete Institute provide 22 to 30 hours of training and examinations to qualify inspectors in the critical skills of concrete testing and inspection. Another six-hour written and practical exam offered by the American Welding Society certifies MTA employees as welding inspectors.

A fourth element is a 30-hour public works construction inspectors course taught by Cal State L.A. This course also prepares inspectors to take the NICET exam.

The NICET exam includes a core of nine "work elements" each inspector must pass. These include basic physical science, construction terms and definitions, OSHA and other safety requirements, and principles of quality control and quality assurance. The candidate's exam also may include a number of electives chosen on the basis of the individual's construction technical specialties.

The 10 MTA inspectors who received the first joint MTA/NICET certification awards during a ceremony in mid-March were Alan Hodge, Robert Veatch, Mike Torres, Gary Rudy, Ralph Ratliff, Ken Morrow, Gary Manker, Emanuel Douglas and Kerry Bodtke, all of Parsons-Dillingham, and Chuck



*Charles Stark,
 MTA Metro Red Line
 Project Manager*



*John Adams,
 MTA Acting
 Executive Officer,
 Construction*

Chang of Managers of Transit Construction (MTC).

“Passing the NICET exam is an excellent indication of an inspector’s experience and knowledge,” said Frank White, the MTA’s CEO. “Passing the exam is a notable personal achievement for these inspectors.

“Through this training program,” White added, “the MTA expects to encourage all its quality inspectors to stay current with the full range of technical construction information. In the long-term, this program will greatly benefit MTA rail construction projects by ensuring that they are built to the most exacting standards.”

Tunneling in North Hollywood Halted Due to Surface Settlement

Metro Rail tunneling was halted in North Hollywood on March 16 when a loss of soil at the tunnel face caused settlement of about five inches in a small area at the intersection of Lankershim Boulevard and Weddington Street.

The tunneling contractor, Obayashi Corporation, took immediate measures to minimize further subsidence. The contractor also alerted the Department of Water and Power, which sent crews to monitor water lines and shut them off if required.

John J. Adams, MTA interim executive officer, construction, said tunneling was halted at about 2 a.m. when a loss of soil at the face of the tunnel caused a void to develop above the tunneling machine. The void, in turn, apparently caused the street surface to settle.

There has been no damage to surrounding properties, and engineers are continually monitoring the street surface for further settlement.

Prior to the start of tunneling, the contractor chemically grouted a 40-foot zone ahead of the tunnel construction entrance to minimize soil loss. Steel struts are used to support the tunnel liner segments.

Measures also include exposing critical water lines in the area to observe any leaks that might develop. Monitoring equipment was installed in the first 1,000 feet to observe ground

conditions. DWP and Gas Company personnel are always on call.

Adams said the MTA is evaluating Obayashi’s mining equipment and techniques. The construction contract for the North Hollywood tunnels requires Obayashi to conduct mining without loss of ground at the tunnel face.

“Obayashi is working with some of the nation’s top mining experts to develop safe, effective techniques for tunneling in this type of soil,” said Adams. “The contractor has proceeded very cautiously and will continue to do so.” •

Metro Rail Progress

The following is the completion status (as of March, 1) of the various Metro Rail Projects underway (either under construction, or in the design phase):

	<i>Project Progress</i>	<i>Revenue Operations Date</i>
<i>Metro Green Line</i>		
Design	100% completed	Orig. 3/94
Construction	96%	Forecast: Summer 95
<i>Metro Pasadena Blue Line</i>		
Design	76%	Orig. 11/97
Construction	85%	Forecast: 2002
<i>Metro Red Line (Segment 1)</i>		
Design	100%	Orig. 4/93
Construction	99%	Actual 1/93
<i>Metro Red Line (Segment 2)</i>		
Design	99%	
Construction	48%	
Wilshire Section		Orig. 7/96 Forecast 2/96
Vermont/Hollywood		Orig. 9/98 Forecast 3/99
<i>Metro Red Line (Segment 3)</i>		
North Hollywood Extension		
Design	86%	Orig. 2000
Construction	4.8%	Forecast 5/00
<i>Metro Red Line (Segment 3)</i>		
Mid-City Extension		
Design	27%	Orig. 1999
Construction	0%	Forecast: 1999

Community Notes

MTA Sponsors Novel Inner City Telecommunications Workshop

Marking the beginning of a public participation process on a unique project, the MTA invited community leaders to join in an all-day workshop last month at the Compton Transit Center to plan the Blue Line TeleVillage Demonstration Project.

The Blue Line TeleVillage, which is scheduled to open in June, will be a community-based computing, information and service center located at a Metro Rail station. The first-of-its-kind project will provide inner city residents and organizations access to computer technology and the MTA's fiber optic communications system. There are several possible ways the program could benefit residents:

- They could attend a class in Compton and interact with a teacher and classmates who are in a classroom at Cal State Dominguez Hills;
- They could use the telework center resources to "commute" to work;
- They could use on-line information systems to identify markets for a product; and
- Children could be taught how to read, write and type on computers.

"This project will show the power of linking bus and rail transit centers, so that the rail station becomes a destination in and of itself," said Supervisor and MTA Director Yvonne Burke, one of the workshop's attendees. "Why not have these MTA services in people's own neighborhoods — for instance, making them available at the local rail or bus transit center they already use to access transportation?" "We believe this project provides an ideal opportunity to use computing and telecommunications to improve the

daily lives of our citizens," said Franklin E. White, MTA chief executive officer. "MTA can play a key role in the delivery of information services to consumers at our transit stations."

The introductory workshop will feature computer access experts, including Peter Miller, executive director of the Playing to Win Network, which began as a community computing center in Harlem and has burgeoned to over 37 inner-city neighborhood technology centers. Workshop participants will have an opportunity to observe and participate in a two-way interactive classroom, log on to an "electronic city" network, experiment with multi-media arts programs, and cruise the Internet.

Angels Flight Restoration Underway

Angels Flight, one of the City of Los Angeles' most beloved cultural landmarks, is on its way to restoration and rejuvenation. Called the Shortest Little Railway in the World, it transported more than 100 million people between 1901 and 1969, offering people an easy way to negotiate the steep terrain of Bunker Hill. Angels Flight was later removed to make way for the redevelopment of Bunker Hill.

By the time the re-installation work is completed next year, the railway will offer residents and visitors a direct link between Bunker Hill and the city's historic core, with direct access to a Metro Red Line station.

The MTA participated in the restoration effort by contributing about \$750,000. By its location near a Metro Red Line station, Bunker Hill residents and riders will be able to quickly access Union Station and Long Beach (by way of the Metro Blue Line).



Bus Division Displays Mural

The MTA's Division 3 in Cypress Park is sporting a bright north exterior wall now, thanks to the artistic talents of Los Angeles artist Margaret Garcia De La Paz.

The nationally-known artist, who has been featured in a number of publications, undertook the mural as part of the MTA's anti-graffiti effort. Her work is entitled "Puro Cypress," and portrays the Cypress Park community, its transportation and houses, and flowers native to the region. It was painted with the assistance of local youths.

"This artist's work is another excellent example of how the MTA's Art Program helps our rail and bus facilities reflect the spirit of the communities they serve," said Maya Emsden, director of MTA's Art program.

Artist Garcia De La Paz, a Los Angeles resident, holds a master of fine arts degree from USC. She has won several awards, and has taught and lectured extensively on art in different cultures. She and her work also have been featured in numerous publications, including the Los Angeles Times, Art Scene magazine and the Los Angeles Times Magazine.

The Mural at Cypress Park by artist Margaret Garcia De La Paz.

Future Talk A Look Ahead at What's Coming

Electric Cars Tested by Real Commuters

In a joint demonstration project sponsored by the MTA, the Department of Water and Power, the Los Angeles Department of Transportation, the U.S. Electricar Company, and the South Coast Air Quality Management District (AQMD), employees of these agencies will be given the opportunity to see what it would be like to commute by electric car.

The program, called the Electric Vehicle Station Car Program (EVSP), will begin in about two months. Volunteer employees will use an electric car to commute between their homes and the Chatsworth or Sylmar Metrolink Stations for a short period of time.

The project will gather data for the first EVSP in the Los Angeles area. The electric vehicles will serve as door-to-door service for select commuting employees from their homes to the Metrolink station. They will then ride



Metrolink to downtown, where they will board the Red Line or buses at Union Station for their work locations.

Later, the program may be expanded to include other commuter test-drivers. It is estimated that a five-mile trip with a cold start in a 1987 automobile emits almost 15 grams of hydrocarbons; on a 20-mile trip, still easily within range of electric vehicles, that rises to more than 20 grams. The comparable emissions

performance of electric vehicles is zero, according to the technical experts.

An electric charging station for the car will be available at the stations. Information on the performance of the vehicle, travel mileage, driver's satisfaction and other related information will be collected from participants and reported to the AQMD. •

Community Notes, continued

Community Events and Meetings

Antelope Valley Residents invited to Public Hearings

Antelope Valley Residents attended two public meetings with the MTA on April 11th to discuss the area's public transportation needs.

The Antelope Valley area is eligible to receive a share of California Transportation Development Act (TDA) funds for transportation-related projects.

"The Transportation Development Act,

passed in 1971, gives areas that are not included in the MTA's service area, a chance to share in TDA funds to help pay for local public transit needs," said the MTA's CEO, Franklin White.

Annual Vendor Fair on April 18

The third annual Vendor Fair will be held at the Convention Center on April 18. The MTA is teaming with the City and County of Los Angeles to provide the private sector with an opportunity to learn how to do business with the

city, county and MTA agencies.

The fair will feature new technology exhibits, including fuel cell technology vehicles and the Advanced Technology Transit Bus.

The MTA's Vendor Relations is coordinating the all-day event. For further information, call Yolanda Williams, (213) 972-5128. •

Public Preview, continued

Assemblywoman Grace Napolitano (58th District), Congressman Esteban Torres (34th District), Norwalk Mayor Michael Mendez, and Redondo Beach Chamber of Commerce Executive Director Ernie O'Dell.

Even former Los Angeles Mayor Tom Bradley came to the party. The former mayor has long been a proponent for bringing rail back to the City of Angels, and his efforts helped spearhead L.A.'s rail renaissance. "This is one more major step in accomplishing our original goal," said Bradley.

All of the cities along the Green Line alignment, through their Marketing Action Groups, were actively involved in the planning of the St. Patrick's Day ride. There were bagpipes, costumed-dancers, the Cerritos College band and Travis the Owl, the Metro Rail mascot who brings rail safety messages to students along Los Angeles' Metro rail lines. Then, there were the Norwalk area second and third graders dressed as leprechauns, who sang their own version of a familiar song: "I've been

Working on the Green Line. "Today is a perfect example of how public transportation can bring communities together," said White.

The Metro Green Line is 96% complete and is expected to open this summer. The MTA construction team is conducting a rigorous testing schedule, which includes the testing of rail vehicles, automatic control systems, and line operations from end to end. Testing is now 40% complete.

Initially, trains will operate from 5 a.m. to 9 p.m., every seven-and-one-half minutes during rush hour. During non-peak hours and on weekends, trains will run every 12 minutes.

"Bus and shuttle connections to the Green Line are a priority," White said. "We have prepared a bus/rail interface plan that establishes a network of bus and shuttles to serve each station."

The Metro Green Line will bring the number of operating Metro Rail miles to 46 and the number of stations to 39. •



Children
Made the Day
More than two hundred elementary school children participated in the St. Patrick's Day Green Line event. Below, some of them gather around Travis the Owl, the MTA's Metro Rail mascot.



Board Report, continued

MTA Review

A monthly publication produced by the MTA.

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Tutor-Saliba/ Perini of Sylmar was the successful bidder for the Hollywood/ Highland station contract at \$69,887,867. Two other firms were considered non-responsive for failure to meet the 30% Disadvantaged Business Enterprise participation goal set by the MTA.

Kajima/Ray Wilson of Pasadena bid \$68,912,089 and Kiewit-Shea of Santa Fe Springs bid \$72,970,345. The MTA's estimate for the contract was \$75,720,912. With a 10% contract contingency added to Tutor-Saliba/Perini's bid, the total Authorization for Expenditure for the station project will be \$76,876,654.



The Hollywood/Highland project includes construction of the station, surface improvements, construction of

an access shaft near La Brea Avenue and demolition of an underground parking structure. •



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