

EVALUATION
OF
NEW SERVICE
IN
SAN GABRIEL VALLEY

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1976

SOUTHERN CALIFORNIA
RAPID TRANSIT DISTRICT

Prepared by
Surface Planning

June, 1976



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JACK R. GILSTRAP
General Manager

June 17, 1976

To: Members of the Board of Directors
From: Jack R. Gilstrap
Subject: Evaluation of New Services -
San Gabriel Valley Transit Improvement Program

The San Gabriel Valley Transit Improvement Program was the third major sector improvement implemented as a result of the agreement between the County of Los Angeles and the District for the Fiscal Year 1975-76. As with other sector improvements, evaluation of the improved services is required in the agreement.

In order to fulfill the evaluation requirements of ridership and productivity data by the end of the fiscal year, passenger checks were conducted only four weeks after the April 11th implementation of service. However, substantial increases in ridership have been observed, in spite of this abbreviated period of development.

Passenger data collected prior to implementation showed 90,831 daily boarding passengers within the sector. After four weeks of improved service this number had grown 12.5% to 101,667. This is a greater number of boarding passengers than experienced in any other sector improvement to date, with similar equipment allocations to the improved sectors.

The initial success of the San Gabriel Valley Transit Improvement Program can be attributed to the improved north-south services, the increased access to the Busway, and the provision of new and improved local circulation throughout the Valley. These factors have made public transportation a reasonable alternative to the private automobile within the sector.

Members of the
Board of Directors

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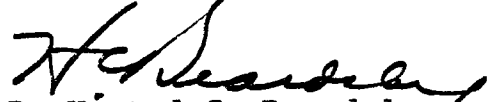
June 17, 1976

It is recommended that the San Gabriel Valley Transit Improvement Program be continued in its present form until further evaluation is completed. Staff will conduct further passenger checks after six months of service and again report to your Board. Minor modifications generated by public concern will be individually evaluated and action taken as appropriate.

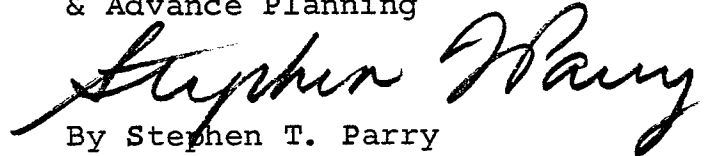
Respectfully,



Jack R. Gilstrap



By Howard C. Beardsley
Assistant Manager of Surface
& Advance Planning



By Stephen T. Parry
Surface Planner

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BACKGROUND

The San Gabriel Valley Transit Improvement Program was implemented on April 11, 1976 in the area roughly bounded by the San Gabriel Mountains, the Los Angeles-San Bernardino County Line, the Puente Hills, and the Repetto and San Rafael Hills. The plan yielded a significant improvement over existing transit services by the addition of 50 buses, a 16% increase, and 29,011 daily miles traveled, a 62% increase.

The new lines of the San Gabriel Valley Improvement Project provide commuter and local service for Valley residents. An increase in frequency, hours of operation, and weekend service has facilitated convenient use of this system for many transportation needs. The 31 new lines now create a network of surface transit within the 30 municipalities in the San Gabriel Valley Sector. (Figure 1)

PURPOSE OF REPORT

This report represents the initial findings of the San Gabriel Valley Transit Improvement Program Evaluation. After four weeks of service, data was gathered in order to judge the progress of the program and the effectiveness of the system in accommodating travel patterns. Lines were examined and evaluated utilizing the criteria developed by your Board.

Although changes in patronage patterns and general trends are beginning to emerge, it would be untimely to draw definite conclusions about this new system until after a reasonable period of time for growth. It is necessary to bear in mind that the San Gabriel Valley Evaluation cannot be compared to the Mid-Cities or East Los Angeles data due to differences in system maturity.

CHARACTERISTICS OF THE AREA

To properly consider the development of the new system, topographic, socio-economic and demographic characteristics of the area must be placed in perspective. The San Gabriel Valley encompasses approximately 348 square miles and with a population of more than 1,260,000 people, the average density is 3,600 per square mile.

The characteristically flat topography is interrupted by the San Gabriel Mountains, Repetto and San Rafael Hills and the Puente Hills. As the San Gabriel Valley has continued to

grow in the last 20 years, shopping, employment and other institutions have somewhat decentralized into Pasadena and other regional centers. SCAG's projections indicate that there will be a nearly balanced labor force and employment for an estimated 530,000 people by the year 2000. The major employment centers are Pasadena, Duarte, El Monte, La Puente and Pomona.

The characteristically dispersed travel patterns were fostered and are maintained by the many shopping centers, employment generators, and civic centers in the area. The new San Gabriel Transit Improvement Program was designed to serve the street arterials, and still conveniently link the major trip generators with residential and commercial centers. The intensified use of the El Monte Busway, including the Long Beach and Del Mar Ramps, has made expedited travel more convenient, providing better access to downtown Los Angeles for both the East and West San Gabriel Valley areas.

COMMUNITY INVOLVEMENT & SYSTEM REFINEMENTS

Community Involvement

In order to consider and respond to public transit needs, the District's Planning and Community Relations staff has operated a field office in the El Monte Division. Since implementation on April 11, 1976, this office has become the regional District contact for the San Gabriel Valley Municipal Governments and civic associations and numerous community meetings have been attended. Resources of the District have been coordinated through the field office to respond to the needs of the 30 cities served.

This program has proved a valuable tool in assessing the transit needs of the public and adjusting service to meet the needs. The District's Customer Relations Department, public reaction expressed in newspapers, letters and petitions, combined with the efforts of our Community Relations and Planning Field representatives have already initiated modifications in the District's service.

System Refinements

Anticipated in such a major realignment of services, staff prepared a procedure for handling initial public reaction of the sector improvements. Comments received thus far desiring modifications are of three (3) varieties:

- Requests for replacement of a former routing.
- Requests for removal of new service from a street previously without buses.
- Requests for relocation of bus stops.

Staff has received several positive comments about the system as well as complimenting the new transit network, the increased frequencies and greater ease of transferring. Remaining comments received generally deal with overcrowding conditions on the Busway; generally, the public has allowed the system to "settle"; each additional leg of operation has seen greater operator familiarity and better schedule performance which has alleviated the vast majority of routing problems.

When problem areas are identified either through letters, petitions, or personal contact with civic groups and governmental agencies, the staff in the San Gabriel Valley Regional Field Office begins the process of evaluating the comments. Numerous alternatives after on-site inspections include reroutings, schedule and cost analysis as well as positive and negative impact on the neighborhood ridership of the operation. Community participation is included before developing finite solutions so that the eventual decision is mutually acceptable to all concerned.

A list of comments to date which have required this process is included. Each item is presently under study and specific modifications are being developed with recommendations which are now in the process of being presented to various concerned parties. Specific recommendations, with the approval of the community, will be presented to your Board upon complete evaluation for implementation after the initial 90-day period.

Alhambra Area

Line 17. Former Line 80 operated shuttle service within the western portion of Alhambra and the Emery Park section of the City of Los Angeles. Replaced by Line 17 with better frequencies and 7-day operation, a void was created in the southern section causing some passengers to walk a distance of one-half mile to reach a bus stop. Although the new two-way operation was placed for the majority of the former Line 80 riders, concern has been expressed from those residents primarily along Alhambra Road. Initial community meetings have been held and a mutually agreeable decision will be made in the near future.

Line 17. The former route of this line served a portion of eastern Alhambra primarily along Chapel Avenue, Park Street, Almansor Street, Adams Avenue, and New Avenue. Although replaced by portions of Lines 420, 424, 428, and 487, some former riders have been inconvenienced by walking new distances of up to one-half mile to the nearest bus stop. New routes are being evaluated carefully to justify retention or modification, whichever would have the greatest benefit to the residents and riders of the area.

Line 17. Staff has received a petition from a senior citizen's residence on Fremont Avenue requesting return to the former hourly operation which allowed them to travel to downtown Alhambra. Replaced by 20-minute service on the new system, passengers to Alhambra Central Business District must transfer. Alternatives have been developed and will be presented in the near future.

Line 420. Complaints were received from the residents of Stoneman Avenue regarding the turning movements of this new route which was implemented as Line 30 on January 25th as part of the East Los Angeles Transit Improvement Program. A new layover zone and turning movement was established in March to alleviate this problem.

South Pasadena Area

Line 430. Prior to implementation, staff received a petition from residents of Garfield Avenue between Mission Road and Huntington Drive, demonstrating concern over the use of the thoroughfare for bus service. It has been agreeable to the residents to wait for the evaluation of the new service and a meeting will be scheduled in the near future to receive the reactions since the implementation of this line.

San Marino Area

Line 434. Similar complaints have been voiced by residents on California Boulevard and Madre Street regarding the implementation of bus service in their neighborhood. On temporary detour at this time, the community review process has seen several meetings held thus far and specific recommendations as to retention or modification of service on California Boulevard are near at hand.

Line 487. At the request of the City, the operation of Line 487 was modified prior to implementation to exclude service on San Marino Avenue for the three-block area within the City limits. As a result of this modification, service was routed from Sierra Madre Boulevard along California Boulevard and San Gabriel Boulevard. Residents along California Boulevard have indicated their concern for this change and modifications will be included concurrently with those recommended for Line 434.

Sierra Madre Area

Line 435. Prior to implementation, meetings were held, where local residents of Grandview Avenue expressed opposition to the proposal to operate on their street. Modifications approved by your Board effectuated the changing of route with the support of the community prior to implementation on April 11, 1976.

West Covina Area

Requests have been received by management of West Covina Fashion Park to provide service within the grounds of this facility. Alternatives are being developed to the possibility of operating Lines 443, 445, and/or 446 pending schedule capabilities within the framework of existing equipment requirements.

La Verne Area

Requests have been received from residents of three (3) Trailer Parks located on Arrow Highway between White and Garey Avenue. Formerly served by Lines 64 and 402, new Line 445 was routed directly on Bonita Avenue requiring these residents to walk an additional one-quarter mile to the nearest bus stop.

Claremont Area

Line 451-452. The City of Claremont has transmitted complaints by local residents of excessive use of 6th Street within the City. Formerly served by Line 60G, 6th Street is one of the few east-west thoroughfares that is suitable for bus use. The 60G operation included only two (2) buses per hour; under the implementation program initiated on April 11, there are now ten (10) buses serving this street. Staff has met with the Claremont City Council and presented six (6) alternatives for their consideration. A special Committee has been created by the City Council to determine the optimal modification for their residents.

Pomona Area

The City of Pomona has met with the District to determine the feasibility of alternatives in the relocation of bus layover facilities for Lines 440, 452, 454, 480, 482 and 484. Although approved prior to implementation, actual observations by the Traffic Engineer have shown that the present locations are potentially hazardous to vehicular traffic. Subject to written approval by the City of modifications presented, these lines will be modified in the near future with the approval of your Board.

El Monte Area

Line 426. Comments have been received by the El Monte Chamber of Commerce requesting service to the El Monte Mall on Line 426 which presently operates along Valley Boulevard. Former Line 53 used to operate this routing. However, only 3% of the total ridership availed themselves of this access to the Mall. Presently, numerous routes provide service to the Mall along Ramona Boulevard. The request for reinstatement of service is solely for residents near Valley Boulevard in the eastern section of the City.

EVALUATION

While planning the San Gabriel Valley Transit Improvement Program, staff included arrangements to evaluate the sector by comparing pre-implementation conditions with those of the new system. Careful steps were taken to separate the data collection, reduction and analysis efforts for the San Gabriel Valley Plan from the East Los Angeles and Mid-Cities Transit Improvement Programs implemented in early 1976. Minor peripheral changes took place, with the implementation of the East Los Angeles Improvement Program, on lines which operate between sectors. Several longer trans-sector lines were improved on February 22, 1976 as a result of the Mid-Cities Transit Improvement Program. A complete revision, rerouting and renumbering of the San Gabriel Valley lines took place on April 11, 1976, acknowledging these aforementioned sectors. Every effort was made to integrate routes to render the highest possible level of service without unnecessary duplication between sectors.

Objectives & Criteria

A major element of staff efforts has been to determine the objectives of the evaluation process and to develop criteria for measuring their accomplishment. The objectives that have evolved and the criteria for measurement are presented in Table 1.

Table 1. Evaluation of New Services in
East Los Angeles

Objectives and Criteria

OBJECTIVE	CRITERIA
To determine if the new service has attracted more riders than the previous service.	Passenger totals, day and night, by line, by sector, pre-and-post.
To determine if new service is as productive as previous service.	Passengers in the Sector per vehicle hour assigned to lines or portions of lines in the project Sector, day and night, pre-and-post.
To determine if productivity is adequate to continue service.	Productivity of the line <u>at maturity</u> should exceed 20 passengers per vehicle hour, day and night, by Sector and by line. Transit dependency and system integrity are considered on a subjective basis.

Methodology

In designing the service evaluation program for projects implemented early in 1976, it was felt that all improvement projects should be evaluated the same way so that any one could be compared with another. Project evaluations for recently implemented service in East Los Angeles, Mid-Cities and the San Gabriel Valley should be comparable to the San Fernando Valley and South Central Grid evaluations performed in 1975.

Sector Boundaries

To satisfy this requirement the improvement project sectors were clearly defined so that projects were mutually exclusive. Passengers would be counted only within one sector regardless of whether the line operated within the sector or partly outside it. The San Gabriel Valley Sector for the purpose of evaluation is bounded by:

- o Along Eastern Avenue, Huntington Drive and Monterey Road from Valley Blvd. to Highland Park.
- o Along the eastern city boundaries of Los Angeles and Glendale from Highland Park northward along Chevy Chase Drive and Commonwealth Avenue in Flintridge and La Canada to the foothills of the San Gabriel Mountains
- o Along the foothills of the San Gabriel Mountains from Commonwealth Avenue to the San Bernardino County Line.
- o The San Bernardino County Line from the foothills of the San Gabriel Mountains to the Orange County line.
- o The northern boundary of Orange County and the northern city limits of Whittier, Pico Rivera and Montebello.
- o North and west along the southern city limits of Monterey Park to Monterey Pass Road.
- o Monterey Pass Road from Floral Drive to Garvey Avenue.

- o Garvey Avenue from Monterey Pass Road to the Long Beach Freeway.
- o The Long Beach Freeway from Garvey Avenue to Valley Boulevard.
- o Valley Boulevard from the Long Beach Freeway to Eastern Avenue.

The portions of old lines included in the San Gabriel Valley sector are included in Table 2. New line information is in Table 3.

The evaluation considers a number of San Gabriel Valley lines that operate partly outside the sector. Some of these lines have been partially evaluated in the East Los Angeles or Mid-Cities Transit Improvement Programs. In these evaluations, passenger counts, vehicle hours and productivity figures were examined by sector and by line. The short time between completion of the San Gabriel Valley checks and the presentation requirement of this report did not allow evaluation of each line to be made on both a line and sector basis. Total line data was used in the following pre-implementation trans-sector lines: Lines 11/16, 17, 19, 30, 31, 38, 61, 63 and 143.

The same analysis was made on the corresponding post implementation lines: Lines 16, 17, 143, 420, 422, 423, 434 and 436.

This approach is consistent when comparing the conditions before implementation with the post implementation conditions. It is not, however, consistent with the approach taken in evaluating the East Los Angeles and Mid-Cities Transit Improvement Programs. A supplemental analysis of all San Gabriel Valley lines on a sector basis will be forthcoming in the near future, pending completion of specific line data.

Table 2 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
IMPROVEMENT PROGRAM
PRE IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One-Way Route Miles	Segment of line in San Gabriel Sector From	Sector Boundaries To
11/16	State Univ.-San Gabriel-Arizona Ave.	20.1	South Terminal	Monterey Pass & Garvey
17	New Ave.-Fremont Ave.-Arizona	11.7	South Terminal	Monterey Pass & Garvey
19	Glendale-Montrose-La Canada-Pasadena	23.2	Foothill & Commonwealth	East Terminal
31	Hollywood-Glendale-Pasadena	20.9	Colorado & Eagle Rock	East Terminal
38	Long Beach-Whittier-El Monte	34.2	Rosemead & San Gabriel Blvd.	North Terminal
52	Los Angeles-Alhambra-Temple City	18.0	Terminal	Terminal
53	Los Angeles-El Monte	16.4	Terminal	Terminal
60**	Los Angeles-Pomona-Riverside-San Bernardino	71.6	Terminal	Terminal
61	Long Beach-Atlantic Blvd.-Pasadena	27.3	Atlantic & Brooklyn-North Terminal	
63	Los Angeles-El Monte via Garvey Ave.	16.2	Ramona & Eastern	East Terminal
64	Pasadena-Pomona	28.9	Terminal	Terminal
67	Los Angeles-Sierra Madre	18.2	Terminal	Terminal
68	Los Angeles-Monrovia-Glendora	27.9	Terminal	Terminal
69	Los Angeles-Hellman Ave.	12.8	Terminal	Terminal

Table 2 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
IMPROVEMENT PROGRAM
PRE IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One Way Route Miles	Sector Boundaries	
			Segment of Line in San Gabriel Sectc From	To
70	Los Angeles-Pasadena via Oak Knoll	14.4	Terminal	Terminal
71	Los Angeles-Pasadena-via Fair Oaks Ave.	12.0	Terminal	Terminal
79	Alhambra-South Pasadena-Highland Pk.	9.4	Terminal	Terminal
80	Emery Park	2.9	Terminal	Terminal
107	Highland Park-North Los Robles	7.4	Terminal	Terminal
108	Pasadena-Rosemead-Monrovia	11.0	Terminal	Terminal
109	North Fair Oaks Ave.-North Lake Ave.	8.3	Terminal	Terminal
110	North Lincoln Ave.-North Hill Ave.	9.0	Terminal	Terminal
119	Washington Blvd.-Baldwin Ave.	10.4	Terminal	Terminal
133	West Covina-La Puente	9.8	Terminal	Terminal
134	El Monte-Durfee Ave.-Peck Rd.-Whittier	13.3	Workman Mill & Peck	North Terminal
135	El Monte-Merced Ave.-Cogswell Rd.	6.1	Terminal	Terminal
143	Eastern Ave.	8.0	(Considered as dedicated to East Los Angeles Sector prior to implementation of the San Gabriel Program	
170	Azusa-West Covina-Whittier	22.1	Hacienda & Colima	North Terminal
192	North Towne-North White	7.6	Terminal	Terminal

Table 2 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
 IMPROVEMENT PROGRAM
 PRE IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One Way Route Miles	Sector Boundaries	
			Segment of Line in San Gabriel Secto From	To
193	East Holt-West Ninth	7.4	Terminal	Terminal
195	Garey Ave.	6.8	Terminal	Terminal
196	So. San Antonio-West Holt Ave.	7.9	Terminal	Terminal
401	L.A. - El Monte-Pomona via La Puente	40.4	Terminal	Terminal
404	L.A. - El Monte-South Arcadia	19.2	Terminal	Terminal
405	L.A. - El Monte-Temple City	19.4	Terminal	Terminal

Table 3 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
 IMPROVEMENT PROGRAM
 POST IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One-Way Route Miles	Sector Boundaries	
			Segment of Line in San Gabriel Sector From	To
16	Arizona Avenue--State University	6.6	Monterey Pass & Garvey	North Terminal
17	Fremont Ave--Arizona Avenue	9.7	Monterey Pass & Garvey	North Terminal
143	Eastern Avenue	7.5	Monterey & Huntington	North Terminal
420	Los Angeles--Alhambra via Brooklyn and Garfield Avenues	14.2	Brooklyn & Atlantic	East Terminal
422	Los Angeles--El Monte via Garfield Avenue	16.6	Eastern & Ramona	East Terminal
423	Long Beach--Pasadena--Altadena	30.9	Terminal	Terminal
424	Hellman Ave.--El Monte via South El Monte	19.6	Terminal	Terminal
425	Avenue 64--North Hill Ave.	8.7	Terminal	Terminal
426	Los Angeles--El Monte via Valley Boulevard	17.7	Terminal	Terminal
428	Los Angeles--Alhambra--South Arcadia via Las Tunas Drive	18.4	Terminal	Terminal
430	Highland Park--Alhambra--El Monte	11.7	Terminal	Terminal

Table 3 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
IMPROVEMENT PROGRAM
POST IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One-Way Route Miles		Sector Boundaries	
		From	To	From	To
431	San Gabriel Blvd.--Altadena Dr.	16.5	Terminal	Terminal	Terminal
432	Los Angeles-Arcadia via Huntington Drive	17.6	Terminal	Terminal	Terminal
433	Temple City Bl-Del Mar Bl-Lincoln Avenue	15.2	Terminal	Terminal	Terminal
434	Glendale-La Canada-Pasadena-Monrovia-Duarte	29.1	Foothill & Commonwealth	East Terminal	East Terminal
435	Baldwin Ave.--Washington Blvd.	19.1	Terminal	Terminal	Terminal
436	Hollywood-Glendale-Pasadena	18.2	Colorado & Eagle Rock	East Terminal	East Terminal
438	No. Fair Oaks Av-Colorado Bl-Duarte	17.8	Terminal	Terminal	Terminal
440	Pasadena-Glendoria-Pomona via Foothill Blvd.	30.3	Terminal	Terminal	Terminal
441	Puente Ave.--Citrus Ave.	16.4	Terminal	Terminal	Terminal
443	Sunset Ave-Covina Bl-San Dimas Ave	21.8	Terminal	Terminal	Terminal
445	Hacienda Bl-Irwindale Ave-Arrow Hwy	25.5	Terminal	Terminal	Terminal
446	El Monte-Baldwin Park-West Covina-Valinda	14.0	Terminal	Terminal	Terminal
447	Azusa Avenue	11.1	Terminal	Terminal	Terminal
449	Glendoria-Pacific State Hospital via Grand Avenue	16.0	Terminal	Terminal	Terminal

Table 3 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
IMPROVEMENT PROGRAM
POST IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One-Way Route Miles	Segment of Line in San Gabriel Sector		Terminal
			From	To	
451	Garey Ave. - Foothill Blvd.	9.9	Terminal	Terminal	Terminal
452	Arroyo Ave.-North White-San Bernardino Ave.	9.4	Terminal	Terminal	Terminal
453	Indian Hill Blvd.-Reservoir St.	8.8	Terminal	Terminal	Terminal
454	West Ninth St.-South Towne-Arrow Highway	11.4	Terminal	Terminal	Terminal
480	Los Angeles-El Monte-West Covina-Pomona	39.8	Terminal	Terminal	Terminal
482	Los Angeles-El Monte-Hacienda Heights-Pomona	46.7	Terminal	Terminal	Terminal
483	Los Angeles-Altadena via Fair Oaks Ave.	17.5	Terminal	Terminal	Terminal
484	Los Angeles-El Monte-La Puente-Pomona-Ontario Airport	45.8	Terminal	Terminal	Terminal
485	Los Angeles-Altadena via Lake Ave.	18.7	Terminal	Terminal	Terminal
486	Los Angeles-El Monte-Puente Hills Mall	29.3	Terminal	Terminal	Terminal
487	Los Angeles-San Gabriel-Sierra Madre	22.5	Terminal	Terminal	Terminal

Table 3 EVALUATION OF NEW SERVICE, SAN GABRIEL VALLEY TRANSIT
IMPROVEMENT PROGRAM
POST IMPLEMENTATION LINE DESCRIPTION

Line No.	Line Name	One-Way Route Miles	Segment of Line in San Gabriel Sector		Sector Boundaries To
			From	To	
488	Los Angeles-El Monte-West Covina-Eastland	28.2	Terminal	Terminal	Terminal
490	Los Angeles-El Monte-Covina Eastland	25.8	Terminal	Terminal	Terminal
491	Los Angeles-Sierra Madre via Santa Anita Ave.	22.0	Terminal	Terminal	Terminal
492	Los Angeles-El Monte-So. Arcadia-San Dimas	32.6	Terminal	Terminal	Terminal
493	Los Angeles-El Monte-Monrovia	22.8	Terminal	Terminal	Terminal
494	Los Angeles-El Monte-Monrovia-Glendora	31.4	Terminal	Terminal	Terminal
496	Los Angeles-Pomona-Riverside-San Bernardino	76.3	Terminal	Terminal	Terminal
770	Pasadena Park/Ride	16.1	Terminal	Terminal	Terminal
820	Los Angeles-Whittier-La Habra-Puente Hills Mall via Whittier Blvd.	28.4	Colima & Hacienda	Colima & Hacienda	North Terminal
827	El Monte-Cerritos	25.6	Workman Mill & Peck Rd.	Workman Mill & Peck Rd.	North Terminal
829	Lakewood Blvd.-Rosemead Blvd.	32.8	Rosemead & Durfee	Rosemead & Durfee	North Terminal

Ridership

Another essential element in meeting the evaluation objectives of comparability for mature lines was to decide on a consistent definition of ridership. A rider is a boarding passenger regardless of the type of fare paid.

Ridership Growth With Time

Previous evaluation of the South Central and San Fernando Valley Grid Systems by staff and the Joint Agency Transit Advisory Committee indicated that line ridership of new service increases for some time after implementation. The point at which this growth levels off cannot be specified because of the demographic variations of areas served by the lines under study and differences in the extent of changes made to different lines. Evaluation of this project and others to follow may allow staff to successfully predict line performance. At present it can be said that line growth may level off between six and twenty-four months after implementation.

Results

Once riders were defined and passenger counts scheduled the checking process got underway.

100% Ridership Checks

Passengers are counted by District checkers who ride each trip on a line from end to end. In what is known as a 100% check, the checker counts the passengers boarding and alighting at each stop and records the type of fare paid. The 100% check is widely accepted as representative of annual ridership on a line but has limitations because of daily ridership fluctuations of up to 5%. Inclement weather can cause variations of up to 10%. The 100% check is, in reality, a sample and is subject to normal sampling errors when it is used to draw conclusions about the total annual ridership of a line. It took 18 working days between May 3 and June 8, 1976 to complete the checks for the 47 lines involved in the study.

The total sector ridership, therefore, contains some inconsistencies introduced by possible variations between lines checked on different days. The same procedure was followed for pre-implementation checks, except checks were taken over an extended period from November 1975 through March 1976.

Passenger Totals

The passenger counts for the lines existing before implementation are shown in Table 4. During the day (beginning to 7:00 p.m.) there were 87,177 passengers boarding while 3,654 rode at night (7:01 p.m. to close) for a total of 90,831.

The post implementation San Gabriel Valley sector riders are shown in Table 5. During the day there were 96,417 passengers (up 9,140) while night ridership increased by 1,596. Total passengers increased to 101,667, up 10,736, a gain of 12.5%.

Factors contributing to the Increase

The increase in ridership in the San Gabriel Valley can be attributed to the establishment of a number of transportation centers linked by numerous bus lines into a comprehensive transit system. The resulting system has improved service frequencies and affords riders better transfer opportunities.

It is reemphasized that several San Gabriel Valley lines which operate outside the sector include passenger counts taken from end to end. As a result, the passenger boarding totals include more riders than actually boarded in the sector. Since both pre- and post-implementation totals have been prepared in the same manner, the results remain comparable.

Confirming Factors

Division revenues. Revenue data collection is accomplished at division level for the aggregate of bus lines operated from the division. Precise allocations of revenues to each line is not possible, but general trends can be deduced. Divisions 3-10 and 9 which operate San Gabriel Valley lines, have recorded a modest rise in average daily fare box revenues between the periods of March 15 to April 10, 1976 and April 19 to May 29, 1976. The above Divisions' revenue gain of \$391 represents 2,150 daily riders at the District average of 5.5 boardings per fare box dollar, and partially substantiates the gain in ridership in the San Gabriel Valley.

Sector Pass Sales. Although pass sales are even more difficult to localize than farebox revenue, sales in the San Gabriel Valley help illustrate the general sector activity. An average of 4900 patrons per month

Table 4 EVALUATION OF NEW SERVICE IN THE SAN GABRIEL VALLEY

Pre Implementation Ridership & Productivity

Line No.	Passengers Boarding		Vehicle Hours		Total		Passengers per Vehicle Hour		Productivity	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
11 *	1193	NNS	25	NNS	25		47.7	NNS	47.7	
17 *	857	NNS	26	NNS	26		32.96	NNS	32.96	
19 *	492	20	47.73	16.27	64		10.3	1.2	8.0	
30 *	3790	218	105.88	14.12	120		35.8	15.4	33.4	
31 *	8753	574	165.82	5.18	171		52.8	110.8	54.5	
38 *	89	NNS	12.0	NNS	12.0		7.4	NNS	7.4	
52 *	4259	115	135.45	11.55	147		31.4	10.0	29.8	
53 *	5247	204	132.30	16.70	149		39.7	12.2	36.6	
60 *	3950	327	309.92	26.08	336		12.7	12.5	12.7	
61 *	3508	89	126.32	7.68	134		27.8	11.6	26.8	
63 *	2837	183	99.29	13.71	113.0		28.6	13.3	26.7	
64	215	NNS	14	NNS	14		15.4	NNS	15.4	
67/68*	3280	153	129.30	14.70	144		25.4	10.4	23.8	
69 *	693	NNS	32	NNS	32		21.7	NNS	21.7	
70/71*	5353	330	144.17	19.83	164		37.1	16.6	34.7	
79	706	9	28.5	.5	29		24.8	18.0	24.7	
80	382	NNS	14	NNS	14		27.3	NNS	27.3	
107	1785	51	41.78	1.22	43		42.7	41.8	42.7	
108	3403	134	81.87	10.13	92		41.6	13.2	38.4	
109	5212	279	93.03	8.97	102		56.0	31.1	53.8	
110	3271	161	68.77	6.23	75		47.6	25.8	45.8	
119	1202	67	58.75	6.25	65		20.5	10.7	19.5	
133	238	NNS	27	NNS	27		8.8	NNS	8.8	
134	398	0	19.07	.37	19.44		20.9	0	20.5	
135	223	2	14.12	.88	15.		15.8	2.3	15.0	
143 *	1180	74	59.13	3.87	63		20.0	19.1	19.9	
170	1393	102	58.36	6.58	64.94		23.9	15.5	23.0	
192	928	NNS	37	NNS	37		25.1	NNS	25.1	
193	1107	NNS	38	NNS	38		29.1	NNS	29.1	
195/6	1892	0	59.75	6.25	66		31.7	0	31.7	
401 *	4844	145	180.95	10.05	191		26.8	14.4	26.1	

Table 4 EVALUATION OF NEW SERVICE IN THE SAN GABRIEL VALLEY

Line No.	Pre-Implementation Ridership & Productivity										
	Passengers Boarding		Vehicle Hours		Total		Passengers per vehicle hour		Productivity		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
402 *	4437	155	164.43	13.57	178		27.0		11.4		25.8
403 *	3396	182	110.02	10.98	121		30.9		16.6		29.6
404 *	2740	36	69.55	3.45	73		39.4		10.4		38.0
405 *	2096	44	53.93	5.07	59		38.9		8.7		36.3
760 *	800	NNS	25	NNS	25		32.0		NNS		32.0
764 *	198	NNS	14.4	NNS	14.4		13.8		NNS		13.8
770 *	830	NNS	25	NNS	25		33.2		NNS		33.2
	87177	3654	2847.59	240.19	3087.78		30.6		15.2		29.4

* Figures are for complete line from Terminal to Terminal. Part of the line lies outside the San Gabriel Valley Sector boundaries.

NNS = No Night Service

Table 5
 EVALUATION OF NEW SERVICE IN THE SAN GABRIEL VALLEY
Post Implementation Ridership & Productivity

Line No.	Passengers Boarding		Vehicle Hours		Total		Passengers per Vehicle Hour		Productivity	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
16	649	36	39.9	18.10	58.0		16.3		2.0	11.8
17	1301	8	42.35	1.01	43.36		30.7		7.9	30.1
143	1643	101	68.33	10.19	78.52		24.1		9.9	22.2
420	4339	226	109.12	8.29	117.41		39.8		27.3	38.9
422	3809	338	138.81	16.32	155.13		27.4		20.7	26.7
423	4586	207	132.28	8.14	140.42		34.7		25.4	34.1
424	1143	69	115.79	8.80	124.59		9.9		7.8	9.7
425	2073	116	68.58	9.06	77.64		30.2		12.8	28.2
426	4433	337	131.55	34.48	166.03		33.7		9.8	28.7
428	3925	187	122.39	24.28	146.67		32.1		7.7	28.0
430	863	36	68.33	12.33	80.66		12.6		2.9	11.1
431	908	44	97.59	14.40	111.99		9.3		3.1	8.5
432	1838	124	113.13	27.20	140.33		16.2		4.6	14.0
433	2435	96	97.26	14.25	111.51		25.0		6.7	22.7
434	1643	48	110.15	14.24	124.39		14.9		3.4	13.6
435	2222	123	115.05	15.13	130.18		19.3		8.1	18.0
436	10099	652	209.33	28.48	237.81		48.2		22.9	45.1
438	3335	141	88.24	9.08	97.32		37.8		15.5	35.7
440	3920	153	101.48	16.28	117.76		28.8		9.4	26.1
441/	474	30	150.49	12.12	162.61		6.2		6.3	6.2
443	464	46	85.21	8.12	93.33		9.3		3.4	8.8
445	791	28	52.06	6.32	58.38		9.6		4.6	9.0
446	499	29	42.38	7.04	49.42		19.7		16.5	19.3
447	836	116	66.10	11.12	77.22		6.8		2.0	6.1
449	451	22								
451/	1108	22	122.26	4.20	126.46		12.3		9.3	12.2
453	392	17								
452/	590	20	141.30	11.12	152.42		9.5		4.3	9.1
454	752	28	202.43	27.13	229.56		18.5		12.1	17.7
480	3746	327								

Table 5
EVALUATION OF NEW SERVICE IN THE SAN GABRIEL VALLEY
Post Implementation Ridership & Productivity

Line No.	Passengers Boarding		Vehicle Hours		Total	Passengers per Vehicle Hour		Productivity
	Day	Night	Day	Night		Day	Night	
482	2334	79	122.06	17.24	139.30	19.1	4.6	17.3
483/485	6882	472	246.43	36.06	282.49	27.9	13.1	26.0
484	4571	343	187.28	50.12	237.40	24.4	6.8	20.7
486	2249	99	106.17	13.15	119.32	21.2	7.5	19.7
487/491	1679	47	213.43	26.02	239.45	16.7	3.3	15.2*
488	1885	38	93.15	10.40	103.55	17.9	5.8	16.7
489	1667	60	119.42	13.39	132.81	27.0	7.1	25.0
490	3229	95	19.23	NNS	19.23	16.5	0	16.5
492	318	0	33.21	6.15	39.36	15.6	6.0	14.1
493	518	37	17.15	NNS	17.15	15.2	0	15.2
494	260	0	88.59	12.31	100.9	14.6	7.4	13.7
496	1291	91	29.4	NNS	29.4	23.1	NNS	23.1
760	680	0	18.3	NNS	18.3	19.1	NNS	19.1
764	350	0	110.23	15.76	125.99	17.7	5.9	16.2
770	1948	93	18.65	1.21	19.86	12.0	12.4	12.0
820	223	15	23.04	2.60	25.64	18.0	9.2	17.1
827	414	24	65.55	6.37	71.92	9.4	4.7	9.5
829	652	30						
	96,417	5,250	4343.18	588.02	4931.20	22.19	8.92	20.6

NNS = No Night Service

* - Revised June 24, 1976

purchased passes in the three months before implementation. Purchases have jumped to an average of 5900 for April and May, a rise of 17.8%.

Productivity

To determine whether the productivity of new service was as high as previous service, the passengers per line in the sector were divided by the vehicle hours per line in the sector.

The overall productivity of lines in the San Gabriel Valley Sector before implementation of the Transit Improvement Program was 29.4 passengers per vehicle hour. Individual line ratios ranged from a high of 54.5 passengers per vehicle hour to a low of 7.4. Table 4 displays the productivity of the San Gabriel Valley lines before implementation. Corresponding productivity for post implementation lines is presented in Table 5. Overall productivity dropped to 20.6 passengers per vehicle hour, down 8.2 because of the impact of adding 1843 vehicle hours to the sector. This 60% increase in vehicle hours outweighs even the substantial increase in ridership to show an initial drop in productivity.

Night service showed a decline in productivity from 15.2 passengers per hour to 8.92. The 43.7% gain in night ridership was offset by a 145% increase in the vehicle hours assigned to night service in the sector.

C O N C L U S I O N S

The San Gabriel Valley Transportation Improvement Program has effectively refined transportation in the sector into a cohesive transit system. Although extensive changes in travel patterns have occurred, only minor disruptions have been reported by our patrons. Travel opportunity has been extended to many areas previously with little or no service with a resultant increase in ridership.

Prior to implementation, the service in the San Gabriel Valley was centered around Pasadena, Pomona, El Monte Station and the Busway, and various routings to Los Angeles. Local circulation was minimal and north-south routings were scarce. With the implementation of the Transit Improvement Program, travel between most points within the Valley is possible, with one transfer, and local circulation is available within most communities. The extensive coverage and the improved service frequencies make bus transportation an efficient alternative for San Gabriel Valley residents.

Unlike other sectors, passenger counts were made after only four weeks of operation. The resulting increases reflected in these early counts indicate a great potential for development as the system matures.

R E C O M M E N D A T I O N S

- Service in the San Gabriel Valley should be continued without major routing or frequency changes until evaluation of the first six months of operation is complete.
- Staff will monitor operations and effect minor adjustments as necessary.
- Rider checks shall be conducted at the end of six months of operations.
- Staff will investigate and act upon proposals to increase productivity as required.