

## 5.0 TECHNICAL COMPONENTS

### 5.1 Circulation

#### 5.1.1 Overview

The circulation system for The Ontario Center incorporates several components into an integrated, balanced whole, which serves to bolster the mixed use philosophy of the Center. The principal components are a vehicular circulation system, a pedestrian circulation system, and a public transit system.

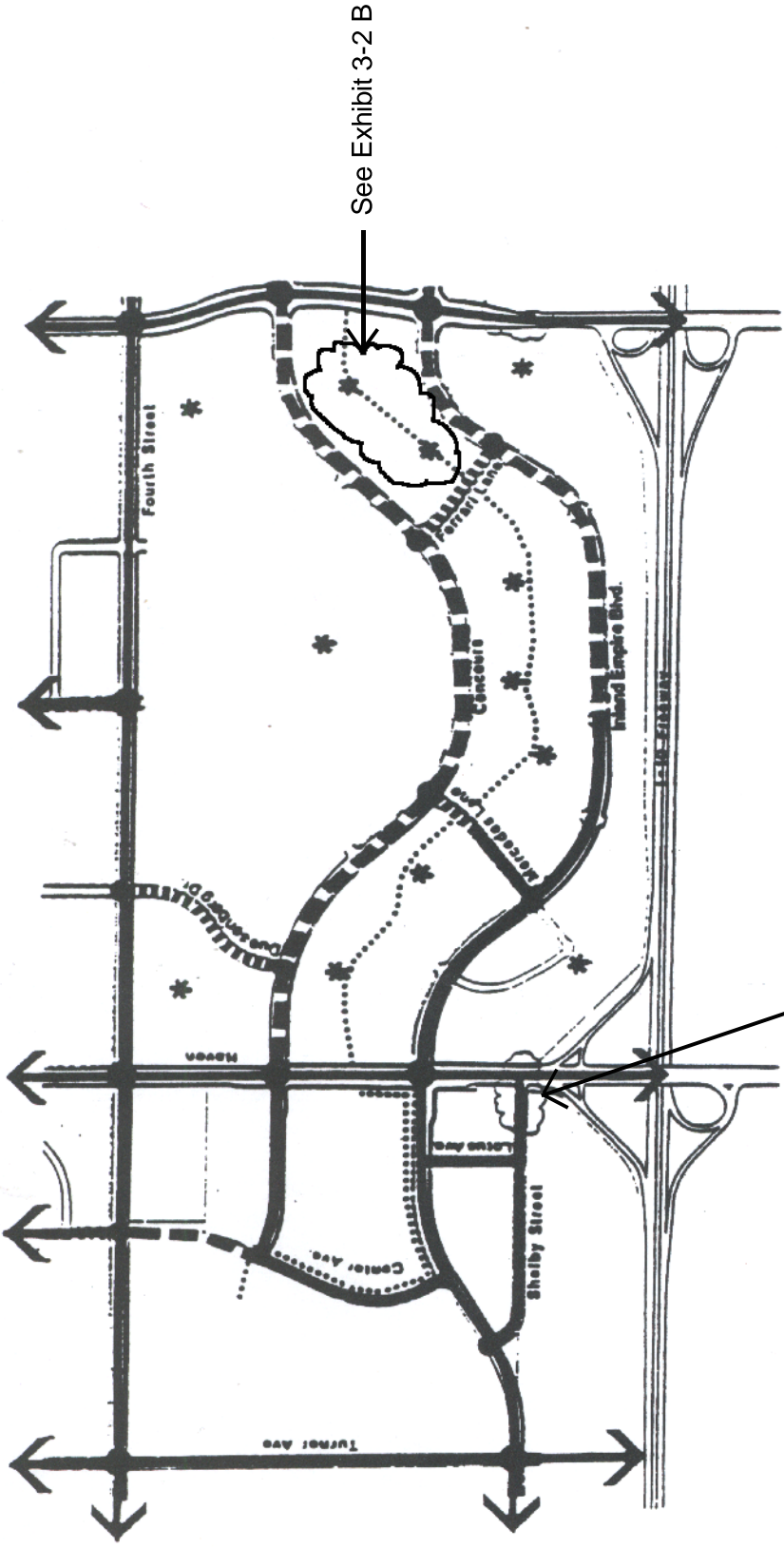
Fourth Street, Inland Empire Boulevard, Concourses, Turner Avenue, Haven Avenue, Milliken Avenue, and Duesenberg Drive form the backbone of the vehicular system. Local and collector streets supplement the primary network. Project traffic is accommodated by traffic signalization at principal road intersections (see Table 5-J). Realignment of existing streets and improvements to freeway interchange will facilitate movement.

A pedestrian circulation system integrates plazas and other areas within the Center. The system includes both sidewalks adjacent to the streets and a pedestrian walkway/greenbelt traversing the Center in an east-west direction. Pedestrian facilities within public rights-of-way shall be maintained by the City of Ontario. Pedestrian facilities constructed outside public rights-of-way shall be maintained by maintenance associations or by private property owners.

The public transportation program is based on linkages with regionally oriented public transit systems. Within the Center, a surface street mini-bus system will be employed on the interior streets, linking residential, employment, and shopping areas in an integrated manner. Bus stops will be placed to encourage maximum use of the system, and the system will be sufficiently flexible to accommodate shifting hourly demands of patrons.

The circulation system is shown on Exhibit 5-1 (p. 140).

REVISED AS OF JULY 1987  
 REVISED AS OF JAN. 1989  
 REVISED AS OF MARCH 1993



**LEGEND**

- EXISTING STREETS
- — — PROPOSED PRINCIPAL STREETS
- ..... PROPOSED SECONDARY STREETS  
 (SELECTED ILLUSTRATIVE LOCATIONS ONLY)

- ..... PROPOSED PEDESTRIAN SYSTEM
- \* PLAZA LOCATION

ULTIMATE CIRCULATION SYSTEM WITHIN THIS AREA TO BE DETERMINED PURSUANT TO MASTER PLAN OF TRANSPORTATION

CONCEPTUAL STREET ALIGNMENTS. FINAL CIRCULATION SYSTEM TO BE DETERMINED BY MASTER PLAN OF TRANSPORTATION.

**PROJECT CIRCULATION SYSTEM  
 THE ONTARIO CENTER  
 ONTARIO, CALIFORNIA**

EXHIBIT 5-1



## 5.1.2 Street Alignments

The centerline alignments of the project's principal streets are shown in Exhibit 5-2 (p. 142). The alignment of each street is discussed briefly below.

### 5.1.2.1 Fourth Street

The existing centerline will be maintained.

### 5.1.2.2 Haven Avenue

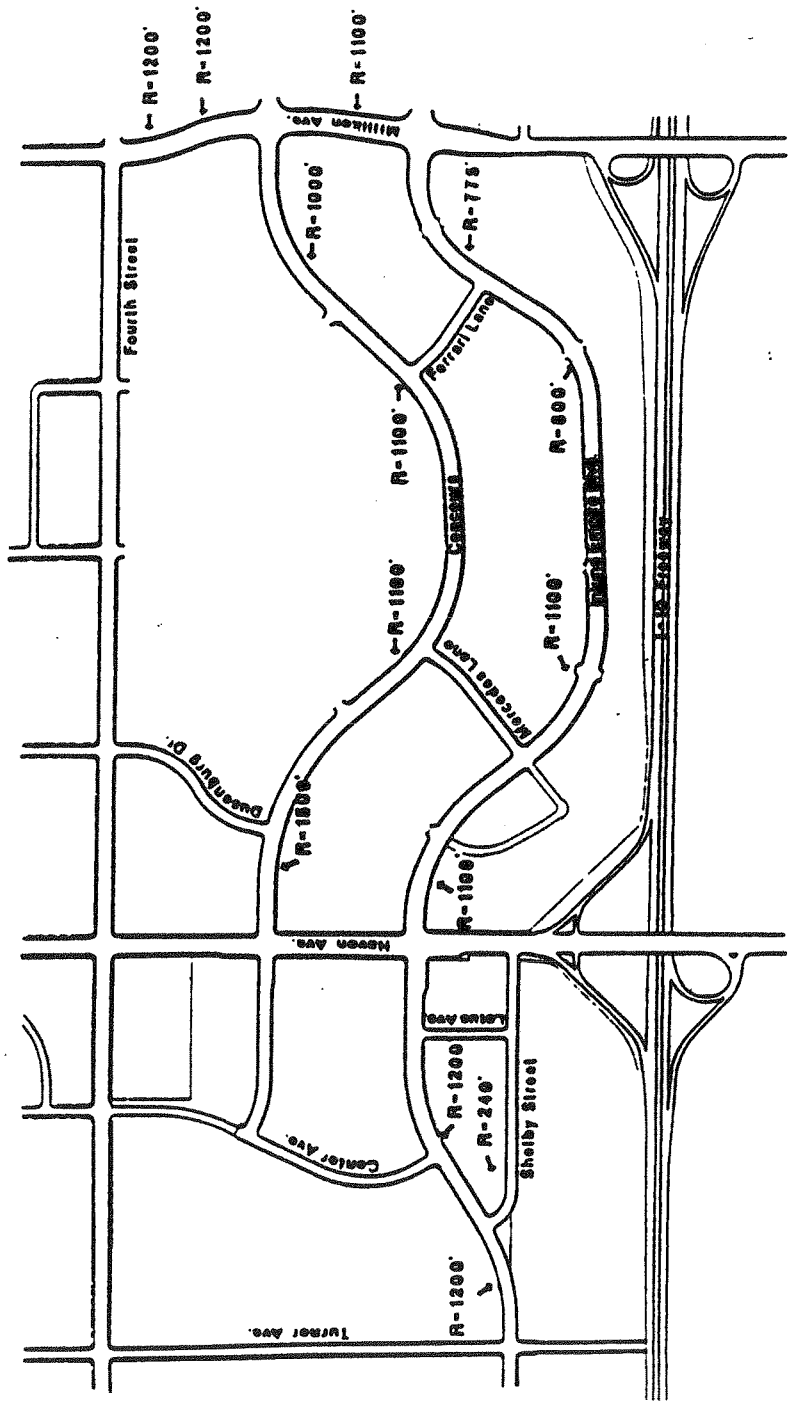
The existing centerline will be maintained north of old "G" Street. South of old "G" Street, Haven Avenue will be built out around the projection of the existing centerline north of old "G" Street. The existing centerline may change as lanes are added to the Haven Avenue freeway overpass.

### 5.1.2.3 Milliken Avenue

The existing centerline will be modified to provide for better traffic characteristics at Inland Empire Boulevard and Concours.

### 5.1.2.4 Turner Avenue

The existing centerline will be maintained.



**CENTERLINE STREET ALIGNMENTS**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA

EXHIBIT 5-2

0 600 1200

PCRC  
 PRC Engineering, Inc.

SOURCE: WILLDAN ASSOCIATES



### 5.1.2.5 Inland Empire Boulevard

Near Haven and Milliken Avenues, the street has been relocated to the north to provide greater distance between these intersections and the interchange ramps at I-10. At the time that these new alignments are constructed and open to public use, the existing rights-of-way no longer needed for circulation purposes shall be vacated by the City. West of Haven Avenue ~~and east of Milliken Avenue~~, the street transitions to the new intersections using curves with centerline radii of 1,200 feet. East of Haven Avenue, the street will go through two curves with 1,100-foot centerline radii, thereafter rejoining the existing alignment. It will then use curves with 800-foot and 775-foot radii, respectively, to reach its intersection with Milliken Avenue.

The existing sections of old "G" Street on the eastern approach to Haven Avenue and the western approach to Milliken Avenue have been or will be closed. A cul-de-sac shall be constructed where Shelby Street presently approaches the western side of Haven Avenue. This street is tied into Inland Empire Boulevard approximately 800 feet to the east of Turner Avenue. In the case of future limitation of access from Shelby Street to Haven Avenue and from Lancia to Milliken Avenue, this limitation and subsequent reconstruction shall be done only after a determination by the City Engineer that the traffic volumes warrant such limitation. Access mitigation measures shall be implemented to lessen impact on adjacent properties.

### 5.1.2.6 Concours

This new street intersects Haven and Milliken Avenues approximately midway between their intersections with relocated Inland Empire Boulevard and Fourth Street. Between Haven and Milliken Avenues,

the minimum centerline radius would be 1,000 feet near the approach to Milliken Avenue. ~~To the east of Milliken, Concours will intersect Bugatti Avenue which is an extension of the existing Buffalo Avenue in the City of Rancho Cucamonga.~~ To the west of Haven Avenue, Concours ends at Center Avenue which intersects Fourth Street directly opposite Center Avenue in the City of Rancho Cucamonga. The precise centerline alignment shall be determined with the participation and approval of City staff.

#### ~~5.1.2.7 McLaren Avenue~~

~~The existing approach of McLaren Avenue (formerly Rochester) to the south side of Fourth Street will be closed. McLaren Avenue will now end at a knuckle at its intersection with Concours. Exhibit 5-3 (p. 145) shows the conceptual treatment of McLaren Avenue. The final design shall be determined after consultation with the City Engineer, the applicant and adjoining property owners.~~

~~In all cases where additional streets are proposed, precise alignments and dedication requirements shall be determined after consultations by the applicant with the City Engineer and the adjoining property owner(s) directly affected by the changes to be made.~~

#### ~~5.1.2.8 Bugatti Avenue~~

~~Bugatti Avenue intersects Concours and Fourth Street where the alignment of Buffalo Avenue in Rancho Cucamonga intersects Fourth Street.~~

~~The full width of Bugatti Avenue must be constructed before the first permits to occupy are granted on properties which front on any of the streets east of Milliken except Inland Empire Boulevard, Lancia south of Inland Empire Boulevard, and the southern two thirds of Pantera Drive.~~

~~Exhibit 5-3 McLaren Avenue Conceptual Design~~

### 5.1.3 Design Parameters

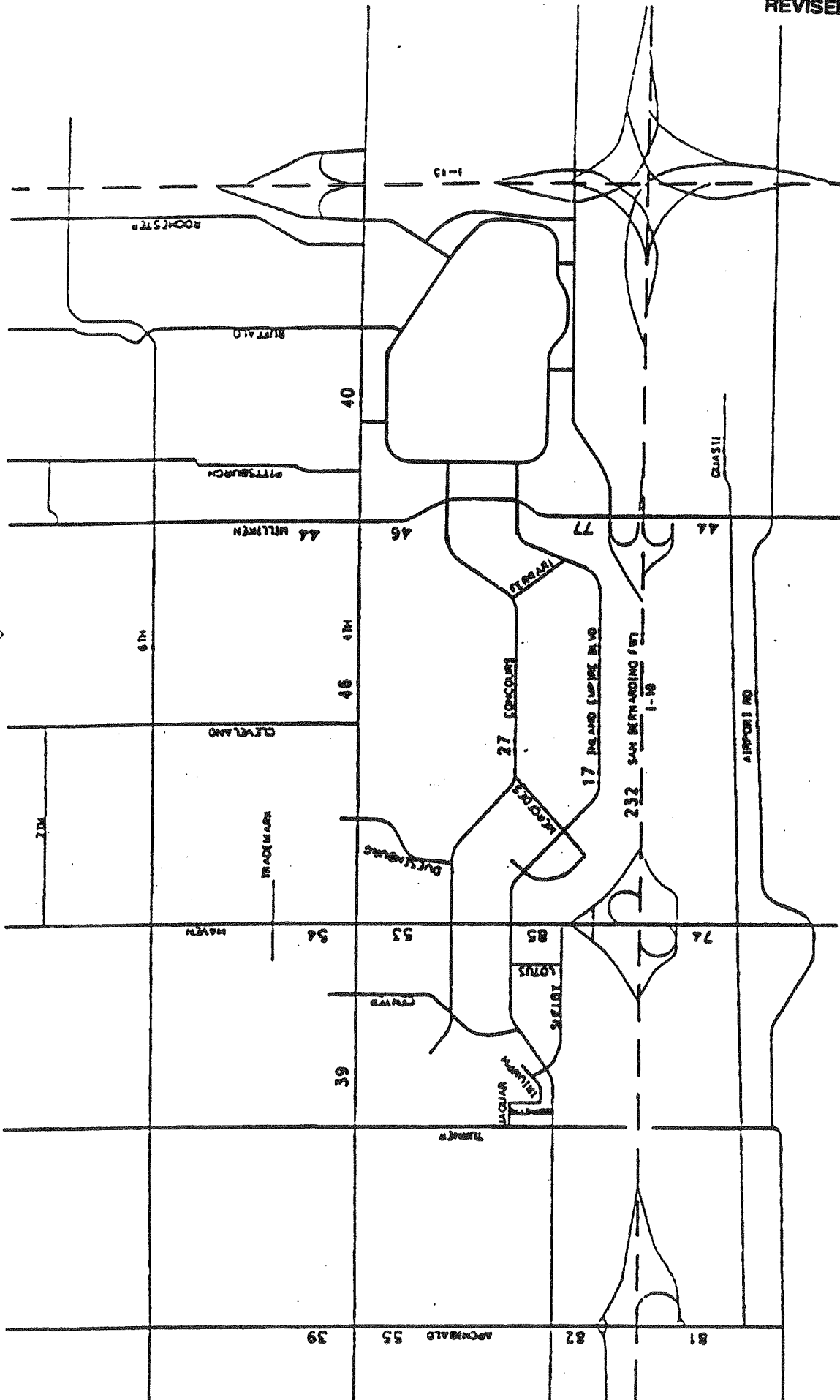
The traffic study prepared for EIR 88-2 has been incorporated in the Specific Plan as the guiding study for traffic and circulation issues. Roadways within The Ontario Center have been designed to accommodate peak hour traffic generation, with traffic projections based on ultimate build-out of each area within the Center. Traffic generation rates were selected for each land use category based on experience deemed comparable in Southern California or similar locales, and on the appropriateness of these rates to the location in question. Rates used are conservatively high to anticipate future changes in land use mix. Trip generation rates employed for The Ontario Center are presented in the appendix of EIR 88-2.

Trip distribution projections were derived from observed traffic patterns in the vicinity of the project site, as well as from locations and levels of development similar to the project. The distribution of trips was applied to traffic generation rates, and these trips were then assigned to the shortest path between each parcel and the respective destinations.

Non-project traffic was ascertained for EIR 88-2 and includes all development currently planned in the surrounding area. In addition, maximum development density permitted by existing entitlements was assumed. Non-project traffic was subsequently added to project traffic to generate roadway and intersection requirements within The Ontario Center. Traffic projections for total ultimate p.m. peak-hour volumes are depicted on Exhibit 5-4 (p. 147). Exhibit 5-5 (p. 148) indicates project average daily traffic (ADT) in thousands.

Proportional turning movements at major intersections were estimated from the trip assignments. Controlling intersection movements were identified through the ICU (Intersection Capacity Utilization) Analysis. Configuration of intersections presented in the following section are in substantial compliance with EIR 88-2. Mitigating considerations, such as internal project

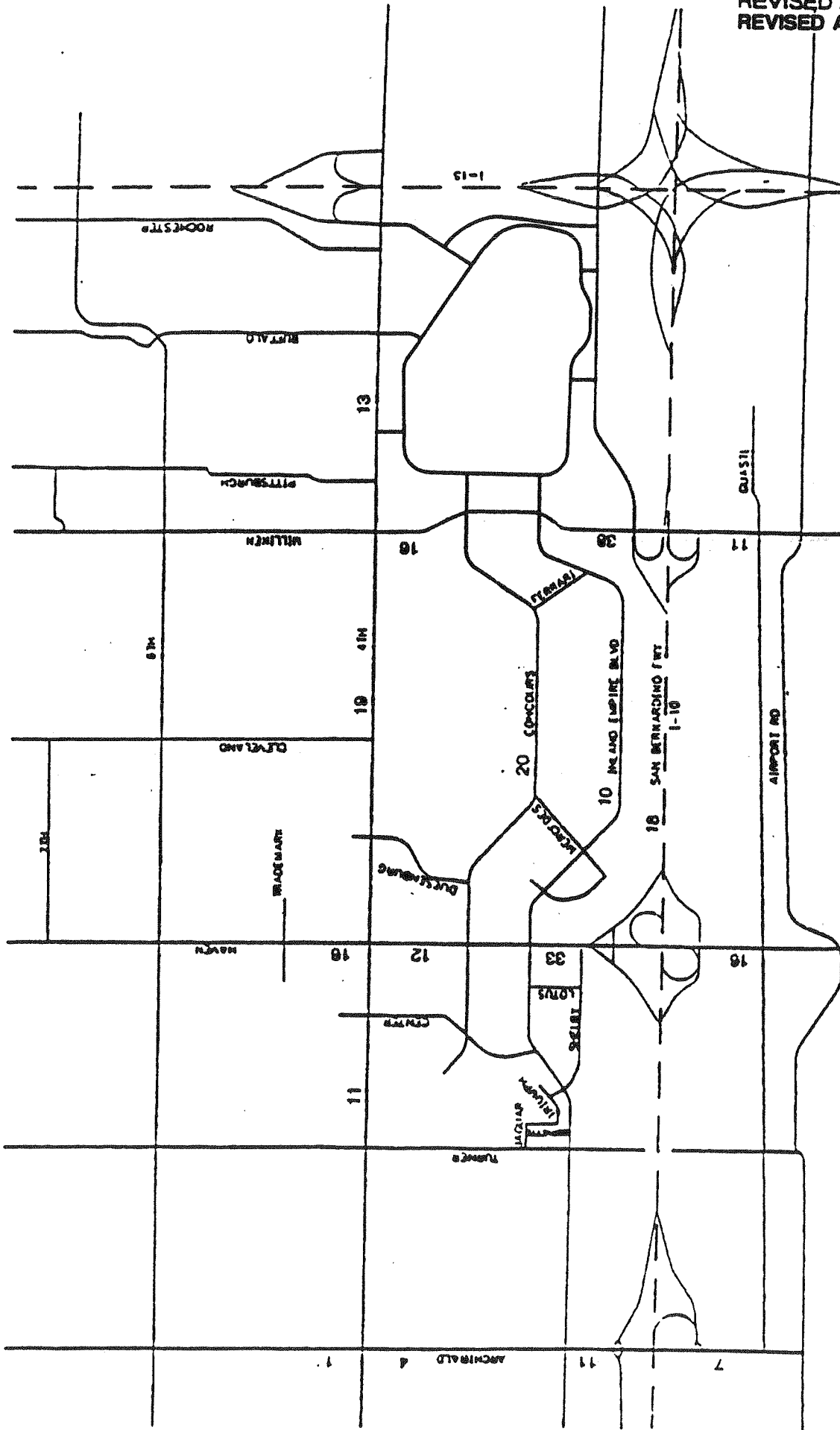
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 REVISED AS OF MAY 1990  
 REVISED AS OF OCTOBER 1994



**TOTAL TRAFFIC VOLUMES AT  
 ULTIMATE DEVELOPMENT YEAR 2010 (1000's)  
 THE ONTARIO CENTER  
 ONTARIO, CALIFORNIA**

EXHIBIT 5-4  
 Rand  
 Associates, Inc.  
 SOURCE: AUSTIN-FOUST ASSOCIATES

REVISED AS OF JULY 1987  
 REVISED AS OF JAN. 1989  
 REVISED AS OF MAY 1990  
 REVISED AS OF OCTOBER 1994



PROJECT ADT (1000's)  
**THE ONTARIO CENTER**  
 ONTARIO, CALIFORNIA

EXHIBIT 5-5  
 Randolph Hubbs Associates, Inc.  
 SOURCE: AUSTIN-FOUST ASSOCIATES 1994

transit service, signal coordination, peak period directional route planning, and future regional and subregional transit service planning will alleviate some of the congested conditions indicated in the ICU analysis.

#### 5.1.4 Street Cross-Sections and Intersection Lane Configurations

Exhibits 5-6 through 5-19 (pp. 150-165) provide necessary street cross-section information for ultimate right-of-way planning in the project area. Exhibits 5-6 through 5-12 illustrate the midblock cross-sections for Haven Avenue, Milliken Avenue, Inland Empire Boulevard, Fourth Street, Concours, Turner Avenue, Mercedes, Ferrari, and Duesenberg, McLaren, Bugatti, Lancia, Pantera and Alfa Romeo. Exhibits 5-13 through 5-18 show the anticipated intersection lane configurations recommended for use as a reasonable planning basis at the following intersections:

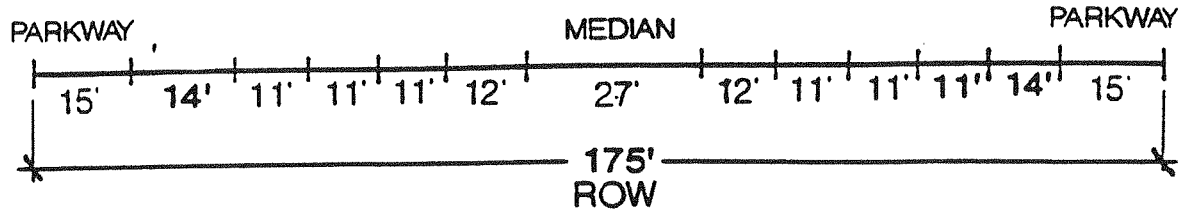
- Inland Empire Boulevard/Haven Avenue
- Inland Empire Boulevard/Milliken Avenue
- Concours/Haven Avenue
- Concours/Milliken Avenue
- Fourth Street/Haven Avenue
- Fourth Street/Milliken Avenue
- ~~Fourth Street/Bugatti Avenue~~

Minor modifications to these standards may be made by the City Engineer. Unless otherwise approved by the City Engineer, all other major, collector and local roadways will be designed to the standards contained in the City's Master Plan of Streets and Highways. The traffic analysis for EIR No. 88-2 projected future traffic and is the determining study for required intersection and lane configurations. Demand projections at each intersection were reviewed for consistency and reasonableness, and adjustments were made where deemed appropriate. Considerations of design balance, practicality, and traffic safety were incorporated into preliminary intersection configura-

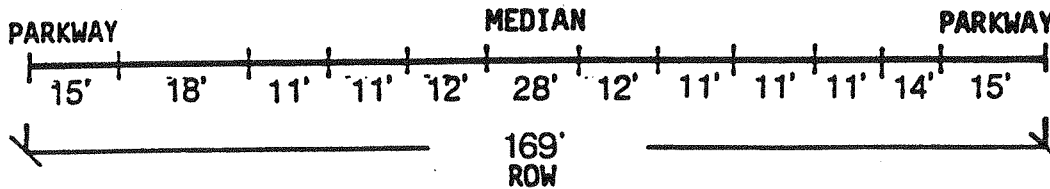
# MID BLOCK CROSS SECTIONS :

## HAVEN AVENUE

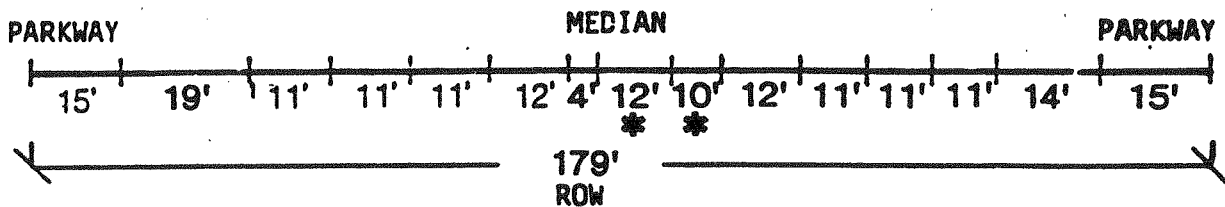
### North of Concours



### North of Inland Empire Blvd.



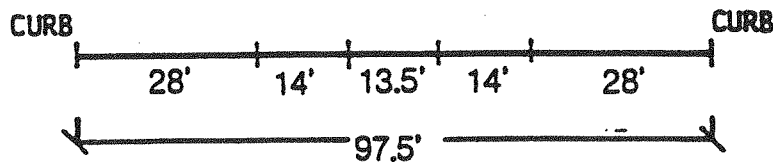
### North of the San Bernardino Frwy.



Ultimate design to be coordinated with CalTrans. Lane widths vary between Shelby St. and Inland Empire Blvd.

\* Left - turn lane

### Existing Condition North of Concours

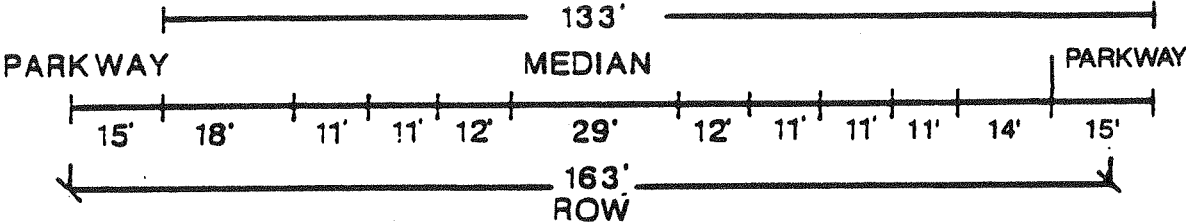




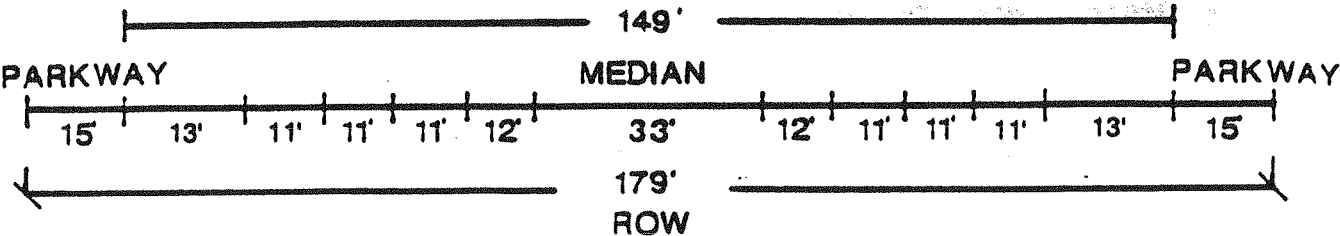
# MID BLOCK CROSS SECTIONS:

## MILLIKEN AVENUE

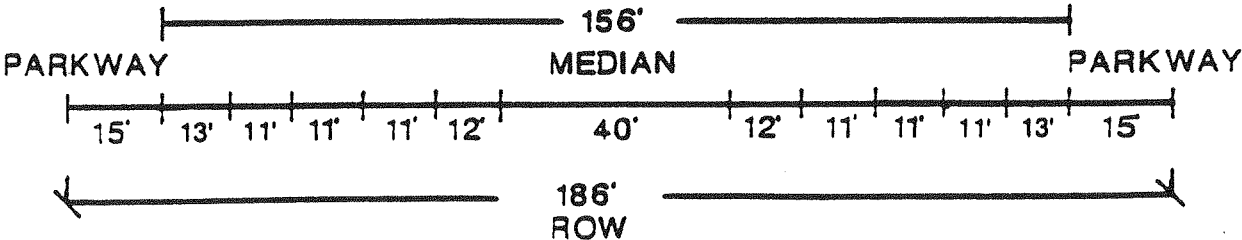
### North of Concour



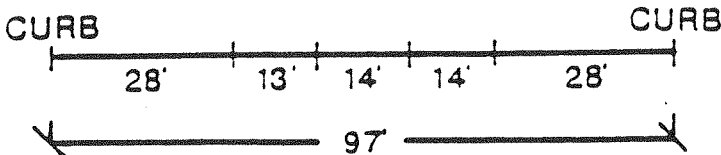
### North of Inland Empire Blvd.



### North of the San Bernardino Frwy.



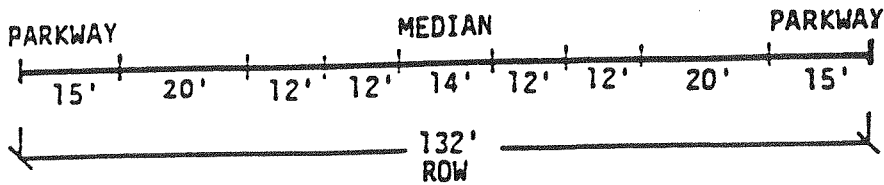
### Existing Condition



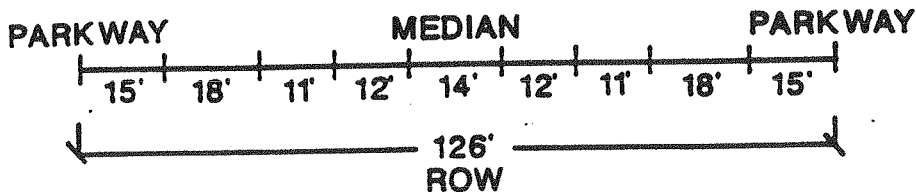
# MID BLOCK CROSS SECTIONS:

## INLAND EMPIRE BLVD.

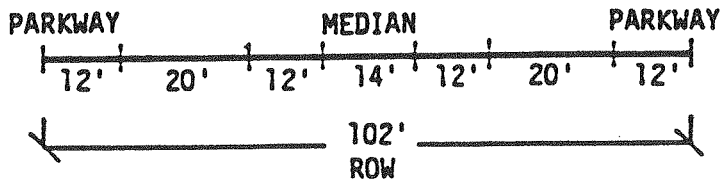
### West of Haven to East of Mercedes



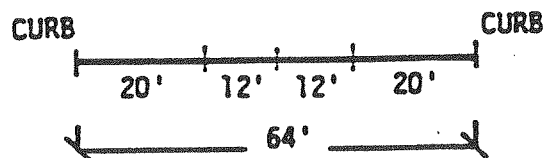
### East of Mercedes to Milliken



### East of Turner to West of Haven



### Existing Condition

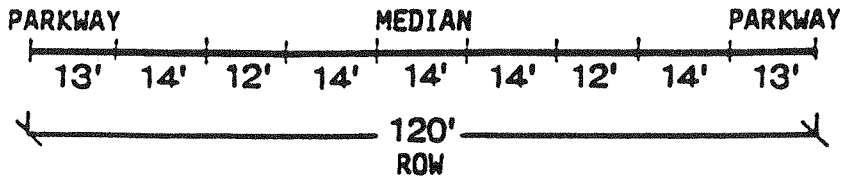


~~Exhibit 5-8a Mid Block Cross Sections: Inland Empire Blvd.~~

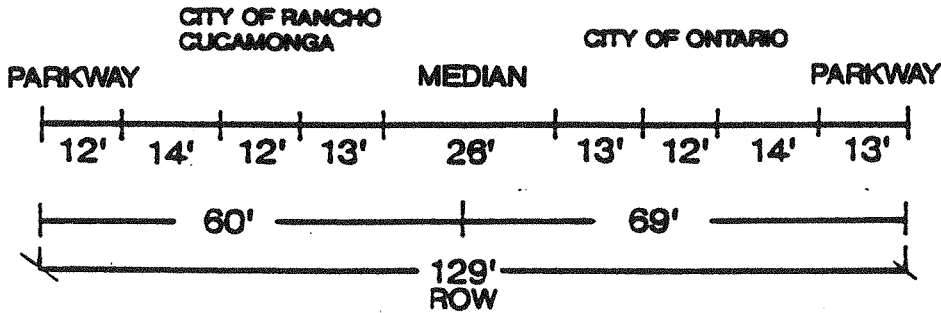
# MID BLOCK CROSS SECTIONS:

## FOURTH STREET

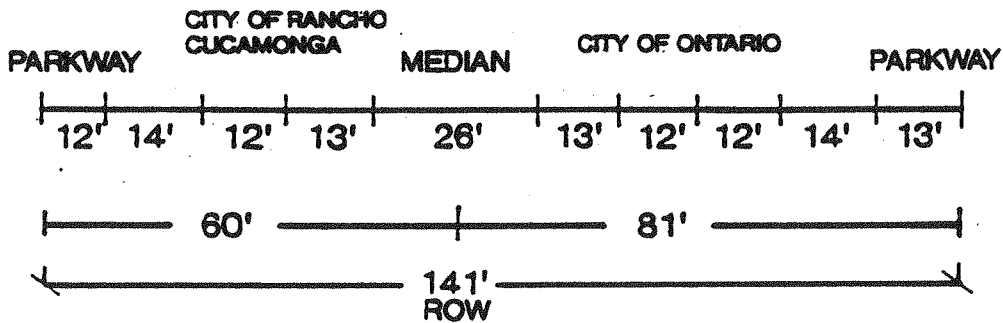
West of Haven Ave.



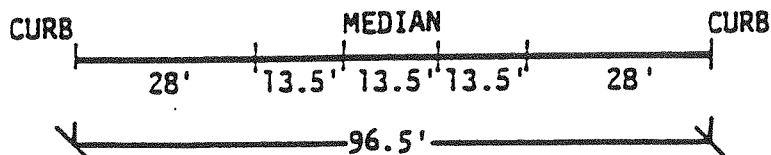
## Dusenburg to Milliken Ave.



## Haven Ave. to Dusenburg



## Existing Condition

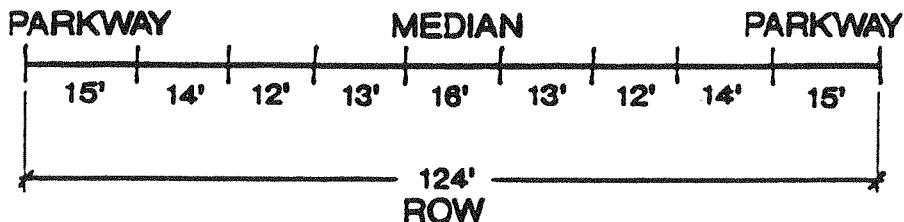


# MID BLOCK CROSS SECTIONS:

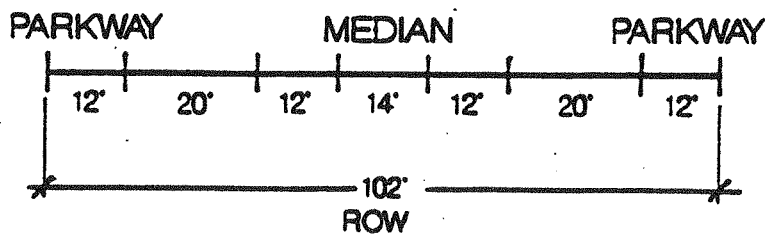
REVISED AS OF MARCH 1993

## CONCOURS

### Haven to Milliken

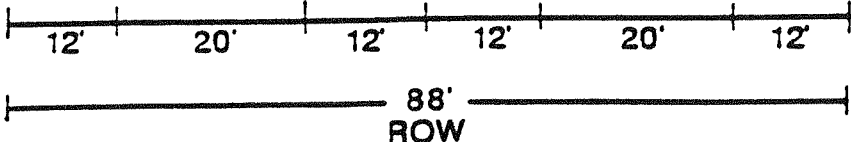


### West of Haven

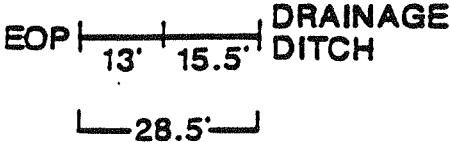


# MID BLOCK CROSS SECTIONS:

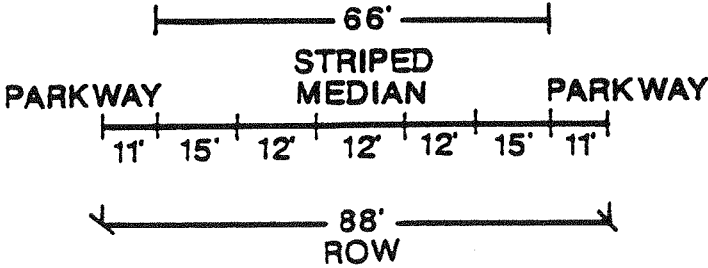
## TURNER AVENUE



Existing Condition



## MERCEDES, FERRARI, and DUSENBERG

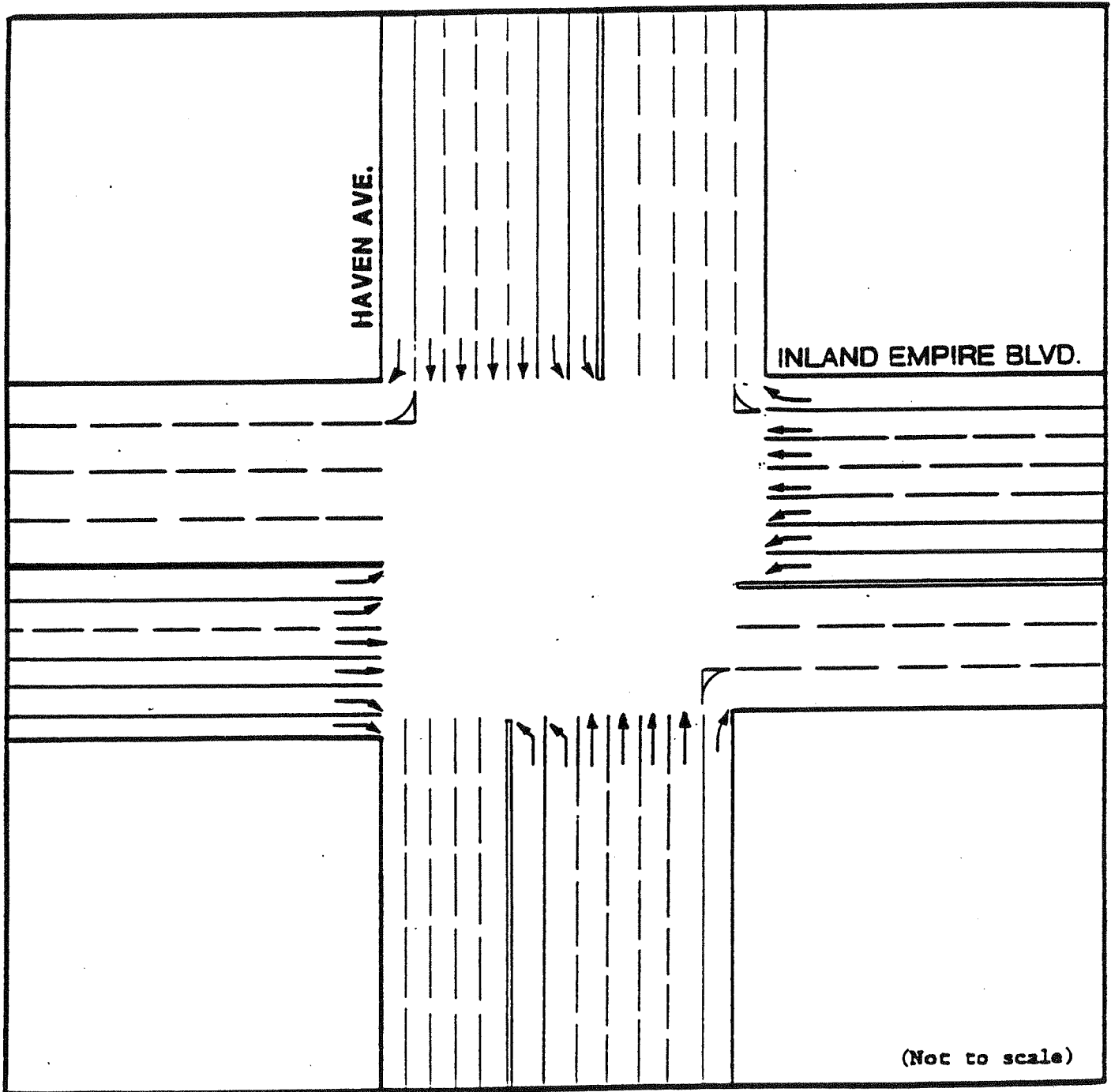


~~Exhibit 5-12 Mid Block Cross Sections: Me Laren~~

~~Exhibit 5-12a Mid Block Cross Sections: Lancia~~

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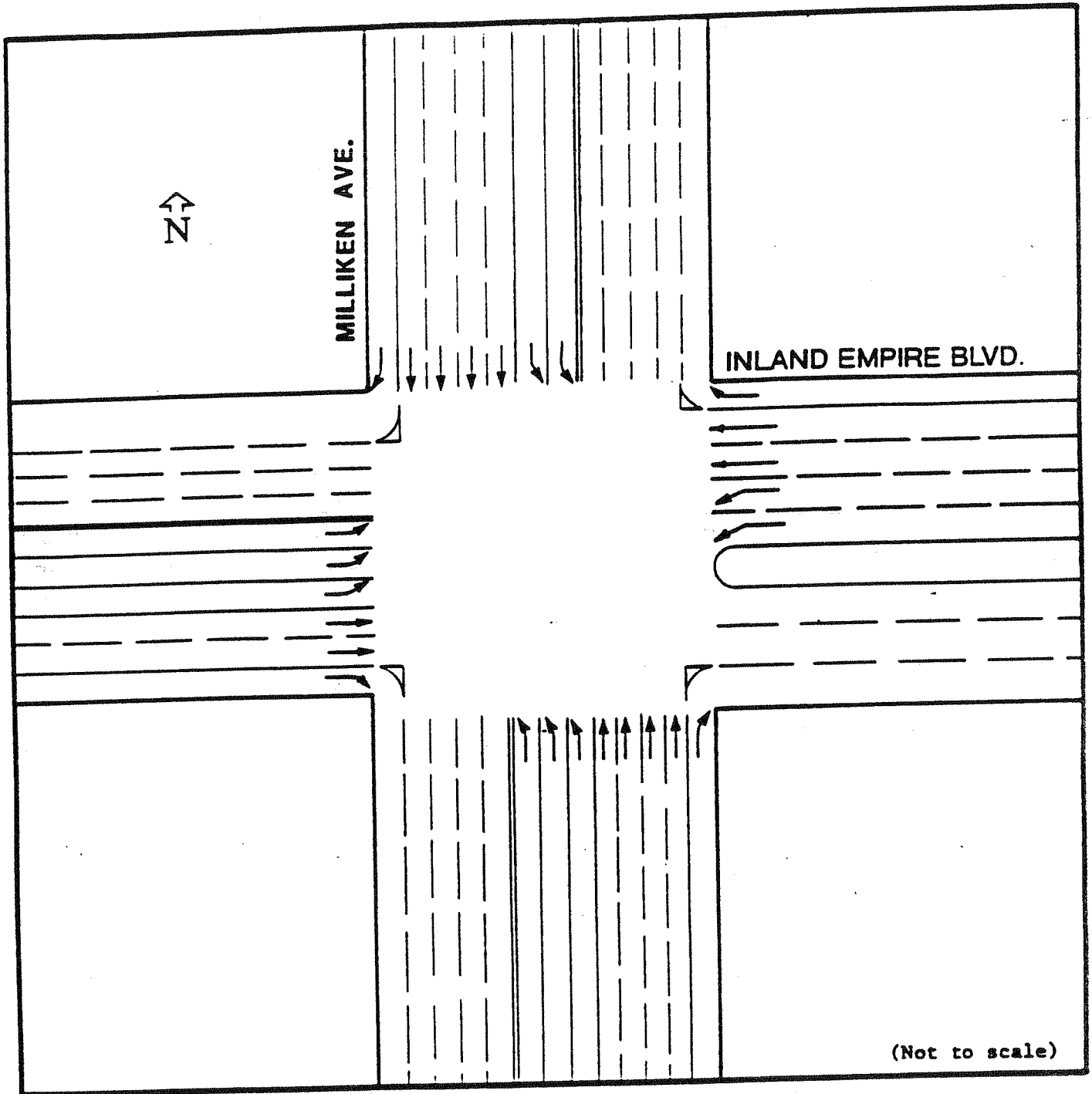


**INTERSECTION CONFIGURATION:  
HAVEN/INLAND EMPIRE BLVD  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-13**



SOURCE: WESTON PRINCLE & ASSOCIATES



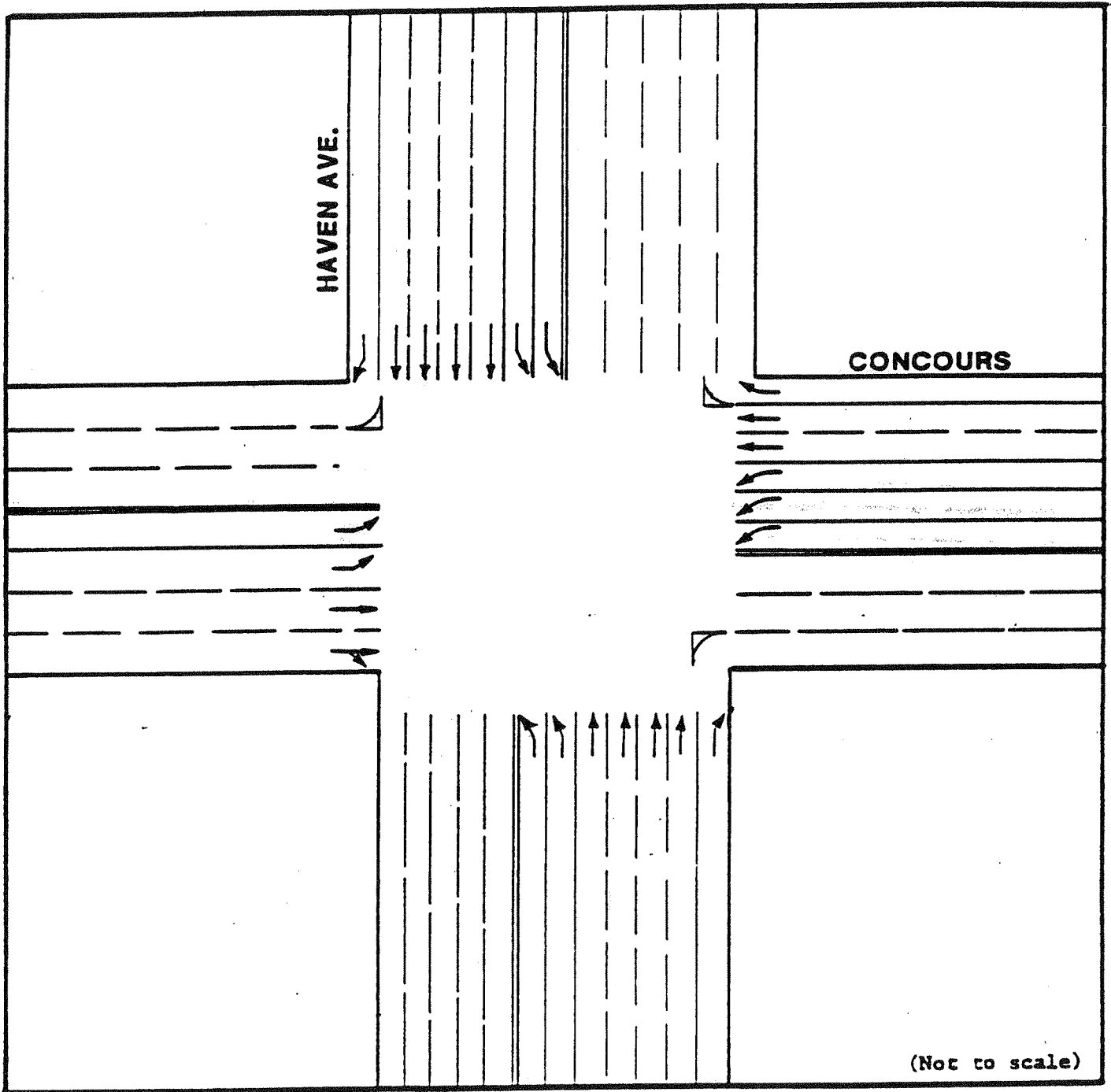
Note: The northbound and westbound lefts can be reduced to dual lefts if Lancia Street is realigned to intersect with the Milliken/ I-10 westbound ramp. (See CCCN Specific Plan.)

**INTERSECTION CONFIGURATION:  
MILLIKEN / INLAND EMPIRE BLVD  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-14**



SOURCE: WESTON PRINGLE ASSOCIATES

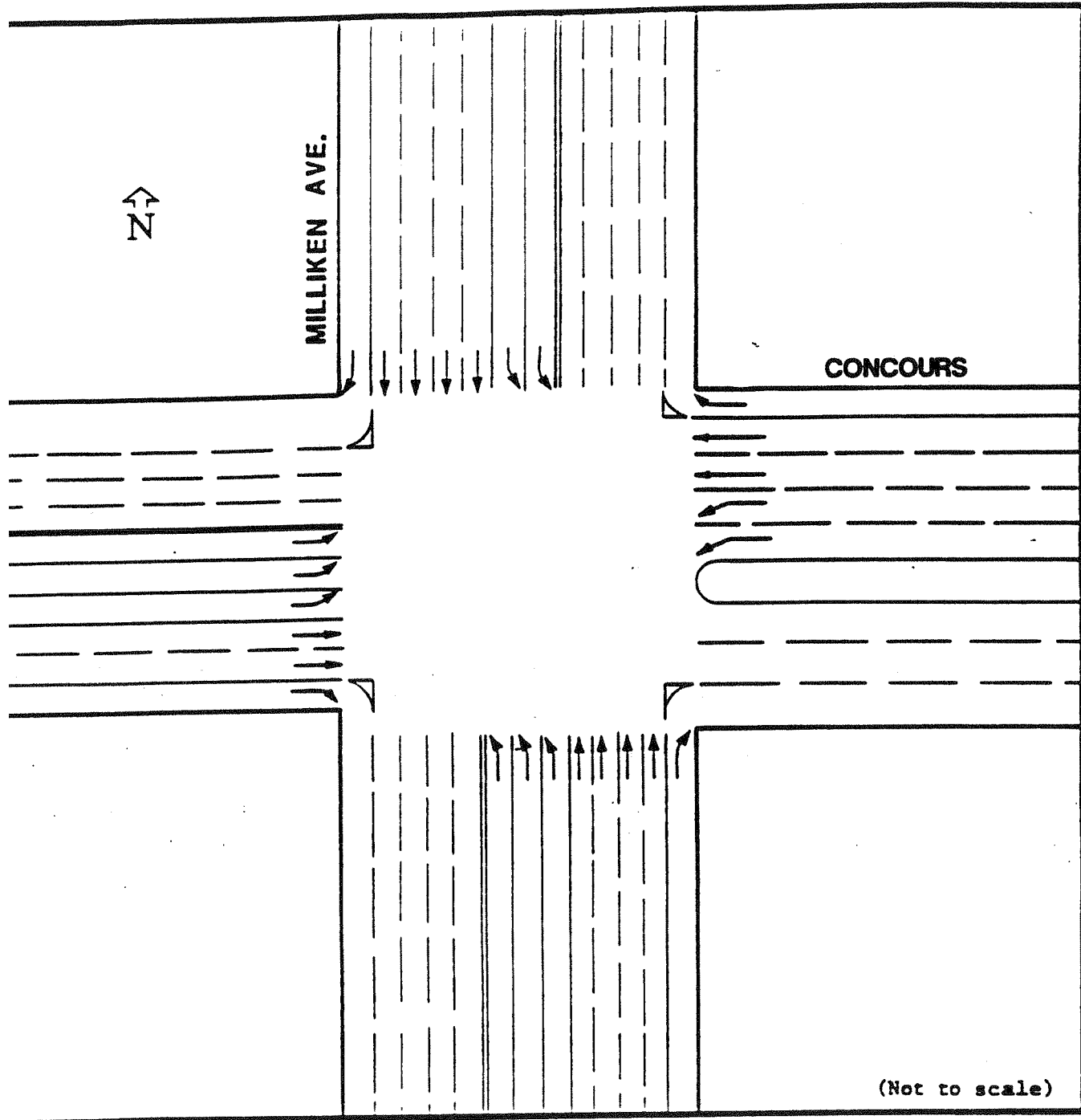


**INTERSECTION CONFIGURATION:  
HAVEN/CONCOURS  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-15**



SOURCE: WESTON PRINGLE & ASSOCIATES

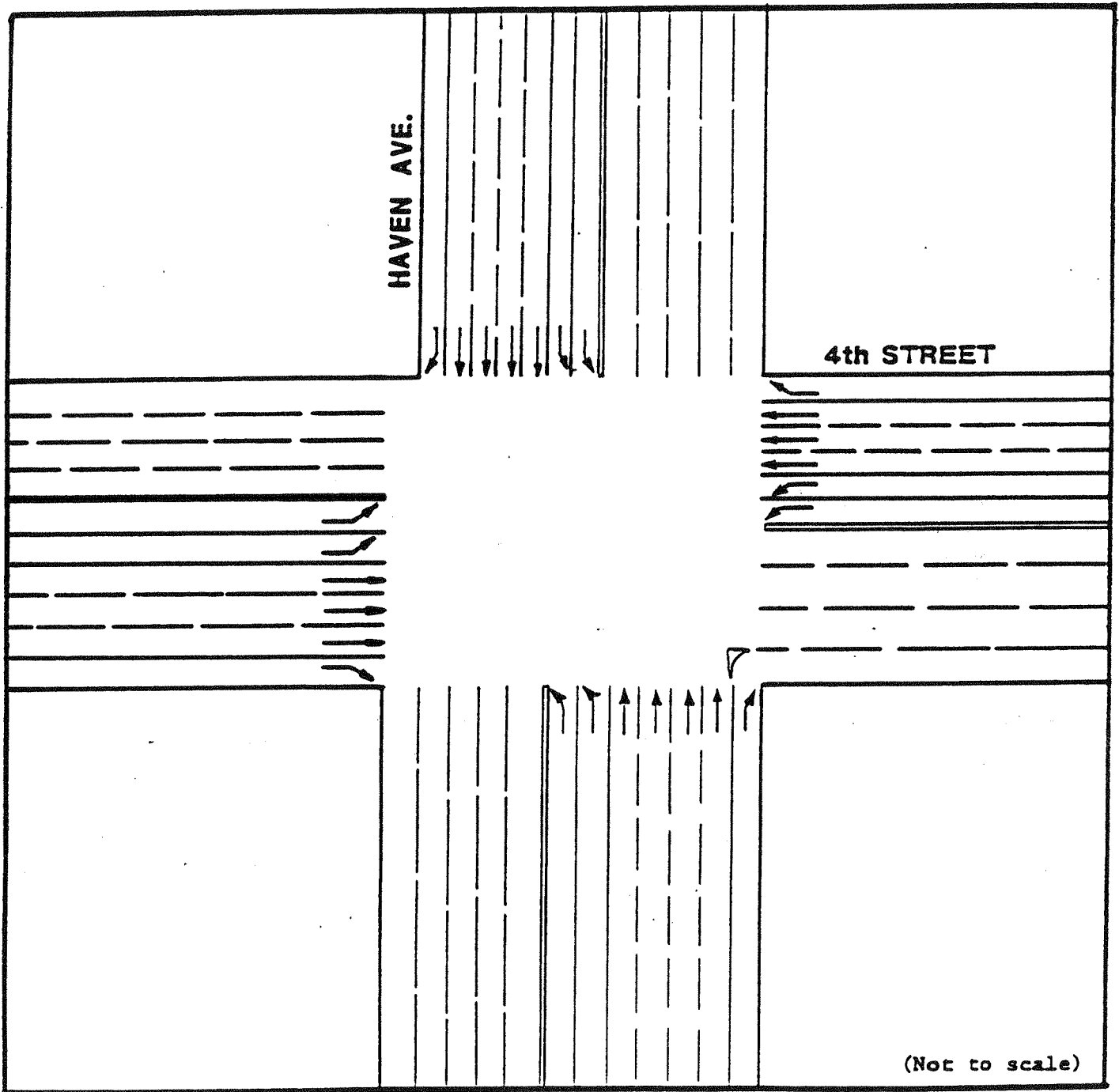


**INTERSECTION CONFIGURATION:**  
**MILLIKEN/CONCOURS**  
**AT THE ONTARIO CENTER**  
Environ Land and Development Company  
ONTARIO, CALIFORNIA

EXHIBIT 5-16

SOURCE: WESTON PRINGLE & ASSOCIATES

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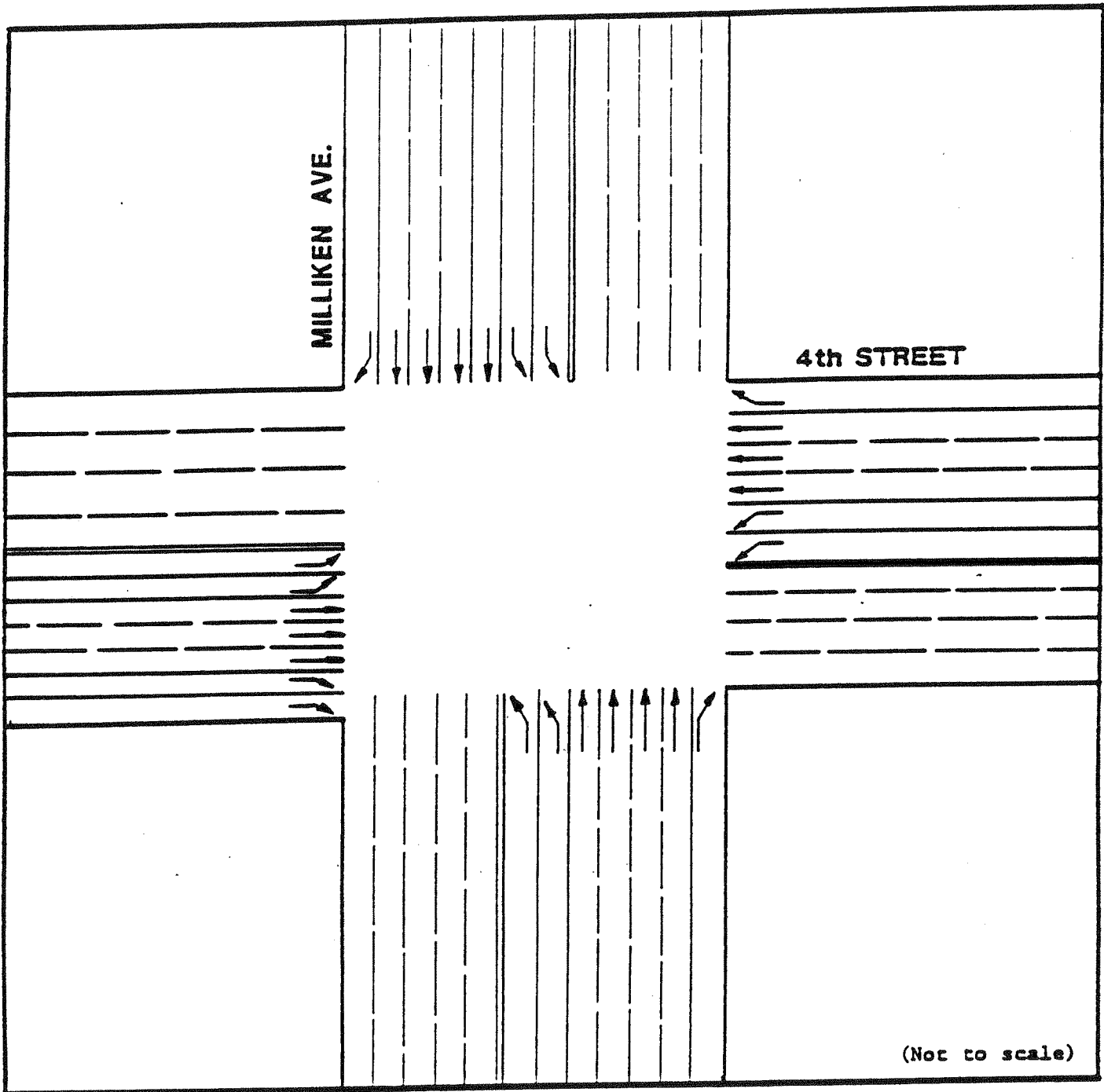
**INTERSECTION CONFIGURATION:  
HAVEN/FOURTH  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-17**



SOURCE: WESTON PRINGLE & ASSOCIATES

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REVISED AS OF MAY 1990



**INTERSECTION CONFIGURATION:  
MILLIKEN/FOURTH  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-18**



SOURCE: WESTON PRINGLE & ASSOCIATES

~~Exhibit 5-19 Intersection Configuration: Bugatti/Buffalo/Fourth~~

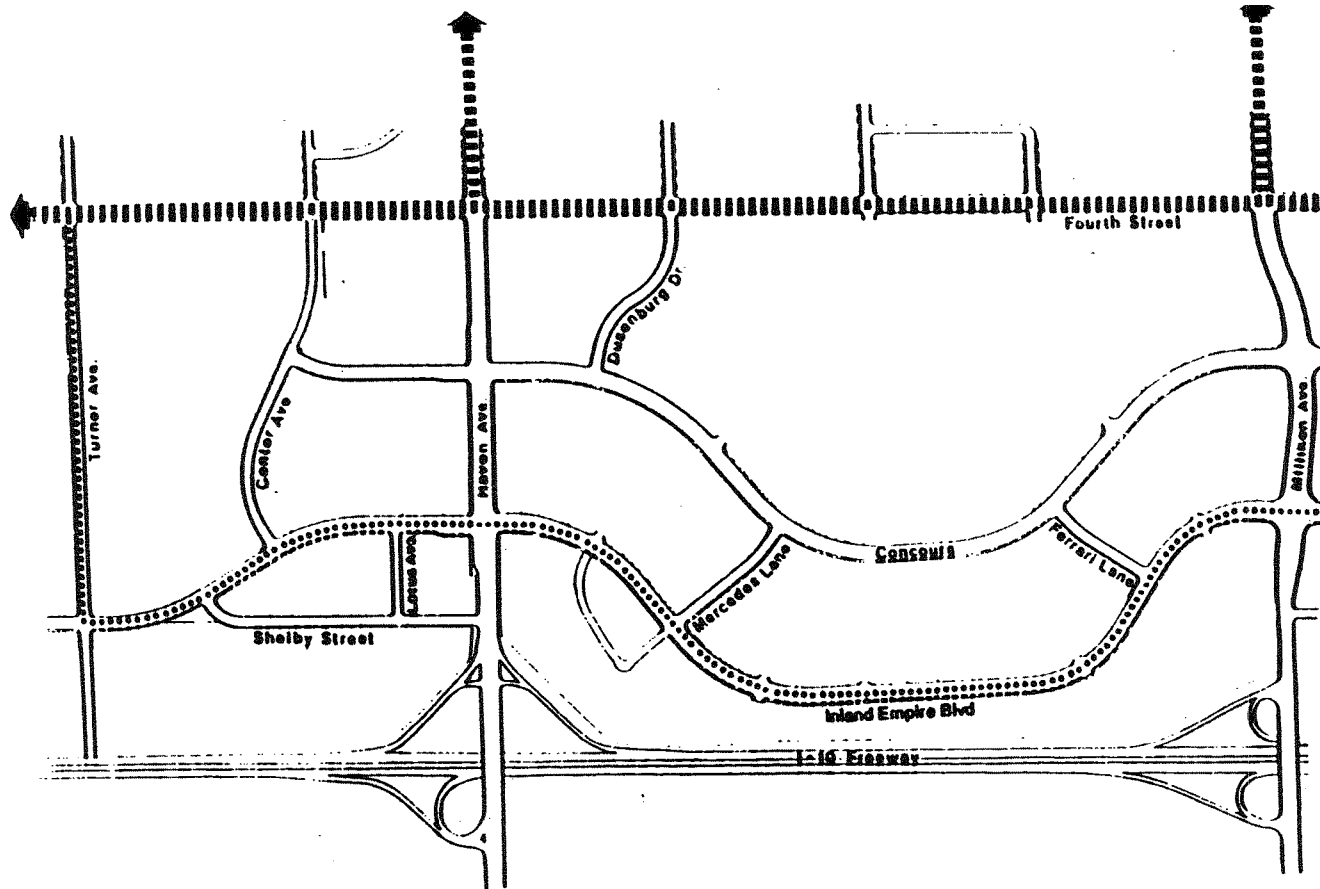
tions. Each intersection was tested assuming multiphase traffic actuated signal control and employing an approximate ICU analysis to test intersection capacity and investigate other possible configurations, if any, that would naturally increase traffic capacity. The intersection configurations were coordinated with the midblock cross-sections to form a balanced street circulation system plan.

At intersections other than the seven noted above, the analysis indicated that the standard (midblock) cross-section would not need to be widened to accommodate the range of turning movements that can be anticipated at this level of planning. In such instances, left-turn pockets would be provided in center medians to provide mid-block access.

#### 5.1.5 Provisions for Bicycles

Within the project area, there are no existing bicycle facilities. However, the City of Rancho Cucamonga's General Plan includes a proposed bicycle route plan which includes bikeways of Haven Avenue, Milliken Avenue, and Fourth Street to the north of the project. To provide a complementary bicycle route system, it would be appropriate to connect the Center's bikeways with the proposed Rancho Cucamonga bicycle route plan. At the same time, however, safety considerations dictate that automobile traffic volumes also be incorporated into the planning process. Since several of the Project's streets (particularly Haven and Milliken Avenues) are expected to carry heavy daily volumes of traffic, it would be unwise to implement bikeways along these arterials. Balancing these considerations, a bike route is proposed utilizing ~~Lancia Lane~~, Inland Empire Boulevard and Turner Avenue. This path will have connections to Fourth Street via Turner Avenue and Concours ~~or through the California Commerce Center North Specific Plan area east of Milliken Avenue.~~ The route is depicted on Exhibit 5-20 (p. 167).





**LEGEND**

- CITY OF RANCHO CUCAMONGA BIKE ROUTE
- ..... BIKE ROUTE WITHIN THE ONTARIO CENTER

**BICYCLE ROUTES  
THE ONTARIO CENTER**  
Chevron Land and Development Company  
ONTARIO, CALIFORNIA

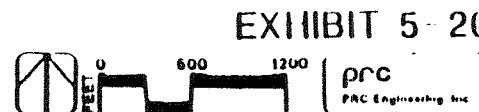


EXHIBIT 5-20

REVISED AS OF OCT. 1990  
REVISED AS OF OCTOBER 1994

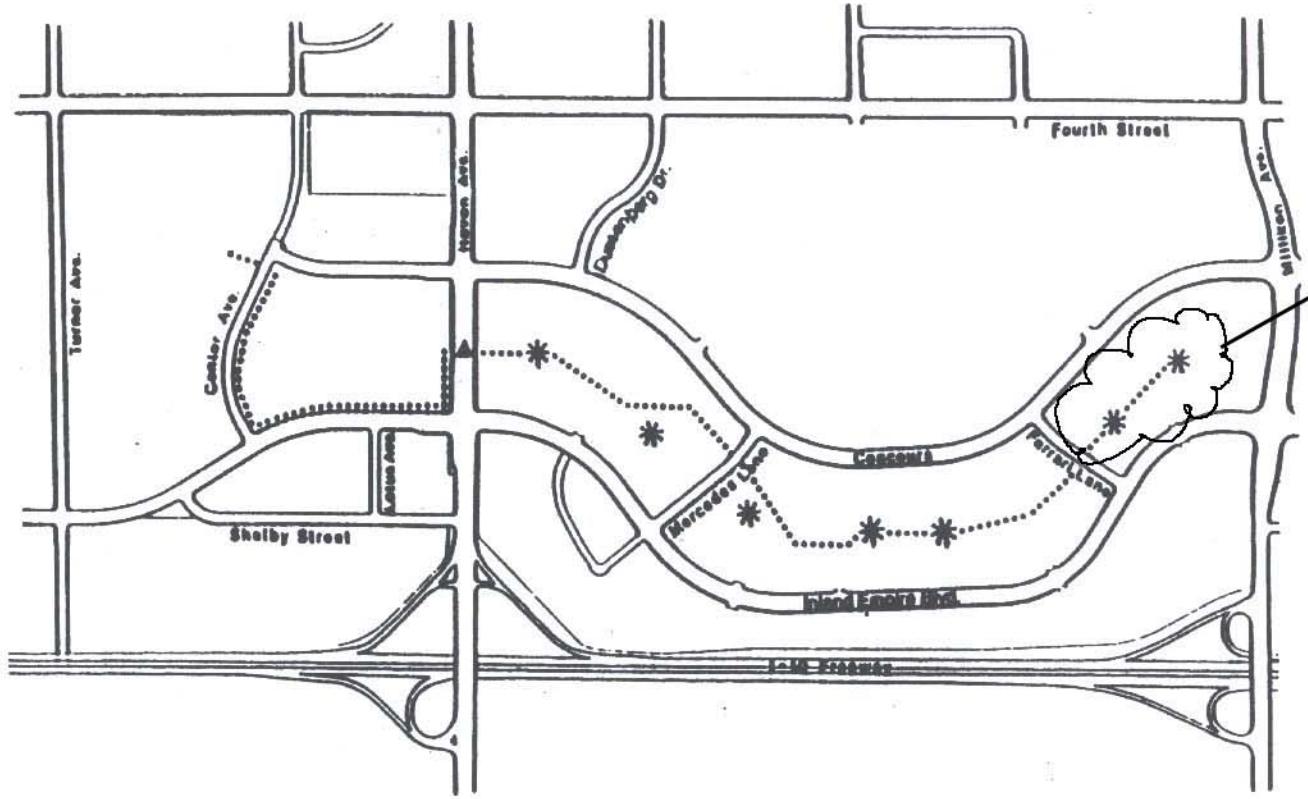
A bikeway on Concours will connect the eastern end of the proposed bike route with the proposed Rancho Cucamonga bike route on Fourth Street. ~~Bicycle crossings from the north side of Concours to Lancia Lane will be accommodated by a crosswalk at Lancia Lane.~~ The western end of the bike route will be connected to Fourth Street via Turner Avenue.

Bike route signs will be provided along the designated bike route. Each of the principal streets in the project will include an 8-foot emergency lane along each curb. Along the bike route this lane will accommodate bicycles.

#### 5.1.6 Provisions for Pedestrians

Pedestrian facilities within the Center are shown on Exhibit 5-21 (p. 169). Sidewalks are located within street rights-of-way or separate easements, and pedestrian paths will meander within and between planning areas through a 20 foot to 50 foot wide landscaped area. Paths are no less than 5 feet in width and average 6 feet in width within a Planning Area. They are located adjacent to a landscaped buffer area where possible. Sidewalks and pedestrian paths are linked to integrate the two system elements.

Pedestrian crossings of the two major north/south streets, Haven Avenue and Milliken Avenue are the longest pedestrian crossings in the project and require special consideration. The recommended traffic geometrics for the intersections within the project along Haven and Milliken include the use of free right turn lanes created by small median islands. One reason for these islands is to reduce the pedestrian crossing distances and time requirements. This will limit the potential conflicts between pedestrians and vehicles and allow the intersections to function at maximum vehicle capacity. Should the need for a mid-block crossing, between Inland Empire Boulevard and Concours, across Haven or Milliken arise due to the continuation of the pedestrian pathway system at mid-block, the preferred method of crossing shall be a signalized at-grade crossing. A time/space diagram shall be prepared by



See Exhibit 3-2B

**LEGEND**

- ..... PEDESTRIAN PATHWAY
- \* PLAZA LOCATION

**PEDESTRIAN CIRCULATION SYSTEM**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA



EXHIBIT 5-21

REVISED AS OF JULY 1987  
 REVISED AS OF MARCH 1993  
 REVISED AS OF OCTOBER 1994

a registered traffic engineer to determine the phasing of such a mid-block signal so that the flow of traffic is affected as little as possible. If the uses on both sides of these two streets require direct connection for pedestrians at mid-block, such as employee parking lots for a place of employment which is across the street or a single use which is on both sides of the street, pedestrian overcrossings across Haven and Milliken Avenues may be constructed if pedestrian movements require separation from vehicular traffic.

~~Sidewalks are required on both sides of the street, fully landscaped, in all areas characterized by the business park type of land use. ("Business Park" is a permitted use in the Garden Industrial area of the Center.)~~

~~If a service commercial facility is established in a clearly industrial portion of the Specific Plan, a sidewalk will be provided on the side of the street upon which that establishment exists. This sidewalk will extend at least the length of the block upon which that establishment exists.~~

Pedestrian crossings will not be permitted on the south sides of the intersections of Haven and Inland Empire Boulevard and Milliken Street and Inland Empire Boulevard at the ultimate stage of development. Fully signalized pedestrian-activated crossings shall be provided at all other traffic signalized access points.

## **5.1.7 Provision for Public Transportation and Ridesharing**

### **5.1.7.1 Introduction**

The availability of a convenient, coordinated transit service and ridesharing program will be a key factor in minimizing traffic congestion on the streets around the Center. Discussions with transit planners at Omnitrans (San Bernardino County's transit operator) and SANBAG (the County's transportation planning agency) revealed that the two public agencies presently have no specific plans for providing public transportation to the area around The Ontario Center site.

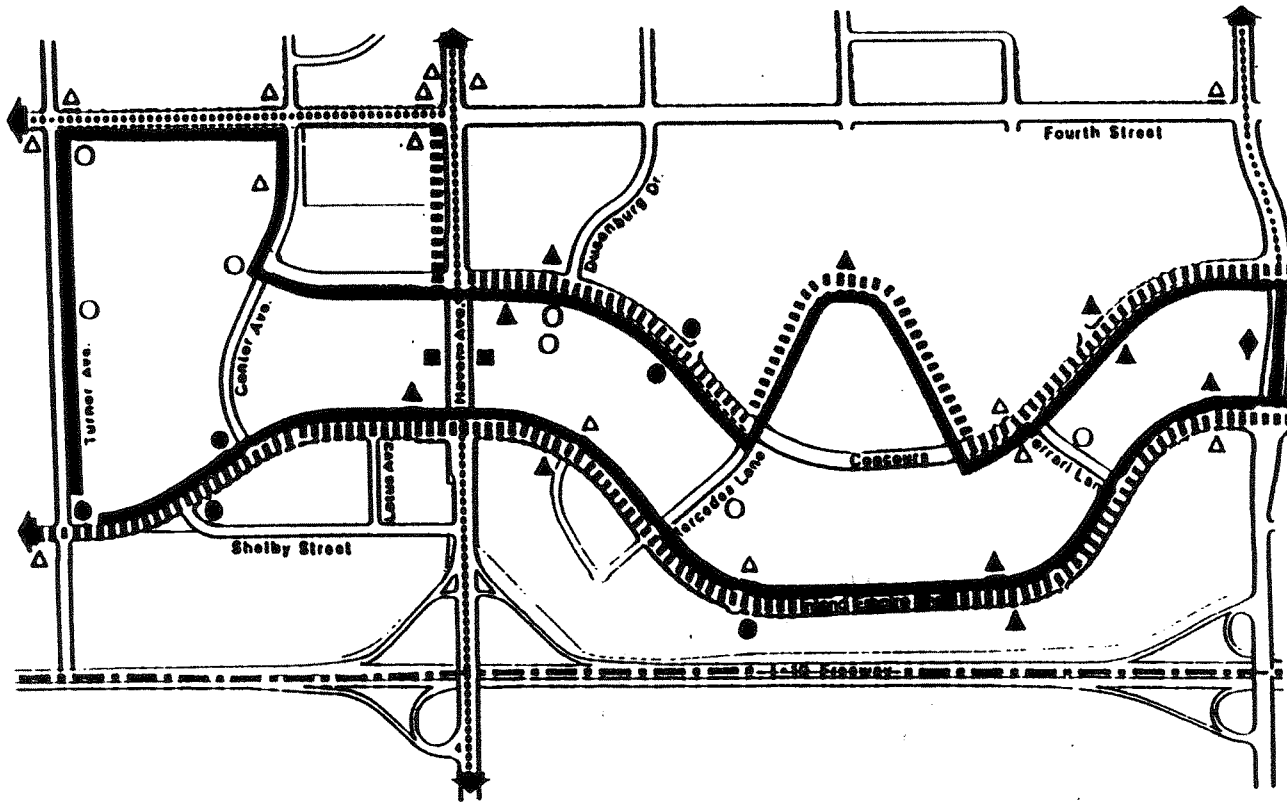
Despite the lack of plans, some effort must be made at this time to project what type of service will be provided once the level of development warrants it.

Four types of transit and paratransit services are expected to serve the Project: an internal circulation system; local bus service; express bus service; and ridesharing. The transit elements of this system are shown on Exhibit 5-22 (p. 172).

#### 5.1.7.2 Internal Circulation

Plans for the Center envision a minibus system providing circulation within the project area. This plan will be implemented per the Covenants, Conditions and Restrictions for The Ontario Center. The service concept is to provide for local trips internal to the project primarily along the development corridors adjacent to Inland Empire Boulevard and Concours. The general service plan would be to provide minibus circulation in a loop pattern along Inland Empire Boulevard and Concours, with the ends of the loop at ultimate project development being Turner Avenue on the west and the secondary street east of Milliken on the east. Actual minibus routing may include bringing the minibuses off of Inland Empire Boulevard and Concours to serve the regional center and other major activity centers, such as plazas, as the demand for internal trip capture increases with ultimate development of the Center.

Specific locations or stops will be set at the Planning Area Review level. Appropriately marked bus stops will be provided at each stop location. In addition, on the heavily traveled portions of Inland Empire Boulevard and Concours, bus bays may be provided as indicated on Exhibit 5-22 (p. 172) to enable the buses to move out of traffic. The design of major bus bay facilities is shown on Exhibit 5-23 (p. 173). Exhibit 5-24 (p. 174) depicts the design of a local plus mini bus bay.



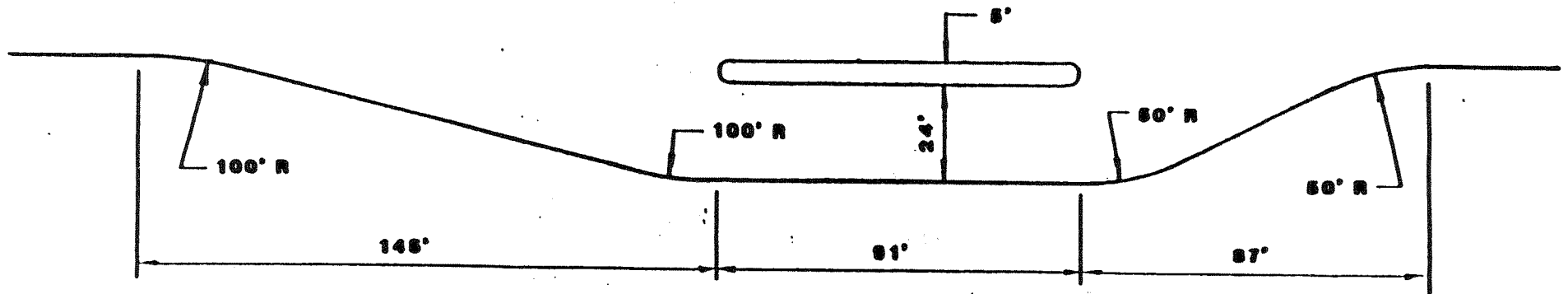
- ..... PROBABLE LOCAL BUS ROUTE
- ..... POSSIBLE LOCAL BUS ROUTE
- PROBABLE MINIBUS ROUTE
- - - - EXPRESS BUS CORRIDOR
- MINIBUS STOP

- MAJOR BUS BAY
- ◆ POSSIBLE MAJOR BUS BAY
- ▲ LOCAL PLUS MINIBUS BAY
- △ LOCAL BUS STOP
- LOCAL PLUS MINIBUS STOP

**TRANSIT SYSTEM ELEMENTS**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA



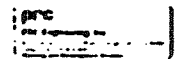
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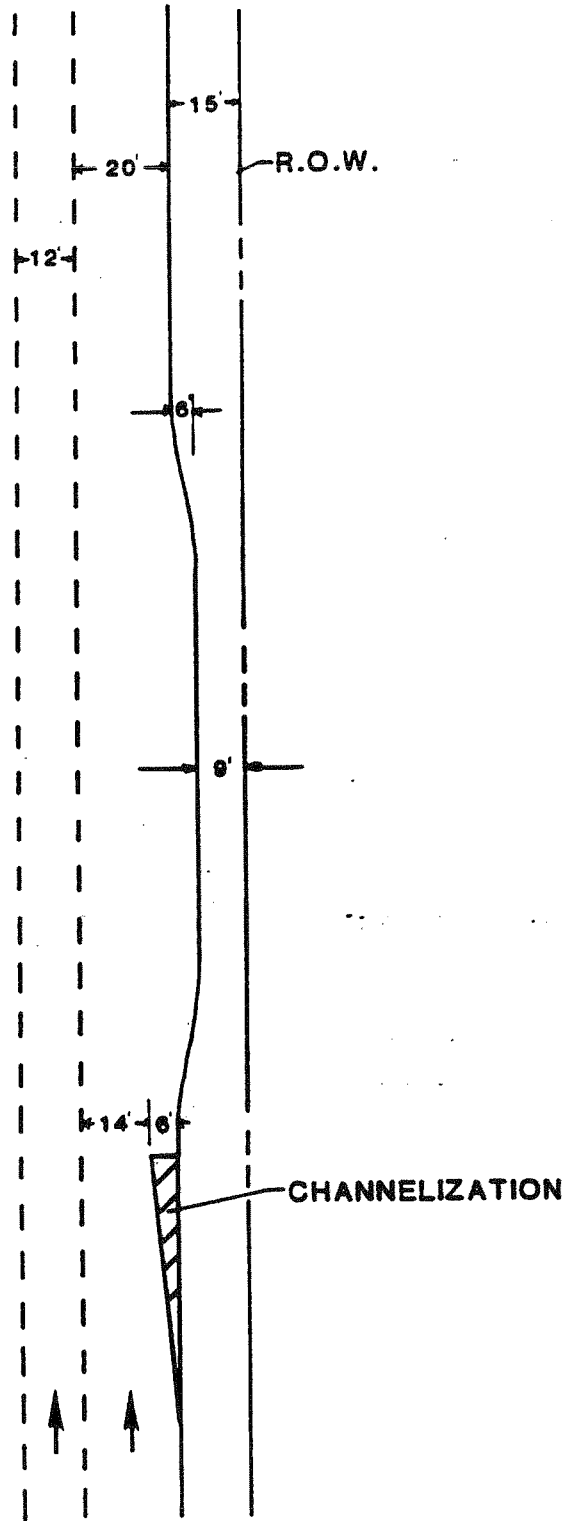


**MAJOR BUS BAY DESIGN CRITERIA**  
**THE ONTARIO CENTER**  
Chevron Land and Development Company  
ONTARIO, CALIFORNIA

EXHIBIT 5-23

SOURCE: PARSONS BRINCKERHOFF





**LOCAL & MINI-BUS BAY DESIGN CRITERIA**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA

EXHIBIT 5-24





Based upon anticipated project timing and phasing, it is projected that minibus service should be initiated once the planned regional center has opened or as determined by the City Engineer. The loop service concept (frequency, extent, and precise routing of service) should be adapted to the actual extent and intensity of land development at each of the interim stages leading to ultimate project development. At ultimate development, minibus service around the loop should be provided at least in a clockwise direction, although two-direction service would be desirable. Under ultimate project conditions, the maximum daytime service headway should be 20 minutes, with ten minute headways during peak service hours.

#### 5.1.7.3 Local Bus Service

Discussions were held with Omnitrans and SANBAG representatives to achieve concurrence on a plausible scenario of local transit service. Three "corridors" exist which probably could support fixed-route bus service on local streets. Assuming that Haven Avenue is built out between the San Bernardino and Pomona Freeways, Omnitrans planners feel that the anticipated developments justify local bus service on Haven Avenue both north and south of the Center. Expected developments along Milliken Avenue in Rancho Cucamonga may justify service along that street, but Omnitrans planners do not feel that developments south of the San Bernardino Freeway would warrant service. Service on Fourth Street west of the ~~Ontario Devore~~ Freeway also appears plausible, but service east of I-15 does not appear to be justified. Transit service on Inland Empire Boulevard within the Center would be reasonable, but there is no clearly defined corridor which such a line would serve.

Since the optimal routes and terminus points cannot be specified at this level of planning, the transit plan portrays routes which seem logical at this time. If any local routes should terminate in the vicinity of the

Center, it is anticipated that layover zones would be located off the principal streets of the development. Stops for local bus service should be spaced one-fifth to one-quarter mile apart. On Haven and Milliken Avenues, high traffic volumes and turning movements suggest that only one stop should be made between the San Bernardino Freeway and Fourth Street. Where local bus routes serve heavily traveled portions of Inland Empire Boulevard or Concourses, bus bays may be provided (consistent with bus stop spacing requirements) which serve both the minibus and the local bus. To provide for these future bus bays, areas shall be offered for dedication at the time of recordation of a subdivision map or by separate document if required prior to recording a subdivision map on properties adjacent to the proposed routes, subject to Engineering Department requirements.

Based on informal service-initiation criteria suggested by SANBAG, development in the Center should support local bus service with 60-minute headways some time after 1986. Since the Center is located in an area where other development is not expected to be particularly dense, midday local bus headways would probably be at least 15 to 20 minutes, with shorter headways possible during peak periods.

#### 5.1.7.4 Express Bus Service

Express bus service presently is operated on the San Bernardino Freeway by both Omnitrans and SCRTD, and SANBAG currently is studying the possibility of increasing express bus service under the County's Regional Transit Development Program. The existing express service stops at Ontario International Airport, and Omnitrans planners feel that this major employment center would probably warrant a stop on the I-10 express routes.

On Exhibit 5-22 (p. 172), the express service is shown on Interstate 10, with no deviation to the Center, since no optimal means of serving the Center is apparent at this time. A stop on the freeway ramps at Haven Avenue would be the most convenient method from the bus operator's standpoint but would require a transfer for passengers coming into the Center. Provision of direct service to the high employment concentration along Haven Avenue would be much more attractive for passengers but would reduce the overall speed of the express service. Nevertheless, the provisions made for local bus service should be able to accommodate any express bus needs within the Center.

Since the Center is located near two freeways, it might appear to be a good site for a park-and-ride location. However, large volumes of traffic are anticipated on the project's principal streets, and the siting of a park-and-ride should be located where the additional traffic can be more readily absorbed.

#### 5.1.7.5 Ridesharing

Together with transit service, a ridesharing program will reduce the number of automobiles which visit the Center. At the Planning Area Review level, the ridesharing requirements for the developments in each planning area shall be determined in tandem with parking requirements.

#### 5.1.7.6 Transportation Management

At such time as the peak hour traffic volumes within The Ontario Center reach Traffic Service Level "C" (as determined by the City Engineer), The Ontario Center and/or any successors or assigns shall have a transportation management plan prepared by a registered professional traffic engineer in accordance with the Covenants,

**Conditions and Restrictions of The Ontario Center. This transportation management plan shall consider these specific implementation mechanisms and procedures for:**

- (A) Transit incentives**
- (B) Carpool/vanpool incentives**
- (C) Alternate transportation inducements**
- (D) Staggered work schedules/flexible work schedules**
- (E) Jitney/minibus service**
- (F) Ridesharing**
- (G) Traffic signal coordination**
- (H) Bicycles/mopeds**
- (I) Park-and-ride lots**
- (J) Other transportation management measures, as applicable**

**This plan shall be developed by The Ontario Center and/or any successors or assigns and shall be done in consultation with the City of Ontario Planning and Engineering Departments and San Bernardino Associated Governments (SANBAG). Developments within The Ontario Center shall adhere to the requirements of the Air Quality Management District Regulation XV, Trip Reduction, Indirect Service.**

#### **5.1.8 Freeway Access Improvements**

**The Ontario Center will continue to be served by three freeway interchanges at I-10/Haven Avenue, I-10/Milliken Avenue, and I-15/Fourth Street. All three interchanges are built to rural standards and require improvements as planned development occurs in the area.**

**Existing interchange spacing and ramp configurations virtually eliminate the possibility of adding additional interchanges in the immediate project area. One significant exception is north of the project area at I-15 and Seventh Street**

in the City of Rancho Cucamonga. At this location, a new interchange has been suggested. Such an interchange would help to forestall future traffic demand overloads on currently available interchange capacity.

Interchange modifications required and necessary to handle project traffic and projected future regional traffic growth have been identified in the related interchange Project Study Report approved by Caltrans and the City of Ontario. These modifications are illustrated schematically in Exhibit 5-25 (pg. 181).

The traffic analysis prepared for this development in EIR 88-2 indicates that the traffic impacts and associated mitigation measures at the interchanges are the result of the accumulated traffic from all projects within the surrounding area, including projects within Rancho Cucamonga.

Haven Avenue interchange improvements are included in the State Transportation Improvement Program and are anticipated to be funded by the State and completed in mid-1992 as part of the Ground Access Improvements related to the proposed new passenger terminal at Ontario International Airport.

State funding will not likely be available for the Milliken Avenue and Fourth Street interchange improvements within a reasonable period. Accordingly, required funding may be generated by a future fee district, assessment district, Mello-Roos Community Facilities District, development agreement(s) or other financial arrangements, hereinafter referred to as the "Program". The Ontario Center may pay cash in-lieu of any assessment or liens established by the Program.

The Program, or an alternative means of financing the construction of the Milliken Avenue and Fourth Street interchanges, must be formed and approved by the City prior to (i) City approval of future subdivision maps covering all or any portion of Planning Areas 7, 8, 9, 10, 13 and 15 through 20, and/or

(ii) City approval of site plan applications or other requests for developmental approvals relating to projects on land included within such Planning Areas.

**5.1.9 Revisions to City's Master Plan of Streets and Highways**

The circulation plan for the Center involves several revisions to the City of Ontario's adopted Master Plan of Streets and Highways. Revised classifications are shown on Exhibit 5-26 (p. 182). As the proposed revisions are minor, no amendments to the City's Master Plan are required.

**5.1.10 Provisions for Emergency Vehicles**

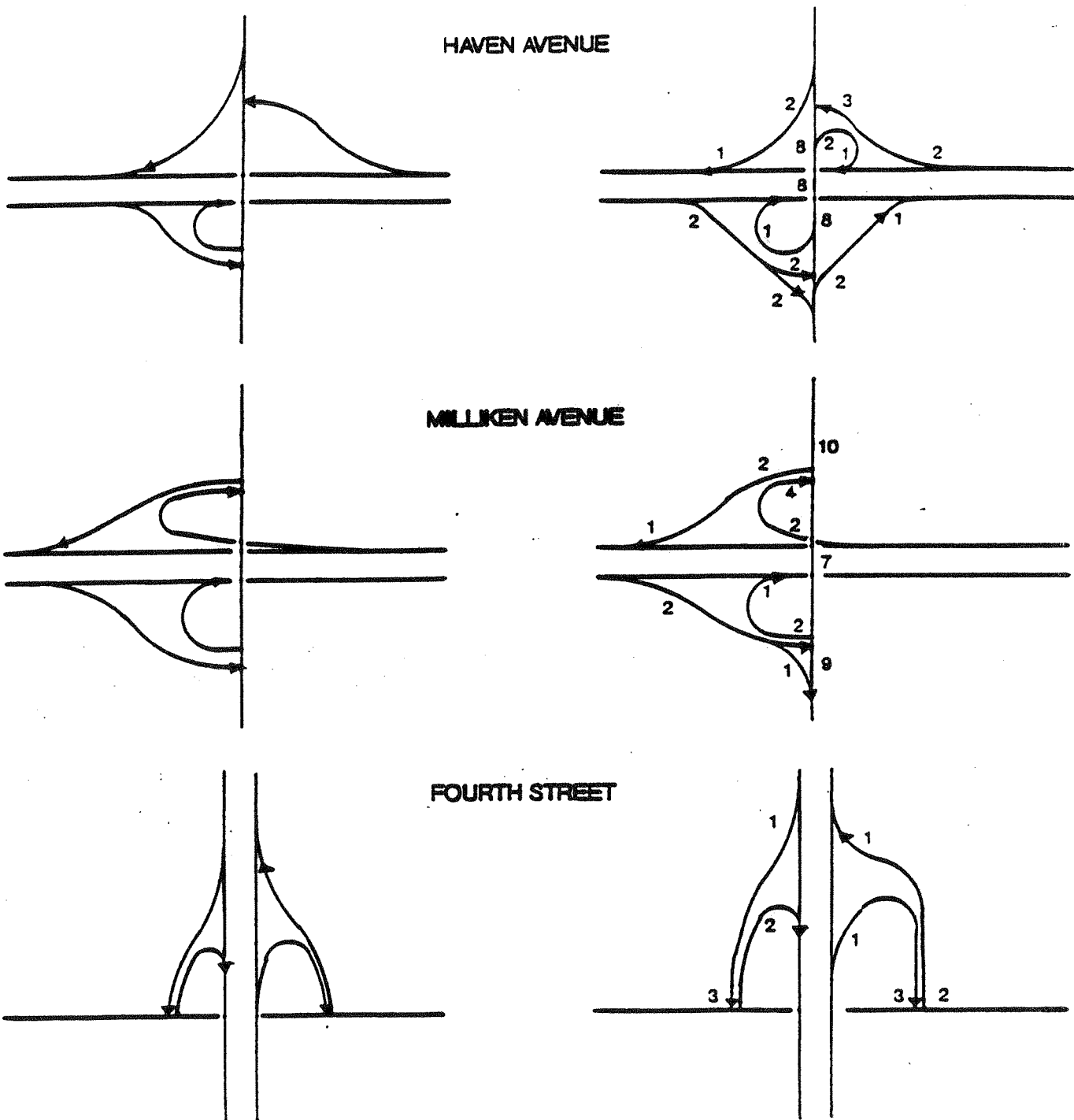
Consultation with representatives of the City's Engineering, Planning, Fire, Police, and Public Services Departments revealed the necessity for several types of emergency vehicle access provisions. Responding to this need, the Master Plan incorporates an 8-foot emergency vehicle access and emergency parking lane into the Standard Street cross sections. This lane does not apply at intersections.

- (A) The Master Plan endorses a reflectorized marker program for fire hydrants. This will involve the installation of three blue, reflectorized, raised pavement markers in the emergency-vehicle lane opposite the location of each fire hydrant. This provision will assist the fire department in locating hydrants during fire emergencies.
- (B) Emergency vehicle access requirements are summarized in Table 5-A (p. 183).

# SUGGESTED INTERCHANGE MODIFICATIONS

Present Configuration

Suggested Configuration

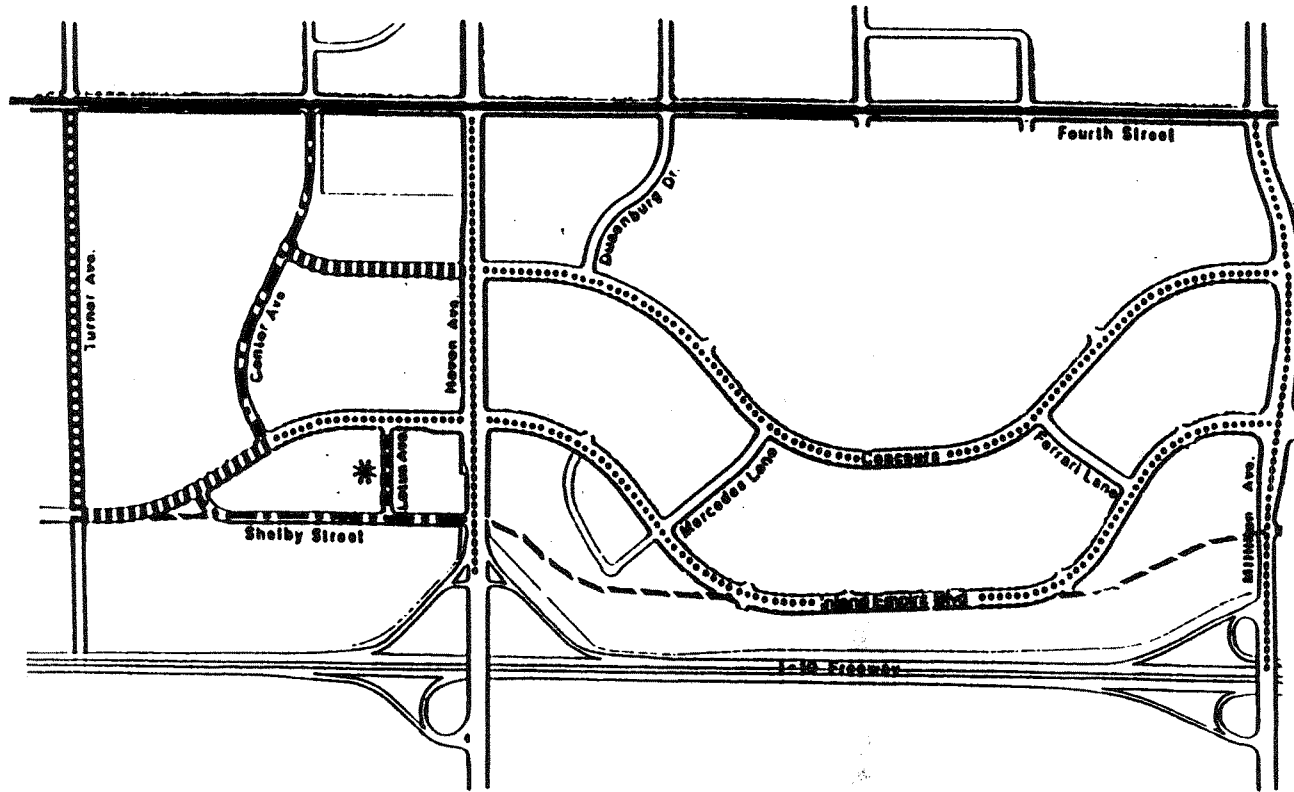


**FREEWAY INTERCHANGE  
MODIFICATIONS  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

Source: CH2M HILL

EXHIBIT 5-25

Randolph  
Hlubik  
Associates, Inc.



..... COLLECTOR STREET W/ SPECIAL TREATMENT

..... DIVIDED ARTERIAL W/ SPECIAL TREATMENT

--- COLLECTOR STREET

\* Potential street to mitigate an ultimate cul-de-sac on old 'G' Street.

--- STREET DELETED FROM MASTER PLAN

--- DIVIDED ARTERIAL

--- LOCAL STREET

**MASTER PLAN OF STREET AND HIGHWAYS**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA

EXHIBIT 5-26



REVISED AS OF OCT. 1990  
 REVISED AS OF MARCH 1993  
 REVISED AS OF OCTOBER 1994



**TABLE 5-A  
EMERGENCY VEHICLE ACCESS REQUIREMENTS**

<b>STAGE OF PLANNING</b>	<b>ENGINEERING DEPARTMENT</b>	<b>FIRE DEPARTMENT</b>	<b>POLICE DEPARTMENT</b>	<b>PUBLIC SERVICES AGENCY</b>
Specific Plan	8-foot emergency vehicle access and emergency parking lane on all principal streets, except Fourth Street.	55-foot minimum radius of bulb at cul-de-sac or knuckle with no parking. Maximum length of cul-de-sac of 300 feet.	Need access to center core of mall, office to detain people there and parking for 2-3 cars, unobtrusive entrance.	Space required for firefighting equipment adequate.
Planning Area Plan		Blue dot program for hydrants.	Need to be able to surround buildings. Reflectorization of curb in curves, left-turn bays as warranted	Access to each individual building required in each Superblock
Site Plan		No-Parking signs, red curb on arterials; shut-off valves for hydrants; twenty foot wide fire lanes dependent on building/site configuration.		

## 5.2 Drainage and Flood Control

### 5.2.1 Overview

The purpose of the drainage analysis is to identify those facilities which are required to accommodate storm runoff from the proposed development. This section establishes preliminary sizes of storm drains and proposed methods of runoff disposal.

### 5.2.2 Existing Drainage Conditions

The Ontario Center site generally slopes from north to south and can be divided into three major sectors for drainage analysis: the west, center, and east.

5.2.2.1 The west sector, located between Turner and Haven Avenues, drains in two directions. The northerly portion drains to the Turner basins via an existing reinforced concrete box and the southerly portion drains to lower Deer Creek via an existing drainage system in Inland Empire Boulevard and Turner Avenue.

5.2.2.2 The center sector extends from Haven Avenue to Milliken Avenue and drains south under the San Bernardino Freeway to land that had previously been used for vineyards. Within the past two years, developers have completed the ultimate drainage facilities from the I-10 freeway southerly to Deer Creek.

~~5.2.2.3 The east sector extends from Milliken Avenue to the Devore Freeway. Most of the existing drainage flows southerly over old "G" Street and under the freeway near Milliken Avenue. The remaining area drains to Day Creek through an existing facility in Inland Empire Boulevard between the Channel and McLaren Avenue.~~

Approximately 25 acres located east of Milliken, near the intersection of Inland Empire Boulevard and Milliken Avenue,

drain into The Ontario Center through an existing storm drain in Inland Empire Boulevard.

Storm flows generated on the site generally have not caused a serious problem for downstream properties because most downstream land is vacant or agricultural. However, much of the vacant land now surrounding the site will be urbanized in the future mandating the provision of extensive regional drainage improvements. The effect of The Ontario Center on regional drainage conditions will be lessened somewhat by the site's previous use as a motor speedway which included extensive paved surfaces. Upon full development, runoff will increase but not to the same extent as if the land existed in an unpaved condition.

### 5.2.3 Analysis Criteria

#### 5.2.3.1 Drainage Improvement Concept

The overall drainage concept followed in the preparation of this Plan is to provide a system where buildings and other habitable structures are protected from flooding associated with a 100-year rainfall. As part of that primary goal, an underground storm drain system is developed which will collect the runoff derived from a 25-year rainfall for conveyance to appropriate outlets. It should be noted that the minimum design frequency required by the City is a 10-year rainfall. The difference between the 25-year and 100-year flow is also conveyed to appropriate outlets, either as surface flow within public street right-of-way or over dedicated drainage easements. Specific easements shall be identified at the subdivision stage.

#### 5.2.3.2 Hydrology and Hydraulic Criteria

The methods used to establish the facility requirements for this Plan are in conformance with those currently used by the City of Ontario. Actual design of drainage improvements shall be in accordance with the City's criteria in effect at the time of final design.

#### 5.2.4 Proposed Drainage Patterns

The development plan will generally allow each major drainage area to flow to the same outlet as presently exists. A portion of the west sector will remain tributary to Lower Deer Creek, and the center sector will be collected and passed through the existing reinforced concrete box under the San Bernardino Freeway, and the east sector will be tributary to the intersection of McLaren Avenue and Inland Empire Boulevard. A significant portion of the eastern sector is presently tributary to the freeway culvert near Milliken Avenue, however, in the plan, nearly all this area will be tributary to Day Creek via Inland Empire Boulevard.

There is a short length of storm drain proposed in the west sector that is not connected to a major outlet. The existing pipe under Shelby Street previously had a tributary area of about 23 acres. Improvement of Inland Empire Boulevard within the last 4 years has resulted in decreasing this area to approximately 6 acres. Since there has been a significant flow reduction, the existing pipe was maintained in the developed condition.

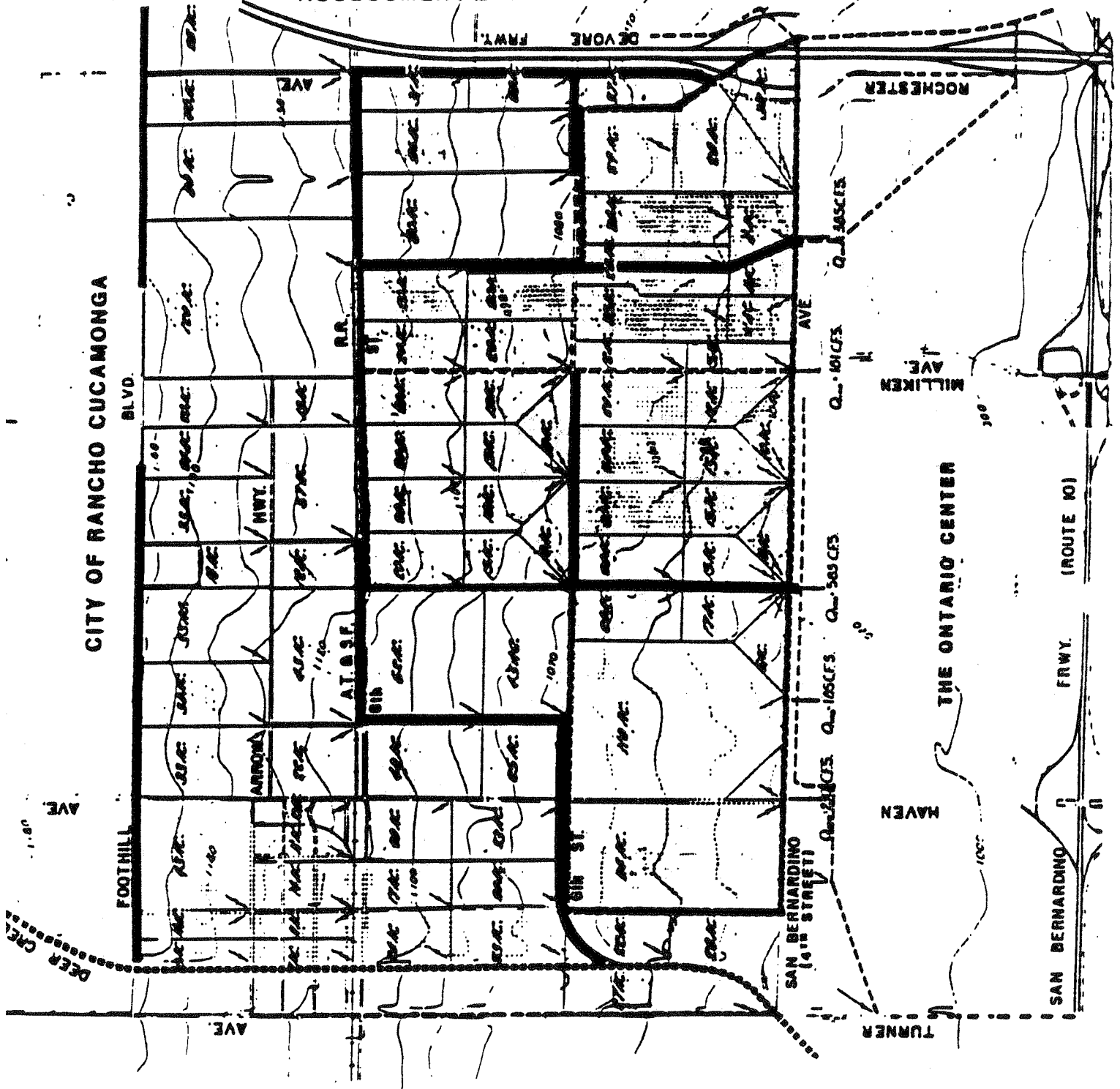
Runoff from the City of Rancho Cucamonga flowing into The Ontario Center will be channelized in an appropriate manner and conveyed to the same outlet as presently exists. Exhibit 5-27 (p. 187) shows the tributary areas and concentration points of the drainage improvements constructed as part of Assessment District 79-1 in the City of Rancho Cucamonga.

#### 5.2.5 Planned Drainage Facilities

##### 5.2.5.1 New Storm Drain Facilities

The drainage facilities proposed are shown in Exhibit 5-28 (p. 188). New storm drains will be placed within public streets. Where the storm drain must be placed in areas other than streets, a drainage easement will be furnished for appropriate maintenance access. Some modification will be necessary to existing drainage facilities to

ASSESSMENT DISTRICT 79-1 - DRAINAGE



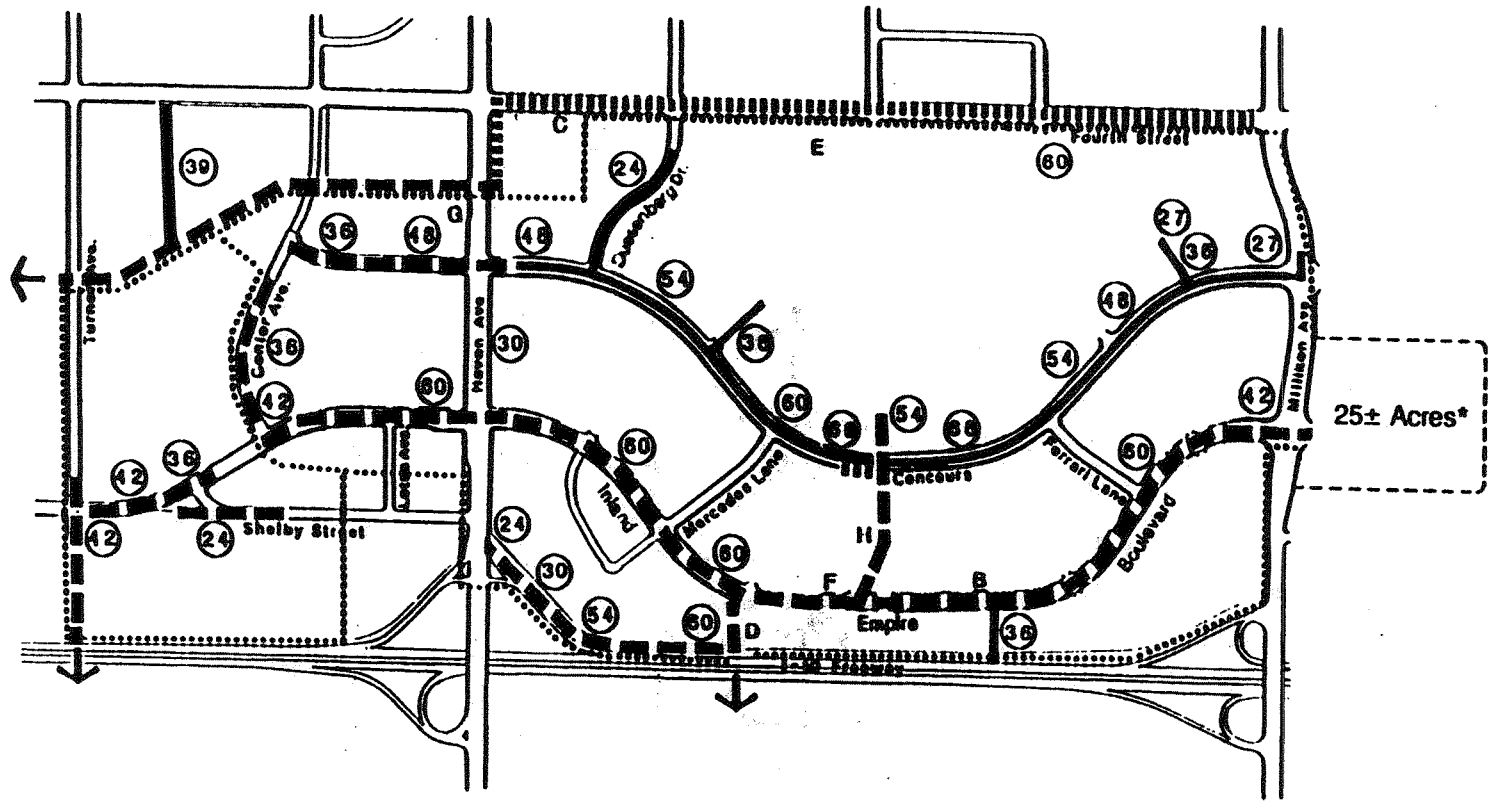
LEGEND

- DRAINAGE AREA - TRIBUTARY AREA TO O. I. C.
- STORM DRAIN

REGIONAL DRAINAGE/AD 79-1  
 THE ONTARIO CENTER  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA

EXHIBIT 5-27





\* Approximately 25 acres east of Milliken drain into the Ontario Center. See CCCN Specific Plan.

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN (100)
- PROPOSED STORM DRAIN (25)
- ..... DRAINAGE AREA BOUNDARY
- STORM DRAIN FACILITY SIZE

BOX CULVERT SIZES

A		E	
B		F	
C		G	
D		H	

**STORM DRAIN FACILITIES PLAN**  
**THE ONTARIO CENTER**  
 ONTARIO, CALIFORNIA

EXHIBIT 5-28



REVISED AS OF JAN. 19  
 REVISED AS OF MARCH 19  
 REVISED AS OF OCT. 19

increase capacity or allow additional improvements. No existing facility will be taken out of service or have its capacity reduced unless it is replaced with another structure to serve the particular condition.

#### **5.2.5.2 Detention Facilities**

Permanent detention facilities are not planned as part of the drainage improvements proposed for The Ontario Center. The storm drain facilities designated within the Plan are sized to convey the fully developed runoff.

Deficiencies which formerly existed below the outflow points in the west and center sectors have been alleviated.

#### **5.2.5.3 Desiltation of Storm Water**

As development proceeds, there will be a need for temporary basins to control the flow of sediment from the unprotected areas. The location and size of these basins will depend on the area under construction, which will dictate the quantity of sediment to be controlled.

#### **5.2.5.4 Ground Water Recharge**

The proposed development will not significantly change ground water recharge conditions. Presently, recharge is extremely limited due to runoff rates and soil conditions. Overland flows across the pervious sections of the site are not expected to infiltrate to a depth where an effect on ground water storage is realized. Recharge through the soils which characterize the site can only be accomplished through injection.

## 5.2.6 Regional Watershed Considerations

### 5.2.6.1 Day Creek

The Day Creek watershed extends into the mountains located approximately 7 miles north of The Ontario Center. The channel is operated by the San Bernardino County Flood Control District. Runoff from Day Canyon passes through the existing spreading grounds at the canyon mouth and then is directed into Day Creek via a levee system. The levees, as well as Day Creek itself, are earth embankment facilities without adequate slope protection or capacity to handle high runoff quantities. The channel runs nearly due south and is located east of the ~~Ontario Devere~~-Freeway as it passes The Ontario Center before entering into the Wineville and Riverside Basins. These basins presently retain the flow from Day Creek and have no substantial outlet. The Day Creek Channel system is presently under final design with construction of the permanent concrete facility planned for early 1990. The Riverside and Wineville Basins were substantially deepened in 1985. Storage volume within these facilities was increased from approximately 210 acre-feet to approximately 1,900 acre-feet.

### 5.2.6.2 Deer Creek

The Deer Creek watershed is immediately adjacent to and west of Day Creek. This system has historically been responsible for flooding the area west of Milliken Avenue where a large portion of The Ontario Center will be located. Fortunately, the channel has been improved by the Corps of Engineers which will eliminate the previous flood threat. The insurance rate maps have been updated by the Federal Emergency Management Agency (FEMA) to reflect the improvements.



### 5.2.6.3 Turner Basins

The Turner Basins are located between Archibald Avenue and Turner Avenue directly west of The Ontario Center. There are three individual basins interconnected with spillways which served in the past as debris basins for Deer Creek. The creek previously flowed directly into the most easterly basin, designated as Basin No. 9. Also entering into Basin No. 9 is a channel which extends from Milliken Avenue along 4th Street westerly, crossing Haven and Turner Avenues. This channel intercepts storm water from the City of Rancho Cucamonga on the north before the flow enters The Ontario Center.

The improvement of Deer Creek by the Corps of Engineers has bypassed the basins and eliminated the need for their use as debris basins. The old Deer Creek channel was eliminated at Fourth Street. With Deer Creek separated from the basins, the only significant channel entry into Basin No. 9 is the channel which picks up flow from the City of Rancho Cucamonga along Fourth Street.

The channel along Fourth Street has been designed and constructed to accept the 100-year flows generated within the proposed industrial area above Fourth Street in the City of Rancho Cucamonga and upper portion of the west sector. This has then essentially isolate the west and center sectors of The Ontario Center from offsite storm water flow. ~~The east sector will be protected in a similar manner by large inlets along 4th Street connected to a proposed major connector through The Ontario Center.~~

## 5.2.7 Regional Land Use Considerations

### 5.2.7.1 Existing and Proposed Development

The land north of The Ontario Center is presently vacant, agricultural or developed with industrial buildings. The area is within the City of Rancho Cucamonga and is contained within an assessment district established to fund street and storm drain improvements. There has been coordination with Rancho Cucamonga to ensure that planned drainage facilities within the assessment district are compatible with those planned for The Ontario Center.

Within the area bounded by Turner Avenue, the ~~Ontario~~ Devere Freeway, the San Bernardino Freeway, and Fourth Street, there are several outparcels not controlled by The Ontario Center. Drainage improvements within the Center will be beneficial to the outparcels, in that drainage facilities will be available when these parcels develop.

The land located to the south of The Ontario Center, immediately adjacent to the freeway, is under development and includes substantial drainage improvements. The mainline system has been completed between the I-10 freeway and Deer Creek located approximately 5 miles to the south.

### 5.2.7.2 Interim Offsite Drainage Requirements

As The Ontario Center progresses through its development over the next 12 to 15 years, the storm water runoff from the area will increase. With the exception of Day Creek, all downstream drainage systems have been upgraded to accept the predicted fully developed runoff from The Ontario Center. Day Creek is funded and scheduled to be constructed in the near future which will complete the mainline systems below The Ontario Center.

### 5.2.8 Agency Approval

All public drainage improvements are subject to the approval of the City Engineer. The City Engineer also has the authority to administratively approve minor modifications to the drainage plan.

Where other agencies are affected, permits will be obtained prior to City approval. These agencies may include:

- San Bernardino County
- State Department of Transportation (CALTRANS)
- Water Conservation District

## 5.3 Grading

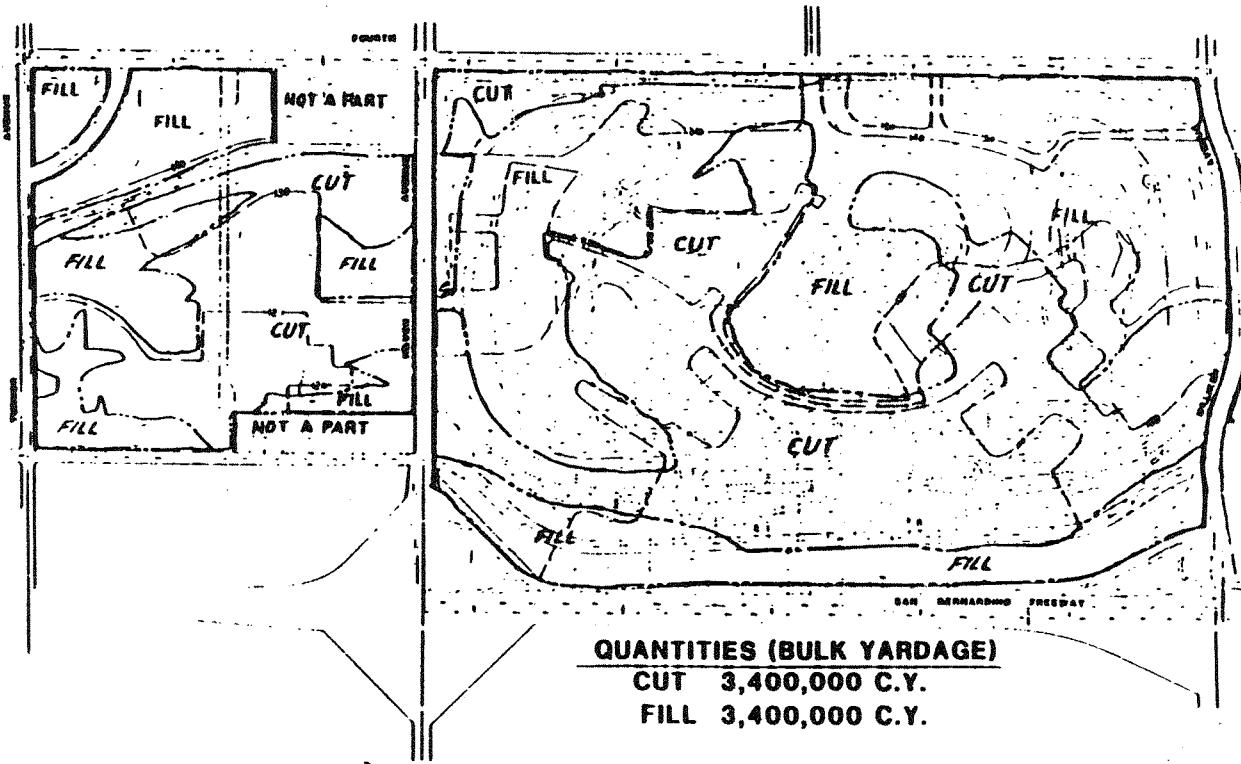
The cut and fill concept for the Center is shown in Exhibit 5-29 (p. 194). Grading is continuing on a site-wide basis and follows existing drainage patterns to minimize disruption of tributary drainage areas. Cut and fill is designed to be balanced on a project-wide basis. The general intent of the grading program is to provide suitable conditions for building construction across The Ontario Center site. Existing earthen berms on the perimeter of the speedway have been leveled to provide fairly uniform grades across the property and to eliminate visual barriers.

## 5.4 Utilities

### 5.4.1 Water Facilities

#### 5.4.1.1 Introduction

Water service to the study area is provided by the City of Ontario Water Department. The City system consists of four separate pressure zones. The study area is entirely within the Eighth Street system, which is the largest pressure zone.

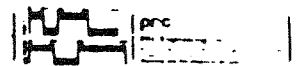


ILLUSTRATIVE CONCEPT PLAN

**GRADING CONCEPT**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA

SOURCE: WILLDAN ASSOCIATES

EXHIBIT 5-29



#### 5.4.1.2 Water Demand

To determine the water supply requirements, land use data is combined with a knowledge of water consumption trends. Unit demand factors or duty factors are applied to different land uses to generate estimates of water demand. The unit factors or duty factors represent the amount of water a unit value of space will need. Unit demand factors vary because of the climate and type of land use.

The common method used in assigning rates is to base the rates on numbers that are already being used successfully in the area. However, because of the density and high concentration of development proposed for The Ontario Center, demand rates previously used in the City of Ontario will not be adequate. Likewise, computing water demand based on projected numbers of fixtures is not appropriate, as building design has not been completed.

The methods published in the Journal of the American Water Works Association have proven to be consistent with demands experienced by projects of a similar nature in other areas. The method is useful in estimating water demands before a building has been designed. For the information published in the Journal, water demands for all types of commercial and residential land uses from various parts of the country were studied. The water demands of various types and sizes of buildings were related to consumption by the various types of building uses. The researchers made elaborate investigations of many uses and monitored meters and flow recorders in various types of buildings. They related water consumption to several criteria such as building area, number of personnel, number of seats in theaters, number of beds in hospitals, etc., and made a recommendation after the study as to which unit was the most appropriate for determining the water demand for each type of building use. In addition, they computed the expected and recommended design demands for the annual water

demand, maximum day water demand, and the peak hour water demand, and identified which hours of the day peak water demands for each type of establishment or institution should normally occur.

The data furnished in the Journal is convenient and appropriate for computing the expected water demands for each land use in The Ontario Center. These resulting demand factors have made adequate allowance for The Ontario Center's large size and intensity. The water demands are computed on the gross square feet of building development and are not average commercial demands for local and neighborhood centers but are most closely related to the water demand which may be expected from the Center in its ultimate development. The recommended water factors and overall water consumption for the project are presented in Table 5-B (p. 197).

**TABLE 5B  
DOMESTIC WATER CONSUMPTION  
ULTIMATE DEVELOPMENT**

Land Use			Mean Annual Demand GPD	Maximum Day Demand GPD	Peak Hour Demand GPD
Office	4,530,347 <del>3,395,488</del>	SF	742,977 <del>556,860</del>	1,188,763 <del>890,975</del>	3,573,234 <del>2,678,133</del>
Service Commercial (Auto Service, Car Wash, Day Care & Restaurant)	849,276 <del>649,841</del>	SF	239,256 <del>199,548</del>	375,009 <del>319,878</del>	612,065 <del>521,826</del>
Regional Center	2,055,000	SF	992,565	1,389,591	2,580,669
Hotel	1,023,250	SF	261,952	314,342	523,904
Commercial Recreation <sup>(1)</sup>	123,000	SF	65,000	104,000	169,000
Industrial	<del>537,715</del>	<del>SF</del>	<del>95,713</del>	<del>133,999</del>	<del>248,855</del>
Residential	1,530	DU	657,900	1,184,220	2,368,440
Park	11	ACRE	44,187	70,699	114,886
Open Space	34	ACRE	136,578	218,525	355,103
School (600 People)	7	ACRE	26,000	41,600	78,000
<b>SUBTOTAL: TOC SPECIFIC PLAN</b>			<del>3,262,128</del> <del>2,940,590</del>	<del>5,020,748</del> <del>4,533,830</del>	<del>10,624,156</del> <del>9,389,961</del>
<b>Non-T.O.C. properties south of 4th Street east of Turner, north of I-10 and west of McLaren</b>					
Office	756,286 <del>1,891,145</del>	SF	124,031 <del>310,148</del>	198,450 <del>496,238</del>	446,511 <del>1,341,612</del>
Service Commercial (Auto Service, Car Wash)	449,506 <del>649,506</del>	SF	73,719 <del>113,427</del>	117,950 <del>173,081</del>	191,670 <del>281,909</del>
Industrial	593,603 <del>1,131,318</del>	SF	105,661 <del>201,374</del>	147,926 <del>281,925</del>	274,719 <del>523,574</del>
Residential	134	DU	57,620	103,716	207,432
Open Space	0	ACRES	0	0	0
<b>SUBTOTAL: NON-TOC PROPERTIES</b>			<del>361,031</del> <del>682,569</del>	<del>568,042</del> <del>1,054,960</del>	<del>1,120,332</del> <del>2,354,527</del>
<b>GRAND TOTAL: TOTAL STUDY AREA</b>			<b>3,623,159</b>	<b>5,588,790</b>	<b>11,744,488</b>

<sup>(1)</sup> Theater and Health Club

**Note:** For additional information regarding Non-TOC properties, see CCCN/Gateway Plaza/Wagner Properties Specific Plan.

The water demands calculated on a unit basis can be equated to area for comparison with the City Master Plan and EIR 80-3. This information is shown in Table 5-C.

**TABLE 5-C  
COMPARISON OF WATER DEMAND FACTORS  
MEAN ANNUAL (GAL/SF-DAY)**

	City Master	TOC Master Plan
Office	0.045	0.164
Service Commercial	0.045	0.164
Regional Center	0.045	0.483
Hotel	0.045	0.256
Commercial Recreation	0.045	0.164
<del>Industrial</del>	<del>0.049</del>	<del>0.178</del>
Residential	0.061	8,522 GPD/Acre
Park/Open Space	1,853	4,017 GPD/Acre

Water demands vary due to type of land use, time of day, and time of year. Maximum daily demands for an entire water system are typically 1.8 to 2.0 times the mean annual demand with residential demands generally causing the widest demand variations and lower density residential having the highest peak to average ratio, primarily during July, August, and September when landscape irrigation demands are highest.

In commercial developments, water demands tend to follow shopping practices with peak demands occurring in the Christmas season. ~~Industrial demands have the lowest peak to average ratio since their demands are fairly consistent on a day-by-day basis.~~ The peaking factors used in this study considered these trends and represent the factors that should be applied to the mean annual



water demands for the time periods concurrent with overall system peaks. The flow criteria used produces a maximum daily demand for the Specific Plan area of 5.0 million gallons per day (mgd) and a maximum daily demand for the total study area of 5.5 mgd.

The City of Ontario 1981 Water Master Plan anticipated that The Ontario Center study area would eventually become a light industrial development. Using an area factor for this type of development, the maximum day water demand for the study area was estimated to be 4,312 GPD/acre or 4.2 mgd.

Using the demand factors recommended for this study, an equivalent area factor of 5,528 GPD/acre is calculated. This indicates that The Ontario Center is a more water intense development than the original zoning of light industrial. The demand comparison is shown in Table 5-D.

The City's Water Master Plan is currently being updated but no new information is available at this time.

**TABLE 5-D. WATER DEMAND COMPARISON**

	Maximum Day	Average Annual
City Water Master Plan	4.2 mgd	2.1 mgd
TOC Master Plan (1988)	5.0 mgd	3.3 mgd

Another requirement a water system must meet is that it provide adequate water for fire protection. Usually, these fire protection flows are much higher than normal water demands and can often be the controlling criteria when sizing water mains. The City Water Master Plan suggested that the water distribution system be sized to provide 6,000 gallons per minute fire protection flows in industrial areas.

For The Ontario Center, the City fire prevention staff has determined that 6,000 gpm should be provided in the regional center area, 5,000 gpm in the industrial areas, and 3,500 in the residential areas.

#### 5.4.13 Existing System

The City of Ontario water production report for the fiscal year 1987-88 shows that the City has a total supply capacity of 58.0 mgd including 47.1 mgd from 21 City wells.

The City of Ontario currently purchases supplemental water through the Chino Basin Municipal Water District (CBMWD). This imported water is presently used throughout the City, including the Eighth Street zone. The capacity of the existing connection for this source is 8.2 mgd. Recent experience indicates that approximately 31 percent of the City's annual water production is purchased from Chino Basin Municipal Water District.

The City Water Master Plan projects that the use of supplemental water will increase as development within the City occurs. To provide for these future water needs, the City has negotiated for 15 mgd of State project water from CBMWD. CBMWD has noted that these supplemental water sources must be considered as interruptable and that each contracting agency should provide for alternate sources or emergency storage.

The City Master Plan also addressed the possibility of losing a portion or all of the CBMWD supply. In the event that CBMWD cannot continue to provide the full 8.2 mgd from its Colorado River system it is assumed that CBMWD will modify their facilities to provide water from other sources.

In any event, the City Master Plan recommended a Year 1990 supply capacity of over 70 mgd with an anticipated demand for the entire City of 65 mgd. It is anticipated that all existing water users and future developers will have to share the cost of constructing supplemental City-wide supply facilities.

The effect that future water supply problems may have on development of The Ontario Center is not clear at this time and is beyond the scope of this report. However, The Ontario Center developers will continue to work closely with the City to minimize future difficulties.

The City of Ontario currently serves the study area with several water lines. There is an 18-inch water line running east and west in Fourth Street and a 12-inch water line running east and west in Inland Empire Boulevard which are connected to a 12-inch water line running north and south in Haven Avenue and a 16-inch water line in Milliken Avenue.

The existing distribution system is supplied by the City's Eighth Street pressure zone which is capable of providing pressures of up to 150 pounds per square inch (psi) during average day demands within the study area. This unusually high pressure is due to the hydraulics of the system and will require that all services in the area be furnished with pressure control devices to prevent damage to interior plumbing systems.

Due to recent experience in The Ontario Center with fluctuating pressures, it is recommended that buildings over four stories high be provided with booster pumps which can pressurize the water system for the higher floors.

The Eighth Street system is primarily supplied with groundwater through 11 wells located throughout the City which pump water directly into the distribution system. Imported water is also supplied to the system through the CBMWD connection. CBMWD water is treated and filtered in the Fourth Street system and pumped into the Eighth Street system by booster pumps. The Eighth Street zone also receives water from the San Antonio Water Company.

The area studied in The Ontario Center Plan consists of approximately 906 acres. If the study area had developed as anticipated in the City Water Master Plan, the maximum daily demand would have been 2.3 mgd in 1985 and 4.2 mgd in 1990. No projections extending past 1990 were made in the City Master Plan.

The storage analysis presented in the City Master Plan is valid except that it considered the CBMWD supply. In the event that CBMWD is not available, other sources will have to be developed to maintain adequate supply. Therefore, additional storage beyond that identified in the City Master Plan should not be necessary to meet operational or fire requirements. However, additional storage may be desirable to improve system hydraulics and pressures.

Special storage to assure adequate capacity in the event of an interruption of imported water is a City-wide consideration and is not limited to The Ontario Center development. The City's Master Plan of Water does provide for storage capacity in the City's system. In addition, during extended periods of interrupted service, conservation measures may be instituted. The Ontario Center development will support water conservation measures.

#### 5.4.1.4 System Requirements

Design and construction of water facilities within The Ontario Center will be completed under the jurisdiction of the City of Ontario. All water lines will be located within public streets or dedicated easements. Construction materials will be those acceptable to the City. City design standards in effect at the time of submittal of individual projects will be used. The Ontario Center's developers will cause the construction of water facilities within the Center. Where other properties benefit from the construction of improvements, it is anticipated that an appropriate cost sharing or reimbursement schedule would be approved by the City.

The water pipelines will be 3 to 5 feet below finished grade elevations unless alternative designs are approved by the City Engineer. The minimum pipe diameter considered is eight inches. Pipe sizes are determined so that velocities are generally below 7 feet per second at either peak hour demand or maximum day demand plus fire flow demand. The resulting higher flow criteria is used. Pressures should normally be above 45 psi, although, due to the large differences in the surface elevations of the water services, much higher pressures will normally be present. Mains will be looped to improve circulation in the system and to provide reliability in the event of problems with local water mains.

Fire hydrants will be spaced in accordance with Fire Department requirements and will generally be located at 300 to 330-foot intervals. Where streets exceed 100 feet in width or where a median is built, fire hydrants will be located on both sides of the street. A minimum clearance of eight feet between hydrants and other street surface obstructions will be maintained.

Metering of services will be provided to the satisfaction of the City. Exact locations and type of services and meters will be determined during the design phase for each project.

The existing City water wells are to remain in service and access to them will be provided to the satisfaction of the appropriate City departments.

There are water lines presently in place serving other properties in Inland Empire Boulevard and ~~McLaren Avenue~~. Any plans for changes in those water lines which would affect those properties will be made only after consultations with the City Engineer and with the owners of the aforesaid properties. In no case will the present level of service be reduced.

#### 5.4.15 Water Master Plan

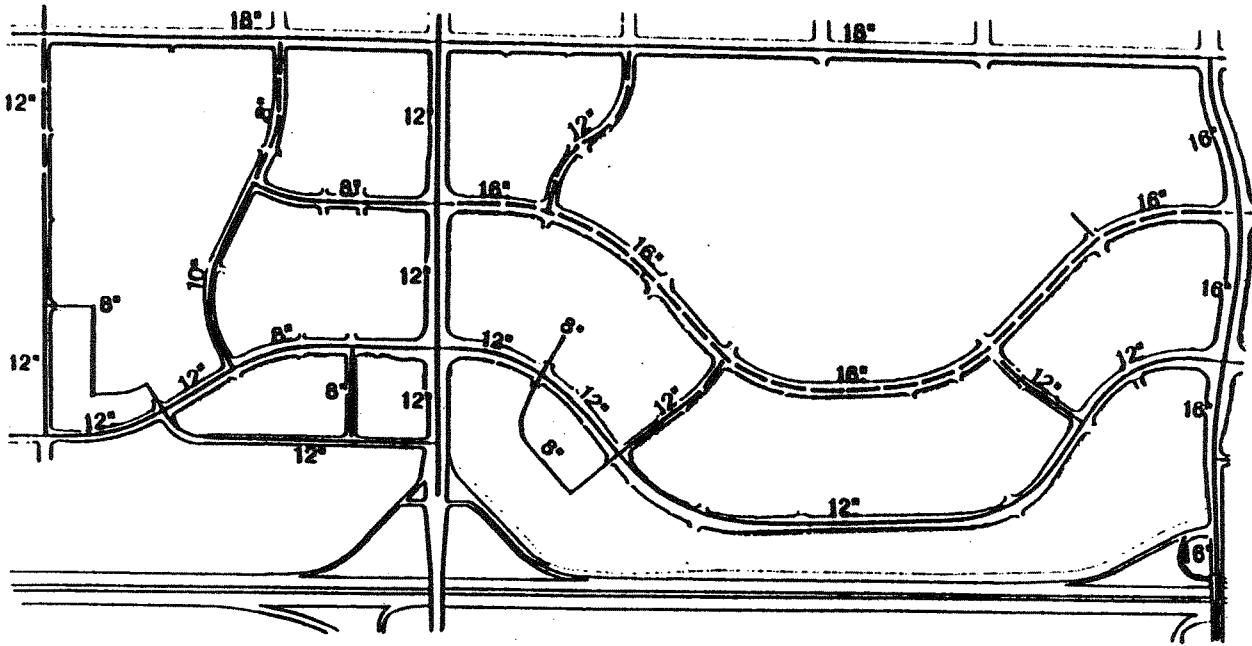
Initially, a rough schematic of the proposed system was developed based upon known criteria and requirements such as phasing, land use, and topography. As indicated above, all facilities will be built in locations approved by the City. These locations include public streets or dedicated easements. The data known about the proposed system was entered into the computer program KYPIPE, a sophisticated hydraulic network analysis program. KYPIPE is used specifically for the analysis and design of municipal water systems. The program analyzes entire water systems and determines the flow and velocity in each pipe and the pressures at points of connection or nodes. The program can assist the engineer to determine if the capacity of the existing and proposed lines is adequate to provide service within the specified criteria.

Several analyses were performed using the water system data provided by the City as well as development information provided by TOC. The entire Eighth Street system was analyzed using KYPIPE to verify that results similar to the City's Master Plan would be achieved.

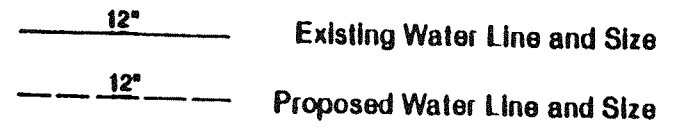
The proposed improvements for The Ontario Center were entered into the program, and the system was analyzed under average day, maximum day, plus flow conditions and peak hour demands. Fire flows of 3,500, 5,000, and 6,000 gpm were imposed on the system in the areas of proposed development where these different fire flows were required. The proposed system met or exceeded the design criteria for all conditions.

The results of the hydraulic analyses are provided ~~in the Appendix~~ on file in the Engineering Department. In accordance with the requirements of Specific Plan approval, the hydraulic model of the proposed system has been submitted to the City in a format that is compatible with the City's computer program.

The water system shown in Exhibit 5-30 (p. 206) represents the backbone system necessary to assure adequate water service. As specific planning is completed, additional facilities will be identified which will serve individual developments. Minor modifications may be made to the water distribution system with the approval of the City Engineer. As part of the planning process for individual projects, it will be determined which facilities should be publicly dedicated.



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**WATER DISTRIBUTION MASTER PLAN  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**



**Randolph  
Hubb  
Associates, Inc.**  
Engineering, Architecture, Planning

**EXHIBIT 5-30**

REVISED AS OF JULY 1987  
REVISED AS OF JAN. 1989  
REVISED AS OF MARCH 1993



## 5.4.2 Sewage Facilities

### 5.4.2.1 Introduction

Sewage collection service within the study area is provided by the City of Ontario. Sewage from the City system is transported through trunk lines operated by CBMWD which also operates the treatment plants and is responsible for disposal of the effluent.

### 5.4.2.2 Sewage Flows

Wastewater flows are estimated by applying unit flow factors to each distinct land use and multiplying each by a peaking factor. The peaking factor is the ratio of peak flow to average flow.

Unit flow factors vary according to an area's physiography, land use, climate, and socioeconomic conditions as well as water demands. Thus, it is important to be aware of a development's natural and manmade characteristics when projecting wastewater flows. Previous research of similar developments help form the basis of any unit flow factor.

As a general rule, wastewater flow equals 70 percent of water consumption although water consumption includes irrigation and other uses typical in municipal systems which do not contribute to wastewater flows. As The Ontario Center is to be more intensely developed than most municipalities, this general rule is not considered adequate. Previous studies for Cerritos, Anaheim, and Irvine have indicated that sewage flow factors that are 80 percent of water demand factors are appropriate with slightly higher percentages used for multi-family residential and hotels. Using this approach resulted in an average wastewater flow of 3,132 gpd/acre for the entire study area, as demonstrated in Table 5-E.

**TABLE 5-E. COMPARISON OF AVERAGE SEWAGE FLOWS**

City Sewer Master Plan	3.8 mgd
TOC Master Plan (1988)	2.8 mgd

The City of Ontario Sewer Master Plan, April, 1981 anticipated industrial zoning for the study area. At that time, the average flow for the area was projected to be 3,938 gpd/acre. It should be noted that the flows projected in the City Sewer Master Plan exceed the water demands projected in the City Water Master Plan. Environmental Impact Report 80-3 for The Ontario Center, September, 1980 calculated the amount of wastewater flow to be produced for 954 acres including The Ontario Center and projected 2.9 million gallons per day (mgd) or 3,040 gpd/acre. Unit flow factors developed for this Specific Plan resulted in a value of 3,132 gpd/acre. A comparison of the average wastewater flow for the 906-acre study area is presented in Table 5-E. Table 5-F presents the wastewater flow factors and contains the wastewater flow breakdown by land use while Table 5-G shows the sewage flows anticipated by land use categories at ultimate development.

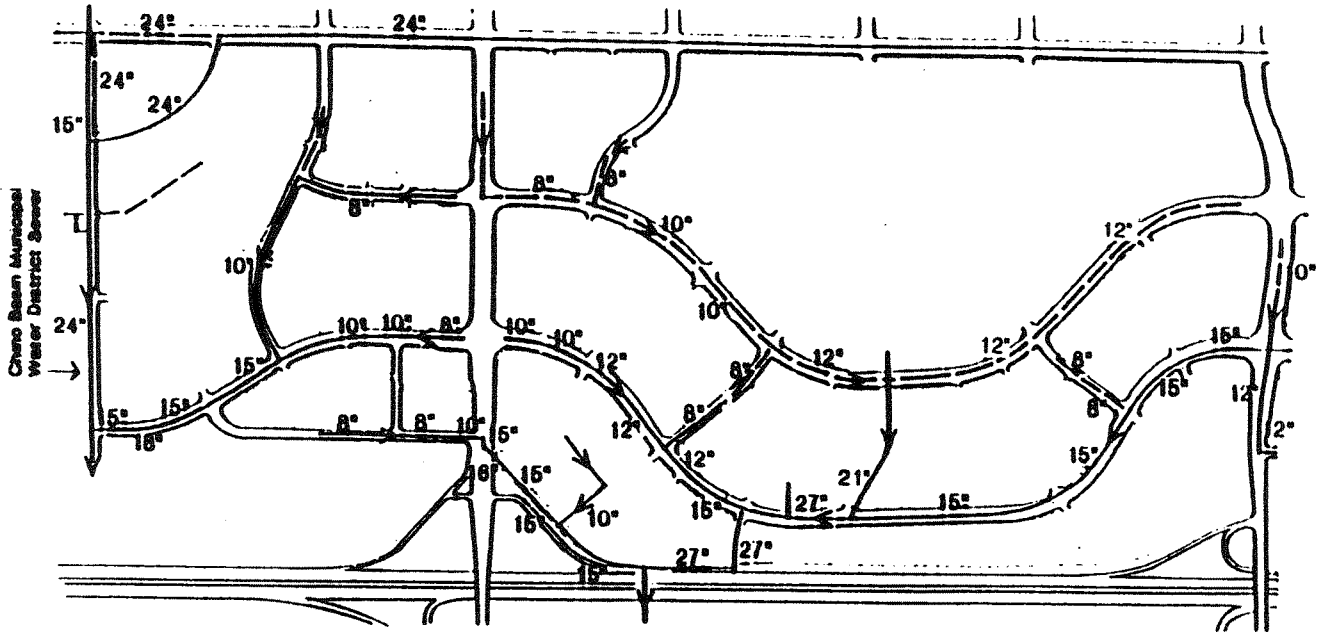
**TABLE 5-F. WASTEWATER FLOW FACTORS**

	Factor	Units
Office	0.131	gpd/SF
Service Commercial	0.131	gpd/SF
Regional Center	0.386	gpd/SF
Hotel	0.230	gpd/SF
Commercial Recreational	0.131	gpd/SF
Industrial	0.142	gpd/SF
Residential	387	gpd/DU
Park/Open Space	0	
School	16	gpd/person

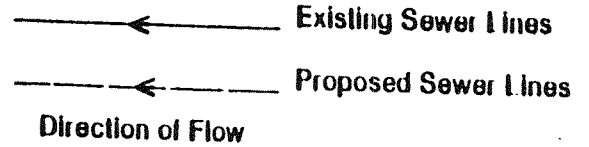
The peaking equation used for the Ontario Sewer Master Plan was also used for the initial analysis in this Plan.

#### 5.4.2.3 Existing Sewer System

The existing sewers within the study area are shown on Exhibit 5-31 (p. 210). The study area is currently served by a City sewer which discharges into the CBMWD Cucamonga interceptor. The City trunk is referred to as the Ontario Motor Speedway outfall sewer. The Ontario Motor Speedway outfall sewer was intended to receive wastewater discharge from the speedway and several developments in the immediate area. The sewer extends east and west along "G" Street to receive wastewater and then carries the flow south under the San Bernardino Freeway to the Cucamonga interceptor which receives the flow at Slover and Haven Avenues.




(Sewer lines sized for 8.7 million square feet of development.)



**SEWER MASTER PLAN  
 THE ONTARIO CENTER  
 ONTARIO, CALIFORNIA**



EXHIBIT 5-31  
 Randolph Hunt Associates, Inc.  
 Landscape Architecture & Surveying

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 REVISED AS OF OCT. 1994

The second trunk sewer within the study area is a Cucamonga County Water District (CCWD) line which travels west along Fourth Street and then south down the Deer Creek flood control channel to Turner Avenue. Ownership of the interceptor transfers to CBMWD in Turner Avenue, where the line is known as the Turner branch sewer. The Turner branch sewer then travels into the Cucamonga interceptor just above the intersection of Turner Avenue and the San Bernardino Freeway.

Both the Ontario Motor Speedway outfall and the Turner branch line flow by gravity. No pumping is required to sewer the area because the general topography of the land slopes to the south.

The Cucamonga Interceptor is a CBMWD trunk sewer which serves Rancho Cucamonga and portions of eastern Ontario. Except for the few existing sites in Ontario that are developed, the majority of the existing flow in the interceptor originates in Rancho Cucamonga.

Within Ontario, the trunk line flows southerly in Turner Avenue under the freeway to Slover Avenue (Airport Drive), then Easterly to Haven Avenue and southerly again to just south of Mission Boulevard. Eventually, the interceptor discharges into the CBMWD treatment plant RP-1. This trunk line varies in size from 18 inches to 30 inches.

Projections for development of The Ontario Center indicate that average flows of 2.4 mgd will be generated at buildout. About 0.8 mgd will be distributed to the Turner-Slover reaches from the western sector, while 1.9 mgd will be discharged into the interceptor downstream of the Haven-Slover intersection from the center and eastern sectors.

In 1980, the existing Cucamonga interceptor line had capacity limitations which could have an affect on property development within the service area including The Ontario Center. Approval of the original 1981 Specific Plan did not assure that adequate capacity would be available as each development phase occurred. However, it should be noted that the project does, in effect, have some vested capacity rights in the interceptor line to the extent that the Ontario Motor Speedway development, which formerly existed on the site, contributed sewage flows to the interceptor line.

The regional wastewater collection and treatment issues in and around The Ontario Center that were a major concern in 1980 have, for the most part, been resolved through the cooperative efforts of Chino Basin Municipal Water District and the City of Ontario. These issues have included increasing the capacity of the trunk sewer system that transports wastewater to the treatment plant and expanding the treatment capacity of the plants such that they can now accommodate the sewage flows anticipated from the ultimate TOC development. It is anticipated that continued cooperative efforts between CBMWD and the City will ensure that adequate facilities will be available for future wastewater collection and treatment for The Ontario Center.

CBMWD operates an interceptor for industrial wastes, known as the non-reclaimable waste line (NRW), that traverses the project area parallel to Inland Empire Boulevard. The NRW line is available for users with non-domestic wastes who wish to contract with CBMWD for capacity in the interceptor. It is anticipated that The Ontario Center development will include high technology-type industrial uses. There are no plans at this time for use of the NRW line. However, as planning for the industrial development progresses, any known plans for use of the system and the anticipated flow requirements will be made known to the City and CBMWD.

#### 5.4.2.4 System Requirements

Design and construction of sewer facilities within The Ontario Center will be completed under the jurisdiction of the City of Ontario. All sewer lines will be located within public streets or dedicated easements. Construction materials will be those acceptable to the City. City design standards in affect at the time of submittal of individual projects will be used.

For the purpose of preparing this plan element, it was assumed that the sewer pipelines would generally be constructed 6 to 7 feet below finished grade elevations. The minimum pipe diameter considered was 8 inches. Pipe diameters of 8 inches and 10 inches are designed to flow at a maximum depth of 50 percent of the pipe diameter when carrying ultimate peak flows. Design capacities for pipes with a diameter of 12 inches and larger when carrying ultimate peak flows were equal to 75 percent of the pipe capacity.

Sewer mains are laid out so that all parcels can be served by gravity mains without pumping. Minimum acceptable slopes are defined as those which ensure a velocity of at least 2 feet per second when carrying ultimate peak flows. Manholes are spaced at 350 feet unless otherwise approved by the City Engineer.

As with the proposed water distribution system, all new facilities will be constructed by the Center's developers. Where other properties benefit from the construction of improvements, it is anticipated that an appropriate cost sharing or reimbursement schedule would be approved by the City.

There are wastewater lines currently in place serving the properties in old "G" Street, Inland Empire Boulevard, Haven Avenue, Milliken Avenue, ~~and Fourth Street~~, ~~and McLaren Avenue~~. Any plans for

changes in those lines which would affect those properties will be made only after consultations with the City Engineer and with the owner(s) of the aforesaid properties. In no case will the present level of service be reduced.

#### 5.4.2.5 Sewer Master Plan

Initially, a rough schematic of the proposed sewers was developed based upon known criteria and requirements such as phasing, land use, and topography. The data known about the proposed system was entered into the computer program SEWER.

SEWER is a computer program developed specifically for the analyses and design of municipal sewer systems. The program analyzes a system and determines if the capacity of the proposed lines are adequate to accommodate the proposed developments. If the design capacity is not enough, the program then selects a pipe size with adequate capacity.

All facilities will be built in locations approved by the City. These locations may include public streets or satisfactory dedicated easements. The Master Plan submitted is based upon street patterns and parcel locations as determined to date.

The results of the computer analysis are provided in the appendix. In accordance with the requirements of the Specific Plan approval, the system model will be submitted to the City in a format that is compatible with the City's computer program.

The wastewater system shown in Exhibit 5-31 (p. 210) represents the backbone necessary to assure adequate sewer service. Minor modifications may be made to the sewer system by the City Engineer on an administrative basis. As specific planning is completed,



additional facilities will be identified which will serve individual developments. As part of the planning process for individual projects, it will be determined which facilities should be publicly dedicated.

Table 5-G (p. 216) summarizes anticipated volumes of sewage flow.

#### 5.4.3 Telephone

Telephone service is provided by General Telephone Company or a suitable alternative entity. Service lines are proposed to be phased and located as shown in Exhibit 5-32 (p. 217). Those telephone facilities located in dedicated streets shall follow the ultimate alignment of said streets, subject to the approval of the City Engineer. All lines shall be underground and located within dedicated public streets or in easements within private streets subject to the approval of the City Engineer. Areas designated as Open Space are not used for longitudinal utility locations unless they are underground. Ultimate phasing of telephone improvements shall be consistent with the development of land uses in the Center. All utility crossings in open space areas are subject to the approvals of the City Engineer and Director of Public Services.

#### 5.4.4 Electricity

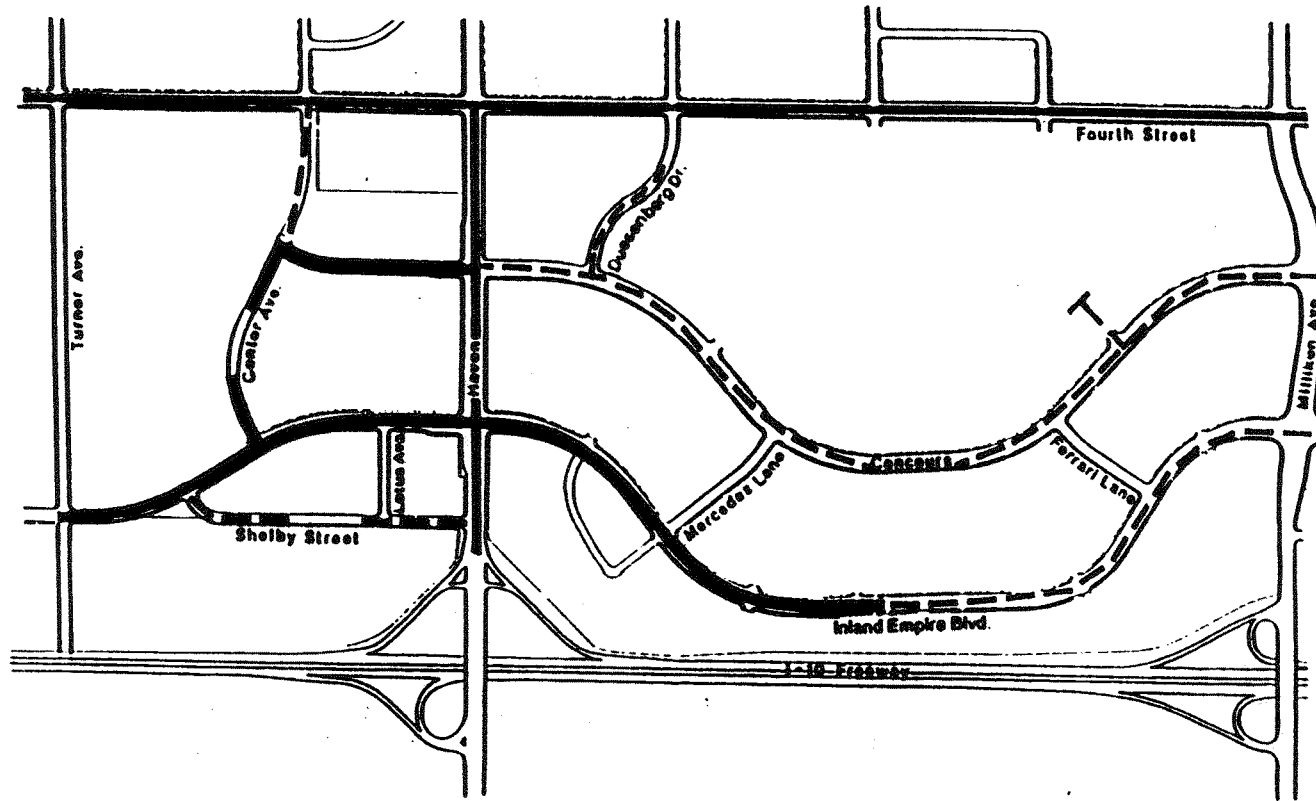
Electrical service is provided by the Southern California Edison Company or a suitable alternative entity. It is anticipated that the Center may consume up to 1,500 kw/ X 10<sup>4</sup> per month at buildout. The proposed phasing and location of electrical improvements is set forth in Exhibit 5-33 (p. 218). Those electrical facilities located in collector streets shall follow the ultimate alignment of said streets, subject to the approval of the City Engineer. All electrical lines are underground and placed in dedicated public streets, in dedicated easements within private streets subject to the approval of the City

**WASTEWATER FLOW  
THE ONTARIO CENTER (T.O.C.)  
ULTIMATE DEVELOPMENT**

TABLE 5-G

LAND USE	QTY	UNITS	MEAN ANNUAL AVG FLOW GDP
Office	4,530,247 <del>3,395,488</del>	sf	593,475 <del>441,807</del>
Service Commercial (Auto Service, Car Wash, Day Care & Restaurant)	849,276 <del>649,841</del>	sf	191,758 <del>159,532</del>
Regional Center	2,055,000	sf	793,230
Hotel	1,023,250	sf	235,348
Commercial Rec	123,000	sf	52,000
Industrial	537,715	sf	76,356
Residential	1,530	du	592,110
Park	11	acre	0
Open Space	34	acre	0
School (600 People)	7	acre	9,600
<b>SUBTOTAL: THE ONTARIO CENTER</b>			<b>2,543,877</b> <del>2,286,627</del>
<b>Non-T.O.C. properties south of 4th Street, East of Turner, north of the I-10 and west of McLaren</b>			
Office	756,286 <del>1,891,145</del>	sf	99,073 <del>247,741</del>
Service Commercial	449,506 <del>648,941</del>	sf	58,885 <del>91,111</del>
Industrial	593,603 <del>1,131,318</del>	sf	84,292 <del>160,648</del>
Residential	134	du	51,858
Open Space	0	acres	0
<b>SUBTOTAL: NON-T.O.C. PROPERTIES</b>			<b>294,108</b> <del>551,258</del>
<b>GRAND TOTAL: TOTAL STUDY AREA</b>			<b>2,837,985</b>

Note: For additional information regarding Non-TOC properties, see CCCN/Gateway Plaza/Wagner Properties Specific Plan.



**LEGEND**

- EXISTING FACILITIES
- - -** PROPOSED FACILITIES (1989-1995)

**TELEPHONE SYSTEM PHASING**  
**THE ONTARIO CENTER**  
 ONTARIO, CALIFORNIA

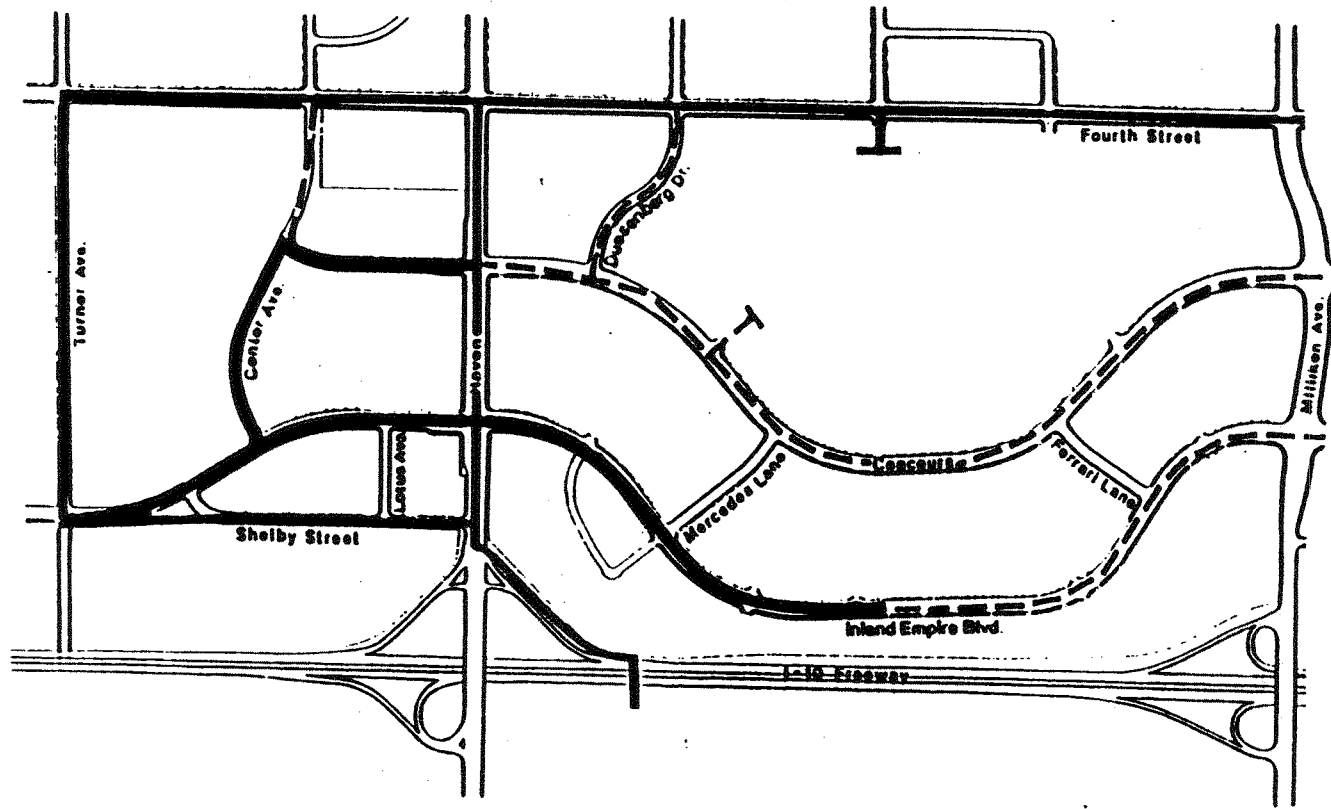
**EXHIBIT 5-32**





**Randolph**  
**Hlubik**  
**Associates, Inc.**

SOURCE: California Civil

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**LEGEND**

-  EXISTING FACILITIES
-  PROPOSED FACILITIES (1989-1995)

**ELECTRICAL SYSTEM PHASING**  
**THE ONTARIO CENTER**  
 ONTARIO, CALIFORNIA

**EXHIBIT 5-33**

The graphic scale bar shows a distance of 0, 600, and 1200 feet. To the right of the scale bar is the logo for Randolph Hubik Associates, Inc., which includes the company name and the text "A Division of the Randco Group of Companies".

SOURCE: California Civil

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 REVISED AS OF JAN. 1989  
 REVISED AS OF MARCH 1993

Engineer and the Southern California Edison Company. The only exception are high-voltage (66 kv or higher) electrical transmission lines, which may remain above ground. Areas designated as Open Space are not used for longitudinal utility locations unless underground. All utility crossings in open space areas are subject to the approvals of the City Engineer or the Director of Public Services. Ultimate phasing shall be consistent with the development of land uses within the Center.

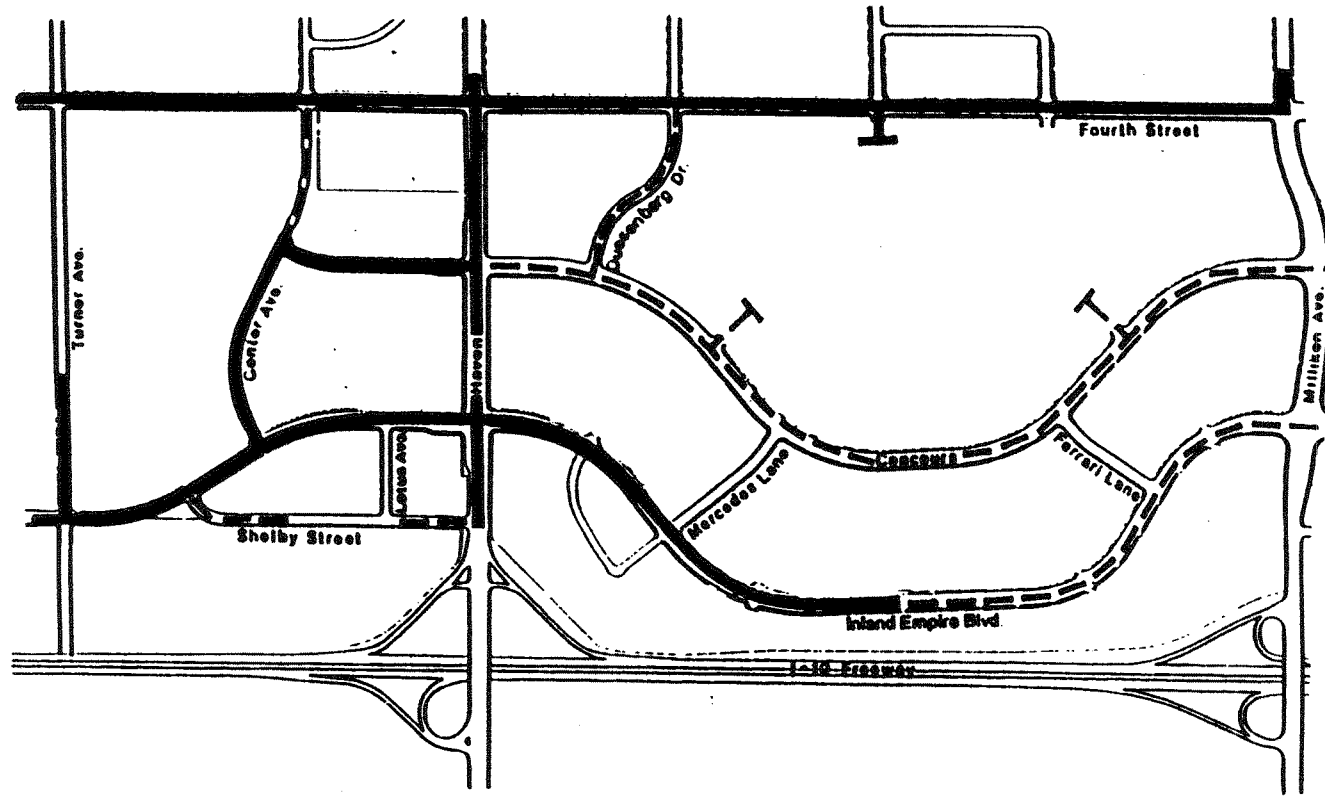
#### 5.4.5 Natural Gas

Natural gas service is supplied by the Southern California Gas Company or a suitable alternative entity. At project buildout, it is anticipated that up to 16,000 cu ft x 10<sup>4</sup>/month may be required to meet the energy needs of the Center. The proposed phasing and location of natural gas improvements is set forth in Exhibit 5-34 (p. 220). All gas facilities shall be placed in dedicated public streets, in dedicated easements within private streets subject to the approval of the City Engineer and the Southern California Gas Company. The location of those natural gas facilities which are not shown on Exhibit 5-34 and which will not be located in collector streets shall be determined at Site Plan Review. Areas designated as Open Space are not used for longitudinal utility locations unless underground. All utility crossings in open space areas are subject to the approvals of the City Engineer and Director of Public Services. Ultimate phasing shall be consistent with the development of land uses within the Center. Proposed service lines in dedicated streets shall follow the ultimate alignment of said street, subject to the approval of the City Engineer.

### 5.5 Maintenance

#### 5.5.1 Overview

Maintenance responsibilities will be allocated to the City of Ontario, special districts, and to a series of maintenance associations formed for the explicit purpose of maintaining commonly owned facilities. The associations are

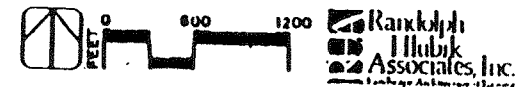


**LEGEND**

- EXISTING FACILITIES
- - -** PROPOSED FACILITIES (1989-1995)

**NATURAL GAS SYSTEM PHASING  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**

**EXHIBIT 5-34**



SOURCE: California Civil

REVISION AS OF JAN. 1989  
 REVISION AS OF MARCH 1993

composed of property owners within the Center. Covenants, conditions, and restrictions (CC&R's) shall be prepared to guarantee maintenance of these facilities.

#### 5.5.2 Maintenance Responsibilities

Maintenance responsibilities for streetscape improvements within The Ontario Center are divided among three entities: Property Owner's Association (POA), comprised of all property owners within the Center; the City of Ontario; and owners of individual parcels within the Center. The maintenance responsibilities assigned to the Property Owners Association may be assigned to special landscape maintenance districts or other similar entities. The maintenance responsibilities of these organizations for specific streetscape areas are summarized on Table 5-H.

#### 5.5.3 Streets

All streets accepted by the City shall be maintained by the City in accordance with established City policies. All collector and local streets shall be maintained by the City of Ontario subsequent to a one-year developer maintenance period. Maintenance of all private streets shall be the responsibility of the landowners within the Center and shall be regulated by Covenants, Conditions, and Restrictions (CC&R's). All maintenance shall be in accordance with City standards and policies in effect at the time of acceptance of improvements.

**TABLE 5-H. MAINTENANCE MATRIX**

	City of Ontario	Prop. Owners' Association(s)	Other
<b>A. STREETS (Public Rights of Way)</b>			
Median Landscaping/Hardscaping		X	
Street Paving and Striping	X		
Traffic Signals	X		
Traffic Control Signs	X		
Street Signs	X		
Street Signs (Special Design)		X	
Street Lights	X(2)		
Parkway Landscaping/Hardscaping		X	
Sidewalks		X	
Bus Bench/Appurtenant Structures		X	
Drinking Fountains		X	
<b>B. UTILITIES</b>			
Major Water/Sewer Facilities	X		
On-Site Water/Sewer Facilities	X(3)	X	
Major Drainage Facilities	X(4)	X	
Interim Drainage Facilities		X	
Non-Reclaimable Industrial Waste Line			X(5)
Natural Gas			X(6)
Electric			X(7)
Telephone			X(8)
<b>C. OPEN SPACE AREAS</b>			
Project Entry Signs		X	
Landscaping/Hardscaping		X	
Pedestrian Pathway		X	
Benches/Appurtenant Structures		X	
Lighting		X	
City Parks	X		
		X	
<b>D. LANDSCAPING ADJACENT TO I-10 FREEWAY</b>			

**Notes:**

1. Private streets shall be maintained by Property Owners Association(s).
2. Property Owners Association(s) to provide specialized light fixtures and ancillary equipment. City of Ontario to provide maintenance functions.
3. The City of Ontario shall maintain on-site water/sewer facilities placed within dedicated easements.
4. The City of Ontario shall maintain on-site drainage facilities placed with public rights-of-way or dedicated easements. Private facilities shall be maintained by the Property Owners Association.



TABLE 5-H. MAINTENANCE MATRIX (Continued)

- 
- |    |   |
|----|---|
| 5. | The Chino Basin Municipal Water District has the responsibility of maintaining this facility.       |
| 6. | The Southern California Gas Company has the responsibility of maintaining natural gas facilities.   |
| 7. | The Southern California Edison Company has the responsibility of maintaining electrical facilities. |
| 8. | The General Telephone Company has the responsibility of maintaining the telephone facilities.       |
- 

#### 5.5.4 Pedestrian Facilities

Pedestrian facilities located within public rights-of-way shall be maintained by the City of Ontario. Pedestrian facilities constructed outside of public rights-of-way shall be maintained by maintenance association or by private property owners. CC&R's shall be recorded which guarantee said maintenance. CC&R's shall be subject to review and approval by the City Planner (as to scope and content) and by the City Attorney (as to enforceability).

#### 5.5.5 Drainage Facilities

##### 5.5.5.1 Interim Facilities

The maintenance and liability for drainage improvements designated as interim facilities will remain the responsibility of the developer/landowner in most cases. If a facility is specifically accepted by the City of Ontario or another agency, the responsibility could be transferred. Where a facility is initially constructed as an interim facility, but is a part of a future permanent structure, the City may, at its option, accept maintenance responsibility before the facility is upgraded to a permanent component of the completed system.

### **5.5.2 Permanent Improvements**

It is proposed that all drainage improvements constructed in public rights-of-way will be permanent facilities. The City of Ontario will accept those facilities for maintenance.

Where it is necessary to construct underground drainage facilities across private property from public rights-of-way, an easement for drainage and access will be dedicated to the City. The City of Ontario would be responsible for the maintenance of the subsurface facility only and not the surface improvements within the easement.

Drainage facilities on private property will be considered private drains in the absence of an easement dedicated to the City of Ontario. Maintenance of these drains would be the responsibility of the landowner or, of the association charged with the general up-keep of the landscaping and other common improvements.

### **5.5.6 Water and Sewer**

The City of Ontario will assume responsibility for the maintenance and monitoring of sewer and water facilities constructed with the public rights-of-way within The Ontario Center.

### **5.5.7 Miscellaneous**

The Southern California Gas Company maintains natural gas facilities. Southern California Edison maintains electrical facilities. The General Telephone Company maintains all telephone facilities.

## **5.6 Conservation of Natural Resources**

### **5.6.1 Overview**

This Specific Plan is designed to ensure that wise use is made of all natural resources affected by this project, including water, air, soils, and non-renewable energy resources, such as natural gas and other fossil fuels used to generate electrical power.

The following measures and procedures shall be followed to assure the conservation of affected natural resources.

### **5.6.2 Water Resources**

Procedures to maintain the existing level of water quality include:

- 5.6.2.1 Adherence to the adopted 208 Area-wide Waste Treatment Management Plan.
- 5.6.2.2 Routine sweeping of public streets by public agencies.
- 5.6.2.3 Routine sweeping of private streets and parking facilities by the landowner, community association and/or other designated entity.

Procedures to reduce water consumption are described in Section 4.1.9.4.

### **5.6.3 Air Quality Overview**

This section sets forth an implementation program addressing the short-term and long-range project-related impacts to air resources within The Ontario Center and surrounding environs. Specifically, conditions of approval of the Specific Plan require that the following topical issues be addressed as part of this Master Plan:

- **Dust reduction program and schedule**
- **Speed limits within construction areas**
- **Coordination of grading with high soil moisture content**
- **Phasing of development and coordination with prevailing wind patterns**
- **Protection of Cucamonga-Guasti Park from fugitive dust**
- **Compliance with the Air Quality Management Plan**
- **Mobile source mitigation plan**
- **Signalization and intersection plan**

**Control measures herein assure compliance with state, federal and local regulations, allowing the on-going review and approval of the Center to occur in a timely and orderly fashion.**

#### **5.63.1 Dust Reduction Program**

**Construction activities inevitably result in the exposure and disturbance of soil. Fugitive dust is emitted during such activities as excavation, vehicle traffic, human activity and wind erosion over the exposed earth surfaces. To ensure that emissions of fugitive dust are kept to acceptable levels, all graded areas are to be stabilized by watering, chemical stabilizers, oiling or other methods to achieve this goal. These methods are described as follows:**

(A) Watering Schedule

As stated above, all areas actively involved in the grading process are subject to watering as demanded by wind and other climatic conditions. A watering truck is to be stationed adjacent to all grading sites at all times. Graded areas which will not be watered will be treated chemically as described in a following section.

(B) Soil Compaction Criteria

Continuous compaction of graded areas, in conjunction with a frequent watering schedule or surface chemical application, assists in reducing dust emission throughout the study area. Soil compaction is achieved by mechanical means, typically using "sheepsfoot" apparatus.

(C) Paving and Oiling of Access Routes

Although paving is the most effective dust control technique, it is often not practical because of the high cost involved. Surface chemical treatments can be accomplished with relatively low to moderate costs, but frequent treatments are required to be effective. The control efficiency of paving is 85 percent while the efficiency of surface chemical treatments is 50 percent.

(D) Chemical Application

Chemical stabilizers such as PDO-K are effective primarily for application on completed cuts and fills at the construction site. The chemicals provide better wetting of the soil and longer retention of the moisture film. Complete specifications regarding this product are contained in the Appendix.

**(E) Rule 403 Compliance**

Compliance with the South Coast Air Quality Management District's (SCAQMD) Rule 403 will assist in reducing the offsite impact of fugitive dust. This requirement relates to the emission of dust from excavation and construction activities as well as depositing dust and particulate matter on public roads. Rule 403 is reproduced in the Appendix.

**(F) Coordination of Grading With High Soil Moisture Content**

High soil moisture content grading operations are to be undertaken in the winter and spring months, the time of year when the soil is typically moist from precipitation. However, realizing that many other factors also influence the timing of grading operations, a complete watering program and PDO-K application program should be undertaken to permit year-round grading.

**5.632 Establishment of Speed Limits Within Construction Areas**

Establishment of speed limits within construction areas assists in decreasing the dust emissions generated. In the speed range of 30 mph to 50 mph, on an unpaved road, dust emissions are directly proportional to vehicle speed. The control efficiency of speed limits is 80 percent at 15 mph to a low of 25 percent control efficiency at 30 mph. Speed limits in construction areas will be coordinated with the City building and engineering departments.

### **5.6.3.3 Coordination of Grading With Appropriate Wind Conditions**

Major grading will be performed during relatively calm days, with wind less than 5 mph, to minimize soil disturbance (fugitive dust potential) due to onsite construction activities (Source 1).

### **5.6.3.4 Protection of Guasti Park and Berndt School from Fugitive Dust**

The Department of Agriculture, County of San Bernardino has adopted a Soil Erosion Control Ordinance (Chapter 1 Section 810.010 - 810.0130) that outlines the statement of the hazard, the territory encompassed, and the permit and enforcement procedures for soil erosion control. The site lies within the boundaries of the hazardous wind erosion area and is therefore subject to a permit prior to disturbing the surface or subsurface of the site. Compliance with the permit procedures of the "Control of Blowing Sand and Soil Erosion" ordinance will reduce fugitive dust hazard to Guasti Park. A copy of this ordinance is included in the Appendix. No changes have been made in this ordinance since adoption in 1975.

### **5.6.3.5 Air Quality Baseline Program**

The regional Air Quality Management Program utilizes the SCAG-88 Growth Forecast Policy as a basis for determining the amount, location and timing of population, housing and employment growth in the region, and therefore predicted air emissions.

Monitoring growth rates in the west end of San Bernardino County will occur in conjunction with City and County inputs to the SCAG model and annual surveys of regional progress towards air quality goals. Air quality impacts from The Ontario Center will thus be measured as a part of the South Coast Air Quality Management District total program and forwarded to SCAG on a periodic basis.

### **5.63.6 Mobile Source Mitigation Measures**

Mobile Source Mitigation Measures are those which reduce vehicular air quality impacts through the following measures:

- (A) Incentive programs to encourage employees to use alternatives to the singly occupied auto.
- (B) Public information programs regarding transit opportunities.
- (C) Internal shuttle bus service provision.
- (D) Parking areas designed to minimize idle time.
- (E) Park-and-Ride facilities provision.
- (F) Provision of bus shelters and benches to encourage transit use.
- (G) Provision of bicycle and pedestrian facilities.

### **5.63.7 Signalization and Intersection Mitigation Measures**

Intersection lane configurations and signal coordination will reduce delays in traffic, improve traffic flow, and increase average speed, thereby reducing emissions.

### **5.63.8 Stationary Source Mitigation Measures**

Long-term impacts associated with stationary sources of air pollution (i.e., electrical generation and natural gas usage) can be reduced through the energy conservation measures outlined in Sections 4.1.7, 4.1.9.1, 2, and 3. The following measures are also recommended:



- (A) Smog-tolerant and pollution-absorbing trees, and drought-resistant landscaping are both used to improve air quality within the Center. A listing of recommended plant materials is presented on Exhibit 4-8 (p. 43).
  
- (B) The reduction of temperature settings to 68°F winter/78-80°F summer is also encouraged.

As part of the stationary source aspect of air quality, all uses within The Ontario Center shall comply with the stationary source measures included within the approved air quality plan for the South Coast Air Basin. These are included in the Appendix.

#### 5.6.4 Soils

The Center site is essentially flat. No areas exhibiting excessive slope or unstable terrain are found to exist in the area.

Steps taken to minimize soil erosion include compliance with the City of Ontario grading ordinance, County of San Bernardino Dust Abatement District Regulations and completion of further soil testing prior to major construction. Storm drains constructed as a part of the Center will mitigate hydrologically-induced soil erosion.

##### 5.6.4.1 Non-Renewable Energy Resources

Provisions to conserve non-renewable energy resources have been documented in Section 4.1.9. These measures include architectural and landscape design standards, an energy audit program, a solar energy program, efficiency in lighting and ventilation, and use of insulation to reduce heating and cooling costs.

## **5.7 Phasing**

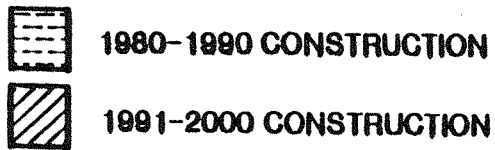
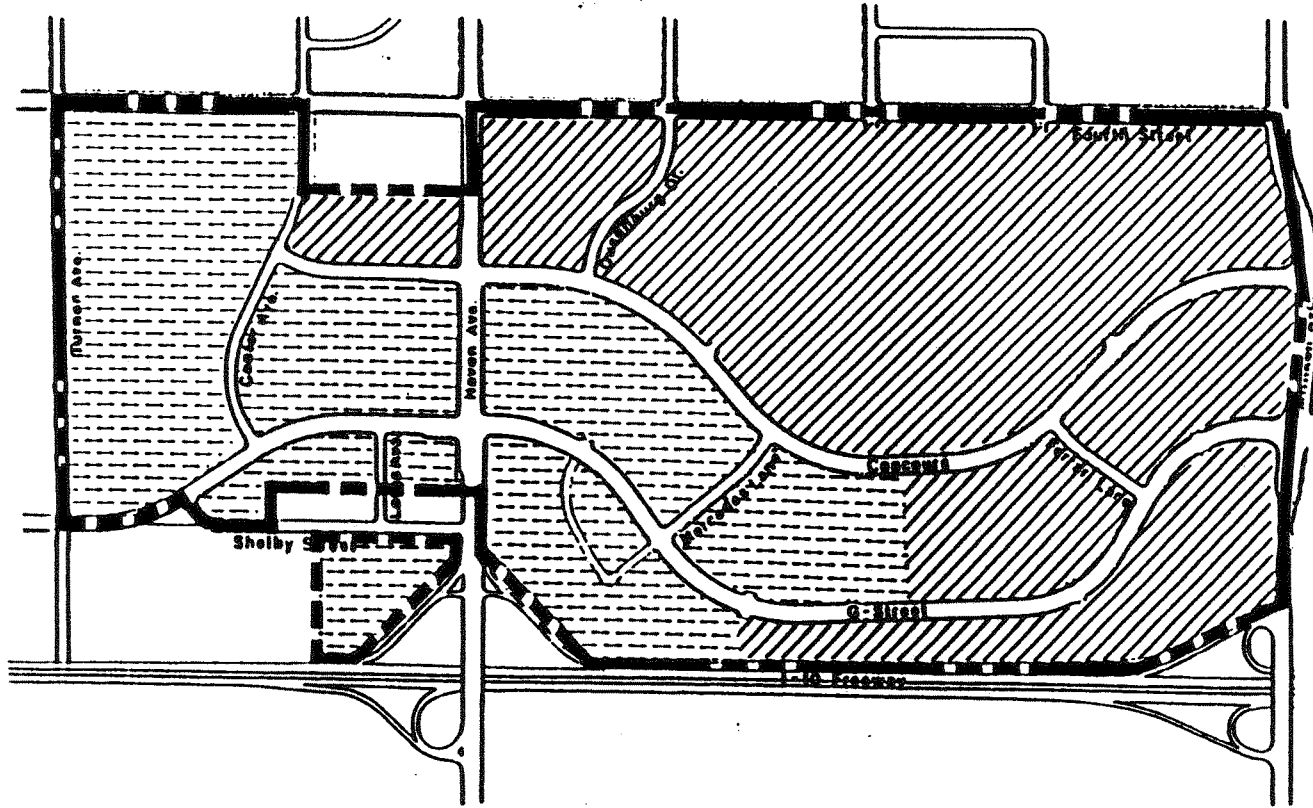
### **5.7.1 Land Use**

Actual phasing of development is difficult to predict completely over the long term, anticipated from groundbreaking to full ultimate development of the project. However, for planning purposes, an anticipated phasing program of development was formulated as a guide to land use and infrastructure planning.

Exhibit 5-35 (p. 233) delineates the anticipated phasing of The Ontario Center and includes time estimations for completion of each phase. Precise phasing within each planning area shall be reviewed and approved by the Development Advisory Board during site plan review. Modifications may be made to the phasing plan and may be approved by the Development Advisory Board when infrastructure facilities in the area are consistent with phasing plan changes.

### **5.7.2 Transportation**

The transportation program is to be phased in accordance with a 5-year increment planning program through the year 2000. A separate traffic analysis was performed for each 5-year stage. Regional (non-project) traffic volumes expected in each timeframes were approximated by assuming that the following percentages of ultimate regional traffic would be realized in each phase: 10 percent by 1985; 40 percent by 1990; and 70 percent by 1995.



**LAND USE PHASING**  
**THE ONTARIO CENTER**  
 Chevron Land and Development Company  
 ONTARIO, CALIFORNIA



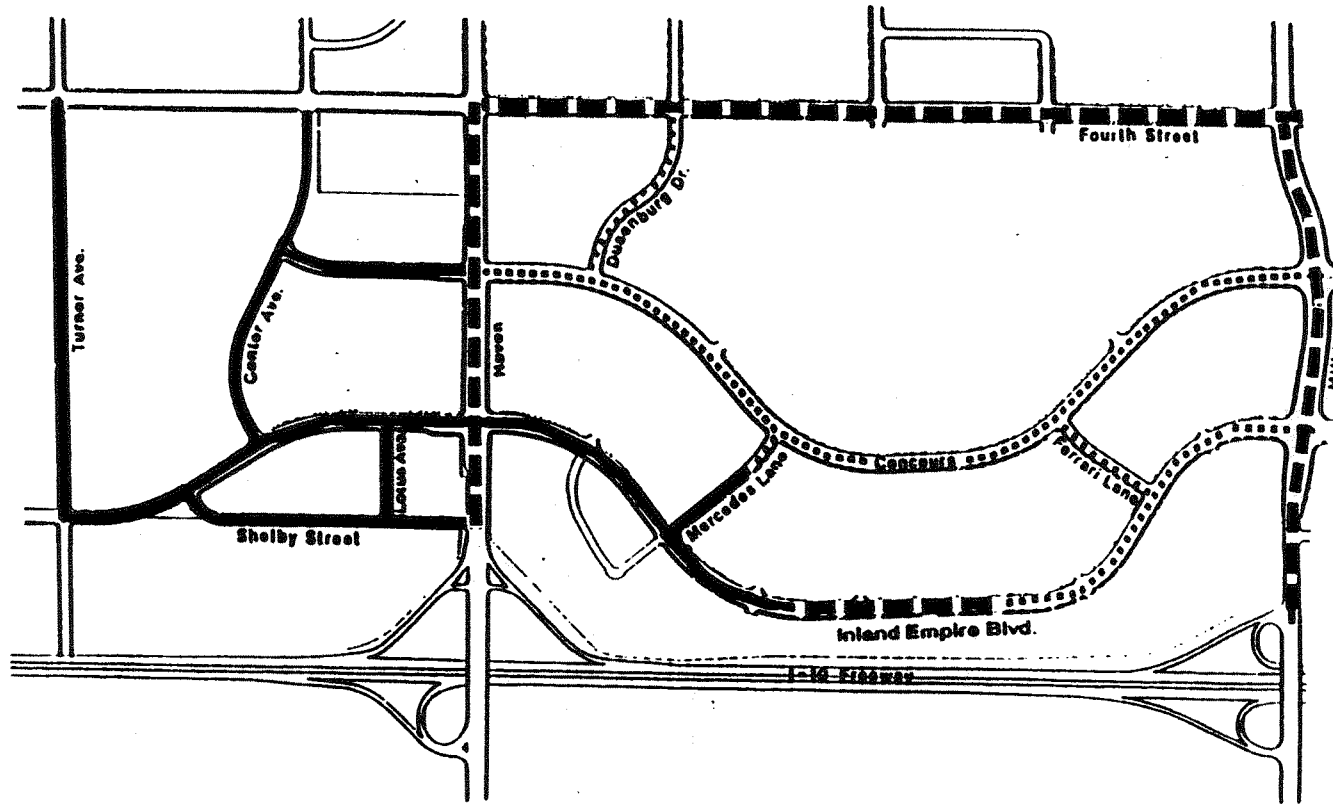
EXHIBIT 5-35

These volumes were added to project-generated volumes to arrive at projections of traffic volumes by 5-year increments. Exhibit 5-36 (p. 235) indicates the phase during which street improvements would be made under this plan. All new sections of the principal streets would be developed by 1995. ~~The new section of McLaren Avenue would be developed by 1995.~~ The realigned Inland Empire Boulevard near Haven Avenue was opened by 1985, whereas its new approaches to Milliken Avenue would not be developed until after 1990.

Intersection signalization requirements were determined using the phased traffic volumes, along with standard signalization warrants, shown in Table 5-I (p. 236). The resulting signalization phasing scheme is shown in Table 5-J (p. 237). The applicant shall construct traffic signals as warrants are met, or suitable financial arrangements shall be made with the City Engineer for construction and/or participation in the construction of such signals.

### 5.7.3 Water and Sewer

Two phases were defined for water and sewer planning purposes. These phases respond to the Land Use and Circulation Phasing programs for the next 15 years. All parcels to be developed before 1990 (according to the land use plan) and all developed areas adjacent to The Ontario Center represent the first phase. In some cases, mains will be built in advance of adjacent development to complete loops. ~~Phasing for water and sewer systems are presented on Exhibits 5-30 and 5-31.~~



- EXISTING
- .....** PROPOSED NEW FACILITIES
- - -** PROPOSED WIDENING

**TRANSPORTATION SYSTEM PHASING  
THE ONTARIO CENTER**  
Chevron Land and Development Company  
ONTARIO, CALIFORNIA

EXHIBIT 5-36

Randolph  
Hubik  
Associates, Inc.  
Engineering and Surveying

REVISED AS OF JULY 1987  
REVISED AS OF MAY 1990  
REVISED AS OF MARCH 1993

**TABLE 5-I  
SIGNAL VOLUME WARRANTS**

	Warrant			
	Minimum Vehicular Volume Warrant		Interruption of Continuous Traffic Warrant	
	Urban	Rural	Urban	Rural
<b><u>MAJOR STREET</u></b> (Total of Both Approaches)				
<b><u>1 lane approach</u></b>				
Eight Highest Hours Volume	500	350	750	525
Peak Hour Volume*	800	560	1,200	840
<b><u>2 or more lane approaches</u></b>				
Eight Highest Hours Volume	600	420	900	630
Peak Hour Volume	960	672	1,440	1,080
<b><u>MINOR STREET</u></b> (Highest Volume Approach)				
<b><u>1 lane approach</u></b>				
Eight Highest Hours Volume	150	105	75	53
Peak Hour Volume	240	168	120	85
<b><u>2 or More Lane Approaches</u></b>				
Eight Highest Hours Volume	200	140	100	70
Peak Hour Volume	320	224	160	112

\* Assuming that eight highest hours volume equals sixty percent of the peak hour volume.

Source: Federal Highway Administration adopted signal warrants

**TABLE 5-J  
SIGNALIZATION PHASING**

	SIGNAL INSTALLED			
	1980-1984	1985-1989	1990-1994	1995-2000
4th at Turner			•	
4th at Center Avenue			•	
4th at Haven Avenue		•	•	
4th at Cleveland			•	
4th at Duesenberg			•	
4th at Vincent			•	
4th at Milliken Avenue			•	
4th at Bugatti				•
Concours at Haven Avenue		•	•	
Concours at Duesenberg			•	
Concours at Mercedes			•	
Concours at Ferrari			•	
Concours at Milliken Avenue			•	
<del>Concours at Pantera</del>				•
<del>Concours at Bugatti</del>				•
Inland Empire Blvd. at Turner			•	
Inland Empire Blvd. at Shelby			•	
Inland Empire Blvd. at Center		•		
Inland Empire Blvd. at Haven	•	•		
Inland Empire Blvd. at Mercedes			•	
Inland Empire Blvd. at Milliken			•	
Inland Empire Blvd. at Ferrari			•	
<del>Inland Empire Blvd. at Alfa Romeo</del>				•
<del>Inland Empire Blvd. at Pantera</del>				•
<del>Inland Empire Blvd. at Lancia</del>				•
<del>Inland Empire Blvd. at McLaren</del>				•
Inland Empire Blvd. at Lotus*		•		

\* If required by Planning Area Plan

#### **5.7.4 Drainage**

Drainage improvements will be constructed almost immediately to serve the initial development areas and will continue to be added as required for future development. Two phases of storm drain construction are proposed; these correspond to the phases indicated for sewer and water facilities.

Exhibit 5-37 (p. 239) depicts a drainage phasing plan which indicates the 10-year periods when storm drain facilities are scheduled for construction.

### **5.8 Development Monitoring Program**

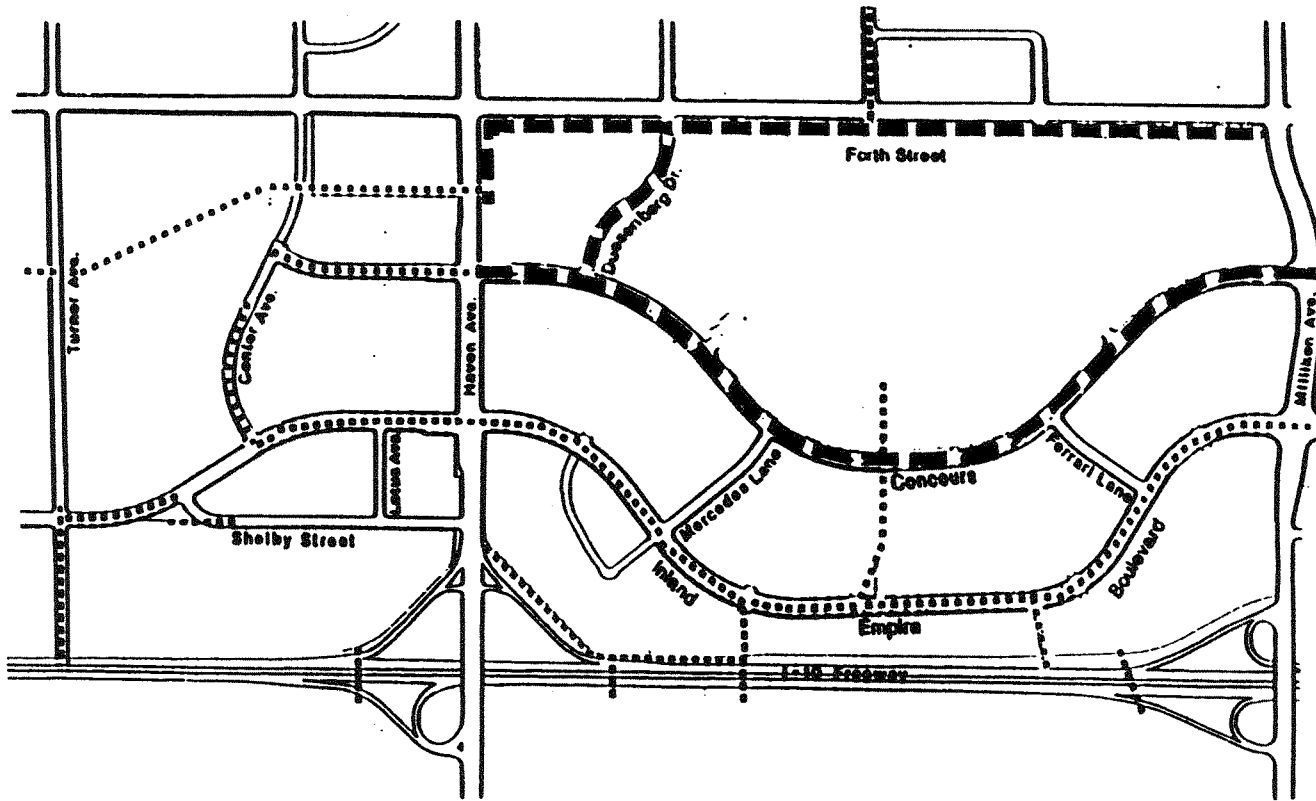
#### **5.8.1 Overview**

The Development Monitoring Program ensures that adequate infrastructure is provided to handle each increment of development. In conjunction with the approval of each phase of development, a finding shall be made that adequate capacity exists or will be constructed in conjunction with that phase.

The Program is an on-going informational process to enable the City of Ontario to collect and assimilate data. The Program will remain in force until full build-out occurs or may terminate sooner if the City of Ontario determines it is no longer necessary. The parties who will be involved in the program will be:

- 5.8.1.1 The Engineering Department of the City of Ontario, which maintains current records and information during the program. The City will collect data normally obtained by City forces and will make this information available to all participants of the program. The developer's engineer will supply the City with data which will be subject to review and acceptance by the City.





**LEGEND**

- ..... EXISTING
- — — 1990-2000

**STORM DRAIN PHASING PLAN  
THE ONTARIO CENTER  
ONTARIO, CALIFORNIA**



**REDAK  
HILBY  
Associates, Inc.**

**EXHIBIT 5-37**

REVISIONS AS OF JULY, 1991  
 REVISED AS OF JAN. 1989  
 REVISED AS OF MAY 1990  
 REVISED AS OF MARCH 1993

5.8.1.2 Any entity, public or private, which from time to time proposes to develop as owner any portion of the property included under the jurisdiction of The Ontario Center Specific Plan. The extent of the involvement of the owner entities shall be limited to those occasions identified in these procedures and shall be occasioned only by the presentation of an active development plan to the City of Ontario, in which case the owner entities shall be responsible for preparing and submitting to the City of Ontario Engineering Department the information specified in these procedures.

## 5.8.2 Traffic Monitoring Program

### 5.8.2.1 Introduction

The principal purpose of the traffic monitoring program is to assure that, as each increment of development is approved under The Ontario Center Specific Plan, adequate roadway capacity is or will be provided to handle the traffic expected with the development in place. That purpose will be achieved by requiring each development proposal to be subjected to a traffic impact analysis that will investigate and report this information prior to development approval:

- (A) The cumulative traffic loads on the roadway system prior to consideration of the development increment in question, including through traffic and all traffic expected to be present from developments previously approved but not yet in place.
- (B) The principal traffic volume impacts from the development increment being considered, as determined by a qualified traffic engineer, and as reported on a standard form prescribed as part of these procedures.

- (C) The new cumulative total traffic loads including the development being considered, along with an assessment of traffic level of service and roadway improvements required to provide and maintain acceptable service levels.

#### 5.8.2.2 The Traffic Monitoring Process

- (A) The inputs to the process consist of:

- (1) A standard traffic impact report to be filed on each increment of development as it comes in for site plan approval or for issuance of a building permit, or both. The standard traffic report form is enclosed in the Appendix.
- (2) Field traffic measurements, which are to be conducted periodically according to a prescribed calendar. The data to be collected and the frequency of collection is outlined on an attachment entitled **Field Traffic Data Collection**, which is enclosed in the Appendix.

- (B) The outputs from the process will consist of:

- (1) Maintained, up-to-date tabular records of estimated traffic volumes for all major links in The Ontario Center circulation system. The tables would cumulatively record the contributions of each project processed for approval. The tables will be updated each time a standard traffic impact report is processed.

Two separate sets of tables will be maintained; one for traffic loads estimated according to site plans approved, the other for traffic loads estimated according to building permits issued.

(2) **Trend line graphs to show the build-upon actual and projected traffic volumes over the long-term timespan from initial project groundbreaking to full ultimate development of The Ontario Center. A number of graphs could be maintained. The vertical axis could be total trips generated or traffic volume at a given significant location. The horizontal axis in all cases would be time in years and quarters of a year. The trend line graphs would track growth in actual traffic volumes as reflected by the field traffic data, and would also track projected traffic volumes based upon the developments as processed through for approval. This can be compared to the roadway capacity of staged transportation improvements.**

(C) **The cycle of activity in the traffic monitoring process is as follows:**

**As a project within The Ontario Center comes up for site plan approval or a building permit:**

(1) **The City provides the developer with a standard traffic impact report form. City also supplies a coded road network map and link traffic data (cumulative totals including existing traffic plus traffic impact estimates for any previously approved projects within The Ontario Center, or affecting the traffic loads on the street within The Ontario Center).**

(2) **The developer completes the form in consultation with the City and with professional traffic engineering input.**

- (3) Items 7 and 8 from the Standard Traffic Report are used to make the necessary decisions on circulation system adequacy. Item 9 is used to determine signalization requirements.
- (4) When the development action is approved, Item 5 is pulled from the traffic report and added to the tabular summaries kept on file at the City.
- (5) In many cases, Item 6 from the traffic report can be handed to the next applicant as the "existing plus committed" link data for the subsequent project to be evaluated under this monitoring program.

**As new traffic data is collected in the field traffic measurement part of the monitoring program:**

- (6) Pertinent data is added to trend line plots of actual traffic growth.
- (7) Count data, as deemed appropriate following qualified professional review, is used to replace or adjust previous link volume estimates in the tabular data.

### 5.8.3 Drainage

#### 5.8.3.1 Introduction

Each development proposal will be accompanied by a drainage impact statement which provides general information regarding the development as well as specific data sufficient for the City to evaluate readily the overall impact of the proposal. The statement will also clarify the individual project's conformance to the drainage provisions of the Specific Plan. The statement should include an analysis of the impact on appurtenant drainage facilities along the particular system or on surrounding properties. Important considerations will be the following:

- (A) The cumulative existing runoff at the Specific Plan boundary prior to consideration of the development increment in question. The cumulation total will express those developments previously processed through the monitoring program as partially complete. Only those portions of the previous developments that have had applications through the Building Department for grading and drainage approval will be considered in place. This will establish the actual runoff at the project boundary at the time when the subject development proposal is considered.
- (B) The cumulative runoff at the Specific Plan boundary considering the proposed development added to actual conditions as defined above.
- (C) The cumulative runoff at the Specific Plan boundary considering the proposed development combined with all previously proposed developments, to establish the theoretical maximum outflow to date.

### **5.8.3.2 The Drainage Monitoring Process**

**(A) The inputs to the process shall consist of:**

- (1) A standard drainage impact report to be filed on each increment of development at the time any activity requiring formal City approval is initiated, i.e., parcel map, or tract map, or site plans.**
- (2) Information relating to drainage improvements within the Specific Plan area, whether public or private, will be maintained by the City of Ontario. This information will be available to participants of the monitoring program.**

**(B) The outputs from the process will consist of:**

- (1) A composite drawing of the Specific Plan area will be maintained by the City of Ontario to identify which portions of land have been processed through the monitoring program and which portions have had applications processed for grading and drainage facilities. A copy of this map will be available to participants of the program when initiating a new development proposal.**

The map will be supplied initially to the City by the property owner at 1" = 100' scale and will accurately show structure locations and the following items as identified in the Specific Plan:

- (a) Proposed street locations including right-of-way widths where available**

- (b) Drainage facilities (existing)
- (c) Water lines (existing)
- (d) Sewer lines (existing)
- (e) Proposed facilities and other items as deemed necessary by the City

(C) The cycle of activity in the drainage monitoring process is as follows:

**As a project or development proposal within the Specific Plan area is initiated, the Engineering Department of the City of Ontario will make the determination as to whether the formal monitoring process is applicable. If it is, then the following steps will proceed:**

- (1) The City provides the applicant with the printed guidelines for the monitoring program with one copy of the composite map and the required standard impact reports for traffic, water, sewer, and drainage as applicable.
- (2) The applicant completes the appropriate reports with professional engineering input to identify all pertinent aspects of the development proposal. This draft report, accompanied by supporting technical data, is submitted for review to the City.
- (3) The City reviews the draft report for completeness and content and returns comments to the applicant. At this point, the City's review can only be preliminary and conformance with the comments returned will establish



only approval of the concept proposed by the applicant. The City's comments may very well contain a request to gather further information or to identify mitigation to a known deficiency more specifically, in which case, an amended draft review would be required.

- (4) After the applicant has received concurrence from the Engineering Department on the scope of improvements to be included within the development proposal, the City will issue a letter identifying such, and the applicant will proceed with the development plans in the normal manner.
- (5) As an attachment to the subsequent development plan submittal to the City, the applicant will supply a final impact report which will reflect the precise character of the development proposal.

It should be noted that the monitoring process is intended only to enhance communication with the City during development phasing within the Specific Plan area. The applicant's statements contained in the impact reports, as well as the City's letter of concurrence, both are to be regarded as intentions rather than binding commitments. The final impact report will be arriving at the City at the same time as the detailed development plan submittal. Only then will all the required information be available for City review on the development which may lead to modifications on subjects covered in the preliminary impact reports.

- (6) Upon approval of the development proposal, the City will update the composite map to reflect the area being developed, designating which improvements to street, water, sewer, or drainage facilities are planned.
- (7) When grading application is made for a particular site, the application will have a reference to the individual final impact report previously processed over that area. All sites where grading applications have been processed will be noted on the composite drawing as these sites will then be considered in place for future studies.

The Standard Drainage Report Form is included in the Appendix to this report.

#### **5.8.4 Water and Sewer**

##### **5.8.4.1 Introduction**

The principal purpose of the water and sewer monitoring programs is to assure that, as each increment of development is approved, adequate water and sewer supply and distribution capacity is or will be provided to handle the expected demands. Each development proposal will be subjected to a water and sewer impact analysis which will investigate and report the following information prior to development approval:

- (A) The cumulative water demand and sewage flow in the system prior to consideration of the development increment in question, including all demands expected to be present from developments previously approved but not yet in place.

- (B) The water demand and sewage flow generated by the development increment being considered, as determined by a qualified engineer, and as reported on a standard form prescribed as part of these procedures.
- (C) The new cumulative total water demand and sewage flow being considered, along with an assessment of capacity and improvements required to provide and maintain acceptable service levels.

#### 5.8.4.2 The Water and Sewer Monitoring Processes

- (A) The inputs to the process consist of:
  - (1) **Standard water and sewer impact reports**, to be filed on each increment of development as it comes in either for site plan approved or for issuance of a building permit. The standard water and sewer impact report forms are attached in the Appendix to this report.
  - (2) **Field water and sewage flow measurements** which are to be conducted periodically on an as needed basis. The data to be collected and guidelines for frequency of collection are outlined in the appendices entitled **Field Water Data Collection** and **Field Sewage Flow Data Collection**.
  - (3) **Water Consumption Data**, which may be compiled periodically from office billing records on an as-needed basis.
- (B) The outputs from the process will consist of:

- (1) Maintained, up-to-date tabular records of estimated water demand and sewage flows for all nodes and trunks in The Ontario Center systems. The tables will cumulatively record the contributions of each project processed for approval. The tables will be updated each time a standard water or sewer impact report is processed. Two separate sets of tables will be maintained; one for water demand and sewage flows estimated according to site plans approved, and the other for water demand and sewage flows estimated according to building permits issued.
  - (2) Tabular comparisons to show the buildings of measured and projected water demand and sewage flows over the timespan from initial project groundbreaking to full development of The Ontario Center. The tables would track growth in actual water demand and sewage flows as reflected by the field data, and would also track projected water demand and sewage flows based upon the developments as processed through for approval. This can be compared to the main and trunk capacity of staged system improvements.
- (C) The cycle of activity in the water and sewage monitoring processes is as follows:

**As a project within The Ontario Center comes up for site plan approval or building permits:**

- (1) The City provides the developer with standard water and sewer impact report forms. The City also supplies a coded water and sewer system map, node demand, and

link flow data (cumulative totals including existing demands and flows plus water and sewer impacts estimates for any previously approved projects).

- (2) The developer completes the forms in consultation with the City and with professional engineering input.
- (3) When the development action is approved, Item 5 is pulled from each of the Standard Reports and is added to the tabular summaries kept on file at the City.
- (4) The demand and flow increments in Item 5 are added to the tabular comparisons, kept on file at the City.

**As new water consumption and sewage flow data is collected in the field flow measurement part of the monitoring programs:**

- (5) Pertinent data is added to the tabular comparisons of actual measured flow.
- (6) Consumption and flow data, as deemed appropriate following qualified professional review, is used to replace or adjust previous node and link flow estimates in the tabular data.

**The Standard Water and Sewer Impact Reports, and the Water Data Collection and Field Sewer Data Collection specifications are enclosed in the Appendix.**