



# *City of San Carlos*

Circulation Element Update

August 18, 2004



## Technical Advisory Staff:



- San Carlos Public Works Department
- San Carlos Planning Department
- San Carlos Police Department



## TRAFFIC and TRANSPORTATION COMMISSION MEETING

August 18, 2004

7:00 p.m.

Location- City Hall- Council Chambers  
600 Elm Street, San Carlos

You are hereby invited to attend the Traffic and Transportation Commission meeting to kick off an update of the City's Circulation Element of the General Plan.

### Agenda

Introductory Session

San Carlos General Plan – Circulation Element

For further information, you may contact Liz Cullinan (Planning Director) at 802-4264

# *Background*

- Joint City Council/Traffic & Transportation Commission goal
- Updated Traffic Studies completed
- Authorized under the City Council Work Program for the fiscal year 2004/2005

# *Purpose of Update*

Utilize updated traffic information

Analyze existing conditions

Incorporate/formalize new mitigation types

Update Projects

Update Goals

WHY????

# *Comparison of Conditions*

## 1991

### Peak Hours

4:45 – 5:45

- 11,000 cars entered the City via Holly Street
- Between 163,000 and 195,000 vehicles on US 101
- US 101 projected at between E and F for future

## 2004

### Peak Hours

4:00 – 6:00

- 12,000 cars entered City via Holly Street
- Approximately 220,000 vehicles on US 101
- US 101 at LOS F

# *Comparison of Conditions*

**1991**

15,700 vehicles per day on Holly

El Camino/Holly Street intersection  
= LOS A/B

Old County Road/Holly Street  
intersection = LOS A/A

Industrial Road/Holly Street  
intersection = LOS B/C

**2004**

17,600 vehicles per day on Holly  
Street

El Camino/Holly Street intersection  
= LOS A/B

Old County Road/Holly Street  
intersection = LOS A/B

Industrial Road/Holly Street  
intersection = LOS A/C

# *Capital Improvement Projects*

## *- Completed*

- Widen and add turn lanes to the El Camino Real, Old County Road and Industrial Road intersections with Holly Street.
- Construct a Holly Street grade separation.
- Construct southbound off and on ramps at Brittan Avenue and U.S. 101.
- Widen Brittan Avenue from U.S. 101 to El Camino Real and construct a grade-separation at Brittan Avenue and Old County Road/Railroad/El Camino Real.



# *Capital Improvement Projects Ongoing*

- Crestview Drive Connection to 1-280 Vista Point Interchange
  - It is anticipated that approximately 3,000 vehicles per day of local Western Hills traffic would utilize this facility for access to and from I-280.
  
- Enhanced Downtown Parking Program
  - Possible solutions include designation of specific areas for employee parking, expansion of parking opportunities.
  
- Facilities for the Handicapped
  
- Pedestrian Facilities and Trails
  
- Bicycle Facilities
  
- Transportation Systems Management (TSM)



## *Common Traffic Myths*

- Local traffic conditions have been getting worse.
- Traffic conditions are worse near the downtown.
- Traffic impacts depend on the size of buildings.

# *Challenges*

- Maintaining acceptable traffic conditions while creating a more walkable environment.
- Balancing the city's larger economic development and quality of life goals.



# *What is a Circulation Element?*

## *Circulation Element 1992 - Structure*

- Purpose
- Relation to Other Elements
- Goals and Objectives (General)
- Circulation System
  - Road Types
  - Road Standards
- Level of Service (1990)
  - Traffic volumes
  - Intersection Service Levels
- Modifications/Improvements
- Transportation Systems Management (TSM)
- Transportation Facilities
- Scenic Highways
- Circulation Policies
- Transportation Policies
- Scenic Highways Policies

# *Definitions*

## *Intersection LOS:*

- **LOS** serves as a benchmark to determine whether new development will comply with an existing LOS or if it will exceed the preferred or adopted LOS.
- Average delay experienced by each vehicle passing through an intersection, reported with a letter grade designation ranging from A to F.
  - LOS A represents insignificant delay (less than 10 seconds per vehicle);
  - LOS F represents significant waiting .This means more than 50 seconds per vehicle for intersections with non-existent or inadequate signals or more than 80 seconds per vehicle for intersections with signals.

*Definitions*

*Average Delay*

# *Definitions*

## *Volume-to-Capacity Ratio (V/C)*

- Measure of traffic demand on a facility compared to its traffic-carrying capacity. *(A v/c ratio of 0.7, for example, indicates that a traffic facility is operating at 70 percent of its capacity.)*
- V/C ratios should be considered together with the letter grade system:
  - Even with an acceptable LOS grade, a v/c ratio may indicate that the same facility is operating at or near full capacity (e.g., 0.95 to 0.99).
  - Road segments operating at deficient levels of service may have an acceptable v/c ratio).

# *Level of Service (Transportation Research Board)*

<b>Level of Service (LOS)</b>	<b>Volume to Capacity Ratio (V/C)</b>
A Free Flow	< or = 0.60
B Stable Flow (slight delay)	0.61 - 0.70
C Stable Flow (acceptable delay)	0.71 – 0.80
D Approaching unstable flow (tolerable delay)	0.81 -0.90
E Unstable Flow (congestion; intolerable delay)	0.91-1.00
F Forced Flow (Dammed)	>1.00

## *Definitions*

### *"Peak Period"*

- The time period during which the roadway carries the greatest number of vehicles.

# *Definitions*

## *"Speed Humps"*

- Speed humps are a gradual rise and fall in the pavement surface, usually with a circular profile, to a maximum height of three inches over a distance of 12 feet in the direction of travel.
- Typically they are installed in a series of two or more separated by a minimum of 200 feet.
- Speed humps are generally installed only on local residential streets.

## *Definitions*

### *"Traffic Calming"*

- "Traffic calming slows vehicles on streets where drivers travel at higher speeds than is desirable."
- Traffic calming keeps speeds within a narrower range.
- Can be bulbouts, diverters, medians, road narrowing and roundabouts, etc.

# *Building Blocks*



- Major Intersection Study
- Nelson Nygaard Study
- B-PAC policies and mission
- T&T policies and mission

# *Major Intersection Study*

## *Phase 1*

- 29 San Carlos intersections were studied – March 2001
- With projected development, primary intersections within San Carlos would remain at level of service D or above.
- The City's General Plan states that intersection service levels should be maintained at level D or above.
- ***New projects could reduce levels of traffic service within the community to unacceptable levels.***
- Continuous efforts to improve rather than simply reacting to traffic issues will provide long-term benefits to San Carlos.

# *Non-Capital Mitigation Measures Phase II*

- *Land Use Planning Strategies*
- *A City Transportation Demand Management (TDM) Ordinance Applicable to all New Development*
- *Transportation Impact Fee on New Development*
- *Parking Management*
- *Bicycle Network*
- *School Transportation Programs*
- *Shuttle Program*
- *City-Based Trip Reduction Measures for City Employees and Residents*

# ***B-PAC Mission/Policies***

- Participate in the development and review of comprehensive bicycle/pedestrian goals, objectives and policies...
- Review recommended changes to the Circulation Element of the general plan.
- Work with the City to promote walking and utilitarian and recreational cycling.
- Recommend policies for pedestrian and bikeway systems...
- Ensure sensitivity to bicycle and pedestrian issues in the design and implementation of all public works projects...
- Develop a safe convenient and effective bikeways system that promotes bicycle travel as a viable transportation mode and connects work, shopping, schools, residential and recreational areas.

# *T&T Mission*

- Makes recommendations for improving traffic conditions regulations.
- Creating a safe and environmentally efficient traffic and transportation system.
- Policies:
  - Speed Humps
  - Traffic Calming
  - Stop Signs\*

# *Speed Humps*

## *Policy/Key Criteria*

- The street must be a local residential street.
- Minimum 85th percentile speed must be 30 mph.
- Minimum 24 hour volume of traffic must be 1,200.
- Street grade must be less than 5%.
- The street must have raised curbs or other barriers.
- At least 67% of the residents on the block must sign a petition for installation of speed humps.
- The homeowners and residents on both sides of the street where a hump is to be installed must agree in writing.

## *Stop Sign Key Findings*

- ✓ Traffic calming is generally a more effective *speed* control than stop signs.
- ✓ Unwarranted stop signs create potentially dangerous conditions and City liability.
- ✓ Stop signs potentially increase speed at mid-block.
- ✓ Highest accident rate in San Carlos is at 4-way controlled intersections.

# *Traffic Calming Policy*

- Neighborhood funding of Traffic Calming devices.
- City will provide staff time.

# *Traffic Calming Key Findings*

- A primary characteristic of speed humps is their high-speed control effectiveness at a reasonable cost.
- Noise level at speed humps will increase due to braking, accelerating and bouncing.
- Due to required signing and striping, there can be a negative visual impact.
- Speed humps and striping require maintenance.
- Speed humps will increase the response time for emergency vehicles and can cause damage/increased maintenance costs for such vehicles.

# *Areas of possible change*

- Enhance and Define **Transportation Network** (no longer just locals, arterials and collectors)
- Incorporate new types of **Mitigation Measures**
- Confirm Appropriate Local **Traffic Calming** Policies and Devices
- **Establish Bicycle Policies**
- Document New **Traffic Conditions**
- **Incorporate Pedestrian Enhancements**



# *Areas of possible change*

## *Miscellaneous*

- Add definitions and assumptions
- Confirm acceptable levels of service (LOS)
- Consider Transportation Impact fee
- Consider Gateway/entryway and links into community (Council/DRAC recommendations)
- Confirm 280 Interchange/connection
- Establish Alley Policy
- Consider Infill opportunity Zone/SB 1636
- Establish Delivery practices
- Incorporate C/CAG policies on Congestion Management.

# *Next Steps*

## *September 15, 2004*

- Receive general public commentary on traffic

## *October 2004*

*Commission review of specific sections:*

- **Traffic Mitigation Measures**
- **Local Traffic Calming Policies and Devices**

## *November 2004*

*Commission review of specific sections:*

- **Pedestrian Enhancements**
- **Bicycle Policies**

# *Next Steps*

## *December 2004*

Commission overview of updated document and recommendation to Planning Commission.

## *January 2005*

Planning Commission review and recommendation to City Council of a Resolution Amending Circulation Element of the General Plan.

## *February 2005*

City Council consideration of Resolution Amending the Circulation Element of the General Plan.

*Serena Nevarez 802-4267*

*Liz Cullinan: 802-4264*

*Parviz MokhtariL 802-4202*



## TRAFFIC and TRANSPORTATION COMMISSION MEETING

September 15, 2004

7:00 p.m.

Location- City Hall- Council Chambers  
600 Elm Street, San Carlos

You are hereby invited to attend the Traffic and Transportation Commission meeting to provide public commentary on the City's Circulation Element of the General Plan.

### Agenda

Public Comment Session  
San Carlos General Plan – Circulation Element

For further information, you may contact Liz Cullinan (Planning Director) at 802-4264