CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor

Report to the City Council
City of San José

AN AUDIT OF THE TRAFFIC CALMING PROGRAM

The Department Of Transportation Needs To Establish Additional Controls To Improve The Traffic Calming Program's Effectiveness

The Department Of Transportation Needs To Better Maintain Some Comprehensive Traffic Calming Projects

Report 07-03
May 2007

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor
Gerald A. Silva, City Auditor

May 4, 2007

Honorable Mayor and Members
of the City Council
200 East Santa Clara Street
San Jose, CA 95113

Transmitted herewith is a report on *An Audit of the Traffic Calming Program.* This report is in accordance with City Charter Section 805. An Executive Summary is presented on the blue pages in the front of this report. The City Administration's response is shown on the yellow pages before the appendices.

This report will be presented to the *Public Safety, Finance & Strategic Support Committee* at its May 17, 2007, meeting. If you need any additional information, please let me know. The City Auditor's staff members who participated in the preparation of this report are Mike Edmonds and Ruth Garcia Merino.

Respectfully submitted,

Gerald A. Silva
City Auditor

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Report to the City Council
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AN AUDIT OF THE TRAFFIC CALMING PROGRAM

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Executive Summary

In accordance with the City Auditor's 2006-07 Audit Workplan, we audited the Department of Transportation's (DOT) Traffic Calming Program (Program). We conducted our audit in accordance with Generally Accepted Government Auditing Standards and limited our work to those areas specified in the Objectives, Scope, and Methodology section of this report.

Finding I The Department Of Transportation Needs To Establish Additional Controls To Improve The Traffic Calming Program's Effectiveness

The City of San Jose's Traffic Calming Program (Program) was initially established in 1978; however, it has been discontinued and reestablished twice over the past few decades. In 2000, the City Council established a new Traffic Calming Policy and the Program was reestablished. Since 2001, the Program has implemented a number of measures intended to reduce traffic problems and increase the safety of the residents of San Jose. On the whole, the community seems to support the Program. However, funding problems have limited the Program's ability to implement needed traffic calming measures. In our opinion, the Department of Transportation (DOT) needs to establish additional controls to ensure that the Program spends its limited funds on comprehensive traffic calming projects that are warranted and on the highest priority projects. In addition, we found that the DOT needs to strengthen its controls over its Annual Collision Review process for reviewing high crash locations and that the Program should use technology to enhance its ability to proactively identify neighborhood streets with speeding problems and obtain additional non-injury crashes information. Furthermore, we found that the DOT needs to establish additional controls to ensure that the Program responds to neighborhood complaints in a timely and consistent manner. Also, the DOT needs to formalize the Neighborhood Automated Speed Compliance Program (NASCOP) procedures[1]. Finally, we found that the San Jose Police

[1] We should note that the City Manager has proposed elimination of the NASCOP in the proposed 2007-08 operating budget.

Department's (SJPD) Traffic Enforcement Unit (TEU), which handles the enforcement part of the Program, was not accurately reporting its performance in responding to and resolving traffic complaints.

The lack of funding for the Program has impaired its effectiveness. However, we found that the DOT can develop and implement additional controls to improve the overall effectiveness and performance of the Program. Specifically, the DOT should develop procedures to ensure that project files sufficiently document that comprehensive traffic calming projects are warranted under the City's Traffic Calming Policy. Furthermore, the DOT should develop a priority ranking system to provide greater assurance that the City's limited Program funds are spent on comprehensive traffic calming projects that are warranted and on the highest priority projects. In addition, the DOT needs to develop and implement procedures to ensure that staff follow up and assess the effectiveness of comprehensive traffic calming projects. Furthermore, the DOT should formalize its Annual Collision Review process. To be more proactive, the DOT should work with the SJPD to obtain traffic speeding citations information that can assist the DOT in identifying neighborhood streets with high occurrences of speeding. In addition, the DOT should work with the SJPD to generate reports by location for those non-injury accidents for which the SJPD did not prepare a traffic accident report. To ensure a more timely and consistent response to traffic complaints, the DOT should prioritize complaints and develop written procedures to identify complaints that have not been resolved in a timely manner. The DOT should also develop procedures to ensure appropriate and consistent handling of traffic complaints. To ensure the effective deployment of NASCOP resources, the DOT should formalize procedures to monitor NASCOP utilization and to guide staff in its effective deployment. In addition, the SJPD should develop written procedures to ensure accurate reporting of the TEU's performance. Finally, the City Council should revisit its policy to prioritize traffic calming projects on a first-come, first-served basis.

RECOMMENDATIONS

We recommend that the Department of Transportation:

Recommendation #1 **Develop written procedures to assess whether comprehensive traffic calming projects are warranted. These procedures should include how to assess if specific streets experience traffic volumes, speeds, or crashes in excess of 10 percent above the City averages and how to assess if specific streets qualify for traffic calming based on unusual conditions, such as limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes. (Priority 3)**

Recommendation #2 **Develop written procedures to ensure that the project files for all comprehensive traffic calming projects document any studies performed and resulting analyses, a statement of the existing adverse condition that needs to be addressed, the estimated impact or objective of the project, the estimated cost of the project, and the approving official. (Priority 3)**

Recommendation #3 **Develop written procedures that clarify the DOT's process for approving comprehensive traffic calming projects. (Priority 3)**

We recommend that the City Council:

Recommendation #4 **Revisit its Traffic Calming Policy regarding project prioritization such that it funds larger comprehensive traffic calming projects on a priority ranking system basis. (Priority 3)**

Further, we recommend that the Department of Transportation:

Recommendation #5 **Develop and implement written procedures to ensure timely staff follow-up, study, analysis, and written conclusions as to whether comprehensive traffic calming projects meet their intended objectives. (Priority 3)**

Recommendation #6 **Formalize the Annual Collision Review process. (Priority 3)**

We recommend that the Department of Transportation:

Recommendation #7 **Work with the San Jose Police Department to generate date, time, and location reports for residential speeding traffic citations reports by location using the E-Cite System and non-injury accidents for which the SJPD did not prepare a traffic accident report. (Priority 3)**

Recommendation #8 **Develop procedures to identify traffic complaints that are not resolved in a timely manner and require staff to document the reason for lengthy delays. (Priority 3)**

Recommendation #9 **Establish a system for prioritizing complaints based on severity of the traffic complaints. (Priority 3)**

Recommendation #10 **Complete the Traffic Calming Procedures Manual to help ensure that staff take appropriate and consistent actions and comply with policies and regulations. (Priority 3)**

Finally, we recommend that the Department of Transportation:

Recommendation #11 **Develop a performance measure to monitor NASCOP utilization. (Priority 3)**

Recommendation #12 **Formalize its procedures to guide staff in the effective deployment of NASCOP resources. (Priority 3)**

We recommend that the San Jose Police Department:

Recommendation #13 **Develop written procedures to ensure that it accurately reports on the percentage of traffic complaints responded to within two weeks and the level of customer satisfaction. (Priority 3)**

Finding II The Department Of Transportation Needs To Better Maintain Some Comprehensive Traffic Calming Projects

The Department of Transportation (DOT) installs various types of traffic calming measures such as road bumps, traffic circles, and bulb-outs for its comprehensive traffic calming projects. These traffic calming measures need periodic maintenance.

The DOT's Infrastructure Maintenance Division is responsible for maintaining most of the traffic calming measures. However, we found that residents have volunteered to be responsible for maintaining parking strips on traffic calming measures such as bulb-outs and some traffic circles. We visited various traffic calming project sites. While most of the project sites are properly maintained, we found that some of the sites are not. Specifically, we found that some road bump markings are faded and some landscaped traffic calming projects were in poor condition. In our opinion, the DOT should review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, the DOT should explore the feasibility of using either Thermo thin plastic or high build paint for road bumps. Also, the DOT should provide guidelines, training, and equipment for volunteers who maintain projects not attached to a sidewalk under the City's Adopt-A-Street Program. Finally, the DOT should develop written procedures to ensure that all comprehensive traffic calming projects receive the appropriate maintenance; individual comprehensive traffic calming project files document the responsible party for each traffic calming device requiring landscaping; and processes are in place in the event that neighborhood residents do not maintain agreed-upon landscaping.

RECOMMENDATIONS

We recommend that the Department of Transportation:

Recommendation #14 **Review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, we recommend that the DOT explore using Thermo thin line plastic or high build paint markings for road bumps. (Priority 3)**

Recommendation #15 **Provide guidelines, training, and equipment to volunteers who maintain street projects not attached to sidewalks under the City's Adopt-A-Street Program. (Priority 3)**

We also recommend that the Department of Transportation:

Recommendation #16

Develop written procedures to ensure that 1) all comprehensive traffic calming projects receive the appropriate maintenance; 2) individual comprehensive traffic calming project files document the responsible party for each traffic calming device requiring landscaping; and 3) processes are in place in the event that neighborhood residents do not maintain agreed-upon landscaping. (Priority 3)

Introduction

In accordance with the City Auditor's 2006-07 Audit Workplan, we audited the Department of Transportation's (DOT) Traffic Calming Program (Program). We conducted our audit in accordance with Generally Accepted Government Auditing Standards and limited our work to those areas specified in the Objectives, Scope, and Methodology section of this report.

The City Auditor's Office thanks the staff of the Department of Transportation and the Police Department who gave their time, information, insight, and cooperation during the audit.

Background

The Institute of Transportation Engineers published "Traffic Calming: State of the Practice" (ITE Report) in 1999. According to the ITE Report, "traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users." As such, traffic calming measures are intended to be self-enforcing. On the other hand, traffic control devices such as stop and speed limit signs require police traffic enforcement.

Traffic Calming Policy

The City Council adopted a new Traffic Calming Policy in September 2000 and later revised it in June 2001. The City developed the revised policy "to minimize the negative impacts associated with traffic on all City streets, particularly within residential neighborhoods and near schools…" The policy also requires review of all private and public development proposals for potential traffic calming issues. Furthermore, the policy also adopted timeliness performance goals. The City's Traffic Calming Policy includes both physical measures and traffic control devices. The Traffic Calming Program (Program) has three components. These are:

- Engineering
- Education
- Enforcement

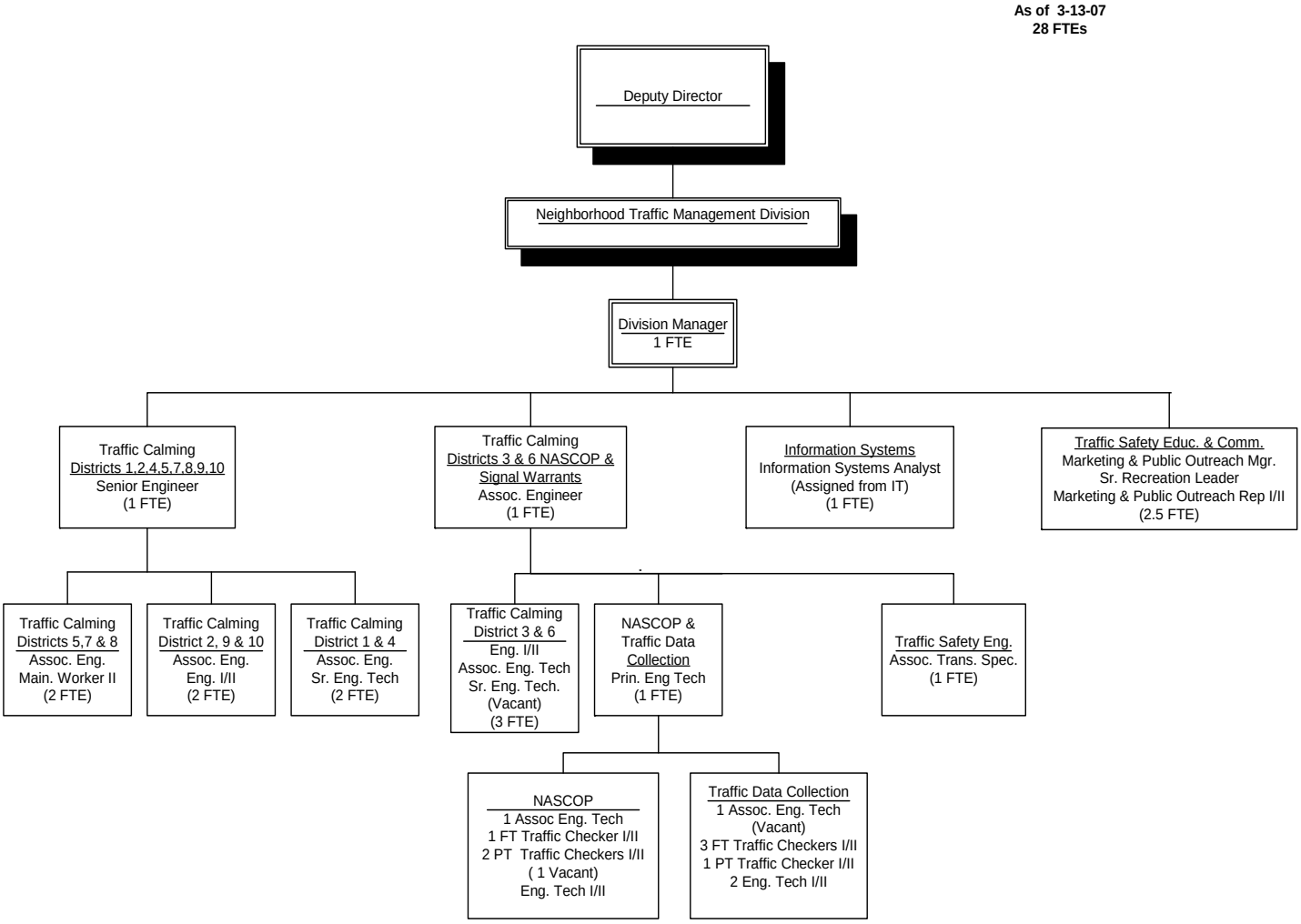
The City's Traffic Calming Policy includes traffic control devices through basic engineering solutions and physical measures using comprehensive engineering solutions. For

basic projects, the DOT installs traffic control signs and markings. For comprehensive traffic calming projects, the DOT installs physical measures to reduce speeds and volume of traffic. Furthermore, the Program's education component is provided through the Street Smarts Traffic Safety Education Program. Enforcement is provided by working closely with the San Jose Police Department's (SJPD) Traffic Enforcement Unit (TEU) and by parking compliance. The Neighborhood Automated Speed Compliance Program (NASCOP) previously also provided enforcement. The Traffic Calming Program (Program) serves all areas of the City and also supports the Strong Neighborhoods Initiative Program areas.

Program Organization And Functions

The Program is housed within the Department of Transportation's (DOT) Transportation Operations Division, Neighborhood Traffic Management Division. The Transportation Operations core service purpose is *"provide for the safe and efficient movement of vehicles and pedestrians by optimizing traffic flow, calming neighborhood traffic, providing traffic safety education, and installing traffic improvements."* This includes optimizing traffic conditions throughout the system, enhancing neighborhood traffic conditions, and promoting transportation safety. The Program currently has 28 full-time equivalent positions, of which 2.5 are vacant. The following exhibit illustrates the Program's organization chart. The organization chart shows 3.5 Traffic Safety positions that were recently merged into the Program.

Exhibit 1 Department Of Transportation
Transportation Operations Division



As the organization chart illustrates, the Program staff is assigned by City Council District, with an Associate Engineer or Engineer II coordinating the workload. The workload includes responding to traffic complaints. Because the workload varies by City Council District, the number of staff assigned to each City Council District also varies. In addition, there is a team dedicated to the NASCOP and collection of mechanical and manual traffic data. The Principal Engineering Technician for this team is also responsible for maintaining a database for speed surveys, deployment of the speed feedback radar trailers, and signal warrant studies.

SJPD Traffic Enforcement Unit

The Program works with the Traffic Enforcement Unit (TEU) of the SJPD. The TEU also receives traffic complaints from residents. Officers usually respond to traffic complaints by going to the street identified in the complaint and issuing traffic citations as needed. In addition, the TEU is involved with education campaigns in the community. These education campaigns include seat belt safety and DUI education. In some instances, the TEU officers request the DOT to perform engineering studies on a particular street. The TEU maintains a database of the complaints it receives and provides the City Manager's Office with quarterly reports on the complaints it has received and their resolution.

Traffic Calming Services

The Program provides the following services as part of the Traffic Calming mission: 1) Street Smarts Traffic Safety Education; 2) Basic and Comprehensive engineering solutions; 3) NASCOP; and 4) review of Public and Private Development. In addition to its Program, the DOT also conducts speed surveys to establish and re-establish speed limits, and reviews and analyzes SJPD crash reports with a focus on fatal crashes, pedestrian and bicycle crashes, and high crash locations, to determine if there are any measures that may have mitigated a crash. Furthermore, the DOT implements various special projects, such as the San Jose Safe Streets Initiative. Finally, the Program works with the Strong Neighborhoods Initiative to provide traffic calming services to neighborhoods.

Street Smarts Traffic Safety Education Program

The Street Smarts Traffic Safety Education Program, launched in November 2002, targets improving driver, pedestrian, and bicyclist behaviors to help reduce injuries and fatalities on city streets. This multi-lingual program works in conjunction with engineering and enforcement by presenting traffic safety education and materials to schools and neighborhoods as an approach to calming traffic on neighborhood streets. According to the DOT, to date, this nationally-recognized program has presented traffic safety education to more than 53,000 children at 102 schools, and 25 San Jose neighborhoods have adopted the program. Staff revised the City's Traffic Calming Toolkit to reflect the addition of education as a basic tool to calm traffic. This Toolkit is available on the City's website.

Basic And Comprehensive Engineering Solutions

Traffic Calming Basic Services

Basic traffic calming elements are those traffic control devices and programs implemented on a day-to-day basis to regulate, warn, guide, inform, enforce, and educate motorists, bicyclists, and pedestrians. These elements include standard striping and signing elements as found in the State of California Traffic Manual, minor roadway design elements to improve visibility and safety, police enforcement and photo radar (NASCOP), and safety education programs. Basic elements are primarily used in those areas where traffic impacts have been found not to be excessive or serious, but where traffic control and/or education has been determined to be appropriate. Some common Basic elements include safety education programs, high visibility crosswalks, minor bulb-outs, warning signs, stop signs, police enforcement, traffic signal timing, and the NASCOP.

Comprehensive Traffic Calming Projects: Level 1

Level 1 elements are traffic control devices and roadway design features primarily used to slow traffic within residential areas. Level 1 is employed when the use of Basic elements cannot effectively address speeding issues and it has been found that speeds and/or accidents are 10 percent higher than the Citywide average for similar streets. Level 1 elements are used in conjunction with Basic elements. Some common Level 1 elements include traffic circles, road bumps, medians, chokers, chicanes, raised crosswalks, and major bulb-outs.

Comprehensive Traffic Calming Projects: Level 2

Level 2 elements are traffic control devices and roadway design features primarily designed to discourage cut-through traffic on residential streets. The DOT uses these devices when traffic volumes are at least 10 percent higher than the Citywide average for similar streets. Level 2 devices can be used by themselves or in conjunction with Basic and Level 1 elements. Some examples of Level 2 elements include full street closure, partial street closure, diverters, and extended medians. Generally, Level 2 projects require City Council approval.

Since 2002-03, the DOT has implemented 24 Level 1 comprehensive projects and one comprehensive Level 2 project. Of the total 25 comprehensive projects, 21 were funded with the City's Capital monies, two were funded with

monies from the Strong Neighborhood Initiative (SNI) Program, one was funded with both City Capital and SNI funds, and one of the projects was developer-funded.

The Neighborhood Automated Speed Compliance Program

The Neighborhood Automated Speed Compliance Program (NASCOP) was a photo radar speed enforcement program, designed to complement police enforcement. In March 2007, based on legal concerns, the City Council eliminated the enforcement aspect of the NASCOP and directed the DOT to explore other measures to address speed violations, including warnings. The NASCOP is used solely on local neighborhood streets with chronic speeding problems and resident support. Such streets must be two lane roadways with 25 or 30 mph speed limits. The use of the NASCOP on any roadway is subject to prior SJPD TEU approval and must conform to the SJPD's Community Policing guidelines. Furthermore, the NASCOP requires 51 percent approval from residents whose houses are on the street. The City Council approved the formation of the NASCOP in 1995 to evaluate the use of photo radar speed enforcement to help reduce speeding in residential neighborhoods. In 1996, a pilot program was begun, using a leased van which was equipped with wet-film camera equipment. Non-sworn personnel operated the van and equipment. In December 1997, the City Council authorized a permanent NASCOP which became fully operational in June 1998. Currently, the NASCOP is deployed on 177 NASCOP neighborhood street segments.

Proposed Private Or Public Developments

The Traffic Calming Policy requires that all private and public development proposals are reviewed for potential traffic calming issues and a DOT study when needed. If a study determines that a proposed development will create or increase an adverse traffic condition in an existing neighborhood, then the developer is required to minimize the adverse condition impacts. The July 2004 "Private Development Monitoring Report" to the Building Better Transportation Committee showed that five projects required traffic calming during the first six months of 2004.

Engineering And Traffic Surveys

The DOT's Traffic Calming Program staff conducts Engineering and Traffic Surveys of the speed limits of major arterial streets and collectors in compliance with State and Federal regulations. The speed limits derived from the surveys are posted to enable the SJPD to utilize radar during their enforcement activities, and to promote the safe, efficient, and orderly movement of traffic and pedestrians. The City Council

needs to approve a speed limit survey if a change in speed limit is being proposed, or when initially established. Furthermore, according to State law, a traffic citation would be invalid if the courts find that surveys were not done to determine appropriate traffic speeds on a particular street. The DOT surveys about 500 major arterial streets and collectors every seven years on a rotating basis.

Injury And Fatality Crashes

The DOT reviews and analyzes SJPD crash reports related to fatal crashes, and pedestrian and bicycle crashes, to determine if there are any Traffic Calming or other DOT measures that could have mitigated the crashes. Compared to the national average, San Jose has a lower than average injury and fatality rate. Specifically, the City's ratio of 3.4 injury and fatality crashes per 1,000 population during 2005 is lower than the national average of 6.3. Furthermore, according to the DOT, the City's injury and crash rate per 1,000 population has improved from 7.6 during 1987-88 to 3.4 during 2005. During 2005, there were about 3,200 injury and fatality crashes resulting in about 4,400 injuries and 38 fatalities.

The DOT And The Strong Neighborhoods Initiative Redevelopment Agency Project Areas

In addition to the Traffic Calming Program, other DOT Divisions also provide traffic improvements and traffic calming services to the City's neighborhoods. Specifically, the DOT works with the Strong Neighborhoods Initiative Redevelopment Agency Project Areas (SNI). The SNI includes nineteen neighborhood areas with both residential and commercial development. The neighborhood areas each have a Top 10 list of priorities. The SNI has several programs to address the neighborhood areas' priorities, of which three of the programs involve the DOT. These programs are 1) Infrastructure Improvements; 2) Streetscape and Gateway Improvements; and 3) Traffic Calming, Transit and Parking Improvements. According to the SNI Implementation Plan Progress Report which the Redevelopment Agency Board approved in June 2006, completed projects included 7 Infrastructure Improvements; 17 Streetscape and Gateway Improvements; and 12 Traffic Calming, Transit and Parking Improvements projects. Furthermore, an additional 13 projects were in progress.

Audit Objectives, Scope, And Methodology

Our primary audit objective was to evaluate the efficiency and effectiveness of the City's Traffic Calming Program (Program). The scope of our audit was 2001-02 through 2005-06. We reviewed the Program to determine whether the Department of Transportation (DOT) has established sufficient controls to ensure that the Program spends its limited funds on comprehensive projects that are warranted and on the highest priority projects; responds to neighborhood complaints in a timely and consistent manner; and utilizes the NASCOP effectively. We also reviewed the Program's primarily reactive focus and its proactive activities. In addition, we also reviewed the SJPD's reporting in the City's Operating Budget of its actual performance against its timely response to traffic complaints and customer satisfaction performance measures. Finally, we reviewed the DOT's controls over the maintenance of comprehensive traffic calming projects.

We used the following methodologies to achieve our audit objectives. To assess whether the DOT spends traffic calming funds on comprehensive traffic calming projects that are warranted and on the highest priority projects, we reviewed the DOT's comprehensive traffic calming project files for 21 comprehensive traffic calming projects. Specifically, we reviewed the DOT's files to determine if 1) the DOT performed applicable engineering studies; 2) DOT files contained documented evidence of an adverse condition criteria as set forth in the Traffic Calming Policy; and 3) the DOT performed an analysis of the engineering studies and documented the objective of each recommended comprehensive traffic calming project. In addition, we used information from the City's Financial Management System to determine the Program's funding and the cost of the comprehensive traffic calming projects.

In reviewing the Program's proactive activities, we reviewed information from the DOT's traffic complaints databases and its Annual Collision Reviews. To assess whether the DOT responds to neighborhood complaints in a timely and consistent manner, we calculated the timeliness performance for the DOT's traffic complaint response. Specifically, we compared the traffic complaint received dates to the traffic complaint completed dates using the 2004-05 traffic complaint database. We then calculated the percentage of traffic complaints that were resolved within the performance measurement target. In

addition, we reviewed a sample of the DOT's basic project files for traffic calming projects with lengthy completion times to determine why these projects were delayed.

To determine the utilization of the NASCOP program, we compared the actual number of hours that the DOT deployed the NASCOP vans to the number of hours that the three NASCOP vans were available. We also analyzed the resource deployment at NASCOP locations throughout the City. We then compared the DOT's NASCOP resources allocation for those locations with the highest number of speeding offenses to those locations with fewer speeding offenses. We also observed DOT staff using photo radar equipment in a NASCOP van to record speeding violations.

To determine the timeliness of the SJPD response to traffic complaints, we calculated the number of complaints resolved within the 14-day performance target using the SJPD's Traffic Enforcement Unit (TEU) traffic complaint database. We also observed a TEU officer enforcing the speed limit. To determine if the DOT appropriately provides maintenance of comprehensive traffic calming projects, we visited and took pictures of locations with traffic calming measures and interviewed DOT maintenance staff.

In addition to the above methodologies, we interviewed management and staff from the DOT and the SJPD regarding the Traffic Calming Program. Also, we surveyed other jurisdictions regarding their traffic calming programs. Further, we reviewed the Institute of Transportation Engineers' 1999 publication prepared for the U.S. Department of Transportation Federal Highway Administration, "Traffic Calming: State of the Practice." We also reviewed the City Council's Traffic Calming Policy; DOT memorandums; manuals; the Traffic Calming Toolkit; the 2001 DOT NASCOP Evaluation; operating budgets; and management reports. We interviewed residents who had made traffic complaints. Finally, to determine the reliability of the databases, we reviewed the NASCOP database process and also compared the information on the DOT traffic complaint and SJPD traffic complaint databases we reviewed with a sample of the source documents.

Major Accomplishments Related To This Program	In Appendix B, the Director of the Department of Transportation informs us of the Traffic Calming Program's accomplishments.

Finding I

The Department Of Transportation Needs To Establish Additional Controls To Improve The Traffic Calming Program's Effectiveness

The City of San Jose's Traffic Calming Program (Program) was initially established in 1978; however, it has been discontinued and reestablished twice over the past few decades. In 2000, the City Council established a new Traffic Calming Policy and the Program was reestablished. Since 2001, the Program has implemented a number of measures intended to reduce traffic problems and increase the safety of the residents of San Jose. On the whole, the community seems to support the Program. However, funding problems have limited the Program's ability to implement needed traffic calming measures. In our opinion, the Department of Transportation (DOT) needs to establish additional controls to ensure that the Program spends its limited funds on comprehensive traffic calming projects that are warranted and on the highest priority projects. In addition, we found that the DOT needs to strengthen its controls over its Annual Collision Review process for reviewing high crash locations and that the Program should use technology to enhance its ability to proactively identify neighborhood streets with speeding problems and obtain additional non-injury crashes information. Furthermore, we found that the DOT needs to establish additional controls to ensure that the Program responds to neighborhood complaints in a timely and consistent manner. Also, the DOT needs to formalize the Neighborhood Automated Speed Compliance Program (NASCOP) procedures[1]. Finally, we found that the San Jose Police Department's (SJPD) Traffic Enforcement Unit (TEU), which handles the enforcement part of the Program, was not accurately reporting its performance in responding to and resolving traffic complaints.

The lack of funding for the Program has impaired its effectiveness. However, we found that the DOT can develop and implement additional controls to improve the overall effectiveness and performance of the Program. Specifically, the DOT should develop procedures to ensure that project files sufficiently document that comprehensive traffic calming

[1] We should note that the City Manager has proposed elimination of the NASCOP in the proposed 2007-08 operating budget.

projects are warranted under the City's Traffic Calming Policy. Furthermore, the DOT should develop a priority ranking system to provide greater assurance that the City's limited Program funds are spent on comprehensive traffic calming projects that are warranted and on the highest priority projects. In addition, the DOT needs to develop and implement procedures to ensure that staff follow up and assess the effectiveness of comprehensive traffic calming projects. Furthermore, the DOT should formalize its Annual Collision Review process. To be more proactive, the DOT should work with the SJPD to obtain traffic speeding citations information that can assist the DOT in identifying neighborhood streets with high occurrences of speeding. In addition, the DOT should work with the SJPD to generate reports by location for those non-injury accidents for which the SJPD did not prepare a traffic accident report. To ensure a more timely and consistent response to traffic complaints, the DOT should prioritize complaints and develop written procedures to identify complaints that have not been resolved in a timely manner. The DOT should also develop procedures to ensure appropriate and consistent handling of traffic complaints. To ensure the effective deployment of NASCOP resources, the DOT should formalize procedures to monitor NASCOP utilization and to guide staff in its effective deployment. In addition, the SJPD should develop written procedures to ensure accurate reporting of the TEU's performance. Finally, the City Council should revisit its policy to prioritize traffic calming projects on a first-come, first-served basis.

The DOT Needs To Establish Additional Controls To Ensure That The DOT Spends Its Limited Traffic Calming Funds On Projects That Are Warranted And On The Highest Priority Projects

San Jose adopted its first Traffic Calming Policy in 1978. The policy provided for spot treatments of individual streets. In the early 1980's, San Jose developed its first areawide traffic calming plan. That experience led to the adoption of a second policy, independent of the first, for neighborhood traffic management. This program was to develop areawide plans in response to neighborhood requests. The program ended some years later as a result of City budget cuts.

The City Council adopted a Traffic Calming Policy in April 2000 and revised it in June 2001. The City developed the revised policy to minimize the negative impacts associated with traffic on all City streets, particularly within residential neighborhoods and near schools. The City's Traffic Calming Policy states that the DOT may program a comprehensive traffic calming analysis for those situations where adverse

Background On The Traffic Calming Program

traffic conditions exist. San Jose defines the criteria for adverse traffic conditions as traffic speeds, volumes, or crash rates higher than 10 percent above the Citywide average for similar types of streets. In addition, streets that are deemed to have unusual conditions, like limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes, are also considered to have adverse traffic conditions. The policy also requires review of all private and public development proposals for potential traffic calming issues. Furthermore, the policy also adopted timeliness performance goals. The City's Traffic Calming Program (Program) includes both physical measures and traffic control devices. The Program has three components. These are

- Engineering
- Education
- Enforcement

San Jose's experience with traffic calming is similar to other jurisdictions. An informational report on traffic calming entitled "Traffic Calming: State of the Practice" (ITE Report), which the Institute of Transportation Engineers prepared for the United States Department of Transportation, discusses the nature of traffic calming programs. According to the ITE Report, traffic managers in surveyed cities "strive for balance between 'study it to death' and 'get it built now' and between 'respond to neighborhood wishes' and 'use your best technical judgment'." The ITE Report also noted that the traffic managers in the surveyed cities "attempt to be sufficiently process-oriented to avoid political and legal fallout, yet sufficiently output-oriented to satisfy constituents."

Since 2001, the City's Program has implemented a number of measures to reduce traffic problems and increase the safety of San Jose's neighborhoods. Specifically, since 2001, the DOT has installed numerous basic engineering solutions. For instance, in 2003-04 and 2004-05, the DOT installed signs and markings at over 1,200 locations in the City. The DOT uses signs and markings to regulate, warn, guide, inform, enforce, and educate motorists, bicyclists, and pedestrians. The DOT also included standard striping and signing elements and minor roadway design elements to improve visibility and safety. In addition, the DOT has installed 21 comprehensive traffic calming projects throughout the City. Specifically, the DOT has installed 20 Level 1 comprehensive projects throughout the

City and one Level 2 comprehensive project. The following exhibit shows the 21 Level 1 and Level 2 comprehensive projects by type of project. The list of 21 comprehensive traffic calming projects does not include two projects funded with Strong Neighborhood Initiative (SNI) monies, one SNI project partially funded by the City, and one developer-funded project.

Exhibit 2 Level 1 And Level 2 Comprehensive Projects Completed From 2003-04 To 2005-06 By Type Of Project

Type Of Project	Number Of Level 1 Comprehensive Projects	Number Of Level 2 Comprehensive Projects	Total Projects
Island(s)	7		7
Neighborhood Projects: May include one or more of the following types of measures: islands, chokers, circles, embossed sidewalks, trees, bulb-outs, and road bumps	4		4
Road Bumps	4		4
Circles	2		2
Chokers	1		1
Street Widening	2		2
Street Closure		1	1
Total	**20**	**1**	**21**

The Program seems to have improved the community's perception of traffic issues in residential neighborhoods. Specifically, the City's December 2005 Community Survey found that the percent of residents who rated the acceptability of traffic flow has improved over the last several years. Further, since 2001, the acceptability of traffic impacts in the neighborhoods improved from 66 percent to 73 percent. However, residents have indicated that they want increased traffic safety. Specifically, in January 2007, the Mayor convened the Neighborhood Associations' Priority Setting Session. In the Priority Setting Session, residents indicated that the neighborhoods have too much traffic, need more speed bumps, need NASCOP follow-up, and need improvements in traffic, pedestrian, and bicycle safety.

Comprehensive Traffic Calming Projects

The City funds most of the comprehensive traffic calming projects through the Capital Budget. After an initial infusion of money for projects, the City has significantly reduced funding for projects. The decrease in funding has significantly

decreased the number of comprehensive traffic calming projects the DOT can implement. The exhibit below shows the capital funds for traffic calming projects from 2000-01 through 2006-07.

Exhibit 3 2000-01 Through 2006-07 Traffic Calming Capital Budget

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	7-Year Totals
New Annual Capital Budget Funding	$1,800,000	$5,000,320	$1,464,104	$1,339,369	$283,204	$250,163	-0-	$10,137,160
Plus Prior Year Carryover		$1,561,859	$4,844,370	$2,869,689	$1,708,927	$1,475,278	$1,290,284	N/A
Total Annual Capital Budget Funding	$1,800,000	$6,562,179	$6,308,474	$4,209,058	$1,992,131	$1,725,441	$1,290,284	N/A
Less Expenditures	$238,141	$1,717,809	$3,438,785	$2,500,131	$516,853	$435,157	$496,627[2]	$9,343,503[3]
Current Year Budget Carryover	$1,561,859	$4,844,370	$2,869,689	$1,708,927	$1,475,278	$1,290,284	N/A	N/A

Source: City's Financial Management System.

As Exhibit 3 indicates, the City added over $9.6 million in new funding for the Program from 2000-01 through 2003-04, but only $533,000 during 2004-05 and 2005-06. Moreover, the City budgeted no new funds for 2006-07.

The funding problems for traffic calming projects are not unique to San Jose. Other jurisdictions such as Austin, Texas; West Palm Beach, Florida; and Seattle, Washington have all reported that the funding for traffic calming projects has been very cyclical. In our opinion, because funding for traffic calming tends to be cyclical, the Program needs to establish additional controls to ensure that limited traffic calming funds are spent on projects that address the most significant neighborhood problems and ensure equitable service to the neighborhoods of San Jose.

[2] The 2006-07 expenditures amount is as of 4-5-07 and includes $76,273 in encumbrances.

[3] The total expenditures include $1,491,000 for the development and implementation of the Streets Smarts Traffic Safety Education Program.

Since 2001-02, the City has spent $2.7 million of the City's capital funds installing 21 comprehensive traffic calming projects. In addition, the SNI Program funded two projects and a developer funded another project. The City partially funded another SNI project for streetscape improvements and pedestrian enhancements. The City spent $162,000 on the design and construction of that project, which had a $678,000 total budget. Exhibit 4 below shows the number of comprehensive traffic calming projects classified by less than $10,000, between $10,000 to $100,000, and over $100,000 completed from 2003-04 to 2005-06.

Exhibit 4 Comprehensive Traffic Calming Projects Completed From 2003-04 To 2005-06 By Type Of Project, Cost, And Year Completed

Project Cost	Number	Type Of Project	Cost	Year Completed
Projects Less Than $10,000	1	Island	$1,400	2003-04
	2	Island	$3,290	2005-06
	3	Island	$3,350	2005-06
	4	Road Bumps	$4,665	2005-06
	5	Road Bumps	$5,000	2002-03
	6	Island Extension	$5,000	2003-04
	7	Road Bumps	$5,000	2002-03
	8	Island	$6,375	2005-06
Sub-total	**8**		**$34,080**	
Projects between $10,000 to $100,000	9	Road Bumps	$17,500	2002-03
	10	Islands	$18,669	2003-04
	11	Chokers	$45,800	2003-04
	12	Circles	$53,608	2002-03
	13	Neighborhood-wide: Medians, chokers, road bumps & bulb-outs	$92,331	2003-04
Sub-total	**5**		**$227,908**	
Projects costing more than $100,000	14	Circles	$100,062	2003-04
	15	Islands	Included with Project #14	2003-04
	16	Street Closure	$144,891	2003-04
	17	Street Widening	$263,984	2003-04
	18	Neighborhood-wide: Circles, chokers, medians, etc.	$305,393	2003-04
	19	Neighborhood: Median Islands	$421,465	2003-04
	20	Street widening & sidewalk improvements	$481,114	2003-04
	21	Neighborhood-wide: Circles, chokers, and trees	$727,363	2003-04
Sub-total	**8**		**$2,444,272**	
Total	**21**	**Total**	**$2,706,260**	

We reviewed these 21 projects to determine if they were warranted under the City's Traffic Calming Policy which sets forth the adverse conditions criteria to justify a comprehensive traffic calming project. In general, we had a difficult time making that determination. For example, several projects did not appear to have the adverse conditions that would qualify for a comprehensive traffic calming project. We also identified a number of projects that lacked sufficient documentation in the files to demonstrate the existence of an adverse condition that needed to be addressed. Furthermore, the project files did not clearly document the objective of the traffic calming measures. In addition, the Program itself lacks a clear process for approving comprehensive traffic calming projects. Finally, we found that the Program does not consistently assess the effectiveness of completed comprehensive traffic calming projects. Below are summaries for the comprehensive traffic calming projects we reviewed.

- On one project, the DOT installed three traffic circles in 2003-04 at a cost of $100,062. The information in the file shows that before the project was installed, the average speeds were below the speed limit of 25 mph and that traffic volume was low. Although studies performed after the circles were installed showed a reduction in speed, the Program Manager agreed that the project did not meet the adverse conditions that would qualify for a comprehensive traffic calming project. The cost of this project included another project for islands to address speeding along a curve. However, the islands project file did not document the existence of an adverse condition that needed to be addressed.
- On another project, the DOT installed circles, chokers, medians, and/or textured pavement on six streets in a neighborhood in 2003-04. This project cost the City $305,000. The DOT staff studied the volume per day and average speed for 13 street segments. Most of the average speeds on the studied streets did not exceed the 25 mph speed limit and had a relatively low volume of traffic. Therefore, this project did not have a documented adverse condition that would qualify for a comprehensive traffic calming project. Furthermore, prior to installing a permanent traffic calming measure, the DOT installed temporary devices to assess the effectiveness of the proposed traffic calming solution.

In assessing the temporary devices, the DOT found that the speeds actually increased for some of the streets after the temporary measures were installed. Moreover, the overall volume of traffic increased by 10 percent after the temporary devices were installed. Nevertheless, the DOT installed the permanent traffic calming devices.

- We reviewed one project which had no information in its file to document the need for the project. On this project, the City spent $421,000 in 2003-04 to install median islands on a residential street. The DOT could not provide us with any records that supported the need for the project. Therefore, we were unable to determine whether this project addressed an adverse condition that qualified it for a comprehensive traffic calming project.
- On another project, the DOT installed bulb-outs, chokers with tree wells, and trees on several residential streets in a neighborhood at a cost of $727,000 in 2003-04. The project file contained engineering speed counts but limited information justifying the project. Our review of the speed counts indicated that speeds were in excess of 10 percent above the City's average for streets with 25 mph speed limits. However, the project files did not include documentation that any formal analysis was conducted to demonstrate that the speeds met the criteria for an adverse condition and that the streets qualified for a comprehensive traffic calming project.
- We reviewed two comprehensive traffic calming projects which widened streets and installed sidewalk improvements near schools in 2003-04. The first project included the construction of gutters, curbs, and sidewalks at a cost of $481,000. The second project included pavement, curbs, gutters, sidewalks, wheel chair ramps, street lighting, and street trees at a cost of 264,000. The project files did not document that adverse conditions existed that needed to be addressed. Although the Traffic Calming Policy allows funding of projects that have unusual street conditions, the project files did not document that any unusual street conditions existed.
- For the five projects that ranged in cost from $10,000 to $100,000, we found that two of the project files did not have sufficient information to determine whether the

projects were justified. On one project, the DOT installed chokers on the street at a cost of $45,800. However, we could not locate an engineering study in the file and the file did not contain any analysis or justification for the project. The other project involved the DOT installing median islands, bulb-outs, chokers and/or speed humps on several streets in a neighborhood. This project cost $92,331. The project files lacked sufficient information to justify the need for the project.

- With respect to the eight projects under $10,000, we found that six of the project files had documented adverse conditions. The remaining two project files lacked any documentation to support that an adverse condition existed.

We found that the DOT needs to develop written procedures regarding how to assess and document whether comprehensive traffic calming projects are warranted. Specifically, the DOT needs to develop written procedures on how to determine if specific streets experience traffic volumes, speeds, or crashes in excess of 10 percent above the City averages. These procedures should also document how the DOT should assess whether streets qualify for traffic calming based on unusual conditions, such as limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes. The Program also needs to establish written procedures to ensure consistent documentation in the files. In our opinion, the project files for all comprehensive traffic calming projects should document the engineering studies performed and resulting analyses, a statement of the existing adverse condition that needs to be addressed, the estimated impact or objective of the project, and the estimated cost of the project. Furthermore, the project files should include documentation on the official who approved the project.

We recommend that the Department of Transportation:

Recommendation #1

Develop written procedures to assess whether comprehensive traffic calming projects are warranted. These procedures should include how to assess if specific streets experience traffic volumes, speeds, or crashes in excess of 10 percent above the City averages and how to assess if specific streets qualify for traffic calming based on unusual conditions, such as limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes. (Priority 3)

Recommendation #2

Develop written procedures to ensure that the project files for all comprehensive traffic calming projects document any studies performed and resulting analyses, a statement of the existing adverse condition that needs to be addressed, the estimated impact or objective of the project, the estimated cost of the project, and the approving official. (Priority 3)

Recommendation #3

Develop written procedures that clarify the DOT's process for approving comprehensive traffic calming projects. (Priority 3)

Furthermore, in our opinion, the City should establish a formal process for ranking higher-cost comprehensive traffic calming projects. Such a system is necessary to ensure that funds are used on traffic calming projects that address the greatest need. According to the ITE Report, a priority system is useful to rank traffic calming projects unless sufficient funds are available for all warranted projects. According to the ITE Report, the City of Seattle has established a priority ranking system. The Seattle priority ranking system assigns points for factors such as accident history, traffic volume, and speed. According to the Seattle traffic calming manager, accident history is the most significant factor in ranking about 150 annual requests it receives for traffic circles. The ITE Report further states that a

number of jurisdictions such as Austin, Texas; Dallas, Texas; and Sacramento, California have developed priority ranking systems.

San Jose does not have a traffic calming priority system like the ITE Report recommends or as several other cities have implemented. Such a system would help ensure that limited traffic calming funds are spent on the projects with the greatest need. We should note that a priority ranking system for traffic calming projects would be inconsistent with the current City Council Traffic Calming Policy that, in general, funds projects on a first-come, first-served basis. As noted above, this policy has resulted in some projects that have not addressed the most significant traffic calming needs. According to the DOT, it has not had more projects than it can fund. However, this may change now that Program funds are limited. In our opinion, the City Council should reconsider its policy to fund traffic calming projects on a first-come, first served basis and instead fund larger comprehensive traffic calming projects on a priority ranking system basis.

We recommend that the City Council:

Recommendation #4

Revisit its Traffic Calming Policy regarding project prioritization such that it funds larger comprehensive traffic calming projects on a priority ranking system basis. (Priority 3)

The DOT Does Not Consistently Assess The Effectiveness Of Comprehensive Traffic Calming Projects

According to the Program's Toolkit, once a comprehensive traffic calming project has been implemented in the neighborhood, the impacts and effectiveness of the project are evaluated to determine if the stated objectives of the plan are met.

We found that the DOT has not consistently assessed the effectiveness of its comprehensive traffic calming projects. Specifically, we found that the DOT evaluated the effectiveness of only 7 of the 21 comprehensive traffic calming projects we reviewed while one other project had only partial evidence of a DOT effectiveness evaluation. Furthermore, according to the DOT, it did four additional projects for pedestrian/safety

enhancements which could not be measured for effectiveness. Without adequate follow-up, the DOT cannot evaluate the effectiveness of its traffic calming projects.

To ensure consistent follow-up, the DOT needs to develop written procedures to ensure timely follow-up, study, analysis, and written conclusions as to whether the comprehensive traffic calming projects meet their intended objectives.

We recommend that the Department of Transportation:

Recommendation #5

Develop and implement written procedures to ensure timely staff follow-up, study, analysis, and written conclusions as to whether comprehensive traffic calming projects meet their intended objectives. (Priority 3)

The DOT Needs To Strengthen Its Controls Over The Annual Collision Review Process And The Program Should Use Technology To Enhance Its Ability To Proactively Identify Neighborhood Streets With Speeding Problems And Obtain Additional Non-Injury Crashes Information

San Jose's Traffic Calming Program (Program) can be described as reactive in that the Program's primary focus is to respond to traffic complaints from residents. For instance, over the last three fiscal years, the Program has responded to nearly 5,000 traffic complaints. On an on-going basis, staff respond to these complaints by assessing the complaints, performing field studies, and developing and overseeing the implementation of solutions. One of the Program's proactive elements is its Annual Collision Review process whereby DOT staff review and study high crash locations. However, the DOT should formalize the Annual Collision Review process. Furthermore, the Program should use new technology to enhance its ability to proactively identify neighborhood streets with speeding problems. To more proactively address these speeding problems, the DOT should work with the SJPD to obtain traffic citations speeding information that can assist the DOT in identifying neighborhood streets with high occurrences of speeding. Furthermore, the SJPD can generate reports that would provide the DOT with non-injury accident locations for which the SJPD does not prepare traffic accident reports.

We found that, like San Jose, many other jurisdictions have reactive traffic calming programs. Nonetheless, according to the ITE report, proactive traffic calming programs are more successful than reactive programs. The ITE Report also notes that most traffic calming programs are reactive. The ITE Report notes that "A traffic calming program may be reactive, responding to citizen requests for action, or it may be proactive,

with staff identifying problems and initiating action." A nationwide survey by researchers at the University of California at Berkeley determined that all but a handful of traffic calming programs are reactive.

Although the Program is generally reactive, it has some proactive elements. For example, using the Annual Collision Review process, the DOT attempts to develop engineering solutions for intersections with high crash rates and with high numbers of crashes that involve red lights, stop sign running, and pedestrians. It also reviews fatal crashes and those involving pedestrians and bicycles. In addition, in 2005-06, for the Mayor's San Jose Safe Streets Initiative, the DOT analyzed intersections throughout the City to determine where to install red light running indicators, pedestrian count-down signals, and flashing beacons. Furthermore, as described in the Background section of this report, the new development reviews, the Street Smarts Traffic Safety Education Program, and the SNI Program are also proactive elements of the Program. However, the DOT relies primarily on resident complaints to identify the problems it corrects on residential streets.

The DOT needs to strengthen its controls over its Annual Collision Review process. The DOT uses the Annual Collision Review process to review the 3-year history of high crash intersections, including high numbers of red light running, stop sign running, and pedestrian and bike crashes. Each year, staff from various divisions of the DOT, including the Traffic Calming Program, review, study, and make recommendations for approximately 40 intersections with high crash rates. In addition, SJPD staff participate in the reviews of the intersections. Because some of these intersections are major intersections, they have high crash rates each year. As such, a major intersection studied in one year is not studied the following year or two in order to give any solutions time to take effect. However, this process lacks written procedures and has not been formalized. In our opinion, to ensure consistency in this process, the DOT should formalize its Annual Collision Review process.

We recommend that the Department of Transportation:

Recommendation #6

Formalize the Annual Collision Review process. (Priority 3)

An example of a city with a proactive traffic calming program is Austin, Texas. According to staff in Austin, its traffic calming program is similar to San Jose's in that it is not currently funded for capital improvements, but it is funded for what San Jose refers to as basic traffic calming. However, according to an Austin Supervising Engineer, it does have a proactive program in place when the capital program is funded. Specifically, the Austin Neighborhood Traffic Calming Program Guidelines describe project selection. Austin is divided into a total of 170 geographical units within five sections of the city. Project areas were selected in each of the five sections of the city during each fiscal year. Using the number of requests in each project area, the city identifies the highest request per acre ratio to select three neighborhoods in each of the five sections of the city. In each of these neighborhoods, Austin city staff selects three residential streets that appear to exhibit the highest speeding and/or cut-through traffic problem. Austin city staff collect vehicular speed and volume data on these streets and rank them to determine the project area in that section with the highest priority.

Staffing resources limit the Program's ability to proactively identify neighborhood streets with speeding problems. However, the SJPD will be implementing new technology that can facilitate obtaining speeding problems information. Furthermore, the SJPD can generate reports that would provide the DOT with non-injury accident locations for which the SJPD does not prepare traffic accident reports.

According to the DOT Director, an efficient approach to determining streets where speeding is a problem is by using the SJPD's speeding traffic citation information. Accessing such information is currently labor intensive because only hardcopies of traffic citations provide location information. The traffic citation information database that the County of Santa Clara remits to the City does not include the citation location. However, by Summer 2007, the SJPD plans to implement a new electronic citation system, E-Cite, which will include traffic citation location information. The SJPD will issue 45 of 175 E-Cite handheld computer units to all of the SJPD Traffic Enforcement Unit officers. Furthermore, according to the SJPD, it will be able to generate residential speeding traffic citations reports by location with the E-Cite System and provide the DOT with the information it requests. In addition, according to the SJPD, the E-Cite System reports can also include the addresses of the drivers cited. The drivers'

addresses can be used to identify whether the drivers live in the neighborhood or if they are commuters. Also, according to the SJPD, that information can then be used to determine if additional educational programs can be implemented to address a segment of the community. In our opinion, the DOT should work with the SJPD to generate residential speeding traffic citations reports using the E-Cite System. The residential speeding traffic citations reports information can assist the DOT in identifying neighborhood streets with high occurrences of speeding for purposes of further study and solutions, if needed.

The SJPD does not prepare traffic accident reports for those non-injury accidents to which a police officer does not respond. According to the SJPD Communication Manager, police officers usually respond to traffic accidents and prepare traffic accident reports. However, in those instances where none of the parties are injured, and the caller either initially or while waiting inquires about the need for an officer, the SJPD dispatcher will tell the caller it is not necessary to wait for a police officer and to exchange driver and insurance information. In these types of instances, the SJPD dispatcher does not enter a disposition code or enters a cancelled call disposition code into the Computer Assisted Dispatch (CAD) System. According to the SJPD's Communications Manager, the SJPD could develop a procedure whereby dispatchers could enter an advised disposition code for those types of accidents that do not require a police officer dispatch. In addition, the SJPD could generate reports providing the date, time, and locations of non-injury accidents calls for which the SJPD did not prepare traffic accident reports. In our opinion, these reports would provide the DOT with additional information for either proactive purposes or for performing engineering studies of a location. Therefore, the DOT should work with the SJPD to generate information on non-injury accidents for which the SJPD did not prepare traffic accident reports.

We recommend that the Department of Transportation:

Recommendation #7

Work with the San Jose Police Department to generate date, time, and location reports for residential speeding traffic citations reports by location using the E-Cite System and non-injury accidents for which the SJPD did not prepare a traffic accident report. (Priority 3)

The DOT Needs To Implement Additional Controls To Ensure That The Traffic Calming Program Responds To Neighborhood Complaints In A Timely Manner

The City Council's Traffic Calming Policy states that most engineering studies and installation of devices in response to traffic complaints from residents will be completed within a specified period of time. We found that the DOT's responsiveness to traffic complaints has declined over the past three fiscal years. While workload and staffing issues contribute to the decline in timeliness, the DOT still needs to implement additional controls to better manage its complaint workload.

The Traffic Calming Policy states that "Most engineering studies will be completed within two weeks of the receipt of the request." In addition, the Traffic Calming Policy states that "If traffic control devices (signs and markings) are needed, installation will normally be completed within three weeks of the study findings. In some cases capital improvements will require funding, which will extend the time of completion."

The Program has established a timeliness performance measure target to assess the overall amount of time it takes from the receipt of a request to the installation of signs and markings. Over the last three fiscal years, the DOT has revised its performance measure target downward. Specifically, in 2003-04 the DOT's target was to install signs and markings within 35 days of the complaint for 70 percent of the complaints. In 2004-05, the DOT revised its target downward to respond to 60 percent of the complaints within 35 days. In 2005-06, the DOT further revised its target downward to respond to 50 percent of the complaints within 35 days.

Exhibit 5 below shows the number of traffic complaints completed, the DOT's performance measure target, and its actual performance against that target for 2002-03 through 2005-06.

Exhibit 5 2002-03 Through 2005-06 DOT Traffic Complaints Timeliness Performance

		Percentage Of Traffic Complaints Resolved Within 35 Days From Initial Study Request	
Year	Number Of Traffic Complaints Received	Target	Actual
2002-03	2,060	66%	83%
2003-04	1,924	70	73
2004-05	1536	60	62
2005-06	1,475	50	53

Source: City's Operating Budget and DOT.

As Exhibit 5 shows, the DOT responded within 35 days to 73 percent of its complaints in 2003-04, to 62 percent of the complaints in 2004-05, and to 53 percent of its complaints in 2005-06. Further, the DOT's timeliness performance declined despite a significant drop in the number of complaints. Specifically, the number of complaints declined from 2,060 in 2002-03 to 1,475 in 2005-06.

We analyzed traffic complaints that took more than 35 days to complete to learn why some complaints take longer to resolve. Specifically, we stratified the 2004-05 traffic complaint database by length of time to complete. Exhibit 6 shows all the 2004-05 traffic complaints by the time the DOT took to resolve the complaints.

Exhibit 6 Summary Of 2004-05 Traffic Complaints By The Time The DOT Took To Resolve The Complaints

Time To Resolve Complaints	Number Of Traffic Complaints	Percent Of Total Traffic Complaints
35 days or less	948	62%
36 to 49	297	19
50 to 99 days	220	14
100 to 323 days	71	5
Total	1,536	100%

We reviewed a sample of 51 traffic complaints from the ten City Council Districts that had taken longer than 35 days to complete to determine why delays occurred. However, for the 51 traffic complaints we sampled, the DOT had documented the reasons for the delays for only 14 of the traffic complaints that took more than 35 days to complete.

For those 14 traffic complaints for which the DOT had documentation, we were unable to determine a common reason for the delays. Some of the documented reasons for the delays included multiple investigations or multiple meetings with residents, untimely supervisory review, and a pending traffic signal study.

According to the Program Manager, the decline in timeliness in resolving complaints is mainly attributable to high workload demands and reduced staffing. In fact, since 2001-02, the DOT eliminated three Program positions and has left two other positions vacant. In addition, an SNI-funded position was also eliminated. Thus, in 2006-07, the DOT has six fewer Program positions staffed than it had in 2001-02.

In our opinion, the DOT should develop procedures to identify complaints that are not resolved in a timely manner and require staff to document reasons for lengthy delays in resolving complaints.

We recommend that the Department of Transportation:

Recommendation #8

Develop procedures to identify traffic complaints that are not resolved in a timely manner and require staff to document the reason for lengthy delays. (Priority 3)

We also found that the DOT lacks a formal process to prioritize traffic complaints based on the severity of the complaints. Currently, the Program has a single 35-day timeliness target in compliance with the Traffic Calming Policy. However, the DOT does respond to traffic complaints with immediate safety concerns such as a downed stop sign as soon as possible, with a twenty-four hour target. The severity of other traffic complaints varies from minor issues such as parking restriction changes to speeding complaints to urgent traffic complaints. In

our opinion, the DOT should develop a system for prioritizing traffic complaints based on the severity of the traffic complaints.

We recommend that the Department of Transportation:

Recommendation #9

Establish a system for prioritizing complaints based on the severity of the traffic complaints. (Priority 3)

The DOT Needs Additional Controls To Ensure Appropriate And Consistent Handling Of Traffic Complaints

DOT staff have a variety of actions to use in addressing traffic complaints. These include basic traffic calming services such as installing signs and/or markings, and police traffic enforcement; the NASCOP; and comprehensive traffic calming projects. These actions should be appropriate to the traffic complaints and consistently applied.

However, we found several inconsistencies in how staff categorized and resolved traffic complaints. For example, we found several instances of staff using outdated criteria for stop sign analyses. Furthermore, we found that different staff addressed similar speeding complaints differently. For example, while one staff member categorized speeding information on residential streets as average, a different staff member categorized the same speeding information on another residential street as a speeding problem. Finally, we identified an instance of staff notifying a resident that SJPD enforcement had been requested; however, the DOT had made that request ten months earlier and SJPD enforcement was no longer in effect.

The City has a Traffic Calming Policy and a Stop Sign Policy. Furthermore, traffic measures are subject to local, state, and federal regulations. Although we found few exceptions, the DOT lacks a Traffic Calming Procedures Manual to help ensure that staff take appropriate and consistent actions and comply with policies and regulations. In our opinion, the DOT should develop written guidelines and procedures with regards to addressing traffic complaints, such as speeding, volume, crashes, pedestrian safety, and parking. Furthermore, the procedures manual should guide staff in using stop sign studies, crosswalk studies, and speeding enforcement. In addition, the procedures should include average speed, volume, and crash rates for categories of streets to ensure compliance with the adverse condition criteria of the Traffic Calming Policy. It

should also include procedures to guide staff on NASCOP studies and implementation. Finally, it should provide guidance on approving and implementing Program basic and comprehensive traffic calming projects. During the course of our audit, the DOT began developing the Traffic Calming Procedures Manual.

We recommend that the Department of Transportation:

Recommendation #10

Complete the Traffic Calming Procedures Manual to help ensure that staff take appropriate and consistent actions and comply with policies and regulations. (Priority 3)

The DOT Needs To Establish Additional Controls To Ensure The Effective Deployment Of The Neighborhood Automated Speed Compliance Program Resources

As noted in the Background Section of this report, the Neighborhood Automated Speed Compliance Program (NASCOP) is a photo radar speed enforcement program that became fully operational in 1998. In March 2007, the City Council eliminated the enforcement aspect of the NASCOP and directed the DOT to explore other measures to address speed violations, including warnings. The City Council also directed the Office of Intergovernmental Relations to advocate for State legislation authorizing the use of the NASCOP for speed enforcement. We should note that the City Manager has proposed elimination of the NASCOP in the proposed 2007-08 operating budget. Currently, the NASCOP is deployed at 177 street segments throughout the City. Although the NASCOP has shown some demonstrated benefits in San Jose and in other jurisdictions, staffing issues have prevented the Program from fully utilizing the NASCOP vans. Specifically, in 2005, the NASCOP was deployed for 2,771 hours compared to over 4,000 hours in 2004. Moreover, the DOT used three NASCOP vans only 59 percent of the available time in 2005.

San Jose is the only city in California with a photo radar speed program. However, the State of California Vehicle Code section pertaining to red light running automated enforcement programs does not authorize photo radar for speed enforcement purposes. Furthermore, in 2006, the District Attorney's Office began to question the legality of the NASCOP after a few drivers who had received violation notices filed complaints with the District Attorney's Office. In March 2007, based on the legal concerns about the NASCOP, the City Council

eliminated the enforcement aspect of the NASCOP. Specifically, the City Council provided the following direction to the DOT:

> "(1) Immediately cease issuing tickets and assessing fines for speed violations detected by NASCOP system, until the legality of such sanctions can be clarified.
> (2) Explore the use of measures other than fines for speed violations, including warnings. The Department of Transportation should specifically consider the use of neighborhood based forms of advocacy, such as letters issued by local neighborhood associations, and/or direct communications by sworn Staff. Staff to return with alternatives for the Police Department's direct involvement.
> (3) Report to Council within 6 months of the implementation of the measures described in (2) to determine whether these measures have any impact in suppressing the incidence of speeding, so that Council can assess whether to continue the program as modified.
> (4) Direct the Office of Intergovernmental Relations to partner with other interested cities, including but not limited to Los Angeles and Beverly Hills and the League of California Cities to advocate for legislation in Sacramento authorizing the use of NASCOP for speed enforcement.
> (5) Department of Motor Vehicle personal information about residents to remain strictly confidential."

In addition, the City Attorney's Office is currently confirming the legality of obtaining drivers' license information for the modified program with the State of California Department of Motor Vehicles.

The NASCOP was previously an enforcement program. As such, speed violation notices were issued to drivers. A person receiving the violation had three options: pay the fine, attend traffic school, or request a court trial. In order to participate in the NASCOP, an individual or neighborhood association or other organized group must request an application. After it receives the application, the Program does a speed study to see if the street qualifies for the NASCOP. If there is in fact a speeding problem, then the individual or neighborhood

association must petition the residents whose houses are on the street and obtain 51 percent approval to have the NASCOP monitor the speed on their street.

Photo radar programs have shown some demonstrated benefits in other areas and in San Jose. Charlotte, North Carolina found photo radar to be an effective way to reduce speeds. According to the Charlotte study, "collision frequency is traditionally the best way to estimate whether safety … truly has improved. … Speeds are important because they are indirectly related to collision frequency and severity, and because they are an indication of conformity with the speed laws." Furthermore, the Charlotte study found the percentage of vehicles exceeding the speed limit by 10 mph decreased an average of 55 percent and estimated a 12 percent reduction in collisions when compared to control streets.

In San Jose, a 2001 DOT study analyzed speed and crash data that it collected before and after NASCOP deployment. The DOT found that average speeds were reduced by about 2 miles per hour. The study also found that the higher the number of hours of NASCOP deployment, the greater the speed reduction. The study suggested that a linear correlation exists between the levels of NASCOP deployment and reductions in speed. In January 2007, a DOT study of 17 NASCOP streets showed a 62 percent decrease in the number of drivers exceeding the speed limit by ten miles or more.

In addition, we analyzed the NASCOP's effect on speeding violations in locations before and after it was used. Our analysis is based solely on the time that the NASCOP was used in those locations in 2004 and 2005. The results of our analysis were that the number of speeding violations declined in 69 percent of NASCOP locations from 2004 to 2005.

The DOT's use of the NASCOP vans dropped significantly in 2005. Specifically, the DOT deployed the three NASCOP vans for a total of 2,771 hours in 2005, which is a utilization rate of only 59 percent of the available time during the week. In comparison, in 2004, the DOT used the NASCOP vans for over 4,000 hours, for a utilization rate of 85 percent.[4] We should note that NASCOP staff are in the field only part of the time because they must perform follow-up functions in the office

[4] For NASCOP utilization rate calculation purposes we used a 7-hour day and considered staff vacations and other leave for annual hours available of 4,725.

such as matching the photos taken to the drivers' license photos. According to the Program Manager, the NASCOP was short staffed in 2005 due to medical reasons for one of the four NASCOP full time equivalent staff. As such, according to the Program Manager, in 2006 the NASCOP vans deployment increased to 3,851 hours. The Program Manager added that although the Program has procedures to guide staff in the effective deployment of NASCOP resources, they are only informal.

In our opinion, the DOT should establish a NASCOP utilization performance measure in order to internally monitor actual performance against that measure. In addition, the DOT can improve its deployment of NASCOP staff to better target locations with the highest speeding offenses. For example, when we reviewed the DOT's NASCOP management reports we found that the DOT is not sufficiently targeting those NASCOP locations with the highest rate of speeding offenses. We also found that the DOT deployed the NASCOP vans for 2,771 hours, which was 742 hours or 21 percent less than planned. While the above-noted staff absence contributed to the fewer hours of NASCOP deployment, we noted a disconnect between some locations with the highest rate of speeding per hour and reductions in NASCOP deployment. For example, one street that had the 6th highest number of speeding offenses per hour received a 53 percent reduction in planned NASCOP deployment.

During 2005, 30 NASCOP locations recorded 68 percent of the speeding offenses. However, the DOT allocated only 31 percent of the total NASCOP staff hours to those 30 locations. The following exhibit shows traffic activity and NASCOP staff hours at two of the NASCOP locations in 2005.

Exhibit 7 Comparison Of Traffic Activity At Two NASCOP Locations In 2005

	Average Monthly Volume During Hours Staffing	Average Monthly Speeding Offenses	Speeding Offense Rate	Average Monthly NASCOP Staffing Hours
Location 1	574	37	6.5	3.8
Location 2	56	1	1.7%	1.4

As shown above, while one location had 37 times as many offenses, the DOT allocated less than three times the NASCOP monthly staffing hours. In our opinion, the DOT should provide greater emphasis at those locations with the highest volume and speeding offense rates. As such, the DOT should formalize its written procedures to guide staff in the effective deployment of NASCOP resources.

Based on legal concerns, the City Council has eliminated the enforcement aspect of the NASCOP and directed the DOT to explore other measures to address speed violations, including warnings. The City Council also directed the Office of Intergovernmental Relations to advocate for State legislation authorizing the use of the NASCOP for speed enforcement. To ensure the effective deployment of NASCOP resources, we recommend that the DOT implement the following recommendations.

We recommend that the Department of Transportation:

Recommendation #11

Develop a performance measure to monitor NASCOP utilization. (Priority 3)

Recommendation #12

Formalize its procedures to guide staff in the effective deployment of NASCOP resources. (Priority 3)

The SJPD's Traffic Enforcement Unit Was Not Accurately Reporting Its Performance

The DOT works with the SJPD's Traffic Enforcement Unit (TEU). In some instances, DOT staff request that the TEU respond to speeding complaints. However, the TEU also responds to speeding complaints it receives directly from residents. We found that the TEU has overstated its timeliness performance and reported in the City's Operating Budget on surveys it does not appear to have conducted. Furthermore, the SJPD TEU database was not complete. In our opinion, the SJPD should develop written procedures to ensure the accuracy and completeness of its performance information.

The SJPD has established two performance measures to assess how it responds to traffic complaints from the public. The SJPD's first performance measure is to respond to 90 percent of

speeding complaints within two weeks. The SJPD's second performance measure is to receive a rating of 4 or better from 80 percent of persons who make traffic complaints.

The SJPD has reported against its two traffic complaint performance measures in the City's Operating Budget since 2000-01. The exhibit below shows how the SJPD has reported against its traffic complaint performance measures in the City's Operating Budget for 2002-03 through 2005-06.

Exhibit 8 Summary Of SJPD Reported Actual Timeliness And Customer Satisfaction Performance In The City's Operating Budget

Performance Measurement Reported In The City's Operating Budget	Target	2002-03 Actual	2003-04 Actual	2004-05 Actual	2005-06[5] Estimated
1. Timeliness Measurement: Percentage of traffic complaints responded to within a two-week period.	90	90	90	90	90
2. Customer Satisfaction Measurement: Percentage of traffic complainants who rate response a 4 or better on a scale of 1 to 5.	80	80	80	80	80

Source: City's Operating Budget.

As shown above, the SJPD reported it met its 90 percent timeliness and 80 percent customer satisfaction targets for 2002-03 through 2004-05. We found, however, that the SJPD has not accurately reported its actual performance on these two measures. On the timeliness performance measure, we found that for 2002-03 through 2004-05, the SJPD's response time was significantly below what it reported. Specifically, for 2002-03, 2003-04, and 2004-05, the SJPD responded to 44 percent, 39 percent, and 35 percent of traffic complaints, respectively, within two weeks. Furthermore, the SJPD did not perform customer service surveys to substantiate its reported

[5] In 2005-06, the SJPD changed its Timeliness Measurement target to 80 percent and its Customer Satisfaction target to 70 percent.

customer satisfaction. As a result, the City Council lacked adequate and reliable information to assess the SJPD's performance related to traffic complaints.

We should note that the City eliminated a vacant TEU team consisting of a sergeant and six police officers for the 2005-06 budget year. According to the City's Operating Budget description of the team reduction, one of the service impacts would be a decrease in the percentage of traffic complaints responded to within a two-week period.

According to the SJPD, it reported on how quickly it assigned traffic complaints to officers, instead of how quickly officers responded to traffic complaints. We also found that the SJPD's response to traffic complaint data was not complete because officers did not always document the resolution of the complaint. During the course our audit, we discussed this issue with SJPD staff. As a result, the SJPD redeployed a light duty police officer position to provide administrative support for traffic complaints performance reporting. This will allow the SJPD to begin obtaining customer satisfaction surveys and to accurately report on its response to traffic complaints.

In our opinion, the SJPD should develop written procedures to ensure that it accurately reports on the percentage of traffic complaints responded to within two weeks and the level of customer satisfaction.

We recommend that the San Jose Police Department:

Recommendation #13

Develop written procedures to ensure that it accurately reports on the percentage of traffic complaints responded to within two weeks and the level of customer satisfaction. (Priority 3)

CONCLUSION

Since 2001, the City's Traffic Calming Program (Program) has implemented a number of measures intended to reduce traffic problems and increase the safety of the residents of San Jose. In our opinion, the DOT needs to establish additional controls to ensure that the Program spends its limited funds on comprehensive traffic calming projects that are warranted and on the highest priority projects. In addition, we found that the DOT needs to strengthen its Annual Collision Review process for reviewing high crash locations and should use new

technology to enhance its ability to proactively identify neighborhood streets with speeding problems. In addition, the DOT should work with the SJPD to generate information on non-injury accidents for which the SJPD did not prepare a traffic accident report. Furthermore, we found that the DOT needs to establish additional controls to ensure that the Program responds to neighborhood complaints in a timely and consistent manner. Also, the DOT needs to formalize the NASCOP program procedures. Finally, we found that the San Jose Police Department's (SJPD) Traffic Enforcement Unit (TEU), which handles the enforcement part of the Program, was not accurately reporting its performance in responding to and resolving traffic complaints.

RECOMMENDATIONS

We recommend that the Department of Transportation:

Recommendation #1 **Develop written procedures to assess whether comprehensive traffic calming projects are warranted. These procedures should include how to assess if specific streets experience traffic volumes, speeds, or crashes in excess of 10 percent above the City averages and how to assess if specific streets qualify for traffic calming based on unusual conditions, such as limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes. (Priority 3)**

Recommendation #2 **Develop written procedures to ensure that the project files for all comprehensive traffic calming projects document any studies performed and resulting analyses, a statement of the existing adverse condition that needs to be addressed, the estimated impact or objective of the project, the estimated cost of the project, and the approving official. (Priority 3)**

Recommendation #3 **Develop written procedures that clarify the DOT's process for approving comprehensive traffic calming projects. (Priority 3)**

We recommend that the City Council:

Recommendation #4 **Revisit its Traffic Calming Policy regarding project prioritization such that it funds larger comprehensive traffic calming projects on a priority ranking system basis. (Priority 3)**

Further, we recommend that the Department of Transportation:

Recommendation #5 **Develop and implement written procedures to ensure timely staff follow-up, study, analysis, and written conclusions as to whether comprehensive traffic calming projects meet their intended objectives. (Priority 3)**

Recommendation #6 **Formalize the Annual Collision Review process. (Priority 3)**

Recommendation #7 **Work with the San Jose Police Department to generate date, time, and location reports for residential speeding traffic citations reports by location using the E-Cite System and non-injury accidents for which the SJPD did not prepare a traffic accident report. (Priority 3)**

Recommendation #8 **Develop procedures to identify traffic complaints that are not resolved in a timely manner and require staff to document the reason for lengthy delays. (Priority 3)**

Recommendation #9 **Establish a system for prioritizing complaints based on severity of the traffic complaints. (Priority 3)**

Recommendation #10 **Complete the Traffic Calming Procedures Manual to help ensure that staff take appropriate and consistent actions and comply with policies and regulations. (Priority 3)**

Finally, we recommend that the Department of Transportation:

Recommendation #11 **Develop a performance measure to monitor NASCOP utilization. (Priority 3)**

Recommendation #12 **Formalize its procedures to guide staff in the effective deployment of NASCOP resources. (Priority 3)**

We recommend that the San Jose Police Department:

Recommendation #13 **Develop written procedures to ensure that it accurately reports on the percentage of traffic complaints responded to within two weeks and the level of customer satisfaction. (Priority 3)**

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Finding II The Department Of Transportation Needs To Better Maintain Some Comprehensive Traffic Calming Projects

The Department of Transportation (DOT) installs various types of traffic calming measures such as road bumps, traffic circles, and bulb-outs for its comprehensive traffic calming projects. These traffic calming measures need periodic maintenance. The DOT's Infrastructure Maintenance Division is responsible for maintaining most of the traffic calming measures. However, we found that residents have volunteered to be responsible for maintaining parking strips on traffic calming measures such as bulb-outs and some traffic circles. We visited various traffic calming project sites. While most of the project sites are properly maintained, we found that some of the sites are not. Specifically, we found that some road bump markings are faded and some landscaped traffic calming projects were in poor condition. In our opinion, the DOT should review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, the DOT should explore the feasibility of using either Thermo thin plastic or high build paint for road bumps. Also, the DOT should provide guidelines, training, and equipment for volunteers who maintain projects not attached to a sidewalk under the City's Adopt-A-Street Program. Finally, the DOT should develop written procedures to ensure that all comprehensive traffic calming projects receive the appropriate maintenance; individual comprehensive traffic calming project files document the responsible party for each traffic calming device requiring landscaping; and processes are in place in the event that neighborhood residents do not maintain agreed-upon landscaping.

Some Road Bump Markings Are Faded

For the safety of motorists and pedestrians, it is important that traffic calming measures be properly signed, marked, and maintained. According to the Institute of Transportation Engineers, "Traffic Calming: State of the Practice" (ITE Report), if vehicles are driven at excessive speeds, beyond that for which the traffic calming measures are designed, the measures may pose a hazard to motorists. For example, at higher speeds vehicles can become airborne if drivers do not slow down before reaching the road bumps. We visited several

road bump sites and noted differences among the road bumps markings' conditions. During our site visits we noted some road bumps markings that are faded. The picture below shows a road bump that was installed in October 2002.

Exhibit 9 Road Bump With Faded Markings

As shown in the picture above, the markings on the road bumps are faded. Therefore, although the road bump warning sign is visible, and at night the reflective markers at the base of the road bumps are visible, the road bump markings are not clearly visible. We visited another location with road bumps. The following picture shows a road bump that was installed in April 2006.

Exhibit 10 Clearly Marked Road Bump

As shown in the picture above, the road bump is clearly marked and clearly visible to drivers.

The DOT has a goal to re-stripe the City of San Jose's (City) road bumps on a three-year cycle, along with other residential street pavement markings, by zone. However, maintenance is performed sooner if residents make a service request for re-striping. According to the DOT's Maintenance Division staff, the three-year cycle for all street pavement markings has increased to six years because of staffing shortages and numerous service requests.

We contacted staff at another jurisdiction regarding the maintenance of the road bumps. According to the maintenance staff at the City of Cupertino, they refresh the paint annually on painted road bumps. However, some of their road bumps are marked using thermoplastic markings. According to the Cupertino staff, thermoplastic markings last much longer than normal pavement paint markings and therefore do not need annual maintenance.

The City does not use thermoplastic markings. Special equipment is required to use thermoplastic markings. According to a DOT Division Manager, the DOT purchased

thermoplastic equipment and performed a cost analysis in the mid-1980s. The DOT found that while the application lasted longer, the labor costs were too high. Furthermore, the DOT found that there were other problems associated with thermoplastic markings, including environmental and safety issues. However, the DOT Division Manager also noted that there is a new product called Thermo thin line plastic which is easier to install and the equipment is less expensive. The DOT uses this product on some projects on a contractual basis. The Division Manager also said that the DOT uses a new high build paint product that lasts longer than the paint the DOT previously used on road bumps. In our opinion, the DOT should review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, the DOT should explore the feasibility of using either Thermo thin plastic or high build paint for road bumps.

We recommend that the Department of Transportation:

Recommendation #14

Review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, we recommend that the DOT explore using Thermo thin line plastic or high build paint markings for road bumps. (Priority 3)

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Not All Comprehensive Traffic Calming Project Landscaping Is Adequately Maintained

Traffic circle landscaping should also be properly maintained. According to the ITE Report, landscaping on traffic islands should be carefully planned to provide unrestricted visibility for vehicle operators and pedestrians. We visited some comprehensive traffic calming project sites that are landscaped. The pictures below show traffic circles.

Exhibit 11 Traffic Circles

As shown above, the landscaping in the circles is in need of maintenance. Furthermore, the height of the vegetation hinders driver visibility. According to the DOT, the first picture is an example of the wrong plant material being installed. The nursery provided the wrong variety of plants; however, the correct plants have now been planted. Also, according to the

DOT, the second picture is an example of neighborhood volunteers planting wild flower seeds. The DOT is currently working with the neighborhood volunteers to improve this traffic circle.

The DOT's Infrastructure Maintenance Division Landscaping Section staff divides the City into two geographical areas. In addition to maintaining the comprehensive traffic calming measures, the landscaping staff also maintain landscaped medians and other landscaped areas that have automatic irrigation. We found landscaped traffic calming measures that were not well-maintained in both geographic areas. According to a DOT Landscaping Supervisor, part of the problem stems from a lack of information regarding who is responsible for maintaining the traffic calming projects other than watering. He said that typically the DOT is responsible for the watering of drought-resistant plants for the first three years following installation of the comprehensive traffic calming landscaping, after which the plants should be self-sustaining. Maintenance crews need to water traffic circles because they do not have automatic irrigation, which is expensive to install for traffic circles. Some bulb-outs have automatic irrigation while other bulb-outs do not. However, it is not clear which DOT staff is responsible for sweeping, trimming, and re-planting traffic calming project landscaping. Another DOT staff member said it was difficult for him to regularly maintain landscaping because his equipment did not carry water and because of his other workload responsibilities.

According to the Program Manager, the City is responsible for maintaining most traffic circles. However, neighborhood residents have volunteered to be responsible for maintaining two traffic circles under the DOT's Adopt-A-Street Program. The Program Manager added that the neighborhood volunteers are also responsible for maintaining landscaped park strips attached to the sidewalk, such as bulb-outs and medians that may not be attached to the sidewalk. We should note that, unlike bulb-outs, traffic circles are always located in the center of intersections. Therefore, neighborhood residents are exposed to vehicle traffic when maintaining traffic circles. According to the DOT, volunteers' safety can be improved by providing guidelines, training, and equipment such as vests and traffic cones. In addition, volunteer training can include traffic standards regarding the proper vegetation height. In our opinion, because of safety concerns for the residents and potential liability for the City, the DOT should provide

guidelines, training, and equipment for volunteers who maintain comprehensive traffic calming projects not attached to a sidewalk. Furthermore, the DOT should develop written procedures to ensure that all comprehensive traffic calming projects receive the appropriate maintenance and that project files document the responsible party.

We recommend that the Department of Transportation:

Recommendation #15

Provide guidelines, training, and equipment to volunteers who maintain street projects not attached to sidewalks under the City's Adopt-A-Street Program. (Priority 3)

Recommendation #16

Develop written procedures to ensure that 1) all comprehensive traffic calming projects receive the appropriate maintenance; 2) individual comprehensive traffic calming project files document the responsible party for each traffic calming device requiring landscaping; and 3) processes are in place in the event that neighborhood residents do not maintain agreed-upon landscaping. (Priority 3)

CONCLUSION

We found that the Department of Transportation's Infrastructure Maintenance Division is responsible for maintaining most of the comprehensive traffic calming measures while neighborhood residents are responsible for parking strip maintenance on comprehensive traffic calming measures such as bulb-outs and two traffic circles. We visited various comprehensive traffic calming project sites. Most of the sites were properly maintained. However, we found that some of the sites were poorly maintained. Specifically, we found that some road bump markings are faded and some landscaped comprehensive traffic calming projects were in poor condition.

RECOMMENDATIONS

We recommend that the Department of Transportation:

Recommendation #14 **Review its road bump re-striping guidelines to ensure that they are re-striped often enough to ensure that road bumps are adequately visible to drivers. In addition, we recommend that the DOT explore using Thermo thin line plastic or high build paint markings for road bumps. (Priority 3)**

We also recommend that the Department of Transportation:

Recommendation #15 **Provide guidelines, training, and equipment to volunteers who maintain street projects not attached to sidewalks under the City's Adopt-A-Street Program. (Priority 3)**

Recommendation #16 **Develop written procedures to ensure that 1) all comprehensive traffic calming projects receive the appropriate maintenance; 2) individual comprehensive traffic calming project files document the responsible party for each traffic calming device requiring landscaping; and 3) processes are in place in the event that neighborhood residents do not maintain agreed-upon landscaping. (Priority 3)**

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

RECEIVED
MAY 03 2007
CITY AUDITOR

Memorandum

TO: Gerald A. Silva

FROM: James R. Helmer

SUBJECT: **AUDIT OF THE TRAFFIC CALMING PROGRAM**

DATE: 05-02-07

Approved Kay Winer Date 5/2/07

This is in response to the report on *An Audit of the Traffic Calming Program,* which was issued to the Department of Transportation (DOT) on April 12, 2007 for review and comment.

RESPONSES TO AUDIT RECOMMENDATIONS

Recommendation #1, #2 & 3 – Develop procedures to access whether comprehensive traffic calming projects are warranted, and that project files document any studies performed and resulting analysis, the existing adverse condition, the objective and cost estimate of the project, and the approving official.

Procedures and guidelines have been developed to guide staff in the analysis and implementation of comprehensive traffic calming projects. Please note that several of the projects that were referenced in the audit as not having adequate justification in the project files were included in a previous Mayor's Budget Message as priority projects.

Recommendation #4 – City Council revisit its Traffic Calming Policy regarding project prioritization such that it funds larger comprehensive traffic calming projects on a priority ranking system basis.

Although, to date, the Traffic Calming Program has been able to fund projects that are warranted, the remaining funds within the program budget are limited. Given this, a priority ranking system would be beneficial. DOT is considering a more comprehensive review of the Traffic Calming Policy as part of its 2007-08 workplan.

Recommendation #5 – Develop and implement written procedures to ensure timely staff follow-up, study, analysis, and written conclusions as to whether comprehensive traffic calming projects meet their intended objectives.

Written procedures and guidelines will be developed and included in the Neighborhood Traffic Management Guidelines and Procedures Manual.

Recommendation #6 – Formalize the Annual Collision Review Process.

Annually, DOT evaluates high crash intersections, including those with a high number of crashes associated with red light running, stop sign violations, or involving pedestrians and bicyclists. DOT agrees with this recommendation and will document its existing process for selecting intersections that will be analyzed as part of the Annual Collision Review.

Recommendation #7 – Work with the San Jose Police Department (SJPD) to generate residential speeding traffic citations reports by location using the E-Cite System, and non-injury accidents for which the SJPD did not prepare a traffic accident report.

The City's Traffic Calming Program was established to respond to concerns of residents and schools about neighborhood traffic issues. In addition to the Traffic Calming Program, DOT implements many proactive education and safety programs on an ongoing and one-time basis. DOT will work with the SJPD to generate residential speeding traffic citations reports by location and non-injury accidents to provide additional traffic data when analyzing neighborhood traffic concerns.

Recommendation #8 – Develop procedures to identify traffic complaints that are not resolved in a timely manner and require staff to document the reason for lengthy delays.

As a result of budget reductions over the past several years, there are 40% fewer staff within the Traffic Calming Program in FY2006-07 as compared with FY2002-03. This staffing reduction, combined with reductions in maintenance staff that install signs and markings, are the primary reason for the increase in time to implement basic traffic calming projects. On a monthly basis, reports are generated and analyzed for each Council District, including a review of projects that are not completed. DOT will develop written procedures to document its existing process and will include procedures for staff to document the reason for lengthy delays.

Recommendation #9 – Establish a system for prioritizing complaints based on the severity of the traffic complaints.

DOT has a system for prioritizing complaints based on the severity of the complaint. As indicated in the Audit, immediate safety concerns have a 24-hour target. The majority of other measures that are implemented, such as basic signs and markings have a 21-day installation target.

Establishing a system to prioritize the installation of basic signs and markings would be challenging given the nature of these projects. In FY2006-07, it is anticipated that approximately 1,700 basic traffic concerns will be addressed. On any given day, Traffic Calming staff manage between 150-200 basic level projects, each of which may be at a different stage of analysis. This

includes: data collection, field observations, review of traffic and accident data, review of any prior education, enforcement or engineering activities, discussions with neighborhood representatives and other City departments, and development and processing of work orders to implement necessary measures. DOT will continue to identify those issues that are immediate safety concerns and prioritize for completion within 24 hours.

Recommendation #10 – Complete the Traffic Calming Procedures Manual to help ensure that staff take appropriate and consistent actions and comply with policies and regulations.

A Traffic Calming Procedures Manual was developed for a majority of the studies that are conducted. Staff was trained on the guidelines and procedures contained within this manual in the Summer 2006. DOT agrees with this recommendation and will complete this manual.

Recommendation #11 & #12 – Develop a performance measure to monitor NASCOP utilization and formalize procedures to guide staff in the effective deployment of NASCOP resources.

On March 6, 2007 the City Council directed staff to cease operation of the existing NASCOP enforcement program. Although staff was also directed to explore implementation of a modified NASCOP program focusing on issuing warnings, it is unknown whether a modified program will be implemented due to budget constraints. DOT is exploring a modified program as part of the 2007-08 budget review and what positive or negative impacts this may have on existing programs.

NASCOP was effective at reducing the level of speeding in neighborhoods, especially vehicles speeding excessively over the posted speed limit. The positive results achieved by NASCOP were a result of the program itself, and of staff's continual review and adjustments of deployments on neighborhood streets participating in the program. If NASCOP is reinstated as either an enforcement or a warning program, DOT will document its existing procedures to ensure effective deployment of resources.

Recommendation #14 – Review road bump re-striping guidelines to ensure that they are re-striped often enough to ensure adequate visibility, and explore the use of Thermo thin line plastic or high build paint markings for road bumps.

Striping for road bumps has been maintained consistently with other roadway striping within neighborhoods. The single faded road bump that was identified in the audit has been re-striped with more durable paint.

Recommendation #15 – Provide guidelines, training, and equipment to volunteers who maintain street projects not attached to sidewalks under the City's Adopt-a-Street Program.

The City's Adopt-a-Street Program currently provides guidelines, training and equipment to volunteers that maintain street projects.

Recommendation #16 – Develop written procedures to ensure that all comprehensive traffic calming projects receive appropriate maintenance, project files document the responsible party for maintaining landscaped devices, and that processes are in place if neighborhood residents do not adequately maintain agreed-upon landscaping.

DOT currently has maintenance standards for streetscape within the public right-of-way. Overwhelmingly, landscaped traffic calming devices have been maintained consistent with other streetscape throughout the City. DOT maintains a database that identifies which maintenance section is responsible for maintaining various landscaped areas within the City.

Please note that of the two locations identified within the audit, one involved incorrect plant material that had been installed by a contractor which has since been replaced with the correct plants. The other location involved neighborhood volunteers planting wild flowers in a traffic device that was installed many years ago, well before the City's existing Traffic Calming Program. This neighborhood has joined the City's Adopt-a-Street Program that includes procedures to ensure that volunteers only install approved plant material and that agreed upon landscaped areas are maintained adequately.

JAMES R. HELMER
Director of Transportation

RECEIVED
MAY 0 2 2007
CITY AUDITOR

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Gerald A. Silva
City Auditor

FROM: Robert L. Davis

SUBJECT: **SJPD RESPONSE TO TRAFFIC CALMING AUDIT**

DATE: May 1, 2007

Approved

Date

BACKGROUND

The San Jose Police Department (SJPD) has reviewed the final draft report prepared by the Office of the City Auditor entitled "An Audit of the Traffic Claming Program." The purpose of this memorandum is to provide your office with the Department's response to the recommendation that pertains to the SJPD.

RESPONSES

FINDING I. The SJPD's Traffic Enforcement Unit Was Not Accurately Reporting Its Performance

Recommendation #13: Develop written procedures to ensure that it accurately reports on the percentage of traffic complaints responded to within two weeks and the level of customer satisfaction. (Priority 3)

SJPD Response: The SJPD's Traffic Enforcement Unit (TEU) already reviewed this issue and implemented changes at the beginning of Fiscal Year 2006-2007 that would meet the recommended actions as outlined in the Auditor's Report. In addition to the written procedures implemented, TEU personnel now maintain a traffic incident report log within their office and have created a new satisfaction survey form to collect the required data more accurately.

CONCLUSION

Since the SJPD Traffic Enforcement Unit already implemented the recommended changes at the beginning of Fiscal Year 2006-2007, this fact should be clearly noted in the narrative and recommendations section of the Auditor's report so that it very clear not only that the problem no longer exists but that the San Jose Police Department was proactive in resolving the issues once they surfaced months ago. TEU is now able to track all of the complaints, with complete

accuracy, as well as all of the responses to the satisfaction surveys, and has been accurately reporting this data for the first three quarters of the current fiscal year.

Robert L. Davis
Chief of Police

RLD: JS

APPENDIX A

DEFINITIONS OF PRIORITY 1, 2, AND 3 AUDIT RECOMMENDATIONS

The City of San Jose's City Administration Manual (CAM) defines the classification scheme applicable to audit recommendations and the appropriate corrective actions as follows:

Priority Class[1]	Description	Implementation Category	Implementation Action[3]
1	Fraud or serious violations are being committed, significant fiscal or equivalent non-fiscal losses are occurring.[2]	Priority	Immediate
2	A potential for incurring significant fiscal or equivalent fiscal or equivalent non-fiscal losses exists.[2]	Priority	Within 60 days
3	Operation or administrative process will be improved.	General	60 days to one year

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1 The City Auditor is responsible for assigning audit recommendation priority class numbers. A recommendation which clearly fits the description for more than one priority class shall be assigned the higher number. **(CAM 196.4)**

2 For an audit recommendation to be considered related to a significant fiscal loss, it will usually be necessary for an actual loss of $25,000 or more to be involved or for a potential loss (including unrealized revenue increases) of $50,000 to be involved. Equivalent non-fiscal losses would include, but not be limited to, omission or commission of acts by or on behalf of the City which would be likely to expose the City to adverse criticism in the eyes of its citizens. **(CAM 196.4)**

3 The implementation time frame indicated for each priority class is intended as a guideline for establishing implementation target dates. While prioritizing recommendations is the responsibility of the City Auditor, determining implementation dates is the responsibility of the City Administration. **(CAM 196.4)**

APPENDIX B

RECEIVED
MAY 03 2007
CITY AUDITOR

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Gerald A. Silva **FROM:** James R. Helmer

SUBJECT: **TRAFFIC CALMING PROGRAM ACCOMPLISHMENTS** **DATE:** 05-02-07

Approved Kay Winer Date 5/2/07

Thank you for the opportunity to provide information on program accomplishments to be included in your final audit report on *An Audit of the Traffic Calming Program.*

Traffic safety is a priority for the Department of Transportation (DOT) and our department implements on an annual basis a variety of programs and services with a focus on improving traffic safety for pedestrians, bicyclists and motorists. A summary of accomplishments of the Traffic Calming Program and associated safety highlights implemented in conjunction with other areas in DOT is attached.

Please let me know if you need further information.

James R. Helmer
JAMES R. HELMER
Director of Transportation

attachment

TRAFFIC CALMING PROGRAM ACCOMPLISHMENTS AND DEPARTMENT OF TRANSPORTATION SAFETY HIGHLIGHTS

1. Implementation of a variety of measures to enhance traffic safety for pedestrians, bicyclists and motorists, including:

    a. Red light running indicators at 151 intersections
    b. Pedestrian countdown signal heads at approximately 650 intersections
    c. Flashing beacons at 28 crosswalks
    d. Pavement embedded crosswalk light systems at 13 crosswalks
    e. School radar speed display signs at 32 schools

2. Citywide injury crash rate has progressively decreased as a result of proactive approach to traffic safety and collaborated effort between the 3 E's – Education, Engineering and Enforcement. San Jose's current injury crash rate of 3.3 per 1,000 population is lower than the national average of 6.3 per 1,000 population, and significantly lower than the San Jose crash rate of 7.6 per 1,000 population in 1988.

3. Street Smarts Program has been expanded to 25 neighborhoods in San Jose and 24 other agencies throughout California. The Safety Education component of the program has delivered traffic safety education to more than 53,000 children at 102 schools since it's launch in January 2005, and is estimated to serve 18,000 children in FY06-07. The program also expanded to reach senior citizens in FY06-07, with an anticipated delivery to 800 seniors the first year.

4. Implementation or expansion of residential permit parking zones in 7 neighborhoods to minimize the impacts of parking intrusion from motorists from outside of the neighborhood.

5. Implementation of heavy truck traffic restrictions on 14 neighborhood streets to minimize the use of residential streets as through streets for commercial truck traffic.

6. Although DOT was directed by City Council to discontinue the NASCOP (photo radar) program as an enforcement program, NASCOP was effective at reducing the level of vehicles speeding excessively over the posted speed limit in a majority of the 170 neighborhood streets that participated in the program.

7. School access enhancement studies were conducted at 42 elementary and middle schools. The results of these comprehensive studies were used to implement a variety of measures, including installation of sidewalks, ADA ramps, signs and markings, and changes in operational procedures at some of the schools.

8. Since FY01-02, approximately 500 traffic signals have been retimed, reducing travel time on major corridors, and minimizing commute traffic intrusion on residential streets.