

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Jim Ortbal

SUBJECT: ANNUAL TRANSPORTATION SYSTEM SAFETY REPORT

DATE: April 18, 2016

Approved D. O'Syl Date 4/20/16

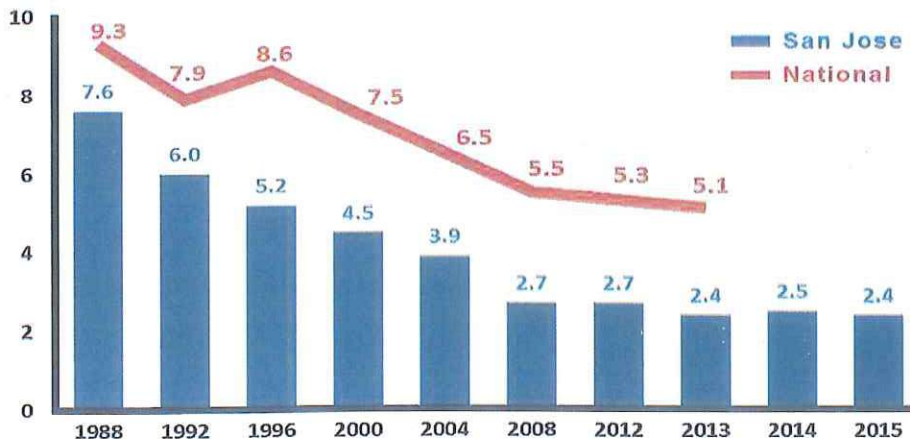
RECOMMENDATION

Accept the Annual Transportation System Safety Report.

BACKGROUND

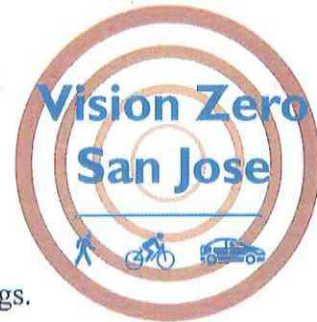
San Jose continues to be one of the safest large cities in the nation for transportation operations, with an injury crash rate about half the national average. Over a 28-year period, San Jose's injury crash rate has declined 68%, and stabilized at approximately 2.4 injury crashes per 1,000 residents in recent years. Historically, there has been a strategic investment in capital projects that were largely based on analysis of crashes; deployment of enforcement at high crash locations; and the prioritized delivery of traffic safety education to school children and seniors.

Figure 1 - San Jose Injury Crash Rate (per 1,000 population)



In May 2015, San Jose became the fourth city in the nation to formally adopt a Vision Zero transportation safety initiative, which aims to eliminate fatalities and reduce severe injuries caused by traffic collisions. The *Vision Zero San Jose (VZSJ)* plan identified a series of actions centered on continuing and enhancing efforts related to *Evaluation, Engineering, Education, and Enforcement*; with emphasis also placed on *Technology, Policy Alignment, and Partnerships*.

During the summer and fall of 2015, Vice Mayor Herrera and the Department of Transportation (DOT) hosted a series of outreach meetings to introduce *Vision Zero San Jose* to the community, with a focus on identified Priority Safety Corridors. The meetings provided an opportunity for the community to learn about Vision Zero and to share their input about improving transportation safety on the Priority Safety Corridors. Representatives from DOT, the Police Department, California Walks, Silicon Valley Bicycle Coalition, and the County of Santa Clara attended each of the meetings. Many Councilmembers also attended the meetings.



Although San Jose has a relatively safe transportation system, tragically, some traffic collisions have resulted in a fatality. In 2015, while fewer people overall were injured as the result of a traffic crash than in prior years, of significant concern was the increased number of traffic fatalities (60), compared to the 42 fatalities that occurred in 2014.

Many of the fatal crashes in San Jose involve drivers, motorcyclists, pedestrians and bicyclists exhibiting illegal behaviors and poor judgment while traveling within the public right-of-way. It is important to understand that people make errors and the overall transportation system needs to be designed to compensate for human error so that the consequence of a traffic collision is not severe injury or death. Further, it is equally important to rigorously analyze collision data to understand the trends and root causes associated with traffic fatalities and severe injury crashes; and to the extent possible, the factors that contribute to the behavior choices that people make while in the roadway. This information will help guide the City to prioritize future capital investments, optimize the deployment of limited traffic enforcement resources, and help to focus the messaging and delivery of education efforts. Key conclusions of the 57 crashes that resulted in a fatality in 2015 are highlighted in Attachment A.

This report is presented annually to the Transportation and Environment (T&E) Committee, and includes information on various transportation safety programs and activities. This year, the report incorporates an update on implementation of strategies to position San Jose to achieve the ultimate goal of eliminating all traffic fatalities, and significantly reducing severe injury crashes.

ANALYSIS

The analysis section of the report includes the following subsections:

A. Building the Foundation to Achieve Vision Zero

- Organization – Alignment to Best Advance Vision Zero Strategies
- Evaluation – Enhanced Data Analytics and Safety Audits
- Engineering – Design Guides and Projects that Improve Safety
- Education/Engagement – Build Awareness through Information and Outreach

- Enforcement – Change Poor Behavior through Targeted Deployment and Technology
- Technology – Innovation will have the Largest Impact on Traffic Safety

B. Ongoing Transportation Safety Programs and Projects

A. Building the Foundation to Achieve Vision Zero

Vision Zero was initiated in Sweden in 1997 as a street safety policy that strives to eliminate fatalities and reduce severe injuries associated with traffic collisions. Vision Zero has been successful in many European nations in achieving significant reductions in fatalities. The core principles that guide Vision Zero include: traffic deaths are preventable and unacceptable; the safety of all roadway users takes precedence over mobility; the design and operation of the transportation system should account for human error; speed is a fundamental predictor of crash survival; safe behaviors, education and enforcement are essential for a safe roadway system; and policy alignment is needed at all levels of government to make safety the highest priority.

San Jose's Vision Zero plan did not set a particular timeline for achieving Vision Zero as a practical matter, as cities do not have enough of the necessary tools available to them to largely control transportation safety outcomes. A significant level of foundational work is needed to set an ambitious, yet feasible timeline for achieving Vision Zero. Further, State and federal policies are not always aligned with the safety-first focus of Vision Zero, and it is estimated that the most significant improvement in safer streets will come through the deployment of crash avoidance technologies in new vehicles. In light of this, the path forward to zero traffic fatalities will take a long-term commitment. It is a path that must be taken, with rigorous focus and incremental improvement, recognizing that even one traffic fatality on our roadways is one death too many. It is important to note though that the national government of Sweden, regarded as the Vision Zero leader, has adopted a revised zero fatality goal of 2050.

When *Vision Zero San Jose* was adopted in 2015, additional City resources were not available for allocation to DOT or the Police Department to further support this more comprehensive, multi-disciplinary transportation safety initiative. The strategies outlined in this report describe the initial efforts to align available resources in both departments to support Vision Zero strategies. To make substantive progress towards Vision Zero, additional resources will be required to provide for more rigorous and systematic data analytics, delivery of corridor based safety projects, engagement and education of the community to move towards a "Safety First" culture, and sustained enforcement focused on the top violations that result in fatalities and severe injuries. Nonetheless, progress will be made to improve safety through focused attention on understanding the root causes and trends associated with fatal and severe injury crashes, improved coordination between City departments, and collaboration with other Vision Zero leaders and community partners. The organizational foundation that is being established is intended to position the City to scale to Vision Zero when the opportunity for additional resources is available.

Organization – Alignment to Best Advance Vision Zero Strategies

Historically, resources in DOT and the Police Department have been organized around functional programs, such as neighborhood traffic, traffic signal operations, Street Smarts/Walk n' Roll, and traffic enforcement. To best advance the strategies identified in *VZSJ*, existing resources within DOT are being aligned and deployed from other programs to enable a core team to focus on more rigorous data analysis, corridor safety audits, development of an education/engagement program, and development of a Vision Zero website. The team will be led by a Vision Zero Program Manager – recruitment efforts for this position are currently in progress. The Police Department is participating as a core member of the Education/Engagement team, is collaborating with DOT on improving the processing of crash data, and is taking steps to increase the presence of traffic enforcement on our roadways.

Additionally, a significant effort has been made to collaborate with other cities within California and nationally, and with community partners and agencies engaged in the analysis and/or improvement of roadway safety and pedestrian/bicycle mobility.

- Vision Zero Network – The Vision Zero Network is a national collaborative established in 2015 and is being sponsored by Kaiser Permanente, in recognition that the safety of streets is related to efforts to increase physical activity. The Vision Zero Network is bringing together a core group of U.S. cities, connecting local leaders in traffic engineering, police enforcement, health, policy, and advocacy to develop and share strategies to make Vision Zero a reality. San Jose was recently selected as a Vision Zero Network Emerging City, and will benefit through opportunities and forums to share information and best practices with leading Vision Zero cities across the nation.
- NACTO Vision Zero Working Group – San Jose is one of 20 member cities of the National Association of Transportation City Officials (NACTO). Over the past year, DOT staff has participated in forums hosted by NACTO as an opportunity for member cities to share information. Recent discussions have focused on best practices in achieving Vision Zero, including data collection efforts, and in the use of data to prioritize safety investments.

Evaluation – Enhanced Data Analytics and Safety Audits

Historically, DOT's primary crash review focus has been on high crash intersections based on total injuries, regardless of severity; and on intersections versus corridors. In recent years, emphasis has been placed on improving the safety and mobility of pedestrians and bicyclists, as these road users are more vulnerable to severe injury in traffic collisions. With Vision Zero, the focus will be expanded to a corridor approach and on locations that have a high frequency of traffic fatalities and severe injury crashes.

- Data Analysis – Based on crash data for the five-year period between 2010 and 2014, fourteen major streets were identified with the highest frequency of fatal and severe injury traffic collisions; and 50% (21) of the fatal traffic crashes in 2014 occurred on these streets ("Priority Safety Corridors"). These corridors represent 3% of San Jose's approximate 2,400

mile roadway system. A high number (30%, 20) of the traffic fatalities in 2015 also occurred on these corridors. The Safety Audit Team conducted extensive data analysis for each of the 14 Priority Safety Corridors, including a review of each police crash report associated with a fatality or severe injury that occurred between 2011 and 2015. The team also analyzed summary collision data to identify trends, find patterns, and to pinpoint high collision locations to discern predominant collision factors.

- Priority Safety Corridor Audits – Using the results of the data analysis and feedback from the community meetings, a multi-disciplinary team conducted field safety assessments at high collision locations and areas identified at the community meetings along each of the Priority Safety Corridors. The assessment process included driving through each corridor during both the day and evening periods, biking the corridors, and walking the corridors with a focus on locations where fatalities and severe injury crashes occurred and high crash areas.

Draft safety assessments have been developed for each corridor with recommendations focused on engineering measures that would help reduce vehicle speeds, minimize conflicts between vehicles, pedestrians and bicyclists, and create safer and more accessible pedestrian and bicycle facilities. The recommendations range from relatively low-cost items such as trimming trees that may obstruct traffic signal heads, refreshing curb markings, or adding pedestrian yield lines in advance of crosswalks at free right turns; to mid-cost items, such as enhancing a crosswalk with flashing beacons and refuge median islands, installing radar speed feedback signs or buffered bike lanes; to higher-cost improvements, such as installing a new traffic signal, modifying the corner radius at intersections to slow turning vehicles, or installing a median island to slow the speed of vehicles. The safety assessments also include some targeted recommendations for enforcement and traffic safety education.

- Private Sector Data Analytics Partnership – Last year, Microsoft and DataKind initiated a partnership to support Vision Zero goals through the use of data science. DataKind is a global non-profit organization that aims to harness the power of data science in the service of humanity. San Jose has recently been selected, along with Seattle and New Orleans, as one of three cities across the nation that DataKind will support, in addition to their current efforts in New York City. The work with DataKind will provide for more advanced analytics of San Jose traffic crash data to evaluate the most common types of crashes and their pattern of occurrence, determine contributing factors, and any trends relative to a variety of factors, including street geometry, behaviors of individuals involved, and demographics. The data analytics will incorporate 2015 traffic crashes to provide for analysis of any new data trends.
- FHWA Resource Center – The Federal Highway Administration Resource Center has a technical service team that provides assistance and guidance to cities on safety analysis tools and countermeasures, training, and data analysis. DOT staff has commenced discussions

Figure 2. Priority Safety Corridors



with FHWA staff, sharing information about San Jose's Vision Zero plan and intends to take advantage of the training and assistance.

- University of California (Berkeley) Complete Streets Safety Assessment – The Technology Transfer Program of the Institute of Transportation Studies at the University of California, Berkeley offers free technical assistance to local agencies as part of their Complete Streets Safety Assessment program. The primary objectives of the assessments are: 1) to improve safety for all modes of travel in a city or county, with emphasis on pedestrian and bicycle safety, 2) to create safe, comfortable, accessible, and welcoming environments for all road users, and 3) to enhance the walkability, bikeability, and economic vitality of local districts. DOT's application to the program for assistance with analysis on one or more of the Priority Safety Corridors was recently accepted. The technical assistance program will include targeted field assessments and a report summarizing their key findings and suggestions.

Engineering – Design Guides and Projects that Improve Safety

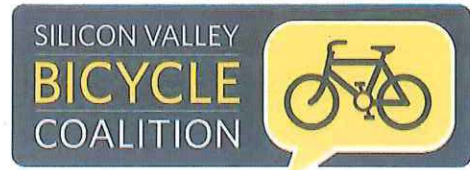
The Safety Audit Team will finalize recommendations for each of the 14 Priority Safety Corridors this spring. Although the corridors represent only 3% of the City's transportation network, they collectively comprise over 64 miles of roadway. Once the corridor recommendations are finalized, the Safety Audit Team will begin the process of prioritizing the implementation of various projects. Factors that will be considered include: anticipated safety benefits, cost and timeline to implement, and availability of resources. To the extent possible, DOT will align the delivery of the Traffic Capital Program to safety projects on the Priority Safety Corridors, especially on projects that will improve pedestrian and bicycle safety and mobility. The team will also initiate development of project scopes for safety projects in preparation for potential grant submittals.

- Complete Street Design Guidelines – DOT is in the final stages of developing a Complete Streets Design Guideline that incorporates progressive standards and will serve as a comprehensive set of street design guidelines for how San Jose builds and retrofits streets. Complete Streets principles will provide guidelines for the design and implementation of streets safe for all modes of travel, in support of Vision Zero strategies.

Education/Engagement – Build Awareness through Information and Outreach

Public education and engagement can be effective in changing behavior. To have sustained impact on building awareness of the need for a culture of "Safety First", and ultimately achieving results with changed behaviors will take significant ongoing efforts. To achieve optimal impact, education campaigns should be coordinated with targeted enforcement and community engagement. Although the City is not currently resourced to implement a campaign at the level that would be necessary to affect significant behavior change, as described below, staff has initiated efforts to build awareness of Vision Zero safety goals, and the need for all roadway users to prioritize street safety. Having a "Safety First" campaign at the State and/or national level targeting the most common behaviors that result in fatalities and severe injuries would support local efforts to build awareness of the importance of transportation safety.

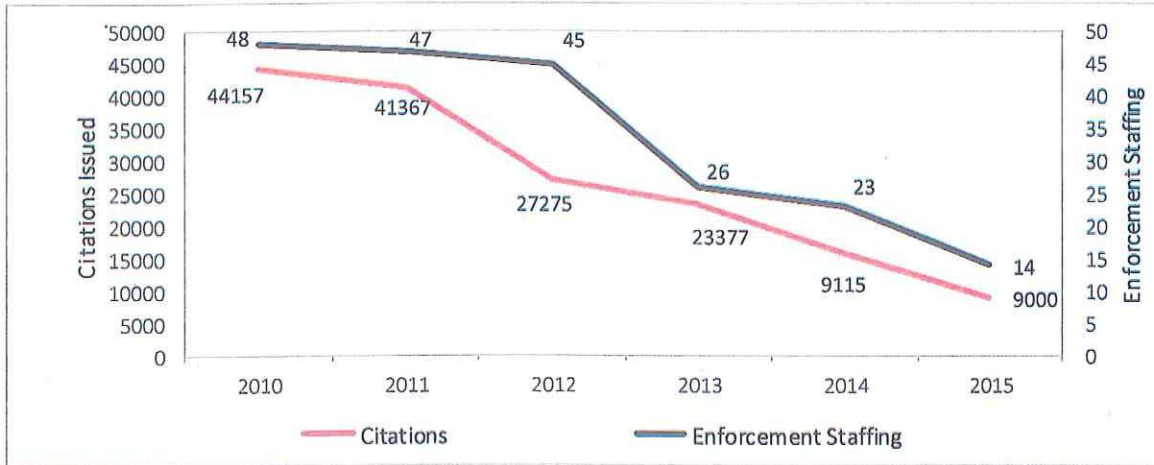
- California Walks and SVBC – In 2015, the City of San Jose received a Partnerships to Improve Community Health (PICH) grant. Programs under PICH aim to increase access to opportunities for physical activity and active transportation. With the PICH grant, DOT entered into a unique services agreement with California Walks and the Silicon Valley Bicycle Coalition (SVBC) to develop and implement an outreach program to engage the community in the development and prioritization of Vision Zero safety initiatives. California Walks and SVBC also joined DOT staff on the Vision Zero corridor safety audits including developing a standard template for the audits. California Walks and SVBC will be spreading the message on Vision Zero through community outreach events, providing traffic safety education, and assisting DOT in developing a two-year action plan for Vision Zero implementation. This two-year action plan will outline efforts to make streets safer for active transportation through physical changes, as well as community education and behavior change. Additionally, through the PICH grant, San Jose is developing a set of outreach materials to be used in conjunction with the community events. Outreach materials funded by the grant will include brochures and event banners. Staff is also evaluating the feasibility (cost-benefit) of streetlight safety banners on the Priority Safety Corridors.
- VZSJ Website – A Vision Zero website has recently been launched (www.visionzerosj.org). The website provides information about *Vision Zero San Jose* including the Priority Safety Corridors, the Four E's (Evaluation, Engineering, Education, and Enforcement), resources including annual safety reports and links to related programs, partner organizations, an event calendar, and how the community can be more involved. Later this Spring, the website will also feature an interactive map providing information about projects that have been implemented and that are planned, as well as traffic crash data.



Enforcement – Change Poor Behavior through Targeted Deployment and Technology

- Strategic Deployment of Traffic Enforcement Resources – As highlighted in the graph on the following page, staffing in the Police Department Traffic Enforcement Unit (TEU) has declined 70% over the past five years, with a corresponding decrease in moving violations issued citywide over this time period. To optimize the impact of the limited TEU resources, over the past year the unit has shifted more to a data driven approach by deploying officers to the highest crash locations in the City; including all of the Priority Safety Corridors. The City Manager's Data Analytics Team also recently provided TEU with detailed information regarding the intersections on the Priority Safety Corridors with the highest incidence of injury collisions, the top violations that occur at these intersections, and the time of day when crashes are most prevalent. This information will further assist TEU with optimizing the deployment of their resources.

Figure 3. Decrease in Enforcement Staffing and Citation Issuance



The Police Department has evaluated opportunities to deploy more officers to TEU to provide more enforcement coverage. Given the high level of vacancies in patrol staffing, doing so is not currently possible given the high overall vacancy rate in the department. Deploying more officers to traffic enforcement would further increase the vacancies in patrol staffing and impact the Police Department's response to 911 calls and serious crimes.

Notwithstanding the current staffing limitations, the Police Department is making efforts to increase the presence of traffic enforcement in San Jose by deploying patrol officers on an overtime basis. Similar to the data approach being taken by TEU, overtime patrol officers are focusing on high crash areas. Additionally, the Police Department will be providing lidar speed gun certification training to 15-20 patrol officers in the use of these devices. The first certification training is scheduled for this Spring, with additional training planned to be provided on a semi-annual basis. Once trained, patrol officers will use available lidar speed guns to provide supplemental enforcement when possible. Fifty-six lidar speed guns are currently available for use by patrol officers due to the reduction in TEU staffing.

- Feasibility of Automated Red Light Running Program – A red light running violation occurs when a vehicle crosses the established limit line at an intersection after the traffic signal turns red. Vehicles that are in the intersection when the light turns red are not in violation. The use of automated red light camera (RLC) equipment to enforce red light running at intersections is authorized in California. The California Vehicle Code (CVC) specifies the process and criteria that local agencies must use to establish and operate a RLC program. During 2009 and 2010, DOT and the Police Department actively explored the feasibility of a pilot RLC program in San Jose, which would have required hiring a RLC vendor, and involved a significant allocation of resources. Due to the budget limitations at the time to provide for the upfront program costs, primarily consisting of the contract with a vendor to supply RLC equipment and to process violation notices, and the limited staffing in both departments to implement and manage a major new program, the pilot RLC program was not implemented. In addition, at the time, there were several bills and fees proposed in the

technologies, such as front crash prevention, lane departure warning, blind spot detection, pedestrian detection, and electronic stability control can assist the driver with warnings or automatic braking to help avoid or mitigate a crash.

The City's Transportation Innovation Zone (TIZ) and Demonstration Partnership Policy provide opportunities to test advancements in technology that may contribute to improved roadway safety. Current efforts include developing an agreement with Cisco Systems to evaluate Direct Short-Range Communication (DSRC) devices in the TIZ. Possible benefits of DSRC include improved traffic safety through V2V communications. Another project involves an upcoming study led by Connected Signals on the potential fuel and safety advantages of making real-time, predictive, traffic signal information available to drivers.

B. Ongoing Safety Programs and Projects

Highlighted below are a variety of traffic safety programs and projects managed by DOT or the Police Department, with a focus on safety and mobility of school children, and improved pedestrian safety on major roadways. To maximize the delivery of traffic safety measures, both departments actively pursue grant funds. For example, over the past five years, DOT has received approximately \$30 million through various grants, including over \$16 million from the One Bay Area Grant (OBAG), to implement projects and programs that focus on improving traffic safety and enhancing pedestrian and bicyclist mobility.

Walk n' Roll San Jose – The City's "Walk n' Roll" program is currently working with 53 elementary and middle schools to encourage walking and bicycling – increasing the number of children who walk or bike to school by at least 20%. Many of these schools have monthly or weekly walk to school events, with an average of 8,100 students participating.



Traffic Safety Education – In 2015, nearly 41,000 school children received traffic safety education via assemblies, special events, and bicycle rodeos. This includes approximately 1,300 children who received and were fitted with free bicycle helmets. This past year, education



events were expanded to include programs at various libraries throughout the City, and at venues providing services to the homeless. Additionally, nearly 1,900 school parents attended traffic safety presentations with a focus on school safety; and traffic safety education was provided to over 2,800 senior residents, at various senior and community centers, with a focus on pedestrian safety.

Parking Compliance – DOT Parking and Traffic Control Officers (PTCOs) support safe school drop-off and pick-up activities through the issuance of warnings, and citations if necessary to gain compliance. PTCOs visit schools throughout the City based on requests from the school community and levels of non-compliance.

Adult School Crossing Guard (ACG) – The Police Department’s School Safety and Education Unit manages the ACG program, providing 271 part-time crossing guards that staff 121 intersections in San Jose.

Crosswalk Enhancements – The 2016-20 Traffic CIP includes \$1.4 million annually to enhance pedestrian crossings on major roadways. Attachment B highlights the locations that have been enhanced or selected for enhancement with funding allocated in the past two years. Selected projects were coordinated with Council Offices and based on pedestrian activity, proximity to pedestrian generators, crash activity, and unique roadway geometry.



Enhanced Pedestrian Crossing on Quimby Rd at Balardo Way

Traffic Calming – The streamlined Traffic Calming that was continued into 2015-16 is focused on neighborhood speeding concerns and school area traffic safety. DOT has worked with



Road Humps on Avenida Rotella

Council Offices to identify priority neighborhoods or schools where speeding or pedestrian safety is a concern. Attachment B identifies projects that have been constructed in the past two years.

Radar Speed Display Signs – Radar signs can be effective at slowing traffic by making drivers aware when they are driving faster than the posted speed limit. Attachment B identifies the roadways that have been enhanced in the past two years with radar signs. All of these locations are on major roadways where the posted speed limit transitions from a higher speed to a lower speed, and/or where the roadway geometry or topography contributes to higher speeds. An additional five signs can be installed with the remaining funding that has been budgeted for radar signs. Staff intends to install the signs on some of the Priority Safety Corridors.



Traffic Signal Installations/Modifications – The 2016-20 Traffic CIP includes \$1.0 million annually to enhance pedestrian crossings on major roadways. Funds have been used to provide left turn phasing, and to improve pedestrian mobility at existing traffic signals. Additionally, through various grant funds that have been obtained, another 16 signal improvement locations have been funded. Some of the CIP signal budget has been used to augment funding for various grant projects that are installing new or modifying existing traffic signals. Attachment B identifies the signalized intersections that have been improved over the past two years.

LED “Smart” Streetlights – To date, approximately 23,500 of San Jose’s streetlights have been retrofitted with a “smart” LED streetlight monitoring and control system. The “smart” streetlights use less energy, require less maintenance, and improve visibility. A majority of the LED streetlight retrofits have occurred on the major roadway network, including a majority of the Vision Zero Priority Safety Corridors; providing a brighter, white light on these higher volume streets during evening hours. In August 2015, the City released the Innovative LED Streetlight RFP providing an opportunity for the private sector to partner with the City to convert the approximate 40,500 remaining streetlights to LED technology. Proposals have been recently submitted and are currently being reviewed by the City Manager’s Office.

Stop Sign Policy – Council Policy 8-1 Criteria for the Installation of Stop Signs establishes the criteria that should be used to determine if a stop sign should be considered for installation in San Jose. Council Policy 8-1 was last updated in 2001. DOT staff is benchmarking and analyzing criteria used by other local agencies to warrant the installation of stop signs. Of interest is the varying criteria that other cities apply to local lower volume, lower speed neighborhood streets vs. major roadways. Staff is evaluating the applicability of criteria used by other agencies relative to San Jose streets, and will bring forward any proposed changes to Council Policy 8-1 to the City Council for review.

COORDINATION

This report has been coordinated with the Police Department and the City Attorney’s Office.

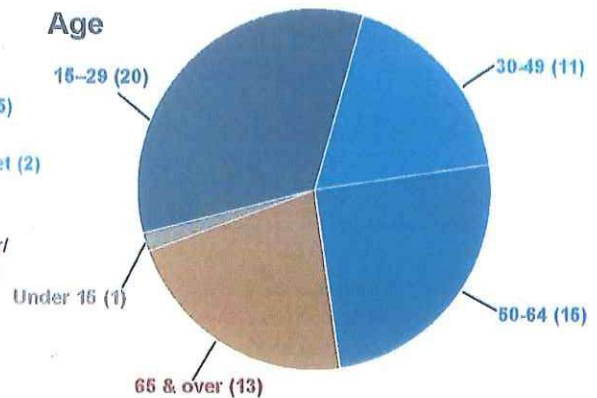
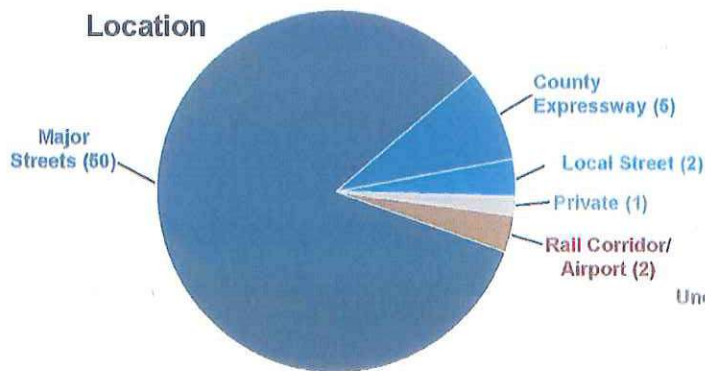
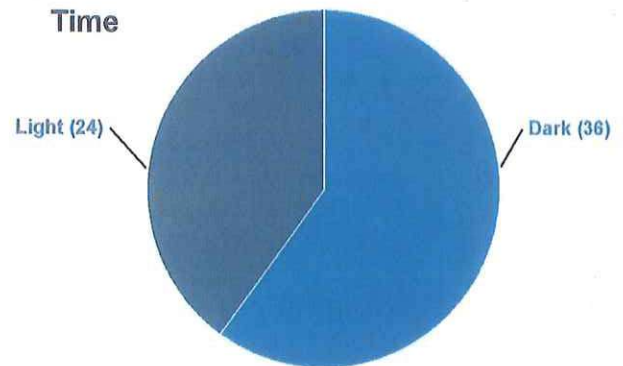
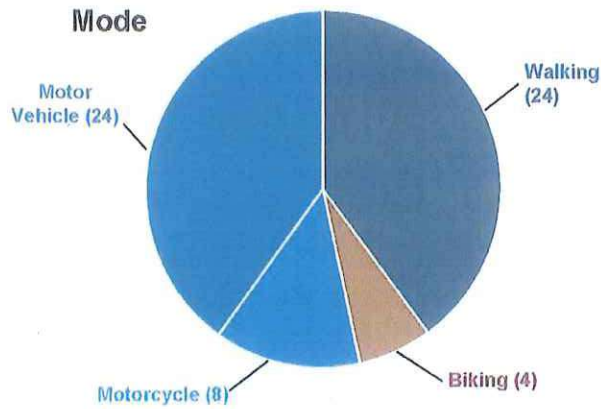
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Jim Ortbal
Director of Transportation

For questions please contact Laura Wells, Deputy Director for Transportation Safety, Operations and Parking, at 408-975-3725.

Attachments: A – 2015 Traffic Fatality Data
B – Transportation System Safety Projects

2015 Traffic Fatality Data



Key Conclusions

- 92% (55) of all fatalities occurred on major roadways, with the remaining 8% split between local roads (2), private property (1), VTA tracks (1) and the Airport (1)
- 60% of all fatalities occurred during evening hours
- 46% of pedestrian fatalities occurred mid-block on major roadways
- 42% of fatalities involved drivers/motorcyclists that were speeding or that lost control of their vehicle
- 25% of fatalities involved solo vehicles or motorcycles
- 22% of all fatalities involved drivers, bicyclists or pedestrians traveling impaired

TRANSPORTATION SYSTEM SAFETY PROJECTS

Pedestrian Enhancement Projects

Includes: Flashing beacons, chokers/median islands, and ADA ramps

Completed Projects (2014-15, 2015-16)

1. Camden Ave & Via Valiente (CD10)
2. D'Amico Dr & Lamond Ct (CD8), grant funded
3. Doyle Rd & Priscilla Dr (CD1)
4. East Hills Dr & Mahoney Av (CD5), grant funded
5. Flint Av & Holderman Dr (CD8), grant funded
6. Fourth St & Paseo de San Antonio (CD3)
7. Great Oaks Pkwy & Endicott Blvd (CD2)
8. Lean Ave & Belden Dr (CD2)
9. Meridian Ave & Willowbrae Ave (CD6)
10. Miller Ave & Dial Way (CD1)
11. Morrill Ave & Cataldi Dr (CD4)
12. Pearl Ave & Mountcastle Way (CD9)
13. Quimby Rd & Balardo Way (CD8)
14. Ridder Park Dr & Fox Dr (CD4), privately funded
15. Senter Rd & Singleton Rd (CD7)
16. Seventh St & Humboldt St (CD3), privately funded
17. Snell Ave & Choctaw Dr (CD10)
18. Story Rd & Lancelot Ln (CD5)
19. San Carlos St & Brooklyn Av (CD6)
20. Tenth St & Humboldt St (CD3), privately funded
21. Third St & Paseo de San Antonio (CD3)
22. 13th St & Mission St. (CD3)
23. Union Ave & Cambrianna Dr (CD9)
24. White Rd & Madeline Dr (CD5)
25. Yancy Dr & Mt. Isabel Dr (CD8), grant funded

Note: Another 13 projects are programed for construction by the end of 2016.

Traffic Calming Projects

Includes: Flashing beacons, chokers/median islands, road humps and/or roadway narrowing

Completed Projects (2014-15, 2015-16)

1. Apple Blossom Dr (CD2)
2. Avenida Rotella (CD2)
3. Bird Ave & Parkside Ave (CD6)
4. Carlton Ave & Kinghurst Dr, Kingwood Way (CD9)
5. Cherry Ave (CD6)
6. Clayton Rd & Mt Pleasant Rd, Harvest Rd (CD5)
7. Forestdale Ave, Jeanne Ave (CD3), grant funded
8. Harwood Rd & Gilda Way, Clovis Ave, Coralee Dr (CD9)
9. Koch Ln & Cottle Ave, Marsha Way (CD9)
10. Mitty Way & Park Meadow Dr (CD1)
11. Piedmont Rd & Whitman Way (CD4)
12. Pine Ave (CD6)
13. Sylvandale Ave & Honolulu Dr (CD7)
14. Thornton Way (CD6), developer funded

Note: Another six projects are programmed for construction by the end of 2016.

Radar Speed Display Signs

Completed Projects (2014-15, 2015-16)

1. Bird Ave, north of Vernon Ave (CD6)
2. Bird Ave, south of Snyder Ave (CD6)
3. Coleman Rd, east of Alvarado Ct (CD10)
4. Pine Ave, east of Coastland Ave (CD6)
5. Yerba Buena Rd, east of Chisin St (CD8)

Note: Another six radar signs are programmed for construction by the end of 2016.

Traffic Signal Projects

Includes: new and modified traffic signals, upgraded signal heads, signal retiming and upgrade of overhead flashing beacons

Completed Projects (2014-15, 2015-16)

1. Cherry Ave & Hillsdale Ave (CD1)
2. Leigh Ave & Dry Creek Rd (CD 6), grant funded
3. Leigh Ave & Moorpark Ave (CD6)
4. Lincoln Ave & Willow Ave (CD6)
5. Miller Ave & Rainbow Dr (CD1)
6. Samaritan Dr & Kinghurst Dr (CD9)

Note: Another six projects are programmed for construction by the end of 2016.