SR 99 Incident Response After-Action Plan

Background

On June 10, 2014 at 1:52 PM, a pickup truck and a passenger car collided on southbound SR 99 (E Marginal Way S), just south of S Spokane St. The SDOT Traffic Management Center (TMC) operator monitoring the Seattle Fire Department 911 feed noted that SFD had dispatched a number of units to the location and began to follow the incident. Once located, SDOT began using Twitter to alert the public (which is followed by West Seattle Blog, KIRO 7, KING 5, KOMO 4, and many other news and traffic outlets), sent an email to those who have signed up for traveler alerts and contacted other interested public agencies including King County Metro and Washington State DOT (WSDOT). At 2:05 PM, SDOT made contact with SPD dispatch (using our protocol at the time). SDOT was informed that southbound SR 99 was going to be shut down at the Battery Street Tunnel. There was not enough information at the time for SPD to provide an estimate of the expected duration of the closure.

SDOT utilized Intelligent Transportation System (ITS) infrastructure like CCTV cameras and electronic message signs to monitor the incident itself, as well as the backups and alternate routes around the city to provide real-time information (travel times, incident related information) to the public. All appropriate electronic message signs were populated with messages informing the public of the SR99 Tunnel/Viaduct closure giving them some time to look for alternate routes. Smart corridors (15th Ave NW, Aurora Ave N, etc.), equipped with traffic responsive capabilities (where signal timing is adjusted automatically based on the volume of vehicles) were monitored and performed well in balancing both the heavy southbound traffic in addition to the heavy northbound traffic which is part of the normal evening commute. The incident concluded at approximately 7:25 PM, with the roadway reopening to its full capacity.

This incident was highly disruptive to the city and demonstrated how delicate the roadway network really is. It was a transformative event that highlighted communications procedural deficiencies that required improvement to better serve the traveling public during such incidents. While understanding that such an incident on a major arterial or freeway will most likely result in significant congestion and travel time delay on the surrounding network, improvements can be made to result in:

- More timely response
- Better communications between SPD and SDOT to address potential traffic impacts

- Better communications with the public regarding the expected duration and impact of the incident
- Communication on alternative routes and modes
- Establishing general traffic detours, while ensuring the safety and security of the incident site
- Better coordination with outside agency partners especially WSDOT and Metro
- Improved traffic management using signal timing plans developed to handle diverted traffic

What Went Well:

- The traffic signal systems equipped with traffic-responsive timing capabilities properly functioned, changing their timing plans to best cope with the traffic demand
- TMC staff posted messages on Dynamic Message Signs throughout the City, warning of the incident
- TMC staff posted Twitter messages and frequent updates, with the best information available from the incident commander in the field

Identified Improvements:

- Improved communications channel between SPD incident commanders in the field and SDOT TMC staff to understand the potential duration of the road closure or lane blockages
- Refined protocol for coordination between SPD incident commanders in the field and SDOT TMC staff in identifying, setting up and operating detours
- Clear communication SOPs across SDOT need to be documented and distributed for both SDOT and SPD staff awareness and application
- Off-hours SOPs for the SDOT TMC for use by SDOT and SPD, while also reinforcing the importance of establishing a 24X7 staffed presence at the SDOT TMC

Actions for Improved Incident Response:

- Complete - Identify critical corridors where coordination is needed
- Complete - Establish internal SDOT processes for notification and managing the incident
- Complete - Operationalize notification protocols between SDOT and SPD
- Ongoing - Expand hours that TMC is operational
- November - Expand TMC to accommodate SPD and other department/agency representatives where appropriate
- November - Determine if additional timing plans can be implemented on key corridors to accommodate incident traffic
- Consistently conduct after-action incident debriefs for Mayor incident
- Develop metrics to monitor performance

SDOT and SPD Early Actions:

SDOT and SPD initiated discussions on actions to improve incident response. Early discussions highlighted:

- The need for 24X7 TMC coverage. SPD operates 24X7 and their processes are uniform at all times; SDOT needs 24/7 coverage for consistent, reliable communication and coordination with SPD
- A map to clarify the corridors where incidents impact traffic. (Attached)
- A consistent procedure for SPD and SDOT after hours maintenance dispatch to use to determine when to initiate contact with the TMC. The current version of the map includes the TMC notification protocols

SPD advocated for a generalized coordination approach applying best practices in emergency management. Every day SPD 9-1-1 staff coordinates with a wide variety of City department operating centers, law enforcement and fire dispatch centers as well as state and federal counterparts. SPD and SDOT reached out to the Office of Emergency Management (OEM). OEM was very supportive of expanding the incident coordination effort to include their department as well as SFD, SCL and SPU.

The closure of SR 99 in August provided an opportunity for SDOT and SPD to test the concept of embedding an SPD Traffic Sergeant in the TMC. Using the tools in the TMC, SPD could identify locations where Traffic Enforcement officers could be deployed to ease congestion. It was very successful and provided both departments experience with how a joint approach to traffic could improve the outcome.

INNOVATIVE APPROACH TO TRAFFIC MANAGEMENT
Planned Closure of SR 99 - August 22-27

An SPD Traffic Sergeant joined WSDOT and SDOT staff in the Traffic Management Center (TMC) which greatly improved SPD communication between SDOT and WSDOT in real time. The presence of the SPD Sergeant in the TMC provided him with an overall picture of the traffic situation and allowed SDOT and WSDOT engineers to communicate with SPD officers in the field in real time.

- Piloted SPD presence in the TMC during the August SR 99 planned closure

Ongoing Improvements:

SDOT and SPD reached out to the Office of Emergency Management (OEM) and the other operations departments within the City, SFD, SCL and SPU. An interdepartmental incident coordination group was formed and is meeting monthly to improve incident coordination and communication.

SDOT has several internal operating units within the department; the TMC, Street Maintenance, Urban Forestry, Traffic Operations (signs and signals) and Roadway Structures. SDOT is developing improved Incident Management SOPs for the TMC and SDOT as a whole.

The interdepartmental incident coordination group identified several tasks to improve incident coordination and response:

- Establish threshold incidents that trigger coordination
- Identify what information needs to be shared
- Determine who needs to be notified for a particular type of incident
- Establish who has responsibility for communications with operations groups
- Establish who has responsibility for communications with the public and elected officials

SDOT and OEM have taken the lead in collecting and compiling this information and reviewing it with the group. It has been combined into a matrix that will be disseminated to staff involved in incident response and communication. The current working draft of the matrix is attached.

Moving Forward:

The TMC is the hub where all of the City's traffic control systems are managed and monitored by a team of SDOT engineers. Located on the 37th floor of the Seattle Municipal tower, the TMC team utilizes signal timing, dynamic message signing and travel time calculating devices and simulations to manage traffic impacts. This team also actively disseminates information to the traveling public via Twitter, electronic message signs and the media (via PIO group notification).

The weekday operating hours of the TMC were extended in January 2014 by 2 hours per day from 6 AM to 7 PM to manage the peak hour impacts more effectively. The TMC does not routinely staff beyond these hours or on weekends except through prior arrangement to manage planned, large events.

There is a four-phase plan to increase TMC response capacity and hours that is now in budget review. A summary of the plan is shown below. The full details are provided in an Attachment.

Phase	Concept	Schedule	Key Elements	Outcomes
1	Improve under current	Sept 2014-Nov 2014	• Improved SPD/WSDOT/Metro	Better response to incidents and pre-planned special

	staff and budget levels		coordination • Strengthen SOPs • Increase off-hours capabilities • Increased special event and pre-planned closure planning and multi-agency coordination • Establish performance measures	events and closures Improved off-hours notification and response Performance measurement to guide future efforts
2	Increase TMC staffing coverage to 16 hrs/day on weekdays and 8 hrs/days on weekends	Nov 2014	• Additional staffing • Leverage new TMC technologies • Continued SOP development	Expansion of hours when high level of TMC response is available
3	Increase TMC staffing coverage to 24X7	Nov 2014-June 2015	• Additional staffing • Complete SOP development	High level of TMC response at all times
4	Integrate TMC staff and space with other SDOT functions	4th Qtr. 2015	• Plan to consolidate value-added functions and staff in a 24X7 TMC • Ongoing SOP improvements	Plan for moving forward, coordinated with other SDOT space and functional needs