Treasure Valley Incident Management Operations Manual and Detour Routes – Update 2017

Existing Conditions Report

Final – May 17, 2017; Updated December 20, 2017

Prepared For:

Community Planning Association of Southwest Idaho (COMPASS)

Prepared By:

McFarland Management, LLC in association with IBI Group

Table of Contents

List of Figures

List of Tables

1. Project Overview

1.1. Background

The existing Treasure Valley Incident Management Operations Manual (IMOM) was published in 2008. It defined directional primary and secondary detour routes for 43 interchanges and intersections throughout the valley (Figure 1-1 illustrates the roads for which detour routes were identified). This resulted in 103 individual detour maps affecting I-84, I-184, and portions of highways 20/26, 21, 44, 55, and 69. The development of the 2008 Manual obtained input from stakeholders incorporating input from these disciplines in multiple agencies: transportation, transit, emergency response, law enforcement, municipalities, and Idaho state communications.

Significant changes in the transportation system, congestion levels, and operational approaches (such as new interchanges, expanded interchanges, road widenings, a new river crossing, and system technology enhancements) suggests the need to revise the Manual and detour routes.

The Community Planning Association of Southwest Idaho (COMPASS) is leading the effort to update the Treasure Valley Incident Management Operations Manual, including the detour routes. This activity is a joint effort by COMPASS, Ada County Highway District (ACHD), and Idaho Transportation Department (ITD); all of whom have contributed funding to accomplish this project. McFarland Management, LLC, in association with IBI Group, was selected (through a competitive bid process) to update the Manual.

1.2. Sample Detour Routes

The detour routes by segment in the 2008 Plan were displayed on maps. The maps included the:

- Section of roadway closed or blocked
- Exits or intersections where traffic was diverted off and then back on the travel path
- Primary and secondary roadways used to temporarily carry the diverted traffic (by direction)

Figure 1-2 illustrates a 2008 sample detour route map pair prepared to detour traffic around a major incident on I-84 between Eagle Road and the Wye, using Overland Road in both directions (east and west).

Figure 1-2. Sample Detour Route on I-84 Between Eagle Road and the Wye

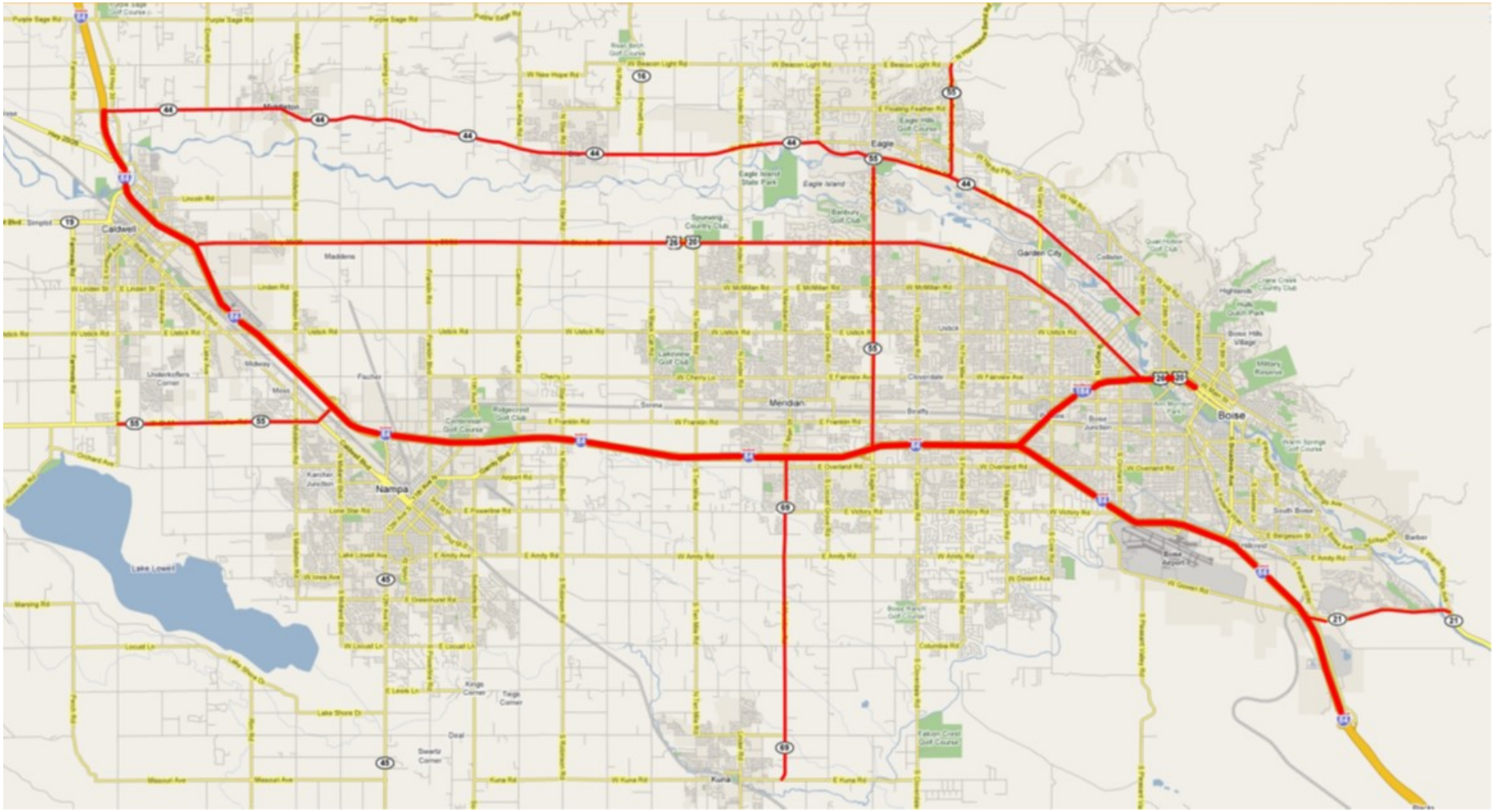

Figure 1-1. 2008 Treasure Valley IMOM Detour Route Roadways

1.3. Purpose

The purpose of this project is to update the 2008 Manual and detour routes. The focus will be to develop a maintainable and sustainable database of detour routes that will be primarily accessed through an electronic web-based tool.

1.4. Stakeholders

The project is implementing a two-tier stakeholder outreach approach. The first tier includes the reinstatement of the Regional Operations Work Group (ROWG) to provide high level guidance and review of deliverables (see Appendix A for membership). The second tier stakeholders include operations representatives from transportation, law enforcement, highway districts, municipalities and others involved in addressing the incidents and implementing the detour routes. Table 1-1 lists the organizations participating.

Table 1-1
Project Stakeholder Organizations Participating

Organization	Organization
Ada County Highway District, Dispatch Center	Federal Highway Administration
Ada County Paramedics	Garden City Police
Ada County Sheriff, Dispatch Center	Golden Gate Highway District
Ada Disaster Services	Idaho Office of Emergency Management
Boise City Planning	Idaho State Police, Dispatch Center
Boise City Police and Fire	Idaho Transportation Dept – Hqtrs
Canyon County Paramedics	Idaho Transportation Dept – District 3
Canyon County Planning	Kuna Fire
Canyon County Sheriff, Dispatch Center	Middleton Fire
Canyon Highway District	Nampa Highway District
City of Caldwell	Notus-Parma Highway District
City of Meridian	State EMS Communications Center
City of Nampa - Transportation	Star Fire
City of Nampa Police, Fire, Dispatch Center	Valley Regional Transit
COMPASS	

Three ROWG meetings are planned to coincide with completion of deliverables in Tasks 1, 2, and 3, respectively. The first meeting will be in mid-April to review the draft Existing Conditions Report and discuss the objectives and requirements of the web-based electronic tool.

Several second-tier stakeholder meetings in Ada and Canyon Counties will be conducted to obtain input on detour route changes and use. Additionally, input will be solicited regarding the need for an electronic tool and what functions that tool needs to deliver. Four such meetings were held in preparation of this document.

1.5. Approach

The detour plan will only be successful if it is embraced by project stakeholders as a valuable management tool. From a technology perspective, the detour plan largely leverages existing Intelligent Transportation System (ITS) equipment; however, implementing the plan requires coordinated action by multiple agencies, and active management of assets operated under

separate jurisdictions. The challenge and opportunity of this project is to achieve buy-in from multiple agencies, mindful of their specific requirements and constraints, to achieve common operations objectives in the freeway corridors. The benefit to this approach is more effective resolution of detours and incidents and a more seamless transportation system.

The project will be accomplished through the execution of the following tasks:

Task 0: Refine Project Workplan

Task 1: Determine Required Changes

Task 2: Prepare Revised Manual

Task 3: Develop New Web-Based Electronic Version of Mapped Detours Routes

Task 0 is complete and the refined project workplan has been accepted by the Project Steering Committee (COMPASS, ACHD, ITD). Task 1 is underway and will culminate in the completion of this Existing Conditions Report. Tasks 2 and 3 will be initiated following the completion of Task 1.

1.6. Other Related Plans

In addition to the 2008 IMOM, there are two other important reference documents, as follows:

Treasure Valley Transportation System: Operations, Management and Intelligent Transportation Systems Plan, 2014, IBI Group and McFarland Management, LLC.

This plan documents the ITS infrastructure throughout the Treasure Valley and identifies an implementation plan of numerous technology projects. Some of the technologies identified in this plan could be used to improve traffic flow and management during detour route execution.

Transportation Incident Management Plan, ITD District 3 Alternate Route Plan, 2008, Idaho Transportation Department.

This plan contains detour routes for all state routes within District 3. This plan was prepared during the same timeframe as the Treasure Valley IMOM and lists many of the same detour routes. Additional detour routes are also available in areas beyond the limits of the Treasure Valley Plan.

1.7. Contents

Following this Introduction, this document contains the remaining content:

- Chapter 2: Summary Findings – summary of input received during stakeholder meetings.
- Chapter 3: Existing ITS Deployments – updated ITS devices and systems used to assist traffic managers in implementing detour routes.
- Chapter 4: Use of Detour Routes – how traffic managers, emergency responders, and management centers use detour routes.
- Chapter 5: Detour Route Suggested Changes – summary of detour route and traffic control changes suggested by the stakeholder groups.
- Chapter 6: Detour Route Electronic Tool Guidance – summary of input received from stakeholders regarding a new detour route electronic tool.
- Chapter 7: Challenges – ongoing challenges that stakeholders will face in maintaining and using the detour routes.

2. Summary Findings

During the initial stakeholder meetings, several incident management and detour routing topics were discussed. This chapter summarizes some of the important observations and findings expressed by the stakeholders during these meetings.

2.1. Detour Route Update Support

Stakeholders expressed strong support for updating the detour routes. Some important reasons cited include improved agency coordination during incidents, addressing planned closures such as major construction projects, focused efforts to actively manage traffic during incidents such as pre-planned sign messages and signal timing plans, improved 911/traffic management center coordination, and facilitating sharing of detour routes to the public (through the media or on existing traveler information websites).

2.2. Traffic Volumes and Congestion

When reviewing the existing detour routes, stakeholders expressed concerns about putting interstate level traffic on already congested roadways – especially during peak travel times. In the past 10 years traffic volumes and levels of congestion have increased significantly. As an example, daily traffic volumes on I-84 at Eagle Road have increased from approximately 90,000 in 2007 to 140,000 today. The I-84 lane capacity has increased in that time and nearby interchanges have been improved; however, this increase is also reflected in increased congestion levels on the nearby major arterials that parallel the Interstate and are often used as detour or complementary routes. This reality influenced the stakeholders to alter many of the 2008 detours to try and accommodate this increase in traffic volumes and congestion.

2.3. Transportation Infrastructure and Traffic Control

As mentioned previously, new and improved transportation infrastructure such as the new Ten Mile Road interchange and many other re-built interchanges have an important impact on how we view detour routes. Also, traffic control infrastructure and management strategies have improved, affecting detour routes. These improvements throughout the Treasure Valley were factors when the stakeholders reviewed the existing detour routes, and in numerous instances dictated changes.

2.4. Use of 2008 Detour Routes

The existing 2008 plan, nearly ten years old, does not reflect the current operational context, roadway network, and supporting ITS infrastructure, and has gradually diminished in its effectiveness as a traffic management tool. Open discussions about the use of the existing 2008 detour routes revealed that, for the most part, they are not being used, in spite of the fact that incident management is a central aspect of the regional operations program. However, there are no formal procedures in place by the stakeholder agencies to implement detour routes.

The original electronic version of the detour routes fell into disrepair and was no longer available. The paper versions of the 2008 IMOM Plan are not available either. Other than the PDF versions of the 2008 detour routes, this project essentially started from scratch to build a new set of usable detour routes.

2.5. Growth Considerations

With anticipation of continued population (and therefore traffic) growth in the Treasure Valley, the stakeholders expressed the need to consider some longer detour routes using less congested

alternative roadways. This perception also inspired suggested changes to the existing detour routes.

2.6. Electronic Tool to Access Detour Routes

The stakeholders unanimously support an electronic tool as the primary method to access the future detour routes. There are many perceived advantages of this approach, including increased accessibility of the plan to management center and field personnel, as well as an enhanced ability to update and maintain the plan over time so that it remains relevant to the region. This approach reflects parallel efforts by COMPASS to improve access and accuracy of other regional transportation information, such as GIS files. Chapter 6 summarizes the input from Stakeholders regarding the nature and use of such a tool.

2.7. Response Planning

Stakeholders expressed the need for incident response planning as a complementary effort to identification of detour routes. The detour plan itself is one element of a coordinated incident response plan that involves coordination of assets and personnel to realize an effective management response. Related operational decisions include:

- When to invoke a particular detour plan (based on location, severity, duration, etc.)
- Who initiates a particular detour plan, and how that action is communicated to other agencies.
- How related operational responses are implemented, such as notification of the traveling public through electronic message signs, 511, and media, or adjustments to traffic signal timing plans on affected routes.
- How and by whom detour routes are de-escalated, and how this information is communicated to other agencies and the public.

Incident response plans could identify the coordinated actions by multi-agency responders during major incidents. Although agencies currently do a good job of coordination, stakeholders believed that the development and documentation of incident response plans, for various scenarios and locations, could improve their ability to effectively balance the needs of those involved in the incident, incident managers, traffic managers, and the traveling public. The development of incident response plans is currently not within the scope of this project, but will be recommended as a future project.

2.8. Plan Updates

It became obvious to the stakeholders while reviewing the 2008 detours that 10 years is too long to wait to update plans such as these. The group indicated a need to review and update the detour routes annually. ITS assets such as signals and cameras shown on the detour maps are expanding continuously, and to a lesser degree changes to the roadway network are ongoing. Additionally, it would be helpful if the electronic tool to facilitate updates with the capability to easily make detour route changes (including modifications or additions/deletions of routes) through the agency personnel that “own” the plan and electronic tools from a maintenance and coordination perspective.

3. Existing ITS Deployments

Over the past 25 years, the Treasure Valley transportation agencies have deployed an extensive array of technologies to help facilitate safe travel within and through the Treasure Valley. Relevant to this project, this has included the following types of Intelligent Transportation Systems Deployments:

- Cameras – providing incident detection and congestion surveillance
- Traffic signal systems (stand alone, coordinated, integrated) – facilitating effective and efficient traffic flow
- Volume and speed detectors – informing traffic flow maps and detecting incidents
- Road weather information systems (RWIS) – providing road weather information
- Variable Message Signs (VMS) – informing travelers of travel advisories en-route via large message boards
- Highway Advisory Radio (HAR) – another means of informing travelers of travel advisories en-route via localized AM radio broadcasts
- Extensive fiber optic infrastructure and networks – facilitating free-flowing data to and from ITS deployed sensors and information dissemination devices
- Transportation management and communications centers – acting as information management and dissemination centers, as well as incident detection and management centers
- Traveler information systems and websites – informing the public of current traffic conditions and congestion hot spots

The content, location, and use of these technologies to enable effective operations management is documented in the *Treasure Valley Transportation System: Operations, Management and ITS Plan* published in 2014. The reader is encouraged to refer to this document for further details. Updated maps displaying these ITS deployments are provided in Appendix B.

Since the 2014 ITS Plan was completed, COMPASS has assumed the role of compiling and maintaining GIS data on regional ITS infrastructure. The goal is to review and update this information with ITS owner agencies on an annual basis to maintain current information.

There is therefore an opportunity to incorporate much more current ITS infrastructure information into the electronic detour plan if the COMPASS GIS data can be incorporated into the electronic tool and updated as-needed by agency staff.

4. Use of Detour Routes

The stakeholders identified the following two types of events that may involve executing detour route(s):

- Planned Event – such as a major construction project or a medium-term closure due to damaged infrastructure (e.g., excessive potholes occurring due to extreme weather, or an overpass being struck by a truck/vehicle).
- Unexpected Incident – a crash or other event that blocks most or all of the roadway for the purpose of removing trucks or other vehicles, providing medical services to the injured, collecting data for later investigate as to the cause of the incident, or to address a hazardous spill.

The agencies potentially involved in one of these events in the Treasure Valley include:

- Management centers
    - 911 centers – receive calls and dispatch resources. Coordinate with other agencies.
        - Ada County Sheriff
        - Canyon County Sheriff
        - City of Nampa (police and fire)
        - Idaho State Police
    - Transportation management centers – monitor transportation network, coordinate with law enforcement/emergency responders regarding incidents, implement traffic management strategies to improve traffic flow, and inform the public.
        - ACHD management center
        - State Communications – under contract to ITD
- Field personnel
    - Transportation maintenance crews (ACHD, ITD, other Highway Districts)
    - Ada County Sheriff officers
    - Canyon County Sheriff officers
    - Idaho State Police officers
    - Local police officers (City of Nampa, Garden City, City of Boise)
    - Local fire department crews
    - Emergency Medical Service (EMS) providers

It should be noted that currently there are no formal procedures in place by the stakeholder agencies for implementing detour routes.

4.1. Planned Events

In the case of detour route being implemented due to a planned event, the implementation of the detour is almost exclusively the responsibility of the transportation agency who is responsible for the roadway. Law enforcement may be called upon to support the activity, but would not manage the detour route execution. Emergency responders would not be involved unless an incident ensued.

Transportation department field personnel would execute the detour route. If signage or other traffic control devices are needed, they would coordinate those resources with personnel inside or outside their organization to ensure the detour operated smoothly. They would also be

responsible for notifying the transportation management centers of the location, type, duration, and other details so that information can be disseminated effectively to the public.

4.2. Unexpected Incidents

In the case of a detour route being implemented because of an unexpected incident, an incident commander from the responsible law enforcement jurisdiction has responsibility for all aspects of the incident. The transportation maintenance crews and traffic managers would support as requested, in most cases execute the detour routes, and provide information to the public with the tools available to them. If EMS is required, they would be dispatched and are on scene to render needed assistance and coordinate medical aid to the injured.

Depending on the location of the incident, the incident commander would likely come from the Idaho State Police, a Sheriff officer, or a local police officer (in that order since the roadway this plan is considering are Interstates and State highways). The incident commander would request the needed support from other law enforcement agencies, EMS, management centers, and transportation agencies. In most cases, the detour route would be executed by the transportation agency or related management center (e.g., ACHD or ITD/State Communications).

The primary focus of emergency management and law enforcement personnel in incident scene command is ensuring safety and rendering assistance as needed. Coordination of traffic impacts caused by incident lane or roadway closures are not actively managed by these incident command personnel. If for example a freeway segment is closed, the primary concern of incident command is to divert traffic onto the upstream off-ramp, *not* to manage traffic once it has left the freeway.

Comprehensive management of incident traffic therefore requires a ‘handoff’ to one of the traffic management centers who can assume responsibility for activation of related traffic management activities such as traveler information or signal timing adjustment. Currently, formal plans to coordinate this “handoff” do not exist.

5. Detour Route Suggested Changes

Each of the 103 existing detour routes were reviewed by the stakeholder groups and changes were suggested to reflect the current conditions in the related areas. Table 5-1 defines the suggested detour route changes. The table provides the 2008 detour route information (segment number, roadway affected, direction of travel, location of blockage, and priority of detour). Additionally, for each of the existing detours, the table identifies the traffic control and detour route changes for inclusion in the 2017 Plan. Examples of suggested changes included (rounding prevents percentages from adding to 100%):

- Updates to traffic control devices only, same detour route (27%)
- Change roadways used as detours to improve traffic flow and avoid congested areas (24%)
- Remove detour routes from Plan and allow local decisions to be made based on conditions and location of the incident. These were located on State Highways that act as major arterials (17%)
- No change in detour route or traffic control devices – the existing detour is the best possible solution (16%)
- Add new detour routes that didn't exist in 2008 (8%)
- Swapping the primary and secondary detour routes (8%)

Table 5-1
Suggested Detour Route Changes

2008 Detour Plan Information					2017 Suggested Changes	
Segment	**Roadway**	**Direction**	**Interchange/Intersection Blockage**	**Priority**	**Traffic Control Changes**	**Detour Route Changes**
1	I-84	Eastbound	Between Hwy 44 and US 20/26 West	Primary	None	None
				Secondary	None	None
		Westbound	Between US 20/26 West and Hwy 44	Primary	None	None
				Secondary	None	None
2	I-84	Eastbound	Between US 20/26 West and Centennial	Primary	Note: there is no traffic signal at Centennial Way and Blaine. The map should reflect this.	None
		Westbound	Between Centennial and US 20/26 West	Primary	None	None
n/a	I-84	Eastbound	Between US 20/26 West and Centennial	Secondary	Add secondary detour	Change route to go west on Hwy 20/26, south on Notus Road, east on Hwy 19, north on Centennial Way to I-84
n/a	I-84	Westbound	Between Centennial and US 20/26 West	Secondary	Add secondary detour	Change route to go west on Centennial Way, west on Hwy 19, north on Notus Road, east on Hwy 20/26 to I-84
3A	I-84	Eastbound	Between Centennial and 10th Ave	Primary	Change signal to stop sign at Centennial and Cleveland Blvd	Centennial Way to Cleveland Blvd, left onto 10th Ave to I-84 on-ramp
				Secondary	Same	Centennial Way, left onto Chicago Street, left onto 10th Ave to I-84 on-ramp.
		Westbound	Between 10th Ave and Centennial	Primary	Same	10th Ave, right onto Blaine Street, merge onto Centennial Way to I-84 on-ramp.
				Secondary	Same	10th Ave, right onto Chicago Street, right onto Centennial Way to I-84 on-ramp.
3B	I-84	Eastbound	Between 10th Ave and Franklin	Primary	Add signals on map at Chicago Street and 21st Street, 21st Street and	10th Ave, left onto Cleveland Blvd, left onto 21st Street, merge onto Franklin Blvd to I-84 on-ramp.

					Franklin Road, and Franklin Road and the I-84 on-ramp.	
				Secondary	Same	10th Ave, left onto Chicago Street, left onto 21st Street, merge onto Franklin Blvd to I-84 on-ramp.
		Westbound	Between Franklin and 10th Ave	Primary	Same	Franklin Road, merge onto 21st Street, right onto Blaine Street, right onto 10th Ave to I-84 on-ramp.
				Secondary	Same	Franklin Road, merge onto 21st Street, right onto Chicago Street, right onto 10th Ave to I-84 on-ramp.
4	I-84	Eastbound	Between Franklin Rd and Karcher Rd	Primary	None	Switch this to secondary detour route
				Secondary	Add signals at the exit ramp and Midland Blvd, Midland and MarketPlace, Midland and St. Lukes, Midland and Cherry, and at Franklin Rd and Smeed Parkway, Franklin Rd and Aviation Way, and at Franklin Rd at the onramp to I-84. Add stop signs at Ustick, Linden, and the railroad crossing. Change the stop sign to a signal on Franklin at Middleton Rd.	Switch this to primary detour route
		Westbound	Between Karcher Rd and Franklin Rd	Primary	Must take exit 33 (eliminating B exit). Otherwise, same as above. Add traffic signal on map at Middleton Rd and Hwy 20/26.	None
				Secondary	None	None
5	I-84	Eastbound	Between Karcher Rd and Northside Blvd	Primary	Add signals on Karcher connector at Karcher Rd, and at Marketplace Blvd	None
				Secondary	None	None

		Westbound	Between Northside Blvd and Karcher Rd	Primary	Same as above	None
				Secondary	None	None
6		Eastbound	Between Northside Blvd and Franklin Blvd	Primary	Add stop sign on Karcher Rd at the railroad crossing. Change the signal to a stop sign on Karcher at Franklin Blvd	None
				Secondary	None	Don't use Garrity Blvd to re-enter I-84. Turn left onto Franklin Blvd from 11th Ave to re-enter I-84 at Franklin.
		Westbound	Between Franklin Blvd and Northside Blvd	Primary	Same as above	None
				Secondary	None	None
7	I-84	Eastbound	Between Franklin Blvd and Garrity Blvd	Primary	Add signals on Garrity Blvd at Flamingo, Stamm, 39th St., Kings Rd, and 16th Ave.	None
				Secondary	Add signals on CanAda Rd at East Gate, Franklin Rd, and Birch Ln. Change signals to stop signs on Franklin Blvd at Birch Ln and Karcher Rd.	None
		Westbound	Between Garrity Blvd and Franklin Blvd	Primary	Same as primary above	None
				Secondary	Same as secondary above	None
8A	I-84	Eastbound	Between Garrity Blvd new Ten Mile interchange	Primary	Add signals on Franklin Rd at Black Cat Rd and 10 mile Rd (both replace stop signs). Add new VMS sign on Ten Mile SB before I-84	Add new detour route to include new Ten Mile interchange and continue to use Franklin Rd.
				Secondary	None	Delete secondary route
		Westbound	Between new Ten Mile interchange and Garrity Blvd	Primary	Same as primary above	Add new detour route to include new Ten Mile interchange and continue to use Franklin Rd.
				Secondary	None	Delete secondary route

8B	I-84	Eastbound	Between new Ten Mile interchange and Meridian Rd	Primary	Add signals: Ten Mile SPUI Ten Mile/Overland Overland/Stoddard Overland/Roaring Springs Meridian/Overland Meridian SPUI	Add new detour route to include new Ten Mile interchange. Change route to use Overland Rd to the south of I-84 instead of Franklin Rd.
				Secondary	Add signals on Meridian Rd at Waltman Ln and Corporate Drive.	Add new detour route to include new Ten Mile interchange. Change route to use use Franklin Rd.
		Westbound	Between Meridian Rd and new Ten Mile interchange	Primary	Same as eastbound primary	Add new detour route to include new Ten Mile interchange. Change route to use Overland Rd as the primary route.
				Secondary	Same as eastbound secondary	Add new detour route to include new Ten Mile interchange. Change the route to use Franklin Rd as the secondary route.
9	I-84	Eastbound	Between Meridian Rd and Eagle Rd	Primary	Add Meridian Rd SPUI signal system	None
				Secondary	Add signals: Meridian SPUI Main/Gem HAWK Franklin/3rd HAWK	None
		Westbound	Between Eagle Rd and Meridian Rd	Primary	Same as eastbound primary	None
				Secondary	Add signals: Meridian SPUI Franklin/3rd HAWK Franklin/Meridian Meridian/Corporate Add VMS Sign south of Corporate before Central.	Due to roadway reconfigurations, continue on Franklin Rd to Meridian Rd and then turn left (do not turn left at Main Street).
10	I-84	Eastbound	Between Eagle Rd and the Wye	Primary	None	None
				Secondary	Add signals: Eagle/I-84 S. ramp Eagle/Overland Eagle/Gold Stone	Change the secondary route to no longer use Franklin Rd, but use Victory Rd to Orchard interchange.

					Eagle/Ridenbaugh Ped/Fire Stat. Eagle/Easy Jet Eagle/Victory Victory/Cloverdale Victory/Five Mile Victory/Maple Grove Victory/Featherly EMS Victory/Trabuco Victory/Saturn HAWK Victory/Cole Victory/Curtis Victory/Orchard/Wright Orchard/I-84 S Ramp	
		Westbound	Between the Wye and Eagle Rd	Primary	None	None
				Secondary	Same as secondary	Change the secondary route to no longer use Franklin Rd, but exit I-84 at the Orchard interchange and use Victory Rd.
11	I-84	Eastbound	Between the Wye and Overland Rd	Primary	Same as #10 eastbound primary	Change the route to exit at Eagle Rd and use Overland to re-enter I-84.
				Secondary	Same as #10 eastbound secondary	Change the route to use Victory to Orchard interchange.
		Westbound	Between Overland Rd and the Wye	Primary	Same as #10 westbound primary	Change the route to use Overland to Eagle Rd.
				Secondary	Same as #10 westbound secondary	Change the route to exit I-84 at Orchard St and use Victory Rd to Eagle Rd.
12	I-84	Eastbound	Between Overland Rd and Orchard Rd	Primary	Add new VMS sign on Cole Road for NB traffic north of Victory	None
				Secondary	Add: Orchard/Hillcrest Ped Xing	None
		Westbound	Between Orchard Rd and Overland Rd	Primary	None	None
				Secondary	Same as secondary	None
13	I-84	Eastbound	Between Orchard Rd and Vista Ave	Primary	Add signals: Orchard/Wright Wright/Vista Vista SPUI	Change route to use Wright St between Orchard and Vista

				Secondary	Add: Orchard/Hillcrest Ped Xing	Change route to use Orchard, to Overland, to Vista then re-enter I-84 (current Primary route)
		Westbound	Between Vista Ave and Orchard Rd	Primary	Same as eastbound primary	Change route to use Wright St between Vista and Orchard
				Secondary	Same as eastbound secondary	Change route to use Vista, to Overland, to Orchard (current Primary route)
14	I-84	Eastbound	Between Vista Ave and Broadway Ave	Primary	Add signals: Gowen/Pleasant Valley Gowen/Farman	No change. Add signage before Orchard St that Airport access is open
				Secondary	Add signals: Broadway SPUI Vista SPUI	None
		Westbound	Between Broadway Ave and Vista Ave	Primary	Same as eastbound primary	No change. Add signage on Orchard St that airport access is available using Wright St from Orchard St.
				Secondary	Same as eastbound secondary	None
15	I-84	Eastbound	Between Broadway Ave and Gowen Rd	Primary	Add signals: Broadway SPUI Gowen/I-84 WB ramp	None
				Secondary	Add signals: Gowen/Pleasant Valley Gowen/Farman	None
		Westbound	Between Gowen Rd and Broadway Ave	Primary	Same as eastbound primary	None
				Secondary	Add signals: Gowen/Pleasant Valley Gowen/Farman Gowen/WB I-84 Ramp	None
16	I-84	Eastbound	Between Gowen Rd and Eisenman Rd	Primary	None	Change route to use Gowen Rd to Eisenman Rd.
				Secondary	Add signals: Federal Way/Tolpmis Gowen/Wb I-84 ramp	Use current Primary route as Secondary.
		Westbound	Between Eisenman Rd and Gowen Rd	Primary	None	Change route to use Eisenman Rd to Gowen Rd.

				Secondary	Same as eastbound secondary	Use current Primary route as Secondary.
17	I-184	Eastbound	Between the Wye and Franklin Rd	Primary	Add signals: Overland/Overland park Overland/Curtis Curtis/Edson HAWK Curtis/Cassia Curtis/Franklin Curtis/Emerald Curtis/St. Al Curtis/I-184 S ramp	Change route to follow Overland Rd east to Curtis Rd, then north on Curtis Rd to I-184.
				Secondary	Add signals: Orchard/I-84 N ramp Orchard/Hillcrest Ped Xing Orchard/Overland Orchard/Clark Orchard/Kootenai Orchard/Cassia Orchard/Franklin Orchard/Morris Hill Orchard/Emerald Orchard/Irving Orchard/Kendall HAWK Chinden/Fairview	Change route to remain on I-84 to Orchard St exit, north on Orchard St. to I-184.
		Westbound	Between Franklin Rd and the Wye	Primary	Add signals: Cole/Westpark Cole/Barrister Cole/Franklin Cole/Gratz Cole/McMullen Cole/I-84 n ramp	Change route to exit I-184 at Exit 1B, turn left onto Cole Rd, follow Cole Rd south to I-84 and enter either direction.
				Secondary	None	None
18	I-184	Eastbound	Between Franklin Rd and Curtis Rd	Primary	Add: Fire signal w/o Allumbaugh	None
				Secondary	Add signals: Cole/Spectrum Cole/Overland Overland/Overland Park Overland/Curtis Curtis/Edson HAWK Curtis/Cassia Curtis/Franklin	Change route to remain on I-84 and exit on Overland Rd, follow Overland Rd east to Curtis Rd, north on Curtis Rd to I-184.

					Curtis/Emerald Curtis/St. AL Curtis/I-184 S ramp	
		Westbound	Between Curtis Rd and Franklin Rd	Primary	Add: Fire signal w/o Allumbaugh	None
				Secondary	Add signals: Curtis/Franklin Curtis/Cassia Curtis/Edson HAWK Curtis/Overland Overland/Overland Park Cole/Overland Cole/I-84 N Ramp	Change route to remain on Curtis Rd south to Overland Rd, then west to I-84. Enter I-84 in either direction.
19	I-184	Eastbound	Between Curtis Rd and Chinden Blvd	Primary	None	Switch this route to Secondary
				Secondary	Add: Orchard/Kendall HAWK	Switch this route to Primary
		Westbound	Between Chinden Blvd and Curtis Rd	Primary	None	None
				Secondary	Add signals: N Ada Fire Signal @ 39th Curtis/I-184 N ramp	None
20	I-184	Eastbound	Between Chinden Blvd and 13th St	Primary	None	None
		Westbound	Between 13th St and Chinden Blvd	Primary	None	None
21	Hwy 20/26	Bi-Directional	Between I-84 and Middleton Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
22	Hwy 20/26	Bi-Directional	Between Middleton Rd and Star Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
23	Hwy 20/26	Bi-Directional	Between Star Rd and Linder Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
24	Hwy 20/26	Bi-Directional	Between Linder Rd and Eagle Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
25	Hwy 20/26	Bi-Directional	Between Eagle Rd and Glenwood St	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	

26	Hwy 20/26	Bi-Directional	Between Glenwood St and Veterans Memorial Parkway	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
27	Hwy 20/26	Bi-Directional	Between Veterans Memorial Parkway and Orchard St	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
28	Hwy 20/26	Eastbound	Between Orchard St to Fairview Ave	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
	Hwy 20/26	Westbound	Between Fairview Ave and Orchard St	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
29	Hwy 21	Bi-Directional	Between Federal Way and Warm Springs Ave	Primary	Add: Federal Way/Lake Forest	None
30	Hwy 44	Bi-Directional	Between I-84 and Old Highway 30	Primary	None	None
31	Hwy 44	Bi-Directional	Between Old Highway 30 and Emmett Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
32	Hwy 44	Bi-Directional	Between Emmett Rd and Middleton Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
33	Hwy 44	Bi-Directional	Between Middleton Rd and Star Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
34	Hwy 44	Bi-Directional	Between Star Rd and Linder Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
35	Hwy 44	Bi-Directional	Between Linder Rd and Eagle Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
36	Hwy 44	Bi-Directional	Between Eagle Rd and Glenwood St	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
37	Hwy 44	Bi-Directional	Between Glenwood St and Veterans Memorial Parkway	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
38	Hwy 55	Bi-Directional	Between 10th Ave and I-84 (at Karcher Rd)	Primary	None	Change route:

						Coming east on Hwy 55 – turn left on Farmway Rd, travel north to Hwy 19 (Simplot Blvd) and turn right, travel east to Centennial and turn left, follow Centennial to I-84. Coming west on I-84 – remain on I-84 and exit on Centennial, go south to Hwy 19 (Simplot Rd) and turn right, turn left on Farmway Rd and travel south to Hwy 55.
39	Hwy 55	Bi-Directional	Between I-84 and Hwy 20/26	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	
40	Hwy 55	Bi-Directional	Between Hwy 20/26 and Hwy 44	Primary	Add signals: State/Bogart State/Ballantyne/Old State State/Eagle island	None
41	Hwy 55	Bi-Directional	Between Hwy 44 and Floating Feather Rd	Primary	None	None
42	Hwy 55	Bi-Directional	Between Floating Feather Rd and Beacon Light Rd	Primary	Add signals: Floating Feather/ Thunderbird HAWK Floating Feather/ Seven Oaks HAWK	None
43	Hwy 69	Bi-Directional	Between I-84 and Kuna Rd	Primary	Remove this segment. Detours in this area will be at the discretion of local law enforcement depending on location and extent of incident.	

6. Detour Route Electronic Tool Stakeholder Input

During the stakeholder meetings, the participants were specifically asked about the detour route electronic tool. Discussion topics included: how to access and display the detour routes, what groups would use the tool, what map base should be used to display the detour routes, how interactive should the map/tool be, should the information be integrated with others systems and why.

This chapter documents the input received by the stakeholders. It should be noted that this input could be viewed as a set of requirements for a detour route electronic tool development. Although this information is a good starting point, it does not represent a full set of tool development requirements. Also, many of the ideas expressed below are beyond the scope and budget of this current project. During tool development requirements identification, an electronic tool will be defined that fits the current budget available and future enhancements will also be identified.

6.1. User Groups

Potential users of the detour routes and electronic tool are described in Chapter 4. It became clear during discussions with stakeholders that the most likely users of this information will be the transportation management agencies and management centers (911 and transportation management centers). The emergency responders and law enforcement believe, that although being aware of the detour routes is important, that during an incident they will be focused on addressing the incident and people involved and will not have the time or the resources to identify and manage the detour routes.

Knowing that the primary users of the tool will likely be transportation management agencies and management centers is important to understand from the standpoint of the electronic tool development approach. It suggests that the tool is more likely a desktop application rather than a mobile application (at least to start). This application can be accessed by mobile devices; however, smartphone applications are not planned as deliverables under this effort.

6.2. Map Base

The 2008 detour routes were developed using a Google Maps base map with detour route lines and other information overlaid. However, the display was not interactive and was just a PDF version of each detour route. Technology has come a long way since then and so has the capabilities and information available on Google Maps. This was one option identified by the stakeholders. They saw the benefits of having additional information such as traffic flow data integrated into the detour route maps, as well as leveraging the continuous effort of these map providers in updating and maintaining the underlying map data, such as roadway network changes. One possibly significant barrier to using Google Maps is the licensing requirements and cost. This will need to be investigated, along with the capacity of participating agencies to support ongoing licensing costs associated with maintaining the tool.

Another map base option expressed was the use of GIS maps. Although not as interactive, it could provide the opportunity to overlay several different types of data that could be useful to decision makers. This approach would likely require new GIS maps to be uploaded into the tool periodically to ensure that the map base remains current with the changing roadway network.

No decision or consensus was reached regarding which map base should be used. This decision will need to be part of the tool development requirements preparation.

6.3. Tool Features (Need to Have)

At the most basic level, the stakeholders said that the detour route electronic tool needed to display the detour route(s) efficiently based on identifying the location of an incident (by direction). The resulting display should provide both primary and secondary routes, if available. They also expressed an interest in it being web-based so it could be accessible anywhere by as many personnel as possible. It would need appropriate level of security with a multi-level permissions based on login. The display should also employ some method of differentiating between directions and primary of secondary routes.

The detour maps generated by the tool should be printable into PDF format so hardcopies can be produced if needed (e.g., for dissemination to media or incident teams).

6.4. Advanced Features (Nice to Have)

The following "nice to have" features were mentioned by the stakeholders:

- Display of field ITS equipment locations such as signals, VMS signs, CCTV, etc. Could toggle layers on and off as needed. As noted earlier, the most accurate and low-cost way to accomplish this capability may be incorporating ITS GIS layers that are actively maintained by COMPASS on behalf of the region.
- Display of real-time traffic flows and/or Waze incident data. This would allow incident managers to see what is going on around the detour routes and help to make decisions based on real-time traffic conditions (e.g., primary or secondary routes). As an interim or fallback solution, traffic management personnel may be able to access a real-time traffic flow map on a parallel screen in the traffic management center, thereby reducing the costs and complexities of integration. Use of a Google-type map base is one method to pull in such information, though as noted earlier this may incur licensing costs.
- Display of landmarks and satellite images, allowing emergency response personnel to reference local landmarks (e.g. businesses) and to see other features in the vicinity of the detour route that may assist with response efforts. Again, use of a Google-type map base may provide this capability.

Even if the above features are not incorporated into the base scope of work, the ease of adding these types of advanced features in a future phase may be a consideration in selecting the preferred detour tool platform.

6.5. Integration with Other Systems

Stakeholders also expressed an interest in integrating the detour routes in Advanced Traffic Management System (ATMS) software and with the 511 traveler information services system and website. Both of these suggestions are out of scope and would need to be considered as a future enhancement.

Both ACHD and ITD have ATMS software. It would be a significant effort to integrate the detour route electronic tool with these systems.

The Idaho statewide 511 traveler information services system is managed by ITD and much of the information management is performed by State Communications under a contract to ITD. The system currently has the ability to either manually draw a detour route in the system or upload a

PDF of a detour route in the traveler advisory message. Integrating the detour route electronic tool would also be a significant effort.

6.6. Tool and Detour Route Updates

To keep the tool and detour routes updated by a Treasure Valley agency, the stakeholders expressed that the tool would need the ability to make updates to the detour routes with minimal technical knowhow and training. Agencies have a preference for using in-house staff to implement periodic updates. These updates could include modifying detour routes, adding or deleting detour routes, adding traffic control or ITS devices, and system administration activities. Providing these capabilities in the tool could also be a significant effort and is currently out of scope. Another key question is the technical capability of the agency in the region that assumes primary responsibility for detour plan maintenance.

6.7. Information Provided to the Media

The stakeholders believe it is very important to get the information about an incident and detour route in effect to the public as quickly as possible and through every means possible. The local media could play an important role to achieve this objective. Many radio and TV stations provide traffic reports in the morning and afternoon peak travel times. Making sure the media has access to the information is critical. This will need to be investigated further and could range from their access to the existing 511 traveler information system to a dedicated feed from one or more of the transportation management centers. The simplest interim approach may be exporting a PDF or image view of a relevant detour that can be emailed to the media or posted on a social media feed.

7. Challenges

This chapter describes potential challenges expressed by the stakeholders in the meetings conducted to review the 2008 Plan and detour routes. Notably, several of these challenges speak to broader issues with how detour and incident management is coordinated in the region, with the detour plan itself being only once component of that multi-faceted endeavor.

7.1. Field Resources

Although the stakeholders saw the advantage in deploying additional field resources when a detour is in effect to help direct traffic, they acknowledged that those resources are seldom available. In most cases, they are working to resolve the incident and get emergency care to the injured. This reality will, in many cases, cause increased congestion and delay on the detour routes.

7.2. Signage

Both permanent and temporary (for longer duration incidents) dynamic message signs can be used to inform the traveling public of an incident or closure ahead. These approaches are used currently and should remain as an effective tool to disseminate information. Some new applications were identified for certain detour routes. (e.g., notice that the Vista interchange is still open for airport access). A careful review of the final detour routes could support the development of pre-defined sign messages under certain conditions and could be integrated into future response plans.

7.3. Traffic Signal Timing Plans

Many of the detour routes have coordinated and integrated signal systems (especially in Ada County) that can be used during major incidents/closures to assist traffic flow on those detour routes. Specific pre-planned timing plans for certain locations have not yet been developed, but were acknowledged by the stakeholders as an important next step. These special signal timing plans could also be integrated into future response plans.

7.4. Electronic Tool Development

The stakeholder input described in Chapter 6 identifies a long list of potential electronic tool requirements. The project budget to develop and build the tool cannot accommodate all the items on the list. A challenge for the project team will be to define a tool that has functionality now to identify and display the appropriate detour given the situation, and identifies a prioritized list of future enhancements to meet the critical remaining unmet needs.

7.5. Ownership of the Detour Route Data and Electronic Tool

To ensure a maintainable and sustainable detour route electronic tool, one of the participating Treasure Valley agencies will need to assume ownership and develop a plan (with funding) to maintain detour route data, host the electronic tool for access by others, and keep the detour routes updated. The stakeholders believe that the ownership of this information and systems will likely need to come from one of the transportation management or planning agencies because they are heaviest users of the information (ITD, ACHD, COMPASS). No decision has been made at the publishing of this document. A decision will be required by the end of this project to ensure the project goals can be met.

7.6. Ensuring Agency Detour Route Use and Coordination

One of the project's success factors will be the use of the detour routes and tool and the increased coordination among the agencies during an incident to implement the detour routes effectively. This will be a challenge mainly because it will involve some new procedures. The owner of the detour routes data and access tool will likely need to also be its champion to promote the benefits, use, and improved coordination.

7.7. Training and Documentation for the Use of the Tool

An important aspect of detour route use expressed by the stakeholders is training regarding the implementation and use of the tool, as well as documentation to support administration and maintenance. In order to have a successful implementation and longer term use of the detour route tool, a training program will need to be developed and executed by the agencies intending to use the tool.

Appendix A
Treasure Valley Regional Operations Work Group Membership

Organization	Name(s)	Phone	Email
Ada County Highway District	Jim Larsen	387-6196	jlarsen@achdidaho.org
	Shawn Martin	387-6154	smartin@achdidaho.org
Ada County Sheriff	Mike Rowe	573-1515	mrowe@adaweb.net
Boise City Fire	Depty Chief Perry Oldenburg		poldenburg@cityofboise.org
Boise City Police	Sgt Tim Fleming	377-6745	tfleming@cityofboise.org
Canyon County Sheriff	Lt. Todd Herrera	454-7451	therrera@canyonco.org
City of Nampa	Jeff Barnes	468-5521	barnesj@cityofnampa.us
	Ken Nutt	468-5717	nuttk@cityofnampa.us
City of Caldwell	Sajonara Tipuric	455-4679	stipuric@cityofcaldwell.org
City of Meridian	Brian McClure	884-5533	bmcclure@meridiancity.org
COMPASS	Liisa Itkonen	475-2241	litkonen@compassidaho.org
	Mary Ann Waldinger	475-2242	mwaldinger@compassidaho.org
Federal Highway Admin	Lance Johnson	334-9180	lance.johnson@dot.gov
Idaho Office of Emergency Mgmt	Brent Larsen		blarson@imd.idaho.gov
Idaho State Police	Matt Smith	884-7364	matt.smith@isp.idaho.gov
Idaho Transportation Dept	Erika Bowen	334-8340	erika.bowen@itd.idaho.gov
	Tony Ernest	344-8836	tony.ernest@itd.idaho.gov
	Nestor Fernandez	334-8495	nestor.fernandez@itd.idaho.gov
State Communications	Chris Loffer	846-7610	lofferc@dhw.idaho.gov
Treasure Valley Transit	Terri Lindenburg	463-9111	terri@treasurevalleytransit.com
Valley Regional Transit	Billy Wingfield	258-2726	bwingfield@valleyregionaltransit.org
McFarland Management	Fred Kitchener	331-0072	fred@mcfarlandmgmt.com
IBI Group	Randy Knapick	503-222-2045	rknapick@ibigroup.com

Appendix B
ITS Deployment Maps

The pages that follow contain updated ITS deployment maps. The data from the *Treasure Valley Transportation System: Operations, Management, and ITS Plan (2014)* was used and updates were incorporated from Ada County Highway District, Idaho Transportation Department, City of Nampa, and City of Caldwell.

The following maps are included:

- Advanced warning beacons
- Bluetooth and detectors
- Conventional pedestrian crossings
- Fire station signals
- Hawk signals ACHD
- Hawk signals Canyon
- Intersection flashing beacons
- Ped crossing yellow beacons
- Rectangular rapid flashing beacons
- Rectangular rapid flashing beacons Nampa
- RWIS and HAR
- School flashers
- Traffic signals_Ada
- Traffic signals_Canyon
- Video cameras
- Variable message signs