Appendix 1
Background Plan Review

DKS Associates
TRANSPORTATION SOLUTIONS

Memorandum

TO:	Cheryl Jarvis-Smith (ODOT), Barry Beyeler (City of Boardman)		
FROM:	Carl Springer, Pam O'Brien		
DATE:	September 18, 2006		
SUBJECT:	Task 1a - Reconnaissance Technical Memorandum	P/A No.	06097-005

This memorandum includes a review of planning documents, policies and regulations applicable to the Interstate Area Management Plan (IAMP) and Transportation System Plan (TSP) Update in the City of Boardman. A review of past plans, maps and studies was conducted to determine key elements that would have an impact on the IAMP and TSP update process for the City of Boardman. The following section summarizes key findings, and provides highlights of the relevant issues from state, county and city planning documents. This background review is useful throughout the IAMP and TSP update projects because it identifies how local plans fit into the larger regional context.

Summary

The Boardman IAMP will address necessary changes to implement practical, workable solutions to protect the function of the interchanges and meet the Transportation Planning Rule (TPR).

As appropriate, key elements of the IAMP will be amended to the Boardman TSP to assure implementation. The IAMP will also attempt to anticipate emerging issues.

Key rules and policies found during the Plan and Document Review include the following:

- Use 1992 Oregon Transportation System Planning Guidelines for overall transportation system planning assistance.
- Strive to be consistent with State access management standards for city streets adjacent to freeway interchanges. Balance the safety and mobility of drivers with the access needs of property and business owners.
- The operating LOS standard for intersections operating on state highways is LOS "C".

Follow the guidance of OHP policies related to:

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- Coordination of land use and transportation planning between the City, County, and the State.
- Off-system improvements, where the State may financially assist local jurisdictions in local road projects that are cost-effective improving conditions on state facilities.
- Alternative modes, recognize city walkways and bikeways (paths, sidewalks, wider shoulders) for transportation alternatives within Boardman.
- Proposed development code language that specifies the kinds of transportation facilities and activities that are permitted in each of the City's land use districts, as well as corresponding, enabling policy language for the Comprehensive Plan.
- Account for the transportation impacts of proposed commercial and residential developments in the city.

The TSP Udate shall address the following:

- Updated street standards and functional classifications.
- Mobility standards for City streets and intersections.
- Document the steps of the TSP update in a matrix to demonstrate TPR compliance.
- Address new TPR requirements (OAR 660-12-0050 and -0055) that direct the amendment of local TSPs when land use plan amendments are proposed.

The following sections summarize the key documents, plans, and regulations that were reviewed to reach the above findings. These are summarized for the State of Oregon, Morrow County, and the City of Boardman.

State of Oregon Planning Documents and Regulations

Oregon Transportation Plan (OTP)

The Oregon Transportation Plan (OTP) sets the general direction for transportation development statewide for the next twenty years and provides overall direction for allocating resources and coordinating modes of transportation. It provides policies to increase livability in the State of Oregon by emphasizing alternative forms of transportation to the single occupant vehicle. The plan seeks to develop public transit, rail lines, bicycling and pedestrian facilities, airports and pipelines, while also emphasizing the maintenance and improvement of highways, roads and bridges. Thus, the plan calls for a transportation system that has a modal balance, is both efficient and accessible, provides connectivity among rural and urban places and between modes, and is environmentally and financially stable.

Oregon Highway Plan (OHP)

The Oregon Highway Plan (OHP) defines policies and investment strategies for Oregon's state highway system for the next 20 years by further refining the goals and policies of the OTP. One of the key goals of the OHP is to maintain and improve safe and efficient movement of people and goods, while supporting statewide, regional, and local economic growth and community livability. The implementation of this goal occurs through a number of policies and actions that guide management and investment decisions by defining a classification system for state highways, setting standards for mobility, employing access management techniques, supporting intermodal connections, encouraging public and private partnerships, addressing the relationship between the highway and land development patterns, and recognizing the responsibility to maintain and enhance environmental and scenic resources.

Specific OHP policies with bearing on transportation planning in Boardman include the following.

Goal 1 (System Definition) includes policies on mobility standards and major improvements, which further define state highway management goals and objectives.

- Policy 1A – State Highway Classification System

  The state highways in Boardman are Interstate 84, classified as an Interstate Highway.

- Policy 1B: Land Use and Transportation

  Land use and transportation planning and development need to be coordinated between state, regional, county, and city agencies.

- Policy 1C: State Highway Freight System

  Balance the need for movement of goods with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck routes.

- Policy 1F: Highway Mobility Standards

  Interstate highways should have a maximum v/c of 0.70 in non-MPO areas.

- Policy 1G: Major Improvements

  Improve system efficiency and management before adding capacity. The first priority is to preserve the existing system. The second priority is to improve the efficiency and capacity of the existing system. Adding capacity to the existing system and adding new facilities can be considered once the first two priorities have been met.

Goal 2 (System Management) jurisdictional coordination to create a seamless transportation system with respect to the development, operation and maintenance of the highway and road system.

- Policy 2A: Partnerships

  The limited resources available for transportation planning and development should be efficiently and effectively used by coordinating the efforts of ODOT and other agencies, in this case the City of Boardman, Morrow County and the Port of Morrow.

- Policy 2B: Off-System Improvements

  The State is to provide financial assistance for local road projects when the projects are cost-effective in improving state facility conditions.

- Policy 2D: Public Involvement

  Offer opportunities for effective public involvement in transportation planning and project development.

- Policy 2F: Traffic safety

  Continually improve the safety for all users of the state transportation system through engineering, education, enforcement, and emergency services.

Goal 3 (Access Management) is critical in transportation planning efforts that involve state transportation facilities. This goal is implemented through OAR 734-051.

Specific OHP policies with bearing on the IAMP in Boardman include the following.

- Policy 3C: Interchange Access Management Areas

  Plan for and manage grade separated interchange area to ensure safe and efficient operation between connecting roadways.

Goal 4 (Travel Alternatives) and Goal 5 (Environmental and Scenic Resources) also apply to the TSP update, if in limited ways. Goal 5, with an aim to go beyond what is required by other state and federal regulations, calls for natural resources to be maintained and even improved by transportation planning and projects involving state facilities.

The only highway of statewide importance that is specifically identified in The Highway Plan in the City of Boardman is:

- Interstate 84, which is classified as a Interstate Highway and Major Freight Route with the primary objective being to provide mobility between urban areas and a secondary objective being to provide mobility for regional trips *within* a metropolitan area. The operations of this facility should be safe and efficient high-speed continuous flow. The maximum volume to capacity ratios for peak hour operating conditions is 0.70.

Oregon Bicycle and Pedestrian Plan

The provision of safe and accessible bicycling and walking facilities in an effort to encourage increased levels of bicycling and walking is the goal of the Oregon Bicycle and Pedestrian Plan. The Plan provides actions that will assist local jurisdictions understand the principals and policies that ODOT follows in providing bikeways and walkways along state highways. In order to reach the plan's objectives, the strategies for system design are outlined, including:

- Providing bikeway and walkway systems that are integrated with other transportation systems.
- Providing a safe and accessible biking and walking environment.
- Development of education programs that improve bicycle and pedestrian safety.

The document includes two sections, including the Policy & Action Plan and the Bikeway & Walkway Planning Design, Maintenance & Safety. The first section contains background information, legal mandates and current conditions, goals, actions and implementation strategies ODOT proposes to improve bicycle and pedestrian transportation. The second section assists ODOT, cities and counties in designing, constructing and maintaining pedestrian and bicycle facilities. Design standards are recommended and information on safety is provided. According to the Plan, bicycle facilities should be considered where the speed of the road is over 25 mph or the Average Daily Traffic is over 3,000 vehicles per day.

The Boardman TSP update will address design standards for all bicycling and pedestrian facilities located in the City of Boardman in accordance with the Oregon Bicycle and Pedestrian Plan. Additionally, needs assessment and possible alignment alternatives will be based on the goals espoused in the Policy and Action section of the Oregon Bicycle and Pedestrian Plan.

Oregon Statewide Planning Goals (OAR 660-015)

The Oregon Statewide Planning Goals provide a foundation for expressing state policy on land use planning. The 19 goals for land use planning in the state are to be achieved through local comprehensive planning. Local comprehensive plans must be consistent with the Statewide Planning Goals.

The Transportation goal (Goal 12) is a safe, convenient, multimodal and economic transportation system. Consideration of local and regional economies, social consequences, environmental impacts, energy, the needs of transportation disadvantaged, and over reliance on a single mode should be included in local plans. Guidelines for planning and implementation are included to support the Statewide Planning Goals.

Oregon Transportation Planning Rule (TPR) (OAR 660-012)

The State of Oregon adopted 19 statewide planning goals that must be implemented in a comprehensive plan for each city (with a population over 10,000 individuals) and county in the state. In addition to identifying how land, air and water resources of each specific jurisdiction will be utilized, a review and needs analysis must be completed for improving public facilities.

One of the 19 goals is the Transportation Planning Rule (Goal 12). To comply with this rule, Boardman must adopt a Transportation System Plan (TSP) that complies with the State TSP. The overarching goals to be accomplished by the TPR are to:

- Reduce dependence on the automobile and the number of people driving alone.
- Establish a stronger connection between land use and transportation planning.

Local TSPs are expected to examine possible land use solutions to transportation problems and identify multi-modal, system management and demand management strategies to address transportation needs. This entails the development of modal plans, including pedestrian, bicycle, motor vehicle and transit. These plans must strive to provide a integrated transportation network and include an inventory of current infrastructure, provide a gap analysis and identify how these gaps are going to be filled. The areas of analysis addressed in the TPR for a transportation system plan include:

- Roadway capacity and level of service
- Transit capacity and capacity utilization
- Bicycle and pedestrian system capacity
- Adjustment of turning movement volumes produced by travel demand forecasting models
- Estimation of future transportation needs (person travel), reflecting:
    - Population and employment forecasts consistent with comprehensive plans
    - Measures to reduce reliance on the automobile
    - Increased residential, commercial and retail development densities
    - Location of neighborhood shopping centers near residential areas
    - Better balance between jobs and housing
    - Maximum parking limits for office and institutional developments
    - Appropriate levels of transportation facilities to serve land uses identified in transportation plans

    - Increases in average automobile occupancy
    - Increases in modal shares of non-automobile modes
    - TDM programs
    - Land use and subdivision regulation
- Estimation of future goods movement
- Access management

These strategies were incorporated into the adopted TSP and will be carried forward in the update.

The Oregon Land Conservation and Development Commission adopted amendments to sections of the TPR – OAR 660-12-0050 and -0055 – in 2005. The amendments clarify planning requirements for amending local TSPs when land use plan amendments are proposed. The TSP update should reflect this new rule requirement.

Oregon Access Management Rule (OAR 734-051)

The purpose of Oregon's Access Management Rule is to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction. In addition, the ability to close existing approaches, set spacing standards and establish a formal appeals process in relation to access issues is also identified.

These rules enable the State to set policy and direct location and spacing of intersections and approaches on state highways, ensuring the relevance of the functional classification system and preserving the efficient operation of state routes.

Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051. These standards do not retroactively apply to interchanges existing prior to adoption of the 1999 Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occurs. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standard.

The access management standards adopted by ODOT state that the distance between an interchange ramp intersection and the first right in/right out access shall be no less than 750 feet. The distance between an interchange ramp intersection and the first full access intersection shall be no less than 1,320 feet. These standards apply to a "fully developed urban interchange" which occurs when 85% or more of the parcels along the frontage are developed at urban densities and have driveways accessing the crossroad.

State Transportation Improvement Program (STIP)

The current adopted (2006-2009) Statewide Transportation Improvement Program (STIP) serves as ODOT's short term capital improvement program and provides funding and scheduling information for transportation projects for both ODOT and the metropolitan planning organizations in the state. Projects funded in the STIP reflect and advance the Oregon Transportation Plan for highways, public transportation, freight and passenger rail and bicycle and pedestrian facilities. Additionally, monies obtained from the sale of state bonds authorized in the 2003 Oregon Transportation Investment Act (OTIA III) and placed in the STIP coffers have been dedicated to modernization, bridge and pavement preservation projects. Therefore, many of the projects in the 2006-2009 STIP are preservation oriented.

The following projects will have an impact on the Boardman transportation system:

- Reconstruct Kunze Road between Main Street and Tower Road. Estimated cost $2.7 Million.
- Widen Columbia Avenue from UP Rail mainline to Port Boundary. Estimated cost $5.85 Million.

Morrow County Planning Documents

Transportation System Plan (TSP)

The Morrow County TSP (2005) provides a framework for addressing the transportation needs of Morrow County over the next 20 years, and works within the framework provided by the related state, regional and local plans. The plan was created through an extensive citizen involvement process and represents the vision and goals of the community. The purpose of the plan is to facilitate multi-modal transportation needs of County citizens with coordination between transportation system improvements and land use requirements.

The plan defines goals and policies, identifies transportation system facilities in the county and suggests recommended improvements. Recommended improvements are based on county profiles, trends, and a detailed needs assessment.

Morrow County projects identified in the TSP include projects from the TSP needs assessment, the Oregon Transportation Plan and the Port of Morrow. The following projects identified in the 10-year Morrow County TSP project list will have an impact on the Boardman transportation system:

Near-Term, High Priority Projects (0-5 years)

- Rebuild and pave shoulders on Laurel Lane from Wilson Road to I-84 (0.8 miles). Estimated cost $80,000.

- Rebuild shoulder and chip seal Miller Lane from Wilson Road to Kunze Lane (0.5 miles). Estimated cost $19,000.

Long-Term Projects (5-20 years)

- Reconstruct and pave Kunze Lane from South Main Street to Olson Road and Olson Road from Kunze Lane to I-84 (2.0 miles total). Estimated cost $900,000.
- Reconstruct and pave Miller Road from Kunze Lane to Wilson Lane (0.5 miles). Estimated cost $250,000).
- Reconstruct and pave Kunze Lane from Olson Road to Miller Road (0.5 miles) Estimated cost $250,000).

Appendix E of the TSP addresses states: "Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051, which are included as Appendix F of the 2005 Morrow County Transportation System Plan Update." OAR 734-051 is described earlier in the text.

City of Boardman Documents

Comprehensive Plan

The Boardman Comprehensive Plan provides a framework for future development by presenting goals and policies in a wide array of subjects related to development, including urbanization, land use, housing, natural and cultural resources, environmental quality, public facilities and services, energy and transportation.

Public involvement policies require public hearings and opportunities for citizen participation during the consideration of amendments to the City's Comprehensive Plan, a requirement that adoption of a TSP update will trigger. Natural resource policies protect habitat and natural systems around the city, the most sensitive areas being associated with the Columbia River and the Umatilla Wild Life Refuge. Transportation planning and projects should minimize impacts to these resources as well as minimize degradation of air, water, and general environmental quality.

The development of the City Center will use the Downtown Plan completed in 2000 as a resource document when guiding future development within the City of Boardman.

Transportation System Plan (TSP)

The adopted 1999 Boardman TSP was developed to provide an extensive review of the transportation system, evaluate deficiencies in the system and plan for future improvements for the area through the year 2020. A key objective of this plan was to achieve a balanced, safe transportation system that meets the needs of all modes of travel, including pedestrians, bicycles, transit, motor vehicles and other modes (e.g. rail, air). The

TSP outlines the City's goals for developing its transportation facilities to meet short and long term needs.

Existing conditions were assessed and future needs through 2020 were determined based on growth assumptions. A master plan for roadway improvements and pedestrian and bicycle system improvements were recommended to meet the city's goals and local performance standards. A summary of the project is shown below (estimated costs are in 1999 dollars):

Near-Term, High Priority Projects (0-5 years)

- Revise traffic control devices and improve pedestrian crossings at South Main Street & Wilson Road intersection. Estimated cost $6,000. (completed)
- Re-stripe Main Street to a 3-lane section and provide pedestrian and bicycle facilities in the Main Street corridor. Estimated cost $200,000. (TE Grant received)
- Construct sidewalk and bicycle lanes along Main Street from I-84 to Marine Drive. Estimated cost $46,000. (completed)

Mid-Term Projects (5-10 years)

- Construct Oregon Trail (including pedestrian and bicycle amenities) along the BPA easement. Estimated cost $162,000.
- Extend Olson Road across I-84. Estimated cost $8-10 Million.
- Construct multi-use path along Marine Drive from Main Street to Olson Road. (complete)
- Construct multi-use path along Columbia Avenue from Main Street to UGB. Estimated cost $56,000.

Long-Term Projects (10-20 years)

- Construct sidewalk and bicycle lanes along Olson Road from Kunze Road to Columbia Avenue. Estimated cost $230,000.

As Appropriate/Concurrent with Local Development

- Reduce reliance on vehicles through zoning and development code revisions.
- Extend NE Boardman Road to Olson Road. Estimated cost $420,000.
- Provide strategic roadway extensions (identified in TSP).
- Promote access management.
- Implement Transportation Demand Management measures.

- Construct sidewalk and/or multi-use path along Boardman Avenue, Front Street, Second Street, Third Street, Wilson Road, and Smith Road.

The TSP also provides funding strategies. The TSP update will consider and incorporate all findings and projects from the adopted TSP that are still relevant in addition to incorporating new projects.

Zoning Code

The City of Boardman Zoning Code specifies zoning and land use including permitted uses, conditional uses, standards and exceptions. The goal of zoning and development codes is to promote general welfare and to implement the Comprehensive Plan for the city. The following zoning designations are made in the City Code:

- Residential (R)
- Multi-Family Residential (MF)
- Manufactured Home Park (MH)
- Future Urban Residential (FU)
- Commercial (C)
- Commercial – Tourist Sub District (C)
- Commercial – City Center Sub District (C)
- Commercial – Service Center Sub District (C)
- Light Industrial (LI)
- General Industrial (GI)
- Port Industrial Sub District (PI)

The zoning code establishes permitted uses and design standards for each of these zones. Parking and loading requirements as well as signage standards are included.

The land near the IAMP study area at the Main Street interchange is zoned mostly commercial. North of I-84, the land is zoned for a mix of land uses. The land near the IAMP study area at the Laurel Avenue interchange is zone Service Center Commercial. The land north of I-84 is zoned General Industrial.

Main Street "Downtown" Development Plan

The Boardman Main Street "Downtown" Development Plan was produced as a result of recommendations from the 1999 TSP. The plan was created through an extensive citizen involvement process and represents the vision and goals of the community. The purpose of

the plan was to examine the TSP recommendation of focusing future commercial development in Boardman in a downtown area south of I-84. The preferred plan locates the commercial area south of I-84 on the west side of Main Street. The findings of the Plan were adopted into a TSP amendment in 2001.

Components of the Main Street "Downtown" Development Plan include:

- Flexible land use plan for the preferred Main Street "Downtown" location.
- Street design standards and Streetscape improvements in the Main Street "Downtown" area.
- Analysis of future traffic in the Main Street "Downtown" area and recommended future roadway improvements.
- Construction cost estimates and potential funding sources

Major Development Plans

There are no major development plans within the City of Boardman at this time.

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Appendix 2
Summary of Stakeholder Interviews

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

A series of stakeholder interviews were conducted at the Boardman city hall over a two-day period. Several additional interviews were done by phone for stakeholders that could not attend the selected days. The summary that follows is a compilation of the responses grouped into the general categories of questions. The initial questions identified on the survey are stated for reference, but, in most cases, the responses were more generalized that detailed replies to each question. The identities of the respondents have been kept confidential.

General

1. What works well today as it relates to traffic access and circulation around the freeway interchange area?
2. Are there any safety or operational issues that you feel need to be addressed through this study?
3. Do you have ideas or specific suggestions about how to address the issues you noted above?

Responses
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. It is a narrow intersection with tight curve radii. The banking feels opposite of what it should be and there is the potential for trucks to tip at high speeds. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign. It is also a tight turn to get onto the westbound on-ramp.
The Laurel Lane/Yates Lane intersection will be difficult to relocate to increase spacing to freeway ramps because of topography – 20-30 foot elevation gain up to BPA power lines. Also, configuration of card-lock station requires unique layout to accommodate long load trucks. Minor congestion is created by drivers who are not familiar with circulation patterns. Wider intersection is needed so trucks turning onto Laurel Lane do not crossover into oncoming traffic.
The current circulation system on Main Street, both north and south of I-84, works pretty well today. The only persistent issue is the lack of vehicle access controls on the retail sites in the south west corner of South Main and South Front Street (i.e., service station, car wash facilities). The absence of curb and sidewalk make it confusing for vehicles and for pedestrians. Vehicles have ingress or egress at any point along the frontage, which causes increased likelihood of conflicts with other motor vehicles and with pedestrians passing through the area.
School traffic is peak during the lunch break, for about one-half hour. It is busier than during the before / after school starts, because there is a relatively high volume of pedestrians traveling to / from local stores. The school has 7 or 8 buses that serve the local community. The school boundary recently added younger classes; so many of the students do not drive cars to the campus, which increases walking trips and bus usage. There should be a traffic light at North Main and Boardman Avenue to handle the school peak activity. Also, their should be another roadway crossing the freeway to allow for shift workers from the industrial area the circulate back to neighborhoods south of I-84. Shift changes about the same time as the high school (and middle school) campus ends. There should be wider sidewalks on the overcrossing to the freeway to better serve the high volume of pedestrians to and from school.
The existing left-turn access on and off of Main Street should not be restricted. This would reduce emergency service response times and adversely impact local businesses. ¼ mile spacing distance is a long way in a small town like Boardman. Please provide examples of other rural communities with these access controls.
The freeway overcrossing at Main Street should be widened. Issues include: 1) limited sight distance for vehicles on off-ramps looking across the bridge for a safe gap due to skewed angle of off-ramps, guard rail and protective fencing, 2) narrow sidewalks for pedestrians, 3) no room for left-turn lanes on Main

Street. Bike facilities on overpass are inadequate – shoulder/fog line is narrow and a drainage grate forces bicycles into travel lane. A dangerous situation if two trucks are passing at the same time. Freeway off-ramps need left and right turn lanes so traffic can pass vehicles/trucks waiting to make left turns. (Multiple respondents)
Need bus service between Boardman and nearby cities for general public.
Marine Drive should be re-paved and sidewalks added near residential and business uses.

Street Design

4. What works well today is it relates to traffic access and circulation around the two freeway interchanges?
5. How do you feel about the city street design standards (lighting, sidewalks, street trees, etc.?)

Responses
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign.
Need to extend sidewalks and curbs on South Main Street with a center turn lane through town. The adopted plan for 10-foot sidewalks on South Main Street are too wide. Should be narrowed to 6 feet, like North Main Street. (Nearly all respondents agreed on this point). 10-foot sidewalks would be more attractive and convenient for pedestrians, but the extra cost of a wider sidewalk should be considered. Local opinion does not share what is perceived as ODOT's vision for Main Street. A main street character, similar to Joseph,OR, with buildings at the edge of the sidewalk and parking behind does not fit Boardman.
A center turn lane on South Main Street should be included with any improvement package. By reducing the current standard from 10 feet to 6 feet (see note above), any extra width should be added to the center turn lane area or the landscaping area.
The street design standard should include safety lighting along Main Street (and any arterial roadways). Improves visibility and safety for pedestrians and bicycles, especially in the winter hours and for school kids. (Multiple respondents)

The existing roundabout in front of city hall was not designed to allow for large fire trucks to traverse it. It should be re-designed to allow for a parallel route to South Main Street, especially if Tatone Street is extended north up to South Front Street.
A new roundabout should be added at Wilson Road and Main Street to handle traffic growth and slow vehicles on Wilson Road. High vehicle speeds on Wilson Road conflicts with pedestrians and bike users within the city limits.
Little annual rainfall. Do not need in-street storm drainage area shown in standard cross-section.

Access and Circulation

6. As properties develop (or re-develop), how should truck and auto access be provided?
7. How do street spacing standards established by the city and ODOT relate to your answer above?
8. Do you foresee any circulation issues associated with Front Street intersections being so close to the freeway ramps at Exit 164? If so, what do you suggest for us to consider in correcting them?

Responses
The parallel street schemes for the Port Interchange and for South Main Street seem to be well conceived. North-south local street should parallel Main Street on either side, and connect at least between Front Street and Oregon Trail Boulevard. This would help reduces conflicts on the main road, and allows access to all the affected properties. Shared access between existing businesses is okay as long as circulation and access is still convenient for all properties. Multiple circulation options is good for economic development. Can BPA powerline easement be used for access roads? (Multiple respondents).
A recent example of where access controls went wrong was the access changes to the Napa Auto Parts store on South Main at City Center Boulevard. Patrons have to cross through adjoining parking lots for other businesses to reach the store. Same is true of shared access for Chevron Station and CND. Access to CND parking lot is difficult.
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign.
Some truckers (from out of the area) get confused by the existing circulation and traffic control pattern around the Port I/C.
Front Street works fine today, but as development occurs, operational and safety issues may become more of an issue. The concept of establishing growth thresholds based on traffic volumes for implementing solutions at the two Main / Front Street intersections would help to ease transitions to the next stages of improvements. (Multiple respondents)
The residential neighborhood north of Wilson Road at the far west end of town is isolated. A local street connection across (either Mt. Adams or Mt. Hood) the refuge area should extend to Kinkade Road, so local traffic and school kids do not need to walk along Wilson Road only. The existing multi-use path on the north side of Wilson Road terminates at Faler Road. It should be extended to Paul Smith Road.
Any left-turn lanes should be limited to striping only. No raised medians should be included, that restrict safe turning and are easily struck by vehicles
Oregon Trail Boulevard should be extended easterly to Olsen Road and westerly through the wildlife refuge to provide a parallel east-west circulation route other than Wilson Road.
The Front Street intersections with Main Street (both north and south) work fine today, and should not be altered.
The planned sidewalk along Laurel Lane at the Port I/C is not needed. A wide shoulder area is enough for pedestrian safety.

Multi-Modal Issues

9. How could the city improve the bicycle and pedestrian access and safety around the freeway interchange?
10. Would you be encouraged to bike around town if there were more bike lanes or other bike amenities?
11. Does large truck parking impact traffic access and circulation near the interchange?

Responses
Overnight parking for large trucks should be limited to those that are patrons at local hotels. Other recurring parking areas should be posted to restrict parking for extended periods. Posted signing should be put up after a city ordinance is passed to address this issue. (Multiple respondents) Truck parking around the freeway is no big deal. Some think parking around North Main Street reflects poorly on the image of the city. As new development comes, it will be an increasing problem. Any truck services added to the city should be at the Port I/C (Exit 165) and not at Main Street. Truck parking facilities should be added to make it more attractive for long-haul truckers to stop in the city and use its services. Mobile food vendors should be required to have a local business license to operate their services. Then they would have to comply with city standards.
The existing painted crosswalk at the car wash lot should be improved to make it safer. A lot of young kids cross at this point. Either at this location or further south at the Oregon Trail intersection to South Main Street. Or both locations. Also suggested that mid-block pedestrian crossing be located within the BPA right-of-way area, since this area will not develop and chance of conflicts with turning vehicles will be minimal. (Multiple respondents)
The only persistent issue is the lack of vehicle access controls on the retail sites in the southwest corner of South Main and South Front Street (i.e., service station, car wash facilities). The absence of curb and sidewalk make it confusing for vehicles and for pedestrians. Vehicles have ingress or egress at any point along the frontage, which causes increased likelihood of conflicts with other motor vehicles and with pedestrians passing through the area. (Multiple respondents)
Pedestrian access to / from the high school is limited for the neighborhood to the northeast. Residential lots are not set up for pathways, and recurring holes are made in backyard fences to make for more direct walking paths. Ultimately, it would be desirable to have an improved walkway through the neighborhood on a more direct route than is available today. School is also considering realigning the existing access onto Columbia Boulevard further east, around the backside of the ball fields to reduce vehicles and pedestrians conflicts between the two sports fields.
Sidewalks should be constructed on both sides of South Main Street. There are no good, safe walking routes for elementary school kids on South Main Street to and from the two schools along Wilson Road. Need continuous sidewalks improvements, and more safe crossings on arterial roads.
The mobile food vendors that locate on South Main Street exacerbate the uncontrolled vehicle access issues. Their location and activities should be considered as a part of any plans to change permanent access along South Main Street.
Needs better pedestrian and bicycle circulation on North Main Street across the railroad tracks to the Marina Park area. North of Columbia Boulevard the

street narrows, and the intersections with Marine Drive is confusing.

Funding

12. How should improvements identified through this plan be funded?
13. Would you be willing to contribute a proportional share to any locally funded portion of the improvements?

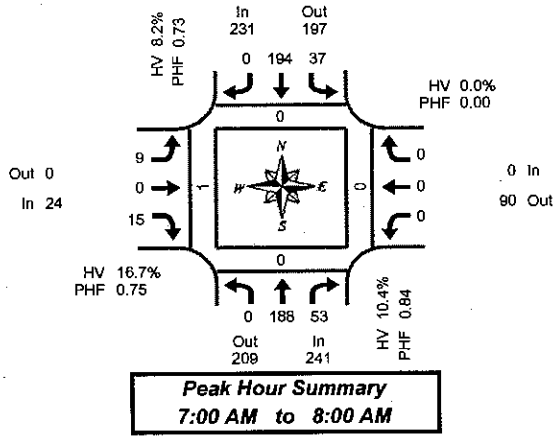
Responses
Any local share of the fund required to facilitate new improvements should be shared across the entire city and not just on the new development, or the existing businesses. There is a broader benefit for the whole community if new commercial uses come into town, and the developer of that site should not be left with the whole burden of off-site improvements, as required by this plan. (Multiple respondents).
New development should share in the cost of required improvements. Most other Oregon cities have system development charges (SDC) for transportation improvements. No reason why Boardman should be different. SDC programs are common in Oregon, but they do not help unless there is growth. Need other funding sources to get improvements built.
If local residents or businesses are going to have new costs for improvements related to development, any funding measure should be put to a general public vote.
New development should pay their way. This is typically in most other Oregon cities.
High growth at the Port of Morrow and the industrial users that are being added there should contribute to the funding of improvements within Boardman that provide them services.
If NASCAR does come to the region, the attractiveness of new commercial business will be much higher. Then a local SDC might work.
If local truck services are provided, an extra truck fee could be charged to offset costs of required improvements.
Boardman has a relatively low average income level, and the community would be sensitive to any new funding or fees required from them.

Appendix 3
Traffic Counts

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Main St & I-84 EB Ramps

Tuesday, September 19, 2006
6:00 AM to 8:00 AM

15-Minute Interval Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
6:00 AM	0	16	10	0	6	8	0	0	0	0	0	0	0	0	0	0	40
6:15 AM	0	36	17	0	4	12	0	0	0	1	0	0	0	0	0	0	70
6:30 AM	0	42	26	0	10	17	0	0	2	0	4	0	0	0	0	0	101
6:45 AM	0	54	17	0	9	17	0	0	0	0	3	0	0	0	0	0	100
7:00 AM	0	50	16	0	9	53	0	0	2	0	6	0	0	0	0	0	136
7:15 AM	0	62	10	0	14	65	0	0	2	0	4	0	0	0	0	0	157
7:30 AM	0	34	13	1	6	37	0	0	2	0	4	0	0	0	0	0	96
7:45 AM	0	42	14	0	8	39	0	0	3	0	1	0	0	0	0	0	107
Total Survey	0	336	123	1	66	248	0	0	11	1	22	0	0	0	0	0	807

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	2
0	0	0	1
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	6

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	241	209	450	1	231	197	428	0	24	0	24	0	0	90	90	0	496
%HV	10.4%				8.2%				16.7%				0.0%				9.7%
PHF	0.84				0.73				0.75				0.00				0.79

Pedestrians Crosswalk			
North	South	East	West
0	0	0	1

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	188	53	241	37	194	0	231	9	0	15	24	0	0	0	0	496
%HV	0.0%	9.0%	15.1%	10.4%	21.6%	5.7%	0.0%	8.2%	11.1%	0.0%	20.0%	16.7%	0.0%	0.0%	0.0%	0.0%	9.7%
PHF	0.00	0.76	0.83	0.84	0.66	0.75	0.00	0.73	0.75	0.00	0.63	0.75	0.00	0.00	0.00	0.00	0.79

Rolling Hour Summary
6:00 AM to 8:00 AM

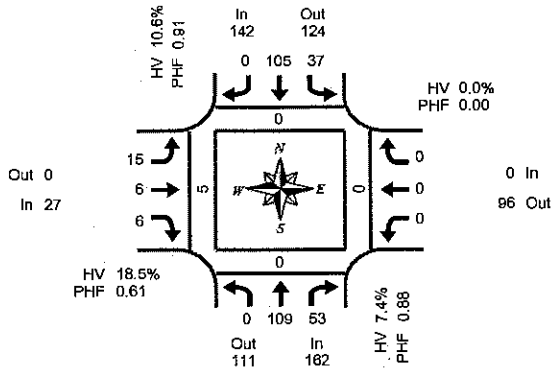
Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
6:00 AM	0	148	70	0	29	54	0	0	2	1	7	0	0	0	0	0	311
6:15 AM	0	182	76	0	32	99	0	0	4	1	13	0	0	0	0	0	407
6:30 AM	0	208	69	0	42	152	0	0	6	0	17	0	0	0	0	0	494
6:45 AM	0	200	56	1	38	172	0	0	6	0	17	0	0	0	0	0	489
7:00 AM	0	188	53	1	37	194	0	0	9	0	15	0	0	0	0	0	496

Pedestrians Crosswalk			
North	South	East	West
0	0	0	5
0	0	0	5
0	0	0	3
0	0	0	3
0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
8:00 AM to 9:00 AM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
8:00 AM to 10:00 AM

15-Minute Interval Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	0	33	13	0	10	27	0	0	1	0	0	0	0	0	0	0	84	0	0	0	1
8:15 AM	0	24	13	0	7	32	0	0	4	1	3	0	0	0	0	0	84	0	0	0	1
8:30 AM	0	28	16	0	7	27	0	1	3	2	2	0	0	0	0	0	85	0	0	0	1
8:45 AM	0	24	11	2	13	19	0	0	7	3	1	0	0	0	0	0	78	0	0	0	2
9:00 AM	0	28	10	0	9	22	0	0	4	0	3	0	0	0	0	0	76	0	0	0	0
9:15 AM	0	29	9	0	13	27	0	1	2	0	3	0	0	0	0	0	83	0	0	0	1
9:30 AM	0	21	10	0	9	24	0	0	2	1	4	0	0	0	0	0	71	0	0	0	0
9:45 AM	0	30	6	0	10	27	0	0	4	0	3	0	0	0	0	0	80	0	0	0	0
Total Survey	0	217	88	2	76	205	0	2	27	7	19	0	0	0	0	0	641	0	0	0	6

Peak Hour Summary
8:00 AM to 9:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	162	111	273	2	142	124	266	1	27	0	27	0	0	96	96	0	331	0	0	0	5
%HV	7.4%				10.6%				18.5%				0.0%				9.7%				
PHF	0.88				0.91				0.61				0.00				0.97				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	109	53	162	37	105	0	142	15	6	6	27	0	0	0	0	331
%HV	0.0%	6.4%	9.4%	7.4%	16.2%	8.6%	0.0%	10.6%	13.3%	50.0%	0.0%	18.5%	0.0%	0.0%	0.0%	0.0%	9.7%
PHF	0.00	0.83	0.83	0.88	0.71	0.82	0.00	0.91	0.54	0.50	0.50	0.61	0.00	0.00	0.00	0.00	0.97

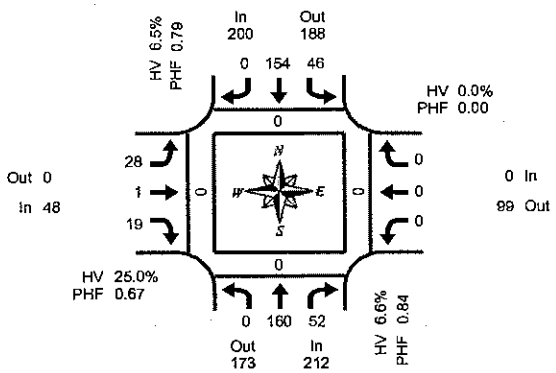
Rolling Hour Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	0	109	53	2	37	105	0	1	15	6	6	0	0	0	0	0	331	0	0	0	5
8:15 AM	0	104	50	2	36	100	0	1	18	6	9	0	0	0	0	0	323	0	0	0	4
8:30 AM	0	109	46	2	42	95	0	2	16	5	9	0	0	0	0	0	322	0	0	0	4
8:45 AM	0	102	40	2	44	92	0	1	15	4	11	0	0	0	0	0	308	0	0	0	3
9:00 AM	0	108	35	0	41	100	0	1	12	1	13	0	0	0	0	0	310	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Main St & I-84 EB Ramps

Tuesday, September 19, 2006
10:00 AM to 12:00 PM

15-Minute Interval Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	0	21	17	0	3	30	0	0	5	0	1	0	0	0	0	0	77	0	0	0	2
10:15 AM	0	31	6	0	12	25	0	0	3	2	6	0	0	0	0	0	85	0	0	0	1
10:30 AM	0	33	11	0	12	31	0	2	4	0	6	0	0	0	0	0	97	0	0	0	0
10:45 AM	0	35	8	0	12	46	0	0	7	0	2	0	0	0	0	0	110	0	0	0	0
11:00 AM	0	42	8	0	13	31	0	0	8	1	2	0	0	0	0	0	105	0	0	0	0
11:15 AM	0	41	12	0	11	32	0	0	4	0	7	0	0	0	0	0	107	0	0	0	0
11:30 AM	0	35	11	0	12	38	0	0	10	0	8	0	0	0	0	0	114	0	0	0	0
11:45 AM	0	42	21	0	10	53	0	0	6	0	2	0	0	0	0	0	134	0	0	0	0
Total Survey	0	280	94	0	85	266	0	2	47	3	34	0	0	0	0	0	829	0	0	0	3

Peak Hour Summary
11:00 AM to 12:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	212	173	385	0	200	188	388	0	48	0	48	0	0	99	99	0	460	0	0	0	0
%HV	6.6%				6.5%				25.0%				0.0%				8.5%				
PHF	0.84				0.79				0.67				0.00				0.86				

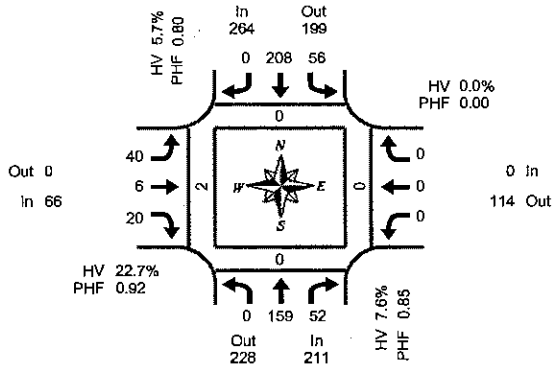
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	160	52	212	46	154	0	200	28	1	19	48	0	0	0	0	460
%HV	0.0%	5.6%	9.6%	6.6%	13.0%	4.5%	0.0%	6.5%	17.9%	#####	31.6%	25.0%	0.0%	0.0%	0.0%	0.0%	8.5%
PHF	0.00	0.95	0.62	0.84	0.88	0.73	0.00	0.79	0.70	0.25	0.59	0.67	0.00	0.00	0.00	0.00	0.86

Rolling Hour Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	0	120	42	0	39	132	0	2	19	2	15	0	0	0	0	0	369	0	0	0	3
10:15 AM	0	141	33	0	49	133	0	2	22	3	16	0	0	0	0	0	397	0	0	0	1
10:30 AM	0	151	39	0	48	140	0	2	23	1	17	0	0	0	0	0	419	0	0	0	0
10:45 AM	0	153	39	0	48	147	0	0	29	1	19	0	0	0	0	0	436	0	0	0	0
11:00 AM	0	160	52	0	46	154	0	0	28	1	19	0	0	0	0	0	460	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
12:00 PM to 1:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
12:00 PM to 2:00 PM

15-Minute Interval Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	0	31	10	0	17	66	0	0	11	1	6	0	0	0	0	0	142	0	0	0	0
12:15 PM	0	52	10	0	13	48	0	0	9	0	6	0	0	0	0	0	138	0	0	0	0
12:30 PM	0	36	14	0	9	46	0	0	9	4	2	0	0	0	0	0	120	0	0	0	2
12:45 PM	0	40	18	2	17	48	0	0	11	1	6	0	0	0	0	0	141	0	0	0	0
1:00 PM	0	41	20	0	11	47	0	0	14	0	6	0	0	0	0	0	139	0	0	0	0
1:15 PM	0	33	11	0	13	39	0	0	11	0	5	0	0	0	0	0	112	0	0	0	0
1:30 PM	0	26	17	0	14	36	0	0	6	1	1	0	0	0	0	0	101	0	0	0	0
1:45 PM	0	31	8	0	13	43	0	0	7	1	4	0	0	0	0	0	107	0	0	0	1
Total Survey	0	290	108	2	107	373	0	0	78	8	36	0	0	0	0	0	1,000	0	0	0	3

Peak Hour Summary
12:00 PM to 1:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	211	228	439	2	264	199	463	0	66	0	66	0	0	114	114	0	541	0	0	0	2
%HV	7.6%				5.7%				22.7%				0.0%				8.5%				
PHF	0.85				0.80				0.92				0.00				0.95				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	159	52	211	56	208	0	264	40	6	20	66	0	0	0	0	541
%HV	0.0%	5.7%	13.5%	7.6%	7.1%	5.3%	0.0%	5.7%	17.5%	66.7%	20.0%	22.7%	0.0%	0.0%	0.0%	0.0%	8.5%
PHF	0.00	0.76	0.72	0.85	0.82	0.79	0.00	0.80	0.91	0.38	0.83	0.92	0.00	0.00	0.00	0.00	0.95

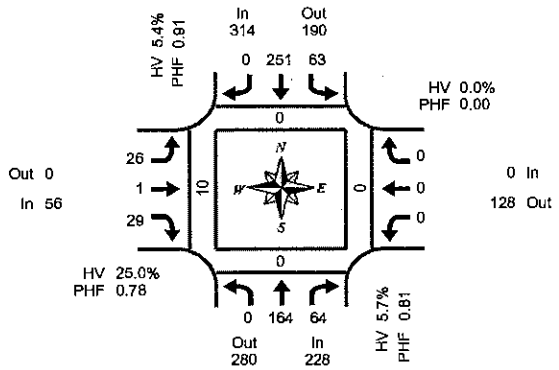
Rolling Hour Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	0	159	52	2	56	208	0	0	40	6	20	0	0	0	0	0	541	0	0	0	2
12:15 PM	0	169	62	2	50	189	0	0	43	5	20	0	0	0	0	0	538	0	0	0	2
12:30 PM	0	150	63	2	50	180	0	0	45	5	19	0	0	0	0	0	512	0	0	0	2
12:45 PM	0	140	66	2	55	170	0	0	42	2	18	0	0	0	0	0	493	0	0	0	0
1:00 PM	0	131	56	0	51	165	0	0	38	2	16	0	0	0	0	0	459	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
3:00 PM to 4:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
2:00 PM to 4:00 PM

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	0	33	14	0	23	55	0	0	9	0	2	0	0	0	0	0	136	0	0	0	1
2:15 PM	0	32	12	0	10	46	0	0	7	0	4	0	0	0	0	0	111	0	0	0	0
2:30 PM	0	47	18	1	8	45	0	0	4	0	8	0	0	0	0	0	130	0	0	0	0
2:45 PM	0	42	11	1	3	29	0	1	5	0	6	0	0	0	0	0	96	0	0	0	0
3:00 PM	0	36	9	0	18	68	0	0	9	1	8	0	0	0	0	0	149	0	0	0	3
3:15 PM	0	36	15	1	19	61	0	0	6	0	5	0	0	0	0	0	142	0	0	0	4
3:30 PM	0	50	20	0	13	60	0	1	6	0	9	0	0	0	0	0	158	0	0	0	2
3:45 PM	0	42	20	0	13	62	0	0	5	0	7	0	0	0	0	0	149	0	0	0	1
Total Survey	0	318	119	3	107	426	0	2	51	1	49	0	0	0	0	0	1,071	0	0	0	11

Peak Hour Summary
3:00 PM to 4:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	228	280	508	1	314	190	504	1	56	0	56	0	0	128	128	0	598	0	0	0	10
%HV	5.7%				5.4%				25.0%				0.0%				7.4%				
PHF	0.81				0.91				0.78				0.00				0.95				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	164	64	228	63	251	0	314	26	1	29	56	0	0	0	0	598
%HV	0.0%	5.5%	6.3%	5.7%	4.8%	5.6%	0.0%	5.4%	19.2%	#####	27.6%	25.0%	0.0%	0.0%	0.0%	0.0%	7.4%
PHF	0.00	0.82	0.80	0.81	0.83	0.92	0.00	0.91	0.72	0.25	0.81	0.78	0.00	0.00	0.00	0.00	0.95

Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	0	154	55	2	44	175	0	1	25	0	20	0	0	0	0	0	473	0	0	0	1
2:15 PM	0	157	50	2	39	188	0	1	25	1	26	0	0	0	0	0	486	0	0	0	3
2:30 PM	0	161	53	3	48	203	0	1	24	1	27	0	0	0	0	0	517	0	0	0	7
2:45 PM	0	164	55	2	53	218	0	2	26	1	28	0	0	0	0	0	545	0	0	0	9
3:00 PM	0	164	64	1	63	251	0	1	26	1	29	0	0	0	0	0	598	0	0	0	10

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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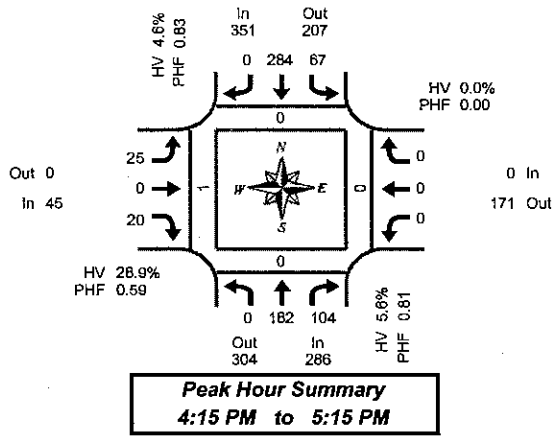


Main St & I-84 EB Ramps

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	43	23	0	15	73	0	0	6	0	7	0	0	0	0	0	167	0	0	0	0
4:15 PM	0	55	33	0	21	61	0	1	4	0	6	0	0	0	0	0	180	0	0	0	1
4:30 PM	0	44	19	0	14	62	0	0	4	0	4	0	0	0	0	0	147	0	0	0	0
4:45 PM	0	49	20	0	11	76	0	0	11	0	8	0	0	0	0	0	175	0	0	0	0
5:00 PM	0	34	32	0	21	85	0	0	6	0	2	0	0	0	0	0	180	0	0	0	0
5:15 PM	0	42	10	0	13	54	0	0	9	0	7	0	0	0	0	0	135	0	0	0	1
5:30 PM	0	44	21	2	11	49	0	0	8	0	6	0	0	0	0	0	139	0	0	0	0
5:45 PM	0	37	18	0	15	87	0	0	7	2	4	0	0	0	0	0	170	0	0	0	0
Total Survey	0	348	176	2	121	547	0	1	55	2	44	0	0	0	0	0	1,293	0	0	0	2

Peak Hour Summary
4:15 PM to 5:15 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	286	304	590	0	351	207	558	1	45	0	45	0	0	171	171	0	682	0	0	0	1
%HV	5.6%				4.6%				28.9%				0.0%				6.6%				
PHF	0.81				0.83				0.59				0.00				0.95				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	182	104	286	67	284	0	351	25	0	20	45	0	0	0	0	682
%HV	0.0%	3.3%	9.6%	5.6%	4.5%	4.6%	0.0%	4.6%	28.0%	0.0%	30.0%	28.9%	0.0%	0.0%	0.0%	0.0%	6.6%
PHF	0.00	0.83	0.79	0.81	0.80	0.84	0.00	0.83	0.57	0.00	0.63	0.59	0.00	0.00	0.00	0.00	0.95

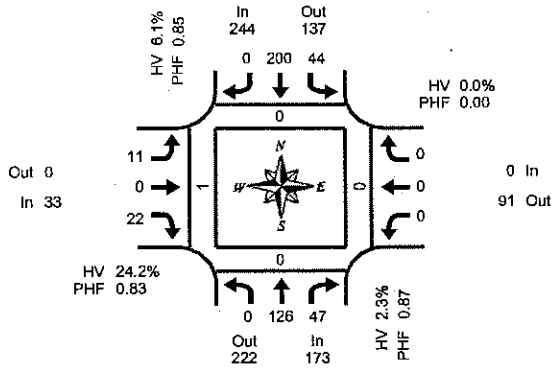
Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	191	95	0	61	272	0	1	25	0	25	0	0	0	0	0	669	0	0	0	1
4:15 PM	0	182	104	0	67	284	0	1	25	0	20	0	0	0	0	0	682	0	0	0	1
4:30 PM	0	169	81	0	59	277	0	0	30	0	21	0	0	0	0	0	637	0	0	0	1
4:45 PM	0	169	83	2	56	264	0	0	34	0	23	0	0	0	0	0	629	0	0	0	1
5:00 PM	0	157	81	2	60	275	0	0	30	2	19	0	0	0	0	0	624	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
6:00 PM to 7:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
6:00 PM to 8:00 PM

15-Minute Interval Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	0	35	15	0	10	62	0	0	4	0	5	0	0	0	0	0	131	0	0	0	0
6:15 PM	0	27	14	0	10	35	0	0	3	0	7	0	0	0	0	0	96	0	0	0	0
6:30 PM	0	33	11	0	10	49	0	0	2	0	3	0	0	0	0	0	108	0	0	0	1
6:45 PM	0	31	7	0	14	54	0	0	2	0	7	0	0	0	0	0	115	0	0	0	0
7:00 PM	0	42	5	0	6	54	0	0	2	0	5	0	0	0	0	0	114	0	0	0	2
7:15 PM	0	35	10	0	14	39	0	0	9	0	4	0	0	0	0	0	111	0	0	0	0
7:30 PM	0	14	9	0	5	42	0	0	5	0	7	0	0	0	0	0	82	0	0	0	0
7:45 PM	0	15	8	0	4	32	0	0	5	0	12	0	0	0	0	0	76	0	0	0	2
Total Survey	0	232	79	0	73	367	0	0	32	0	50	0	0	0	0	0	833	0	0	0	5

Peak Hour Summary
6:00 PM to 7:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	173	222	395	0	244	137	381	0	33	0	33	0	0	91	91	0	450
%HV	2.3%				6.1%				24.2%				0.0%				6.0%
PHF	0.87				0.85				0.83				0.00				0.86

Pedestrians Crosswalk			
North	South	East	West
0	0	0	1

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	126	47	173	44	200	0	244	11	0	22	33	0	0	0	0	450
%HV	0.0%	2.4%	2.1%	2.3%	6.8%	6.0%	0.0%	6.1%	9.1%	0.0%	31.8%	24.2%	0.0%	0.0%	0.0%	0.0%	6.0%
PHF	0.00	0.90	0.78	0.87	0.79	0.81	0.00	0.85	0.69	0.00	0.79	0.83	0.00	0.00	0.00	0.00	0.86

Rolling Hour Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	0	126	47	0	44	200	0	0	11	0	22	0	0	0	0	0	450	0	0	0	1
6:15 PM	0	133	37	0	40	192	0	0	9	0	22	0	0	0	0	0	433	0	0	0	3
6:30 PM	0	141	33	0	44	196	0	0	15	0	19	0	0	0	0	0	448	0	0	0	3
6:45 PM	0	122	31	0	39	189	0	0	18	0	23	0	0	0	0	0	422	0	0	0	2
7:00 PM	0	106	32	0	29	167	0	0	21	0	28	0	0	0	0	0	383	0	0	0	4

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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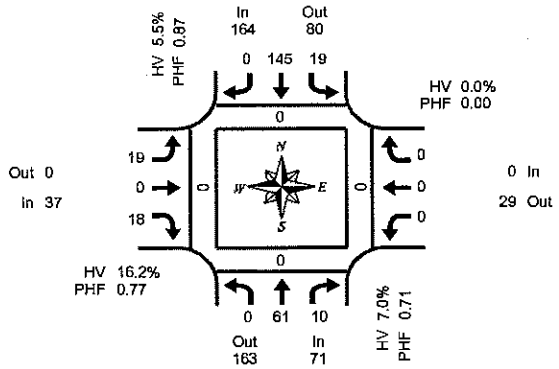

Peak Hour Summary
8:30 PM to 9:30 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
8:00 PM to 10:00 PM

15-Minute Interval Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	0	9	3	0	5	35	0	0	2	0	6	0	0	0	0	0	60	0	0	0	2
8:15 PM	0	12	10	0	5	26	0	0	3	0	9	0	0	0	0	0	65	0	0	0	0
8:30 PM	0	20	5	0	4	43	0	0	5	0	5	0	0	0	0	0	82	0	0	0	0
8:45 PM	0	12	4	0	7	29	0	0	6	0	3	0	0	0	0	0	61	0	0	0	0
9:00 PM	0	10	0	0	3	38	0	0	6	0	6	0	0	0	0	0	63	0	0	0	0
9:15 PM	0	19	1	0	5	35	0	0	2	0	4	0	0	0	0	0	66	0	0	0	0
9:30 PM	0	17	0	0	2	35	0	0	3	0	4	0	0	0	0	0	61	0	0	0	0
9:45 PM	0	19	1	0	6	33	0	0	4	0	2	0	0	0	0	0	65	0	0	0	0
Total Survey	0	118	24	0	37	274	0	0	31	0	39	0	0	0	0	0	523	0	0	0	2

Peak Hour Summary
8:30 PM to 9:30 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	71	163	234	0	164	80	244	0	37	0	37	0	0	29	29	0	272	0	0	0	0
%HV	7.0%				5.5%				16.2%				0.0%				7.4%				
PHF	0.71				0.87				0.77				0.00				0.83				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	61	10	71	19	145	0	164	19	0	18	37	0	0	0	0	272
%HV	0.0%	4.9%	20.0%	7.0%	5.3%	5.5%	0.0%	5.5%	5.3%	0.0%	27.8%	16.2%	0.0%	0.0%	0.0%	0.0%	7.4%
PHF	0.00	0.76	0.50	0.71	0.68	0.84	0.00	0.87	0.79	0.00	0.75	0.77	0.00	0.00	0.00	0.00	0.83

Rolling Hour Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	0	53	22	0	21	133	0	0	16	0	23	0	0	0	0	0	268	0	0	0	2
8:15 PM	0	54	19	0	19	136	0	0	20	0	23	0	0	0	0	0	271	0	0	0	0
8:30 PM	0	61	10	0	19	145	0	0	19	0	18	0	0	0	0	0	272	0	0	0	0
8:45 PM	0	58	5	0	17	137	0	0	17	0	17	0	0	0	0	0	251	0	0	0	0
9:00 PM	0	65	2	0	16	141	0	0	15	0	16	0	0	0	0	0	255	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
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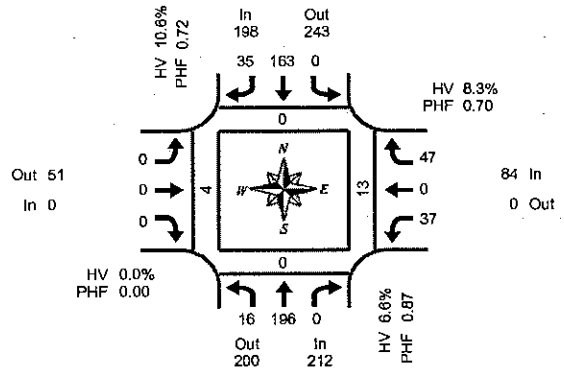

Peak Hour Summary
6:30 AM to 7:30 AM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
6:00 AM to 8:00 AM

15-Minute Interval Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 AM	1	16	0	0	0	11	4	0	0	0	0	0	5	0	5	0	42	0	0	0	0
6:15 AM	11	26	0	0	0	14	17	0	0	0	0	0	4	0	11	0	83	0	0	0	0
6:30 AM	7	37	0	0	0	23	15	0	0	0	0	0	6	0	11	0	99	0	0	8	3
6:45 AM	4	48	0	0	0	19	7	0	0	0	0	0	3	0	8	0	89	0	0	2	1
7:00 AM	3	52	0	0	0	56	9	0	0	0	0	0	10	0	16	0	146	0	0	3	0
7:15 AM	2	59	0	0	0	66	4	0	0	0	0	0	18	0	12	0	160	0	0	0	0
7:30 AM	3	30	0	1	0	26	8	0	0	0	0	0	7	0	8	0	82	0	0	1	0
7:45 AM	5	39	0	0	0	27	1	0	0	0	0	0	21	0	8	0	101	0	0	0	0
Total Survey	36	307	0	1	0	241	65	0	0	0	0	0	74	0	79	0	802	0	0	14	4

Peak Hour Summary
6:30 AM to 7:30 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	212	200	412	0	198	243	441	0	0	51	51	0	84	0	84	0	494	0	0	13	4
%HV	6.6%				10.6%				0.0%				8.3%				8.5%				
PHF	0.87				0.72				0.00				0.70				0.77				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	16	196	0	212	0	163	35	198	0	0	0	0	37	0	47	84	494
%HV	43.8%	3.6%	0.0%	6.6%	0.0%	5.5%	34.3%	10.6%	0.0%	0.0%	0.0%	0.0%	5.4%	0.0%	10.6%	8.3%	8.5%
PHF	0.57	0.83	0.00	0.87	0.00	0.63	0.58	0.72	0.00	0.00	0.00	0.00	0.51	0.00	0.73	0.70	0.77

Rolling Hour Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 AM	23	127	0	0	0	67	43	0	0	0	0	0	18	0	35	0	313	0	0	10	4
6:15 AM	25	163	0	0	0	112	48	0	0	0	0	0	23	0	46	0	417	0	0	13	4
6:30 AM	16	196	0	0	0	163	35	0	0	0	0	0	37	0	47	0	494	0	0	13	4
6:45 AM	12	189	0	1	0	166	28	0	0	0	0	0	38	0	44	0	477	0	0	6	1
7:00 AM	13	180	0	1	0	174	22	0	0	0	0	0	56	0	44	0	489	0	0	4	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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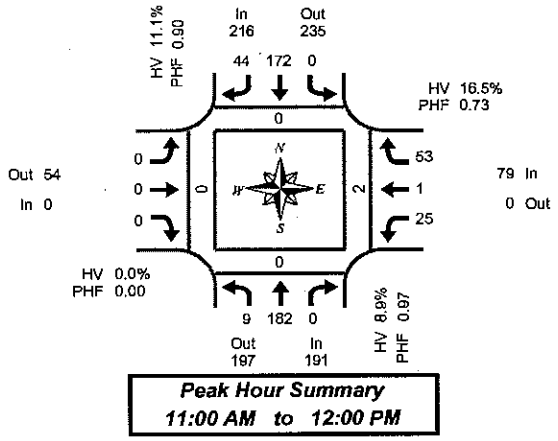


Main St & I-84 WB Ramps

Tuesday, September 19, 2006
10:00 AM to 12:00 PM

15-Minute Interval Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	2	22	0	0	0	28	11	0	0	0	0	0	5	0	13	0	81	0	0	0	0
10:15 AM	2	35	0	0	0	30	7	0	0	0	0	0	5	0	14	0	93	0	0	0	0
10:30 AM	3	32	0	0	0	44	9	2	0	0	0	0	5	0	13	0	106	0	0	0	0
10:45 AM	3	44	0	0	0	51	11	0	0	0	0	0	7	0	17	0	133	0	0	0	0
11:00 AM	3	45	0	0	0	43	11	0	0	0	0	0	4	0	12	0	118	0	0	1	0
11:15 AM	2	47	0	0	0	36	12	0	0	0	0	0	5	0	10	0	112	0	0	1	0
11:30 AM	2	44	0	0	0	41	13	0	0	0	0	0	6	0	15	0	121	0	0	0	0
11:45 AM	2	46	0	0	0	52	8	0	0	0	0	0	10	1	16	0	135	0	0	0	0
Total Survey	19	315	0	0	0	325	62	2	0	0	0	0	47	1	110	0	899	0	0	2	0

Peak Hour Summary
11:00 AM to 12:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	191	197	388	0	216	235	451	0	0	54	54	0	79	0	79	0	486
%HV	8.9%				11.1%				0.0%				16.5%				11.1%
PHF	0.97				0.90				0.00				0.73				0.90

Pedestrians Crosswalk			
North	South	East	West
0	0	2	0

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	9	182	0	191	0	172	44	216	0	0	0	0	25	1	53	79	486
%HV	55.6%	6.6%	0.0%	8.9%	0.0%	5.8%	31.8%	11.1%	0.0%	0.0%	0.0%	0.0%	12.0%	#####	17.0%	16.5%	11.1%
PHF	0.75	0.97	0.00	0.97	0.00	0.83	0.85	0.90	0.00	0.00	0.00	0.00	0.63	0.25	0.83	0.73	0.90

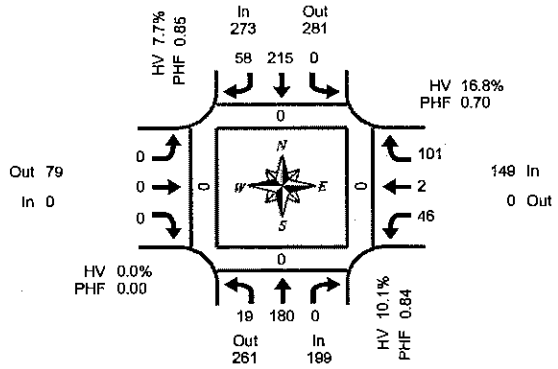
Rolling Hour Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	10	133	0	0	0	153	38	2	0	0	0	0	22	0	57	0	413	0	0	0	0
10:15 AM	11	156	0	0	0	168	38	2	0	0	0	0	21	0	56	0	450	0	0	1	0
10:30 AM	11	168	0	0	0	174	43	2	0	0	0	0	21	0	52	0	469	0	0	2	0
10:45 AM	10	180	0	0	0	171	47	0	0	0	0	0	22	0	54	0	484	0	0	2	0
11:00 AM	9	182	0	0	0	172	44	0	0	0	0	0	25	1	53	0	486	0	0	2	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Camey
(503) 833-2740



Peak Hour Summary
12:00 PM to 1:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
12:00 PM to 2:00 PM

15-Minute Interval Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
12:00 PM	5	38	0	0	0	66	14	0	0	0	0	0	18	2	33	0	176
12:15 PM	6	53	0	0	0	49	16	0	0	0	0	0	11	0	26	0	161
12:30 PM	1	44	0	0	0	47	10	0	0	0	0	0	8	0	16	0	126
12:45 PM	7	45	0	1	0	53	18	0	0	0	0	0	9	0	26	0	158
1:00 PM	4	51	0	0	0	60	10	0	0	0	0	0	8	0	14	0	147
1:15 PM	2	43	0	0	0	34	9	0	0	0	0	0	11	0	10	0	109
1:30 PM	2	27	0	0	0	42	15	0	0	0	0	0	10	0	10	0	106
1:45 PM	1	37	0	0	0	47	13	0	0	0	0	0	11	1	15	0	125
Total Survey	28	338	0	1	0	398	105	0	0	0	0	0	86	3	150	0	1,108

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Peak Hour Summary
12:00 PM to 1:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	199	261	460	1	273	281	554	0	0	79	79	0	149	0	149	0	621
%HV	10.1%				7.7%				0.0%				16.8%				10.6%
PHF	0.84				0.85				0.00				0.70				0.88

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	19	180	0	199	0	215	58	273	0	0	0	0	46	2	101	149	621
%HV	15.8%	9.4%	0.0%	10.1%	0.0%	5.6%	15.5%	7.7%	0.0%	0.0%	0.0%	0.0%	15.2%	#####	15.8%	16.8%	10.6%
PHF	0.68	0.85	0.00	0.84	0.00	0.81	0.81	0.85	0.00	0.00	0.00	0.00	0.64	0.25	0.77	0.70	0.88

Rolling Hour Summary
12:00 PM to 2:00 PM

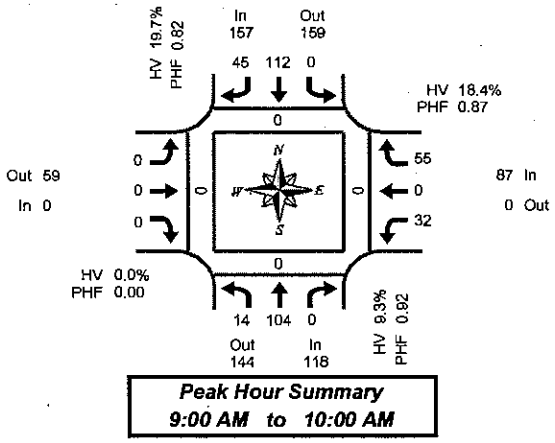
Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
12:00 PM	19	180	0	1	0	215	58	0	0	0	0	0	46	2	101	0	621
12:15 PM	18	193	0	1	0	209	54	0	0	0	0	0	36	0	82	0	592
12:30 PM	14	183	0	1	0	194	47	0	0	0	0	0	36	0	66	0	540
12:45 PM	15	166	0	1	0	189	52	0	0	0	0	0	38	0	60	0	520
1:00 PM	9	158	0	0	0	183	47	0	0	0	0	0	40	1	49	0	487

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Main St & I-84 WB Ramps

Tuesday, September 19, 2006
8:00 AM to 10:00 AM

15-Minute Interval Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	5	30	0	0	0	31	9	0	0	0	0	0	8	0	11	0	94	0	0	1	0
8:15 AM	1	27	0	0	0	31	9	0	0	0	0	0	9	0	11	0	88	0	0	0	0
8:30 AM	3	29	0	0	0	26	7	1	0	0	0	0	8	0	8	0	81	0	0	0	0
8:45 AM	2	28	0	1	0	23	8	0	0	0	0	0	6	1	12	0	80	0	0	0	0
9:00 AM	5	25	0	0	0	27	10	0	0	0	0	0	9	0	15	0	91	0	0	0	0
9:15 AM	4	28	0	0	0	29	9	0	0	0	0	0	8	0	17	0	95	0	0	0	0
9:30 AM	4	20	0	0	0	28	6	1	0	0	0	0	7	0	10	0	75	0	0	0	0
9:45 AM	1	31	0	0	0	28	20	0	0	0	0	0	8	0	13	0	101	0	0	0	0
Total Survey	25	218	0	1	0	223	78	2	0	0	0	0	63	1	97	0	705	0	0	1	0

Peak Hour Summary
9:00 AM to 10:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	118	144	262	0	157	159	316	1	0	59	59	0	87	0	87	0	362	0	0	0	0
%HV	9.3%				19.7%				0.0%				18.4%				16.0%				
PHF	0.92				0.82				0.00				0.87				0.90				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	14	104	0	118	0	112	45	157	0	0	0	0	32	0	55	87	362
%HV	42.9%	4.8%	0.0%	9.3%	0.0%	11.6%	40.0%	19.7%	0.0%	0.0%	0.0%	0.0%	9.4%	0.0%	23.6%	18.4%	16.0%
PHF	0.70	0.84	0.00	0.92	0.00	0.97	0.56	0.82	0.00	0.00	0.00	0.00	0.89	0.00	0.81	0.87	0.90

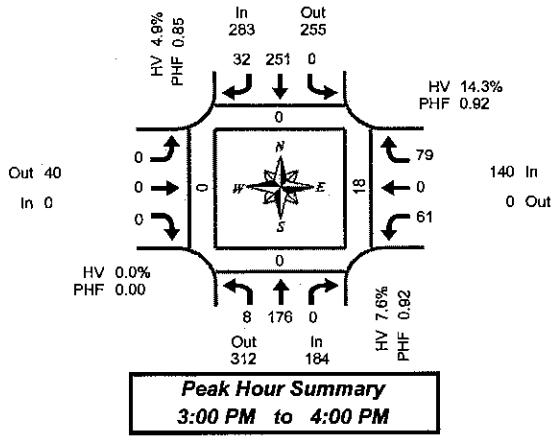
Rolling Hour Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	11	114	0	1	0	111	33	1	0	0	0	0	31	1	42	0	343	0	0	1	0
8:15 AM	11	109	0	1	0	107	34	1	0	0	0	0	32	1	46	0	340	0	0	0	0
8:30 AM	14	110	0	1	0	105	34	1	0	0	0	0	31	1	52	0	347	0	0	0	0
8:45 AM	15	101	0	1	0	107	33	1	0	0	0	0	30	1	54	0	341	0	0	0	0
9:00 AM	14	104	0	0	0	112	45	1	0	0	0	0	32	0	55	0	362	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Main St & I-84 WB Ramps

Tuesday, September 19, 2006
2:00 PM to 4:00 PM

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	2	38	0	0	0	62	11	0	0	0	0	0	14	0	11	0	138	0	0	0	0
2:15 PM	2	36	0	0	0	46	11	0	0	0	0	0	10	0	18	0	123	0	0	0	0
2:30 PM	1	51	0	0	0	39	8	0	0	0	0	0	16	0	13	0	128	0	0	0	0
2:45 PM	4	48	0	0	0	24	9	1	0	0	0	0	12	1	16	0	114	0	0	0	0
3:00 PM	3	42	0	0	0	73	10	0	0	0	0	0	13	0	19	0	160	0	0	14	0
3:15 PM	1	41	0	0	0	63	4	0	0	0	0	0	13	0	25	0	147	0	0	3	0
3:30 PM	1	49	0	0	0	61	10	1	0	0	0	0	16	0	19	0	156	0	0	1	0
3:45 PM	3	44	0	0	0	54	8	0	0	0	0	0	19	0	16	0	144	0	0	0	0
Total Survey	17	349	0	0	0	422	71	2	0	0	0	0	113	1	137	0	1,110	0	0	18	0

Peak Hour Summary
3:00 PM to 4:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	184	312	496	0	283	255	538	1	0	40	40	0	140	0	140	0	607
%HV	7.6%				4.9%				0.0%				14.3%				7.9%
PHF	0.92				0.85				0.00				0.92				0.95

Pedestrians Crosswalk			
North	South	East	West
0	0	18	0

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	176	0	184	0	251	32	283	0	0	0	0	61	0	79	140	607
%HV	37.5%	6.3%	0.0%	7.6%	0.0%	3.6%	15.6%	4.9%	0.0%	0.0%	0.0%	0.0%	11.5%	0.0%	16.5%	14.3%	7.9%
PHF	0.67	0.90	0.00	0.92	0.00	0.86	0.80	0.85	0.00	0.00	0.00	0.00	0.80	0.00	0.79	0.92	0.95

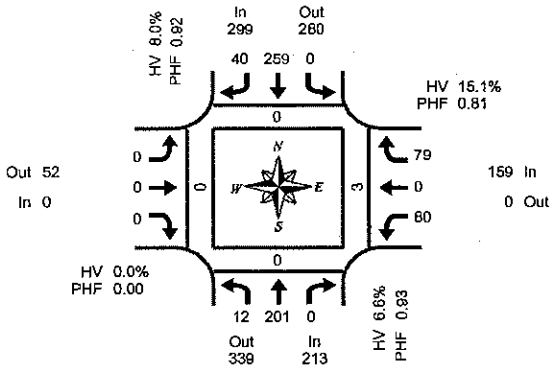
Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	9	173	0	0	0	171	39	1	0	0	0	0	52	1	58	0	503	0	0	0	0
2:15 PM	10	177	0	0	0	182	38	1	0	0	0	0	51	1	66	0	525	0	0	14	0
2:30 PM	9	182	0	0	0	199	31	1	0	0	0	0	54	1	73	0	549	0	0	17	0
2:45 PM	9	180	0	0	0	221	33	2	0	0	0	0	54	1	79	0	577	0	0	18	0
3:00 PM	8	176	0	0	0	251	32	1	0	0	0	0	61	0	79	0	607	0	0	18	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Main St & I-84 WB Ramps

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	47	0	0	0	66	9	0	0	0	0	0	24	0	25	0	174	0	0	0	0
4:15 PM	5	52	0	0	0	63	10	0	0	0	0	0	14	0	19	0	163	0	0	3	0
4:30 PM	2	47	0	0	0	59	11	1	0	0	0	0	18	0	17	0	154	0	0	0	0
4:45 PM	2	55	0	0	0	71	10	0	0	0	0	0	24	0	18	0	180	0	0	0	0
5:00 PM	4	38	0	0	0	81	9	0	0	0	0	0	19	0	15	0	166	0	0	4	0
5:15 PM	4	47	0	0	0	51	10	0	0	0	0	0	17	1	23	0	153	0	0	2	0
5:30 PM	5	43	0	2	0	45	14	0	0	0	0	0	17	0	17	0	141	0	0	4	0
5:45 PM	1	45	0	0	0	82	3	0	0	0	0	0	21	0	15	0	167	0	0	4	0
Total Survey	26	374	0	2	0	518	76	1	0	0	0	0	154	1	149	0	1,298	0	0	17	0

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	213	339	552	0	299	280	579	1	0	52	52	0	159	0	159	0	671	0	0	3	0
%HV	6.6%				8.0%				0.0%				15.1%				9.2%				
PHF	0.93				0.92				0.00				0.81				0.93				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	12	201	0	213	0	259	40	299	0	0	0	0	80	0	79	159	671
%HV	25.0%	5.5%	0.0%	6.6%	0.0%	3.1%	40.0%	8.0%	0.0%	0.0%	0.0%	0.0%	11.3%	0.0%	19.0%	15.1%	9.2%
PHF	0.60	0.91	0.00	0.93	0.00	0.91	0.91	0.92	0.00	0.00	0.00	0.00	0.83	0.00	0.79	0.81	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	12	201	0	0	0	259	40	1	0	0	0	0	80	0	79	0	671	0	0	3	0
4:15 PM	13	192	0	0	0	274	40	1	0	0	0	0	75	0	69	0	663	0	0	7	0
4:30 PM	12	187	0	0	0	262	40	1	0	0	0	0	78	1	73	0	653	0	0	6	0
4:45 PM	15	183	0	2	0	248	43	0	0	0	0	0	77	1	73	0	640	0	0	10	0
5:00 PM	14	173	0	2	0	259	36	0	0	0	0	0	74	1	70	0	627	0	0	14	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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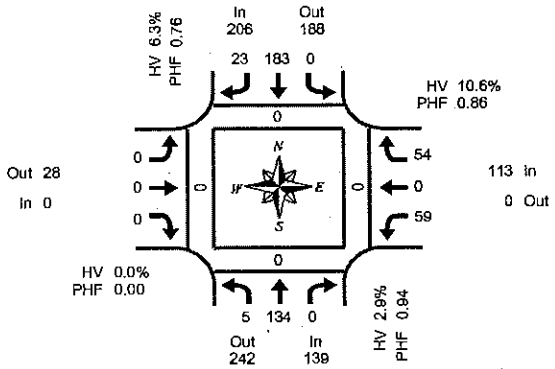

Peak Hour Summary
6:00 PM to 7:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
6:00 PM to 8:00 PM

15-Minute Interval Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	1	36	0	0	0	62	6	0	0	0	0	0	6	0	24	0	135	0	0	0	0
6:15 PM	1	30	0	0	0	31	6	0	0	0	0	0	15	0	13	0	96	0	0	0	0
6:30 PM	2	33	0	0	0	40	9	0	0	0	0	0	19	0	14	0	117	0	0	0	0
6:45 PM	1	35	0	0	0	50	2	0	0	0	0	0	19	0	3	0	110	0	0	0	0
7:00 PM	1	40	0	0	0	49	3	0	0	0	0	0	12	0	16	0	121	0	0	0	0
7:15 PM	0	39	0	0	0	45	1	0	0	0	0	0	12	0	4	0	101	0	0	0	0
7:30 PM	1	22	0	0	0	26	5	0	0	0	0	0	19	0	11	0	84	0	0	0	0
7:45 PM	2	17	0	0	0	24	2	0	0	0	0	0	12	0	7	0	64	0	0	0	0
Total Survey	9	252	0	0	0	327	34	0	0	0	0	0	114	0	92	0	828	0	0	0	0

Peak Hour Summary
6:00 PM to 7:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	139	242	381	0	206	188	394	0	0	28	28	0	113	0	113	0	458
%HV	2.9%				6.3%				0.0%				10.6%				6.3%
PHF	0.94				0.76				0.00				0.86				0.85

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	134	0	139	0	183	23	206	0	0	0	0	59	0	54	113	458
%HV	20.0%	2.2%	0.0%	2.9%	0.0%	4.4%	21.7%	6.3%	0.0%	0.0%	0.0%	0.0%	11.9%	0.0%	9.3%	10.6%	6.3%
PHF	0.63	0.93	0.00	0.94	0.00	0.74	0.64	0.76	0.00	0.00	0.00	0.00	0.78	0.00	0.56	0.86	0.85

Rolling Hour Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	5	134	0	0	0	183	23	0	0	0	0	0	59	0	54	0	458	0	0	0	0
6:15 PM	5	138	0	0	0	170	20	0	0	0	0	0	65	0	46	0	444	0	0	0	0
6:30 PM	4	147	0	0	0	184	15	0	0	0	0	0	62	0	37	0	449	0	0	0	0
6:45 PM	3	136	0	0	0	170	11	0	0	0	0	0	62	0	34	0	416	0	0	0	0
7:00 PM	4	118	0	0	0	144	11	0	0	0	0	0	55	0	38	0	370	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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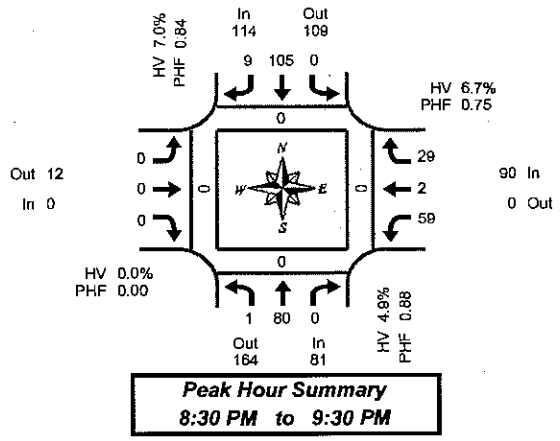


Main St & I-84 WB Ramps

Tuesday, September 19, 2006
8:00 PM to 10:00 PM

15-Minute Interval Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	1	12	0	0	0	17	4	0	0	0	0	0	24	0	5	0	63	0	0	0	0
8:15 PM	0	12	0	0	0	20	0	0	0	0	0	0	11	0	2	0	45	0	0	2	0
8:30 PM	0	23	0	0	0	30	4	0	0	0	0	0	17	2	11	0	87	0	0	0	0
8:45 PM	1	19	0	0	0	25	2	0	0	0	0	0	11	0	6	0	64	0	0	0	0
9:00 PM	0	19	0	0	0	28	2	0	0	0	0	0	14	0	5	0	68	0	0	0	0
9:15 PM	0	19	0	0	0	22	1	0	0	0	0	0	17	0	7	0	66	0	0	0	0
9:30 PM	0	22	0	0	0	26	4	0	0	0	0	0	15	0	2	0	69	0	0	0	0
9:45 PM	1	20	0	0	0	25	2	0	0	0	0	0	13	0	6	0	67	0	0	0	0
Total Survey	3	146	0	0	0	193	19	0	0	0	0	0	122	2	44	0	529	0	0	2	0

Peak Hour Summary
8:30 PM to 9:30 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	81	164	245	0	114	109	223	0	0	12	12	0	90	0	90	0	285	0	0	0	0
%HV	4.9%				7.0%				0.0%				6.7%				6.3%				
PHF	0.88				0.84				0.00				0.75				0.82				

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	80	0	81	0	105	9	114	0	0	0	0	59	2	29	90	285
%HV	0.0%	5.0%	0.0%	4.9%	0.0%	6.7%	11.1%	7.0%	0.0%	0.0%	0.0%	0.0%	3.4%	#####	6.9%	6.7%	6.3%
PHF	0.25	0.87	0.00	0.88	0.00	0.88	0.56	0.84	0.00	0.00	0.00	0.00	0.87	0.25	0.66	0.75	0.82

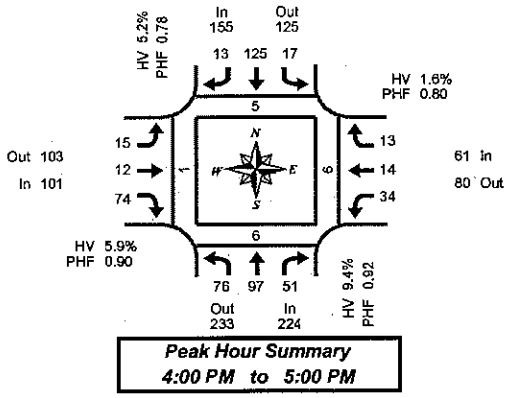
Rolling Hour Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	2	66	0	0	0	92	10	0	0	0	0	0	63	2	24	0	259	0	0	2	0
8:15 PM	1	73	0	0	0	103	8	0	0	0	0	0	53	2	24	0	264	0	0	2	0
8:30 PM	1	80	0	0	0	105	9	0	0	0	0	0	59	2	29	0	285	0	0	0	0
8:45 PM	1	79	0	0	0	101	9	0	0	0	0	0	57	0	20	0	267	0	0	0	0
9:00 PM	1	80	0	0	0	101	9	0	0	0	0	0	59	0	20	0	270	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
4:00 PM to 5:00 PM

Main St & Boardman Ave

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	7	6	0	1	10	0	0	1	2	6	0	2	1	1	0	44	0	0	1	0
4:05 PM	12	10	5	0	1	16	0	0	0	1	5	0	4	0	0	0	54	0	0	0	0
4:10 PM	4	7	3	0	2	11	1	0	0	2	10	0	4	1	0	0	45	0	0	0	0
4:15 PM	5	8	6	0	3	13	3	0	0	0	7	1	2	0	2	0	49	0	2	1	0
4:20 PM	6	7	3	0	0	8	0	0	1	1	7	0	5	2	3	1	43	1	2	2	0
4:25 PM	6	9	3	0	2	10	0	0	4	3	4	0	0	0	1	0	42	2	0	0	0
4:30 PM	5	8	2	0	3	7	3	0	2	0	4	0	3	2	1	0	40	0	0	0	0
4:35 PM	5	7	4	0	0	12	2	0	2	1	7	0	1	1	1	0	43	0	1	0	0
4:40 PM	6	9	7	0	1	11	2	0	1	1	5	0	2	1	4	0	50	1	0	0	0
4:45 PM	7	8	3	0	2	10	1	0	0	0	7	1	2	3	0	0	43	0	0	0	0
4:50 PM	9	9	2	0	1	6	1	0	1	1	9	0	1	3	0	0	43	1	1	0	1
4:55 PM	4	8	7	0	1	11	0	0	3	0	3	0	8	0	0	0	45	0	0	2	0
5:00 PM	6	5	4	0	1	13	1	0	1	1	2	1	6	2	1	0	43	0	0	0	0
5:05 PM	3	7	2	0	0	7	1	0	0	1	2	0	3	2	0	0	28	0	0	0	3
5:10 PM	2	3	3	0	2	10	0	0	0	0	9	0	3	3	2	2	37	0	3	0	3
5:15 PM	4	5	5	0	0	10	0	0	2	1	6	0	3	1	2	0	39	0	0	0	0
5:20 PM	3	7	4	0	1	5	0	0	1	1	4	0	6	2	1	0	35	0	0	0	0
5:25 PM	4	2	2	0	0	3	1	0	0	0	2	0	4	3	0	0	21	0	0	0	0
5:30 PM	1	6	6	1	2	7	1	0	1	2	6	0	9	1	2	0	44	0	0	0	0
5:35 PM	3	7	3	0	0	6	0	0	1	1	2	0	7	2	0	0	32	0	0	0	0
5:40 PM	1	5	2	0	0	5	1	0	0	0	2	0	5	1	1	0	23	0	0	0	0
5:45 PM	3	3	3	0	0	9	0	0	2	1	9	0	12	0	1	0	43	0	0	0	0
5:50 PM	6	6	5	0	0	4	2	0	0	0	4	0	6	0	3	0	36	2	0	0	2
5:55 PM	2	6	9	0	2	9	3	0	0	3	6	0	6	3	0	0	49	0	0	0	0
Total Survey	114	159	99	1	25	213	23	0	23	23	128	3	104	34	26	3	971	7	9	6	9

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	23	24	14	0	4	37	1	0	1	5	21	0	10	2	1	0	143	0	0	1	0
4:15 PM	17	24	12	0	5	31	3	0	5	4	18	1	7	2	6	1	134	3	4	3	0
4:30 PM	16	24	13	0	4	30	7	0	5	2	16	0	6	4	6	0	133	1	1	0	0
4:45 PM	20	25	12	0	4	27	2	0	4	1	19	1	11	6	0	0	131	1	1	2	1
5:00 PM	11	15	9	0	3	30	2	0	1	2	13	1	12	7	3	2	108	0	3	0	6
5:15 PM	11	14	11	0	1	18	1	0	3	2	12	0	13	6	3	0	95	0	0	0	0
5:30 PM	5	18	11	1	2	18	2	0	2	3	10	0	21	4	3	0	99	0	0	0	0
5:45 PM	11	15	17	0	2	22	5	0	2	4	19	0	24	3	4	0	128	2	0	0	2
Total Survey	114	159	99	1	25	213	23	0	23	23	128	3	104	34	26	3	971	7	9	6	9

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	224	233	457	0	155	125	280	0	101	103	204	2	61	80	141	1	541	5	6	6	1
%HV	9.4%				5.2%				5.9%				1.6%				6.7%				
PHF	0.92				0.78				0.90				0.80				0.91				

By Movement	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	76	97	51	224	17	125	13	155	15	12	74	101	34	14	13	61	541
%HV	5.3%	9.3%	15.7%	9.4%	0.0%	3.2%	30.8%	5.2%	0.0%	8.3%	6.8%	5.9%	2.9%	0.0%	0.0%	1.6%	6.7%
PHF	0.83	0.93	0.91	0.92	0.71	0.78	0.46	0.78	0.47	0.60	0.77	0.90	0.77	0.50	0.54	0.80	0.91

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	76	97	51	0	17	125	13	0	15	12	74	2	34	14	13	1	541	5	6	6	1
4:15 PM	64	88	46	0	16	118	14	0	15	9	66	3	36	19	15	3	506	5	9	5	7
4:30 PM	58	78	45	0	12	105	12	0	13	7	60	2	42	23	12	2	467	2	5	2	7
4:45 PM	47	72	43	1	10	93	7	0	10	8	54	2	57	23	9	2	433	1	4	2	7
5:00 PM	38	62	48	1	8	88	10	0	8	11	54	1	70	20	13	2	430	2	3	0	8

Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
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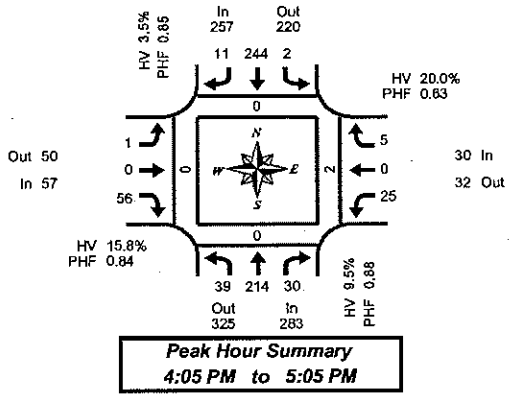


Main St & Front St NW

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	15	2	0	0	12	0	0	1	0	4	0	0	0	0	0	34	0	0	0	0
4:05 PM	2	20	4	0	0	22	0	0	0	0	2	0	2	0	0	0	52	0	0	0	0
4:10 PM	3	21	1	0	0	30	2	0	0	0	6	0	5	0	0	0	68	0	0	0	0
4:15 PM	3	25	0	0	0	19	0	0	0	0	7	0	0	0	0	0	54	0	0	0	0
4:20 PM	6	18	3	0	0	25	0	0	0	0	3	0	1	0	1	0	57	0	0	1	0
4:25 PM	4	12	1	0	0	15	0	1	0	0	5	0	0	0	2	0	39	0	0	0	0
4:30 PM	3	17	2	0	0	17	3	0	1	0	6	0	4	0	0	0	53	0	0	0	0
4:35 PM	2	18	4	0	0	19	2	0	0	0	2	0	1	0	0	0	48	0	0	0	0
4:40 PM	2	18	1	0	0	17	1	0	0	0	2	0	1	0	0	0	42	0	0	0	0
4:45 PM	1	18	3	0	1	19	0	0	0	0	7	0	1	0	0	0	50	0	0	0	0
4:50 PM	4	17	6	0	0	20	2	0	0	0	2	0	3	0	1	0	55	0	0	0	0
4:55 PM	6	15	2	0	1	15	0	0	0	0	8	0	4	0	1	0	52	0	0	0	0
5:00 PM	3	15	3	0	0	26	1	0	0	0	6	0	3	0	0	0	57	0	0	1	0
5:05 PM	3	15	3	0	0	16	1	0	0	3	6	0	1	0	0	0	48	0	0	0	0
5:10 PM	0	10	4	0	0	25	1	0	0	0	6	0	2	0	0	0	48	0	0	0	1
5:15 PM	1	12	2	0	1	20	1	0	0	0	3	0	1	0	0	0	41	0	0	0	1
5:20 PM	8	18	6	0	0	12	0	0	1	0	2	0	3	0	1	0	51	0	0	0	0
5:25 PM	3	20	3	0	0	13	0	0	0	1	5	0	3	0	0	0	48	0	0	1	0
5:30 PM	2	8	1	2	0	13	1	0	0	0	2	0	2	0	0	0	29	0	0	0	0
5:35 PM	4	17	3	0	1	7	1	0	0	0	5	0	1	0	0	0	39	0	0	0	0
5:40 PM	1	16	4	0	0	23	0	0	0	0	4	0	2	1	1	0	52	0	0	4	0
5:45 PM	5	12	3	0	0	22	0	0	0	0	4	0	4	1	1	0	52	0	0	2	0
5:50 PM	3	14	3	0	1	18	2	0	0	1	0	0	4	0	2	0	48	0	0	0	0
5:55 PM	2	12	3	0	0	24	1	0	0	1	3	0	1	0	0	0	47	0	0	0	0
Total Survey	71	383	67	2	5	449	19	1	3	6	100	0	49	2	10	0	1,164	0	0	9	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	56	7	0	0	64	2	0	1	0	12	0	7	0	0	0	154	0	0	0	0
4:15 PM	13	55	4	0	0	59	0	1	0	0	15	0	1	0	3	0	150	0	0	1	0
4:30 PM	7	53	7	0	0	53	6	0	1	0	10	0	6	0	0	0	143	0	0	0	0
4:45 PM	11	50	11	0	2	54	2	0	0	0	17	0	8	0	2	0	157	0	0	0	0
5:00 PM	6	40	10	0	0	67	3	0	0	3	18	0	6	0	0	0	153	0	0	1	1
5:15 PM	12	50	11	0	1	45	1	0	1	1	10	0	7	0	1	0	140	0	0	1	1
5:30 PM	7	41	8	2	1	43	2	0	0	0	11	0	5	1	1	0	120	0	0	4	0
5:45 PM	10	38	9	0	1	64	3	0	0	2	7	0	9	1	3	0	147	0	0	2	0
Total Survey	71	383	67	2	5	449	19	1	3	6	100	0	49	2	10	0	1,164	0	0	9	2

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	283	325	608	0	257	220	477	1	57	50	107	0	30	32	62	0	627	0	0	2	0
%HV	9.5%				3.5%				15.8%				20.0%				8.1%				
PHF	0.88				0.85				0.84				0.63				0.88				

By Movement	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	39	214	30	283	2	244	11	257	1	0	56	57	25	0	5	30	627
%HV	5.1%	9.3%	16.7%	9.5%	0.0%	3.7%	0.0%	3.5%	0.0%	0.0%	16.1%	15.8%	20.0%	0.0%	20.0%	20.0%	8.1%
PHF	0.75	0.81	0.68	0.88	0.25	0.82	0.46	0.85	0.25	0.00	0.82	0.84	0.63	0.00	0.42	0.63	0.88

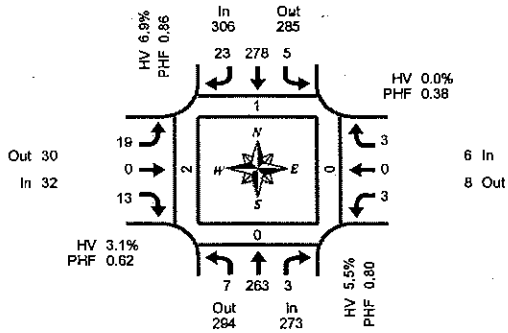
Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	36	214	29	0	2	230	10	1	2	0	54	0	22	0	5	0	604	0	0	1	0
4:15 PM	37	198	32	0	2	233	11	1	1	3	60	0	21	0	5	0	603	0	0	2	1
4:30 PM	36	193	39	0	3	219	12	0	2	4	55	0	27	0	3	0	593	0	0	2	2
4:45 PM	36	181	40	2	4	209	8	0	1	4	56	0	26	1	4	0	570	0	0	6	2
5:00 PM	35	169	38	2	3	219	9	0	1	6	46	0	27	2	5	0	560	0	0	8	2

Total Vehicle Summary

All Traffic Data Services Inc

Clay Carney
(503) 833-2740



Peak Hour Summary
4:05 PM to 5:05 PM

Main St & Front St SW

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	21	0	0	0	20	1	0	2	0	0	0	0	0	1	0	45	0	0	0	0
4:05 PM	0	20	1	0	0	32	0	0	0	0	1	0	0	0	0	0	54	0	0	0	0
4:10 PM	0	22	1	0	0	24	3	0	1	0	1	0	0	0	0	0	52	0	0	0	0
4:15 PM	1	33	0	0	1	24	5	0	4	0	3	0	0	0	0	0	71	0	0	0	0
4:20 PM	0	22	0	0	0	15	1	1	0	0	4	0	1	0	0	0	43	1	0	0	2
4:25 PM	1	28	0	0	3	17	0	0	1	0	0	0	1	0	2	0	53	0	0	0	0
4:30 PM	0	15	1	0	1	18	3	0	0	0	0	0	0	0	0	0	38	0	0	0	0
4:35 PM	0	21	0	0	0	22	1	0	3	0	1	0	0	0	1	0	49	0	0	0	0
4:40 PM	2	21	0	0	0	19	1	0	2	0	0	0	1	0	0	0	46	0	0	0	0
4:45 PM	1	19	0	0	0	30	1	0	3	0	2	0	0	0	0	0	56	0	0	0	0
4:50 PM	1	18	0	0	0	22	3	0	1	0	1	0	0	0	0	0	46	0	0	0	0
4:55 PM	1	23	0	0	0	22	4	0	0	0	0	0	0	0	0	0	50	0	0	0	0
5:00 PM	0	21	0	0	0	33	1	0	4	0	0	0	0	0	0	0	59	0	0	0	0
5:05 PM	0	30	1	0	1	18	1	0	0	0	0	0	1	0	1	0	53	0	0	0	0
5:10 PM	0	12	0	0	0	34	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0
5:15 PM	0	17	0	0	0	23	2	0	2	0	0	0	0	0	0	0	44	0	0	0	0
5:20 PM	1	18	0	0	2	18	1	0	1	0	0	0	0	0	0	0	41	0	0	0	1
5:25 PM	0	15	0	0	1	13	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0
5:30 PM	0	23	0	1	0	18	1	0	0	0	0	0	0	0	1	0	43	0	0	0	0
5:35 PM	1	11	0	0	0	14	1	0	1	0	0	0	0	0	2	0	30	0	0	0	0
5:40 PM	4	23	0	0	0	19	2	0	3	0	0	0	0	1	0	0	52	0	0	0	0
5:45 PM	0	15	2	0	1	35	2	0	2	0	0	0	0	0	0	0	57	0	0	0	0
5:50 PM	2	15	0	0	1	18	3	0	2	0	1	0	2	0	0	0	44	0	0	0	0
5:55 PM	0	21	0	0	0	29	2	0	1	0	0	0	1	0	0	0	54	0	0	0	0
Total Survey	15	484	6	1	11	537	39	1	33	0	14	0	7	1	8	0	1,155	1	0	0	3

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	63	2	0	0	76	4	0	3	0	2	0	0	0	1	0	151	0	0	0	0
4:15 PM	2	83	0	0	4	56	6	1	5	0	7	0	2	0	2	0	167	1	0	0	2
4:30 PM	2	57	1	0	1	59	5	0	5	0	1	0	1	0	1	0	133	0	0	0	0
4:45 PM	3	60	0	0	0	74	8	0	4	0	3	0	0	0	0	0	152	0	0	0	0
5:00 PM	0	63	1	0	1	85	2	0	4	0	0	0	1	0	1	0	158	0	0	0	0
5:15 PM	1	50	0	0	3	54	3	0	3	0	0	0	0	0	0	0	114	0	0	0	1
5:30 PM	5	57	0	1	0	51	4	0	4	0	0	0	0	1	3	0	125	0	0	0	0
5:45 PM	2	51	2	0	2	82	7	0	5	0	1	0	3	0	0	0	155	0	0	0	0
Total Survey	15	484	6	1	11	537	39	1	33	0	14	0	7	1	8	0	1,155	1	0	0	3

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	273	294	567	0	306	285	591	1	32	30	62	0	6	8	14	0	617	1	0	0	2
%HV	5.5%				6.9%				3.1%				0.0%				6.0%				
PHF	0.80				0.86				0.62				0.38				0.87				

By Movement	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	263	3	273	5	278	23	306	19	0	13	32	3	0	3	6	617
%HV	0.0%	5.7%	0.0%	5.5%	80.0%	4.7%	17.4%	6.9%	0.0%	0.0%	7.7%	3.1%	0.0%	0.0%	0.0%	0.0%	6.0%
PHF	0.44	0.79	0.38	0.80	0.31	0.87	0.64	0.86	0.59	0.00	0.41	0.62	0.38	0.00	0.25	0.38	0.87

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	263	3	0	5	265	23	1	17	0	13	0	3	0	4	0	603	1	0	0	2
4:15 PM	7	263	2	0	6	274	21	1	18	0	11	0	4	0	4	0	610	1	0	0	2
4:30 PM	6	230	2	0	5	272	18	0	16	0	4	0	2	0	2	0	557	0	0	0	1
4:45 PM	9	230	1	1	4	264	17	0	15	0	3	0	1	1	4	0	549	0	0	0	1
5:00 PM	8	221	3	1	6	272	16	0	16	0	1	0	4	1	4	0	552	0	0	0	1

Appendix 4
Operational Analysis

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 2 Front S @ Main	B	13.7	0.000	B	13.7	0.000	+ 0.000 D/V
# 3 I84 EB Ramps @ Main	B	13.9	0.000	B	13.9	0.000	+ 0.000 D/V
# 4 I84 WB Ramps @ Main	B	13.4	0.000	B	13.4	0.000	+ 0.000 D/V
# 5 Front N @ Main	C	16.9	0.000	C	16.9	0.000	+ 0.000 D/V
# 6 Boardman @ Main	B	14.4	0.000	B	14.4	0.000	+ 0.000 D/V

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Front S @ Main

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.7]

Street Name:	Main						Front S					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	265	5	5	280	25	20	0	15	5	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	265	5	5	280	25	20	0	15	5	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	11	305	6	6	322	29	23	0	17	6	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	305	6	6	322	29	23	0	17	6	0	6
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	351	xxxx	xxxxx	310	xxxx	xxxxx	681	xxxx	336	687	xxxx	307
Potent Cap.:	1186	xxxx	xxxxx	1222	xxxx	xxxxx	363	xxxx	704	364	xxxx	737
Move Cap.:	1186	xxxx	xxxxx	1222	xxxx	xxxxx	356	xxxx	704	351	xxxx	737
Volume/Cap:	0.01	xxxx	xxxx	0.00	xxxx	xxxx	0.06	xxxx	0.02	0.02	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	452	xxxxx	xxxx	476	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.7	xxxxx	xxxxx	12.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			13.7			12.8		
ApproachLOS:	*			*			B			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[13.9]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	180	105	70	285	0	25	0	20	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	180	105	70	285	0	25	0	20	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	189	111	74	300	0	26	0	21	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	189	111	74	300	0	26	0	21	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.7	xxxx	6.5	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.8	xxxx	3.6	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	300	xxxx	xxxxx	692	xxxx	300	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx	372	xxxx	680	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx	354	xxxx	680	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	0.07	xxxx	0.03	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	450	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	13.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[13.4]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0 0	0	0 0	0 1	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	200	0	0	260	40	0	0	0	80	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	200	0	0	260	40	0	0	0	80	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	11	215	0	0	280	43	0	0	0	86	0	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	215	0	0	280	43	0	0	0	86	0	86
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.6	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	323	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	538	xxxx	215
Potent Cap.:	1210	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	xxxx	793
Move Cap.:	1210	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	479	xxxx	793
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.18	xxxx	0.11
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	598	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.4	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.4		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Front N @ Main

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[16.9]

Street Name:	Main									Front N		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	40	215	30	5	245	10	5	0	55	25	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	215	30	5	245	10	5	0	55	25	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	45	244	34	6	278	11	6	0	63	28	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	45	244	34	6	278	11	6	0	63	28	0	6
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.3	xxxx	6.4	7.3	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	xxxx	3.4	3.7	xxxx	3.5
Capacity Module:												
Cnflict Vol:	290	xxxx	xxxxx	278	xxxx	xxxxx	651	xxxx	284	679	xxxx	261
Potent Cap.:	1228	xxxx	xxxxx	1273	xxxx	xxxxx	363	xxxx	723	342	xxxx	736
Move Cap.:	1228	xxxx	xxxxx	1273	xxxx	xxxxx	349	xxxx	723	303	xxxx	736
Volume/Cap:	0.04	xxxx	xxxx	0.00	xxxx	xxxx	0.02	xxxx	0.09	0.09	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	663	xxxxx	xxxx	336	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	16.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.0			16.9		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Boardman @ Main

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: B[14.4]

Street Name:	Main									Boardman					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 1 0			0 1 0 0 1			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	75	100	50	20	125	15	15	10	75	35	15	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	100	50	20	125	15	15	10	75	35	15	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	82	110	55	22	137	16	16	11	82	38	16	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	82	110	55	22	137	16	16	11	82	38	16	16
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.2	6.6	6.3	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	4.1	3.4	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	154	xxxx	xxxxx	165	xxxx	xxxxx	500	511	137	538	500	137
Potent Cap.:	1385	xxxx	xxxxx	1395	xxxx	xxxxx	475	460	901	454	473	911
Move Cap.:	1385	xxxx	xxxxx	1395	xxxx	xxxxx	427	426	901	381	437	911
Volume/Cap:	0.06	xxxx	xxxx	0.02	xxxx	xxxx	0.04	0.03	0.09	0.10	0.04	0.02
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	705	xxxxx	xxxx	456	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	0.6	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	14.4	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			11.0			14.4		
ApproachLOS:	*			*			B			B		

Note: Queue reported is the number of cars per lane.

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 2 Front S @ Main	F	129.6	0.000	F	129.6	0.000	+ 0.000 D/V
# 3 I84 EB Ramps @ Main	E	38.0	0.000	E	38.0	0.000	+ 0.000 D/V
# 4 I84 WB Ramps @ Main	F	206.0	0.000	F	206.0	0.000	+ 0.000 D/V
# 5 Front N @ Main	D	30.4	0.000	D	30.4	0.000	+ 0.000 D/V
# 6 Boardman @ Main	F	57.3	0.000	F	57.3	0.000	+ 0.000 D/V

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Front S @ Main

Average Delay (sec/veh): 10.5 Worst Case Level Of Service: F[129.6]

Street Name:	Main						Front S					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	30	515	65	55	635	55	45	0	35	30	0	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	515	65	55	635	55	45	0	35	30	0	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	34	592	75	63	730	63	52	0	40	34	0	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	34	592	75	63	730	63	52	0	40	34	0	57
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	793	xxxx	xxxxx	667	xxxx	xxxxx	1615	xxxx	761	1606	xxxx	629
Potent Cap.:	810	xxxx	xxxxx	900	xxxx	xxxxx	83	xxxx	403	86	xxxx	486
Move Cap.:	810	xxxx	xxxxx	900	xxxx	xxxxx	67	xxxx	403	70	xxxx	486
Volume/Cap:	0.04	xxxx	xxxx	0.07	xxxx	xxxx	0.77	xxxx	0.10	0.49	xxxx	0.12
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	105	xxxxx	xxxx	151	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	5.1	xxxxx	xxxxx	3.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	130	xxxxx	xxxxx	60.1	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			129.6			60.1		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: E[38.0]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	385	245	95	640	0	35	0	125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	385	245	95	640	0	35	0	125	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	405	258	100	674	0	37	0	132	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	405	258	100	674	0	37	0	132	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.7	xxxx	6.5	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.8	xxxx	3.6	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	663	xxxx	xxxxx	1408	xxxx	674	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	912	xxxx	xxxxx	134	xxxx	411	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	912	xxxx	xxxxx	122	xxxx	411	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.11	xxxx	xxxx	0.30	xxxx	0.32	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	270	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	3.8	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	38.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	E	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			38.0			xxxxxx		
ApproachLOS:	*			*			E			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 65.9 Worst Case Level Of Service: F[206.0]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 0	1 0		0 0 0	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	80	245	0	0	455	60	0	0	0	275	0	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	245	0	0	455	60	0	0	0	275	0	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	86	263	0	0	489	65	0	0	0	296	0	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	86	263	0	0	489	65	0	0	0	296	0	124
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.6	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	554	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	957	xxxx	263
Potent Cap.:	992	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	271	xxxx	745
Move Cap.:	992	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	252	xxxx	745
Volume/Cap:	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.17	xxxx	0.17
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	313	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.8	xxxxx
Shrd ConDel:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	206	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			206.0		
ApproachLOS:	*			*			*			F		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Front N @ Main

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: D[30.4]

Street Name:	Main									Front N		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0	0	1 0 0	1 0	0	0 0 1!	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	40	375	35	5	435	15	10	0	65	35	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	375	35	5	435	15	10	0	65	35	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	45	426	40	6	494	17	11	0	74	40	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	45	426	40	6	494	17	11	0	74	40	0	23
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.3	xxxx	6.4	7.3	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	xxxx	3.4	3.7	xxxx	3.5
Capacity Module:												
Cnflict Vol:	511	xxxx	xxxxx	466	xxxx	xxxxx	1063	xxxx	503	1088	xxxx	446
Potent Cap.:	1014	xxxx	xxxxx	1085	xxxx	xxxxx	189	xxxx	542	178	xxxx	576
Move Cap.:	1014	xxxx	xxxxx	1085	xxxx	xxxxx	175	xxxx	542	148	xxxx	576
Volume/Cap:	0.04	xxxx	xxxx	0.01	xxxx	xxxx	0.06	xxxx	0.14	0.27	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.7	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	423	xxxxx	xxxx	203	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.6	xxxxx	xxxxx	30.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			15.6			30.4		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Boardman @ Main

Average Delay (sec/veh): 14.0 Worst Case Level Of Service: F[57.3]

Street Name:	Main						Boardman					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	105	145	140	40	190	25	20	15	110	125	20	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	145	140	40	190	25	20	15	110	125	20	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	115	159	154	44	209	27	22	16	121	137	22	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	115	159	154	44	209	27	22	16	121	137	22	38
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.2	6.6	6.3	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	4.1	3.4	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	236	xxxx	xxxxx	313	xxxx	xxxxx	794	841	209	846	791	236
Potent Cap.:	1291	xxxx	xxxxx	1230	xxxx	xxxxx	301	297	822	282	322	803
Move Cap.:	1291	xxxx	xxxxx	1230	xxxx	xxxxx	245	260	822	208	282	803
Volume/Cap:	0.09	xxxx	xxxx	0.04	xxxx	xxxx	0.09	0.06	0.15	0.66	0.08	0.05
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	531	xxxxx	xxxx	251	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	1.3	xxxxx	xxxxx	5.9	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	14.7	xxxxx	xxxxx	57.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			14.7			57.3		
ApproachLOS:	*			*			B			F		

Note: Queue reported is the number of cars per lane.

Preliminary Signal Warrants

Introduction

The single most important criterion for preliminary signal warrant analysis is engineering judgment. In the following procedures only the fundamental parameters of volumes and approach lanes are provided.

Background

There are 8 traffic signal warrants found in the Manual on Uniform Traffic Control Devices (MUTCD), Page 4C-1. The signal warrants are:

Warrant 1, Eight-Hour Vehicular Volume.
- Case A – Minimum Vehicular Volume.
- Case B – Interruption of Continuous Traffic.

Warrant 2, Four-Hour Vehicular Volume.
Warrant 3, Peak Hour.
Warrant 4, Pedestrian Volume.
Warrant 5, School Crossing.
Warrant 6, Coordinated Signal System.
Warrant 7, Crash Experience.
Warrant 8, Roadway Network.

OAR 734-020-0460 (1) stipulates that only MUTCD warrant 1 Case A and Case B may be used to project a future need for a traffic signal. (Corrected to reflect numbering used in the Millennium Edition of the MUTCD.) In the Transportation Planning Analysis Unit (TPAU), we are typically projecting traffic into the future and analyzing future years, so we consider warrants 1, Case A and Case B. Case A deals primarily with high volumes on the intersecting minor street. Case B addresses high volumes on the major street and the delays and hazards to vehicles on the minor street trying to either access or cross the major street.

Analysis

In MUTCD warrant 1 the eighth highest hour of an average day is used to determine whether a warrant is met. At the analysis stage in TPAU, Average Daily Traffic (ADT) is used for preliminary signal warrant analysis. We apply a conversion factor of 5.65% to the ADT to reach the eighth highest hour. The conversion factor of 5.65% is acceptable as shown using 1991 to 1994 manual counts and as agreed on by TPAU and Traffic Management Section. To convert MUTCD hourly volumes to ADT volumes, divide the MUTCD volume by the factor .0565, this equals the target ADT volume to meet MUTCD warrant 1.

If the "85 percentile speed of major street traffic exceeds 40 mph in either an urban or rural area, or when the intersection lies within the built-up area of an isolated community having a population of less that 10,000" (MUTCD), reduce the target volume for the warrants to 70 percent of the normal requirements. The warrant volumes, along with the number of lanes, are shown in the preliminary traffic signal warrant analysis sheet on the following page.

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Main Street	**Minor Street:**	I-84 Westbound Ramp
Project:	Boardman IAMP	**City/County:**	Boardman, Morrow
Year:	2026	**Alternative:**	

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
Case B: Interruption of Continuous Traffic					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

5.65% of the above ADT volumes is equal to the MUTCD vehicles per hour (vph)

	100 percent of standard warrants
x	70 percent of standard warrants[2]

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	1	6,200	8,800	Y
	Minor	2	2,500	3,325	
Case B	Major	1	9,300	8,800	N
	Minor	2	1,250	3,325	

Analyst and Date: PJO 3/15/07 | Reviewer and Date:

Determining the number of approach lanes and determining the approach volumes to use in the warrant analysis requires knowledge of the involved intersection.

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. Before a signal can be installed a traffic signal investigation must be conducted or reviewed by the Region Traffic Manager. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

[2] Used due to 85th percentile speed in excess of 40 mph or isolated community with population of less than 10,000.

Oregon Department of Transportation

Transportation Development Branch

Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Main Street	**Minor Street:**	I-84 Eastbound Ramp
Project:	Boardman IAMP	**City/County:**	Boardman, Morrow
Year:	2026	**Alternative:**	

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
Case B: Interruption of Continuous Traffic					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

5.65% of the above ADT volumes is equal to the MUTCD vehicles per hour (vph)

	100 percent of standard warrants
x	70 percent of standard warrants[2]

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	1	6,200	11,200	N
	Minor	2	2,500	975	
Case B	Major	1	6,200	11,200	N
	Minor	2	2,500	975	

Analyst and Date: PJO 3/15/07 | Reviewer and Date:

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. Before a signal can be installed a traffic signal investigation must be conducted or reviewed by the Region Traffic Manager. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

[2] Used due to 85th percentile speed in excess of 40 mph or isolated community with population of less than 10,000.

Appendix 5
Main Street Land Use Assumptions

Future Land Use/Trip Generation Assumptions:

- Land use assumptions were developed by Winterbrook Planning and reviewed by the City of Boardman and ODOT.
- Trips generation was based on the ITE Trip Generation Manual, 7th Edition.
- Trip reduction (pass by and shared trips) was based on ITE Trip Generation Manual, 7th Edition and was applied to Retail, Fast Food Restaurants, Convenience Mart and Gas Station.
- There were no background through trips added to the network, since the only development in the area would be in Boardman. There is minimal historical growth of traffic volumes on roadways in the area, so there was no additional growth rate applied to existing volumes.

Main Street Trip Distribution:

East N Front "TAZ"

- 70% towards I-84 Ramps (south)
- 25% north
- 5% west

East S Front "TAZ"

- 60% towards I-84 Ramps (north)
- 35% south
- 5% west

West S Front "TAZ"

- 70% towards I-84 Ramps (north)
- 30% south

South Main "TAZ"

- 45% towards I-84 Ramps (north)
- 45% south
- 10% west

South Oregon Trail "TAZ"

- 45% towards I-84 Ramps (north)
- 45% south
- 10% west

South "TAZ"

- 100% towards I-84 Ramps (north)

Traffic was distributed at the ramps so that 45% was directed to the east, 25% was directed to the west and 30% was directed north.

Trip Generation

Main Street IAMP

Table A1: Cumulative Development Raw Trip Generation – Main Street IAMP Area

Land Use	ITE Code	Units (square ft)	Trip Generation Daily	AM In	AM out	PM In	PM Out
Convenience Mart	851	2,000	1,476	67	67	53	51
Fast Food w Drive-Thru	934	3,000	1,488	81	78	54	50
Free Standing Discount Store	815	20,000	1,120	11	5	51	51
East N Front - Subtotal			**4,085**	**160**	**150**	**158**	**152**
Gas Station w/Mart	945	8 pumps	1,302	40	40	54	54
Motel	320	65 rooms	592	15	27	20	18
Sit-Down High Turn Restaurant	932	6,000	763	36	33	40	26
SF Housing	210	120 units	1,148	23	68	76	45
Fast Food w Drive-Thru	934	4	1,984	108	104	72	67
Self Service Car Wash	947	3 stalls		0	0	8	8
Auto Care Center	942	2		4	2	3	3
East S Front - Subtotal			**5,790**	**226**	**274**	**274**	**220**
Motel	320	65 rooms	592	15	27	20	18
Sit-Down High Turn Restaurant	932	6	763	36	33	40	26
East S Front - Subtotal			**1,355**	**51**	**60**	**60**	**43**
Fast Food with Drive-Thru	934	4,000	1,984	108	104	72	67
Bank Drive-In	912	4,000	986	28	22	91	91
Single Tenant Office	715	5,000	58	8	1	1	7
Single Tenant Office	715	5,000	58	8	1	1	7
Medical Clinic	630	10,000	315	18	18	26	26
Single Tenant Office	715	5,000	58	8	1	1	7
Single Tenant Office	715	5,000	58	8	1	1	7
South Main - Subtotal			**3,216**	**186**	**148**	**195**	**213**
Drug Store with Drive Thru	881	20,000	1,763	30	23	84	88
Hardware/Paint Store	816	10,000	513	6	5	29	32
Specialty Retail	812	10,000	452	17	9	21	24
Housing – condos	230	120 units	703	9	44	42	21
South Main - Subtotal			**3,431**	**62**	**80**	**176**	**164**
Housing	210	100 units	957	19	56	64	37
South – Subtotal			**957**	**19**	**56**	**64**	**37**
Subtotal (Main Street IAMP Area)			**18,834**	**1,329**		**1,415**	

Table A1a: Cumulative Development Trip Generation – Main Street IAMP Area

Including Trip Reductions

		Trip Generation			
Land Use	**Daily**	**AM In**	**AM out**	**PM In**	**PM Out**
Convenience Mart*	590	27	27	21	21
Fast Food w Drive-Thru**	848	46	45	31	28
Free Standing Discount Store***	728	7	3	33	33
East N Front - Subtotal	**2,167**	**81**	**75**	**85**	**82**
Gas Station w/Mart****	951	29	29	39	39
Motel	592	15	27	20	18
Sit-Down High Turn Restaurant	763	36	33	40	26
SF Housing	1,148	23	68	76	45
Fast Food w Drive-Thru**	1,131	62	59	41	38
Self Service Car Wash****		0	0	6	6
Auto Care Center****		3	2	2	2
East S Front - Subtotal	**4,585**	**167**	**218**	**225**	**174**
Motel	592	15	27	20	18
Sit-Down High Turn Restaurant	763	36	33	40	26
East S Front - Subtotal	**1,355**	**51**	**60**	**60**	**43**
Fast Food with Drive-Thru**	1,131	62	59	41	38
Bank Drive-In	986	28	22	91	91
Single Tenant Office	58	8	1	1	7
Single Tenant Office	58	8	1	1	7
Medical Clinic	315	18	18	26	26
Single Tenant Office	58	8	1	1	7
Single Tenant Office	58	8	1	1	7
South Main - Subtotal	**2,663**	**140**	**103**	**164**	**185**
Drug Store with Drive Thru***	1,146	20	15	55	57
Hardware/Paint Store***	333	4	3	19	21
Specialty Retail***	294	11	6	14	15
Housing – condos	703	9	44	42	21
South Main - Subtotal	**2,776**	**44**	**68**	**129**	**114**
Housing	957	19	56	64	37
South – Subtotal	**957**	**19**	**56**	**64**	**37**
Subtotal – Main Street IAMP	**11,727**	**969**		**1,118**	

* Trip Reduction of 60% (Convenience Store)
** Trip Reduction of 43% (Fast Food)
***Trip Reduction of 35% (Retail)
****Trip Reduction of 27% (gas station)

Appendix 6
Main Street Alternatives

Main Street Alt. 2: Convert Front Street into Freeway Ramps

The second concept would abandon the existing freeway on and off-ramps, and construct new ramps that connect to the existing North Front Street and South Front Street road segments. This concept eliminates the conflicts discussed with Alt. 1 by removing one of the two intersections. The other benefit of this concept is that is negates the need for widening the I-84 overpass bridge. The new ramp terminal intersections would not have restricted sight distance because of the overpass railing, and there could be some provision for left-turn pockets, although it would be less than ODOT standards require.

The negative aspects of this concept are very significant, based on reviews of ODOT and Federal Highway Administration design practices, and it is essentially fatally flawed. The primary reasons that this concept could not be supported by current safety and highway design standards include:

- Transition from interstate to local streets would be unusual, and motorists not familiar with the area could be confused and make poor driving decisions, which could lead to higher crash rates.
- Two-way streets circulation next to one-way off-ramps creates the potential for wrong-way entry onto the Interstate.
- Reduce safety associated with higher conflicting movements between vehicles exiting the freeway, and local circulation to and from the adjoining businesses on Front Street.

Because of these and other issues not listed, this concept was rejected from further consideration for this interchange.

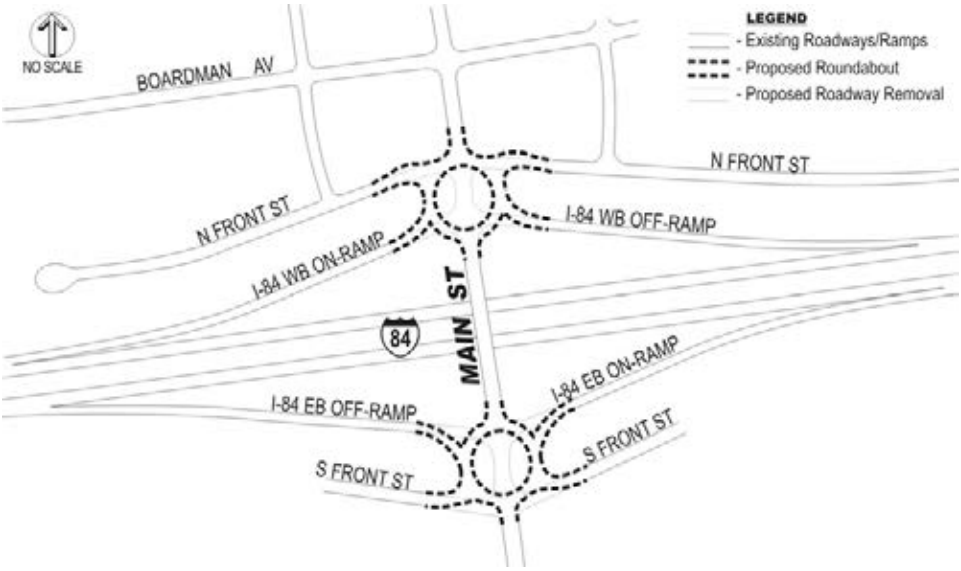
Main Street Alt. 3: Combine Ramp Terminals and Front Street by Roundabouts

The third concept for Main Street would combine the freeway ramp terminals with existing Front Street to form one large intersection on either side of the freeway. This concept would use a

roundabout configuration to reduce conflicts for the six approaching legs to the newly formed intersections.

The value of this concept would be to retain full access on Front Street without a dramatic change to the existing freeway ramp configuration, as was proposed in Alternative 2, above. Combining the intersection partially addresses the vehicle queue issues noted with Alternative 1, and the temporary blockage of traffic accessing Front Street.

The negative aspects of this concept are very significant, for many of the reasons noted for Alternative 2, plus a few others reasons that are unique to roundabout applications. Pedestrian and bicycle travel through the interchange would be significantly more complex, since vehicles are not required to fully stop on the approach legs, except to yield to other vehicles. Typically, crosswalks are set back away from the inner circle of the roundabout to improve visibility of the pedestrian by the approaching motorist. This would lengthen the walking path for pedestrians.



ODOT highway design engineers identified a list of other reasons that roundabouts would not be appropriate at this location, and those include:

- All legs should have near balanced volumes,
- Not more than one level of street functional classification between legs,
- Should be mostly commuter traffic,
- Should not have more than 4 legs and
- Should not have a high volume of truck traffic (interchange would anticipate high trucks).

The second bullet refers to the street functional classification; Main Street is an arterial, and Front Street is a local street, and the freeway off ramps are interstate highways. Mixing these types of street types at one intersection is very unusual, and it could cause uncertainty and confusion for drivers not familiar with the area. For the above reasons, the third alternative was deemed to be flawed, and was rejected from further consideration for the Main Street interchange.