City of Gaston

Transportation Master Plan

Prepared by

DKS *Associates*

TRANSPORTATION SOLUTIONS

January 2009

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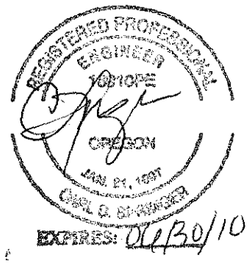

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Introduction

Motor vehicles are the primary mode for transporting goods and people within the City of Gaston. The physical roadway infrastructure and the motor vehicles it supports play a vital role in the City's social and economic livelihood. Efficient movement of motor vehicles supports the economic vitality of the region and maintains the mobility of its residents.

The City of Gaston is located along Highway 47 south of Forest Grove and north of McMinnville. Highway 47 has two travel lanes and is designated by the Oregon Department of Transportation (ODOT)[1] as a Regional Highway through the City of Gaston. According to ODOT, a Regional Highway provides safe and efficient, high-speed, continuous-flow operation in rural areas and moderate to high-speed operations in urban and urbanizing areas. Highway 47 is the primary route for Gaston residents to reach places of employment. Other streets in the city have significantly lower traffic volumes than Highway 47 and are primarily local streets that serve residential areas. With the highest traffic volumes being on Highway 47, the focus of the traffic analysis was Highway 47.

This Gaston Transportation Master Plan (TMP) identifies projects and programs needed to serve planned growth through the TMP horizon year (2030). The TMP builds on the previous plan that was developed in 2002 for the city, and addresses changes in local and regional growth patterns and other new issues including planned developments. This document presents recommendations for the Pedestrian, Bicycle, and Motor Vehicle systems in the City of Gaston.

Existing Conditions

A capacity analysis was conducted at three intersections on Highway 47 during the AM and PM peak period to determine how the intersections are operating under existing conditions. The capacity analysis provided information at the intersections such as expected delay and queue length for a motorist entering Highway 47. The three study intersections analyzed were:

- Highway 47/Main Street
- Highway 47/Cottonwood Street
- Highway 47/Olson Road.

Details on existing volumes data collection and capacity analysis can be found in the Appendix. For the study intersections, there is a numerical standard that expresses how much congestion or delay occurs at a given location. Generally, this is referred to as a Volume-to-Capacity Ratio. The ODOT standard is a Volume-to-Capacity Ratio (V/C) of 0.85 for the AM and PM peak hour. As shown in Table 1 on the next page, all study intersections are well below the ODOT standard of a V/C ratio of 0.85 under existing conditions. The analysis also shows that there are minimal delays for motorist getting on or off of Highway 47 any time of the day.

[1] *Analysis and Procedures Manual,* Transportation Planning and Analysis Unit, ODOT, 1999.

Table 1: Existing (2008) Capacity Analysis Result

Intersection	Highest Volume to Capacity Ratio on Any Approach	
	AM Peak	PM Peak
Highway 47/ Main Street	0.06	0.08
Highway 47/ Cottonwood Street	0.01	0.03
Highway 47/ NW Olson Road	0.06	0.05

Source: DKS Associates. Detailed calculations provided in Appendix.

Future Forecast

The Gaston Transportation Master Plan addresses existing system needs and additional facilities that are required to serve future growth to the forecast year of 2030. The 2015 and 2030 future years were analyzed with full development of the vacant land in the southwest area of the City limits and without the development. Growth was assumed in this area due to a proposed development in this area. Additional development within the UGB south of Olson Road was not assumed because of the creek and wetland area.

Traffic volumes were projected for the year 2015 and 2030 using a growth rate of 2.3 percent along Highway 47 and by adding in the trips from proposed future development. This growth rate was determined from the ODOT 2026 Highway Future Volume Table[2]. For future development in the southwest, 350 dwelling units were assumed based on population projections of 1,422 in the year 2015 and 1,797 in 2030. This is below the buildout population projection of 2,600 in the city's Comprehensive Plan. Access to the future development area will be provided primarily through connecting streets to Trail Street to the north, Cottonwood Street to the east and Olson Road to the south.

The number of vehicle trips from the future development during the AM and PM peak hours during the week was estimated using the *ITE Trip Generation Manual.*[3] The future development will generate approximately 3,350 daily trips, 263 trips during the AM peak and 354 trips during the PM peak. The resulting trip generation for the future development is shown in Table 2.

Table 2: Future Development Trip Generation Summary

Land Use	Units	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Single Family Detached	350	3350	66	197	263	223	131	354

[2] http://www.oregon.gov/ODOT/TD/TPAU/A_Data.shtml
[3] *ITE Trip Generation Manual*, Institute of Transportation Engineers, 7th Edition, 2003.

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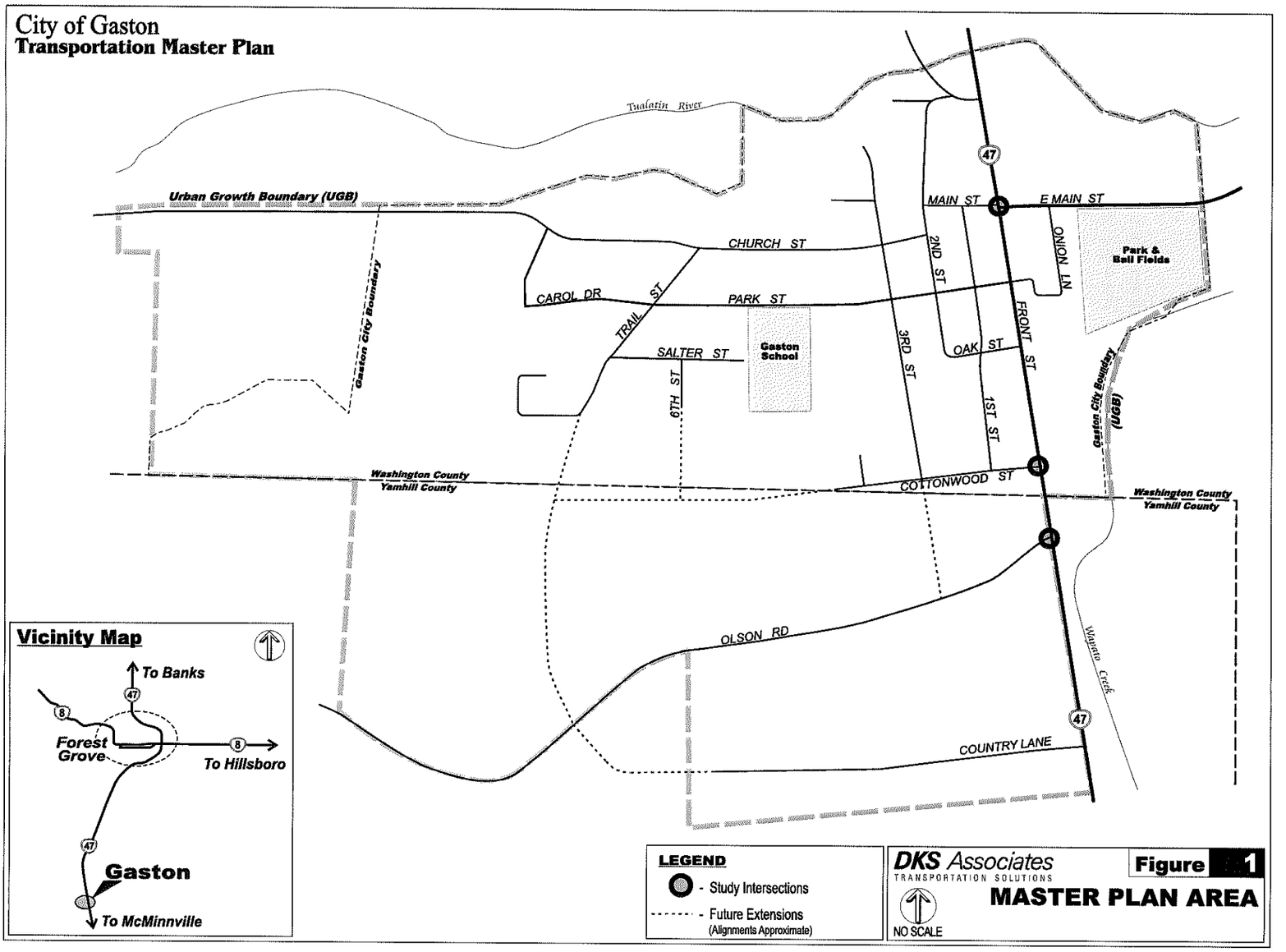

The trips generated by the future development were distributed to local roadways in the City of Gaston based on existing traffic counts and predicted travel patterns. The trip distributions were also used to determine the added number of trips at the three study intersections. The trip distribution assumed that Trail Street will be extended to Olson Road and Cottonwood Street will be extended to Trail Street.

The additional trips projected for the future development were added to the 2015 and 2030 without the future development to determine the traffic volumes for the 2015 and 2030 scenarios with the future development.

The PM peak hour volumes totals for both directions on Highway 47 are approximately 800 vehicles in 2008, 1100 vehicles in 2015 and 1,350 vehicles in 2030. The total traffic on Highway 47 is projected to grow by 500 vehicles in the peak hour, which is approximately 70 percent growth. This growth is primarily driven by through volumes on Highway 47 and by future development of the vacant land in the southwest. The future development will also cause large traffic volume increases in the future on Trail Street, Cottonwood Street and Olson Road.

Future Conditions

This section presents the capacity analysis conducted to determine the potential intersection improvements that would be necessary as part of a long-range master plan. Phasing of implementation will be necessary since not all the improvements can be done at once. This will require prioritization of projects and periodic updating to reflect current needs. It should be understood that the improvements outlined in the following section are a guide to defining the types of right-of-way and street needs that will be required as traffic growth (and infill development) occurs.

The study intersections were analyzed to determine if left turn lanes were warranted in the future. The analysis looks at the left turn volumes for an intersection and compares it to the conflicting volumes, the opposing through and right turn movements. Based on the analysis, a southbound and northbound left turn lane at the Highway 47/Main Street intersection is recommended. A northbound left turn lane is also recommended at the Highway 47/Olson Road intersection. These left turn lanes will improve safety at the intersections and reduce delay by removing the left turning vehicles from the through lane. Analysis and approval from ODOT would be required for these left turn lanes.

The Trail Street extension will connect to Olson Road and will allow drivers to travel south without having to travel north on Trail Street to access Highway 47. The Trail Street extension will provide connectivity between the southwest and the other areas of the City. The 3rd Street extension will connect the central business district of Gaston to Olson Road, allowing people to travel between downtown and Olson Road without having to use Highway 47.

The Cottonwood Street extension will allow drivers to travel to the north and south without having to use Trail Street. This extension will reduce the daily traffic volumes on Trail Street by approximately 500 vehicles. Trail Street is a two lane Collector Street that serves a residential area and an additional 500 vehicles daily would be a large increase in traffic for this type of residential area. This connection will also reduce intersection delay at the Highway 47/Main Street intersection. The Cottonwood Street extension will bisect Gaston School property but it is expected that speeds on Cottonwood Street will be low based on the narrow street design, frequency of pedestrian crossings and the proximity of the school.

As shown in Table 3, all study intersections are projected to operate within the jurisdictional standard of a maximum V/C ratio of 0.85. The highest V/C ratio for the future scenarios is 0.45 and occurs at the Highway 47/Main Street intersection under the 2030 "with full development" PM peak period. The delay for vehicles crossing or entering Highway 47 will be greater due to the increased volumes in the future but will still be within ODOT standards.

Table 3: Future (2015 and 2030) Capacity Analysis Results

	Highest Volume to Capacity			
	Without Future Development		With Future Development	
Intersection	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**
2015 Analysis				
Highway 47/ Main Street	0.06	0.09	0.25	0.25
Highway 47/ Cottonwood Street	0.02	0.04	0.15	0.17
Highway 47/ NW Olson Road	0.06	0.06	0.07	0.10
2030 Analysis				
Highway 47/ Main Street	0.10	0.16	0.40	0.45
Highway 47/ Cottonwood Street	0.02	0.06	0.22	0.29
Highway 47/ NW Olson Road	0.09	0.10	0.12	0.13

Source: DKS Associates. Detailed calculations provided in Appendix.

Pedestrian

Many of the streets have at least a sidewalk on one side of the street. The existing sidewalk network is shown in Figure 2. A few gaps that exist in the sidewalk network are:

- Salter Street from Trail Street to 6th Street
- Carol Drive West of Trail Street
- 3rd Street from Park Street to Church Street
- Park Street from 3rd Street to 2nd Street
- Oak Street from 3rd Street to Highway 47
- Cottonwood Street from Highway 47 to 3rd Street.
- 1st Street north of Oak Street
- 1st Street from Oak Street to Cottonwood Street
- 3rd Street north of Cottonwood
- Country Lane east of Highway 47

By providing sidewalks on these streets, pedestrian connectivity throughout the City of Gaston would be improved and made safer for pedestrians. Sidewalks were not included on both sides of the street for some roadways due to topography and right of way constraints.

A Transportation Enhancement (TE) Grant by ODOT was awarded to the City of Gaston to construct sidewalks and crosswalks along portions of Highway 47. The Transportation Enhancement Program provides federal funds for 12 specific activities that strengthen the cultural, aesthetic, and environmental value of the transportation system. The sidewalks will be constructed along the east side of Highway 47 from Park Street to Main Street and along the south side of Main Street from Highway 47 east to the park and ball fields. Crosswalks across Highway 47 will be modified at two locations: A new crosswalk will be installed at the Highway 47 / Park Street intersection, and the existing crosswalk just south of Main Street will be relocated to that intersection.

The Gaston Transportation Master Plan is in addition to the City of Gaston Parks Master Plan[4]. A list of pedestrian projects to meet the identified needs of the City was developed into a Pedestrian Master Plan. The Pedestrian Master Plan identifies improvements to provide a connected pedestrian network within the City of Gaston, focusing on arterial and collector roadways and providing connections to high pedestrian activity areas. In addition, local street projects should provide sidewalks where possible, and the City of Gaston Development Code regulations should require new developments to provide pedestrian infrastructure as part of the development costs. All new roadways constructed should include sidewalks. The Pedestrian

[4] City of Gaston Parks and Recreation Master Plan and Level of Service, Greenworks, August 2008.

Master Plan projects are shown in Figure 2 and summarized in Table 4. A multi-use trail is being considered by the City of Gaston along the south side of Olson Road from the Trail Street extension to Highway 47. This project is shown in Figure 2 and is included in the Bicycle Master Plan.

A multi-use path is shown in Figure 2 along the west side of Highway 47 from Olson Road south to Country Lane to provide pedestrian access to Country Lane.

The planning level cost estimates provided are based on general unit costs for transportation improvements, but do not reflect the unique project elements that can significantly add to project costs (e.g. Retaining walls, drainage). Each of these project costs will need further refinement to detail right-of-way requirements and costs associated with special design details as projects are pursued. Sidewalk costs were estimated based on a construction cost of $105 per foot of length.

Table 4: Pedestrian Master Plan Projects

Project	Location/ Side	From	To	Length (feet)	Estimated Cost*
Salter Street	South	Trail Street	6th Street	225	$23,000
Park Street	North	3rd Street	2nd Street	150	$16,000
Oak Street	South	3rd Street	Highway 47	125	$14,000
Cottonwood Street	South	Highway 47	3rd Street	500	$53,000
1st Street	West	Cottonwood Street	Oak Street	550	$58,000
1st Street	West	Oak Street	North to existing sidewalk	125	$13,000
3rd Street	West	Cottonwood Street	North to existing sidewalk	450	$47,000
Country Lane	North/South	Highway 47	End of existing street	1,600	$336,000
Highway 47**	West	Olson Road	Country Lane	1,200	$90,000
			Total Pedestrian Master Plan Cost		**$650,000**

Source: DKS Associates.
*All cost estimates are in 2008 dollars.
**Multi-use path

There are no local services for the transportation disadvantaged in the City of Gaston; however, there is a service to destinations outside the city currently available by Washington County U-Ride[5]. U-Ride service allows customers to access public transit, shopping and other activities, such as, medical, recreation, employment and education facilities.

[5] Washington County U-Ride, http://www.rideconnection.org/services/URide%20Washington%20County.htm

Bicycle

The City of Gaston does not currently have any designated bicycle lanes in the city. The general threshold used for determining if a roadway needs a dedicated bicycle facility is a daily traffic volume of 3,000 vehicles. The city streets carry much lower volume today, and are generally not expected to exceed this threshold in the future. If a roadway carries more volume than this threshold, then a bike lane or separate multi-use path is helpful for traffic flow and the safety of the bicycle rider. A regional trail or multi-use path allows safe and efficient travel for bicycle riders when there are high vehicle volumes and speeds on a highway connecting neighboring cities. The City of Gaston Parks and Recreation Master Plan[4] outlines where multi-use paths are planned. These planned multi-use paths are also shown in Figure 2.

There is a vacant railroad right-of-way that runs parallel to the east of Highway 47. The city' Comprehensive Plan indicates that this corridor should be reserved for potential commuter rail service to regional destinations. However, there is no indication of this type of provision in the Washington County 2020 Transportation System Plan. A more pragmatic option would be to monitor availability of this corridor from the railroad, and potentially re-use this land to establish a regional trail that would give an alternative route for pedestrians and bicycles for travel along Highway 47, where vehicles speeds commonly exceed 50 miles per hour, outside of the city limits. A bicycle facility along the Highway 47 corridor from McMinnville to Forest Grove is not in the Washington County 2020 Transportation Plan, and it would need to be added by the county during their next plan update cycle. This improvement would also provide connectivity to the City of Gaston from the existing bicycle facilities in the City of Forest Grove once a connection in the bicycle network is made between Forest Grove and Gaston. Pending consideration of a new regional trail, the City of Gaston should reserve this abandoned right-of-way for non-motor vehicle uses. Local improvements could be done consistent with the ultimate design standard that a regional trail would require, which typically includes a 10 foot paved surface at the center of the right-of-way.

A multi-use path is also in the Parks and Recreation Mater plan along the south side of Olson Road from the west extents of the UGB to Highway 47. This path will allow bicycles and pedestrian connections between Trail Street and regional connections at Highway 47. The trail concept would have less impact to the existing environment of Olson Road than a more traditional sidewalk facility. The Bicycle Master Plan is shown in Figure 2.

Costs were not estimated for Bicycle Master Plan because all of the planned improvements are covered by the capital improvements in the Parks and Recreation Master Plan[4].

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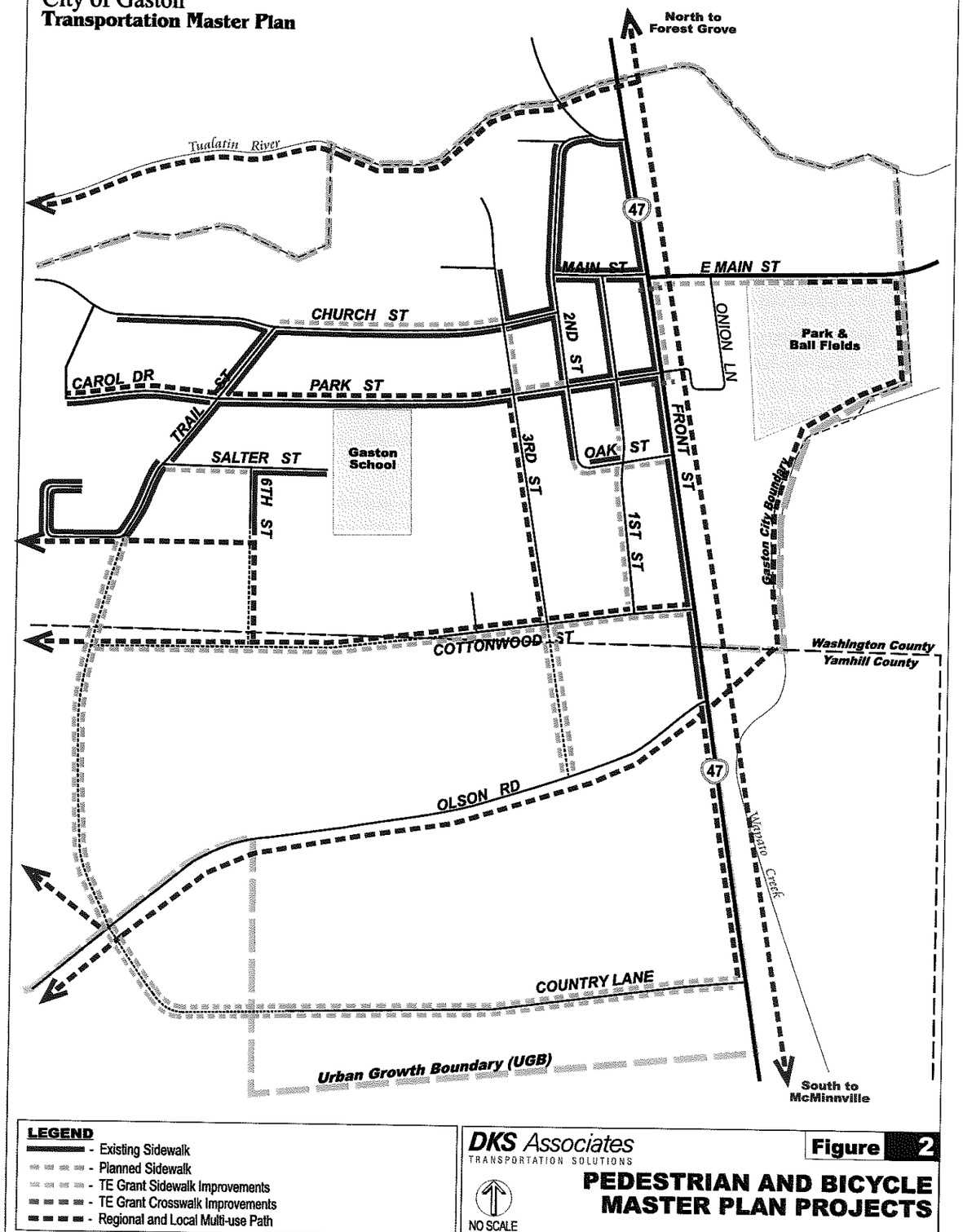

LEGEND
- Existing Sidewalk
- Planned Sidewalk
- TE Grant Sidewalk Improvements
- TE Grant Crosswalk Improvements
- Regional and Local Multi-use Path

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NO SCALE

Figure 2

PEDESTRIAN AND BICYCLE MASTER PLAN PROJECTS

Motor Vehicle

This section summarizes the needs for the motor vehicle system for the City of Gaston. It also provides implementation details to be considered when new streets are designed, or existing streets are upgraded to current standards. All roadways within the city have been classified based on a functional class for the roadway. A functional class helps designate particular functions to a roadway. The proposed functional classification map for streets in Gaston is shown in Figure 3. The definitions of the functional classes used for the City of Gaston are:

Arterial streets serve to connect the City to neighboring areas. These streets link major commercial, residential, industrial and institutional areas. Arterial streets are typically spaced about one mile apart to assure accessibility and reduce the incidence of traffic using collectors or local streets for through traffic in lieu of well placed arterial streets. Access control is the key feature of an arterial route. Arterials are typically multiple miles in length. In the city of Gaston, Highway 47 is classified as an arterial street.

Collector streets provide both access and circulation within and between residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function and do not require as extensive control of access (compared to arterials). Collector streets also penetrate residential neighborhoods, distributing trips from the neighborhood and local street system. In the city of Gaston, collector streets include Main Street, Church Street, 3rd Street, Trail Street and Olson Road.

Local Streets have the sole function of providing access to immediate adjacent land. Any street not designated as an arterial or collector is considered a local street. Service to "through traffic movement" on local streets is typically deliberately discouraged by design. Streets in the city that are not an arterial or collector street are classified as a local street.

Olson Road is in Yamhill County and the functional classification is resource road. The Yamhill Transportation System Plan[6] defines a resource road as local road with an average daily traffic of 500 vehicles or more.

[6] http://www.co.yamhill.or.us/plan/planning/planning.asp?sel=11

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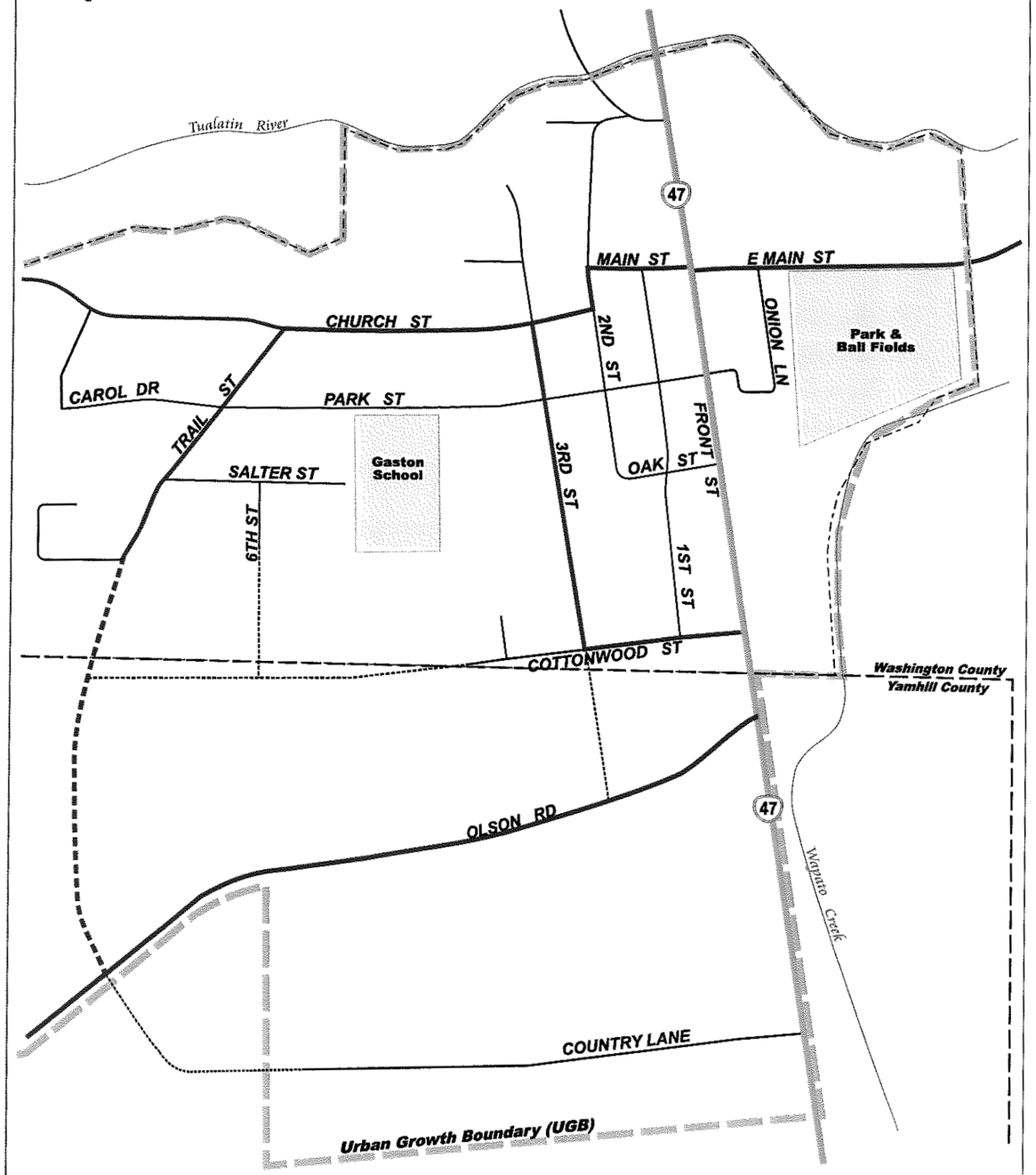

LEGEND
- Arterial
- Collector
- Local
- Future Extension (Alignment Approximate)

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NO SCALE

Figure 3

FUNCTIONAL CLASSIFICATION MAP

Residential Roadway Cross Sections

The street design characteristics for city streets were developed to meet the function and demand for each facility type. The resulting street cross-sections are depicted in Figure 4 for city collectors and local streets. The cross-sections shown in Figure 4 are for residential land use. Because the actual design of a roadway can vary from segment to segment, due to adjacent land uses and physical constraints, the objective was to define a system that provides consistency, but also to gives some flexibility. The street cross-sections provide the following features:

- One travel lane in each direction
- No additional width for turn lanes at major intersections
- Sidewalks or shared use facilities
- On-street parking on both sides of the roadway
- Landscape strips along the collector street, between the edge of pavement and the sidewalks

The optional cross section for collector streets is to be used when right-of-way is constrained. This option can only be used with council approval for each roadway section. The local street cross-section provides a 34-foot paved width between curbs, while the collector streets provide 36-feet between curbs. Narrower street cross-sections, such as these, help to keep vehicle speeds lower, which improves safety for all users.

Specific right-of-way needs should be monitored continuously through the development review process to reflect current needs and conditions (that is to say that more specific detail may become evident in development review which requires improvements other than these outlined in this 20 year general planning assessment of street needs).

On facilities under State jurisdiction, ODOT's design standards will apply, any deviation from those standards could require approval of a design exception. Within the City of Gaston, this is limited to Highway 47. The existing right-of-way on Highway 47 within the city is 60 feet. This is suitable for the existing facilities, but any improvements that might cause the highway to be widened and may require additional right-of-way. For example, widening the highway at Main Street or at Olson Road to accommodate left-turn pockets for highway traffic would require dedication of property on the affected sides of the highway.

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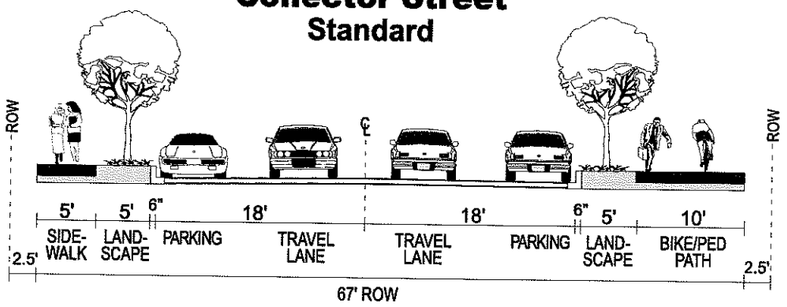
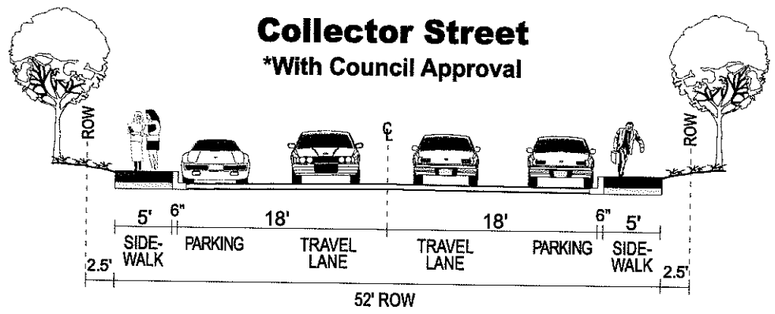
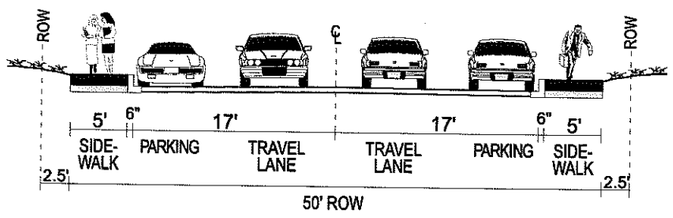
Collector Street
Standard



Collector Street
*With Council Approval



Local Street
Standard



***44' ROW and 28' pavement width allowed with Council Approval**

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Figure 4

RESIDENTIAL ROADWAY CROSS SECTIONS

Access Management

Access Management is a policy tool which seeks to balance mobility, the need to provide efficient, safe and timely travel with the ability to allow access to individual properties. Proper implementation of access management techniques should guarantee reduced congestion, reduced accident rates, less need for roadway widening, conservation of energy, and reduced air pollution.

Access management limits the number and spacing of vehicular access on arterial and collector facilities to maintain the capacity of the facilities and preserve their functional integrity. Access management strives to strike a balance between maintaining the integrity of the facility and providing access to adjacent parcels. Numerous driveways can erode the capacity of arterial and collector roadways. Preservation of capacity is particularly important on higher volume roadways, such as Highway 47, for maintaining traffic flow and mobility. Numerous driveways or street intersections increase the number of conflicts and potential for collisions and decrease mobility and traffic flow. The City of Gaston, as with every city, needs a balance of streets that provide access with streets that serve mobility. Highway 47 inside the City of Gaston is designated as a Special Transportation Area (STA), which gives the city more flexibility in complying with ODOT standards.

Several access management strategies were identified to improve local access and mobility in the City of Gaston:

- Develop specific access management plans for the arterial and collector functional classifications within the City of Gaston to maximize the capacity of the existing facilities and protect their functional integrity.
- Work with land use development applications to consolidate driveways where feasible.
- Provide left turn lanes where warranted for access onto cross streets.

New development and roadway projects on City street facilities should meet the recommended access spacing standards summarized in Table 5.

Table 5: Access Spacing Standards for City Collectors

	Intersection			
	Public Road		Private Drive	
Functional Classification	Type	Spacing	Type	Spacing
Collectors	At Grade	300'	Left / Right Turns	150'

Many existing roadways and/or driveways do not currently meet these standards. These access points were installed when traffic volumes were substantially lower and no access spacing

criteria were mandated. With higher traffic volumes in the future, the need for access control on arterial and collector roadways is critical to allow for safe mobility.

Preservation of capacity through specific access spacing standards on state facilities is outlined for roadways such as Highway 47, in the Oregon Highway Plan (OHP)[7]. The access management standards for Highway 47 are outlined in Table 7. Preserving capacity on state facilities is especially important since a large number of regional trips are served daily on Highway 47. Substandard performance because of a lack of capacity could force drivers to look for alternative routes along city streets.

Table 6: Access Spacing Standards for ODOT Facilities

Facility	Highway Classification	Posted Speed	National Highway System	Truck Route	Freight Route	STA	Access Spacing Standard (ft)
Highway 47	Regional Highway	30 mph	No	No	No	Yes	425

Note: Minimum access management spacing for public road approaches is the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways. However, where driveways are allowed and where land use patterns permit, the minimum access management spacing for driveways is 175 feet (55 meters) or mid-block if the current city block is less than 350 feet (110 meters)[7].

The standard access spacing requirement on Highway 47 is 425 feet between public street intersections. Many of the existing city blocks in Gaston fall below this distance. Typical blocks are 300 to 350 feet long, and the posted speed limit is 30 mile per hour. According to ODOT guidelines, driveways should be limited to mid-block connections on longer blocks (between Cottonwood Street and Oak Street, for example), and restricted on shorter blocks, with a minimum separation of 175 feet.

Planned Improvements

A list of motor vehicle projects to meet the transportation needs for the City of Gaston was developed into a Motor Vehicle Master Plan. The Motor Vehicle Master Plan projects are summarized in Table 7. This list is an overall plan and summarizes the "wish list" of motor vehicle related projects in Gaston.

The Highway 47/Olson Road intersection currently does not meet sight distance standards. Adequate sight distance at intersections is important so a stopped vehicle can decide when to enter the intersecting highway or to cross it. The eastbound approach of Olson Road intersects Highway 47 at a skew angle, causing drivers to look over their shoulder to look for oncoming traffic to the south. Compounding the issue, the eastbound approach is at a lower elevation until the intersection with Highway 47, which reduces visibility for vehicles entering Highway 47 from Olson Road.

[7] *Oregon Highway Plan (OHP)*, Oregon Department of Transportation (ODOT), 1999

According to the *AASHTO Geometric Design of Highway and Streets Manual*[8], the minimum required intersection sight distance for a vehicle turning left onto a two-lane highway with a speed limit of 45 mph is 500 feet. A speed limit of 45 mph was used for the sight distance analysis because the speed limit is 45 mph south of the Highway 47/Olson Road intersection. The observed sight distance from the eastbound approach of Olson Road at Highway 47 was approximately 300 feet to the south, which is below the design standard. The Highway 47/Olson Road intersection needs to be improved so that the Olson Road approach intersects at a 90 degree angle and at the same elevation with Highway 47.

The Trail Street extension to Olson Road will help distribute trips from the future development in the southwest area of Gaston. The Trail Street Extension to Olson Road will allow for better traffic circulation and access to the future development. The extension of Cottonwood Street to Trail Street will also provide connectivity to the future development. The developers of future growth area would complete these two roadway extensions because the extensions would not be needed without the development.

The value of the Cottonwood Street extension was reviewed in terms of the relative change in daily traffic on connecting streets to Highway 47. Table 7 summarizes the estimated daily volumes for today and the horizon plan year (2030) with and without the Cottonwood Street extension. It is estimated that Cottonwood Street extension, the portion westerly of its current terminus, would carry about 1,000 vehicles daily. If the new connection were not constructed, that amount of traffic would be served by routes to Main Street, or routes to Olson Road. The future volumes on the connecting streets of those routes, like Trail Street, would also increase proportionately.

Table 7: Selected Traffic Volumes With Cottonwood Street Extension

Location of Traffic Data	Existing	2030 With Cottonwood Extension	2030 Without Cottonwood Extension
Main Street west of Highway 47	500	1,600	2,100
Cottonwood Street west of Highway 47	400	1,400	400
Olson Road west of Highway 47	500	1,900	2,500

The volumes represent typical average weekdays, and do not reflect activity associated with the sports fields recently proposed by the Gaston School District south of its current campus. Sporting events could have higher traffic activity than assumed in our analysis, which would result in higher daily volumes than shown in Table 7 on event days.

[8] *Geometric Design of Highway and Streets*, AASHTO, 2004.

The planning level cost estimates provided are based on general unit costs for transportation improvements, but do not reflect the unique project elements that can significantly add to project costs. Each of these project costs will need further refinement to determine right-of-way requirements (not included in cost estimate) and costs associated with special design details as projects are pursued.

Table 8: Motor Vehicle Master Plan Projects

Location	Improvement	Estimated Cost**
ODOT Facilities*		
Highway 47/ Olson Road	Improve the intersection so that the Olson Road approach intersects at a 90-degree angle and at the same elevation with Highway 47 for at least 50 feet.	$450,000
Highway 47/ Olson Road	Add northbound left turn lane	$155,000
Highway 47/ Main Street	Align the east leg of Main Street to facility the safe operation of left-turn lanes on the highway	$450,000
Highway 47/ Main Street	Add southbound left turn lane Add northbound left turn lane	$235,000
City of Gaston Facilities		
Trail Street	Extend Trail Street to Olson Road	$1,465,000
Cottonwood Street	Extend Cottonwood Street to Trail Street	$1,415,000
6th Street	Extend 6th Street to Cottonwood Street	$500,000
Country Lane	Extend County lane to Olson Road	$1,170,000
3rd Street	Extend 3rd Street to Olson Road	$640,000
Church Street***	Reconstruct from 3rd Street to Trail Street	$540,000
	Total Motor Vehicle Master Plan Cost	**$7,020,000**

Source: DKS Associates
* Any project on the state highway would require ODOT approval as to need, design and construction.
**Detailed cost estimates provided in Appendix. Cost estimates do not include right-of-way. Costs are in 2008 dollars.
*** Cost estimate provided by Kennedy/Jenks Consultants

The Gaston Comprehensive Plan[9] discusses a potential loop connection that would extend Onion Lane to intersect Highway 47 at Cottonwood Street. This improvement was not included in the Motor Vehicle Master Plan projects because of right-of-way issues conflicts with the wetland to the southeast and the planned regional multi-use path.

[9] Gaston Comprehensive Plan, Urban Solutions, 13 Nov 2002.

The City of Gaston is in the process of obtaining funding for the Church Street reconstruction from 3rd Street to Trail Street as shown in Table 8. This project will widen Church Street to the collector standard width and provide sidewalks on both sides of the street.

The Gaston Comprehensive Plan also mentions that commuter rail service through Gaston is a potential for the future. A commuter rail line between Beaverton and Wilsonville is planned to open in early 2009. If the line is successful, it could stimulate interest in other lines, such as the one through Gaston.

Olson Road is a county rural road, and not under road authority by the City of Gaston. As new urban level development occurs north of Olson Road, the traffic volumes on this facility will require more consistent maintenance of the roadway to trim weeds and improve visibility for motorists. The proposed trail parallel to the roadway would provide facilities for bikes and pedestrians, without requiring widening of the roadway itself. The major issue on Olson Road is the intersection with Highway 47, where there is substandard visibility for making turns onto the highway. To mitigate this condition, a new improvement project is identified in the Roadway Master Plan. No other improvements are recommended on Olson Road within the city limits.

Funding and Implementation

This chapter outlines the funding sources that can be used to meet the needs of the transportation system. The costs for the elements of the transportation system plan are outlined and compared to the potential revenue sources. Options are discussed regarding how costs of the plan and revenues can be balanced.

Current Funding Strategies

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure through motor vehicle fees (such as gas tax and registration fees) or transit fares. However, a great share of motor vehicle user fees goes to road maintenance, operation and preservation of the system rather than construction of new system capacity. Much of what the public views as new construction is commonly funded (partially or fully) through local improvement districts (LIDs), traffic impact fees and fronting improvements to land development.

The City of Gaston utilizes a number of mechanisms to fund construction of its transportation infrastructure as described below. The first three sources collect revenue each year that is used to repair street facilities or construct new streets, with some restrictions on the type and location of projects. The last program is different in that it does not generate on-going revenue, but is a means to acquire needed property (Exaction) as development occurs.

State Fuel Tax and Vehicle License Fee

The State of Oregon Highway Trust Fund collects various taxes and fees on fuel, vehicle licenses, and permits. A portion is paid to cities annually on a per capita basis. By statute, the money may be used for any road-related purpose. Gaston uses it for street operating needs.

Oregon gas taxes are collected as a fixed amount per gallon of gasoline served. Gas tax in Oregon has not increased since 1993 (currently 24 cents per gallon), and this tax does not vary with changes in gasoline prices. There is no adjustment for inflation tied to the gas tax, so the lack of change since 1993 means that the net revenue collected has gradually eroded over time as the cost to construct and repair transport systems increase. Fuel efficiency in new vehicles has further reduced the total dollars collected through this system.

Oregon vehicle registration fees are collected as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon have recently increased from $15 per vehicle per year to $27 per vehicle per year for passenger cars, with similar increases for other vehicle types. There is no adjustment for inflation tied to vehicle registration fees.

Gaston gets about $25,000 per year in gas tax and vehicle license fee revenue for streets, bikeways and sidewalks[10]. Through 2030, this accounts for about $550,000 in current year dollars. Essentially all of these funds are spent on surface restoration of local streets or operations. Washington County does not have a gas tax that is distributed to cities, so all of the gas tax received by Gaston externally is distributed from the State of Oregon. Because there is no index for cost inflation, this revenue level will increase only proportionate with the city's population growth relative to the rest of the county.

Exactions

These are street improvements that are obtained when development is permitted. Developers are required to improve the streets along frontage of the property and, in some cases, provide off site improvements depending upon their level of traffic generation and the impact to the transportation system.

Capital Projects

Pedestrian, Bicycle, and Motor Vehicle projects were identified in the Master Plan for each mode, and represent those projects that are needed for implementation to satisfy performance standards, or other policies established for the Gaston Transportation Master Plan. These projects are summarized below, according to the agency or party most likely to take the lead on the improvement project.

[10] Fuel tax revenue in 2002, based on http://www.city-data.com/city/Gaston-Oregon.html

The total costs for Master Plans are approximately $7.7 million dollars; well over total available revenues ($0.5 million) for all City transportation programs. The Master Plans include additional projects expected to be built beyond the plan horizon or as additional revenue sources become available.

A key issue to be addressed at implementation of the plan is the funding source. In Table 9, in the rightmost column, a separate consideration was shown about what shares of the projects are eligible to be included in a System Development Charge (SDC) for transportation. The basic legal criterion for inclusion in the SDC is that the project is constructed to serve growth. None of the pedestrian improvement noted fall into this category, because these are existing gaps in the city system, and it will be the City's responsibility to construct them. Street extensions would not occur without the future development, and so these projects are noted as being fully eligible for that type of funding.

Several of the improvements on Highway 47 were listed as ODOT responsibilities, and those included the existing safety concern at Olson Road, and the addition of left-turn lanes at Main Street. None of these improvements are included in current ODOT improvement programs, and will need to be considered in their future plan updates and funding allocations. There is no funding commitment for any state projects at this date. The left-turn lane at Olson Road was not included, since there would not be need for that project without future development, and this item was allocated for funding by the private development sponsors.

The total city costs for the Master Plan would be approximately $1,190,000, with none of that amount being eligible for SDC funding. The greatest burden for facility improvement falls onto the private development sponsor, with just over $5.3 million, based on the above cost estimates and fund assumptions.

Table 9: Gaston Transportation Master Plan (2008 Dollars)

Project	Improvement	Estimated *City Cost	Portion Eligible for SDC Funding
City Projects		**$1,190,000**	**$0**
Sidewalk In-Fill Projects	See Table 4 for details	$650,000	0%
Church Street	Reconstruct from 3rd Street to Trail Street.	$540,000	0%
State Projects **		**$1,135,000**	**$0**
Highway 47/ Olson Road	Safety improvement to correct existing limited sight distance.	$450,000	0%
Highway 47/ Main Street	Re-align the east leg of Main Street to allow for construction of left-turn lanes on the highway	$450,000	0%
Highway 47/ Main Street	Add left turn lanes on highway.	$235,000	0%
Private Development Projects		**$5,345,000**	**$5,345,000**
Highway 47/ Olson Road	Add northbound left turn lane	$155,000	100%
Trail Street	Extend Trail Street to Olson Road	$1,465,000	100%
6th Street	Extend 6th Street to Cottonwood Street	$500,000	100%
Cottonwood Street	Extend Cottonwood Street westerly to Trail Street	$1,415,000	100%
3rd Street	Extend 3rd Street to Olson Road	$640,000	100%
Country Lane	Extend Country Lane to Olson Road	$1,170,000	100%
Total		**$7,670,000**	**$5,345,000**

Source: DKS Associates. Detailed calculations provided in Appendix.
*All cost estimates are in 2008 dollars and do not include ROW acquisition (except ROW is included for Cottonwood Street extension).
** Any project on the state highway would require ODOT approval as to need, design and construction.

New Funding Sources and Opportunities

The new transportation improvement projects will require funding beyond the levels currently collected by the City. This section summarizes several potential funding options available for transportation improvements. These are sources that have been used in the past by agencies in Oregon. In most cases, these funding sources, when used collectively, are sufficient to fund transportation improvements for local communities. Due to the complexity of today's transportation projects, it is necessary to seek several avenues of funding projects. Unique or hybrid funding of projects generally will include these funding sources combined in a new package.

Funding for major transportation projects often is brought to a vote of the public for approval. This is usually for a large project or list of projects. Because of the need to gain public approval for transportation funding, it is important to develop a consensus in the community that supports needed transportation improvements. That is the value of the Transportation Plan. In most communities where time is taken to build a consensus regarding a transportation plan, funding sources can be developed to meet the needs of the community.

Transportation program funding options range from local taxes, assessments, and charges to grants, and loans. All of these resources can be constrained based on a variety of factors, including the willingness of local leadership and the electorate to burden citizens and businesses; the availability of local funds to be dedicated or diverted to transportation issues from other competing City programs; and the availability and competitiveness of state and federal funds. Nonetheless, it is important for the City to consider all of its options and understand where opportunities exist to provide and enhance funding for its Transportation programs.

The following funding sources have been used by cities to fund the capital and maintenance aspects of their transportation programs. It may be possible to begin to use (or further utilize) these sources, as described below, to address new needs identified in the Transportation System Plan.

System Development Charge

The System Development Charge (SDC) fee for streets is used as a funding source for all capacity adding projects for the transportation system. The funds can be used to construct or improve portions of local streets within the city, or be used as a partial match on county street projects within the city limits. The SDC fee is collected from new development based on the afternoon peak hour vehicle trips that are expected from a proposed development. The city does not have an SDC at this time. By comparison, the City of Gresham charges $1,963 per trip for their transportation SDC, which is about average for the Portland-Vancouver Metropolitan area. The City of Eugene currently charges $1,566 per trip.

Street Utility Fee

A number of Oregon cities supplement their street funds with street utility fees. Portland Metro cities with adopted street utility fees include Lake Oswego, Milwaukie, Tualatin, West Linn, and Wilsonville. Establishing user fees to fund applicable transportation activities and/or capital construction ensures that those who create the demand for service pay for it proportionate to their use. The Street Utility Fees are recurring monthly or bi-monthly charges that are paid by all residential, commercial, industrial, and institutional users. The fees are charged proportionate with the amount of traffic generated, so a retail commercial user pays a higher rate than a residential user. Typically, there are provisions for reduced fees for those that can demonstrate they use less than the average rate implies, for example, a resident that does not own an automobile or truck.

From a transportation system health perspective, creating a street utility fee would help to support the ongoing viability of the program by establishing a source of reliable, dedicated funding for that specific function. Fee revenues can be used to secure revenue bond debt used to finance capital construction. A street utility can be formed by Council action and does not require a public vote.

A preliminary estimate for street utility fee revenue in Gaston ranges between $50,000 to $75,000 annually, based on the average rates charged around the state. A specific fee study would be necessary to establish a fee program for the City of Gaston to determine specific allocations to its residents and businesses.

General Fund Revenues

At the discretion of the City Council, the City can allocate General Fund revenues to pay for its Transportation program. (General Fund revenues primarily include property taxes, use taxes, and any other miscellaneous taxes and fees imposed by the City.) This allocation is completed as a part of the City's annual budget process, but the funding potential for transportation is constrained by competing community priorities set by the City Council. General Fund resources can fund any aspect of the program, from capital improvements to operations, maintenance, and administration. Additional revenues would only become available from this source to fund new aspects of the transportation program when either General Fund revenues increase or City Council directs and diverts funding from other City programs.

Other Funding Sources

Urban Renewal District

An Urban Renewal District (URD) is a tax-funded district within a City. The URD would be funded with the incremental increases in property taxes that result from construction of applicable infrastructure improvements. This type of tax increment financing has been

used in Oregon since 1960. It is tax-increment funded rather than fee funded and can provide for renewal that includes, but is not limited to, transportation projects.

Local Improvement District Assessment Revenue

The City may set up Local Improvement Districts (LIDs) to fund specific capital improvement projects within defined geographic areas, or zones of benefit. LIDs impose assessments on properties within its boundaries. LIDs may not fund ongoing maintenance costs. They require separate accounting, and the assessments collected may only be spent on capital projects within the geographic area. Citizens representing 33% of the assessment can terminate a LID and overturn the planned projects; therefore projects and costs of a LID must gain broad approval of those within the boundaries of the LID.

Special Assessments

A variety of special assessments are available to be used in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking and CBD or commercial zone transportation improvements. These assessments would likely fall within the Measure 50 limitations.

Debt Financing

While not direct funding sources, debt financing can be used to mitigate the immediate impacts of significant capital improvement projects and spread costs over the useful life of a project. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but is also viewed as an equitable funding strategy, spreading the burden of repayment over existing and future customers who will benefit from the projects. The caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations.

Voter-Approved General Obligation Bond Proceeds:

Subject to voter approval, the City can issue General Obligation (G.O.) bonds to debt finance capital improvement projects. G.O. bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property City-wide (a property tax increase). Depending on the critical nature of projects identified in the Transportation Plan, and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved G.O. bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.

Revenue Bonds:

Revenue bonds are debt instruments secured by rate revenue. In order for the City to issue revenue bonds for transportation projects, it would need to identify a stable source

of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds, due to the perceived stability offered by the "full faith and credit" of a jurisdiction.

Recommendations

The City should establish a transportation system development charge program to fund new improvements to serve growth, and a street utility as the backbone of its operations and maintenance funding approach.

A transportation SDC would help to cover the new City funded capital projects identified in the plan. This would help to ensure that local growth pays its fair share of new transportation facilities that are required to serve this planned development.

Street utility fees can provide a stable source of dedicated revenue useable for transportation system operations and maintenance and/or capital construction. Rate revenues can also secure revenue bond debt if used to finance capital improvements. Street utilities can be formed by Council action, and billed through the City utility billing system.

In addition, the City should actively pursue grant and other special program funding in order to mitigate the costs to its citizens of transportation capital construction.

Appendix

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Trail Street Extension

Project Description:

Roadway construction of new 2-lane collector roadway (pavement width of 36 feet - total ROW 60 ft)
This improvement, approximately 1200 feet in length, includes 5' sidewalk, 8' bike/ped path, on street parking, and 4' landscape strips

Linear Foot Cost Template	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	0	SF	$ 0.33	$	-
Clear & Grub	72000	SF	$ 0.05	$	3,600
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	72000	SF	$ 1.25	$	90,000
Pavement	43200	SF	$ 8.00	$	345,600
Pavement Elevated/Subgrade	0	SF	$ 150.00	$	-
Sidewalk	15600	SF	$ 4.00	$	62,400
Curb and gutter	2400	LF	$ 14.00	$	33,600
Landscaping	2400	LF	$ 12.00	$	28,800
Wall	0	LF	$ 120.00	$	-
Lighting	2400	LF	$ 60.00	$	144,000
Full Drainage	2400	LF	$ 100.00	$	240,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	2400	LF	$ 1.50	$	3,600
SUBTOTAL				$	951,600
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	142,740
Contingency			30%	$	285,480
Project Development			9%	$	85,644
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**1,465,464**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Cottonwood Street Extension

Project Description:

Roadway construction of new 2-lane local roadway (pavement width of 34 feet - total ROW 55 ft)
This improvement, approximately 1250 feet in length, includes 5' sidewalk, and on street parking

	UNITS		UNIT COSTS		ESTIMATED COST
ROW	0.8	Acre	$ 125,000.00	$	100,000
Remove Pavement	0	SF	$ 0.33	$	-
Clear & Grub	68750	SF	$ 0.05	$	3,438
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	68750	SF	$ 1.25	$	85,938
Pavement	42500	SF	$ 8.00	$	340,000
Sidewalk	12500	SF	$ 4.00	$	50,000
Curb and gutter	2500	LF	$ 14.00	$	35,000
Landscaping	0	LF	$ 12.00	$	-
Wall	0	LF	$ 120.00	$	-
Lighting	2500	LF	$ 60.00	$	150,000
Full Drainage	2500	LF	$ 100.00	$	250,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	2500	LF	$ 1.50	$	3,750
SUBTOTAL				$	918,125
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	137,719
Contingency			30%	$	275,438
Project Development			9%	$	82,631
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**1,413,913**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: 6th Street Extension

Project Description:

Roadway construction of new 2-lane local roadway (pavement width of 34 feet - total ROW 55 ft)
This improvement, approximately 450 feet in length, includes 5' sidewalk, and on street parking

	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	0	SF	$ 0.33	$	-
Clear & Grub	24750	SF	$ 0.05	$	1,238
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	24750	SF	$ 1.25	$	30,938
Pavement	15300	SF	$ 8.00	$	122,400
Sidewalk	3000	SF	$ 4.00	$	12,000
Curb and gutter	900	LF	$ 14.00	$	12,600
Landscaping	0	LF	$ 12.00	$	-
Wall	0	LF	$ 120.00	$	-
Lighting	900	LF	$ 60.00	$	54,000
Full Drainage	900	LF	$ 100.00	$	90,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	900	LF	$ 1.50	$	1,350
SUBTOTAL				$	324,525
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	48,679
Contingency			30%	$	97,358
Project Development			9%	$	29,207
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**499,769**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: 3rd Street Extension

Project Description:

Roadway construction of new 2-lane local roadway (pavement width of 34 feet - total ROW 55 ft)
This improvement, approximately 550 feet in length, includes 5' sidewalk, and on street parking

Linear Foot Cost Template	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	0	SF	$ 0.33	$	-
Clear & Grub	0	SF	$ 0.05	$	-
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	30250	SF	$ 1.25	$	37,813
Pavement	18700	SF	$ 8.00	$	149,600
Pavement Elevated/Subgrade	0	SF	$ 150.00	$	-
Sidewalk	5500	SF	$ 4.00	$	22,000
Curb and gutter	1100	LF	$ 14.00	$	15,400
Landscaping	1100	LF	$ 12.00	$	13,200
Wall	0	LF	$ 120.00	$	-
Lighting	1100	LF	$ 60.00	$	66,000
Full Drainage	1100	LF	$ 100.00	$	110,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	1100	LF	$ 1.50	$	1,650
SUBTOTAL				$	415,663
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	62,349
Contingency			30%	$	124,699
Project Development			9%	$	37,410
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**640,120**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
12/30/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Country Lane Extension

Project Description:

Roadway construction of new 2-lane local roadway (*pavement width of 34 feet - total ROW 55 ft*)
This improvement, approximately 1,000 feet in length, includes 5' sidewalk, and on street parking

Linear Foot Cost Template	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	0	SF	$ 0.33	$	-
Clear & Grub	55000	SF	$ 0.05	$	2,750
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	55000	SF	$ 1.25	$	68,750
Pavement	34000	SF	$ 8.00	$	272,000
Pavement Elevated/Subgrade	0	SF	$ 150.00	$	-
Sidewalk	10000	SF	$ 4.00	$	40,000
Curb and gutter	2000	LF	$ 14.00	$	28,000
Landscaping	2000	LF	$ 12.00	$	24,000
Wall	0	LF	$ 120.00	$	-
Lighting	2000	LF	$ 60.00	$	120,000
Full Drainage	2000	LF	$ 100.00	$	200,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	2000	LF	$ 1.50	$	3,000
SUBTOTAL				$	758,500
Traffic Control			0%	$	-
Mobilization			0%	$	-
Design/Administration/Management			15%	$	113,775
Contingency			30%	$	227,550
Project Development			9%	$	68,265
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**1,168,090**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
12/30/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Highway 47 Left Turn Lanes at Highway 47/Main Street

Project Description:

Roadway construction of a northbound and southbound left turn lane (150 feet in length each)

	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	7800	SF	$ 0.33	$	2,574
Clear & Grub	0	SF	$ 0.05	$	-
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	28200	SF	$ 1.25	$	35,250
Pavement	14100	SF	$ 8.00	$	112,800
Sidewalk	0	SF	$ 4.00	$	-
Curb and gutter	0	LF	$ 14.00	$	-
Landscaping	0	LF	$ 12.00	$	-
Wall	0	LF	$ 120.00	$	-
Lighting	0	LF	$ 60.00	$	-
Full Drainage	0	LF	$ 100.00	$	-
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	1300	LF	$ 1.50	$	1,950
SUBTOTAL				$	152,574
Traffic Control			0%	$	-
Mobilization			0%	$	-
Design/Administration/Management			15%	$	22,886
Contingency			30%	$	45,772
Project Development			9%	$	13,732
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**234,964**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Highway 47 Left Turn Lane at Highway 47/Olson Road

Project Description:

Roadway construction of a 150 foot northbound left turn lane (150 feet in length)

	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	4200	SF	$ 0.33	$	1,386
Clear & Grub	0	SF	$ 0.05	$	-
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	18700	SF	$ 1.25	$	23,375
Pavement	9350	SF	$ 8.00	$	74,800
Sidewalk	0	SF	$ 4.00	$	-
Curb and gutter	0	LF	$ 14.00	$	-
Landscaping	0	LF	$ 12.00	$	-
Wall	0	LF	$ 120.00	$	-
Lighting	0	LF	$ 60.00	$	-
Full Drainage	0	LF	$ 100.00	$	-
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	1100	LF	$ 1.50	$	1,650
SUBTOTAL				$	101,211
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	15,182
Contingency			30%	$	30,363
Project Development			9%	$	9,109
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**155,865**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Highway 47/Olson Road realignment

Project Description:

Align Olson Road to intersect Highway 47 at a 90 degree angle

	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	8400	SF	$ 0.33	$	2,772
Clear & Grub	18000	SF	$ 0.05	$	900
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	26400	SF	$ 1.25	$	33,000
Pavement	14400	SF	$ 8.00	$	115,200
Sidewalk	3200	SF	$ 4.00	$	12,800
Curb and gutter	950	LF	$ 14.00	$	13,300
Landscaping	0	LF	$ 12.00	$	-
Wall	0	LF	$ 120.00	$	-
Lighting	700	LF	$ 60.00	$	42,000
Full Drainage	700	LF	$ 100.00	$	70,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	700	LF	$ 1.50	$	1,050
SUBTOTAL				$	291,022
Traffic Control			0%	$	-
Mobilization			0%	$	-
Design/Administration/Management			15%	$	43,653
Contingency			30%	$	87,307
Project Development			9%	$	26,192
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**448,174**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

City of Gaston TMP
Cost Estimate Summary

PROJECT ELEMENT: Highway 47/Main Street realignment

Project Description:

Align east leg of Main Street to intersect Highway 47 across from west leg of Main Street

	UNITS		UNIT COSTS		ESTIMATED COST
Remove Pavement	9600	SF	$ 0.33	$	3,168
Clear & Grub	12000	SF	$ 0.05	$	600
Remove Curb	0	LF	$ 10.00	$	-
Remove Sidewalk	0	SF	$ 1.50	$	-
Grading	21600	SF	$ 1.25	$	27,000
Pavement	14400	SF	$ 8.00	$	115,200
Sidewalk	400	SF	$ 4.00	$	1,600
Curb and gutter	400	LF	$ 14.00	$	5,600
Landscaping	800	LF	$ 12.00	$	9,600
Wall	0	LF	$ 120.00	$	-
Lighting	800	LF	$ 60.00	$	48,000
Full Drainage	800	LF	$ 100.00	$	80,000
Drainage Modifications	0	LF	$ 25.00	$	-
Driveway Adjustments	0	Driveways	$ 2,000.00	$	-
Roundabouts	0	EA	$500,000	$	-
Traffic Signal Modification	0	Unit	$ 50,000.00	$	-
Signing and Striping	800	LF	$ 1.50	$	1,200
SUBTOTAL				$	291,968
Traffic Control			0%	$	-
Mobiliization			0%	$	-
Design/Administration/Management			15%	$	43,795
Contingency			30%	$	87,590
Project Development			9%	$	26,277
Sales Tax			0.0%	$	-
PROJECT COST:				**$**	**449,631**

Notes: High contingencies are due to uncertainty regarding storm drainage/utility needs and grading.
Storm drain base cost = $75.00/LF, assumes storm drain connections only at $28.00/LF.
These issues should be further resolved in project development. Assumes no ROW costs.
Costs are in 2008 dollars

***DKS** Associates*
10/21/08

Church St. Reconstruction

	Amount	units	Unit cost	Cost
Curb and Gutter	2,200	LF	$ 18.00	$ 39,600
Sidewalks	2,200	LF	$ 25.00	$ 55,000
Storm Drain Line	300	LF	$ 65.00	$ 19,500
Storm drain inlets	3	ea	$ 1,000.00	$ 3,000
4" Asphalt	4,400	SY	$ 26.00	$ 114,400
6" Base Rock	1,222	CY	$ 30.00	$ 36,667
Excavation and disposal	1,874	CY	$ 25.00	$ 46,852
Demolition and disposal	1	LS	$ 20,000.00	$ 20,000
Driveway reconstruction	10	ea	$ 2,000.00	$ 20,000
landscaping restoration	1	LS	$ 10,000.00	$ 10,000
traffic control	1	LS	$ 10,000.00	$ 10,000
subtotal				$ 375,019
Engineering and Surveying	15%			$ 56,253
Contingency	30%			$ 112,506
Project Total				$ 543,777
				$ 540,000 Rounded

	length	width	SY
Asphalt	1,100	36	4400

	length	width	depth (in)	CF	CY
base rock	1,100	36	10	33,000	1,222

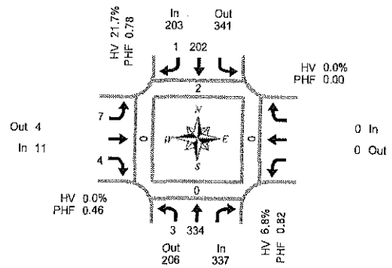
	length	width	depth (ft)	CF	CY
Excavation	1,100	46	1	50,600	1,874

Provided by Kennedy/Jenks Consultants

Traffic Counts

Total Vehicle Summary

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



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

Hwy 47 & Cottonwood St

Wednesday, July 09, 2008
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Interval Total
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes	
7:00 AM	0	24		0	19	0	0	0	0	0			0	43
7:05 AM	0	17		0	15	0	0	0	0	0			0	32
7:10 AM	1	26		0	14	0	0	3	0	0			0	44
7:15 AM	0	30		0	16	0	0	0	0	0			0	46
7:20 AM	0	20		0	22	0	0	2	1	0			0	45
7:25 AM	0	36		0	21	1	0	0	0	0			0	58
7:30 AM	0	37		0	21	0	0	1	0	0			0	59
7:35 AM	0	30		0	8	0	0	0	1	0			0	39
7:40 AM	0	30		0	26	0	0	1	1	0			0	58
7:45 AM	1	32		0	11	0	0	0	0	0			0	44
7:50 AM	1	37		0	15	0	0	0	1	0			0	54
7:55 AM	0	15		0	14	0	0	0	0	0			0	29
8:00 AM	1	13		0	14	0	0	0	0	0			0	28
8:05 AM	0	26		0	19	0	0	0	0	0			0	45
8:10 AM	1	25		0	15	0	0	0	2	0			0	43
8:15 AM	0	23		0	18	0	0	1	0	0			0	42
8:20 AM	1	35		0	11	0	0	0	0	0			0	47
8:25 AM	0	20		0	15	0	0	1	0	0			0	36
8:30 AM	0	23		0	14	0	0	1	0	0			0	38
8:35 AM	0	16		0	14	0	0	1	0	0			0	31
8:40 AM	0	33		0	7	0	0	0	0	0			0	40
8:45 AM	0	16		0	23	1	0	0	0	0			0	40
8:50 AM	0	25		0	18	0	0	0	0	0			0	43
8:55 AM	0	24		0	16	0	0	0	1	0			0	41
Total Survey	6	613		0	386	2	0	11	7	0			0	1,025

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

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Interval Total
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes	
7:00 AM	1	67		0	48	0	0	3	0	0			0	119
7:15 AM	0	86		0	59	1	0	2	1	0			0	149
7:30 AM	0	97		0	55	0	0	2	2	0			0	156
7:45 AM	2	84		0	40	0	0	0	1	0			0	127
8:00 AM	2	64		0	48	0	0	0	2	0			0	116
8:15 AM	1	78		0	44	0	0	2	0	0			0	125
8:30 AM	0	72		0	35	0	0	2	0	0			0	109
8:45 AM	0	65		0	57	1	0	0	1	0			0	124
Total Survey	6	613		0	386	2	0	11	7	0			0	1,025

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

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

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	337	206	543	0	203	341	544	0	11	4	15	0	0	0	0	0	551
%HV		6.8%				21.7%				0.0%				0.0%			12.2%
PHF		0.82				0.78				0.46				0.00			0.85

Pedestrians Crosswalk			
North	South	East	West
2	0	0	0

By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	3	334		337	202	1	203		7		4	11				0	551
%HV	0.0%	6.9%	NA	6.8%	21.8%	0.0%	21.7%		0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%	12.2%
PHF	0.38	0.81		0.82	0.79	0.25	0.78		0.35		0.50	0.46				0.00	0.85

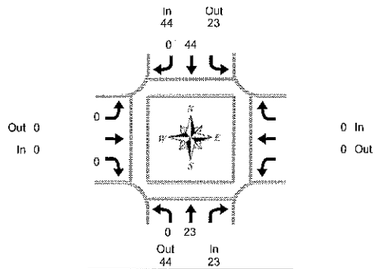
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Interval Total
	L	T	Bikes	T	R	Bikes	L	R	Bikes			Bikes	
7:00 AM	3	334	0	202	1	0	7	4	0			0	551
7:15 AM	4	331	0	202	1	0	4	6	0			0	548
7:30 AM	5	323	0	187	0	0	4	5	0			0	524
7:45 AM	5	298	0	167	0	0	4	3	0			0	477
8:00 AM	3	279	0	184	1	0	4	3	0			0	474

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

Heavy Vehicle Summary

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



Hwy 47 & Cottonwood St

Wednesday, July 09, 2008
7:00 AM to 9:00 AM

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

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St		Interval Total
	L	T	Total	T	R	Total	L	R	Total	Total		
7:00 AM	0	3	3	3	0	3	0	0	0	0		6
7:05 AM	0	0	0	4	0	4	0	0	0	0		4
7:10 AM	0	2	2	6	0	6	0	0	0	0		8
7:15 AM	0	0	0	5	0	5	0	0	0	0		5
7:20 AM	0	2	2	4	0	4	0	0	0	0		6
7:25 AM	0	5	5	6	0	6	0	0	0	0		11
7:30 AM	0	3	3	6	0	6	0	0	0	0		9
7:35 AM	0	2	2	2	0	2	0	0	0	0		4
7:40 AM	0	0	0	3	0	3	0	0	0	0		3
7:45 AM	0	1	1	1	0	1	0	0	0	0		2
7:50 AM	0	5	5	2	0	2	0	0	0	0		7
7:55 AM	0	0	0	2	0	2	0	0	0	0		2
8:00 AM	0	1	1	6	0	6	0	0	0	0		7
8:05 AM	0	2	2	1	0	1	0	0	0	0		3
8:10 AM	0	2	2	3	0	3	0	0	0	0		5
8:15 AM	0	4	4	3	0	3	0	0	0	0		7
8:20 AM	0	6	6	5	0	5	0	0	0	0		11
8:25 AM	0	6	6	1	0	1	0	0	0	0		7
8:30 AM	0	4	4	0	0	0	0	0	0	0		4
8:35 AM	0	5	5	4	0	4	0	0	0	0		9
8:40 AM	0	9	9	1	0	1	0	0	0	0		10
8:45 AM	0	4	4	6	0	6	0	0	0	0		10
8:50 AM	0	7	7	5	0	5	0	0	0	0		12
8:55 AM	0	4	4	2	0	2	0	0	0	0		6
Total Survey	0	77	77	81	0	81	0	0	0	0		158

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St		Interval Total
	L	T	Total	T	R	Total	L	R	Total	Total		
7:00 AM	0	5	5	13	0	13	0	0	0	0		18
7:15 AM	0	7	7	15	0	15	0	0	0	0		22
7:30 AM	0	5	5	11	0	11	0	0	0	0		16
7:45 AM	0	6	6	5	0	5	0	0	0	0		11
8:00 AM	0	5	5	10	0	10	0	0	0	0		15
8:15 AM	0	16	16	9	0	9	0	0	0	0		25
8:30 AM	0	18	18	5	0	5	0	0	0	0		23
8:45 AM	0	15	15	13	0	13	0	0	0	0		28
Total Survey	0	77	77	81	0	81	0	0	0	0		158

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

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	23	44	67	44	23	67	0	0	0	0	0	0	67
PHF	0.58			0.69			0.00			0.00			0.64

By Movement	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St		Total
	L	T	Total	T	R	Total	L	R	Total	Total		
Volume	0	23	23	44	0	44	0	0	0	0		67
PHF	0.00	0.58	0.58	0.69	0.00	0.69	0.00	0.00	0.00	0.00		0.64

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St		Interval Total
	L	T	Total	T	R	Total	L	R	Total	Total		
7:00 AM	0	23	23	44	0	44	0	0	0	0		67
7:15 AM	0	23	23	41	0	41	0	0	0	0		64
7:30 AM	0	32	32	35	0	35	0	0	0	0		67
7:45 AM	0	45	45	29	0	29	0	0	0	0		74
8:00 AM	0	54	54	37	0	37	0	0	0	0		91

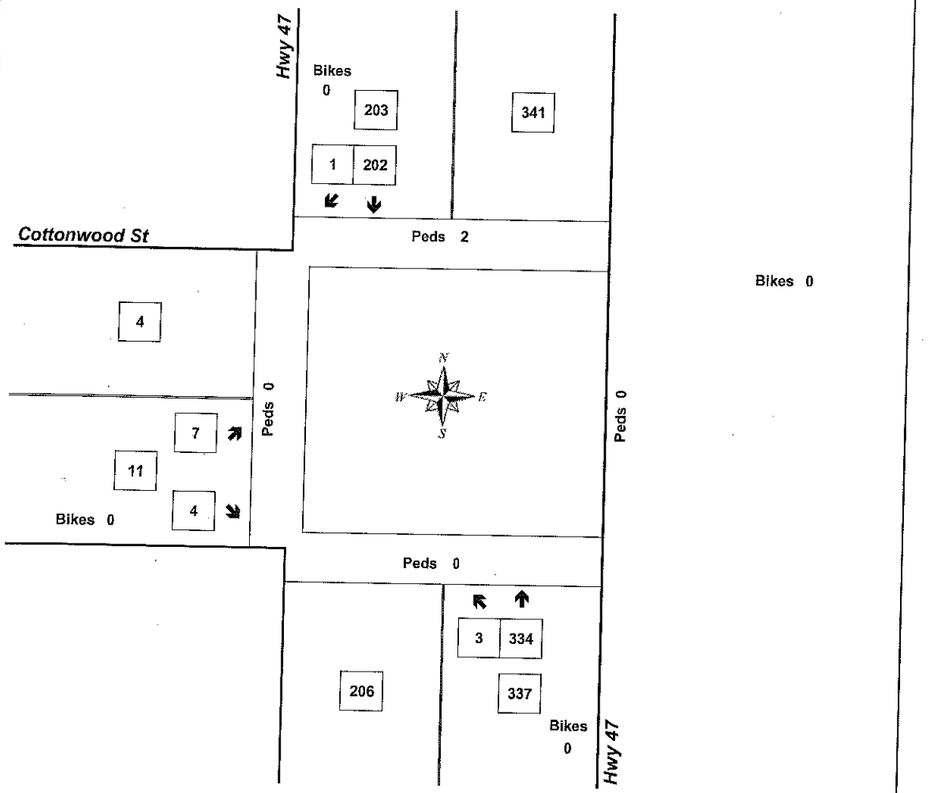
Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

Hwy 47 & Cottonwood St

7:00 AM to 8:00 AM
Wednesday, July 09, 2008

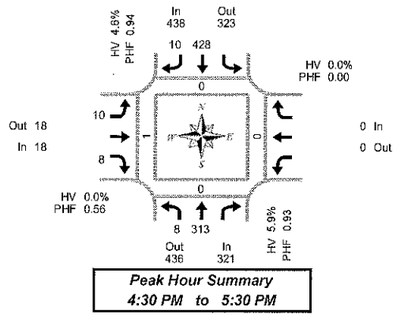


Approach	PHF	HV%	Volume
EB	0.46	0.0%	11
WB	0.00	0.0%	0
NB	0.82	6.8%	337
SB	0.78	21.7%	203
Intersection	0.85	12.2%	551

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

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



Peak Hour Summary
4:30 PM to 5:30 PM

Hwy 47 & Cottonwood St

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes				Bikes			North	South	East	West
4:00 PM	1	16		0	19	2	0		0	2	0				0		40	0	0	0	0
4:05 PM	1	28		0	42	1	0		2	0	0				0		74	0	0	0	0
4:10 PM	1	23		0	21	0	0		1	2	0				0		48	0	0	0	0
4:15 PM	1	19		0	37	1	0		0	3	0				0		61	0	0	0	0
4:20 PM	0	24		0	37	1	0		0	0	0				0		62	0	0	0	0
4:25 PM	0	22		0	33	0	0		0	1	0				0		56	0	0	0	0
4:30 PM	1	19		0	40	0	2		0	0	0				0		60	0	0	0	0
4:35 PM	0	33		0	32	0	0		0	0	0				0		65	0	0	0	1
4:40 PM	1	22		0	40	0	0		2	0	0				0		65	0	0	0	0
4:45 PM	0	28		0	28	2	0		1	0	0				0		59	0	0	0	0
4:50 PM	2	23		0	24	4	0		2	3	0				0		58	0	0	0	0
4:55 PM	1	25		0	41	0	0		0	0	0				0		67	0	0	0	0
5:00 PM	1	33		0	36	0	0		2	1	0				0		73	0	0	0	0
5:05 PM	0	26		0	35	3	0		1	1	0				0		66	0	0	0	0
5:10 PM	1	21		0	37	0	0		0	1	0				0		60	0	0	0	0
5:15 PM	0	26		0	39	0	0		0	1	0				0		66	0	0	0	0
5:20 PM	1	19		0	32	0	0		1	0	0				0		53	0	0	0	0
5:25 PM	0	38		0	44	1	0		1	1	0				0		85	0	0	0	0
5:30 PM	0	19		0	28	0	0		3	0	0				0		50	0	0	0	0
5:35 PM	0	17		0	37	0	0		1	0	0				0		55	0	0	0	0
5:40 PM	0	35		0	43	1	0		0	1	0				0		80	0	0	0	0
5:45 PM	2	18		0	23	0	0		0	1	0				0		44	0	0	0	0
5:50 PM	0	24		0	25	0	0		1	0	0				0		50	0	0	0	2
5:55 PM	1	15		0	22	0	0		1	0	0				0		39	0	0	0	2
Total Survey	15	573		0	795	16	2		19	18	0				0		1,436	0	0	0	5

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes				Bikes			North	South	East	West
4:00 PM	3	67		0	82	3	0		3	4	0				0		162	0	0	0	0
4:15 PM	1	65		0	107	2	0		0	4	0				0		179	0	0	0	0
4:30 PM	2	74		0	112	0	2		2	0	0				0		190	0	0	0	1
4:45 PM	3	76		0	93	6	0		3	3	0				0		184	0	0	0	0
5:00 PM	2	80		0	108	3	0		3	3	0				0		199	0	0	0	0
5:15 PM	1	83		0	115	1	0		2	2	0				0		204	0	0	0	0
5:30 PM	0	71		0	108	1	0		4	1	0				0		185	0	0	0	0
5:45 PM	3	57		0	70	0	0		2	1	0				0		133	0	0	0	4
Total Survey	15	573		0	795	16	2		19	18	0				0		1,436	0	0	0	5

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	321	436	757	0	438	323	761	2	18	18	36	0	0	0	0	0	777	0	0	0	1
%HV	5.9%				4.6%				0.0%				0.0%				5.0%				
PHF	0.93				0.94				0.56				0.00				0.94				

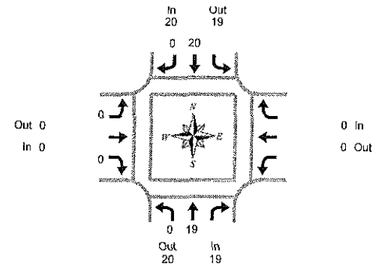
By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Total
	L	T		Total	T	R	Total		L	R	Total				Total		
Volume	8	313		321	428	10	438		10	8	18				0		777
%HV	0.0%	6.1%	NA	5.9%	4.7%	0.0%	4.6%		0.0%	0.0%	0.0%		NA	NA	0.0%		5.0%
PHF	0.50	0.93		0.93	0.93	0.42	0.94		0.50	0.50	0.56				0.00		0.94

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes				Bikes			North	South	East	West
4:00 PM	9	282		0	394	11	2		8	11	0				0		715	0	0	0	1
4:15 PM	8	295		0	420	11	2		8	10	0				0		752	0	0	0	1
4:30 PM	8	313		0	428	10	2		10	8	0				0		777	0	0	0	1
4:45 PM	6	310		0	424	11	0		12	9	0				0		772	0	0	0	0
5:00 PM	6	291		0	401	5	0		11	7	0				0		721	0	0	0	4

Heavy Vehicle Summary

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



Hwy 47 & Cottonwood St

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:30 PM to 5:30 PM

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	0	0		0	0	0	0		0		0	0				0	0
4:05 PM	0	2		2	3	0	3		0		0	0				0	5
4:10 PM	1	4		5	1	0	1		0		0	0				0	6
4:15 PM	0	3		3	4	1	5		0		0	0				0	8
4:20 PM	0	4		4	2	0	2		0		0	0				0	6
4:25 PM	0	3		3	3	0	3		0		0	0				0	6
4:30 PM	0	1		1	1	0	1		0		0	0				0	2
4:35 PM	0	3		3	2	0	2		0		0	0				0	5
4:40 PM	0	1		1	3	0	3		0		0	0				0	4
4:45 PM	0	2		2	1	0	1		0		0	0				0	3
4:50 PM	0	0		0	0	0	0		0		0	0				0	0
4:55 PM	0	1		1	0	0	0		0		0	0				0	1
5:00 PM	0	2		2	2	0	2		0		0	0				0	4
5:05 PM	0	3		3	3	0	3		0		0	0				0	6
5:10 PM	0	1		1	4	0	4		0		0	0				0	5
5:15 PM	0	1		1	1	0	1		0		0	0				0	2
5:20 PM	0	3		3	2	0	2		0		0	0				0	5
5:25 PM	0	1		1	1	0	1		0		0	0				0	2
5:30 PM	0	0		0	0	0	0		1		0	1				0	1
5:35 PM	0	1		1	1	0	1		0		0	0				0	2
5:40 PM	0	2		2	2	0	2		0		0	0				0	4
5:45 PM	0	0		0	0	0	0		0		0	0				0	0
5:50 PM	0	2		2	2	0	2		0		0	0				0	4
5:55 PM	0	1		1	1	0	1		0		0	0				0	2
Total Survey	1	41		42	39	1	40		1		0	1				0	83

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	1	6		7	4	0	4		0		0	0				0	11
4:15 PM	0	10		10	9	1	10		0		0	0				0	20
4:30 PM	0	5		5	6	0	6		0		0	0				0	11
4:45 PM	0	3		3	1	0	1		0		0	0				0	4
5:00 PM	0	6		6	9	0	9		0		0	0				0	15
5:15 PM	0	5		5	4	0	4		0		0	0				0	9
5:30 PM	0	3		3	3	0	3		1		0	1				0	7
5:45 PM	0	3		3	3	0	3		0		0	0				0	6
Total Survey	1	41		42	39	1	40		1		0	1				0	83

Heavy Vehicle Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	19	20	39	20	19	39	0	0	0	0	0	0	39
PHF	0.79			0.56			0.00			0.00			0.65

By Movement	Northbound Hwy 47			Southbound Hwy 47			Eastbound Cottonwood St			Westbound Cottonwood St			Total
	L	T	Total	T	R	Total	L	R	Total			Total	
Volume	0	19	19	20	0	20	0	0	0			0	39
PHF	0.00	0.79	0.79	0.56	0.00	0.56	0.00	0.00	0.00			0.00	0.65

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound Cottonwood St				Westbound Cottonwood St				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	1	24		25	20	1	21		0		0	0				0	46
4:15 PM	0	24		24	25	1	26		0		0	0				0	50
4:30 PM	0	19		19	20	0	20		0		0	0				0	39
4:45 PM	0	17		17	17	0	17		1		0	1				0	35
5:00 PM	0	17		17	19	0	19		1		0	1				0	37

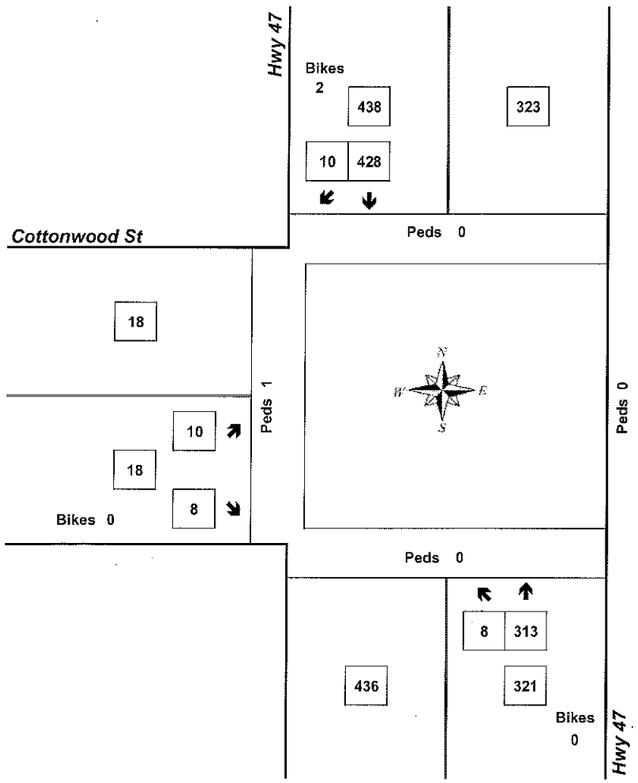
Peak Hour Summary

All Traffic Data
Services Inc.

Clay Carney
(503) 833-2740

Hwy 47 & Cottonwood St

4:30 PM to 5:30 PM
Tuesday, July 08, 2008



Approach	PHF	HV%	Volume
EB	0.56	0.0%	18
WB	0.00	0.0%	0
NB	0.93	5.9%	321
SB	0.94	4.6%	438
Intersection	0.94	5.0%	777

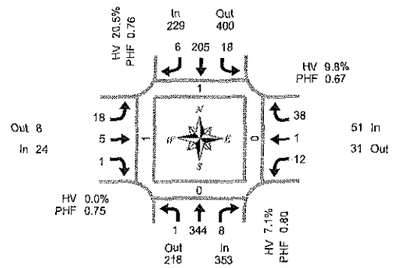
Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

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

Hwy 47 & E Main St

Wednesday, July 09, 2008
7:00 AM to 9:00 AM



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

5-Minute Interval Summary
7:00 AM to 8:55 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	24	2	0	1	16	1	0	2	0	0	0	0	0	1	0	47	0	0	0	0
7:05 AM	0	20	0	0	2	18	0	0	1	1	0	0	1	0	4	0	47	0	0	0	0
7:10 AM	0	31	0	0	0	13	0	0	2	0	0	0	0	0	4	0	50	0	0	0	0
7:15 AM	0	28	0	0	3	21	0	0	1	1	0	0	1	1	2	0	58	0	0	0	0
7:20 AM	0	22	1	0	1	30	0	0	1	0	0	0	1	0	4	0	60	0	0	0	0
7:25 AM	0	40	0	0	0	20	0	0	2	1	0	0	0	0	2	0	65	0	0	0	1
7:30 AM	0	39	3	0	3	15	0	0	2	0	0	0	1	0	2	0	65	0	0	0	0
7:35 AM	0	26	2	0	1	12	0	0	0	1	0	0	1	0	4	0	47	0	0	0	0
7:40 AM	0	33	0	0	0	20	1	0	3	0	0	0	1	0	2	0	60	1	0	0	0
7:45 AM	1	33	0	0	2	11	0	0	3	1	0	0	2	0	5	0	58	0	0	0	0
7:50 AM	0	34	0	0	3	16	1	0	0	0	0	0	0	0	6	0	60	0	0	0	0
7:55 AM	0	14	0	0	2	13	3	0	1	0	1	0	4	0	2	0	40	0	0	0	0
8:00 AM	0	15	0	0	3	14	0	0	0	2	0	0	1	0	3	0	38	0	0	0	0
8:05 AM	1	21	0	0	2	18	1	0	3	0	1	0	1	0	0	0	48	0	0	0	0
8:10 AM	0	24	1	0	0	15	0	0	3	0	2	0	1	0	6	0	52	0	0	0	0
8:15 AM	0	27	0	0	2	16	1	0	1	1	0	0	2	0	4	0	54	0	0	0	0
8:20 AM	0	27	0	0	0	15	0	0	0	0	0	0	2	0	5	0	49	0	0	0	0
8:25 AM	0	24	0	0	1	18	1	0	4	0	0	0	1	1	4	0	56	0	0	0	0
8:30 AM	0	27	3	0	1	13	0	0	1	0	0	0	2	0	2	0	49	0	0	0	1
8:35 AM	0	19	0	0	0	14	1	0	2	0	0	0	0	0	5	0	41	0	0	0	0
8:40 AM	0	30	1	0	0	7	0	0	3	1	0	0	1	1	5	0	49	0	0	0	0
8:45 AM	0	18	2	0	1	24	0	0	0	0	0	0	0	0	4	0	49	0	0	0	0
8:50 AM	0	23	0	0	3	20	1	0	2	0	0	0	3	1	5	0	58	0	0	0	1
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Total Survey	2	599	15	0	31	379	11	0	37	9	4	0	26	4	81	0	1,198	1	0	0	3

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	75	2	0	3	47	1	0	5	1	0	0	1	0	9	0	144	0	0	0	0
7:15 AM	0	90	1	0	4	71	0	0	4	2	0	0	2	1	8	0	183	0	0	0	1
7:30 AM	0	98	5	0	4	47	1	0	5	1	0	0	3	0	8	0	172	1	0	0	0
7:45 AM	1	81	0	0	7	40	4	0	4	1	1	0	6	0	13	0	158	0	0	0	0
8:00 AM	1	60	1	0	5	47	1	0	6	2	3	0	3	0	9	0	138	0	0	0	0
8:15 AM	0	78	0	0	3	49	2	0	5	1	0	0	5	1	13	0	157	0	0	0	0
8:30 AM	0	76	4	0	1	34	1	0	6	1	0	0	3	1	12	0	139	0	0	0	1
8:45 AM	0	41	2	0	4	44	1	0	2	0	0	0	3	1	9	0	107	0	0	0	1
Total Survey	2	599	15	0	31	379	11	0	37	9	4	0	26	4	81	0	1,198	1	0	0	3

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

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	353	218	571	0	229	400	629	0	24	8	32	0	51	31	82	0	657
%HV	7.1%				20.5%				0.0%				9.8%				11.7%
PHF	0.80				0.76				0.75				0.67				0.86

Pedestrians Crosswalk			
North	South	East	West
1	0	0	1

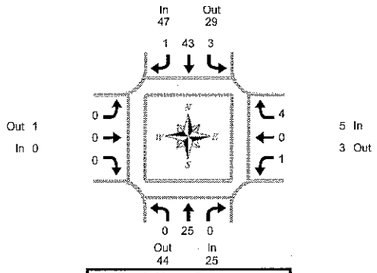
By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	344	8	353	18	205	6	229	18	5	1	24	12	1	38	51	657
%HV	0.0%	7.3%	0.0%	7.1%	16.7%	21.0%	16.7%	20.5%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	10.5%	9.8%	11.7%
PHF	0.25	0.82	0.40	0.80	0.64	0.72	0.38	0.76	0.75	0.63	0.25	0.75	0.50	0.25	0.73	0.67	0.86

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	344	8	0	18	205	6	0	18	5	1	0	12	1	38	0	657	1	0	0	1
7:15 AM	2	329	7	0	20	205	6	0	19	6	4	0	14	1	38	0	651	1	0	0	1
7:30 AM	2	317	6	0	19	183	8	0	20	5	4	0	17	1	43	0	625	1	0	0	0
7:45 AM	2	295	5	0	16	170	8	0	21	5	4	0	17	2	47	0	592	0	0	0	1
8:00 AM	1	255	7	0	13	174	5	0	19	4	3	0	14	3	43	0	541	0	0	0	2

Heavy Vehicle Summary

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



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

Hwy 47 & E Main St

Wednesday, July 09, 2008
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 8:55 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	4	0	4	1	2	0	3	0	0	0	0	0	0	0	0	7
7:05 AM	0	0	0	0	1	4	0	5	0	0	0	0	0	0	1	1	6
7:10 AM	0	1	0	1	0	6	0	6	0	0	0	0	0	0	0	0	7
7:15 AM	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	5
7:20 AM	0	1	0	1	0	6	0	6	0	0	0	0	0	0	1	1	8
7:25 AM	0	7	0	7	0	6	0	6	0	0	0	0	0	0	0	0	13
7:30 AM	0	3	0	3	0	4	0	4	0	0	0	0	0	0	0	0	7
7:35 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:40 AM	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	5
7:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:50 AM	0	5	0	5	0	2	0	2	0	0	0	0	0	0	2	2	9
7:55 AM	0	0	0	0	1	3	1	5	0	0	0	0	1	0	0	1	6
8:00 AM	0	2	0	2	0	6	0	6	0	1	0	1	0	0	0	0	9
8:05 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
8:10 AM	0	1	0	1	0	3	0	3	0	0	1	1	0	0	0	0	5
8:15 AM	0	7	0	7	0	1	0	1	0	0	0	0	1	0	0	1	9
8:20 AM	0	4	0	4	0	7	0	7	0	0	0	0	0	0	0	0	11
8:25 AM	0	6	0	6	0	2	0	2	0	0	0	0	0	0	0	0	8
8:30 AM	0	7	0	7	1	1	0	2	0	0	0	0	0	0	1	1	10
8:35 AM	0	5	0	5	0	3	0	3	0	0	0	0	0	0	0	0	8
8:40 AM	0	9	0	9	0	2	0	2	2	0	0	2	0	0	0	0	13
8:45 AM	0	5	0	5	0	7	0	7	0	0	0	0	0	0	0	0	12
8:50 AM	0	8	0	8	2	6	0	8	0	0	0	0	0	1	1	2	18
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Survey	0	81	0	81	6	82	1	89	2	1	1	4	2	1	6	9	183

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	5	0	5	2	12	0	14	0	0	0	0	0	0	1	1	20
7:15 AM	0	9	0	9	0	16	0	16	0	0	0	0	0	0	1	1	26
7:30 AM	0	5	0	5	0	10	0	10	0	0	0	0	0	0	0	0	15
7:45 AM	0	6	0	6	1	5	1	7	0	0	0	0	1	0	2	3	16
8:00 AM	0	5	0	5	0	10	0	10	0	1	1	2	0	0	0	0	17
8:15 AM	0	17	0	17	0	10	0	10	0	0	0	0	1	0	0	1	28
8:30 AM	0	21	0	21	1	6	0	7	2	0	0	2	0	0	1	1	31
8:45 AM	0	13	0	13	2	13	0	15	0	0	0	0	0	1	1	2	30
Total Survey	0	81	0	81	6	82	1	89	2	1	1	4	2	1	6	9	183

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

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	25	44	69	47	29	76	0	1	1	5	3	8	77
PHF	0.57			0.73			0.00			0.42			0.69

By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	25	0	25	3	43	1	47	0	0	0	0	1	0	4	5	77
PHF	0.00	0.57	0.00	0.57	0.38	0.67	0.25	0.73	0.00	0.00	0.00	0.00	0.25	0.00	0.50	0.42	0.69

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	25	0	25	3	43	1	47	0	0	0	0	1	0	4	5	77
7:15 AM	0	25	0	25	1	41	1	43	0	1	1	2	1	0	3	4	74
7:30 AM	0	33	0	33	1	35	1	37	0	1	1	2	2	0	2	4	76
7:45 AM	0	49	0	49	2	31	1	34	2	1	1	4	2	0	3	5	92
8:00 AM	0	56	0	56	3	39	0	42	2	1	1	4	1	1	2	4	106

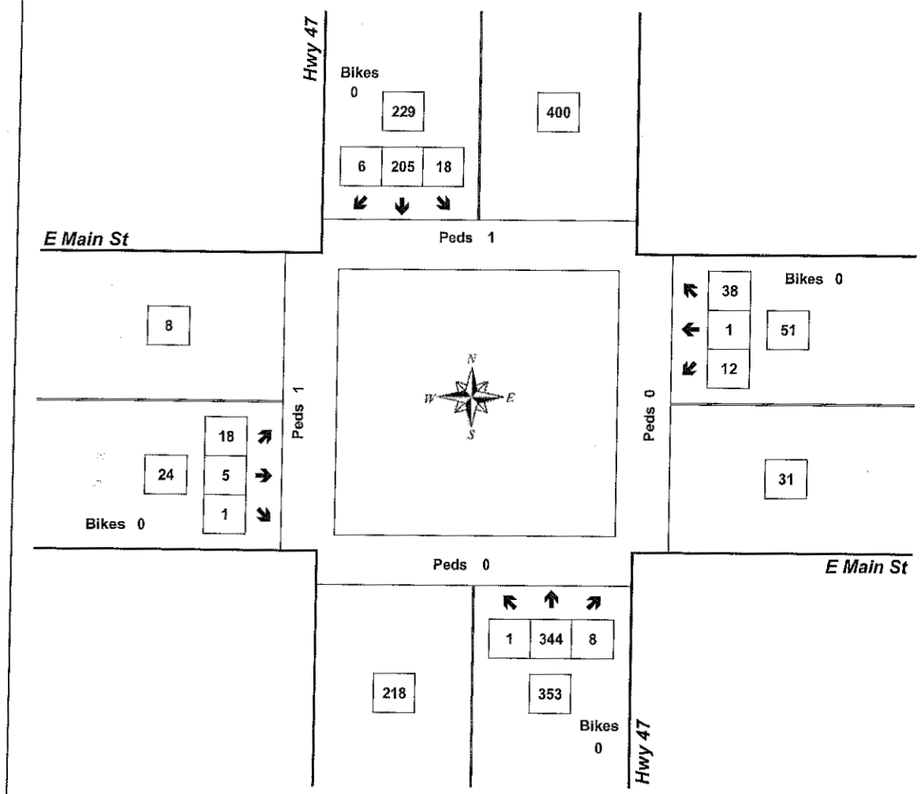
Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

Hwy 47 & E Main St

7:00 AM to 8:00 AM
Wednesday, July 09, 2008

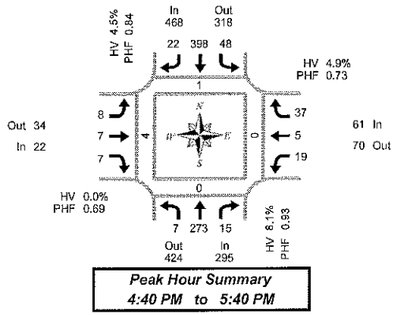


Approach	PHF	HV%	Volume
EB	0.75	0.0%	24
WB	0.67	9.8%	51
NB	0.80	7.1%	353
SB	0.76	20.5%	229
Intersection	0.86	11.7%	657

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

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



Peak Hour Summary
4:40 PM to 5:40 PM

Hwy 47 & E Main St

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				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	17	3	0	4	31	1	0	1	0	0	0	0	0	1	0	58	0	0	0	0
4:05 PM	0	16	1	0	4	23	2	0	1	1	1	0	0	0	5	0	54	0	0	0	0
4:10 PM	1	3	0	0	0	14	0	0	1	0	0	0	1	1	2	0	23	0	0	0	0
4:15 PM	0	25	2	0	2	23	1	0	1	0	1	0	2	0	5	0	62	0	0	0	0
4:20 PM	0	13	0	0	1	25	1	0	0	2	1	0	2	0	2	0	47	0	0	0	0
4:25 PM	0	31	3	0	4	31	3	2	0	3	0	0	4	1	5	0	85	0	0	0	0
4:30 PM	0	22	0	0	5	29	2	0	1	1	0	0	2	1	5	0	68	0	0	0	0
4:35 PM	1	16	1	0	6	33	3	0	1	1	0	0	2	0	9	0	73	0	0	1	0
4:40 PM	0	33	1	0	4	32	1	0	0	0	0	0	2	0	5	0	78	0	0	0	0
4:45 PM	0	15	1	0	2	34	1	0	0	1	0	0	2	0	4	0	60	0	0	0	1
4:50 PM	0	24	2	0	5	35	3	0	0	0	0	0	1	2	3	0	75	0	0	0	0
4:55 PM	2	17	2	0	3	25	1	0	0	2	0	0	2	0	4	0	58	0	0	0	0
5:00 PM	0	26	4	0	3	37	1	0	2	0	1	0	2	0	0	0	76	0	0	0	0
5:05 PM	0	22	1	0	4	25	2	0	1	1	1	0	0	1	3	0	61	0	0	0	2
5:10 PM	1	22	0	0	1	35	1	0	0	1	1	0	4	0	3	0	69	0	0	0	0
5:15 PM	0	19	0	0	2	28	6	0	0	0	0	0	3	1	5	0	64	0	0	0	0
5:20 PM	2	21	1	0	4	33	1	0	2	0	1	0	1	0	4	0	70	0	0	0	1
5:25 PM	0	17	0	0	6	32	2	0	0	0	2	0	0	1	2	0	62	0	0	0	0
5:30 PM	1	30	3	0	7	44	0	0	0	1	0	0	0	0	1	0	87	1	0	0	0
5:35 PM	1	27	0	0	7	38	3	0	3	1	1	0	2	0	3	0	86	0	0	0	0
5:40 PM	0	13	0	0	7	23	2	0	0	0	1	0	1	0	0	0	47	0	0	0	0
5:45 PM	0	32	1	0	6	30	2	0	3	1	1	0	2	2	2	0	82	0	0	2	0
5:50 PM	0	21	3	0	4	32	4	0	2	1	1	0	2	0	1	0	71	0	0	2	0
5:55 PM	1	19	2	0	1	31	3	0	1	0	2	0	0	0	6	0	66	0	0	4	4
Total Survey	10	501	31	0	92	723	46	2	20	17	15	0	37	10	80	0	1,582	1	0	9	8

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				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	1	36	4	0	8	68	3	0	3	1	1	0	1	1	8	0	135	0	0	0	0
4:15 PM	0	69	5	0	7	79	5	2	1	5	2	0	8	1	12	0	194	0	0	0	0
4:30 PM	1	71	2	0	15	94	6	0	2	2	0	0	6	1	19	0	219	0	0	1	0
4:45 PM	2	56	5	0	10	94	5	0	0	3	0	0	5	2	11	0	193	0	0	0	1
5:00 PM	1	70	5	0	8	97	4	0	3	2	3	0	6	1	6	0	206	0	0	0	2
5:15 PM	2	57	1	0	12	93	9	0	2	0	3	0	4	2	11	0	196	0	0	0	1
5:30 PM	2	70	3	0	21	105	5	0	3	2	2	0	3	0	4	0	220	1	0	0	0
5:45 PM	1	72	6	0	11	93	9	0	6	2	4	0	4	2	9	0	219	0	0	8	4
Total Survey	10	501	31	0	92	723	46	2	20	17	15	0	37	10	80	0	1,582	1	0	9	8

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	295	424	719	0	468	318	786	0	22	34	56	0	61	70	131	0	846	1	0	0	4
%HV	8.1%				4.5%				0.0%				4.9%				5.7%				
PHF	0.93				0.84				0.69				0.73				0.90				

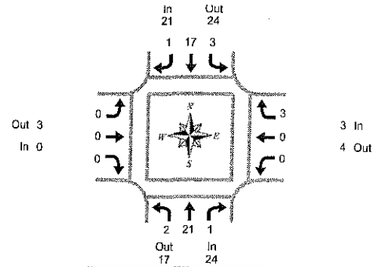
By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	273	15	295	48	398	22	468	8	7	7	22	19	5	37	61	846
%HV	28.6%	7.7%	6.7%	8.1%	6.3%	4.3%	4.5%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.1%	4.9%	5.7%
PHF	0.58	0.92	0.47	0.93	0.60	0.87	0.61	0.84	0.67	0.58	0.58	0.69	0.59	0.63	0.77	0.73	0.90

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				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	4	232	16	0	40	335	19	2	6	11	3	0	20	5	50	0	741	0	0	1	1
4:15 PM	4	266	17	0	40	364	20	2	6	12	5	0	25	5	48	0	812	0	0	1	3
4:30 PM	6	254	13	0	45	378	24	0	7	7	6	0	21	6	47	0	814	0	0	1	4
4:45 PM	7	253	14	0	51	389	23	0	8	7	8	0	18	5	32	0	815	1	0	0	4
5:00 PM	6	269	15	0	52	388	27	0	14	6	12	0	17	5	30	0	841	1	0	8	7

Heavy Vehicle Summary

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



Hwy 47 & E Main St

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:05 PM	0	2	0	2	1	5	0	6	0	0	0	0	0	0	0	0	8
4:10 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:15 PM	0	5	0	5	0	2	0	2	0	0	0	0	0	0	0	0	7
4:20 PM	0	5	0	5	0	2	0	2	0	0	1	1	1	0	0	1	9
4:25 PM	0	6	1	7	0	4	0	4	0	0	0	0	0	0	1	1	12
4:30 PM	0	2	0	2	1	2	0	3	0	0	0	0	0	0	0	0	5
4:35 PM	0	1	0	1	0	2	1	3	1	0	0	1	0	0	1	1	6
4:40 PM	0	4	0	4	0	1	0	1	0	0	0	0	0	0	1	1	6
4:45 PM	0	2	0	2	1	2	0	3	0	0	0	0	0	0	0	0	5
4:50 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:05 PM	0	1	1	2	1	3	0	4	0	0	0	0	0	0	0	0	6
5:10 PM	0	2	0	2	0	5	0	5	0	0	0	0	0	0	0	0	7
5:15 PM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	1	1	4
5:20 PM	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5:25 PM	0	2	0	2	1	1	1	3	0	0	0	0	0	0	0	0	5
5:30 PM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
5:35 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:40 PM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
5:45 PM	0	2	0	2	0	2	0	2	1	0	0	1	0	0	0	0	5
5:50 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:55 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
Total Survey	2	48	3	53	5	42	2	49	2	0	1	3	1	0	5	6	111

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	2	1	3	1	7	0	8	0	0	0	0	0	0	0	0	11
4:15 PM	0	16	1	17	0	8	0	8	0	0	1	1	1	0	1	2	28
4:30 PM	0	7	0	7	1	5	1	7	1	0	0	1	0	0	2	2	17
4:45 PM	0	4	0	4	1	4	0	5	0	0	0	0	0	0	1	1	10
5:00 PM	0	5	1	6	1	8	0	9	0	0	0	0	0	0	0	0	15
5:15 PM	1	5	0	6	1	3	1	5	0	0	0	0	0	0	1	1	12
5:30 PM	1	5	0	6	0	2	0	2	0	0	0	0	0	0	0	0	8
5:45 PM	0	4	0	4	0	5	0	5	1	0	0	1	0	0	0	0	10
Total Survey	2	48	3	53	5	42	2	49	2	0	1	3	1	0	5	6	111

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound E Main St			Westbound E Main St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	24	17	41	21	24	45	0	3	3	3	4	7	48
PHF	0.75			0.48			0.00			0.75			0.71

By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	21	1	24	3	17	1	21	0	0	0	0	0	0	3	3	48
PHF	0.50	0.66	0.25	0.75	0.75	0.43	0.25	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.75	0.71

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound E Main St				Westbound E Main St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	29	2	31	3	24	1	28	1	0	1	2	1	0	4	5	66
4:15 PM	0	32	2	34	3	25	1	29	1	0	1	2	1	0	4	5	70
4:30 PM	1	21	1	23	4	20	2	26	1	0	0	1	0	0	4	4	54
4:45 PM	2	19	1	22	3	17	1	21	0	0	0	0	0	0	2	2	45
5:00 PM	2	19	1	22	2	18	1	21	1	0	0	1	0	0	1	1	45

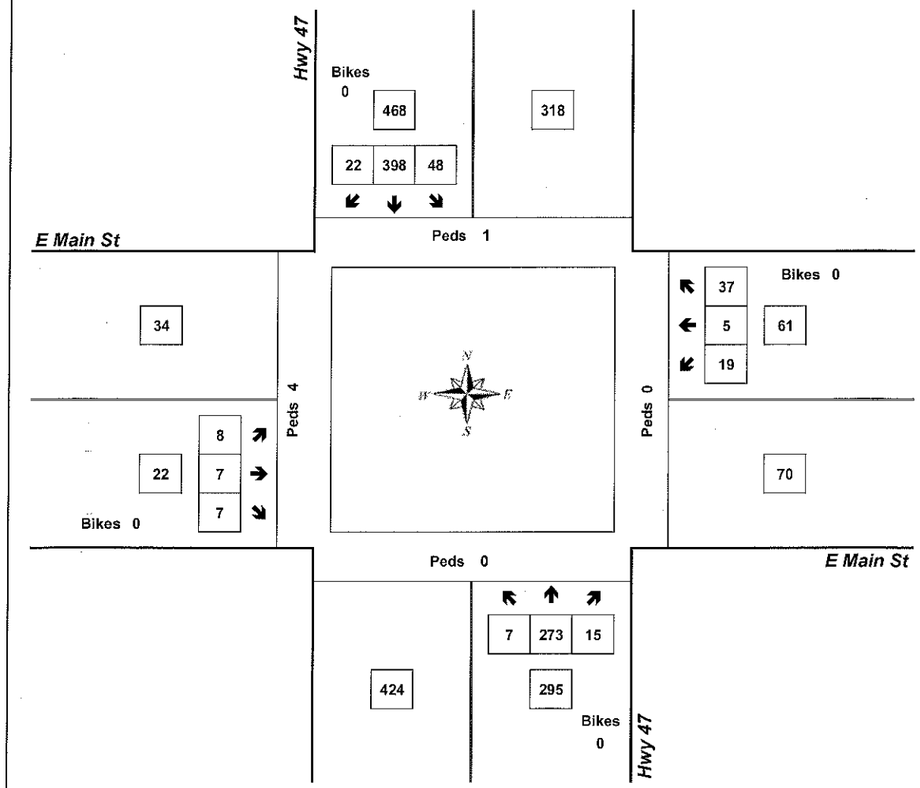
Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

Hwy 47 & E Main St

4:40 PM to 5:40 PM
Tuesday, July 08, 2008

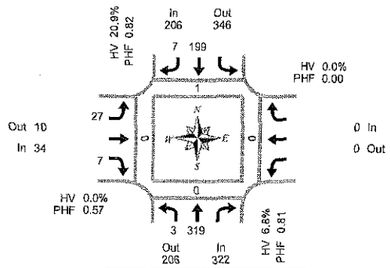


Approach	PHF	HV%	Volume
EB	0.69	0.0%	22
WB	0.73	4.9%	61
NB	0.93	8.1%	295
SB	0.84	4.5%	468
Intersection	0.90	5.7%	846

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

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



Hwy 47 & NW Olson Rd

Wednesday, July 09, 2008
7:00 AM to 9:00 AM

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

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes					North	South	East	West
7:00 AM	0	24		0	17	2	0	1	0	0			0				44	1	0	0	0
7:05 AM	0	17		0	15	0	0	1	0	0			0				33	0	0	0	0
7:10 AM	1	23		0	15	0	0	3	0	0			0				42	0	0	0	0
7:15 AM	0	30		0	16	1	0	1	0	0			0				48	0	0	0	0
7:20 AM	0	17		0	21	0	0	4	2	0			0				44	0	0	0	0
7:25 AM	0	35		0	21	0	0	1	1	0			0				58	0	0	0	0
7:30 AM	1	34		0	21	0	0	5	2	0			0				63	0	0	0	0
7:35 AM	0	29		0	8	0	0	1	1	0			0				39	0	0	0	0
7:40 AM	0	30		0	25	3	0	1	1	0			0				60	0	0	0	0
7:45 AM	1	28		0	10	0	0	4	0	0			0				43	0	0	0	0
7:50 AM	0	36		0	17	0	0	4	0	0			0				57	0	0	0	0
7:55 AM	0	19		0	13	1	0	1	0	0			0				31	0	0	0	0
8:00 AM	1	10		0	14	0	0	2	0	0			0				27	0	0	0	0
8:05 AM	1	23		0	19	0	0	2	0	0			0				45	0	0	0	0
8:10 AM	0	24		0	14	1	0	2	1	0			0				42	0	0	0	0
8:15 AM	1	20		0	19	2	0	3	0	0			0				45	0	0	0	0
8:20 AM	0	31		0	12	0	0	2	0	0			0				45	0	0	0	0
8:25 AM	0	18		0	14	1	0	4	0	0			0				37	0	0	0	0
8:30 AM	0	22		0	14	1	0	0	0	0			0				37	0	0	0	0
8:35 AM	0	13		0	12	2	0	1	2	0			0				30	0	0	0	0
8:40 AM	1	31		0	5	1	0	0	1	0			0				39	0	0	0	0
8:45 AM	0	15		0	22	2	0	0	2	0			0				41	0	0	0	0
8:50 AM	2	24		0	19	0	0	2	1	0			0				48	0	0	0	0
8:55 AM	1	21		0	14	2	0	3	0	0			0				41	0	0	0	0
Total Survey	10	571		0	377	19	0	48	14	0			0				1,039	1	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes					North	South	East	West
7:00 AM	1	64		0	47	2	0	5	0	0			0				119	1	0	0	0
7:15 AM	0	82		0	58	1	0	6	3	0			0				150	0	0	0	0
7:30 AM	1	93		0	54	3	0	7	4	0			0				162	0	0	0	0
7:45 AM	1	80		0	40	1	0	9	0	0			0				131	0	0	0	0
8:00 AM	2	57		0	47	1	0	6	1	0			0				114	0	0	0	0
8:15 AM	1	69		0	45	3	0	9	0	0			0				127	0	0	0	0
8:30 AM	1	66		0	31	4	0	1	3	0			0				106	0	0	0	0
8:45 AM	3	60		0	55	4	0	5	3	0			0				130	0	0	0	0
Total Survey	10	571		0	377	19	0	48	14	0			0				1,039	1	0	0	0

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

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	322	206	528	0	206	346	552	0	34	10	44	0	0	0	0	0	562	1	0	0	0
%HV	6.8%				20.9%				0.0%				0.0%				11.6%				
PHF	0.81				0.82				0.57				0.00				0.85				

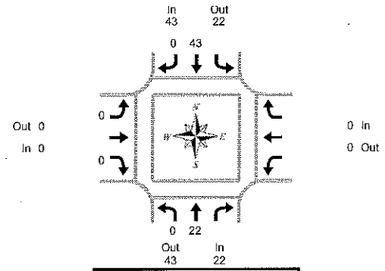
By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Total
	L	T		Total	T	R	Total	L		R	Total				Total		
Volume	3	319		322	199	7	206	27		7	34				0		562
%HV	0.0%	6.9%	NA	6.8%	21.6%	0.0%	20.9%	0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%		11.6%
PHF	0.75	0.81		0.81	0.79	0.58	0.82	0.68		0.35	0.57				0.00		0.85

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes					North	South	East	West
7:00 AM	3	319		0	199	7	0	27	7	0			0				562	1	0	0	0
7:15 AM	4	312		0	199	6	0	28	8	0			0				557	0	0	0	0
7:30 AM	5	299		0	186	8	0	31	5	0			0				534	0	0	0	0
7:45 AM	5	272		0	163	9	0	25	4	0			0				478	0	0	0	0
8:00 AM	7	252		0	178	12	0	21	7	0			0				477	0	0	0	0

Heavy Vehicle Summary

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



Hwy 47 & NW Olson Rd

Wednesday, July 09, 2008
7:00 AM to 9:00 AM

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

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
7:00 AM	0	3	3	2	0	2	0	0	0			0	5
7:05 AM	0	0	0	4	0	4	0	0	0			0	4
7:10 AM	0	2	2	6	0	6	0	0	0			0	8
7:15 AM	0	0	0	5	0	5	0	0	0			0	5
7:20 AM	0	2	2	4	0	4	0	0	0			0	6
7:25 AM	0	5	5	5	0	5	0	0	0			0	10
7:30 AM	0	3	3	6	0	6	0	0	0			0	9
7:35 AM	0	2	2	2	0	2	0	0	0			0	4
7:40 AM	0	0	0	3	0	3	0	0	0			0	3
7:45 AM	0	1	1	1	0	1	0	0	0			0	2
7:50 AM	0	4	4	3	0	3	0	0	0			0	7
7:55 AM	0	0	0	2	0	2	0	0	0			0	2
8:00 AM	0	1	1	6	0	6	0	0	0			0	7
8:05 AM	0	2	2	2	0	2	0	0	0			0	4
8:10 AM	0	2	2	2	0	2	0	0	0			0	4
8:15 AM	0	4	4	4	0	4	0	0	0			0	8
8:20 AM	0	6	6	5	0	5	0	0	0			0	11
8:25 AM	0	6	6	1	0	1	0	0	0			0	7
8:30 AM	0	5	5	0	0	0	0	0	0			0	5
8:35 AM	0	4	4	4	0	4	0	0	0			0	8
8:40 AM	0	9	9	0	0	0	0	0	0			0	9
8:45 AM	0	4	4	6	0	6	0	0	0			0	10
8:50 AM	0	7	7	5	0	5	0	0	0			0	12
8:55 AM	0	4	4	2	0	2	0	0	0			0	6
Total Survey	0	76	76	80	0	80	0	0	0			0	156

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
7:00 AM	0	5	5	12	0	12	0	0	0			0	17
7:15 AM	0	7	7	14	0	14	0	0	0			0	21
7:30 AM	0	5	5	11	0	11	0	0	0			0	16
7:45 AM	0	5	5	6	0	6	0	0	0			0	11
8:00 AM	0	5	5	10	0	10	0	0	0			0	15
8:15 AM	0	16	16	10	0	10	0	0	0			0	26
8:30 AM	0	18	18	4	0	4	0	0	0			0	22
8:45 AM	0	15	15	13	0	13	0	0	0			0	28
Total Survey	0	76	76	80	0	80	0	0	0			0	156

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

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	22	43	65	43	22	65	0	0	0	0	0	0	65
PHF	0.55			0.72			0.00			0.00			0.65

By Movement	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Total
	L	T	Total	T	R	Total	L	R	Total			Total	
Volume	0	22	22	43	0	43	0	0	0			0	65
PHF	0.00	0.55	0.55	0.72	0.00	0.72	0.00	0.00	0.00			0.00	0.65

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

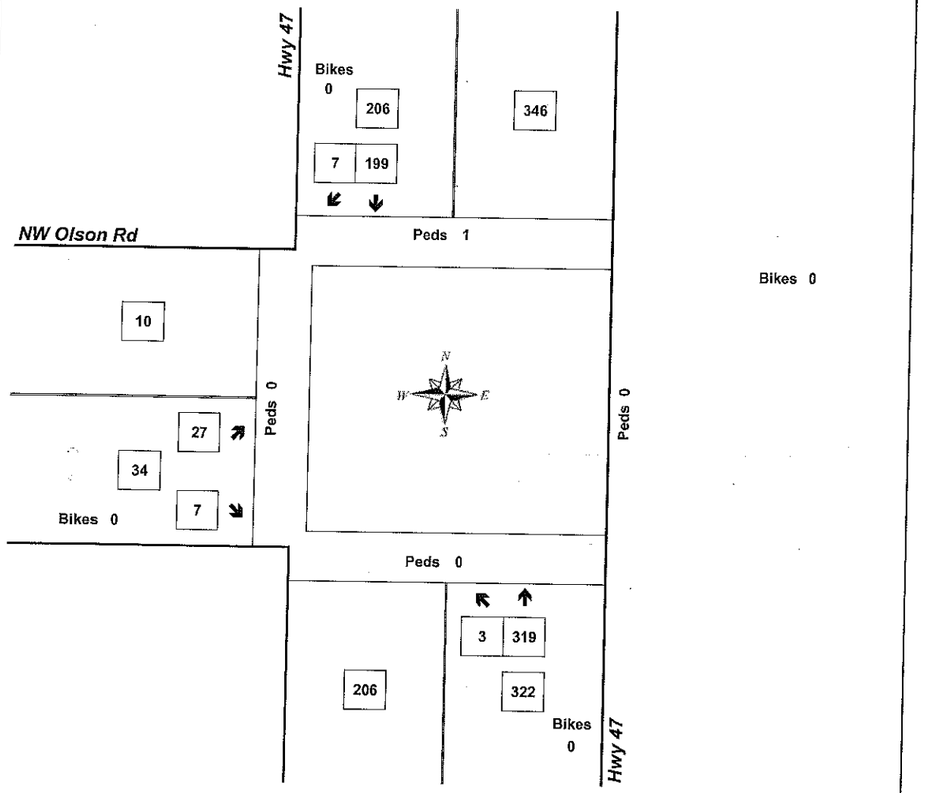
Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
7:00 AM	0	22	22	43	0	43	0	0	0			0	65
7:15 AM	0	22	22	41	0	41	0	0	0			0	63
7:30 AM	0	31	31	37	0	37	0	0	0			0	68
7:45 AM	0	44	44	30	0	30	0	0	0			0	74
8:00 AM	0	54	54	37	0	37	0	0	0			0	91

Peak Hour Summary

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

Hwy 47 & NW Olson Rd

7:00 AM to 8:00 AM
Wednesday, July 09, 2008

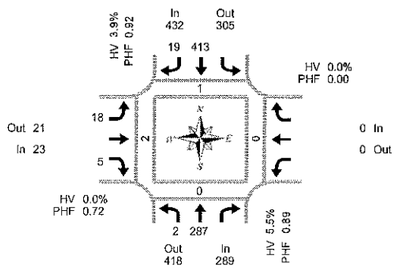


Approach	PHF	HV%	Volume
EB	0.57	0.0%	34
WB	0.00	0.0%	0
NB	0.81	6.8%	322
SB	0.82	20.9%	206
Intersection	0.85	11.6%	562

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

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



Hwy 47 & NW Olson Rd

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:45 PM to 5:45 PM

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	0	15		0	17	3	0		0	0	0					0	35	0	0	0	1
4:05 PM	2	22		0	38	0	0		3	1	0					0	66	0	0	0	0
4:10 PM	0	23		0	24	2	0		1	0	0					0	50	0	0	0	0
4:15 PM	0	20		0	32	2	0		0	0	0					0	54	0	0	0	0
4:20 PM	1	19		0	35	2	0		0	0	0					0	57	0	0	0	0
4:25 PM	0	20		0	31	0	0		0	0	0					0	51	0	0	0	0
4:30 PM	0	18		0	38	0	2		2	1	0					0	59	0	0	0	0
4:35 PM	0	31		0	27	0	0		0	1	0					0	59	0	0	0	0
4:40 PM	2	23		0	36	3	0		3	0	0					0	67	0	0	0	0
4:45 PM	0	23		0	23	0	0		3	0	0					0	49	0	0	0	0
4:50 PM	0	22		0	32	4	0		1	2	0					0	61	0	0	0	0
4:55 PM	0	26		0	37	1	0		0	0	0					0	64	0	0	0	2
5:00 PM	0	26		0	35	1	0		2	0	0					0	64	1	0	0	0
5:05 PM	0	22		0	29	1	0		3	1	0					0	56	0	0	0	0
5:10 PM	0	20		0	38	1	0		0	0	0					0	59	0	0	0	0
5:15 PM	0	24		0	39	2	0		1	0	0					0	66	0	0	0	0
5:20 PM	0	19		0	34	1	0		2	1	0					0	57	0	0	0	0
5:25 PM	0	38		0	36	1	0		2	0	0					0	77	0	0	0	0
5:30 PM	0	21		0	35	1	0		2	1	0					0	60	0	0	0	0
5:35 PM	1	14		0	34	5	0		1	0	0					0	55	0	0	0	0
5:40 PM	1	32		0	41	1	0		1	0	0					0	76	0	0	0	0
5:45 PM	0	22		0	24	0	0		2	1	0					0	49	0	0	0	0
5:50 PM	0	19		0	25	0	0		1	0	0					0	45	0	0	0	0
5:55 PM	2	16		0	22	0	0		1	1	0					0	42	0	0	0	0
Total Survey	9	535		0	762	31	2		31	10	0					0	1,378	1	0	0	3

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	2	60		0	79	5	0		4	1	0					0	151	0	0	0	1
4:15 PM	1	59		0	98	4	0		0	0	0					0	162	0	0	0	0
4:30 PM	2	72		0	101	3	2		5	2	0					0	185	0	0	0	0
4:45 PM	0	71		0	92	5	0		4	2	0					0	174	0	0	0	2
5:00 PM	0	68		0	102	3	0		5	1	0					0	179	1	0	0	0
5:15 PM	0	81		0	109	4	0		5	1	0					0	200	0	0	0	0
5:30 PM	2	67		0	110	7	0		4	1	0					0	191	0	0	0	0
5:45 PM	2	57		0	71	0	0		4	2	0					0	136	0	0	0	0
Total Survey	9	535		0	762	31	2		31	10	0					0	1,378	1	0	0	3

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	289	418	707	0	432	305	737	0	23	21	44	0	0	0	0	0	744	1	0	0	2
%HV		5.5%				3.9%				0.0%				0.0%			4.4%				
PHF		0.89				0.92				0.72				0.00			0.93				

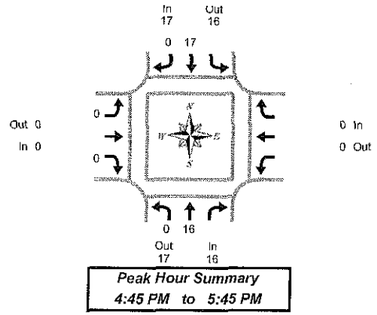
By Movement	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Total
	L	T		Total	T	R	Total		L	R	Total					Total	
Volume	2	287		289	413	19	432		18	5	23					0	744
%HV	0.0%	5.6%	NA	5.5%	NA	4.1%	0.0%	3.9%	0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%	4.4%
PHF	0.25	0.89		0.89		0.93	0.68	0.92	0.75		0.63	0.72				0.00	0.93

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

Interval Start Time	Northbound Hwy 47				Southbound Hwy 47				Eastbound NW Olson Rd				Westbound NW Olson Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	5	262		0	370	17	2		13	5	0					0	672	0	0	0	3
4:15 PM	3	270		0	393	15	2		14	5	0					0	700	1	0	0	2
4:30 PM	2	292		0	404	15	2		19	6	0					0	738	1	0	0	2
4:45 PM	2	287		0	413	19	0		18	5	0					0	744	1	0	0	2
5:00 PM	4	273		0	392	14	0		18	5	0					0	706	1	0	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 633-2740



Hwy 47 & NW Olson Rd

Tuesday, July 08, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:45 PM to 5:45 PM

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

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
4:00 PM	0	0	0	0	0	0	0	0	0			0	0
4:05 PM	0	1	1	4	0	4	1	1	2			0	7
4:10 PM	0	5	5	2	0	2	0	0	0			0	7
4:15 PM	0	2	2	2	0	2	0	0	0			0	4
4:20 PM	0	4	4	4	0	4	0	0	0			0	8
4:25 PM	0	3	3	2	0	2	0	0	0			0	5
4:30 PM	0	1	1	1	0	1	0	0	0			0	2
4:35 PM	0	3	3	2	0	2	0	0	0			0	5
4:40 PM	1	2	3	2	0	2	0	0	0			0	5
4:45 PM	0	2	2	1	0	1	0	0	0			0	3
4:50 PM	0	1	1	1	0	1	0	0	0			0	2
4:55 PM	0	0	0	0	0	0	0	0	0			0	0
5:00 PM	0	2	2	2	0	2	0	0	0			0	4
5:05 PM	0	2	2	3	0	3	0	0	0			0	5
5:10 PM	0	2	2	4	0	4	0	0	0			0	6
5:15 PM	0	1	1	1	0	1	0	0	0			0	2
5:20 PM	0	3	3	1	0	1	0	0	0			0	4
5:25 PM	0	0	0	1	0	1	0	0	0			0	1
5:30 PM	0	0	0	0	0	0	0	0	0			0	0
5:35 PM	0	1	1	1	0	1	0	0	0			0	2
5:40 PM	0	2	2	2	0	2	0	0	0			0	4
5:45 PM	0	0	0	0	0	0	0	0	0			0	0
5:50 PM	0	2	2	2	0	2	0	0	0			0	4
5:55 PM	0	1	1	0	0	0	0	0	0			0	1
Total Survey	1	40	41	38	0	38	1	1	2			0	81

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

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
4:00 PM	0	6	6	6	0	6	1	1	2			0	14
4:15 PM	0	9	9	8	0	8	0	0	0			0	17
4:30 PM	1	6	7	5	0	5	0	0	0			0	12
4:45 PM	0	3	3	2	0	2	0	0	0			0	5
5:00 PM	0	6	6	9	0	9	0	0	0			0	15
5:15 PM	0	4	4	3	0	3	0	0	0			0	7
5:30 PM	0	3	3	3	0	3	0	0	0			0	6
5:45 PM	0	3	3	2	0	2	0	0	0			0	5
Total Survey	1	40	41	38	0	38	1	1	2			0	81

Heavy Vehicle Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	16	17	33	17	16	33	0	0	0	0	0	0	33
PHF	0.67			0.47			0.00			0.00			0.55

By Movement	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Total
	L	T	Total	T	R	Total	L	R	Total			Total	
Volume	0	16	16	17	0	17	0	0	0			0	33
PHF	0.00	0.67	0.67	0.47	0.00	0.47	0.00	0.00	0.00			0.00	0.55

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

Interval Start Time	Northbound Hwy 47			Southbound Hwy 47			Eastbound NW Olson Rd			Westbound NW Olson Rd			Interval Total
	L	T	Total	T	R	Total	L	R	Total			Total	
4:00 PM	1	24	25	21	0	21	1	1	2			0	48
4:15 PM	1	24	25	24	0	24	0	0	0			0	49
4:30 PM	1	19	20	19	0	19	0	0	0			0	39
4:45 PM	0	16	16	17	0	17	0	0	0			0	33
5:00 PM	0	16	16	17	0	17	0	0	0			0	33

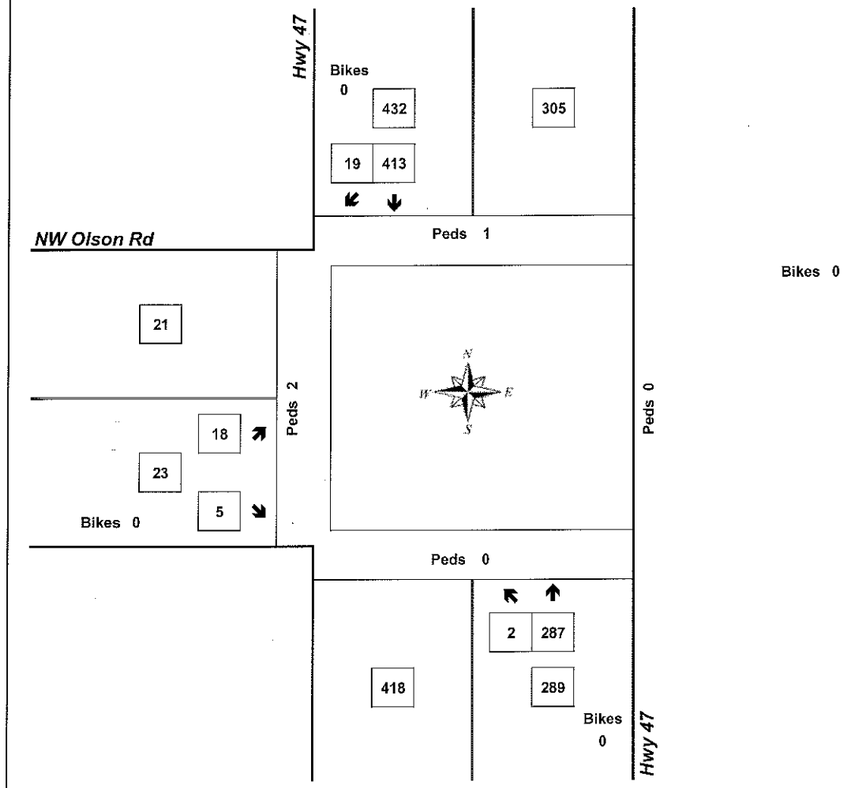
Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

Hwy 47 & NW Olson Rd

4:45 PM to 5:45 PM
Tuesday, July 08, 2008



Approach	PHF	HV%	Volume
EB	0.72	0.0%	23
WB	0.00	0.0%	0
NB	0.89	5.5%	289
SB	0.92	3.9%	432
Intersection	0.93	4.4%	744

Count Period: 4:00 PM to 6:00 PM

TRAFFIX Output

Scenario Report

Scenario:	2015 AM Peak
Command:	Default Command
Volume:	Existing AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Turning Movement Report
Gaston Heights AM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 Hwy 47/Main St													
Base	1	422	8	19	252	6	19	5	1	13	1	40	787
Added	0	49	8	0	17	17	49	8	0	3	3	0	154
Total	1	471	16	19	269	23	68	13	1	16	4	40	941
#2 Hwy 47/Cottonwood St													
Base	3	411	0	0	248	1	7	0	4	0	0	0	674
Added	0	0	0	0	0	19	57	0	0	0	0	0	76
Total	3	411	0	0	248	20	64	0	4	0	0	0	750
#3 Hwy 47/ Olson Rd													
Base	3	392	0	0	245	7	28	0	7	0	0	0	681
Added	27	0	0	0	0	0	0	0	78	0	0	0	105
Total	30	392	0	0	245	7	28	0	85	0	0	0	786

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
1	Hwy 47/Main S	1	422	8	19	252	6	19	5	1	13	1	40
2	Hwy 47/Cotton	3	411	0	0	248	1	7	0	4	0	0	0
3	Hwy 47/ Olson	3	392	0	0	245	7	28	0	7	0	0	0

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	1	471	16	19	269	23	68	13	1	16	4	40
2	Hwy 47/Cotton	3	411	0	0	248	20	64	0	4	0	0	0
3	Hwy 47/ Olson	30	392	0	0	245	7	28	0	85	0	0	0

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
# 1 Hwy 47/Main St	C	17.1	0.000	C	23.4	0.000	+ 6.304 D/V
# 2 Hwy 47/Cottonwood St	B	12.2	0.000	B	14.8	0.000	+ 2.677 D/V
# 3 Hwy 47/ Olson Rd	B	13.1	0.000	B	11.8	0.000	-1.228 D/V

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[17.1]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: AM Peak												
Base Vol:	1	361	8	19	215	6	19	5	1	13	1	40
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	422	8	19	252	6	19	5	1	13	1	40
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:	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 Volume:	1	422	8	19	252	6	19	5	1	13	1	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	422	8	19	252	6	19	5	1	13	1	40
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	258	xxxx	xxxxx	430	xxxx	xxxxx	741	725	255	724	724	426
Potent Cap.:	1319	xxxx	xxxxx	1140	xxxx	xxxxx	334	354	789	344	354	632
Move Cap.:	1319	xxxx	xxxxx	1140	xxxx	xxxxx	308	348	789	335	348	632
Volume/Cap:	0.00	xxxx	xxxx	0.02	xxxx	xxxx	0.06	0.01	0.00	0.04	0.00	0.06
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.7	xxxx	xxxxx	8.2	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	324	xxxxx	xxxx	515	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	17.1	xxxxx	xxxxx	12.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			17.1			12.8		
ApproachLOS:	*			*			C			B		

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

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

Intersection #1 Hwy 47/Main St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: C[23.4]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: AM Peak												
Base Vol:	1	361	8	19	215	6	19	5	1	13	1	40
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	422	8	19	252	6	19	5	1	13	1	40
Added Vol:	0	49	8	0	17	17	49	8	0	3	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	471	16	19	269	23	68	13	1	16	4	40
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:	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 Volume:	1	471	16	19	269	23	68	13	1	16	4	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	471	16	19	269	23	68	13	1	16	4	40
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	292	xxxx	xxxxx	487	xxxx	xxxxx	821	807	280	806	811	479
Potent Cap.:	1282	xxxx	xxxxx	1086	xxxx	xxxxx	296	317	764	302	316	590
Move Cap.:	1282	xxxx	xxxxx	1086	xxxx	xxxxx	269	311	764	288	310	590
Volume/Cap:	0.00	xxxx	xxxx	0.02	xxxx	xxxx	0.25	0.04	0.00	0.06	0.01	0.07
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	8.4	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	277	xxxxx	xxxx	441	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx	xxxxx	0.5	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	23.4	xxxxx	xxxxx	14.5	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			23.4			14.5		
ApproachLOS:	*			*			C			B		

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

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #1 Hwy 47/Main St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.2]

Street Name:	Highway 47						Cottonwood St					
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	1! 0	0	0 0	0	0 0
Volume Module: AM Peak												
Base Vol:	3	351	0	0	212	1	7	0	4	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	411	0	0	248	1	7	0	4	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:	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 Volume:	3	411	0	0	248	1	7	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	411	0	0	248	1	7	0	4	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	249	xxxx	xxxxx	xxxx	xxxx	xxxxx	665	665	249	xxxx	xxxx	xxxxx
Potent Cap.:	1328	xxxx	xxxxx	xxxx	xxxx	xxxxx	428	383	795	xxxx	xxxx	xxxxx
Move Cap.:	1328	xxxx	xxxxx	xxxx	xxxx	xxxxx	427	382	795	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.7	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	514	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	12.2	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.2			xxxxxx		
ApproachLOS:	*			*			B			*		

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

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

Intersection #2 Hwy 47/Cottonwood St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[14.8]

Street Name:	Highway 47						Cottonwood St					
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 1! 0	0	0	0 0 0	0
Volume Module: AM Peak												
Base Vol:	3	351	0	0	212	1	7	0	4	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	411	0	0	248	1	7	0	4	0	0	0
Added Vol:	0	0	0	0	0	19	57	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	411	0	0	248	20	64	0	4	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:	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 Volume:	3	411	0	0	248	20	64	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	411	0	0	248	20	64	0	4	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	268	xxxx	xxxxx	xxxx	xxxx	xxxxx	675	675	258	xxxx	xxxx	xxxxx
Potent Cap.:	1307	xxxx	xxxxx	xxxx	xxxx	xxxxx	423	378	785	xxxx	xxxx	xxxxx
Move Cap.:	1307	xxxx	xxxxx	xxxx	xxxx	xxxxx	422	377	785	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.15	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	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	434	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			14.8			xxxxxx		
ApproachLOS:	*			*			B			*		

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

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #2 Hwy 47/Cottonwood St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[13.1]

Street Name:	Highway 47						NW Olson Rd					
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	1!	0 0	0 0	0	0 0
Volume Module:AM Peak												
Base Vol:	3 335		0	0	209	7	28		0	7	0	0 0
Growth Adj:	1.00 1.17		1.00	1.00	1.17	1.00	1.00		1.00	1.00	1.00	1.00 1.00
Initial Bse:	3 392		0	0	245	7	28		0	7	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:	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 Volume:	3 392		0	0	245	7	28		0	7	0	0 0
Reduct Vol:	0 0		0	0	0	0	0		0	0	0	0 0
FinalVolume:	3 392		0	0	245	7	28		0	7	0	0 0
Critical Gap Module:												
Critical Gp:	4.1 xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5		6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2 xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0		3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	252 xxxx	xxxxx	xxxx	xxxx	xxxxx	646	646		248	xxxx	xxxx	xxxxx
Potent Cap.:	1326 xxxx	xxxxx	xxxx	xxxx	xxxxx	439	393		796	xxxx	xxxx	xxxxx
Move Cap.:	1326 xxxx	xxxxx	xxxx	xxxx	xxxxx	439	392		796	xxxx	xxxx	xxxxx
Volume/Cap:	0.00 xxxx	xxxx	xxxx	xxxx	xxxx	0.06	0.00		0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0 xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	7.7 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	482	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	7.7 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.1	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.1			xxxxxx		
ApproachLOS:	*			*			B			*		

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

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

Intersection #3 Hwy 47/ Olson Rd

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.8]

Street Name:	Highway 47						NW Olson Rd					
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 1!	0 0	0	0 0	0 0
Volume Module: AM Peak												
Base Vol:	3	335	0	0	209	7	28	0	7	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	392	0	0	245	7	28	0	7	0	0	0
Added Vol:	27	0	0	0	0	0	0	0	78	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	392	0	0	245	7	28	0	85	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:	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 Volume:	30	392	0	0	245	7	28	0	85	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	30	392	0	0	245	7	28	0	85	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	252	xxxx	xxxxx	xxxx	xxxx	xxxxx	700	700	248	xxxx	xxxx	xxxxx
Potent Cap.:	1326	xxxx	xxxxx	xxxx	xxxx	xxxxx	409	366	796	xxxx	xxxx	xxxxx
Move Cap.:	1326	xxxx	xxxxx	xxxx	xxxx	xxxxx	401	357	796	xxxx	xxxx	xxxxx
Volume/Cap:	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	0.00	0.11	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	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	640	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.8			xxxxxx		
ApproachLOS:	*			*			B			*		

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

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #3 Hwy 47/ Olson Rd

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Scenario Report

Scenario:	2015 PM Peak
Command:	Default Command
Volume:	Existing PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Turning Movement Report
Gaston Heights PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Hwy 47/Main St													
Base	7	336	16	50	489	23	8	7	7	20	5	39	1007
Added	0	33	5	0	56	56	33	5	0	9	9	0	206
Total	7	369	21	50	545	79	41	12	7	29	14	39	1213
#2 Hwy 47/Cottonwood St													
Base	8	385	0	0	525	11	11	0	8	0	0	0	948
Added	0	0	0	0	0	65	38	0	0	0	0	0	103
Total	8	385	0	0	525	76	49	0	8	0	0	0	1051
#3 Hwy 47/ Olson Rd													
Base	2	352	0	0	508	20	19	0	5	0	0	0	906
Added	90	0	0	0	0	0	0	0	52	0	0	0	142
Total	92	352	0	0	508	20	19	0	57	0	0	0	1048
#4													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	1	0	38	0	0	0	0	0	2	65	0	0	106
Total	1	0	38	0	0	0	0	0	2	65	0	0	106
#5													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	52	0	1	2	0	0	0	0	90	145
Total	0	0	0	52	0	1	2	0	0	0	0	90	145
#6													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	38	0	0	65	0	103
Total	0	0	0	0	0	0	0	38	0	0	65	0	103

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	7	336	16	50	489	23	8	7	7	20	5	39
2	Hwy 47/Cotton	8	385	0	0	525	11	11	0	8	0	0	0
3	Hwy 47/ Olson	2	352	0	0	508	20	19	0	5	0	0	0

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	7	369	21	50	545	79	41	12	7	29	14	39
2	Hwy 47/Cotton	8	385	0	0	525	76	49	0	8	0	0	0
3	Hwy 47/ Olson	92	352	0	0	508	20	19	0	57	0	0	0

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
# 1 Hwy 47/Main St	C	19.1	0.000	D	33.4	0.000	+14.271 D/V
# 2 Hwy 47/Cottonwood St	C	15.3	0.000	C	19.6	0.000	+ 4.286 D/V
# 3 Hwy 47/ Olson Rd	C	15.9	0.000	C	15.6	0.000	-0.353 D/V

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[19.1]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: PM Peak												
Base Vol:	7	287	16	50	418	23	8	7	7	20	5	39
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	336	16	50	489	23	8	7	7	20	5	39
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:	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 Volume:	7	336	16	50	489	23	8	7	7	20	5	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	336	16	50	489	23	8	7	7	20	5	39
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	512	xxxx	xxxxx	352	xxxx	xxxxx	980	966	501	965	970	344
Potent Cap.:	1064	xxxx	xxxxx	1218	xxxx	xxxxx	231	256	574	236	255	704
Move Cap.:	1064	xxxx	xxxxx	1218	xxxx	xxxxx	207	244	574	220	243	704
Volume/Cap:	0.01	xxxx	xxxx	0.04	xxxx	xxxx	0.04	0.03	0.01	0.09	0.02	0.06
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.4	xxxx	xxxxx	8.1	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	276	xxxxx	xxxx	383	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.6	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	19.1	xxxxx	xxxxx	16.3	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			19.1			16.3		
ApproachLOS:	*			*			C			C		

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

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

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Intersection #1 Hwy 47/Main St

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Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: D[33.4]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: PM Peak												
Base Vol:	7	287	16	50	418	23	8	7	7	20	5	39
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	336	16	50	489	23	8	7	7	20	5	39
Added Vol:	0	33	5	0	56	56	33	5	0	9	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	369	21	50	545	79	41	12	7	29	14	39
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:	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 Volume:	7	369	21	50	545	79	41	12	7	29	14	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	369	21	50	545	79	41	12	7	29	14	39
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	624	xxxx	xxxxx	390	xxxx	xxxxx	1104	1088	585	1087	1117	379
Potent Cap.:	967	xxxx	xxxxx	1180	xxxx	xxxxx	190	217	515	195	209	672
Move Cap.:	967	xxxx	xxxxx	1180	xxxx	xxxxx	163	206	515	177	198	672
Volume/Cap:	0.01	xxxx	xxxx	0.04	xxxx	xxxx	0.25	0.06	0.01	0.16	0.07	0.06
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.8	xxxx	xxxxx	8.2	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	186	xxxxx	xxxx	280	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.3	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	33.4	xxxxx	xxxxx	23.1	xxxxx
Shared LOS:	*	*	*	*	*	*	*	D	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			33.4			23.1		
ApproachLOS:	*			*			D			C		

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

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[15.3]

Street Name:	Highway 47						Cottonwood St					
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 1!	0 0	0	0 0	0 0 0
Volume Module: PM Peak												
Base Vol:	8	329	0	0	449	11	11	0	8	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	385	0	0	525	11	11	0	8	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:	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 Volume:	8	385	0	0	525	11	11	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	385	0	0	525	11	11	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	536	xxxx	xxxxx	xxxx	xxxx	xxxxx	932	932	531	xxxx	xxxx	xxxxx
Potent Cap.:	1042	xxxx	xxxxx	xxxx	xxxx	xxxxx	298	269	552	xxxx	xxxx	xxxxx
Move Cap.:	1042	xxxx	xxxxx	xxxx	xxxx	xxxxx	297	267	552	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.5	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	368	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.3	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			15.3			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #2 Hwy 47/Cottonwood St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[19.6]

Street Name:	Highway 47						Cottonwood St					
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 1!	0 0	0	0 0	0 0 0
Volume Module: PM Peak												
Base Vol:	8	329	0	0	449	11	11	0	8	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	385	0	0	525	11	11	0	8	0	0	0
Added Vol:	0	0	0	0	0	65	38	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	385	0	0	525	76	49	0	8	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:	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 Volume:	8	385	0	0	525	76	49	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	385	0	0	525	76	49	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	601	xxxx	xxxxx	xxxx	xxxx	xxxxx	964	964	563	xxxx	xxxx	xxxxx
Potent Cap.:	986	xxxx	xxxxx	xxxx	xxxx	xxxxx	285	257	529	xxxx	xxxx	xxxxx
Move Cap.:	986	xxxx	xxxxx	xxxx	xxxx	xxxxx	284	255	529	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.17	0.00	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.7	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	303	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	19.6	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			19.6			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[15.9]

Street Name:	Highway 47						NW Olson Rd					
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 1!	0 0	0	0 0	0 0 0
Volume Module: PM Peak												
Base Vol:	2	301	0	0	434	20	19	0	5	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	352	0	0	508	20	19	0	5	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:	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 Volume:	2	352	0	0	508	20	19	0	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	352	0	0	508	20	19	0	5	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	528	xxxx	xxxxx	xxxx	xxxx	xxxxx	874	874	518	xxxx	xxxx	xxxxx
Potent Cap.:	1050	xxxx	xxxxx	xxxx	xxxx	xxxxx	323	290	562	xxxx	xxxx	xxxxx
Move Cap.:	1050	xxxx	xxxxx	xxxx	xxxx	xxxxx	322	290	562	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.4	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	354	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			15.9			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

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Intersection #3 Hwy 47/ Olson Rd

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Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[15.6]

Street Name:	Highway 47						NW Olson Rd					
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	1! 0	0	0 0	0 0	0
Volume Module: PM Peak												
Base Vol:	2	301	0	0	434	20	19	0	5	0	0	0
Growth Adj:	1.00	1.17	1.00	1.00	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	352	0	0	508	20	19	0	5	0	0	0
Added Vol:	90	0	0	0	0	0	0	0	52	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	352	0	0	508	20	19	0	57	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:	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 Volume:	92	352	0	0	508	20	19	0	57	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	92	352	0	0	508	20	19	0	57	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	528	xxxx	xxxxx	xxxx	xxxx	xxxxx	1054	1054	518	xxxx	xxxx	xxxxx
Potent Cap.:	1050	xxxx	xxxxx	xxxx	xxxx	xxxxx	252	228	562	xxxx	xxxx	xxxxx
Move Cap.:	1050	xxxx	xxxxx	xxxx	xxxx	xxxxx	235	207	562	xxxx	xxxx	xxxxx
Volume/Cap:	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	0.00	0.10	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.8	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	417	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.6	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			15.6			xxxxxx		
ApproachLOS:	*			*			C			*		

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

Scenario Report

Scenario:	2030 AM Peak
Command:	Default Command
Volume:	Existing AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Turning Movement Report
Gaston Heights AM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 Hwy 47/Main St													
Base	1	596	8	19	355	6	19	5	1	13	1	40	1063
Added	0	49	8	0	17	17	49	8	0	3	3	0	154
Total	1	645	16	19	372	23	68	13	1	16	4	40	1217
#2 Hwy 47/Cottonwood St													
Base	3	579	0	0	350	1	7	0	4	0	0	0	944
Added	0	0	0	0	0	19	57	0	0	0	0	0	76
Total	3	579	0	0	350	20	64	0	4	0	0	0	1020
#3 Hwy 47/ Olson Rd													
Base	3	553	0	0	345	7	28	0	7	0	0	0	943
Added	27	0	0	0	0	0	0	0	78	0	0	0	105
Total	30	553	0	0	345	7	28	0	85	0	0	0	1048
#4													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	2	0	57	0	0	0	0	0	1	19	0	0	79
Total	2	0	57	0	0	0	0	0	1	19	0	0	79
#5													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	78	0	2	1	0	0	0	0	27	108
Total	0	0	0	78	0	2	1	0	0	0	0	27	108
#6													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	57	0	0	19	0	76
Total	0	0	0	0	0	0	0	57	0	0	19	0	76

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
1	Hwy 47/Main S	1	596	8	19	355	6	19	5	1	13	1	40
2	Hwy 47/Cotton	3	579	0	0	350	1	7	0	4	0	0	0
3	Hwy 47/ Olson	3	553	0	0	345	7	28	0	7	0	0	0

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	1	645	16	19	372	23	68	13	1	16	4	40
2	Hwy 47/Cotton	3	579	0	0	350	20	64	0	4	0	0	0
3	Hwy 47/ Olson	30	553	0	0	345	7	28	0	85	0	0	0

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
# 1 Hwy 47/Main St	C	24.4	0.000	E	41.5	0.000	+17.098 D/V
# 2 Hwy 47/Cottonwood St	B	14.9	0.000	C	20.3	0.000	+ 5.404 D/V
# 3 Hwy 47/ Olson Rd	C	16.5	0.000	B	14.0	0.000	-2.509 D/V

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[24.4]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: AM Peak												
Base Vol:	1	361	8	19	215	6	19	5	1	13	1	40
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	596	8	19	355	6	19	5	1	13	1	40
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:	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 Volume:	1	596	8	19	355	6	19	5	1	13	1	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	596	8	19	355	6	19	5	1	13	1	40
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	361	xxxx	xxxxx	604	xxxx	xxxxx	1018	1001	358	1000	1000	600
Potent Cap.:	1209	xxxx	xxxxx	984	xxxx	xxxxx	218	245	691	224	245	505
Move Cap.:	1209	xxxx	xxxxx	984	xxxx	xxxxx	197	240	691	216	240	505
Volume/Cap:	0.00	xxxx	xxxx	0.02	xxxx	xxxx	0.10	0.02	0.00	0.06	0.00	0.08
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	8.7	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	210	xxxxx	xxxx	376	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	0.5	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	24.4	xxxxx	xxxxx	16.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			24.4			16.2		
ApproachLOS:	*			*			C			C		

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

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

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Intersection #1 Hwy 47/Main St

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
LaneWidth:	12 feet			12 feet			12 feet			12 feet		

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: E[41.5]

Street Name:	Highway 47						E Main St					
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	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:AM Peak												
Base Vol:	1	361	8	19	215	6	19	5	1	13	1	40
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	596	8	19	355	6	19	5	1	13	1	40
Added Vol:	0	49	8	0	17	17	49	8	0	3	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	645	16	19	372	23	68	13	1	16	4	40
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:	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 Volume:	1	645	16	19	372	23	68	13	1	16	4	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	645	16	19	372	23	68	13	1	16	4	40
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	395	xxxx	xxxxx	661	xxxx	xxxxx	1098	1084	383	1083	1087	653
Potent Cap.:	1175	xxxx	xxxxx	937	xxxx	xxxxx	192	219	669	197	218	471
Move Cap.:	1175	xxxx	xxxxx	937	xxxx	xxxxx	170	214	669	184	213	471
Volume/Cap:	0.00	xxxx	xxxx	0.02	xxxx	xxxx	0.40	0.06	0.00	0.09	0.02	0.08
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.9	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	178	xxxxx	xxxx	315	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.2	xxxxx	xxxxx	0.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	41.5	xxxxx	xxxxx	19.1	xxxxx
Shared LOS:	*	*	*	*	*	*	*	E	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			41.5			19.1		
ApproachLOS:	*			*			E			C		

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

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[14.9]

Street Name:	Highway 47						Cottonwood St					
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 1!	0 0	0	0 0	0 0
Volume Module:AM Peak												
Base Vol:	3	351	0	0	212	1	7	0	4	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	579	0	0	350	1	7	0	4	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:	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 Volume:	3	579	0	0	350	1	7	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	579	0	0	350	1	7	0	4	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	351	xxxx	xxxxx	xxxx	xxxx	xxxxx	935	935	350	xxxx	xxxx	xxxxx
Potent Cap.:	1219	xxxx	xxxxx	xxxx	xxxx	xxxxx	297	267	698	xxxx	xxxx	xxxxx
Move Cap.:	1219	xxxx	xxxxx	xxxx	xxxx	xxxxx	296	267	698	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	0.00	0.01	xxxx	xxxx	xxxx
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	375	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			14.9			xxxxxx		
ApproachLOS:	*			*			B			*		

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

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

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Intersection #2 Hwy 47/Cottonwood St

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[20.3]

Street Name:	Highway 47						Cottonwood St					
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	1! 0	0	0	0 0	0 0
Volume Module:AM Peak												
Base Vol:	3	351	0	0	212	1	7	0	4	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	579	0	0	350	1	7	0	4	0	0	0
Added Vol:	0	0	0	0	0	19	57	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	579	0	0	350	20	64	0	4	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:	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 Volume:	3	579	0	0	350	20	64	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	579	0	0	350	20	64	0	4	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	370	xxxx	xxxxx	xxxx	xxxx	xxxxx	945	945	360	xxxx	xxxx	xxxxx
Potent Cap.:	1200	xxxx	xxxxx	xxxx	xxxx	xxxxx	293	264	689	xxxx	xxxx	xxxxx
Move Cap.:	1200	xxxx	xxxxx	xxxx	xxxx	xxxxx	293	263	689	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.22	0.00	0.01	xxxx	xxxx	xxxx
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	303	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.3	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			20.3			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.5]

Street Name:	Highway 47						NW Olson Rd					
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 1!	0 0	0	0 0	0 0 0
Volume Module:AM Peak												
Base Vol:	3	335	0	0	209	7	28	0	7	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	553	0	0	345	7	28	0	7	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:	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 Volume:	3	553	0	0	345	7	28	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	553	0	0	345	7	28	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	352	xxxx	xxxxx	xxxx	xxxx	xxxxx	907	907	348	xxxx	xxxx	xxxxx
Potent Cap.:	1218	xxxx	xxxxx	xxxx	xxxx	xxxxx	309	278	699	xxxx	xxxx	xxxxx
Move Cap.:	1218	xxxx	xxxxx	xxxx	xxxx	xxxxx	308	277	699	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	0.00	0.01	xxxx	xxxx	xxxx
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	347	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	16.5	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			16.5			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #3 Hwy 47/ Olson Rd

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[14.0]

Street Name:	Highway 47						NW Olson Rd					
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	1! 0 0	0	0	0 0 0
Volume Module:AM Peak												
Base Vol:	3 335	0	0	209	7	28	0	7	0	0	0	
Growth Adj:	1.00 1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	3 553	0	0	345	7	28	0	7	0	0	0	
Added Vol:	27 0	0	0	0	0	0	0	78	0	0	0	
PasserByVol:	0 0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	30 553	0	0	345	7	28	0	85	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:	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 Volume:	30 553	0	0	345	7	28	0	85	0	0	0	
Reduct Vol:	0 0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	30 553	0	0	345	7	28	0	85	0	0	0	
Critical Gap Module:												
Critical Gp:	4.1 xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	
FollowUpTim:	2.2 xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	
Capacity Module:												
Cnflict Vol:	352 xxxx	xxxxx	xxxx	xxxx	xxxxx	961	961	348	xxxx	xxxx	xxxxx	
Potent Cap.:	1218 xxxx	xxxxx	xxxx	xxxx	xxxxx	287	258	699	xxxx	xxxx	xxxxx	
Move Cap.:	1218 xxxx	xxxxx	xxxx	xxxx	xxxxx	281	252	699	xxxx	xxxx	xxxxx	
Volume/Cap:	0.02 xxxx	xxxx	xxxx	xxxx	xxxx	0.10	0.00	0.12	xxxx	xxxx	xxxx	
Level Of Service Module:												
2Way95thQ:	0.1 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	511	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	8.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.0	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			14.0			xxxxxx		
ApproachLOS:	*			*			B			*		

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

Scenario Report

Scenario:	2030 PM Peak
Command:	Default Command
Volume:	Existing PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Turning Movement Report
Gaston Heights PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Hwy 47/Main St													
Base	7	474	16	50	690	23	8	7	7	20	5	39	1345
Added	0	33	5	0	56	56	33	5	0	9	9	0	206
Total	7	507	21	50	746	79	41	12	7	29	14	39	1551
#2 Hwy 47/Cottonwood St													
Base	8	543	0	0	741	11	11	0	8	0	0	0	1322
Added	0	0	0	0	0	65	38	0	0	0	0	0	103
Total	8	543	0	0	741	76	49	0	8	0	0	0	1425
#3 Hwy 47/ Olson Rd													
Base	2	497	0	0	716	20	19	0	5	0	0	0	1259
Added	90	0	0	0	0	0	0	0	52	0	0	0	142
Total	92	497	0	0	716	20	19	0	57	0	0	0	1401
#4													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	1	0	38	0	0	0	0	0	2	65	0	0	106
Total	1	0	38	0	0	0	0	0	2	65	0	0	106
#5													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	52	0	1	2	0	0	0	0	90	145
Total	0	0	0	52	0	1	2	0	0	0	0	90	145
#6													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	38	0	0	65	0	103
Total	0	0	0	0	0	0	0	38	0	0	65	0	103

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	7	474	16	50	690	23	8	7	7	20	5	39
2	Hwy 47/Cotton	8	543	0	0	741	11	11	0	8	0	0	0
3	Hwy 47/ Olson	2	497	0	0	716	20	19	0	5	0	0	0

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	Hwy 47/Main S	7	507	21	50	746	79	41	12	7	29	14	39
2	Hwy 47/Cotton	8	543	0	0	741	76	49	0	8	0	0	0
3	Hwy 47/ Olson	92	497	0	0	716	20	19	0	57	0	0	0

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
# 1 Hwy 47/Main St	D	29.3	0.000	F	75.8	0.000	+46.465 D/V
# 2 Hwy 47/Cottonwood St	C	21.8	0.000	D	33.1	0.000	+11.328 D/V
# 3 Hwy 47/ Olson Rd	C	23.0	0.000	C	22.2	0.000	-0.817 D/V

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: D[29.3]

Street Name:	Highway 47						E Main St					
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	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:	PM Peak											
Base Vol:	7	287	16	50	418	23	8	7	7	20	5	39
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	474	16	50	690	23	8	7	7	20	5	39
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:	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 Volume:	7	474	16	50	690	23	8	7	7	20	5	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	474	16	50	690	23	8	7	7	20	5	39
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	713	xxxx	xxxxx	490	xxxx	xxxxx	1319	1305	701	1304	1308	482
Potent Cap.:	896	xxxx	xxxxx	1084	xxxx	xxxxx	135	162	442	139	161	589
Move Cap.:	896	xxxx	xxxxx	1084	xxxx	xxxxx	118	153	442	126	152	589
Volume/Cap:	0.01	xxxx	xxxx	0.05	xxxx	xxxx	0.07	0.05	0.02	0.16	0.03	0.07
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.0	xxxx	xxxxx	8.5	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	170	xxxxx	xxxx	248	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	1.0	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	29.3	xxxxx	xxxxx	24.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	D	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			29.3			24.4		
ApproachLOS:	*			*			D			C		

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

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

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Intersection #1 Hwy 47/Main St

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #1 Hwy 47/Main St

Average Delay (sec/veh): 5.5 Worst Case Level Of Service: F[75.8]

Street Name:	Highway 47						E Main St					
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			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: PM Peak												
Base Vol:	7	287	16	50	418	23	8	7	7	20	5	39
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	474	16	50	690	23	8	7	7	20	5	39
Added Vol:	0	33	5	0	56	56	33	5	0	9	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	507	21	50	746	79	41	12	7	29	14	39
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:	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 Volume:	7	507	21	50	746	79	41	12	7	29	14	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	507	21	50	746	79	41	12	7	29	14	39
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	825	xxxx	xxxxx	528	xxxx	xxxxx	1443	1427	785	1426	1456	517
Potent Cap.:	814	xxxx	xxxxx	1050	xxxx	xxxxx	111	137	396	114	131	562
Move Cap.:	814	xxxx	xxxxx	1050	xxxx	xxxxx	90	129	396	100	124	562
Volume/Cap:	0.01	xxxx	xxxx	0.05	xxxx	xxxx	0.45	0.09	0.02	0.29	0.11	0.07
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.5	xxxx	xxxxx	8.6	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	106	xxxxx	xxxx	173	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.7	xxxxx	xxxxx	2.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	75.8	xxxxx	xxxxx	43.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	E	*
ApproachDel:	xxxxxx			xxxxxx			75.8			43.2		
ApproachLOS:	*			*			F			E		

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

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[21.8]

Street Name:	Highway 47						Cottonwood St					
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	1! 0 0	0	0	0 0 0
Volume Module: PM Peak												
Base Vol:	8	329	0	0	449	11	11	0	8	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	543	0	0	741	11	11	0	8	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:	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 Volume:	8	543	0	0	741	11	11	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	543	0	0	741	11	11	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	752	xxxx	xxxxx	xxxx	xxxx	xxxxx	1305	1305	746	xxxx	xxxx	xxxxx
Potent Cap.:	867	xxxx	xxxxx	xxxx	xxxx	xxxxx	178	162	417	xxxx	xxxx	xxxxx
Move Cap.:	867	xxxx	xxxxx	xxxx	xxxx	xxxxx	177	160	417	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	0.00	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.2	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	234	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	21.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			21.8			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

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Intersection #2 Hwy 47/Cottonwood St

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Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #2 Hwy 47/Cottonwood St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[33.1]

Street Name:	Highway 47						Cottonwood St					
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	1! 0 0	0	0	0 0 0
Volume Module: PM Peak												
Base Vol:	8	329	0	0	449	11	11	0	8	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	543	0	0	741	11	11	0	8	0	0	0
Added Vol:	0	0	0	0	0	65	38	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	543	0	0	741	76	49	0	8	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:	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 Volume:	8	543	0	0	741	76	49	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	543	0	0	741	76	49	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	817	xxxx	xxxxx	xxxx	xxxx	xxxxx	1338	1338	779	xxxx	xxxx	xxxxx
Potent Cap.:	820	xxxx	xxxxx	xxxx	xxxx	xxxxx	170	154	399	xxxx	xxxx	xxxxx
Move Cap.:	820	xxxx	xxxxx	xxxx	xxxx	xxxxx	169	153	399	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.29	0.00	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.4	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	184	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	33.1	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	D	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			33.1			xxxxxx		
ApproachLOS:	*			*			D			*		

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

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[23.0]

Street Name:	Highway 47						NW Olson Rd					
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 1!	0 0	0	0 0	0 0
Volume Module: PM Peak												
Base Vol:	2	301	0	0	434	20	19	0	5	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	497	0	0	716	20	19	0	5	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:	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 Volume:	2	497	0	0	716	20	19	0	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	497	0	0	716	20	19	0	5	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	736	xxxx	xxxxx	xxxx	xxxx	xxxxx	1227	1227	726	xxxx	xxxx	xxxxx
Potent Cap.:	879	xxxx	xxxxx	xxxx	xxxx	xxxxx	199	180	428	xxxx	xxxx	xxxxx
Move Cap.:	879	xxxx	xxxxx	xxxx	xxxx	xxxxx	199	180	428	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.1	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	224	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	23.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			23.0			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

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Intersection #3 Hwy 47/ Olson Rd

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

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

Intersection #3 Hwy 47/ Olson Rd

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[22.2]

Street Name:	Highway 47						NW Olson Rd					
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	1! 0	0	0 0	0 0	0
Volume Module: PM Peak												
Base Vol:	2	301	0	0	434	20	19	0	5	0	0	0
Growth Adj:	1.00	1.65	1.00	1.00	1.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	497	0	0	716	20	19	0	5	0	0	0
Added Vol:	90	0	0	0	0	0	0	0	52	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	497	0	0	716	20	19	0	57	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:	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 Volume:	92	497	0	0	716	20	19	0	57	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	92	497	0	0	716	20	19	0	57	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	736	xxxx	xxxxx	xxxx	xxxx	xxxxx	1407	1407	726	xxxx	xxxx	xxxxx
Potent Cap.:	879	xxxx	xxxxx	xxxx	xxxx	xxxxx	155	140	428	xxxx	xxxx	xxxxx
Move Cap.:	879	xxxx	xxxxx	xxxx	xxxx	xxxxx	142	125	428	xxxx	xxxx	xxxxx
Volume/Cap:	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	0.00	0.13	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	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	284	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	22.2	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			22.2			xxxxxx		
ApproachLOS:	*			*			C			*		

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