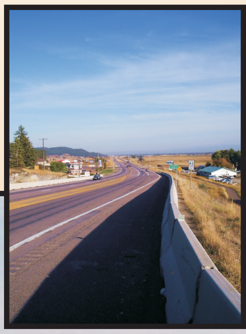
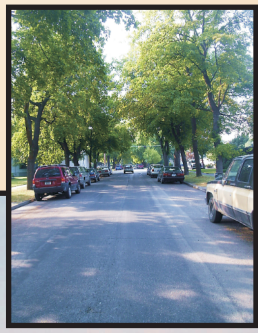
KALISPELL

AREA TRANSPORTATION PLAN (2006 UPDATE)





Prepared By:

Robert Peccia & Associates

Helena & Kalispell, Montana

April 21, 2008

KALISPELL

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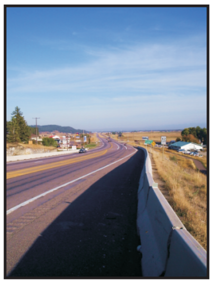

Prepared For:
Kalispell Technical Advisory Committee (TAC)
Kalispell, Montana

In Cooperation With:
City of Kalispell
Montana Department of Transportation
Federal Highway Administration

Adopted By:
Kalispell Technical Advisory Committee (TAC), December 4, 2007
Kalispell City Planning Board, January 8, 2008
Kalispell City Council, April 21, 2008

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EXECUTIVE SUMMARY

The city of Kalispell and the surrounding area is at a critical juncture regarding its transportation system. The area has been "found", and as such is experiencing tremendous growth patterns. The different growth being realized currently includes a mixture of commercial, residential, industrial, retail and office. This growth, coupled with existing transportation system constraints, have necessitated the update of the community's current Transportation Plan. This update of the Kalispell Area Transportation Plan is intended to offer guidance for the decision-makers in the greater Kalispell community. It contains a multi-modal analysis of the transportation system in Kalispell. This Plan includes an examination of the traffic operations, road network, transit services, non-motorized transportation alternatives, transportation demand management (TDM) and growth management techniques that will help encourage the use of alternative modes of travel. This document also identifies the problems with the various transportation systems and offers recommendations in the form of improvement projects and progressive programs that will relieve existing problems and/or meet future needs.

The development and implementation of a Transportation Plan is a good tool for managing growth and accommodating development needs. Not only do Transportation Plans provide analysis and mitigation for the existing transportation system currently being utilized, it also provides an opportunity to "look into the crystal ball" to try and predict future growth – where it is likely to happen, when it is likely to happen, and how much of it is likely to occur. More importantly, by predicting this growth the community can be primed to deal with it before infrastructure problems become apparent. This is one of the fundamental goals of developing a Transportation Plan – identifying transportation system needs before it is too late. By doing so, planners and community leaders can begin to plan and program needed infrastructure improvements pertinent to the transportation system.

The city of Kalispell and its adjacent lands are developing at an extremely rapid pace. If the development that is predicted in **Chapter 3** is realized over the planning horizon of this document (year 2030), there will be significant infrastructure constraints regarding the roadway system. Based on forecasts from the US Census Bureau and the Montana Department of Commerce, **the community can expect to see growth equating to an additional 16,000 dwelling units and 30,500 retail & non-retail jobs by the planning horizon year of 2030**. These totals are for the area within this project's study area boundary only. Obviously, additional growth will occur outside of the planning boundary in areas such as Whitefish, Columbia Falls, and unincorporated areas within Flathead County. All of this growth is entered into the urban travel demand model to quantify future traffic conditions in the community. The Transportation Plan study area boundary mimics the boundary selected for the current update to the City's Facilities Plan, and growth forecasts are on par with that document and the recently completed *US Highway 93 Bypass Environmental Impact Statement (EIS) Re-evaluation (2005)*.

For the most part, the transportation system in the greater Kalispell area functions adequately for about nine (9) months out of the year – with some exceptions. The real impact realized by the areas citizens occur during the summer tourist months, when main roadway corridors, and associated intersections, are congested. These problematic corridors and intersections have been identified, and without expansion or revision in the near future, will see congestion and "levels of service" deteriorate due to the excessive growth on the horizon. This will be perhaps the greatest challenge – trying to keep up with the current development trends that are impacting the transportation system. Coupled with this is making sure appropriate infrastructure is in place to accommodate the anticipated growth over the planning horizon. Several major travel corridors will be pushed to their limits in the coming years. These major travel corridors that are experiencing heavy amounts of traffic volumes are US Highway 2, US Highway 93, Reserve Drive, & Meridian Road. Additionally, many now rural roadways will by necessity become "urban" roadways as the City contemplates property annexation and grows northward and westward. These have been identified for urban standards, as appropriate, in this document.

Perhaps the most interesting feature of the future transportation system is the major impact the proposed US Highway 93 Bypass will have on area traffic patterns. The Bypass is presently being designed, along with right-of-way being acquired, for the full build section between US Highway 93 South (near Gardner's Auction) north to the terminus at Reserve Drive. This "full-build" section has drastic benefits for about 2/3rds of the community's transportation system. However for these benefits to be realized, it does necessitate the full project to be constructed. Presently, it is not planned to build the full section in the near future. It is noted, however, that the Technical Advisory Committee (TAC) considers the full Bypass to be of the highest priority for the community's transportation system in the coming years. Because of this, most of the projects recommended later in this document in **Chapter 8** and **Chapter 9** will only happen through innovative financing strategies (impact fees, transportation bonds, etc.) and/or partnerships with private developers. The recommended projects will have to be developed and balanced against the funding needs required for the full Bypass project.

It must be acknowledged that under current funding conditions, the focus should be on getting the most out of the existing transportation system. The bigger "corridor type" projects should come in parallel to private development requests (with the exception of the Highway 93 Bypass). Outside of the development realm, the following **opportunities** should be fully considered with each and every transportation project:

- Continue to make pedestrian and bicycle travel amenities a normal part of transportation system planning. There will of course be cases where non-motorized travel modes may not be feasible due to right-of-way constraints, topography, etc., but as a matter of practice every effort should be made to incorporate non-motorized facilities in planning activities. Non-motorized planning activities are discussed in great detail in **Chapter 4** of the Plan.

- In newly developing areas, plan for a "grid" transportation system wherever possible. Cul-de-sacs are increasingly being eliminated in current planning because the deter connectivity in the transportation system and force unbalanced travel characteristics in many neighborhoods.

- Continue to support transit activities wherever possible. Planning for the future with transit needs in developments, actively seeking out grants, and heightening awareness of the community's transit system can ensure that transit will not get "left behind" as the community goes forward with their transportation system.

- It is crucial to forge partnerships amongst all governmental jurisdictions as the future transportation system is created. The technical advisory committee (TAC) is a good starting point for the various players in the community to forge common ground associated with transportation planning issues.

This Transportation Plan examined current goals and objectives related to transportation issues as found in the current 1993 Transportation Plan and the current community Growth Policy. In addition, potential goals and objectives were developed and presented for the community to consider with this Transportation Plan Update. The new goals and objectives are more specific towards issues like non-motorized transportation and balancing the transportation system for all users, and are reiterated below:

<u>Goal #1</u>: Provide a safe, efficient, accessible, and cost-effective transportation system that offers viable choices for moving people and goods throughout the community.

<u>Goal #2</u>: Make transit and non-motorized modes of transportation viable alternatives to the private automobile for travel in and around the community.

<u>Goal #3</u>: Provide an open public involvement process in the development of the transportation system and in the implementation of transportation improvements, and assure that community standards and values, such as aesthetics and neighborhood protection, are incorporated.

<u>Goal #4</u>: Provide a financially sustainable Transportation Plan that is actively used to guide the transportation decision-making process throughout the course of the next 20 years.

<u>Goal #5</u>: Identify and protect future road corridors to serve future developments and public lands.

It is intuitive that the connection between land use and transportation is of the utmost importance. As described earlier in this Executive Summary, the Kalispell area is one of the fastest growing areas within Montana. Development patterns are aggressive, and to that end a “land use committee” was convened to revisit the growth assumptions made as part of the US Highway 93 EIS Re-evaluation. This exercise resulted in defining known and potential development projects within the planning study area boundary, as well as outside the study area boundary, and refining the projections and where they might be realized. This was extremely important, since this becomes the input for the travel demand model that allows future traffic conditions to be developed and known. The model relies on future housing (dwelling units), “retail” employment (jobs), and “non-retail” employment (jobs).

The “Land Use Advisory Committee” set up for this project predicted significant new housing development primarily to the north and west of the city proper, although there were other housing developments to the east and south. The most pressing housing developments are planned north and west of the city on the “Section 35” property, as well as developments farther north in the Church Drive area.

Considerable commercial development and employment will occur both north and south of the city, with the majority occurring just north and south of the Reserve Drive corridor near US Highway 93 North. Developments in this area that are known include the Glacier Life Style Center, the Hutton Ranch Plaza, and the Section 36 development. Areas to the south of the City include the Old School Station and other miscellaneous infill development. The area around Glacier International Airport will also see growth over the coming years and will exhibit a variety of mixed-use development.

Considerable commercial development can continue to occur in the downtown area which has the potential for significant additional build-out. There currently are approximately 250,000 square feet of un-built surface area in the downtown core, all taken up currently with low density surface parking. This, if built out to four levels (one down and three up), would result in 1,000,000 square feet of new space and a parking requirement of 1,500 required parking spaces (at a minimum), and maybe as much as 3,500 spaces, to be competitive in the marketplace. Investments in parking facilities in this area can encourage compact redevelopment and infill, which research shows to be a cost effective allocation of scarce transportation dollars and results in reductions in per capita trips.

Obviously, the result of all of this combined residential and employment growth translates into additional traffic and higher demands on the transportation system. Traffic volume growth in the greater Kalispell area was projected using a computer traffic model. The model used current socio-economic data and growth trends to project traffic volumes. These projected traffic volumes were used to help identify future traffic problems within the area. The projections indicate that most sections of the current street network can be sufficiently utilized to meet the traffic demands generated by future growth, with conditions. Several corridors will need expansion, and construction of the full section of the US Highway 93 Bypass corridor will be a necessity to allow the system to function acceptably into the future.

In order to efficiently respond to the traffic demands identified within the community, a Traffic Demand Management (TDM) strategy is provided. Possible TDM strategies include parking management strategies like parking garage facilities in the downtown area which can reduce trips and encourage walkable access to compact development, ride-sharing, carpools, non-motorized forms of transportation, and public transit. Another possible strategy is to encourage local businesses to allow employees to use flex-time to help shift traffic demand away from the peak hours.

This Plan also supports the concept of “traffic calming”. Historically used as a response to transportation issues on local streets, traffic calming is increasingly being used in new street design to provide pedestrian amenities and ward off future problems associated with vehicle speeds and cut-thru traffic. The City of Kalispell has used certain forms of traffic calming, and this Transportation Plan takes this subject one step further and presents a petition process by which a neighborhood can go forward with a traffic calming request. Also included are examples and guidelines for what types of traffic calming might be appropriate and when.

The analysis of the future traffic conditions indicated a need for a variety of improvements in the area. These improvements are presented in two categories: Transportation System Management (TSM) improvements and Major Street Network (MSN) improvements. A total of twenty-seven (27) TSM projects are recommended, at an **estimated cost of about $2,740,000**. The MSN projects focus on upgrading entire road corridors and the construction and/or rehabilitation of roadways. Thirty (30) MSN improvements are recommended, at an **estimated cost of approximately $108,990,000**. Note that the costs for the MSN projects do not include the cost of the full US Highway 93 Bypass, which is currently in the design phase.

The Transportation System Management improvements are listed in **Chapter 8**, with Major Street Network improvements being shown in **Chapter 9**. The various projects are shown in tabular format below by project identifier (number and title), however exact project specifics are discussed in the relevant chapters. It must be recognized that the projects listed in **Table ES-1** and **Table ES-2** are not listed in any priority.

Table ES-1
Planning Area "Transportation System Management (TSM)" Projects

Project ID	Project Title
TSM-1	Evergreen Drive / LaSalle Road ▪ Intersection reconfiguration/realignment ▪ Includes turn bays and curb bulb-outs
TSM-2	LaSalle Road / US Highway 2 ▪ Geometric modifications ▪ Turn lanes and signal revisions
TSM-3	Indian Trail Road / US Highway 93 North ▪ Traffic signal warrant analysis (every three years)
TSM-4	MT Highway 35 / Helena Flats Road ▪ Southbound left-turn movement restrictions ▪ No truck traffic signing
TSM-5	3rd Avenue / 4th Avenue Couplet ▪ Remove one-way couplet and change to two-way traffic flow ▪ Remove from "urban aid system"
TSM-6	Reserve Drive / Stillwater Road ▪ Install modern roundabout
TSM-7	US Highway 2 / Woodland Park Drive ▪ Extend westbound left-turn storage length on US Highway 2 ▪ Stripe eastbound right-turn lane on US Highway 2
TSM-8	Conrad Drive / Willow Glen Drive ▪ Install modern roundabout traffic control
TSM-9	US Highway 93 North / Home Depot Signal ▪ Add westbound and eastbound left-turn lanes ▪ Change signal phasing and timing for "left protected" movements
TSM-10	2nd Street East / Woodland Avenue ▪ Install an "urban compact" modern roundabout ▪ Install temporary roundabout prior to permanent installation
TSM-11	Willow Glen Drive / Woodland Avenue ▪ Remove sight distance obstructions on adjacent private land

	▪ Provide pedestrian crossing on Willow Glen Drive
TSM-12	18th Street / Airport Road ▪ Reconstruct intersection to remove "offset" alignment
TSM-13	Main Street (between 9th and 12th Street) ▪ Re-stripe Main Street to four-lane geometry ▪ Minor widening along curb-lanes may be required
TSM-14	US Highway 93 / Northridge Drive Modify intersection to allow northbound left turn protected phase
TSM-15	4th Avenue East / 2nd Street East ▪ Modify intersection to allow for three-way stop control
TSM-16	Whitefish Stage Road / West Evergreen Drive ▪ Implement three-way stop control ▪ Add separate westbound left- and right-turn bays
TSM-17	2nd Street East / Conrad Drive / Woodland Park Drive ▪ Install a modern roundabout intersection traffic control
TSM-18	Foys Lake Road & Valley View Drive ▪ Install an "urban compact" modern roundabout
TSM-20	South Meridian Road & 7th Street West ▪ Install an "urban compact" modern roundabout
TSM-21	South Meridian Road Corridor (Appleway Drive to Center Street) ▪ Widen roadway prism to provide back-to-back left-turn lanes ▪ Install northbound right-turn lane at Center Street ▪ Review traffic signal control warrants every three years
TSM-22	South Meridian Road & 2nd Street West ▪ Install "urban compact" modern roundabout
TSM-23	Four-Mile Drive / W. Springcreek Road ▪ Modify geometrics of intersection to a conventional four-legged geometry
TSM-24	Traffic Signal Synchronization - US 93 & US Highway 2 ▪ Revisit traffic signalization timing and phasing along corridor every two (2) years
TSM-25	Traffic Impact Study Requirements ▪ Require Traffic Impact Studies (TIS's) be prepared for all developments generating more than 300 trips per day
TSM-26	Transportation Plan Update Schedule ▪ Prepare an update to the community Transportation Plan every five (5) years to revisit land use assumptions and update completed project list
TSM-27	Community-Wide Opticom System Review ▪ Review the community's opticom system periodically, via the manufacturer or a Consultant, to ensure equipment need are met and travel patterns for emergency services are better understood
TSM-28	County Land Development Issues/Geometric Considerations ▪ Review development specific mitigation needs to ensure compliance with major Transportation Plan recommendations contained in **Chapter 8**, **Chapter 9** and **Chapter 10**

Table ES-2
Planning Area "Major Street Network (MSN)" Projects

Project ID	Project Title
CMSN-1	Reserve Drive Loop Connector (from Stillwater Road to U.S. Highway 93) ▪ Construct new roadway in Section 36
CMSN-2	Old Steel Bridge Replacement ▪ Replace structurally deficient one-lane bridge across Flathead River ▪ Slated for construction during 2009
CMSN-3	US Highway 93 (North of Kalispell city limits) ▪ Four-lane roadway reconstruction ▪ Slated for construction during 2008
MSN 1	West Reserve Drive - Stillwater to West Springcreek Road ▪ Reconstruct to a five-lane minor arterial urban roadway section
MSN 2	Four Mile Drive - Stillwater Road to US Highway 93 ▪ Construct new three-lane minor arterial urban section
MSN 3	Grandview Drive Extension - Existing Bend to Whitefish Stage Road ▪ Extend Grandview Drive as an urban minor arterial
MSN 4	Whitefish Stage Road - Reserve Drive to Rose Crossing ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 5	Whitefish Stage Road - Rose Crossing to Birch Grove Road ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 6	Helena Flats Road - Montana Highway 35 to Rose Crossing ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 7	Foys Lake Road (Whalebone Drive to Valley View Drive) ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 8	Four Mile Drive - West Springcreek Road to Stillwater Road ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 9	Rose Crossing (western Corridor Creation - Farm to Market to Whitefish Stage) ▪ Create new, major east/west corridor to serve future travel needs ▪ Urban minor arterial (2-lane with bays and/or 3-lanes) ▪ Junior interchange at intersection with US Highway 93
MSN 10	Stillwater Road - Four Mile Drive to West Reserve Drive ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN-11	New Roadway Connecting Foys Lake Road to US Highway 2 ▪ Create a new north/south route to serve development and relieve future traffic on South Meridian Road ▪ Urban collector standard with relatively straight alignment to establish grid system
MSN 12	West Springcreek Road - US Highway 2 to West Reserve Drive ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)

MSN 13	Willow Glen Drive - Conrad Drive to Woodland Avenue ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes) ▪ Incorporate *Sam Bibler Commemorative Trail* design features
MSN 14	Church Drive (Western Corridor - Farm to Market Road to Whitefish Stage Road) ▪ Construct and/or reconstruct a major east/west corridor to serve future travel needs ▪ Urban minor arterial (2-lane with bays and/or 3-lanes) ▪ Junior interchange at intersection with US Highway 93
MSN 15	Trumble Creek Road - Rose Crossing to Birch Grove Road ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 16	Conrad Drive - Willow Glen Road to Shady Lane ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 17	Shady Lane - Conrad Drive to MT 35 ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 18	Reserve Drive - US Highway 93 to Whitefish Stage Road ▪ Reconstruct to a five-lane minor arterial urban roadway section
MSN 19	Reserve Drive - Whitefish Stage Road to LaSalle Road ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 20	Reserve Drive - LaSalle Road to Helena Flats Road ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 21	Evergreen Drive - Whitefish Stage Road to LaSalle Road Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 22	Whitefish Stage Road - Oregon Street to Reserve Drive ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 23	18th Street West Extension/Sunnyside Drive ▪ Design and construct a new urban collector (2-lane with bays)
MSN 24	LaSalle / Conrad Drive Connector ▪ New connection to an urban minor arterial (2-lane with bays and/or 3-lanes) ▪ Only complete after improvements to Willow Glen Drive are in place
MSN 25	MT 35 Expansion ▪ Reconstruct MT 35 between LaSalle Road and MT 206 ▪ Four-lane principal arterial with new bridge ▪ Very long-term project
MSN 26	US Highway 2 East - LaSalle Road to Woodland Park Drive ▪ Expand to six-lane urban principal arterial facility ▪ Westbound inside lane “drop” at Woodland Park Drive ▪ Eastbound outside lane “pick-up” after Woodland Park Drive

MSN 28	7th Avenue East North (E. California Street to Whitefish Stage Road) ▪ Reconstruct roadway segment to a 2-lane urban minor arterial ▪ Ensure context sensitivity and pedestrian friendly amenities
MSN 29	Three-Mile Drive (W. Springcreek Road to Meridian Road) ▪ Reconstruct to an urban minor arterial (2-lane with bays and/or 3-lanes)
MSN 30	Two-Mile Drive (W. Springcreek Road to Meridian Road) ▪ Reconstruct to an urban collector (2-lane with bays and/or 3-lanes)
MSN 31	US Highway 93 North (Reserve Drive to Birch Grove Road)
MSN-31(a)	▪ Provide for a "junior interchange" at Rose Crossing /US 93 North
MSN-31(b)	▪ Provide for a three-quarters access at-grade intersection at US 93 North/Tronstad
MSN-31(c)	▪ Provide for a "junior interchange" at Church Drive/US 93 North
MSN-31(d)	▪ Complete "access control plan" for US 93 North between Reserve/Birch Grove
US Highway 93 Bypass	▪ Full bypass construction, as a four-lane, access controlled facility ▪ Currently in process of design and right-of-way acquisition

In addition, a project was identified through the public review and adoption process of the Transportation Plan document. This project included a recommendation to develop a detailed *Downtown Parking Management Plan* and support the development of a downtown parking facility (i.e. parking garage), in the appropriate location as defined through the *Downtown Parking Management Plan*.

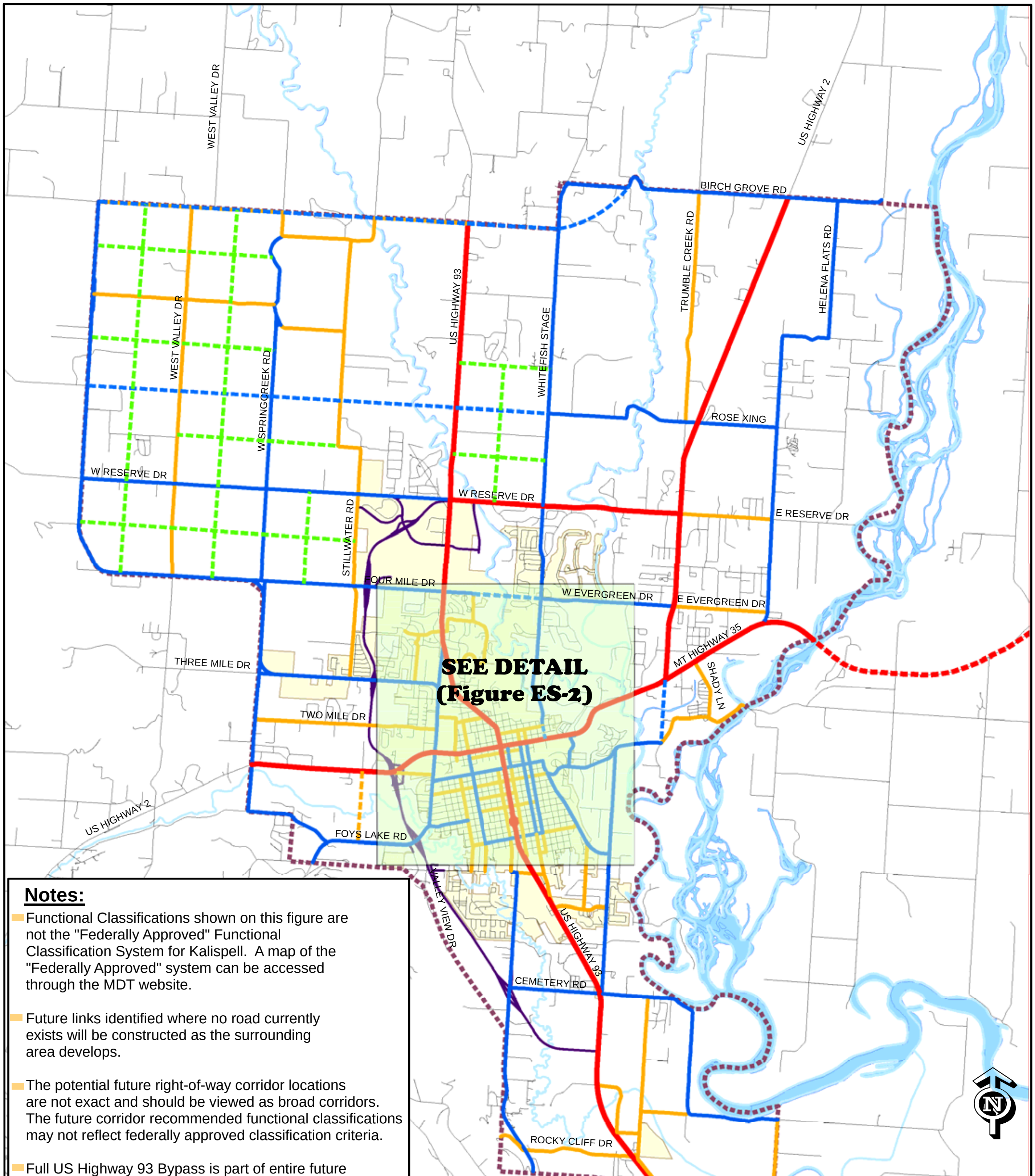
One of the most important pieces of information that is provided in this Plan is a projection of the recommended “major street network”. This network is included in this Executive Summary as shown on **Figure ES-1** and **Figure ES-2** (as well as later in the report in **Chapter 11**), and identifies where the future arterial and collector routes of the community should be located as the area develops. This map is an important planning tool. This projection of the future road system is essential for the city and county planners. It provides a blueprint of how the arterial network should be developed. It enables the planners to locate future arterial corridors, and to request appropriate amounts of rights-of-way and new road sections throughout the development process. This will allow the community to create a logical and functional road network for the future.

It is important to note that identifying the desired general alignment of future road corridors is significantly different from building roads to encourage development. The socio-economic trends indicate that steady and sustainable development will occur within the 24-year planning horizon of this Transportation Plan. This map of the future road system will insure that anticipated development also produces an appropriate road system.

The combined cost for both types of recommended projects exceeds the funds estimated to be available through the programs that traditionally finance transportation improvements. This should not be interpreted to imply that this Transportation Plan is not fiscally sound. What does need to be recognized, though, is that many future projects will need to be financed by the private sector during the development process to assist with the building and expansion of the transportation infrastructure. Land use and transportation decisions will need to give careful consideration, and even priority where appropriate, to cost effective investments in transportation infrastructure that result in reductions in per capita vehicle trips and cost effective use of existing city infrastructure. Additionally, alternative finance mechanisms should be explored on a project-by-project basis. Several of the recommended projects that may experience funding shortfalls are predicted for projects within the County that are not eligible for conventional funding participation. These projects especially will require other measures to fund the improvements (such as transportation bonds, developer impact fees, RID's/SID's, etc.).

Although this document is a tool that can be used to guide development of the transportation system in the future, local and state planners must continually re-evaluate the findings and recommendations in this document as growth is realized and development occurs. If higher than anticipated growth is realized in the community, or if growth occurs in areas not originally planned for, transportation needs may be different from those analyzed in this plan. An update and re-evaluation of this document should occur every five years, at a minimum, due to the explosive growth that is occurring within the community.

Lastly, tough decisions regarding allowable land use and associated mitigation measures will be in need of constant evaluation as the community grows. The potential for "growth management" areas could be quite feasible in the study area boundary, given the excessive growth predicted and the inability of transportation infrastructure to keep up with the growth.



Notes:

- Functional Classifications shown on this figure are not the "Federally Approved" Functional Classification System for Kalispell. A map of the "Federally Approved" system can be accessed through the MDT website.
- Future links identified where no road currently exists will be constructed as the surrounding area develops.
- The potential future right-of-way corridor locations are not exact and should be viewed as broad corridors. The future corridor recommended functional classifications may not reflect federally approved classification criteria.
- Full US Highway 93 Bypass is part of entire future Recommended MSN.

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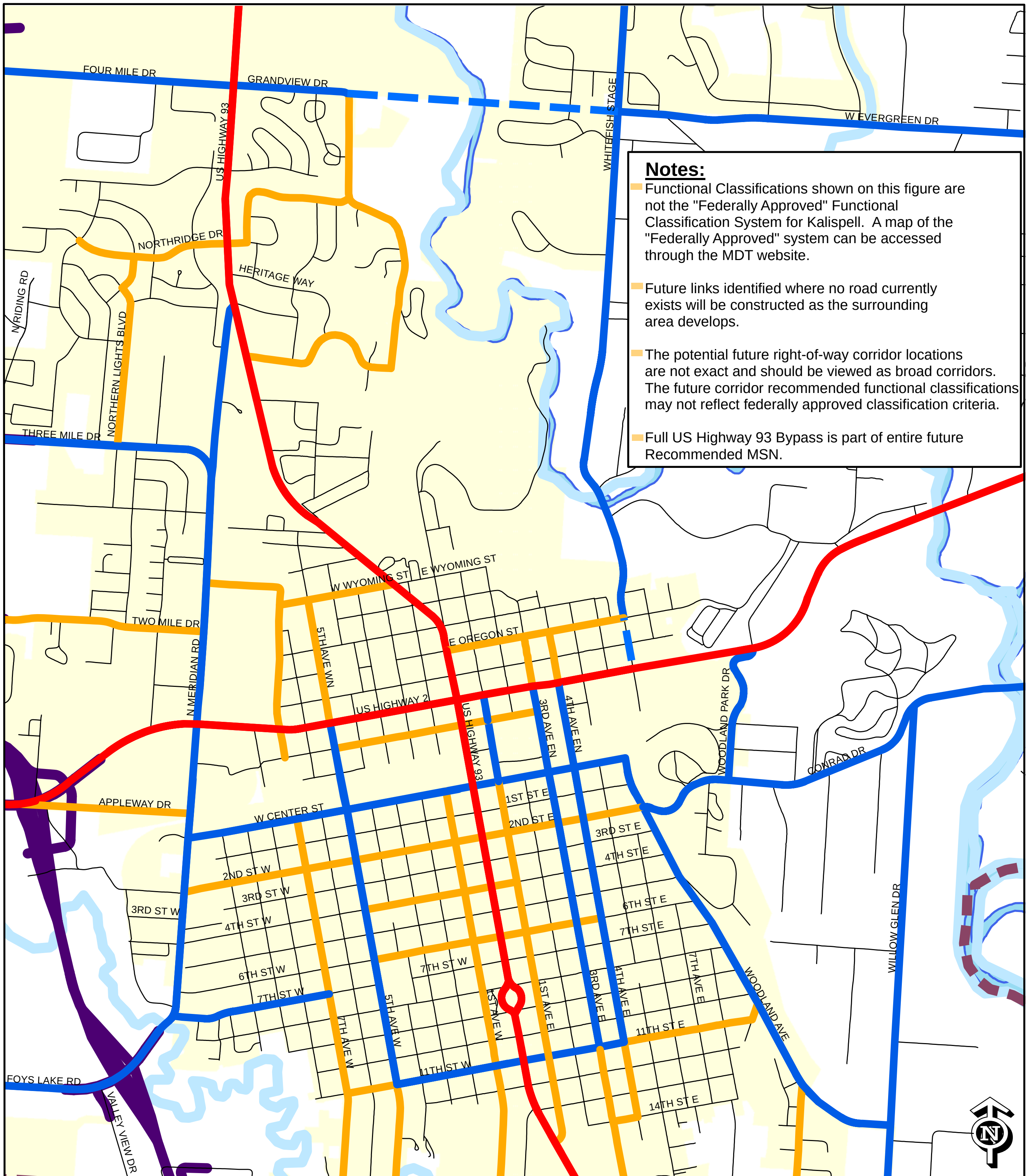
ROBERT PECCIA & ASSOCIATES

0 4,000 8,000
Scale in Feet

- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS
- FUTURE PRINCIPAL ARTERIAL
- FUTURE MINOR ARTERIAL
- FUTURE COLLECTOR
- FUTURE LOCAL/COLLECTOR

Figure ES-1

Future Recommended Major Street Network (MSN)



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0 1,000 2,000

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- MINOR ARTERIAL
- COLLECTOR
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS
- FUTURE PRINCIPAL ARTERIAL
- FUTURE MINOR ARTERIAL
- FUTURE COLLECTOR

Figure ES-2

Future Recommended Major Street Network (MSN)

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

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DEFINITIONS / ACRONYMS

DEFINITIONS

Access Management/Control – Controlling or limiting the types of access or the locations of access on major roadways to help improve the carrying capacity of a roadway, reduce potential conflicts, and facilitate proper land usage.

Average Daily Traffic (ADT) – The total amount of traffic observed, counted or estimated during a single, 24-hour period.

Annual Average Daily Traffic (AADT) – The average daily traffic averaged over a full year.

Americans with Disabilities Act (ADA) – The Federal regulations which govern minimum requirements for ensuring that transportation facilities and buildings are accessible to individuals with disabilities.

Bikeway - Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Bike Path - A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right of way or within an independent right of way.

Bike Lane – a portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bike Route – A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number.

Capacity – The maximum sustainable flow rate at which vehicles can be expected to traverse a roadway during a specific time period given roadway, geometric, traffic, environmental, and control conditions. Capacity is usually expressed in vehicles per day (vpd) or vehicles per hour (vph).

Collector Street – Provides for land access and traffic circulation within and between residential neighborhoods, and commercial and industrial areas. It provides for the equal priority of the movement of traffic, coupled with access to residential, business and industrial areas. A collector roadway may at times traverse residential neighborhoods. Posted speed limits on collectors typically range from 25 mph to 45 mph.

Congested Flow - A traffic flow condition caused by a downstream bottleneck unable to pass through unsignalized intersections.

Context Sensitive Design (CSD) - A fairly new concept in transportation planning and highway design that integrates transportation infrastructure improvements to the context of the adjacent land uses and functions, with a greater sensitivity to transportation impacts on the environment and communities being realized.

Delay - The amount of time spent not moving due to a traffic signal being red, or being unable to pass through an unsignalized intersection.

Facility – A length of highway composed of connected section, segments, and points.

Level of Service (LOS) - A qualitative measure of how well an intersection or road segment is operating based on traffic volume and geometric conditions. The level of service "scale" represents the full range of operating conditions. The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it, and can be used for both existing and projected conditions. The scale ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion.

Local Street – Comprises all facilities not included in a higher system. Its primary purpose is to permit direct access to abutting lands and connections to higher systems. Usually through-traffic movements are intentionally discouraged. Posted speed limits on local roads typically range from 25 mph to 35 mph.

Major Street Network (MSN) – The network of roadways defined for the Transportation Plan effort that include the interstate, principal arterials, minor arterials, collectors and some local streets.

Minor Arterial Street – Interconnects with and augments the Principal Arterial system. It also provides access to lower classifications of roads on the system and may allow for traffic to directly access destinations. They provide for movement within sub-areas of the city, whose boundaries are largely defined by the Principal Arterial road system. They serve through traffic, while at the same time providing direct access for commercial, industrial, office and multifamily development but, generally, not for single-family residential properties. The purpose of this classification of road is to increase traffic mobility by connecting to both the Principal Arterial system and also providing access to adjacent land uses. Posted speed limits on minor arterials typically range from 25 mph to 55 mph.

Multi-modal – A transportation facility for different types of users or vehicles, including passenger cars and trucks, transit vehicles, bicycles, and pedestrians.

Oversaturation – A traffic condition in which the arrival flow rate exceeds capacity on a roadway lane or segment.

Peak Hour – The hour of greatest traffic flow at an intersection or on a road segment. Typically broken down into AM and PM peak hours.

Road Failure – A condition by which a road has reached maximum capacity or has experienced structural failure.

Principal Arterial Street – Is the basic element of a city's road system. All other functional classifications supplement the Principal Arterial network. Access to a Principal Arterial is generally limited to intersections with other principal arterials or to the interstate system. Direct access is minimal and controlled. The purpose of a principal arterial is to serve the major centers of activity, the highest traffic volume corridors, and the longest trip distances in an urbanized area. This classification of roads carries a high proportion of the total traffic within an urban area. The major purpose is to provide for the expedient movement of traffic. Posted speed limits on principal arterials typically range from 25 mph to 70 mph.

Running speed - The actual vehicle speed while the vehicle is in motion (travel speed minus delay).

Service Life – The design life span of roadway based on capacity or physical characteristics.

Technical Advisory Committee (TAC) – The oversight committee that guided the development of this Transportation Plan Update. The committee is comprised of 18 members and includes representatives from the City of Kalispell, Flathead County, the Montana Department of Transportation (MDT), and other local business and citizen interests. The committee is a standing committee in the community that is generally responsible for overseeing transportation planning efforts.

Transportation Analysis Zone (TAZ) – Geographical zones identified throughout the study area based on land use characteristics and natural physical features for use in the traffic model developed for this project.

Transportation Demand Management (TDM) - Programs designed to maximize the people-moving capability of the transportation system by increasing the number of persons in a vehicle, or by influencing the time of, or need to, travel.

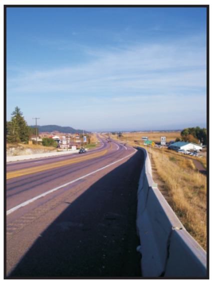
Travel speed - The speed at which a vehicle travels between two points including all intersection delay.

Volume to Capacity (V/C) Ratio – A qualitative measure comparing a roads theoretical maximum capacity to the existing (or future) volumes. Commonly described as the result of the flow rate of a roadway lane divided by the capacity of the roadway lane.

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
MDT	Montana Department of Transportation
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
TEA-21	Transportation Efficiency Act for the 21^{st} Century
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
TIP	Transportation Improvement Program

Chapter 1: Introduction and Background



CHAPTER 1: INTRODUCTION AND BACKGROUND

The city of Kalispell and the surrounding area is at a critical juncture regarding its transportation system. The area has been "found", and as such is experiencing tremendous growth patterns. The different growth being realized currently include a mixture of commercial, residential, industrial, retail and office. This growth, coupled with existing transportation system constraints, have necessitated the update of the community's current Transportation Plan. This update of the Kalispell Area Transportation Plan is intended to offer guidance for the decision-makers in the greater Kalispell community. It contains a multi-modal analysis of the transportation system in the Kalispell area. This Plan includes an examination of the traffic operations, road network, transit services, non-motorized transportation alternatives, transportation demand management (TDM) and growth management techniques that will help encourage the use of alternative modes of travel. This document also identifies the problems with the various transportation systems and offers recommendations in the form of improvement projects and progressive programs that will relieve existing problems and/or meet future needs.

1.1 PROJECT BACKGROUND

The Kalispell community has been in dire need of a current Transportation Plan for some time. The most comprehensive community transportation planning effort was completed back in the year 1993 in conjunction with the Somers to Whitefish Environmental Impact Statement. The consulting firm of Carter-Burgess was developing the EIS during this time period, and as a result was retained to continue work in the community developing a comprehensive Transportation Plan. The plan laid out a mixture of small and large recommendations pertinent to roadway expansions, new roadway corridors, and intersection modifications. To date, this transportation planning effort has been the primary guidance regarding transportation infrastructure in the community. In fact, the data and recommendations in the Plan are still contained in the area Growth Policies and other planning documents.

Perhaps the most substantial component of the previous transportation planning effort, and one that is currently in the process of becoming a reality, is that of the US Highway 93 Bypass. Plans for a bypass have been well known and defined since the original EIS document, and in 2003 a consulting firm was retained by the Montana Department of Transportation (MDT) to develop the project design. As part of the design efforts, a "Re-evaluation" of the approved 1994 EIS was completed which resulted in "*...no significant changed conditions*". This finding allowed the consultants (Stelling Engineers) to continue on with the project and develop design plans. As of the date of this writing, funding has severely hampered the ultimate sections of the bypass that can be constructed. However, a portion of the bypass has been committed to for construction within the next five years. The first committed portion is known as the "Reserve Loop" and will connect Stillwater Road to US Highway 93 just south of Reserve Street. This segment will serve an area of the community that is exploding exponentially with commercial and residential growth.

Because of the development of the Bypass project(s), and because the bypass has such an important impact to overall traffic flow in the community, it was decided by community decision makers that a ten-year update to the existing Transportation Plan should wait until bypass plans were better defined. To that end, instead of completing a Transportation Plan Update during the year 2003, the project was delayed until the bypass plans were further along. As such, the year 2006 was chosen as a good time to begin the comprehensive update to the Transportation Plan, and the firm of Robert Peccia & Associates was chosen to assist in this effort.

It is the intent of this planning process and document to build upon previous transportation planning efforts set forth through the 1993 Kalispell Area Transportation Plan and the recent US Highway 93 EIS Re-evaluation. Both particular studies have presented a comprehensive look at transportation issues in well defined study areas that both are somewhat smaller than the study area boundary being analyzed with this project. Those planning processes and resulting documents provided a comprehensive analysis of the existing transportation system, future growth and socio-economic considerations, and recommended improvements to the area street network and intersections.

Presently, Kalispell and the surrounding Flathead County is experiencing an aggressive growth trend. Residential developments are locating on the fringes of the City of Kalispell proper, reaching out to both the northern part of the Flathead Valley (i.e. Church Drive), east towards the Flathead River, and also south to Somers. For the most part, however, most of these residential developments rely on work destinations within the City (or directly adjacent to the City). This pattern results in unique travel considerations that places stresses on the major roadways and intersections. When the major roadways and intersections begin to fail, local streets begin to see higher traffic volumes and system users begin to experience frustrations as they travel the network. The trends that are currently being established result in inherent limitations, and proper planning to identify these limitations and work towards mitigation is a primary vision of this planning document.

The community of the greater Kalispell area has been primed for an updated Transportation Plan for the past ten years. Transportation Plans are typically updated every ten years in urban communities. Urbanized areas such as Billings, Great Falls and Missoula are required to update their Transportation Plans on a four-year or five-year cycle, depending on their incorporated population and whether they meet Federal and State air-quality standards. Kalispell is not subject to either of these two circumstances, and as such their only previous Transportation Plan effort was completed in 1993 in conjunction with the US Highway 93 EIS.

Transportation planning in the greater Kalispell area is overseen and guided by the Transportation Technical Advisory Committee (TAC). This group is made up of representatives from the City of Kalispell, Flathead County, the Montana Department of Transportation (MDT), the Federal Highway Administration (FHWA), citizen representatives, and other community organizations. TAC membership is listed on the acknowledgements page at the beginning of this document. The TAC played an interactive role in the development of this Plan update.

1.2 STUDY AREA BOUNDARY

The study area for this project was established in consultation with the TAC and includes all of the area that was studied during the 1993 Transportation Plan, plus additional areas. The study area boundary is shown on **Figure 1-1**. Generally, the study area boundary is bounded by; Farm to Market Road (western boundary); Church Drive (northern boundary); the Flathead River (eastern boundary); and south of Cemetery Road (southern boundary). Although only a small portion of Flathead County is included in the Study Area Boundary, residential and commercial considerations have been incorporated into the Travel Demand Model used to project future traffic conditions for County areas outside the study area boundary proper. The study area does not include the cities of Whitefish or Columbia Falls, although land use components have been incorporated into the regional Travel Demand Model used for this study. This is explained further in **Chapter 3**.

The study area for this Plan is larger than the area studied in the 1993 update. The larger area was chosen because it generally follows the facilities planning area that the city of Kalispell is currently planning for water and sewer services. A companion project is being developed for a City of Kalispell Facilities Plan Update that looks at a growth boundary that may potentially be realized fifty (50) years out into the future. Although the planning year horizon for this Transportation Plan Update is the year 2030 (24 years), the 50-year planning boundary was selected to complement the City's facility planning exercise. In addition, the larger study area is useful because the traffic analysis and evaluation includes the impacts of commuter traffic being generated from the outlying residential areas in the Flathead Valley, as well as developing areas in Evergreen and south of the City of Kalispell proper. This larger study should allow for better advance planning of the future road network in the outlying areas of the community.

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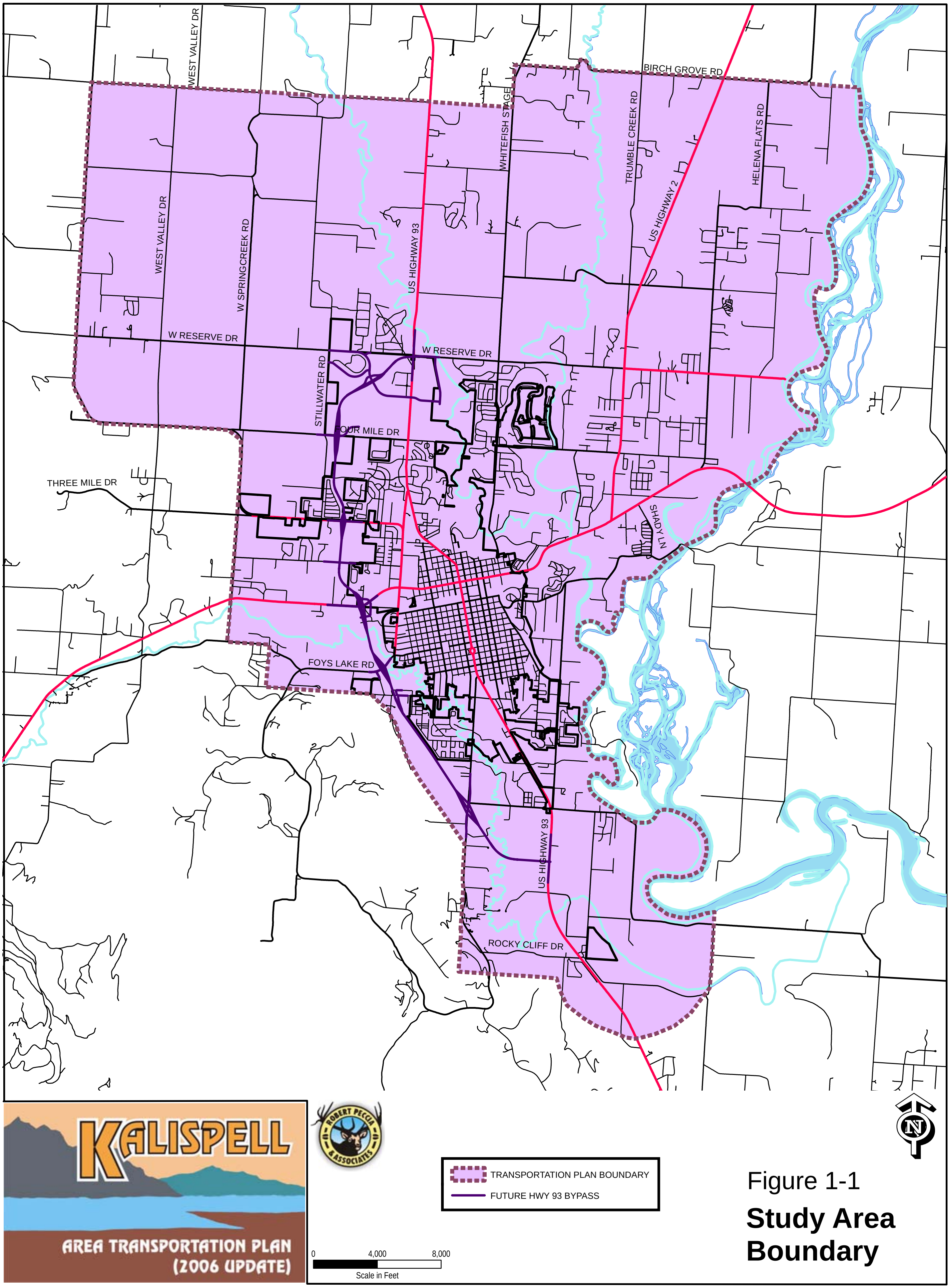


KALISPELL

AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

Figure 1-1
Study Area Boundary

1.3 TRANSPORTATION PLANNING GOALS AND OBJECTIVES

1.3.1 GOALS AND OBJECTIVES

The overall goal of this project is to update the existing 1993 update of the Kalispell Area Transportation Plan. This existing plan was originally developed by Carter-Burgess in 1993 and occurred at the same time as the development of the Somers to Whitefish US Highway 93 Environmental Impact Statement (EIS). The intent of this project is to take an entirely fresh look at the condition of transportation issues in the Kalispell area.

This Transportation Plan Update is intended to facilitate community goals and improve the transportation infrastructure and services within the Kalispell area to meet the needs of existing and future land use. The Plan will address regional transportation issues, overall travel convenience, traffic safety, and property access, in addition to potential special issues such as traffic calming, transportation demand management (TDM), and multi-modal connections. The Plan will include recommendations for short-term Transportation System Management (TSM) improvements as well as recommended modifications and capital improvements to the "Major Street Network (MSN)". The Plan will address all modes of transportation in a balanced attempt to meet the current and future transportation needs of the Kalispell area while in compliance with state and federal requirements.

With this background in mind, it is important to recognize that "Goals and Objectives" have been developed to guide this Transportation Plan Update. These are presented later in this section. It is also appropriate, however, to present the existing goals that are found in the existing Kalispell Area Transportation Plan (1993) and the current Kalispell Growth Policy.

Kalispell Area Transportation Plan (1993) Goals

1. Maintain and enhance traffic flow such that the Kalispell area remains accessible to tourist traffic and provides for the mobility needs of residents.

2. Improve the safety of the transportation system.

3. Limit construction disruption as much as possible.

4. Improve air quality.

5. Minimize negative impacts to existing residential neighborhoods.

6. Minimize negative impacts to the business community.

7. Be responsive to future land use plans and corresponding transportation needs.

8. Develop concepts for short-term/low cost improvements for immediate action to solve current congestion/safety problems.

9. Minimize impacts to important natural resources in the Flathead Valley (wetlands, wildlife resources, riparian resources).

10. Enhance and preserve recreational resources, including greenways and open space corridors.

11. Minimize impacts of property acquisition.

12. Be responsive to City's fiscal constraints.

13. Be responsive to long-term maintenance requirements.

Kalispell Growth Policy (2020)

1. Provide a comprehensive traffic circulation system that serves the combined needs of the community and the region, and that provides safe, convenient and economical access to all transportation facilities throughout the area.

2. Construct the west side bypass.

3. Provide greater diversity in transportation options.

4. Expand public transportation to serve broader segments of the community.

5. Explore the development of a greater number of funding options for roadways in the area.

6. Develop sidewalk installation and replacement program for all areas of the community.

7. Reduce congestion and excess traffic in problem areas.

8. Maintain the integrity of residential areas by avoiding the introduction of non-local traffic.

In response to issues and concerns raised during the development of this transportation planning process, it is suggested that transportation related goals and objectives be refined to reflect the diversity of competing transportation interests and the inherent limitations of just focusing on automobile traffic. To that end, the following "Goals and Objectives" are presented for consideration by the community as transportation system development is considered over the planning horizon of this document:

Suggested Kalispell Transportation "Goals and Objectives"

Goal #1: Provide a safe, efficient, accessible, and cost-effective transportation system that offers viable choices for moving people and goods throughout the community.

Objectives:

- Plan and implement a logical, efficient, long-range arterial transportation system to ensure that public and private investments in transportation infrastructure support other land use decisions of the community.
- Plan a logical, efficient long-range arterial system that can be systematically implemented by right-of-way reservations and advance acquisition procedures.
- Meet the current and future needs of the greater Kalispell area that can be maintained with available resources
- Provide adequate emergency service access to all residents inside and outside of the Study Area Boundary.
- Develop a "Major Street Network" classifying existing roadways by functional usage (as well as future corridors) within the Study Area Boundary.
- Address the needs of business and commerce both locally and regionally.
- Plan for adequate access and egress to high volume traffic generation points.
- Conduct a comprehensive data collection effort that will include vehicular counts, truck counts, bicycle movements and pedestrian usage at the intersections identified for the project.
- Review the most recent three-year accident history and crash statistics to evaluate potential safety problems and possible mitigation efforts that can improve and/or resolve identified concerns on the existing transportation system.
- Examine population and employment growth trends to assess demographic changes and how those changes may affect transportation system users over the twenty year planning horizon.
- Develop a 20-year traffic model that can be used to predict future transportation system needs as growth occurs within the Study Area Boundary limits.
- Identify current and foreseeable traffic problems.

Goal #2: Make transit and non-motorized modes of transportation viable alternatives to the private automobile for travel in and around the community.

Objectives:

- Support alternatives to single occupancy vehicles.
- Establish safe pedestrian and bicycle access in designated areas by:
  - Considering pedestrian/bicycle needs when planning and designing new roads.
  - Considering improvement and dedication of bikeways and pedestrian paths through developing areas.
  - Providing widened shoulders where possible to accommodate pedestrians/bicycles on existing roadways, with a preference for physical separation between motorized and non-motorized traffic.
- Encourage mixed-use development that integrates compatible residential, office, and commercial uses to reduce the need for automobile trips.
- Encourage walkable neighborhoods, both within existing developed areas and new residential and commercial subdivisions.
- Recommend policies and decisions to ensure bicyclists and pedestrians can access and conveniently cross all major roadways and highways.
- Identify and incorporate, as applicable, Transportation Demand Management (TDM) strategies to provide alternatives to private vehicle travel.

Goal #3: Provide an open public involvement process in the development of the transportation system and in the implementation of transportation improvements, and assure that community standards and values, such as aesthetics and neighborhood protection, are incorporated.

Objectives:

- Provide for citizen involvement in the planning and implementation of transportation plans and projects.
- Respect and ensure the area’s natural and historic context is maintained by minimizing adverse impacts to the environment.
- Minimize negative transportation effects upon residential neighborhoods.

- Encourage transportation improvements that preserve the natural panorama of skylines and sightlines, and are compatible with historic resources.
- Evaluate and identify transportation system needs of area schools, and address existing and future transportation issues as appropriate.
- Provide for connecting streets among neighborhoods.
- Meet the unique transportation needs of the areas elderly, disabled and disadvantaged populations

Goal #4: Provide a financially sustainable Transportation Plan that is actively used to guide the transportation decision-making process throughout the course of the next 20 years.

<u>Objectives:</u>

- Review all existing and on-going planning reports and studies for compatibility.
- Conduct a financial analysis to ensure the Plan is financially feasible and sustainable.
- Identify funding mechanisms that may be viable alternatives to the traditional funding programs currently used to fund transportation system improvements.

Goal #5: Identify and protect future road corridors to serve future developments and public lands.

<u>Objectives:</u>

- Develop a Plan to address forecasted transportation growth needs.
- Identify future corridors and future connections to existing roadways in order to acquire appropriate right of way and improvements.
- Identify road construction needs to serve developing areas, and encourage development in identified urban areas.

1.4 PREVIOUS TRANSPORTATION PLANNING EFFORTS

In the course of data collection, past plans and studies were obtained. From the review of these documents, applicable issues were incorporated into this Kalispell Area Transportation Plan (2006 Update). The contributing documents are as follows:

- Kalispell Comprehensive Parks and Recreation Master Plan (2007);
- Kalispell Impact Fees for the Transportation System (2007) report;
- Eagle Transit Transportation Development Plan Update (2006 Update);
- Kalispell Facilities Plan (2006 Update);
- US Highway 93 Bypass Environmental Impact Statement (EIS) re-evaluation (2005);
- Kalispell Growth Policy 2020 (2003);
- Kalispell Facility Plan (2002);
- Downtown Kalispell Streetscape Improvement Project (September, 2001);
- Kalispell Area Transportation Plan (1993);
- School Bus Routes;
- Postal Routes;
- Locally adopted master plans, public facility plans, and related development regulations;
- Official Code of the City of Kalispell;
- Montana Department of Transportation STIP and other Local Planning Documents
- U.S. Bureau of Census data;
- City building permits & utility records; and
- Socioeconomic data and projections compiled by the Planning Board, Montana Department of Commerce, and/or University of Montana.

1.5 PUBLIC INVOLVEMENT

The primary goal of the communications program for the Kalispell Area Transportation Plan (2006 Update) was to keep the public informed and involved in the project. A second goal of the process was to integrate the opinions and issues identified by the public, as a result of the program, into the project approach and methodology, wherever feasible. The methods that were used to achieve these goals included: guidance from the Kalispell Area Transportation "Technical Advisory Committee (TAC)"; outreach to key constituencies (i.e. Citizens for a Better Flathead, general public); education of decision-makers (i.e. City Council and City Planning Board); project newsletters; news releases; and public events. Below is a brief summary of some of the project outreach activities utilized during the projects development.

1.5.1 SUMMARY OF PROGRAM COMPONENTS

<u>Technical Advisory Committee (TAC)</u>

The Kalispell Transportation Technical Advisory Committee (TAC) provided project oversight for this project to serve in an advisory capacity and to review and comment on materials over the projects duration. Meetings were generally held every other month (on the fourth Thursday of the month). Membership was composed of individuals as noted on the acknowledgements page of this document, and generally included representatives from the Montana Department of Transportation, Flathead County, the City of Kalispell, and local business and citizen interests. The TAC was the principal guiding force behind this Transportation Plan. In addition, a full-day workshop was held on March 22nd to discuss potential modeling alternatives and direction on how to proceed. From that exercise, several projects were modified and/or removed from consideration.

Public Meetings

Three formal public meetings were held during the study process. The first meeting was held at a time when the data collection process was nearing completion. This meeting focused on informing the public about the current transportation problems that had been identified to date, and receiving public comment on which issues should be addressed in the Plan. A variety of key issues were identified. The issues generally fell within four categories: 1) the need to plan for future growth; 2) to relieve traffic congestion; 3) to improve traffic safety; and 4) to provide alternatives to the automobile. Specific problem intersections and roadway corridors were identified and presented at this first meeting.

The second public meeting was held after the analysis of the existing transportation system was completed. Additionally, the effects of population growth on traffic volumes and transportation infrastructure were discussed. Where and potentially when future land use changes (i.e. growth) were also defined and discussed. Again, the public had the opportunity to give their opinions on transportation system issues in the study area, as well as any other concerns they might have.

The third public meeting was held after the draft Transportation Plan document was completed, and gave the public the opportunity to review the draft document in its entirety, including a thorough review of recommended projects that not only offered mitigation measures to solve existing transportation issues, but also measures to accommodate future growth issues.

All three public opportunities described above were held at the Museum at Central School.

Other Public Outreach Activities

Formal and informal meeting and presentations occurred many times over the course of the project. These are specifically listed in **Table 1-3** later in this chapter.

Public Hearing

One public hearing was conducted near the completion of this planning process to obtain formal public comment on the draft document before the City Council. The public hearing covered all elements of the draft and significant additional time for public comment was provided after the public hearing closed. After reviewing the comments received at the public hearing, the TAC met with the consultant to provide comments and direction in revising the draft document, and developing the final version of the Plan.

News Releases

Television and newspaper articles were used several times during the planning process to help keep the public informed. These news releases generally were issued prior to public meetings (and the public hearing), to generate interest in the process, and to encourage participation by the public.

Internet Access

The results of the traffic studies and analyses conducted during the study process were made available to the public on the Internet website. As sections of the report and graphic displays became available, they were posted on the web site for public review and comment. This enabled the public to stay abreast of the developments occurring during the planning process. It also provided an opportunity for the public to submit comments.

Project Newsletters
Several project newsletters were created and distributed through a project mailing list. Towards the end of the project, there were approximately 235 people on the project mailing list. Newsletters were distributed at all meetings and presentations made through the outreach program. A total of three (3) newsletters were issued on the project.

1.6 COORDINATION SUMMARY

The following tables (**Table 1-1** thru **Table 1-3**) summarize all of the coordination that occurred over the course of this planning project. They encompass all formal and informal meetings, including but not limited to Technical Advisory Committee (TAC) meetings and workshops, formal public meetings, and others.

Table 1-1
Summary of Technical Advisory Committee (TAC) Activities

Date	Agency or Individual
05/09/06	Technical Advisory Committee (TAC) Meeting
07/14/06	Technical Advisory Committee (TAC) Meeting
09/21/06	Technical Advisory Committee (TAC) Meeting
11/16/06	Technical Advisory Committee (TAC) Meeting
01/25/07	Technical Advisory Committee (TAC) Meeting
03/22/07	Technical Advisory Committee (TAC) Meeting – Modeling Alternatives Workshop
05/10/07	Technical Advisory Committee (TAC) Meeting
09/13/07	Technical Advisory Committee (TAC) Meeting
12/04/07	Technical Advisory Committee (TAC) Meeting

Table 1-2
Summary of "Governmental Agency" Activities

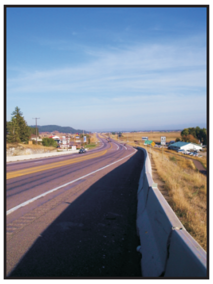
Date	Agency or Individual
06/06/06	MDT Statewide and Urban Planning Staff Meeting
08/04/06	MDT Safe Routes to School Implementation Team Meeting
10/25/06	Land Use Advisory Committee "Forecasting" Workshop
11/11/06	Long Range Planning Task Force Meeting
12/11/06	City Council Work Session
12/12/06	City Planning Board Regular Meeting
01/11/07	Long Range Planning Task Force Meeting
01/23/07	MDT Safe Routes to School Implementation Team Meeting

02/05/07	MDT Evergreen School Team Meeting
02/06/07	Healthy Mothers/Healthy Babies SRTS Meeting
03/08/07	City of Kalispell / MDT Traffic Modeling Conference Call
03/09/07	MDT Traffic Modeling Meeting
03/23/07	SRTS Kalispell Pilot Projects Kick-off Meeting (Edgerton and Russell Schools)
04/02/07	Stelling Engineers – Meeting to Discuss Kalispell US 93 Bypass
04/30/07	MDT Staff Meeting to Discuss Known Developments in the Kalispell Area
11/26/07	Combined City Council Work Session / City Planning Board Workshop
12/11/07	City Planning Board Public Hearing
01/08/08	City Planning Board Public Hearing (Continuation & Adoption)
03/03/08	City Council Public Hearing
03/17/08	City Council Public Hearing (Continuation)
04/14/08	City Council Work Session
04/21/08	City Council Public Hearing (Continuation & Adoption)

Table 1-3
Summary of Other Public Outreach Activities

Date	Agency or Individual
09/14/06	Public Information Meeting #1 (Museum at Central School)
10/17/06	Evergreen Community Partners/Parent-Teacher Organization Safe Routes to School Meeting
10/24/06	Evergreen Business Owners & Property Owners Association Presentation
10/25/06	Evergreen School District Board Meeting
12/13/06	Public Information Meeting #2 (Museum at Central School)
01/25/07	Citizens for a Better Flathead Presentation
06/05/07	Evergreen Community Partners/Parent-Teacher Organization Safe Routes to School Meeting
10/25/07	Public Information Meeting #3

Chapter 2: Existing Conditions



CHAPTER 2: EXISTING CONDITIONS

2.1 INTRODUCTION

In an effort to clearly understand the existing traffic conditions, it was necessary to gather current information about different aspects of the transportation system. Existing traffic volume data from 2003 was used to determine annual average daily traffic (AADT) volumes on major road segments within the community. This data was obtained through a variety of sources (Montana Department of Transportation annual traffic count locations, City of Kalispell ADT counts and Flathead County). For purposes of presenting the AADT, the year 2003 was portrayed as that is the year that the *TransCad* travel demand model is calibrated to. In addition, recent 24-hour AADT counts are random and not synthesized, so the most complete year of record appeared to be the year 2003. Traffic data other than the AADT was collected during the summer of 2006. The data was used to determine current operational characteristics, and to identify any traffic problems that may exist or are likely to occur within the foreseeable future. A variety of information was gathered to help evaluate the system including:

- Existing functional classifications & study roadways;
- Existing machine traffic volume counts (2003);
- Existing roadway corridor size;
- Intersection turning movement counts;
- Current traffic signal operation information;
- Intersection data required to conduct level of service analyses;
- Travel time and delay studies; and
- Traffic crash records (see **chapter 5**).

2.2 EXISTING FUNCTIONAL CLASSIFICATIONS & STUDY ROADWAYS

One of the initial steps in trying to understand a community's existing transportation system is to first identify what roadways will be evaluated as part of the larger planning process. A community's transportation system is made up of a hierarchy of roadways, with each roadway being classified according to certain parameters. Some of these parameters are geometric configuration, traffic volumes, spacing in the community transportation grid, speeds, etc. It is standard practice to examine roadways that are functionally classified as a collector, minor arterial, or principal arterial in a regional transportation plan project. These functional classifications can be encountered in both the "urban" and "rural" setting. The reasoning for examining the collector, minor arterial and principal arterial roadways, and not local roadways, is that when the major roadway system (i.e. collectors or above) is functioning to an acceptable level, than the local roadways are not used beyond their intended function. When problems begin to occur on the major roadway system, then vehicles and resulting issues begin to infiltrate neighborhood routes (i.e. local routes). As such, the overall health of a regional transportation system can be typically characterized by the health of the major roadway network. The roadways being studied under this Transportation Plan update, along with the appropriate functional classifications, are shown on **Figure 2-1** and **Figure 2-2**. It is important to recognize that the functional classifications shown on **Figure 2-1** and **Figure 2-2** are as defined in the City's current *Growth Policy* document. This functional classification system is different from the "Federally Approved Functional Classification" for the community. The "Federally Approved Functional Classification" system can be seen graphically via maps available at the Montana Department of Transportation's (MDT's) website at the following addresses:

http://www.mdt.mt.gov/other/urban_maps/fc_internet/KALISPELLFUNC.PDF (Urban Area)

http://www.mdt.mt.gov/travinfo/docs/funct-classification.pdf (Rural Area)

Roadway functional classifications within the city of Kalispell include principal arterials; minor arterials; collector routes; and local streets. The rural areas of Flathead County are also served by a similar hierarchy of streets. However, due to their rural nature the volumes on these streets are generally smaller than in urban areas. Although volumes may differ on urban and rural sections of a street, it is important to maintain coordinated right-of-way standards to allow for efficient operation of urban development. A description of these classifications is provided in the following sections.

Principal Arterial System

The purpose of the principal arterial is to serve the major centers of activity, the highest traffic volume corridors, and the longest trip distances in an urbanized area. This group of roads carries a high proportion of the total traffic within the urban area. Most of the vehicles entering and leaving the urban area, as well as most of the through traffic bypassing the central business district, utilize principal arterials. Significant intra-area travel, such as between central business districts and outlying residential areas, and between major suburban centers, are served by principal arterials.

The spacing between principal arterials may vary from less than one mile in highly developed areas (e.g., the central business district), to five miles or more on the urban fringes. Principal arterials connect only to other principal arterials or to the interstate system.

The major purpose of the principal arterial is to provide for the expedient movement of traffic. Service to abutting land is a secondary concern. It is desirable to restrict on-street parking along principal arterial corridors. The speed limit on a principal arterial could range from 25 to 70 mph depending on the area setting.

<u>Minor Arterial Street System</u>

The minor arterial street system interconnects with and augments the urban principal arterial system. It accommodates trips of moderate length at a somewhat lower level of travel mobility than principal arterials, and it distributes travel to smaller geographic areas. With an emphasis on traffic mobility, this street network includes all arterials not classified as principal arterials while providing access to adjacent lands.

The spacing of minor arterial streets may vary from several blocks to a half-mile in the highly developed areas of town, to several miles in the suburban fringes. They are not normally spaced more than one mile apart in fully developed areas.

On-street parking may be allowed on minor arterials if space is available. In many areas on-street parking along minor arterials is prohibited during peak travel periods. Posted speed limits on minor arterials would typically range between 25 and 55 mph, depending on the setting.

<u>Collector Street System</u>

The urban collector street network serves a joint purpose. It provides equal priority to the movement of traffic, and to the access of residential, business, and industrial areas. This type of roadway differs from those of the arterial system in that collector roadways may traverse residential neighborhoods. The collector system distributes trips from the arterials to ultimate destinations. The collector streets also collect traffic from local streets in the residential neighborhoods, channeling it into the arterial system. On-street parking is usually allowed on most collector streets if space is available. Posted speed limits on collectors typically range between 25 and 45 mph.

The rural collector street network serves the same access and movement functions as the urban collector street network – a link between the arterial system and local access roads. Collectors penetrate but should not have continuity through residential neighborhoods. **The actual location of collectors should be flexible to best serve developing areas and the public.** Several design guidelines should be kept in mind as new subdivisions are designed and reviewed. The most important concept is that long segments of continuous collector streets are not compatible with a good functional classification of streets. Long, continuous collectors will encourage through traffic, essentially turning them into arterials. This, in turn, results in the undesirable interface of local streets with arterials, causing safety problems and increased costs of construction and maintenance. The collector street system should intersect arterial streets at a uniform spacing of one-half to one-quarter mile in order to maintain good progression on the arterial network. Ideally, collectors should be no longer than one to two miles without discontinuities.

<u>Local Street System</u>

The local street network comprises all facilities not included in the higher systems. Its primary purpose is to permit direct access to abutting lands and connections to higher systems. Usually service to through-traffic movements are intentionally discouraged. On-street parking is usually allowed on the local street system. The speed limit on local streets is usually 25 mph.

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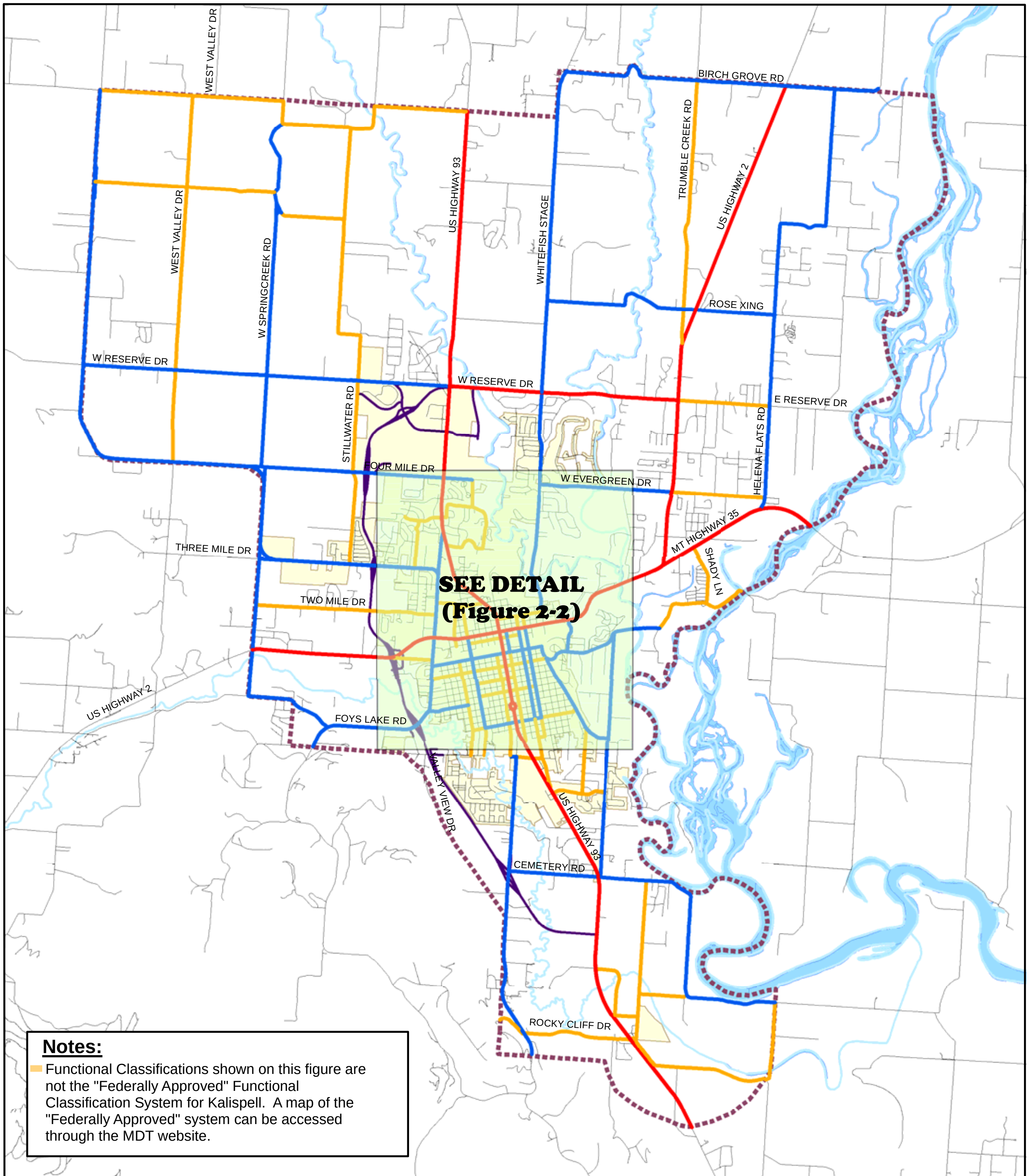


Notes:

Functional Classifications shown on this figure are not the "Federally Approved" Functional Classification System for Kalispell. A map of the "Federally Approved" system can be accessed through the MDT website.

KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

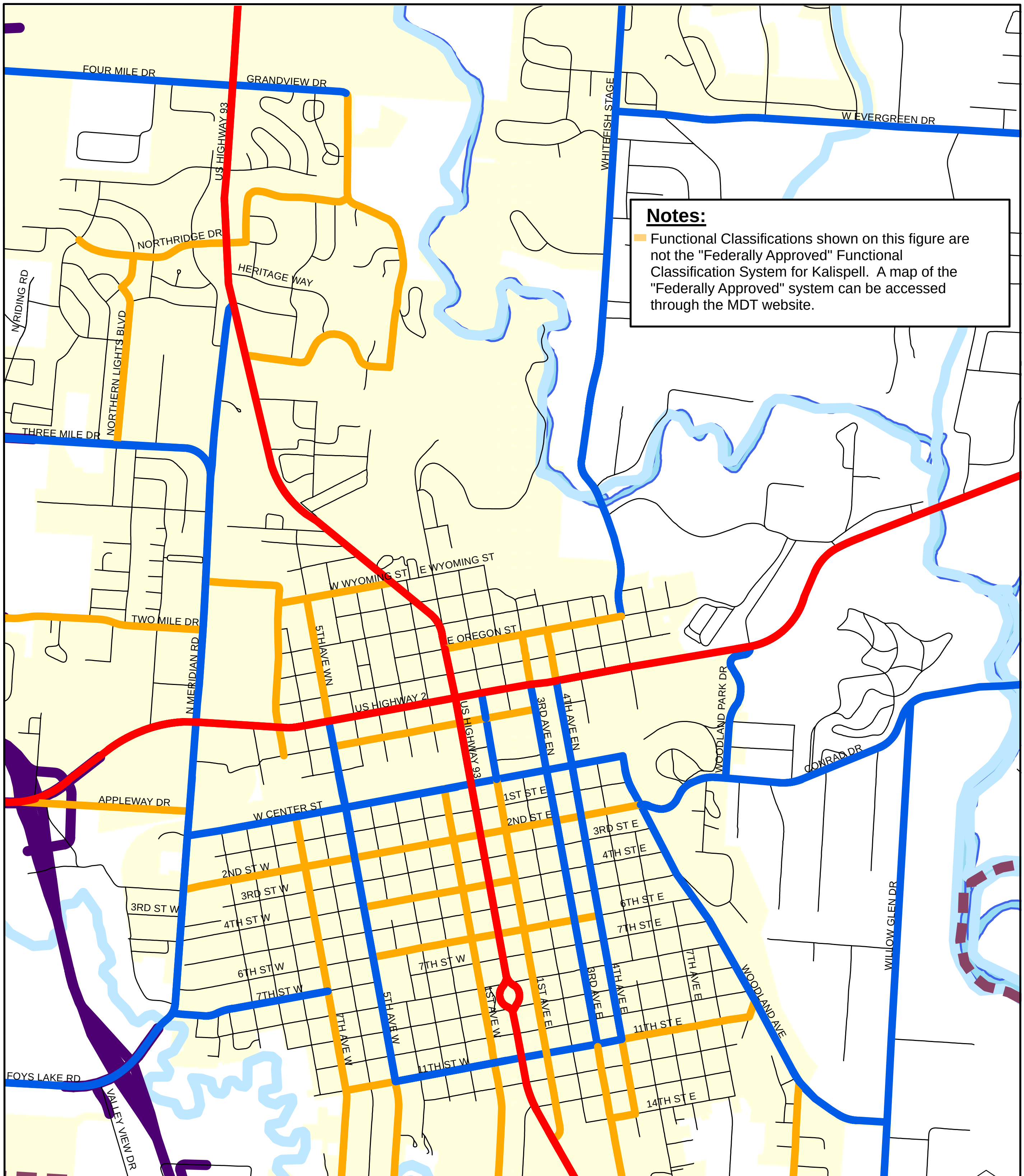
- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 4,000 8,000

Scale in Feet

Figure 2-1

Functional Classification Map (2006)



Notes:

Functional Classifications shown on this figure are not the "Federally Approved" Functional Classification System for Kalispell. A map of the "Federally Approved" system can be accessed through the MDT website.

KALISPELL

AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 1,000 2,000

Scale in Feet

N

Figure 2-2

Functional Classification Map (2006)

2.3 EXISTING TRAFFIC VOLUMES AND CORRIDOR FACILITY SIZE

One of the best ways to evaluate a street system is to compare the traffic volumes to the approximate capacity of each road. Traffic volumes for the study area are periodically monitored by local and state agencies. Traffic volumes collected by the city of Kalispell, Montana Department of Transportation (MDT), and Flathead County were used to determine current traffic conditions, and to provide reliable data on historic traffic volumes.

Existing traffic volume data from 2003 was used to determine annual average daily traffic (AADT) volumes on major road segments within the community. This information is shown on **Figure 2-3** and **Figure 2-4**. These figures show that the most highly traveled corridors are US Highway 93, US Highway 2 (LaSalle Road), Meridian Road, & Reserve Drive. Traffic volumes on these corridors ranges between 14,000 vehicles per day (vpd) and 30,300 vpd.

After identifying the current traffic volumes, the existing road network was examined to determine the current size of the major routes. This information is presented on the "Corridor Size" graphics on **Figure 2-5** and **Figure 2-6**. The information shows the following:

<u>Existing five-lane corridors:</u>

- US Highway 2 (i.e. LaSalle Road north of MT 35)
- US Highway 93 North (between Reserve Drive and Tronstad Road)
- US Highway 2 West (between Appleway Drive and 5th Avenue NW)
- US Highway 93 (between Center Street and US Highway 2), and
- US Highway 93 South (between Rocky Cliff Drive and 1st Avenue East)

<u>Existing four-lane corridors:</u>

- US Highway 2 (between 5th Avenue NW and LaSalle Road)
- North Meridian Road (between Idaho Street and Liberty Street)
- US Highway 93 North (between Idaho Street and Reserve Drive)
- Center Street (between 5th Avenue West and 1st Avenue East)
- US Highway 93 (between Center Street and 9th Street West)
- US Highway 93 (between 12th Street and 1st Avenue East)
- US Highway 93 South (south of Rocky Cliff Drive)

<u>Existing three-lane corridors:</u>

- West Reserve Drive (between US Highway 93 North and US Highway 2)
- MT 35 (between LaSalle Road and Flathead River Bridge)
- North Meridian Road (between Liberty Street and US Highway 93)
- South Meridian Road (between Appleway Drive and US Highway 2)

Five-lane road corridors are generally defined as two travel lanes in each direction with a continuous center two-way turn lane. Four-lane road corridors have two travel lanes in each direction, with or without left-turn bays at major intersections. Three-lane roads are one travel lane in each direction with a continuous center two-way turn lane, or any combination of three-lanes (i.e. two travel lanes in one direction with one lane in the opposite direction). Roadways not listed above are all two-lane corridors for the major street network with either two-way or one-way flow characteristics.

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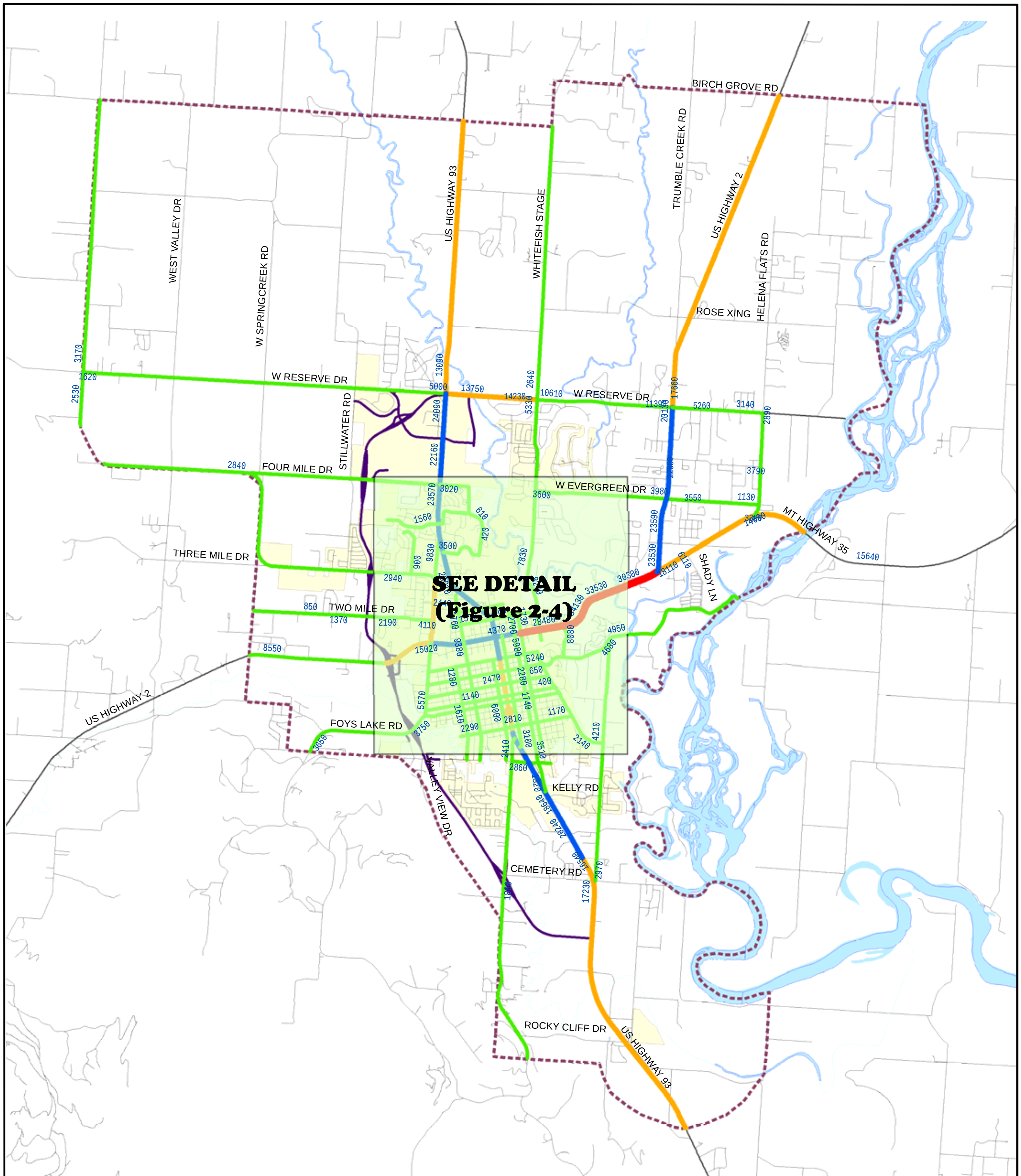
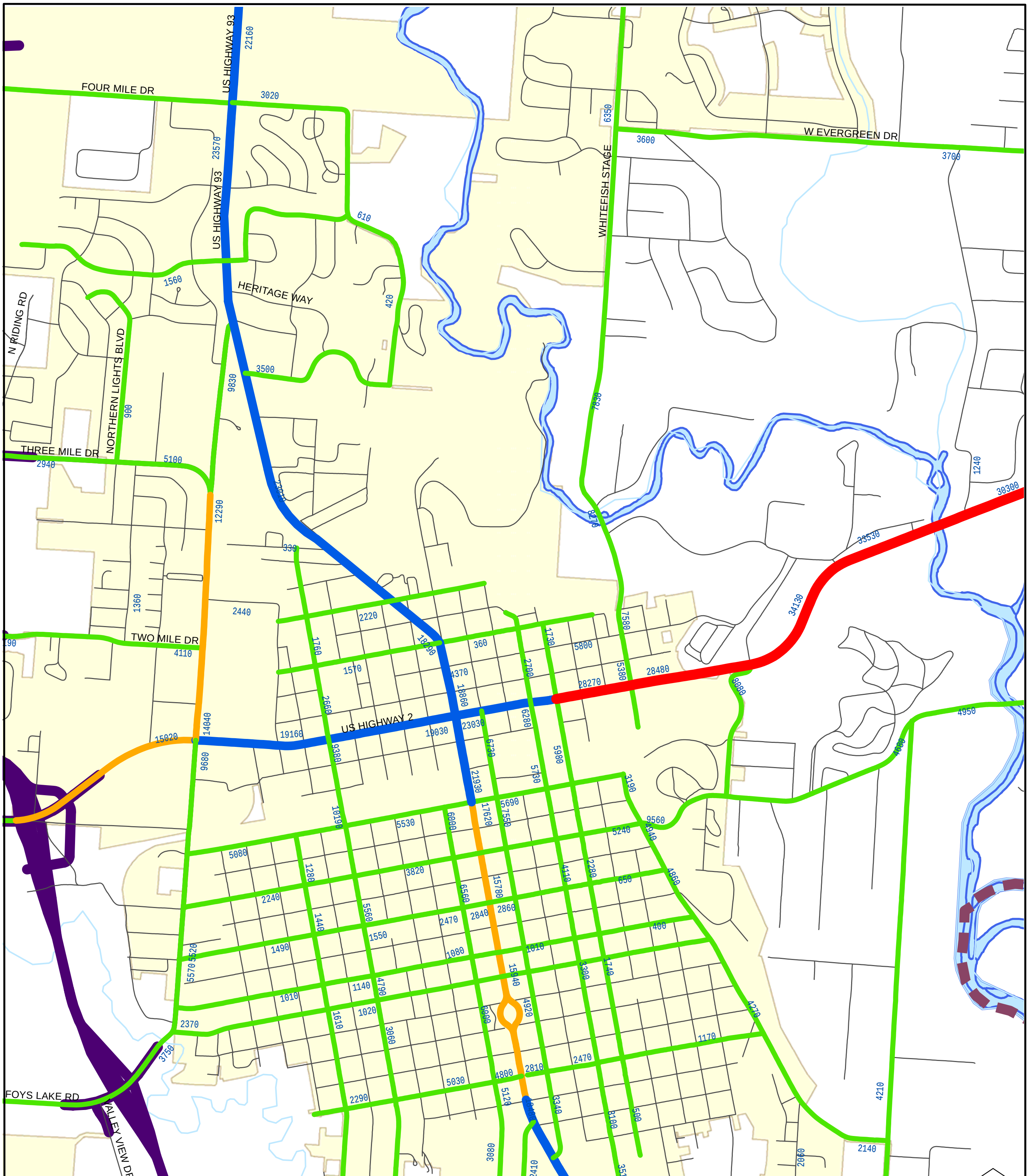


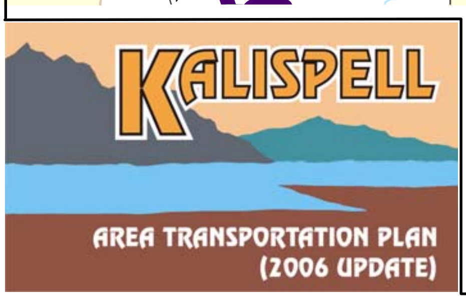
AREA TRANSPORTATION PLAN (2006 UPDATE)

0-12,000 (CONSISTENT WITH 2-LANE ROAD)
12,000-18,000 (CONSISTENT WITH 3-LANE ROAD)
18,000-24,000 (CONSISTENT WITH 4-LANE ROAD)
24,000-36,000 (CONSISTENT WITH 5-LANE ROAD)
22160 = 2003 TRAFFIC VOLUME (ANNUAL AVERAGE DAILY TRAFFIC - AADT)
TRANSPORTATION PLAN BOUNDARY
FUTURE HWY 93 BYPASS

0 2,000 4,000 8,000
Scale in Feet

Figure 2-3
Existing (2003) Traffic Volumes

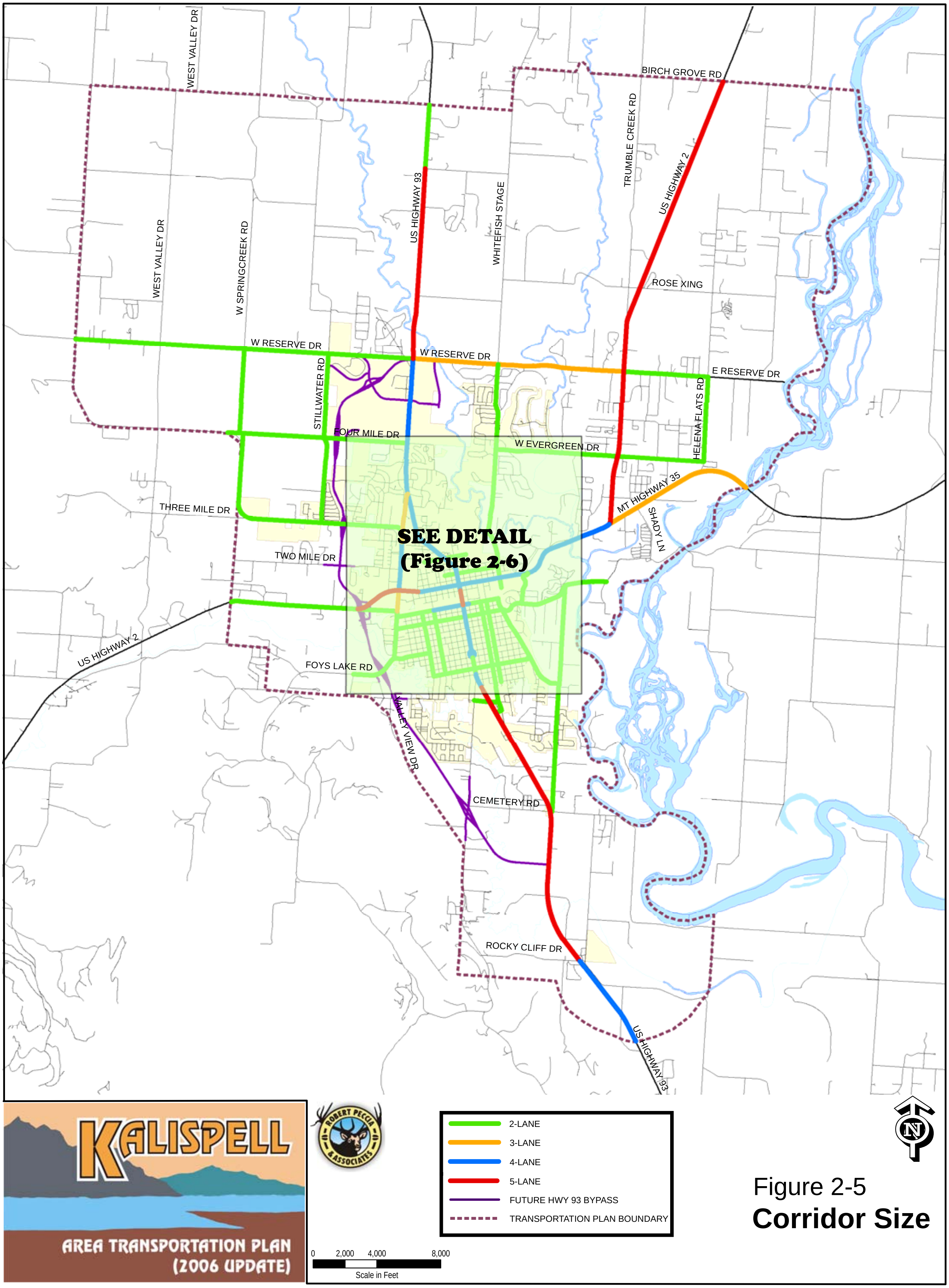




- 0-12,000 (CONSISTENT WITH 2-LANE ROAD)
- 12,000-18,000 (CONSISTENT WITH 3-LANE ROAD)
- 18,000-24,000 (CONSISTENT WITH 4-LANE ROAD)
- 24,000-36,000 (CONSISTENT WITH 5-LANE ROAD)
- 22160 = 2003 TRAFFIC VOLUME (ANNUAL AVERAGE DAILY TRAFFIC - AADT)
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 500 1,000 2,000
Scale in Feet

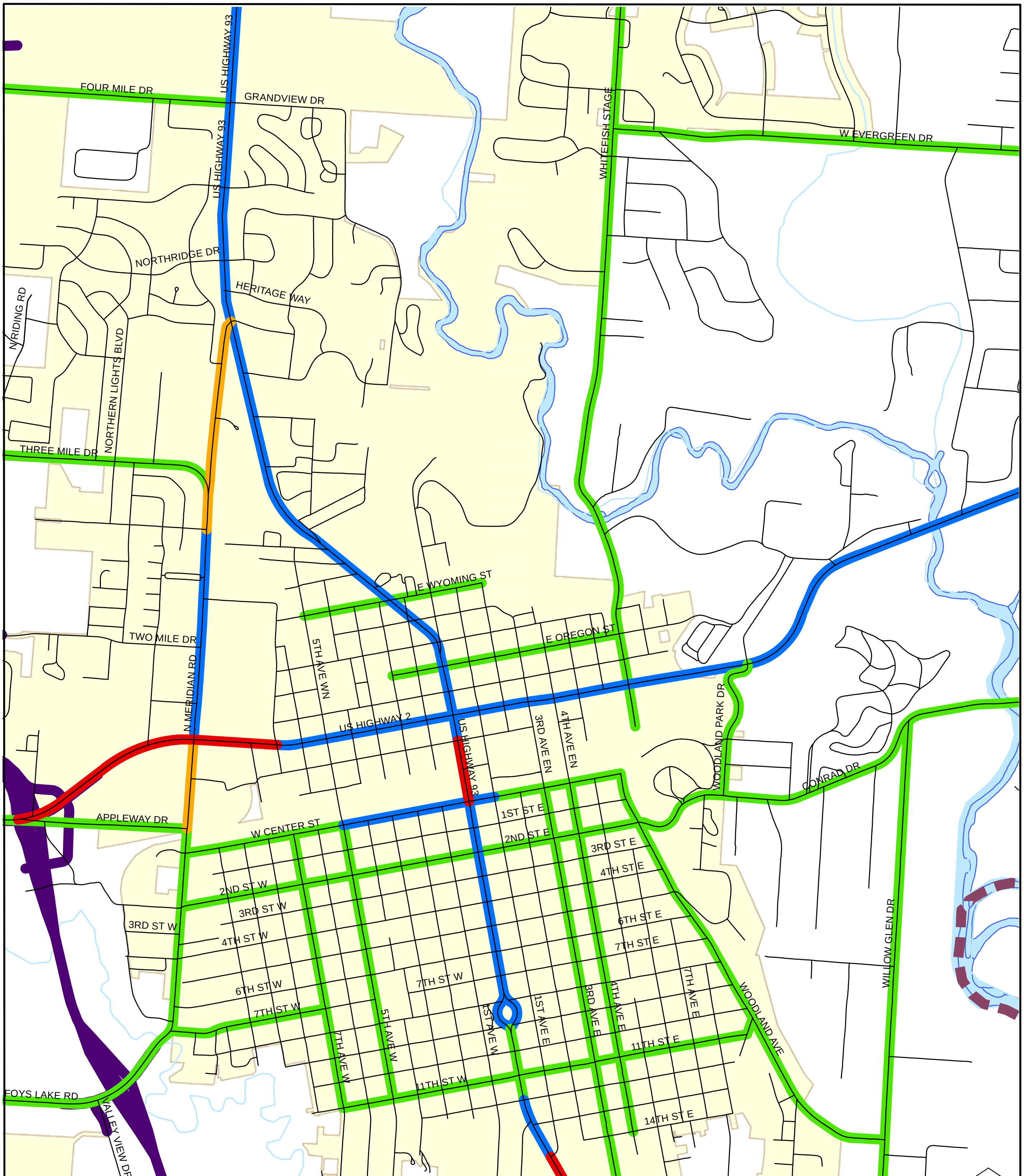
Figure 2-4
Existing (2003) Traffic Volumes



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

Robert Peccia & Associates

Figure 2-5
Corridor Size



KALISPELL

AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

- 2-LANE
- 3-LANE
- 4-LANE
- 5-LANE
- FUTURE HWY 93 BYPASS
- TRANSPORTATION PLAN BOUNDARY

0 1,000 2,000

Scale in Feet

N

Figure 2-6

Corridor Size

2.4 EXISTING TRAFFIC SIGNAL SYSTEM

One of the best ways to analyze the operation of an entire road network is to examine the existing signalized intersections. Forty-two (42) existing signalized intersections in the Kalispell study area were evaluated as part of this Transportation Plan update. This does not include an additional three (3) intersections that were under construction with the Meridian Road project. These three intersections were located at North Meridian Road and Three Mile Drive, Liberty Street, and Two Mile Drive respectively. The existing intersections at the termini of North Meridian Road (i.e. US Highway 93 and Idaho Street) were evaluated based upon post-construction traffic volumes and the most recent signal phasing and timing plans instituted by the MDT after the construction project was completed. Most of the signals are located along the US Highway 93 and US Highway 2 roadway corridors and within the downtown central business district (CBD). At the time of the data collection effort for this project, there was only one coordinated signal system in the downtown core along US Highway 93. This coordinated system incorporated five of the traffic signals identified. This resulted in a total of forty traffic signals operating independently (including the three along North Meridian Road not studied as part of this project). **Figure 2-7 and Figure 2-8** shows all of the current signalized intersections and the coordinated signal systems.

2.5 EXISTING INTERSECTION LEVELS OF SERVICE

Urban road systems are ultimately controlled by the function of the major intersections. Intersection failure directly reduces the number of vehicles that can be accommodated during the peak hours that have the highest demand and the total daily capacity of a corridor. As a result of this strong impact on corridor function, intersection improvements can be a very cost-effective means of increasing a corridor's traffic volume capacity. In some circumstances, corridor expansion projects may be able to be delayed with correct intersection improvements. Due to the significant portion of total expense for road construction projects used for project design, construction, mobilization, and adjacent area rehabilitation, a careful analysis must be made of the expected service life from intersection-only improvements. If adequate design life can be achieved with only improvements to the intersection, then a corridor expansion may not be the most efficient solution. With that in mind, it is important to determine how well the major intersections are functioning by determining their Level of Service (LOS).

In order to calculate the LOS, 80 intersections on the major street network were counted during the summer of 2006. An additional 9 intersections included in this report were counted as part of previous projects. These intersections included all signalized intersections and selected high-volume unsignalized intersections. Each intersection was counted between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., to ensure that the intersection's peak volumes were represented. Based upon this data, the operational characteristics of each intersection were obtained.

The intersections counted included Kalispell's 42 signalized intersections (noting that an additional three intersections along North Meridian Road were not monitored due to construction activities) and 47 unsignalized intersections in the city and the county.

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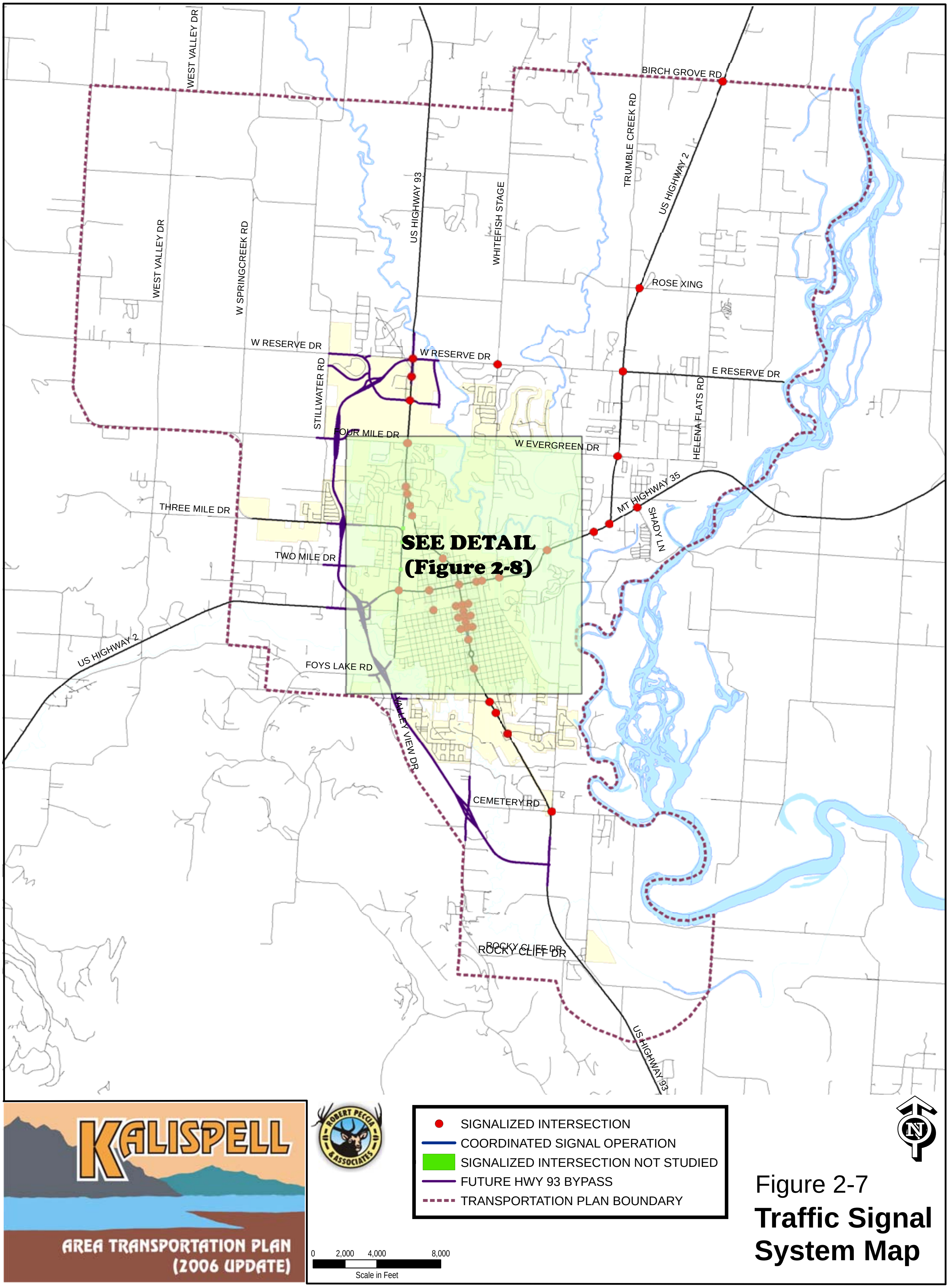
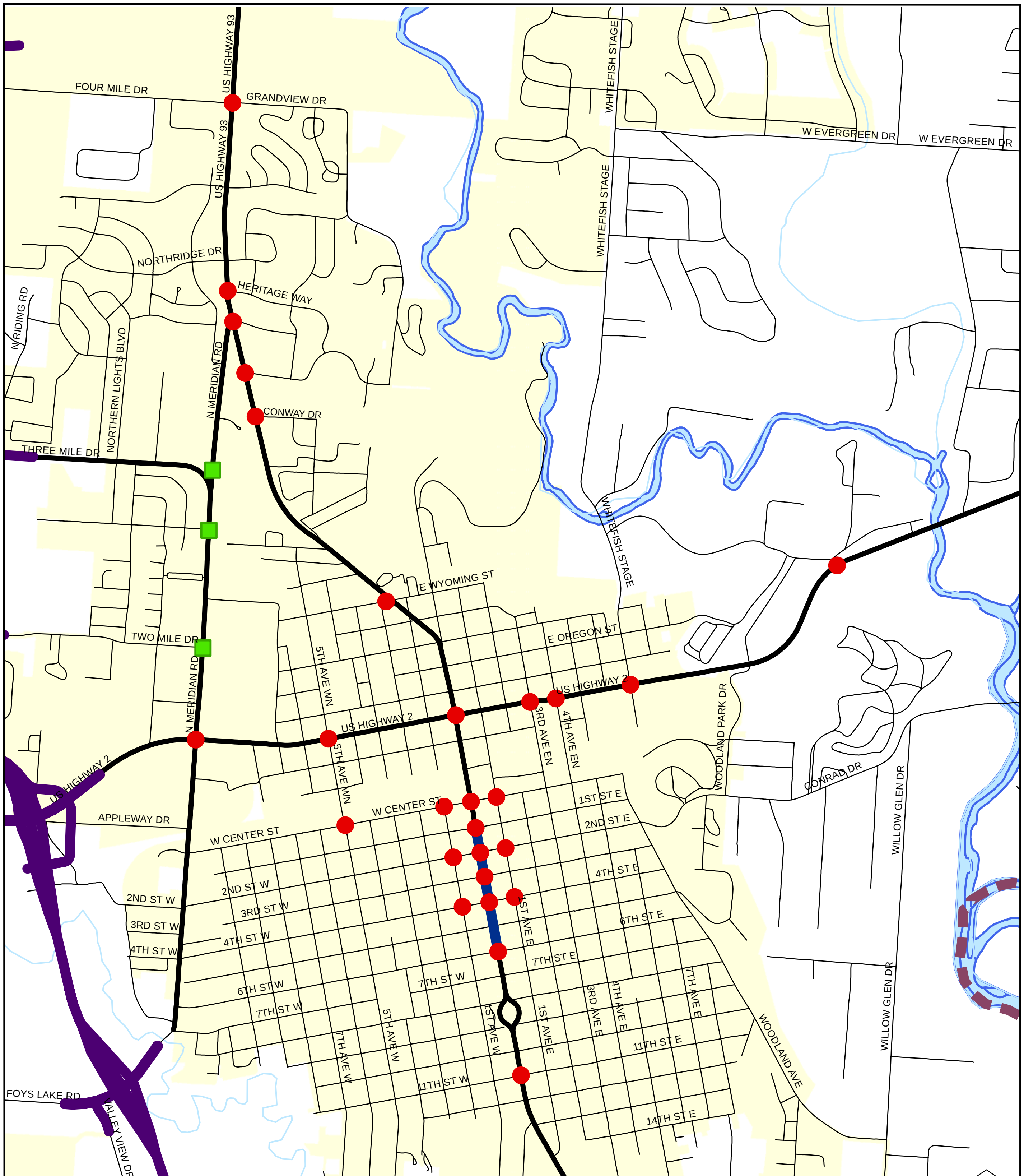


Figure 2-7
Traffic Signal System Map



AREA TRANSPORTATION PLAN (2006 UPDATE)

- SIGNALIZED INTERSECTION
- COORDINATED SIGNAL OPERATION
- SIGNALIZED INTERSECTION NOT STUDIED
- FUTURE HWY 93 BYPASS
- TRANSPORTATION PLAN BOUNDARY

0 1,000 2,000
Scale in Feet

Figure 2-8
Traffic Signal System Map

Level of service (LOS) is a qualitative measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a scale that is intended to match the perception by motorists of the operation of the intersection. Level of Service provides a means for identifying intersections that are experiencing operational difficulties, as well as providing a scale to compare intersections with each other. The level of service scale represents the full range of operating conditions. The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it. The scale ranges from “A” which indicates little, if any, vehicle delay, to “F” which indicates significant vehicle delay and traffic congestion. The LOS analysis was conducted according to the procedures outlined in the Transportation Research Board’s ***Highway Capacity Manual – Special Report 209*** using the Highway Capacity Software, version 4.1f.

Signalized Intersections

For signalized intersections, recent research has determined that average stopped delay per vehicle is the best available measure of level of service. The following table identifies the relationship between level of service and average stopped delay per vehicle. The procedures used to evaluate signalized intersections use detailed information on geometry, lane use, signal timing, peak hour volumes, arrival types and other parameters. This information is then used to calculate delays and determine the capacity of each intersection. An intersection is determined to be functioning adequately if operating at LOS C or better. **Table 2-1** shows the LOS by stopped delay for signalized intersections.

Table 2-1
Level of Service Criteria (Signalized Intersections)

Level of Service	Stopped Delay per Vehicle (sec)
A	< 10
B	10 to 20
C	20 to 35
D	35 to 50
E	50 to 80
F	> 80

Using these techniques and the data collected in the summer of 2006, the LOS for the signalized intersections was calculated. **Tables 2-2 & 2- 3** show the AM and PM peak hour LOS for each individual leg of the intersections, as well as the intersections as a whole. The intersection LOS is shown graphically in **Figure 2-9** and **Figure 2-10**.

Table 2-2
2006 AM Peak LOS (Signalized Intersections)

INTERSECTION	EB	WB	NB	SB	INT	INTERSECTION	EB	WB	NB	SB	INT
Main Street & Idaho Street	D	E	E	D	E	Main Street & 1st Street	B	-	C	C	C
West Idaho Street & Meridian Road	D	C	D	E	D	Main Street & 4th Street East	B	B	C	C	C
Center Street & 1st Avenue West	C	C	C	C	C	Main Street & 3rd Street	B	B	C	C	C
Main Street & Center Street	C	C	D	D	C	4th Street East & 1st Avenue East	B	B	B	B	B
US 93 & West Reserve Street	D	D	D	D	D	West Reserve & Whitefish Stage Road	B	B	C	C	C
MT 35 & LaSalle Road (US 2)	E	F	E	F	F	US 93 & Home Depot	C	C	C	C	C
Idaho Street & 7th Avenue East	C	D	C	C	D	US 93 & Costco	B	-	B	B	B
East Idaho Street & 4th Avenue East	C	D	C	C	D	US 93 & North Ridge Drive	C	C	B	B	B
US 93 & Four Mile Drive/ Grandview Drive	C	C	B	B	B	US 93 & Meridian Road/ Heritage Way	C	--	C	C	C
LaSalle Road (US 2) & East Reserve Street	F	E	B	C	E	US 93 & Conway Drive	-	C	B	B	B
East Evergreen & Hwy 2 (LaSalle Road)	D	D	C	D	C	US 93 & 18th Street*	C	C	C	C	C
Sunset Boulevard & West Wyoming	C	C	B	B	B	US 93 & 3rd Avenue East*	C	C	C	C	C
West Idaho Street & 5th Avenue West	D	D	D	D	D	US 2 (LaSalle) & Walmart	B	C	D	C	C
East Idaho Street & 3rd Avenue East	C	E	C	C	D	US 2 (LaSalle) & Sager Lane (Super One, Staples)	B	C	B	B	C
Main Street & 6th Street	B	B	B	B	B	5th Avenue West & Center Street	B	B	B	B	B
1st Avenue West & 4th Street West	B	B	B	B	B	1st Avenue East & Center Street	B	B	B	B	B
2nd Street East & 1st Avenue East	B	B	B	B	B	US 93 & Willow Glen & Cemetery Road	C	C	B	B	B
1st Avenue West & 2nd Street West	B	B	B	B	B	US 2 (LaSalle) & Rose Crossing	C	C	B	B	B
Sunset Boulevard (US 93) & Sunny View Lane	-	C	B	B	B	US 2 (LaSalle) & Birch Grove	C	C	B	B	B
Main Street & 11th Street *	C	B	D	C	C	US 93 & Kelly Road	B	B	B	B	B
Main Street & 2nd Street	B	B	C	C	C	MT 35 & Shady Lane	B	D	B	B	C

(Abbreviations used in the table are as follows: EB = eastbound; WB = westbound; NB = northbound; SB = southbound; INT = intersection as a whole)
* intersection studied for previous projects.

Table 2-3
2006 PM Peak LOS (Signalized Intersections)

INTERSECTION	EB	WB	NB	SB	INT	INTERSECTION	EB	WB	NB	SB	INT
Main Street & Idaho Street	E	E	F	F	F	Main Street & 1st Street	B	-	C	C	C
West Idaho Street & Meridian Road	D	C	D	E	D	Main Street & 4th Street East	B	B	C	C	C
Center Street & 1st Avenue West	C	C	C	C	C	Main Street & 3rd Street	B	B	C	C	C
Main Street & Center Street	C	C	D	D	D	4th Street East & 1st Avenue East	B	B	C	B	B
US 93 & West Reserve Street	E	D	F	D	F	West Reserve & Whitefish Stage Road	C	B	D	C	C
MT 35 & LaSalle Road (US 2)	F	E	F	F	F	US 93 & Home Depot	F	F	E	D	F
Idaho Street & 7th Avenue East	D	C	C	E	D	US 93 & Costco	C	-	F	C	F
East Idaho Street & 4th Avenue East	E	D	D	C	E	US 93 & North Ridge Drive	C	C	C	C	C
US 93 & Four Mile Drive/ Grandview Drive	C	C	C	C	C	US 93 & Meridian Road/ Heritage Way	D	--	D	C	C
LaSalle Road (US 2) & East Reserve Street	F	D	C	D	E	US 93 & Conway Drive	-	C	C	C	C
East Evergreen & Hwy 2 (LaSalle Road)	F	F	C	D	E	US 93 & 18th Street*	C	C	C	C	C
Sunset Boulevard & West Wyoming	C	B	B	C	C	US 93 & 3rd Avenue East*	C	C	C	C	C
West Idaho Street & 5th Avenue West	D	D	E	E	D	US 2 (LaSalle) & Walmart	F	C	F	D	E
East Idaho Street & 3rd Avenue East	F	F	F	F	F	US 2 (LaSalle) & Sager Lane (Super One, Staples)	F	D	C	B	E
Main Street & 6th Street	B	B	B	B	B	5th Avenue West & Center Street	B	B	B	C	B
1st Avenue West & 4th Street West	B	B	B	B	B	1st Avenue East & Center Street	B	B	B	B	B
2nd Street East & 1st Avenue East	C	B	C	C	C	US 93 & Willow Glen & Cemetery Road	C	C	C	B	C
1st Avenue West & 2nd Street West	B	B	C	B	B	US 2 (LaSalle) & Rose Crossing	C	C	B	B	B
Sunset Boulevard (US 93) & Sunny View Lane	-	E	F	C	E	US 2 (LaSalle) & Birch Grove	C	C	B	B	B
Main Street & 11th Street *	C	C	C	C	C	US 93 & Kelly Road	B	B	B	B	B
Main Street & 2nd Street	B	B	C	C	C	MT 35 & Shady Lane	F	E	C	B	E

(Abbreviations used in the table are as follows: EB = eastbound; WB = westbound; NB = northbound; SB = southbound; INT = intersection as a whole)
* intersection studied for previous projects.

Unsignalized Intersections

Level of service for unsignalized intersections is based on the delay experienced by each movement within the intersection, rather than on the overall stopped delay per vehicle at the intersection. This difference from the method used for signalized intersections is necessary since the operating characteristics of a stop-controlled intersection are substantially different. Driver expectations and perceptions are also entirely different. For two-way stop controlled intersections, the through traffic on the major (uncontrolled) street experiences no delay at the intersection. Conversely, vehicles turning left from the minor street experience more delay than other movements and at times can experience significant delay. Vehicles on the minor street, which are turning right or going across the major street, experience less delay than those turning left from the same approach. Due to this situation, the level of service assigned to a two-way stop controlled intersection is based on the average delay for vehicles on the minor street approach.

Levels of service for all-way stop controlled intersections are also based on delay experienced by the vehicles at the intersection. Since there is no major street, the highest delay could be experienced by any of the approaching streets. Therefore, the level of service is based on the approach with the highest delay as shown in **Table 2-4**. This table shows the LOS criteria for both the all-way and two-way stop controlled intersections.

Table 2-4
Level of Service Criteria (Stop Controlled Intersections)

Level of Service	Delay (sec / veh)
A	< 10
B	10 to 15
C	15 to 25
D	25 to 35
E	35 to 50
F	> 50

Using the above guidelines, the data collected in the summer of 2006, and calculation techniques for two-way stop controls and all-way stop controls, the LOS was calculated for 50 intersections. The results of these calculations are shown in **Table 2-5**. The intersection LOS is shown graphically in **Figure 2-9** and **Figure 2-10**.

Table 2-5
2006 LOS (Stop-Controlled Intersections)

INTERSECTION	AM	PM	INTERSECTION	AM	PM
MT-35 & Helena Flats Road	D	F	3rd Avenue East & 2nd Street East	B	C
Evergreen & Helena Flats Road	B	B	3rd Avenue East & 11th Street East	B	B
East Reserve Street & Helena Flats Road	A	A	3rd Avenue East & 14th Street East	B	B

INTERSECTION	AM	PM	INTERSECTION	AM	PM
Center Street & Meridian Road *	E	F	4th Avenue East & East Center Street	A	C
2nd Street West & Meridian Road *	C	D	4th Avenue East North & 2nd Street East	C	F
Appleway Drive & Meridian Road *	C	C	4th Avenue East & 11th Street East	B	B
7th Street West & Meridian Road *	C	C	4th Avenue East & 14th Street East	A	A
Foys Lake Road & Valley View Drive *	B	B	East Center Street & Woodland Avenue	**	**
7th Street west & 7th Avenue West *	B	B	2nd Street East & Woodland Avenue	B	F
US Highway 2 & Appleway Drive	C	F	11th Street East & Woodland Avenue	B	C
Three Mile Drive & Northern Lights Boulevard	B	B	Conrad Drive & Woodland Park Drive	C	F
West Reserve Drive & Stillwater Road	C	C	East Idaho Street & Woodland Park Drive	E	F
Three Mile Drive & Stillwater Road	B	B	5th Avenue West North & Wyoming Street	A	A
Whitefish Stage Road & Rose Crossing	A	B	Sunset Boulevard & East Oregon Street	F	F
Whitefish Stage Road & Evergreen Drive	C	F	3rd Avenue East North & East Oregon Street	C	C
7th Avenue West & Center Street	B	B	4th Avenue East North & East Oregon Street	C	C
7th Avenue West & 2nd Street West	B	B	7th Avenue East North & East Oregon Street	C	E
7th Avenue West & 11th Street West	B	B	Woodland Avenue & Willow Glen Drive	B	B
5th Avenue West & 2nd Street West	B	C	Conrad Drive & Willow Glen Drive	C	C
5th Avenue West & 4th Street West	C	B	US 93 & Rocky Cliff Drive	C	C
5th Avenue West & 7th Street West	B	B	North Riding Road & Three Mile Drive	B	B
5th Avenue West & 11th Street West	B	C	Sunnyside Drive & Denver Street	A	B
1st Avenue West & 11th Street West	B	C			
1st Avenue East & 11th Street East	A	B			
3rd Avenue East & East Center Street	A	C			

***** intersection studied for previous projects.
** This intersection is free flowing, therefore, no LOS can be calculated.

The LOS analyses of the existing conditions in the Kalispell area reveals that several signalized and unsignalized intersections are currently functioning at LOS D or lower. These intersections are shown in **Table 2-6** and are ideal candidates for closer examination and potential intersection improvements measures.

Table 2-6
Existing Intersections Functioning at LOS D or Lower

Intersection		AM Peak Hour LOS	PM Peak Hour LOS
2nd Street West & Meridian Road *	U	C	D
2nd Street East & Woodland Avenue	U	B	F
4th Avenue East North & 2nd Street East	U	C	F
7th Avenue East North & East Oregon Street	U	C	E
Center Street & Meridian Road *	U	E	F
Conrad Drive & Woodland Park Drive	U	C	F
East Idaho Street & 3rd Avenue East	S	D	F
East Idaho Street & 4th Avenue East	S	D	E
East Idaho Street & Woodland Park Drive	U	E	F
Idaho Street & 7th Avenue East	S	D	D
Idaho Street & Meridian Road	S	D	D
LaSalle Road (US 2) & East Reserve Street	S	E	E
Main Street & Idaho Street	S	E	F
MT-35 & Helena Flats Road	U	D	F
MT 35 & LaSalle Road (US 2)	S	F	F
MT 35 & Shady Lane	S	C	E
Sunset Boulevard & East Oregon Street	U	F	F
Sunset Boulevard (US 93) & Sunny View Lane	S	B	E
US 2 (LaSalle) & Sager Lane	S	C	E
US 2 (LaSalle) & Walmart	S	C	E
US Highway 2 & Appleway Drive	U	C	F
US 93 & Costco	S	B	F
US 93 & Home Depot	S	C	F
US 93 & West Reserve Street	S	D	F
West Idaho Street & 5th Avenue West North	S	D	D
Whitefish Stage Road & Evergreen Drive	U	C	F

(S)ignalized
(U)nsignalized

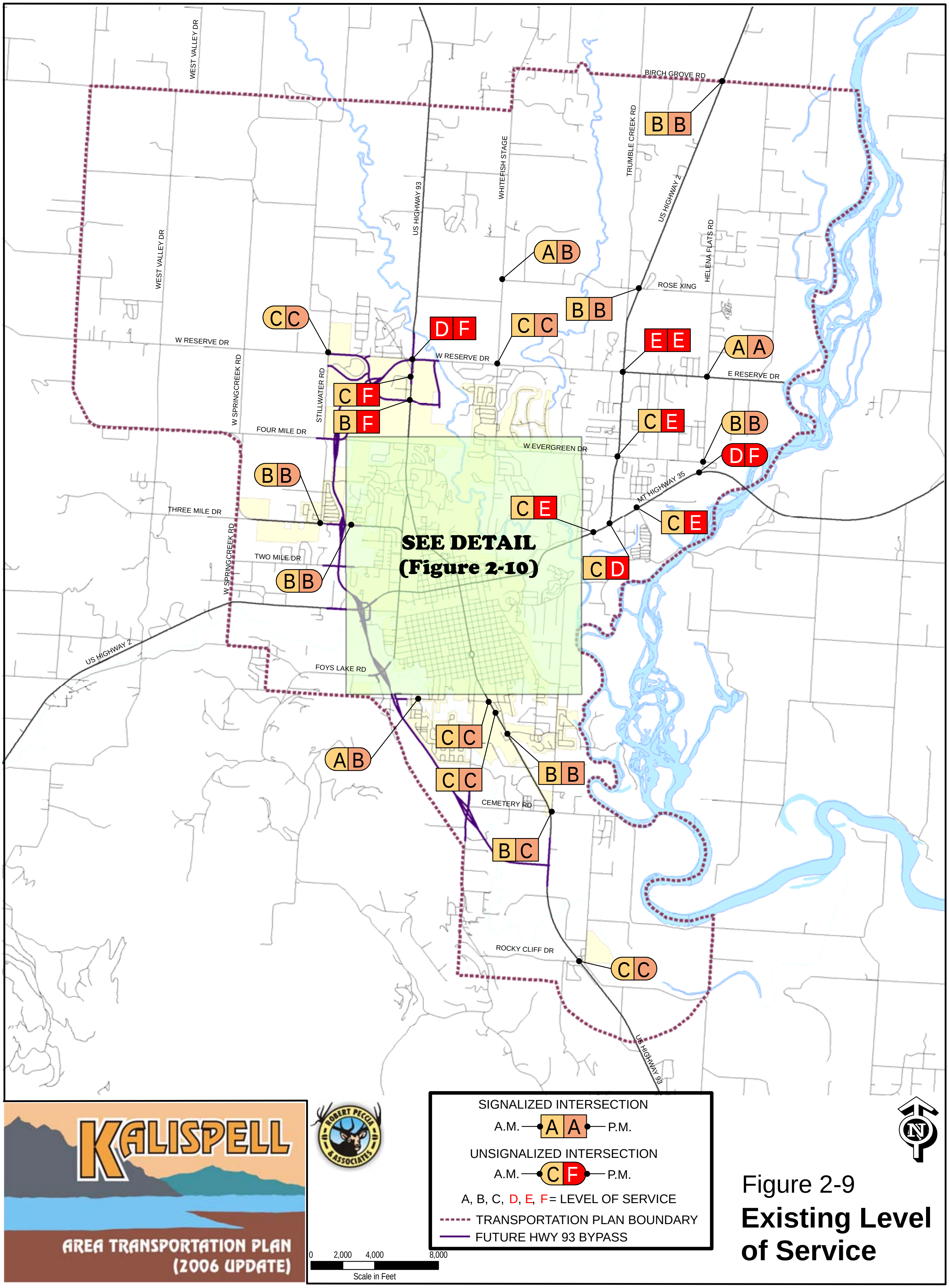
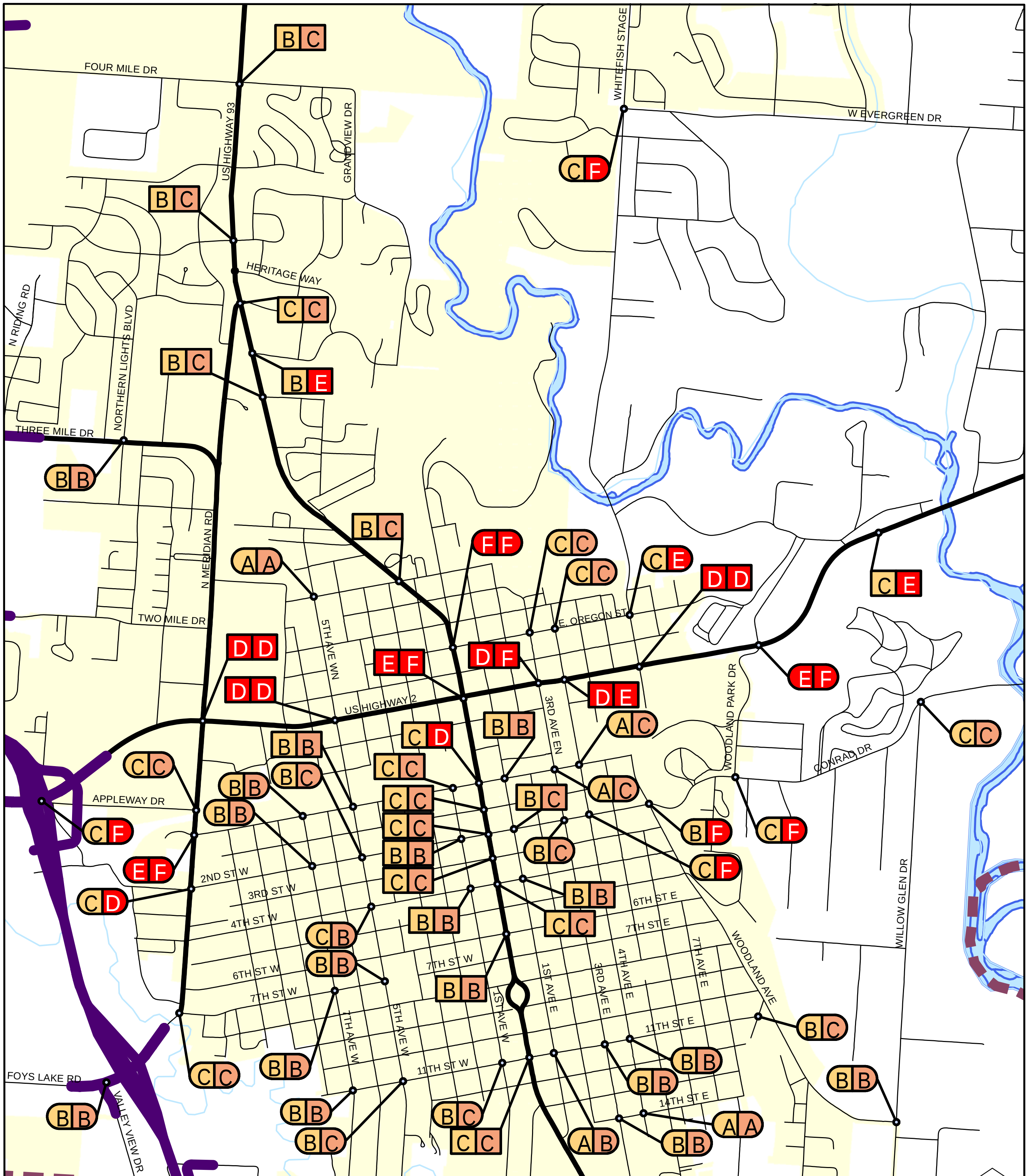


Figure 2-9

Existing Level of Service



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

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SIGNALIZED INTERSECTION

A.M. — A | A — P.M.

UNSIGNALIZED INTERSECTION

A.M. — C | F — P.M.

A, B, C, D, E, F = LEVEL OF SERVICE

FUTURE HWY 93 BYPASS

TRANSPORTATION PLAN BOUNDARY

0 1,000 2,000

Scale in Feet

N

Figure 2-10
Existing Level of Service

2.6 TRAVEL TIME AND DELAY

Travel-time and delay studies are used to determine general traffic and delay patterns for a traffic system. A travel-time study provides data on the amount of time it takes to traverse a section of street or highway. This data, combined with the length of the section of roadway, gives the average travel speed.

Travel-time and delay studies are conducted when the sources and amounts of delay occurring within the section are determined. This data is used for a number of different tasks including:

- Determining the efficiency of a route with respect to its ability to carry traffic.
- Providing input to capacity analysis of roadway segments.
- Identify problem locations as indicated by delay.
- Evaluating the effectiveness of traffic operation improvements.
- Providing input to economic analyses of alternatives.
- Generating travel-time maps.
- Providing input to studies that evaluate trends in efficiency and level of service over time.

Ten routes were identified which included most of the major traffic routes through the area. These ten (10) routes included:

- Idaho Street (from Corporate Drive to LaSalle Road).
- U.S. Highway 93-Main Street-Sunset Boulevard (from Willow Glen Drive to Church Drive).
- 3rd Avenue East (from Center Street to 14th Street East).
- 4th Avenue East (from Center Street to 14th Street East).
- Center Street (from Meridian Road to Woodland Avenue).
- 2nd Street East (from Meridian Road to Woodland Avenue).
- Reserve Drive (from West Springcreek Road to Helena Flats Road).
- Evergreen Drive (from Whitefish Stage Road to Helena Flats Road).
- LaSalle Road (from Idaho Street to Birch Grove).
- Whitefish Stage Road (from Idaho Street to Birch Grove).

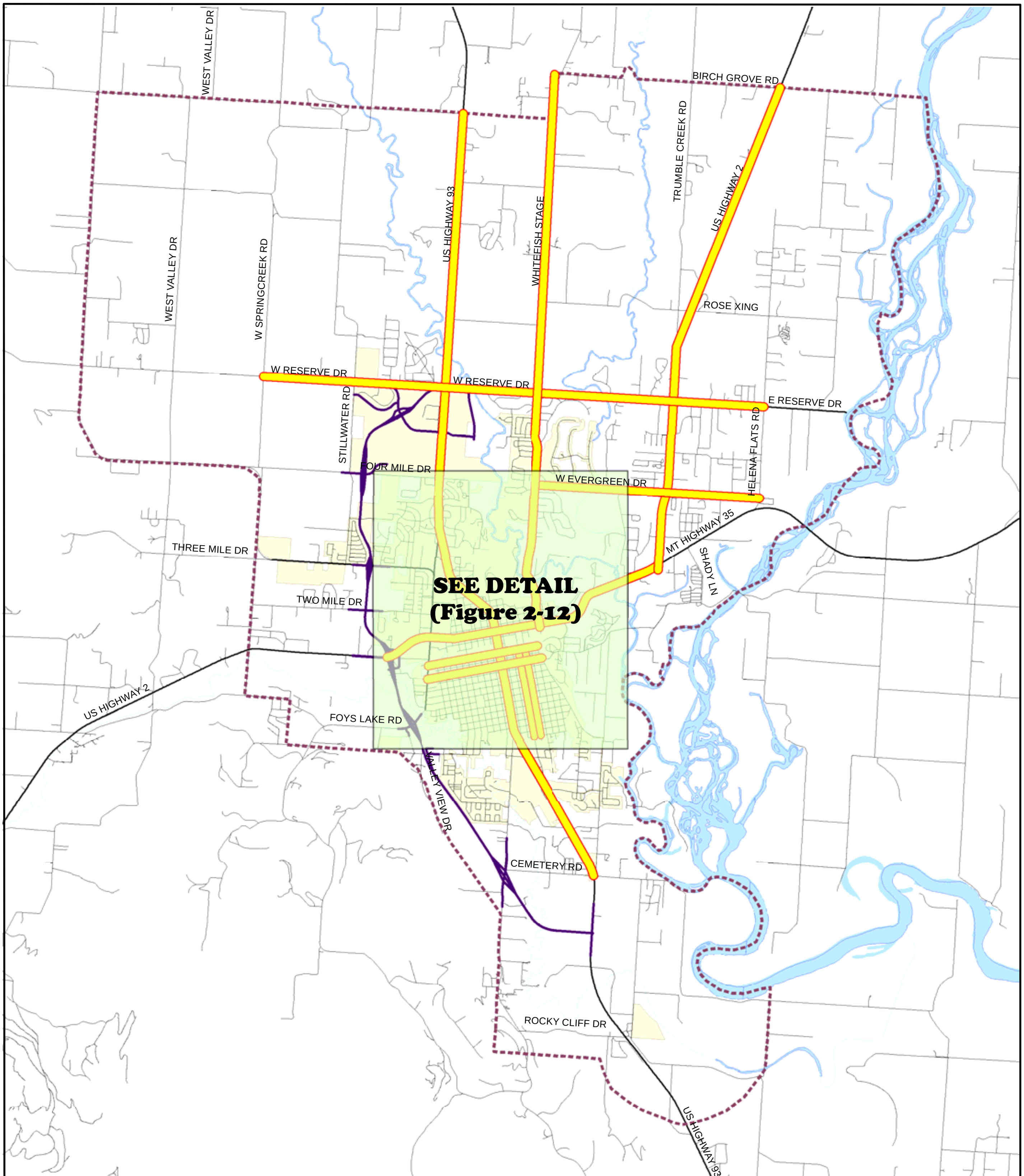
These ten (10) corridors that were studied are shown in **Figure 2-11** and **Figure 2-12**.

Each roadway segment was traveled the same number of times in each direction during the AM peak hour, the PM peak hour, and during the middle of the day. The AM peak hour analysis started about 7:00 a.m., the mid-day analysis started about 11:00 a.m. and the PM peak hour analysis started about 4:00 p.m. Each analysis would generally last up to two hours each. This information was used to determine the average travel speed and running speed for each corridor along with actual delay at signalized intersections on these corridors. Travel speed is defined as the speed at which a vehicle travels between two points and includes all intersection delays. Running speed is defined as the actual vehicle speed while the vehicle is in motion (travel speed minus the delay). Delay is the amount of time spent not moving due to the traffic signal being red, or being unable to pass through unsignalized intersections.

Figure 2-13 to **Figure 2-18** shows the running speed and delay for each time period studied. Major intersection delays (greater than 25 seconds of average stopped time) were experienced at a number of intersections and are shown on **Figure 2-13** to **Figure 2-18**.

In most areas, the average running speed was relatively close to the posted speed limit for the route. Areas that experienced a low average running speed either during the AM peak, mid-day or PM peak hour seemed to occur in and around downtown Kalispell. This is due to the fact that the traffic signals in this area are in close proximity to one another as well as high traffic volumes.

Figure 2-19 to **Figure 2-24** shows the travel speed for each time period studied.



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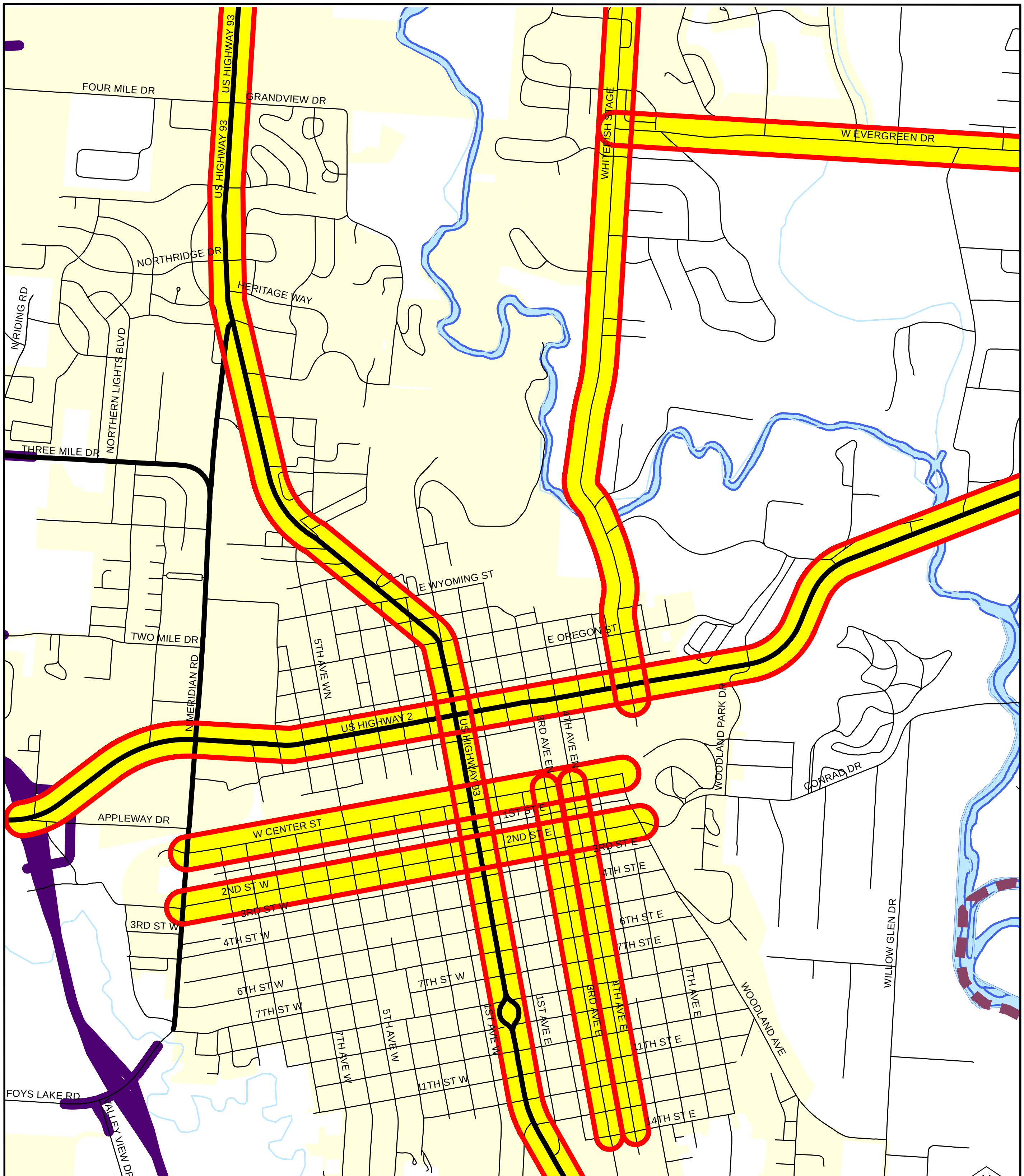
(yellow line)	CORRIDOR INCLUDED IN STUDY
(dashed line)	TRANSPORTATION PLAN BOUNDARY
(purple line)	FUTURE HWY 93 BYPASS

0 2,000 4,000 8,000

Scale in Feet

Figure 2-11

Travel Time and Delay Study



KALISPELL

AREA TRANSPORTATION PLAN (2006 UPDATE)

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CORRIDOR INCLUDED IN STUDY
FUTURE HWY 93 BYPASS
TRANSPORTATION PLAN BOUNDARY

0 1,000 2,000
Scale in Feet

Figure 2-12
Travel Time and Delay Study

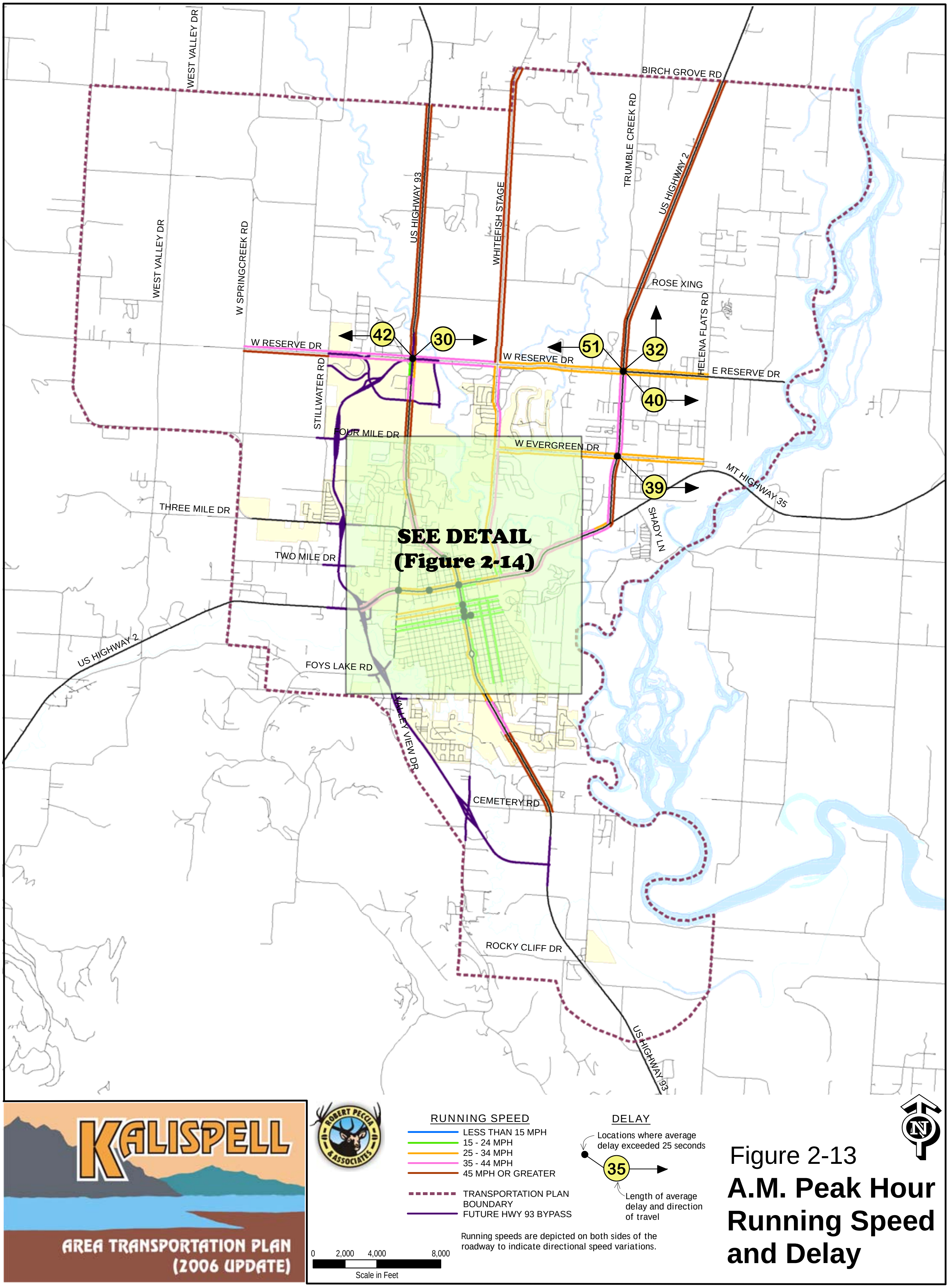


Figure 2-13

A.M. Peak Hour Running Speed and Delay

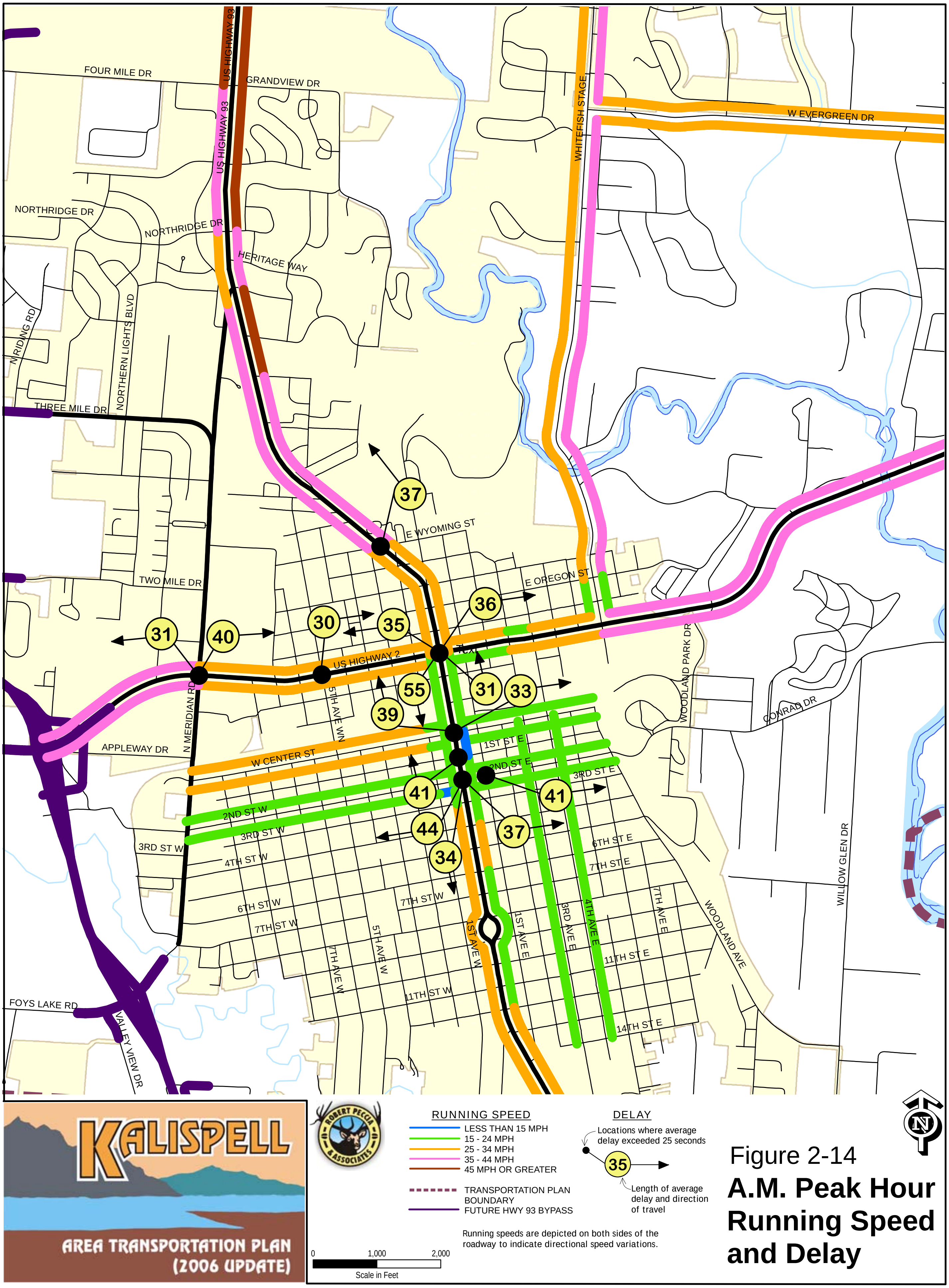


Figure 2-14

A.M. Peak Hour Running Speed and Delay

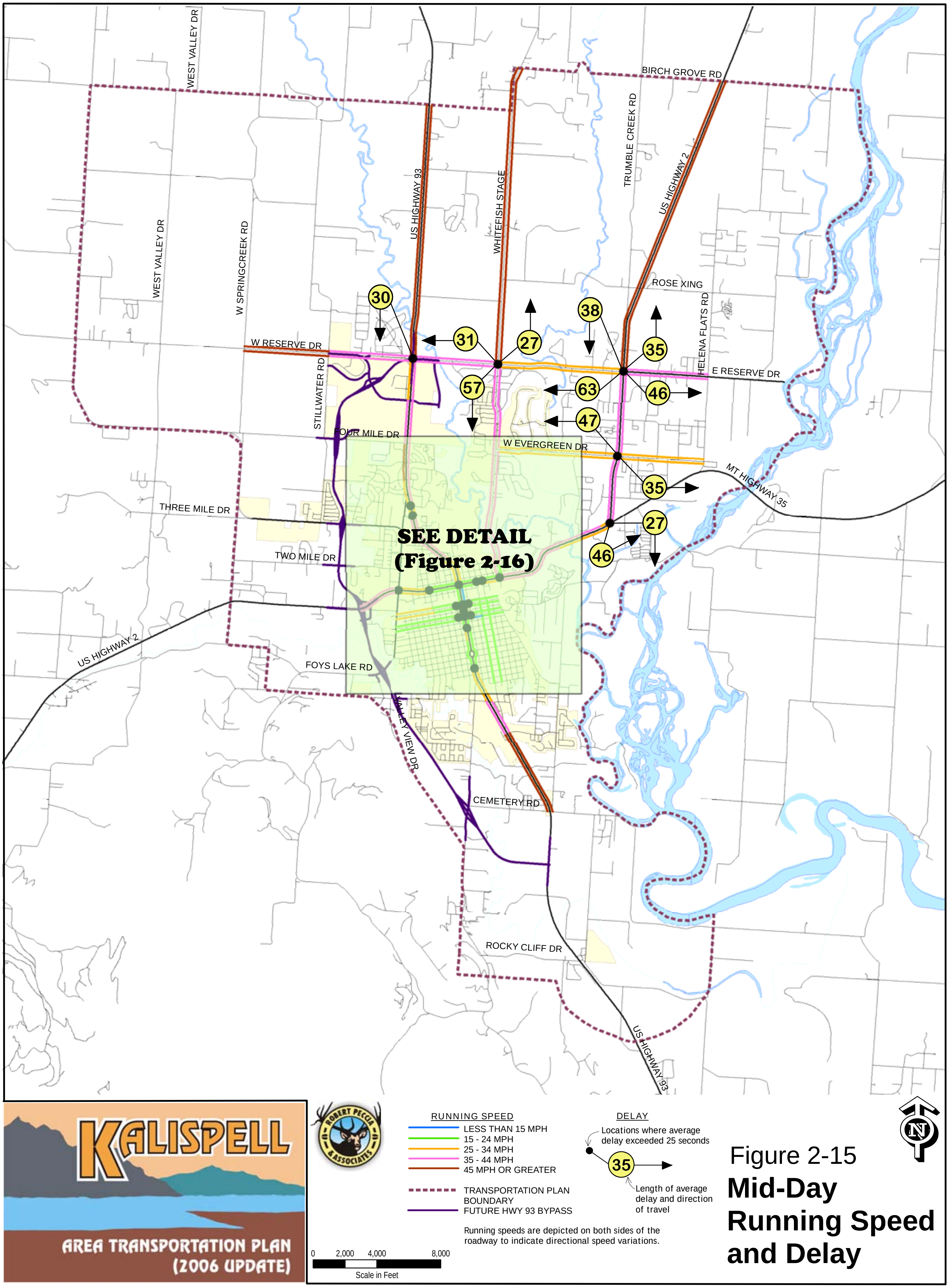


Figure 2-15
Mid-Day Running Speed and Delay

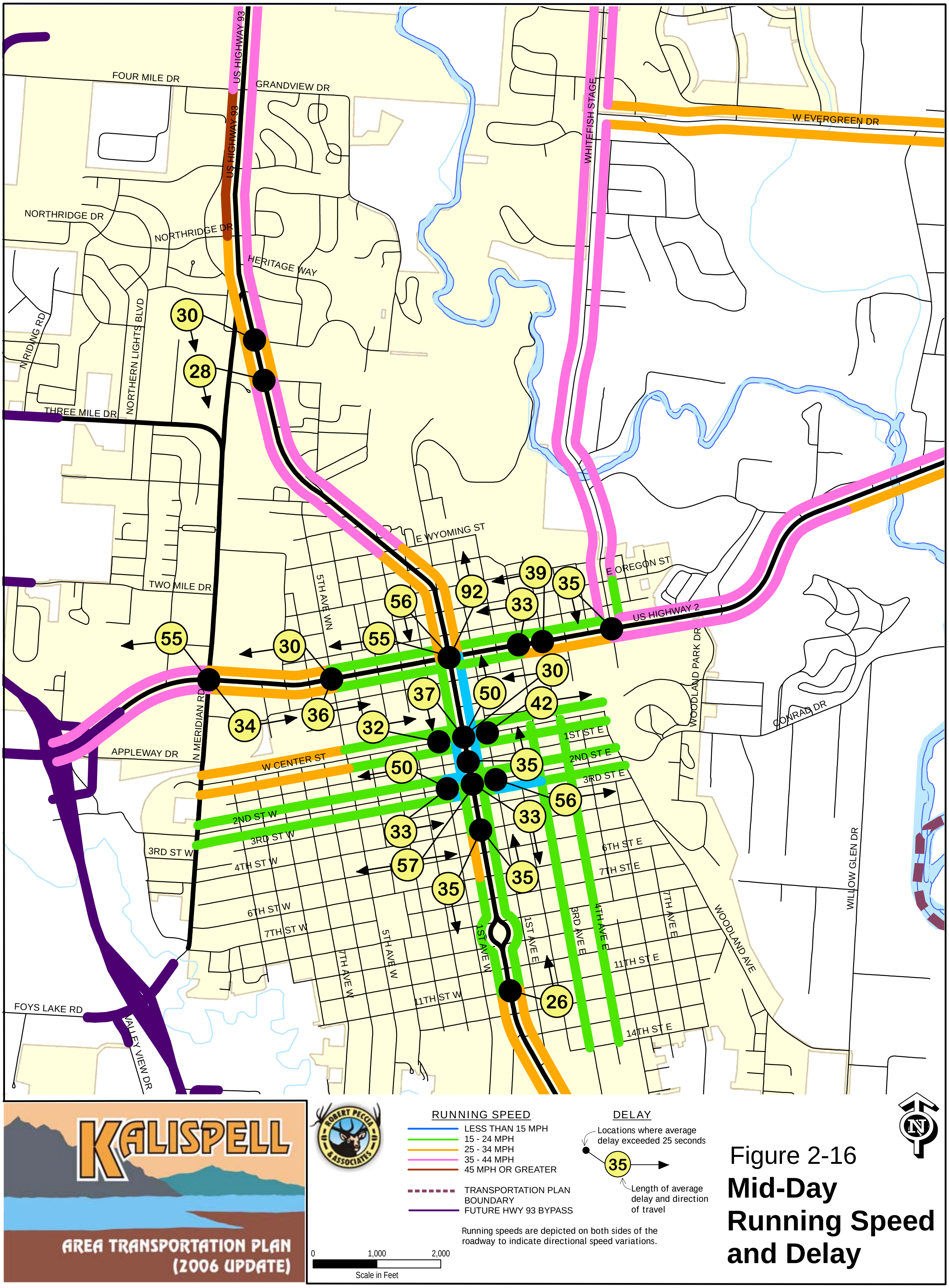
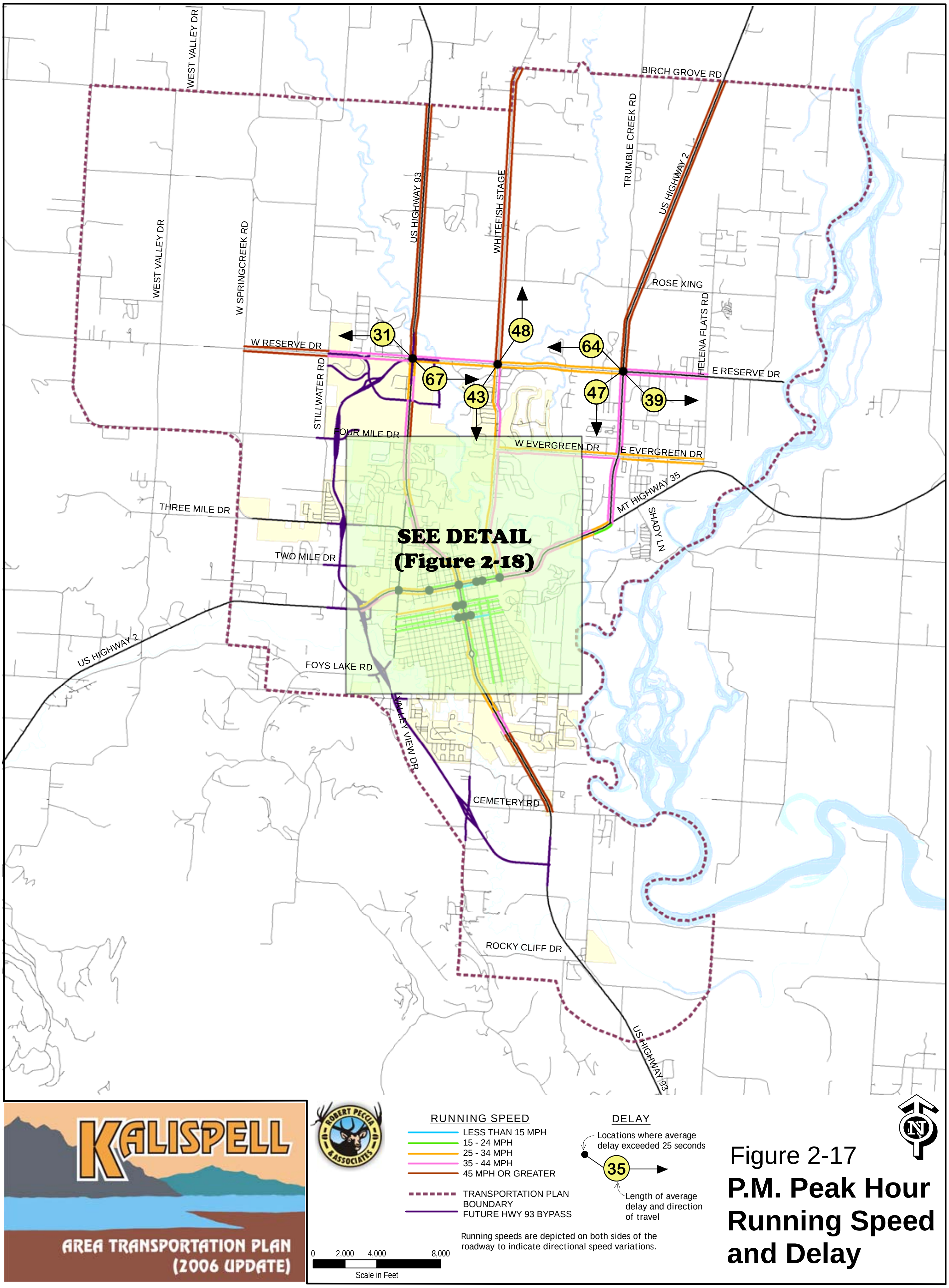


Figure 2-16
Mid-Day Running Speed and Delay



KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

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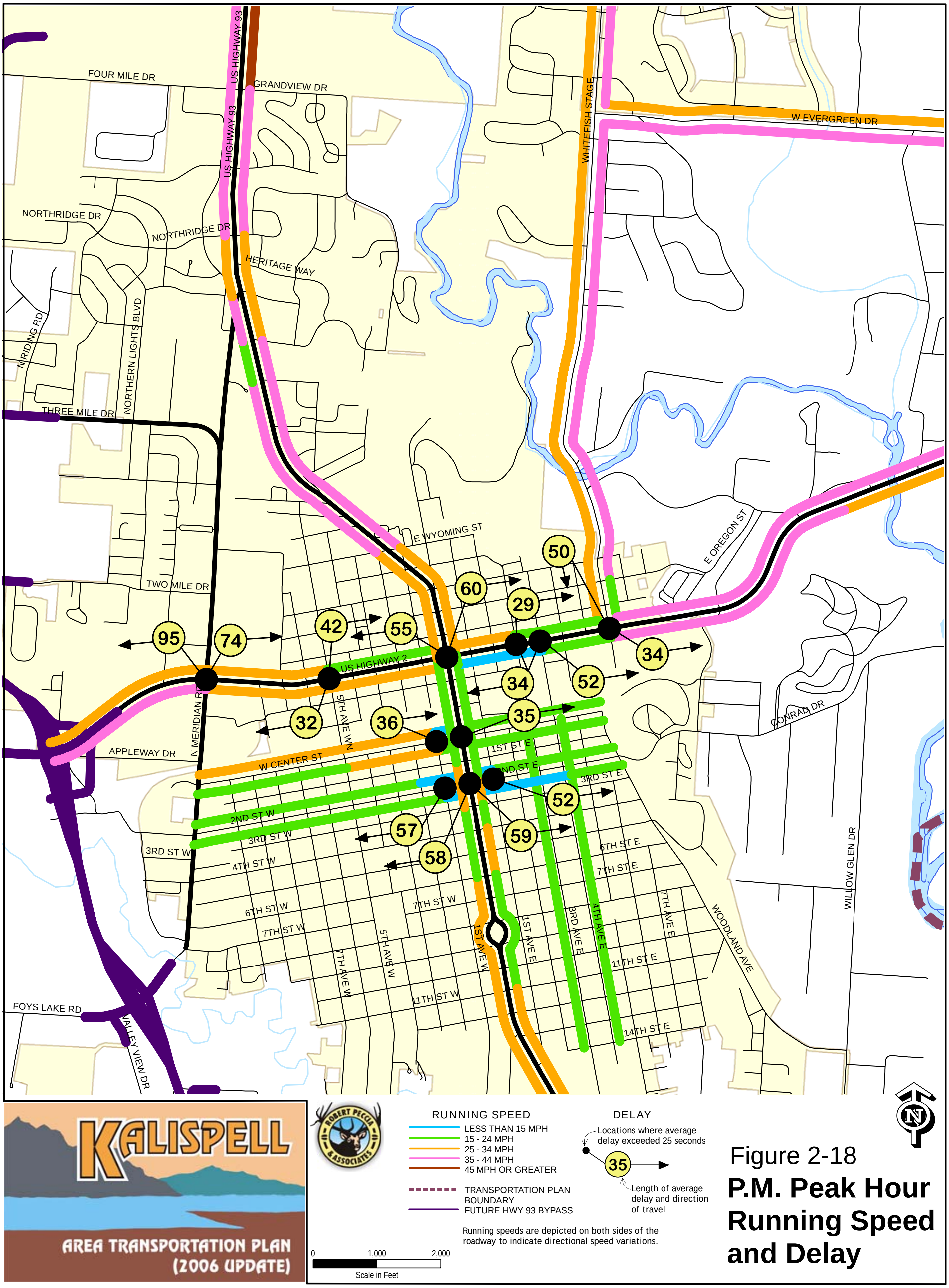
Figure 2-17
P.M. Peak Hour Running Speed and Delay



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(2006 UPDATE)

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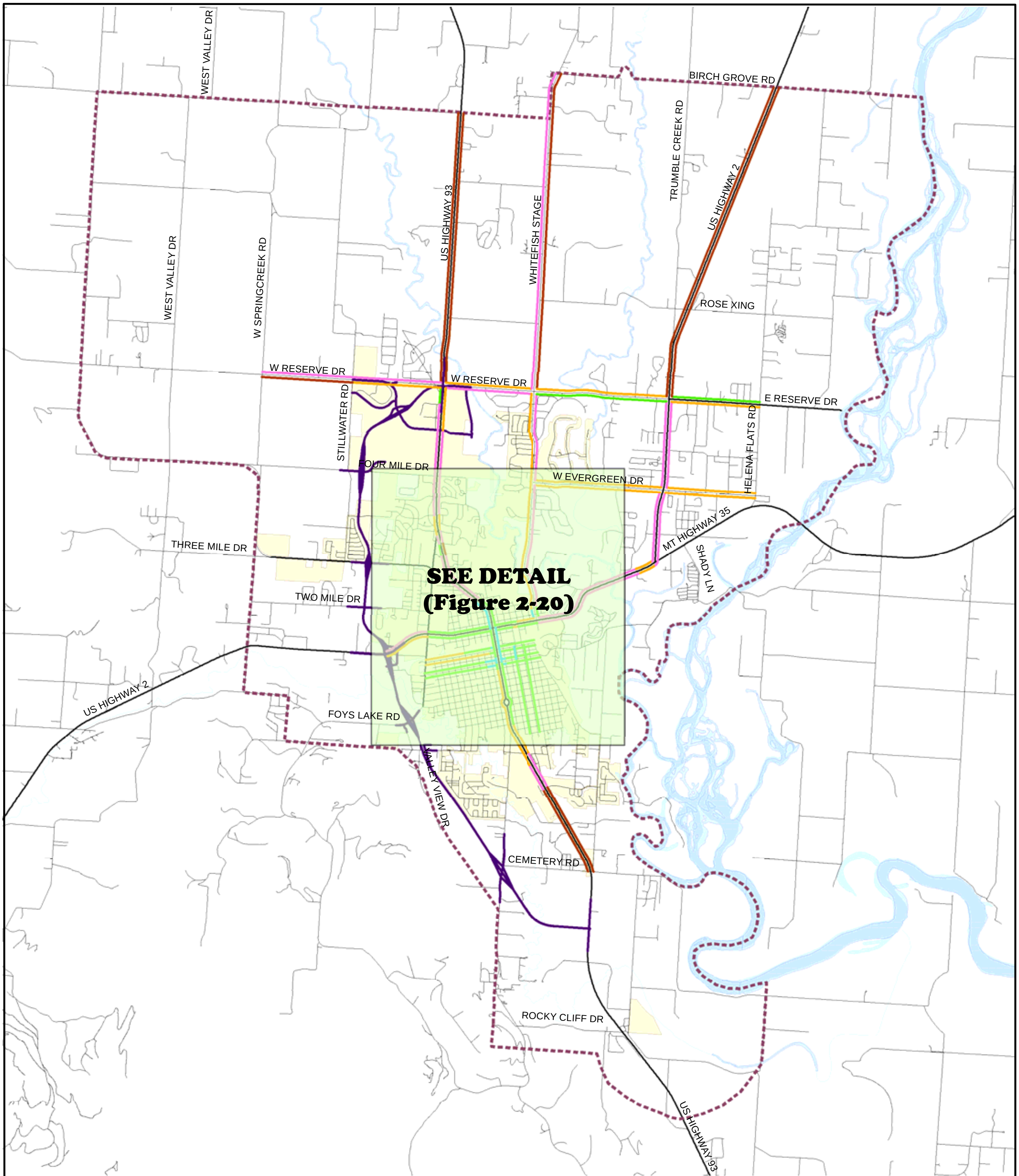
Figure 2-18
P.M. Peak Hour Running Speed and Delay



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AREA TRANSPORTATION PLAN
(2006 UPDATE)

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RUNNING SPEED
- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

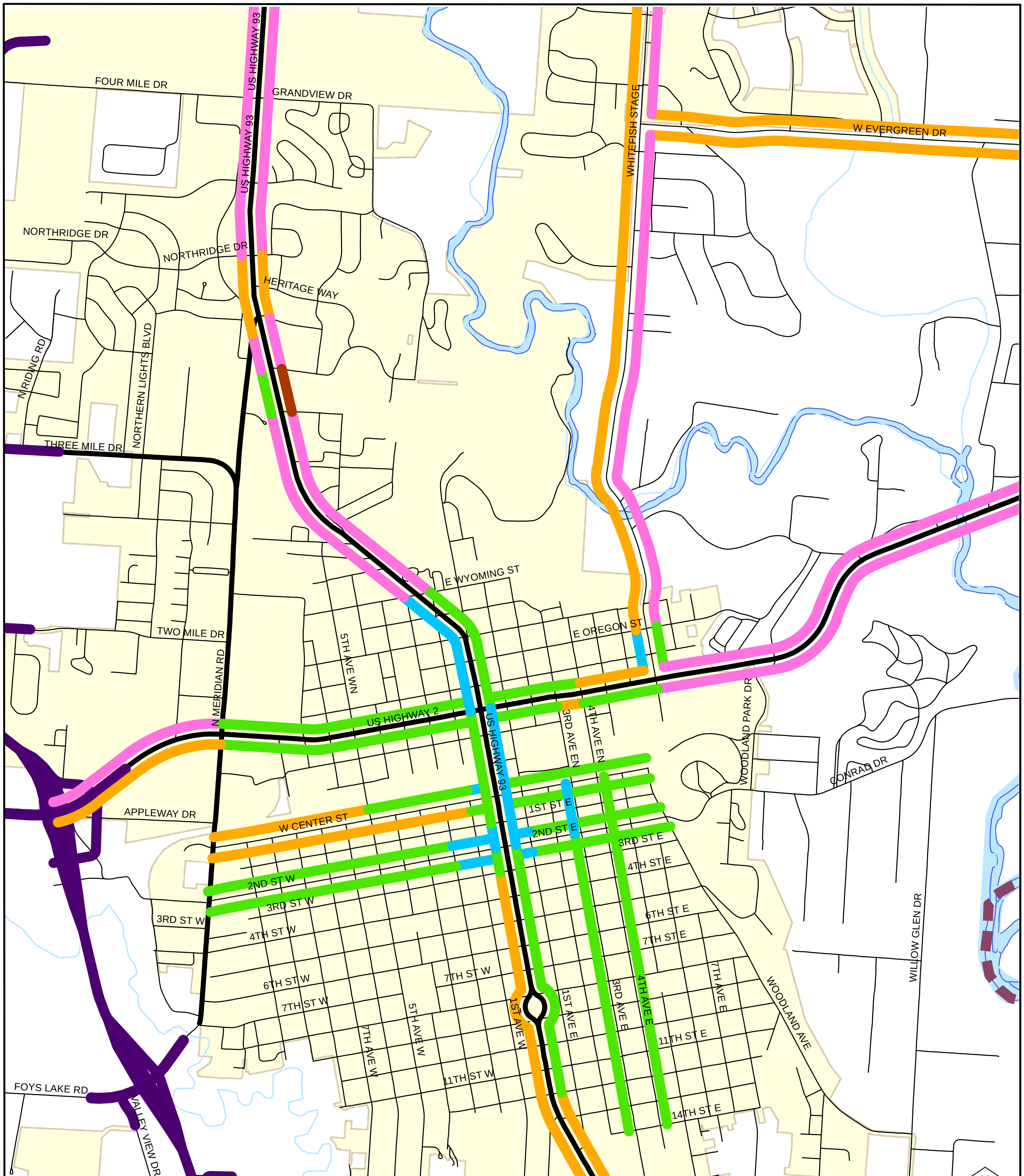
Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

0 2,000 4,000 8,000
Scale in Feet

N

Figure 2-19

Average A.M. Travel Speed



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

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RUNNING SPEED
- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER

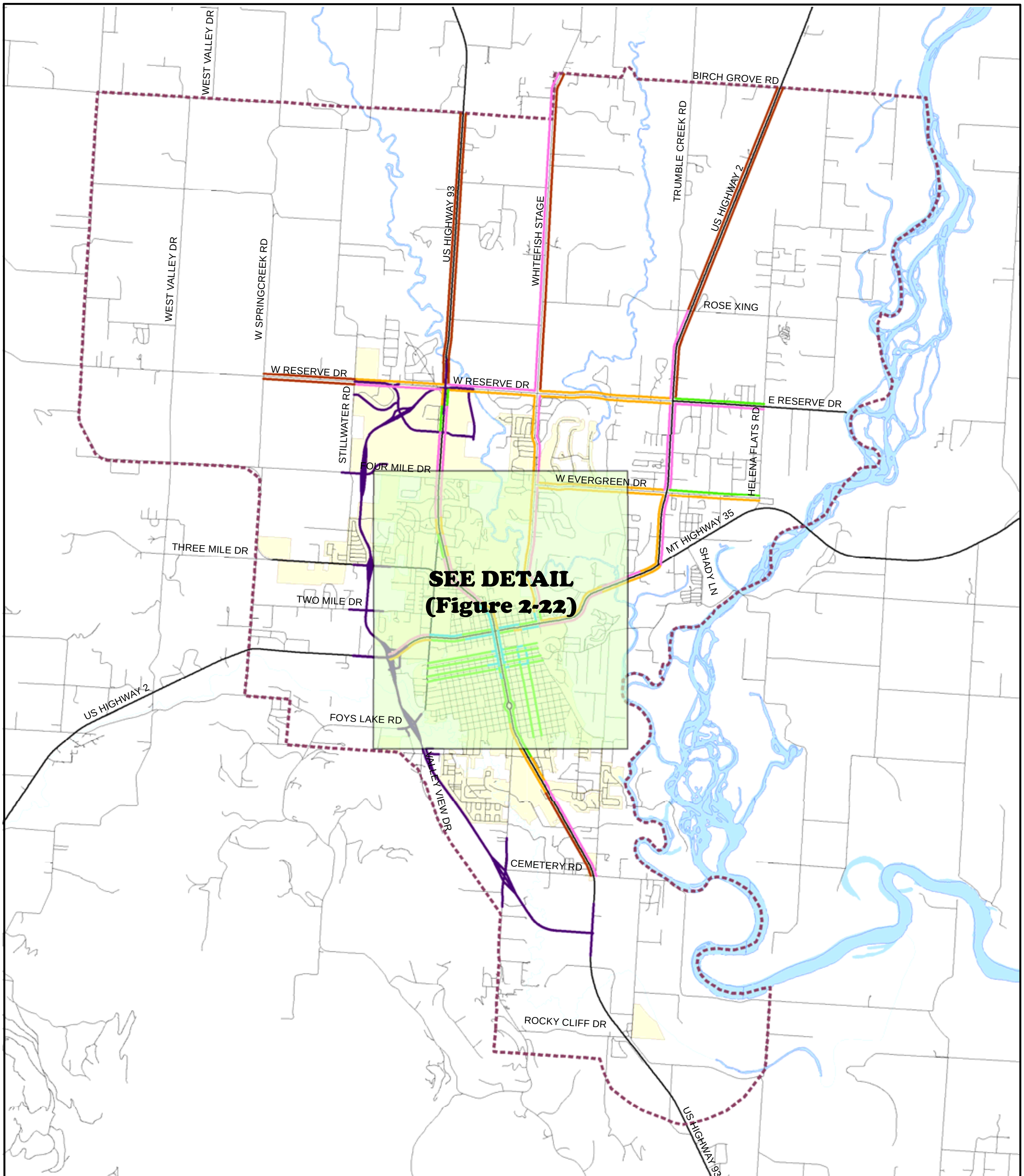
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

0 1,000 2,000
Scale in Feet

N

Figure 2-20
Average A.M. Travel Speed



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

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RUNNING SPEED
- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

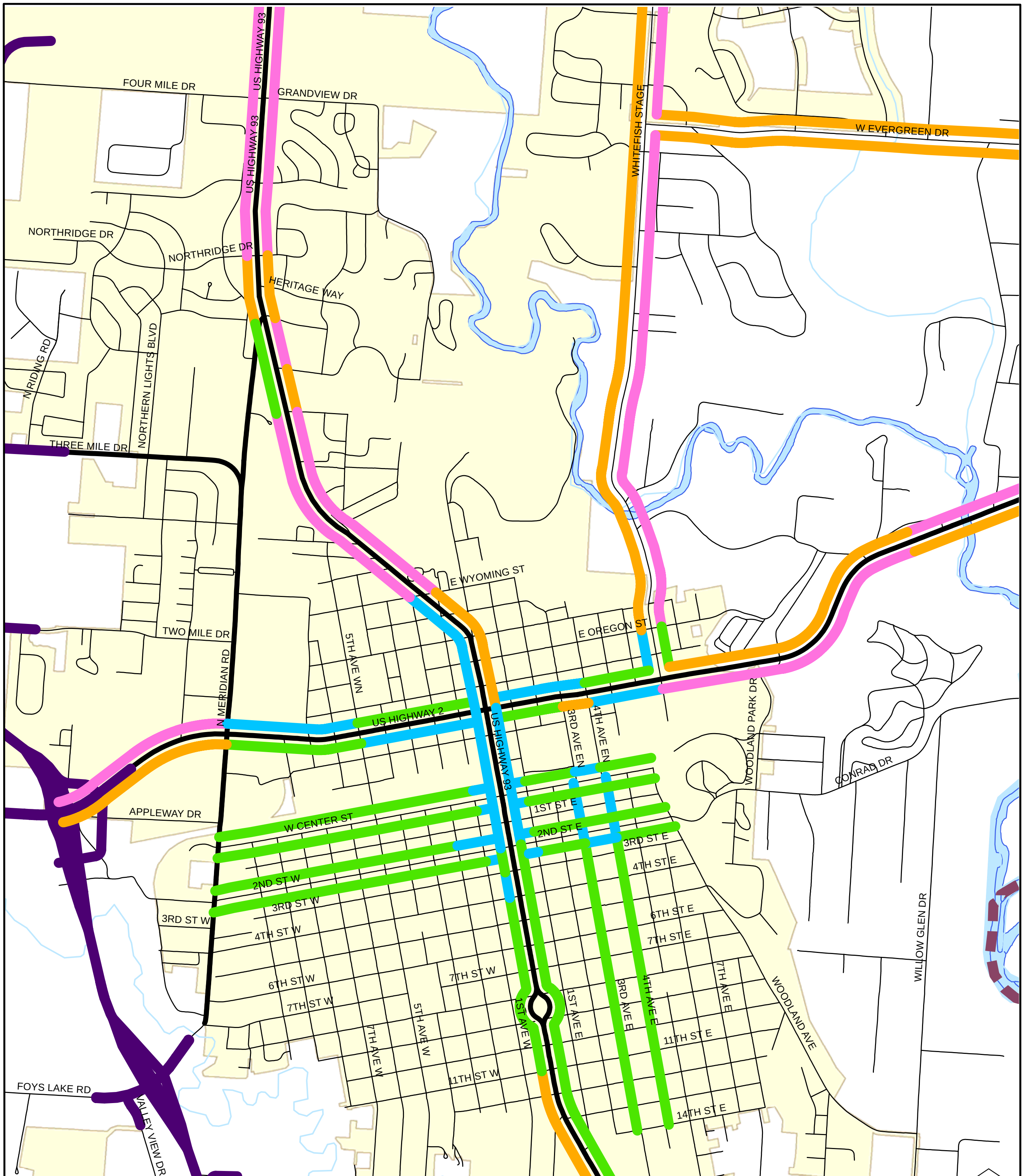
Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

0 2,000 4,000 8,000
Scale in Feet

N

Figure 2-21

Average Mid-Day Travel Speed



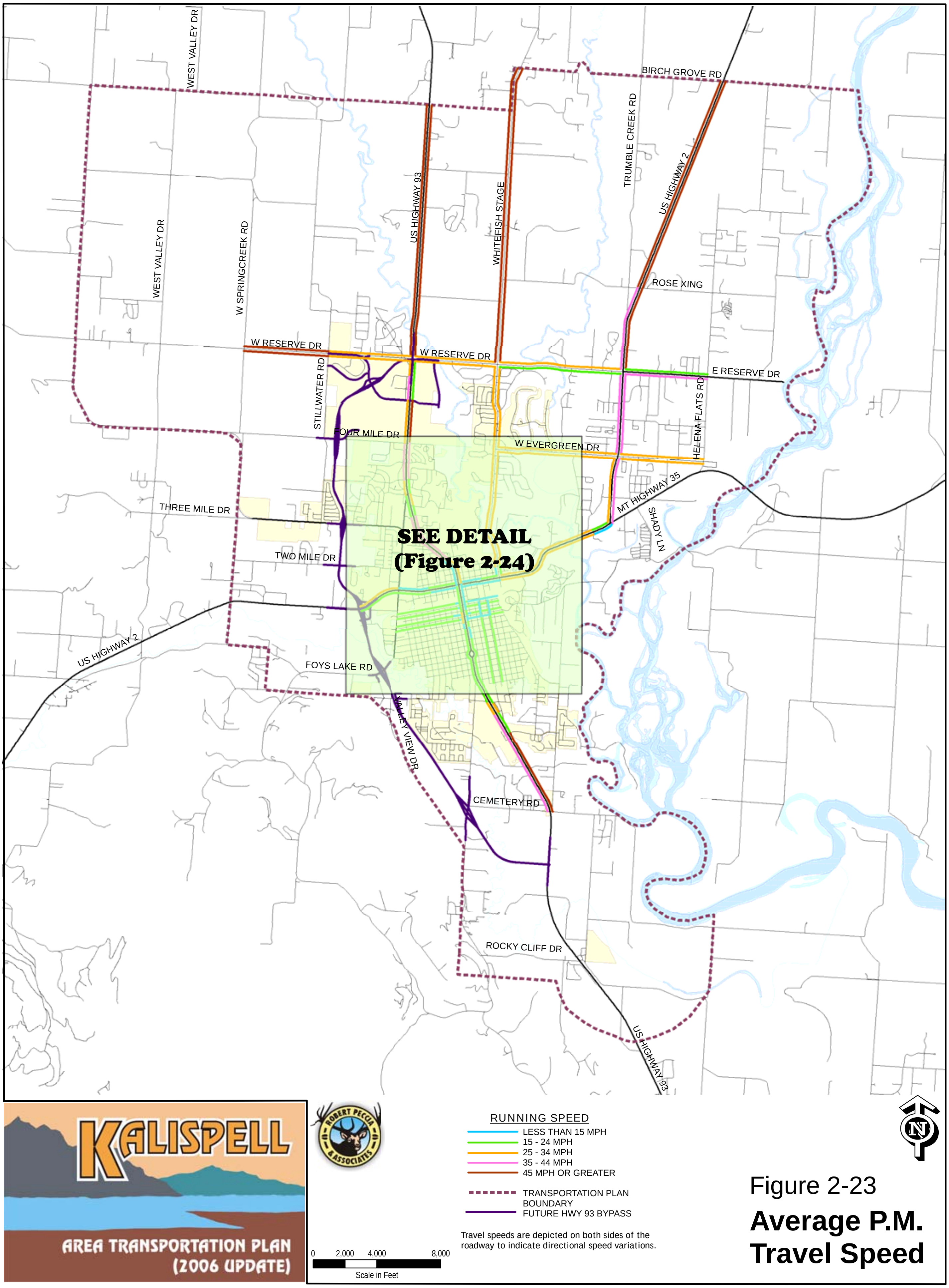
KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

RUNNING SPEED
- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

0 1,000 2,000
Scale in Feet

Figure 2-22
Average Mid-Day Travel Speed



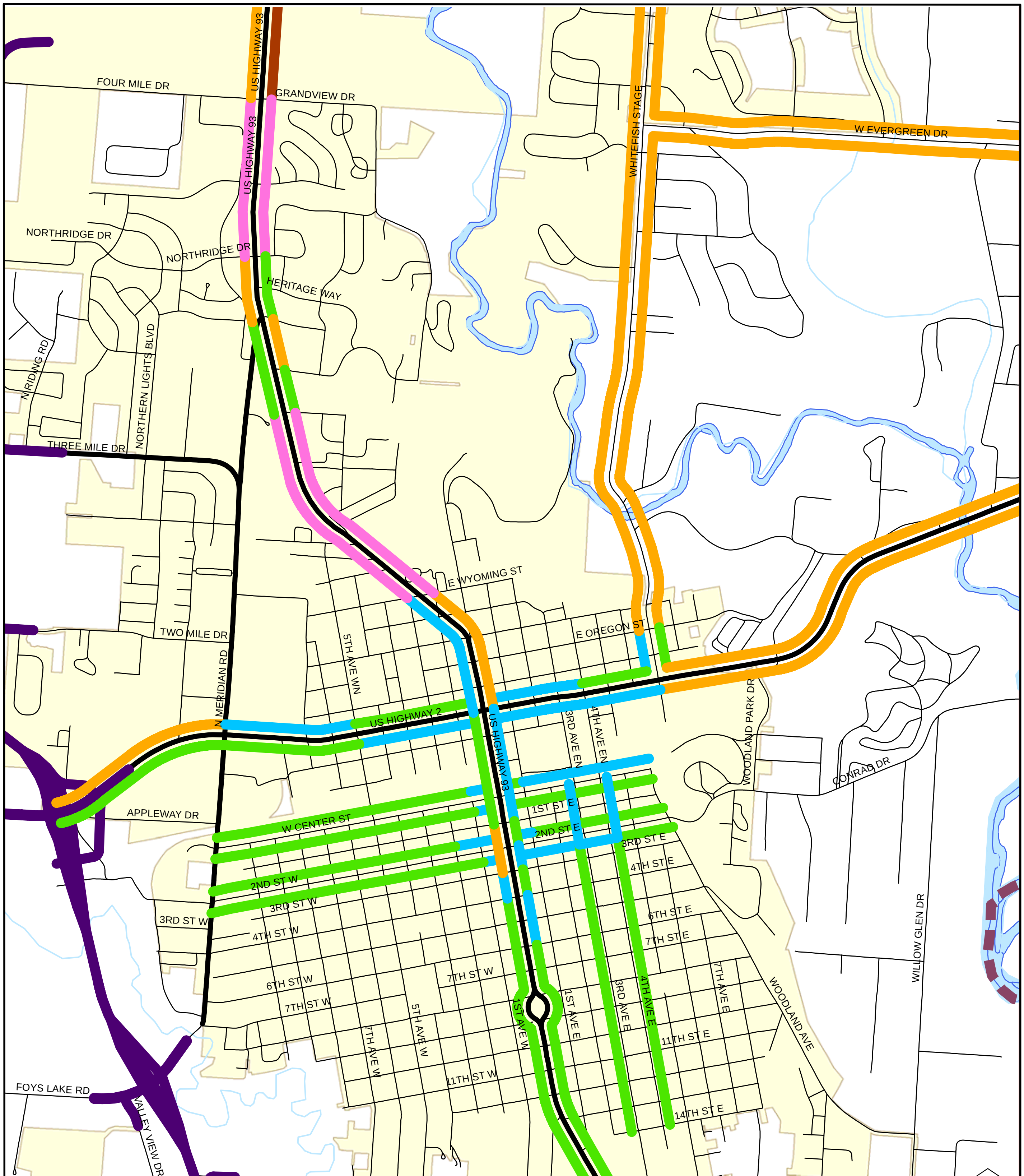
RUNNING SPEED

- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

Figure 2-23

Average P.M. Travel Speed



KALISPELL
AREA TRANSPORTATION PLAN (2006 UPDATE)

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RUNNING SPEED
- LESS THAN 15 MPH
- 15 - 24 MPH
- 25 - 34 MPH
- 35 - 44 MPH
- 45 MPH OR GREATER
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

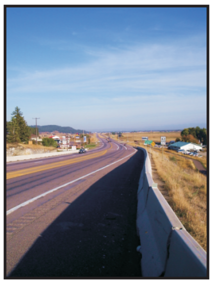
Travel speeds are depicted on both sides of the roadway to indicate directional speed variations.

0 1,000 2,000
Scale in Feet

N

Figure 2-24
Average P.M. Travel Speed

Chapter 3: Travel Demand Forecasting



CHAPTER 3: TRAVEL DEMAND FORECASTING

The method and process developed to predict growth in the Greater Kalispell area over the next twenty years is described in this chapter of the Transportation Plan. Using population, employment and other socio-economic trends as aids, the future transportation requirements of the Greater Kalispell area was defined. A model of the transportation system of the Greater Kalispell area was built, and the additions and changes to the system that are projected to occur over the next twenty years were entered into the model to forecast the future transportation conditions. From this, various scenarios were developed to test a range of transportation improvements to establish their affects on the transportation system.

3.1 SOCIO-ECONOMIC TRENDS

There is a direct correlation between motor vehicle travel growth and population and economic growth. In the greater Kalispell area, this is also supplemented by the large influx of seasonal traffic during the peak summer travel season. Recently, population growth has experienced a significant climb. This is evidenced by the extreme growth that occurred in Flathead County between 1990 and 2000, and accounted for a 25.8 percent increase in Flathead County population growth alone. **Table 3-1** shows that from 1970 through 2000, the county's population almost doubled, increasing by an estimated 35,011 persons. In 2005, the county's population is estimated to be 83,480. Likewise, the county's employment data indicate an increase of 33,651 jobs, more than double that exhibited in 1970. **Figure 3-1** shows the Flathead County population and employment trends between 1970 and 2005 (estimated) in a graphical format.

Table 3-1
Flathead County
Population and Employment Trends (1970-2005)

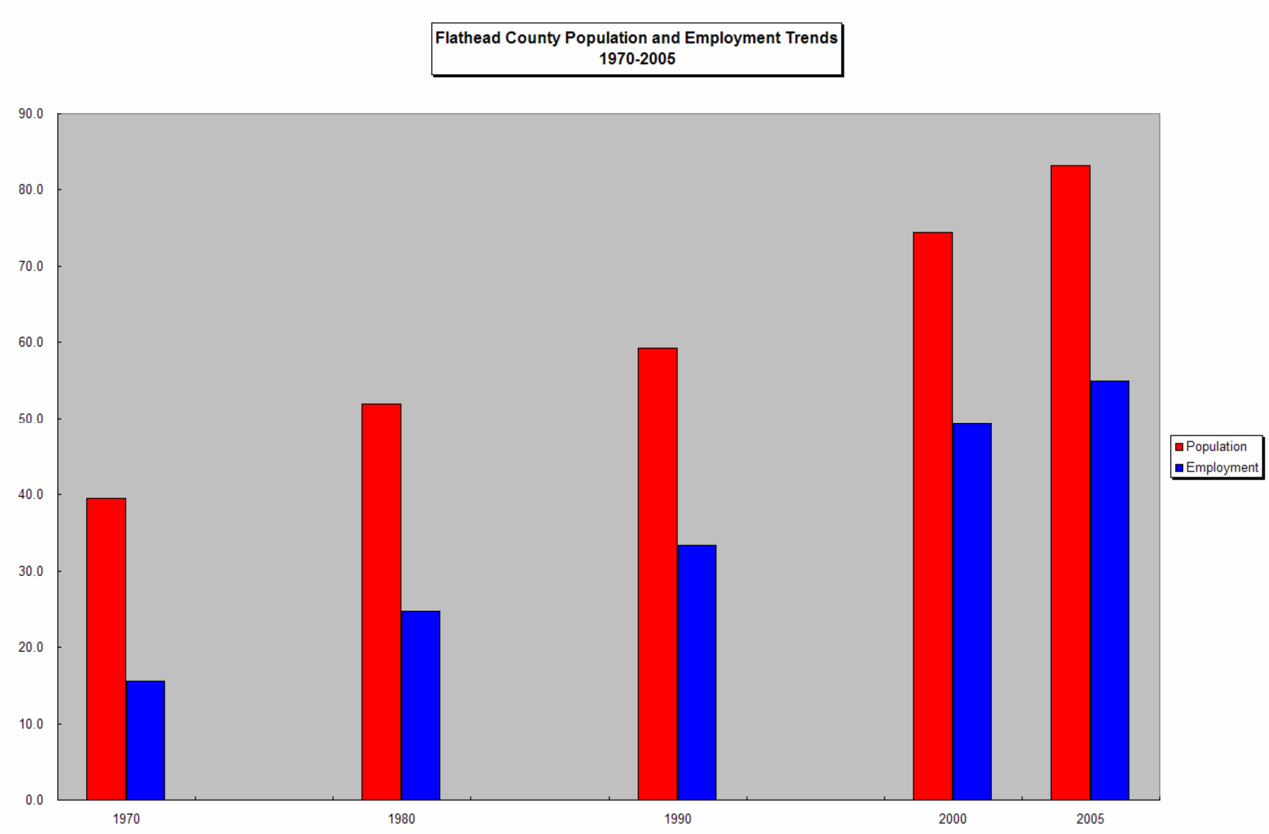
Year	Population	Employment*
1970	39,460	15,627
1980	51,966	24,705
1990	59,218	33,258
2000	74,471	49,278
2005**	83,172	54,942

Source: US Bureau of the Census, Census of Population (1970 thru 2000)

* Employment data is number of jobs, not number of employed people.

** Population and employment data for 2005 are estimates.

Figure 3-1
Flathead County
Population and Employment Trends (1970-2005)



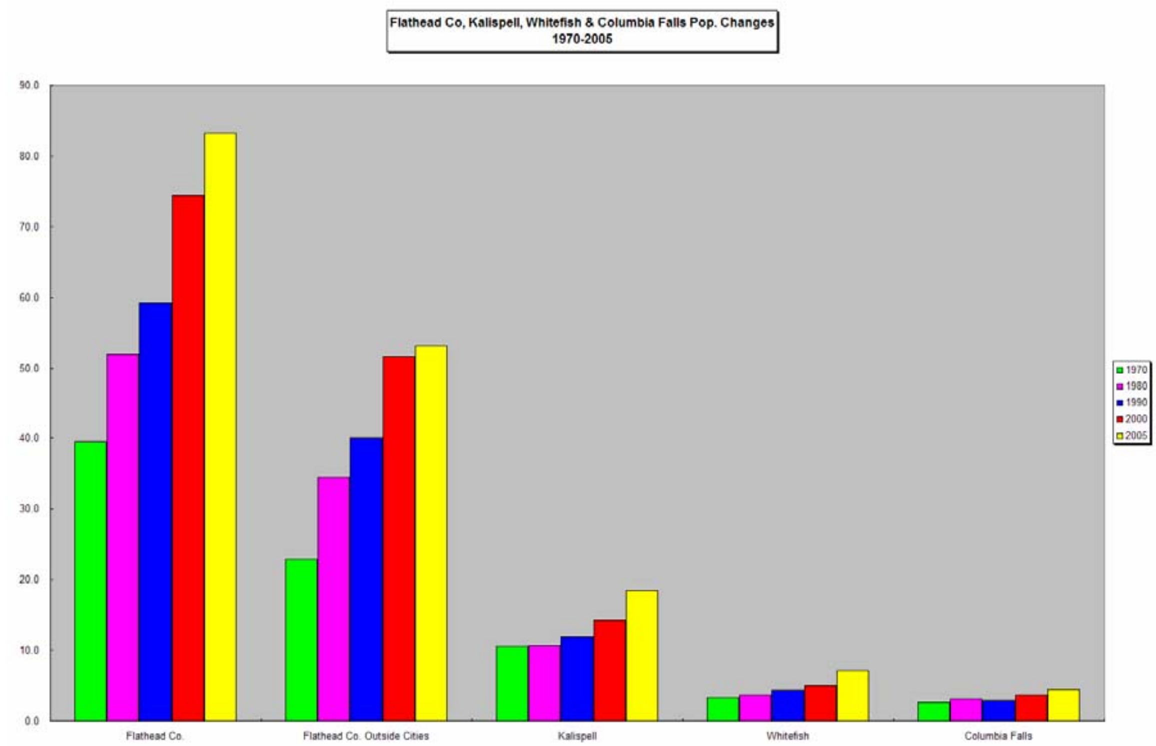
These population trends can further be analyzed by examining the amount of population within the cities contained within Flathead County and the incorporated areas (i.e. Kalispell, Whitefish and Columbia Falls), in comparison to the total population of Flathead County. **Table 3-2** shows the historic population trends for the greater Kalispell area from 1970 through 2005. **Figure 3-2** presents this information graphically.

Table 3-2
Greater Kalispell Area
Historic Population Trends (1970-2005)

Year	Flathead County Population	City of Kalispell Population	City of Columbia Falls Population	City of Whitefish Population	Rural Flathead County Population
1970	39,460	10,526	2,652	3,349	22,933
1980	51,966	10,689	3,112	3,703	34,462
1990	59,218	11,917	2,921	4,368	40,012
2000	74,471	14,223	3,645	5,032	51,571
2005**	83,172	18,480	4,440	7,067	53,185

Source: US Bureau of the Census, Census of Population (1970 thru 2000)
** Population data for 2005 are estimates as of July 1, 2005.

Figure 3-2
Greater Kalispell Area
Historic Population Trends (1970-2005)



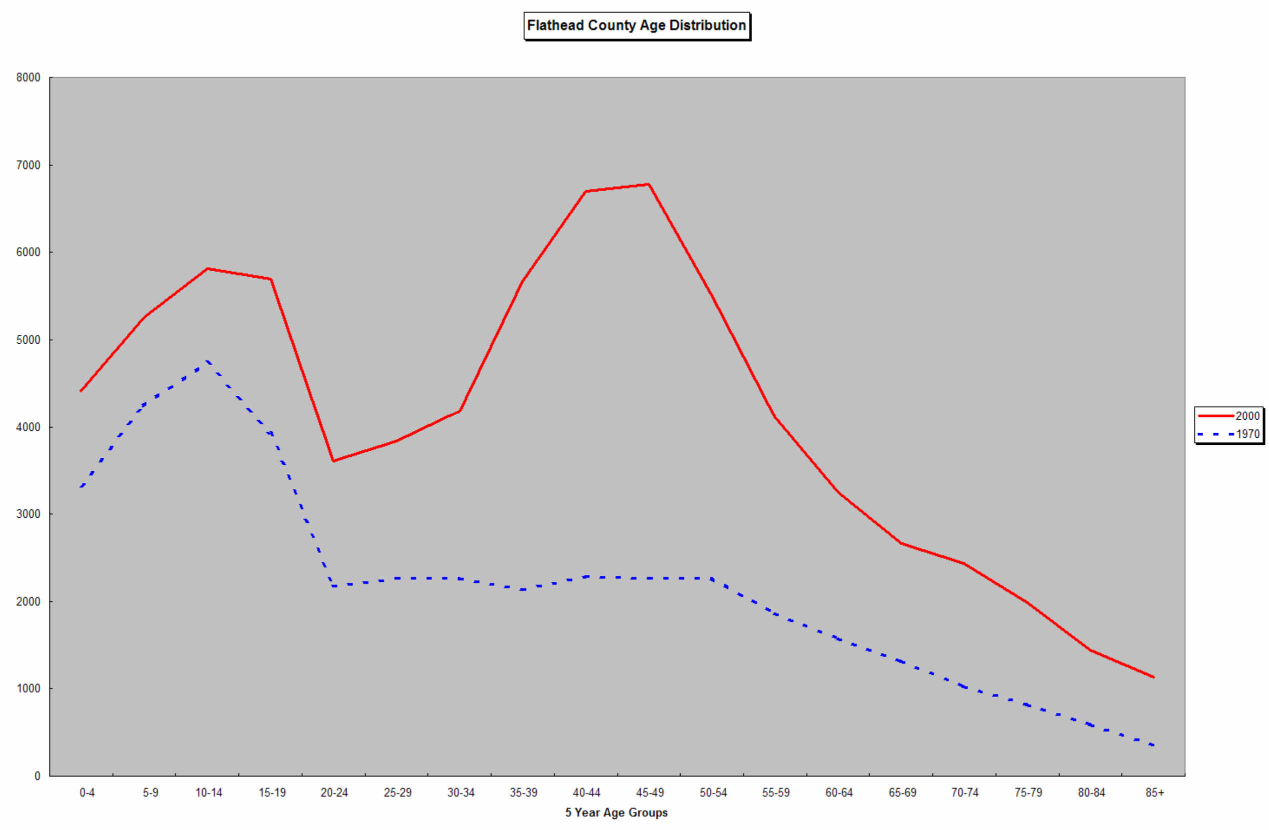
In recent decades there were other notable changes in Flathead County's population. In Flathead County, and elsewhere in Montana and the nation, the population's age profile got older. Between 1970 and 2000, the number of county residents under the age of 16 increased by 3,181 persons, residents age 16 to 64 increased by 26,298 persons, and residents 65 and older increased by 5,532 persons. This can be seen in **Table 3-3**. As "Baby Boomers" got older, they simply had fewer children than their parents. This information is also shown graphically on **Figure 3-3**.

Table 3-3
Comparison of County Resident Age Distribution (1970-2000)

Age Group	1970	2000	30-Yr Change
0-15	12,306 (31.2%)	15,487 (20.8%)	+3,181
16-64	23,030 (58.4%)	49,328 (66.2%)	+26,298
65+	4,124 (10.4%)	9,656 (13.0%)	+5,532
Total	39,460 (100.0%)	74,471 (100.0%)	+35,011

Source: US Bureau of the Census, Census of Population (1970 and 2000)

Figure 3-3
Comparison of County Resident Age Distribution
(1970-2000)



In 2000, the Flathead County economy supported an estimated 49,278 jobs. From 1970 to 2000, the number of jobs in Flathead County more than doubled, from 15,627 jobs in 1970 to 49,278 jobs in 2000. **Table 3-4** displays countywide employment by economic sector from 1970 through 2000. This information is shown graphically in **Figure 3-4**.

Another interesting breakdown of employment sectors in Flathead County is as shown in **Figure 3-5**. This graphic presents the Flathead County 2004 Employment, by economic center, as classified by the *North American Industry Classification System (NAICS)*. This figure shows graphically what the highest employment sectors are in the County. Interestingly enough, the retail industry is the largest employment base in the County, followed by construction, health care, tourism and manufacturing rounding out the top five employment categories.

Table 3-4
Flathead County Employment Trends
By Economic Sector (1970-2000)

Economic Sector	1970	1980	1990	2000	Change (1970-2000)
Farm Employment	730	975	994	1,124	394
Agricultural Services & Forestry	169	273	501	1,223	1,054
Mining	40	17	95	227	187
Construction	674	1,626	1,925	4,183	3,509
Manufacturing	3,345	4,095	4,127	5,106	1,761
Transportation & Public Utilities	1,327	1,928	1,803	2,205	878
Wholesale Trade	501	862	971	1,198	697
Retail Trade	2,831	4,634	6,443	9,873	7,042
Finance, Insurance & Real Estate	1,115	1,821	2,428	3,850	2,735
Services	2,484	4,969	9,832	15,600	13,116
Federal, Civilian Government	461	743	865	851	390
Military	416	318	459	389	(27)
State Government**	307	420	495	551	244
Local Government**	1,227	2,024	2,320	2,898	1,671
Totals	15,627	24,705	33,258	49,278	33,651

** Includes total full-time and part-time employment.*
*** For the year 1970, state & local government categories weren't separated. Numbers shown are estimates based on percentages observed from 1970 thru 2000.*
Source: US Department of Commerce, Bureau of Economic Analysis, REIS Data Series, 2000.

Figure 3-4
Employment Trends By Economic Sector
Flathead County (1970-2000)

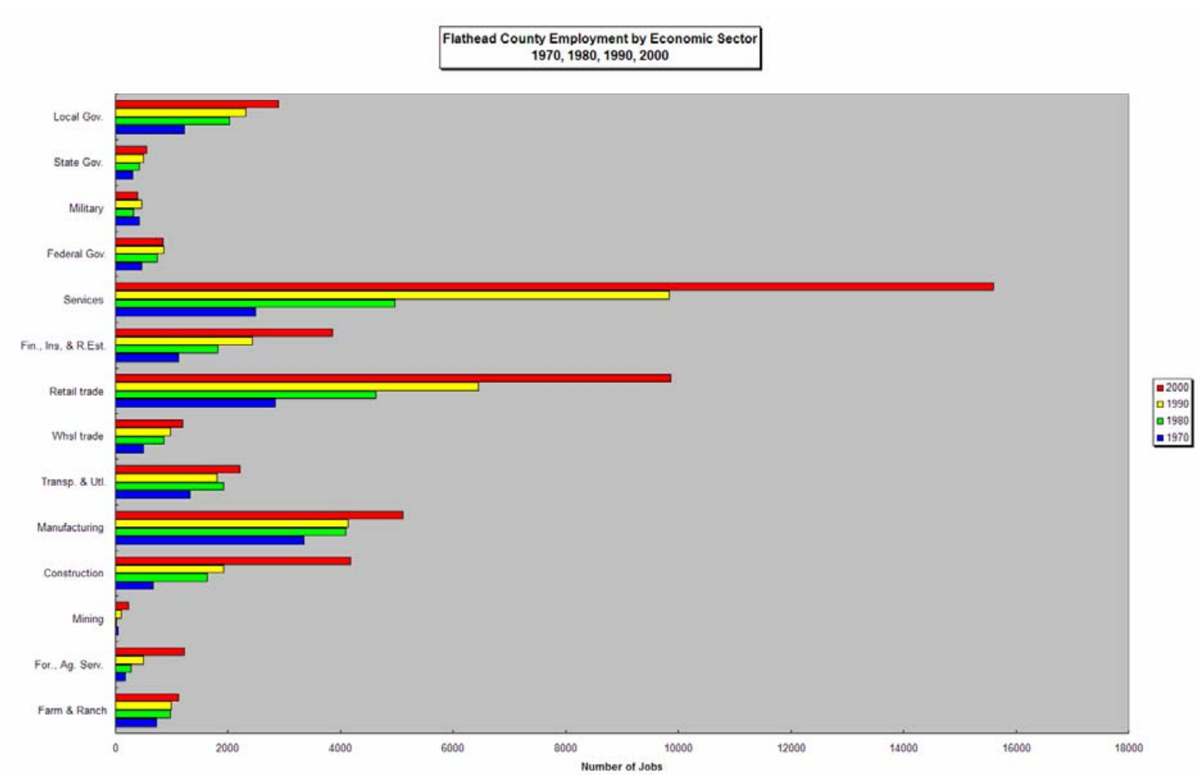
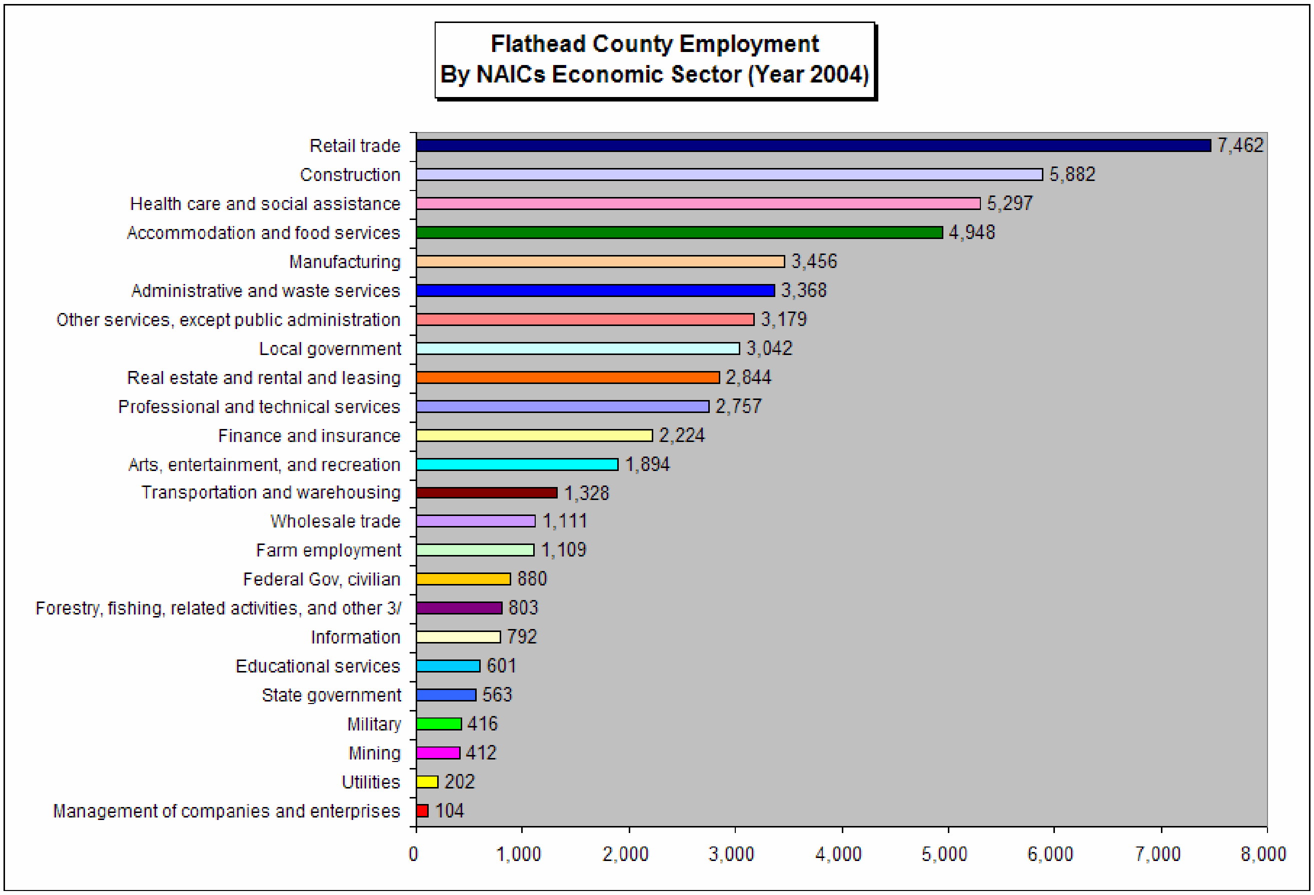


Figure 3-5
Employment Trends By NAIC Sector
Flathead County (2004)



The economic trend data presented in **Figure 3-4** and **Figure 3-5** is not surprising, given the fact that the retail and tourism sectors are large attractions to the Flathead Valley. Many of the top ten economic sectors are types of business that feed off of this sector and/or are directly dependent on this sector. The healthcare industry is also a booming industry. This trend is seen all over Montana, and is likely to continue. The boom in the healthcare industry especially is a “high-growth” sector both in the state of Montana and nationally. This is partly due to the aging of our population. The employment data presented in this section includes both full-time and part-time jobs. An interesting nuance over the past thirty years has been the change in workforce participation. There are many more women in the workforce now than there were thirty years ago. This relates partly to the change in demographics (families are having fewer children than thirty years ago) and also the availability of part-time jobs. Many part-time jobs include retail and tourism centered jobs, and these positions have attracted a greater proportion of women desiring part-time positions. In some cases, several part-time jobs are held. The fundamental importance of understanding economic trends is that eventually, the numbers and types of jobs equate to vehicle travel on our transportation system. Quantifying and understanding this is crucial for projecting population and employment characteristics out to the twenty-year planning horizon.

3.2 POPULATION AND EMPLOYMENT PROJECTIONS

Population and economic projections are used to predict future travel patterns, and to analyze the potential performance capabilities of the Greater Kalispell area transportation system. Projections of the study area's future population and employment are developed from both Flathead County trends (regression line projections), ongoing Growth Policy discussions, and estimates contained in the City of Kalispell *Utility Plan Update*. Three projection scenarios are provided through the year 2030 (the planning horizon).

The basic scenario that is presented is referred to as the "Moderate Growth" scenario. This is the scenario that is most likely to occur, based on past trends and what has happened in other Montana community's over the past thirty years. This scenario was selected as the basis for the transportation modeling, and represents a continuation of the current population and growth trends already observed as presented in **Section 3.1**, such that adequate services and infrastructure will be planned for if the current levels of development continue. It assumes that the Flathead County population and economy will continue to grow at the same rate it has in the past decade. If this growth rate pattern does not develop further, or is not sustained, then demand will not occur as planned for in this Transportation Plan, and projects may be delayed or avoided. A second scenario was also developed, and is referred to as the "Low Growth" scenario. It builds from much of the population and employment trends that were realized in the 1980's, where economic growth was fairly flat due to many different circumstances. Lastly, a third growth scenario, referred to as a "High Growth" situation, was developed to reflect a more aggressive growth pattern in both population and employment. This growth trend is patterned after population and employment trends that were realized between 2000 and 2005, where economic growth was fairly higher than past years.

A breakdown of the population and employment projections produced in each scenario, on a countywide basis for Flathead County, are presented in **Table 3-5** and shown graphically in **Figure 3-6** and **Figure 3-7**.

Table 3-5
Flathead County
Population and Employment Projections (2005-2030)

Year	Low Growth		Moderate Growth		High Growth	
	Population (1.31%)	Employment (1.00%)	Population (1.59%)	Employment (1.88%)	Population (2.23%)	Employment (4.01%)
2005	83,172	54,942	83,172	54,942	83,172	54,942
2010	88,764	57,745	89,675	60,313	92,869	66,877
2015	94,733	60,690	97,127	66,210	103,696	81,406
2020	101,102	63,786	104,713	72,683	115,785	99,090
2025	107,901	67,040	112,516	79,788	129,284	120,616
2030	115,156	70,459	121,778	87,589	144,356	146,819

Figure 3-6
Flathead County Population Projections (2005-2030)

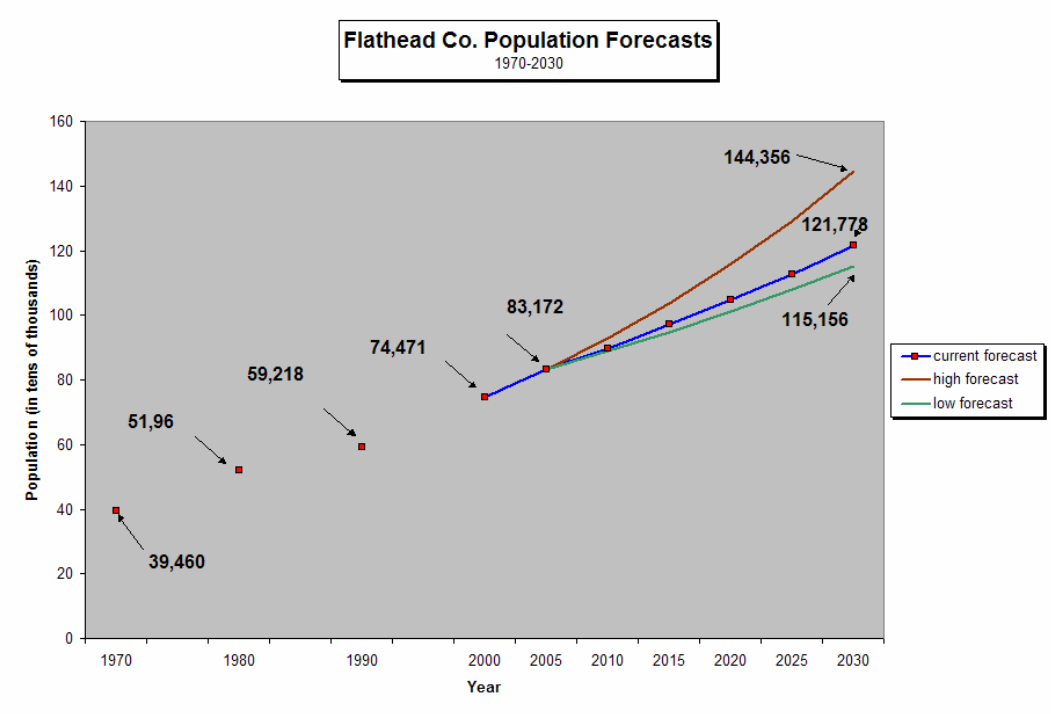
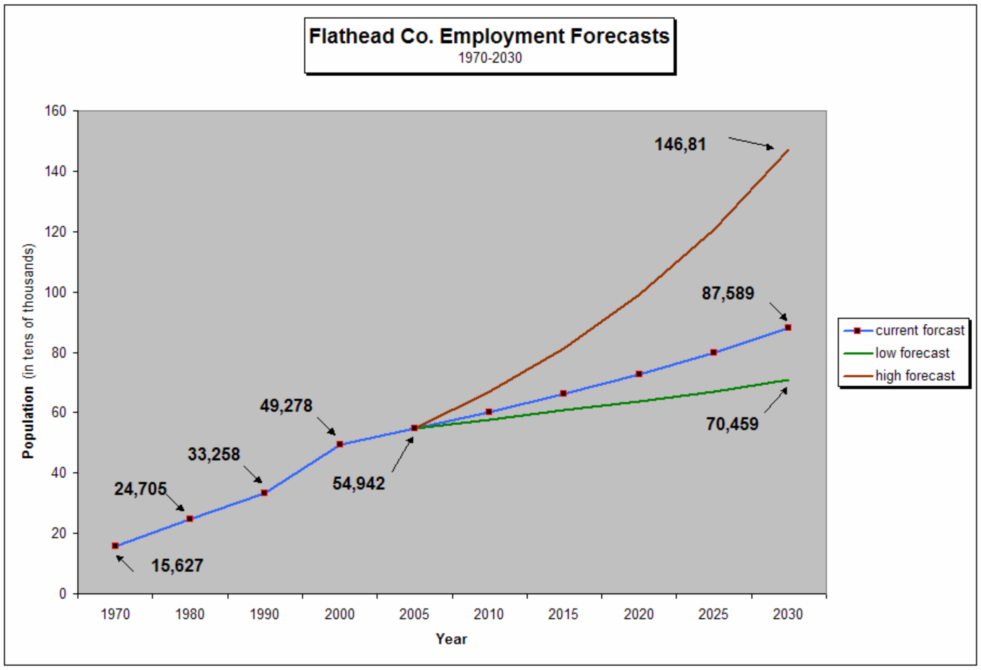


Figure 3-7
Flathead County Employment Projections (2005-2030)



The projections of population and employment presented above are for the entire area of Flathead County. The study area boundary for this Transportation Plan, however, is much smaller. Although County level projections are satisfactory to establish the overall growth rates and scenarios for future population and employment, this data must be reduced to accommodate the area within the planning boundary of the Transportation Plan. Forecasting for areas within the study area boundary were completed via the recent City of Kalispell *Water Utility Plan Update* by HDR Engineering. This document, which has the same study area boundary as the Transportation Plan project, forecasts population growth out to the planning year of 2050. Although several different growth scenarios were utilized, the ultimate growth scenario selected amounted to a growth rate of 3.0 percent per year within the study area boundary. That particular document estimated there was a population of 39,282 people within the study area boundary. A projected population of 79,273 was made within the study area boundary utilizing the selected 3.0 percent growth rate per year out to the year 2030. This is important to recognize, as the current Flathead County *Growth Policy Update* utilizes a much slower growth rate of 1.59 percent per year over the next twenty years. Because of the difference in growth rates, nearly all of the expected Flathead County growth would occur within the study area boundary of this Transportation Plan. This is counterintuitive, as some growth obviously will continue outside of Kalispell proper (for example Columbia Falls, Whitefish, rural areas, etc.). Because of this phenomena, some ambient growth, over and above the expected population increase of 39,991 people within the study area boundary, was assigned to derive external trips utilizing the Kalispell roadway network. This was also the case for projected employment forecasts (32,647 additional jobs), but to a much lesser extent (i.e. a greater percentage of these jobs were assigned to outside of the study area boundary). This is shown in further detail below in **Table 3-6**. Note that the difference in year 2030 and year 2005 numbers are the "forecasts" within the study area boundary that must be assigned to census tracts to evaluate the travel demand model.

Table 3-6
Transportation Plan Study Area Boundary – Control Totals (Moderate Scenario)
Total Projected Population and Employment (2030)

Land Use Designation	Study Area Boundary (2005)	Remainder Flathead County (2005)	Total Flathead County (2005)	Study Area Boundary (2030)	Remainder Flathead County (2030)	Total Flathead County (2030)
Total Households *	15,713 {39,282 people}	17,086 {42,714 people}	32,799 {83,172 people}	31,709 {79,273 people}	17,220 {42,505 people}	48,711 {121,778 people}
Retail Employment **	3,741 jobs	4,052 jobs	7,793 jobs	8,498	4,576	13,074 jobs
Non-Retail Employment **	22,632 jobs	24,517 jobs	47,149 jobs	48,435	26,080	74,515 jobs

* A household is expected to consist of 2.5 people.
** Jobs are proportioned between the study area boundary and the rest of the County using percentages from population forecasts.

Assignments: <u>**Within Study Area Boundary**</u>

Households	15,996
Retail	4,757
Non-Retail	25,803

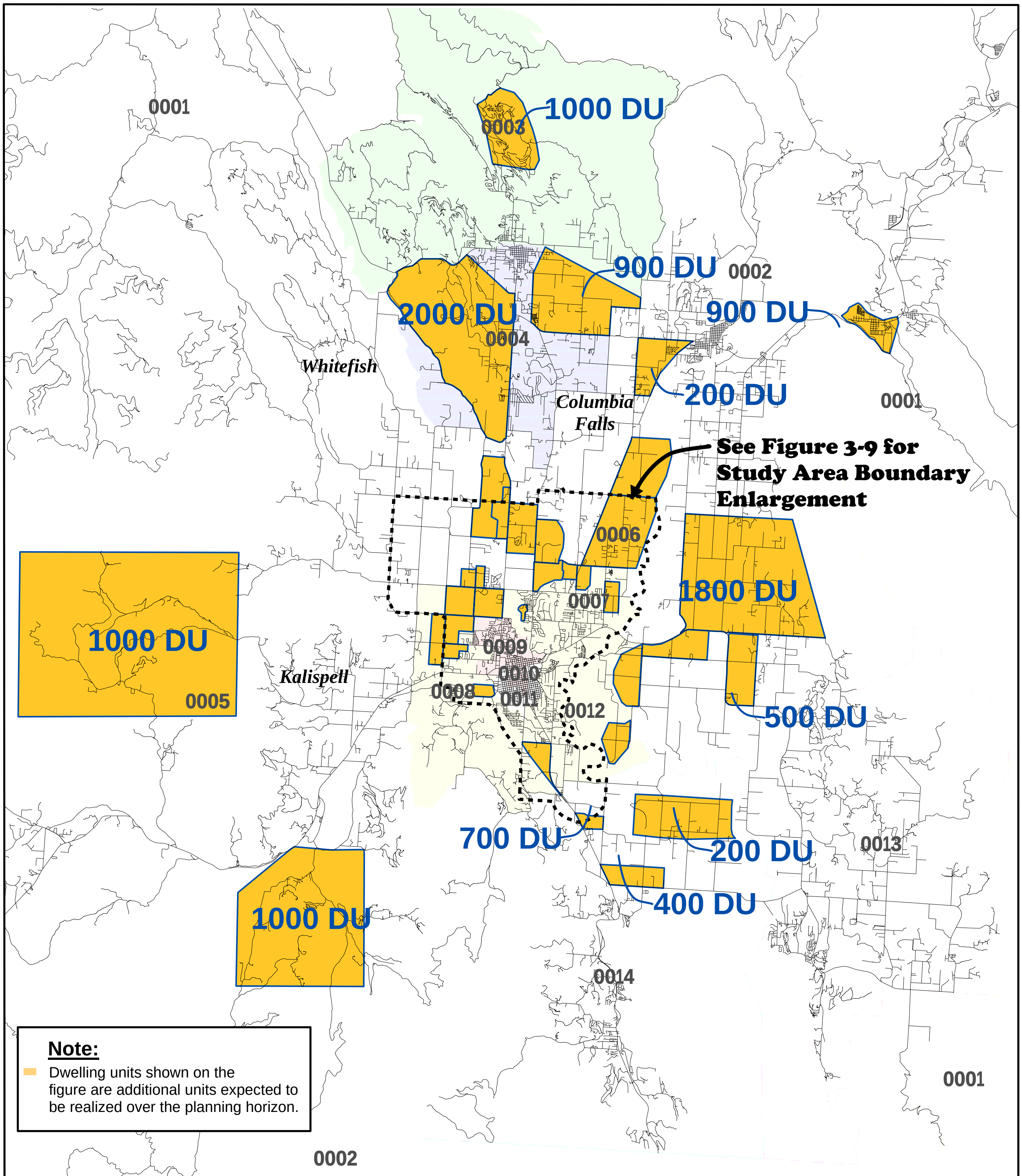
3.3 ALLOCATION OF GROWTH WITHIN THE STUDY AREA

Montana Department of Transportation's modeling of future traveling patterns out to the year 2030 planning horizon required identification of future socioeconomic characteristics within each census tract and census block. County population and employment projections were translated to predictions of increases in housing and employment within the Greater Kalispell area transportation study area boundary. To accomplish this task, a "Land Use Advisory Committee" was formed to discuss and reach consensus on the distribution of future housing and employment growth in the planning area. The committee's membership was recruited from the staff of public agencies and utilities familiar with ongoing development trends in the "Greater Kalispell" area. The committee included staff from the following organizations:

- Kalispell Public Works Department (2 representatives);
- Kalispell Planning Department (2 representatives);
- Flathead County Planning Department (1 representative);
- Montana Department of Transportation (2 representatives); and
- Robert Peccia & Associates (2 representatives).

The committee's work considered recent land use trends, land availability and development capabilities, land use regulations, planned public improvements, and known development proposals. It also included a review of the previous land use assumptions associated with the recently approved *US 93 Somers to Whitefish West (Kalispell Bypass Only) Re-evaluation*. The Land Use Advisory Committee predicted significant new housing development in the outlying areas of the city of Kalispell proper. Intensive residential development will be occurring to the northwest of the city limits (i.e. west of US Highway 93). Additionally, current development patterns east of the Flathead River will elevate over the next twenty years. There are currently many large development proposals being considered in the overall study area boundary area. Another area predicted to experience substantial residential growth is immediately north of Foys Lake Road, as well as areas south of Reserve Drive on both sides of Stillwater Road. This area is presently developing in phases, and the area will be realizing significant residential growth over the next twenty years. **Figure 3-8** and **Figure 3-9** show approximate locations of predicted residential growth over the planning horizon (i.e. year 2030).

Considerable additional commercial development and employment will occur both west and east of US Highway 93 over the coming years. Growth associated with changes to "Section 36", the proposed Glacier Mall, and the developing Hutton Ranch will all serve to increase jobs in the study area boundary. The area around the Glacier International Airport will see growth over the coming years and will exhibit a variety of mixed-use development. Other areas to see intensive commercial growth are the Old School Station (south of the city proper along US Highway 93), areas near the intersection of MT 82 and US Highway 93, areas around the proposed interchanges to the US Highway 93 Bypass, and isolated in-fill areas within the city proper.
Kalispell will also continue to experience growth in the medical services industry. **Figure 3-10** shows approximate "retail" and "non-retail" forecasts for each of the census tracts that contribute to effects on the existing and future transportation system.



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

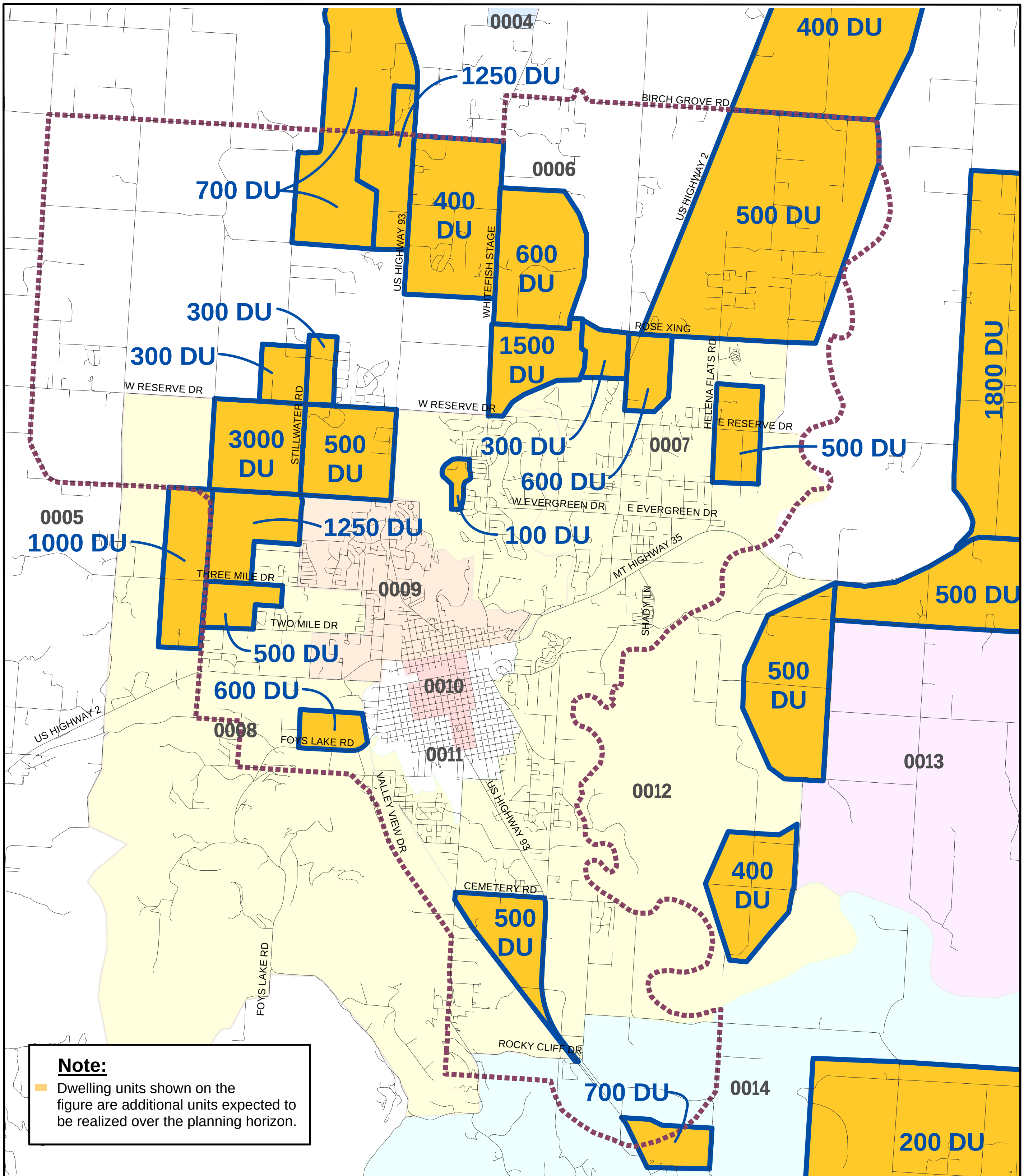
ROBERT PECCIA & ASSOCIATES

ESTIMATED FUTURE DEVELOPMENT (DU = DWELLING UNITS)
0006 U.S. CENSUS TRACT DESIGNATION
TRANSPORTATION PLAN BOUNDARY

0 0.5 1 2 3 4 5
Miles

N

Figure 3-8
Land Use Forecasting Residential



Note:
Dwelling units shown on the figure are additional units expected to be realized over the planning horizon.

KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

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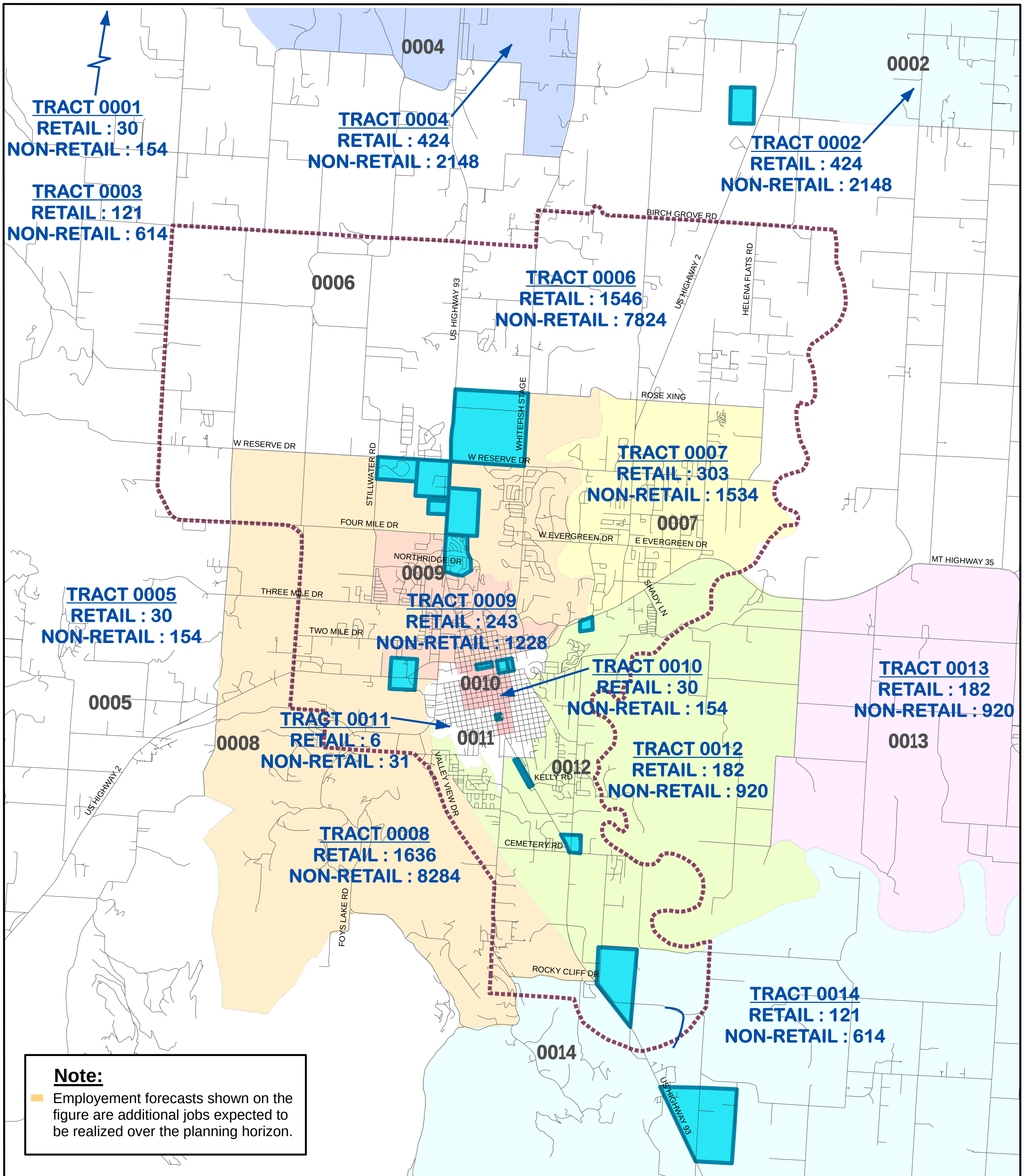
ESTIMATED FUTURE DEVELOPMENT (DU = DWELLING UNITS)
0006 U.S. CENSUS TRACT DESIGNATION
TRANSPORTATION PLAN BOUNDARY

0 2,000 4,000 8,000
Feet

Figure 3-9
Land Use Forecasting Residential



Note:
Employement forecasts shown on the figure are additional jobs expected to be realized over the planning horizon.

KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

ESTIMATED FUTURE DEVELOPMENT FOR EMPLOYMENT OPPORTUNITIES
0006 U.S. CENSUS TRACT DESIGNATION
TRANSPORTATION PLAN BOUNDARY

0 2,500 5,000 10,000
Feet

Figure 3-10
Land Use Forecasting Employment

Residential forecasts were delivered graphically for unit assignments by MDT staff based on **Figure 3-8** and **Figure 3-9**. Employment forecasts are much more difficult to incorporate into the travel demand model. For employment forecasts, Robert Peccia and Associates took the employment forecasts for each census tract and manually assigned them to census blocks using handwritten notes on 11-inch x 17-inch graphics. These were then placed into a spreadsheet for delivery to the MDT Statewide and Urban Planning Section. The relevant assignments are as noted below in **Table 3-7** and **Table 3-8**.

Table 3-7
Year 2030 Employment Forecast "Adjustments" *

Census Tract	Year 2030 Employment Increase **	Year 2030 Employment (Adjusted)	Year 2030 Retail Increase (16.5%)	Year 2030 Non-Retail Increase (83.5%)
1	195	184	30	154
2	2,726	2,572	424	2,148
3	779	735	121	614
4	2,726	2,572	424	2,148
5	195	184	30	154
6				
6.1	195	184	30	154
6.2	7,788	7,349	1,213	6,136
6.3	1,947	1,837	303	1,534
7	1,947	1,837	303	1,534
8				
8.1	3,894	3,674	606	3,068
8.2	5,841	5,512	909	4,602
8.3	779	735	121	614
9	1,558	1,470	243	1,228
10	195	184	30	154
11	39	37	6	31
12	1,168	1,102	182	920
13	1,168	1,102	182	920
14	779	735	121	614
Totals	**33,919**	**32,006**	**5,281**	**26,725**

* Slight adjustments to forecasts contained in the <u>*US 93 Somers to Whitefish West (Kalispell Bypass Only) Re-evaluation*</u> were made due to modified quarterly projections from the Montana Department of Commerce.
** Year 2030 Employment Increase (Stelling et al – <u>*Kalispell Bypass Traffic Forecasting Report*</u>)

Table 3-8
Year 2030 Employment Forecasts

Census Tract	Census Block	Forecasted "Retail" Jobs	Forecasted "Non-retail" Jobs
1	4028	5	25
1	4033	5	25
1	4034	5	25
1	4035	5	25
1	4038	5	29
1	4086	5	25
		30	**154**
2	2003		100

2	2004		100
2	2012	50	200
2	2013	50	200
2	2019	50	200
2	2034		98
2	2063	25	100
2	2067	25	100
2	2068	25	100
2	2074	50	200
2	2076	25	100
2	7002	24	50
2	7006	25	300
2	7009	25	100
2	7032	25	100
2	7033	25	100
		424	**2148**
3	2010	16	65
3	2012	16	65
3	2013	16	65
3	2015	16	89
3	2038	25	200
3	3000	16	65
3	3012	16	65
		121	**614**
4	1001	50	50
4	1005	150	400
4	1006		100
4	1025	25	200
4	1031	25	200
4	1034		73
4	2000		50
4	2065		100
4	2067		200
4	5041		50
4	7000	50	50
4	7003		50
4	7004	24	350
4	7006	50	100
4	7036	50	75
4	7037		100
		424	**2148**
5	4000	10	27
5	5009	10	100
5	5013	10	27
		30	**154**
6	1014		200
6	1026		200
6	1035		49
6	2008		300

6	2010		500
6	2011		200
6	2017		200
6	2018		500
6	2019		100
6	2020	1250	1800
6	2022		75
6	2023	100	1500
6	2028	100	100
6	3007	25	500
6	3026	10	200
6	3027	16	300
6	3033	10	200
6	3039	10	200
6	3041	25	700
		1546	**7824**
7	1000		34
7	1001	25	150
7	1007	25	100
7	1010		400
7	2004		75
7	2006		75
7	2011		100
7	2015	50	100
7	3005	28	150
7	3010	50	100
7	4008		100
7	5006	50	50
7	5016	75	100
		303	**1534**
8	1000	400	2000
8	1001		1000
8	1003		300
8	1004		450
8	1005		450
8	1010		300
8	1011		300
8	1015	100	150
8	1016		100
8	1018		100
8	1022		50
8	1031	50	75
8	1039	50	75
8	2000		150
8	2004		50
8	2005	500	500
8	2006	100	500
8	2060		50
8	3003	300	600

8	3009		100
8	3011	50	75
8	3017		200
8	3028	25	150
8	3029	20	59
8	3030	30	250
8	3031	11	250
		1636	**8284**
9	1005		50
9	1006		50
9	1009		100
9	2002		53
9	2004	15	100
9	2012		
9	2013	18	100
9	2014		
9	2015		50
9	2016		
9	4006		100
9	4022		200
9	5007		100
9	5013	75	150
9	5015	75	100
9	5016	10	25
9	5017	50	50
		243	**1228**
10	1014	10	
10	1015	10	
10	1016	10	
10	1018		30
10	1019		30
10	1020		30
10	1026		30
10	1071		34
		30	**154**
11	5003	4	21
11	5004	2	10
		6	**31**
12	1012	75	
12	1013	75	
12	4038	17	
12	4040		200
12	5001		100
12	5003		10
12	5005		200
12	5027		50
12	5028		50
12	5030		100
12	5031		10

12	5033		100
12	5041		50
12	5042	15	
12	5043		50
		182	**920**
13	1004		50
13	1009	30	60
13	1014	10	50
13	1016		50
13	1020		50
13	1028	10	50
13	1045	15	100
13	3069	15	100
13	5004		60
13	5005	15	100
13	5008	32	75
13	5009	15	100
13	5028	40	75
		182	**920**
14	1007	60	300
14	1008	30	150
14	1028		64
14	1030	31	100
		121	**614**
Totals		***5,281***	***26,725***

3.4 COMMITTED TRANSPORTATION IMPROVEMENTS

During the development of the traffic model, the existing road network is coded into the computer. This existing network is often called the "E Network." Once the "E Network" is developed, the next step is to consider and incorporate (as appropriate) all committed improvement projects. Generally, committed improvements listed are only considered if they are likely to be constructed within a five-year timeframe (i.e. year 2006 through the year 2011), and a funding source has been identified and is assigned to the specific project. Committed projects are only listed if the project will affect capacity and/or delay characteristics of a roadway facility and/or intersection. This distinction is necessary since some committed improvement projects, likely to occur within the next five years, are not listed here since they will not have an effect on the traffic model. The addition of the committed improvements through year 2011 with the existing roadway network produces what is known as the "Existing plus Committed" network (referred to as the E+C Network). It is the E+C Network that is used for all future year analyses.

A comment should be made about the *US 93 Somers to Whitefish West (Kalispell Bypass Only) EIS Re-evaluation*. Although this recent project has identified the alignment and design parameters for the entire US Highway 93 Bypass, it is not readily apparent if and when the entire Bypass construction will begin and be completed. As such, it is not prudent to treat the entire Bypass as a "committed" project for travel demand modeling purposes. Different variations of modeling portions of the Bypass were treated as a "Network Alternative Test Runs" as described in **section 3.7** of this chapter. The committed improvements included in the modeling process are listed below.

CMSN-1: Reserve Drive Loop Connector (from Stillwater Road to U.S. Highway 93)
This committed project was constructed during the summer of 2007 in such a manner to complement the future US Highway 93 By-pass project (not committed) and serve developing areas within section 36. The roadway was built to a four-lane roadway section, with center turn lanes, and began at the intersection of Stillwater Road and West Reserve Drive. From the intersection, it traverses east to just past the new Glacier High School, bends in a south and easterly direction, and then ties in to US Highway 93 across from the Hutton Plaza Ranch mixed-use development. The intersection of Stillwater and Reserve Drive is a single-lane roundabout, while the intersection of with US Highway 93 is a conventional traffic signal control intersection.

CMSN-2: Old Steel Bridge Replacement
The Old Steel Bridge is presently a single lane bridge across the Flathead River located east of the Conrad Drive/Shady Lane area and technically along the alignment of Holt Stage Road. It is slated for replacement with a modern two-way bridge during the year 2009.

CMSN-3: US Highway 93 (North of Kalispell city limits)
The reconstruction of US Highway 93 from the existing two-lane facility will be constructed to four-lanes between the northern Kalispell city limits to Happy (Hidden) Valley Road, approximately five miles to the north and half way to Whitefish. Construction is scheduled for 2008. This project also includes a new

modified interchange at Church Drive. Church Drive, on the west side of US 93, will connect to the revised Highway 93 via a new interchange.

3.5 TRAFFIC MODEL DEVELOPMENT

All of the characteristics of the various areas of the greater Kalispell area combine to create the traffic patterns present in the community today. To build a model to represent this condition, the population information was collected from the 2000 census, and employment information was gathered from the Montana Department of Labor and Industry, second quarter of 2006, and was carefully scrutinized by local agency planners and MDT modeling staff.

The roadway network / centerline information was provided by the Flathead County GIS office. This information was substantially supplemented by input from staff at the City of Kalispell, Flathead County, and the Montana Department of Transportation who have substantial local knowledge and were able to increase the accuracy of the base model.

The GIS files, population census information, and employment information are readily available. The TransCAD software is designed to use this information as input data. TransCAD has been developed by the Caliper Corporation of Newton, Massachusetts, and version 4.0 was used as the transportation modeling software for this project. TransCAD performs a normal modeling process of generating, distributing and assigning traffic in order to generate traffic volumes. These traffic volumes are then compared to actual ground counts and adjustments are made to "calibrate", or ensure the accuracy of, the model. This is further explained below:

<u>Trip Generation</u> - Trip Generation consists of applying nationally developed trip rates to land use quantities by the type of land use in the area. The trip generation step actually consists of two individual steps: trip production and trip attraction. Trip production and trip attraction helps to "explain" why the trip is made. Trip production is based on relating trips to various household characteristics. Trip attraction considers activities that might attract trip makers, such as offices, shopping centers, schools, hospitals and other households. The number of productions and attractions in the area is determined and is then used in the distribution phase.

<u>Trip Distribution</u> - Trip distribution is the process in which a trip from one area is connected with a trip from another area. These trips are referred to as trip exchanges.

<u>Mode Split</u> - Mode choice is the process by which the amount of travel will be made by each available mode of transportation. There are two major types: automobile and transit. The automobile mode is generally split into drive alone and shared ride modes. For the Kalispell travel demand model, there were no "mode split" assignments (i.e. all trips are assumed to be automobile mode).

<u>Trip Assignment</u> - Once the trip distribution element is completed, the trip assignment tags those trips to the Major Street Network (MSN). The variable that influence this are travel time, length, and capacity.

Due to the inherent characteristics of a traffic model, it is easy to add a road segment, or "link", where none exists now or widen an existing road and see what affect these changes will have on the transportation system. Additional housing and employment centers can be added to the system to model future conditions, and moved to different parts of the model area to see what affect different growth scenarios have on the transportation system. Thus the land use changes anticipated between now and 2030 can be added to the transportation system, and the needed additions to the transportation system can then be identified. Additionally, different scenarios for how the Greater Kalispell area may grow between now and 2030 can be examined to determine the need for additional infrastructure depending upon which one most accurately represents actual growth.

To develop a transportation model, the modeling area must be established. The modeling area is, by necessity, much larger than the Study Area. Traffic generated from outlying communities or areas contributes to the traffic load within the Study Area, and is therefore important to accuracy of the model. Additionally, it is desirable to have a large model area for use in future projects.

The future year model was developed specifically for the year 2030 planning horizon. The 2030 model is used in this document to evaluate future traffic volumes, since 2030 is the horizon year for this document. The information contained in **Sections 3.1, 3.2** and **3.3** was used to determine the additions and changes to the traffic volumes in 2030.

The modeling area was subdivided by using census tracts and census blocks, as previously described in this chapter. Census blocks are typically small in the downtown and existing neighborhood areas, and grow geographically larger in the less densely developed areas. The census blocks & census tracts were used to divide the population and employment growth anticipated to occur between now and 2030.

3.6 TRAFFIC VOLUME PROJECTIONS

The traffic model was used to produce traffic forecasts for the planning horizon year of 2030. For comparison purpose, traffic model results for the calibration year of 2003 are presented herein on **Figure 3-11** and **Figure 3-12**. Year 2030 traffic volume projections are presented in **Figure 3-13** and **Figure 3-14.** These projections indicate that the traffic volumes on some of the major corridors will increase significantly over the next 24 years. By the year 2030, traffic volumes on several sections of the major street network will increase to over 25,000 vehicles per day (vpd). These sections include:

- LaSalle Road (volumes range between 49,300 vpd to 51,100 vpd);
- US Highway 2 East (volumes range between 33,000 vpd to 34,600 vpd);
- US 93 North (volumes range between 30,000 vpd to 52,700 vpd)
- US 93 South (volumes range between 30,000 vpd and 34,500 vpd);
- Whitefish Stage Road (volumes range between 25,500 vpd and 30,500 vpd); and
- Idaho Street (volumes between 27,700 vpd and 40,500 vpd).

It is important to recognize that the volumes shown on **Figure 3-13** and **Figure 3-14** are based on the "Existing plus Committed" roadway network. In other words, these are the volumes if no changes to the transportation system are made other than those currently committed to. Similar graphics are presented in **Chapter 12** that show future year volumes based on a "recommended" transportation system network.

The placement of a the proposed US Highway 93 Bypass has a substantial effect on overall traffic flow with the full build out of the facility for its entire length. Several scenarios of the bypass were modeled and are presented later in **Chapter 3** as alternatives scenarios 1, 2 and 3. It must be reiterated, however, that by the strictest definition of a "committed" project, the US Highway 93 Bypass does not meet the relevant criteria. Significant efforts will be needed to forge ahead and realize the full benefit of the US Highway 93 Bypass through the Kalispell community.

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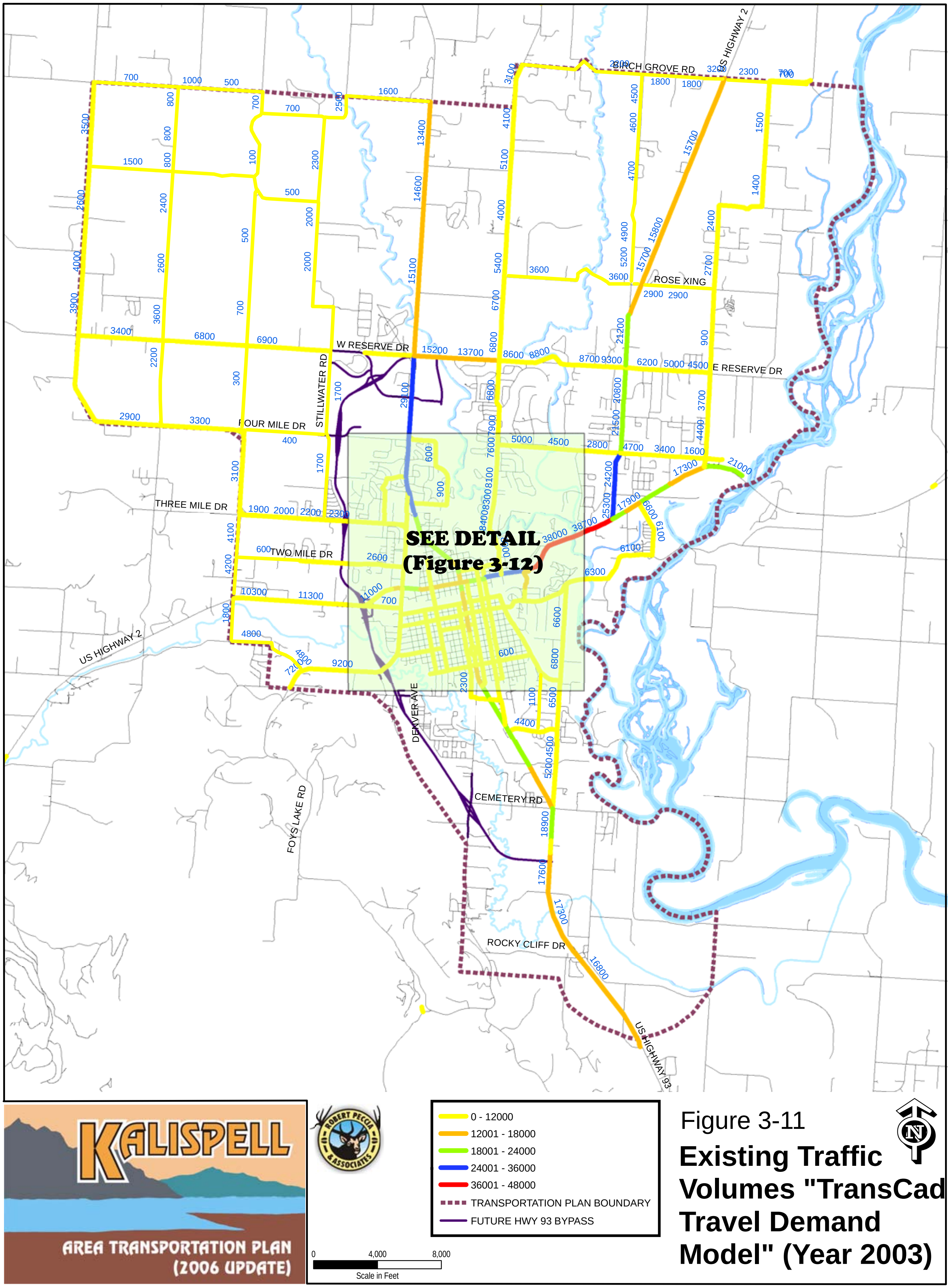

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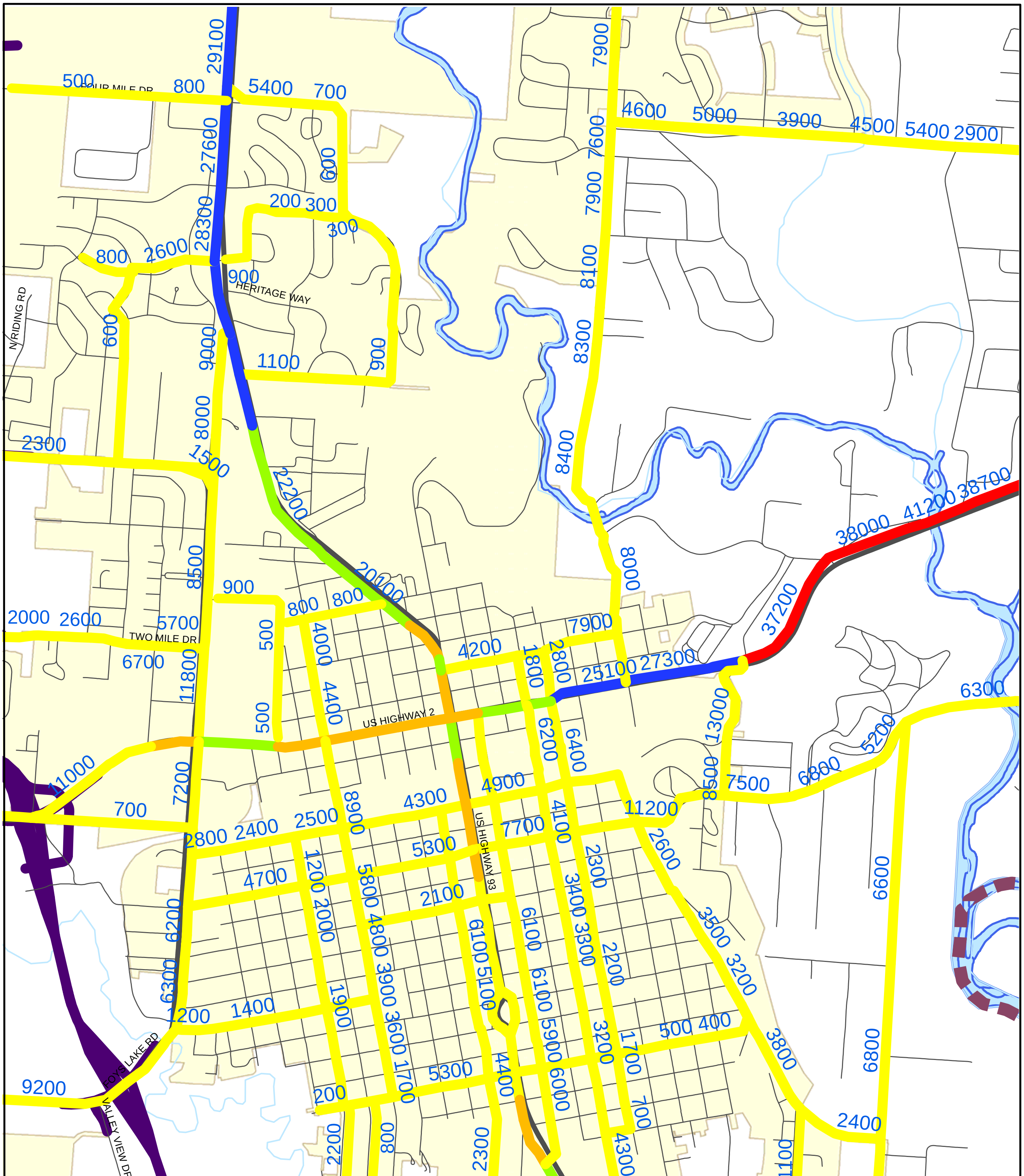
Figure 3-11

Existing Traffic Volumes "TransCad Travel Demand Model" (Year 2003)



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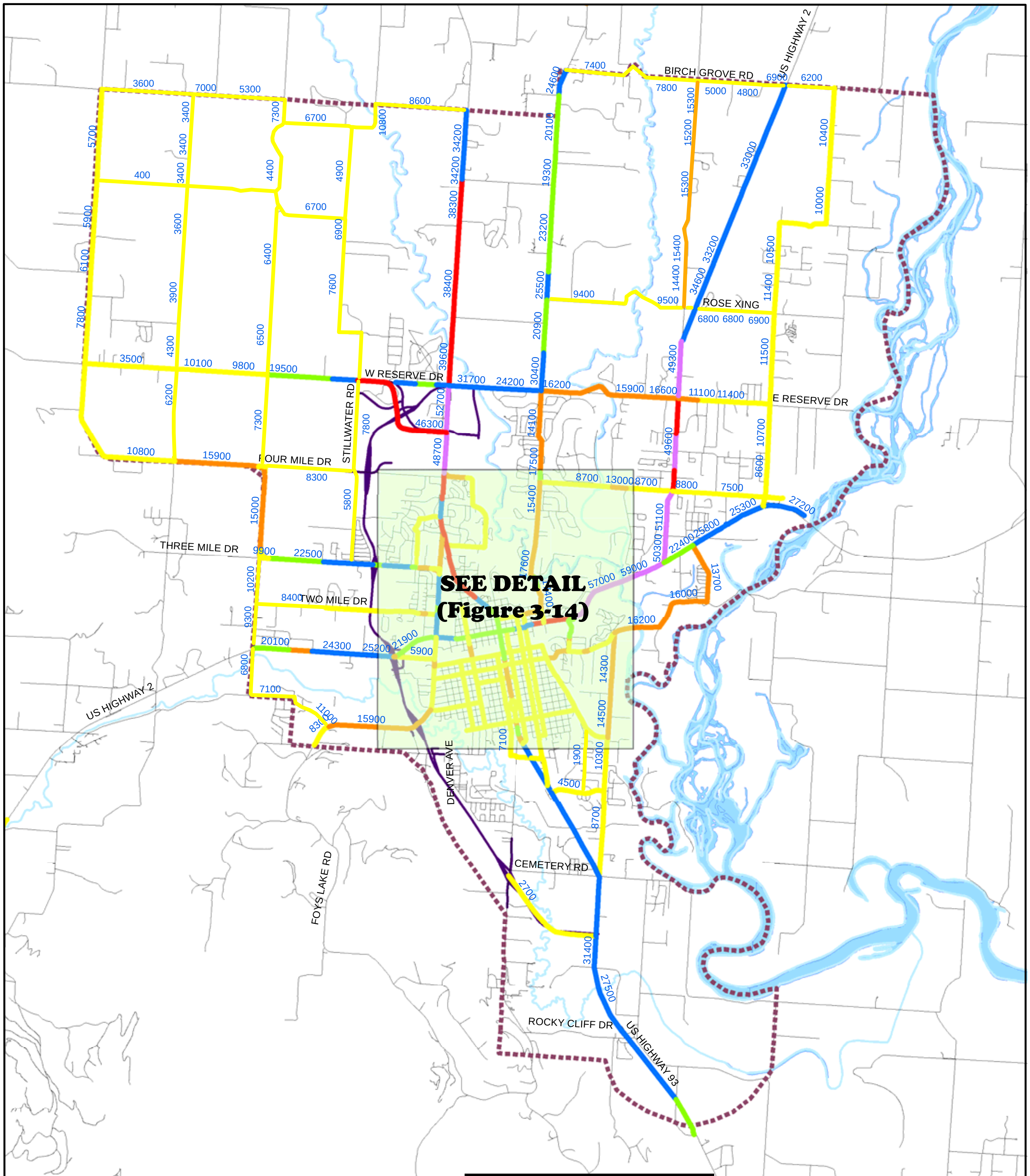
Legend
0 - 12000
12001 - 18000
18001 - 24000
24001 - 36000
36001 - 48000
TRANSPORTATION PLAN BOUNDARY
FUTURE HWY 93 BYPASS

0 500 1,000 2,000
Scale in Feet

Figure 3-12
Existing Traffic Volumes "TransCad Travel Demand Model" (Year 2003)

N



0 - 12000
12001 - 18000
18001 - 24000
24001 - 36000
36001 - 48000
48001 - 68000
TRANSPORTATION PLAN BOUNDARY
FUTURE HWY 93 BYPASS

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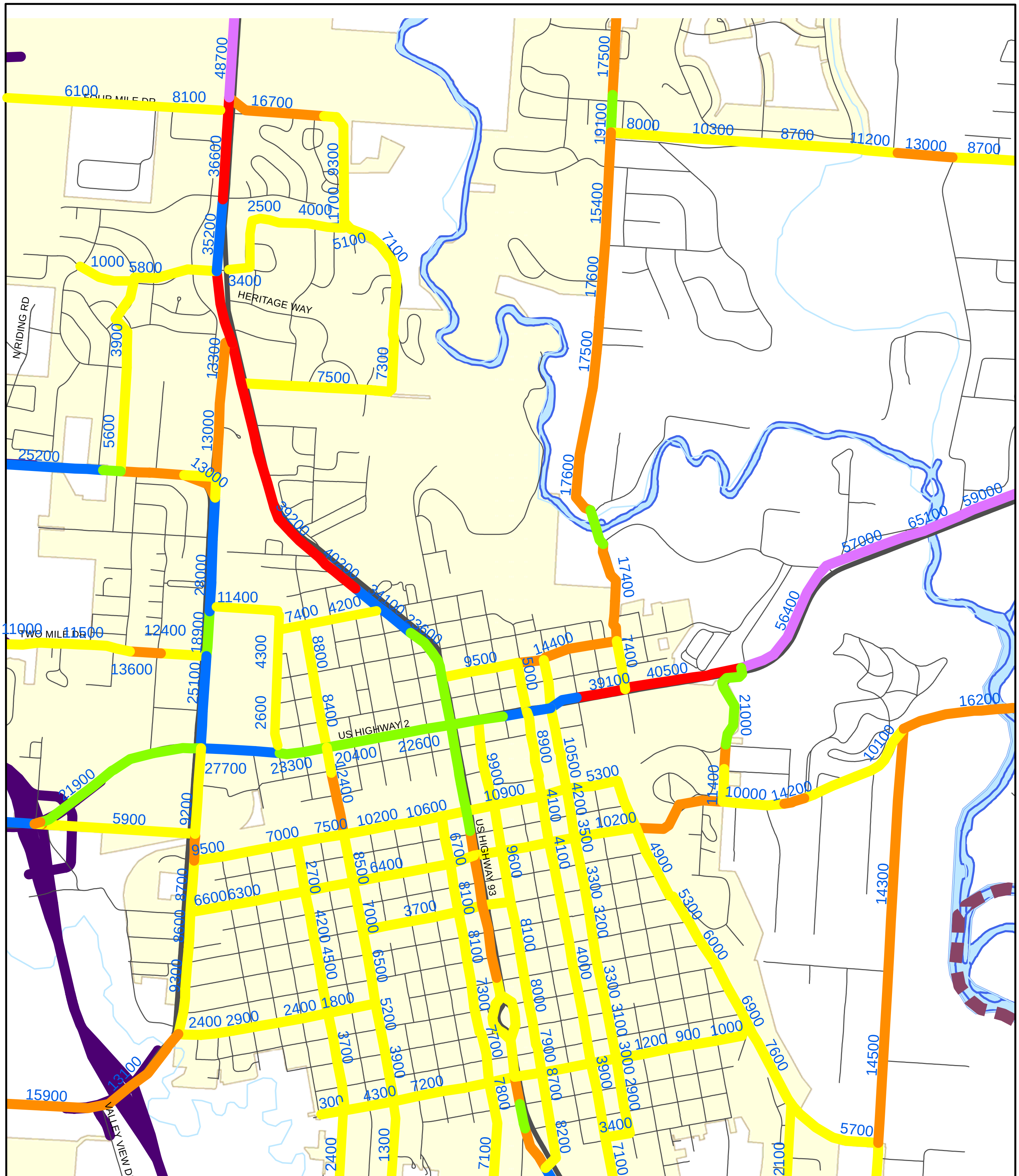
0 4,000 8,000
Scale in Feet

E + C Network

Figure 3-13

Future Traffic Volumes "TransCad Travel Demand Model" (Year 2030)



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

Figure 3-14
Future Traffic Volumes "TransCad Travel Demand Model" (Year 2030)

3.7 NETWORK ALTERNATIVES TEST RUN ANALYSIS

Using the traffic model it is possible to produce traffic assignments that predict the effects of major modifications and additions to the street network. Alternatives such as the addition of new arterial links, street closures, or the extension of existing routes were identified and discussed. Major improvements can then be grouped together and superimposed on the existing network. The impacts of implementing the alternative actions can then be determined for each test run. These tests help determine possible benefits and drawbacks of a variety of potential changes to the major street network.

Fourteen (14) separate "alternative scenarios" have been test modeled. This section of the Plan contains the descriptions of the proposed modifications included in each model run, along with a brief description of the resulting traffic volume changes. **Table 3-9** gives a summary of each "alternative scenario" tested.

Table 3-9
Traffic Model Alternative Scenarios

Alternative Scenario	Description
Alternative Scenario No. 1	Shows the "E+C" Network" without any US Highway 93 Bypass features.
Alternative Scenario No. 2	A new four-lane link between US Highway 93 South (near Gardner's Auction Road) north to US Highway 2 West and the Reserve Loop connector.
Alternative Scenario No. 3	The full US Highway 93 Bypass between Highway 93 South and Reserve Drive as a full four-lane facility with the Reserve Loop connector.
Alternative Scenario No. 4	Create a parallel two-lane north-south route to Main Street in the downtown referred to as the LaSalle / Conrad Drive connector.
Alternative Scenario No. 5	Create a two-lane extension of Four Mile Drive between Stillwater Road and US Highway 93.
Alternative Scenario No. 6	Extend Grandview Drive eastward to connect to Whitefish Stage Road.
Alternative Scenario No. 7	Create a new east/west corridor at Birch Grove from Farm-to-Market Road to Columbia Falls Stage Road.
Alternative Scenario No. 8	Expand MT Highway 35 to a four-lane roadway between LaSalle Road and MT Highway 206.
Alternative Scenario No. 9	Create a new east/west corridor in the vicinity of Rose Crossing from Farm-to-Market Road to Whitefish Stage Road.
Alternative Scenario No. 10	Expand West Springcreek Road to a more important two-lane facility with higher travel speeds (45 mph) and better capacity accommodations from US Highway 2 to Reserve Drive.
Alternative Scenario No. 11	Convert 3rd / 4th Avenue East one way couplet to two-way facilities.
Alternative Scenario No. 12	Create a one-way couplet from 1st Avenue East / 1st Avenue West.
Alternative Scenario No. 13	Extend 7th Avenue East to Woodland Avenue.
Alternative Scenario No. 14	Create a new north/south route between Foys Lake Road and US Highway 2.
Alternative Scenario No. 15	A comparison of existing traffic volumes without the bypass to traffic volumes with the bypass.

ALTERNATIVE SCENARIO NO. 1 was the first test run and basically shows the "E+C Network" without any US Highway 93 Bypass features. In other words, the portion of the Bypass that is being treated as committed, referenced as project CMSN-4 in the previous section, was removed from the "E+C Network". The intent of this test run was to show the future year traffic volumes without any Bypass influences. The differences between volume output associated with this test run, and the volume output associated with the actual "E+C Network" model run shown in **Figure 3-13** and **Figure 3-14**, are quite negligible. For this alternative scenario modeling run, the south segment from Gardner's Auction to Airport Road was removed from the model run.

Alternative Scenario No. 1 Results:

Table 3-10
Alternative Scenario No. 1 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)
Foys Lake Road	15,900	16,800	900
US 93 South Segment Bypass (Gardner's Auction to Airport Road)	2,700	0	(2,700)
Willow Glen Drive (just north of US 93)	8,700	8,300	(400)
Reserve Drive (east of US 93)	31,700	33,100	1,400
Appleway Drive	5,000	6,700	1,700

ALTERNATIVE SCENARIO NO. 2 modified the South Bypass by entering in the new four-lane link between US Highway 93 South (near Gardner's Auction) north to US Highway 2 West. This alternative test run also included the Reserve Loop Connector. Constructing the South Bypass segment in this configuration pulled considerable traffic from the existing transportation system serving the southern half of the community when compared to the future planning year volumes associated with the official "E+C Network".

Alternative Scenario No. 2 Results:

Table 3-11
Alternative Scenario No. 2 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)
Foys Lake Road	15,900	17,400	1,500
US 93 South Segment Bypass (just northwest of Airport Road)	0	27,300	27,300
US 2 (just west of Appleway Drive)	25,200	27,000	1,800
US 2 (just east of Appleway Drive)	21,900	33,000	11,100
Meridian Road (just north of Idaho)	25,100	28,900	3,800
1st Avenue West (just south of County Courthouse)	7,700	4,700	(3,000)
1st Avenue East (just south of County Courthouse)	7,900	6,400	(1,500)

Main Street (just north of 11th Avenue)	11,800	10,700	(1,100)
Main Street (just south of Idaho)	20,300	19,000	(1,300)
US 2 (just west of US 93)	22,600	20,000	(2,600)

ALTERNATIVE SCENARIO NO. 3 included the full US Highway 93 Bypass between Highway 93 South and Reserve Drive as a full four-lane facility, with the reserve loop Connector. The full-fledged Bypass construction draws significant traffic volumes when compared to the future year traffic volumes (year 2030) associated with the present "E+C Network). The full bypass construction significantly affects the transportation system for the entire travel network west of the Flathead River and east of Farm-to-Market Road.

Alternative Scenario No. 3 Results:

Table 3-12
Alternative Scenario No. 3 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)
Foys Lake Road	15,900	17,500	1,600
US 93 South Segment Bypass (just northwest of Airport Road)	0	31,700	31,700
US 2 (just west of Appleway Drive)	25,200	27,000	1,800
US 2 (just east of Appleway Drive)	21,900	32,700	10,800
Meridian Road (just north of Idaho)	25,200	20,500	(4,700)
1st Avenue West (just south of County Courthouse)	7,700	4,700	(3,000)
1st Avenue East (just south of County Courthouse)	7,900	6,300	(1,600)
US 2 (just west of US 93)	22,600	20,300	(2,300)
Whitefish Stage Road (just north of 7th Ave EN)	17,600	14,900	(2,700)

ALTERNATIVE SCENARIO NO. 4 included the following modifications to the E+C network to create a parallel north-south route to Main Street in the downtown. It is referred to as the LaSalle/Conrad Drive connector, and would incorporate a segment to connect LaSalle Road with Conrad Drive via a two-lane north/south roadway.

Alternative Scenario No. 4 Results:

Table 3-13
Alternative Scenario No. 4 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Conrad Drive (just east of Willow Glen)	16,200	19,300	3,100	19,400
Willow Glen (just south of Conrad	14,300	15,600	1,300	15,300

Drive)				
Shady Lane (just south of MT 35)	13,700	9,200	(4,500)	9,000
New LaSalle extension	0	13,300	13,300	13,100
LaSalle Road (just north of MT 35)	50,300	54,200	3,900	54,100
Willow Glen (just north of Woodland Avenue)	14,500	15,700	1,200	15,500
Woodland Park Drive (just south of US 2)	21,000	20,500	(500)	20,800

The potential connection of LaSalle Road and Conrad Drive does have minor benefits in that traffic is taken off the curve-a-linear alignment of Shady Lane and conceivably can be put on a more direct linear alignment of the new roadway segment. The connection does not do much to improve and or shift traffic volumes associated with Woodland Park Drive. There are minor increases to traffic volumes along Conrad Drive (west of Willow Glen) and 2nd Street East. The connection would also improve intersection operations at LaSalle Road and MT 35 by creating a more traditional four-legged intersection that could then be adequately timed for all opposing movements. This connection is viewed as valuable subject to ensuring improvements to Willow Glen Drive can be completed prior to the connection being made (this is discussed further in **Chapter 9**).

ALTERNATIVE SCENARIO NO. 5 includes the extension of Four Mile Drive in conjunction with the "E+C Network". Currently, the facility is gapped between Stillwater Road and US 93. This absent segment was modeled as a two-lane connection to complete continuity of the facility.

Alternative Scenario No. 5 Results:

Table 3-14
Alternative Scenario No. 5 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Four Mile Drive (west of Springcreek Road)	15,900	17,200	1,300	18,000
Four Mile Drive (east of Springcreek)	8,300	9,400	1,100	9,300
Four Mile Drive (west of US 93)	8,100	17,300	9,200	15,900
Grandview Drive (east of US 93)	16,700	19,400	2,700	19,700
US 93 (south of Four Mile Drive)	36,600	39,400	2,800	39,900
US 93 (north of Four Mile Drive)	48,700	47,900	(800)	47,900
Reserve Drive (west of US 93)	35,600	35,700	100	35,600
Reserve Loop (west of US 93)	46,300	41,200	(5,100)	42,600

The extension of Four Mile Drive, to an urban standard, is considered to be desirable to improve overall east/west connectivity in the area and to serve future land use changes. This is further defined in "Major Street Network" recommendations contained in **Chapter 9**.

ALTERNATIVE SCENARIO NO. 6 was defined to model the potential effects of extending Grandview Drive eastward to connect to Whitefish Stage Road.

Alternative Scenario No. 6 Results:

Table 3-15
Alternative Scenario No. 6 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Grandview Drive (west of Whitefish Stage Road)	0	19,900	19,900	19,600
Evergreen Drive (east of Whitefish Stage Road)	8,000	13,500	5,500	13,200
Whitefish Stage Road (south of Grandview Drive)	12,400	13,400	1,000	13,600
Whitefish Stage Road (north of Evergreen Drive)	19,000	18,900	(100)	19,500
Four Mile Drive (west of US 93)	8,100	9,000	900	8,600
Grandview Drive (east of US 93)	16,700	17,000	300	17,000
US 93 (south of Four Mile Drive)	36,600	38,200	1,600	38,500
US 93 (north of Four Mile Drive)	48,700	48,300	(400)	48,400

The extension of Grandview Drive, to an urban standard, is considered to be desirable to improve overall east/west connectivity in the area and to serve future land use changes. This is further defined in “Major Street Network” recommendations contained in **Chapter 9**. This alternative was modeled under the assumption that alternative 5, described above, would also be implemented.

ALTERNATIVE SCENARIO NO. 7 included the following modifications to the E+C network to evaluate the effects of a new east/west corridor somewhere in the vicinity of Birch Grove. This new crossing included a new crossing of the Flathead River and went from Farm-to-Market Road to Columbia Falls Stage Road. This scenario was identified in an effort to improve east/west connectivity through the land areas expected to be developed over the planning horizon (year 2030):

Alternative Scenario No. 7 Results:

Table 3-16
Alternative Scenario No. 7 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Farm-to-Market Road (south of Birch Grove extension)	5,700	14,400	8,700	14,600
New Birch Grove Roadway (east of Farm-to-Market Road)	0	11,700	11,700	11,400

New Birch Grove Roadway (west of US 93)	0	18,400	18,400	18,700
Whitefish Stage Road (just south of new Birch Grove roadway)	24,600	25,500	900	25,900
US 93 (just south of new Birch Grove roadway)	34,200	35,500	1,300	35,500
Reserve Drive (east of Farm-to-Market Road)	3,500	6,800	3,300	6,300
Reserve Drive (west of US 93)	35,600	35,600	0	35,600

A new east/west roadway corridor is considered to be desirable in this area of the study area boundary. Although an exact alignment cannot be specified with 100 percent certainty as it is somewhat subject to overall development patterns, the community very much lacks good east/west connectivity to the north. This is considered desirable to alleviate the poor connectivity in the area and to serve future land use changes. This is further defined in "Major Street Network" recommendations contained in **Chapter 9**.

ALTERNATIVE SCENARIO NO. 8 included the expansion of MT 35 between LaSalle Road and MT 206 to the east. The existing corridor experiences congestion and delay, which will only compound due to the lack of other choices associated with east/west connectivity across the Flathead River. This alternative was modeled to see what an expanded MT 35, to a four lane roadway section, would accomplish regarding traffic volume draws.

Alternative Scenario No. 8 Results:

Table 3-17
Alternative Scenario No. 8 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
MT 35 (just west of Flathead River)	25,300	42,600	17,300	42,700
MT 35 (just east of LaSalle Road)	22,400	40,200	17,800	37,900
LaSalle Road (just north of MT 35)	50,300	43,700	(6,600)	46,100
US 2 (just west of LaSalle Road)	59,000	63,200	4,200	63,200
Shady Lane (just south of MT 35)	13,700	13,800	100	13,600

The creation of a four-lane facility for MT 35 results in a fairly heavy traffic draw. This is partly due to the overall lack of east west connectivity across the Flathead River in general. Presently, there are on two locations to cross the Flathead River (MT 35 and Columbia Falls crossing), so an expanded MT 35 would draw more traffic, while reducing traffic along LaSalle Road. This is deemed to be desirable and should be considered a long-range recommendation to pursue as funding situations become more favorable in the planning horizon (i.e. year 2030).

ALTERNATIVE SCENARIO NO. 9 included the following modifications to the E+C network to evaluate the effects of a new east/west corridor somewhere in the vicinity of Rose Crossing. This new crossing went from Farm-to-Market Road to Whitefish Stage Road. This scenario was identified in an effort to improve east/west connectivity through the land areas expected to be developed over the planning horizon (year 2030):

Alternative Scenario No. 9 Results:

Table 3-18
Alternative Scenario No. 9 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Farm-to-Market Road (south of Rose Crossing extension)	7,800	10,800	3,000	13,600
Farm-to-Market Road (north of Rose Crossing extension)	5,900	7,400	1,500	8,700
New Rose Crossing (east of Farm-to-Market Road)	0	9,700	9,700	11,700
New Rose Crossing (west of US 93)	0	18,300	18,300	22,800
Whitefish Stage Road (just south of new Rose Crossing)	20,900	18,400	(2,500)	19,700
Whitefish Stage Road (just north of new Rose Crossing)	25,500	29,400	3,900	29,900

A new east/west roadway corridor is considered to be desirable in this area of the study area boundary. Although it is somewhat subject to overall development patterns, the community very much lacks good east/west connectivity to the north. This is considered desirable to alleviate the poor connectivity in the area and to serve future land use changes. This is further defined in "Major Street Network" recommendations contained in **Chapter 9**.

ALTERNATIVE SCENARIO NO. 10 included the expansion of West Springcreek Road to a more important "two-lane" facility with higher travel speeds (45 mph) and better capacity accommodation. The limits of this expansion were from US highway 2 (southern terminus) to Reserve Drive (northern terminus). The intent of this alternative was to create another important north/south route west of the current city limits to facilitate future lane use changes and create an overall grid network.

Alternative Scenario No. 10 Results:

Table 3-19
Alternative Scenario No. 10 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
W. Springcreek Road (just north of US 2)	9,300	17,600	8,300	17,600
W. Springcreek Road (just south of Four Mile Drive)	15,000	21,000	6,000	20,300
W. Springcreek Road (just north of Four Mile Drive)	7,300	13,900	6,600	7,500
W. Springcreek Road (just north of Reserve Drive)	6,500	6,900	400	6,700

There does not appear to be any great benefit to a capacity enhanced north/south corridor along West Springcreek Road. The model does not predict drastic land use changes west of West Springcreek Road, and land use changes east of West Springcreek Road will be using employment bases farther to the south and east of the West Springcreek Road corridor. This alternative scenario is not considered to be beneficial and was not carried forward in the Transportation Plan Update.

ALTERNATIVE SCENARIO NO. 11 included the conversion of the 3rd / 4th Avenue East one-way couplet to two-way facilities. This conversion has historically been debated in the community in terms of reducing "cut-thru" traffic and reducing travel speeds. Although travel demand modeling is only one component of a future decision to convert the facility (along with neighborhood goals, economics, etc.) the model results should not be used as a stand-alone decision point when evaluation this scenario.

Alternative Scenario No. 11 Results:

Table 3-20
Alternative Scenario No. 11 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
3rd Avenue East (just south of 2nd Street East)	3,900	7,600	3,700	6,600
4th Avenue East (just south of 2nd Street East)	3,300	5,800	2,500	5,000
3rd Avenue East (just north of 11th Street East)	4,000	7,400	3,400	6,800
4th Avenue East (just north of 11th Street East)	3,100	4,800	1,700	3,800
3rd Avenue East (just north of Center Street)	8,700	11,700	3,000	10,100
4th Avenue East (just north of Center Street)	10,500	11,500	1,000	11,100

The elevation in traffic volumes associated with changing the one-way couplet to two-way facilities can be mitigated through other, network-wide planning. Providing pedestrian and bicycle amenities may in fact produce mode shifts within the neighborhood area. The east/west roadways in the area would experience minor volume changes. The conversion to two-way facilities is recommended at this time for 3rd Avenue East and 4th Avenue East. After the conversion, additional study should be completed to document traffic volume changes and query neighborhood perceptions of the roadway conversion. If neighborhood issues are present, more active forms of traffic calming may be appropriate. This is discussed further in **Chapter 8**.

ALTERNATIVE SCENARIO NO. 12 included the creation of a one-way couplet for 1st Avenue East / 1st Avenue West. Presently, two-way flow is allowed on each facility. Again, although travel demand modeling is only one component of a future decision to convert the facilities (along with neighborhood goals, economics, etc.) the model results should not be used as a stand-alone decision point when evaluation this scenario.

Alternative Scenario No. 12 Results:

Table 3-21
Alternative Scenario No. 12 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
1st Avenue East (just south of 2nd Street East)	9,600	5,700	(3,900)	5,400
1st Avenue West (just south of 2nd Street West)	8,200	4,400	(3,800)	3,900
1st Avenue East (just north of 11th Street East)	7,900	6,900	(1,000)	5,500
1st Avenue West (just north of 11th Street West)	7,500	7,100	(400)	3,500
1st Avenue East (just north of Center Street)	8,900	12,000	3,100	8,500
1st Avenue West (just south of Center Street)	5,200	4,500	(700)	3,300

In general terms, this scenario would result in less traffic volume on 1st Avenue East and 1st Avenue West as a result of going to a one-way couplet, with a rise in traffic volumes on Main Street (i.e. US Highway 93). This is not considered to be significant, however, and there doesn't appear to be any real reason for doing such a conversion based on traffic circulation alone. Furthermore, implementation of this conversion would result in removal of fairly recent construction items to convert the roadway properly. Based on traffic circulation alone, this scenario is not considered beneficial and has not been carried forward in this Transportation Plan Update.

ALTERNATIVE SCENARIO NO. 13 included the extension of 7th Avenue East to Woodland Avenue to complete a north/south corridor. Under present conditions, there is an absence of continuity in this location for about three blocks.

Alternative Scenario No. 13 Results:

Table 3-22
Alternative Scenario No. 13 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
Center Street (east of 4th Avenue East)	5,300	8,800	3,500	8,900
2nd Street East (west of Woodland Avenue)	8,900	9,800	900	9,600
2nd Street East (east of Woodland Avenue)	17,400	18,000	600	17,600
New Woodland Avenue connection (north of Center Street)	0	14,000	14,000	14,100
US Hwy 2 (just east of new 7th	39,100	43,500	4,400	42,300

Avenue connection)				
3rd Avenue East (just north of Center Street)	8,700	8,100	(600)	6,200
4th Avenue East (just north of Center Street)	10,500	7,700	(2,800)	7,000
Woodland Avenue (south of 2nd Street East)	6,000	8,000	2,000	6,200
Woodland Avenue (west of Willow Glen Drive)	5,700	8,100	2,400	6,800

This scenario does have the effect of changing traffic circulation patterns substantially in an existing area of the City. By putting this connection in, traffic volumes on other north / south roadways are somewhat reduced. Volumes on several east/west roadways are slightly increased. Perhaps the biggest impact would be to Woodland Avenue itself, which would see traffic volumes rise between 2,500 and 3,000 vehicles per day on the existing segments south of 2nd Street east. Furthermore, volumes on Center Street would also rise with the connection in place. This connection is deemed beneficial to overall traffic circulation in this area, but is not being carried forward in **Chapter 9**. Traffic calming features may be needed along the existing Woodland Avenue segment to mitigate potential neighborhood issues south of 2nd Street East.

ALTERNATIVE SCENARIO NO. 14 included the placement of a new north/south route between Foys Lake Road and US Highway 2 West in an effort to alleviate traffic congestion on South Meridian Road and serve future development trends in the area. Although presumably the US Highway 93 Bypass will accomplish this objective, the decision was made to model a potential north/south route in the event that the Bypass does not become a reality in the near future.

Alternative Scenario No. 14 Results:

Table 3-23
Alternative Scenario No. 14 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)	After Network Modifications with South Bypass (vpd)
New north/south connection between Foys Lake Road and US Highway 2 & west of Meridian Road)	0	9,000	9,000	4,100
Foys Lake Road	15,900	16,8000	900	17,100
US Highway 2 (west of Appleway)	25,200	25,100	(100)	25,800
Appleway Drive	5,900	3,000	(2,900)	4,500
US Highway 2 (east of Appleway)	21,900	23,800	1,900	32,900
Meridian Road (south of Center Street)	8,700	7,600	(1,100)	6,800

The new link modeled for the future year is deemed desirable to reduce traffic impacts to South Meridian Road and create additional options for travel on the west side of the bypass. The facility was modeled as an urban collector and should be considered if and when property develops between Foys Lake Road and US Highway 2.

ALTERNATIVE SCENARIO NO. 15 is not a scenario that assesses future year traffic volumes, however is a comparison of existing traffic volumes (2003) with and without the full fledged US Highway 93 Bypass being in place. This alternative scenario was added at the request of the Technical Advisory Committee (TAC) overseeing the Transportation Plan Update. The intent is merely to present a comparison of existing traffic volumes without the bypass to traffic volumes with the bypass. This comparison utilizes year 2003 traffic volumes, as that is the year that the travel demand model was calibrated to the available data by the MDT Statewide and Urban Planning Section.

Alternative Scenario No. 15 Results:

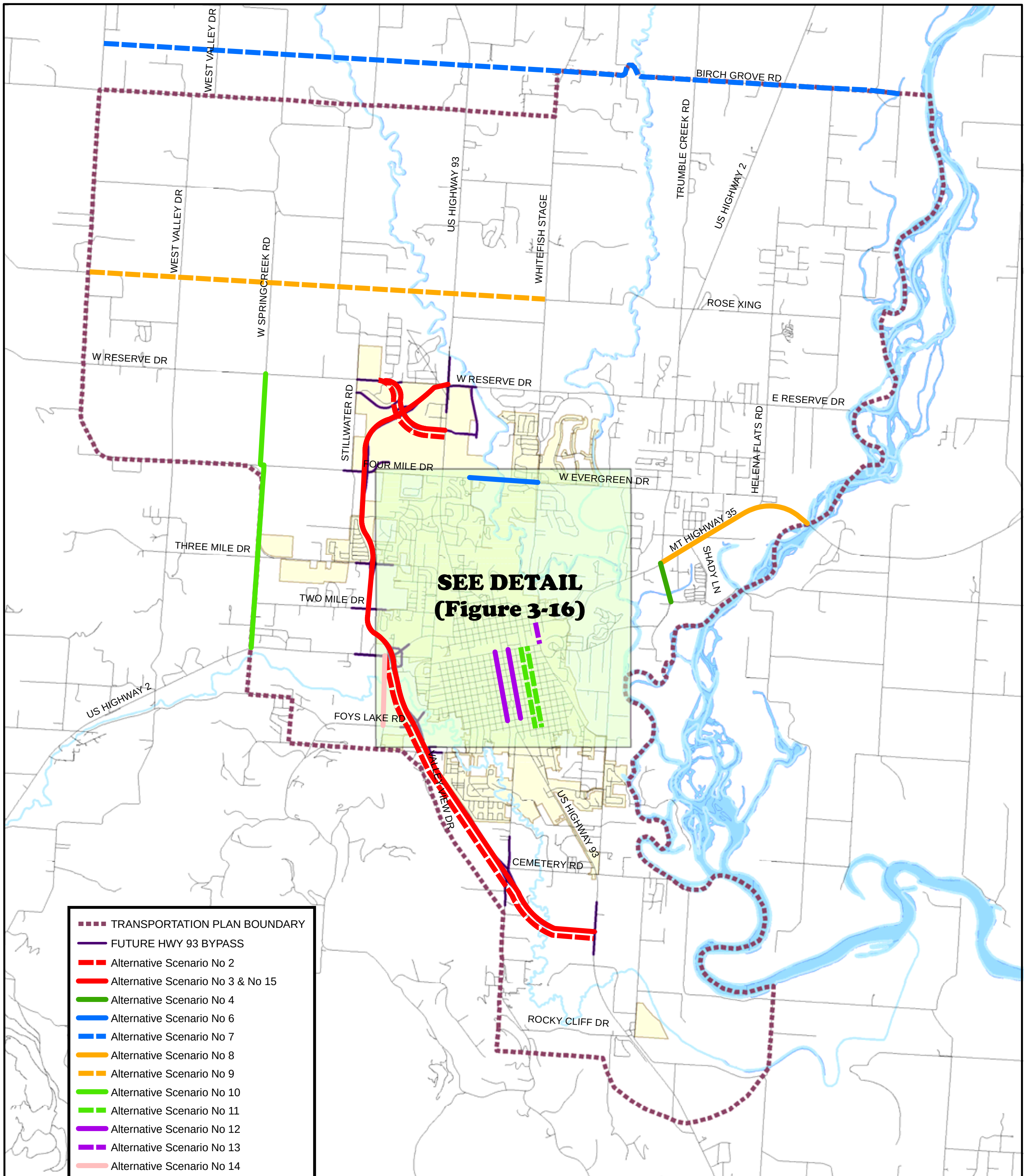
Table 3-24
Alternative Scenario No. 15 Results

Roadway Facility	Before Network Modifications (vpd)	After Network Modifications (vpd)	Net Result (vpd)
US Highway 93 (north of Gardner's Auction)	18,900	11,500	(7,400)
11th Street West (west of Main Street)	5,200	3,000	(2,200)
1st Avenue East (south of 11th Street East)	6,000	3,300	(2,700)
South Meridian Road (north of 7th Avenue West)	6,300	4,200	(2,100)
US Hwy 2 (east of Appleway Drive)	11,000	17,300	6,300
Meridian Road (north of Idaho Street)	11,800	9,200	(2,600)
US Highway 93 (south of Four Mile)	27,600	23,700	(3,900)
Willow Glen Drive (just north of Woodland Avenue)	6,800	5,000	(1,800)
US Hwy93 (north of Four Mile Drive)	29,100	21,700	(7,400)
US Hwy 93 (north of Reserve Drive)	15,100	21,000	5,900
New US 93 Bypass (near Gardner's Auction)	0	9,700	9,700
New US 93 Bypass (south of US 2)	0	18,800	18,800
New US 93 Bypass (north of Three Mile Drive)	0	15,100	15,100

The locations presented above in **Table 3-24** are only select locations of primary influence due to the bypass implementation. Shifts in traffic volumes occur area-wide as a result of the Bypass implementation, and have a very beneficial impact to overall travel patterns.

3.8 TRAFFIC MODEL DEVELOPMENT CONCLUSIONS

The alternative scenarios modeled, and described above, are reflective of major street network (MSN) projects that may or may not have considerable value to the transportation conditions in the community. Most of the alternative scenarios modeled will be carried forward later in the Plan in the form of specific recommendations. These are primarily found in **Chapter 9**. A few of the scenarios do not appear to have substantial value, so will not be considered further. Ultimately, the recommended projects defined in **Chapter 9** will transform into what is known as the community's "Recommended Major Street Network". This network is shown graphically in **Chapter 11**, along with travel demand model volume outputs. The "Recommended Major Street Network" is the future transportation system network that the community should be planning towards as land use changes occur over the planning horizon (year 2030).



KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

Figure 3-15

Traffic Model Alternative Scenarios

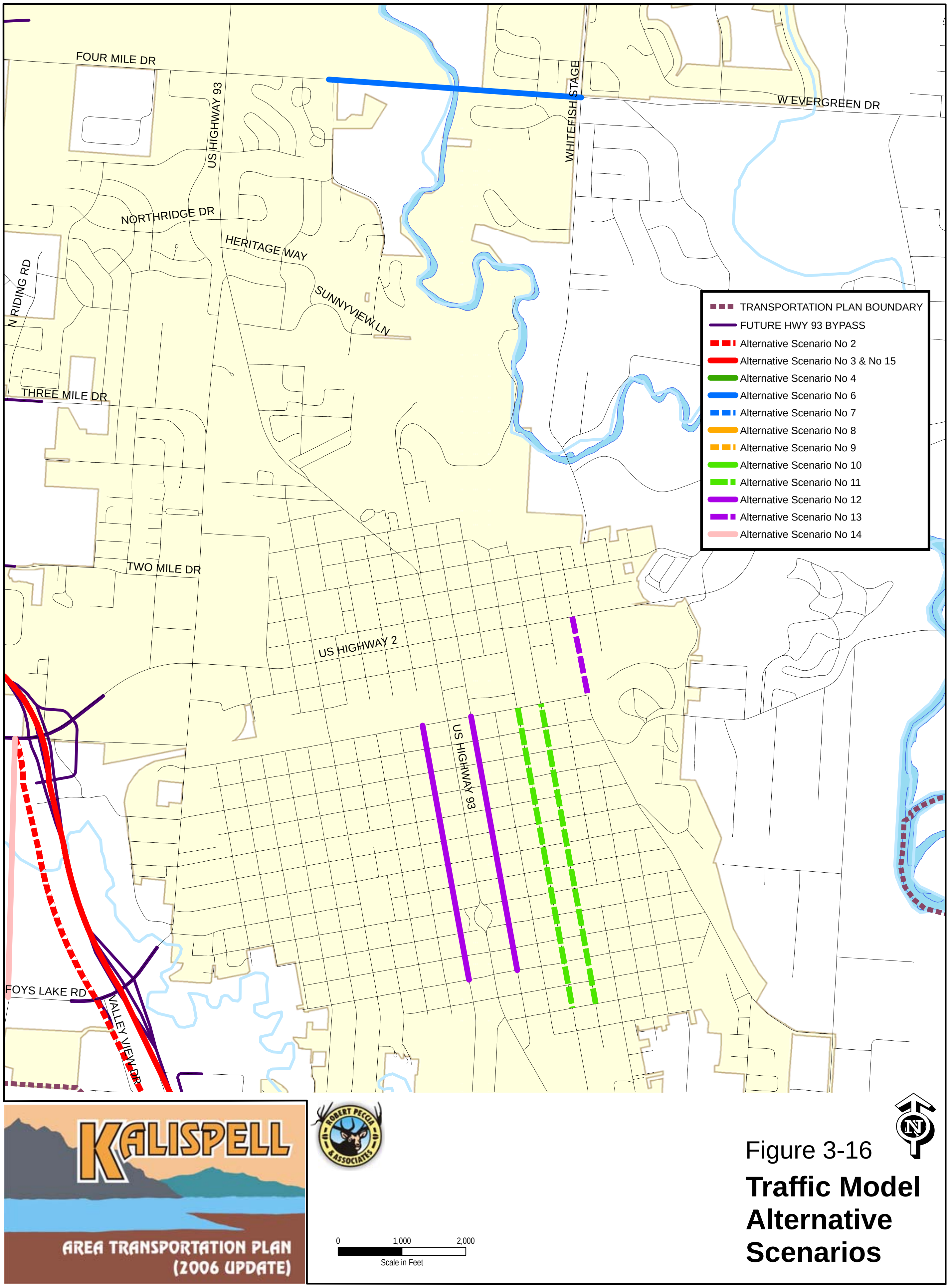
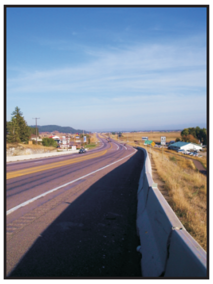


Figure 3-16

Traffic Model Alternative Scenarios

Chapter 4: Alternative Travel Modes



CHAPTER 4: ALTERNATIVE TRAVEL MODES

4.1 INTRODUCTION

Alternative travel modes generally includes modes of travel outside of private vehicular travel. This generally encompasses bicycle and pedestrian travel (non-motorized) and transit travel (motorized). It is the intent of this chapter of the Transportation Plan Update to discuss the importance of these mode types and present the current status of these facilities in the community. Additionally, because two very recent and relevant planning efforts have just been completed regarding these types of facilities, the general conclusions reached and recommendations going forward for alternative travel mode developments are presented.

The two recent and relevant documents that guide alternative travel modes in the community are as follows:

- City of Kalispell *Parks and Recreation Comprehensive Master Plan (November, 2006)* [prepared by Moore, Iacofano, Goltsman, Inc.]

- Eagle Transit T*ransportation Development Master Plan Update (2007-2012)* [prepared by LSC Transportation Consultants, Inc.]

Both of the above referenced documents represent the latest planning efforts regarding alternative travel modes in the City of Kalispell. Relevant information regarding existing conditions of the alternative travel modes have been extracted from these documents and presented herein. Additionally, future system recommendations arising out of these two plans are recent, relevant, and have been subject to public review. As such, recommendations contained therein have been carried forward into this Transportation Plan Update. As appropriate, supplemental information has been developed for consideration by the City elected officials in charge of adoption of this Transportation Plan Update.

<u>Pedestrian Travel</u>

The following goal can be viewed as supplementing the goals contained earlier in this Transportation Plan in **Chapter 1**.

Goal: Promote land use planning and development which encourages pedestrian travel and thus reduces vehicle trip generation

Support: A) Allocation of transportation funds will support the Kalispell Downtown Improvement Association's and city's goal of providing additional parking garage facilities downtown.

B) Land use plans and development applications will be reviewed to ensure that strategies to promote compact development patterns that encourage walking and biking and reduce vehicle trip generation.

4.2 NON-MOTORIZED TRANSPORTATION FACILITIES

Introduction

Well-designed non-motorized transportation facilities are safe, attractive, convenient and easy to use. Poorly designed or inadequate facilities can discourage users and waste valuable money and resources. The characteristics of non-motorized travel varies greatly and often the different travel modes compete for the same street and roadway space. Non-motorized facilities are often found at the roadway edge and often allocated insufficient space for their needs. This puts them close to right-of-way lines and in conflict with other demands such as parking, utility poles and signs. It is in the community's best interest then to plan new non-motorized facilities in a manner that can best accommodate the needs of the anticipated users.

Montana statutes (**61-8-602 M.C.A.**) make bicycle riders legitimate road users. They are, however, slower, less visible and more vulnerable than motorists. Bicyclists operate vehicles under their own power and are vulnerable in crashes. Well-designed bicycle facilities guide cyclists of various skill levels to ride on the roadway in a safe manner that conforms to the uniform vehicle code. Pedestrians prefer greater separation from traffic and are slower than bicyclists. They need extra time for crossing roadways, special consideration at intersections and traffic signals, and other improvements to enhance the walking environment. Pedestrians are particularly vulnerable roadway users, as significant numbers are often small children, handicapped individuals, or the elderly.

Goals

An overriding goal for non-motorized transportation in the Kalispell Area to be considered should be as follows:

> *To develop a living plan for the greater Kalispell area to create and maintain corridors for cyclists and other non-motorized modes of travel and recreation that are safe and effective for their transportation and enjoyment, and to inform and educate motorists, cyclists, and pedestrians in how to safely and respectfully share roads and other corridors as citizens transport themselves about the community.*

Additional goals can be summarized as follows:

- Planning: integrate and coordinate non-motorized needs into planning activities to improve pedestrian and bicycle access within a community.

- Network & Facilities: develop a safe, convenient, and continuous network of non-motorized facilities that serves the needs of the community.

- Education & Safety: improve non-motorized safety through pedestrian, bicyclist and motorist education and enforcement.

- Promotion: increase non-motorized transportation "mode share" by increasing public awareness of the benefits of non-motorized transportation and available related programs.

- Implementation: secure sufficient resources from all available sources to fund ongoing non-motorized improvements and education.

Definitions

The following definition for the term bikeway from the "*Guide for the Development of Bicycle Facilities*" published by the American Association of State Highway and Transportation Officials (AASHTO) in 1999 is presented. It should be noted that in Montana, bicycles are allowed on roadways, and as such the AASHTO definition presented below is not applicable in its entirety.

> "**BIKEWAY** - A generic term for any road, street, path, or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes."

The system of bikeways to be developed in the Kalispell Area will include bike paths, bike lanes, and shared roadways. These types of bikeways are defined based on the AASHTO Guide and other pertinent sources as follows:

- Bicycle (Bike) Path/Trail - A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Separated trails usually are paved, but they may be unpaved as well. While thin-wheeled bicycles are better accommodated on paved bikeways, unpaved trails are suitable for wide-tired bicycles like mountain bikes and other users such as walkers, equestrians or cross-country skiers. Off-street bike and pedestrian facilities, also known as greenway trails, consist of trails that are located outside of roadways and are primarily multi-use, accessible, recreational facilities. However, commuting bicyclists, in addition to the recreational cyclist and pedestrian are anticipated to use many of these trails.

- Bicycle (Bike) Lane - A portion of a roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are typically found in urban areas with high motor vehicle and bicycle traffic. Bicycle lanes are used to delineate available road space for preferential use by bicyclists and motorists and to provide for more predictable movements by each. Bicycle lane markings can increase a bicyclist's confidence in motorists not straying into his/her path of travel. Similarly, passing motorists are less likely to swerve to the left out of their lane to avoid bicyclists on their right.

- Shared Roadway - Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway. Typical examples of shared roadways include low-volume residential streets or rural roads and urban streets with wide outside (curb) lanes. A bike route is officially designated with signs and route markers and appropriately marked on bike maps as a segment of a network of "bikeways," but is open to motorized vehicle travel and has no designated bike lane.

The type of bikeway most appropriate for a given situation depends on the traffic volume, speed, vehicle mix, sight distance, the amount of on-street parking, and the types of bicyclists (advanced riders, basic riders, and children) on the road or street segment. Many bicyclists and potential bicyclists who lack significant experience riding on urban streets express a preference for separated bike paths over on-street bike lanes. However, while the physical separation of bicycles and motor vehicles surely reduces the likelihood of rear-end and same-direction sideswipe accidents, these types of collisions usually constitute only a small percentage of bicycle-motor vehicle accidents. Crossing traffic presents a much greater risk to bicyclists than traveling in the same direction as motor vehicles on the same pavement.

Available Resources and Publications

AASHTO's *"Guide for the Development of Bicycle Facilities*" is the principal resource for bicycle facility design and has been adopted by many state and local governments. AASHTO published an update of the Guide in 1999. The Guide discusses general design characteristics of roadway improvements for bicycles and identifies design standards for bicycle paths (width and clearance, design speed, alignment and grade, sight distance, intersection treatments, signing and markings, pavement structure, requirements for structures and drainage, lighting, etc.). The Guide is comprehensive but does not set down strict standards for bicycle facilities. Instead, it presents sound design guidelines for attaining designs sensitive to the needs of bicyclists and other users. Minimum design values are provided only where further deviation from desirable "standards" would result in unacceptable safety compromises.

Signing and marking of bikeways and paths must be uniform and consistent for them to command the respect of the public and provide safety to the users of these facilities. Signing and marking must be warranted by use and need. Signing and markings of bikeways and paths should conform to the most current edition of the **FHWA's *Manual on Uniform Traffic Control Devices (MUTCD)***.

Proposed Non-Motorized Facilities in the Kalispell Area

As described earlier, the community is fresh off a recent planning exercise that looked at the condition and status of Parks and Recreational Facilities through a Comprehensive Master Plan. This document was prepared by the firm of Moore, Iacofano, Goltsman, Inc., and contained very specific recommendations for both on-street and off-street trail facilities. The results of the planning exercise are shown graphically in **Figure 4-1** and **Figure 4-2** and offer realistic, implementable non-motorized projects that the community can work into their development and planning processes.

Table 4-1 shows the various projects as described in the Master Plan, and those that are shown graphically on the figures.

Table 4-1
Proposed Non-Motorized Facilities

Short Description	ID *	Length	Non-Motorized Type
US 93 North (north of Reserve)	T-1	4.0 miles	Bike Lane (Proposed)
US 93 North (Four Mile to Reserve)	T-2	2.4 miles	Bike Path (Existing)
US 93 North (Four Mile to Idaho)	T-3	0.7 miles	Paved Path (Partially Existing)
US Highway 2 (north of Reserve)	T-4	5.8 miles	Paved Path (Proposed)
LaSalle Road (Woodland Park to Reserve)	T-5	3.0 miles	Paved Path (Proposed)
Reserve Dr. (US 93 to Whitefish Stage)	T-6	1.0 miles	Bike Lane (Proposed)
Reserve Dr. (Whitefish Stage to LaSalle)	T-7	1.3 miles	Bike Lane (Proposed)
Whitefish Stage Road (south of Reserve)	T-8	3.6 miles	Paved Path (Existing)
US Highway 2 West (US 93 to Bypass)	T-9	0.4 miles	Paved Path (Existing)
Idaho Street (US 93 to Woodland Park)	T-10	1.2 miles	Paved Path (Proposed)
US 93 Bypass North (US 2 to Reserve)	T-11	3.6 miles	Paved Path (Proposed)
US Highway 2 West (west of 93 Bypass)	T-12	2.2 miles	Paved path (Existing)
US 93 Bypass South (south of US Hwy 2)	T-13	3.8 miles	Paved Path (Proposed)
US Highway 93 (Cemetery to Courthouse)	T-14	1.7 miles	Bike Lane (Existing)
Willow Glen Drive (US 93 to Woodland)	T-15	3.0 miles	Bike Path (Proposed)
US 93 South (Cemetery to Bypass)	T-16	0.6 miles	Bike Lane (Proposed)
US 93 South (south of new Bypass)	T-17	4.8 miles	Bike Lane (Existing)
Riparian Area Trail	T-18	1.3 miles	Unpaved Path (Proposed)
Riparian Area Trail	T-19	1.6 miles	Unpaved Path (Proposed)
Riparian Area Trail	T-20	2.0 miles	Unpaved Path (Proposed)
US 93 North (Grandview to Reserve)	T-21		Paved Path (Existing)
US 93 (Four Mile to Meridian)	T-22		Paved Path (Existing)
US 93 (Meridian to Idaho)	T-23		Bike Lane (Proposed)

Source: City of Kalispell Parks & Recreation Comprehensive Master Plan (November, 2006)
* Reference is made to Figure 7.2 of *Comprehensive Master Plan*.

In addition to the *Parks and Recreations Comprehensive Master Plan*, the City of Kalispell has their own listing of existing and proposed projects in the Kalispell area. **Figure 4-1** and **4-2** shows these projects that are in addition to the projects listed in *Parks and Recreations Plan*. **Table 4-2** shows projects described by the City.

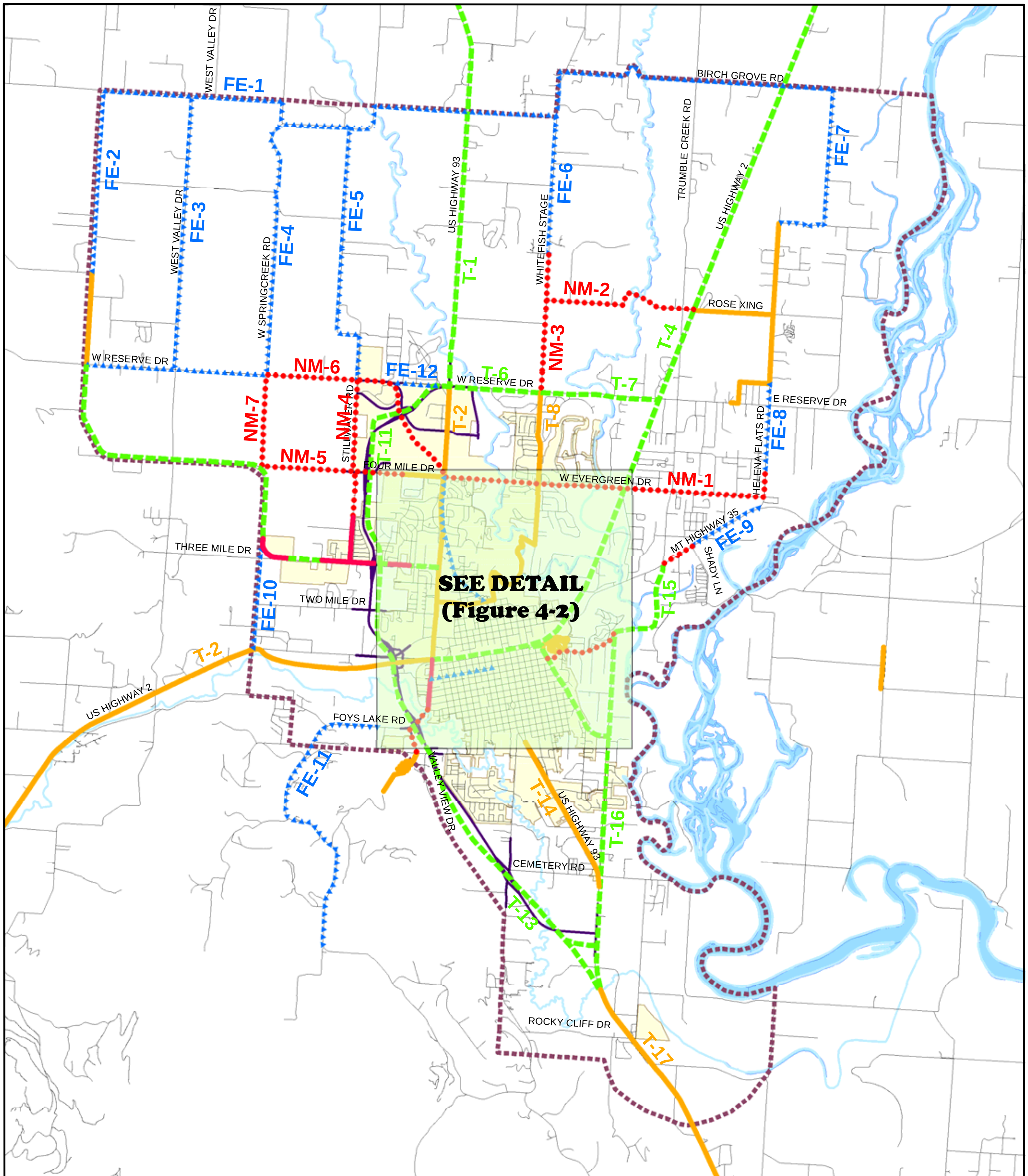
Table 4-2
City of Kalispell Proposed Non-Motorized Facilities

Short Description	ID	Non-Motorized Type
Evergreen Dr. (Helena Flats Rd. to US 93)	NM-1	Paved Path (Proposed)
Rose Crossing (US 93 to Whitefish Stage Road)	NM-2	Paved Path (Existing)
Whitefish Stage Rd. (North of Reserve Dr.)	NM-3	Paved Path (Proposed)
Stillwater Rd. (Three Mile Dr. to Four Mile Dr.)	NM-4	Paved Path (Proposed)
Four Mile Dr. (N. Haven Dr. to W. Springcreek Rd.)	NM-5	Paved Path (Proposed)
Reserve Dr. (W. Springcreek Rd. to Four Mile Dr.)	NM-6	Paved Path (Proposed)
W. Springcreek Rd. (Four Mile Dr. to Reserve Dr.)	NM-7	Bike Lane (Proposed)
Meridian Road (Center St. to Valley Center Road)	NM-8	Paved Path (Existing)
Conrad Dr. (Woodland Ave. to Willow Glen Dr.)	NM-9	Bike Lane (Proposed)

There are several areas that have existing or proposed trails that need to be extended or connected to be fully efficient. These projects have been listed in **Table 4-3** and are shown graphically in **Figure 4-1** and **4-2** as well. These project listed would allow the Kalispell area to eventually have a trails system in place that would be fully connected.

Table 4-3
Non-Motorized Facilities Extensions

Short Description	ID	Non-Motorized Type
Birch Grove Rd. (Farm to Market Rd. to Helena Flats Road)	FE-1	Paved Path (Proposed)
Farm to Market Rd. (Rhodes Dr. to Birch Grove Rd.)	FE-2	Paved Path (Proposed)
West Valley Dr. (Reserve Dr. to Birch Grove Rd.)	FE-3	Paved Path (Proposed)
W. Springcreek Rd. (Reserve Dr. to Birch Grove Rd.)	FE-4	Paved Path (Proposed)
Stillwater Rd. (Reserve Dr. to Birch Grove Rd.)	FE-5	Paved Path (Proposed)
Whitefish Stage Rd. (Existing path to Birch Grove Rd.)	FE-6	Paved Path (Proposed)
Helena Flats Rd. (Existing path to Birch Grove Rd.)	FE-7	Paved Path (Proposed)
Helena Flats Rd. (Evergreen Dr. to Existing path)	FE-8	Paved Path (Proposed)
Highway 35 (Shady Ln. to Evergreen Dr.)	FE-9	Bike Lane (Proposed)
W. Springcreek Rd. (Hwy 2 to Three Mile Dr.)	FE-10	Paved Path (Proposed)
Foys Lake Road (Valley View Dr. to Foys Canyon Rd.)	FE-11	Paved Path (Proposed)
West Reserve Drive (US Highway 93 North to Glacier High School)	FE-12	Paved Path (Proposed) and/or sidewalk
US Highway 93 (Wyoming Avenue to Grandview Drive)	FE-13	Paved Path (Proposed) and/or sidewalk
2nd Street West (South Meridian Road to 2nd Avenue West)	FE-14	On-street Bicycle Lanes (Proposed)



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(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

- EXISTING TRAIL
- FUTURE PROPOSED EXTENSION
- CITY OF KALISPELL EXISTING TRAIL
- CITY OF KALISPELL PROPOSED TRAIL
- PROPOSED TRAIL
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 4,000 8,000
Scale in Feet

N

Figure 4-1
Non-Motorized System

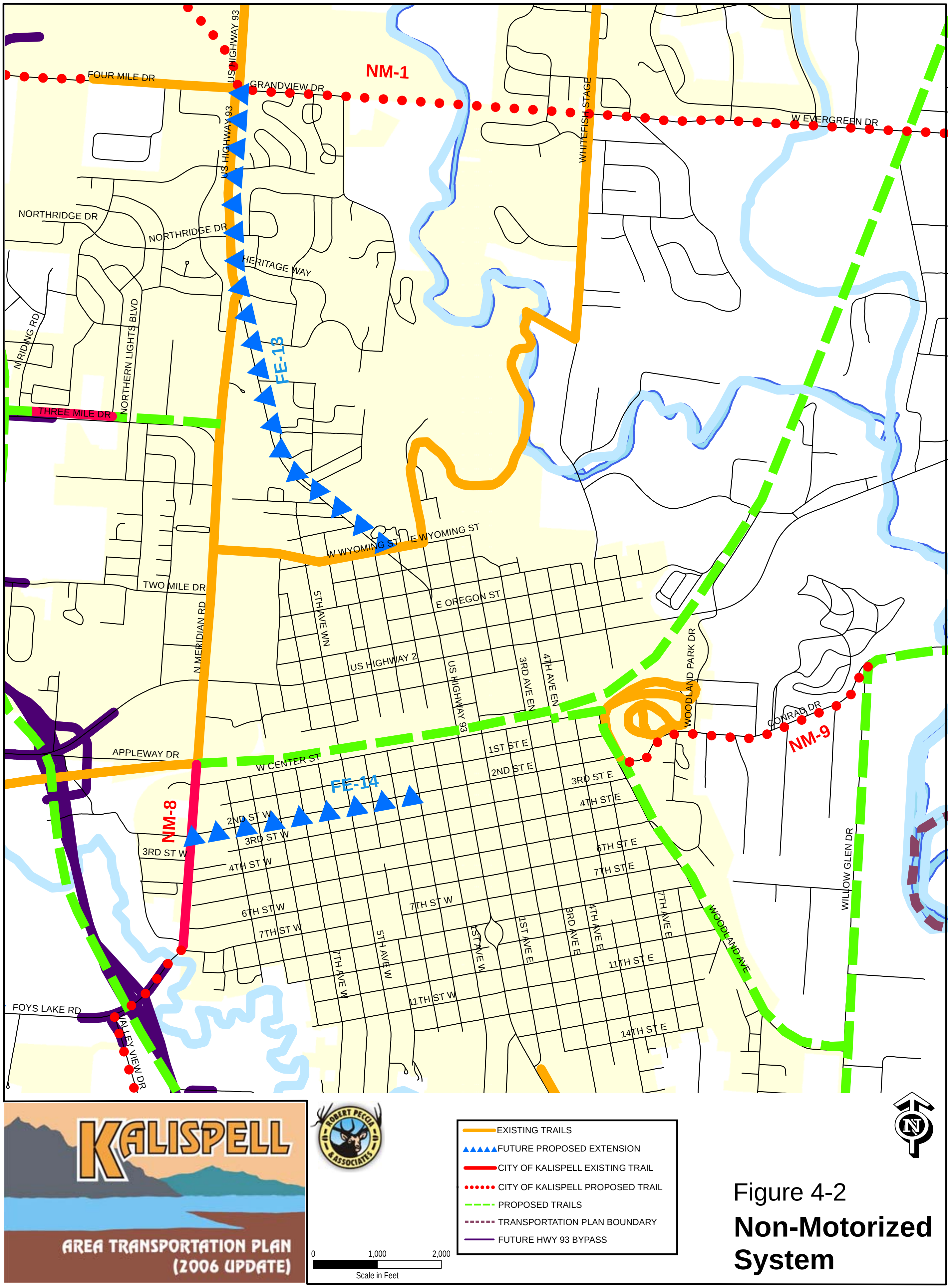

Figure 4-2
Non-Motorized System

4.3 TRANSIT CONSIDERATIONS *

(* Note that the majority of this information has been taken directly from the recent Eagle Transit *Transportation Development Plan Update (2007-2012)* prepared by the consulting firm of LSC Transportation Consultants, Inc.)

Introduction

This section of **Chapter 4** of the Transportation Plan is intended to provide a "snapshot" of current transit service and operations in the Flathead County area. Transit operations are evaluated in the Flathead County area on a five-year cycle through the development of "Transit (or Transportation) Development Plan (TDP)" updates. The most recent TDP Update was completed during the calendar year 2006 by the consulting firm of LSC Transportation Consultants, Inc. Accordingly, the next TDP Update will occur during the year 2011. Transit development plans are generally intended to analyze current transit system operations and determine how well the transit systems are meeting the needs of the community. Projecting future growth patterns and future transit needs are also examined in great detail. Within the Flathead County planning area, there are a variety of different transportation providers. These providers include public, private, and nonprofit operations. Most of these organizations serve a specific segment of the City of Kalispell and Flathead County's population.

It is important to recognize that transit service in the community is for some citizens the only mode of transportation utilized. This is especially true for many of the community's elderly and disabled citizen population. The primary goal of the transit system should be to provide reliable service to its users and make that service available to all members of the public. A secondary goal is to make mass transit work for the community, by reducing parking demand, traffic congestion, and the need for roadway expansion wherever possible. Wherever possible, planners & elected officials should consistently evaluate opportunities to heighten transit awareness and usage in the community. This can be as simple as requiring consideration of park-and-ride facilities with new developments along major roadways (if appropriate), to ensuring that the needs of disabled pedestrians are examined to ensure that they have well connected routes of travel.

Goals of Eagle Transit Service in Flathead County

The mission of Eagle Transit is to "*…promote transportation education and to provide transportation in a safe, economical, and efficient manner for the transportation-disadvantaged and general public of Flathead County.*" To achieve the mission statement, a set of goals and objectives were defined during the TDP Update process. Four (4) goals with corresponding objectives were developed in the TDP Update. These goals addressed mobility, performance, customer orientation, and land use planning. The following constitute the current "Goals and Objectives" as adopted by the Eagle Transit Board.

GOAL 1: Flathead County will provide mobility opportunities for those who are dependent on public transportation.

A. Service will be provided to key activity centers within Flathead County, including hospitals, medical clinics, shopping centers, FVCC, schools, and major employment centers.

B. Service will comply with the requirements of the Americans with Disabilities Act.

C. Coordinate with local entities for a more efficient use of local resources.

D. Coordinate bus schedules to accommodate the local schools.

GOAL 2: Eagle Transit will strive to provide efficient and effective services at the lowest cost and highest productivity possible.

A. Increase ridership on all routes and services.

B. Productivity standards will be met based on passengers per hour and passengers per mile.

C. Make maximum use of facilities and equipment, both public and private.

D. The lowest cost alternative will be used to meet identified transit needs.

E. Service will be provided on time to meet published schedules.

F. Requests for new service will be evaluated to ensure that productivity objectives will be met and funding is available.

G. Stimulate the use of private funds to supplement public subsidies.

H. Develop a long-term commitment for public funding of transit services and seek sustainable sources of additional funding for operations.

GOAL 3: Provide transportation programs that are consumer-oriented.

A. Provide service during commute hours at locations of major employment.

B. Establish a countywide ridesharing program.

C. Provide intercity services when demand and funding warrant such service enhancements.

D. Encourage use of Eagle Transit through a continuous marketing campaign and develop general community support for the purpose of generating ridership and funding.

GOAL 4: Promote land use planning and development which facilitate transportation service provision and minimize energy consumption.

A. The Transit Advisory Board will comment as appropriate on land use proposals in Flathead County, including those within municipal corporate limits.

B. The Transit Advisory Board will comment on proposed locations of major transit trip generators. Service to major transit trip generators will be based on the system productivity standards.

C. Eagle Transit will comment on designs for proposed major transit trip generators.

Vehicle Fleet

Eagle Transit currently has nine vehicles for passenger transportation. The vehicle inventory for passenger transit is shown in **Table 4-4**. Each of the buses is equipped with two-way mobile radios. As shown in the table, there will be capital replacement needs within the next five years. The buses have a vehicle life based on the Federal Transit Administration Guidelines of seven years for the light-duty buses. A description of the buses are shown in **Table 4-4**.

Table 4-4
Eagle Transit Vehicle Fleet

Quantity	Year	Model	Seating	Condition
2	2005	Body-on-Chassis	17 pass. (or 3 wheelchairs + 3 pass.)	Excellent
2	2003	Goshen Buses	23 pass. (or 3 wheelchairs + 15 pass.)	Excellent
2	2000	Champion Buses	23 pass. (or 3 wheelchairs + 15 pass.)	Fair/Poor
1	2004	Chevy Minivan	6 pass. (or 1 wheelchairs + 1 pass.)	Excellent
2	1997	Ford Body-on-Chassis	17 pass. (or 3 wheelchairs + 3 pass.)	Poor

Description of Transportation Services

Eagle Transit is available to all persons within Flathead County. Two (2) types of primary service are available to local residents and are listed below:

City Bus Route – The City Bus Route operates year-round Monday through Friday in Kalispell, and the hours of operation are from 9:15 a.m. to 5:30 p.m. A variety of fare options are available for the checkpoint service. Elderly riders provide donations for the transportation service. The current fares are listed in **Table 4-5**.

Table 4-5
Current City Bus Route Fares

Type of User (and/or Use)	Price
General Fare	$1.00
FVCC Student Semester Pass	$35
Monthly Passes	$25
Disabled (20-Ride Tickets)	$10
Elderly	Tickets by Donation

The City Bus Route operates on an hour-and-30-minute headway for the checkpoint service. The bus operates primarily in a counterclockwise direction, providing service to the hospital, FVCC, Treasure State and Senior Apartments, Kalispell Center Mall, Sykes Market, and Smith's Food and Drug. The City Bus Route provided approximately 11,900 trips in the 2004-2005 Fiscal Year (July - June), or approximately 990 trips per month. This service provides nearly 25 percent of the total systemwide ridership, the second highest ridership of all services.

Countywide "Door-to-Door" Service – These services vary within each community and also have varied operating hours and days of service. The different services are described below. Much of this service is provided only if there are a certain number of riders scheduled for the trips. Many times this does not occur. New service put in place in October 2004 attempts to reach into those areas which previously had not had service. The service is designed to meet the need of the elderly and disabled and is available within a 20-mile radius of Columbia Falls, Kalispell, and Whitefish on Tuesday and Thursday.

Columbia Falls "Curb-to-Curb" Service – The service is offered Monday through Friday from 9:00 a.m. to 1:00 p.m. The curb-to-curb service in Columbia Falls is expanded to the Canyon with two round-trips on Tuesdays and Thursdays when at least five passengers schedule a ride. The fare for this service is $1.00 for each one-way trip in Columbia Falls. Passengers who schedule a ride from the Canyon to Kalispell are charged $3.00 per one-way trip. Other destinations are charged $6.00 per trip as this is considered a county dial-a-ride request. This service provided 2,800 annual trips for 2004-2005, approximately six percent of the total Eagle Transit ridership. This service also provides transportation to and from the Montana Veterans Home.

Columbia Falls/Canyon/Kalispell Service – This service is provided on the first and third Tuesdays of the month only. There must be a minimum of five riders for the service to operate. The trip costs $6.00 each way. This service is virtually non-existent and only provided occasionally. Service is provided using the conversion van. The service historically provided service five days per week; however, service was changed to reflect the decrease in demand from Canyon into Columbia Falls. Ridership decreased 21 percent and service hours were reduced by 9 percent. The primary users of this service are the elderly.

Kalispell/Evergreen "Curb-to-Curb" Service – This curb-to-curb service is offered Monday, Wednesday, and Friday at 8:00 a.m., 10:00 a.m., 12:00 noon, and 3:00 p.m. The fare for this service is $1.00 for each one-way trip. This service provided the most trips in 2004-2005, providing more than 12,700 trips, or 27 percent of the total systemwide ridership. This service provides more trips than the Kalispell City Bus.

Evergreen Express Service – The Express Service is provided on Wednesdays only with two round-trips scheduled—one at 10:00 a.m. and the second at 12:00 noon. This route provides direct service to the shopping areas, such as Wal-Mart, Shopko, and Kmart. The fare for this service is $1.00 for each one-way trip.

Whitefish/Kalispell Service **–** This curb-to-curb service is provided on Tuesdays providing five riders or more have requested the trip. The scheduled service provides one round-trip, leaving Whitefish at 2:00 p.m. and returning at approximately 6:00 p.m. The fare for this service is $6.00 for each one-way trip. Again, this service in nonexistent due to the policy of having five or more riders scheduled three days in advance.

Kalispell/Whitefish Service **–** This curb-to-curb service is offered Monday, Wednesday, and Friday with one round-trip scheduled each day. The route leaves Kalispell at 9:00 a.m. and returns at 2:45 p.m. The fare for this service is $3.00 for each one-way trip.

Whitefish Service **–** This curb-to-curb service is also offered Monday, Wednesday, and Friday from 10:00 a.m. to 2:00 p.m. The fare for this service is $1.00 for each one-way trip. This service provided approximately 3,300 annual trips for 2004-2005, or approximately seven percent of the total Eagle Transit ridership. This service averages approximately 400 trips per month.

SPARKS Service **–** The Sparks service is an after-school program for children through The Summit, a part of the Regional Medical Center. Children are provided transportation from school to this program. The service approximately 4,800 rides in FY 2004-2005.

Note that **Figure 4-3** and **Figure 4-4** show the existing checkpoints currently used for the City Bus Service. Also shown on the figures are the expanded checkpoint serve stops that were a recommendation arising from the recent Transportation Development Plan Update (2007-2011).

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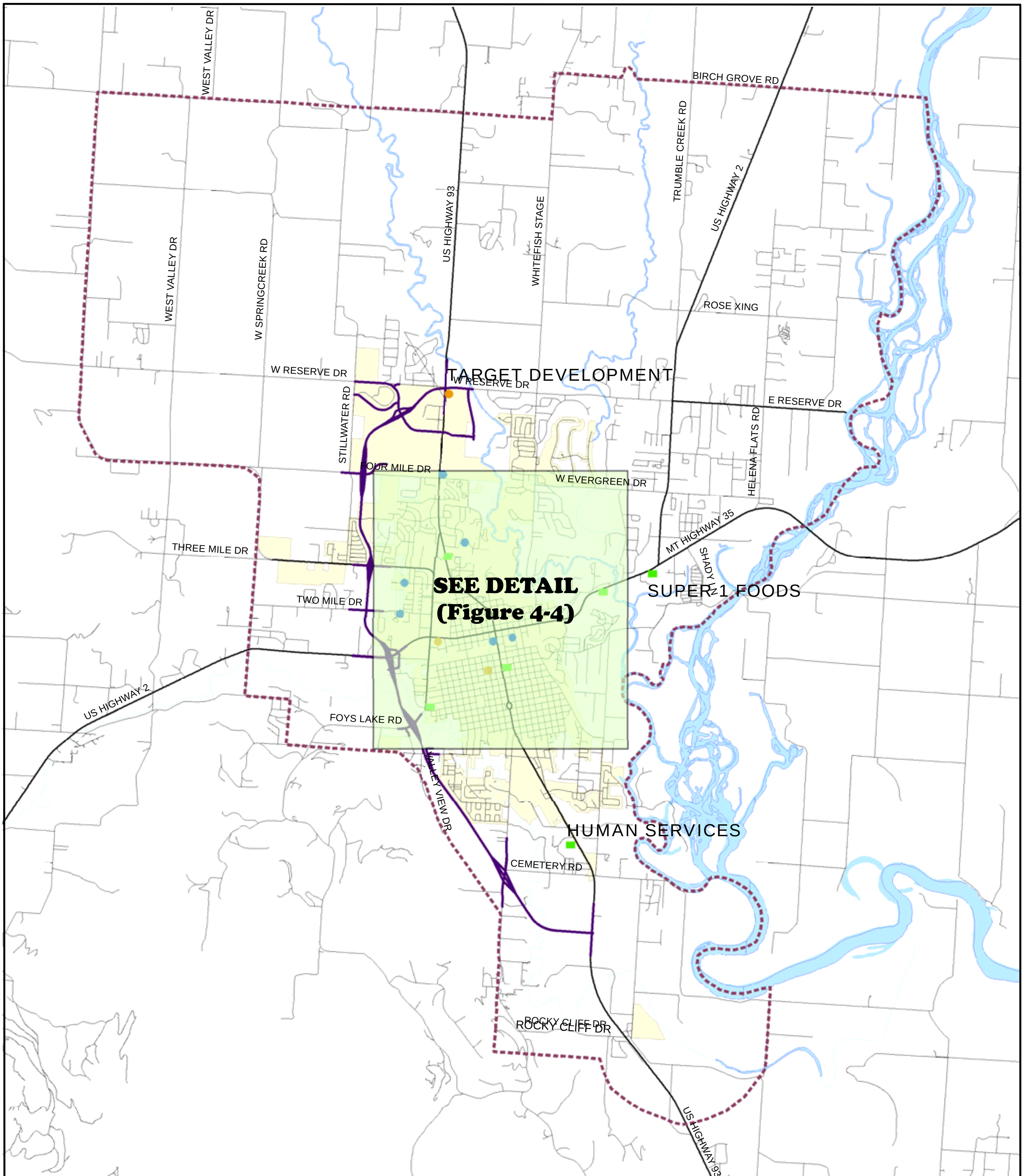

KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

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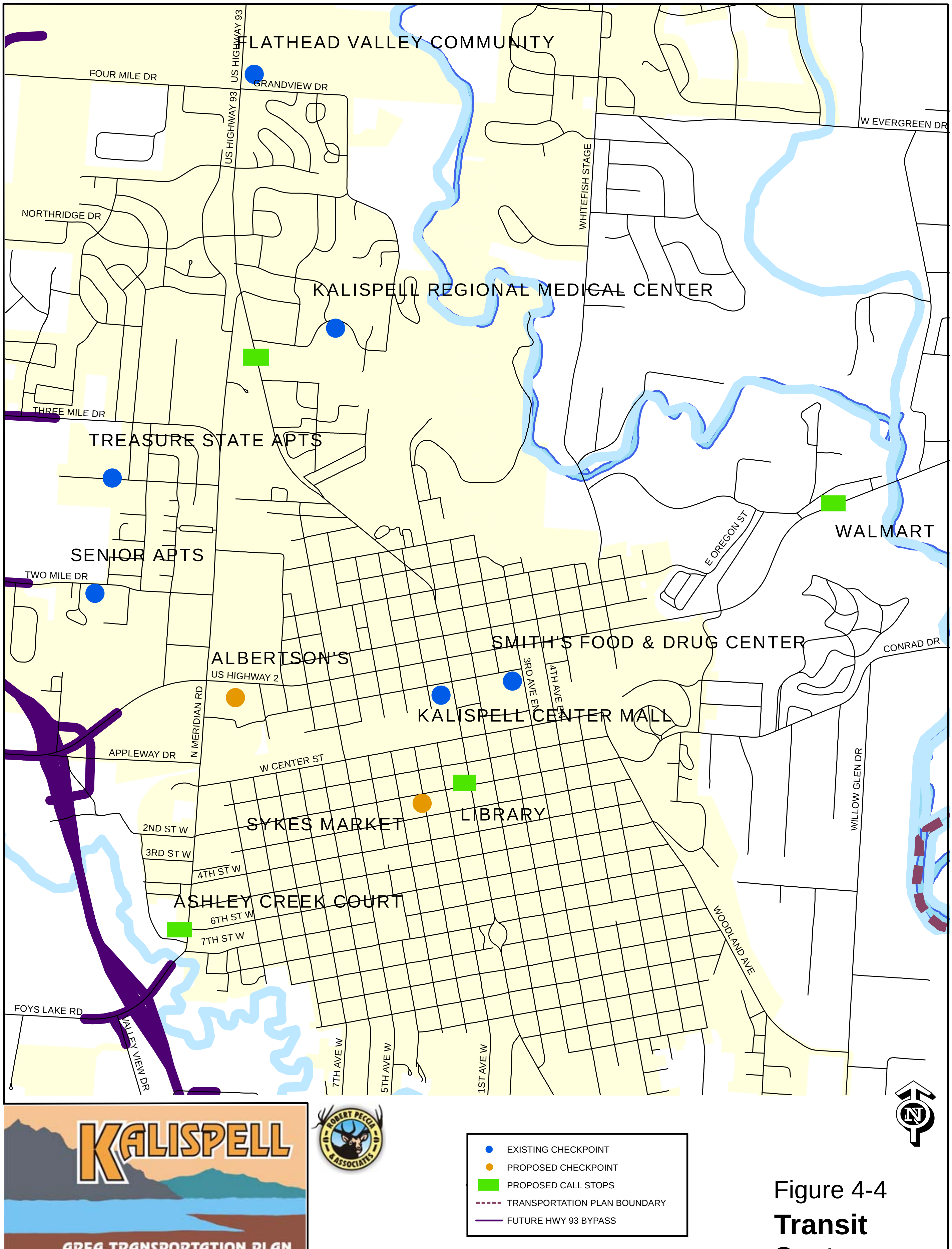
- EXISTING CHECKPOINT
- PROPOSED CHECKPOINT
- PROPOSED CALL STOPS
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 2,000 4,000 8,000
Scale in Feet

N

Figure 4-3
Transit System



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

Figure 4-4
Transit System

Other Transportation Providers

Kalispell Taxi - Kalispell Taxi, also known as Flathead Area Custom Transportation, is a full-service, private transportation provider. Kalispell Taxi's current service area extends 50 miles from Kalispell in all directions. Kalispell Taxi provides demand-response, scheduled, and non-ambulatory (wheelchair) service. Service is available 24 hours a day, seven days a week.

> ***Airport Shuttle Service*** - Shuttle services from the Flathead Valley to and from the airport are provided year-round. Kalispell Taxi previously had two contracts for the transportation of airline crews to and from the airport to the hotel. Approximately 900 rides were supplied to airline crews annually and approximately 4,000 rides to the general public from scheduled shuttle operations. This service is no longer active due to the hotels purchasing vans for their clients and operating the service themselves. However, in January 2000, Kalispell Taxi began a contract with Amtrak to transport crews to and from the train station. This service generates approximately 3,000 to 4,000 annual trips.
>
> ***General Taxi Services*** - Kalispell Taxi offers taxi service to passengers within a 50-mile radius of Kalispell. The service is based out of Kalispell. The company has from one to seven drivers on shift at any given time, based on the demand for service. Approximately 35,000 passengers per year are transported with the general service.
>
> ***Specialized Taxi Services*** - Kalispell Taxi provides non-ambulatory and medical transportation to passengers with disabilities year-round. The service is provided at the same rate as used for Medicaid and for the Eagle Transit program. Approximately 1,500 non-ambulatory rides per year are provided and approximately 5,000 annual rides to others with disabilities.
>
> ***Expedited Courier Service*** - The final service offered by Kalispell Taxi provides immediate delivery of courier items 24 hours per day year-round to points and places in Montana and Idaho. Approximately two trips per day of this type are provided. Current contracts for this service are with Sky Courier, Network, Sonic, Federal Express, and other small courier companies.

Buffalo Hill Terrace - Buffalo Hill Terrace is a residential community for the elderly located at 40 Claremont Street in Kalispell. Buffalo Hill Terrace has one 17-passenger bus providing transportation for its residents only. In general, transportation services are provided seven days per week with Tuesday and Thursday afternoons reserved for Kalispell-area appointments. Commonly, there are shopping trips on Saturdays and trips to area churches on Sundays. The bus is reserved for activities scheduled at other times during the week. The bus is driven either by the director, maintenance, or recreation person for Buffalo Hill Terrace as part of their regular full-time work. Transportation services are provided at no extra cost other than resident rent.

Immanuel Lutheran Home - Immanuel Lutheran Home is a residential care facility which has a 13-passenger, lift-equipped mini-bus available to provide transportation. On Tuesdays and Thursdays, the vehicle is reserved to accommodate scheduled medical appointments for the residents. Resident families are encouraged to accompany residents to these appointments. On

Mondays, Wednesdays, and Fridays, the vehicle is used by the Activities Department for group outings. Resident families, as well as volunteers and staff members, accompany residents to assist in providing necessary care. On Sundays, the vehicle is used to transport residents of Buffalo Hill Terrace and Immanuel Lutheran Home to Sunday morning church services. The vehicle is available as needed for medical emergencies if it is not in use for group outings.

Heritage Place - Heritage Place, at 171 Heritage Way, provides residential care for elderly persons. It owns and maintains one van. Transportation services for residents are provided to and from appointments with doctors, dentists, and other medical practitioners. Other transportation services include recreational activities, such as lunches, trips to parks, and parades. Transportation is generally provided in the Kalispell area. Services are usually operated from 8:30 a.m. until 4:00 p.m. on Mondays, Tuesdays, and Wednesdays. Special trips are made on Thursdays and Fridays. Emergency trips can be made on Saturdays and Sundays. Residents' rent covers all transportation costs.

Flathead Industries - Flathead Industries is a community rehabilitation agency. It operates four group homes, each of which has a van. There are four additional vans not assigned to a group home, for a total of eight vans. Flathead Industries also operates services for disabled persons living independently. Transportation services are provided seven days a week and virtually 24 hours a day. The majority of trips are made within the Kalispell area, but trips have been made as far north as Libby. Several fixed schedule services are run to enable disabled persons to get to work. That service takes disabled persons to work at 9:00 a.m. and picks them up again at 3:00 p.m. The remainder of the transportation services operate much like a family vehicle, taking clients on demand where they need to go. Peak transportation periods are generally between the hours of 7:00 and 9:00 a.m., and again in the afternoon from 2:00 to 4:00 p.m.

Flathead Industries has a total of 74 full-time employees and 60 part-time employees. Of the total 134, a core of 28 persons, primarily the group home staff, does most of the driving. All driving is part of other regular staff duties. Flathead Industries provides 40,000 one-way passenger-trips per year. Their eight vans travel approximately 85,000 total vehicle-miles per year. That represents about 8,000 miles per year per van, plus an additional 20,000 miles for service in Whitefish. The trip totals and mileage totals translate to nearly 7,500 vehicle-hours of service.

Regarding trends for the future, Flathead Industries is similar to many other agencies across the United States—focusing on disabled persons getting their own jobs rather than working in "sheltered workplaces." The result of this trend is the increasing breadth of services throughout the community. As service broadens, increased coordination between Flathead Industries, Eagle Transit, and other transportation providers will be necessary.

Kalispell Regional Hospital - Kalispell Regional Hospital operates two vans for its patients. One van is used solely for transporting nursing home patients and psychiatric patients. The other van is used for general patient transportation. In general, transportation services are provided to and from other doctor's appointments, dialysis, rehabilitation, recreational therapy, and psychiatric appointments. The services are provided on an as-needed basis. Kalispell Hospital estimates that each van travels approximately 10,000 miles per year. The general patient van provides approximately 3,000 passenger-trips per year.

The general patient 1995-van has room for two wheelchairs, three ambulatory patients, and one driver, for a total of six. The hospital applied for DOT grants several years in a row, as was done in Missoula. Unlike Missoula, Kalispell Hospital was denied the grant each time, making it necessary for Kalispell Hospital to purchase the van without any assistance.

S.N.O.W. (The Shuttle Network of Whitefish) BUS - The S.N.O.W. Bus service operates only during the ski season. This free service is funded by the member businesses of the Big Mountain Commercial Association (BMCA). The service provides convenient, comfortable, and free transportation to and from the Town of Whitefish and Big Mountain Village. The agency reported approximately 40,000 trips for the 2004-2005 ski season. Possible coordination for summer operations in the future between S.N.O.W. Bus and Eagle Transit have been discussed. S.N.O.W. Bus also showed interest in coordination with the Glacier Park Project.

Colonial Manor Nursing Home of Whitefish - The Colonial Manor Nursing Center operates a dual-purpose van. One of those purposes is to provide residents transportation to and from medical office visits. The nursing center service area is approximately 20 miles in any direction from Whitefish. The transportation service runs by appointment. Appointments are set by nursing staff and the van is used at those times. Some additional outside trips are scheduled.

There is no fare for this service. The transportation fees are included in the resident room rate. Several employees do the driving for this service as part of their overall responsibilities. Service is provided generally between the hours of 9:00 a.m. and 7:00 p.m.

Colonial Manor staff estimate approximately 400 one-way trips are made annually. Those trips require approximately 2,000 vehicle-miles and 300 vehicle-hours of service. The operating cost of the service is estimated at $1,000. The van operates, more than twice per week. In general, the current resident transportation needs are being met. The number of trips made per year has decreased slightly in recent years due to increasing Eagle Transit service.

Rocky Mountain Transportation - Rocky Mountain Transportation is the largest transportation provider in Flathead County. Rocky Mountain Transportation (RMT) consists of three divisions: school bus operation in Whitefish, charter services including convention and athletic trips, and a Hertz franchise. As mentioned elsewhere, some of Rocky Mountain Transportation’s charter services include the Big Mountain Ski Area. Contract fees are charged for all services based on the cost of providing those services. As a private transportation provider, it does not receive government subsidies. RMT has a substantial fleet, consisting of 7 coaches, 15 school buses, five 12-passenger vans, and 200 automobiles (Hertz). RMT has been providing transportation services in the Whitefish area since 1946.

Whitefish Golden Agers, Inc. - Whitefish Golden Agers, Inc. owns and operates a 12-passenger van. Transportation services are provided free of charge to residents of the Golden Agers community. Transportation services are generally provided on Tuesdays, taking senior walkers to the mall. Other special trips are made as needed. The Whitefish Golden Agers community coordinates with Eagle Transit, which provides service on Monday, Wednesday, and Friday to and from nutrition sites. All drivers for the Golden Agers service are volunteers.

State Veterans Home - The Montana State Veterans Home is located approximately one mile outside of the Columbia Falls city limits. The State Veterans Home currently maintains several vehicles for transportation services. However, many of the clients use Eagle Transit for transportation. Eagle Transit stops by the Veterans Home daily for passenger pickup or drop off.

The Veterans Home provides bus service to Columbia Falls on Monday, Wednesday, and Friday mornings. Demand-response service is also available. There is no fee charged to residents of the Veterans Home for in-house transportation services. Several full-time maintenance employees do the driving as part of their overall responsibilities.

The State Veterans Home estimates that they provide approximately 600 one-way passenger-trips on an annual basis. This represents approximately 14,000 vehicle-miles and 600 vehicle-hours of service per year. Funding for their transportation is provided by the federal Veterans Administration, by State of Montana cigarette tax, and when possible, third parties, such as insurance companies, pay for residents of the home.

Lake View Care Center - The Lake View Care Center is a nursing home with an 83-bed capacity. It currently operates one lift-equipped van for resident transportation needs. Transportation services are provided from 8:00 a.m. until 5:00 p.m. Tuesday through Friday, with Monday lunch and outing trips. The majority of the trips Tuesday through Friday are to doctors and dentists in the Kalispell area.

Two employees of Lake View Care Center drive the 1987 van as part of their other full-time duties. The Lake View Care Center estimates that the van travels 10,000 miles per year. The budgeted operating cost for the transportation services is approximately $1,500 per year. Operating costs come directly out of resident rent. No federal or state grants are available.

There are two issues to consider for the Lake View Care Center. One is that the Lake View Care Center staff are only able to provide transportation Monday through Friday 8:00 a.m. to 5:00 p.m. Evening and weekend service needs are not currently met. Additionally, some of the ambulatory residents desire to get out and about more often. Some sort of public transit service, such as Eagle Transit, would be great if available.

Rimrock Stage/Rimrock Trailways - Rimrock is an intra- and interstate transportation provider. Service operates daily between Whitefish and Missoula. Stops are made in Kalispell and numerous other locations along the west shore of Flathead Lake. Service departs Missoula at 12:15 p.m. and arrives in Whitefish at 4:35 p.m. Return service departs Whitefish at 4:35 p.m. and terminates in Missoula at 8:05 p.m.

Fares are approximately $31 one-way trip/ $62 round-trip between Whitefish and Missoula. Connecting bus service beyond Missoula is made aboard the Greyhound Bus lines.

TDP Update (2007-2011) Recommendations

Eagle Transit shows limited expansion of the existing services as the plan for the next six years, due to local funding constrains. The major assumptions used in developing revenue and cost projections are sources currently dedicated to Eagle Transit or to be realized over the short planning horizon. Currently FTA has allocated a large amount of FTA Section 5311 funding for general transportation providers; however, this funding requires a local match for both operating and capital, and it is this local match which is in short supply. Unless innovative funding mechanisms become realized by Eagle Transit, service will likely remain unchanged except for minor improvements; however, a plan is also designed to incorporate “what if” scenarios, such as increased local funding sources. This Plan attempts to be both realistic, as well as optimistic. The Preferred Transit Plan (i.e. recommendations) incorporates ten elements:

- Route-deviation service in Kalispell;
- ADA service in Kalispell;
- Increased service in Columbia Falls;
- Increased service in Whitefish;
- Limited commuter service;
- Downtown Kalispell shuttle system;
- Operations Manager Position;
- Marketing program;
- Capital improvements; and
- Countywide Dial-a-Ride and South Valley expansion.

Each of these service options is presented below with a brief description and operating measures.

Kalispell Route-Deviation System - This service component will be operated with two vehicles from 7:00 a.m. until 6:00 p.m. Two deviated fixed-routes are designed to run both generally north/south and east/west with a timed transfer point at the Kalispell Center Mall in downtown Kalispell. Buses would be dispatched to pick up passengers off the route using computer-aided schedule and dispatch software. These passengers would be charged 2.0 times the route stop fare. If passengers pay $1.00 at a published stop on the route, they are then charged $2.00 per deviation pick-up or drop-off in the service areas.

ADA Service in Kalispell - ADA service in Kalispell will be provided to subscription or certified riders only. Fares would be established at a rate of $2.00 per trip per ride. This service would be done with one small body-on-chassis vehicle or a small van with a lift. Only passengers within the city limits of Kalispell are eligible for ADA service. Passengers outside who are ADA certified will continue to be served with the County Dial-A-Ride service.

Columbia Falls Service - Columbia Falls will be served with one vehicle five days per week from approximately 8:00 a.m. until 5:00 p.m. Multiple “tripper” runs could be done out of Columbia Falls between either Kalispell or Whitefish daily or Hungry Horse/Canyon. These would be published runs and occur for any one passenger. Fares in-town would be established at $1.00 per trip with out-of-town trips at $3.00 per trip.

Whitefish Service - Service in Whitefish would be provided Monday, Wednesday, and Friday from 8:00 a.m. until approximately 5:15 p.m. This service would provide two “trippers” to Kalispell daily, one scheduled in the mid-morning and one in the mid-afternoon. This service would also provide the limited commuter service discussed in the next section. Service would be provided on these days until an average of 5 passengers per hour is reached, at which point, service should be increased to five days per week.

Limited Commuter Service - Commuter service would be incorporated into each of the options listed above. Commuter service is envisioned to operate from Kalispell to Hungry Horse and back twice per day as well as between Whitefish and back twice per day.

Downtown Kalispell Shuttle Service - A downtown shuttle has been discussed with local Kalispell business leaders. This shuttle would serve the downtown area during normal business hours and be free to patrons. The shuttle would help alleviate downtown congestion and allow downtown patrons to travel around the area without having to drive their car. This will be developed further as discussions progress with business leaders who have expressed a willingness to fund this type of service.

Operations Manager Position - An Operations Manager Position should be formed. This position should be formed from the existing Driver Supervisor/Scheduler position. Once computer-aided scheduling is in place, the current supervisor/scheduler should take over more a role of operations manager. This position would continue to oversee the driver’s schedules, training, and other administrative duties as well as assist in operations management, tracking of records, and overall maintenance functions. While this is actually being done by the scheduler, these scheduling duties would be replaced by such functions as marketing of the system, tracking ridership, on-time performance monitoring, grant preparation, and planning. No significant cost is assumed to be incurred by this position; however, significant training may be required on grant writing, report preparation, and other duties as seen fit by the Transit Manager.

Marketing Program - An aggressive marketing campaign and program should be established. As step one, a Marketing Plan should be prepared detailing plans for one fiscal year of marketing strategies and efforts. As system changes occur in the near future, increased public awareness is a priority. This ranges from newspaper advertisement, radio spots, television appearances, the formation of an education and speaker forum, all under the direction and responsibility of the Transit Manager. This is likely to cost from $15,000 to $20,000 per year for elements such as schedule printing, advertisement, travel costs, and other promotional material.

Additional Capital Improvements - Additional capital is likely to be needed to make Eagle Transit more effective and efficient. Several items include the following:

- Computer-aided dispatching and scheduling hardware/software;
- New fare boxes;
- Communication equipment for drivers and dispatchers;
- Office equipment such as color printer/copier;
- Bike racks;
- General maintenance equipment;

- On-sight wash bay/rack; and
- Passenger amenities such as fixed-stop shelters.

While not all of these elements are needed, vehicles are a must and therefore must be planned for if a transit system is to operate. Some of these items, such as dispatching software, will allow Eagle Transit to more effectively serve passengers as the system progresses to more of a deviated fixed-route system.

4.4 ALTERNATIVE TRAVEL MODE CONCLUSIONS

Additional Considerations

During the development of this Transportation Plan Update, additional non-motorized locations and thoughts were developed to "piggy-back" on the routes and ideas developed in the Comprehensive Parks and Recreation Master Plan. These are listed below:

- Continue support of and explore funding for the Sam Bibler Commemorative Trail. This facility was identified as project T-15 in the Comprehensive Master Plan, however did not extend north on Willow Glen Drive past Woodland Avenue. The entire segment would be in place between US Highway 93 South and Conrad Drive, with eventual connection to Shady Lane via Conrad Drive.

- Explore feasibility of a recreation trail in the Slough area between Woodland Avenue and Kelly Drive, with potential connections to the Sam Bibler Memorial Trail. There is currently an informal trail around most of the northern part of the slough area.

- Encourage on-street bicycle facilities for all new minor arterials, and/or reconstruction projects on existing minor arterials.

- Require new developments annexing into the City to provide non-motorized facilities and ensure connectivity to appropriate key features (parks, schools, etc.).

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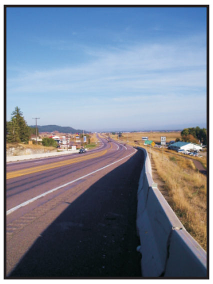
Chapter 5: Problem Identification



CHAPTER 5: PROBLEM IDENTIFICATION

This chapter of the Transportation Plan identifies areas of the existing transportation system that do not meet the desires of the community. The deficiencies may fall into one or more of the following categories:

- Safety (i.e. crash analyses);
- Intersection levels of service;
- Signal warrant analysis; and
- Corridor levels of service;

Each of these areas is expanded upon in this chapter.

5.1 CRASH ANALYSIS

The MDT Traffic and Safety Bureau provided crash information and data for use in the Kalispell Area Transportation Plan – 2006 Update. The crash information was analyzed to identify intersections with crash characteristics that may warrant further study. General crash characteristics were determined along with probable roadway deficiencies and solutions. The crash information covers the three-year time period from January 1st, 2003 to December 31st, 2005. It should be noted that while there were reconfiguration projects at various intersections in Kalispell during this three-year time period, this was not taken into account in this analysis.

Three analyses were performed to rank the intersections based on different crash characteristics. First, the intersections were ranked by number of crashes. For this analysis, intersections with 12 or more crashes in the three-year period were included. If an intersection did not have 12 crashes in the three-year period the data was available, it was not included at all in this analysis. A summary of these intersections, along with the number of crashes at each intersection, is shown in **Table 5-1**.

The second analysis involved a more detailed look at the crashes to determine the MDT "severity index rating". Crashes were broken into three categories of severity: property damage only (PDO), non-incapacitating injury crash, and fatality or incapacitating injury. Each of these three types is given a different rating: one (1) for a property damage only crash; three (3) for an injury crash; and eight (8) for a crash that resulted in a fatality. Crash information provided by the MDT Traffic and Safety Bureau listed the crashes as either "injury" or "non-injury". There was no way to determine with this information whether the crashes included "possible injury".

The MDT severity index rating for the intersections in the analysis is shown in **Table 5-2**. The calculation used to arrive at the severity index rating is as follows, and is based on crash severity data provided by the MDT:

$$\frac{[(\text{\# PDO for intersection}) \times (1)] + [(\text{\# non-incapacitating crashes for intersection}) \times (3)] + [(\text{\# fatalities or incapacitating crashes for intersection}) \times (8)]}{\text{Total number of crashes in three-year period}} = \text{(MDT Severity Index Rating)}$$

The third analysis ranked the number of crashes against the annual average daily traffic (AADT) at each intersection, expressed in crashes per million entering vehicles (MEV). A summary of the intersections in the analysis is shown in **Table 5-3**. The calculation used to arrive at the crash rates, expressed in crashes per million entering vehicles (MEV), as shown in **Table 5-3**, is as follows:

$$\frac{\text{Total number of crashes in three-year period}}{(\text{AADT for Intersection}) \times (3 \text{ years}) \times (365 \text{ days/year}) / (1{,}000{,}000 \text{ vehicles})} = (\text{Crash Rate})$$

In order to give the intersections included in the crash analysis an even rating, a composite rating score was developed based on the three analyses presented above. This composite rating score has the following criteria: First, the intersection had to have a minimum crash rate of 1.0 crash per MEV. Second it had to have 12 or more crashes in the three years combined. Third, it had to rate in the top 10 of one of the three previous categories. Using these criteria, the intersections were then rated based on their position on each of the three previous tables, giving each equal weight. For example, the intersection of La Salle Road and Reserve Drive was given a ranking of 3 for its position in **Table 5-1**, another ranking of 5 for its position in **Table 5-2**, and a ranking of 1 for its location in **Table 5-3**. Thus its composite rating is 9.

Table 5-1
Intersections with 12 or More Crashes in the
Three-Year Period (January 1, 2003 – December 31, 2005)

Intersection		**# Crashes**
Intersections with 60 - 65 crashes		
MT 35 & La Salle Road (U.S. 2)	S	64
Intersections with 54 - 59 crashes		
Main Street & Idaho Street	S	55
Intersections with 36 - 41 crashes		
La Salle Road & Reserve Drive	S	41
West Idaho Street & Meridian Road	S	38
Intersections with 30 - 35 crashes		
U.S. Highway 93 & 18th Street	S	33
Idaho Street & 3rd Avenue East	S	31
Intersections with 24 - 29 crashes		
Idaho Street & 7th Avenue East	S	28
River Road & Idaho Street	U-2W	28
U.S. Highway 93 & Northridge Drive	S	27
U.S. Highway 2 & Sager Lane (Super One, Staples)	S	26
U.S. Highway 93 & Reserve Drive	S	26
West Idaho Street & 5th Avenue West	S	26
Main Street & Center Street	S	25

U.S. Highway 93 & Meridian Road	S	24
LaSalle & Cottonwood Drive*	U-2W	24
Intersections with 18 - 23 crashes		
East Evergreen & U.S. Highway 2 (La Salle Road)	S	22
Town Pump (business) & Idaho Street*	U-2W	21
Idaho Street & 4th Avenue East	S	20
Plum Creek (business) & Reserve Drive*	U-2W	20
U.S. Highway 93 & Montana Street*	U-2W	19
U.S. Highway 2 & Walmart	S	19
U.S. Highway 93 and 4 Mile Drive	S	18
Intersections with 12 - 17 crashes		
2nd Street East & Woodland Street	U-3W	16
U.S. Highway 93 and Wyoming Street	S	16
La Salle & McDonalds, ect. (various businesses)*	U-2W	15
Main Street & 4th Street	S	14
U.S. Highway 93 & 3rd Avenue East (Rosauers)	S	14
U.S. Highway 93 & Willow Glen Drive	S	14
Greenhouse (business) & Idaho Street*	U-2W	14
Main Street & 2nd Street	S	13
Center Street & 5th Avenue NW	S	13
La Salle Road & Spring Creek Drive*	U-2W	13
Main Street & 11th Street	S	12
Main Street & 1st Street	S	12
East Idaho Street & Woodland Park Drive	U-2W	12

* Intersections not identified in the Kalispell Area Transportation Plan – 2006 Update

** ”S” = Signalized intersection, “U-2W” = Unsignalized two-way stop controlled, “U-3W = Unsignalized three-way stop controlled “U-4W = Unsignalized four-way stop controlled

Note that there are several intersections listed in **Table 5-1** that are not specifically being studied as part of the Kalispell Area Transportation Plan – 2006 Update.

Table 5-2
Intersection Crash Analysis – MDT Severity Index Rating

Intersection		**PDO**	**Injury**	**Severity Index**
Intersections with 2.49 – 2.0 Severity Index				
East Idaho Street & Woodland Park Drive	U-2W	5	7	2.17
U.S. Highway 2 & Sager Lane (Super One, Staples)	S	11	15	2.15
U.S. Highway 93 & Reserve Drive	S	11	15	2.15
U.S. Highway 93 & Willow Glen Drive	S	6	8	2.14
La Salle Road & Reserve Drive	S	22	19*	2.05
East Evergreen & U.S. Highway 2 (La Salle Road)	S	11	11	2.00
Intersections with 1.99 – 1.50 Severity Index				
U.S. Highway 2 & Walmart	S	10	9	1.95
West Idaho Street & Meridian Road	S	24	14	1.74
Main Street & 4th Street	S	9	5	1.71
U.S. Highway 93 & 3rd Avenue East (Rosauers)	S	9	5	1.71
Main Street & 11th Street	S	8	4	1.67
MT 35 & La Salle Road (U.S. 2)	S	43	20	1.63
West Idaho Street & 5th Avenue West	S	18	8	1.62
Main Street & 2nd Street	S	9	4	1.62
U.S. Highway 93 & Meridian Road	S	18	6	1.50
Intersections with 1.49 – 1.0 Severity Index				
Idaho Street & 3rd Avenue East	S	24	7	1.45
U.S. Highway 93 & 4 Mile Drive	S	14	4	1.44
Idaho Street & 7th Avenue East	S	22	6	1.43
U.S. Highway 93 & Wyoming Street	S	13	3	1.38
Main Street & Idaho Street	S	45	10	1.36
Main Street & Center Street	S	21	4	1.32
Idaho Street & 4th Avenue East	S	17	3	1.30
2nd Street East & Woodland Street	U-3W	14	2	1.25
U.S. Highway 93 & 18th Street	S	29	4	1.24
U.S. Highway 93 & Northridge Drive	S	24	3	1.22
Main Street & 1st Street	S	11	1	1.17
Intersections with 0.99 – 0.50 Severity Index				
Center Street & 5th Avenue West	S	13	0	0.77

* Fatality Recorded

** ”S” = Signalized intersection, “U-2W” = Unsignalized two-way stop controlled, “U-3W = Unsignalized three-way stop controlled “U-4W = Unsignalized four-way stop controlled

Table 5-3
Intersection Crash Analysis Crash Rate

Intersection		Number of Crashes	Volume	Rate
Intersections with 2.0 – 1.50 Crash Rate				
La Salle Road & Reserve Drive	S	41	22,600	1.66
West Idaho Street & Meridian Road*	S	38	20,957	1.66
U.S. Highway 93 & 18th Street	S	33	18,409	1.64
MT 35 & La Salle Road (U.S. 2)	S	64	35,809	1.61
Intersections with 1.49 – 1.0 Crash Rate				
2nd Street East & Woodland Avenue	U-3W	16	11,191	1.31
U.S. Highway 93 & Meridian Road*	S	24	18,496	1.19
West Idaho Street & 5th Avenue West	S	26	23,530	1.01
Idaho Street & 7th Avenue East	S	28	25,391	1.01
Intersections with 0.99 – 0.50 Crash Rate				
Main Street & Center Street	S	25	23,748	0.96
Main Street & Idaho Street	S	55	54,504	0.92
U.S. Highway 93 & Reserve Drive	S	26	26,774	0.89
Center Street & 5th Avenue NW	S	13	13,452	0.88
East Evergreen & U.S. Highway 2 (La Salle Road)	S	22	23,817	0.84
U.S. Highway 93 & Northridge Drive	S	27	29,591	0.83
Main Street & 4th Street	S	14	15,565	0.82
Main Street & 1st Street	S	12	15,217	0.72
Idaho Street & 3rd Avenue East	S	31	40,148	0.71
U.S. Highway 93 & Willow Glen Drive	S	14	18,226	0.70
U.S. Highway 93 & 3rd Avenue East (Rosauers)	S	14	18,574	0.69
Idaho Street & 4th Avenue East	S	20	26,843	0.68
U.S. Highway 93 & 4 Mile Drive	S	18	24,470	0.67
U.S. Highway 2 & Sager Lane (Super One, Staples)	S	26	35,591	0.67
Main Street & 2nd Street	S	13	18,643	0.64
Main Street & 11th Street	S	12	18,983	0.58
U.S. Highway 93 & Wyoming Street	S	16	26,896	0.54
Intersections with 0.49 – 0.00 Crash Rate				
U.S. Highway 2 & Walmart	S	19	35,261	0.49
East Idaho Street & Woodland Park Drive	U-2W	12	29,087	0.38

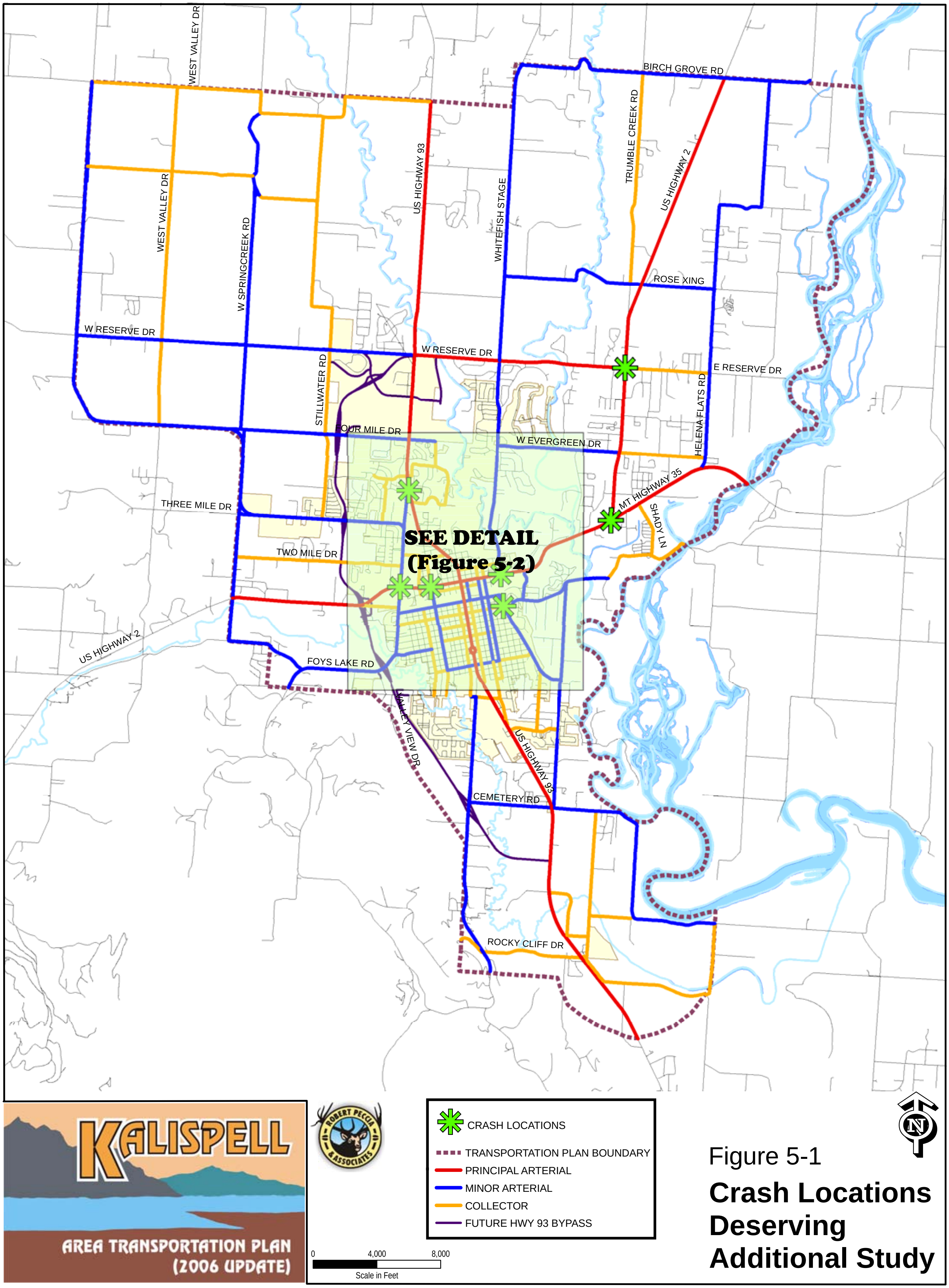
*Volume determined using 1995 turning movement counts

** ”S” = Signalized intersection, “U-2W” = Unsignalized two-way stop controlled, “U-3W = Unsignalized three-way stop controlled “U-4W = Unsignalized four-way stop controlled

Intersections that were identified through the composite rating score method, as described earlier in this section, that warrant further study and may be in need of mitigation to specifically address crash trends. These intersections are as listed on the following page. The locations of these intersections are shown on **Figure 5-1** and **Figure 5-2**.

- 2nd Street East & Woodland Avenue
- Idaho Street & 7th Avenue East
- La Salle Road & Reserve Drive
- MT 35 & La Salle Road (U.S. Highway 2)
- U.S. Highway 93 & 18th Street
- U.S. Highway 93 & Meridian Road
- West Idaho Street & 5th Avenue West
- West Idaho Street & Meridian Road

Note that the eight intersections listed above are in alphabetical order, and there is no significance to the order of their listing. The identified intersections have been evaluated further to determine what type of mitigation measures may be possible to reduce specific crash trends (if any) and/or severity. The mitigation measures, if identified and appropriate, have been presented in **Chapter 8** and **Chapter 9** of this Transportation Plan Update.



KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

Figure 5-1

Crash Locations Deserving Additional Study

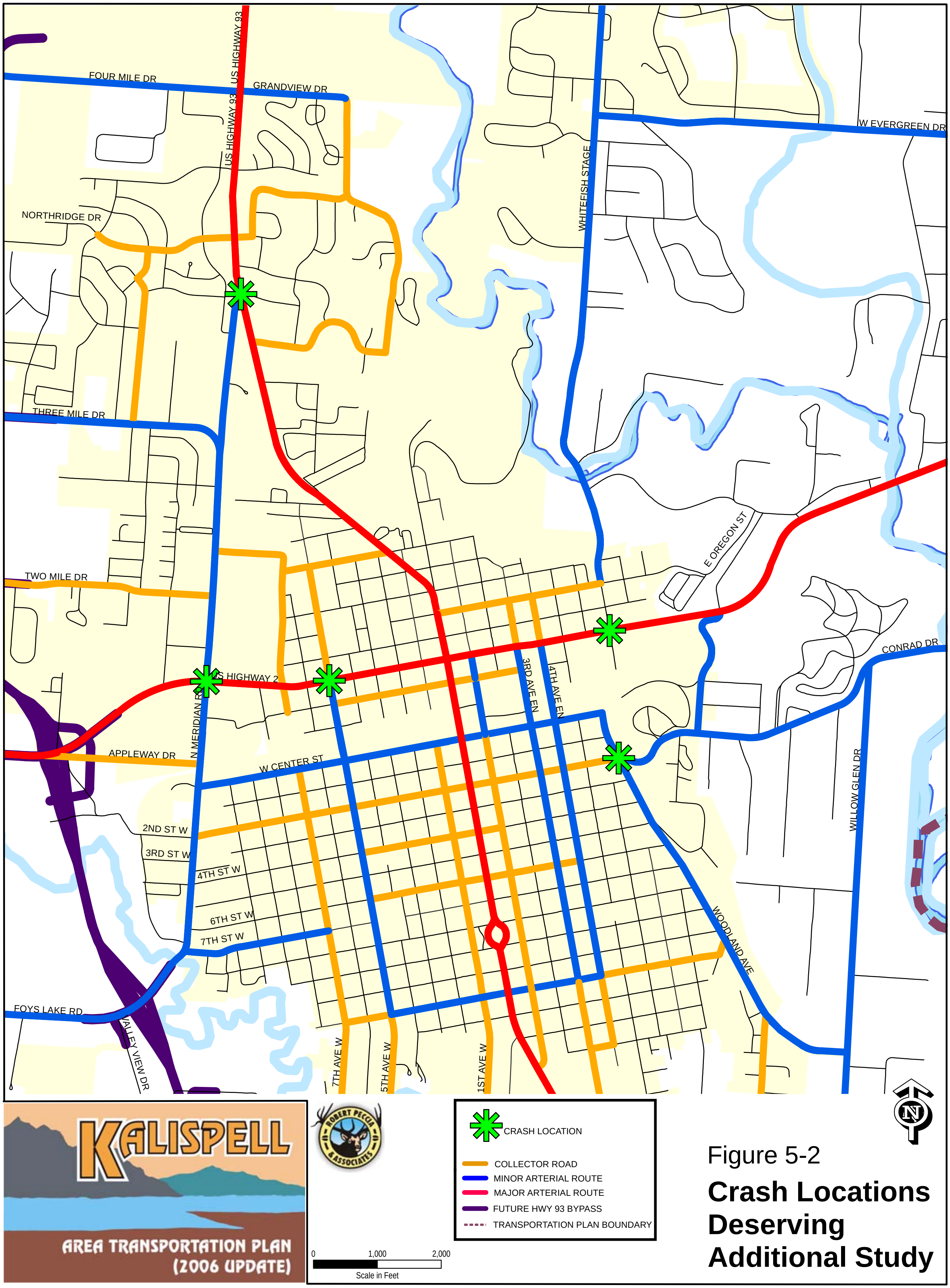


Figure 5-2

Crash Locations Deserving Additional Study

5.2 INTERSECTION LEVELS OF SERVICE

Urban road systems are ultimately controlled by the function of the major intersections. Intersection failure directly reduces the number of vehicles that can be accommodated during the peak hours that have the highest demand and the total daily capacity of a corridor. As a result of this strong impact on corridor function, intersection improvements can be a very cost-effective means of increasing a corridor's traffic volume capacity. In some circumstances, corridor expansion projects may be able to be delayed with correct intersection improvements. Due to the significant portion of total expense for road construction projects used for project design, construction, mobilization, and adjacent area rehabilitation, a careful analysis must be made of the expected service life from intersection-only improvements. If adequate design life can be achieved with only improvements to the intersection, then a corridor expansion may not be the most efficient solution. With that in mind, it is important to determine how well the major intersections are functioning by determining their Level of Service (LOS).

Section 2.5 in **Chapter 2** presents the analysis of the existing levels of service based on existing geometry's and existing traffic volumes. Of the 89 intersections that were studied as part of this project (42 signalized intersections and 47 unsignalized intersections), 26 had a level of service of D, E or F during the PM peak hours of the day (15 signalized intersections and 11 unsignalized intersections).

As a reminder, level of service (LOS) is a qualitative measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a scale that is intended to match the perception by motorists of the operation of the intersection. Level of Service provides a means for identifying intersections that are experiencing operational difficulties, as well as providing a scale to compare intersections with each other. The level of service scale represents the full range of operating conditions. The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it. The scale ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion. The LOS analysis was conducted according to the procedures outlined in the Transportation Research Board's ***Highway Capacity Manual – Special Report 209*** using the Highway Capacity Software, version 4.1c.

5.3 SIGNAL WARRANT ANALYSIS

A signal warrant analysis was conducted to determine if any of the existing unsignalized intersections with unacceptable Levels of Service (LOS) met signal warrants. Level of service (LOS) is a qualitative measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a scale that is intended to match the perception by motorists of the operation of the intersection. Level of Service provides a means for identifying intersections that are experiencing operational difficulties, as well as providing a scale to compare intersections with each other. The level of service scale represents the full range of operating conditions.

The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it. The scale ranges from “A” which indicates little, if any, vehicle delay, to “F” which indicates significant vehicle delay and traffic congestion. Generally, Levels of Service of A, B, and C are considered acceptable, while Levels of Service of D, E, and F are considered unacceptable and below industry standards. Unsignalized intersections exhibiting a Level of Service of D, E, or F were evaluated for signal warrants.

The *Manual on Uniform Traffic Control Devices, 2003 Edition* was used to conduct the warrant analysis. The signal warrants are nationally accepted minimum standards that must be met before a traffic signal should be considered at an intersection. An intersection must meet at least one warrant to be eligible for signalization. The warrant descriptions from the *Manual on Uniform Traffic Control Devices* are as follows:

1. Eight-Hour Vehicular Volume

a. The Minimum Vehicular Volume is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

b. The Interruption of Continuous Traffic is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

c. If 80% of the Minimum Vehicular Volume and 80% of the Interruption of Continuous Traffic criteria are met, this warrant is considered to be met.

2. Four- Hour Vehicular Volume

The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

3. Peak Hour

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

4. Pedestrian Volume

The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

5. School Crossing

The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.

6. Coordinated Signal System

Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

7. Crash Experience

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

8. Roadway Network

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.

The peak hour warrant was conducted assuming that this peak hour would fall within the peak periods. As applicable, the signal warrant determinations were performed using Table 4C-1, Figure 4C-1, Figure 4C-2, Figure 4C-3, and Figure 4C-4 from the *Manual on Uniform Traffic Control Devices*. The four-hour warrant was based upon a combination of peak hour volumes.

The Eight-Hour Volume Warrant (Warrant 1) was not evaluated due to insufficient project data. Therefore this warrant was not included in this analysis.

One warrant was not met for any of the intersections under consideration; the Pedestrian Warrant (Warrant 4). Peak hour turning movement counts at the pertinent intersections had very low pedestrian volumes, so the Pedestrian Warrant (Warrant 4) was not included in this analysis.

Only one intersection, the intersection of Meridian Road and 2nd Street West, could be evaluated for the School Crossing Warrant (Warrant 5). However, data collected for this study was done in the summer months when school was not in session, therefore, there is not sufficient data to accurately evaluate this Warrant.

Table 5-4 shows which warrants are met for each intersection under existing traffic conditions (i.e. 2006).

Table 5-4
Signal Warrant Analysis (Existing Intersections)*

Intersection	LOS (AM/PM)	#2	#3	#5	#6	#7	#8
2nd Street East & Woodland Avenue	B/F		X			**	
2nd Street West & Meridian Road	C/D			**			
4th Avenue East & 2nd Street East	C/F						
7th Avenue East & East Oregon Street	C/E		X				
Center Street & Meridian Road	E/F		X				
Conrad Drive & Woodland Park Drive	C/F		X				
Idaho Street & Woodland Park Drive	E/F	X	X			**	
Meridian Road & Two Mile Drive	A/E	**	X				
MT Hwy 35 & Helena Flats Road	D/F	X	X				
Sunset Boulevard & East Oregon Street	F/F	X	X				
U.S. Hwy 2 & Appleway Drive	C/F		X				
Whitefish Stage Road & Evergreen Drive	C/F						

* None of the intersections met Warrants 4 so it is not shown in this summary.
** Warrant not evaluated at this time due to insufficient projected data.

The data indicates that the intersections of 2nd Street East and Woodland Avenue, 7th Avenue East and Oregon Street, Center Street and Meridian Road, Conrad Drive and Woodland Park Drive, Idaho Street and Woodland Park Drive, Meridian Road and Two Mile Drive, Highway 35 and Helena Flats Road, Sunset Boulevard and East Oregon Street, and U.S. Highway 2 and Appleway Drive currently meet the peak-hour signal warrant. Three of the intersections meet the four-hour warrants; Idaho Street and Woodland Park Drive, MT Highway 35 and Helena Flats Road, and Sunset Boulevard and East Oregon Street.

There are two intersections that would need to be further evaluated to determine if they meet the Crash Warrant (Warrant 7). The intersections of 2nd Street East and Woodland Avenue and Idaho Street and Woodland Park Drive have reported five or more crashes within a 12-month period however, there is insufficient data at this time to determine if they would meet the rest of the Warrant.

Although the intersection of Meridian Road and Two Mile Drive is evaluated in this study, it has been signalized since this project data was collected.

Ideally, before considering a signal for traffic control at an intersection, it is desirable to meet more than one signal warrant. All of the intersections identified that meet one warrant (i.e. the Peak Hour warrant) will be further evaluated to determine if less restrictive traffic controls, or possible geometric modifications, will benefit the operational characteristics of the intersection. Intersections meeting two or three signal warrants are ideal candidates for signalization, but must be analyzed carefully to consider the major street traffic movements and volumes.

It is appropriate to discuss the advantages and disadvantages of traffic signal control when evaluating traffic signal warrants. Often times, restricting troublesome movements can bring up overall intersection levels of service such that a traffic signal may not be necessary. An example might be preventing left turns out of a side street approach to a major arterial.

When properly used, traffic control signals are valuable devices for the control of vehicular and pedestrian traffic. They assign the right-of-way to the various traffic movements and thereby profoundly influence traffic flow. Traffic control signals that are properly designed, located, operated, and maintained may have one or more of the following advantages:

- They provide for the orderly movement of traffic;
- They increase the traffic-handling capacity of the intersection if proper physical layouts and control measures are used, and if the signal timing is reviewed and updated on a regular basis (every 2 years) to ensure that it satisfies current traffic demands;
- They reduce the frequency and severity of certain types of crashes, especially right-angle collisions;
- They are coordinated to provide for continuous or nearly continuous movement of traffic at a definite speed along a given route under favorable conditions; and
- They are used to interrupt heavy traffic at intervals to permit other traffic, vehicular or pedestrian, to cross.

Traffic control signals are often considered a panacea for all traffic problems at intersections. This belief has led to traffic control signals being installed at many locations where they are not needed, adversely affecting the safety and efficiency of vehicular, bicycle, and pedestrian traffic. Traffic control signals, even when justified by traffic and roadway conditions, can be ill-designed, ineffectively placed, improperly operated, or poorly maintained. Improper or unjustified traffic control signals can result in one or more of the following disadvantages:

- Excessive delay;
- Excessive disobedience of the signal indications;
- Increased use of less adequate routes as road users attempt to avoid the traffic control signals;
- Significant increases in the frequency of collision (especially rear-end collisions); and
- Engineering studies of operating traffic control signals should be made to determine whether this type of installation and the timing program meet the current requirements of traffic.

Since vehicular delay and the frequency of some types of crashes are sometimes greater under traffic signal control than under STOP sign control, consideration should be given to providing alternatives to traffic control signals, even if one or more of the signal warrants has been satisfied. Some of the available alternatives may include, but are not limited to, the following:

- Installing signs along the major street to warn road users approaching the intersection;
- Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;
- Installing measures designed to reduce speeds on the approaches;
- Installing a flashing beacon at the intersection to supplement STOP sign control;
- Installing flashing beacons on warning signs in advance of a STOP sign controlled intersection on major- and/or minor-street approaches;
- Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;
- Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;
- Installing roadway lighting if a disproportionate number of crashes occur at night;
- Restricting one or more turning movements, perhaps on a time-of-day basis, if alternate routes are available;
- If the warrant is satisfied, installing multi-way STOP sign control;
- Installing a roundabout; and
- Employing other alternatives, depending on conditions at the intersection.

5.4 CORRIDOR VOLUMES, CAPACITY AND LEVELS OF SERVICE

The corridors shown on **Figure 2-5** and **Figure 2-6 in Chapter 2** were evaluated for volume to capacity (v/c) ratios under existing traffic conditions (year 2003 due to calibrated travel demand model) and future year traffic projections (year 2030). These variables are shown on **Figure 5-3** and **Figure 5-4** (existing year 2003 v/c ratios) and **Figure 5-5** and **Figure 5-6** (projected year 2030 v/c ratios). The preparation and analysis of these figures assisted in determining potential capacity deficiencies under the future traffic conditions. Roadway capacity is of critical importance when looking at the growth of a community. As traffic volume increases, the vehicle flow deteriorates. When traffic volumes approach and exceed the available capacity, the road begins to “fail”. For this reason it is important to look at the size and configuration of the current roadways and determine if these roads need to be expanded to accommodate the existing or future traffic needs. The capacity of a road is a function of a number of factors including intersection function, land use adjacent to the road, access and intersection spacing, road alignment and grade, speed, turning movements, vehicle fleet mix, adequate road design, land use controls, street network management, and good planning and maintenance. Proper use of all of these tools will increase the number of vehicles that a specific lane segment may carry. However, the number of lanes is the primary factor in evaluating road capacity since any lane configuration has an upper volume limit regardless of how carefully it has been designed.

The size of a roadway is based upon the anticipated traffic demand. It is desirable to size the arterial network to comfortably accommodate the traffic demand that is anticipated to occur 20 years from the time it is constructed. The selection of a 20-year design period represents a desire to receive the most benefit from an individual construction project’s service life within reasonable planning limits. The design, bidding, mobilization, and repair to affected adjacent properties can consume a significant portion of an individual project’s budget. Frequent projects to make minor adjustments to a roadway can therefore be prohibitively expensive. As roadway capacity generally is provided in large increments, a long term horizon is necessary. The collector and local street network are often sized to meet the local needs of the adjacent properties.

There are two measurements of a street’s capacity, Annual Average Daily Traffic (AADT) and Peak Hour. AADT measures the average number of vehicles a given street carries over a 24-hour period. Since traffic does not usually flow continuously at the maximum rate, AADT is not a statement of maximum capacity. Peak Hour measures the number of vehicles that a street can physically accommodate during the busiest hour of the day. It is therefore more of a maximum traffic flow rate measurement than AADT. When the Peak Hour is exceeded, the traveling public will often perceive the street as “broken” even though the street’s AADT is within the expected volume. Therefore, it is important to consider both elements during design of corridors and intersections.

Street size of the roadway and the required right-of-way is a function of the land use that will occur along the street corridor. These uses will dictate the vehicular traffic characteristics, travel by pedestrians and bicyclists, and need for on-street parking. The right-of-way required should always be based upon the ultimate facility size.

The actual amount of traffic that can be handled by a roadway is dependant upon the presence of parking, number of driveways and intersections, intersection traffic control, and roadway alignment. The data presented in **Table 5-5** and **Table 5-6** indicates the approximate volumes that can be accommodated by a particular roadway. As indicated in the differences between the two tables, the actual traffic that a road can handle will vary based upon a variety of elements including: road grade; alignment; pavement condition; number of intersections and driveways; the amount of turning movements; and the vehicle fleet mix.

Roadway capacities can be increased under “ideal management conditions” (**Column 2** in **Table 5-5**) that take into account such factors as limiting direct access points to a facility, adequate roadway geometrics and improvements to sight distance. By implementing these control features, vehicles can be expected to operate under an improved Level of Service and potentially safer operating conditions.

Table 5-5 shows a range of volumes for roadways developed in the future.

Table 5-5
Approximate Volumes for Planning of Future Roadway Improvements

Road Segment	Volumes[1]	Volumes[2]
Two Lane Road	Up to 12,000 VPD	Up to 15,000 VPD*
Three Lane Road	Up to 18,000 VPD	Up to 22,500 VPD*
Four Lane Road	Up to 24,000 VPD	Up to 30,000 VPD*
Five Lane Road	Up to 35,000 VPD	Up to 43,750 VPD*

[1] Historical management conditions
[2] Ideal management conditions
* Additional volumes may be obtained in some locations with adequate road design, access control, and other capacity enhancing methods.

Table 5-5 shows capacity levels which are appropriate for planning purposes in developing areas within the study area. In newly developing areas, there are opportunities to achieve additional lane capacity improvements. The careful, appropriate, and consistent use of the capacity guidelines listed above can provide for long-term cost savings and help maintain roads at a scale comfortable to the community.

Two important factors to consider in achieving additional capacity are peak hour demand and access control. Traffic volumes shown in **Table 5-5** are 24-hour averages; however, traffic is not smoothly distributed during the day. The major street network shows significant peaks of demand, especially the work “rush” hour. These limited times create the greatest periods of stress on the transportation system. By concentrating large volumes in a brief period of time, a road’s short-term capacity may be exceeded and a road user’s perception of congestion is strongly influenced. The use of pedestrian and bicycle programs as discussed in **Chapter 4** and TDM measures discussed in **Chapter 6** can help to smooth out the peaks and thereby extend the adequate service life of a specific road configuration. The Transportation Plan strongly recommends the pursuit of such measures as low-cost means of meeting a portion of expected transportation demand.

Each time a roadway is intersected by a driveway or another street it raises the potential for conflicts between transportation users. The resulting conflicts can substantially reduce the roadway’s ability to carry traffic if conflicts occur frequently. This basic principle is the design basis for the interstate highway system, which carefully restricts access to designated entrance and exit points. Arterial streets are intended to serve the longest trip distances in an urbanized area and the highest traffic volume corridors. Access control is therefore very important on the higher volume elements of a community’s transportation system. Collector streets, and especially local streets, do provide higher levels of immediate property access required for transportation users to enter and exit the roadway network. In order to achieve volumes in excess of that shown in **Column 2** of **Table 5-5**, access controls should be put in place by the appropriate governing body. It is strongly recommended that access control standards appropriate to each classification of street be incorporated into the subdivision and zoning regulations of the City of Kalispell. Follow up monitoring of the effects of access control will aid in future transportation planning efforts.

Using the traffic model developed for this project, it was possible to project the traffic volumes on all major roads within the study area. These roads were analyzed for the current year (2003), and Year 2030 conditions to determine if the roads have an adequate number of lanes for the traffic volume. **Figure 3-13** and **Figure 3-14** presented in **Chapter 3** show the projected traffic volumes for the planning year horizon of year 2030 within the study area. The best tool generated by the traffic model for comparing the current traffic volumes to the existing number of travel lanes on the major corridors is the volume to capacity ratio (v/c ratio). By definition, the "v/c ratio" is the result of the flow rate of a roadway lane divided by the capacity of the roadway lane. **Table 5-6** shows "v/c ratios" and their corresponding roadway corridor "Level of Service" designations.

Table 5-6
V/C Ratios & LOS Designations

V/C Ratio	Description	Corridor LOS
< 0.59	Well Under Capacity	LOS A and B
> 0.60 – 0.79	Under Capacity	LOS C
> 0.80 – 0.99	Nearing Capacity	LOS D
> 1.00 – 1.19	At Capacity	LOS E
> 1.20	Over Capacity	LOS F

An examination of the "v/c ratios" computed by the traffic model, and as shown graphically on **Figures 5-3 thru 5-6**, shows the facilities that either over capacity or are at or nearing capacity, and consequently are roadways that may be currently undersized:

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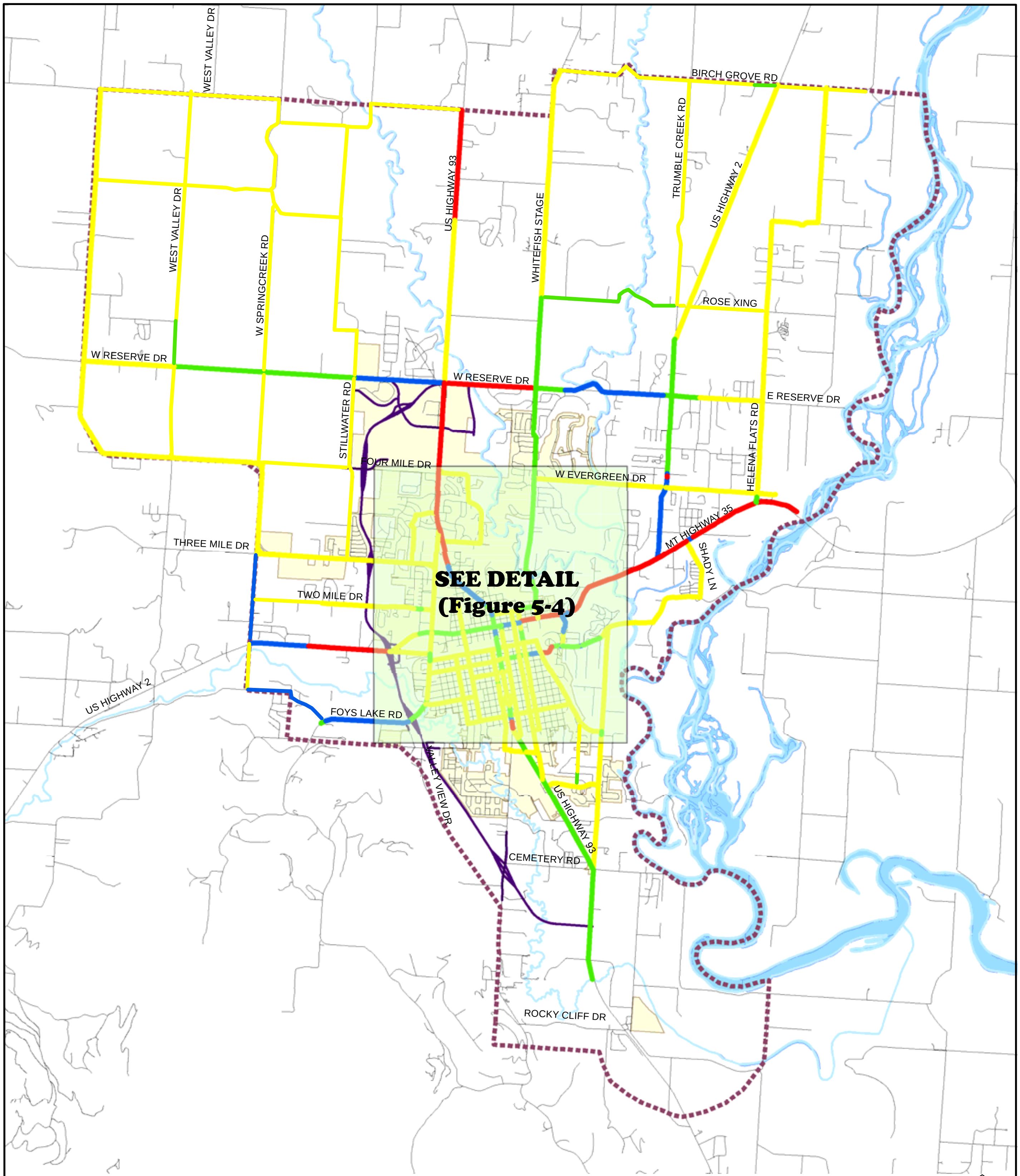


KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

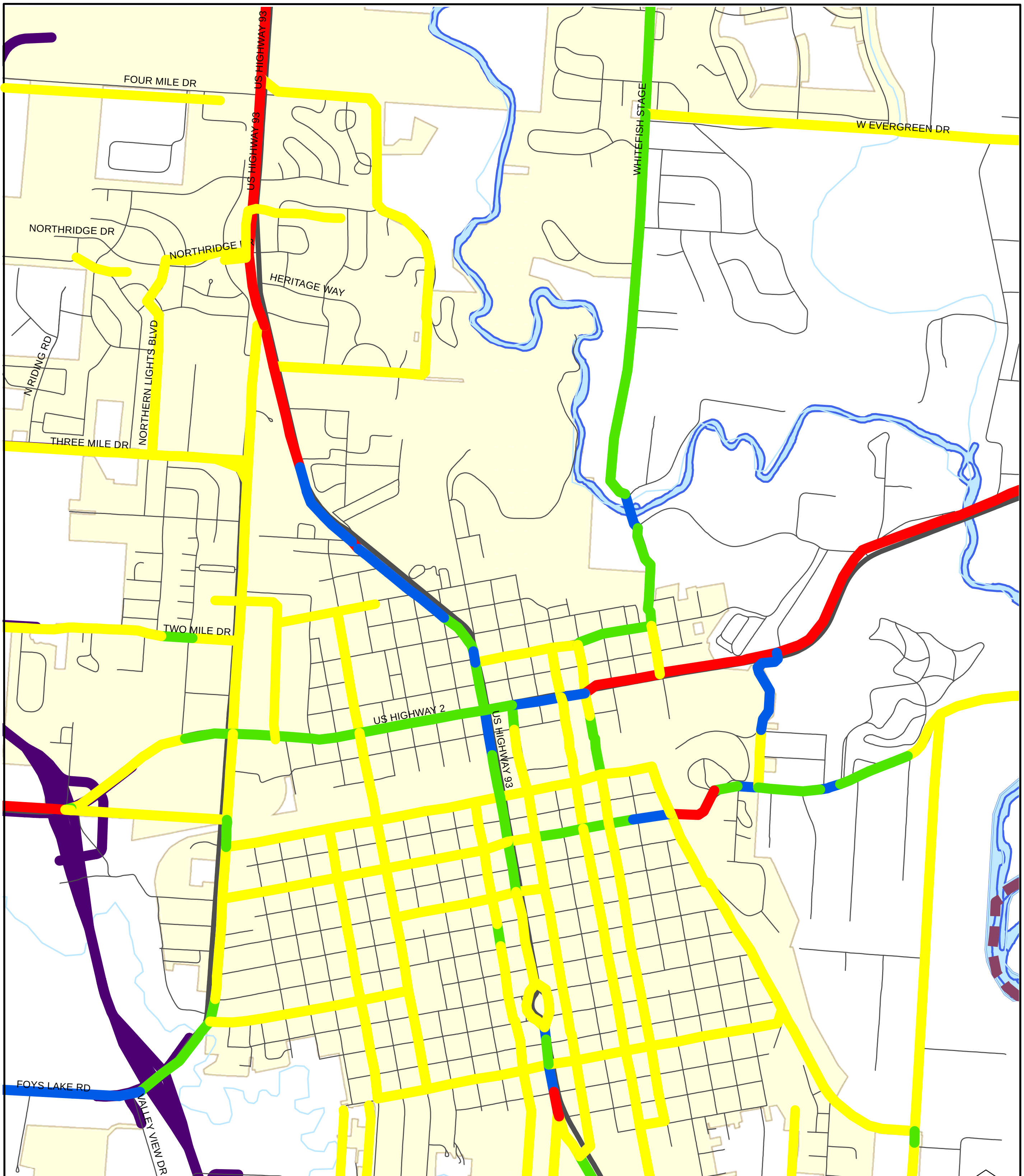
- < 0.59 Well Under Capacity (LOS A, B)
- > 0.60 - 0.79 Under Capacity (LOS C)
- > 0.80 - 0.99 At Or Nearing Capacity (LOS D, E)
- > 1.00 Over Capacity (LOS F)
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 4,000 8,000
Scale in Feet

N

Figure 5-3

Existing (2003)
V/C Ratios



KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

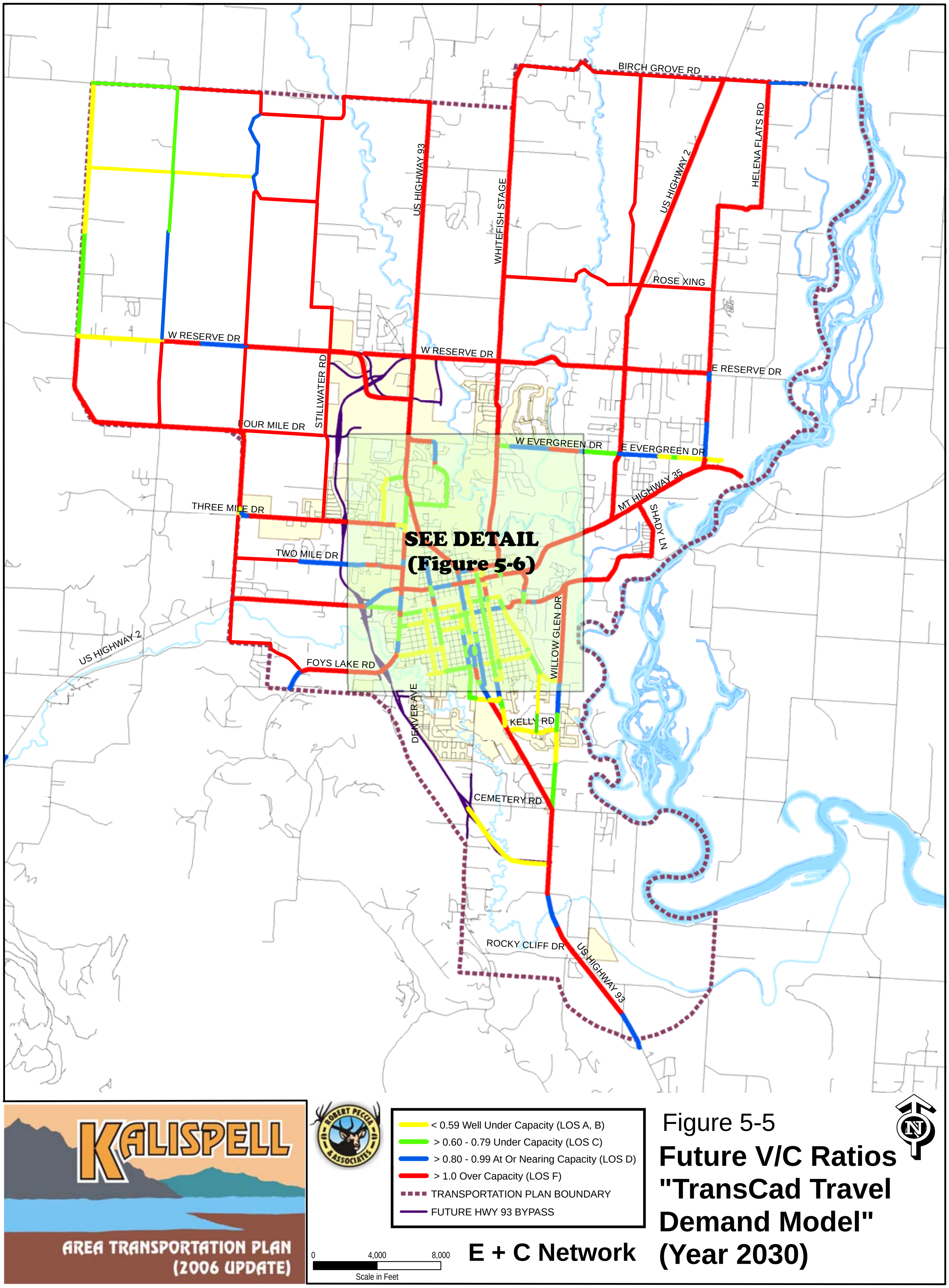
ROBERT PECCIA & ASSOCIATES

- < 0.59 Well Under Capacity (LOS A, B)
- > 0.60 - 0.79 Under Capacity (LOS C)
- > 0.80 - 0.99 At Or Nearing Capacity (LOS D,E)
- > 1.00 Over Capacity (LOS F)
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

0 500 1,000 2,000
Scale in Feet

N

Figure 5-4
Existing (2003) V/C Ratios

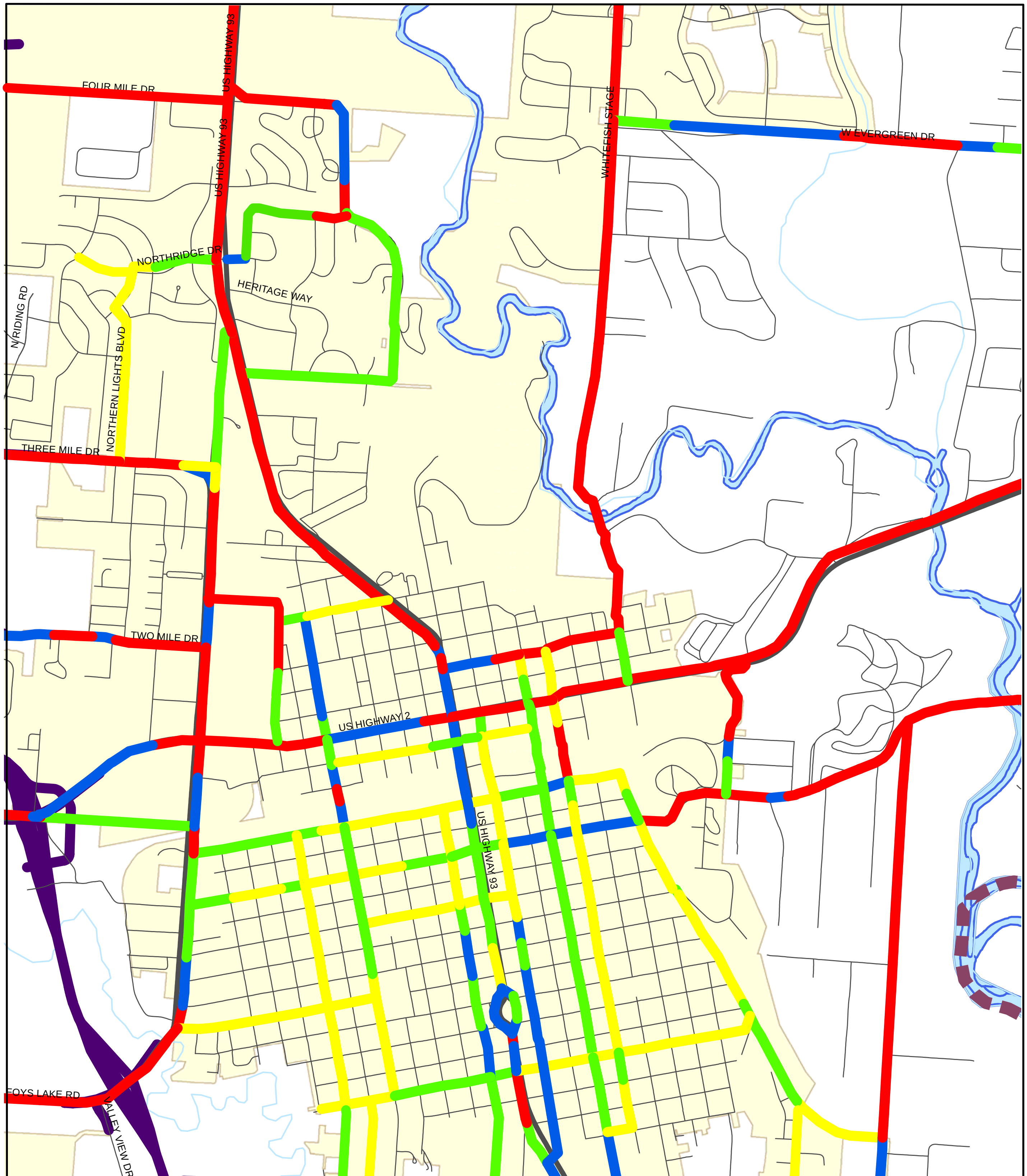


KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

E + C Network

Figure 5-5
Future V/C Ratios "TransCad Travel Demand Model" (Year 2030)



KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

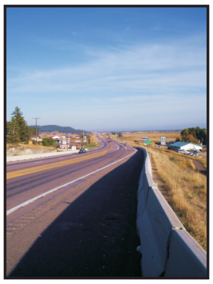
- < 0.59 Well Under Capacity (LOS A, B)
- > 0.60 - 0.79 Under Capacity (LOS C)
- > 0.80 - 0.99 At Or Nearing Capacity (LOS D,E)
- > 1.00 Over Capacity (LOS F)
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

E + C Network

Figure 5-6

Future V/C Ratios "TransCad Travel Demand Model" (Year 2030)

Chapter 6: Travel Demand Management



CHAPTER 6: TRAVEL DEMAND MANAGEMENT

6.1 ROLE OF TDM IN THE PLAN UPDATE

Transportation Demand Management (TDM) measures came into being during the 1970s and 1980s in response to a desire to save energy, improve air quality, and reduce peak-period congestion. TDM strategies focused on identifying alternates to single occupant vehicle use during commuting hours. Therefore, such things as carpooling, vanpooling, transit use, walking and bicycling for work purposes are most often associated with TDM. Many of these methods were not well received by the commuting public and therefore, provided limited improvement to the peak-period congestion problem. Due to the experiences with these traditional TDM measures over the past few decades, it became clear that the whole TDM concept needed to be changed. TDM measures that have been well received by the commuting public include flextime, a compressed workweek and telecommuting. In addition to addressing commute trip issues, managing demand on the transportation system includes addressing traffic congestion associated with special events, such as the Northwest Montana Fair, the Glacier Jazz Stampede, and other large cultural or sporting events. A definition of TDM follows.

> *TDM programs are designed to maximize the people-moving capability of the transportation system by increasing the number of persons in a vehicle, or by influencing the time of, or need to, travel. (FHWA, 1994)*

Since 1994, TDM has been expanded to also include route choice. A parallel arterial with excess capacity near a congested arterial can be used to manage the transportation system to decrease congestion for all transportation users. In Montana, an excellent model for TDM strategies can be found by examining the Missoula Ravalli Transportation Management Association (MR TMA).

The Kalispell area is projected to grow. The accompanying expansion of transportation infrastructure is expensive and usually lags behind growth. Proper management of demand now will maximize the existing infrastructure and delay the need to build more expensive additional infrastructure. TDM is an important and useful tool to extend the useful life of a transportation system. It must be recognized that TDM strategies aren't always appropriate for certain situations and may be difficult to implement. In the Kalispell area, there is a high occurrence of thru-traffic within the community due to the tourist nature of the area. Achieving significant results from TDM strategies may be difficult on certain types of roadway facilities in the area. However, the use of TDM measures is a worthy component to the community's overall transportation system objectives.

As communities such as Kalispell grow, the growth in number of vehicles and travel demand should be accommodated by a combination of road improvements; transit service improvements; bicycle and pedestrian improvements; and a program to reduce travel (vehicle trips and the vehicle miles traveled) via transportation demand management in conjunction with appropriate land use planning. This Chapter of the Plan describes which TDM measures are appropriate and acceptable for the Kalispell community.

TDM strategies are an important part of the Kalispell Area Transportation Plan Update due to their inherent ability to provide the following benefits to the commuting public:

- Better transportation accessibility;
- Better transportation predictability;
- More, and timelier, information;
- A range of commute choices; and
- Enhanced transportation system performance.

TDM measures can also be applied to non-commuter traffic and are especially easy to adapt to tourism, special events, emergencies and construction. The benefits to these traffic users are similar to those for commuters, and are listed as follows:

- Better transportation accessibility;
- More transportation reliability;
- More, and timelier, information;
- A range of route choices; and
- Enhanced transportation system performance.

These changes allow the same amount of transportation infrastructure to effectively serve more people. They acknowledge and work within the mode and route choices which motorists are willing to make, and can encourage a sense of community. Certain measures can also increase the physical activity of people getting from one place to another.

Such things as alerting the traveling public to disruptions in the transportation system caused by construction or vehicle crashes can manage demand and provide a valuable service to the traveling public.

Overall, congestion can be avoided or managed on a long-term basis through the use of an integrated system of TDM strategies.

Goal and Support for TDM Strategies

The following goal and support can be viewed as supplementing the goals contained earlier in this Transportation Plan in **Chapter 1**.

Goal: Promote land use planning and development which encourages pedestrian travel and thus reduces vehicle trip generation

Support: A) Allocation of transportation funds will support the Kalispell Downtown Improvement Association's and city's goal of providing additional parking garage facilities downtown.

B) Land use plans and development applications will be reviewed to ensure that strategies to promote compact development patterns that encourage walking and biking and reduce vehicle trip generation.

6.2 LIST OF TDM STRATEGIES AND THEIR EFFECTIVENESS

Flextime

When provided by employers, flextime allows workers to adjust their commuting time away from the peak periods. This means that employees are allowed some flexibility in their daily work schedules. For example, rather than all employees working 8:00 to 4:30, some might work 7:30 to 4:00, and others 9:00 to 5:30. This provides the workers with a less stressful commute, allows flexibility for family activities and lowers the number of vehicles using the transportation system during peak times. This in turn can translate into reduced traffic congestion, support for ridesharing and public transit use, and benefits to employees. Flextime allows commuters to match their work schedules with transit and rideshare schedules, which can significantly increase the feasibility of using these modes. Costs for implementing this type of TDM strategy can include increased administrative and management responsibilities for the employer, and more difficulty in evaluating an employee's productivity.

Alternate work schedule

A related but more expansive strategy is to provide an alternate work schedule. This strategy involves using alternate work hours for all employees. It would entail having the beginning of the normal workday start at a time other than 8:00 a.m. For example, starting the workday at 7:30 a.m. would allow all employees to reach the work site in advance of the peak commute time. Additionally, since they will be leaving work at 4:30 p.m., they will be home before the peak commute time, and have more time in the evening to participate in family or community activities. This can be a very desirable side benefit for the employees. This has a similar effect on traffic as flextime, but does not give individual employees as much control over their schedules.

Compressed work week

A compressed work week is different from offering "flextime" or the "alternate work schedule" in that the work week is actually reduced from the standard "five-days-a-week" work schedule. A good example would be employers giving their workers the opportunity to work four (4) ten-hour days a week. A compressed work week reduces commute travel (although this reduction may be modest if employees take additional car trips during non-work days or move farther from worksites). Costs for implementing this type of TDM strategy may be a reduction in productivity (employees become less productive at the end of a long day), a reduction in total hours worked, and it may be perceived as wasteful by the public (for example, if staffing at public agencies is low on Fridays).

Telecommuting

Telecommuting in the work place offers a good chance to reduce the dependence to travel to work via car or bus. This is especially true in technical positions and some fields in the medical industry (such as medical transcription). Additionally, opportunities for distance learning, shopping via computers, basic health care services and recreation also exist and can serve to reduce vehicular travel on the transportation system. Telecommuting is usually implemented in response to an employee request, more so than instigated by the employer. Since telecommuting reduces commute trips, it can significantly reduce congestion and parking costs. It is highly valued by many employees and tends to increase their productivity and job satisfaction. Costs associated with this TDM strategy include increased administrative and management responsibilities, and more difficult evaluation of employee productivity. Some employees find telecommuting difficult and isolating. Telecommuting also may reduce staff coverage and interaction, and make meetings difficult to schedule. Many employers in Montana have tried and currently allow some form of telecommuting.

Ride sharing (carpooling)

Carpooling is traditionally one of the most widely considered TDM strategies. The idea is to consolidate drivers of single occupancy vehicles (SOV's) into fewer vehicles, with the result being a reduction in congestion. Carpooling is generally limited to those persons whose schedules are rigid and not flexible in nature. Studies have shown that carpooling is most effective for longer trips greater than ten miles in each direction. Aside for the initial administrative cost of set-up and marketing, ridesharing also may encourage urban sprawl by making longer-distance commutes more affordable.

Transit agencies sometimes consider rideshare as competition that reduces transit ridership. Ridesharing is a strategy that would work within the Kalispell area, especially if set up through the larger employers. An extensive public awareness campaign describing the benefits of this program would help in selling it to the general public.

Vanpooling

Vanpooling is a strategy that encourages employees to utilize a larger vehicle than the traditional standard automobile to arrive at work. Vans typically hold twelve or more persons. Vanpooling generally does not require high levels of subsidy usually associated with a fixed-route or demand-responsive transit service. They can often times be designed to be self-sufficient. The van is typically provided by the employer, or a vanpool brokerage agency, which provides the insurance. The costs of a vanpooling program are very similar to those of ridesharing.

Bicycling

Bicycling can substitute directly for automobile trips. Communities that improve cycling conditions often experience significant increases in bicycle travel and related reductions in vehicle travel. Even a one percent shift in travel modes from vehicle trips to bicycle trips can be viewed as a positive step in the Kalispell community. Although this may not be a measurable statistic pertinent to reducing congesting, providing increased bicycling opportunities can help and can also contribute to quality of life issues. Bicycling characteristics within the Kalispell area is primarily recreational in nature, and by implementing the bikeway network improvements as described in **Chapter 4**, a gradual shift to bicycling as a commuter mode of travel should be realized. Incentives to increase bicycle usage as a TDM strategy include: construction improvements to bike paths and bike lanes; correcting specific roadway hazards (potholes, cracks, narrow lanes, etc.); development of a more connected bikeway street network; development of safety education, law enforcement and encouragement programs; and the solicitation and addressing of bicycling security/safety concerns. Potential costs of this TDM strategy are expenses associated with creating and maintaining the bikeway network, potential liability and accident risks (in some cases), and increased stress to drivers.

Walking

Walking as a TDM strategy has the ability to substitute directly for automobile trips. A relatively short non-motorized trip often substitutes for a longer car trip. For example, a shopper might choose between walking to a small local store versus driving a longer distance to shop at a supermarket. Incentives to encourage walking in a community can include: making improvements to sidewalks, crosswalks and paths by designing transportation systems that accommodate special needs (including people using wheelchairs, walkers, strollers and hand carts); providing covered walkways, loading and waiting areas; improving pedestrian accessibility by creating location-efficient, clustered, mixed land use patterns; and soliciting and addressing pedestrian security/safety concerns. Costs are similar to that of bicycling and are generally associated with program expenses and facility improvements.

Park & Ride lots

Park and ride lots are effective for communities with substantial suburb to downtown commute patterns. Park and ride consists of parking facilities at transit stations, bus stops and highway on ramps, particularly at the urban fringe, to facilitate transit and rideshare use. Parking is generally free or significantly less expensive than in urban centers. Costs are primarily associated with facility construction and operation.

Car sharing

Car sharing is a demand reducing technique that allows families within a neighborhood to reduce the number of cars they own and share a vehicle for the limited times when an additional vehicle is absolutely essential. Costs are primarily related to creation, startup and administrative costs of a car sharing organization.

Traditional transit

Traditional transit service is an effective TDM strategy, especially in a highly urban environment. Several methods to increase transit usage within the community are to improve overall transit service (including more service, faster service and more comfortable service), reduce fares and offer discounts (such as lower rates for off-peak travel times, or for certain groups), and improved rider information and marketing programs. The costs of providing transit depend on many factors, including the type of transit service, traffic conditions and ridership. Transit service is generally subsidized, but these subsidies decline with increased ridership because transit services tend to experience economies of scale (a 10% increase in capacity generally increases costs by less than 10%). TDM strategies that encourage increased ridership can be very cost effective. These strategies may include offering bicycle carrying components on the transit vehicle, changing schedules to complement adjacent industries, etc.

Express bus service

Express bus service as a TDM strategy has been used by larger cities in the nation as a means to change driver vehicle characteristics. The use of an express bus service is founded on the idea that service between two points of travel can either be done faster or equal to the private automobile (or a conventional bus service that is not "express").

Installing / increasing Intelligent Transportation Systems (ITS)

The use of ITS (Intelligent Transportation System) methods to alert motorists of disruptions to the transportation system will be well received by the transportation users, and are highly effective tools for managing transportation demands.

Ramp metering

Ramp metering has been used by some communities and consists of providing a modified traffic signal at on ramps to interstate highway facilities. The use of this TDM strategy would not be applicable to the Kalispell area.

Traffic Calming

Traffic Calming (also called Traffic Management) refers to various design features and strategies intended to reduce vehicle traffic speeds and volumes on a particular roadway. Traffic Calming projects can range from minor modifications of an individual street to comprehensive redesign of a road network. Traffic Calming can be an effective TDM strategy in that its use can alter and/or deter driver characteristics by forcing the driver to either use a different route or to use an alternative type of transportation (such as transit, bicycling, walking, etc.). Costs of this TDM strategy include construction expenses, problems for emergency and service vehicles, potential increase in drivers' effort and frustration, and potential problems for bicyclists and visually impaired pedestrians.

Identifying and using special routes and detours for emergencies or special events

This type of TDM strategy centers around modifications to driver patterns during special events or emergencies. They can typically be completed with intensive temporary signing or traffic control personnel. Temporary traffic control via signs and flaggers could be implemented to provide a swift and safe exit after applicable events.

Linked trips

This strategy entails combining trips into a logical sequence that reduces the total miles driven on the surrounding transportation system. These trips are generated by associated facilities within a mixed-use development or within an area of the community where adjacent land uses are varied and offer services that would limit the need to travel large distances on the transportation system.

Pay for parking at work sites (outside the downtown area)

TDM measures involving "paying for parking" outside the downtown area or at employers or paying more for single occupant vehicles can be regarded by those impacted as Draconian.

Higher parking costs for single occupant vehicles (SOV)

Intuitively, free parking provided by employers is a tremendous incentive for driving alone. If the driver of a SOV is not penalized in some form, there is no perceived reason not to drive to the workplace. One way to counter this reality is to charge a higher price for parking for the SOV user. This implementation is not likely to have much of an impact to the frequency of SOV users on the transportation system.

Preferential parking for rideshare/carpool/vanpools

This concept ties into the discussion above regarding parking of the SOV user. Preferential parking, such as delineating spaces closer to an office for riders sharing their commute or reduced/free parking, can be an effective TDM strategy.

Subsidized transit by employers

A subsidized transit program, typically offered by employers to their employees, consists of the employer either reimbursing or paying for transit services in full as a benefit to the employee. This usually comes in the form of a monthly or annual transit pass. Studies show that once a pass is received by an employee, the tendency to use the system rises dramatically.

Guaranteed ride home (GRH) programs for transit riders

The guaranteeing of a ride home for transit users is a wise choice for all transit systems, since it gives the users a measure of calm knowing that they will be able to get home. A GRH program provides an occasional subsidized ride to commuters who use alternative modes, for example, if a bus rider must return home in an emergency, or a car pooler must stay at work later than expected. This addresses a common objection to the use of alternative modes. GRH programs may use taxies, company vehicles or rental cars. GRH trips may be free or they may require a modest co-payment. The cost of offering this service tends to be low because it is seldom actually used.

Mandatory TDM measures for large employers

Some communities encourage large employers (typically with at least 50 to 100 employees) to mandate TDM strategies for their employees. This is a control that can be required by local governments on developers, employers, or building managers. The regulatory agencies often times provide incentives for large employers to make TDM strategies more appealing, such as reduced transit fares, preferred parking, etc.

Required densification / mixed use elements for new developments

Requiring new developments to be dense and contain mixed-use elements will ensure that these developments are urban in character and have some services that can be reached by biking, walking or using other non-automobile methods. This also relates to the concept of “linked” or “shared” trips presented later in this chapter. As new developments are proposed, local and regional planners have the opportunity to dictate responsible and effective land use to encourage “shared” trips and reduce impacts to the surrounding transportation system.

Transit Oriented Development (TOD)

Transit Oriented Development (TOD) refers to residential and commercial areas designed to maximize access by transit and non-motorized transportation, and with other features to encourage transit ridership. A TOD usually consists of a neighborhood with a rail or bus station, surrounded by relatively high-density development, with progressively lower-density spreading outwards. Transit Oriented Development generally requires about seven residential units per acre in residential areas and twenty-five employees per acre in commercial centers to adequately justify transit ridership. Transit ridership is also affected by factors such as employment density and clustering, demographic mix (students, seniors and lower-income people tend to be heavy transit users), transit pricing and rider subsidies, and the quality of transit service. This type of development could potentially work well within Kalispell and its outlying areas as development occurs. Features could be built into a given development to encourage transit use from the start, and at the same time could be incorporated into the funding source available to Eagle Transit to help offset costs associated with new service.

Alternating directions of travel lanes

This method of TDM is similar to that of Traffic Calming in that it strives to change driver characteristics and possibly enable users of the system to try different modes of travel. It also can serve to relieve a corridor during particularly heavy times of the day.

By capitalizing on the use of these options, the existing vehicular infrastructure can be made to function at acceptable levels of service for a longer period of time. Ultimately, this will result in lower per year costs for infrastructure replacement and expansion projects, not to mention less disruption to the users of the transportation system.

While some of these options may work well in the Kalispell area, it is clear that some may be inappropriate. Additionally, some of these options are more effective than others. To provide a TDM system that is effective in managing demand, a combination of these methods will be necessary.

The measure of effectiveness of TDM strategies can be done using several different methods such as cost, usage, or those listed below:

- Reduced traffic during commute times;
- Reduced or stable peak hour traffic volumes;
- Increased commuter traffic at off peak times;
- Increased use of modes other than single occupant vehicles;
- Increased use of designated routes during emergencies or special events;
- Eased use of the transportation system by tourists or others unfamiliar with the system;
- Reduced travel time during peak hours; and/or
- Fewer crashes during peak hours.

In order to provide a TDM system that will address the needs of the Kalispell area, the elements of the system must be acceptable to the general population. If elements are proposed which are not acceptable, the TDM system goals will not be reached. However, it is also important to keep in mind the cost of implementing TDM measures.

Table 6-1 presents available TDM measures and ranks them by the likeliness of being accepted and implemented within the Kalispell area. A rank of “3” indicates that the measure has a high likelihood of being successfully implemented, a rank of “2” indicates that the measure would have more difficulty being accepted or implemented and a rank of “1” indicates that this measure would either be difficult to implement, or is inappropriate for the community at this time. This ranking system is based on input from public meetings, as well as consultant knowledge and experience. It is not survey based.

The measures which could best be adopted and accepted by area residents are those which allow greater flexibility in work hours, changing modes of transportation, or address specific, time-limited situations. Note that is envisioned that the most successful programs are "employer based", which necessitates a great deal of cooperation amongst the area employers most affected by modified work schedules and other potential TDM programs.

Table 6-1
TDM Measures Ranked by Anticipated Usability

Strategy	**Rank**
Alternating directions of travel lanes	1
Alternate work schedule	3
Bicycling	2
Car sharing	1
Compressed work week	3
Express bus service	1
Flextime	3
Guaranteed ride home program	2
Higher parking costs for single occupant vehicles	1
Identifying routes for emergencies or special events	3
Installing / increasing Intelligent Transportation Systems (ITS)	2
Linked trips	3
Mandatory TDM measures for large employers	1
Park & Ride Lots	1
Pay for parking at work sites (outside the downtown area)	1
Preferential parking for rideshare/carpool/vanpools	1
Ramp metering	1
Required densification / mixed use elements for new developments	2
Ride sharing (carpooling)	2
Subsidized transit by employers	2
Telecommuting	2
Traffic Calming	3
Transit Oriented Development	2
Use of Eagle Transit (Transit)	2
Vanpooling	1
Walking	2

Those measures that would not be used in the planning area generally address issues not present in our community, such as significant commuting from a suburb. If such a problem existed, park and ride lots could be installed to address it. Travel characteristics in Montana are heavily dependent on population densities, distances to services (retail, medical, etc.), and locations of major employment centers. Often times travel distances are longer than what would be encountered in a larger urban area. Due to this nature of travel in Montana, private automobiles are unlikely to be replaced by other modes of travel until a change in technology occurs which allows travel by a mode that has the same flexibility of the automobile.

TDM strategies can be applied to specific events. If an event occurs on a regular basis which can be planned for, steps can be taken to manage the demands made on the transportation system.
A list of potential TDM strategies is provided below. This list has been divided into public sector strategies and private sector strategies. A combination of methods is the most effective in reducing demand. The next step in the process is to prioritize these strategies to determine community preferences, and begin to develop packages of TDM strategies. These preferences and strategies can be analyzed to determine their impact on reducing trips. In order to prioritize the strategies, several questions must be answered relating to applicability, cost effectiveness, and community support. Using national experience as a basis, the strategies are classified according to their cost effectiveness as follows:

The Most Cost Effective TDM Strategies

- Financial Incentives (commuter subsidies for not driving alone)
- Financial Disincentives (e.g., parking tax or charges)
- Bicycle and Walking Programs, Facilities and Subsidies
- Parking Management (i.e., reducing the supply of available parking)

Thus, pricing, parking and provision of non-motorized options are among the most cost effective (greatest trip reduction impact at the lowest cost) alternatives. Taxes and/or charges for parking are among the least popular strategies, but most effective and cost-effective because they can immediately change travel behavior, and can be revenue neutral or even generate revenue to fund improved travel alternatives.

Moderately Cost Effective TDM Strategies

- Compressed Work Weeks (e.g., 4/40 schedules)
- Telecommuting
- Car Pool and Van Pool Programs

Compressed workweeks and telecommuting are among the most popular strategies with commuters because they offer employees more time at home. However, these strategies can be costly to employers because they involve a change in the basic operating policies of the work site. Car pool and van pool programs are also less cost effective because they generally only involve improved information on these travel alternatives (e.g., ride-matching computer systems, marketing campaigns, etc.). These programs can be expensive to manage and produce limited impact without supportive incentives or disincentives.

Cost Ineffective TDM Strategies

- TDM Marketing Programs (without incentives)

- Shuttles (for commuters, lunchtime travelers, etc.)
- Transit Service Improvements (without incentives)

Shuttles that connect employment sites to retail areas are often cited as necessary to allow ride sharers to get around midday without their cars. However, most shuttle programs of this type exhibit very low ridership and very high per rider cost. That is not to say all shuttles, such as student/campus shuttles, are ineffective. Likewise, transit service improvements can be very expensive and ineffective if incentives are not in place.

Cost Effectiveness Unknown

- TDM Friendly Land Use Policies
- TDM Strategies Applied to Non-Commute Travel

While some early evidence suggests that transit-oriented, bicycle-oriented, and pedestrian-oriented developments are effective in increasing the use of these modes at new residential, commercial and office sites, the cost effectiveness of these strategies is still somewhat unknown. One study in southern California showed that employers who combined financial incentives with an aesthetically pleasing work site exhibited trip reduction results 10 percent higher than those without these two critical strategies.

Finally, the application of TDM strategies to non-commute trips is somewhat problematic. In the Kalispell area, commute (home-base work) trips account for most all of the travel in the region. On the one hand, school, shopping, recreational and other trips most likely exhibit higher auto occupancy rates. This makes sense when one considers the amount of natural car pooling that occurs to schools, to the store, to restaurants, etc. However, many TDM strategies cannot be applied to these other travel markets. For example, one cannot really telecommute to the store. Other TDM strategies, such as parking taxes and bicycle improvements, can influence all travel markets.

Employer and Area-wide TDM Strategies - A range of employer-based and area-wide strategies can be considered. These strategies include the following:

- **Minimal Voluntary Ride-sharing Program:** assuming voluntary participation among employers (a low proportion of whom are implementing programs), this program includes support of car pools, van pools and transit, as well as preferential parking for car pools and van pools.
- **Maximum Voluntary Ride-sharing Program:** still assuming low participation among employers, this program includes additional support, such as significant alternative work arrangements (compressed workweeks and telecommuting), preferential parking, and direct financial subsidies to car poolers, van poolers, and transit riders ($0.50 per day).
- **Voluntary Alternative Work Arrangement Program:** again assuming voluntary participation among the region's employers, this program involves offering 30 percent of all

employees compressed work weeks and giving another 25 percent the option of telecommuting (acknowledging that only about 20 percent of eligible employees will choose to do so).

- **Trip Reduction Ordinance:** this type of employer-based program would mandate all employers to implement the maximum ride-sharing program outlined above.

- **Voluntary Ride-sharing plus Transit Service Improvements:** a voluntary ride-sharing program for employers with area-wide improvements to transit service such as frequency and coverage increases, and preferential treatment to expedite bus run times.

- **Voluntary Ride-sharing plus Transit Improvements and a Parking Tax:** a voluntary employer program and transit service improvements with a $1 per day parking tax on all public and private parking spaces (non-residential).

- **Developer-based Ride-sharing Requirements:** new developments would be required to implement a moderate ride-sharing program (moderate support, preferential parking, alternative work arrangements, and subsidies), and site design improvements that are conducive to TDM (such as transit shelters, bicycle storage, etc.).

6.3 CONCLUSIONS BASED ON PRELIMINARY TDM EVALUATION FOR THE KALISPELL AREA

The object of this analysis is to provide the planners and policy-makers in the greater Kalispell area with a range of TDM programs, strategies and estimated impacts in terms of reducing traffic. The intent of the information provided is to assist in facilitating a consensus on the preferred TDM program to be included in the Plan update. The following overall conclusions are offered:

- **<u>Employer-based programs will have limited long-term impacts.</u>** Alone, these programs do not sufficiently reduce regional traffic volumes. This is because the Kalispell area is comprised of relatively small employers that are generally less effective in facilitating commute alternatives. The exception to this might be the Flathead Valley Community College and/or SemiTool, which would likely realize a greater impact from employer-based strategies given its control over key travel variables, notably parking.

- **<u>Employer programs should be considered as an interim step.</u>** Even though employer programs are less effective due to the employment composition of the Kalispell area, a voluntary program, focused on the downtown (and perhaps the community college) should be considered. A demonstration program would provide local planners and policy-makers with valuable information on the specific strategies and marketing techniques to encourage commute alternatives. Unlike efforts aimed at the general population, the program should target large employers and work through appointed and dedicated coordinators. The program should be launched by local government (City and County) employers, and might involve the formation of a Transportation Management

Association (TMA). Flextime among large employers and the community college should also be tested.

- **Transit service improvements would have limited impacts.** The transit service improvements (increased coverage and frequency, faster running times, etc.), will not likely yield significant trip reduction impacts on a regional basis. However, when applied to the downtown and burgeoning area near Reserve Street and US Highway 93, with heavier concentrations of commuter and student trips, the results may be more encouraging.

- **Land use and non-motorized TDM strategies can be effective.** The implementation of land use policies that are TDM-friendly, combined with improvements to bicycle and pedestrian facilities, can impact all types of travel. The potential impact of these strategies may be greater in the long run than traditional employer-based TDM measures. These measures, considered alone, could reduce vehicle trips and vehicle miles traveled (VMT), although the impacts may be somewhat weather-dependent.

- **Area-wide pricing strategies are the most effective strategy**. While politically among the least popular measures, the fact remains that financial incentives and disincentives, especially area-wide parking pricing strategies, are the most effective techniques for reducing trips and encouraging travelers to use alternative modes of transportation and times of day. A regional parking tax could significantly reduce trips and VMT.

- **A range of regional impacts is possible from TDM.** The impacts presented here range from a low reduction in trips (for a voluntary ride-sharing program), to a theoretical maximum trip reduction of 25 percent (for a combination of all strategies). However, the results possible in the Kalispell area are highly dependent on the community support for changing travel behavior. The maximum impact is based on a combination of programs that has not, to date, been implemented anywhere in the U.S.

The steps in incorporating TDM into the Kalispell Area Transportation Plan Update involve the selection of a preferred set of TDM strategies, and then the specification of a recommended short- and long- run TDM program for the Kalispell area. The choices for the preferred TDM program generally involved the following elements, alone or in combination:

- developer requirements *(new employment)*;
- trip reduction ordinance *(all employers)*;
- transit service improvements;
- voluntary employer program;
- parking fees or taxes;
- TDM-friendly land use policies; and
- bicycle and pedestrian facility and program improvements.

It is recommended that the preferred TDM program consists of four principle TDM program elements: 1) a voluntary employer program; 2) an enhanced bicycle and pedestrian program; 3) an improved transit system; and 4) modified land use policies to encourage TDM. Each is discussed in more detail in the next subsection. It is believed that the non-motorized strategies offer the potential for reducing a significant number of trips in a cost-effective manner, and that a voluntary employer program is a good short-term objective. The belief is that the land use policy initiative would address necessary long-term measures.

It is also believed that several TDM strategies should be rejected outright as being infeasible or unacceptable. These include parking pricing and any type of mandatory requirements on employers and developers. The Montana Department of Transportation has developed a Montana specific “TDM Toolbox”. In evaluating local options for TDM it is suggested to look for programs and alternatives that have been successfully implemented in Montana.

6.4 RECOMMENDED TDM PROGRAM

Based on the preferred TDM strategies described above, a short- and long-range TDM program can be outlined for the Kalispell area. This program description is not intended as a fully articulated plan for implementing TDM strategies over the next 20 years; rather it is intended as a framework from which to develop such a plan. As mentioned above, the plan should have at least two distinct time frames, or perhaps three: a short-range plan (1 to 3 years); a medium-range plan (5 to 10 years); and possibly a long-range plan (10 to 20 years).

Short-range TDM Program: Maximize Volunteerism (1 to 3 years)

A program could be developed with the following components:

- **Voluntary Employer Cooperative Program:** With the assistance of the City, County, College, and a select group of other major employers, form a business cooperative to explore the implementation of TDM programs within each organization. This might involve a pilot program, whereby the City would work with several existing and new employer programs to test and evaluate employee acceptance and the effectiveness of various TDM strategies. The impetus for business involvement should not only be traffic congestion and air quality; rather TDM should be sold as a good business practice that benefits participants by solving site access problems, assisting with employee recruitment or retention, and providing additional employee benefits.

- **Small Employer TDM Program:** The Kalispell area has a very large proportion of employers with less than 50 employees, most of which with less than ten employees. This clearly affects the ability to group employees into car pools, but does not preclude the use of transit, bicycling, walking, or even alternative work arrangements (e.g., 4/40 schedules and telecommuting). While the small employer market has been a difficult one for the TDM profession to tackle, some techniques, including multi-tenant-building campaigns, can be effective.

- **Education on Smart Trip-making:** Since the employer elements of the program only effect commute trips and some student trips, an aggressive educational campaign to combine or avoid other types of trips could be implemented. This would be designed to reduce VMT and cold starts by encouraging residents to combine trips (e.g., to drop off school children and shop at the grocery store), or to avoid trips by using the telephone, computer or televisions to access information and services.

- **Flex-time and Staggered Shifts at Largest Employment Sites:** Changing the arrival and departure times of commuters and students can be a very effective way to alleviate peak period, localized traffic congestion. While these strategies do not reduce trips or VMT (and therefore, do not have an air quality benefit), they tend to be very effective in University communities. While many employers in the greater Kalispell area already have informal flexible schedules, the formalization of flex-time and staggered hours among employers, at places like the FVCC, and the City and County, could go a long way to reduce congestion around these sites and on heavily congested corridors.

- **Enhanced Bicycle/Pedestrian Program:** Given that the greatest TDM impacts are anticipated to be derived from the enhanced non-motorized program, implementation of three related program elements should be initiated. First, a bicycle and pedestrian system improvement program should be implemented on an aggressive schedule. Second, non-motorized information should be produced and distributed to reflect these new facilities on an ongoing basis. As the bicycle and pedestrian systems are improved and connectivity enhanced, marketing of the program should reflect the ease at which travelers can get around on foot or by pedal. Finally, as part of the employer pilot programs, financial subsidies for non-motorized modes should be encouraged.

- **Improved Transit System:** The public transit system should be expanded to serve the most popular destinations within the community, such as the downtown area, the shopping mall, as well as Highway 93 North shopping complexes (Home Depot, Target, etc.) and businesses along Highway 2 (Walmart, Staples, etc.).

Medium-range TDM Program: Land Use and Non-Motorized (5 to 10 years)

The TDM program for the medium-range future--five to ten years from now--should build upon the short-range program, and initiate strategies that have a longer-range impact, such as land use policies. These strategies include:

- **Expansion of Employer Cooperative Program into TMA:** Based on the experience of the trial period of the business cooperative program, additional employers and organizations should be recruited to participate in the program. If the cooperative program is successful (demonstrating the interest and commitment of the involved organizations), the effort could be expanded into a Transportation Management Association (TMA). The TMA could relieve the City from the day-to-day responsibilities of operating the program, and provide additional focus and resolve to the efforts.

- **Continued Implementation of the Bicycle/Pedestrian/Transit Program:** Those projects programmed for implementation in five to ten years should be completed. Then the supporting information and incentive elements, as developed, could be continued to assure that maximum use and benefits are derived from the capital investment.

- **Land Use Policies and Practices Supportive of TDM:** The relationship between land use policies and travel behavior cannot be overstated. Modifying existing land use policies and practices, to be more TDM-friendly, could be very effective as a long-term solution. Supportive land use policies include:

  1. **Parking maximums** - reduced parking requirements to encourage the implementation of TDM measures and parking supply management.

  2. **Shared parking** - allowing two different and adjacent land uses (e.g., office building and movie theaters), to build and manage shared parking that is less than that required of each site.

  3. **Density bonuses** - in certain areas, densification and mixed uses can reduce overall trip generation rates, and make shared ride and transit options more effective.

  4. **In-filling** - by allowing residential development close to downtown and major employment areas, the ability of residents to bicycle, walk, or use transit to commute is enhanced. Other growth management techniques, as suggested in the new growth management plan, could also be supportive of TDM.

  5. **Site design guidelines** - as described below, a number of TDM-friendly site design practices can be incorporated into the development review process, as either a comprehensive policy or on a case-by-case basis for zoning variances.

- **TDM-friendly Site Design Features:** As mentioned above, site design features that are supportive of TDM programs can be incorporated into site plans, and required or negotiated as part of the review process. This is a very common practice throughout the U.S. and has already been used on a limited basis in Montana. Such features should be considered for growing areas. An illustrative list of some site design features includes:

  - provision for bus shelters and information kiosks;

  - allowance for van pools in any downtown or FVCC parking lots;

  - secure and safe bicycle storage at employment, school and retail locations;

  - showers and lockers for bicyclist and walkers at large employment sites; and

  - pedestrian system connectivity with adjacent sites and other paths.

Long-range TDM Program: Contingency Measures (10 to 20 years)

The final element of the Kalispell area TDM program should be long-range contingency measures to address traffic problems (e.g., congestion, accessibility, mobility or air quality), become untenable. Should air quality or traffic congestion levels reach intolerable levels, the Kalispell area could revisit the analyses made as part of the 20-year plan. This would include investigating the need to implement more stringent, but less popular measures, such as parking pricing and mandatory TDM programs. While not a recommendation of this Plan, the possibility of needing more aggressive TDM measures, should the short- and medium-range programs fall short of expectations, should not be totally ignored.

Clearly TDM has an important place in the Kalispell Area Transportation Plan Update. However, the voluntary employer programs, bicycle/pedestrian improvements, transit system development and land use strategies are insufficient to completely avoid the need for key roadway capacity expansion projects, but may help defer the need for construction for a period of time. The highest priority should be the implementation of the non-motorized improvements; but even a modest reduction in vehicle trips during certain times of the year would avoid the need for certain capacity enhancements. Supportive of congestion relief, air quality improvement and regional mobility goals, TDM should be implemented on an incremental basis to test and evaluate the effectiveness and acceptability of the strategies analyzed in this Plan. Several short-term TDM program elements have been suggested that are relatively low-cost and readily available. The Kalispell area should strive to build more local experience with TDM programs by developing a detailed short-range plan and pilot program, and then revisiting that plan in three to five years.

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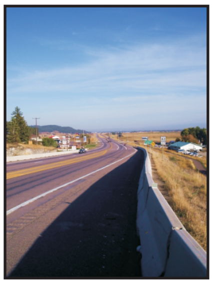
Chapter 7: Traffic Calming



CHAPTER 7: TRAFFIC CALMING

Traffic calming refers to a number of methods used to reduce vehicle speeds, improve safety, and enhance the quality of life. In the simplest definition, it is changing the physical environment to reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for pedestrians and other non-motorized street users. This chapter serves to delineate a process by which a traffic calming program can be carried out, as well as going further to discuss different traffic calming measures and their applicability to different transportation systems.

The overriding goals of traffic calming are to:

- Improve the quality of life in an area;
- Address the wishes and needs of the people living in or using an area for purposes other than motorized transit;
- Create safe, attractive streets;
- Help to reduce the negative effects of motor vehicles on an area such as pollution and sprawl; and
- Promote pedestrian, cycle and transit use.

To that end, the following objectives are identified to assist in meeting the stated goals:

- Achieve slow speeds for motor vehicles;
- Reduce collision frequency and severity;
- Increase the safety, and the perception of safety, for non-motorized users of the street(s);
- Reduce the need for police traffic enforcement;
- Enhance the attractiveness of the street environment (streetscaping);
- Encourage water absorption into the ground;
- Increase access for all modes of transportation; and
- Reduce cut-through motor vehicle traffic.

Traffic calming techniques cannot be used with the same degree of success on all roadway facilities. Traffic calming is rarely seen on roadway facilities higher than a collector roadway functional classification. This is primarily due to roadways functionally classified higher than a collector having the primary purpose of moving traffic, whereas for collector and local roadways the primary purpose tends to shift more towards serving adjacent land uses and infiltration into neighborhoods. In some circumstances, traffic calming can be applied to a minor arterial roadway with low traffic volumes.

7.1 PURPOSE OF TRAFFIC CALMING

Traffic calming is comprised of the three "E's," Education, Enforcement and Engineering. The Institute of Transportation Engineers (ITE) defines traffic calming as a "combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users." It is used on local streets to discourage non-local traffic. Non-local traffic is not invested in the neighborhood, and therefore has less respect for speed limits, and the non-vehicular elements of the street environment. Certain, limited traffic calming measures are appropriate for slowing traffic on collectors or minor arterials as well. These can be in various forms, however caution must be exercised in using traffic calming on collectors or minor arterials in that they could cause motorists to seek out other routes – some of which may be into local neighborhoods.

Because traffic calming includes an educational or enforcement campaign, or an engineering study, it can result in the physical construction of traffic elements designed to reinforce the perceived need for caution by the users of the transportation system. The need for physical traffic calming devices indicates the transportation user's consistent failure to appropriately interact with the surroundings. Regardless of any traffic calming measures installed, the primary responsibility for safe use of the streets lies with the individual driver, cyclist, or pedestrian.

The success of traffic calming measures on a local street depends upon strong support by residents in the immediate area. Additionally, the traffic calming measures need to address situations that a number of residents agree should be addressed. Situations that many people agree exist and that could respond to traffic calming techniques will have more support from the neighborhood, and will better enhance the neighborhood environment. Traffic calming projects which involve installing "hard" improvements should meet several criteria before being considered for implementation, because they can be disruptive to the residents in the surrounding area, difficult to fund and maintain, and difficult to remove once installed.

Traffic calming is a series of techniques designed to lower vehicle speeds, reduce the amount of cut-through or non-local traffic, and in certain cases, decrease truck traffic. The goal of these techniques is to keep traffic on a local street local. Other goals which traffic calming can achieve include the following:

- Reduce air and noise pollution caused by vehicles;
- Reduce the frequency and severity of accidents;
- Improve the street environment through increased landscaping;
- Improve the quality of life for residents;
- Promote walking and bicycling;
- Reduce the need for police enforcement;
- Address speeding or other problems on collectors or minor arterials; and
- Improve pedestrian safety.

Traffic calming elements can be incorporated into the initial design of subdivision, or can be retrofitted into existing subdivisions. The City of Kalispell has many streets which already contain traffic calming measures. These include pedestrian bulb-outs at corners, on-street parking, and sidewalks separated from the street by a planting strip. Other techniques can include landscaped medians, traffic circles or other intersection design techniques as well as other mid-block design techniques.

There are however, several circumstances where traffic calming becomes necessary. One of the most common circumstances is when the arterial system is congested or has turn restrictions.

This set of circumstances will lead to arterial traffic detouring into an adjacent neighborhood. Local streets near a heavily used arterial can experience arterial traffic.
During street construction traffic calming issues may be raised. Detours are necessary but frustrating for residents. However, when motorists use alternate routes instead of the designated detours, concerns with congestion, speed, pollution and enforcement become real. But these issues are temporary, and temporary measures are appropriate to address them. Some examples of temporary traffic calming measures include:

- Removable median curbs to constrict, or choke, a roadway;
- Removable median curbs placed to form a traffic circle within an intersection;
- Removable median curb placed to form forced turn diverters;
- Temporary bollards to close off traffic to a roadway; and
- Temporary speed bumps.

Very few traffic calming techniques are appropriate for use on arterials, because they interfere with an arterial's ability to move people and vehicles quickly from one place to another. The techniques which are appropriate for the arterial system are summarized later in the Chapter. Regarding providing traffic calming measures on local access streets, an arterial system which functions well is the best way to limit the need to provide local access streets with retrofitted traffic calming measures

7.2 HISTORY OF TRAFFIC CALMING

Traffic calming techniques originated in Germany in the 1960's with the "pedestrianization" of downtown shopping areas. This idea expanded to the Netherlands in the 1970's where the concept was applied to residential streets to better integrate motorized and non-motorized traffic. The Dutch believed the street served as an extension of the residents' yard. This philosophy resulted in giving pedestrians priority over automobiles. Based on this philosophy, the Dutch installed obstacles, bends, and bottlenecks at regular intervals to prevent vehicular traffic from moving at speeds higher than pedestrians could walk. Germany developed the more modern concept of area-wide traffic calming, which considers the entire road system in order to avoid merely shifting one problem to another location.

Over the past 30 years, traffic calming techniques have expanded throughout the globe, including Japan, Australia, and in North America. In Montana, the cities of Missoula and Bozeman both have formal traffic calming programs. These two programs are substantially different, but each community is satisfied with their program. In the Northwest, traffic calming techniques have been adopted in most of the larger cities, with active programs in Seattle and Bellevue, WA, and Portland and Eugene, OR.

In Missoula, and most of these Northwest communities, the concept of area-wide traffic calming has been adopted, with the emphasis on improving neighborhood street systems rather than alleviating a problem at a specific location. Due to this philosophy, these traffic-calming programs are known as Local Area Traffic Management Programs, Neighborhood Traffic Management Programs, Neighborhood Traffic Control Programs, or something similar.

7.3 TYPES OF TRAFFIC CALMING MEASURES

Traffic calming measures generally fit into one of the following six categories.

1. Passive measures
2. Education and enforcement
3. Signing and pavement marking
4. Vertical deflection
5. Horizontal deflection
6. Obstruction

Passive Measures

Passive measures are described as measures which are built into the street environment. They are not immediately obvious to the traveling public, but nevertheless produce a calming effect on traffic. Some of these measures are listed below.

- Tree-lined streets;
- Streets with boulevards separating the sidewalks (boulevards can best calm traffic when there is some kind of vegetation present to obstruct the drivers' view by creating a narrowing effect);
- Streets with raised center medians (usually landscaped);
- On-street parking (including angled parking);
- Highly visible pedestrian crossings; and
- Short building set-back distances.

These elements tend to slow traffic by giving motorists the impression that the street is narrow and that extra care is required, but these elements do not restrict or interfere with traffic flow. A combination of more than one of these techniques, or these techniques combined with measures from the other categories, will produce better results.

Education and Enforcement

Several techniques are available to raise public awareness of traffic problems and change the behaviors contributing to problems. Some of these techniques are listed below.

- Neighborhood Speed Watch Program - A speed monitoring program where residents themselves measure vehicle speeds with a radar unit and record license plate numbers of speeding vehicles. Follow-up action of the data can include sending letters to the registered owners of the vehicles explaining the safety concerns within the neighborhood and requesting better observance of the speed limits.

- Radar Speed Monitoring Trailer - A pull-behind trailer equipped with speed detection equipment, a readout of vehicle speeds, and a sign with the posted speed limit is brought to an area with speeding problems. The Kalispell Police Department currently has one of these trailers and this service can be requested by contacting the

Kalispell Police Department. These trailers are usually unmanned; however better results are obtained if someone is present. Additionally, the trailer can be equipped with a camera that would record license plate information for possible follow-up.

- Neighborhood Traffic Safety Campaign – As a part of the normal neighborhood group activities, newsletters or other materials can be produced containing educational information regarding traffic issues. These materials can be tailored to issues of specific concern to different neighborhoods. These issues can then be addressed at regularly scheduled meetings or at special meetings and recommendations can be put forward to increase neighborhood traffic safety.

- Target Enforcement – This is a requested, time-limited addition of police enforcement within a neighborhood.

- Public Service Announcements (PSA's) – These occasionally include traffic calming information, and are televised during local news programs. PSA's could be used more regularly to inform the public on traffic issues and calming techniques identified in this Chapter.

Signage and Pavement Marking

Traffic control signs and pavement markings can be installed as non-intrusive traffic calming measures. These techniques are already in use in the Kalispell area. The signs can include speed limit signs, dead-end street signs, and signs indicating school crossings or general pedestrian crossing. Pavement markings can include marked crosswalks, delineation of (narrow) lanes, and speed limit markings. Traffic calming techniques which specifically fall in this category include:

- Truck Route Signing – Signs placed on routes where trucks are allowed, plus signs placed on routes where trucks are not allowed.
- Basket Weave Stop Sign Pattern – Stop signs placed at every intersection in a residential neighborhood with stops alternating between east west and north south. Note: this is appropriate for local access streets only, and it disregards MUTCD warrants.
- Additional speed limit signs.
- Edge Lines – Painted lines on the pavement which narrow traffic lanes and/or provide for bicycle lanes or on-street parking.
- Stop Bars – painted lines on the pavement that show motorists where to stop for stop signs.

Vertical Deflection, Horizontal Deflection, and Obstruction

There is a wide variety of physical traffic calming measures which fall under the categories of vertical deflection, horizontal deflection and installation of obstructions. Each measure has both advantages and disadvantages. A comprehensive description of a wide variety of these measures is presented on the tables at the end of this Chapter. These tables include a general cost for basic installation of each measure. Actual costs may increase, depending upon such additions as irrigation systems, street lighting, landscaping, installation of decorative brick pavers, etc. Acquisition of additional right-of-way can also raise the cost, sometimes dramatically so.

Several guidelines should be considered when deciding to implement these types of deflection and obstruction measures. These include:

- Attempt less restrictive measures before considering more restrictive measures such as road closures or other route modifications.
- Space devices 300-to-500 feet apart in order to contain speeds to a 20-to-25 mile-per-hour speed range.
- Make accommodations for drainage and snow removal.
- Make accommodations for emergency vehicles.
- Consider pedestrian and bicyclist needs.
- Address landscaping or other maintenance issues.

7.4 TRAFFIC CALMING PROGRAM SUMMARY

Many traffic calming programs are in place in the United States. The best programs provide a balance of citizen input and economic realities, and are standardized for fair treatment of all residents. These programs ensure that the traffic calming techniques proposed are necessary, attractive, effective, and safe, and are implemented at a minimal cost to the general public. The programs also provide citizens a regular and on-going opportunity to nominate, test, and implement improvements to address problems with the local street network in a timely, orderly, and efficient manner.

Such a program is proposed for the Kalispell area. This proposed traffic calming program is broken down into three phases, each with multiple steps. Together they are designed to ensure that the physical construction is done only when truly necessary, and only when lesser measures have been tried first. Each phase would require the participation of neighborhood residents and the Public Works Department. The program's priority is the safe use of the streets for all users, be they vehicular, cyclist, or pedestrian.

For purposes of this discussion, the agency with jurisdiction will be the City of Kalispell. Therefore, during the following discussion, the use of the term "the City" refers to whatever jurisdiction ultimately implements this procedure.

7.5 TRAFFIC CALMING PROGRAM FOR EXISTING STREETS

The method to implement a traffic calming program for existing streets is recommended in this section of the Chapter. It is important to note when examining this recommended program and its procedures that the process may be modified depending upon various factors. Some of these factors would include the severity of the problem, location of the problem (one intersection or area-wide), cause of the problem (such as a special seasonal event like the Northwest Montana Fair), or other circumstances which affect the situation under consideration. Under any of these circumstances, the process may be altered at the discretion of the Public Works Department. This can include accelerating, slowing down, or terminating the process. Although some traffic calming measures are applicable to higher volume roads like collectors or in some commercial areas, the process outlined here is for local residential streets only.

To facilitate this process, the City will work closely with the neighborhood citizens. This process would start early with the City supplying the neighborhood citizens with information about the traffic calming program and a number of Investigation Request Forms. With this preliminary coordination in place, the process can proceed smoothly.

Phase I – Problem Identification and Investigation

Step 1: Step one can begin in two ways. First, a citizen contacts other citizns in the neighborhood where the traffic problem is. The citizens listen to the circumstances, agrees there is a problem, and then completes an Investigation Request form and sends it to the Public Works Department. The responsibility to fill out the form can be delegated to the resident bringing forward the concern, or remain with the Council; or Second, the City Council sees a need for traffic calming within one of their Wards on an area-wide basis and then completes and forwards an Investigation Request form to the Public Works Department.

The form is key to this process, because it has the information about the nature of the problem, its location, and the signatures of at least ten other neighborhood residents who agree the problem exists. Furthermore, it identifies the relevant City Ward and interested local residents. Note the Investigation Request form requires signatures from ten residents agreeing that the situation observed exists, and this portion must be completed in order to move this process forward.

Step 2: After receiving the form, the Public Works Department would contact the neighborhood to discuss the nature of the perceived problem. This contact would include the neighborhood citizens and, if appropriate, local residents. This is an important step, since this discussion helps determine the types of studies which need to be conducted, and would help focus on potential solutions.

Step 3: The Public Works Department conducts a field review of the location, and collects the appropriate data in order to determine whether or not the perceived problem actually exists. For most requests, the accident records would be reviewed, and traffic volumes collected. Other studies that may be appropriate include a speed study, truck count, or determining the percentage of cut-through traffic.

Once this data is collected, it is reviewed in the office against baseline traffic calming criteria. These should include at least one of the following:

- Traffic volumes higher than 1,000 vehicles per day or 100 vehicles in one hour.
- Three or more accidents in a 12-month period, occurring within the last three years.
- An 85^{th} percentile speed at least 5 mph over the speed limit.
- Truck traffic volumes exceeding five percent of the total traffic volumes.
- More than 25% cut-through traffic during any single hour of an average day.
- Pedestrian crossing volume of 25 people per hour for any single hour of an average day.
- Chronic failure of drivers to yield to pedestrian traffic at an intersection.
- Other criteria as agreed upon by the neighborhood and the Public Works Department.

After the data is collected and reviewed against the baseline criteria, the Public Works Department shares the results of the review with the City Ward and any interested local residents. If the subject location meets the required criteria, the Public Works Department would review the Phase II process with the neighborhood citizens and interested local residents. If the location does not meet the above criteria, the Public Works Department would discuss options with the neighborhood to address the situation outside of the traffic calming program.

Phase II – Implementation of Passive Traffic Calming Strategies

Step 4: The Public Works Department determines the boundaries of the affected neighborhood. Neighborhood boundaries will generally follow arterial streets or other natural physical boundaries such as rivers, abrupt changes in elevation, etc. A neighborhood meeting would then be scheduled by the Public Works Department to discuss possible educational / enforcement solutions to the problem. The map prepared by the Public Works Department delineating the boundary of the affected neighborhood is given to the neighborhood citizen who is then responsible for contacting the area residents about the meeting. At the meeting, the Public Works Department would present a range of educational / enforcement or low level engineering options. These measures would emphasize the least intrusive measures which may expand beyond educational / enforcement options to only minor physical changes, such as increased signing, installing pavement marking or trimming vegetation. The purpose of this meeting is to agree on a course of action to address the situation. This step may require more than one meeting and should not be considered complete until a course of action is agreed upon.

Step 5: A member of the City Ward or interested local resident circulates a Phase II petition within the boundary of the affected neighborhood. This petition identifies the proposed education / enforcement / engineering techniques, and asks residents to indicate their approval. The petition must be signed by more than forty percent of the property owners within the boundary of the affected neighborhood for the process to proceed. If a large number of residences are not owner occupied, then neighborhood residents may sign the petition, but the required amount is raised to fifty percent. Because these measures affect residents at their homes and in their neighborhoods, substantial neighborhood support is mandatory. If the required amount of signatures are obtained, the identified measures can then be implemented. If neighborhood approval cannot be secured, no further action would be taken.

Step 6: Approximately 90 days after implementing the measures, the City would repeat the data collection process it performed in Phase I. Please note that the 90-day time frame is generally enough time for shifts in the traffic patterns to have occurred. However, this may need to be modified depending on seasonal conditions or other factors. If the data collected indicates that the problem has been alleviated, the educational and/or enforcement activities can be considered as adequate and the process a success.

Phase III – Implementation of Active Traffic Calming Strategies

Step 7: If the traffic problem has not been resolved by the measures implemented during Phase II, the Public Works Department then conducts a more intensive engineering study to determine a range of appropriate physical improvements to the location. The study should consider installation of either vertical or horizontal deflection techniques before considering roadway obstruction techniques.

Step 8: The Public Works Departments schedules a neighborhood meeting to review the improvement options. Once again, the neighborhood citizen is responsible for notifying area residents about the meeting. The Public Works Department facilitates this meeting. Based on resident input, a preferred solution is selected from the range of possible solutions. If a temporary version of this traffic calming device is not practical, proceed to Step 11.

Step 9: If a temporary version of the device is feasible, the City Ward represnetatives or a designated representative circulates a Phase III Petition for Temporary Measures throughout the affected neighborhood. At least fifty percent of the property owners within the affected neighborhood must sign the petition for the temporary version of the preferred traffic calming device to be installed. Once again, if the neighborhood is predominantly not owner occupied, the residents can sign the petition, but at least sixty percent of the residents must sign the petition. If less than fifty percent of the property owners or sixty percent of the residents sign the petition, the elements from Phase II may remain in place, but no additional elements would be installed.

Step 10: After one year, the City would repeat the same data collection process as completed during Phase I to determine whether or not the temporary device is effective. If it is found not to be effective, the City would notify the neighborhood citizens and remove the device. The process then can begin again at Step 7.

Step 11: If the temporary device is effective, the Public Works Department then develops a preliminary design and cost estimate for installing a permanent traffic calming device. The Public Works Department also determines the funding mechanism to finance the permanent solution. The Public Works Department would look at all possible funding sources including federal or state grants, pilot project funding, etc to lower the costs to local residents. The City would provide the Neighborhood Council with this information, and the “Petition for Installation of Permanent Measures” can be initiated.

Step 12: The Neighborhood Contact circulates the petition for Installation of Permanent Measures, which includes a copy of the preliminary design, the cost estimate and an explanation of financial responsibility to the property owners in the affected neighborhood. The petition must be signed by seventy percent of the property owners in the affected neighborhood to allow the process to move forward. If less than seventy percent of the property owner sign the petition, the process cannot continue, and the temporary measures would be removed. However, if more than seventy percent of the property owners sign the petition, the Public Works Department would bring this measure before the City Commission for their approval, complete a final design and arrange for construction of the permanent traffic calming device. Note that financial obligations by the residents would be required at this point and must be in place before construction would begin.

Note: there are numerous points during this process at which the traffic calming process can be ended due to completion of the process or lack of adequate neighborhood support. Since neighborhood sentiment can change at a later date, the process can be resumed a year later at the same step where it left off.

Project Costs

The cost sharing related to installing traffic calming measures should be based on the initial need for the measure. The need for the measures can arise from one of the following situations.

- Poor initial street design
- Inadequacies of the major street network
- Commercial and/or residential development adjacent to the neighborhood

During Phase I of the process, the nature and cause of the traffic problem would be identified. From this information, the City would proportion the project costs. It is possible that such entities as the City, the neighborhood residents, developers, or other parties would be involved in paying for the traffic calming measures.

The costs of Steps 1 through 11 would be mostly borne by the City, other than the volunteer hours worked to complete paperwork, gather petition signatures, and notify residents of traffic meetings. Permanent traffic calming measures, as proposed in Phase 12 would likely be financed by neighborhood contributions, development fees, City funds and funds from other sources. The proportion of funding from various sources will vary on a case-by-case basis.

Removal of Permanent Traffic Calming Devices

To remove a permanent traffic calming device, the neighborhood citizens must submit a "Petition for Removal of Traffic Calming Measure". This petition must be signed by ninety percent of the property owners within the affected neighborhood. The property owners within the affected neighborhood will be fully responsible for paying the cost of removing the traffic calming devices.

7.6 INCORPORATING TRAFFIC CALMING MEASURES IN NEW STREET DESIGNS

Much more is known about street function and design now than was known when Kalispell was originally laid out. As such, street function should be identified at the beginning of the project approval process, and the streets designed to accomplish the functions appropriate for them. Those designed as arterials (part of the major street network) should be designed to efficiently move traffic in a convenient and safe manner. Conversely, streets that are intended to be local access streets or collector streets should be laid out and designed to primarily provide access to adjacent land, while discouraging through traffic and the higher travel speeds that accompany it. New developments, therefore, should include inherent traffic calming features which are an integral part of their design. If designed properly, the appropriate functions of the different categories of street would be intuitively obvious to the traveling public.

Some of the techniques that could be adopted for local access streets include:

- Street layout;
- Design standards including lane width, curve tightness, on-street parking and landscaping;
- Street connectivity;
- Pedestrian / bicycle facilities;
- Intersection treatments such as small corner radii, pedestrian bulb-outs, etc.;
- Judicious use of "T" intersections;
- Entrance treatment; and
- Traffic circles.

To achieve these goals, the City could incorporate traffic calming improvements into the adopted standard street designs. These designs could include recommendations where various treatments are appropriate as well as when they could be used. Design details could also be included to provide a guideline of what would be acceptable to the City.

Traffic calming design characteristics should also be incorporated into the City's development review and annexation review processes. Proposed developments or requests to annex would be reviewed by staff to determine whether or not traffic calming elements incorporated into the development's layout are appropriate for the given location, or alternatively, what strategies are best suited, and what design details could be considered. The process should be designed to pro-actively assist developers in utilizing traffic calming strategies to improve the quality of life in their developments, while minimizing or eliminating the costs for retrofit efforts. Due to the long term effects of original roadway layout and construction, the traffic calming program should apply to all development in the transportation study area.

The designing of new subdivisions with inherent traffic calming procedures in place will ultimately result in better neighborhoods for new residents, and better use of arterials by the traveling public.

7.7 TRAFFIC CALMING TECHNIQUES APPLICABLE TO COLLECTORS AND MINOR ARTERIALS

A few of the measures depicted on the tables on the following pages are applicable to non-local street conditions. Installation of any of these measures will be done at the discretion of City staff. These measures do not fall under the process outlined in **Section 7.5**. The measures are restricted to horizontal deflection and include the following:

- Mid-block median;
- Curb bulb outs / neckdown; and
- On-street parking.

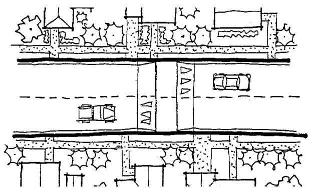
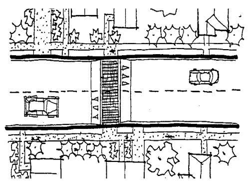
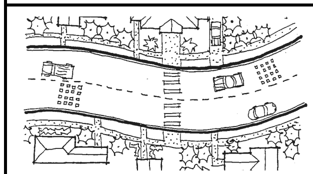
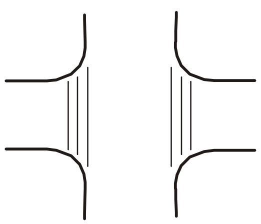
These measures can be used to slow traffic where chronic speeding problems have been shown to exist, or to accommodate pedestrian traffic. The mid-block median usually is present on arterials due to another piece of infrastructure, such as a railroad track which passes over the street, or an overhead pedestrian crossing structure.

On-street parking almost always occurs in a residential area, but also can occur in retail or industrial sectors. Judicious use of on-street parking can influence the traffic flow and help regulate traffic speeds on collectors or minor arterials. Bulb outs, also called neckdowns, can be used to create the illusion for the driver that the roadway is narrowing. This perception will cause the driver to slow down. A secondary benefit of the bulb outs is the decreased walking distance for pedestrians at the crosswalks. Bulb outs generally are wide enough for a car to park in their "shadow". This generally creates good separation between the parked cars and the moving traffic.

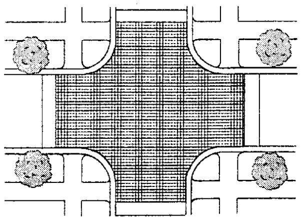
It should be recognized that applying traffic calming measures to non-local streets (i.e. collectors and arterials) should be done with caution, as there is always the risk that traffic may seek out alternate routes to avoid a "calmed" roadway. This can often result in increased traffic on the local street system.

Table 7-1 Types of Traffic Calming Measures

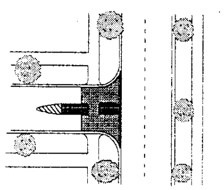
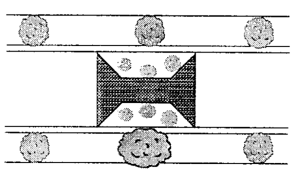
Vertical Deflection

Measure	**Definition/Application**	**Advantages**	**Disadvantages**	**Special Considerations**
 Speed Hump	Paved hump in the street that causes discomfort at high speeds. • Speed reduction • Possible traffic reduction	• Effective if used in series at 300 to 500 foot spacing. • Self-enforcing. • Relatively inexpensive.	• If not properly designed, drivers may skirt around to reduce impact. • Drivers may speed up between humps. • May increase volumes on other streets. • Difficult to properly construct.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $1,000 to $2,000
 Raised Crosswalk	Speed hump designed as a pedestrian crossing. • Speed reduction at crossing • Possible traffic reduction	• Highlights crosswalk. • Excellent pedestrian safe treatment. • Aesthetically pleasing if designed. • Relatively inexpensive.	• Drivers may speed up between humps. • May increase volumes on other streets. • Difficult to properly construct.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $1,000 to $2,000
 Rumble Strips	Patterned sections of rough pavement. • Possible speed reduction	• Relatively inexpensive to install. • Create driver awareness.	• High maintenance. • May adversely impact bicyclists. • Noisy by design, and not recommended for all areas.	• Emergency vehicles Estimated Cost Range = $1,000 to $2,000
 Surface Valley Gutters	Dips in the street that can be used to carry run-off as well as cause discomfort to drivers at high speeds. • Speed reduction • Possible traffic reduction	• Effective if used in series at 300 to 500 foot spacing. • Self-enforcing. • Relatively inexpensive during initial construction.	• Drivers may speed up between dips. • May increase volumes on other streets. • Not usually appropriate for existing streets with established drainage patterns.	• Emergency vehicles • Drainage • Signage Estimated Cost Range = $1,000 to $2,000

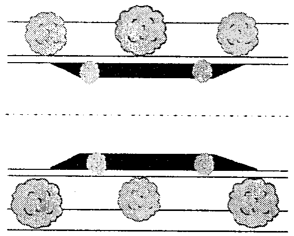
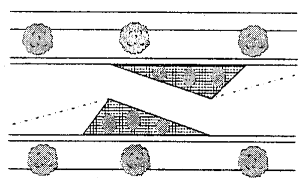
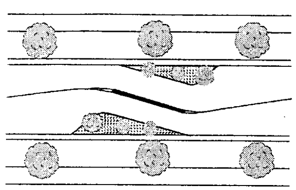
Vertical Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Raised Intersection	Raised plateau where streets intersect. • Speed reduction • Possible traffic reduction	• Slows vehicles in the most critical area, reducing conflict. • Highlights intersection. • Excellent pedestrian safety treatment. • Aesthetically pleasing if well designed. • Better for emergency vehicles than speed humps.	• Increases difficulty of making a turn. • Increased maintenance. • Requires adequate signage and driver education.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $4,000 to $6,000

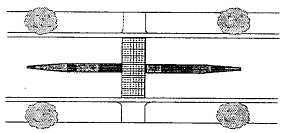
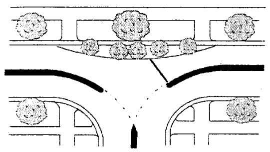
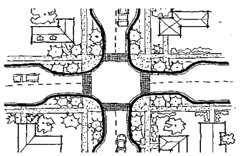
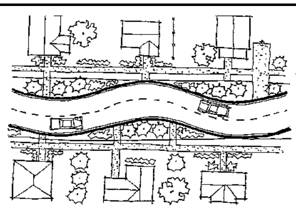
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Gateway Treatment	Entry treatment that communicates a sense of neighborhood identity and a change in traffic conditions. • Speed reduction at entry • Traffic reduction	• Positive indication of a change in environment from arterial road to residential street. • Reduces pedestrian crossing distances. • On wide streets, provides space for landscaping in the median.	• Low speed of turning vehicles may restrict flow on adjacent arterial.	• Emergency vehicle access • Lighting • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $25,000
Single-Lane Slow Point/  Lane Narrowing	Mid-block expansion of landscaped areas and/or on-street parking in order to physically narrow the street to a single traffic lane. • Speed Reduction • Traffic Reduction	• Minor inconvenience to drivers. • Minimal inconvenience to local traffic. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Effective when used in series.	• Unfriendly to bicyclists unless designed to accommodate them. • Conflict between opposing drivers arriving simultaneously could create problems. • Contrary to driver expectation of unobstructed flow.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000

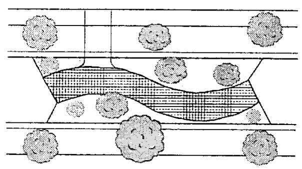
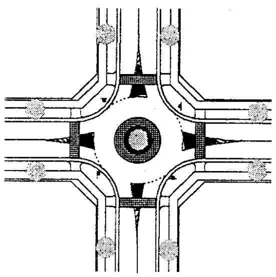
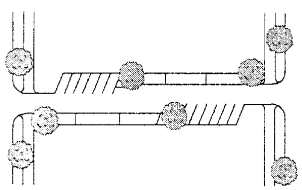
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Two-Lane Slow Point	Mid-block expansion of landscaped areas and/or on-street parking in order to physically narrow the street. • Speed reduction • Possible traffic reduction	• Minor inconvenience to drivers. • Regulates parking if bulb-outs are placed in no parking zones. • Protects parked vehicles. • Reduces pedestrian crossing distance. • Provides space for landscaping.	• Less effective in reducing speed and diverting traffic than the single-lane application. • Unfriendly to bicyclists unless designed to accommodate them.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000
 Single-Lane Angled Slow Point	Offset curb extensions used to narrow the street to a single lane and create angled deviations in the path of travel. • Speed reduction • Traffic reduction	• Minor inconvenience to drivers. • Minimal inconvenience to local traffic. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Effective when used in series.	• Unfriendly to bicyclists unless designed to accommodate them. • Conflict between opposing drivers arriving simultaneously could create problems. • Contrary to driver expectation of unobstructed flow.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000
 Two-Lane Angled Slow Point	Offset curb extensions used to narrow the street and create angled deviations in the path of travel. • Speed reduction • Possible traffic reduction	• Same as Single-Lane Angled Slow Point, except pedestrian safety is reduced.	• Same as Single-Lane Angled Slow Point, except less effective in controlling speeds because drivers can create a straighter through movement by driving over centerline.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000

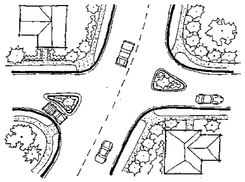
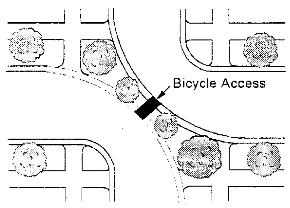
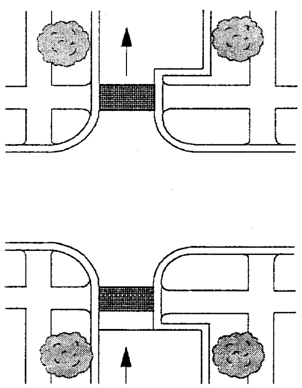
Horizontal Deflection

Measure	**Definition/Application**	**Advantages**	**Disadvantages**	**Special Considerations**
 Mid-Block Median	Island or barrier in the center of a street that narrows lanes and segregates traffic. • Possible speed reduction • Possible traffic reduction	• Provides a refuge for pedestrians and bicyclists. • Can improve the streetscape if landscaped.	• Limited reduction in vehicle speeds.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $10,000
 Modified "T" Intersection	Modification of "T" intersection layout which gives priority to turning traffic. • Speed reduction • Possible traffic reduction	• Reduces through traffic along the top of the "T". • May provide space for landscaping.	• Can cause confusion regarding priority movements, which may lead to accidents.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $10,000
 Neckdown/Curb Bulbs	Physical curb reduction of road width at an intersection. • Speed reduction	• Reduces pedestrian crossing distance. • Can be used in multiple applications or on a single segment of roadway. • Aesthetically pleasing if landscaped.	• Unfriendly to bicyclists unless designed to accommodate them. • Landscaping may cause sight line problems.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $30,000
 Deviation/Chicanes	Offset curb extensions that cause deviation in the path of travel. • Speed reduction • Possible traffic reduction	• Imposes minimal inconvenience on local traffic. • Reduces pedestrian crossing distance. • Provides large area for landscaping. • Reduces speed without significantly increasing emergency response time. • Aesthetically pleasing.	• May create opportunities for head-on conflicts on narrow streets. • Cost is greater than many other devices. • Unfriendly to bicyclists unless designed to accommodate them.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $30,000

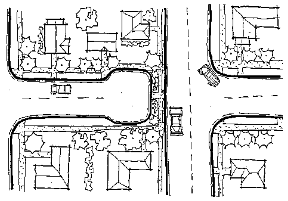
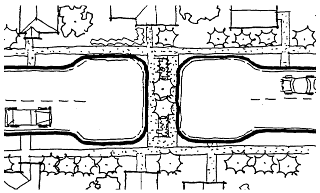
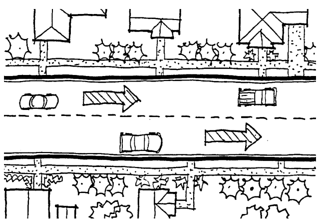
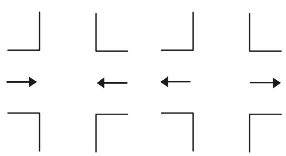
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Driveway Link	Narrow winding driveway section placed between two standard street segments. • Speed reduction • Traffic reduction	• Changes the initial impression of the street. Appears to be a road closure yet allows through movements for local traffic. • Provides a large area for landscaping.	• High cost can be prohibitive. Best installed in conjunction with street reconstruction or initial construction. • Unfriendly to bicyclists unless designed to accommodate them.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $50,000
 Traffic Circle/Roundabout	Raised circular area placed in the center of an intersection. Drivers travel in a counter-clockwise direction and are required to yield upon entry. • Speed reduction at intersection • Possible traffic reduction	• Reduces accidents by 50% to 90% over stop control. • Provides space for landscaping. • Cheaper to maintain than signals. • Effective at multi-leg intersections. • Provides equal access to intersections for all drivers. • Provides a good environment for bicyclists.	• May be restrictive for larger vehicles if designed to a low speed. (This can be minimized by the use of a mountable apron.) • Right of way may need to be purchased to accommodate left turns by large vehicles. • Initial safety issues as drivers adjust. • May increase volumes on adjacent streets.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10,000 to $50,000
 Shared Zone	A block with narrow entry points and high-density parking which functions similarly to a parking lot. • Speed reduction • Traffic reduction	• Provides a low speed shared environment that is safe for all users. • Improves amenity without restricting access. • Provides flexibility for on-street parking.	• High cost unless part of original design. • May result in an increased number of low speed accidents.	• Emergency vehicle access • Signage Estimated Cost Range = $15,000 to $25,000

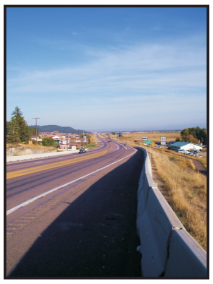
Obstruction

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Forced Turn Barriers/ Diverters	Small traffic islands installed at intersections to restrict and channelize turning movements. • Traffic reduction • Possible speed reduction	• Changes driving patterns • May reduce cut through traffic. • May be attractive if landscaped.	• May increase trip length for some drivers. • May increase response times for emergency vehicles.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $4,000 to $8,000
 Diagonal Road Closure	Barrier placed diagonally across a four-legged intersection, interrupting traffic flow across the intersection. • Traffic reduction • Speed reduction	• Eliminates through traffic • Provides area for landscaping. • Reduces traffic conflict points. • Increases pedestrian safety • Can include bicycle path connection.	• May inconvenience residents gaining access to their properties. • May inhibit access by emergency vehicles. • May divert through traffic to other local streets. • Altered traffic patterns may increase trip length.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10,000 to $20,000
 Partial Street Closure	Blockage of one direction of traffic on a two-way street. The open lane of traffic is signed one-way, and traffic from the blocked lane is not allowed to drive around the barrier in the open lane. • Traffic reduction • Speed reduction	• Reduces through traffic in one direction. • Allows two-way traffic on the remainder of the street. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Two-way bicycle access can be maintained. • Emergency vehicles can drive around partial closure with care.	• Reduces access for residents. • Compliance with semi-diverters is not 100%. • May increase trip length.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10,000 to $20,000 each side of intersection

Obstruction

Measure	**Definition/Application**	**Advantages**	**Disadvantages**	**Special Considerations**
 Cul-De-Sac/Street Closure	Street closed to motor vehicles at the end of a block using planters, bollards, barriers, etc. • Traffic reduction • Speed reduction	• Eliminates through traffic. • Improves safety for all street users. • Pedestrian and bicycle access maintained.	• Reduces emergency vehicle access. • Reduces access to properties for residents. • May increase trip lengths. • May increase volumes on other streets.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $15,000 to $25,000
 Mid-Block Street Closure	Street closed to motor vehicles mid-block using planters, bollards, barriers, etc. • Traffic reduction • Speed reduction	• Eliminates through traffic. • Improves safety for all street users. • Pedestrian and bicycle access maintained.	• Reduces emergency vehicle access. • Reduces access to properties for residents. • May increase trip lengths. • May increase volumes on other streets.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $15,000 to $25,000
 One-Way Street	Street upon which motor vehicles may operate in just one direction. • Possible traffic reduction	• Increased safety due to lack of opposing traffic. • Can be used to open up more resident parking. • Maintains reasonable access for emergency vehicles. • Can discourage through traffic.	• Can lead to increased vehicle speeds. • May increase trip lengths. • May increase volumes on other streets. • Initial safety concerns as drivers adjust. • Alternative route must exist.	• Signage Estimated Cost Range = $2,000 to $3,000
 Imploding/Exploding One-Way Street Intersections	Intersection at which opposing legs carry one-way traffic in different directions. • Traffic reduction	• Increased safety due to lack of opposing traffic. • Maintains reasonable access for emergency vehicles. • Interrupts the flow of through traffic.	• May increase trip lengths. • May increase volumes on other streets. • Initial safety concerns as drivers adjust. • Alternative route must exist.	• Signage Estimated Cost Range = $3,000 to $5,000

Chapter 8: Recommended Transportation System Management (TSM) Improvements



CHAPTER 8: RECOMMENDED TRANSPORTATION SYSTEM MANAGEMENT (TSM) IMPROVEMENTS

8.1 TSM PROJECTS FROM THE 1993 TRANSPORTATION PLAN

Transportation System Management (TSM) projects are relatively low cost, “tune-up” type improvements. A total of 29 TSM projects were recommended in the 1993 update of the Transportation Plan. The status of these projects were reviewed to determine which have been completed, which are no longer valid, and which projects should be included as part of this plan update. Of the 29 projects, 19 were completed and/or partially completed, 9 were not completed, and the status of 1 is unknown. The complete listing of the 29 projects, and their subsequent status for this 2006 Update to the Transportation Plan, are listed in **Table 8-1**.

Table 8-1
TSM Projects from 1993 Plan & Status for this 2006 Plan Update

TSM Location No.	Location of Past TSM Project	Past Recommendation	Status for this Plan Update
1	U.S. Highway 93/Cemetery Road/Willow Glen	Create “T” intersection of Willow Glen and U.S. 93.	Completed
2	U.S. Highway 93, Cemetery Road to 18th Street	Develop Access Management Plan per MDT Access Resolution, conduct traffic signal warrant studies at Airport/13th and at 1st Avenue East/Rosauer’s.	Completed
3	U.S. Highway 93/3rd Avenue	Realign intersection.	Completed
4	U.S. Highway 93/18th Street	Install traffic signal when warranted.	Completed
5	Main Street/9th to 12th Street	Remove on-street parking on Main Street from 12th to 10th, re-stripe between 9th and 11th St., minor widening at curves and add speed advisory.	Not Completed
6	Main Street /4th Street	Prohibit north/south left turns from 8:00 a.m. to 6:00 p.m. for corridor consistency.	Unknown
7	Main Street/3rd Street	Additional north/south mast arm signal head for corridor consistency.	Completed
8	Main Street/1st Street	Additional north/south mast arm signal head for corridor consistency.	Completed
9	Main Street/Center Street	Additional north/south mast arm signal head for corridor consistency.	Completed
10	Main Street, Center to Idaho Street	Install center median, consolidate access, remove on-street parking, concrete pavement to be replaced by MDT, exclusive eastbound/westbound right-turn lanes, and improved turning radii on southeast, southwest, and northeast corners at Idaho to be	Completed

		constructed by MDT, modify signal phasing/timing at Idaho.	
11	Main Street, 11th Street to Idaho Street	Improve corridor traffic signal coordination, new signal controllers/master controller.	Completed
12	Main Street/Washington Street to Wyoming	Remove on-street parking on Main Street from Idaho to Wyoming, prohibit westbound and southbound left-turn movements at Washington and Oregon from 8:00 a.m. to 6:00 p.m., reconstruct narrow raised median (and paved shoulders north of Wyoming) and shift through-traffic lanes and create center left-turn lanes.	Partially Completed
13	Sunset Boulevard/Conway Drive, Sunnyview Lane, Meridian Road	Traffic signals to be installed by MDT at each location with signal interconnect for traffic progression.	Completed
14	Idaho Street/Meridian Road	Construct exclusive eastbound and westbound right-turn lanes, improve corner radii and relocate traffic signal pole.	Partially Completed (westbound right-turn lane constructed)
15	Idaho Street/5th Avenue West	Install south flow line curb and gutter, add mast arms for 5th Avenue WN, add left-turn phase.	Completed
16	Idaho Street/1st Avenue East	Restrict left turns eastbound Idaho to northbound 1st Avenue from 6:00 a.m. to 6:00 p.m., additional no-left turn signing for northbound 1st Avenue traffic on far left/right of intersection.	Completed
17	Idaho Street/3rd Avenue East	Add left-turn phase.	Completed (eastbound and westbound)
18	Idaho Street/7th Avenue East	Increase length of left-turn storage bay.	Not Completed
19	U.S. Highway 2/Woodland Park Drive	Increase left-turn storage for westbound U.S. 2, stripe shoulder for “right-turn only” lane in eastbound direction.	Not Completed
20	U.S. Highway 2/Super 1 Foods	Consolidate multiple driveways to one access, conduct signal warrant analysis/install signal when warranted.	Completed
21	U.S. Highway 2/west of LaSalle	Signing modifications, add exclusive westbound right-turn lane and improve corner radii.	Not Completed
22	LaSalle Road/Evergreen Drive	Shift signal head for northbound traffic to align with lane lines.	Not Completed
23	LaSalle Road/Sunset Drive and Springcreek Drive	Realign east approach.	Not Completed
24	U.S. Highway 2 Corridor, Meridian Road to 7th Avenue EN	Coordinated traffic signals and update signal hardware.	Completed
25	U.S. Highway 2 Corridor – east of Woodland Park Drive	Reconstruct left-turn lanes in median and improve median ends/left turn traffic sight visibility.	Not Completed
26	Meridian Road/Center	Install traffic signal.	Not Completed

	Street		
27	5th Avenue West/Center Street	Install traffic signal.	Completed
28	1st Avenue East/Center Street	Install traffic signal when warranted.	Completed
29	1st Avenue East/3rd Street	Install traffic signal when warranted.	Not Completed

For the purposes of this Plan an improvement project was classified as a TSM project if the cost of the project was less than $500,000. The cost estimates included in this section are provided for planning purposes only. It was estimated that most new traffic signal systems would cost between $200,000 and $300,000. Lane modifications were estimated to cost $60,000 per approach. If applicable, each project included some basic storm drainage improvements. **The cost estimates do not include any right-of-way costs, but do include design and construction costs.** All costs are in year 2007 dollars.

Previous transportation plans have generally considered signalization to be the preferred method to accommodate significant traffic volumes at intersections. An additional option has been developed and has been implemented in some other jurisdictions in the United States. Roundabouts provide a means of controlling traffic patterns that relies on fixed physical construction of the intersection to direct drivers rather than a system of signal lights. Roundabouts are circular intersections with specific design and traffic control features. These features include yield control of all entering traffic, channelized approaches, and entry speeds of less than 30 mph.

A wide variety of sizes and configurations of roundabouts exist. Like other traffic control features, it is important that a roundabout be individually designed to the intersection where it is located. As with traditional signalization, a specific roundabout design will accommodate a certain traffic pattern and volume, and modifications may be needed as changes occur. The decision to place a roundabout, or any other means of traffic control, at an intersection must be made on a case by case basis and after an engineering analysis based on objective criteria to identify the safest and most effective means of addressing the local needs and circumstances. As with traffic signals, roundabouts are designed to accommodate the peak hour demand on intersecting roadways.

Costs for roundabout installation are likely to be comparable to traditional signalization. Although roundabouts require less mechanical hardware, they are likely to occupy additional land at the intersection and require additional grading and concrete work in association with splitter islands and the center island. A better cost evaluation will be possible after greater experience. Depending on the local circumstances of an intersection, a roundabout may be of benefit in allowing continuous traffic movement, accommodating similar levels of traffic flows from multiple streets, for a demarcation between land uses, and providing for aesthetic improvements.

8.2 COMMITTED TSM (CTSM) IMPROVEMENTS

Committed projects are typically only listed if the project will affect capacity and/or delay characteristics of a roadway facility and/or intersection. This distinction is necessary since some committed improvement projects, likely to occur within the next five years, are not necessarily listed here since they will not have an effect on the traffic model. Those committed improvement projects not included in the traffic model, as well as those extending out beyond the five-year timeframe, are listed elsewhere in this *Transportation Plan*.

At the time of preparation of this draft Transportation Plan, there have not been any identified committed TSM projects that will have a positive or negative effect on the travel demand model.

8.3 RECOMMENDED TSM IMPROVEMENTS

During the preparation of this Plan, a number of TSM projects were identified. The following list of TSM projects are not in any particular order with respect to priority. The location of each recommended TSM project is shown on **Figure 8-1** and **Figure 8-2**.

- **TSM-1:** Evergreen Drive / LaSalle Road: Reconfigure this intersection to re-align the east and west legs of Evergreen Drive so they are directly opposite each other. Also install designated eastbound and westbound left-turn lanes. Curb bulb-outs should be installed on the east and west legs to improve school children crossing visibility and reduce crossing distances. Proper turning radii around the corners should be implemented to eliminate vehicle tracking on the curb and gutter / concrete sidewalk.
  Estimated Cost: $245,000

- **TSM-2:** LaSalle Road / US Highway 2: This intersection has a very large southbound right-turn movement. It is recommended that a significant project be considered to add a second southbound right-turn lane, coupled with a designated southbound left-turn phase on LaSalle Road. Additionally, a recommendation from the 1993 Transportation Plan was to add a designated westbound right-turn lane. This was never completed and should be implemented. There are no pedestrian crossing opportunities at this intersection, which should be considered if and when an intersection construction project is enacted. Some thought has been given to eliminating the northbound left-turn lane and forcing those movements to travel down to the Super 1 Food approach, however it is a very small volume movement and can run opposite of the southbound left-turn phase. Note that any improvements should be completed with sensitivity to future right-of-way needs for a widened MT Highway 35 (see **Chapter 9**) or a future LaSalle Road extension to Conrad Drive (see **Chapter 9**).
  Estimated Cost: $265,000

- **TSM-3:** Indian Trail Road / US Highway 93 North: A traffic signal control warrant study should be completed every three (3) years at this intersection. The residential neighborhood to the north of Indian Trail Road has commented on the need for traffic signal control. The intersections does not meet traffic signal control warrants based on traffic volumes (pedestrian or vehicle) at this time. The crash warrant is also not met at this time, however the intersection should continue to be monitored as time develops. It is noted that traffic signal control at Grandview Drive is accessible for residents in this residential development and can be used to make westbound left-turn movements.

Estimated Cost: $40,000

- **TSM-4:** MT Highway 35 / Helena Flats Road: This intersection has a large proportion of southbound left-turns compared to the southbound right-turn movement. There has been considerable public concern of the use of Helena Flats Road as a “cut-thru” route to avoid LaSalle Road. Although this intersection could be a candidate for immediate signalization (or even a modern day roundabout), it is suggested that an interim step be implemented of restricting southbound left-turns through a channelization island and signing. This will force all “cut-thru” traffic to use LaSalle Road, which is desirable. Local neighborhood traffic will also have to use LaSalle Road. This should only be complemented when project **TSM-2** has been constructed (at least the southbound designated left-turn phase on LaSalle Road). Lastly, Helena Flats Road should be signed at the intersection with MT Highway 35 as “No truck traffic allowed” which would again force trucks to the intersection of LaSalle Road and US Highway 2.

  Estimated Cost: $40,000

- **TSM-5:** 3rd Avenue / 4th Avenue Couplet: The modeling of this couplet as two-way facilities was completed and described in **Chapter 3**. Based on initial modeling results and other factors, it is recommended that the City proceed with changing the one-way couplet to two-way directional flow on each roadway (i.e. 3rd and 4th Avenue East). This network modification is in line with neighborhood goals, and alternative traffic network routes are available for thru-traffic movements. It is envisioned that parking will be allowed on each side of the respective facilities. These two modified roadways will mimic other neighborhood roadways within the City. It is also recommended that before the modification takes place that the City study traffic volumes for a before and after traffic comparison, along with a survey of neighborhood perceptions after the change. If issues appear to be created within the neighborhood, more active traffic calming can be explored as described in **Chapter 7** of this Plan. The City should also explore removal of this couplet from the “urban aid system” in concert with the process described in **Chapter 10**, under the hope of adding a suitable replacement length for newly developing roads in other more pressing areas of the community.

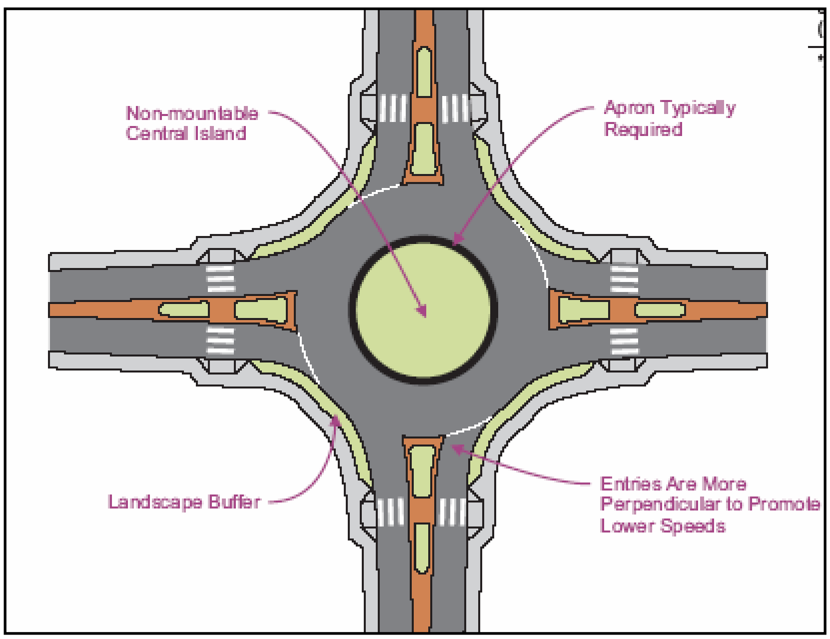
  Estimated Cost: $100,000

- **TSM-6:** Reserve Drive / Stillwater Road: This intersection should be modified to incorporate a modern roundabout. This is planned as part of the “Reserve Loop” project. Crash rates and severity can be mitigated at this location, and the high traffic volumes likely to be realized from future development can be mitigated without having to go back later down the road.

  Project Completed Summer of 2007

- **TSM-7:** US Highway 2 / Woodland Park Drive: The westbound left-turn storage bay should be lengthened to accommodate heavy AM peak hour travel movements. This was a recommendation from the past Transportation Plan. A bay of at least 300 feet should be constructed, with appropriate taper lengths being added on. Also, the shoulder for the eastbound movement on Idaho Street should be striped as a right-turn bay.
  Estimated Cost: $50,000

- **TSM-8:** Conrad Drive / Willow Glen Drive: It is recommended that a modern urban compact roundabout (see schematic below) be constructed at this location to eliminate the surprising sight distance obstacles and poor geometrics, and to better meter traffic flow. This roundabout would allow for slower entry and exit speeds, and would increase safety and visibility at the intersection. The modern urban compact roundabout can process up to 15,000 vehicles per day, and is well suited for existing intersections where space may be of concern. The roundabout would need to be designed and built to FHWA standards, and be larger enough to accommodate any necessary fire and garbage vehicles, as well as the occasional WB-67 vehicle that may use the route as an informal bypass. Land right-of-way acquisition will be necessary, along with intersection luminaries and signing.
  Estimated Cost: $160,000



- **TSM-9:** US Highway 93 North / Home Depot Signal: This existing intersection should be modified to add both westbound and eastbound left-turn lanes. With these opposing lanes in place, the signal can be modified to allow protected eastbound and westbound lefts. These movements are critical and the westbound left-turn movement is already problematic. This would require coordination with the development group to ensure all existing and future infrastructure can be located out of the limits needed for the left-turn bays.
  Estimated Cost: $220,000

- **TSM-10:** 2nd Street East / Woodland Avenue: Install a modern urban compact roundabout. The intersection has a higher occurrence of crashes compared to other similar intersections, and was one of the top ten identified through the crash analysis. An urban compact roundabout can process up to 15,000 vehicles per day, and is well suited for existing intersections where space may be of concern. The grade of the eastern leg is approaching the maximum desirable grade of a roundabout. It would be suggested that a "temporary roundabout" configuration be tried at this location before committing to a full-fledged roundabout construction.

  Estimated Cost: $100,000

- **TSM-11:** Willow Glen Drive / Woodland Avenue: Partner with adjacent landowner on northwest quadrant of intersection to remove sight distance obstacles to improve visibility. Also, provide a pedestrian crossing at the intersection on the north leg of Willow Glen Drive, and sign and mark in accordance with the MUTCD. This will also be utilized for future crossover of Willow Glen Drive needed for the *Sam Bibler Memorial Trail*.

  Estimated Cost: $20,000

- **TSM-12:** 18th Street / Airport Road: This intersection should be reconstructed to take the slight "offset" out of the intersection. It is a difficult maneuver to make for westbound travelers on 18th Street West. Although a long term recommendation is to extend 18th Street west to Sunnyside Drive, this short term project would improve conditions beforehand. It will likely entail some right-of-way acquisition on the northeast and northwest quadrants of the intersection.

  Estimated Cost: $100,000

- **TSM-13:** Main Street (between 9th and 12th Street): Re-stripe this section of Main Street between 9th Street and 11th Street from two-lanes to four-lanes. It is expected that the geometry configuration could occur with the existing roadway prism. If not, some minor widening may be necessary along curb lines and/or at curves. New signing and pavement markings will be required. Also, on-street parking will have to be removed.

  Estimated Cost: $50,000

- **TSM-14:** US Highway 93 / Northridge Drive: Modify the intersection traffic control to provide for a designated northbound left-turn phase. There are sight distance concerns at this location, as the northbound left-turn movement has to contend with heavy traffic flows and a slight horizontal and vertical curvature.

  Estimated Cost: $25,000

- **TSM-15:** 4th Avenue East / 2nd Street East: This intersection should be modified to incorporate a "Three-Way Stop" intersection control. The intersection operates at a level of service of C in the AM peak hour and F in the PM peak hour. Installing three-way stop control will better meter the peak hour traffic and will complement the traffic control one block west of the intersection. Presently, 2nd Street East has uninterrupted travel movements. With this change, the intersection will operate to a LOS of A during the AM peak hour and B during the PM peak hour.

  Estimated Cost: $15,000

- **TSM-16:** Whitefish Stage Road / West Evergreen Drive: This intersection currently operates at a level of service of C during the AM peak hour and F during the PM peak hour. It is recommended to implement "three-way stop control" at this intersection to better meter traffic and improve the peak hour levels of service. This would be coupled with constructing separated left-turn and right-turn lanes on the east leg of West Evergreen Drive. The future extension of West Evergreen Road, to the west, is discussed in **Chapter 9** and is a very long-range project. This recommendation will improve the level of service to an A during the AM peak hour and B during the PM peak hour.
  Estimated Cost: $140,000

- **TSM-17:** 2nd Street East / Conrad Drive / Woodland Park Drive: Install a modern roundabout at this intersection. Presently, there is poor definition and a large pavement area that confuses drivers. Citizens have commented about high speeds in the area as well. A modern roundabout would serve to slow entry speeds to the intersection, provide better definition, and better meter traffic for the proposed roundabout at 2nd Street East and Woodland Avenue (recommended project **TSM-10**). The existing level of service at the intersection is LOS C during the AM peak hour and LOS F during the PM peak hour. A modern roundabout installation would improve levels of service to an "A/A" during the AM and PM peak hours.
  Estimated Cost: $100,000

- **TSM-18:** Foys Lake Road & Valley View Drive: This intersection will not function properly given the level of development expected in the area over the planning horizon. It is highly likely that a traffic signal may be warranted in the next twenty years at this location. This will especially be true when the US Highway 93 bypass becomes realized and an interchange is allowed at Foys Lake Road. Because it is unclear as to whether a traffic signal will indeed become warranted at this location over the planning horizon, the recommendation is to place a modern "urban compact roundabout" at this location.
  Estimated Cost: $100,000

- **TSM-20:** South Meridian Road & 7th Street West: This intersection will not function properly given the level of development expected in the area over the planning horizon. It is highly likely that a traffic signal may be warranted in the next twenty years at this location. This will especially be true if the US Highway 93 Bypass becomes realized and an interchange is allowed at Foys Lake Road. Because it is unclear as to whether a traffic signal will indeed become warranted at this location over the planning horizon, the recommendation is to place a modern "urban compact roundabout" at this location. This will be a good location for this type of traffic control, and will result in less maintenance cost and upkeep over the coming years. It is not subject to meeting "warrants" as a traffic signal is, and will be a safer and pedestrian friendly design to meet future needs.
  Estimated Cost: $100,000

- **TSM-21:** South Meridian Road Corridor (Appleway Drive to Center Street): This corridor does need left-turn bays for northbound left-turn movements at Appleway Drive and southbound left-turn movements at Center Street. These are needed under current conditions. To realize this improvement, right-of-way acquisition will be necessary between the two intersections. There does not appear to be enough pavement width in the roadway prism to accomplish back-to-back left turn lanes, so expansion of the roadway prism will be necessary to realize the new section.

At the Center Street intersection, in addition to the southbound left-turn bay, a northbound right-turn bay would be highly desirable. Both of these are heavy movements, and installation of these two features, again with probable right-of-way acquisition and expansion, should accommodate travel needs. This intersection could be a candidate for traffic signalization, however warrants would have to be met and should be monitored over time.

Estimated Cost: $225,000

- **TSM-22:** South Meridian Road & 2nd Street West: This intersection currently exhibits some operational issues, mainly during the PM peak hour. If the corridor project described as MSN-11 is not implemented, an urban compact roundabout is recommended. This would necessitate right-of-way acquisition on the northeast and southeast corners of the intersection, to obtain enough right-of-way to implement the roundabout.

  Estimated Cost: $125,000

- **TSM-23:** Four-Mile Drive / W. Springcreek Road: This rural intersection should be modified to exhibit a more geometrically conventional intersection. This includes a more conventional four-legged intersection to accommodate future traffic volumes that will arise over the build-out of the Section 35 development. The intersection improvements should complement the major roadway projects described in **Chapter 9** listed as **MSN-8** and **MSN-12**).

  Estimated Cost: $5,000

- **TSM-24:** Traffic Signal Synchronization – US 93 & US Highway 2: The Montana Department of Transportation is encouraged to revisit traffic signal synchronization and timing plans for the two (2) busy principal arterial corridors of US Highway 93 and US Highway 2 at least every three years. This is primarily a result of the aggressive growth patterns being realized and the rapidly escalating traffic volumes being observed. Data collected for this Transportation Plan Update is recent, represents peak summer traffic conditions, and should be used for the first synchronization effort.

  Estimated Cost: $190,000

- **TSM-25:** Traffic Impact Study Requirements: It is suggested that all developments generating more then 300 vehicle trips per day be required to submit a detailed Traffic Impact Study" to the City assessing existing transportation system conditions and any potential mitigation efforts needed for the additional traffic impact. The *Traffic Impact Study* should present an objective technical analysis in a straight-forward and logical manner that leads the reviewer through the analytical process to the resulting conclusions and recommendations. Sufficient detail should be provided so the reviewer is able to follow the path and methodology of the study. All assumptions should be documented, published sources referenced as necessary, and stamped by a professional engineer. At a minimum, the study should include the following:

- The study's purpose and objectives;
- A description of the site and the study area;
- A description of the existing conditions in the area of the site (existing roadway geometries, traffic counts, crash analysis, existing intersection Level of Service (LOS), existing roadway capacity analysis);
- The anticipated nearby land developments and transportation improvements;
- Analysis and discussion of trip generation, distribution, and modal splits;
- The traffic assignment resulting from the proposed development;
- The projection and assignment of future traffic volumes;
- An assessment of the traffic impacts attributable to the development. If the level of service on the study roadways and intersections is not impacted and maintains a minimum Level of Service "C", then no improvements should be required; and
- Recommendations for site access and transportation improvements.

Estimated Cost: $50,000

- **TSM-26:** Transportation Plan Update Schedule: It is recommended that the community undertake a "Transportation Plan Update" on a five (5) year cycle to better revisit growth patterns and assumptions made for the *travel demand model* described in **Chapter 3**. Funding is available though the MDT Statewide and Urban Planning Section to complete a more frequent Plan Update, and excessive growth in the community necessitates a constant revisit to the transportation planning process.

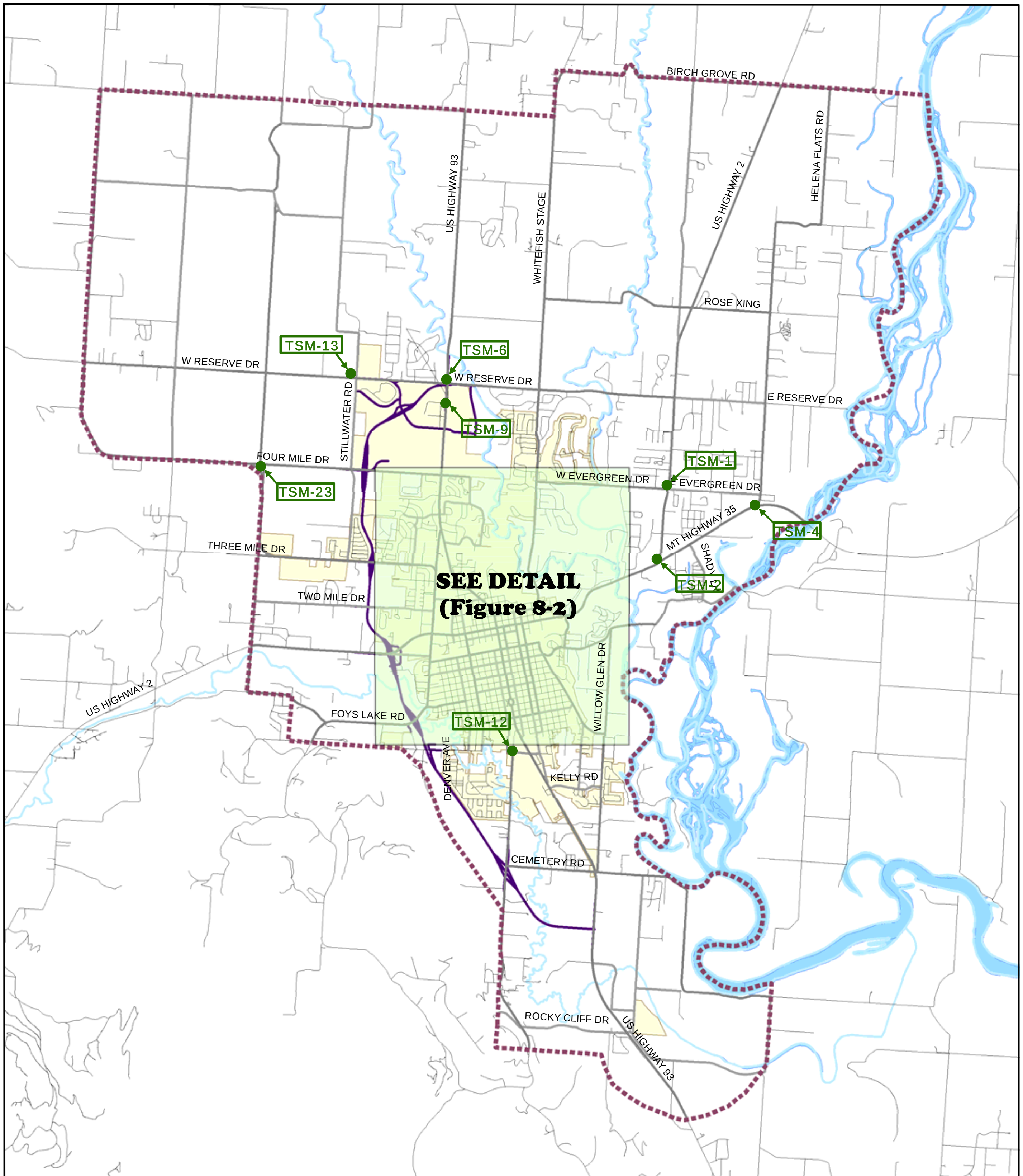
  Estimated Cost: $200,000

- **TSM-27:** Community-Wide Opticom System Review: Discussions with emergency service providers have centered around certain locations where it is believed the opticom system is either faulty and/or not programmed correctly. The system manufacturer should be retained to troubleshoot the existing system and update and revise areas that are inadequate. The opticom system is very specialized, and company technicians should be retained to evaluate the system. The opticom system is the system that allows emergency service providers to control traffic signals when responding to calls via the "eyes" placed on top of the mast arms.

  Estimated Cost: $50,000

- **TSM-28:** County Land Development Issues/Geometric Considerations: Many proposed roadways & corridors are recommended (see **Chapter 9**) to facilitate future growth in areas outside of the current City limits and within Flathead County jurisdiction. As land development occurs in these areas, developers can refer to this Plan to identify where important roadway corridors are needed in the future and thus have some predictability to what sort of transportation grid will be required. Land developments on existing corridors should be responsible for mitigation measures to bring transportation facilities up to at least the same level of service as before the development. Types of mitigation measures that may be appropriate for development impacts on existing corridors include left-turn and right-turn lanes at major intersections to developments, widening of roadways to current roadway standards if presently deficient, proper signing and pavement markings, and in some cases roadway expansion if the specific development puts traffic volumes over planning level threshold volumes discussed elsewhere in this Transportation Plan.

  Estimated Cost: $25,000

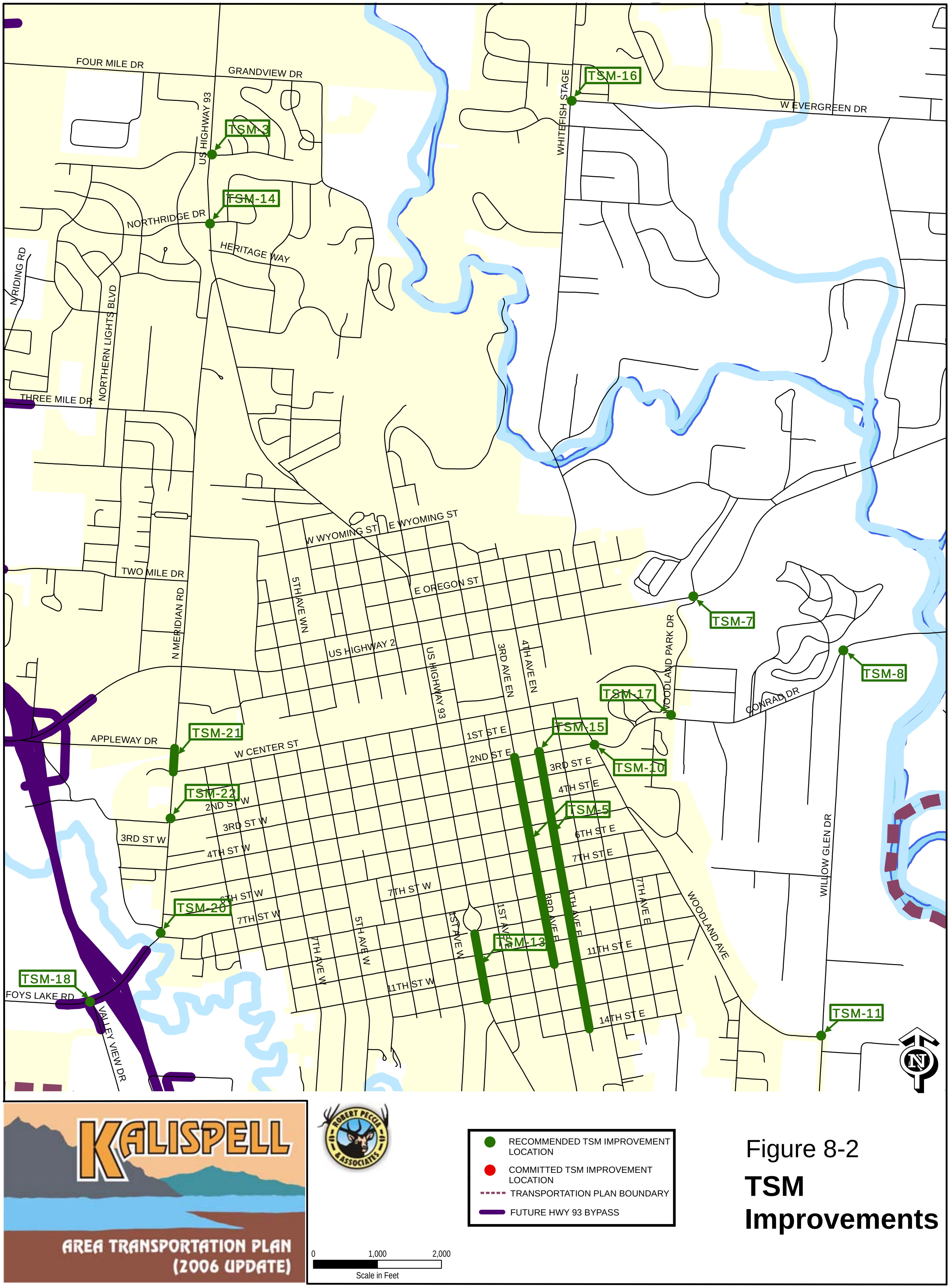


KALISPELL
AREA TRANSPORTATION PLAN
(2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

Figure 8-1

TSM Improvements



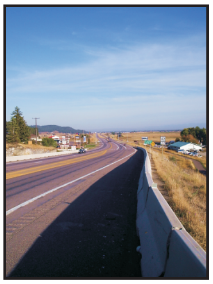
KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

ROBERT PECCIA & ASSOCIATES

Figure 8-2

TSM Improvements

Chapter 9: Recommended Major Street Network Improvements



CHAPTER 9: RECOMMENDED MAJOR STREET NETWORK IMPROVEMENTS

This Plan includes a variety of recommended programs and improvement projects. These projects are needed to meet the anticipated traffic demands of the year 2030. This chapter summarizes the recommended programs and projects.

9.1 MAJOR STREET NETWORK PROJECTS FROM THE 1993 TRANSPORTATION PLAN

The 1993 update of the Transportation Plan included 27 recommended major projects. Of these projects, two were completed, four are no longer valid due to changed conditions and/or new information, and twenty one projects have been included in this update of the plan (as either committed or recommended projects). The various 27 projects and their resultant status are shown below in **Table 9-1**. A major improvement project is any road improvement project that requires substantial financing, and significant planning and design efforts.

Table 9-1
MSN Projects from 1993 Plan & Status for this 2006 Plan Update

MSN Location No.	Location of Past MSN Project	Past Recommendation	Status for this Plan Update
1	Meridian Road (Idaho Street to U.S. Highway 39 North)	Widen to 4 lanes from Idaho Street north to Three Mile Drive and 3 lanes from Three Mile Drive to U.S. 93	Completed
2	Whitefish Stage Road (Oregon Street to Reserve Drive)	Widen and minor realignment with center left-turn lane at major street and driveway intersections.	Not Completed, modified and included herein as **MSN-22**
3	Willow Glen Drive (U.S. Highway 93 to Conrad Drive)	Widen with left-turn lanes at Woodland Avenue and Conrad Drive.	Not Completed, modified and included herein as **MSN-13**
4	LaSalle Road Extension	Extend south of the U.S. Highway 2/Montana Highway 35 intersection to Conrad Drive.	Not Completed, modified and included herein as **MSN-24**
5	18th Street Extension	Extend west to connect with Sunnyside Drive and Valley View Drive.	Not Completed, modified and included herein as **MSN-23**
6	U.S. Highway 93	Widen to 4 lanes north of Grandview/Four Mile Drive to Reserve and south of the Courthouse to Ball's Crossing.	Completed
7	Reserve Drive (U.S. Highway 93 to U.S. Highway 2)	Widen to 5 lanes.	Not Completed, modified and included herein as **MSN-18** & **MSN-19**
8	West Springcreek Road (Whalebone Drive to Reserve Drive)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-12**
9	Stillwater Road (Three Mile Drive to Bypass)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included as **MSN-10**

10	Four Mile Drive (West Springcreek Road to Stillwater Road	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-8**
11	Whalebone Drive (West Springcreek Road to Foy's Lake Road)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, not included in this Plan update
12	Foy's Lake Road (Whalebone Drive to Valleyview Drive)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-7**
13	Conrad Drive (Woodland Avenue to LaSalle Extension)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-16**
14	Helena Flats Road (Montana Highway 35 to Reserve Drive)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-6**
15	Reserve Drive (West Springcreek Road to U.S. Highway 93)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-1** & **CMSN-1**
16	Three Mile Drive (West Springcreek Road to Meridian Road)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-29**
17	Evergreen Drive (Whitefish Stage Road to LaSalle Road)	Widen with left-turn lanes at major intersecting streets or drives.	Not Completed, modified and included herein as **MSN-21**
18	Four Mile Drive	Construct new segment to the proposed bypass.	Not Completed, included herein as **MSN-2**
19	Grandview Drive/Evergreen Drive	Construct new segment from U.S. Highway 93 to Whitefish Stage Road	Not Completed, included herein as **MSN-3**
20	Two Mile Drive (West Springcreek Road to Meridian Road)	Widen with left-turn lanes at major intersecting streets.	Not Completed, modified and included herein as **MSN-30**
21	Evergreen Drive (LaSalle Road to Helena Flats Road)	Widen with left-turn lanes at major intersecting streets.	Not Completed, not included in this Plan update
22	Reserve Drive (LaSalle Road to Helena Flats Road)	Widen with left-turn lanes at major intersecting streets.	Not Completed, included herein as **MSN-20**
23	Center Street (Proposed Bypass to City Limits)	Widen with left-turn lanes at major intersecting streets.	Not Completed, not included in this Plan update
24	Grandview Drive (U.S. Highway 93 to 90-degree turn)	Improve roadway	Not Completed, modified and included herein as **MSN-3**
25	7th Avenue East (Idaho Street to City Limits)	Improve roadway	Not Completed, modified and included herein as **MSN-29**
26	Four Mile Drive (City Limits to U.S. Highway 93)	Improve roadway	Not Completed, included herein as **MSN-2**
27	New Northside Collector (Sunnyview Lane to Reserve Drive)	New roadway	Not Completed, not included in this Plan update

9.2 COMMITTED MAJOR STREET NETWORK PROJECTS

Committed projects are only listed if the project will affect capacity and/or delay characteristics of a roadway facility and/or intersection. This distinction is necessary since some committed improvement projects, likely to occur within the next five years, are not listed here since they will not have an effect on the traffic model. Committed improvements listed are only considered if they are likely to be constructed within a five-year timeframe (i.e. year 2006 through the year 2011), and a funding source has been identified and is assigned to the specific project.

It is appropriate to comment about the *US 93 Somers to Whitefish West (Kalispell Bypass Only) EIS Re-evaluation*. Although this recent project has identified the alignment and design parameters for the entire US Highway 93 Bypass, it is not readily apparent if and when the entire Bypass construction will begin and be completed. As such, it is not prudent to treat the entire Bypass as a "committed" project for travel demand modeling purposes. Different variations of modeling portions of the Bypass were treated as a "Network Alternative Test Runs" as described in **section 3.7** of this chapter. The committed improvements included in the modeling process are listed below.

CMSN-1: Reserve Drive Loop Connector (from Stillwater Road to U.S. Highway 93)
This committed project was constructed during the summer of 2007 in such a manner to complement the future US Highway 93 By-pass project (not committed) and serve developing areas within section 36. The roadway was built to a four-lane roadway section, with center turn lanes, and began at the intersection of Stillwater Road and West Reserve Drive. From the intersection, it traverses east to just past the new Glacier High School, bends in a south and easterly direction, and then ties in to US Highway 93 across from the Hutton Plaza Ranch mixed-use development. The intersection of Stillwater and Reserve Drive is a single-lane roundabout, while the intersection of with US Highway 93 is a conventional traffic signal control intersection.

CMSN-2: Old Steel Bridge Replacement
The Old Steel Bridge is presently a single lane bridge across the Flathead River located east of the Conrad Drive / Shady Lane area and technically along the alignment of Holt Stage Road. It is slated for replacement with a modern two-way bridge during the year 2009.

CMSN-3: US Highway 93 (North of Kalispell city limits)
The reconstruction of US Highway 93 from the existing two-lane facility will be constructed to four-lanes between the northern Kalispell city limits to Happy (Hidden) Valley Road, approximately five miles to the north and half way to Whitefish. Construction is scheduled for 2008. This project also includes a new modified interchange at Church Drive. Church Drive, on the west side of US 93, will connect to the revised Highway 93 via a new interchange.

9.3 RECOMMENDED MAJOR STREET NETWORK PROJECTS

A major street network project is any road improvement project that requires substantial financing, and significant planning and design efforts. The recommended major improvement projects are shown below, in no particular order of importance or priority. Estimated costs for each improvement have been provided for planning purposes, and are based on street standards used by the City of Kalispell and the MDT, as appropriate. Each project includes some basic storm drainage improvements. **The cost estimates do not include any right-of-way costs, but do include design and construction costs.** All costs are in year 2007 dollars.

The location of each recommended major street network project is shown on **Figure 9-1** and **Figure 9-2**.

<u>MSN 1. West Reserve Drive – Stillwater to West Springcreek Road:</u>
Problem: Due to projected growth in the area over the planning horizon, this facility will exceed the capacity of a two-lane rural roadway. Even with the "full build" version of the US Highway 93 Bypass, traffic volumes on this east-west roadway will approach 20,000 vpd (east of W. Springcreek) and 26,000 vpd (west of Stillwater).
Recommendation: Reconstruct West Reserve Drive between West Springcreek Road and Stillwater Road to a five-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed "Section 35" development. This is coupled with the need for pedestrian and bicycle facilities. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including two travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or TWCTL) at the major intersections.
Estimated Cost: $2,200,000

<u>MSN 2. Four Mile Drive – Stillwater Road to US Highway 93:</u>
Problem: Generally poor east-west connectivity in the community. Need to establish a good grid system in the developing areas of the City.
Recommendation: A new segment of Four Mile Drive should be constructed, to an urban minor arterial standard, between Stillwater Road and US Highway 93. The segment should be built regardless of whether the full Bypass is developed. A three-lane urban minor arterial section is envisioned, to consist of new pavement (one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays at the major intersections (Stillwater Road and US Highway 93).
Estimated Cost: $1,725,000

<u>MSN 3. Grandview Drive Extension – Existing Bend to Whitefish Stage Road:</u>
Problem: Poor connectivity and reduced delay time for emergency service vehicles. Also need to establish better grid system.
Recommendation: It is recommended that an extension of Grandview Drive be constructed between the existing 90-degree bend (east of US Highway 93) to its projected intersection with Whitefish Stage Road (and directly opposite of West Evergreen Drive). The roadway should be built to an urban minor arterial standard and should incorporate new pavement (one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate

turn bays at the major intersections (i.e. Whitefish Stage Road). The segment between US Highway 93 and the existing 90 degree bend should also be reconstructed to match the suggested roadway standard.
Estimated Cost: $2,865,000

MSN 4. Whitefish Stage Road – Reserve Drive to Rose Crossing:
Problem: Projected development in this area causes Whitefish Stage Road to exceed its two-lane capacity. Traffic projections out to the year 2030 show traffic volumes approaching 26,000 vpd in this area.
Recommendation: It is recommended to construct this segment of Whitefish Stage Road to a urban minor arterial standard between Reserve Drive and Rose Crossing. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including two travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $2,225,000

MSN 5. Whitefish Stage Road – Rose Crossing to Birch Grove Road:
Problem: Projected development in this area causes Whitefish Stage Road to exceed its two-lane capacity. Traffic projections out to the year 2030 show traffic volumes approaching 20,000 vpd.
Recommendation: It is recommended to construct this segment of Whitefish Stage Road to a urban minor arterial standard between Rose Crossing and Birch Grove Road. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections. Access control to this facility should be limited to extend the capacity of the facility to keep the roadway at a three-lane section.
Estimated Cost: $4,300,000

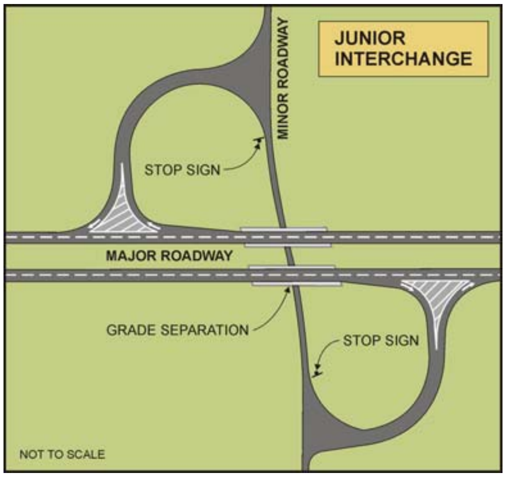
MSN 6. Helena Flats Road - Montana Highway 35 to Rose Crossing:
Problem: Existing facility will exceed capacity of two-lane rural roadway. Future connectivity and land development needs.
Recommendation: This recommendation is to expand Helena Flats Road, between MT 35 and Rose Crossing, to an urban minor arterial section. This should consist of widened pavement (including one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $3,650,000

MSN 7. Foys Lake Road (Whalebone Drive to Valley View Drive):
This segment is classified as a minor arterial in the City's "functional classification system". It is recommended to modify this segment to an urban minor arterial standard, between Whalebone Drive and Valley View Drive, to address future system needs. This is a long-term need that will be necessary to accommodate future development patterns west of the proposed US Highway 93 Bypass, as well as to properly tie into the future bypass. This is coupled with the need for pedestrian and bicycle modes. The City's urban arterial standard should consist of widened pavement (including travel lanes and bike lanes on each side), curb and gutter, boulevard,

sidewalk, and appropriate turn bays at the major intersections. From a capacity standpoint, a rural two-lane arterial can accommodate between 6,000 and 6,600 vehicles per day (vpd).
It is expected that in the twenty-four year planning horizon, this roadway will see traffic volumes on the order of 10,000 vpd to 12,000 vpd. A two-lane urban arterial generally accommodates between 12,000 vpd to 15,000 vpd.
Estimated Cost: $1,575,000

MSN 8. Four Mile Drive – West Springcreek Road to Stillwater Road:
Problem: Due to projected growth in the area over the planning horizon, this facility will exceed the capacity of a two-lane rural roadway. This will especially be realized with a future direct connection of Four-Mile to the Bypass and/or US Highway 93.
Recommendation: Reconstruct Four Mile Drive between West Springcreek Road and Stillwater Road to a three-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed "Section 35" development. This is coupled with the need for pedestrian and bicycle facilities. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $1,725,000

MSN 9. Rose Crossing (western Corridor Creation – Farm to Market Road to Whitefish Stage Road):
Problem: Lack of east / west connectivity and future land development needs.
Recommendation: This recommendation is to construct a new east / west corridor along the approximate westerly extension of Rose Crossing, between Farm to Market Road and Whitefish Stage Road. This is a long-term need and will serve future development patterns that will inevitable occur. Consideration should be given to a "junior interchange" at US Highway 93 to extend the capacity of US Highway 93 North (see schematic below). It should be recognized that this is a long-term vision for the crossing. In the short-term, roundabouts and traffic signalization control may be operationally acceptable to serve adjacent land use changes and future connectivity needs. The Rose Crossing future corridor should be planned for an urban minor arterial facility. This would include a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major north-south routes.
Estimated Cost: $9,800,000



<u>MSN 10. Stillwater Road – Four Mile Drive to West Reserve Drive:</u>
Problem: Due to projected growth in the area over the planning horizon, this facility will exceed the capacity of a two-lane rural roadway.
Recommendation: Reconstruct Stillwater Road between Four Mile Drive and West Reserve Drive to a three-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed "Section 35" development. This is coupled with the need for pedestrian and bicycle facilities. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $1,725,000

<u>MSN-11. New Roadway Connecting Foys Lake Road to US Highway 2:</u>
This recommendation is being made to relieve travel pressure on South Meridian Road and its corresponding intersections. A new north-south route is needed to relieve the travel pressure along South Meridian Road and serve this developing area. This new connection is envisioned to be an urban collector standard that would connect to US Highway 2 somewhere between Greenbriar Drive and Appleway Drive. The exact location is not important at this time and can be worked out over the planning horizon. The newly created intersection created at US Highway 2 should incorporate a designated westbound left-turn lane to serve this expected heavy movement, plus allow for a northbound left-turn and right-turn bay at the intersection.
Estimated Cost: $1,250,000

<u>MSN 12. West Springcreek Road – US Highway 2 to West Reserve Drive:</u>
Problem: Due to projected growth in the area over the planning horizon, this facility will exceed the capacity of a two-lane rural roadway.
Recommendation: Reconstruct West Springcreek Road between US Highway 2 and West Reserve Drive to a three-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed "Section 35" development. This is coupled with the need for pedestrian and bicycle facilities. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $5,150,000

<u>MSN 13. Willow Glen Drive – Conrad Drive to Woodland Avenue:</u>
Problem: Lack of turn bays, pedestrian amenities and future traffic volumes increasing over the planning horizon.
Recommendation: This roadway segment is classified as a minor arterial and will see additional traffic growth over the planning horizon. This is due to the future reconstruction of the Old Steel Bridge, projected land use changes to the east side of the Flathead River, and the congestion related traffic along MT 35 and US Highway 2 west of Shady Lane. It is recommended to reconstruct this facility to an urban minor arterial standard to consist of widened pavement (including one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.

Consideration should be given to completing these improvements all the way south to the intersection with US Highway 93. This would be good for continuity, however based on traffic volumes alone the project could be terminated at its southern end with Woodland Avenue. Also, coordination to ensure the construction of the *Sam Bibler Commemorative Trail* should be ensured for the separated bike path being planned between US Highway 93 and Concord Lane (just north of Woodland Avenue).
Estimated Cost: $2,000,000

MSN 14. Church Drive (western Corridor Creation – Farm to Market Road to Whitefish Stage Road):
Problem: Lack of east / west connectivity and future land development needs.
Recommendation: This recommendation is to construct and/or reconstruct portions of this east/west corridor for Church Drive between Farm to Market Road and Whitefish Stage Road. This is a long-term need and will serve future development patterns that will inevitable occur. Access to US Highway 93 North should be provided via a "junior interchange" to allow ingress and egress (i.e. no traffic signalization). The Church Drive corridor should be planned for an urban minor arterial facility. This would include a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major north-south. It is anticipated that the corridor would wrap to the northeast and tie into Birch Grove Road on the east side of US Highway 93 North.
Estimated Cost: $9,300,000

MSN 15. Trumble Creek Road – Rose Crossing to Birch Grove Road:
Problem: Due to projected growth in the area over the planning horizon, this facility will exceed the capacity of a two-lane rural roadway. Will also assist in strengthening the transportation grid system.
Recommendation: Reconstruct Trumble Creek Road between Rose Crossing and Birch Grove Road to a three-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed development in and around the airport. This is coupled with the need for pedestrian and bicycle facilities. The City's urban minor arterial standard is appropriate, and should consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $4,300,000

MSN 16. Conrad Drive – Willow Glen Road to Shady Lane:
Problem: Lack of turn bays, pedestrian amenities and future traffic volumes increasing over the planning horizon. Very poor sight distance.
Recommendation: This roadway segment is classified as a minor arterial for a small segment and a collector near Shady Lane. These segments will see additional traffic growth over the planning horizon. This is due to the future reconstruction of the Old Steel Bridge, projected land use changes to the east side of the Flathead River, and the congestion related traffic along MT 35 and US Highway 2 west of Shady Lane. It is recommended to reconstruct this facility to an urban minor arterial standard to consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn

bays (or center two-way, left-turn lane) at the major intersections. Consideration should be given to completing these improvements all the way east to the Old Steel Bridge crossing of the Flathead River.
Estimated Cost: $3,550,000

MSN 17. Shady Lane – Conrad Drive to MT 35:
Problem: Very narrow roadway, lack of pedestrian amenities and future traffic volumes increasing over the planning horizon.
Recommendation: This roadway segment is classified as a collector. This facility will see additional traffic growth over the planning horizon. This is due to the future reconstruction of the Old Steel Bridge, projected land use changes to the east side of the Flathead River, and the congestion related traffic along MT 35 and US Highway 2 west of Shady Lane. The installation of the traffic signal at MT 35 and Shady Lane has already compounded heightened traffic volumes. It is recommended to reconstruct this facility to an urban minor arterial standard to consist of widened pavement (including one travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays at the major intersections.
Estimated Cost: $1,125,000

MSN 18. Reserve Drive – US Highway 93 to Whitefish Stage Road:
Problem: Heavy development pressure north and south of this facility, plus increased need to handle east west traffic volumes. Planning year volumes are expected to be between 25,000 vpd and 33,000 vpd on this segment
Recommendation: Reconstruct Reserve Drive between US Highway 93 and Whitefish Stage Road to a five-lane minor arterial roadway section. This is a long-term need that will be necessary to accommodate future development patterns in this area, especially serving proposed development to the north and south. This segment is classified as a principal arterial, which necessitates widened pavement (including two travel lanes in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points serving the development.
Estimated Cost: $2,225,000

MSN 19. Reserve Drive – Whitefish Stage Road to LaSalle Road:
Problem: Heavy development pressure and increased need to handle east west traffic volumes. Planning year volumes are expected to be up to 17,000 vpd, which can be accommodated with a three-lane section with appropriate access control.
Recommendation: Reconstruct Reserve Drive between Whitefish Stage Road and LaSalle Road to a three-lane principal arterial section. This is a long-term need that will be necessary to accommodate future development patterns in the region and serve east-west traffic flow. It is expected that a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points serving the development will be required.
Estimated Cost: $3,400,000

MSN 20. Reserve Drive – LaSalle Road to Helena Flats Road:
Problem: Surrounding development pressure and increased need to handle east west traffic volumes. Planning year volumes are expected to be up to 13,000 vpd, which can be accommodated with a three-lane section.
Recommendation: Reconstruct Reserve Drive between LaSalle Road and Helena Flats Road to a three-lane minor arterial section. This is a long-term need that will be necessary to accommodate future east-west traffic flow. It is expected that a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points serving the development will be required. This segment of roadway is currently a collector, and a change to minor arterial is recommended.
Estimated Cost: $1,725,000

MSN 21. Evergreen Drive – Whitefish Stage Road to LaSalle Road:
Problem: Surrounding development pressure and increased need to handle east west traffic volumes. Planning year volumes are expected to be up to 16,000 vpd, which can be accommodated with a three-lane section.
Recommendation: Reconstruct Evergreen Drive between LaSalle Road and Whitefish Stage Road to a three-lane minor arterial section. This is a long-term need that will be necessary to accommodate future east-west traffic flow. It is expected that a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points serving the development will be required. This segment of roadway is currently a minor arterial.
Estimated Cost: $2,500,000

MSN 22. Whitefish Stage Road – Oregon Street to Reserve Drive:
Problem: Increased need to handle north south traffic volumes. Planning year volumes are expected to be up to 18,000 vpd, which can be accommodated with a three-lane section.
Recommendation: Reconstruct Whitefish Stage Road between Oregon Drive and Reserve Drive to a three-lane minor arterial section. This is a long-term need that will be necessary to accommodate future east-west traffic flow. It is expected that a minimum of one travel lane in each direction, bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points serving the development will be required.
Estimated Cost: $5,200,000

MSN 23. 18th Street West Extension/Sunnyside Drive:
Problem: Poor grid system in this area of the community resulting in extensive neighborhood "cut-thru" traffic.
Recommendation: Design and construct a new corridor between 18th Street West and Sunnyside Lane. This is a logical connection that will accommodate better traffic circulation to the new residential areas near Denver Avenue and Sunnyside Drive. This recommendation was contained in the previous Transportation Plan (1993). The connection should be built to a City urban collector standard. This would include a minimum of one travel lane in each direction, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections and or access points.
Estimated Cost: $875,000

<u>MSN 24. LaSalle / Conrad Drive Connector:</u>
Problem: Increased need to handle north / south traffic volumes. Poor alternative routes in the area associated with Shady Lane sight distance and narrow roadway width. Timing constraints at intersection of LaSalle Road and MT 35.
Recommendation: Design and implement a new connection between LaSalle Road and Conrad Drive. This project was contained in the past Transportation Plan and has merits for improved connectivity, safety, and more efficient operations at the intersection of LaSalle Road and MT-35. The connection should be made only after improvements to Willow Glen Drive have been contemplated and constructed (project MSN 13). It should be recognized that this is a long-term project, and the connection should be designed with sensitivity to the adjacent neighborhoods along Willow Glen Drive and Conrad Drive.
Estimated Cost: $1,500,000

<u>MSN 25. MT 35 Expansion:</u>
Problem: The existing corridor experiences congestion and delay, which will only compound due to the lack of other choices associated with east/west connectivity across the Flathead River.
Recommendation: Reconstruct MT 35, between LaSalle Road and MT 206 to a four-lane facility (with appropriate left-turn bays). This will improve the overall community-wide lack of east/ west connectivity across the Flathead River. Presently, there are only two locations to cross the Flathead River (MT 35 and Columbia Falls crossing), so an expanded MT 35 would draw more traffic, while reducing traffic along LaSalle Road. This is deemed to be desirable and should be considered a long-range recommendation to pursue as funding situations become more favorable in the planning horizon (i.e. year 2030).
Estimated Cost: $21,000,000

<u>MSN 26. US Highway 2 East – LaSalle Road to Woodland Park Drive:</u>
Problem: Existing congestion and future traffic volume increases will necessitate a six-lane roadway section for US Highway 2 East. This is a long-term need and there are significant restraints to carrying the expanded section too far west of Woodland Park Drive.
Recommendation: Expand US Highway 2 East, between Woodland Park Drive and LaSalle Road, to a six-lane roadway section with appropriate turn bays. It would be expected that on the western end of the corridor, a westbound lane drop (from three-lanes westbound to two-lanes westbound) could occur for the inside lane at Woodland Park Drive. Conversely, the additional lane for eastbound traffic could be picked up at Woodland Park Drive. At the intersection with LaSalle Road, dual eastbound lefts and dual southbound lefts would allow for the expanded section to transition appropriately.
Estimated Cost: $5,700,000

<u>MSN 28. 7th Avenue East North (E. California Street to Whitefish Stage Road):</u>
Problem: Under present conditions, this roadway segment is narrow with a lack of pedestrian and safety amenities.
Recommendation: It is recommended to plan for, design and reconstruct the segment of 7th Avenue East North from East California Street to Whitefish Stage Road. This roadway will see an increase in traffic volumes over the planning horizon, and will need to be expanded appropriately to a minor arterial standard with curb and gutter, one travel lane in each direction, and pedestrian amenities on the east side of the facility.
Estimated Cost: $350,000

MSN 29. Three-Mile Drive (W. Springcreek Road to Meridian Road):
Problem: Existing and future development pressures will result in future traffic capacity issues. There is also a lack of turn bays into the developing areas.
Recommendation: It is recommended to plan for, design and reconstruct Three-Mile Drive to a three-lane urban minor arterial standard to include widened pavement (including one travel lane in each direction), bike lanes on each side, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $3,450,000

MSN 30. Two-Mile Drive (W. Springcreek Road to Meridian Road)
Problem: Existing and future development pressures will result in future traffic capacity issues. There is also a lack of turn bays into the developing areas.
Recommendation: It is recommended to plan for, design and reconstruct Two-Mile Drive to a two-lane urban collector standard to include widened pavement (including one travel lane in each direction), appropriate shoulders, curb and gutter, boulevard, sidewalk, and appropriate turn bays (or center two-way, left-turn lane) at the major intersections.
Estimated Cost: $2,600,000

MSN 31. US Highway 93 North (Reserve Drive to Birch Grove Road)
Problem: Development pressures north of the City of Kalispell have necessitated a greater deal of access control and restrictions. The majority of commercial development, along with significant residential development, is being planned for the area between Reserve Drive and Birch Grove Drive in the foreseeable future.
Recommendation: see below

MSN-31(a): Provide for a “junior interchange” at the intersection of Rose Crossing and US Highway 93 North. This location will allow excellent ingress and egress to developing land on the east side of the highway, without compromising thru-traffic mobility along US Highway 93 North itself. This location will work well with the project described earlier in this chapter described under **MSN-9**. It should be recognized that this is a long-term vision for the crossing. In the short-term, traffic signalization control may be operationally acceptable to serve adjacent land use changes and future connectivity needs.

MSN-31(b): Provide for a three-quarters access at-grade intersection at the intersection of US Highway 93 North and Tronstad Road to serve the large development area to the west of US Highway 93. This three-quarter access would be “unsignalized” and would allow northbound left-in movements, as well as southbound right-in and right-out movements.

MSN-31(c): Provide for a “junior interchange” at the intersection of Church Drive and US Highway 93 North. This location will allow excellent ingress and egress to developing land on the west and east side of the highway, without compromising thru-traffic mobility along US Highway 93 North itself. This project has been planned and committed to be built in 2008. This location will work well with the project described earlier in this chapter described under **MSN-14**.

MSN-31(d): Complete a detailed "access control plan" or "Pre-NEPA Corridor Study" for US Highway 93 North between Reserve Drive and Birch Grove Road. This type of planning effort will help to define adjacent landowner needs as well as solidify the community vision of the corridor in the long-term. These types of studies are very communication oriented and this effort will result in good, open communication with all relevant parties.

US Highway 93 Bypass

The Kalispell Technical Advisory Committee (TAC) has stated the full bypass to be the priority project over the coming years. As was stated in **section 9.2** above, as of the writing of this document only a small portion of the total project is committed due to available funding. To date, the Reserve Loop Connector project has been completed (project **CMSN-1** in **section 9.2**). The full bypass construction, as a four-lane, access controlled facility, is a large project that is currently in process of design and right-of-way acquisition. To that end, this project will likely remain of the highest priority going forward as money is secured for transportation projects in the community.

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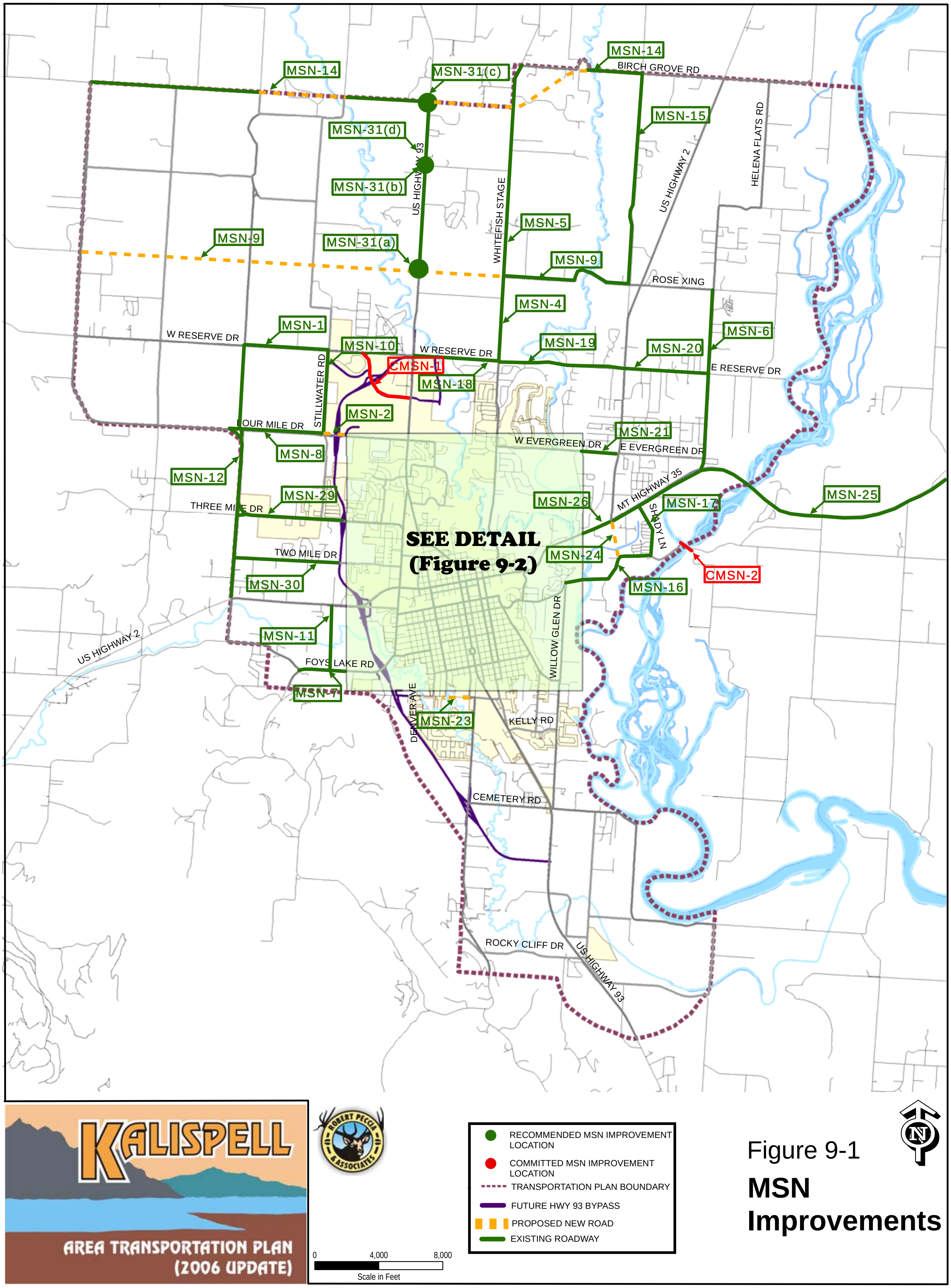
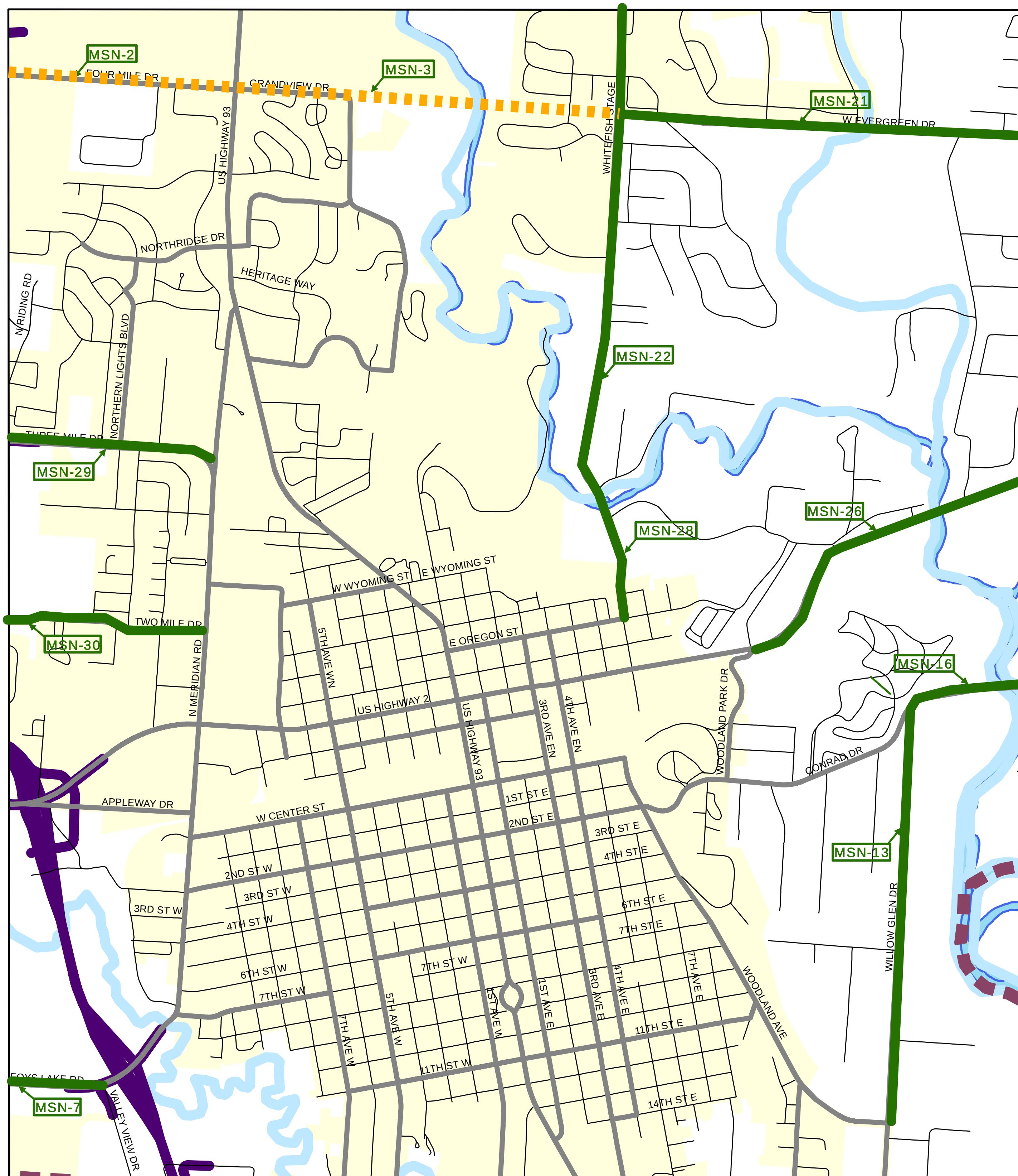


Figure 9-1

MSN Improvements



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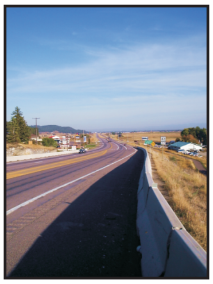
RECOMMENDED MSN IMPROVEMENT LOCATION
COMMITTED MSN IMPROVEMENT LOCATION
TRANSPORTATION PLAN BOUNDARY
FUTURE HWY 93 BYPASS
PROPOSED NEW ROAD
EXISTING ROADWAY

0 1,000 2,000
Scale in Feet

Figure 9-2

MSN Improvements

Chapter 10: Miscellaneous Transportation System Considerations



CHAPTER 10: MISCELLANEOUS TRANSPORTATION SYSTEM CONSIDERATIONS

10.1 URBAN AND SECONDARY HIGHWAY DESIGNATIONS

It is appropriate when completing a regional Transportation Plan to discuss the Urban Highway system designations in place in the community. The formal system in place in the Kalispell area consists of both Urban and Secondary Highways. These roadways are designated through existing Montana statute, the Montana Transportation Commission, and MDT guidelines. Because these roads are Montana systems, the Federal government has no direct involvement in the designations.

Urban and Secondary Highways are designated by the Montana Transportation Commission, in cooperation with local governing authorities. When revisions to the system are proposed, the Transportation Commission may require when adding mileage that a reasonably equal amount of mileage be removed. This is not an absolute, and situations do exist where mileage is added without a corresponding reduction. With that in mind, to meet eligibility requirements for placement on a system of Urban and Secondary Highways, the following criteria must be met:

<u>Secondary Highways</u>
The route must be outside a designated urban area and must be functionally classified as other a rural minor arterial or major collector.

<u>Urban Highways</u>
The route must be within a designated urban area and must be functionally classified by MDT as either an urban arterial or collector.

As conditions change in the community, driven by outlying growth and travel characteristic shifts, it is advisable to revisit the urban and secondary highway classifications from time to time. To add, or delete, a route from the system, a very specific “six-step” process is in place and must be adhered to. This process is as follows:

1. Requests for new route designations or changes in existing designations are initiated by the local government. Requests must have the support of local elected officials and local transportation committees (if applicable).

2. MDT staff reviews the requests to determine whether the routes meet eligibility requirements.

3. If a route does not meet functional classification eligibility requirements, MDT staff advises the local government about the process for requesting a formal review of the routes functional classification.

4. If necessary, MDT staff advises the local government about the Montana Transportation Commission policy that requires no significant net changes in secondary and urban highway mileage within the affected county or urban area as a result of designation changes. Local governments may have to adjust their original request to comply with this requirement.

5. If the proposal meets all eligibility requirements and complies with Transportation Commission policy, MDT staff asks the Transportation Commission to approve the request.

6. If the Transportation Commission approves the request, MDT staff notifies the affected local governments and makes appropriate changes in MDT records.

10.2 CORRIDOR PRESERVATION MEASURES

Corridor preservation is the application of measures to prevent or minimize development within the right-of-way of a planned transportation facility or improvement within a defined corridor. That includes corridors, both existing and future, in which a wide array of transportation improvements may be constructed including roadways, bikeways, multi-use trails, equestrian paths, high occupancy vehicle lanes, fixed-rail lines and more.

Corridor preservation is important because it helps to ensure that a transportation system will effectively and efficiently serve existing and future development within a local community, region or state, and prevent costly and difficult acquisitions after the fact. Corridor preservation policies, programs and practices provide numerous benefits to communities, taxpayers and the public at large. These include, but are not limited to, the following:

- Reducing transportation costs by preservation of future corridors in an undeveloped state. By acquiring or setting aside right-of-way well in advance of construction, the high cost to remove or relocate private homes or businesses is eliminated or reduced.

- Enhancing economic development by minimizing traffic congestion and improving traffic flow, saving time and money. Low cost, efficient transportation helps businesses contain final costs to customers and makes them more competitive in the marketplace. Freight costs, for instance, accounts for ten percent of the value of agricultural products, the highest for any industry.

- Increasing information sharing so landowners, developers, engineers, utility providers, and planners understand the future needs for developing corridors. An effective corridor preservation program ensures that all involved parties understand the future needs within a corridor and that state, local and private plans are coordinated.

- Preserving arterial capacity and right-of-way in growing corridors. Corridor preservation includes the use of access management techniques to preserve the existing capacity of corridors. When it is necessary, arterial capacity can be added before it becomes cost prohibited by preserving right-of-way along growing transportation corridors.

- Minimizing disruption of private utilities and public works. Corridor preservation planning allows utilities and public works providers to know future plans for their transportation corridor and make their decisions accordingly.

- Promoting urban and rural development compatible with local plans and regulations. The state and local agencies must work closely together to coordinate their efforts. Effective corridor preservation will result in development along a transportation corridor that is consistent with local policies.

To effectively achieve the policies and goals listed above, corridor management techniques can be utilized. These techniques can involve the systematic application of actions that:

- Preserve the safety and efficiency of transportation facilities through **access management**; and,

- Ensure that new development along planned transportation corridors is located and designed to accommodate future transportation facilities (**corridor preservation measures**).

Access Management

Access management techniques are increasingly fundamental to preserving the safety and efficiency of a transportation facility. Access control can extend the carrying capacity of a roadway, reducing potential conflicts and facilitating appropriate land usage. There are six basic principles of access management that are used to achieve the desired outcome of safer and efficient roadways. These principles are:

- Limit the number of conflict points.
- Separate the different conflict points.
- Separate turning volumes from through movements.
- Locate traffic signals to facilitate traffic movement.
- Maintain a hierarchy of roadways by function.
- Limit direct access on higher speed roads.

It is recommended that local government adopt a set of Access Management Regulations through which the need for access management principles can be evaluated on a case-by-case basis. For roadways on the State system and under the jurisdiction of the Montana Department of Transportation (MDT), access control guidelines are available which define minimum access point spacing, access geometrics, etc., for different roadway facilities. For other roadways (non-State), the adoption of an access classification system based upon the functional classification of the roadway (principal arterial, minor arterial or major collector) is desirable. These local regulations should serve to govern minimum spacing of drive approaches/connections and median openings along a given roadway in an effort to fit the given roadway into the context of the adjacent land uses and the roadway purpose. The preparation and adoption of a local Access Management Ordinance should be pursued that can adequately document the local government's desire for standard approach spacing, widths, slopes and type for a given roadway classification.

Different types of treatment that can assist in access control techniques are:

- Non-traversable raised medians.
- Frontage roads
- Consolidation and/or closure of existing accesses to the roadway.
- Directional raised medians.
- Left-turn bay islands.
- Redefinition of previously uncontrolled access.
- Raised channelization islands to discourage turns.
- Regulate number of driveways per property.

Corridor Preservation Measures

Another tool used to fulfill the policies and goals listed earlier in this chapter is that of specific corridor preservation measures. As was stated above regarding developing a local Access Management Ordinance, it is desirable to develop a Corridor Preservation Ordinance as well. Such an ordinance would serve to accomplish the following:

- Establish criteria for new corridor preservation policies to protect future transportation corridors from development encroachment by structures, parking areas, or drainage facilities (except as may be allowed on an interim basis). Some possible criteria could include the on-site transfer of development rights and the clustering of structures;

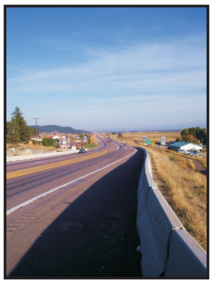
- Establish criteria for providing right-of-way dedication and acquisition while mitigating adverse impacts on affected property owners; and

- Establish criteria by which land dedication requirements can be identified and set forth as roughly proportionate to the transportation impacts generated by a proposed project.

10.3 TRANSPORTATION REVIEW PROCESSES & DEVELOPMENT

The impact that new development has on the existing transportation system has been documented within this Transportation Plan from a larger, regional context. However, as individual development proposals are contemplated and submitted to the City of Kalispell for review, development related specifics for transportation system mitigation is warranted. Presently, developments are required to submit detailed Traffic Impact Studies (TIS's) for developments within the city expected to generate more than 300 vehicles per day. This process is in place such that the developer will know what mitigation may be required as a result of their development, and also for City staff and elected officials to contemplate traffic impacts on the system. The result of preparation and review of the detailed Traffic Impact Studies results in a list of "conditions for approval" that an individual developer will be required to meet before the development can proceed. This process is currently in place in the community, and individual development needs must be carefully examined for the larger, regional transportation system needs defined in this Transportation Plan.

Chapter 11: Recommended Major Street Network



CHAPTER 11: RECOMMENDED MAJOR STREET NETWORK

11.1 RECOMMENDED MAJOR STREET NETWORK

The major street network consists of all interstate, principal arterial, minor arterial, and collector routes. Local streets generally are not included on the major street network. The existing "functional classification" system in place within the City of Kalispell, as designated in the current *Growth Policy*, was used as a basis, or starting point, in developing the major street network for this update. Note that this is different then the "Federally Approved Functional Classification" system described in **Section 2.2**.

Establishing a plan of a community's future streets' layout is essential to proper land development and community planning. It is important that planners, landowners, and developers know where the future road network needs to be located. With an approved major street network, everyone will know where the future arterials need to be located. This will assist everyone involved in anticipating right-of-way needs, and appropriate land-uses. The study area was examined to determine the most appropriate placement for the future major street network, based on projected traffic volumes and likely development patterns.

The recommended existing and future major street networks are shown in **Figure 11-1** and **Figure 11-2**. The future route locations shown are conceptual in nature and may vary based on topography, wetlands, land ownership, and other unforeseen factors. The purpose of these figures is to illustrate the anticipated network at full build-out. It is likely that many of the route corridors shown will not be developed into roads for many decades to come. On the other hand, if development is proposed in a particular area, the recommended major street network will insure that the proper roadway corridors will be established in a fashion that produces an efficient and logical future road network. It is important to note that presenting the major street network at this time is not intended to control or influence development. It is presented in an effort to help plan for the future development of the road system in the community.

Most of the routes are not recommended for construction at this time. The development of these conceptual routes will take decades to become reality, and will only become roads if traffic needs materialize as a result of development in the area. The future road network figures shows how the street network should develop over time and is intended to be used as a planning tool. It will assist in the evaluation of long-term traffic needs when planning future development.

The acquisition of right-of-ways for these future road corridors should be one of the community's highest priorities. It is essential that these corridors be dedicated for roadway use before an area develops. This action will insure that the roadway corridors remain clear and available for use when the future need arises.

In addition, a final "travel demand model" run of the recommended major street network has been made. **Figure 11-3** and **Figure 11-4** show the future year (year 2030) travel demand model estimated traffic volumes based on the recommended major street network contained herein.

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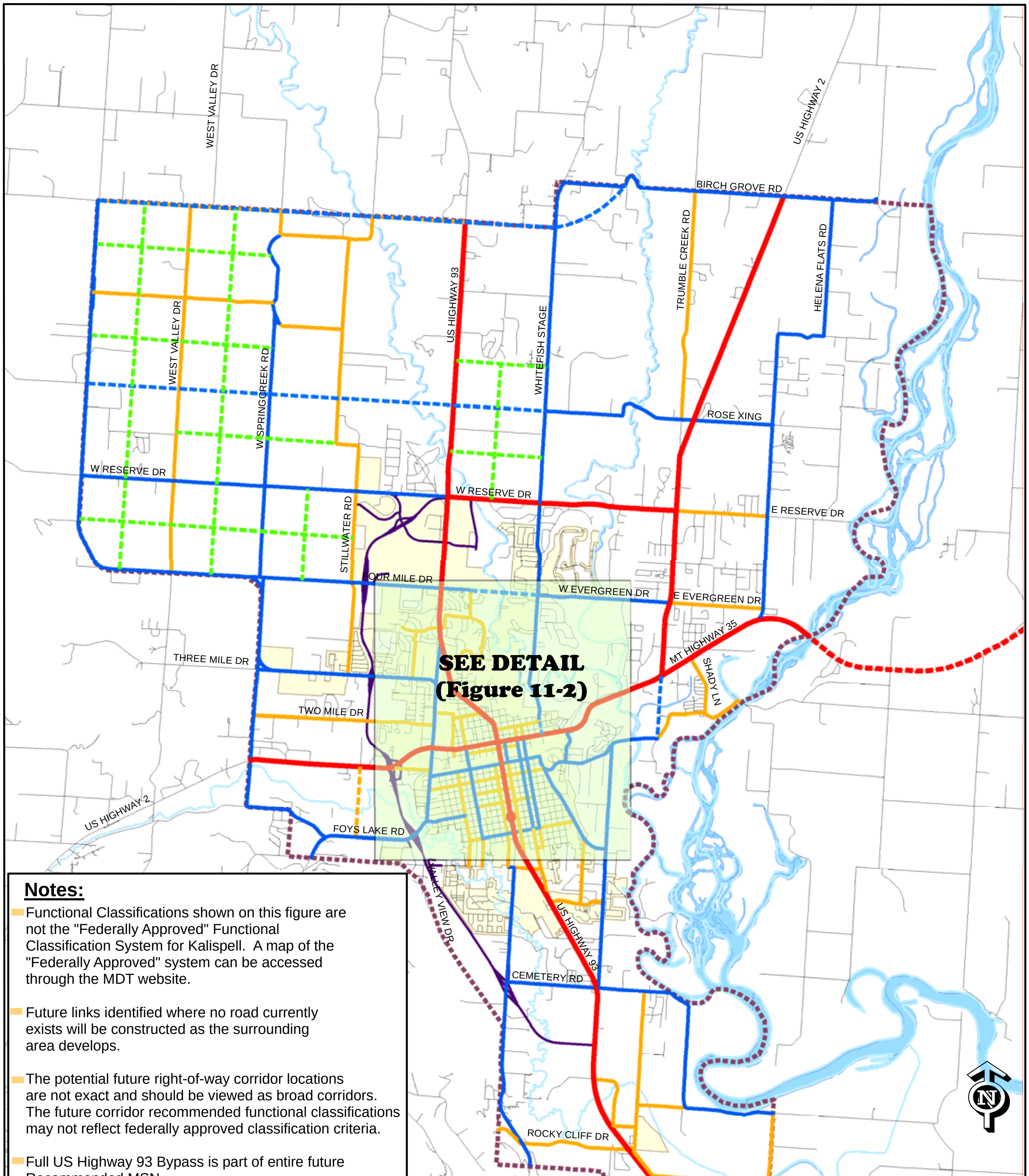

Notes:

- Functional Classifications shown on this figure are not the "Federally Approved" Functional Classification System for Kalispell. A map of the "Federally Approved" system can be accessed through the MDT website.
- Future links identified where no road currently exists will be constructed as the surrounding area develops.
- The potential future right-of-way corridor locations are not exact and should be viewed as broad corridors. The future corridor recommended functional classifications may not reflect federally approved classification criteria.
- Full US Highway 93 Bypass is part of entire future Recommended MSN.

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AREA TRANSPORTATION PLAN (2006 UPDATE)

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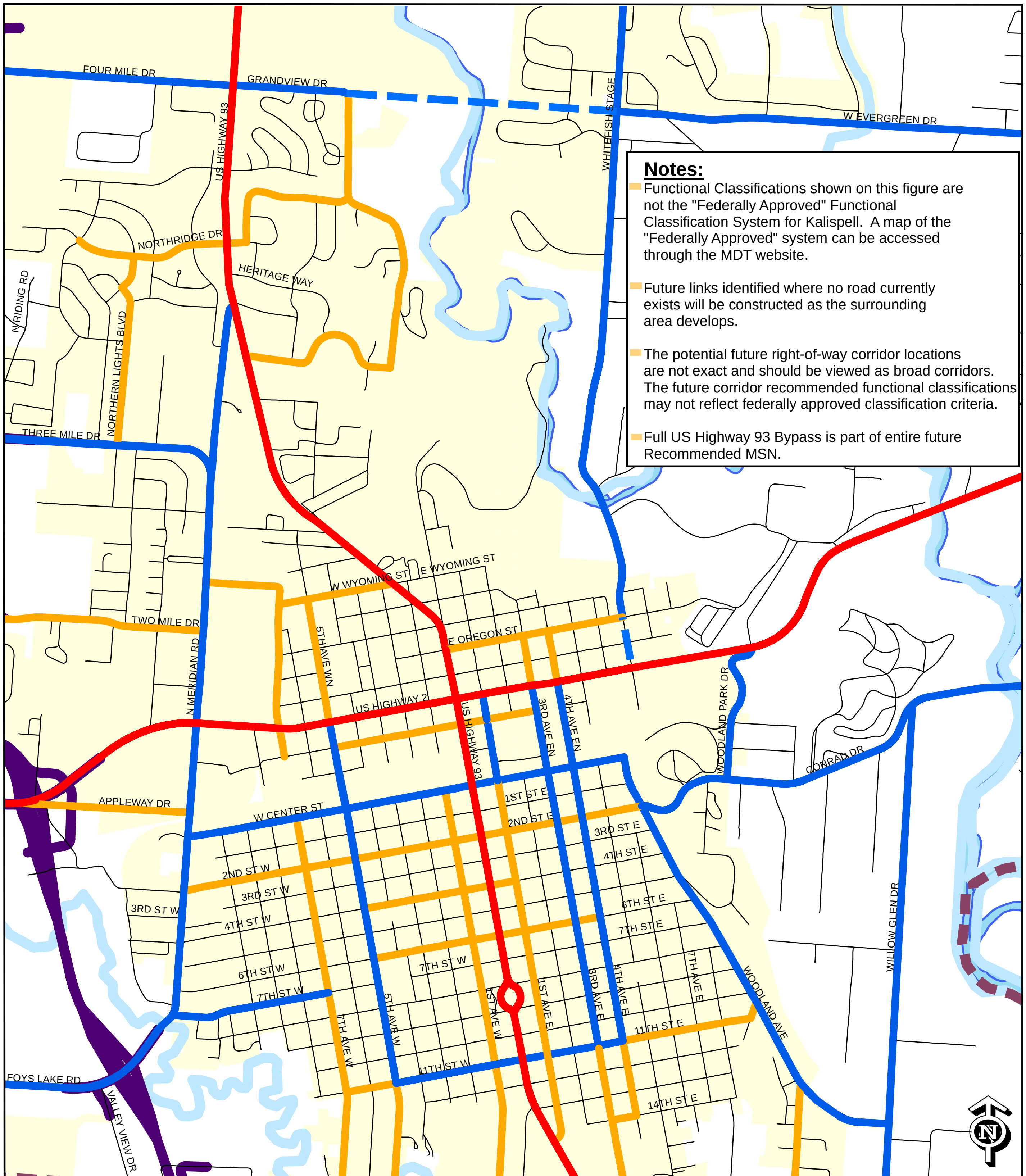
0 4,000 8,000

Scale in Feet

- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS
- FUTURE PRINCIPAL ARTERIAL
- FUTURE MINOR ARTERIAL
- FUTURE COLLECTOR
- FUTURE LOCAL/COLLECTOR

Figure 11-1

Future Recommended Major Street Network (MSN)



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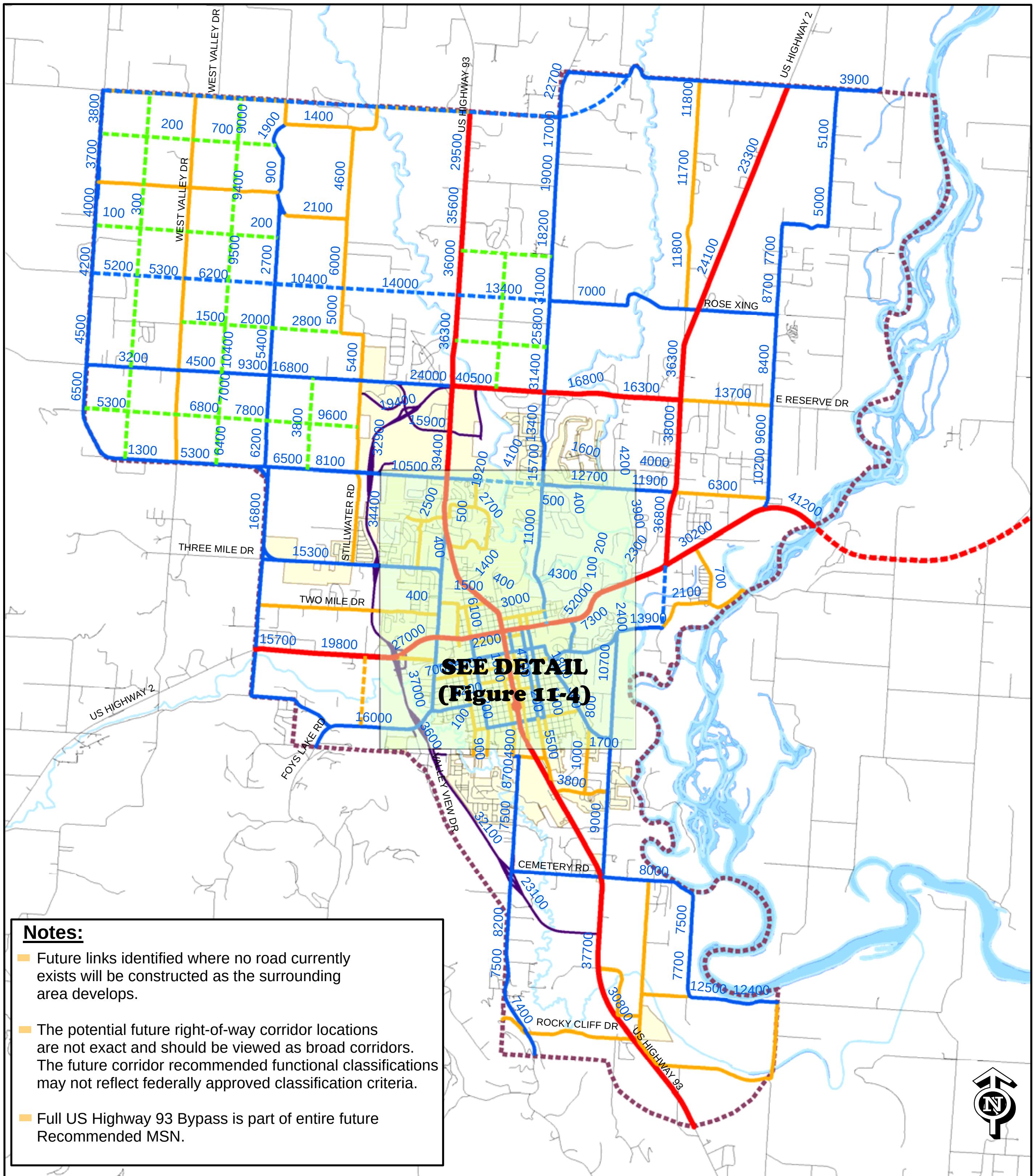
PRINCIPAL ARTERIAL
MINOR ARTERIAL
COLLECTOR
TRANSPORTATION PLAN BOUNDARY
FUTURE HWY 93 BYPASS
FUTURE PRINCIPAL ARTERIAL
FUTURE MINOR ARTERIAL
FUTURE COLLECTOR

0 1,000 2,000
Scale in Feet

Figure 11-2

Future Recommended Major Street Network (MSN)



Notes:

- Future links identified where no road currently exists will be constructed as the surrounding area develops.
- The potential future right-of-way corridor locations are not exact and should be viewed as broad corridors. The future corridor recommended functional classifications may not reflect federally approved classification criteria.
- Full US Highway 93 Bypass is part of entire future Recommended MSN.

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(2006 UPDATE)

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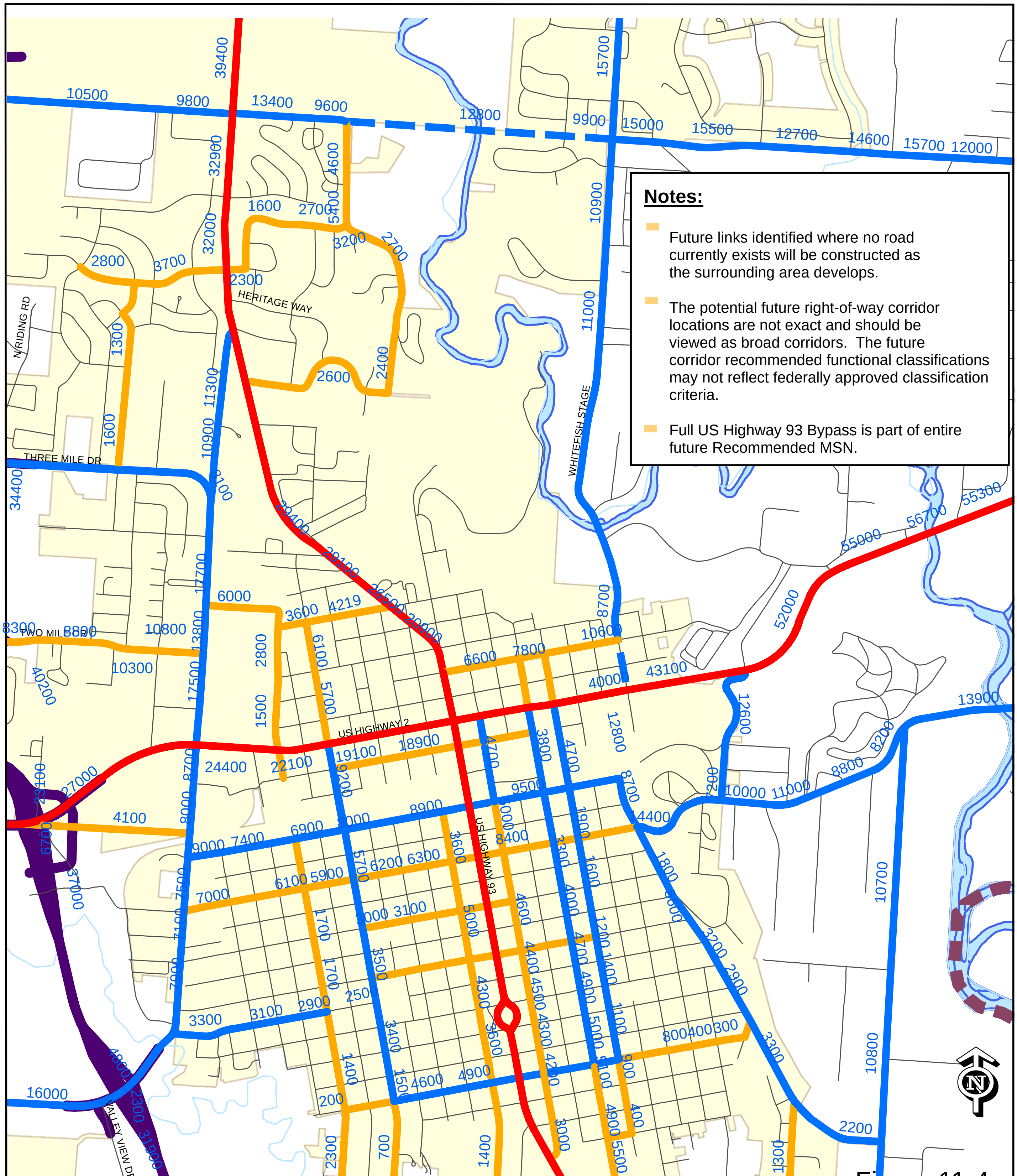
0 4,000 8,000
Scale in Feet

- 0-12,000 (CONSISTENT WITH 2-LANE ROAD)
- 12,000-18,000 (CONSISTENT WITH 3-LANE ROAD)
- 18,000-24,000 (CONSISTENT WITH 4-LANE ROAD)
- 24,000-36,000 (CONSISTENT WITH 5-LANE ROAD)
- 22100 = 2030 TRAFFIC VOLUME (ANNUAL AVERAGE DAILY TRAFFIC - AADT)
- TRANSPORTATION PLAN BOUNDARY
- FUTURE HWY 93 BYPASS

Figure 11-3
Future Recommended Major Street Network (MSN) "Volumes"



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Legend	
(green line)	0-12,000 (CONSISTENT WITH 2-LANE ROAD)
(orange line)	12,000-18,000 (CONSISTENT WITH 3-LANE ROAD)
(blue line)	18,000-24,000 (CONSISTENT WITH 4-LANE ROAD)
(red line)	24,000-36,000 (CONSISTENT WITH 5-LANE ROAD)
22100	= 2030 TRAFFIC VOLUME (ANNUAL AVERAGE DAILY TRAFFIC - AADT)
(dashed line)	TRANSPORTATION PLAN BOUNDARY
(purple line)	FUTURE HWY 93 BYPASS

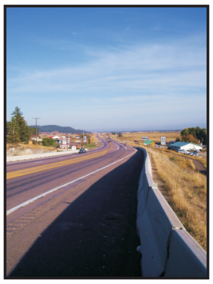
0 500 1,000 2,000

Scale in Feet

Figure 11-4

Future Recommended Major Street Network (MSN) "Volumes"

Chapter 12: Financial Analysis



CHAPTER 12: FINANCIAL ANALYSIS

12.1 BACKGROUND

The previous chapters of this Plan identify problems with the transportation system and recommended appropriate corrective measures. This chapter focuses on the financial mechanisms that are traditionally used to finance transportation improvements. Transportation improvements can be implemented using federal, state, local and private funding sources. Historically federal and state funding programs have been used almost exclusively to construct and upgrade the major roads in the greater Kalispell area. Considering the current funding limits of these traditional programs, and the anticipated road development needs of the community, it is apparent that a greater amount of the financing will be required from local and private sources if these needs are to be met.

Much of the following information concerning the federal and state funding programs was assembled with the assistance of the Statewide and Urban Planning Section of the Montana Department of Transportation (MDT). The intent is to identify the traditional federal, state and local sources of funds available for funding transportation related projects and programs in the Kalispell area. A narrative description of each potential funding source is provided including: the source of revenue; required match; purpose for which funds are intended; means by which the funds are distributed; and the agency or jurisdiction responsible for establishing priorities for the use of the funds.

12.2 FUNDING SOURCES

The following list includes federal and state funding sources developed for the distribution of Federal and State transportation funding. This includes Federal funds the State receives under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)-enacted on August 10, 2005. The list also includes local funding sources available through the city and county, as well as private sources. It should be understood that other funding sources are possible, but those listed below reflect the most probable sources at this time. A narrative description of each source is provided in the following sections of this chapter.

<u>FEDERAL FUNDING SOURCES</u>

National Highway System (NHS)
Surface Transportation Program (STP)
- *Primary Highway System (STPP)**
- *Secondary Highway System (STPS)**
- *Urban Highway System (STPU)**
- *Community Transportation Enhancement Program (CTEP)**

Highway Safety Improvement Program (HSIP)
- *High Risk Rural Roads Program (HRRR)*

Highway – Railway Crossing Program (RRX)

Highway Bridge Replacement and Rehabilitation Program (HBRRP)
On-System Bridge Replacement and Rehabilitation Program
Off-System Bridge Replacement and Rehabilitation Program
Coordinated Border Infrastructure Program (CBI)
Congestion Mitigation & Air Quality Improvement Program (CMAQ)
CMAQ (formula)
*Montana Air & Congestion Initiative (MACI)–Guaranteed Program (flexible)**
*Montana Air & Congestion Initiative (MACI)–Discretionary Program (flexible)**
*Urban High Growth Adjustment (flexible)**
Urban Highway Preservation (UHP) (Equity Bonus)*
Safe Routes To School (SRTS)
Federal Lands Highway Program (FLHP)
Public Lands Highways (PLH)
Parkways and Park Roads
Indian Reservation Roads (IRR)
Refuge Roads
Congressionally Directed Funds
High Priority Projects (HPP)
Transportation Improvements Projects
Transit Capital & Operating Assistance Funding
Discretionary Grants (Section 5309)
Capital Assistance for the Elderly and Persons with Disabilities (Section 5310)
Financial Assistance for Rural General Public Providers (Section 5311)
New Freedoms Program (5317)
Job Access Reverse Commute (JARC) (5316)

STATE FUNDING SOURCES

State Funded Construction (SFC)
TransADE

LOCAL FUNDING SOURCES

City Funds
County Road Funds
Private Funds
Future Potential Funds

12.3 FEDERAL FUNDING SOURCES

The following summary of major Federal transportation funding categories received by the State through the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)-enacted on August 10, 2005, includes state developed implementation/sub-programs. In order to receive project funding under these programs, projects must be included in the State Transportation Improvement Program (STIP).

National Highway System (NHS)

The purpose of the National Highway System (NHS) is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. The National Highway System includes all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

Allocations and Matching Requirements

NHS funds are Federally apportioned to Montana and allocated based on system performance by the Montana Transportation Commission. The Federal share for NHS projects is 86.58% and the State is responsible for the remaining 13.42%. The State share is funded through the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Activities eligible for the National Highway System funding include construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS. Operational improvements as well as highway safety improvements are also eligible. Other miscellaneous activities that may qualify for NHS funding include research, planning, carpool projects, bikeways, and pedestrian walkways. The Transportation Commission establishes priorities for the use of National Highway System funds and projects are let through a competitive bidding process. US 93 and US 2 west of US 93 through Kalispell are on the National Highway System.

Surface Transportation Program (STP)

Surface Transportation Program (STP) funds are Federally apportioned to Montana and allocated by the Montana Transportation Commission to various programs including the Surface Transportation Program Primary Highways (STPP), Surface Transportation Program Secondary Highways (STPS), and the Surface Transportation Program Urban Highways (STPU).

Primary Highway System (STPP)*

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Primary Highway System. The Primary Highway System includes highways that have been functionally classified by the MDT as either principal or minor arterials and that have been selected by the Transportation Commission to be placed on the Primary Highway System [MCA 60-2-125(3)].

Allocations and Matching Requirements

Primary funds are distributed statewide [MCA 60-3-205] to each of five financial districts, including the Missoula District. The Commission distributes STPP funding based on system performance. Of the total received, 86.58% is Federal and 13.42% is State funds from the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Eligible activities include construction, reconstruction, rehabilitation, resurfacing, restoration and operational improvements. The Transportation Commission establishes priorities for the use of Primary funds and projects are let through a competitive bidding process. Primary highways within the Kalispell area are MT 35 and US 2 east of US 93.

Secondary Highway System (STPS)*

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Secondary Highway System. The Secondary Highway System highways that have been functionally classified by the MDT as either rural minor arterials or rural major collectors and that have been selected by the Montana Transportation Commission in cooperation with the boards of county commissioners, to be placed on the secondary highway system [MCA 60-2-125(4)].

Allocations and Matching Requirements

Secondary funds are distributed statewide (MCA 60-3-206) to each of five financial districts, including the Missoula District, based on a formula, which takes into account the land area, population, road mileage and bridge square footage. Federal funds for secondary highways must be matched by non-federal funds. Of the total received 86.58% is Federal and 13.42 % is non-federal match. Normally, the match on these funds is from the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Eligible activities for the use of Secondary funds fall under three major types of improvements: Reconstruction, Rehabilitation, and Pavement Preservation. The Reconstruction and Rehabilitation categories are allocated a minimum of 65% of the program funds with the remaining 35% dedicated to Pavement Preservation. Secondary funds can also be used for any project that is eligible for STP under Title 23, U.S.C.

MDT and county commissions determine Secondary capital construction priorities for each district with final project approval by the Transportation Commission. By state law the individual counties in a district and the state vote on Secondary funding priorities presented to the Commission. The Counties and MDT take the input from citizens, small cities, and tribal governments during the annual priorities process. Projects are let through a competitive bidding process.

Secondary highways in the study area boundary are: S-548 West Reserve Drive, S-317 Willow Glen Drive/Conrad Dr/Shady Lane (this secondary begins at the urban limits, just north of the intersection of Willow Glen Dr. and Kelly Rd), S-503 Foys Lake Road (west of the urban limits), Airport Road (south of Cemetery Road), S-292 Whitefish Stage (north of West Reserve Drive), and S-424 Three Mile Drive (west of Stillwater Road)

Urban Highway System (STPU)*

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Urban Highway System. The Urban Highway System is described under MCA 60-2-125(6), as those highways and streets that are in and near incorporated cities with populations of over 5,000 and within urban boundaries established by the MDT, that have been functionally classified as either urban arterials or collectors, and that have been selected by the Montana Transportation Commission, in cooperation with local government authorities, to be placed on the Urban Highway System.

Allocations and Matching Requirements

State law [MCA 60-3-211] guides the allocation of Urban funds to projects on the Urban Highway System in the fifteen urban areas through a statutory formula based on each area's population compared to the total population in all urban areas. Of the total received, 86.58% is Federal and 13.42% is non-federal match typically provided from the Special State Revenue Account for highway projects.

Eligibility and Planning Considerations

Urban funds are used primarily for major street construction, reconstruction, and traffic operation projects on the 390 miles on the State-designated Urban Highway System, but can also be used for any project that is eligible for STP under Title 23, U.S. C. This is the principle funding source for major projects on Kalispell's 33 miles of designated urban roadways. Priorities for the use of Urban funds are established at the local level through local planning processes with final approval by the Transportation Commission.

In Kalispell, priorities are established through the Kalispell Transportation Advisory Committee, which includes representation from the City of Kalispell, Flathead County and MDT. Because the Urban Highway System includes transportation infrastructure that crosses the line between incorporated and unincorporated areas, it is important that city and county governments work together to identify and address urban highway needs. Consideration of cooperative efforts between city and county governments to address urban highways (roads and bridges) should be incorporated into the planning and implementation of the county CIP as appropriate.

Kalispell's FFY 2007 urban funding balance is currently a negative $3.0 million, due to the recent reconstruction of North Meridian Road. The annual allocation of urban funds for Kalispell is $600,055 (total dollars, Federal plus State match). We assume this allocation will remain constant through the life of the plan. It is anticipated the City of Kalispell will have a positive Urban funding balance and be able to program a new project in 2011. **Figure 12-1** and **12-2** show the official route designations for those roadways on the community's "Urban Aid System" within the project's study area boundary.

Community Transportation Enhancement Program (CTEP)*

Federal law requires that at least 10% of STP funds must be spent on transportation enhancement projects. The Montana Transportation Commission created the Community Transportation Enhancement Program in cooperation with the Montana Association of Counties (MACO) and the League of Cities and Towns to comply with this Federal requirement.

Allocations and Matching Requirements

CTEP is a unique program that distributes funding to local and tribal governments based on a population formula and provides project selection authority to local and tribal governments. The Transportation Commission provides final approval to CTEP projects within the State's right-of-way. The Federal share for CTEP projects is 86.58% and the Local and tribal governments are responsible for the remaining 13.42%.

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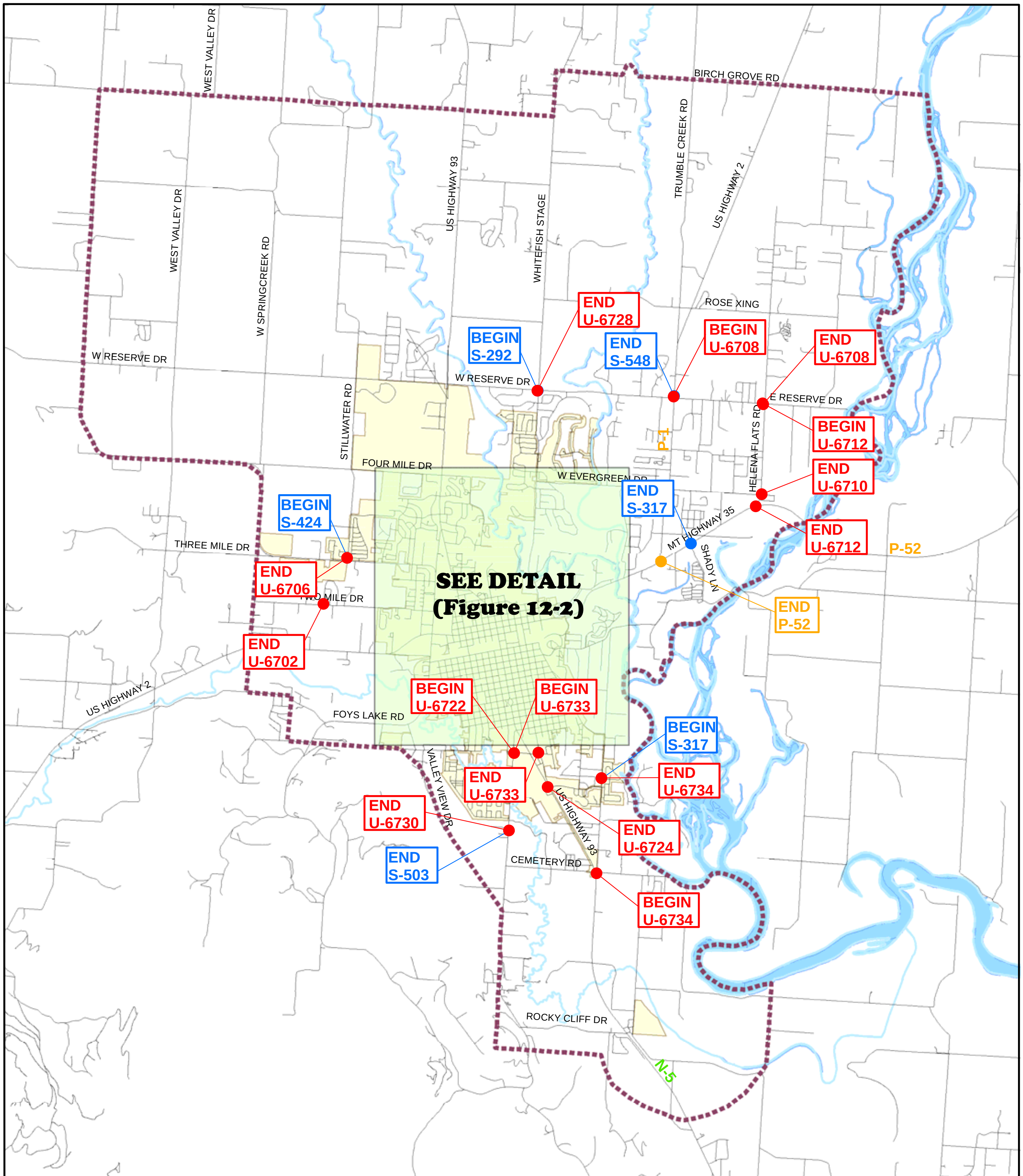


KALISPELL AREA TRANSPORTATION PLAN (2006 UPDATE)

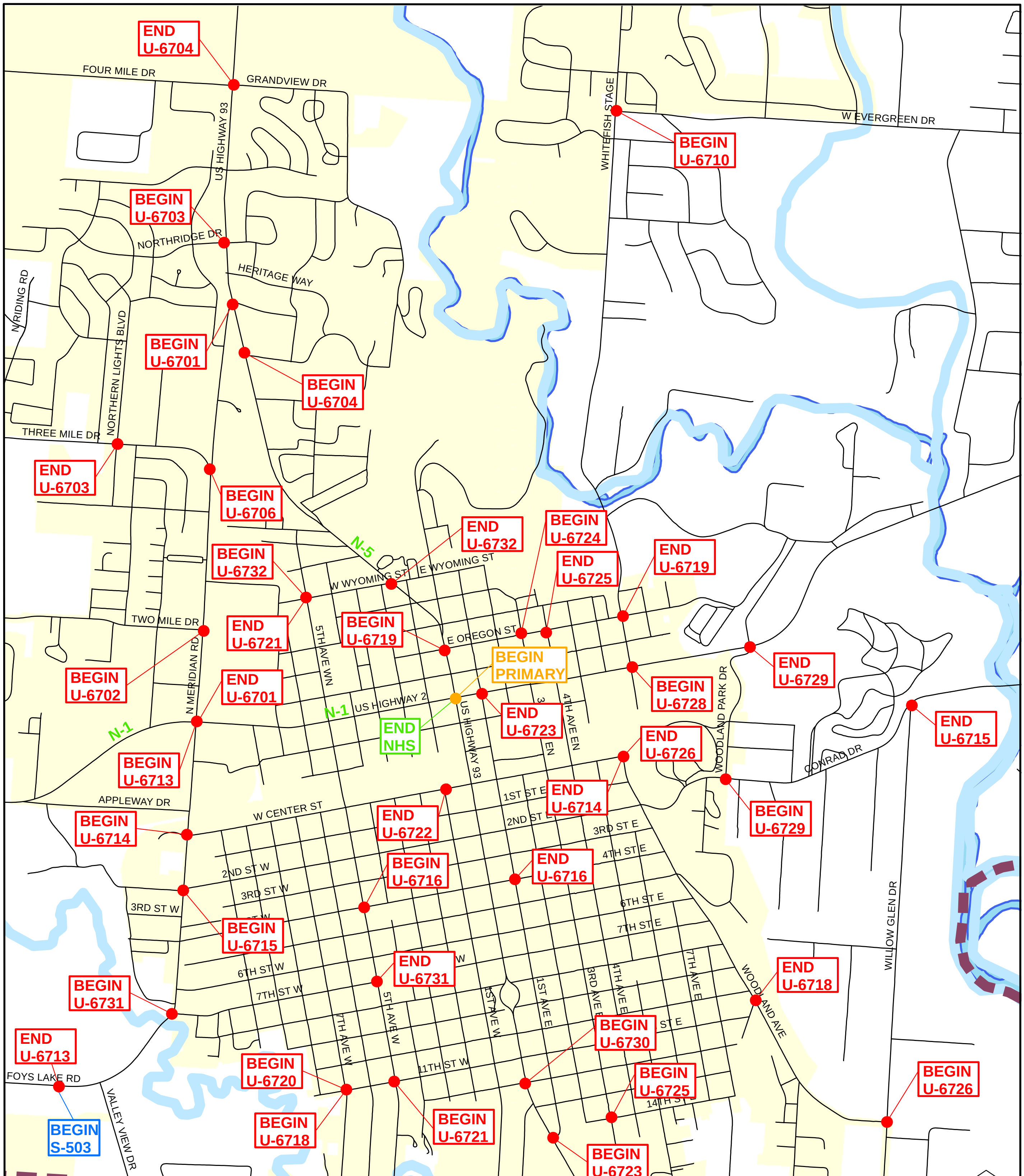
ROBERT PECCIA & ASSOCIATES

	Study Roadways
U-6734	Urban Designation
S-503	Secondary Designation
N-1	National Highway Designation
P-52	Primary Designation

0 4,000 8,000
Scale in Feet

Figure 12-1

Official Federal and State Roadway Designation



KALISPELL

AREA TRANSPORTATION PLAN (2006 UPDATE)

———	Study Roadways
U-6734	Urban Designation
S-503	Secondary Designation
N-1	National Highway Designation
P-52	Primary Designation

0 1,000 2,000

Scale in Feet

Figure 12-2

Official Federal and State Roadway Designation

<u>Eligibility and Planning Considerations</u>
Eligible CTEP categories include:

- Pedestrian and bicycle facilities
- Historic preservation
- Acquisition of scenic easements and historic or scenic sites
- Archeological planning and research
- Mitigation of water pollution due to highway runoff or reduce vehicle-caused
- Wildlife mortality while maintaining habitat connectivity
- Scenic or historic highway programs including provisions of tourist and welcome center facilities
- Landscaping and other scenic beautification
- Preservation of abandoned railway corridors (including the conversion and use for bicycle or pedestrian trails)
- Control and removal of outdoor advertising
- Establishment of transportation museums
- Provisions of safety and educational activities for pedestrians and bicyclists

Projects addressing these categories and that are linked to the transportation system by proximity, function or impact, and where required, meet the "historic" criteria, may be eligible for enhancement funding.

Projects must be submitted to the local government to the MDT, even when the project has been developed by another organization or interest group. Project proposals must include evidence of public involvement in the identification and ranking of enhancement projects. Local governments are encouraged to use their planning boards, where they exist, for the facilitation of public participation; or a special enhancement committee. The MDT staff reviews each project proposal for completeness and eligibility and submits them to the Transportation Commission and the federal Highway Administration for approval.

The City of Kalispell's has a current balance of $64,945 and the estimated 2008 allocation is $ 67,154 (Federal). Flathead County is allocated approximately $243,494 annually (Federal). There is currently a balance of $442,129 for this program. The balances represent funds not obligated towards a selected project.

*State funding programs developed to distribute Federal funding within Montana

Highway Safety Improvement Program (HSIP)

<u>Allocations and Matching Requirements</u>
HSIP is a new core funding program established by SAFETEA-LU. HSIP funds are Federally apportioned to Montana and allocated to safety improvement projects identified in the strategic highway safety improvement plan by the Commission. Projects described in the State strategic highway safety plan must correct or improve a hazardous road location or feature, or address a highway safety problem. The Commission approves and awards the projects which are let through a competitive bidding process. Generally, the Federal share for the HSIP projects is 91.24% and the State is responsible for 8.76%.

Eligibility and Planning Considerations

There are two set aside programs that receive HSIP funding: the Highway – Railway Crossing Program and the High Risk Rural Roads Program.

High Risk Rural Roads Program (HRRR)

Funds are set aside from the Highway Safety Improvement Program funds apportioned to Montana for construction and operational improvements on high-risk rural roads. These funds are allocated to HRRRP projects by the Commission. If Montana certifies that it has met all of the needs on high risk rural roads, these set aside funds may be used on any safety improvement project under the HSIP. Montana's set aside requirement for HRRRP is approximately $700,000 per year.

Highway – Railway Crossing Program (RRX)

Funds are Federally apportioned to Montana and allocated by the Commission for projects that will reduce the number of fatalities and injuries at public highway-rail grade crossings; through the elimination of hazards and/or the installation/upgrade of protective devices.

Highway Bridge Replacement and Rehabilitation Program (HBRRP)

Allocations and Matching Requirements

HBRRP funds are Federally apportioned to Montana and allocated to two programs by the Montana Transportation Commission. In general, projects are funded with 86.58% Federal and the State is responsible for the remaining 13.42%. The State share is funded through the Highway State Special Revenue Account. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process.

Eligibility and Planning Considerations

On-System Bridge Replacement and Rehabilitation Program

The On-System Bridge Program receives 65% percent of the Federal HBRRP funds. Projects eligible for funding under the On-System Bridge Program include all highway bridges on the State system. The bridges are eligible for rehabilitation or replacement. In addition, painting and seismic retrofitting are also eligible under this program. MDT's Bridge Bureau assigns a priority for replacement or rehabilitation of structurally deficient and functionally obsolete structures based upon sufficiency ratings assigned to each bridge. A structurally deficient bridge is eligible for rehabilitating or replacement; a functionally obsolete bridge is eligible only for rehabilitation; and a bridge rated as sufficient is not eligible for funding under this program.

Off-System Bridge Replacement and Rehabilitation Program

The Off-System Bridge Program receives 35% percent of the Federal HBRRP funds. Projects eligible for funding under the Off-System Bridge Program include all highway bridges not on the State system. Procedures for selecting bridges for inclusion into this program are based on a ranking system that weighs various elements of a structures condition and considers local priorities. MDT Bridge Bureau personnel conduct a field inventory of off-system bridges on a two-year cycle. The field inventory provides information used to calculate the Sufficiency Rating (SR).

Coordinated Border Infrastructure Program (CBI)

CBI funds are Federally apportioned to Montana and allocated by the Commission based on system performance and project eligibilities. These funds may be used on projects within 100 miles of the international border to improve transportation, safety, regulation, or improved planning/coordination to streamline international motor vehicle and cargo movements. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. The Federal share is 86.58% and the State is responsible for 13.42%.

Congestion Mitigation & Air Quality Improvement Program (CMAQ)

Federal funds available under this program are used to finance transportation projects and programs to help improve air quality and meet the requirements of the Clean Air Act. Montana’s air pollution problems are attributed to carbon monoxide (CO) and particulate matter (PM^{10} and $PM^{2.5}$).

Allocations and Matching Requirements

CMAQ funds are Federally apportioned to Montana and allocated to various eligible programs by formula and by the Commission. As a minimum apportionment state a Federally required distribution of CMAQ funds goes to projects in Missoula since it is Montana’s only designated and classified air quality non-attainment area. The remaining, non-formula funds, referred to as “flexible CMAQ” is directed to areas of the state with emerging air quality issues through various state programs. The Transportation Commission approves and awards both formula and non-formula projects on MDT right-of-way. Infrastructure and capital equipment projects are let through a competitive bidding process. Of the total funding received, 86.58% is Federal and 13.42% is non-federal match provided by the state for projects on state highways and local governments for local projects.

Eligibility and Planning Considerations

In general, eligible activities include transit improvements, traffic signal synchronization, bicycle pedestrian projects, intersection improvements, travel demand management strategies, traffic flow improvements, and public fleet conversions to cleaner fuels. At the project level, the use of CMAQ funds is not constrained to a particular system (i.e. Primary, Urban, and NHS). A requirement for the use of these funds is the estimation of the reduction in pollutants resulting from implementing the program/project. These estimates are reported yearly to FHWA.

CMAQ (formula)

Mandatory CMAQ funds that come to Montana based on a Federal formula and are directed to Missoula, Montana’s only classified, moderate CO non-attainment area. Not applicable to Kalispell.

Montana Air & Congestion Initiative (MACI)–Guaranteed Program (flexible)*

This is state program funded with flexible CMAQ funds that the Commission allocates annually to Billings and Great Falls to address carbon monoxide issues in these designated, but "not classified", CO non-attainment areas. The air quality in these cities is roughly equivalent to Missoula, however, since these cities are "not classified" so they do not get direct funding through the Federal formula. Not applicable to Kalispell.

Montana Air & Congestion Initiative (MACI)–Discretionary Program (flexible)*

The MACI – Discretionary Program provides funding for projects in areas designated non-attainment or recognized as being "high-risk" for becoming non-attainment. Since 1998, MDT has used MACI-Discretionary funds to get ahead of the curve for CO and PM^{10} problems in non-attainment and high-risk communities across Montana. District Administrators and local governments nominate projects cooperatively. Projects are prioritized and selected based on air quality benefits and other factors. The most beneficial projects to address these pollutants have been sweepers and flushers, intersection improvements and signal synchronization projects. Kalispell is a designated PM 10 non-attainment area and a CO high risk area and therefore eligible for funding through this program

Urban High Growth Adjustment (flexible)*

Urban High Growth Adjustment funds are distributed to urban areas in Montana where population increased by more than 15% between the 1990 and 2000 censuses. Kalispell, Bozeman, and Missoula are the areas currently eligible for funding through this source. The intent of this funding is to address backlogged needs in these very rapidly growing cities. Nominations for the use of these funds are established at the local level similar to STPU funds. These funds may be spent on the Urban Highway System for projects eligible for either STPU or CMAQ funds.

*State funding programs developed to distribute Federal funding within Montana

Urban Pavement Preservation (UPP) (Equity Bonus)*

The Urban Pavement Preservation Program is a state program that addresses urban highway system preservation needs. The program is funded from federal Equity Bonus funds that are appropriated to each State to ensure that each State receives a specific share of the aggregate funding for major highway programs. The program funds cost-effective treatments for the preservation of the existing Urban Highway System to prevent deterioration while maintaining or improving the functional condition of the system without increasing structural capacity.

Allocations and Matching Requirements

The Transportation Commission determines the annual funding level for this program for preservation projects in the fifteen urban areas. Projects are funded with 86.58% Federal and the State is responsible for the remaining 13.42%. The State share is funded through the Highway State Special Revenue Account. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process.

Eligibility and Planning Considerations

Activities eligible for this funding include pavement preservation treatments on the Urban Highway System based on needs identified through a locally developed and maintained pavement management system. Priorities are developed by MDT Districts based on the local pavement management system outputs and consideration of local government nominations with final approval by the Transportation Commission. Projects are let through a competitive bidding process.

*State funding programs developed to distribute Federal funding within Montana

Safe Routes To School (SRTS)

Allocations and Matching Requirements

Safe Routes To School funds are Federally apportioned to Montana for programs to develop and promote a safe environment that will encourage children to walk and bicycle to school. Montana is a minimum apportionment state, and will receive $1-million per year, subject to the obligation limitation. The Federal share of this program is 100%.

Eligibility and Planning Considerations

Eligible activities for the use of SRTS funds fall under two major categories with 70% directed to infrastructure improvements, and the remaining 30% for behavioral (education) programs. Funding may be used within a two mile radius of K-8 schools for improvements or programs that make it safer for kids to walk or bike to school. SRTS is a reimbursable grant program and project selection is done through an annual application process. Eligible applicants for infrastructure improvements include local governments and school districts. Eligible applicants for behavioral programs include state, local and regional agencies, school districts, private schools, non-profit organizations. Recipients of the funds will front the cost of the project and will be reimbursed during the course of the project. For grant cycle information visit:
http://www.mdt.mt.gov/pubinvolve/saferoutes/

Federal Lands Highway Program (FLHP)

FLHP is a coordinated Federal program that includes several funding categories.

Public Lands Highways (PLH)

Discretionary

The PLH Discretionary Program provides funding for projects on highways that are within, adjacent to, or provide access to Federal public lands. As a discretionary program, the project selection authority rests with the Secretary of Transportation. However, this program has been earmarked by Congress under SAFETEA-LU. There are no matching fund requirements.

Forest Highway

The Forest Highway Program provides funding to projects on routes that have been officially designated as Forest Highways. Projects are selected through a cooperative process involving FHWA, the US Forest Service and MDT. Projects are developed by FHWA's Western Federal Lands Office. There are no matching fund requirements.

Parkways and Park Roads

Parkways and Park Roads funding is for National Park transportation planning activities and projects involving highways under the jurisdiction of the National Park Service. Projects are prioritized by the National Park Service and approved and developed by FHWA's Western Federal Lands Office. There are no matching fund requirements.

Indian Reservation Roads (IRR)

IRR funding is eligible for multiple activities including transportation planning and projects on roads or highways designated as Indian Reservation Roads. Funds are distributed to Bureau of Indian Affairs (BIA) area offices in accordance with a Federal formula and are then distributed to projects on individual reservations. Projects are usually constructed by BIA forces. There are no matching fund requirements.

Any public road within or leading to a reservation is eligible for the Indian Reservation Road funding. In practice, IRR funds are only rarely expended on state designated roads. MDT staff is aware of only two secondary routes that have received IRR funding support. These are S-418, Pryor Road, in the Crow Reservation; and S-234, Taylor Hill Road, that leads to the Rocky Boy's Reservation.

Refuge Roads

Refuge Roads funding is eligible for maintenance and improvements of refuge roads, rest areas, and bicycle and pedestrian facilities. Allocations are based on a long-range transportation improvement program developed by the US Fish and Wildlife Service. There are no matching fund requirements.

Congressionally Directed Funds

High Priority Projects (HPP)

High Priority Projects are specific projects named to receive Federal funding in SAFETEA-LU Section 1702. HPP funding authority is available until expended and projects named in this section are included in Montana's percent share of the Federal highway funding program. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. In Montana, the Federal share payable for these projects is 86.58% Federal and 13.42% non-Federal. Montana receives 20% of the total project funding named in each year 2006 thru 2009. These funds are subject to the obligation limitation.

Transportation Improvements Projects

Transportation Improvement Projects are specific projects named to receive Federal funding in SAFETEA-LU Section 1934. Transportation Improvement Project funding authority is available until expended and projects named in this section are not included in Montana's percent share of the Federal highway funding program. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. In Montana, the Federal share payable on these projects is 86.58% Federal and 13.42% non-Federal. Montana receives a directed percent of the total project funding named in each year as follows: 2005 – 10%, 2006-20%, 2007-25%, 2008-25%, 2009-20%. These funds are subject to the obligation limitation.

Transit Capital & Operating Assistance Funding

The MDT Transit Section provides federal and state funding to eligible recipients through federal and state programs. Federal funding is provided through the Section 5310 and Section 5311 transit programs and state funding is provided through the TransADE program. The new highway bill SAFETEA-LU brought new programs for transit "New Freedoms and Job Access Reverse Commute (JARC). All projects funded must be derived from a locally developed, coordinated public transit-human services transportation plan (a "coordinated plan").

The coordinated plan must be developed through a process that includes representatives of public, private, and nonprofit transportation and human service providers and participation from the public. The following programs may be an eligible source of funding for Kalispell area transit needs.

Discretionary Grants (Section 5309)

Provides capital assistance for fixed guide-way modernization, construction and extension of new fixed guide-way systems, bus and bus-related equipment and construction projects. Eligible applicants for these funds are state and local public bodies.

Capital Assistance for the Elderly and Persons with Disabilities (Section 5310)

The Section 5310 Program provides capital assistance to providers that serve elderly persons and persons with disabilities. Eligible recipients must have a locally developed coordination plan. Federal funds provide 86% of the capital costs for purchase of buses, vans, wheelchair lifts, communication, and computer equipment. The remaining 14% is provided by the local recipient. Application for funding is made on an annual basis.

Financial Assistance for Rural General Public Providers (Section 5311)

The purpose of the Section 5311 Program is to assist in the maintenance, development, improvement, and use of public transportation systems in rural areas (areas under 50,000 population). Eligible recipients are local public bodies, incorporated cities, towns, counties, private non-profit organizations, Indian Tribes, and operators of public transportation services. A locally developed coordinate plan is needed to receive funding assistance. Funding is available for operating and capital assistance. Federal funds pay for 86% of capital costs, 54% for operating costs, 80% for administrative costs, and 80% for maintenance costs. The remainder, or required match, (14% for capital, 46% for operating, 20% for administrative, and maintenance) is provided by the local recipient. Application for funding is made on an annual basis.

New Freedoms Program (5317)

The purpose of the New Freedom Program is to provide improved public transportation services, and alternatives to public transportation, for people with disabilities, beyond those required by the Americans with Disabilities Act of 1990 (ADA). The program will provide additional tools to overcome barriers facing Americans with disabilities who want to participate fully in society. Funds may be used for capital expenses with Federal funds provided for up to 80 percent of the cost of the project, or operating expenses with Federal funds provided for up to 50 percent of the cost of the project. All projects funded must be derived from a locally developed, coordinated public transit-human services transportation plan (a "coordinated plan").

Job Access Reverse Commute (JARC) (5316)

The purpose of this grant program is to develop transportation services designed to transport welfare recipients and low income individuals to and from jobs and to develop transportation services for residents of urban centers and rural and suburban areas to suburban employment opportunities. Funds may be used for capital and operating expenses with Federal funds provided for up to 50 percent of the cost of the project.

12.4 STATE FUNDING SOURCES

State Funded Construction (SFC)

Allocations and Matching Requirements

The State Funded Construction Program, which is funded entirely with state funds from the Highway State Special Revenue Account, provides funding for projects that are not eligible for Federal funds. This program is totally State funded, requiring no match.

Eligibility and Planning Considerations

This program funds projects to preserve the condition and extend the service life of highways. Eligibility requirements are that the highways be maintained by the State. MDT staff nominates the projects based on pavement preservation needs. The District's establish priorities and the Transportation Commission approves the program.

TransADE

The TransADE grant program offers operating assistance to eligible organizations providing transportation to the elderly and persons with disabilities.

Allocations and Matching Requirements

This is a state funding program within Montana statute. State funds pay 50 percent of the operating costs and the remaining 50 percent must come from the local recipient.

Eligibility and Planning Considerations

Eligible recipients of this funding are counties, incorporated cities and towns, transportation districts, or non-profit organizations. Applications are due to the MDT Transit Section by the first working day of February each year. To receive this funding the applicant is required by state law (MCA 7-14-112) to develop a strong, coordinated system in their community and/or service area.

12.5 LOCAL FUNDING SOURCES

State Fuel Tax – City and County

Under 15-70-101, MCA, Montana assesses a tax of $.27 per gallon on gasoline and diesel fuel used for transportation purposes. Each incorporated city and town receives a portion of the total tax funds allocated to cities and towns based on:

1) The ratio of the population within each city and town to the total population in all cities and towns in the State;
2) The ratio of the street mileage within each city and town to the total street mileage in all incorporated cities and towns in the State. The street mileage is exclusive of the Federal-Aid Interstate and Primary System.

Each county receives a percentage of the total tax funds allocated to counties based on:

1) The ratio of the rural population of each county to the total rural population in the State, excluding the population of all incorporated cities or towns within the county and State;
2) The ratio of the rural road mileage in each county to the total rural road mileage in the State, less the certified mileage of all cities or towns within the county and State; and
3) The ratio of the land area in each county to the total land area of the state.

All fuel tax funds allocated to the city and county governments must be used for the construction, reconstruction, maintenance, and repair of rural roads or city streets and alleys. The funds may also be used for the share that the city or county might otherwise expend for proportionate matching of Federal funds allocated for the construction of roads or streets on the Primary, Secondary, or Urban Systems. Priorities for these funds are established by the cities and counties receiving them.

For State Fiscal Year 2007, Kalispell/Flathead County's combined allocation was approximately $799,091 (Kalispell - $324,774 and Flathead County - $474,317) in state fuel tax funds. The amount varies annually, but the current level provides a reasonable base for projection throughout the planning period.

In addition, local governments generate revenue through a variety of other funding mechanisms. Typically, several local programs related to transportation exist for budgeting purposes and to disperse revenues. These programs are tailored to fulfill specific transportation functions or provide particular services.

The following text summarizes programs that relate to transportation financing through the city and county.

12.5.1 CITY OF KALISPELL

General Fund

This fund provides revenue for most major city functions like the administration of local government, and the departments of public services, including police, fire, and parks. Revenues for the fund are generated through the general fund mill levy on real and personal property and motor vehicles; licenses and permits; state and federal intergovernmental revenues; intergovernmental fund transfers; and charges for services.

Several transportation-related services are supported by this fund including public services (engineering and streets) and the City of Kalispell Police Department. The street department is responsible for maintaining the city streets and alleys including: pavement repair, street cleaning, striping and signing, lighting and traffic signal maintenance, and plowing and sanding during the winter. In addition to revenue from the General Fund, some revenue used to operate the street department is generated from gas tax funds and street maintenance district funds. The police department is obviously responsible for enforcing traffic laws on the street system.

Although most of the highway-designated monies are oriented toward maintenance activities, some new construction and street-widening projects may be financed through the General Fund. This revenue source has been used in conjunction with other resources to finance local street and highway projects.

Special Revenue Funds

These funds are used to budget and distribute revenues that are legally restricted for a specific purpose. Several such funds that benefit the transportation system are discussed briefly in the following paragraphs.

SID Revolving Fund

This fund provides financing to satisfy bond payments for special improvement districts in need of additional funds. The city can establish street SID's with bond repayment to be made by the adjoining landowners receiving the benefit of the improvement. The city has provided labor and equipment for past projects through the General Fund, with an SID paying for materials.

Gas Tax Apportionment

Revenues are generated through State gasoline taxes apportioned from the State of Montana. Transfers are made from this fund to the General Fund to reimburse expenditures for construction, reconstruction, repair and maintenance of streets. Half of the City's allocation is based upon population, and half is based on the miles of streets and alleys in the City. The City Gas Tax Fund received an allocation of approximately $324,774 for state fiscal year 2007.

Tax Increment Financing (TIF)

The funds generated from a new tax increment financing TIF district could be used to finance projects including street and parking improvements; tree planting; installation of new bike racks; trash containers and benches; and other streetscape beautification projects within the downtown area.

12.5.2 FLATHEAD COUNTY

Road Fund

The County Road Fund provides for the construction, maintenance, and repair of all county roads outside the corporate limits of cities and towns in Flathead County. Revenue for this fund comes from intergovernmental transfers (i.e., State gas tax apportionment and motor vehicle taxes), and a mill levy assessed against county residents living outside cities and towns. Flathead County's State fiscal year gas tax apportionment added approximately $474,317 to the Road Fund.

County Road Fund monies are primarily used for maintenance with little allocated for new road construction. It should be noted that only a small percentage of the total miles on the county road system are located in the study area. Projects eligible for financing through this fund will be competing for available revenues on a county-wide basis.

Bridge Fund

The Bridge Fund provides financing for engineering services, capital outlays, and necessary maintenance for bridges on all off-system and Secondary routes within the county. These monies are generated through intergovernmental fund transfers (i.e., vehicle licenses and fees), and a county-wide mill levy. There is a taxable limit of four mills for this fund.

Special Revenue Funds

Special revenue funds may be used by the county to budget and distribute revenues legally restricted to a specific purpose. Several such funds that benefit the transportation system are discussed briefly in the following paragraphs.

Capital Improvements Fund

This fund is used to finance major capital improvements to county infrastructure. Revenues are generated by loans from other county funds, and must be repaid within ten years. Major road construction projects are eligible for this type of financing.

Rural Improvement District (RID) Revolving Fund

This fund is used to administer and distribute monies for specified RID projects. Revenue for this fund is generated primarily through a mill levy and through motor vehicle taxes and fees. A mill levy is assessed only when delinquent bond payments dictate such an action.

Special Bond Funds

A fund of this type may be established by the county on an as-needed basis for a particularly expensive project. The voters must approve authorization for a special bond fund. The county is not currently using this mechanism.

12.5.3 PRIVATE FUNDING SOURCES AND ALTERNATIVES

Private financing of highway improvements, in the form of right-of-way donations and cash contributions, has been successful for many years. In recent years, the private sector has recognized that better access and improved facilities can be profitable due to increases in land values and commercial development possibilities. Several forms of private financing for transportation improvements used in other parts of the United States are described in this section.

Development Financing

The developer provides the land for a transportation project and in return, local government provides the capital, construction, and necessary traffic control. Such a financing measure can be made voluntary or mandatory for developers.

Cost Sharing

The private sector pays some of the operating and capital costs for constructing transportation facilities required by development actions.

Transportation Corporations

These private entities are non-profit, tax exempt organizations under the control of state or local government. They are created to stimulate private financing of highway improvements.

Road Districts

These are areas created by a petition of affected landowners, which allow for the issuance of bonds for financing local transportation projects.

Private Donations

The private donation of money, property, or services to mitigate identified development impacts is the most common type of private transportation funding. Private donations are very effective in areas where financial conditions do not permit a local government to implement a transportation improvement itself.

Private Ownership

This method of financing is an arrangement where a private enterprise constructs and maintains a transportation facility, and the government agrees to pay for public use of the facility. Payment for public use of the facility is often accomplished through leasing agreements (wherein the facility is rented from the owner), or through access fees whereby the owner is paid a specified sum depending upon the level of public use.

Privatization

Privatization is either the temporary or long-term transfer of a public property or publicly owned rights belonging to a transportation agency to a private business. This transfer is made in return for a payment that can be applied toward construction or maintenance of transportation facilities.

General Obligation (G.O.) Bonds

The sale of general obligation bonds could be used to finance a specific set of major highway improvements. A G.O. bond sale, subject to voter approval, would provide the financing initially required for major improvements to the transportation system. The advantage of this funding method is that when the bond is retired, the obligation of the taxpaying public is also retired. State statutes limiting the level of bonded indebtedness for cities and counties restrict the use of G.O. bonds. The present property tax situation in Montana, and recent adverse citizen responses to proposed tax increases by local government, would suggest that the public may not be receptive to the use of this funding alternative.

Development Exactions/Impact Fees

Impact Fees are increasingly being considered as a potential method for financing infrastructure needs. Presently, the only communities utilizing impact fees are the city of Bozeman, the city of Missoula, and Gallatin County. Developer exactions and fees allow growth to pay for itself. The developers of new properties should be required to provide at least a portion of the added transportation system capacity necessitated by their development, or to make some cash contribution to the agency responsible for implementing the needed system improvements.

Establishment of an equitable fee structure would be required to assess developers based upon the level of impact to the transportation system expected from each project. Such a fee structure could be based upon the number of additional vehicle trips generated, or upon a fundamental measure such as square footage of floor space. Once the mechanism is in place, all new development would be reviewed by the local government and fees assessed accordingly.

This method of funding transportation improvements should be seriously considered by both the city of Kalispell and Flathead County for potential implementation. Although at times controversial, this exaction on private development can help to soften development's impact on the surrounding transportation system.

Tax Increment Financing (TIF)

Increment financing has been used in many municipalities to generate revenue for public improvements projects. As improvements are made within the district, and as property values increase, the incremental increases in property tax revenue are earmarked for this fund. The fund is then used for improvements within the district. Expenditures of revenue generated by this method are subject to certain spending restrictions and must be spent within the district. Tax increment districts could be established to accomplish transportation improvements in other areas of the community where property values may be expected to increase.

Multi-Jurisdictional Service District

This funding option was authorized in 1985 by the State Legislature. This procedure requires the establishment of a special district, somewhat like an SID or RSID, which has the flexibility to extend across city and county boundaries. Through this mechanism, an urban transportation district could be established to fund a specific highway improvement that crosses municipal boundaries (e.g., corporate limits, urban limits, or county line). This type of fund is structured similar to an SID with bonds backed by local government issued to cover the cost of a proposed improvement. Revenue to pay for the bonds would be raised through assessments against property owners in the service district.

Local Improvement District

This funding option is only applicable to counties wishing to establish a local improvement district for road improvements. While similar to an RSID, this funding option has the benefit of allowing counties to initiate a local improvement district through a more streamlined process than that associated with the development of an RSID.