

TOWN OF SILVERTHORNE

TRANSPORTATION MASTER PLAN

MAY 2005



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Introduction

The purpose of a **Transportation Master Plan (TMP)** is to provide direction and recommendation related to transportation issues within the Town. Many of these transportation problems and issues are related to and have been compounded over time by the success of the Silverthorne business community as well as continuing residential growth within Silverthorne and the surrounding region. While transportation issues are often byproducts of success, the potential for improvement to the transportation system does exist in most cases. The TMP will identify, analyze and evaluate existing problem areas, will project future growth, and will suggest an array of both short and long term objectives, concepts and alternatives. This TMP focuses primarily on automotive related transportation; however future updates may be expanded to include pedestrians, bicycles, mass transit, and other forms of transportation. In Silverthorne's case, pedestrian and bicycle facilities have already been master planned in the Town's Parks, Trails and Open Space Master Plan.

The TMP is an advisory document and is not binding on the decision making process. Though advisory, it is an important piece of the overall Town Master Planning process, along with the Comprehensive Plan and other adopted Master Plans. The TMP should be referenced and considered by the Planning Commission, Town Council, and Town Staff when reviewing development proposals, updating Town Code, entering into Intergovernmental and/or development agreements, developing work programs, preparing annual budgets, and evaluating the Town's progress in meeting community goals. The TMP should also be used by citizens, businesses, and developers in proposing and assessing new and existing development within the Town.

The TMP should be reviewed and updated as necessary, with at least a general review every five years. This general review will provide an opportunity for all interested parties to assess the status of progress with the plan, re-examine the recommendations of the plan, and to propose changes and updates to the plan, if necessary.

An abbreviated version of the TMP can also be found in the Transportation Element of the 2001 Comprehensive Plan. This TMP expands on the 2001 Comprehensive Plan's Transportation Element and also updates and replaces the "Silverthorne Town-Wide Transportation Plan" of December 1995. Key goals of the TMP for the Town of Silverthorne, as listed in the Transportation Element of the 2001 Comprehensive Plan are to:

1. Improve the function and continuity of the Town's existing street system.
2. Coordinate with the Colorado Department of Transportation on issues involving State Highway 9, US Highway 6, and Interstate 70.
3. Provide neighborhood connections other than those that use the highway systems.
4. Provide additional north-south roadway capacity along routes other than State Highway 9.
5. Improve off-street bicycle and pedestrian facilities in accordance with the Parks, Trails and Open Space Master Plan.
6. Preserve opportunities for needed future rights-of-way.
7. Enhance bus transit services.

Study Area

The Town of Silverthorne is located near the I-70 interchange with Colorado State Highway 9 (SH9) and US Highway 6 (US6), approximately 70 miles west of Denver. From I-70, SH9 extends north along the Blue River through Silverthorne to Kremmling where SH9 ends at US40. From the Town of Frisco, SH9 extends south from I-70 to US50, just west of Canon City. The portion of SH9 that is within the study area of this TMP includes SH9 between Rancher's Road near the Town's northern limits, and the I-70 interchange. The portion of US6 that is within the study area includes the I-70 interchange to Little Beaver Trail near the Town's southern limits.

The Town of Silverthorne serves as a strong commercial base for and as a gateway to many popular Summit County communities and ski areas, including Keystone, Arapahoe Basin, Frisco, Breckenridge, and Copper Mountain. The Town of Silverthorne's commercial base includes the Outlets at Silverthorne, Target and many other national chain as well as locally owned retailers, restaurants and businesses. The Town also has significant service based commercial businesses and is home to UPS, Fex Ex, several auto dealerships and a variety of other service related commercial businesses. A variety of residential developments exist within the Town, which range from multi-family and condominium developments to medium and lower density single-family neighborhoods and communities.

The Town is surrounded and divided by both natural and man-made barriers. Located in a mountain valley, Silverthorne is geographically constrained on the west by the Gore Mountain Range and the Eagles Nest Wilderness area and on the east by the Williams Fork Mountain Range. To the south, Silverthorne is constrained by the Dillon Dam as well as the town limit border with the Town of Dillon. Primarily due to the topographic characteristics, the Town is approximately one mile wide in most areas and is limited in its growth potential, with most growth opportunities located along SH9 to the north.

Existing Transportation Network

Since the Town of Silverthorne lies within a relatively narrow valley, most roadways of significant length are oriented in a north-south general direction. SH9 bisects the Town of Silverthorne and provides the only continuous north-south passage throughout the entirety of the Town. Throughout most of town, SH9 is a four-lane arterial with left turn and acceleration/deceleration lanes at at-grade intersections. In limited sections however, primarily near the I-70 interchange the SH9 widens to 6 lanes. The alignment of US6 generally runs east-west and merges into and becomes SH9 just under the I-70 overpass. Within the Town limits of Silverthorne, US6 is a four-lane arterial with an additional acceleration/deceleration lane in each direction. According to year 2003 statistics found on the Colorado Department of Transportation's (CDOT) webpage, close to 27,000 vehicles pass through the SH 9/US6 / I-70 interchange on an average day.

Due to Silverthorne's natural geographic and topographic constraints, east-west roadways of significant length are few. Wilderrest Road provides access to some commercial areas within the Town core and also provides the primary access to the Wilderrest subdivision, one of the largest residential areas within the general region, which is located in unincorporated Summit County. Willowbrook Road is also a relatively long east-west roadway which serves one of the most densely developed residential areas within Town limits. While natural geographic, topographic and prior development factors have greatly influenced road alignments, within the commercial core south of 6th Street and west of SH9, the roads are generally configured in a grid pattern.

Roadway Classifications

Roadways within the Town of Silverthorne can be categorized into one of three different classifications: Arterial, Collector or Local.

Of the three classifications, **Arterials** are the largest roads and are sized to carry the highest traffic volumes. Unless they are part of the interstate system, arterials are usually signalized. While arterials often provide direct access to directly adjacent properties where no other access points exist, it is preferable to limit access points where feasible in order to reduce turning movements and to achieve steady traffic flows as best as possible. The State Highways, specifically I-70, SH9 and US6 are roadways that function as Arterials within and through the Town of Silverthorne.

The **Colorado Department of Transportation (CDOT)** has the responsibility for the planning, design, construction, and maintenance of these three highways, however, the Town of Silverthorne often works with CDOT in cooperative efforts regarding maintenance and improvements to SH9 and US6. Some examples the Town's cooperative efforts with CDOT include the maintenance of landscaping, medians, construction and maintenance of sidewalks and bikepaths, as well as assistance with pothole patching, snowplowing, and highway sanding and deicing in the winter.

Collector roadways provide access and circulation within residential, commercial and industrial areas. Collector roadways often connect with both Arterial and Local roadways and often serve as a transition between the two. Collector roads often distribute traffic between the highway system and local streets and to and from neighboring developments. Collectors can also provide direct access to individual residential and/or commercial lots. Roads which serve commercial properties typically tend to generate more traffic than in residential areas and as such are usually considered to function as Collectors. However, roadways within residential areas are often considered as being Collectors depending on the size of the development served and the volume of vehicles that use the road.

Collector roadways within the Town of Silverthorne include:

- Adams Avenue
- Annie Road
- Bald Eagle Road
- Brian Avenue
- Buffalo Mountain Drive
- Center Circle
- Golden Eagle Road
- Little Beaver Trail
- Ruby Ranch Road
- Hunters Knob, Game Trail and Ranchers Roads
- Ptarmigan Trail (County Road 2021)
- 6th Street
- 4th Street (SH9to Brian Avenue)
- Rainbow Drive
- Stephens Way
- Tanglewood Lane
- Wildernd Road
- Willowbrook Road
- Hamilton Creek Road
- 3rd Street

Local roads typically experience lower volumes of traffic than do Collectors and Arterials. Local roads typically branch from Collectors or Arterials and usually lead to specific destinations and usually are in locations in which they are not part of a larger thoroughfare which may experience more traffic. Local roads typify residential uses. While commercial access from a local road is possible, it is less common.

Existing and Projected future travel demand

This section of the TMP will summarize recent traffic data and will analyzes and forecast future traffic characteristics and potential. Actual traffic data collected and analyzed consisted of vehicular turning movement counts as well as average daily traffic tube counts. Projected future forecasts were based on an analysis of these collected counts in conjunction with existing and zoned build-out estimates for land use and population. Sources of this data included the 2003 Town of Silverthorne Community profile, zoning and buildout information provided by Summit County Government, information found on the Summit County Government website and research of Silverthorne maintained property and project files. The Town's transportation consultants, PBS&J, conducted the field data collection, performed the analysis of the land use and population data provided to them by Town Staff and prepared the related graphical **Figures 1 through 10**.

Traffic volumes and transportation system performance can vary greatly given the time of year, or even on a given day such as a holiday, especially in a tourist oriented community. Recognizing that potentially large variations are normal for a roadway network, a TMP should be prepared assuming typical conditions for a typical day, as best as possible. The Figures which illustrate the intersection Level of Service and volume forecasts were based on counts collected over the course of a non-holiday workweek in early August of 2004, which Town staff chose as being a fairly typical or average time of year with respect to traffic volumes. It's important to keep in mind that the Figures of existing and forecasted conditions are based on an average, typical day and not a holiday, weekend or other peak traffic day. **Figures 1 through 9** summarize intersection Levels of Service, peak hour turning movement counts and average daily traffic counts for existing conditions and 5 and 10 year projections.

Traffic Analysis Zones, or TAZs, identify traffic regions or zones within the Town. They summarize existing and zoned build-out estimates relating to land use and population and forecast the percentage change within each individual zone over time. In this case the growth rate was averaged over a 20-year period. This TMP, basically uses the same 9 TAZs that were in the 1995 Transportation Plan, with slight modifications. Specifically, TAZs 2, 3 and 6 were modified from those shown in the 1995 plan and now reflect existing neighborhoods in unincorporated Summit County, such as Dillon Valley, Ptarmigan and Hamilton Creek Subdivisions, among others. Though not in Silverthorne corporate limits, these subdivisions were included because of their proximity to and impact on adjacent Town roads. **Figure 10** graphically illustrates the locations of the TAZs that are described in the Land Use Summary Table on the following page.

Land Use Summary - Existing / Build-Out - By Traffic Analysis Zone (TAZ)					
TAZ	Land Use	Totals		Percent Change	20 Year Total TAZ Growth
		Existing	Buildout (zoned)		
1	Residential	800 units	1,690 units	111%	3.33%
	Commercial	481802 sq ft	662,452 sq ft	37%	
2	Residential	268 units	330 units	23%	11.29%
	Commercial	17,674 sq ft	629,432 sq ft	3461%	
	Other	71,500 sq ft	71,500 sq ft	0%	
3	Residential	787 units	1,713 units	118%	1.44%
	Commercial	344,418 sq ft	362,418 sq ft	5%	
	Other	83,720 sq ft	83,720 sq ft	0%	
4	Residential	157 units	157 units	0%	1.48%
	Commercial	492,463 sq ft	678,128 sq ft	38%	
	Other	9,300 sq ft	9,300 sq ft	0%	
5	Commercial	40,205 sq ft	40,205 sq ft	0%	0%
6	Residential	1127 units	1159 units	3%	0.14%
	Commercial	54,415 sq ft	54,415 sq ft	0%	
7	Residential	2292 units	2405 units	5%	0.21%
8	Commercial	40,000 sq ft	167,200 sq ft	318%	5.64%
9	Commercial	208,817 sq ft	236,717 sq ft	13%	0.33%

Transportation System Evaluation and Objectives – Suggested Priorities and Alternatives

This section of the TMP will both identify areas of the Town Transportation system which need or will likely eventually need improvement, as well as outline general goals and principles to be considered for future development and/or re-development.

Individual items have been grouped and are discussed within general categories. Potential projects and improvements are described and are assigned potential timeframes and priorities. The timeframe and priority classifications are described below. Timeframes and priorities should be considered as being flexible, as they may change depending on other factors which may exist or which may be occurring at any given time in the future. Timeframes and priority classifications are not concrete or definite, as some projects may occur sooner, later, or not at all. As was mentioned in at the beginning of this report, the TMP is an advisory document and is not binding on the decision making process. Certain projects listed may never be feasible due to a variety of factors. Whether or not some of these projects are ever eventually constructed, the vast majority of them can stand on their own and are not reliant or dependant on other projects being completed. **Figures 11 through 22** located at the end of this report illustrate general concepts of the some of the alternatives that will be discussed below. These are conceptual in nature, and if they are considered for implementation, potential factors such as cost, property ownership and easement or right-of-way acquisition, as well as other factors will need to be addressed and resolved prior to or during the planning and design process.

In addition to traffic originating and/or destined for Silverthorne businesses and residential areas, the Town road system is also impacted by traffic generators from out of Town subdivisions such as Wildernest, Dillon Valley, Ptarmigan and Hamilton Creek. As a general policy, where County subdivisions are significant traffic contributors, County participation in future road improvement projects should be sought.

Short Range. Short Range Transportation Plan elements suggest improvements that address existing transportation system deficiencies. These improvements often tend to be less expensive than Long Range improvements and, thus, can be more easily budgeted for. In general, Short Range improvements are those which are expected to be considered for implementation within one to five years from the date of this plan.

Long Range. Long Range Transportation Plan elements include alternatives and recommendations that address existing and/or anticipated future transportation system deficiencies. Long Range Transportation Plan projects and improvement recommendations are often larger scale, more costly projects and often implement long-term planning objectives based on existing and projected transportation system deficiencies. Long Range Transportation Plan components listed present a list of potential transportation system improvements at a conceptual level. Prior to implementation, further detailed analysis may be necessary for some of these improvements, particularly improvements within or that affect CDOT right-of-way. In general, Long Range improvements are those which are expected to be considered for implementation after 5 years from the date of this plan, if even at all.

Priority Rating: High priority and Medium priority ratings are the two categories used to discuss particular improvements. Priority ratings are subjective in nature and have been assigned as best as possible by Staff based on their understanding of the Town's transportation system through day to day experiences and observations. In some cases safety may factor into a priority rating, in others, functionality and in others, both. These descriptors should be taken as being very general overviews of the nature of and/or the immediacy of importance of a particular change or improvement to the Transportation system. As opportunities and needs arise, a lower rating may be reprioritized to occur sooner and vice versa.

Development Dependent: Means that suggested improvements would likely be completed in association with the development or redevelopment of a nearby parcel. This may often affect timeframes and/or priorities of discussed items below.

Ongoing: Means that these improvements may take time to implement and to phase in as well as meaning that improvements, modifications and upkeep may likely be required in perpetuity.

1. Intersection Improvements

A. Intersection shift and/or roundabout at Rainbow Drive and Tanglewood Lane – Short range, High Priority

Capacity problems at the 3-legged Rainbow Drive/Tanglewood Lane intersection exist largely due to its close proximity to the traffic signal on SH9, which is approximately only 250 feet away. The close spacing of these two intersections often results in traffic queuing which can back up into and even beyond the Tanglewood Lane / Rainbow Drive intersection.

Shifting the alignment of Tanglewood Lane further north on Rainbow Drive would increase capacity by providing additional distance and would alleviate much of the queuing problem. Two conceptual renderings of this are shown as **Figures 11 and 12**. **Figure 11** shows a typical 4-way intersection having a two-way stop for Tanglewood Lane and for the Factory Store Parking lot exit, while Rainbow Drive keeps a through-movement. Queuing and access problems at the SH9 intersection as well as the Tanglewood Lane / Rainbow Drive intersection, would be reduced as a result.

Figure 12 is similar in alignment but utilizes a roundabout rather than a two-way stop at the Tanglewood Lane / Rainbow Drive intersection. In addition to having the same benefits mentioned above, the roundabout would also increase traffic flow through the intersection by eliminating the 2-way stop. It would tend to slow traffic on Rainbow Drive by acting as a traffic calming device and would also enhance circulation into and out of the Factory Store Parking lot.

Both figures depict two-way traffic however a potential variation might be to have westbound traffic travel on the shifted alignment while eastbound traffic would remain on the existing Tanglewood Lane alignment.

Since both scenarios impact private property and would require that the Town acquire the necessary right of way from the property owners for the intersection shift concept to be feasible.

B. Wildernest Road / Adams Ave / Buffalo Mountain Drive /Old Highway 9 intersection – Dependent on development

This intersection experiences large amounts of traffic from nearby commercial uses as well as from Wildernest subdivision above. Improvement of this intersection, including possibly reconfiguration, will likely be related to development and or redevelopment of nearby parcels. Development and or redevelopment may have an impact on a final reconfiguration of this intersection. It's likely that the Town may require adjacent landowner cost participation if and when future improvements are made to the intersection in conjunction with the landowner's site development application. Because the unincorporated Wildernest subdivision is such a significant traffic contributor, County participation for this road improvement project should be sought as well.

Conceptual layouts are included as **Figures 13 through 18**.

Figure 13 illustrates a 5-leg roundabout which collects traffic from Buffalo Mountain Drive, Wildernest Road, Adams Ave and Old Highway 9. An optional stop sign might also be located at the intersection of Wildernest Road and Stephens Way. The roundabout would merge and consolidate all 5 legs into one central point and would improve on the current unaligned geometry of the intersection. It would also allow for continuous movement at each of the 5 legs while simultaneously acting as a traffic calming device to reduce speeds on Wildernest Road.

Figure 14 is similar to Figure 13, but proposes a second roundabout at the intersection of Wildernest Road with Stephens Way and the Outlets at Silverthorne parking lot entrance. This alternative would require the Town to obtain more right of way from private landowners and from CDOT, however it would likely enhance circulation into and out of the Outlets at Silverthorne and would allow for continuous movement at Stephens Way as well.

Figure 15 proposes a roundabout at the Wildernest Road and Stephens Way / Outlets at Silverthorne intersection. This improvement may be considered as being either independent or phased with the

construction of roundabout at Buffalo Mountain Drive, Wildernd Road, Adams Ave and Old Highway 9.

Figure 16 illustrates the roundabout concept as well as a river crossing from Old Highway 9 to Stephens Way

All scenarios impact privately owned property and CDOT right-of-way and would require that the Town acquire the necessary right of way from the property owners for the intersection shift concept to be feasible.

To provide redundancy and separated access points into the Wildernd Subdivision the lower portion of Buffalo Mountain Road could be relocated to connect with either 2nd Street and or Warren Avenue. It's feasibility is challenged, however, by the fact that alignment needed for this connection is not public right-of-way, and that it encroaches into privately owned and developed land. In the event of future redevelopment of these parcels the Town should explore this potential alternative. **Figures 17 and 18** illustrate this general concept.

C. Increase Capacity at the I-70 Interchange with a Single Point Urban Interchange (SPUI), roundabouts or interchange reconstruction – Long term, High priority

The Town has requested in CDOTs 2030 plan that the Silverthorne interchange be reconstructed and reconfigured. It is anticipated that by that time or sooner the levels of service will have deteriorated at the two ramp intersections to the point where a complete reconstruction will be necessary. Potential options for this reconstruction include replacement of both intersections with roundabouts, or construction of a single point urban interchange (SPUI). A SPUI involves total replacement of the existing bridges carrying I-70 over the highway below, with all on and off ramp movements intersecting underneath a new bridge having just one signal underneath, rather individual signals at each of the two offramps, as currently exists today. **Figure 19** shows this concept as it might be applied to the geometry of the I-70/SH9 Interchange in Silverthorne. An example of a constructed SPUI can be found at C470 and Morrison Road in the Metro area and is shown on **Figures 20 and 21**.

Roundabouts typically increase the capacity of at-grade intersections by allowing continual movement and by eliminating red-light stop times and left-turn queuing associated with traffic signalization. They typically provide better service in the off-peak periods than do traffic signals since most total daily intersection traffic occurs during the off-peak period. The installation of one or more roundabouts at the I-70/SH9 interchange and elsewhere along SH9 could increase capacity of the interchange at a comparatively low cost to construct than other alternatives, pending land costs for potential right-of-way acquisition needs.

While roundabouts, such as the ones in Vail, Avon, and Aspen, have become more common on Colorado State highways, they are still not universally endorsed by CDOT. At this current time, CDOT has no official standard for roundabouts and, thus, evaluates them on a case by case basis. It is likely that CDOT would, at a minimum, require a detailed feasibility study to be performed as part of SH9 roundabout proposals. The feasibility of roundabouts at this intersection is further complicated by this intersections proximity to the I-70 interchange, the lack of available right-of-way and the likelihood of having to obtain additional right-of-way from adjacent businesses and property owners.

D. Wilderndest Road / Rainbow Drive / SH9 intersection – *Short term, High priority*

With its close proximity to the I-70 interchange, the function of the Wilderndest Road / Rainbow Drive intersection would likely be impacted by any modifications that are made to the interchange, especially roundabouts. Intersection level of service projections show this intersection will continue to deteriorate due to the effects of increasing traffic over the near term. Addition of a separated right turn lane from Wilderndest Road onto southbound SH9 will be needed. Widening of Wilderndest Road from SH9 to Stephens Way will help, as will proposed improvements to the Rainbow Drive / Tanglewood Lane intersection.

E. Tanglewood Lane / Lagoon Lane / Ptarmigan Trail (CR 2021) intersection - *Short term, High priority*

The Ptarmigan Trail and Lagoon Lane intersection with Tanglewood Lane is oddly configured and does not line up. The intersection would likely function better if it were reconfigured into that of a standard 4-way intersection. Its current feasibility is challenged however by right-of-way and private property ownership issues. Any type of alignment shift at this intersection would likely require that the Town acquire the necessary right of way or easement from adjacent property owners. **Figure 22** illustrates this concept.

2. Neighborhood / Subdivision connections — *Ongoing, initiated by both Town and Development*

Background discussion:

Continuous north-south roadway capacity throughout the town is limited, consisting only of SH9. Rainbow Drive, Adams Avenue, and Brian Avenue also provide north-south capacity, however these roadways are discontinuous and still often necessitate access to SH9. This TMP recommends the expansion and interconnection of the existing network of Collector and Local roads as a being fundamental for future development, subdivision and/or roadway planning. One component of this is for the provision of neighborhood or subdivision connections wherever feasible.

The primary objective of neighborhood and subdivision connections is to provide alternative routes other than the State highway system for local traffic already traveling on Town roads. Connectivity within the Town's roadway network allows for more direct trips and does not result in total reliance on the State Highway system. This reduces highway volumes and traffic signals queues while providing local destined traffic potential opportunities for more direct and efficient drives. All new development proposals should include at least two access points to the subdivision.

* Neighborhood / Subdivision connections are not substitutes or bypass routes for traffic on the State Highways not intending to make stops at either Silverthorne businesses or residential areas. Geographically, they are indirect, and are longer in distance and functionally, have lower speed limits and usually include stop controlled intersections. Thus, neighborhood and subdivision connections do not encourage or promote any convenience or time savings to a driver whose destination is not within Silverthorne. Streets extended to provide connections between subdivisions and neighborhoods shall be designed in accordance with these objectives and with the intent being to limit use of these streets to local destined traffic.

Neighborhood connections provide redundancy in access and allows for other way(s) into and out of a subdivision. They benefit emergency service providers such as the Fire and Public Safety Departments by providing alternate routes for emergency response. They also would ensure access in the event that the one access point has been closed by an emergency situation. A good example of this can be recalled when a concrete truck rolled over and blocked Ruby Road several years ago. The only access point was blocked and prevented access, including potential emergency response, into and out of the subdivision until the road was cleared. Neighborhood connections also facilitate with Public Works snow plowing and maintenance tasks.

Specific project areas:

A. Adams Avenue - Ongoing, Initiated by both Town and Development, High priority

As already identified in the 1995 Transportation Plan, and as recommended in this plan as well, the extension/connection of Adams Avenue would provide a continuous local roadway west of SH9. This connection would allow traffic from the northern residential developments, such as Willowbrook Meadows, Willow Creek Highlands and Eagles Nest, access to the downtown core via the local street system, rather than SH9. A connection from Willowbrook Road to 13th Street should be planned as future development proposals on the Smith Ranch are submitted. The Town should also acquire additional right-of-way needed for the connection through the former Silver Springs mobile home park as it redevelops.

If Adams Avenue is extended into the Willowbrook Meadows Subdivision, then it is possible that this reconfiguration would intersect near Trent Park. As additional development continues to occur, completion of this north-south link will provide an alternative for local traffic, and additional neighborhood / subdivision connections.

If a future opportunity arises, such as a redevelopment scenario, the Town should pursue the extension of Adams Avenue from 6th Street to Annie Road between Sanders True Value and Xcel Energy and behind Target.

B. County Road 2020 - Ongoing, initiated by both Town and Development

County Road 2020, a public right-of-way, primarily serves the Ptarmigan Subdivision and is located outside of town limits. It also serves approximately a dozen town lots on its downhill side, though the entire road is owned, serviced and maintained by the County – (however the Town does plow the road up to the Town limits.) County Road 2020 has historically served the Heitt Ranch and is the access for future development there. County Road 2020, would provide a neighborhood connection for local traffic on the east side of town. Should both the Clark and Heitt Ranches develop, then the development, whether separate or combined, should be linked with a neighborhood / subdivision connection.

C. Allegra Lane – Short term, High Priority

Extension of Allegra Lane from its temporary cul-de-sac north to Hamilton Creek Road was planned for and designed as part of the development approval process for Ponds at Blue River Project, approved in 1999. This connection will allow local traffic to utilize the local street system for local trips. It will also provide access for residents of the Ponds to access the Summit County elementary school and signalized intersection at Hamilton Creek Road and SH9. Completion of this street will utilize the existing lands owned by the Town, with no additional right-of-way acquisition being necessary. This connection should be completed as soon as possible to provide this important link in the Town transportation system.

D. Rainbow Drive – Long term, Medium priority

A neighborhood connection which would allow local traffic to make local trips between Rainbow Drive and the Clark Ranch without reliance on SH9 is recommended in this TMP, as it was in the 1995 Transportation Plan. It's feasibility is challenged, however, by the fact that alignment needed for this connection is not public right-of-way, but rather is a private access easement. This easement is owned, maintained and controlled by the Blue River Valley Ranch Lakes Estates (BRVRLE) Homeowners Association. While the Town cannot extend the road without the approval of the BRVRLE subdivision, it is desirable and should be pursued if a future opportunity should ever exist.

E. Anemone Trail West and Stephens Way connection – Dependent on development

As already identified in the 1995 Transportation Plan, a connection between Anemone Trail West, a Town of Dillon street, and Stephens Way would provide an additional circulation option for shoppers and local traffic along the west side of US6. This connection would allow an access between the Summit Place shopping center and commercial developments, shops and businesses on West Anemone Trail in the Town of Dillon, without having to utilize US6. Future development on vacant lands behind Summit Place Shopping Center should include this connection.

F. Bald Eagle Road – Dependent on development

Bald Eagle Road will serve as the primary access to the future development of the Clark Ranch property. When such development occurs, a secondary access should be provided. Should both the Clark and Heitt Ranches develop, then the development, whether separate or combined, should be linked with a neighborhood / subdivision connection.

G. South Maryland Creek Ranch and Oxbow Ranch – Dependent on development, High priority

These neighboring Ranches located towards the Town's north end will both likely be developed at some point in the future. The Oxbow Ranch is already within cooperate limits and has residential density assigned to it. The South Maryland Creek Ranch is currently petitioning the Town for annexation and is proposing residential land uses as well. In accordance with the Background Discussion found at the beginning of this section it is recommended that both development proposals each include at least two access points to the subdivision as well as neighborhood connections to other neighborhoods.

The primary access to the future development of the South Maryland Creek Ranch property will be taken from SH9 and the secondary will be made via the extension of Hunters Knob Road in the Three Peaks Subdivision.

Similarly, proposals for development on Oxbow Ranch should include at least two access points into and out for the subdivision. The main access will likely be taken from SH9 while the secondary or possibly even tertiary access should be a connection to South Maryland Creek Ranch, or into Three Peaks via Ranch Road, or both.

3. Roadway Improvements / Reconstruction

A. Willowbrook Road reconstruction – Short term, High priority

Willowbrook road is planned for reconstruction beginning in 2006. Key components of the rebuild may include traffic calming, including raised crosswalks, striping improvements, narrowed pavement, slight curves in the alignment and a potential traffic circle or roundabout. The bikepath will also be detached where possible in order to provide separation from the road and to make enhance the experience for pedestrian use.

B. Wilderdest Road between Adams Ave and SH9 – Long term, Medium priority

Whether done in conjunction with the Adams Ave / Wilderdest Road and Buffalo Mountain Drive intersection improvements or otherwise, this section of Wilderdest Road may need widening to accommodate future traffic volumes. Related to this, the Wilderdest Road bridge may need to be widened. A lengthened right turn lane eastbound onto SH9 would also provide additional stacking for vehicles at this intersection. Possible reconstruction of this section of Wilderdest Road may be influenced by or may have elements discussed and illustrated in conceptual layout figures discussed above within the Intersection Improvements section.

C. Wilderdest Road, entire length - Short term, High priority

Potential improvements on Wilderdest Road have already been discussed in the preceding item as well as within the Intersection Improvements section above. Some other improvements that may eventually be considered include sidewalk/bikepath construction to connect with the County bikepath currently under construction in phases from Wilderdest Road as it reaches completion. The bridge crossing the Blue River may eventually need widening as well as the roadway itself. Possible reconstruction of this section of Wilderdest Road may be influenced by or may have elements discussed and illustrated in conceptual layout figures discussed above within the Intersection Improvements section. Because the unincorporated Wilderdest subdivision would benefit from these improvements, County participation should be sought.

Improvements which impact property that is not owned by the Town would require that the Town acquire the necessary right of way from the affected property owners.

D. Ruby Road improvements and right-of-way dedication - Development dependent, High priority

Approximately 20 acres of the 70 acre Smith Ranch is located within Silverthorne Town limits and is zoned for commercial uses. Ruby Road, currently unpaved, exists as an access easement to the Ruby Ranch subdivision to the west. Development for the portion of the Smith Ranch which is currently in Town will necessitate that the Town is deeded legal right-of-way for that portion of roadway. Similarly deeded right-of-way will be needed, if and as the remaining portions of the Smith Ranch are considered for future annexation. Improved, paved roadways and pedestrian facilities serving development will be required do be constructed by the developer. Traffic signalization may also eventually be required and is discussed in the following section.

4. Traffic Signalization

A. Traffic signalization at SH9 and Golden Eagle Road / Bald Eagle Road – Development dependent, Medium priority

While a Signal Warrant Analysis performed in 2001 determined that warrants were not met for signalization at that time, the continuing and future development of Eagles Nest, including what is now called the Clark Ranch, will likely eventually drive the need for signalization at this intersection. As development on the Clark Ranch, on the east side of SH9, is proposed, a new Signal Warrant Analysis will be required to be performed by the developer. The new analysis will take into consideration existing conditions, the proposed development and also the signal on Hamilton Creek Road, which was constructed in 2004. The need and the timing for this improvement will likely depend on when and what type development occurs and thus cannot be viewed as being either a short or long term project.

B. Traffic signalization at SH9 and Ruby Ranch Road/Blue River Circle - Development Dependent

Approximately 20 acres of the 70 acre Smith Ranch is located within Silverthorne Town limits and is zoned for commercial uses. A signal warrant analysis was performed during the projects review stage, however, the report concluded that warrants for a signal for this project alone were not met. Depending on future development of the remainder of the Smith Ranch, a signal may likely be eventually warranted however. The need and the timing for this improvement is dependent on when development occurs and thus cannot be viewed as being either a short or long term project.

C. Traffic signalization at SH9 and North Golden Eagle Road - Development Dependent, High priority

When the Fire Department builds their future station in this location on the east side of SH9, it is likely that warrants may be met necessitating traffic signalization at this location. A signal warrant analysis will be required when development proposals are eventually made at this location. Whether or not this signal would operate continuously or activate only on emergency calls would be determined by CDOT.

D. Improve Traffic Signal Timing along SH 9/US6 - Ongoing – CDOT and Town Input

Although the signals on SH9 and US6 were recently analyzed and efforts made to coordinate, continuous monitoring should be performed to allow additional adjustment and improvements to the synchronization. Traffic volumes vary by time of year, day of the week, hour of the day, and weather conditions. Additional enhancements should be made to the system by CDOT and adjustments to the signal timing should be made as needed. CDOT owns and operates all signals on SH9 and US6. Cameras which monitor traffic and control signals need additional adjustment and improvement, additional monitoring would allow more frequent adjustments to be made based on real time conditions.

5. Traffic Calming - ongoing

Speeding, particularly within residential areas is a concern of the Town's as it is indeed an important safety issue. As a result of and in response to both citizen comment and Public Safety Department's input, several community meetings have been held over the years and as a result, traffic calming measures implemented in some areas. Consideration of traffic calming is typically initiated by neighborhood request. While some oppose traffic calming, most citizen comment and feedback thus far has been supportive.

To date, the majority of the Town of Silverthorne's traffic calming implementations has been related to standard improvements such as speed humps and signage. Speed humps currently exist on Golden Eagle Road, Willowbrook Road, Mesa Drive and on County Road 2020. Speed dips also exist on Palmers Drive.

While speed humps are a widely used and effective means of traffic calming, they should be used in moderation. Having too many speed humps presents concerns related to emergency vehicle response times. The Town should work with the Fire Department as a referral agency and should strive to design traffic calming measures in consideration of their concerns.

Various other traffic calming devices designed to control both volume and/or speed exist and may be considered in the future. Some of these include roundabouts, alignment shifts, textured pavements, narrowed roads or road segments, median barriers, full or half closures and forced turn islands, raised intersections and/or crosswalks. For future traffic calming projects, the Town may consider looking into and evaluating these and/or other traffic calming methods.

The following section describes some potential future traffic calming areas and projects. Traffic calming projects will be considered based on neighborhood request, as well as Public Safety, Public Works and Fire Department input and in consultation with the local residents and businesses:

A. Willowbrook Road – *Short term, Medium priority*

Traffic calming elements are included as part of the planned rebuild of Willowbrook Road discussed above in Section 3, Roadway Improvements / Reconstruction. Some elements which may be considered include narrowed pavement, raised crosswalks and a roundabout. Others may be considered as well during the design stage of the project.

B. Ptarmigan Trail (County Road 2021) – *Short term, High priority*

Traffic calming measures may be evaluated and considered to help control speeding problems which are common on this particular roadway. Because this road receives high pedestrian use a sidewalk may be considered either as part of a larger traffic calming project or by itself on its own. Speed humps were recently installed on County Road 2020, just above this road.

6. Pedestrian Improvements – sidewalk, bikepaths and signage

A. Stephens Way sidewalk – *Short term, High priority – influenced by and dependent on Outlets at Silverthorne improvements*

Despite a pedestrian circulation system within the Outlets at Silverthorne, pedestrians are often observed walking on Stephens Way. Construction of a sidewalk between Fashion Lane and River Road along Stephens Way would be a safety improvement. Town owned right-of-way is limited however, so CDOT permission would be needed since much of Stephens Way is located within CDOT right-of-way.

B. Ptarmigan Trail sidewalk (County Road 2021) – *Short term, High priority*

As discussed already, since this road receives high pedestrian use a sidewalk may be considered either as part of a larger traffic calming project or by itself on its own.

C. Little Beaver Trail sidewalk – *Long term, Medium priority*

A sidewalk from Town limits to US6 would be desirable, but only if it were done in conjunction with the Town of Dillon and Summit County performing similar work along Little Beaver Trail. Available right-of-way is limited however and would need to be acquired for sidewalk construction to be feasible.

D. Sidewalk from 4th and Adams intersection west to Post Office, *Short term, High priority*

This will likely be completed in conjunction with Park and Ride parking lot construction.

E. Sidewalk from Little Beaver to Dillon Ridge on north side of US6, *Long term, Medium priority – Development/Dillon participation dependent*

A sidewalk along US6 would allow access between the Town on Silverthorne and the Town of Dillon. Since much of this sidewalk would be located within Dillon Town limits, the feasibility of and consideration of this concept relies on the Town of Dillon's participation on constructing the portion of the sidewalk that lies within Dillon town limits. Unless Dillon participates, it would not make sense for the Town of Silverthorne to construct the Silverthorne portion alone. CDOT support and approval would also be needed since the sidewalk would be located within CDOT right-of-way.

F. Pedestrian Underpasses - Long term, Medium priority

Pedestrian underpasses may be considered where bikepaths cross roadways such as at Wilderndest Road and Stephens Way and also on 6th Street between SH9 and Center Circle.

G. Connectivity of Pedestrian/Bicycle Facilities both for existing and for New Developments – Development dependent / Ongoing

An important element of the improvement of bicycle and pedestrian facilities through town includes the enhancement of the town's sidewalk and bikepath system. Though sidewalks exist throughout town, several segments are discontinuous. Improvements to promote connectivity throughout town are recommended. Future improvements, particularly system extensions, should emphasize improving linkages between existing sidewalks and bikepaths. The Town shall require development proposals to plan for and provide pedestrian/bicycle facilities and shall place a strong emphasis on providing connections to the Town's existing sidewalk network and/or to the Town's trail system, as identified in the Town's Parks, Trails and Open Space Master Plan. In cases where requiring a development to construct a short segment of sidewalk would not connect to any other segments, the Town should collect funds for the segment and pool such funds until enough has been collected to allow completion of logical complete segments, such as full blocks.

H. Wayfinding Signage - Ongoing

While the primary emphasis of the TMP is related to vehicular travel, adequate and clearly understood roadway directional and regulatory signage is important to clearly communicate to drivers and pedestrians alike. Wayfinding signage can provide visitors with clear and easily visible direction on how to get to particular destinations, such as parks and other public facilities. Wayfinding signage can also enhance established town identity through its design and theme.

7. Other Projects

This section describes potential projects which don't directly fit into anyone of the 6 particular categories described above.

A. Enhance Summit Stage Bus Routes Particularly in the Commercial Core – Short term, Medium priority

The Town recently constructed a new Summit Stage transfer center at the corner of 4th Street and Adams Avenue. Funding for this new facility was provided by both the Town and by CDOT. Additional funding from both sources will be used to purchase land nearby for a public parking lot, which is scheduled for construction in 2005. In addition restrooms will also be constructed, on the existing transfer center site.

A new Summit Stage bus stop was also recently added in the area of the new elementary school. This stop will be served this winter, after which an analysis will be done to see if ridership justifies making this stop permanent, in which case a shelter could be added to the stop.

B. Widen SH9 to Six Lanes from Stephens Way to 6th Street - Long term, Medium priority – Determined by CDOT

Previous traffic studies performed by the Town have shown the need to widen SH9 from I-70 to 6th Street. Currently a 6 lane section exists from I-70 to the Wilderndest Road/Rainbow Drive Intersection.

Eventually additional lanes will be needed from this intersection north to 6th Street to accommodate increased volumes. Future widening will be subject to CDOT review and approval.

C. On street Parking - Long term, High priority, Development or re-development dependent

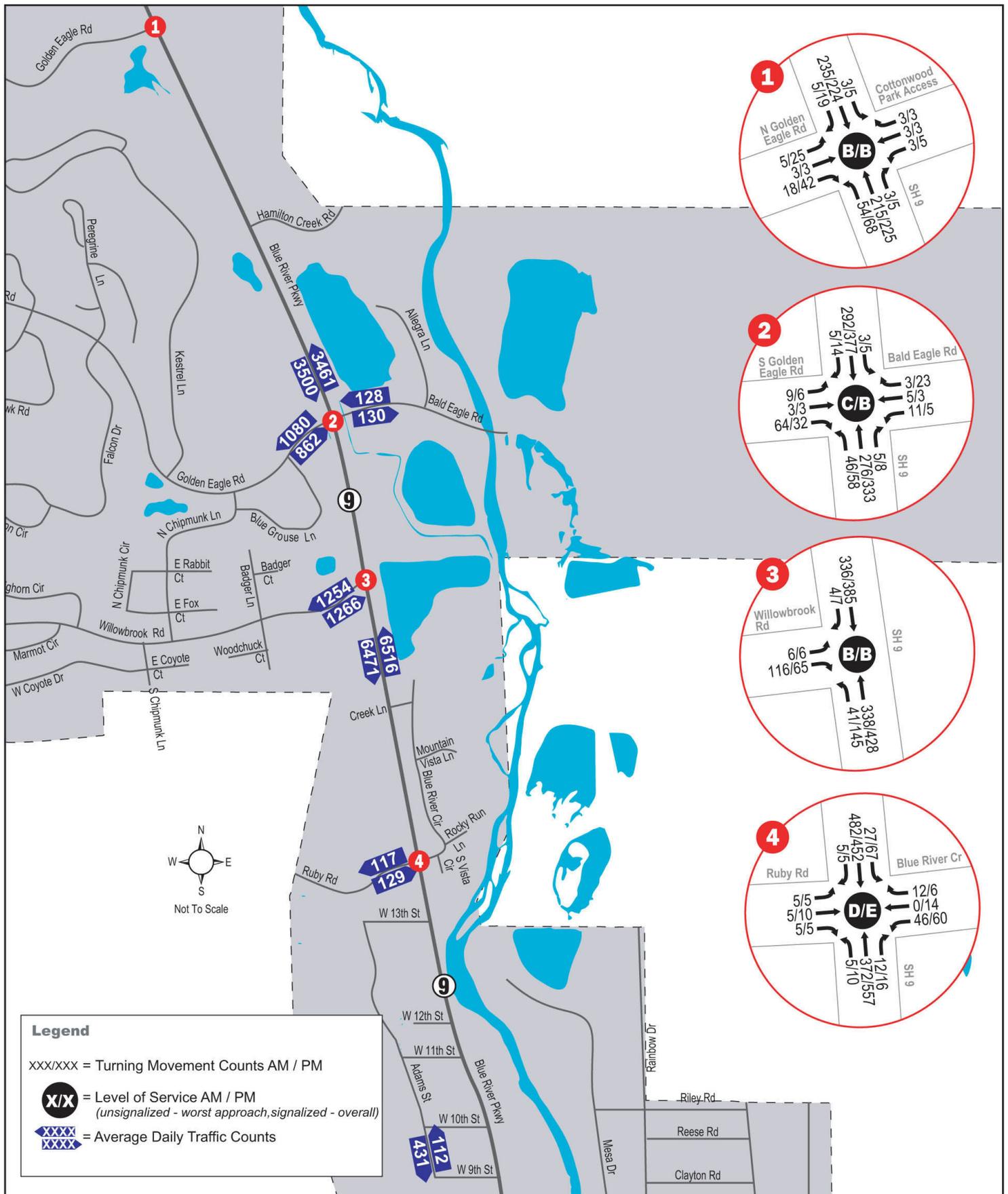
In order to facilitate additional development and re-development in commercial areas of Town, the Town may consider and in some cases encourage use of on-street parking, as well as public parking lots. While both types of public parking have maintenance cost implications for the Town, both also encourage additional density and promote additional development. Issues which will need to be considered, evaluated and addressed include but are not limited to snow removal, snow stacking, right-of-way considerations, pedestrian facilities and safety, and traffic calming implications, parking hours and parking space layout and dimensions. Public parking lots should be developed in areas where such parking will facilitate development activities and where such parking can serve multiple users, preferably during different hours of peak use.

D. Southbound SH9 median alteration at Rainbow Drive – Short term, Medium priority

Evaluate the potential for slightly altering a portion of the current median so as to increase capacity for vehicles within the left turn bay. Additional queuing storage in the left turn bay would serve to reduce highway lane blockages. CDOT review and approval would be necessary since the median is located within CDOT right-of-way.

E. I-70 monorail / mass transit alternatives – Ongoing, Long term

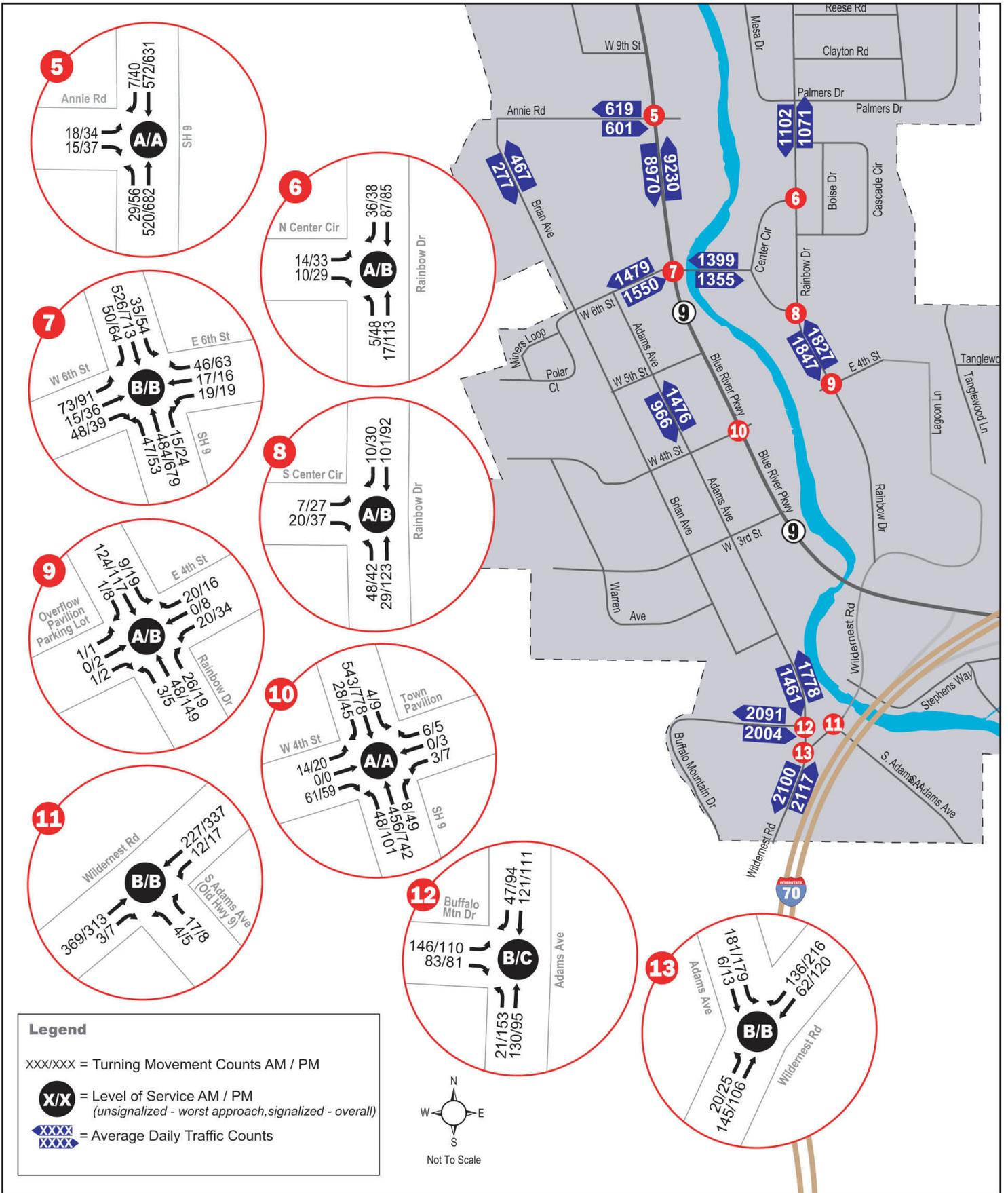
This TMP focuses on the function issues associated with the Town's immediate roadway system. It does not attempt to make recommendations or to suggest planning alternatives for the I-70 corridor mass transit projects since I-70 is CDOT's jurisdiction and is outside of the Town of Silverthorne's immediate control. The Town can and should however play an active role in communicating with CDOT Silverthorne's issues, concerns and ideas as both they and the I-70 issue continues to evolve over time.



EXISTING CONDITIONS

Figure 1

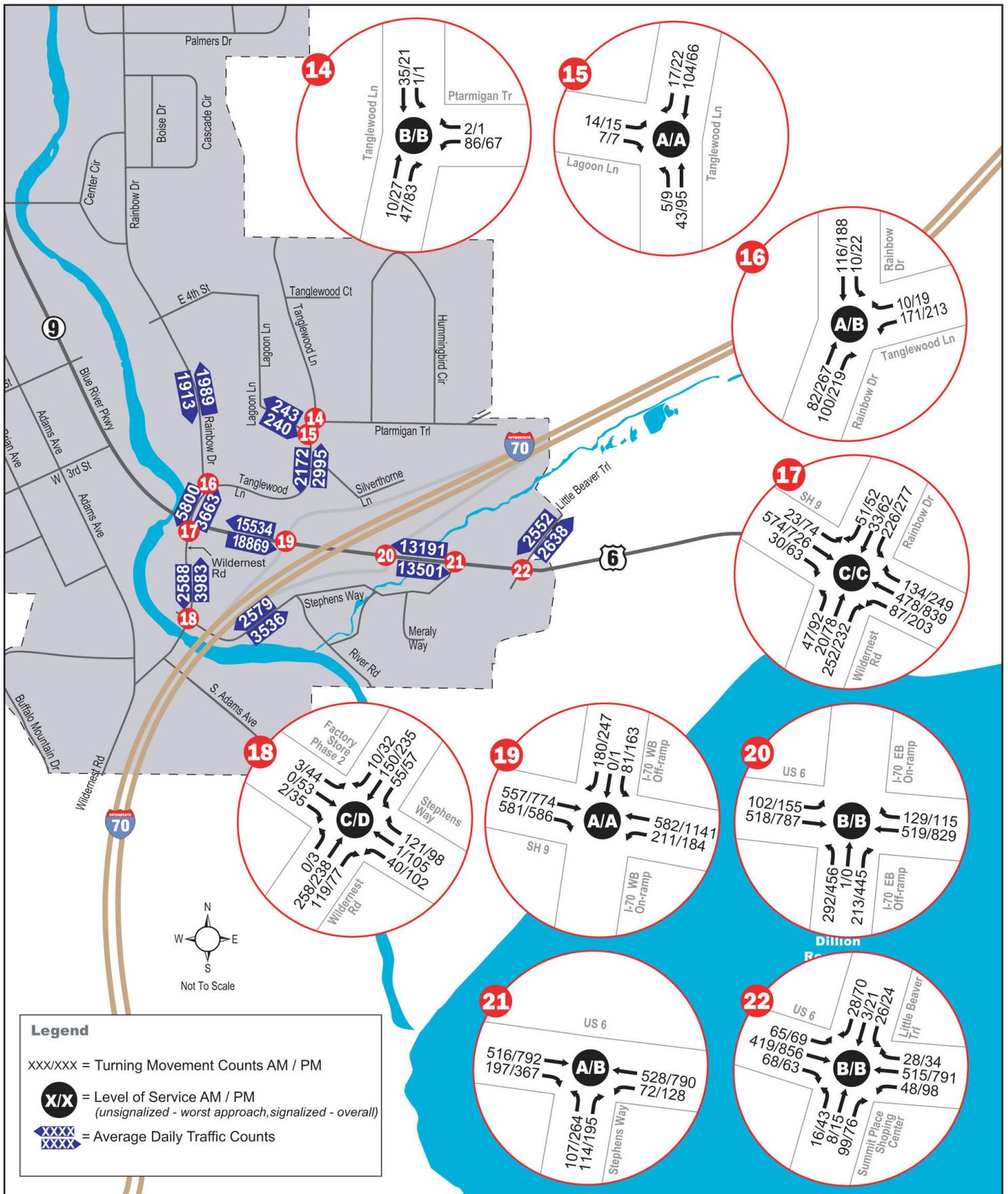




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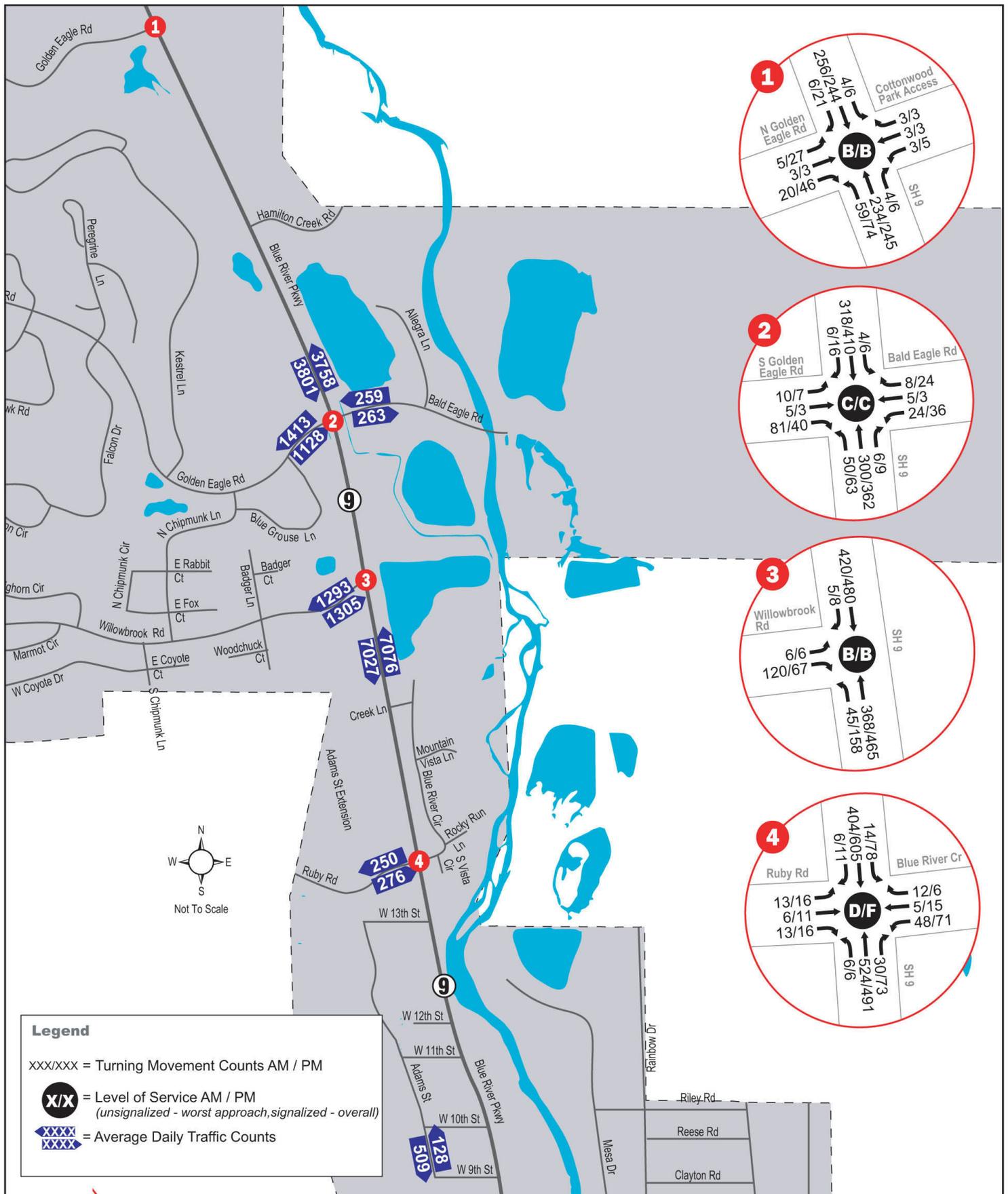
Figure 2





EXISTING CONDITIONS

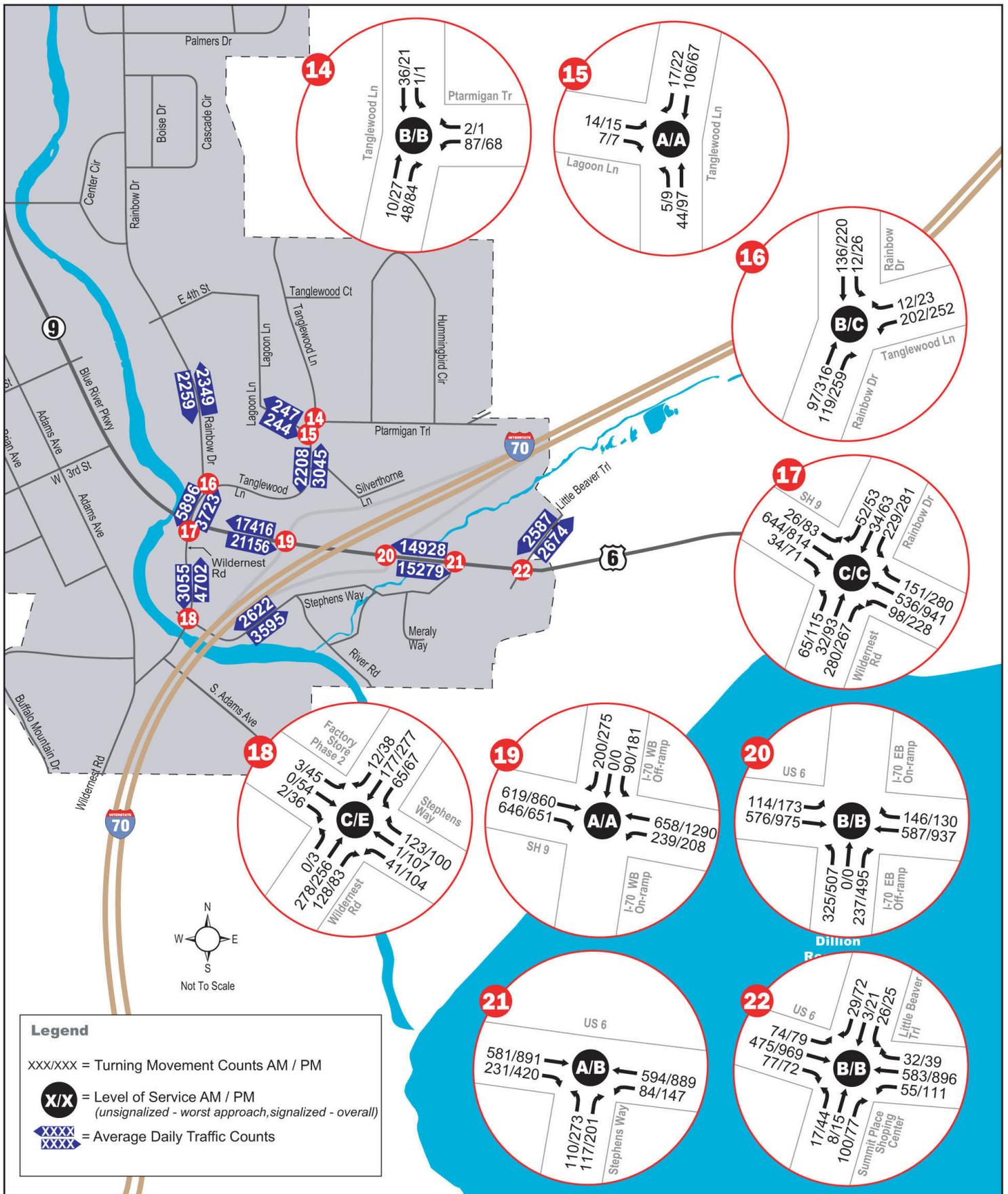
Figure 3



5 YEARS

Figure 4

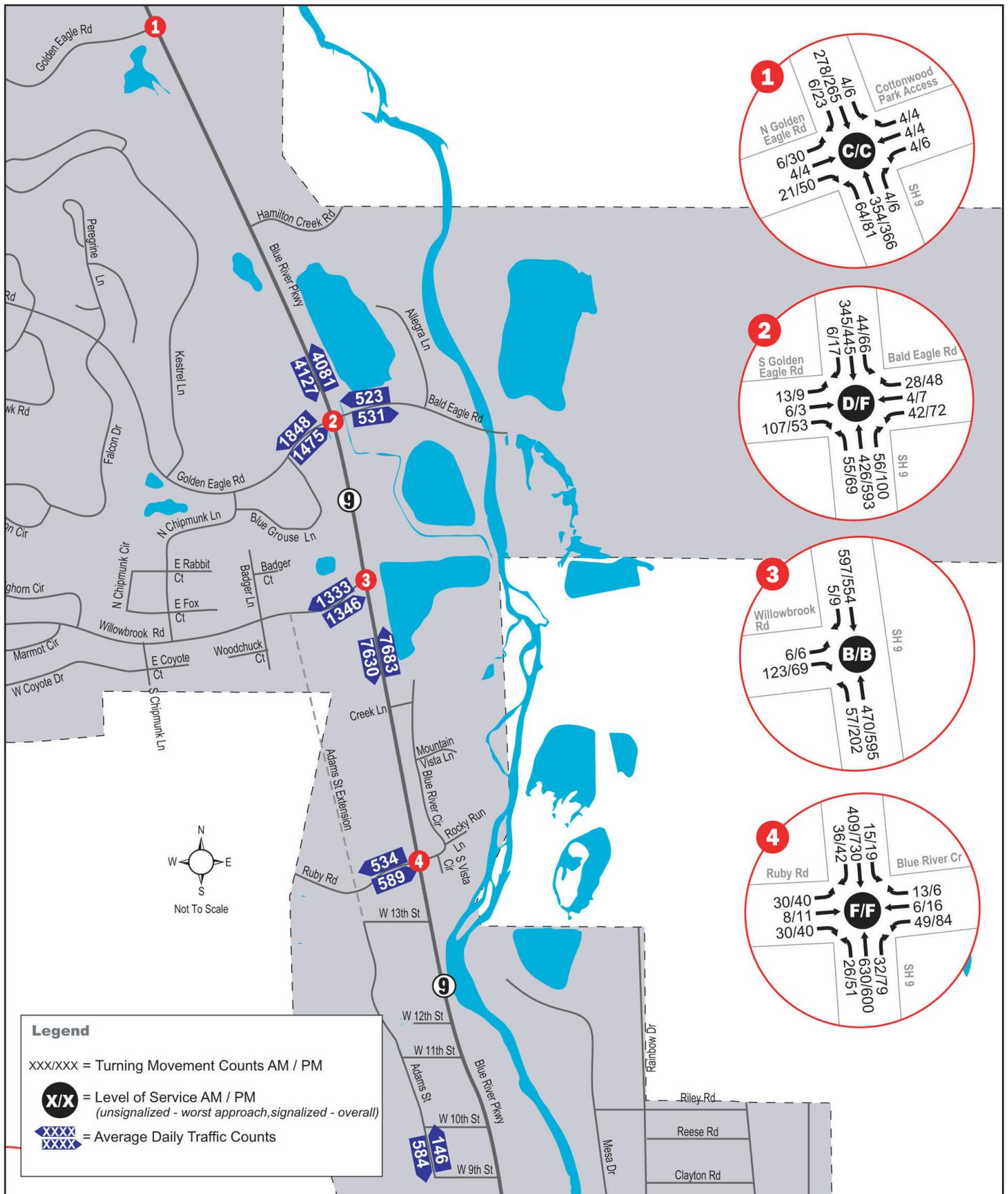




5 YEARS

Figure 6





10 YEARS

Figure 7



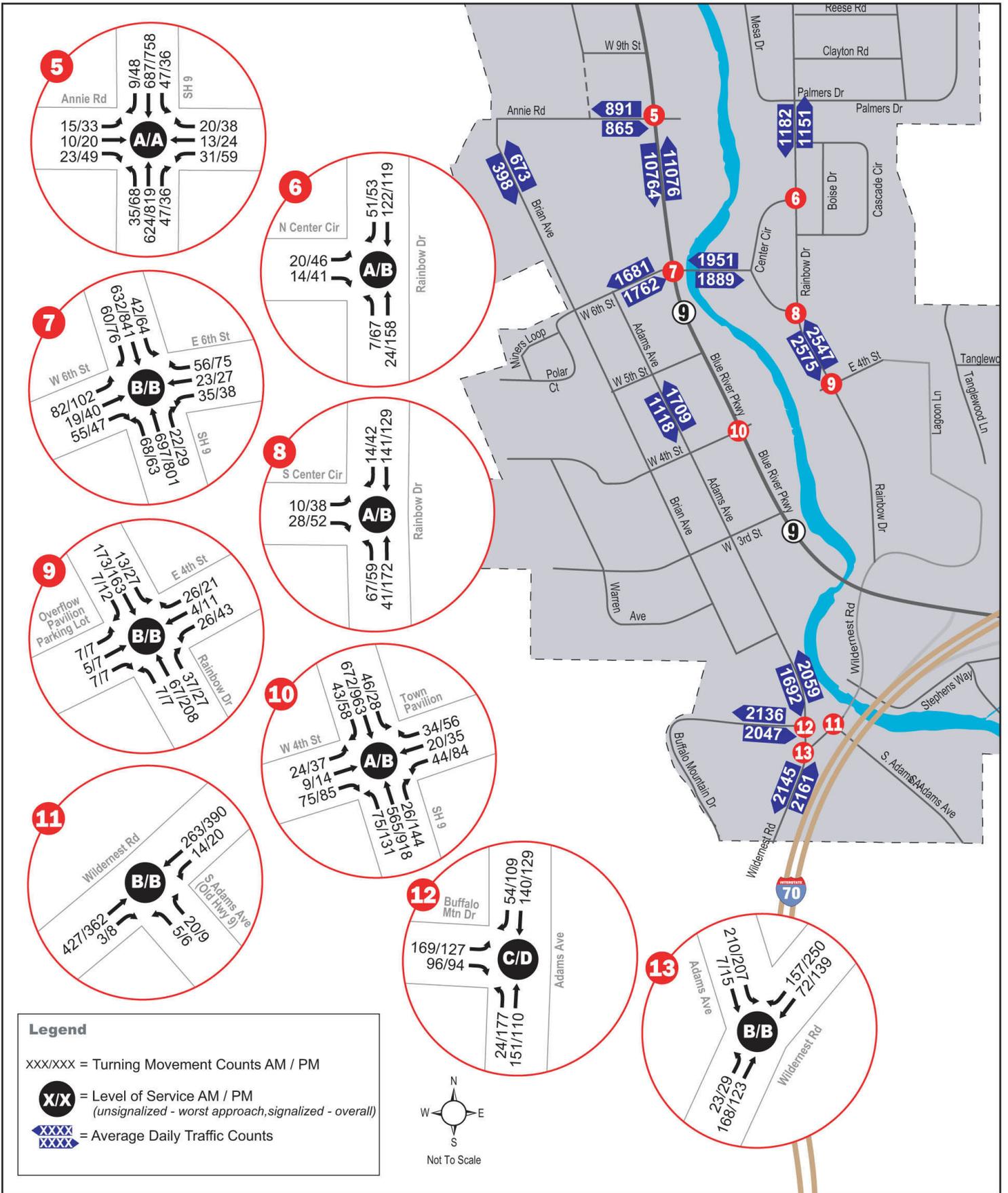
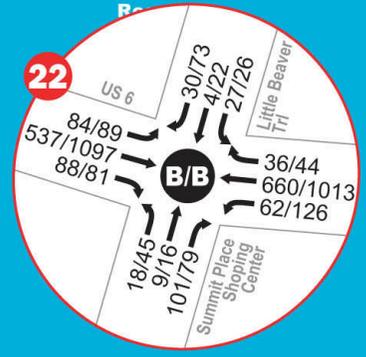
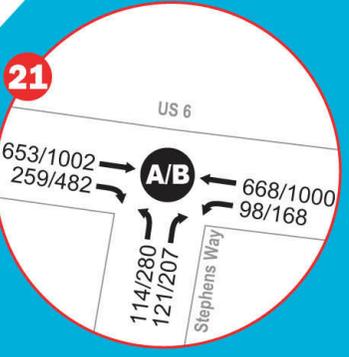
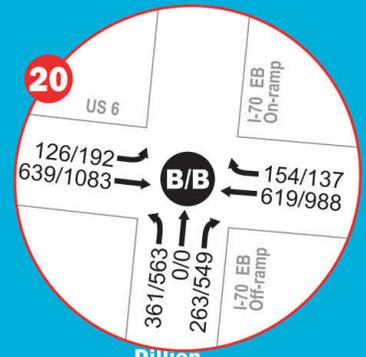
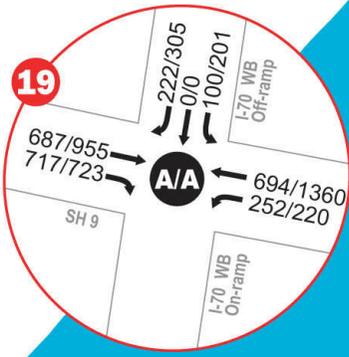
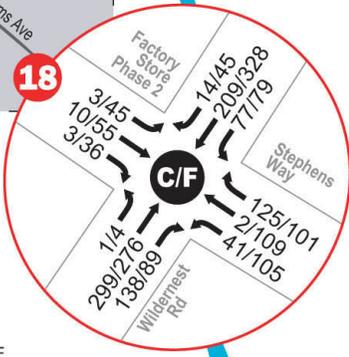
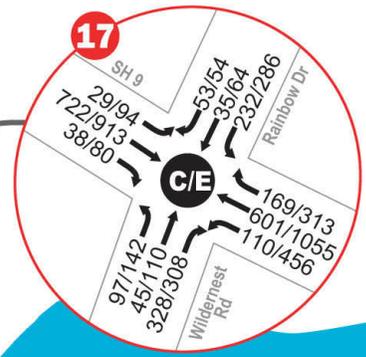
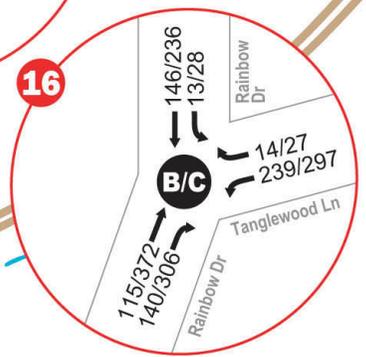
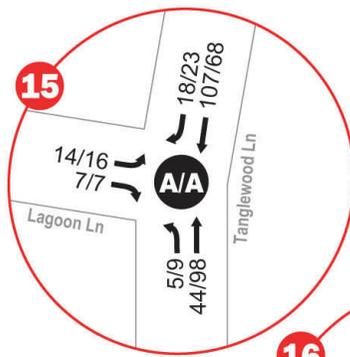
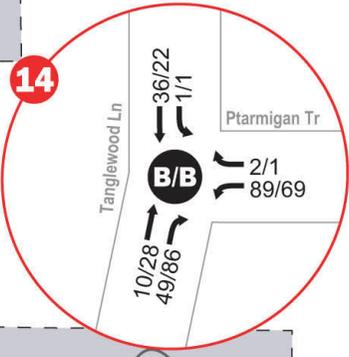
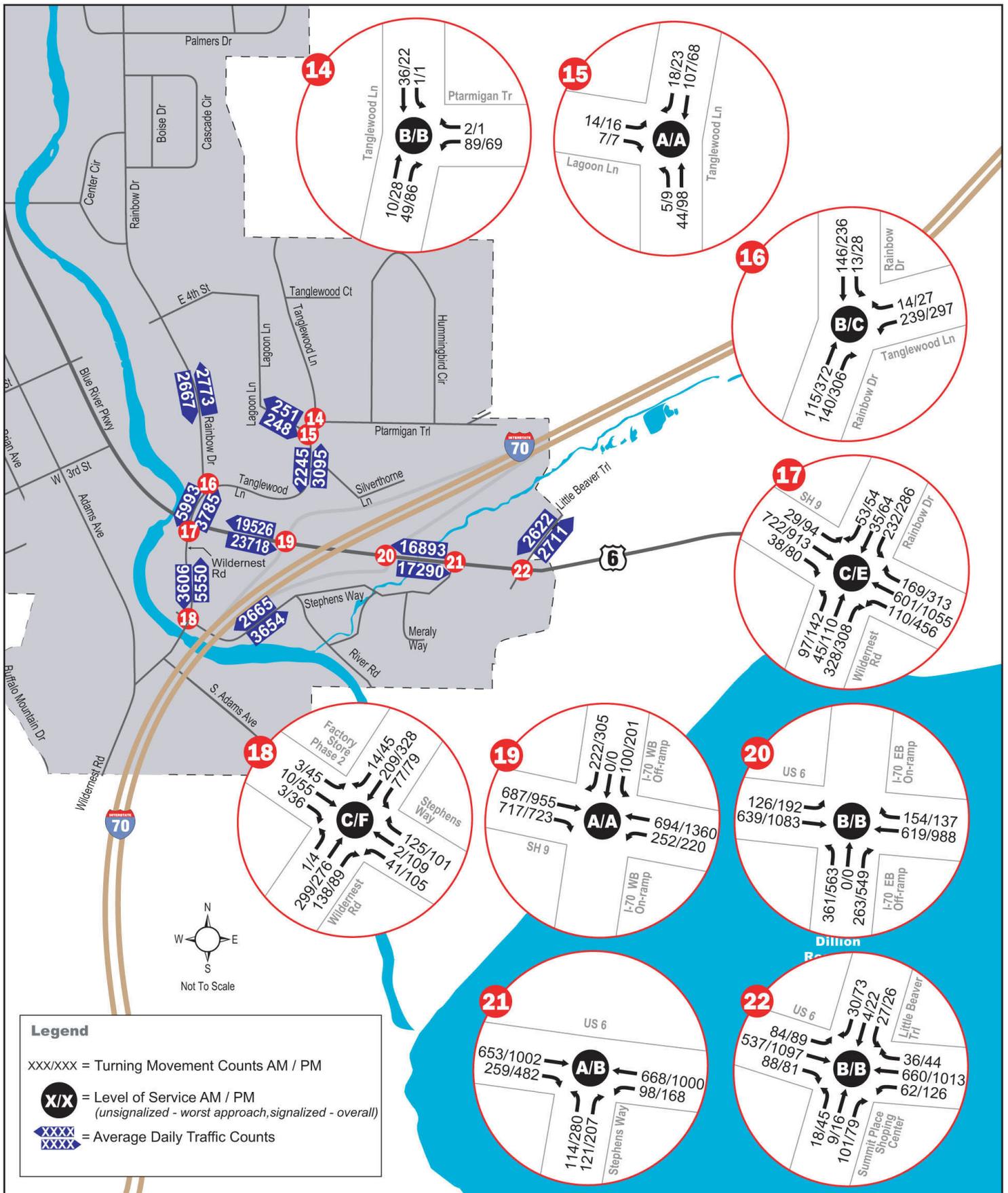


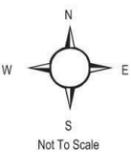
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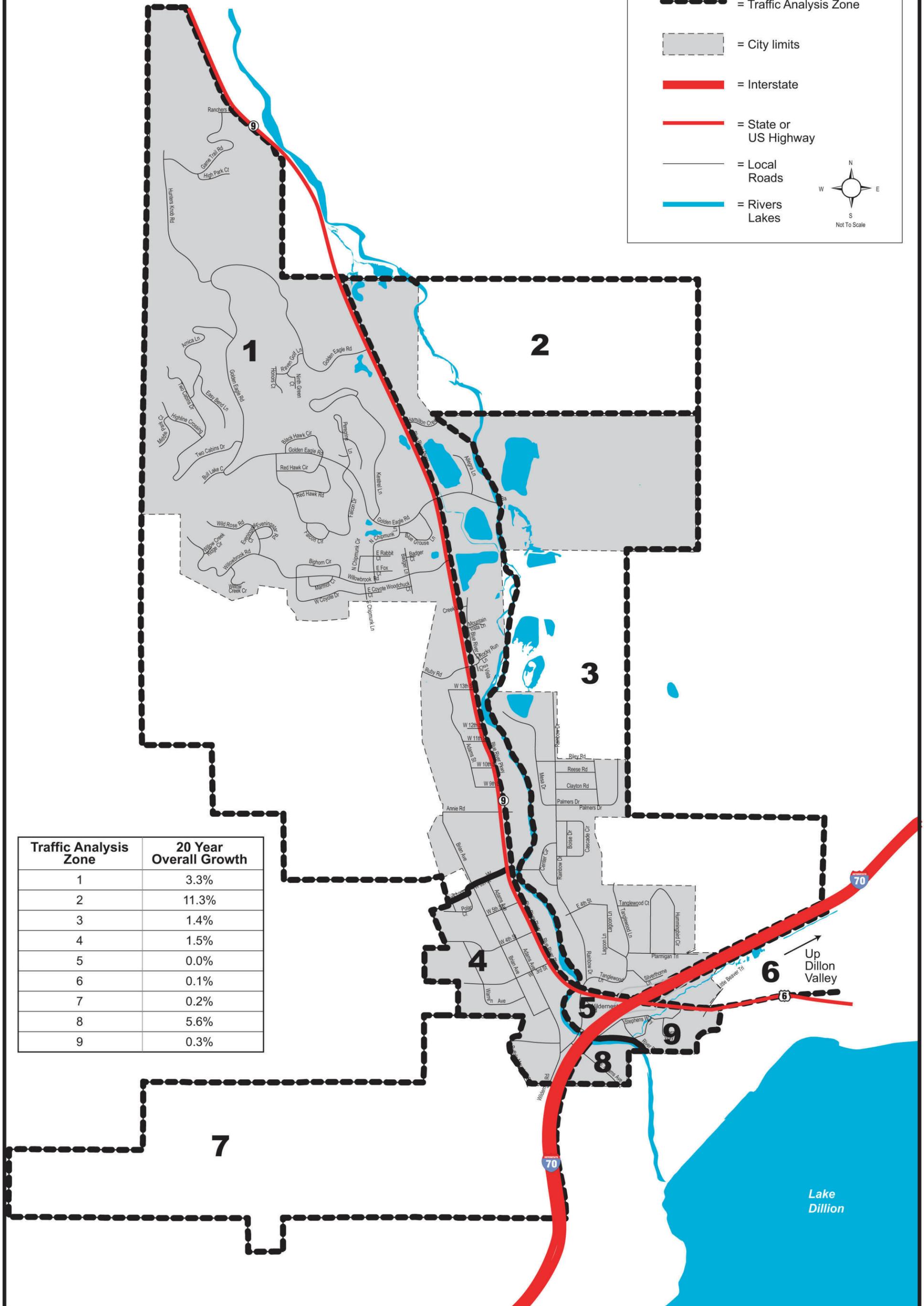


Legend

-  = Traffic Analysis Zone
-  = City limits
-  = Interstate
-  = State or US Highway
-  = Local Roads
-  = Rivers Lakes



Not To Scale



Traffic Analysis Zone	20 Year Overall Growth
1	3.3%
2	11.3%
3	1.4%
4	1.5%
5	0.0%
6	0.1%
7	0.2%
8	5.6%
9	0.3%



Figure 11



PBSJ

5500 Greenwood Plaza Blvd.
Suite 150
Englewood, Colorado, 80111
Phone: 303/721-7275
Fax: 303/721-7276



PBSJ

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Figure 12



Figure 13

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Figure 14



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Figure 15



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Figure 16



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Figure 17



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Figure 18



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Figure 19



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Figure 20



Figure 21



Figure 22



5500 Greenwood Plaza Blvd.
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Appendix A

Preliminary Budget schedule for transportation projects (to be reviewed annually with budget process)

2005 (\$350,000)

Street Maintenance projects	\$350,000
Adams Avenue – Annie Road to 9 th Street	by developer
4 th Street and Adams Avenue sidewalk	\$15,000

2006 (\$900,000)

Street Maintenance. Projects	\$350,000
Stephens Way sidewalk addition	\$100,000
Ptarmigan Trail sidewalk addition	\$ 50,000
Willowbrook Road Phase I reconstruction / traffic calming	\$200,000
Allegra Lane to Hamilton Creek	\$200,000

2007 (\$1,200,000)

Street Maintenance projects	\$400,000
Willowbrook Road Phase II reconstruction / traffic calming	\$250,000
Tanglewood Lane/Rainbow Drive intersection	\$250,000

2008 (\$930,000)

Street Maintenance projects	\$500,000
Wilderness/Adams/Buffalo Mountain intersection	\$300,000
Tanglewood/Lagoon/Ptarmigan Trail intersection	\$100,000
Southbound SH9 to Rainbow Drive turn lane	\$ 30,000

2009 (\$1,450,000)

Street Maintenance projects	\$500,000
Wilderness Road Improvements – Stephens to SH9	\$500,000

2010 (\$600,000)

Street Maintenance projects	\$500,000
Little Beaver Trail sidewalk	\$ 50,000
Highway 6 sidewalk to Dillon	\$ 50,000

Beyond 2010

Single Point Urban Interchange (or round a bouts)	by CDOT
Pedestrian underpass, Wilderness and 6 th	unknown
Highway 9 six laning to 6 th	unknown
Rainbow Drive / Clark Ranch connection	unknown
Wilderness Road between Adams Ave and SH9	unknown
SH9 median alteration	unknown
I-70 monorail / mass transit	by CDOT / unknown

Development Dependent, to be built by Developer – (timeframe unknown)

Adams Ave Ruby Road to Willowbrook
Anemone connection behind Summit Place
County Road 2020
Bald Eagle Road to Clark Ranch
Trail / sidewalk connections

Traffic Signals – costs shall be shared by development that warrants signal installation

Traffic signal – Ruby Road
Traffic signal -S Golden Eagle Road
Traffic signal at N Golden Eagle

Ongoing projects

Traffic Signal Timing / Synchronization
Trail / sidewalk connections
Summit Stage routes
On Street Parking

Appendix B

TOWN COUNCIL RESOLUTION 2005-12

TOWN OF SILVERTHORNE, COLORADO
PLANNING COMMISSION
RESOLUTION NO. 2005-1

A RESOLUTION ADOPTING THE SILVERTHORNE TRANSPORTATION MASTER PLAN.

WHEREAS, the Town of Silverthorne, Colorado, acting through its Planning Commission is empowered pursuant to Section 31-23-201, *et seq.*, C.R.S., to make and adopt a Comprehensive Plan, and

WHEREAS, the Silverthorne Comprehensive Plan has been prepared for the incorporated area of the Town, and

WHEREAS, the Silverthorne Comprehensive Plan complies with the requirements of Section 31-23-201, *et seq.*, C.R.S., and

WHEREAS, the Planning Commission conducted a public hearing to consider the Silverthorne Transportation Master Plan on May 3, 2005, and

WHEREAS, the Planning Commission believes it in the best interest of the Town that the Silverthorne Transportation Master Plan be adopted,

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE TOWN OF SILVERTHORNE, COLORADO:

1. That the Silverthorne Transportation Master Plan is hereby adopted.
2. That the Silverthorne Transportation Master Plan as adopted hereby, expressly includes maps and other matter, intended by the Planning Commission to form a portion of the whole of the Silverthorne Comprehensive Plan, all of which materials are contained within the plan document itself, and which materials are hereby declared to be part of the Plan.
3. A copy of this Resolution shall be attached to each copy of the Silverthorne Transportation Master Plan and shall serve as an attestation that each such copy is a true and correct copy of the Plan as adopted.
4. That an attested copy of the Silverthorne Transportation Master Plan shall be and hereby is certified to the Town of Silverthorne Town Council.

MOVED, SECONDED AND ADOPTED ON THE 3RD DAY OF MAY, 2005, BY A MAJORITY VOTE OF THE ENTIRE MEMBERSHIP OF THE PLANNING COMMISSION, BY A VOTE OF 5 AYES AND 1 NAY.



By: Keith F. Schaefer
Keith F. Schaefer, Chair

ATTEST:

By: Melody Hillis
Melody Hillis, Secretary to the Commission

INTRODUCED, READ, AND ADOPTED BY THE TOWN COUNCIL OF THE TOWN OF SILVERTHORNE THIS 11TH DAY OF MAY, 2005. RECEIVED, APPROVED AND ADOPTED PURSUANT TO § 31-23-208, C.R.S.

TOWN COUNCIL
TOWN OF SILVERTHORNE, COLORADO

By: Lou Del Piccolo
Lou Del Piccolo, Mayor

ATTEST:

By: Michele Karlin
Michele Karlin, Town Clerk

Date: 5-11-05