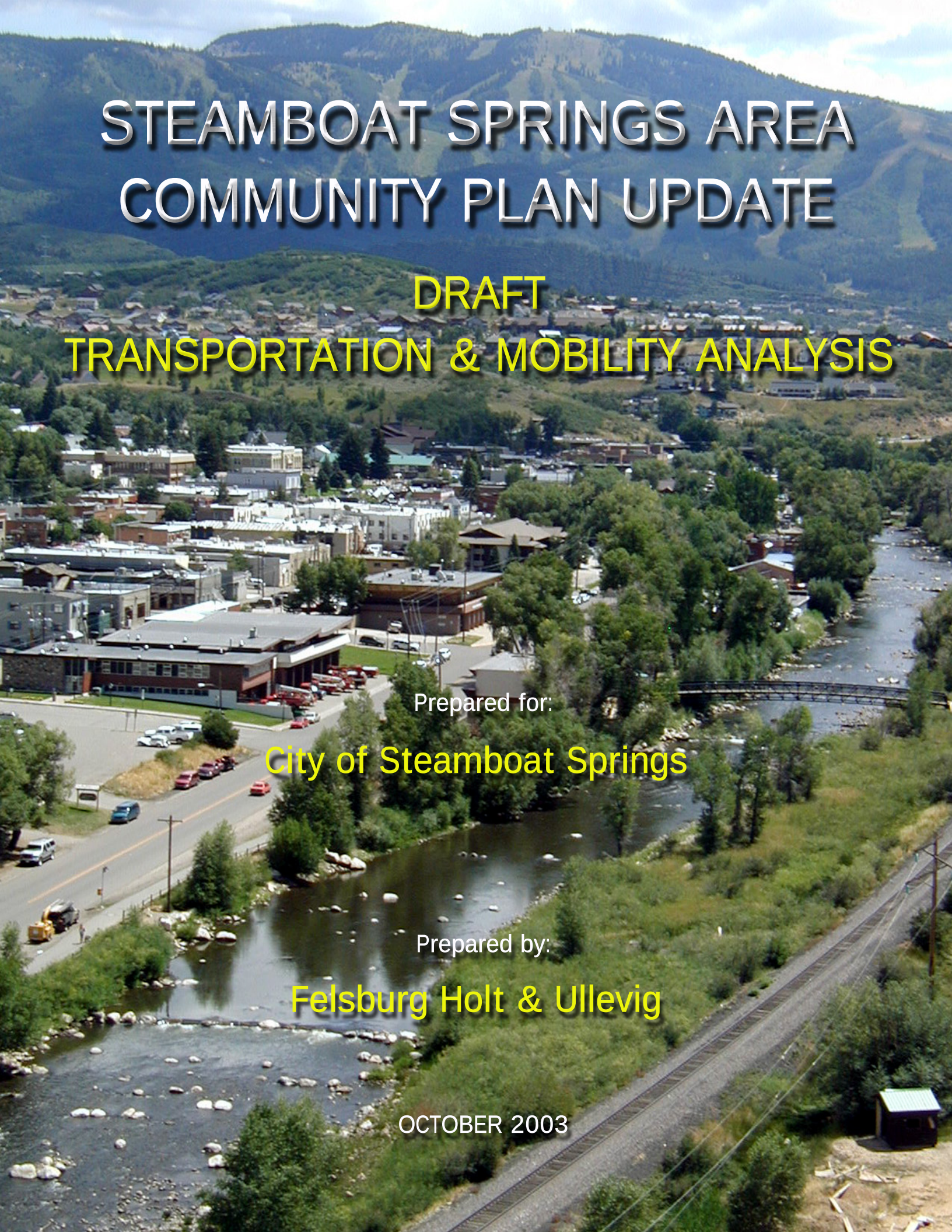

STEAMBOAT SPRINGS AREA COMMUNITY PLAN UPDATE

DRAFT
TRANSPORTATION & MOBILITY ANALYSIS

Prepared for:

City of Steamboat Springs

Prepared by:

Felsburg Holt & Ullevig

OCTOBER 2003

STEAMBOAT SPRINGS AREA COMMUNITY PLAN UPDATE

DRAFT TRANSPORTATION AND MOBILITY ANALYSIS

Prepared for:

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September, 2003

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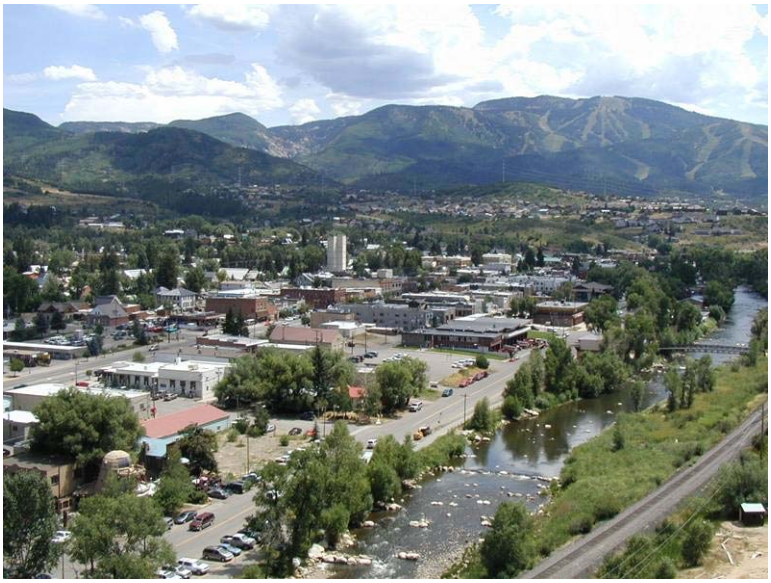
A. Background



The 1995 Steamboat Springs Area Community Plan (City of Steamboat Springs and Routt County, 1995) provided a framework for shaping the future of the City of Steamboat Springs and surrounding areas. The Land Use and Growth component of the 1995 Community Plan defined specific areas where future development should be considered and stressed the importance of integrating the transportation system with the land use plan in a way that minimizes the need for travel by automobile. The 1995 Community Plan provided guidelines for development in:

- Old Town
- Mountain
- Fish Creek
- Strawberry Park
- West of Steamboat
- Lake Catamount
- South of Steamboat

The 1995 Community Plan also provided direction on addressing the transportation issues confronting the area. A detailed set of recommendations was prepared and the community has been acting on their implementation for the past seven years.

B. Previous Studies and Recommendations

Numerous transportation plans have been developed for various areas in and around Steamboat Springs following the adoption of the 1995 Community Plan. The following is a list of the major studies undertaken since 1995, along with a brief synopsis of the scope of each. Appendix A provides a more detailed list of the recommendations of each study.

The **Yampa Valley Multi-Modal Corridor Transportation Plan** (DeLeuw, Cather & Company, June 1996) addressed transportation planning issues in the Yampa River Valley from Craig to the Town of Yampa.

The **Vision 2020** process involved citizens and elected officials from communities in Routt County along the Yampa River Valley to shape a vision for the future. Transportation recommendations were summarized as follows:

> *"Create a multimodal transportation system of corridors, highways and pathways that will relieve congestion and move people throughout the Yampa Valley in an efficient, environmentally sound, affordable and appealing manner."*

Vision 2020 recommended implementing measures that reduce dependency on the automobile, and stressed that land use planning efforts support efficient mass-transit and include road connectors to reduce impacts on "choke points."

The **Whistler Area Transportation Study** (Transplan Associates, Inc., December 1996) provided recommendations for improvements to the residential area south of Walton Creek Road and west of US 40.

The **1998 Steamboat Springs Mobility and Circulation Study** (Transplan Associates, Inc., June 1998) addressed the specific local transportation needs of the Steamboat Springs community. It represents the most comprehensive and specific transportation planning effort for the area to date.

The **Downtown Parking Study** (Charlier Associates, April 1999) provided recommendations on parking improvements in the old town area.

The **Mountain Town Sub-Area Plan** (Design Workshop, Inc., September 1999) provided pedestrian, bicycle, vehicle, and transit recommendations for the downtown area, the US 40 corridor between the mountain and town, and the Mountain area.

The **West of Steamboat Springs Area Plan** (Winston Associates, November 1999) outlined a development plan for the area west of the Curve. It did not, however, conduct an in-depth analysis of transportation impacts outside of that area, such as the bottleneck at 13th and Lincoln.

The **2000-2006 Routt and Moffat County Transportation Development Plan (TDP)** presented socioeconomic data to support transit plans. It measured SST performance and provided route expansion plans.

The **2000 Steamboat Springs Comprehensive Transportation Plan** outlined improvements to the SST transit system to accommodate future growth in Steamboat Springs and the surrounding communities.

The **Mount Werner Circle Circulation Study** (PBSJ, May 2001) recommended improvements to the road system in the vicinity of the ski area base. It concluded that reducing Mt. Werner Circle to one through lane in each direction between Burgess Creek Road and the Gondola Square Transit Center would not result in significant adverse traffic conditions on that facility. It also recommended various channelization and pedestrian features for the facility. The new road design has since been completed and is waiting construction funding.

The **2002 Routt County Master Plan** (Routt County Planning Commission, January, 2002) outlined goals and policies for the County's transportation system. While their action items included changes to standards and resolutions, no specific projects were identified.

The 2003 Steamboat Springs Area Community Plan represents an update to the 1995 Community Plan; however, as the above list shows, there has been a significant amount of additional work performed in the interim between the two plans. Therefore, while the specific transportation needs of Steamboat Springs and Routt County were defined by the working groups brought together for the plan process, many of the recommendations have been assembled based on the work completed as part of the above plans.

II. EXISTING CONDITIONS

A. Population Growth, Seasonal Influences, and Land Use Patterns

The City of Steamboat Springs has a year-round population of approximately 10,100 people. The population can more than triple during peak winter ski season to over 30,000 people. During the ski season, most of the tourist population is housed in the Mountain area, and Steamboat Springs Transit (SST) services operate at peak levels. During the summer, the focus of activity shifts to the downtown area and to the various recreational opportunities spread throughout Routt County. SST reduces its transit services significantly during that season, though service is still provided every 20 minutes in the downtown area.

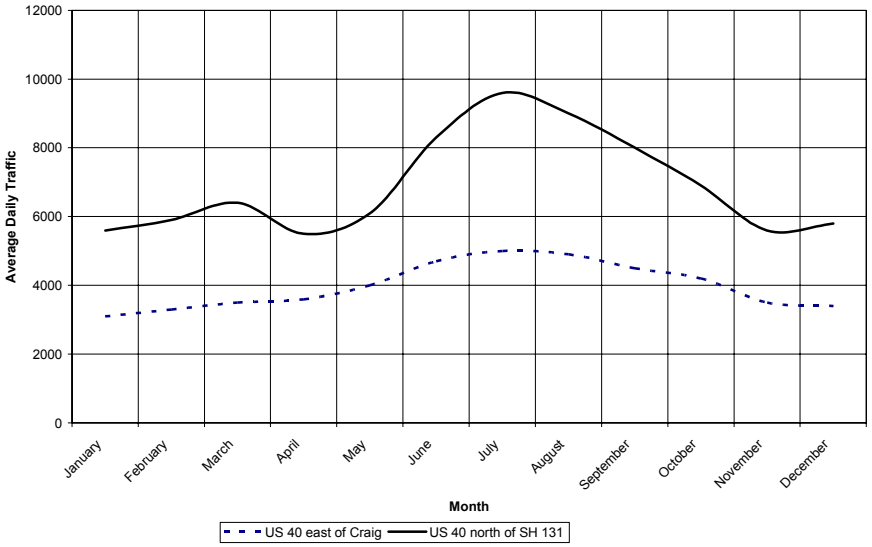
Historic population statistics indicate that Routt County has grown at a rate of approximately 3.8 percent per year since 1995, while the City of Steamboat has grown at approximately 3.3 percent per year during that same period.

The existing land use pattern in Steamboat Springs contributes to the current emphasis on automobile travel, particularly as it relates to the Lincoln Avenue/US 40 corridor. The primary nodes of activity (the Curve area, the downtown area, Central Park Plaza, and the mountain area) are all separated by one to three miles, with US 40 providing the main (and in some cases only) roadway connection. Similarly, the residential areas are spread in a linear pattern along the Yampa River Valley through the area.

B. Road System

While the area experiences more visitors and has a higher base population during the winter, traffic volumes on US 40 are highest during the summer peak. Figure 1 shows the monthly variation in traffic on US 40 on either side of Steamboat Springs, where the Colorado Department of Transportation (CDOT) has permanent traffic counting stations. In both locations peak traffic volumes occur from June through September. West of town, volumes are lowest from November through April, while south of town the lowest volumes occur during the mud seasons in November and April.

Figure 1. Monthly Traffic Variation on US 40



Traffic volumes have been increasing at a rate similar to population growth in the County. As Figure 2 indicates, traffic has been increasing at a rate of approximately 3.6 percent per year south of town and 3.8 percent per year west of town. Growth in town has been considerably higher, with some roads growing by as much as 10 percent per year.

Figure 2. Annual Traffic Growth on US 40

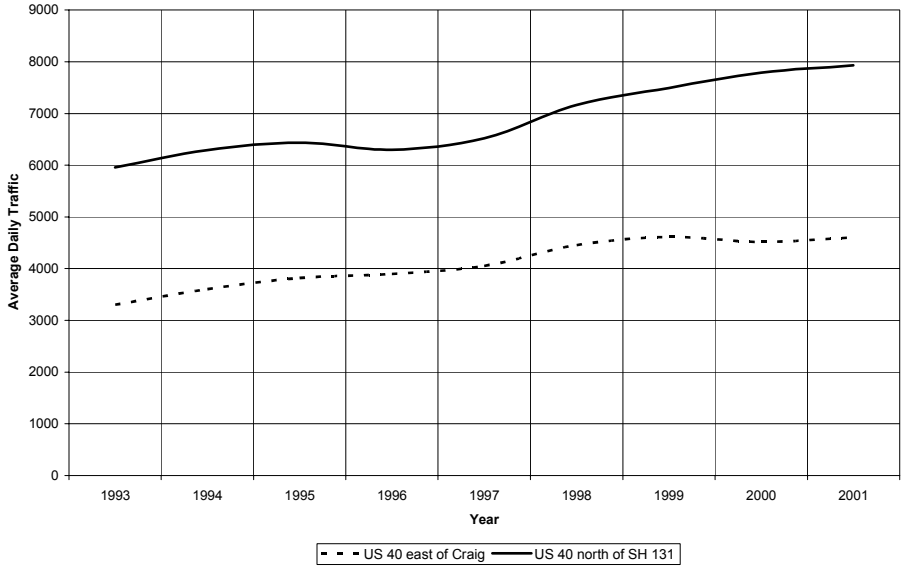


Figure 3 illustrates the road system in Steamboat Springs and the surrounding area. The figure shows the functional classification hierarchy of arterial, collector, and local assess roadways serving the community. Figure 4 shows the recent daily and peak hour traffic counts throughout the study area. When reviewing Figure 4 it is important to note that the traffic volumes accessing town from the south and west are significantly lower than the volumes in the downtown area. Thus, the traffic congestion on Lincoln through town cannot be entirely attributed to tourists and visitors driving through town. To a large extent, the local traffic increases in the summer are caused by increases in local travel. Construction and trucking activities also contribute to this increase, but for the most part it is due to area residents driving more. Part of this may be a result of the curtailment of SST service during the summer, but past surveys have indicated that even during the winter most residents do not use transit for local, non-skiing trips.

Figure 5 summarizes the key existing roadway and traffic issues in the area. US 40/Lincoln Avenue provides the primary travel route to and through town, and the topographic features and development patterns have created a series of transportation bottlenecks in the community. These bottlenecks limit the roadway system's capacity to accommodate increased travel demand in the future. The community has discussed the bottleneck condition from a transportation planning perspective in many of the previously identified planning documents, and the concept of building a roadway bypass around the downtown area has been discussed for more than 20 years. The completion of Steamboat Boulevard and the hilltop connector now provide alternative routes to US 40 between the mountain, Central Park Plaza and downtown, but Lincoln Avenue still remains the only roadway connection between downtown and the West of Steamboat area.

One of the most notable traffic issues on Lincoln Avenue in the summer months is the volume of truck traffic through downtown. Trucks hauling gravel to construction sites make up a significant portion of the truck traffic. Unfortunately, much of the gravel supply is located on the opposite end of town from the construction activity in the mountain area. One potential solution to this issue is the transport and stockpiling of gravel in the winter. However, this solution will also raise significant logistical, operations, and financial issues for the construction and gravel supply industries, and will require additional community debate and feasibility studies.

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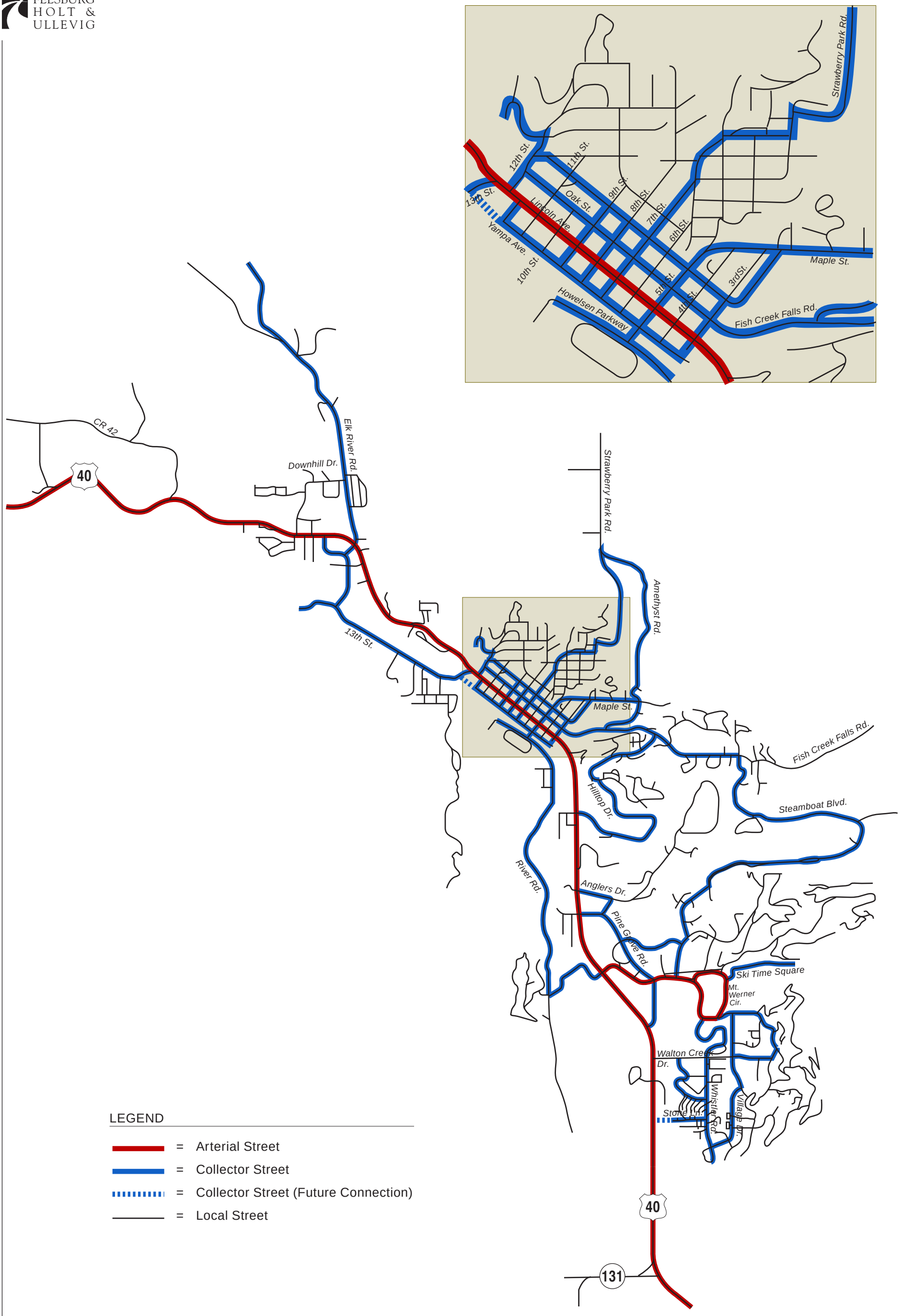

LEGEND

= Arterial Street

= Collector Street

= Collector Street (Future Connection)

= Local Street

North

Figure 3

Existing Roadway Functional Classification

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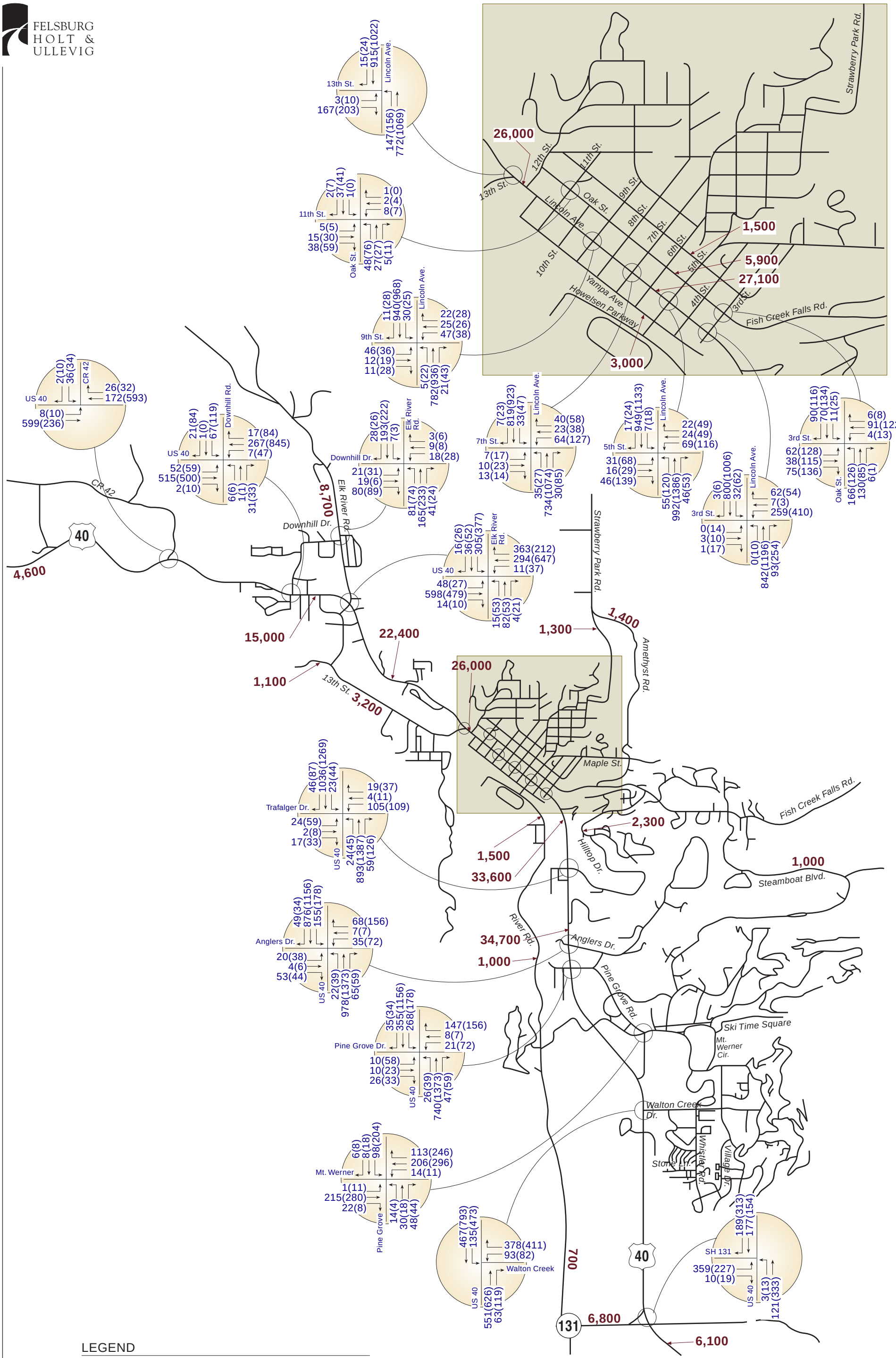

LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

Figure 4

Existing Traffic Volumes

North

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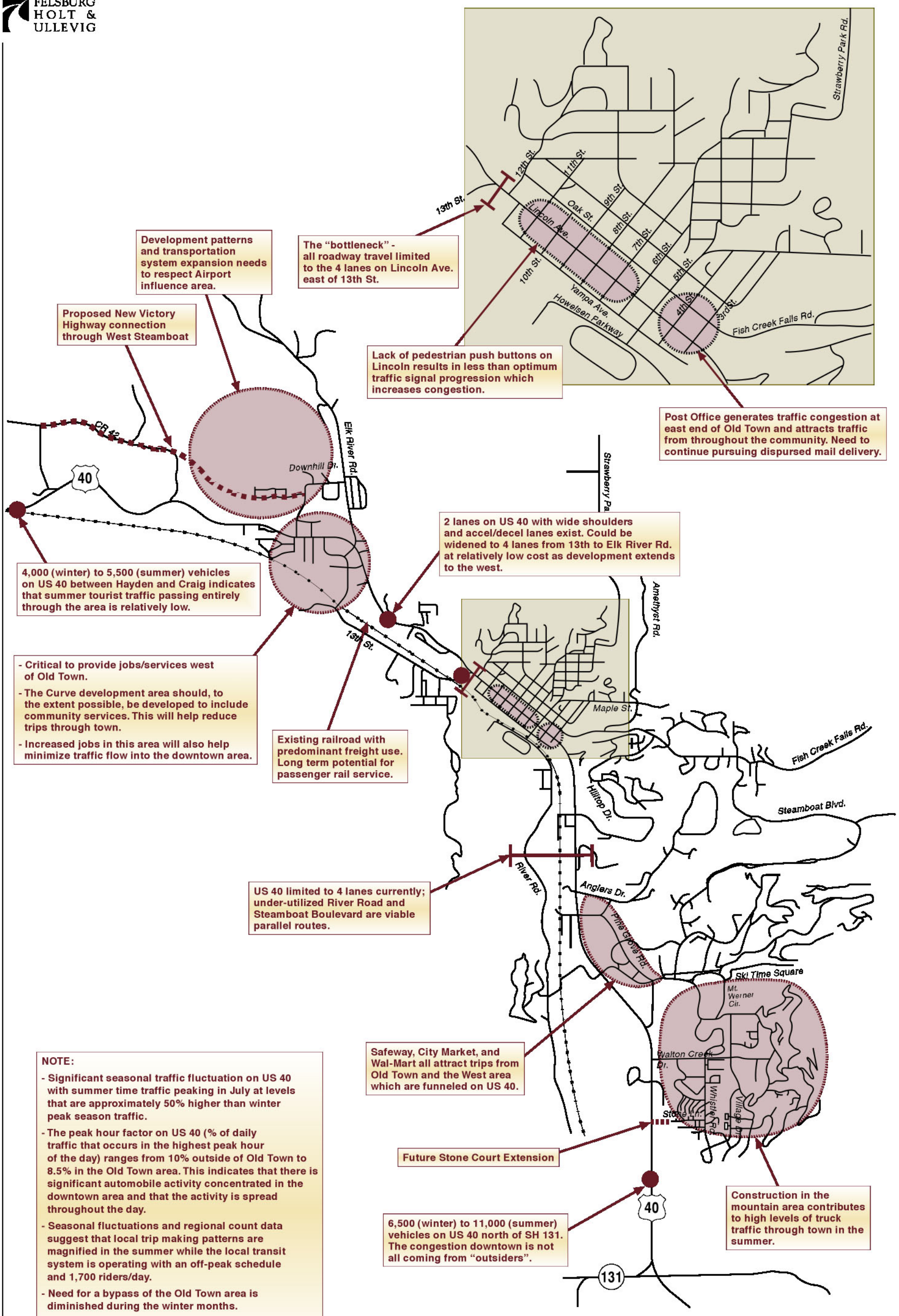

NOTE:

- Significant seasonal traffic fluctuation on US 40 with summer time traffic peaking in July at levels that are approximately 50% higher than winter peak season traffic.
- The peak hour factor on US 40 (% of daily traffic that occurs in the highest peak hour of the day) ranges from 10% outside of Old Town to 8.5% in the Old Town area. This indicates that there is significant automobile activity concentrated in the downtown area and that the activity is spread throughout the day.
- Seasonal fluctuations and regional count data suggest that local trip making patterns are magnified in the summer while the local transit system is operating with an off-peak schedule and 1,700 riders/day.
- Need for a bypass of the Old Town area is diminished during the winter months.
- Traffic on US 40 to the south and west of town has been growing a 3.6% - 3.8% per year; consistent population growth.

Figure 5

Existing Roadway and Traffic Issues

North

Another potential solution would be to impose conditions during the approval process on a project that restrict or prohibit truck traffic during peak commuter hours. This concept is often imposed in urban areas; construction projects on major commuter roads typically cannot shut down any travel lanes until after 9 PM and must open all lanes up before 6 AM, and must minimize truck trips during the morning and afternoon peak periods. It would appear to be feasible to apply the concept to the primarily residential construction in the Steamboat community.

C. Levels of Service

Figure 6 shows the existing roadway and intersection levels of service at key locations throughout the study area. Screenlines (A-H) have been drawn at key locations to help quantify the existing daily traffic demand at each location (which in most cases includes more than one roadway), and the potential traffic capacity at that location based on the existing roads that are available. The capacity of each roadway corresponds to a transportation planning definition of the likely volume that can be accommodated in a day.

US 40 exceeds its capacity in three locations; on Screenline B in the vicinity of the Dream Island trailer park, on Screenline F south of 3rd Street, and on Screenline G north of Anglers Drive. In all three locations, an additional roadway or roadways (13th Street for Screenline B, River Road, the Hilltop Connector and Steamboat Boulevard for Screenline F, and River Road and Steamboat Boulevard for Screenline G) is available as alternative route and has adequate excess capacity to handle additional volumes. As a result, none of the screenlines are currently operating above their capacity, and can feasibly handle various increases in traffic. However, local perception of roadway capacity is typically less than an engineer's or planner's definition, and many residents in the community consider the existing roadways to be full today. From a planning perspective, five of the eight screenlines could accommodate increases in traffic of over 17,000 vehicles, one could handle an additional 8,000 vehicles (Screenline G), and two could handle less than 5,000 additional vehicles (Screenlines B and C).

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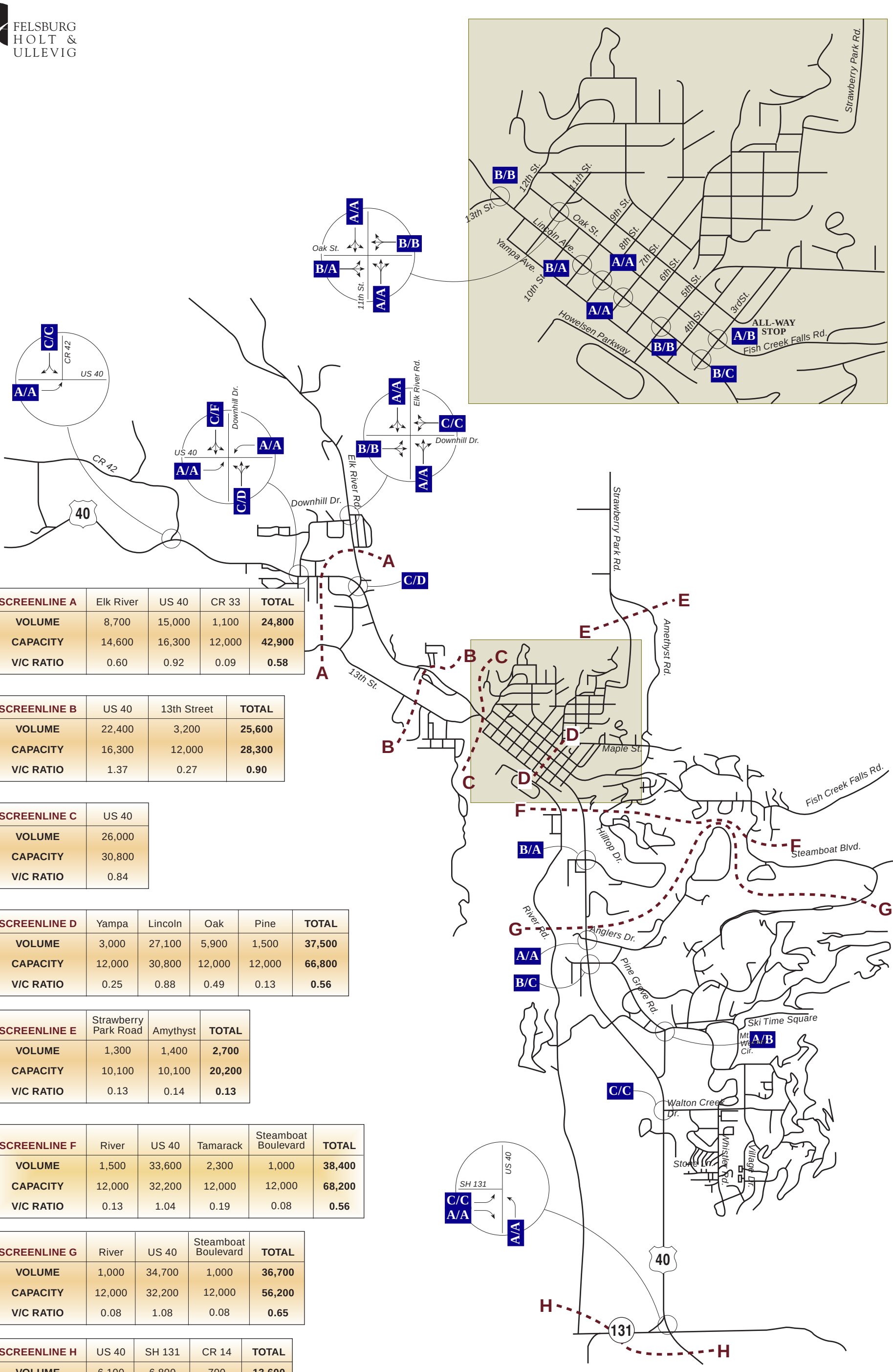

SCREENLINE A	Elk River	US 40	CR 33	TOTAL
VOLUME	8,700	15,000	1,100	**24,800**
CAPACITY	14,600	16,300	12,000	**42,900**
V/C RATIO	0.60	0.92	0.09	**0.58**

SCREENLINE B	US 40	13th Street	TOTAL
VOLUME	22,400	3,200	**25,600**
CAPACITY	16,300	12,000	**28,300**
V/C RATIO	1.37	0.27	**0.90**

SCREENLINE C	US 40
VOLUME	26,000
CAPACITY	30,800
V/C RATIO	0.84

SCREENLINE D	Yampa	Lincoln	Oak	Pine	TOTAL
VOLUME	3,000	27,100	5,900	1,500	**37,500**
CAPACITY	12,000	30,800	12,000	12,000	**66,800**
V/C RATIO	0.25	0.88	0.49	0.13	**0.56**

SCREENLINE E	Strawberry Park Road	Amythyst	TOTAL
VOLUME	1,300	1,400	**2,700**
CAPACITY	10,100	10,100	**20,200**
V/C RATIO	0.13	0.14	**0.13**

SCREENLINE F	River	US 40	Tamarack	Steamboat Boulevard	TOTAL
VOLUME	1,500	33,600	2,300	1,000	**38,400**
CAPACITY	12,000	32,200	12,000	12,000	**68,200**
V/C RATIO	0.13	1.04	0.19	0.08	**0.56**

SCREENLINE G	River	US 40	Steamboat Boulevard	TOTAL
VOLUME	1,000	34,700	1,000	**36,700**
CAPACITY	12,000	32,200	12,000	**56,200**
V/C RATIO	0.08	1.08	0.08	**0.65**

SCREENLINE H	US 40	SH 131	CR 14	TOTAL
VOLUME	6,100	6,800	700	**13,600**
CAPACITY	23,500	22,300	12,000	**57,800**
V/C RATIO	0.26	0.30	0.06	**0.24**

LEGEND

X/X = AM/PM Peak Hour Level of Service

North

Figure 6

Roadway and Intersection Levels of Service

Screenline B best illustrates the bottleneck concept that occurs on the west side of downtown. Screenlines A and B are both located between the West of Steamboat area and downtown, so any traffic traveling between the two locations would pass through both screenlines. While Screenline A, located west of the Curve, can accommodate an additional 18,100 vehicles per day, Screenline B, north of 13th Street, can only accommodate an additional 2,700 vehicles. This latter capacity is the practical limit of additional volume that can be added to the roads between the two areas. That is not to say that development in the West of Steamboat area is limited to an additional 2,700 vehicles, it merely indicates that any traffic beyond that level will need to be contained within the area, or additional connections to downtown will be necessary.

Figure 6 also shows the existing levels of service at key locations throughout the study area. Operations were evaluated using methods documented in the Highway Capacity Manual, Transportation Research Board (TRB), Third Edition, 2000 (HCM-2000). HCM-2000 defines traffic operations by level of service (LOS), which is a qualitative measure based on the average delay per vehicle at a controlled intersection. Level of service is quantified using letter designations ranging from LOS A to LOS F, with LOS A representing very little delay and LOS F representing extreme delay. Signalized intersections report an overall level of service rating, representative of the average delay experienced by all movements through the intersection. Unsignalized intersection analyses report level of service ratings for each critical movement. CDOT would like to maintain LOS D on their facilities, however, LOS E is the desired minimum acceptable level of service. Neither the City of Steamboat Springs, nor Routt County has established minimum level of service standards for their roadways.

In general, all intersections studied operate at adequate levels of service. The only location that operates worse than LOS D is the US 40/Downhill Drive intersection. At that location, the southbound left turns onto US 40 operate at LOS F during the afternoon peak period. All other movements would operate at LOS D or better during both peak periods. It is not uncommon for left turn movements along high volume roadways to operate at or above capacity conditions. In fact, Chapter 17 of the Highway Capacity Manual (2000) notes:

> *LOS F occurs when there are not enough gaps of suitable size to allow a minor-street demand to safely cross through traffic on the major street. LOS F may also appear in the form of drivers on the minor street selecting smaller than usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. Note that LOS F may not always result in long queues but in adjustments to normal gap acceptance behavior. … In evaluating the overall performance of two-way stop control intersections it is important to consider measures of effectiveness in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single measure of effectiveness for the worst movement only, such as delay for the minor-street left turn, users may make less effective traffic control decisions.*

A traffic simulation using the SimTraffic traffic modeling program indicated that queues in excess of 10 vehicles occasionally form during the peak period, therefore, it would appear that signalization of the intersection may be prudent.

D. Transit

The existing SST transit system plays a key role in providing mobility in the community. The 2000 Transportation Development Plan details potential improvements to the system, including potential new routes in the West of Steamboat Area, and potential new connections between the mountain and downtown via Hilltop Connector and Steamboat Boulevard. Figure 7 shows the existing winter SST service.

SST ridership increased significantly between the 1997 and 1998 winter seasons. That year saw expansion of service to 10-minute frequency between the mountain and downtown, and the addition of the yellow line to provide local service around downtown and the hospital area. Since then, only minor changes to the system have been made, and ridership increases have been much more moderate. Nevertheless, ridership has grown at a four percent annual growth rate since 1997, which is slightly higher than the population growth rate in the City over the same period. Figure 8 shows the annual SST ridership since 1995.

While more pronounced in the winter, summer ridership has increased steadily over the past five years, as well. In July 2001, when traffic on Lincoln Avenue and US 40 is peaking, SST carried approximately 1,700 passengers per day, up from approximately 900 passengers per day in July 1997.

Shuttle van service and regional service also carry a significant volume of passenger traffic, particularly during the ski season. Shuttle van service increased steadily from 1997 to 1999, but declined between 1999 and 2001. Meanwhile, regional service ridership has increased virtually every year since 1995, likely a result of the increasing number of employees living in the more affordable outlying areas of Routt County. Figure 9 shows the annual ridership for shuttles, regional buses and other public transit services.

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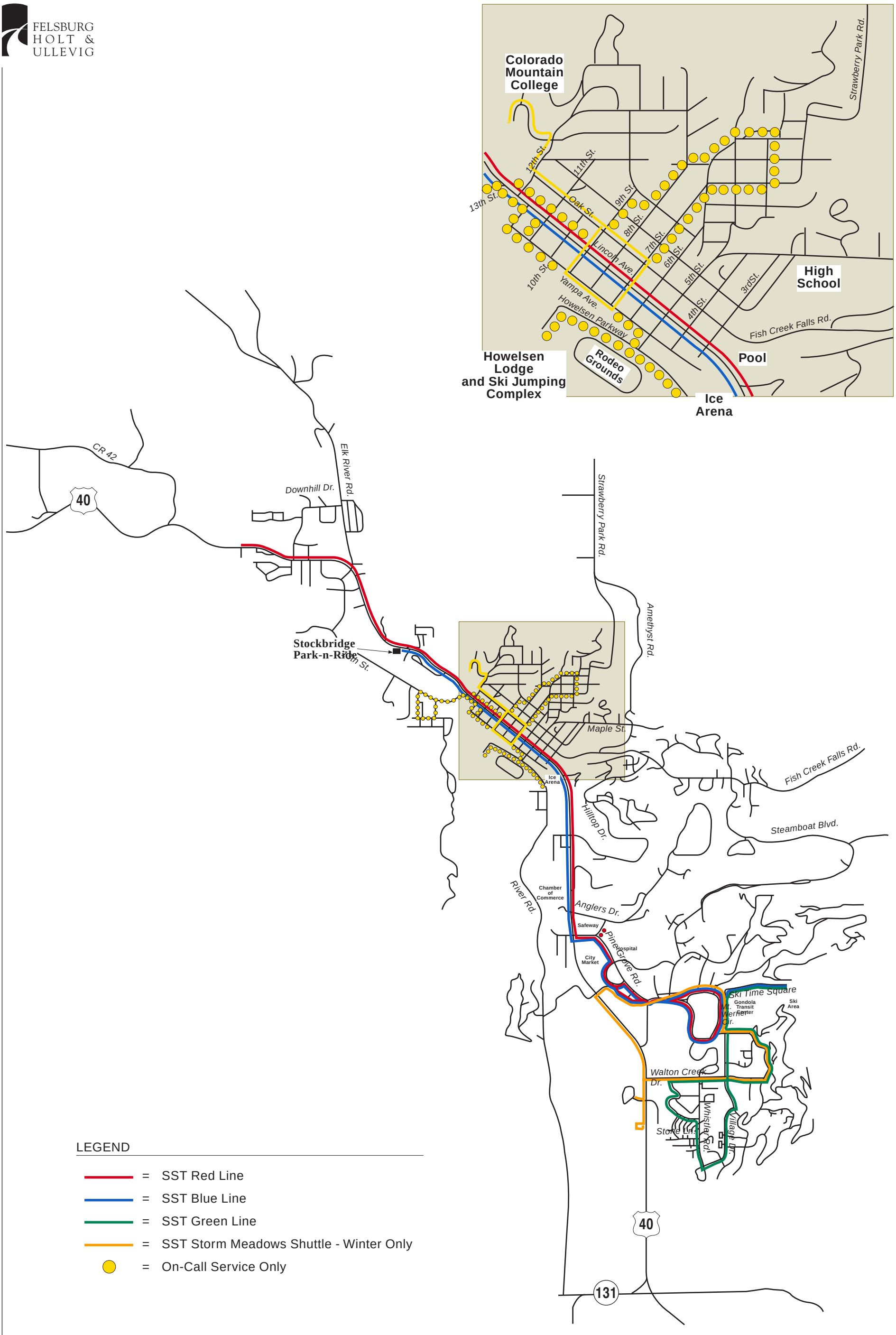


Figure 7

Existing Public Transit Service

Figure 8. Annual City Bus Ridership

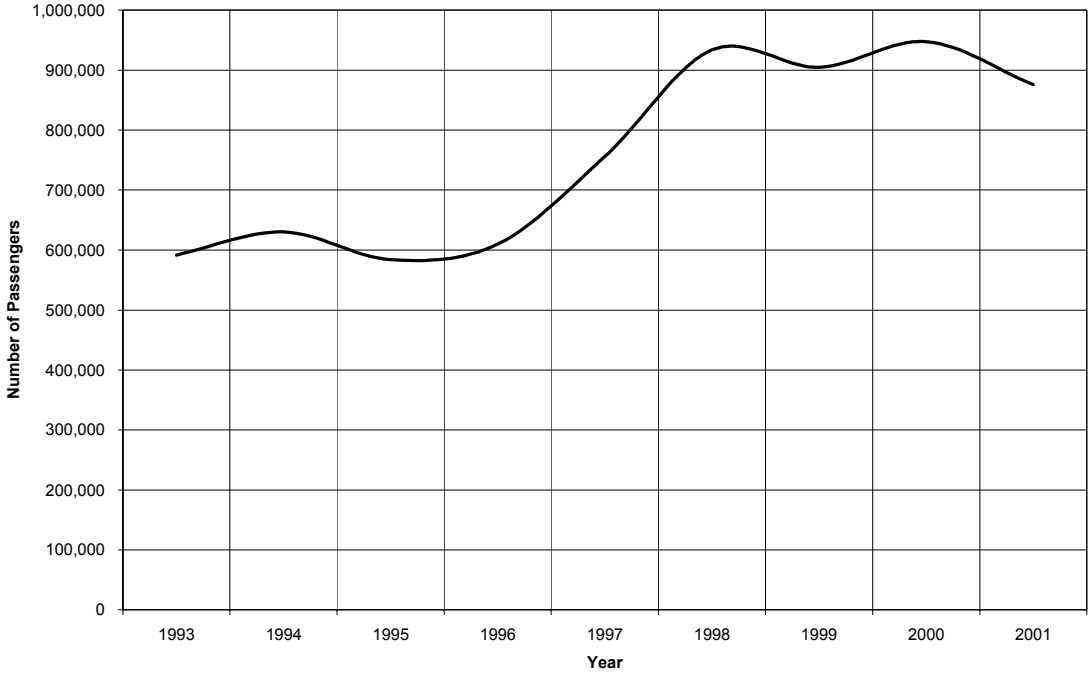
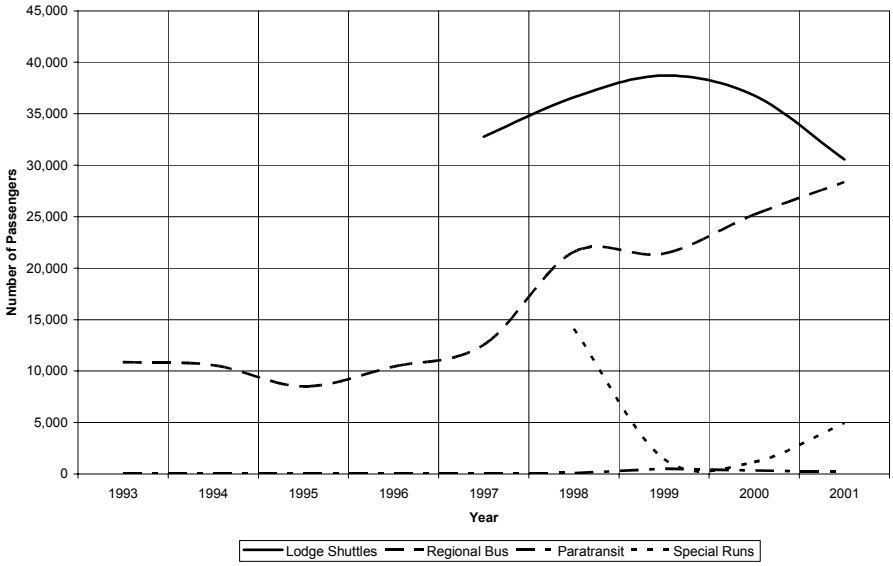


Figure 9. Annual Ridership, Other Transit Services



The Gondola Transit Center at the base of the ski area on Mt. Werner Circle serves as a transit hub in the mountain area. The area is used by SST and private shuttle operators, and has become increasingly congested in the past five years. Redesign of the facility has been completed as part of the Mt. Werner Circle re-design and construction will begin shortly.

The Stockbridge Transit Center opened in 2000 to replace the de facto transit center at the corner of Lincoln and 7th Street. It has been effective in eliminating the congestion and bus turn around issues in the downtown area. The park and ride facility at Stockbridge has also been somewhat effective at encouraging employees who live west of town to take transit into the downtown area, though the success has been somewhat limited in part due to the availability of free parking on some downtown streets. Stockbridge also serves as the home for Greyhound bus service in the area.

E. Parking

Vehicle parking in downtown has consistently been an important topic in the past and will continue to receive attention as the community grows. The current downtown parking supply is summarized in Figure 10. There are approximately 950 on-street parking spaces in the downtown area (Oak, Lincoln, Yampa, and cross streets from 3rd to 12th). With the exception of Oak Street, 2-hour parking limits are applied to much of the on-street supply to ensure adequate spaces are available for shoppers and visitors. There are no time restrictions on Oak during the day, nor are there any on Yampa between 7th and 12th Streets.

On-Street Parking

Occupancy and duration studies for the on-street spaces were conducted in July, 2002 along Oak, Lincoln, and Yampa. Table 1 summarizes the results of the study. Utilization was highest along Yampa (74 percent) and approximately the same along Lincoln and Oak (52 and 55 percent, respectively). In unrestricted spaces, the average occupancy was 64 percent, with an average duration of stay of approximately 2:45. In the 2-hour spaces, the average occupancy was 54 percent, with an average duration of stay of 1:29 minutes.

Table 1. On-Street Parking Occupancy and Duration of Stay

Street	Parking Type	Total Spaces	Occupied Spaces	Percent Occupancy	Average Duration (hr min)	Duration (Hours)							
						1	2	3	4	5	6	7	Total
Yampa	Unrestricted	55	41	74%	2:47	48	16	6	6	5	6	14	101
	2-Hour	18	13	75%	1:44	28	19	4	1	1	0	1	54
Lincoln	2-Hour	159	82	52%	1:27	268	94	36	3	1	0	0	402
Oak	Unrestricted	69	38	55%	2:43	41	18	15	4	3	6	11	98
Total	Unrestricted	124	79	64%	2:45	89	34	21	10	8	12	25	199
	2-Hour	177	96	54%	1:29	296	113	40	4	2	0	1	456
	Overall	301	175	58%	1:52	385	147	61	14	10	12	26	655

In general, when on-street parking occupancy levels approach 85 percent an area is considered to be at the practical capacity. Practical capacity considers that some spaces may have only recently been vacated, some vehicles may occupy more than one space, and that some drivers will seek alternative parking when an area appears to be full. Thus, because it is at the 74 percent occupancy level and is therefore approaching practical capacity, many drivers may feel that no street parking is available on Yampa.

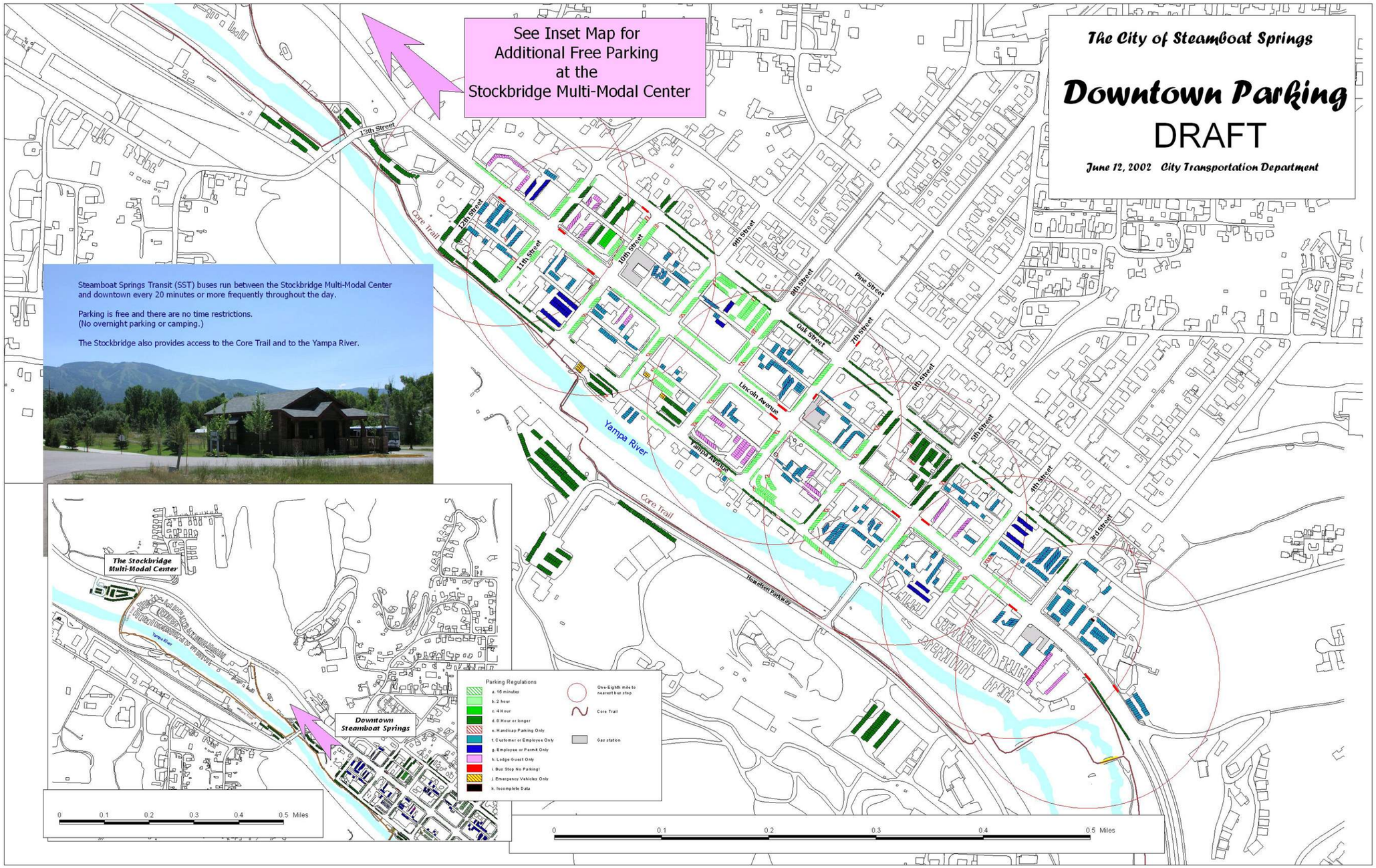


Figure 10
Downtown Parking

North

Chain parking (moving a vehicle from space to space every few hours to avoid a parking ticket) does not seem to be an issue in the time-restricted spaces. Most cars that occupy multiple spots throughout the day leave the area for an hour or more between occupancies. Thus it does not appear that these vehicles belong to employees who might be parking in the time restricted parking because it is more convenient, then moving their vehicle every two hours. Rather they appear to belong to people who are doing business in the area, making deliveries, etc.

It should also be noted that all but seven of the long-term vehicles observed in short-term spaces in the study area (those parked for three hours or longer) occupied a space for only three hours. It is possible that these 3-hour parkers arrived just prior to the first hour's observation, and left just after the last hour's observation, in which case they may not have been parked for much more than the two hour limit. Thus, there do not appear to be significant parking violations.

Off-Street Parking

Parking occupancy was slightly higher in the off-street public lots. Table 2 summarizes the results of the public lot survey. As the table indicates, the overall occupancy in public lots was 73 percent, with the highest occupancies occurring in the lots on Yampa in the middle of downtown (between 6th and 9th) and the lot on Lincoln near the City offices. At the same time, the smaller lots on the south end of town (Yampa south of 6th and Oak north of 3rd) were significantly underutilized. The location of these lots, which may be perceived as too far away from the main downtown activity center (Lincoln between 6th and 9th), may be contributing to the low occupancy, as may be a lack of signage directing vehicles to them.

Table 2. Off-Street Public Parking Lot Occupancy

Street	Lot Location	Total Spaces	Occupied Spaces	Percent Occupancy
Yampa	5th-6th (west)	17	5	29%
	6th-7th (east)	24	21	88%
	8th-9th (east)	21	22	105%
	9th-10th (west)	21	14	67%
	10th-11th (east)	46	34	74%
Lincoln	10th-11th (east)	37	37	99%
Oak	3rd-4th (west)	15	5	32%
	5th-6th (west)	76	50	65%
	8th-9th (west)	54	39	71%
Total		**311**	**226**	**73%**

F. Pedestrian and Bicycle Facilities

The Steamboat Springs community is currently served by a comprehensive system of sidewalks and trails (hard and soft surfaced), but many discontinuities remain that make pedestrian and bicycle travel challenging. Sidewalks typically exist only in the downtown area within one block of Lincoln Avenue, along portions of 7th and 8th Streets, and along isolated roadway in the Mountain and Curve areas. The Core Trail along the Yampa River and the Mt. Werner Trail provide hard surface trail connections between the downtown and mountain areas.

The Mobility and Circulation Plan updated the Trail System Master Plan that was developed and incorporated into the 1995 Community Plan. This represents the most recent and comprehensive trails and sidewalk plan for the area. Figure 11 shows the current pedestrian and bicycle plan.

There are no formal on-street bicycle facilities in the community, but the City has maintained a policy over the last four years of posting "share the road" signs on roadways that experience significant bicycle use to encourage motorists to anticipate and safely interact with cyclists. Bicycle racks are only available in isolated locations.

While there are some deficiencies in the existing system, the proposed plan addresses these and provides connectivity to all major activity centers in the area. Important improvements that would benefit both bicycle commuters and recreational users include providing bike racks in the downtown area, improving the connections between the Core Trail and downtown, connecting the Core Trail to Lincoln at Pine Grove, providing sidewalks on Pine Grove between Lincoln and Mt. Werner Circle, and extending the Pine Trail north and west into the West of Steamboat area from Stockbridge.

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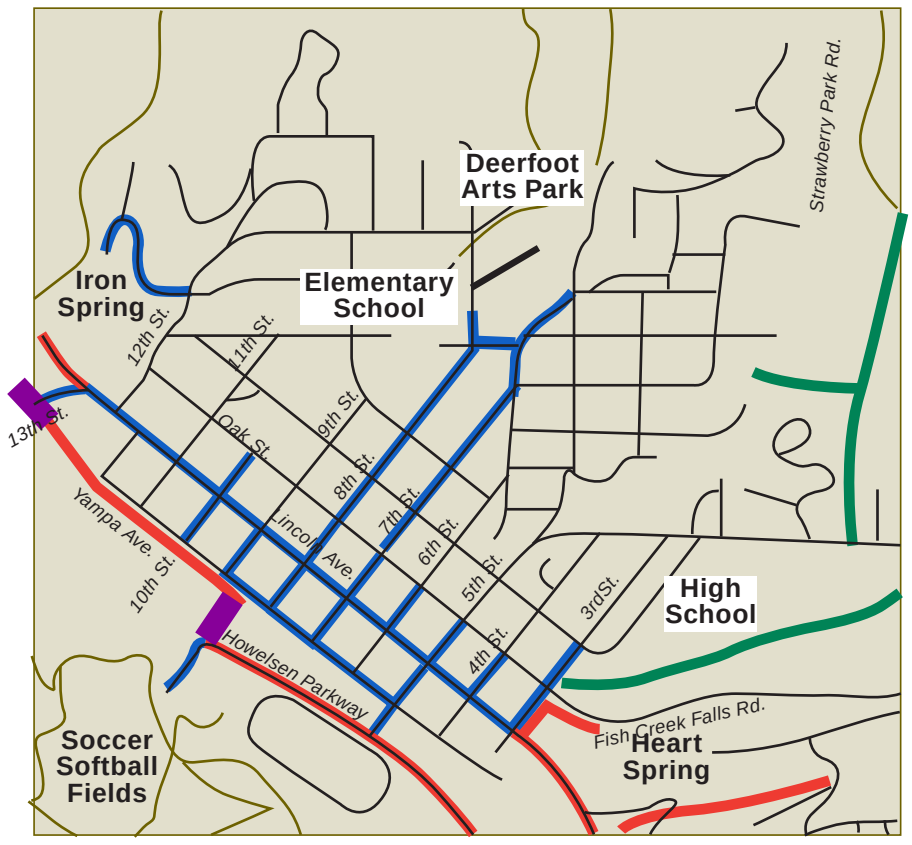
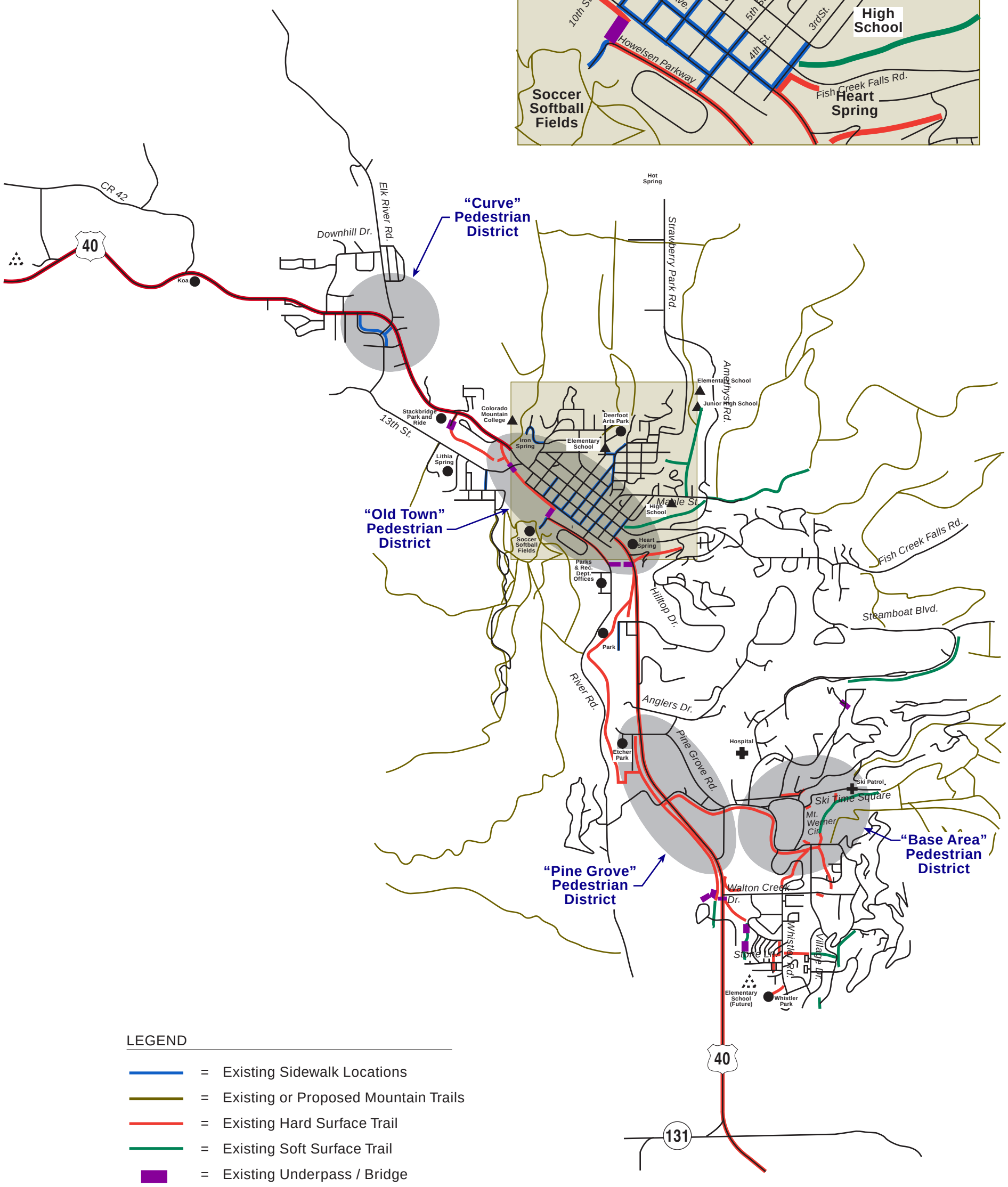




LEGEND

- = Existing Sidewalk Locations
- = Existing or Proposed Mountain Trails
- = Existing Hard Surface Trail
- = Existing Soft Surface Trail
- = Existing Underpass / Bridge

Figure 11

Sidewalk and Trails System

North

G. Air Travel

Air service is provided into and out of the community via the Yampa Valley Regional Airport. Figure 12 shows the annual enplanements at the airport since 1995. Travel through the airport grew steadily between 1995 and 1997, but has remained relatively constant since then. Overall, travel has increased by an average of 1.6 percent per year between 1995 and 2001. Note that this growth is significantly less than the approximately 3.5 percent increases in population and traffic experienced in the study area.

Figure 12. Annual Enplanements at Yampa Valley Regional Airport

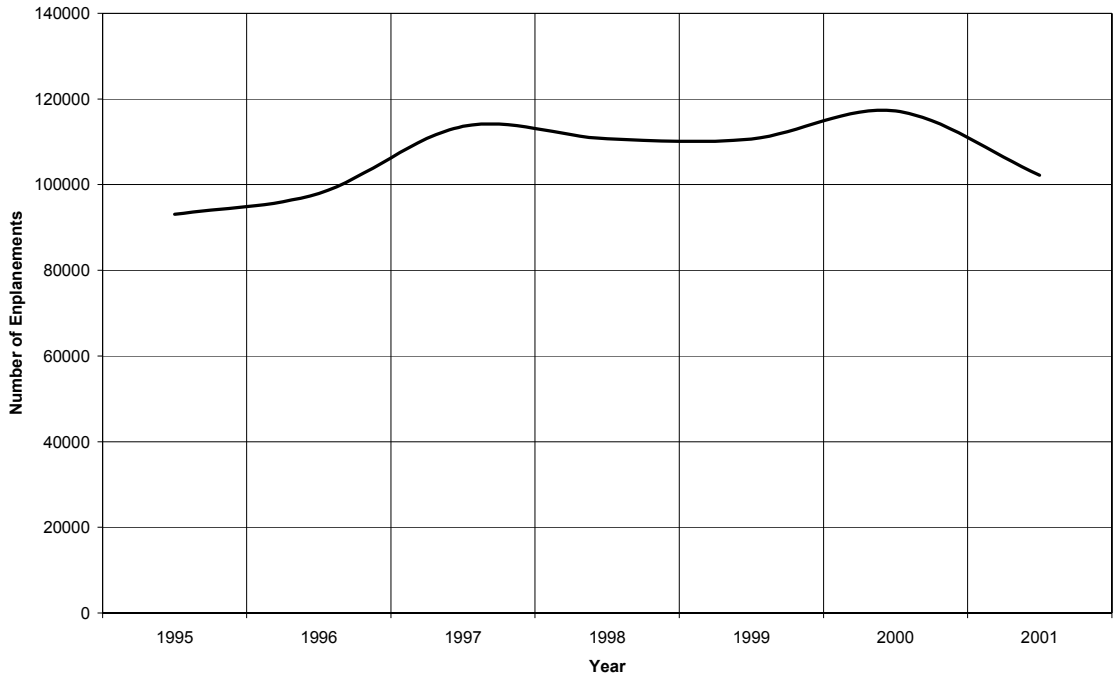
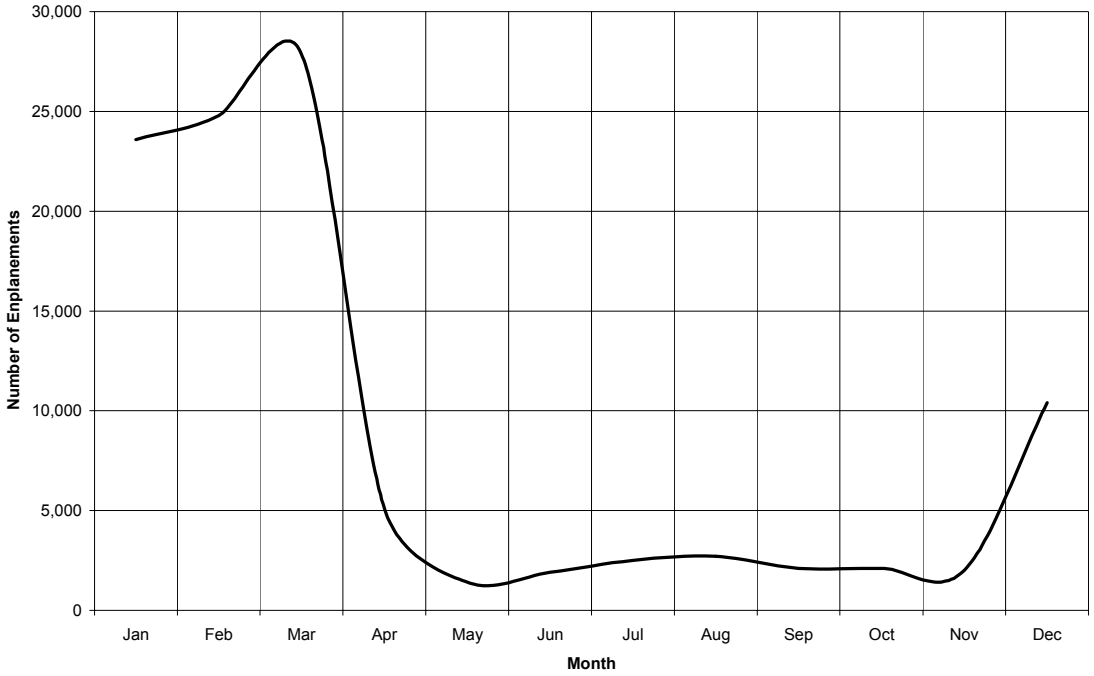


Figure 13 shows the number of enplanements by month at Yampa Valley Regional Airport. The airport is quite active during the ski season, but activity is curtailed significantly during the rest of the year. This corresponds with the significant reduction in service at the airport by the major airlines. While such a reduction is for the most part market-driven, it may be one of the contributing factors to the heavier reliance on the automobile by tourists during the summer.

Figure 13. Monthly Variation in Enplanements



III. LEVEL OF SERVICE STANDARDS

A. Introduction

Level of service standards help ensure that the transportation system can adequately serve expected growth and development. In addition, the service level policy can become the basis for establishing a traffic impact mitigation fee system to provide "fair share" funding of needed transportation improvements and be used as a basis for conditioning or denying proposed developments.

Level of service is quantified using letter designations ranging from LOS A to LOS F, with LOS A representing excellent operating conditions with very little congestion, and LOS F representing extreme congestion and delay. The standard is a determination of the maximum level of congestion allowed on a roadway before improvements are required. For example, if the established level of service for a specific roadway is LOS D, improvements to that roadway are required if its level of service falls below LOS D (more congestion) or if projected growth would cause the road to exceed the LOS D standard.

B. Level of Service Policies in Colorado Mountain Towns

Level of service policies are not unusual concepts. Many jurisdictions throughout the state have adopted them, including other mountain communities such as:

- **Aspen:** Traffic volumes on all roadways must be maintained at 1993 levels or lower (this represents the strictest level of service standard in the State).
- **Breckenridge:** While not a formal policy, the City tries to maintain LOS D or better.
- **Durango:** The City maintains a policy of LOS C or better on all local and collector streets, and LOS D or better on all arterials.
- **Gunnison:** Because of low traffic volumes on the City's roadways, Gunnison does not have a level of service policy based on roadway capacity. Instead, the City's requires new development to upgrade the road system to the current grading, spacing intervals, and width standards in the Municipal Land Code.

In addition, CDOT has a state-wide policy of maintaining LOS E as the desired minimum acceptable level of service on their facilities; however, LOS D is the preferred level of service. In most cases, cities and counties apply the local level of service policy to their streets, and CDOT's policy to any state highway. Thus, for example, Durango would require improvements to a City arterial if it operated at LOS E, but would defer to CDOT if US 550 or SH 160 operated at that level of service.

In general, level of service standards in other jurisdictions throughout Colorado are similar to Breckenridge and Durango, with levels of service based on traditional Highway Capacity Manual definitions for intersections. Typically, jurisdictions only require a development to assess the adequacy of the road system in the immediate vicinity of their project. This can be problematic when a development is located on the outskirts of town, or on the opposite end of town from the area's major trip attractions, such as what may occur in the West of Steamboat area. There, the road system up near the curve may operate adequately, yet development traffic in that area would contribute to the bottleneck problems on either end of downtown, as well as to congestion around the base area during the winter.

To address this issue, other jurisdictions outside Colorado have established a wide range of methodologies to assess overall roadway system performance. Each approach was developed based on the unique character of the area. The following section summarizes some of these other approaches.

C. Other Level of Service Methodologies

Screenline Volume-to-Capacity Ratios

Screenlines are imaginary lines that bisect one or more roadways and are designed to monitor the traffic entering and leaving large subareas. The individual volumes and capacities for each arterial road crossing the screenline are aggregated into a single composite screenline volume-to-capacity ratio. The governing agency then sets a maximum permissible screenline volume-to-capacity ratio for the area that reflects acceptable congestion. The overall adequacy of the system is then assessed based on a comparison of the actual ratio to the standard.

The primary advantage to the screenline approach is that it provides a level of financial flexibility for a jurisdiction because it considers the available capacity of all alternative routes in an area. In this fashion, the jurisdiction can avoid constructing improvements in areas where other roadways are available, but are not used to their full potential. For example, even though US 40 is operating at or near capacity between downtown and Central Park Plaza, River Road and Steamboat Boulevard are both available as alternate routes between those areas, thus negating the immediate need to widen the highway. This would enable the City to address more pressing capacity needs such on the west end of downtown between 12th and 13th, where no alternative routes to US 40 are available.

The primary disadvantage of the screenline approach is that in general, residents of smaller communities are less tolerant of congestion than those who live in larger urban environments. Thus, residents may determine that allowing congestion on even one road is unacceptable because it disrupts the character of the area.

Roadway Volume-to-Capacity Ratios

Level of service based on roadway volume-to-capacity ratios is another common approach used to assess road system adequacy. In this approach, the volume-to-capacity ratio is calculated for each roadway link in an area and compared with the maximum acceptable ratio set by the governing agency. Separate maximum ratios can be used for different types of facilities. For example, a jurisdiction can set up separate policies for arterial within downtown or commercial areas, for arterials within industrial areas, and for all other arterials and collectors.

Adopting separate policies for different facilities recognizes the need to allow different levels of congestion to occur in certain areas to both control and promote growth. So to promote in-fill development, and development in West Steamboat while at the same time delaying the need for road improvements, the City could adopt a policy that allows higher levels of congestion on US 40 between downtown and the Curve, and lower levels of congestion elsewhere in the community. Another option is to enforce the policy on 85 percent of the lane-miles rather than 100 percent of the lane-miles, to recognize that in some areas it may not be financially, environmentally, or socially feasible to increase the capacity of certain roads in the system.

Intersection and Roadway Levels of Service

The previous two approaches assess levels of service only at the roadway level. This is done because in large areas with a significant number of roads it is not practical to conduct detailed intersection analyses. However, in smaller communities such as Steamboat Springs, the limited infrastructure allows jurisdictions to assess levels of service at such a level of detail. Typically, intersection level of service is based on Highway Capacity Manual procedures. Most of the communities in Colorado that have adopted level of service policies follow this approach. A uniform level of service standard (usually LOS D or LOS E) is typically selected as the maximum permissible congestion level for all intersections in the area.

In smaller jurisdictions, often times it is not only feasible to meet a level of service standard at the intersection-level of detail, but also traffic congestion is much more significant an issue to residents, who also may be less tolerable to traffic delays in their community. The major advantage of such a level of service policy is that by including intersection delay in the level of service standard, the city has committed to address localized traffic congestion as well as congestion along arterial links. The disadvantages of this policy are that it requires the city keep an up-to-date database of turning movement counts at key intersections throughout the city and that it result in an increased number of improvements and higher transportation improvement costs.

Levels of Service Based on Design Standards

Many communities recognize that lower volume roads such as collectors and local streets will never experience enough traffic to trigger the need for capacity improvements, and that even if they did, such improvements may not be acceptable to local residents. Thus, they have adopted separate level of service standards for lower volume roadways. Typically, these standards are based on design guidelines such as street width and design speed and are applicable to collectors and local roads only. This is similar to the approach currently used by the Town of Gunnison.

The primary advantage of applying design guidelines to collector and local roadways where capacity is not an issue (and likely never will be) is that it would potentially enable the City and County to collect fees from developers to improve substandard collector and local roads to current design standards should their development contribute traffic to those facilities. For instance, in the West of Steamboat area, such a policy would help fund improvements to Routt County Road 42, Downhill Drive, and any other existing collector or local roadway in the area that would be used to access US 40. The disadvantage is that the City and/or County in some cases would be required to upgrade roads earlier than anticipated because of the time limitation on using developer contributions. This may be an issue because the City and/or County would still be responsible for a portion of the road improvement costs, which in some cases can be quite significant. Without available funds to complete their portion of the project, the City and/or County would be forced to rebate the developer's contribution.

D. Consistency Between Jurisdictions

It is important for both the City of Steamboat Springs and Routt County to work together to develop a level of service approach that is acceptable to both agencies. In absence of such an arrangement, one agency or the other may end up with an unfair traffic burden. This would become a significant issue if, for example, the County adopts a less-stringent policy than the City. Since the City has many of the goods and services required by county residents, some of the traffic from new development will impact City roads. With a less stringent policy, the County could, in theory, approve additional development even after the City's streets exceed the City's policy.

To avoid this possibility, it is recommended that Steamboat Springs and Routt County adopt the same or similar level of service policies and approaches, and the both entities agree on an arrangement wherein development located within one jurisdiction include in the traffic analysis an assessment of conditions in any critical area affected by their traffic, regardless of whether it is located in the City or the County.

IV. TRANSPORTATION ALTERNATIVES

The following section summarizes the transportation system alternatives analyzed as part of the Community Plan Update.

A. Previous Work

As noted previously, Appendix A summarizes the recommendations of all transportation-related studied conducted in the area since the adoption of the Community Plan in 1995. Many of these studies focus on a particular sub-area within the community, such as the Whistler Area Transportation Study, the Downtown Parking Study, and the Mountain Town Sub-Area Plan, and therefore the recommended improvements in these studies are local to that particular area. These local improvement recommendations remain relevant and should be implemented. However, the nature of the transportation analysis for this study focused on inter-area connections, such as between West Steamboat and downtown, or between downtown and the mountain. The following therefore summarizes only those improvements within the previous studies that focus on inter-community connection improvements.

The **Yampa Valley Multi-Modal Corridor Plan** identified a series of intermodal transportation stations in the Yampa Valley including a full service station in East Steamboat (near Pine Grove Road and US 40, not yet implemented) and an intermediate access station in West Steamboat (Stockbridge has been implemented since the plan's adoption). The East Steamboat station has been included in the high-transit alternative.

The **Vision 2020** plan also recommended expanding the existing mass transit system, focusing on transit-oriented development, bus service to the airports, and improving non-motorized trails and pathway connections, all of which are included in the high-transit alternative. The plan also recommended a low profile tramway between downtown Steamboat and the Mountain Area, construction of a commuter rail system. The tramway idea and Route County Road 27 bypass have since been abandoned, and the commuter rail system represents a very long-range option for the area. Therefore, none of these options were included in this analysis.

The **1998 Steamboat Springs Mobility and Circulation Plan** represents the most comprehensive examination of inter-area transportation improvements. Several of the improvements identified in that study have already been implemented, including the Hilltop Connector and Steamboat Boulevard, both of which now provide alternative routes to US 40 between the Mountain and Old Town. However, the most detailed analysis focused on alternatives to address congestion through the downtown area. The study identified 14 potential alternatives to address that issue, ranging from minor re-alignment at local intersections in downtown to construction of major roadways that bypass downtown. The transportation subcommittee for this plan selected two of these alternatives for further analysis in this study; Alternative 7, Howelsen Parkway Bypass (Howelsen Parkway Extension), and Alternative 14, "Hourglass" - 13th Street and Lincoln Avenue (Yampa Avenue Extension). From a land impact perspective, these two alternatives are highly preferable, because each has minimal impacts to private property. Figures 14 and 15 show the respective alternatives.

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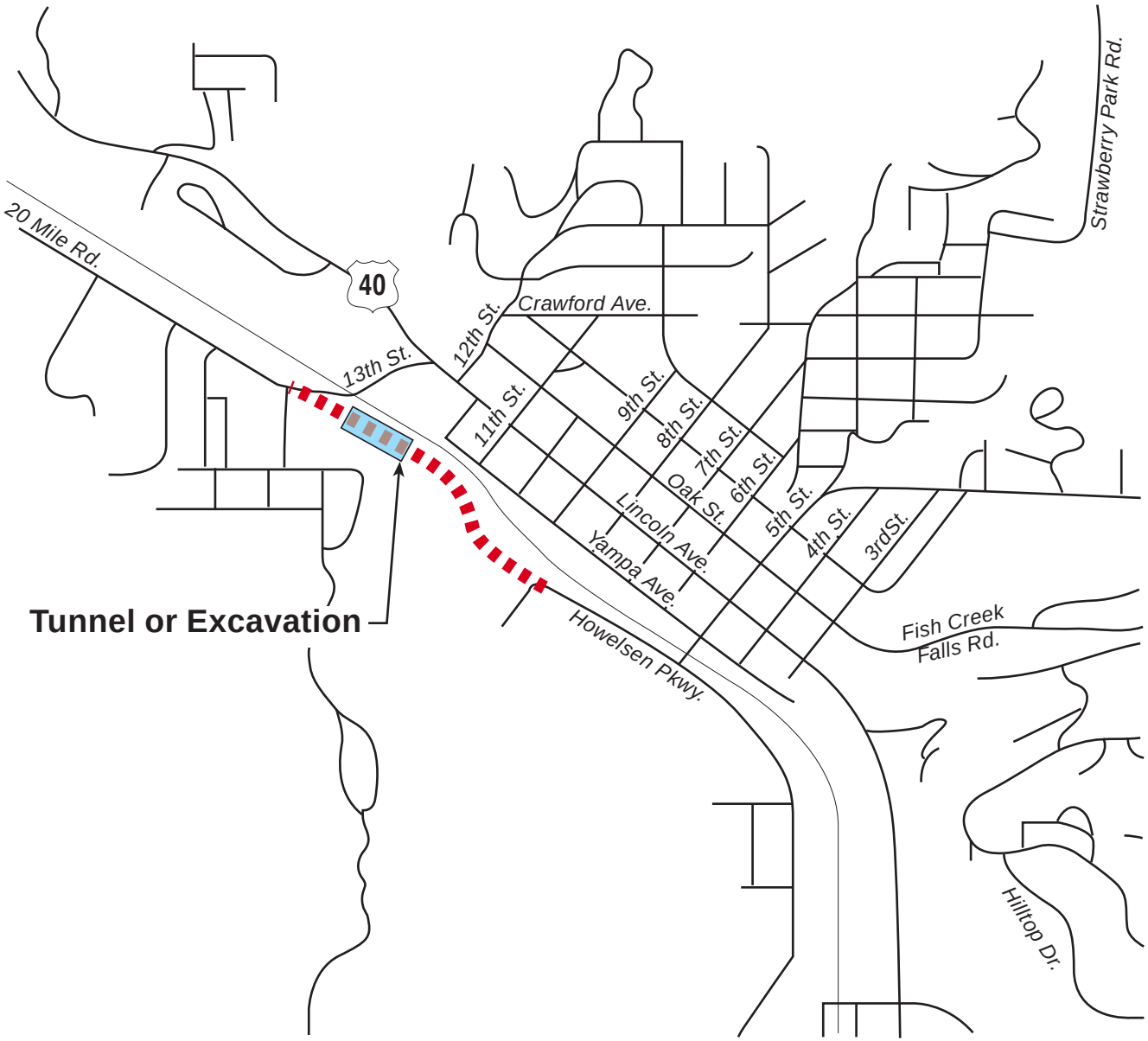

Figure 14

Howelsen Parkway Extension Alternative

North

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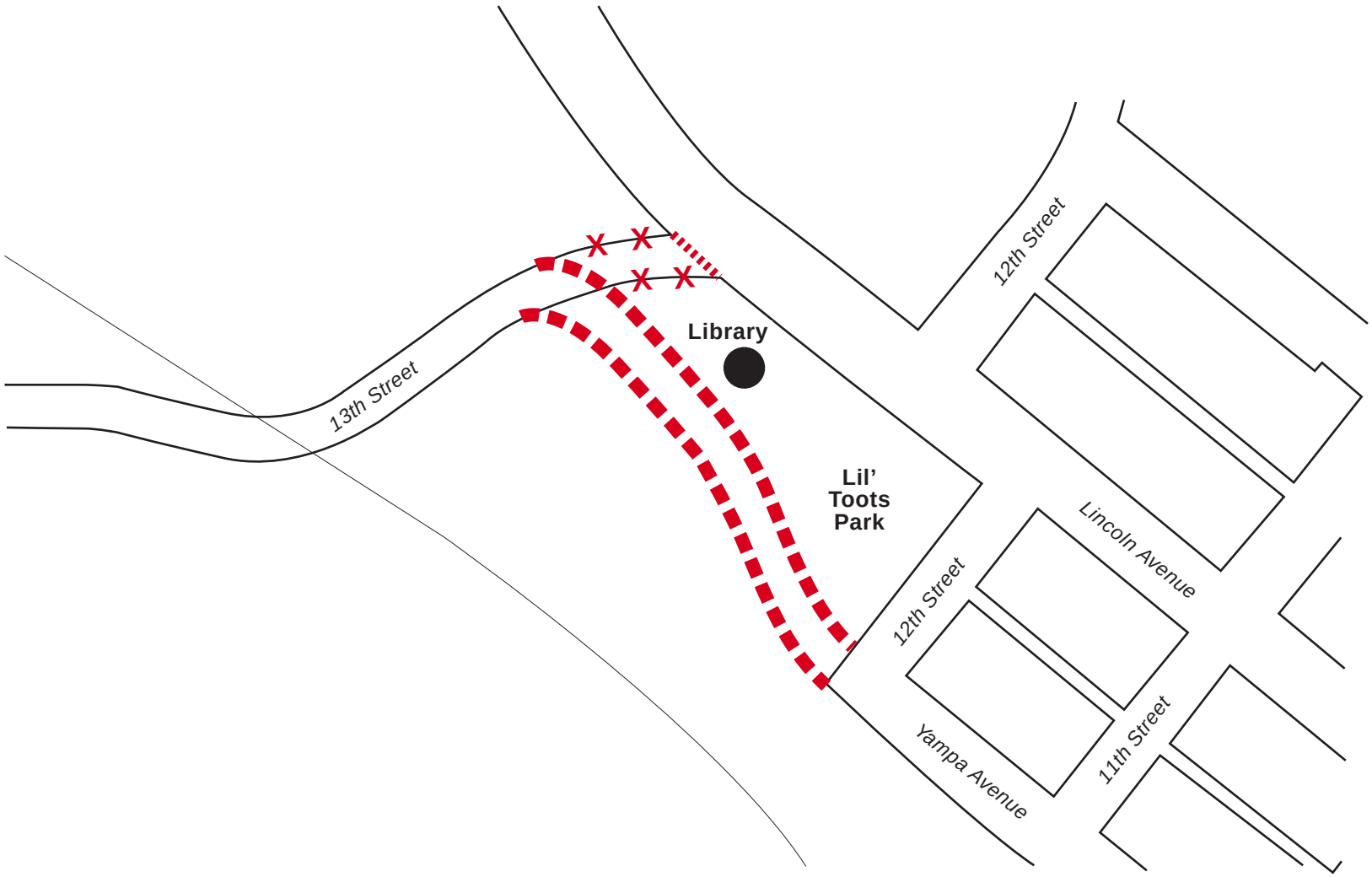

Figure 15

Yampa Avenue Extension Alternative

North

Based on discussions throughout the Community Plan Update process, the concern with the creation of a bypass is that it would significantly impact the character of the surrounding land of whatever route was chosen, whether it be Yampa (where the bypass would separate the town from the river) or Howelsen, which would impart a more urban feel to the Howelsen Hill Recreational Complex area and River Road.

It is important to note, then, that both the Yampa and Howelsen alternatives selected for this analysis minimize these impacts; either new connection would be constructed as a two-lane road with a 25-mph speed limit--the same type of facility as Yampa and Howelsen are today--and neither includes new connections with US 40 to the south (it would be feasible to use River Road as a south bypass in the Howelsen alternative, but that route is not anticipated to be used significantly due to the low speed and narrow lanes on that facility). Both routes simply provide a second, "back way" into downtown from West Steamboat.

In fact, it is worth noting that since neither alternative proposes any improvements to the road system south of town, neither should be considered as a true "bypass" around Old Town. Both would funnel traffic back to Lincoln via 5th Street, and are bypasses only in the sense that they bypass the existing bottleneck on Lincoln Avenue.

Additional recommendations in the Mobility and Circulation Study that have been carried forth in this plan include additional lanes on US 40 between Elk River Road and 13th Street, improved transit service, transit facilities east and west of town and in downtown, improved non-motorized connections and a future trail system plan, and paid parking in the downtown area.

The **Mountain Town Sub-Area Plan** mirrored the above recommendations of the Mobility and Circulation Study.

The **West of Steamboat Springs Area Plan** outlined the future road system that would be developed in the West Steamboat area. The most significant part of the system was the development of New Victory Parkway as a parallel route to US 40 through the West Steamboat area, connecting to Elk River Road on the east via Downhill Drive.

B. Road System Alternatives

Three different road system alternatives were developed for future analysis: the Existing Road System Alternative, the Yampa Avenue Extension Alternative, and the Howelsen Parkway Extension Alternative. Future traffic volume forecasts were developed for each alternative, and assessments were conducted for 5-year future conditions, 10-year future conditions, and buildout conditions (projected to be 25 years). The following section summarizes the improvements included in each alternative.

Existing Road System Alternative

The Existing Road System alternative assumed no capacity improvements to the current roadway infrastructure. It included New Victory Parkway in West Steamboat, however.

Yampa Avenue Extension Alternative

The following road improvements were assumed under the Yampa Avenue Extension alternative:

- Extend Yampa Street as a two lane road north through Lil' Toots Park to 13th Street immediately east of the Yampa River Bridge;
- Widen US 40 to four lanes between 13th Street and Elk River Road;
- Widen Elk River Road between US 40 and Downhill Drive;
- Improve 13th Street to two 12-foot lanes with 6-foot shoulders between the Yampa Bypass and County Road 33 (CR 33); and
- Vacate 13th Street between the Yampa Bypass and Lincoln Avenue.

Howelsen Parkway Extension Alternative

The following road improvements were assumed under the Howelsen Parkway Extension alternative:

- Extend Howelsen Parkway as a two lane road north through the hillside to 13th Street, immediately west of the Yampa River Bridge;
- Widen US 40 to four lanes between 13th Street and Elk River Road;
- Widen Elk River Road between US 40 and Downhill Drive; and
- Improve 13th Street to two 12-foot lanes with 6-foot shoulders between the Howelsen Bypass and CR 33.

C. *Transit Alternatives*

In addition to the three road systems alternatives, two transit-use alternatives were considered. The first alternative assumed a status quo transit service and ridership; the second assumed that future development, particularly in the West Steamboat area, would be transit-oriented, and thus would encourage higher transit ridership. To accomplish this ridership increase, the following improvements were assumed:

- Provide bus service every 20 minutes in the West Steamboat area;
- Provide bus stops every 1/4 mile in that area, with improved stops every ½ mile;
- Implement paid parking in the Old Town area to encourage transit use by employees;
- Construct a 50-space park and ride on the south end of town; and
- Construct two 20-space park and rides in the West Steamboat area, one at Steamboat II, the other near the intersection of Downhill Drive and Elk River Road, to encourage transit use by those living outside of walking distance to a transit stop;

To assess the effects of higher transit usage, the model assumed transit ridership increases for various land use types based on the likelihood of each using increased transit service. For example, the shift to transit for residents living in high-density housing was assumed to be much higher than the shift to transit for low-density housing, because, presumably, high-density housing would be well-served by transit, while low-density housing many not be nearly as well served.

V. ALTERNATIVES ANALYSIS

A. Road System Analysis

Travel Demand Model

Future traffic volume forecasts for the Steamboat Springs area were developed using a spreadsheet-based travel demand forecasting model. The study area was broken into six analysis zones, and eight screenlines were created across strategic areas of the roadway network to assess traffic volume increases under each alternative. Figure 16 shows the analysis zones and screenline locations.

The travel demand model developed traffic volume forecasts based on existing land use information in each zone. This information is presented in Figure 17. Trips to and from each zone were developed based on trip generation rates from the Institute of Transportation Engineers' Trip Generation Manual 6th Edition, with adjustments taken for transit trips and trips made by other nonmotorized modes. Residential, commercial, tourist, and through trips were included in the forecasts. These trips were then assigned to the roadway network based on the available origins and attractions in other zones, and the model was calibrated to existing traffic volumes at each screenline by adjusting the origin and destination pairs.

Five-year, 10-year and buildout (projected to be 25 years) travel forecasts were then developed using the future land use forecasts shown in Figure 18.

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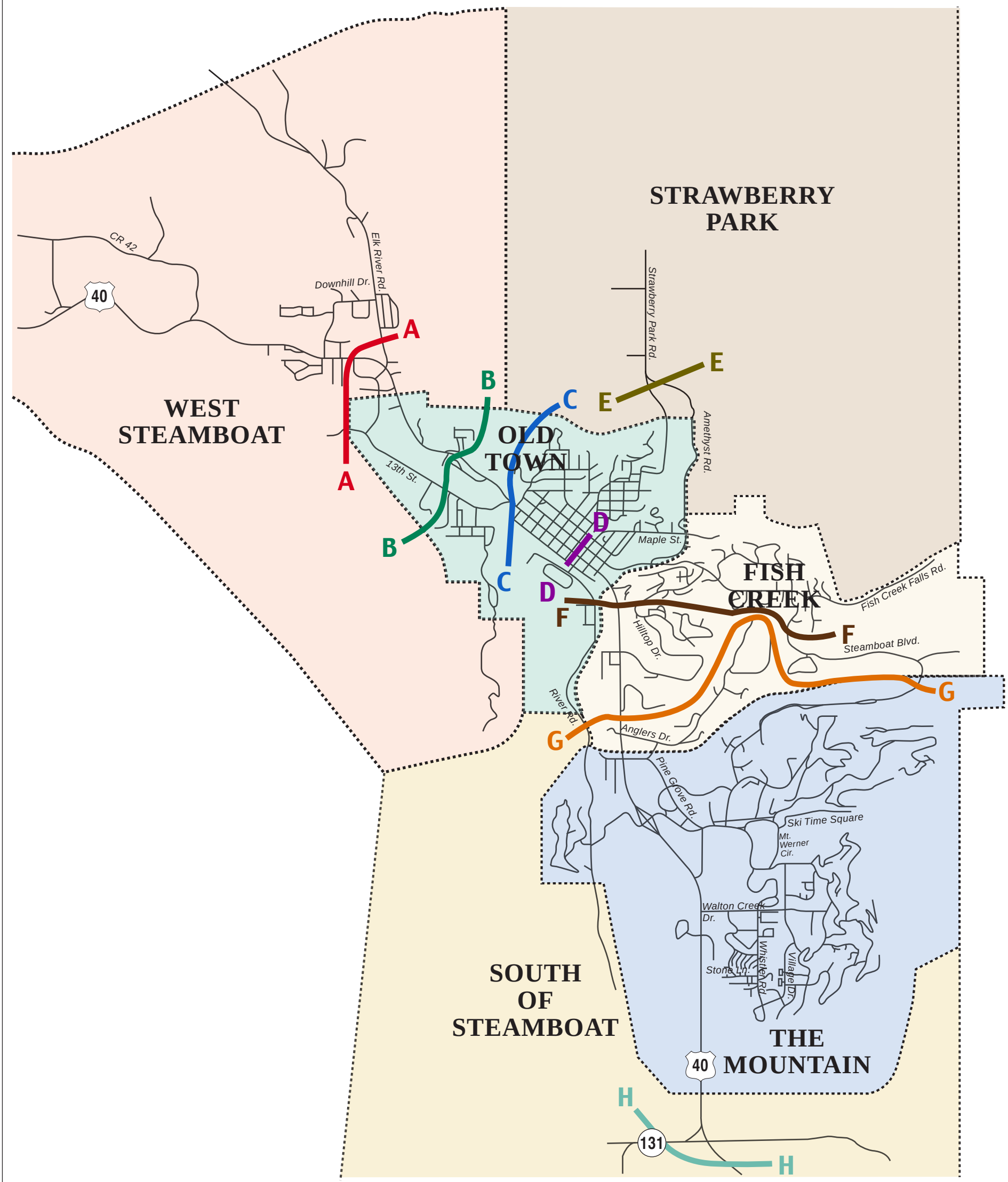

Figure 16

Analysis Zones and Screenline Locations

North

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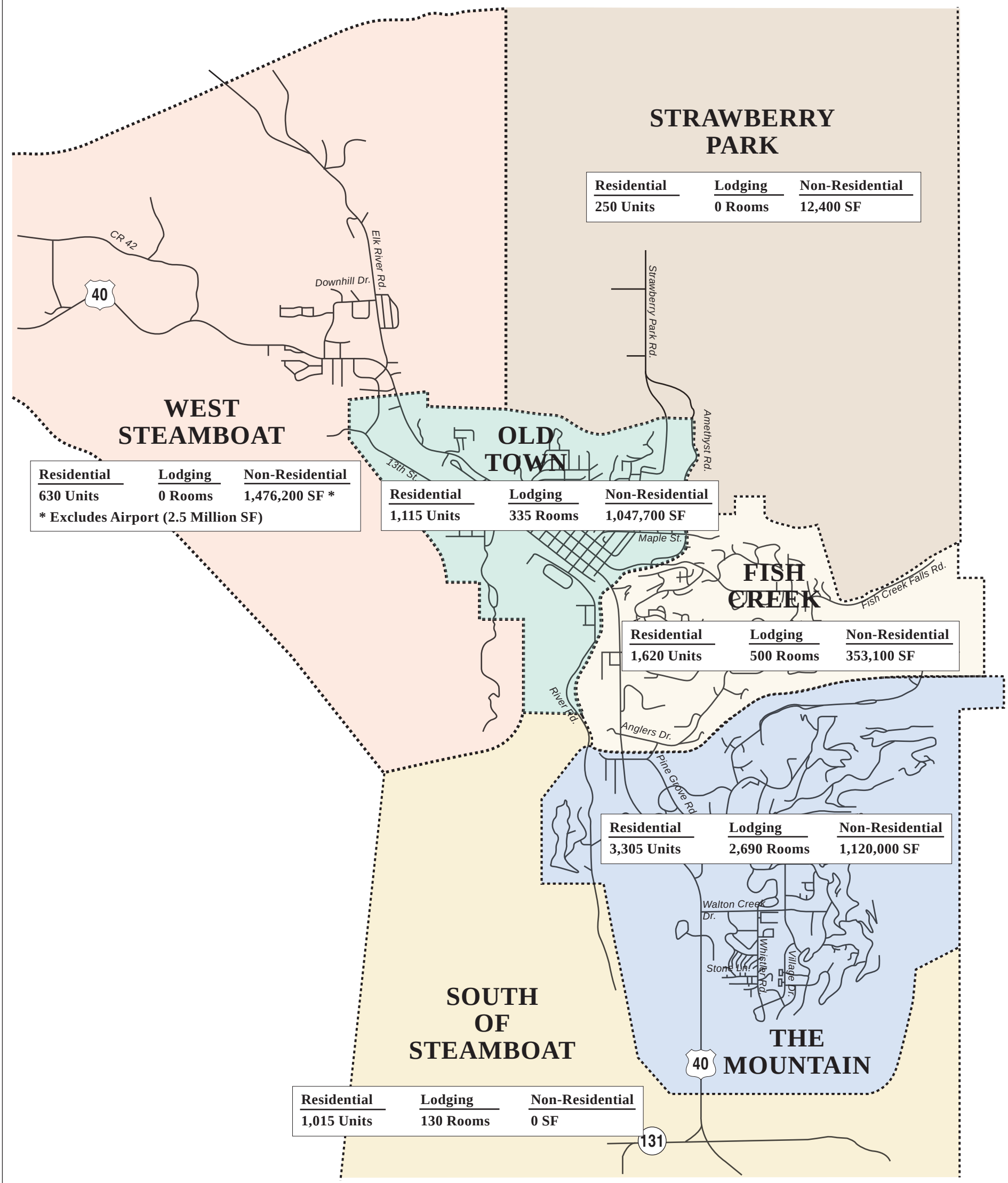

LEGEND

Residental	=	Primary and Secondary
Lodging	=	Hotel and Rental Properties
Non-Residental	=	Retail, Commercial and Industrial

Figure 17

Existing Development

North

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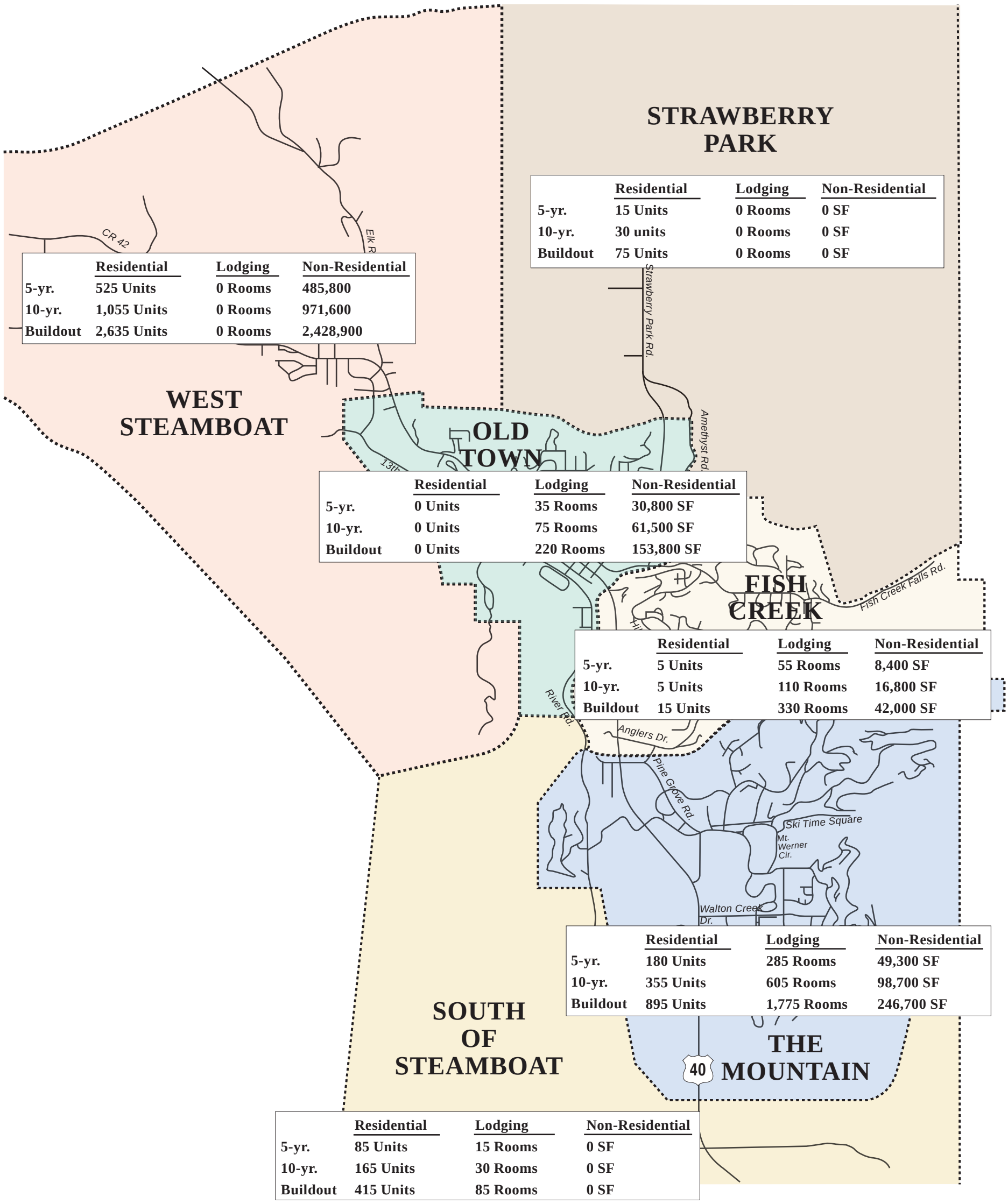

STRAWBERRY PARK

	Residential	Lodging	Non-Residential
5-yr.	15 Units	0 Rooms	0 SF
10-yr.	30 units	0 Rooms	0 SF
Buildout	75 Units	0 Rooms	0 SF

	Residential	Lodging	Non-Residential
5-yr.	525 Units	0 Rooms	485,800
10-yr.	1,055 Units	0 Rooms	971,600
Buildout	2,635 Units	0 Rooms	2,428,900

	Residential	Lodging	Non-Residential
5-yr.	0 Units	35 Rooms	30,800 SF
10-yr.	0 Units	75 Rooms	61,500 SF
Buildout	0 Units	220 Rooms	153,800 SF

	Residential	Lodging	Non-Residential
5-yr.	5 Units	55 Rooms	8,400 SF
10-yr.	5 Units	110 Rooms	16,800 SF
Buildout	15 Units	330 Rooms	42,000 SF

	Residential	Lodging	Non-Residential
5-yr.	180 Units	285 Rooms	49,300 SF
10-yr.	355 Units	605 Rooms	98,700 SF
Buildout	895 Units	1,775 Rooms	246,700 SF

	Residential	Lodging	Non-Residential
5-yr.	85 Units	15 Rooms	0 SF
10-yr.	165 Units	30 Rooms	0 SF
Buildout	415 Units	85 Rooms	0 SF

LEGEND

Residental	=	Primary and Secondary Homes
Lodging	=	Hotel and Rental Properties
Non-Residental	=	Retail, Commercial and Industrial Properties

NOTE:

Additional Units/Rooms/Square Footage Over Existing Conditions

Figure 18

Future Development Forecasts

North

Model Results

Existing Road System Alternative

Figure 19 shows projected traffic volumes and volume to capacity (v/c) ratios at each of the eight screenlines in the study area and the projected travel time increases between West Steamboat and Old Town and the Mountain and Old Town for 5-year, 10-year, and buildout conditions, both with and without improved transit service. As the figure indicates, if no changes to the road system or transit system are undertaken, delays and congestion would begin to increase within five years and would become fairly significant within 10 years on US 40 on both ends of town. If improved transit service is implemented, congestion and delays would still increase between Old Town and West of Steamboat over the next 10 years (Screenlines A, B and C), but the road system on the south end of town would experience conditions comparable to today (Screenlines F and G). At buildout, however, US 40 would experience severe congestion and significant delays on both ends of town, with or without improved transit. (It should also be noted that transit vehicles would also be subjected to this additional delay, as no provisions have been made for separate transit lanes in either the status quo or improved transit alternatives.)

The existing road system could accommodate up to 300 housing units and 290,000 square feet (SF) of commercial development in West Steamboat before additional lanes would be needed on US 40 between 13th Street and Elk River Road. Based on historical growth rates, this level of development would occur by 2005. With four lanes on US 40 through that section, up to 700 housing units and 680,000 SF of commercial space could be developed in West Steamboat before either the Yampa Avenue or Howelsen Parkway extension is needed (2009).

If transit improvements are implemented and West Steamboat is developed as a transit-oriented community, the existing road system could accommodate up to 600 housing units and 580,000 SF of commercial space before additional lanes would be needed on US 40 (2008) between 13th Street and Elk River Road. With these additional lanes, up to 1,100 housing units and 1.9 million SF of commercial space could be developed (2013).

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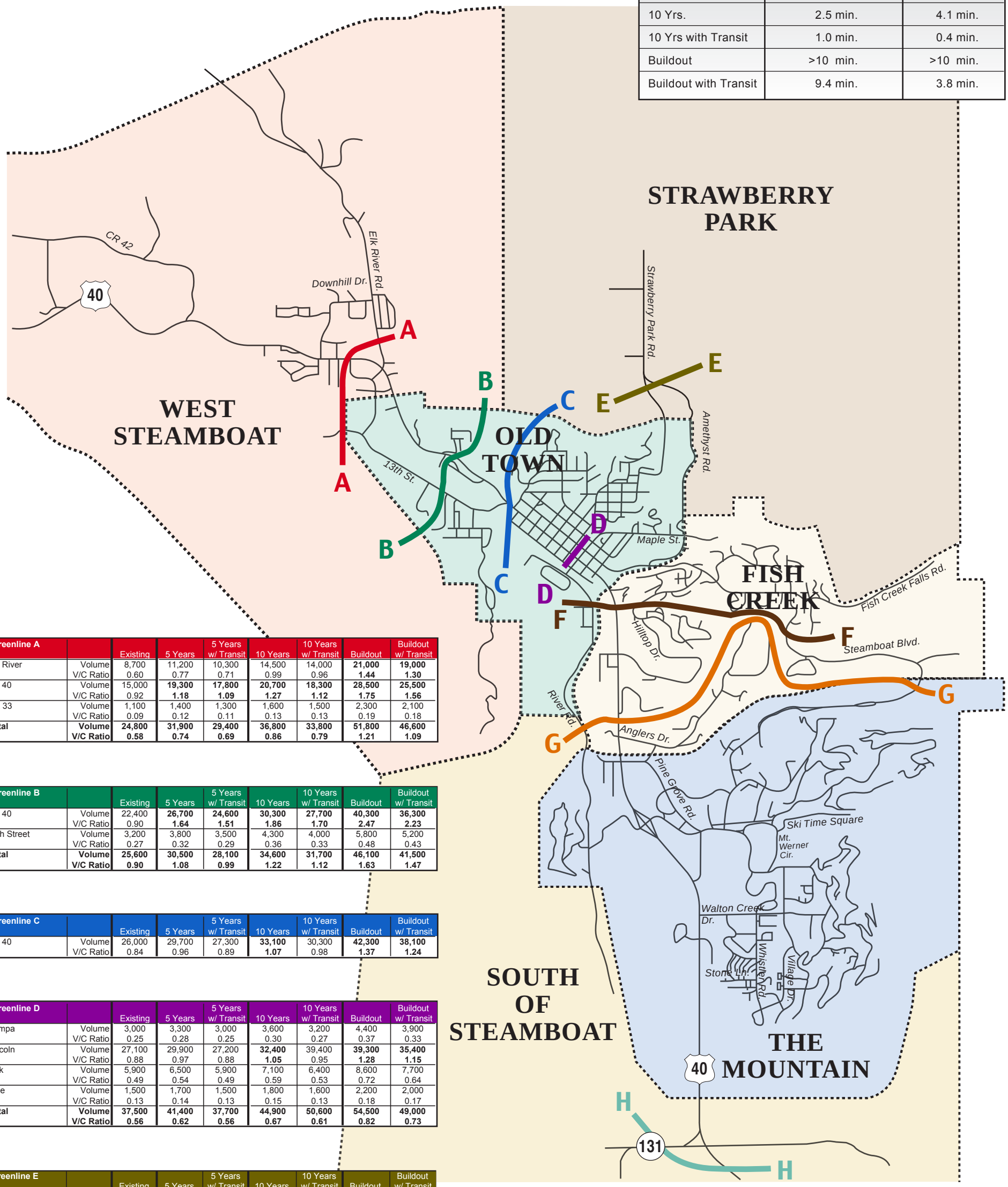
	TRAVEL TIME INCREASES	
	West Of Steamboat To Old Town	Mountain To Old Town
5 Yrs.	0.9 min.	2.6 min.
5 Yrs. with Transit	0.2 min.	-0.4 min.
10 Yrs.	2.5 min.	4.1 min.
10 Yrs with Transit	1.0 min.	0.4 min.
Buildout	>10 min.	>10 min.
Buildout with Transit	9.4 min.	3.8 min.



Screenline A		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Elk River	Volume	8,700	11,200	10,300	14,500	14,000	**21,000**	**19,000**
	V/C Ratio	0.60	0.77	0.71	0.99	0.96	**1.44**	**1.30**
US 40	Volume	15,000	**19,300**	**17,800**	**20,700**	**18,300**	**28,500**	**25,500**
	V/C Ratio	0.92	**1.18**	**1.09**	**1.27**	**1.12**	**1.75**	**1.56**
CR 33	Volume	1,100	1,400	1,300	1,600	1,500	2,300	2,100
	V/C Ratio	0.09	0.12	0.11	0.13	0.13	0.19	0.18
Total	**Volume**	**24,800**	**31,900**	**29,400**	**36,800**	**33,800**	**51,800**	**46,600**
	V/C Ratio	**0.58**	**0.74**	**0.69**	**0.86**	**0.79**	**1.21**	**1.09**

Screenline B		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	22,400	**26,700**	**24,600**	**30,300**	**27,700**	**40,300**	**36,300**
	V/C Ratio	0.90	**1.64**	**1.51**	**1.86**	**1.70**	**2.47**	**2.23**
13th Street	Volume	3,200	3,800	3,500	4,300	4,000	5,800	5,200
	V/C Ratio	0.27	0.32	0.29	0.36	0.33	0.48	0.43
Total	**Volume**	**25,600**	**30,500**	**28,100**	**34,600**	**31,700**	**46,100**	**41,500**
	V/C Ratio	**0.90**	**1.08**	**0.99**	**1.22**	**1.12**	**1.63**	**1.47**

Screenline C		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	26,000	29,700	27,300	**33,100**	30,300	**42,300**	**38,100**
	V/C Ratio	0.84	0.96	0.89	**1.07**	0.98	**1.37**	**1.24**

Screenline D		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Yampa	Volume	3,000	3,300	3,000	3,600	3,200	4,400	3,900
	V/C Ratio	0.25	0.28	0.25	0.30	0.27	0.37	0.33
Lincoln	Volume	27,100	29,900	27,200	**32,400**	39,400	**39,300**	**35,400**
	V/C Ratio	0.88	0.97	0.88	**1.05**	0.95	**1.28**	**1.15**
Oak	Volume	5,900	6,500	5,900	7,100	6,400	8,600	7,700
	V/C Ratio	0.49	0.54	0.49	0.59	0.53	0.72	0.64
Pine	Volume	1,500	1,700	1,500	1,800	1,600	2,200	2,000
	V/C Ratio	0.13	0.14	0.13	0.15	0.13	0.18	0.17
Total	**Volume**	**37,500**	**41,400**	**37,700**	**44,900**	**50,600**	**54,500**	**49,000**
	V/C Ratio	**0.56**	**0.62**	**0.56**	**0.67**	**0.61**	**0.82**	**0.73**

Screenline E		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Strawberry Park	Volume	1,300	1,500	1,500	1,600	1,500	1,800	1,700
	V/C Ratio	0.13	0.15	0.15	0.16	0.15	0.18	0.17
Amethyst	Volume	1,400	1,700	1,600	1,700	1,700	1,900	1,900
	V/C Ratio	0.14	0.17	0.16	0.17	0.17	0.19	0.19
Total	**Volume**	**2,700**	**3,200**	**2,100**	**3.300**	**3,200**	**3,700**	**3,600**
	V/C Ratio	**0.13**	**0.16**	**0.15**	**0.16**	**0.16**	**0.18**	**0.18**

Screenline F		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
River	Volume	1,500	1,700	1,500	1,800	1,600	2,100	1,900
	V/C Ratio	0.13	0.14	0.13	0.15	0.13	0.18	0.16
US 40	Volume	**33,600**	**36,200**	**32,900**	**37,400**	**33,800**	**41,400**	**37,000**
	V/C Ratio	**1.04**	**1.12**	**1.02**	**1.16**	**1.05**	**1.29**	**1.15**
Tamarack	Volume	2,300	2,500	2,300	2,700	2,500	3,200	2,900
	V/C Ratio	0.19	0.21	0.19	0.23	0.21	0.27	0.24
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**38,400**	**42,500**	**38,700**	**45,100**	**41,000**	**52,600**	**47,600**
	V/C Ratio	**0.56**	**0.62**	**0.57**	**0.66**	**0.60**	**0.77**	**0.70**

Screenline G		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	**34,700**	**37,900**	**34,500**	**39,400**	**35,700**	**44,000**	**39,400**
	V/C Ratio	**1.08**	**1.18**	**1.07**	**1.22**	**1.11**	**1.37**	**1.22**
River	Volume	1,000	1,100	1,000	1,200	1,100	1,400	1,300
	V/C Ratio	0.08	0.09	0.08	0.10	0.09	0.12	0.11
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**36,700**	**41,100**	**37,500**	**43,800**	**39,900**	**51,300**	**46,500**
	V/C Ratio	**0.65**	**0.73**	**0.67**	**0.78**	**0.71**	**0.91**	**0.83**

Screenline H		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	6,100	6,900	6,700	7,300	7,000	8,100	7,800
	V/C Ratio	0.26	0.29	0.28	0.31	0.30	0.34	0.33
SH 131	Volume	6,900	7,800	7,600	8,200	7,900	9,200	8,900
	V/C Ratio	0.31	0.35	0.34	0.37	0.35	0.41	0.40
CR 14	Volume	700	800	800	800	800	900	900
	V/C Ratio	0.06	0.07	0.07	0.07	0.07	0.08	0.08
Total	**Volume**	**13,700**	**15,500**	**15,100**	**16,300**	**15,700**	**18,200**	**17,600**
	V/C Ratio	**0.24**	**0.26**	**0.26**	**0.28**	**0.27**	**0.31**	**0.30**

Figure 19

Future Traffic Forecasts - Existing Road System

North

Yampa Avenue Extension Alternative

Figure 20 shows future conditions with the Yampa Avenue Extension. As the figure indicates, the extension does an adequate job of addressing congestion between the Curve and Old Town, with travel times on US 40 over the next 10 years anticipated to be less than they are today. Buildout conditions would see travel times increasing by about 1.7 minutes over today, but if transit improvements are implemented, this increase would only be about a half a minute.

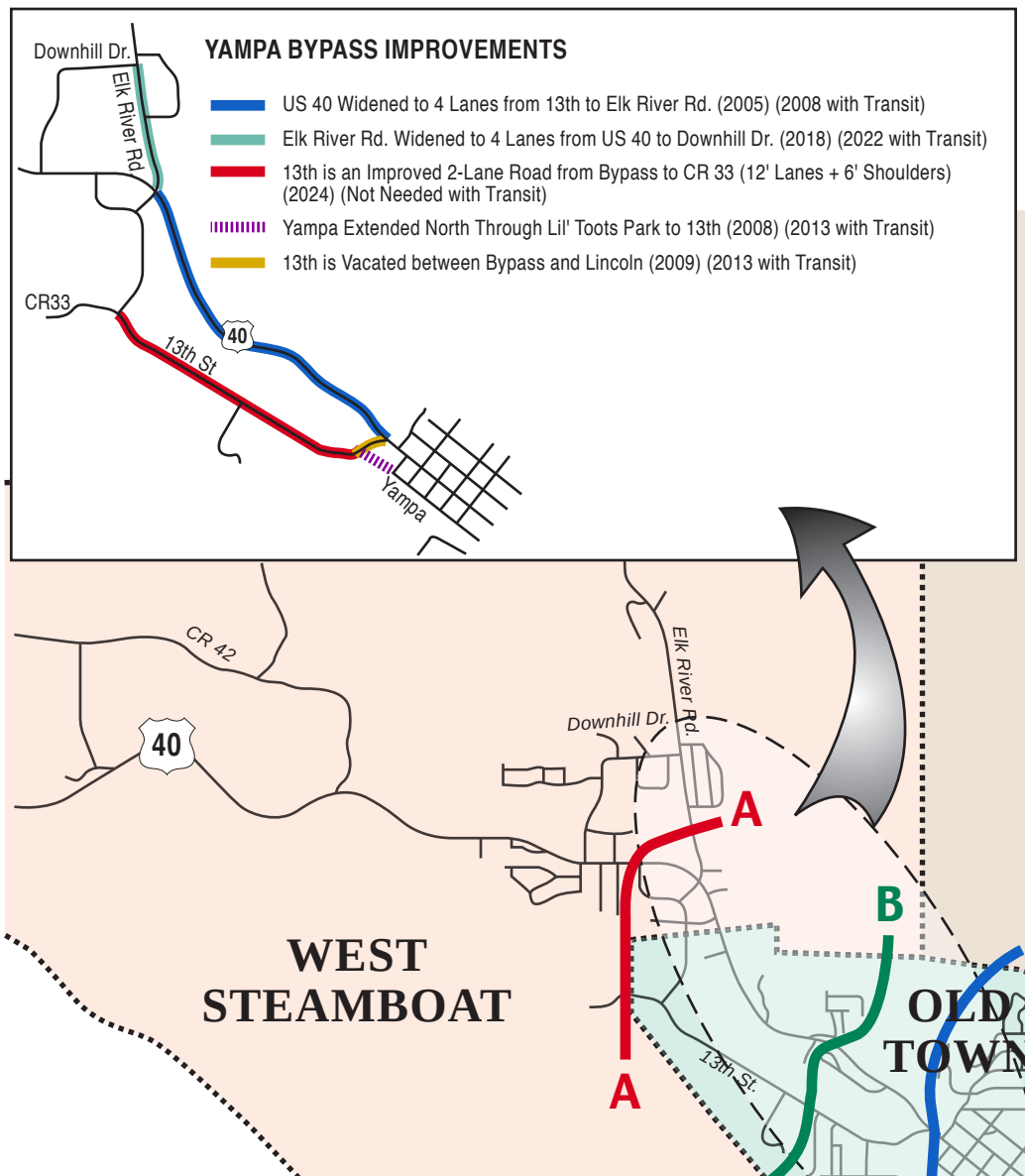
It should be noted, however, that the extension improvements do not address any of the congestion that would occur on the south end of town, which would become quite significant within the next 10 years without transit improvements or by buildout of the area with transit improvements. Likewise, the improvements do not address increasing volumes on US 40 west of the Curve (Screenline A), which also would become quite significant within 10 years, even with New Victory Parkway.

Howelsen Parkway Extension Alternative

Figure 21 shows future conditions with the Howelsen Parkway Extension. As the figure indicates, this option also does an adequate job of addressing congestion between the Curve and Old Town, though the projected volumes shifting to the new roadway in this alternative are slightly lower than those using the Yampa alternative (Screenline C). This is because Howelsen does not provide as convenient a connection to the properties on the north end of Old Town as Yampa, and the lack of improvements to River Road south of town limit its attractiveness to vehicles destined further south of town.

As a result of the smaller shift in traffic volumes, the projected improvements in travel time on US 40 between the Curve and Old Town are not as significant as with the Yampa Avenue Extension, though in general they still result in congestion over the next 10 years that would be similar to that experienced today. At buildout, however, the Howelsen alternative results in travel times that are two to four minutes longer than today.

As with the Yampa alternative, the Howelsen alternative does not address the congestion that is anticipated within the next 5 to 10 years west of the Curve. Likewise, although a small traffic shift to River Road on the south end of town (approximately 500 vehicles) is anticipated under this alternative, it is not significant enough to overcome volume increases on US 40 in that area, and thus does not mitigate the projected delays to the state highway.



	TRAVEL TIME CHANGES	
	West Of Steamboat To Old Town	Mountain To Old Town
5 Yrs.	0.4 min. less	2.6 min. more
5 Yrs. with Transit	0.5 min. less	0.4 min. less
10 Yrs.	0.2 min. less	4.1 min. more
10 Yrs with Transit	0.3 min. less	0.4 min. more
Buildout	1.7 min. more	>10 min. more
Buildout with Transit	0.6 min. more	3.8 min. more

Screenline A		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Elk River	Volume	8,700	11,200	10,300	14,500	14,000	24,000	22,000
	V/C Ratio	0.60	0.77	0.71	0.99	0.96	0.82	0.75
US 40	Volume	15,000	**19,300**	**17,800**	**20,700**	**18,300**	**25,500**	**22,500**
	V/C Ratio	0.92	**1.18**	**1.09**	**1.27**	**1.12**	**1.56**	**1.38**
CR 33	Volume	1,100	1,400	1,300	1,600	1,500	2,300	2,100
	V/C Ratio	0.09	0.12	0.11	0.13	0.13	0.19	0.18
Total	**Volume**	**24,800**	**31,900**	**29,400**	**36,800**	**33,800**	**51,800**	**46,600**
	V/C Ratio	**0.58**	**0.74**	**0.69**	**0.86**	**0.79**	**0.90**	**0.81**

Screenline B		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	**22,400**	23,000	21,300	26,200	24,600	**35,400**	**32,100**
	V/C Ratio	**1.37**	0.71	0.66	0.81	0.76	**1.10**	**1.00**
13th Street	Volume	3,200	7,500	6,800	8,400	7,100	10,700	9,400
	V/C Ratio	0.27	0.63	0.57	0.70	0.59	0.89	0.78
Total	**Volume**	**25,600**	**30,500**	**28,100**	**34,600**	**31,700**	**46,100**	**41,500**
	V/C Ratio	**0.90**	**0.69**	**0.64**	**0.78**	**0.72**	**0.99**	**0.94**

Screenline C		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	26,000	22,200	20,500	24,700	23,200	**31,600**	28,700
	V/C Ratio	0.84	0.72	0.67	0.80	0.75	**1.03**	0.93
Yampa Bypass	Volume		7,500	6,800	8,400	7,100	10,700	9,100
	V/C Ratio		0.63	0.57	0.70	0.59	0.89	0.76
Total	**Volume**	**26,000**	**29,700**	**27,300**	**33,100**	**30,300**	**42,300**	**37,800**
	V/C Ratio	**0.84**	**0.69**	**0.64**	**0.81**	**0.71**	**0.99**	**0.89**

Screenline D		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Yampa	Volume	3,000	6,500	5,800	7,200	5,800	9,000	7,500
	V/C Ratio	0.25	0.54	0.48	0.60	0.48	0.75	0.63
Lincoln	Volume	27,100	28,700	24,400	28,800	26,800	**34,700**	**31,800**
	V/C Ratio	0.88	0.87	0.79	0.94	0.87	**1.13**	**1.03**
Oak	Volume	5,900	6,500	5,900	7,100	6,400	8,600	7,700
	V/C Ratio	0.49	0.54	0.49	0.59	0.53	0.72	0.64
Pine	Volume	1,500	1,700	1,500	1,800	1,600	2,200	2,000
	V/C Ratio	0.13	0.14	0.13	0.15	0.13	0.18	0.17
Total	**Volume**	**37,500**	**41,400**	**37,600**	**44,900**	**40,600**	**54,500**	**49,000**
	V/C Ratio	**0.56**	**0.62**	**0.56**	**0.67**	**0.61**	**0.82**	**0.73**

Screenline E		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Strawberry Park	Volume	1,300	1,500	1,500	1,600	1,300	1,800	1,700
	V/C Ratio	0.13	0.15	0.15	0.16	0.15	0.18	0.17
Amethyst	Volume	1,400	1,700	1,600	1,700	1,700	1,900	1,900
	V/C Ratio	0.14	0.17	0.16	0.17	0.17	0.19	0.19
Total	**Volume**	**2,700**	**3,200**	**3,100**	**3,300**	**3,200**	**3,700**	**3,600**
	V/C Ratio	**0.13**	**0.16**	**0.15**	**0.16**	**0.16**	**0.18**	**0.18**

Screenline F		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
River	Volume	1,500	1,700	1,500	1,800	1,600	2,100	1,900
	V/C Ratio	0.13	0.14	0.13	0.15	0.13	0.18	0.16
US 40	Volume	**33,600**	**36,200**	**32,900**	**37,400**	**33,800**	**42,400**	**37,000**
	V/C Ratio	**1.04**	**1.12**	**1.02**	**1.16**	**1.05**	**1.29**	**1.15**
Tamarack	Volume	2,300	2,500	2,300	2,700	2,500	3,200	2,900
	V/C Ratio	0.19	0.21	0.19	0.23	0.21	0.27	0.24
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**38,400**	**42,500**	**38,700**	**45,100**	**41,000**	**52,600**	**47,600**
	V/C Ratio	**0.56**	**0.62**	**0.57**	**0.66**	**0.60**	**0.77**	**0.70**

Screenline G		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	**34,700**	**37,900**	**34,500**	**39,400**	**35,700**	**44,000**	**39,400**
	V/C Ratio	**1.08**	**1.18**	**1.07**	**1.22**	**1.11**	**1.37**	**1.22**
River	Volume	1,000	1,100	1,000	1,200	1,100	1,400	1,300
	V/C Ratio	0.08	0.09	0.08	0.10	0.09	0.12	0.11
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**36,700**	**41,100**	**37,500**	**43,800**	**39,900**	**51,300**	**46,500**
	V/C Ratio	**0.65**	**0.73**	**0.67**	**0.78**	**0.71**	**0.91**	**0.83**

Screenline H		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	6,100	6,900	6,700	7,300	7,000	8,100	7,800
	V/C Ratio	0.26	0.29	0.28	0.31	0.30	0.34	0.33
SH 131	Volume	6,900	7,800	7,600	8,200	7,900	9,200	8,900
	V/C Ratio	0.31	0.35	0.33	0.37	0.35	0.41	0.43
CR 14	Volume	700	800	800	800	800	900	900
	V/C Ratio	0.06	0.07	0.07	0.07	0.07	0.08	0.08
Total	**Volume**	**13,700**	**15,500**	**15,100**	**16,300**	**15,700**	**18,200**	**17,600**
	V/C Ratio	**0.24**	**0.27**	**0.26**	**0.28**	**0.27**	**0.31**	**0.30**

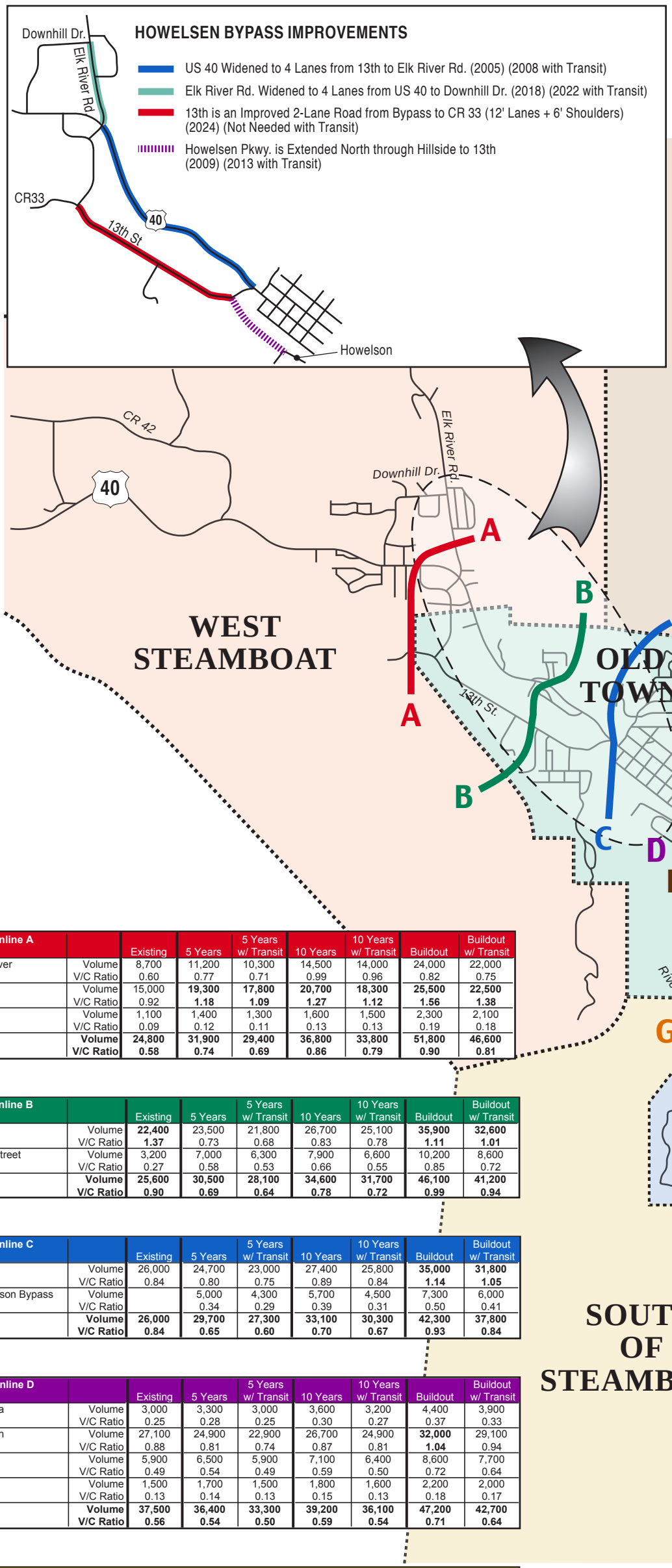
Figure 20

Future Traffic Forecasts

with Yampa Avenue Extension Improvements

FELSBURG HOLT & ULLEVIG

North



	TRAVEL TIME CHANGES	
	West Of Steamboat To Old Town	Mountain To Old Town
5 Yrs.	0.2 min. less	2.3 min. more
5 Yrs. with Transit	0.3 min. less	0.6 min. less
10 Yrs.	0.2 min. more	3.8 min. more
10 Yrs with Transit	same time	same time
Buildout	4.2 min. more	>10 min. more
Buildout with Transit	1.7 min. more	3.5 min. more

Screenline A		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Elk River	Volume	8,700	11,200	10,300	14,500	14,000	24,000	22,000
	V/C Ratio	0.60	0.77	0.71	0.99	0.96	0.82	0.75
US 40	Volume	15,000	**19,300**	**17,800**	**20,700**	**18,300**	**25,500**	**22,500**
	V/C Ratio	0.92	**1.18**	**1.09**	**1.27**	**1.12**	**1.56**	**1.38**
CR 33	Volume	1,100	1,400	1,300	1,600	1,500	2,300	2,100
	V/C Ratio	0.09	0.12	0.11	0.13	0.13	0.19	0.18
Total	**Volume**	**24,800**	**31,900**	**29,400**	**36,800**	**33,800**	**51,800**	**46,600**
	V/C Ratio	**0.58**	**0.74**	**0.69**	**0.86**	**0.79**	**0.90**	**0.81**

Screenline B		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	**22,400**	23,500	21,800	26,700	25,100	**35,900**	**32,600**
	V/C Ratio	**1.37**	0.73	0.68	0.83	0.78	**1.11**	**1.01**
13th Street	Volume	3,200	7,000	6,300	7,900	6,600	10,200	8,600
	V/C Ratio	0.27	0.58	0.53	0.66	0.55	0.85	0.72
Total	**Volume**	**25,600**	**30,500**	**28,100**	**34,600**	**31,700**	**46,100**	**41,200**
	V/C Ratio	**0.90**	**0.69**	**0.64**	**0.78**	**0.72**	**0.99**	**0.94**

Screenline C		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	26,000	24,700	23,000	27,400	25,800	**35,000**	**31,800**
	V/C Ratio	0.84	0.80	0.75	0.89	0.84	**1.14**	**1.05**
Howelson Bypass	Volume		5,000	4,300	5,700	4,500	7,300	6,000
	V/C Ratio		0.34	0.29	0.39	0.31	0.50	0.41
Total	**Volume**	**26,000**	**29,700**	**27,300**	**33,100**	**30,300**	**42,300**	**37,800**
	V/C Ratio	**0.84**	**0.65**	**0.60**	**0.70**	**0.67**	**0.93**	**0.84**

Screenline D		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Yampa	Volume	3,000	3,300	3,000	3,600	3,200	4,400	3,900
	V/C Ratio	0.25	0.28	0.25	0.30	0.27	0.37	0.33
Lincoln	Volume	27,100	24,900	22,900	26,700	24,900	**32,000**	29,100
	V/C Ratio	0.88	0.81	0.74	0.87	0.81	**1.04**	0.94
Oak	Volume	5,900	6,500	5,900	7,100	6,400	8,600	7,700
	V/C Ratio	0.49	0.54	0.49	0.59	0.50	0.72	0.64
Pine	Volume	1,500	1,700	1,500	1,800	1,600	2,200	2,000
	V/C Ratio	0.13	0.14	0.13	0.15	0.13	0.18	0.17
Total	**Volume**	**37,500**	**36,400**	**33,300**	**39,200**	**36,100**	**47,200**	**42,700**
	V/C Ratio	**0.56**	**0.54**	**0.50**	**0.59**	**0.54**	**0.71**	**0.64**

Screenline E		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
Strawberry Park	Volume	1,300	1,500	1,500	1,600	1,500	1,800	1,700
	V/C Ratio	0.13	0.15	0.15	0.16	0.15	0.18	0.17
Amethyst	Volume	1,400	1,700	1,600	1,700	1,700	1,900	1,900
	V/C Ratio	0.14	0.17	0.16	0.17	0.17	0.19	0.19
Total	**Volume**	**2,700**	**3,200**	**3,100**	**3,300**	**3,200**	**3,700**	**3,600**
	V/C Ratio	**0.13**	**0.16**	**0.15**	**0.16**	**0.16**	**0.18**	**0.18**

Screenline F		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
River	Volume	1,500	2,100	2,000	2,300	2,000	2,600	2,300
	V/C Ratio	0.13	0.18	0.17	0.19	0.17	0.22	0.19
US 40	Volume	**33,600**	**35,800**	**32,400**	**36,900**	**33,400**	**40,900**	**36,600**
	V/C Ratio	**1.04**	**1.11**	**1.01**	**1.15**	**1.04**	**1.27**	**1.14**
Tamarack	Volume	2,300	2,500	2,300	2,700	2,500	3,200	2,900
	V/C Ratio	0.19	0.21	0.19	0.23	0.21	0.27	0.24
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**38,400**	**42,500**	**38,700**	**45,100**	**41,000**	**52,600**	**47,700**
	V/C Ratio	**0.56**	**0.62**	**0.57**	**0.66**	**0.60**	**0.77**	**0.70**

Screenline G		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	**34,700**	**37,400**	**34,000**	**38,900**	**35,300**	**43,500**	**39,000**
	V/C Ratio	**1.08**	**1.16**	**1.06**	**1.21**	**1.10**	**1.35**	**1.21**
River	Volume	1,000	1,600	1,500	1,700	1,500	1,900	1,700
	V/C Ratio	0.08	0.13	0.13	0.14	0.13	0.16	0.14
Steamboat	Volume	1,000	2,100	2,000	3,200	3,100	5,900	5,800
	V/C Ratio	0.08	0.18	0.17	0.27	0.26	0.49	0.48
Total	**Volume**	**36,700**	**41,100**	**37,500**	**43,800**	**39,900**	**51,300**	**46,500**
	V/C Ratio	**0.65**	**0.73**	**0.67**	**0.78**	**0.71**	**0.91**	**0.83**

Screenline H		Existing	5 Years	5 Years w/ Transit	10 Years	10 Years w/ Transit	Buildout	Buildout w/ Transit
US 40	Volume	6,100	6,900	6,700	7,300	7,000	8,100	7,800
	V/C Ratio	0.26	0.29	0.28	0.31	0.30	0.34	0.33
SH 131	Volume	6,900	7,800	7,600	8,200	7,900	9,200	8,900
	V/C Ratio	0.31	0.35	0.34	0.37	0.35	0.41	0.40
CR 14	Volume	700	800	800	800	800	900	900
	V/C Ratio	0.06	0.07	0.07	0.07	0.07	0.08	0.08
Total	**Volume**	**13,700**	**15,500**	**15,100**	**16,300**	**15,700**	**18,200**	**17,600**
	V/C Ratio	**0.24**	**0.27**	**0.26**	**0.28**	**0.27**	**0.31**	**0.30**

Figure 21

Future Traffic Forecasts

with Howelsen Parkway Extension Improvements

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North

Additional Improvements

As noted above, while both road extension alternatives do an adequate job of addressing the projected congestion through the bottleneck on the north end of town, neither adequately addresses conditions south of town or west of the Curve, where US 40 would continue to carry the vast majority of traffic. As a result, the following additional improvements would be needed to create an adequate road system that can accommodate traffic forecasts:

- Widen US 40 to four lanes between Elk River Road and Steamboat II.
- Widen US 40 to six lanes between 3rd Street and the Mt. Werner Circle interchange.

Thus, at buildout, to fully address capacity US 40 would consist of four lanes between Steamboat II and 3rd Street, six lanes between 3rd Street and the Mt. Werner Circle Interchange, and four lanes between the interchange and Walton Creek Road. However, both the community and Steamboat Springs Transit have expressed that a six-lane road is not acceptable at this time; of particular concern would be the potential impacts on pedestrians accessing bus stops on the opposite side of the road. They have also indicated that they are willing to accept some increases in congestion as an acceptable alternative to major roadway widening projects. In light of these issues, and since Steamboat Boulevard and River Road are both available as alternate routes between Old Town and the mountain, widening of US 40 south of downtown has not been included in this plan. It may need to be revisited in future Plan updates.

Table 3 summarizes the road system improvements needs and the amount of development that could occur in the West Steamboat area before the road system reaches capacity.

Table 3. Road System Improvements

Improvement	Capacity of Existing Road System		Capacity of Bypass Alternatives[1]	
	Traditional Development	w/ Transit Improvements	Traditional Development	w/ Transit Improvements
No Improvements	2005 300 Residential 290,000 SF Commercial	2008 600 Residential 580,000 SF Commercial	2005 300 Residential 290,000 SF Commercial	2008 600 Residential 580,000 SF Commercial
US 40 13th - Elk River Road			2009 700 Residential 680,000 SF Commercial	2013 1,100 Residential 1.1 million SF Commercial
Yampa/Howelsen Extension			2009 700 Residential 680,000 SF Commercial	2013 1,100 Residential 1.1 million SF Commercial
US 40 Elk River - Steamboat II			2018 1,600 Residential 1.6 million SF Commercial	2022 1,900 Residential 1.9 million SF Commercial
Elk River Road US 40 - Downhill Drive			2024 2,200 Residential 2.2 million SF Commercial	Buildout
13th Street Extension - CR 33			Buildout	Not Needed

1. Level of development that could occur in West Steamboat before road system would require additional improvements

It is important to note that all the improvements between the bottleneck and Steamboat II represent incremental roadway widening steps that would need to be built in the identified order so that the West Steamboat area can be developed to its full potential without undue delays on the road system. Each improvement addresses a congestion location in the order it would occur (i.e., US 40 north of 13th would be the first segment of roadway to become congested, followed by the bottleneck, followed by US 40 west of Elk River Road, followed by Elk River Road). As such, if an earlier improvement is skipped, such as the Yampa Avenue extension, the incremental development increase gained by a later improvement, such as widening US 40 from Elk River Road to Steamboat II, wouldn't be realized. In other words, while additional lanes on US 40 in West Steamboat would allow more vehicles to move through that area (and therefore more development to occur), they wouldn't solve the problem of moving those additional vehicles between West Steamboat and downtown; unless additional capacity is provided at the bottleneck, the additional capacity further west merely results in more vehicles arriving at the bottleneck a little faster.

In addition to the above projects, five minor changes to the roadway system are recommended to further improve traffic operations:

- Swap the eastbound and westbound phase order at the US 40/Elk River Road intersection. Currently, the two side streets are split-phased; westbound traffic moves first, followed by eastbound traffic. Westbound left turns are the most significant side street volume. Under the current phase order, this movement arrives at the 13th Street/Lincoln Avenue signal near the beginning of the red phase, and therefore must wait for up to 25 seconds before proceeding. By swapping the phase order, this movement would arrive at that signal approximately 20 seconds later, and therefore only have a five second wait.

- Install a westbound right turn overlap phase at the US 40/Pine Grove Road intersection. Westbound queue lengths at this intersection are approximately 200 feet. A westbound right turn overlap phase, which would provide a green arrow for westbound right turns concurrently with the southbound left turn movement, would increase the number of vehicles served during the overlapping left turn. This would reduce queues and improve intersection level of service.

- Install westbound overlap phasing at the US 40/Walton Creek Road intersection. As above, this improvement would consist of a westbound right turn arrow phase concurrent with the southbound left turn phase to reduce queuing and enhance intersection performance.

- At the Elk River Road/Downhill Drive intersection, northbound left turning vehicles frequently block through traffic because no left turn lane is available. The through vehicles then use the northbound right turn pocket to drive around the queue. While no accidents or near-misses were observed during the counts, this operational issue could potentially lead to an increase in accidents at the intersection.

- Install a traffic signal with left turn phasing at the Lincoln Avenue/11th Street intersection upon completion of the Yampa Extension. The current SST transit operations center is located on 13th Street north of the 13th Street/Lincoln Avenue signal, and transit coaches access their routes via this intersection. When 13th Street is vacated between the Yampa Extension and Lincoln, coaches would be routed to and from Lincoln via the Yampa Extension and the new signal at 11th Street.

In addition to the above improvements, the City and CDOT should periodically review the progression plans on US 40 between Walton Creek and Elk River Road to ensure they are sufficiently serving travel patterns. This review would consist of conducting AM, noon, and PM peak hour turning movement counts at each intersection every 2-4 years, and updating the progression model with the new volumes. Intersection splits and off-sets should be adjusted accordingly based on the volumes.

Roundabouts

Over the course of the Steamboat Springs Area Community Plan Update process, the subject of roundabouts has been raised several times. As a result of the success of these devices in other mountain towns such as Vail, Avon, Frisco, and Aspen, both as traffic control devices and prominent entry features for the town, several members of the community have expressed an interest in installing one or more in this community.

It is important to note that a roundabout is first and foremost a traffic control device, whose primary function is to safely meter traffic at an intersection, similar to a stop sign or a traffic signal. And like stop signs and traffic signals, there are certain locations where they are appropriate and certain locations where they would not be successful (one wouldn't want to place a four way stop on Lincoln Avenue in the middle of old town, just as one wouldn't place a signal at the entrance to Strawberry Park Hot Springs). Application of traffic control devices are largely governed by the traffic volumes and travel patterns at an individual intersection, and roundabouts are most successful at locations where through and left turning traffic on the main road is low to moderate, and the predominant side street movement is a left turn. Other areas where roundabouts may be appropriate include:

- High accident locations, especially locations with high accidents related to cross movements or left turn or right turn movements;
- Locations with high delays;
- Locations where traffic signals are not warranted;

- Four-way stop intersections;
- Intersections with more than four legs;
- Intersections with unusual geometry;
- Intersections with high left turn flows;
- Intersections with changing traffic patterns;
- Intersections where U-turns are frequent or desirable, i.e. in conjunction with access management strategies (raised median) along commercial corridors;
- Locations where storage capacities for signalized intersections are restricted, or where the queues created by signals cause operational or safety problems, i.e. diamond interchanges, intersections near rail underpasses, bridges, and tunnels;
- To replace a pair of closely spaced intersections;
- Along congested arterials, in lieu of full-length road widening;
- Intersections where the character or speed of the road changes, e.g. at entry points to a community or at junctions where a bypass road connects to an arterial; and
- Intersections that are important from an urban design or visual point of view (as long as the basic engineering and safety criteria can be satisfied).

Conditions that a generally unfavorable for roundabouts include:

- Locations where there is insufficient right-of-way for an acceptable outside diameter;
- Locations where it would be difficult to provide a flat plateau for the roundabout construction. Most guides recommend maximum grades of three to five percent depending on design speed (since all vehicle must slow and/or stop before entering the roundabout, steep approach grades can be problematic in icy conditions);
- Locations within a coordinated signal network where the roundabout would disrupt platoons; and
- Locations with heavy flows on the major road and low flows on the minor road.

A roundabout level of service analysis was conducted at the US 40/Elk River Road intersection for future conditions to determine if a roundabout would be appropriate there. The analysis indicated that a roundabout would not work because the combination of high eastbound and westbound through volumes on US 40 left too few gaps available for the high left turn volume on Elk River Road. However, the following locations may be appropriate for future roundabouts:

- Walton Creek Road/Village Drive;
- Whistler Road/Eagle Ridge Drive/Walton Creek Road;
- Village Drive/Apres Ski Way (approach grades and pedestrian activity here may not be conducive to a roundabout);
- Mt. Werner Circle/Pine Grove Road (the current signal is projected to operate adequately in the future; it's replacement with a roundabout would only appear appropriate so as to provide an entry feature to the Mountain Area. Approach grades may also be an issue here.); and
- One or more of the four Oak Street all-way stop intersections (3rd, 5th, 7th, and 9th Street);
- Elk River Road/Downhill Drive (while not appropriate now due to low volumes on Downhill Drive, a roundabout may be appropriate here in the future as New Victory Parkway is constructed and West Steamboat develops).

It is recommended that a more detailed study be conducted at each of the above locations to determine if a roundabout would appropriate.

B. Parking

Future parking projections for Old Town were developed based on projected new commercial development in the area and increases in tourist and local traffic destined for downtown as forecasted by the travel demand model. These increases were then converted to low, medium, and high parking demand forecasts. The low demand forecast assumed that future trips to the area would park at the same rate as they do under existing conditions. The medium forecast assumes traffic would park at a slightly higher rate in the future, with the rate based on information for downtown parking demand from the Eno Foundation. The high forecast assumes future traffic would park at a rate more typical of suburban commercial development. This rate was derived from the ITE Parking Generation rate for shopping centers.

Table 4 summarizes the 5-year, 10-year, and buildout parking demand for Old Town under the three parking scenarios. In each case, parking was assessed both with and without the transit improvements described above, which includes implementing paid parking in the downtown area. As the table indicates, the existing parking supply would appear to be adequate for the next 10 years under any of the growth scenarios, and would be adequate at buildout under the low growth scenario. Approximately 100 to 400 additional spaces would be needed by buildout under the medium and high growth scenarios, depending on the implementation of transit improvements and paid parking.

Table 4. Future Parking Demand in Old Town

Year	Scenario	Total Spaces	Existing Demand	Low Demand	Medium Demand	High Demand
5 Year	Base	612	401	464	490	506
	w/ Transit			407	431	456
10 Year	Base	612	401	493	554	594
	w/ Transit			433	477	534
Buildout	Base	612	401	601	847	987
	w/ Transit			530	684	889

The existing surface lot at the corner of 8th Avenue and Oak Street would be a convenient location for a future parking structure. This facility could be funded by the implemented downtown parking fees. However, the City is currently working with a parking focus group on the parking issues facing the community, and the group's discussion with Walker Parking Consultant suggests that a garage with ramps on a ¼ block such as that at 8th and Oak may be costly and inefficient.

It is recommended that the paid parking system for downtown be a pay-and-display system similar to the City of Aspen's paid parking system. This system consist of a kiosk on each block face, where drivers pay for a certain time period and receive a printed ticket, which they display on their dashboard. This is most effective financially for the City because unlike metered parking, if the vehicle leaves before their paid time is up, the next vehicle to use that space cannot park for free on the remaining time.

Implementing paid parking downtown represents the key component in shifting employees from reliance on their personal vehicles to reliance on transit for their work trips. It is not meant to discourage customers from visiting the downtown area, and to that end, the City of Aspen's paid parking experience represents a good case study for Steamboat.

Before pay-and-display was implemented in Aspen, approximately 95 percent of the spaces in the downtown area were occupied, with about 70 percent used by employees. The goal of the pay-and-display system was to reduce this employee use. Naturally, when the concept was presented to the local businesses, they strongly opposed it, as they felt while it may reduce employee use, it would also discourage customers from visiting the area. The general thought was that everyone would go to Glenwood Springs instead of Aspen to shop.

When the new system was implemented, two immediate effects were observed: Roaring Fork Transit Agency (RFTA) ridership increased by 35 percent; and parking space occupancy downtown dropped to 64 percent. As for local business concerns, sales tax revenues were the same after implementation as before, indicating the drop in business did not occur. In hindsight, this result should not have been unexpected; the shops in Aspen are geared towards tourists rather than locals, and tourists are not as likely to change their travel plans simply because of paid parking at their destination.

Pay-and-display parking has been in place in Aspen for several years now, and there does not appear to be any obvious negatives to the system. On street occupancy has increased to 80 percent, but there are still open spaces available on most blocks. Traffic volumes have remained at 1993 levels in town, which cannot be attributed entirely to the parking policy, though it is likely that the policy is a key component.

The parking revenues collected by the City are used to fund alternative transportation in the area and help further reduce the reliance on personal vehicles. As similar policy would appear appropriate for Steamboat.

As noted above, the City is currently working with a parking focus group on the parking issues facing the community. In addition to the comments on the 8th and Oak parking structure, the group has also recommended that hours of enforcement shift from 8 AM to 5 PM to 10 AM to 8 PM, and that the parking officers act less as enforcement officers and more as ambassadors for the downtown area.

C. Pedestrian and Bicycle Facilities

The 1998 Mobility and Circulation Study included a proposed community-wide pedestrian and bicycle facilities plan as the cornerstone of the Mobility and Circulation Plan. Figure 22 shows the proposed plan. The text description of the plan is presented in Appendix B. It is recommended that these elements be included in the community plan.

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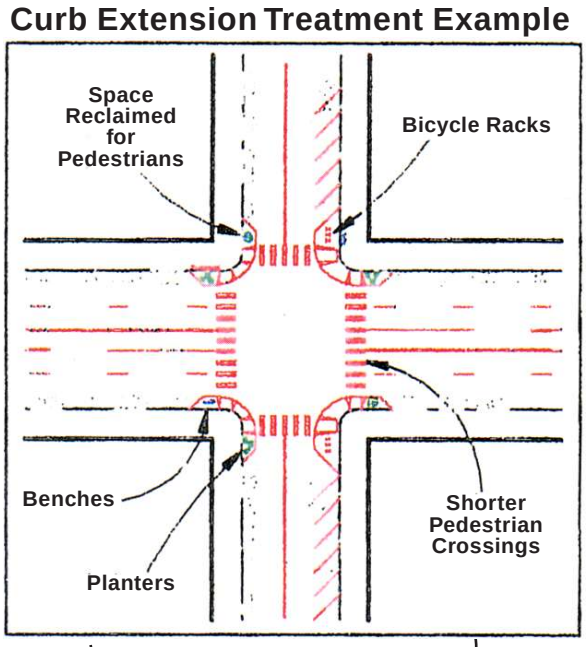
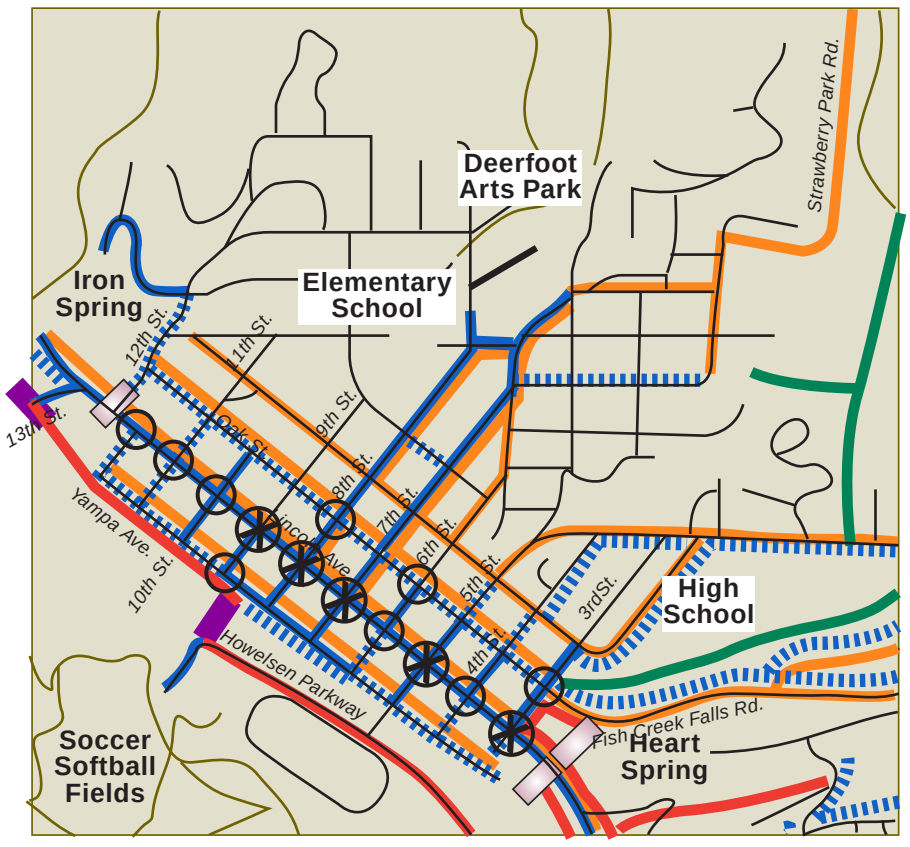
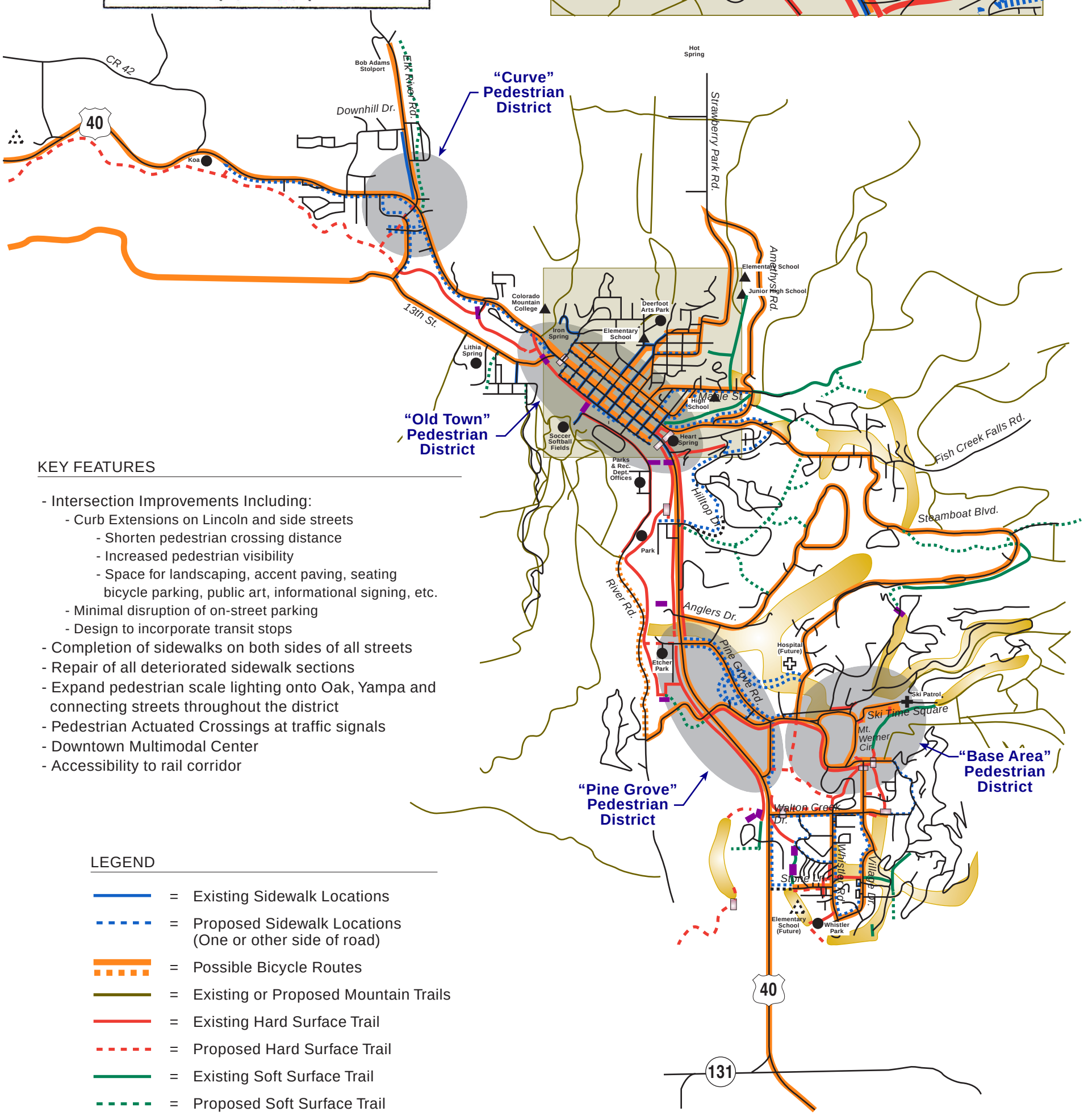
Curb Extension Treatment Example







KEY FEATURES

- Intersection Improvements Including:
  - Curb Extensions on Lincoln and side streets
    - Shorten pedestrian crossing distance
    - Increased pedestrian visibility
    - Space for landscaping, accent paving, seating bicycle parking, public art, informational signing, etc.
  - Minimal disruption of on-street parking
  - Design to incorporate transit stops
- Completion of sidewalks on both sides of all streets
- Repair of all deteriorated sidewalk sections
- Expand pedestrian scale lighting onto Oak, Yampa and connecting streets throughout the district
- Pedestrian Actuated Crossings at traffic signals
- Downtown Multimodal Center
- Accessibility to rail corridor

LEGEND

- = Existing Sidewalk Locations
- = Proposed Sidewalk Locations (One or other side of road)
- = Possible Bicycle Routes
- = Existing or Proposed Mountain Trails
- = Existing Hard Surface Trail
- = Proposed Hard Surface Trail
- = Existing Soft Surface Trail
- = Proposed Soft Surface Trail
- = Proposed Trail Connection Corridor
- = Existing Underpass / Bridge
- = Future Underpass / Bridge
- = Intersection Improvements
- = Pedestrian Actuated Signal

North

Figure 22

Pedestrian and Bicycle Facilities Plan

D. Air Travel

The Yampa Valley Regional Airport is quite active during the ski season, but activity is significantly curtailed significantly during the rest of the year. This corresponds with the significant reduction in service at the airport by the major airlines. While such a reduction is for the most part market-driven, it may be one of the contributing factors to the heavier reliance on the automobile by tourists during the summer. Encouraging airlines to maintain a higher level of service in the summer may encourage more tourists to arrive via plane, and then use public transit or lodge shuttles as their primary mode of travel around the area.

However, summer destinations around Steamboat are far more varied that in the winter (e.g. many hiking trailheads versus one ski mountain), which is a more significant contributor to the dependence on the automobile than lack of air service. Similarly, a larger portion of the tourists in the summer are from within the state, where it is cheaper and faster to drive to Steamboat than fly (200-250 miles is about the distance at which driving is typically faster, when airport time is factored).

The provision of seamless transit service between the airport and town, and providing lodge shuttle service to some of the major summer destinations in the community may help to reduce some tourist travel. Based on existing difference between summer and winter traffic volumes, it is anticipated that expanding the reliance on air travel to the area by tourists in the summer would reduce traffic volumes through Old Town by up to 5,000 vehicles per day, and on US 40 south of town by up to 2,000 vehicles per day.

VI. RECOMMENDED IMPROVEMENTS

The following sections summarize the recommended transportation system improvements identified through this planning process.

A. Road System

Based on the results of the travel demand analysis, it is recommended that the Yampa Avenue Extension Alternative be implemented. Table 5 presents the recommended road system improvements associated with that alternative, plus the additional improvements that have been identified in the various planning studies for the area that have been completed in recent years. The table also includes a cost estimate and time frame for construction. Figure 23 shows the locations of each improvement.

As noted previously, the first five improvements represent incremental roadway widening steps that must be built in the identified order so that the West Steamboat area can be developed to its full potential without undue delays on the road system. Skipping one improvement, such as the Yampa extension, would render later improvements, such as widening US 40 from Elk River Road to Steamboat II, ineffective. In other words, while additional lanes on US 40 in West Steamboat would help move more vehicles through that area, they wouldn't solve the problem of moving those vehicles between West Steamboat and downtown; unless additional capacity is provided at the bottleneck, the additional capacity further west merely results in more vehicles arriving at the bottleneck sooner.

Table 5. Recommended Road System Improvements

Improvement	Estimated Cost ($000K) (1)	Estimated Year of Need
US 40 13th - Elk River Road - Widen to 4 lanes	$1,000 (CDOT)	2008
Yampa Bypass	$500	2013
US 40 Elk River - Steamboat II Widen to 4 lanes	$2,600 (CDOT)	2022
Elk River Road US 40 - Downhill Drive - Widen to 4 lanes	$430	2022
New Victory Parkway Steamboat II - Elk River Road	Developer-funded	Concurrent with new development
Mt. Werner Circle Circulation improvements	$1,100	2003 (Phase I) 2010 (Phase II)
US 40/Elk River Road Change phasing order	$1 (CDOT)	2004
US 40/Pine Grove Road Install westbound right turn overlap phase	$1 (CDOT)	2004
US 40/Walton Creek Road Install westbound right turn overlap phase	$1 (CDOT)	2004
Roundabout Study	$35	2004
Elk River Road/Downhill Drive Install northbound left turn lane (6)	$10	2005
US 40 Signal Optimization (3)	$30	2006
Ski Base Area Signage improvements	$50	2006
US 40 Access Control Plan	$150	2006
Stone Lane Extension Stone Court - US 40	$680	2010
US 40/Dougherty Road/Stone Court Intersection Intersection improvements	$30 (CDOT)	2010
Village Drive/Apres Ski Way Intersection Intersection re-alignment (4) (6)	$250	2010
ITS System (5)	$500	2012
Lincoln Avenue/11th Street Signalize	$200	2013
US 40/Dougherty Road/Stone Court Intersection Signalize	$250 (CDOT)	2015
Village Drive/Walton Creek Road Intersection left turn lanes (6)	$20	2018
Whistler Road/Eagle Ridge Drive/Walton Creek Road left turn lanes(6)	$20	2018
US 40/Walton Creek Road Intersection Intersection improvements	$250 (CDOT)	2018
Total Cost	**$3,975 City/County** **$3,883 CDOT** **$7,858 Total**	

1. Costs do not include right-of-way acquisition
2. Transit stop crossing improvements have also been identified for this section (see following section). The transit improvements would be completed before 2013.
3. Re-optimize signals after pedestrian and transit improvements have been implemented (see following sections).
4. Part of the Mt. Werner Circle Phase II improvements.
5. Cost includes a traffic operations center, four variable message signs, and communications system.
6 Possible roundabout location ($500,000 per location)

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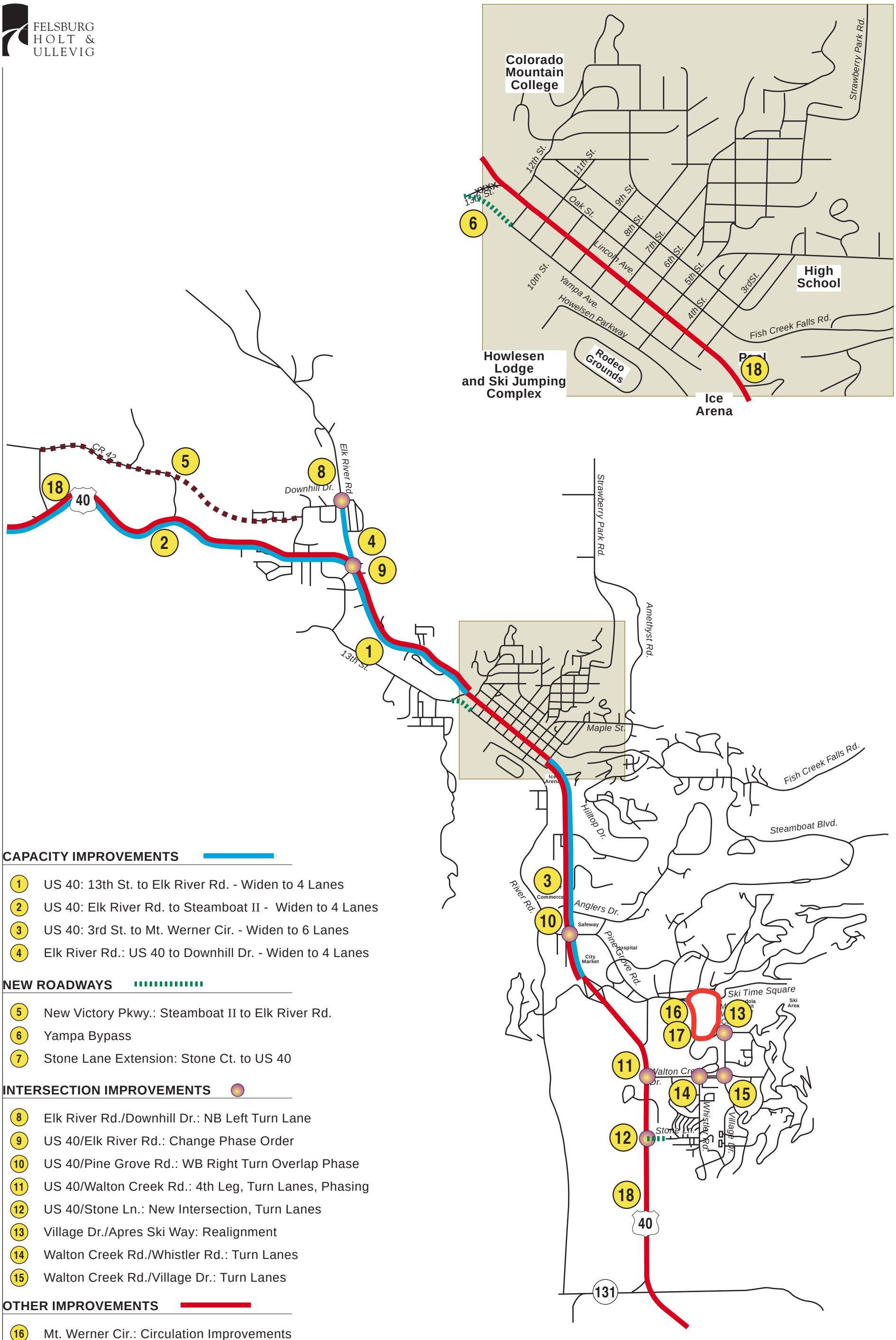

CAPACITY IMPROVEMENTS

1. US 40: 13th St. to Elk River Rd. - Widen to 4 Lanes
2. US 40: Elk River Rd. to Steamboat II - Widen to 4 Lanes
3. US 40: 3rd St. to Mt. Werner Cir. - Widen to 6 Lanes
4. Elk River Rd.: US 40 to Downhill Dr. - Widen to 4 Lanes

NEW ROADWAYS

5. New Victory Pkwy.: Steamboat II to Elk River Rd.
6. Yampa Bypass
7. Stone Lane Extension: Stone Ct. to US 40

INTERSECTION IMPROVEMENTS

8. Elk River Rd./Downhill Dr.: NB Left Turn Lane
9. US 40/Elk River Rd.: Change Phase Order
10. US 40/Pine Grove Rd.: WB Right Turn Overlap Phase
11. US 40/Walton Creek Rd.: 4th Leg, Turn Lanes, Phasing
12. US 40/Stone Ln.: New Intersection, Turn Lanes
13. Village Dr./Apres Ski Way: Realignment
14. Walton Creek Rd./Whistler Rd.: Turn Lanes
15. Walton Creek Rd./Village Dr.: Turn Lanes

OTHER IMPROVEMENTS

16. Mt. Werner Cir.: Circulation Improvements
17. Ski Base Area: Signage Improvements
18. US 40 Access Control Plan

Figure 23

Recommended Road System Improvements

North

B. Transit

Table 6 presents the recommended transit system improvements, along with a cost estimate and general time frame for implementation, that are necessary for the Steamboat Springs area to evolve into a transit-oriented community with a decreased reliance on the personal auto for work and recreational trips.

Table 6. Recommended Transit Improvements

Improvement	Estimated Cost ($000K) (1)	Estimated Year of Need
Transit marketing/promotion	$5/year	On-going
Transit Coach Replacement	$500/year per bus	On-going
Establish dedicated funding source for transit	N/A	2003
Gondola Transit Center Improvements	Funded	2003-2004
Rideshare/vanpool service to outlying communities	$90 for 3 vans $150/year operations	2004
Remote bus storage facility in Craig	$500	2004
Ski Time Square Bus turn around	$500	2004
Expand Transit Operations Center	Funded	2004
Update the 15 existing bus shelters	$150	2005
Install pedestrian crossings at high volume bus stops	$150	2005
Coordinate public and private shuttle transit services	No estimate	2005
Provide loop service north of Mt. Werner Circle (Rockies/Moraine/Hospital)	$260 for 1 bus $144/year per bus and driver (1/2 year)	2005
Provide loop service south of Mt. Werner Circle (Eagle Ridge)	$260 for 1 bus $144/year per bus and driver (1/2 year)	2005
Stockbridge park and ride Expansion	$500	2006
Eastside park and ride and transit center	$750	2006
Transit service to outlying communities	$780 for 3 buses $490/year operations	2006
Public Service to Yampa Valley Regional Airport	$780 for 3 buses $490/year operations	2006
Increase summer service in the mountain area	$116/year per bus and driver	2006
Install curb extensions and downstream, in-street bus stops on Lincoln Avenue through downtown	$600	2006
Provide service between downtown and the base area via Hilltop Drive	$110 for 1 small bus $116/year per bus and driver	2006
Provide service between downtown and the base area via Steamboat Boulevard	$110 for 1 small bus $116/year per bus and driver	2006
Extra buses for reserve capacity	$540 for 2 buses	2006
Remote park and ride in Hayden	$200	2006
High-frequency shuttle between ski area remote lot and the retail area	$260 for 1 bus $116/year per bus and driver (1/2 year)	2008
20-minute service in West Steamboat	$520 for 2 buses $490/year operations	As development and density dictates
Bus stops in West Steamboat	Provided by developers	Concurrent with new development

Improvement	Estimated Cost ($000K) (1)	Estimated Year of Need
West Steamboat park and rides	$500	As development and density dictates
Passenger Rail	To be determined	Long-range
Passenger Rail Terminal near Stockbridge	To be determined	Long-range
Total	**$5,390 Capital Cost $500/year Bus Replacement Cost $2,372/year Operating Cost**	
1. Costs do not include right-of-way acquisition		

C. Parking

It is recommended that the policies and programs outlined in the Steamboat Springs Downtown Parking Study (Charlier Associates, 1999) be revisited via either an in-house review by the parking focus group or a new parking study. In addition, the City should implement pay-and-display paid parking in the Old Town area (3rd Street to 13th Street, Yampa to Oak) in the short-term to encourage transit use by downtown employees; and construct a 100- to 400-space parking lot or structure at 8th Street/Oak Street in the long-term to accommodate future parking demand. It is recommended that this structure be constructed when parking occupancy in downtown reaches 85 percent, and that the final size of the structure be determined through a more detailed analysis of parking needs at that point. Table 7 shows the approximate cost and time table for these parking improvements.

Table 7. Recommended Parking Improvements

Improvement	Estimated Cost ($000K) (1)	Estimated Year of Need
Downtown parking study	$75	2004
Pay-and-display paid parking downtown	$840	2004
Improve signage to public parking	$10	2004
Downtown parking structure	$1,500	2010
Off-road people mover system between ski base area and remote lots	To be determined	Long-term
Expand Ski Time Square garage or construct new structures near base area	$2,000	Long-term
Total	**$4,425**	
1. Costs do not include right-of-way acquisition		

D. Pedestrian and Bicycle System

It is recommended that the pedestrian and bicycle system proposed in the 1998 Mobility and Circulation Study (Transplan Associates) be adopted into this plan. This system was presented in Figure 22. The text from the 1998 Mobility and Circulation Study describing the system is presented in Appendix B. Table 8 summarizes the approximate cost and time table for implementation for these improvements.

Table 8. Recommended Pedestrian and Bicycle System Improvements

Improvement	Estimated Cost ($000K) (1)	Estimated Year of Need
Sidewalk connections (approx. 85,000 LF) (2)	$2,125	Short- and mid-term
Improved pedestrian connections around the ski area base	Included in above	2006
Hard surface trail connections (approx. 42,000 LF) (2)	$420	Short- and mid-term
Soft surface trail connections (approx. 25,000 LF) (2)	$125	Short- and mid-term
New slopeside trail along Burgess Creek with connections to the Core Trail at the Mt. Werner Circle/US 40 underpass	Included in above	2006
Bicycle route signing	$10	Short-term
Internal bicycle and pedestrian trail network in West Steamboat	Developer-funded	Concurrent with development
Paint on-street bike lanes on Oak and 7th or 8th	$5	2005
Pedestrian push buttons at 5 downtown signals	$5	2006
Side street loop detectors at 8 downtown signals	$20	2006
Curb extensions/transit stops at 16 downtown locations	$550	2006
Lincoln Avenue/11th Street - signalize (3)	$200	2006
More visible crosswalks downtown	$50	2006
Additional bike racks on Lincoln in the new curb bulbs	$10	2006
Improved pedestrian amenities at key intersections on US 40 south of town	$180	2008
Pedestrian overpass or underpass at Fish Creek, Central Park Plaza and/or south of 3rd	$500	2008
Extend Core Trail south to provide connection between Dr. Rich Weiss Park and Haymaker Golf Course	$250	2008
Total	**$4,450**	

1. Costs do not include right-of-way acquisition
2. All trails and sidewalks assumed to be 8 feet wide on average
3. Signal would provide pedestrian crossings every 300 feet in downtown.

E. Air Travel

Because air travel is provided by private carriers, the City and County are somewhat limited in their ability to provide more frequent service and/or larger planes. However, Table 9 lists the improvements that are within the City and County's control to help encourage these service increases, along with an approximate cost and implementation schedule for each.

Table 9. Recommended Air Travel System Improvements

Improvement	Estimated Cost ($000K)	Estimated Year of Need
Increased service between airport and town by private providers	Privately Funded	2004
Public transit service to Yampa Valley Regional Airport	$520 for 2 buses $490/year operations	2006
Private shuttle service between hotels/lodges and summer recreation areas	Privately Funded	2008
Terminal improvements to accommodate more frequent service and/or larger planes	$100	2008
Total	**$620 Capital $490/year operations**	

APPENDIX A

The following is a summary of the previous studies undertaken in the Steamboat Springs area since the completion of the 1995 Community Plan, along with the recommendations of each.

The **Yampa Valley Multi-Modal Corridor Transportation Plan** (DeLeuw, Cather & Company, June 1996) addressed transportation planning issues in the Yampa River Valley from Craig to the Town of Yampa. Recommendations included:

- Roadway shoulder and safety improvements to US 40 and SH 131 outside of Steamboat Springs;
- Efforts to pursue passenger rail service in the Yampa Valley;
- Consolidate public and private transit shuttle services in Steamboat Springs; and
- Pursue a series of intermodal transportation stations in the Yampa Valley including a full service station in East Steamboat (near Pine Grove Road and US 40, not yet implemented) and an intermediate access station in West Steamboat (Stockbridge has been implemented since the plan's adoption).

The **Vision 2020** process involved citizens and elected officials from communities in Routt County along the Yampa River Valley to shape a vision for the future. Transportation recommendations were summarized as follows:

"Create a multimodal transportation system of corridors, highways and pathways that will relieve congestion and move people throughout the Yampa Valley in an efficient, environmentally sound, affordable and appealing manner."

Vision 2020 recommended implementing measures that reduce dependency on the automobile, and stressed that land use planning efforts support efficient mass-transit and include road connectors to reduce impacts on "choke points." Other transportation recommendations include:

- Expanding the existing mass transit system;
- Development of transit centers including a Central Transit Center in Steamboat Springs;
- Implementation of a low profile tramway between downtown Steamboat and the Mountain Area;
- Construction of a commuter rail system serving all parts of the community and beyond with linkages to long-range passenger rail statewide;
- Expansion of the existing system of pathways, walkways, mountain routes, including sidewalks that are kept clear in the winter;
- Cluster mail box delivery;

- All development to be transit and pedestrian-oriented;
- Creation of a Regional Transportation Authority;
- Public bus service to both airports (with the suspension of passenger air service to Bob Adams field, this recommendation should be modified to provide service to the Yampa Valley Regional Airport);
- Expansion and upgrade of Routt County Road 27 as a bypass of the Steamboat Springs area; and
- Safety improvements to SH 131.

The **Whistler Area Transportation Study** (Transplan Associates, Inc., December 1996) provided recommendations for improvements to the residential area south of Walton Creek Road and west of US 40. These included:

- Construct the Stone Court extension across the Yampa River to US 40;
- Provide all-way stop control at the Village Drive/Walton Creek Road intersection when congestion and/or safety considerations dictate;
- Provide north and south left turn lanes at the Whistler Road/Eagle Ridge Drive/Walton Creek Road intersection;
- At the US 40/Dougherty Road/Stone Court intersection, improve Dougherty Road to current paved roadway standards; provide north and south left turn lanes on US 40; provide a northbound deceleration and acceleration lane at Stone Court; provide a southbound deceleration lane at Dougherty Road; provide two outbound lanes at Stone Court for a shared left-through lane and a right turn lane;
- At the US 40/Walton Creek Road intersection, provide a southbound deceleration lane; restripe the northbound median for a left turn lane; restripe the westbound approach for a shared left-through lane and a right turn lane; provide two eastbound lanes on the new leg for a left turn lane and a shared through-right turn lane; upgrade the signal hardware and phasing to accommodate the fourth leg and the northbound left turn arrow;
- Update transit stops as transit ridership increases and consider installing additional shelters where they do not exist; and
- Construct sidewalks along project frontages as vacant parcels develop.

The **1998 Steamboat Springs Mobility and Circulation Study** (Transplan Associates, Inc., June 1998) addressed the specific local transportation needs of the Steamboat Springs community. It represents the most comprehensive and specific transportation planning effort for the area to date. Recommendations include:

Pedestrian Facilities

- Create pedestrian districts in the Downtown area, Curve area, Pine Grove area, and Mountain Base area. Recommended policies for these districts covered such facilities as sidewalks, bicycle racks, lighting, curb extensions and crosswalks, transit stops, and streetscaping;

- Enhance the pedestrian-friendliness of the Downtown area through the provision of sidewalks on both sides of every street and curb extensions at intersections along Lincoln Avenue;

- Construct sidewalks along roadways throughout the community unless physical or environmental issues are extremely prohibitive. Where practical, sidewalks along both sides of all arterial and collector roadways are recommended; and

- Expand the existing hard and soft trail system and enhance access. Construction priority should consider missing links, access to schools, connections between travel modes, and availability of additional funding sources.

Bicycle Facilities

- Design standards for sidewalks and trails should reflect the needs of bicyclist as well as pedestrians;

- Design all new collector and arterial roadways with a 16-foot outside lane to accommodate bicycles;

- Due to insufficient width and/or steep grades on many existing roadways, the on-street bicycle system should be a marking system only. Corridors that are important for connectivity should be marked with “share the road” signs;

- All new non-residential development should provide bicycle parking facilities at 10 percent of the supply typically provided for automobiles. The City should pursue adding adequate bicycle parking where needed in already developed non-residential areas. Intersection curb bulbs provide ideal locations for locating bicycle parking; and

- Provide bicycle lockers at multi-modal centers.

Sidewalk and Trail Snow Removal

- Define the critical sidewalks and trails that the City will provide snow removal on and adopt a snow removal ordinance that requires private property owners to clear snow from sidewalks of trails adjacent to their property in a timely manner; and

- Adjust the snow removal procedure on Lincoln Avenue to include snow removal around curb extensions (when constructed) by a pick-up truck mounted plow before the larger road graders are used to clear the main portion of the roadway.

Transit

- Expand summer service to encourage local travelers to switch modes from automobile to transit. This would include service every 15 minutes on Lincoln Avenue between the Curve and Central Park Plaza;
- Provide multi-modal centers at each activity center (Curve, Downtown, Central Park Plaza);
- Extend transit service to developing areas such as West of Steamboat as growth occurs. 30-minute service should be provided if transit is to be considered a viable option to the automobile;
- Increase service in the mountain area during peak summer months;
- Continue winter transit system improvements, including 10-minute service on Lincoln Avenue; and
- Provide multi-modal transit centers at the following locations: upgraded Gondola Transit Center; Central Park Plaza; Downtown center at Oak and 8th; Curve Development (the Stockbridge facility currently serves as the center for the Curve area and downtown). Additional centers can be added in the future as development progresses, such as at US 40/Pine Grove and in the West Steamboat area.

Automobile Circulation and Parking

- Pursue near-term roadway system capacity enhancements, including pedestrian push buttons and side street traffic detectors in downtown to improve signal progression on Lincoln Avenue, and restriping westbound Lincoln Avenue at 3rd Street to formalize a right turn lane onto 3rd;
- Complete currently planned missing roadway segments to increase connectivity and eliminate dead ends;
- Add two lanes of roadway capacity between 12th and 13th Streets in the Lincoln Avenue Corridor;
- Construct a bypass on the south side of the Yampa River;
- Restripe and/or widen US 40 to add travel lanes from Elk River Road to 13th Street, and from Trafalger Street to Pine Grove Road;

- Postpone and complete major roadway expansions only after aggressive alternative mode facility expansions are implemented and the land use growth patterns have resulted in travel demand that exceeds the capacity of the existing system;

- Postpone the construction of a parking deck at 8th/Yampa in favor of combining a structure with a multi-modal center at 8th/Oak; and

- Avoid implementing a parking fee structure until the following conditions occur: demand for 2-hour parking routinely exceeds supply and the lack of parking is a deterrent to visitor trips downtown; employee and visitor parking intrusion into the neighborhoods around downtown reaches unacceptable levels; and an additional revenue source is needed to fund other transportation system expansions.

The **Downtown Parking Study** (Charlier Associates, April 1999) provided recommendations on parking improvements in the old town area. These included:

- Provide consistent, sustained enforcement of overtime parking;

- Revise short-term parking to include more duration categories, including 60-minute convenience parking along Lincoln in core blocks, 2-hour parking on most other streets, and 3-hour shopper parking in the 8th and Oak lot;

- Proactively address employee parking by reducing the drive alone mode share through TDM programs and increasing the supply of commuter parking in remote locations outside of downtown (Stockbridge and a lot southeast of town). Provide incentives to use the remote parking such as retail coupons and drawings or raffles for prizes;

- Identify locations for future downtown parking supply;

- Update the Municipal Parking Code to provide for a parking district and for in-lieu payments;

- Consider remote parking for public vehicles that will be parked for more than one, two, or four hours;

- Provide better parking signage directing motorists to public parking;

- Consider Howelsen Hill and the rodeo grounds for remote parking during major special events;

- Conduct a winter parking survey in the downtown area to determine how winter peak parking demands may differ from summer needs; and

- Consider time-restricted parking at the City lot at 10th and Lincoln (since implemented).

The **Mountain Town Sub-Area Plan** (Design Workshop, Inc., September 1999) provided recommendations for the downtown area, the US 40 corridor between the mountain and town, and the Mountain area.

The following improvements are recommended for the **downtown area**:

Pedestrian and Bicycle Circulation

- Provide curb extensions on all four corners of all signalized intersections on Lincoln (consistent with the Mobility and Circulation Study);
- Provide more visible crosswalks via a wide band of contrasting pavement and/or vertical elements (bollards, banners, flags, signage) at all pedestrian crossings;
- Provide sidewalks throughout downtown. First priority should be given to all blocks of Oak Street, second priority to Yampa Street, and third priority to the cross streets of 3rd, 4th, 5th, 6th, 11th, and 12th;
- Designate Yampa as a bike route and paint on-street bike lanes on both sides of Oak and on both sides of 7th or 8th;
- Provide additional bike racks along Lincoln in the new intersection curb bulbs (consistent with the Mobility and Circulation Study); and
- Provide improved signage to the Core Trail from key intersections.
- Vehicular Circulation
- All of the vehicular recommendations are consistent with the Mobility and Circulation Study:
- Restripe westbound Lincoln Avenue at 3rd Street to formalize a right turn lane on to 3rd Street;
- Continue planning for cluster mailboxes to reduce congestion around the post office;
- Improve signal progression on Lincoln Avenue (since implemented);
- Complete the hillside connector and other missing roadway segments (Steamboat Boulevard, Fairway Trail connector to the hospital) to eliminate dead-ends, increase connectivity, and provide an alternate route to avoid downtown (Steamboat Boulevard has been completed);
- Extend Oak Street from 12th to the 13th/Lincoln intersection;
- Consider construction of an improved two-lane road on the south side of the Yampa River, connecting back to US 40 at Trafalger Road; and

- Actively enforce speed, noise, and emission ordinances.

Transit

- Construct the Stockbridge Park and Ride (since completed);
- Provide a park and ride at the southeast end of the downtown area, including non-winter use of the skier day lots and shared use of excess parking at Central Park Plaza;
- Provide high-frequency bus service downtown (10-minute service is now provided during the winter and 20-minute service is provided in the summer);
- Continue evaluating SST services;
- Provide improved, more visible bus stops on Lincoln Avenue;
- Provide a designated, central location for private shuttles to pick up and drop off passengers;
- Provide a dedicated funding source for SST to support future expansion of the system; and
- Do not preclude the option of passenger rail as a long-term transportation option.
- The following improvements are recommended for the **mountain area**:

Pedestrian Circulation

- Provide a better connection between Ski Time Square and Gondola Square;
- Improve the pedestrian environment on Mt. Werner Circle (this was addressed in a study of the area conducted by PBSJ in 2001, and the subsequent re-design of that roadway);
- Improve the connection from Gondola Square to Apres Ski Way and the South bed base;
- Improve the connection between the Grand Summit and the Gondola Transit Center and Lower Gondola Plaza (also addressed in the PBSJ study and subsequent re-design of Mt. Werner Circle and the GTC);
- Improve the connection between the Grand Summit and Ski Time Square (also addressed in the PBSJ study and subsequent re-design of Mt. Werner Circle and the Ski Time Square bus turn around);
- Create a new slopeside trail along Burgess Creek linking the northern half of the base area to the residential neighborhoods on the south; and

- Utilize the proposed Burgess Creek trail as the primary bicycle route through the core area. Provide connections to existing trails north and south of the Knoll down to the Core Trail at the Mt. Werner Boulevard/US 40 underpass.

Vehicular Circulation

- Provider safer vehicle and pedestrian interaction on Mt. Werner Circle (this was addressed in the PBSJ study and subsequent re-design of that roadway);
- Provider safer vehicle and pedestrian interaction on Ski Time Square (this was addressed in the PBSJ study for Mt. Werner Circle and the subsequent redesign of the Ski Time Square bus turn around);
- Utilize the Sheraton Fire Lane as a drop-off for private shuttle vans and guests staying in the Torian Plum, the Sheraton, or the Mt. Werner Lodge;
- Reconfigure the Mt. Werner Circle/Apres Ski Way intersection to clarify turning movements (this was addressed in the PBSJ study and subsequent re-design of Mt. Werner Circle);
- Reconfigure the Village Drive/Apres Ski Way intersection to align the approaches; and
- Develop a comprehensive signage program to provide better directional information to motorists at key decision points.

Parking

- Maintain the current level of on-street parking in Ski Time Square and enforce the short-term time limits in those spaces;
- Explore opportunities for shared parking as additional commercial space is developed;
- If an off-site parking option is considered once the current parking structures are redeveloped, a high frequency shuttle should be provided between the remote lot and the retail area;
- Encourage employees to park in remote day skier lots;
- Provide transit connections between the remote lots and the retail area in the summer, when the ski area discontinues its service;
- As Tennis Meadows develops, provide an off-road people mover system to connect the base area with the remote lots; and
- Consider the expansion of the Ski Time Square garage, a structure at the Apres Ski Way/Village Drive intersection, or a structure on a privately owned parcel on Burgess Creek Road as alternative sites for parking.

Transit

- Provide a bus turn around in Ski Time Square (design is complete);
- Expand the Gondola Transit Center (this was addressed in the re-design of Mt. Werner Circle);
- Provide a high-frequency shuttle at the base area;
- Improve transit service at the Christie Base;
- Require new development to analyze their potential impacts on traffic and roads and to integrate into their plans alternative connections and modes of transportation for their guests (i.e. trails, shuttle vans, etc.); and
- SST and private shuttles should continue to work together to efficiently provide alternative transportation for residents and guest.
- The following improvements are recommended for the **US 40 Corridor**:

Pedestrian Circulation

- Investigate the feasibility of constructing a continuous pedestrian connection to downtown via a sidewalk detached and buffered from the highway;
- Improve the pedestrian amenities at key intersections (Pine Grove, Anglers, Dr. Rich Weiss Park to Yampa Hot Springs), i.e. crosswalks, signage, lighting, median improvements, pedestrian activated walk buttons, etc.
- Consider a pedestrian overpass or underpass at Fish Creek, Central Park Plaza, and/or south of 3rd;
- Extend the Core Trail south to create a continuous connection between Dr. Rich Weiss Park and the Haymaker golf course. Also connect it under the Mt. Werner interchange to trails from the mountain area. Add trail signage and rest areas with shade;
- Budget for completion of all other trails identified in the City's master trails plan and the Mobility and Circulation Plan; and
- Work with CDOT to determine the feasibility of wider highway shoulders in some areas and to explore highway beautification options.

Vehicular Circulation

- Limit private property to one access drive onto US 40. Access roads should be coordinated among neighboring properties whenever possible.

Parking

- Screen surface parking from the highway. New surface lots should be located on the side of the building away from the highway.

Transit

- Clearly define bus stops with shelters and perhaps pull-out bays. Locate stops close to and downstream of intersections and provide sidewalks between the stop and the intersection (PBSJ conducted a study in May, 2001 and made several recommendations for key bus stops along the US 40 corridor).

The **West of Steamboat Springs Area Plan** (Winston Associates, November 1999) outlined a development plan for the area west of the Curve. It did not, however, conduct an in-depth analysis of transportation impacts outside of that area, such as the bottleneck at 13th and Lincoln. The transportation recommendations include:

- Create a new central collector that follows the historical alignment of County Road 42 (New Victory Parkway);
- Provide connections between New Victory Parkway and US 40.
- Provide transit-friendly development within the area, i.e. higher densities and commercial areas close to bus collection points;
- Provide an internal network of bicycle and pedestrian trails through the area; and
- Actively pursue commuter use of the UP rail lines along the Yampa River.

The **1999 Routt and Moffat County Transportation Development Plan (TDP)** presented socioeconomic data to support transit plans. It measured SST performance and provided route expansion plans.

The **2000 Steamboat Springs Comprehensive Transportation Plan** identified the following improvements to the SST transit system:

- Provide expanded service to the West of Steamboat Area and the Bob Adams Field area;
- Provide a downtown shoppers shuttle;
- Provide service from downtown to the base area via Fish Creek Falls Road;

- Provide service from downtown to the base area via Steamboat Boulevard;
- Expand service around the base area to accommodate newly approved developments;
- Expand the Gondola Transit Center (the design for which is complete and awaiting funding);
- Provide a bus turn around in Ski Time Square (also designed and awaiting funding);
- Expand the Transit Operations Center to accommodate fleet expansion;
- Provide park and rides in Craig and Hayden;
- Provide a bus storage facility in Craig;
- Upgrade the 15 existing bus shelters;
- Consistently require sidewalks and trails of all new developments;
- Install a stop light at the Stockbridge/US 40 intersection to aid bus movement; and
- Install pedestrian crossings at various locations along US 40 and at other high volume stops.

The **Mount Werner Circle Circulation Study** (PBSJ, May 2001) recommended improvements to the road system in the vicinity of the ski area base. It concluded that reducing Mt. Werner Circle to one through lane in each direction between Burgess Creek Road and the Gondola Square Transit Center would not result in significant adverse traffic conditions on that facility. It also recommended various channelization and pedestrian features for the facility. The new road design has since been completed and is waiting construction funding.

The **2002 Routt County Master Plan** (Routt County Planning Commission, January, 2002) outlined goals and policies for the County's transportation system. While their action items included changes to standards and resolutions, no specific projects were identified.

APPENDIX B

Pedestrian and Bicycle Facilities Plan Text (from the 1998 Mobility and Circulation Study, Transplan Associates, Inc.)

Pedestrian Facilities Plan

The cornerstone of this Mobility and Circulation Plan is pedestrian facility improvements. Virtually all trips begin and end as pedestrian trips, and it is the intent of this Plan to encourage and allow more trips to be completed as pedestrian trips in their entirety. Part of the decision to make a trip as a pedestrian (and to leave one's automobile parked) is governed by the proximity of the destination and the availability of safe and convenient facilities. The land use decisions discussed above will help ensure proximity of pedestrian destinations and this Plan will help ensure that the facilities to support the trip are in place.

Adequate pedestrian facilities and connections are also critical to transit trip making. Transit trips will not be made without safe and efficient pedestrian linkages between the transit service and the trip origin and destination.

An expanded Sidewalk and Trail System map has been developed and is contained in Figure 4.1 [Figure 22]. This map recommends new sidewalks and trails, along with the completion of missing sidewalk and trail connections throughout the planning area.

All pedestrian facilities are to be ADA accessible.

Creation of Pedestrian Districts

This Pedestrian Facilities Plan recommends that Pedestrian Districts be identified in areas where the potential for pedestrian activity is highest. Four initial Pedestrian Districts have been identified, including:

- The Downtown area
- The Curve area
- The Pine Grove area
- The Mountain or Base area

These pedestrian districts are illustrated in Figure 22. The Pedestrian District is intended as a policy designation that will support the implementation of pedestrian facilities at the highest level. Recommended policies for the implementation of a Pedestrian District include:

- Sidewalks are to be provided on at least one side of all roadways and on both sides of any roadway that has business frontage on both sides;
- Sidewalks are to be detached from the edge of the roadway except in areas where on-street parking or transit service is provided;

- Sidewalks are to be at least 8 feet wide where ROW or easement allows;
- The minimum sidewalk width is 5 feet
- Sidewalks are to be constructed of concrete
- Bicycle racks are to be strategically placed throughout the District;
- Lighting of sidewalks should be provided (via street lights or pedestrian scale lighting);
- Where practical, intersection curb extensions should be provided to minimize pedestrian crossing distances;
- Intersections with traffic signals should be equipped with pedestrian-actuated pedestrian crossing signals;
- Marked crosswalks should be provided;
- Sidewalk connections should be made to all multi-modal facilities;
- Transit stops should have available shelter and benches;
- A streetscape toolbox should be developed to encourage consistent application of street furniture and amenities

Downtown Pedestrian District

The downtown area will continue to be a focus of pedestrian activity and a hub of multi-modal interaction. Additional features of this area include sidewalks on both sides of every street, and an emphasis on providing curb extensions at 16 key intersections.

Installing curb extensions at downtown intersections along Lincoln Avenue will influence the transit stops that exist (typically every other block along Lincoln Avenue). Buses currently pull out of the traffic lane and stop against the curbing at intersections, where parking has been prohibited. Buses stopping outside of the travel lanes allow traffic to bypass the stopped bus. However, buses often have difficulty re-entering the traffic lane, which reduces the efficiency of transit service. Curb extensions at bus stop intersections will require buses to stop in the outside travel lane, which will improve bus operations but will increase vehicle congestion during peak hours. It is the recommendation of this Plan to facilitate efficient transit operations along Lincoln Avenue. Increased delay to automobiles caused by buses stopped in the travel lane should be offset by increased traffic signal efficiency on Lincoln Avenue. The vehicle progression on Lincoln Avenue will be more efficient in part due to the proposed construction of curb extensions which would shorten the pedestrian crossing distance and reduce the side street green time needed to serve pedestrians crossing Lincoln Avenue.

Sidewalk Access

Steamboat Springs has historically not required that sidewalks be provided with all new development. Reasons for not providing sidewalks range from the logistics of snow removal to the simple logic of "we haven't provided them in the past." The result has been that portions of the community are not easily accessible to pedestrians. This Plan represents a departure from that approach and recommends that sidewalks be constructed along roadways throughout the community (see Figure 22) unless physical or environmental issue are extremely prohibitive. Where practical, sidewalks along both sides of all arterial and collector roadways are recommended.

Trail Access

Enhanced trail access is also a critical component of the integrated Pedestrian Facilities Plan. The trails component of the recommended Sidewalk and Trail System illustrated in Figure 22 builds on the extensive set of existing trails (both hard and soft surface) and identifies recommended additions that should be pursued, either as properties develop or as transportation improvement projects on their own. Improvement recommendations reflect the input of the Rivers and Trails Committee. It is recommended that sidewalks and trails be illustrated together in this plan as they form an inseparable system for encouraging pedestrian travel. Proposed trail connections in this Plan define desired connections. The exact alignment of future trails should be determined on a case-by-case basis.

Table B.1 summarizes the cost of the specific pedestrian facility improvements recommended in this Plan. As funds are available for completion of sidewalks, trails, and related facilities identified in the Plan, the following should be given consideration when defining construction priority:

- Completes missing links in the existing system
- Provides access to schools
- Improves connection between travel modes
- Utilizes additional funding sources

Table B.1 Pedestrian and Bicycle Improvement Cost Estimates

Description	Quantity	Cost Per Unit	Estimated Cost
Pedestrian Push Buttons at Signals	5 Locations	$1,000/Location	$5,000
Side Street Loop Detectors at Signals	8 Locations	$2,500/Location	$20,000
Curb Extensions	16 Locations	$30,000/Location	$480,000
Sidewalk Connections (a)	Approx. 85,000 LF	$25/LF	$2,125,000
Hard Surface Trail Connections (a)	Approx. 42,000 LF	$10/LF	$420,000
Soft Surface Trail Connections (a)	Approx. 25,000 LF	$5/LF	$125,000
Bicycle Route Signing	Approx 100 signs	$100/sign	$10,000
Total Improvement Cost			**$3,185,000**

LF = Linear feet
(a) All trails and sidewalks assumed to be 8' wide on average for cost estimation
(b) Cost per unit does not include right-of-way acquisition

Bicycle Facilities Plan

Many components of the Pedestrian Facilities Plan will also encourage travel by bicycle in Steamboat Springs. It is anticipated that the network of sidewalks and trails that serve pedestrians will also serve bicyclist. In this context, the Bicycle Facilities Plan is an expansion of the Pedestrian Facilities Plan and includes on-street bicycle corridors. Figure 22 includes the bicycle facilities.

Off-Street Bicycle Facilities

Many bicyclists will travel between their origin and destination with at least part of the trip on an off-street sidewalk, path, or trail. Therefore, off-street bicycle facilities are the same as the sidewalk and trail system in Figure 22. In this context, design standards (grades, curvature, sight distance, etc.) for sidewalks and trails should reflect the needs of bicyclists as well as pedestrians.

On-Street Bicycle Facilities

Bicyclist may also travel with all or part of their trip along a roadway. Steamboat Springs has historically not provided designated on-street bicycle lanes. Reasons include the long winter season when markings are obscured and snow storage may restrict full use of paved surfaces, and the limiting physical conditions along many of the mountainous roadways. This plan recommends the continued practice of not marking on-street bicycle lanes, but all recommended roadway cross-sections for collector or arterial roadways include outside pavement width of 16 feet (12 foot wide lanes plus 4-foot paved shoulders). This width will

allow a motorist to comfortably and safely pass a bicyclist (assuming the lane is cleared of snow).

Many of the existing roadways that are not on the state system have steep grades and narrow cross-sections, but bicyclists can be observed using them when no alternative exist. On this basis, it is recommended that the on-street bicycle system be a bicycle route marking system. Corridors that are important for connectivity should be signed with "share the road" messages to alert motorists to the potential of encountering bicyclists and to help facilitate the safe passing of each other. Figure 22 includes the recommended bicycle routes along with the pedestrian facilities. Table B.2 summarizes the existing limiting characteristics of the roadways identified for inclusion in this bicycle route system.

Table B.2 Roadway Descriptions of Recommended Bicycle Routes

Roadway	Minimum Pavement Width	Maximum Grade
US 40 (adequate shoulder widths exist throughout except between 3rd and 13th Streets)	--	5%
20 Mile Road w/o Elk River Road	22'	10%
20 Mile Road e/o Elk River Road	24'	3%
Elk River Road s/o US 40	32'	3%
Elk River Road n/o US 40	24'	4%
Strawberry Park Road s/o Amethyst Drive	21'	10%
Amethyst Drive near Junior High School	30'	7%
Fish Creek Falls Road near Amethyst Drive	30'	7%

Bicycle Parking

A safe, secure, and convenient place to store one's bicycle at a destination is an important consideration in deciding to travel by bicycle. It is recommended that all new non-residential development provide bicycle parking facilities at 10 percent of the supply typically provided for vehicles. The city should pursue adding adequate bicycle parking where needed in already developed non-residential areas. Intersection curb extensions provide ideal locations for locating bicycle parking.

The recommended bike parking rack type is the "inverted U" rack. These racks are simple, provide excellent support for bicycles, are easy to attach locks to, have no moving parts, are unobtrusive when not in use, and can be arranged in almost any configuration to accommodate available space.

Bicycle lockers should also be provided at multi-modal centers.