

**La Plata County and the
City of Durango**

2030

**Transportation
Integrated
Plan**



2030 TRIP

TRansportation Integrated Plan

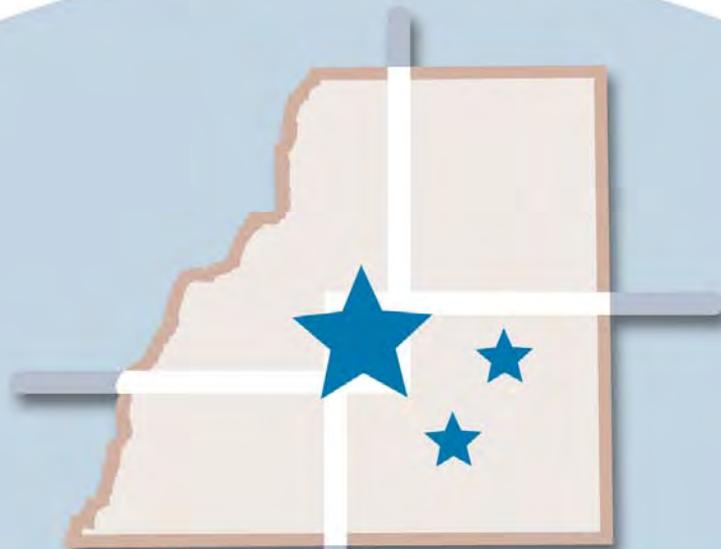
June 2, 2006

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2030 Transportation Integrated Plan

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2030 TRIP

TRansportation Integrated Plan

LSA

LSA ASSOCIATES, INC.

Catalyst Consulting

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The County of La Plata and the City of Durango is a vibrant, bustling region situated in southwest Colorado. The region has a rich history, strong community character, major tourist attractions, and a balanced economic base. As a result, the area has seen steady population and employment expansion for several decades and is projected to continue with this trend in the years to come.

The 2030 TRIP is the regional transportation plan for La Plata County and the City of Durango. This Plan will guide the investments and policy decisions that will ensure a transportation system that meets the area's future needs. The Plan considers all transportation modes, including motorized vehicles, public transportation, bicycling, and walking. The Plan identifies future transportation needs of the area, estimates costs, and identifies short-term and long-term capital investments for improvements to existing roads, construction of new roads, transit, bicycle, and pedestrian facilities.

2030 TRIP is the acronym for the 2030 **TR**ansportation **I**ntegrated **P**lan for La Plata County and the City of Durango. This Plan identifies long-term transportation demand for the 2030 horizon. This Plan also identifies improvements in the post 2030 horizon. This Plan is an integrated plan, as it:

1. Identifies transportation needs for both La Plata County and the City of Durango,
2. Identifies improvements for all transportation modes, and
3. Identifies transportation capital investment to accommodate future growth.

WHY DO WE NEED A PLAN?

For several obvious and some not-so-evident reasons, the County of La Plata and City of Durango region needs a long-range transportation plan. As congestion increases on area roads due to growth, tourism, development, and more travel through the region, it is clear that the current roadway system will not be sufficient to accommodate future needs. In addition, citizens of the region remain interested in alternative mode options, consistent with ongoing federal legislation promoting their use.

Beyond any of these reasons, a long-range transportation plan makes sense. Good planning involves citizens, increases efficiency and effectiveness of the investment, and promotes transportation services and infrastructure that are consistent with the community's desires. The planning process enhances the community's character and quality of life by considering the interaction between land use and transportation and their cumulative effect on the built and natural environments.



WHAT ARE THE IMPORTANT TRANSPORTATION ISSUES?

- **How much development will occur in the 2030 transportation plan horizon and what additional development might occur beyond 2030 within the holding capacity of the City and County's Comprehensive Plans?**
- **Where will this development occur?**
- **What transportation improvements are needed to serve this future growth?**
- **What role should alternative modes of pedestrian, bicycle and transit have in addressing transportation demand?**
- **How much will these transportation improvements cost?**
- **What are the priorities for these transportation improvements?**
- **What are the capital investment needs for the region to meet future transportation demand?**

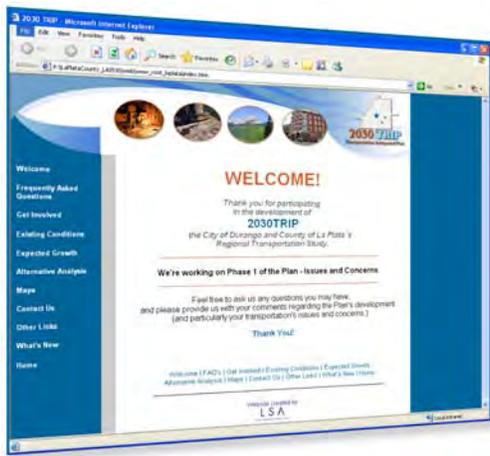
The 2030 TRIP is divided into seven (7) Chapters as follows:

1. **Context and Issues:** Background, purpose, and need for the Plan.
2. **Community Involvement:** Summary of public workshops and community input.
3. **Existing Conditions:** State of the existing transportation system – auto, transit, bicycle, and pedestrian.
4. **Travel Model:** Description of forecast model to estimate future traffic demand.
5. **Forecasted Land Use:** City and County estimates of 2030 and Post 2030 population and employment growth.
6. **Future Transportation Demand and Deficiencies:** Estimate future traffic demand and the ability for the existing transportation system to accommodate this demand.
7. **Alternatives Analysis and Plan Recommendations:** Methodologies and findings for evaluating automobile, transit, and bicycle/pedestrian alternative improvements including plan recommendations for improvements and implementation.

The transportation system is a formative element of the built environment, meaning that it greatly influences how our community looks, feels, and operates. Around the City of Durango and La Plata County, there are streets, sidewalks, buses, recreational trails, signs, bridges, and other reminders that our transportation infrastructure and services are a foundational component of our surroundings. The 2030 Transportation Integrated Plan provides the vision for transportation in the community. In this manner, it should reflect the needs and desires of the people in the community.

Opportunities for community involvement and input were provided throughout the course of developing 2030 TRIP. One method was at three public meetings held at the Durango Recreation Center. Each meeting consisted of three (3) event elements: an open house to review boards of findings and recommendations, a presentation of the current phase of work, and a break out small group exercise in which the public was provided the opportunity to provide specific input. A summary brochure of each meeting was prepared to pass out to those attending. In addition, a personal questionnaire was given to each attending participant. In general, attendance was between 40 to 75 citizens attending each of the three (3) public meetings.

Meeting Date	Topics
March 7, 2005	<ul style="list-style-type: none"> • What is the Long Range Transportation Plan? • Schedule • Existing Conditions • Issues and Concerns
June 8, 2005	<ul style="list-style-type: none"> • Forecast Growth • Transportation Needs and Deficiencies • Transportation Alternatives
November 16, 2005	<ul style="list-style-type: none"> • Transit/Bicycle/Pedestrian Facilities Plan • Roadway Alternatives and Evaluations • Cost Estimates



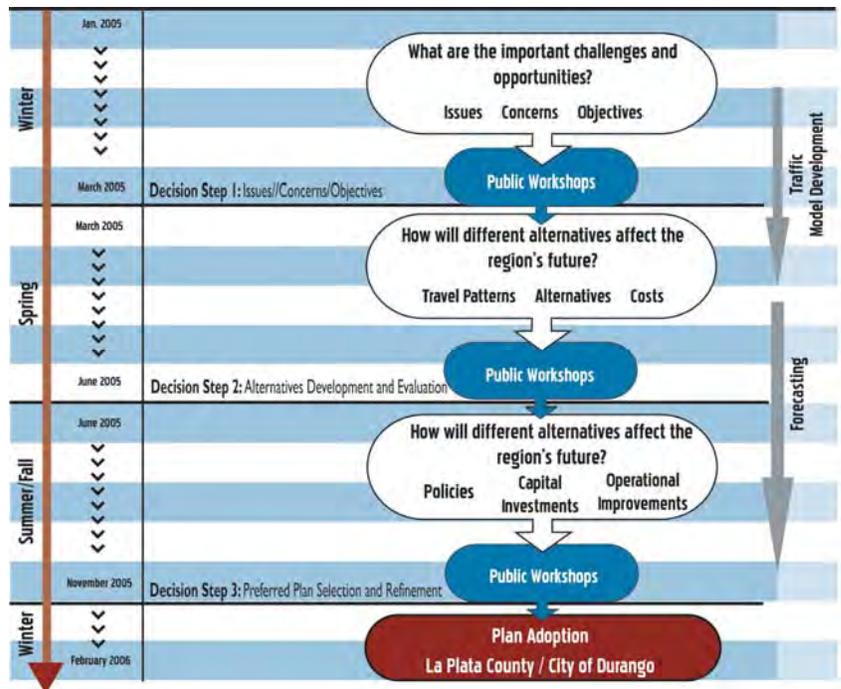
In addition to the public meetings, input was collected through an interactive website "2030 TRIP" built and maintained specifically for this project. All pertinent information was posted on this website as it was developed. In addition to obtaining information, the public was able to provide input via interactive questionnaires and comment forms.



The three public meetings and website updates were structured around these key decision points:



- **Workshop #1 - Issues and Concerns:** The first workshop presented the study's objectives, identified historic changes within the City and County, and documented existing transportation conditions. Information was presented regarding anticipated growth in the region. The objective of the first public workshop was to collect comments on the public's issues and concerns including a review of existing conditions. Key questions that were asked included: 1) what do you like about the existing transportation system? 2) what do you not like about the existing transportation system? and 3) what would you like to see in the future?
- **Workshop #2 – Alternatives Development and Evaluation:** This second workshop focused on growth of the region, forecasted deficiencies, and alternatives that might mitigate those deficiencies. During this phase, the public were solicited for their input upon alternative development and evaluation. The program started with a brief 30-minute open house for people to view project materials and talk to project team members. A brief presentation provided background information on the alternatives and evaluation results, and explained how the public can best contribute to the Study. During the workshop portion of the meeting, people responded to questions related to the alternatives.





- **Workshop #3 – Preferred Plan Recommendation and Refinement:** The third workshop focused on the Draft Plan. The presentation focused on key elements in the Draft Plan. The workshop was organized around the key plan elements – pedestrian, bicycle, transit, street – to provide an opportunity for participants to discuss what is proposed and comment on suggested refinements.

MARCH 7, 2005 MEETING SUMMARY

On Monday, March 7, 2005, La Plata County and the City of Durango held their first public meeting for 2030 TRIP - the La Plata County and City of Durango Long Range Transportation Integrated Plan. At this meeting, LSA Associates, Inc. along with Catalyst Consulting presented an overview of this study to the public and solicited public input in regard to regional transportation issues. Responses to questions included:

1. What do you like about how you travel today?

- River Trail
- Walking and biking in Durango
- Rush hours not too bad
- Alternatives to Main Avenue
- Bike availability on City streets and County roads
- Transportation choice/options - drive/bike/walk
- Relative lack of congestion
- Safe bicycle routes where they exist
- Scenery/Beautiful places you can get to

2. What are the biggest transportation issues today?

- Financing infrastructure and intergovernmental cooperation
- Limited alternatives - geography challenge
- Affordable transportation for low income
- N-S corridor limits - congestion
- County development effects on City streets
- Can't build your way out of congestion
- Roads that are not suited for multiple uses

WELCOME
2030 TRIP
Transportation Integrated Plan

Public Meetings
March 7, 2005

Thank you for participating in the development of 2030Trip - the City of Durango and County of La Plata's Regional Transportation Study.

We're working on Phase I of the Plan - Issues and Concerns.

Feel free to ask us any questions you may have,

AND

Please provide us with your comments regarding the Plan's development (and particularly your transportation's issues and concerns.)

Thank You!

LSA ASSOCIATES, INC.
Catalyst Consulting



- Land use approvals that require road improvements
- Lack of state money for capital investments in transportation
- Planning for growth
- Road capacity and lack to expand
- Concentrate on car an issue - expand to alternative modes
- Bike paths - bike connection Grandview to City
- Transportation and Land Use

3. What are the most important areas to study?

Roadways

- US 160 east
- Horse Gulch
- Florida Road
- CR141
- CR301 and 302
- 3rd Avenue and 15th Street
- Bypass - CR234 - North Durango
- Bus lane Grandview - Ewing Mesa
- Farmington Hill intersection
- Hwy 550 south - safety improvements
- Wider shoulders on state, county and city streets
- Add lanes to US 550/160 through Farmington Hill to Double Tree



Transit System

- Regional transit - Bayfield, Ignacio , Durango and rural mobile home parks
- Parking areas for transit stops
- Express routes
- Increase frequency - Loop to FCC
- Narrow gauge light rail to apart - train station
- Tramway Ewing Mesa to Durango

Bicycle and Pedestrian

- Access to downtown and schools
- Widen all roads
- Slow traffic
- Separate bikeways from road
- Provide a distinct space for pedestrians and bikes
- Snow plowing of bike and sweeping of shoulders
- Pedestrian and bike crossing at Camino del Rio
- Separated bike trail to Farmington to Purgatory
- Bicycle parking in downtown Durango
- Pedestrian and bike crossing at 15th and East 2nd Avenue
- Bike crossings of RR Tracks

4. What alternatives should be evaluated?

- Main Avenue corridor



- Park-n-Ride in Bayfield
- Grandview to Ewing Mesa
- Financing options
- Asphalt Nation review
- Education to reduce road improvement needs
- Evaluate different levels of congestion
- Focus on improving existing roads
- Air quality considerations
- Options to land use regulations to reduce the need for new roads
- Dispersal of land uses to allow businesses in residential rural areas
- Make Bayfield more urban
- Full range spectrum all new roads to no new roads
- Bike routes to employment centers
- Affect of airport expansion and development on 172
- Transit oriented development
- Transit for seniors
- Cost benefit of capital investments

JUNE 8, 2005 PUBLIC MEETING

On Wednesday, June 8th, La Plata County and the City of Durango held a second public meeting for 2030 TRIP. Approximately 40 people attended the workshop and participated in small group exercises to discuss preferences for multi-modal transportation improvements. The following summarizes public comments received at the March 7, 2005 meeting during the workgroup session in response to the following four questions asked.

Bike/Pedestrian

Where should we add new bike/pedestrian facilities?

- Extend Animas Trail to the north and south
- Connection between downtown Durango and Grandview
- Bike lane perpendicular to Animas Trail to provide access to City
- From Harley Davidson east to Wal-Mart
- Separate bike and pedestrian path is 12' wide or wider
- Improved access to and within CBD
- 15th is too busy
- 9th is not easy
- Bikeway north to Hermosa
- To Bayfield
- To Farmington along Animas
- Fast traffic not compatible with pedestrian/bikes – slow traffic
- Look at Trails 2000 and Smart 160

Roadway

What other roadway alternatives should be considered?



- CR 222 extended to CR 510
- Upgrade CR 502 to help CR 501
- Bypass for CR 521 – Bayfield
- Widen E. 32nd to 4 lanes - Farmington Hill solution is top priority
- Widen Florida Road to 4 lanes – Park Avenue bridge will take traffic off north Main Avenue (Florida Road to Main connect)
- Close a portion of La Posta Road – Ewing Mesa Road – Goeglein Gulch Road to Grandview is the important link
- Open Horse Gulch Road - Has too many environmental problems
- New Underpass on Mariposa Drive - Seems useful, but who goes from S.
- Grandview to N. Grandview
- New 172 to relieve pressure on 220 which is unsafe (from junction with 234 north to 220)
- Designate 302 as truck route
- Basin Creek as bypass around reservoir, also improve 125 to take pressure off 550
- 223 improved – likes new section but push 1 mile north so don't encourage strip commercial
- Three options to get north: 1) Improve 234, would unload Florida traffic, important link to tribe, need more efficient connection; 2) 220 option to get North as bypass; and 3) 225 option to get North as bypass
- If there is recreation traffic to reservoir, improve 211 and 141
- Connection between Bayfield and airport makes sense given growth in Bayfield



What are your top 3 roadway alternatives? Why?

- Sawmill to Three Springs (Grandview alternative)
- Widen Florida Road in City and County
- Flex-time to dilute peak hour traffic
- Bayfield needs to be studied
- Bypass Durango via improvements to CR 234 and CR 240 (Florida Road)
- Keep La Posta open for bike and pedestrian when it closes to automobile traffic
- 160
- 234 (northwest route)
- Grandview – prefer northern route to avoid bottleneck at Ewing Mesa
- 211 and 141



Transit

Where should we add new transit facilities?

- Park and Ride – master plan
- BRT – Grandview to Durango
- Ultra light transit – on tracks to Hermosa
- Transit to Purgatory – cascade “Y” – Gondola to Purgatory
- Park and Ride (Downtown, Grandview, and Bayfield)
- Hub Construction – Downtown
- Link Park and Ride with transit at increased frequency
- People won’t use transit unless \$20 gallon
- Need transit between Durango and Hospital
- Keep transit in urban core

What needs to happen to implement your preferences?

- Funding transit referendum?
- Sales tax to fund transit
- Toll Roads
- Light Rail: long-term, but plan for it now
 - Feasibility study should be done soon – where and what
 - Steps along the way
 - Acquire right-of-way to Grandview
 - Tie into tourist trade
 - Existing infrastructure Hermosa to City – use it soon
 - Existing bed south to Grandview to 172 – acquire as development occurs
 - Park and Ride
 - Hospital access

OCTOBER 19, 2005 LA PLATA COUNTY COMMISSIONERS AND CITY OF DURANGO CITY COUNCIL WORKSHOP

On Wednesday, October 19, 2005, a workshop was held with the La Plata County Commissioners and the City of Durango City Council. The objective of this meeting was to share with the Commission and Councilors the work effort to date. This included an overview of the work program, a discussion of the transportation model developed to test alternatives, initial findings and preliminary recommendations. Questions raised to the Commission and Council were as follows:

- Is the work effort completed to date on track?
- What changes would they like to see?
- Whether or not there were specific questions they might like to see answered from the public or the consultant work effort.



Based on responses, changes were made and are included in this document. Key questions raised by the Commission and Council were transportation improvements beyond the 2030 horizon, cost of the improvements, and how these improvements will be paid for.

NOVEMBER 16, 2005 MEETING SUMMARY

The third meeting to present the plan findings and recommendations was held on November 16, 2005. The workshop for this event included a presentation of findings to date and a breakout into groups where those interested in a specific mode of travel, automobile, transit or bicycle/pedestrian, sat with a city/consultant facilitator to review the proposed plan element recommendations and make comments. Each group was also asked to identify the top three improvements that they would recommend. The following summarizes those priorities.

Transit Priorities

- Provide early investment in transit to some degree to accommodate multi-modal choice for our citizens.
- Design and include Park-N-Ride facilities within new and emerging development areas along future potential transit routes. Included in this design should be features that make transit friendly.
- Transit needs to be considered a dominant role and will be critical to develop a transit framework to address the regions transit needs beyond 2030.
- HOV Transit Lanes on US 550/160.
- Concentrate development at transit nodes.

Bicycle Priorities

- East and West Animas.
- Florida Road to Helens Store.
- Improve shoulders to a minimum of four feet on all new roads and reconstruction and paving of existing roads.
- Continuous bike lanes through intersections, including those with turn lanes.



Roadway Priorities

- County Road 222 from SH 172 to CR 221.
- Provide sufficient shoulders for all new roads to accommodate bicycles.
- Country Road 240.
- US 550/160 solutions.
- SH 3 needs.
- Grandview to Ewing Mesa to SH 3 timing.

The transportation system is often envisioned as the network of streets and highways that allow for automobile and truck traffic within, to, and through the region. In reality, roads make up only one component of the transportation system, although an important one. Transit service, bicycle facilities, and pedestrian infrastructure are essential to a well-balanced multi-modal transportation system.

The following chapter presents the existing transportation system that currently serves the citizens and businesses of the City of Durango and La Plata County. This existing transportation system provides the framework for examining future long-term conditions.

ROADWAYS



Roadways make up the backbone of the transportation system. Cars and trucks use the roadway system for mobility. Transit buses utilize roads for their routes. Bicyclists often travel directly on roads, especially in corridors with delineated bike lanes or designated routes. Even pedestrians utilize sidewalks that are often constructed in roadway right-of-way. The most effective roads, called multi-modal streets, often accommodate all of these travel modes.

The City of Durango and La Plata County roadway network is based on a range of different types of facilities with varying characteristics that when combined make up the roadway system. These differences are referred to as “Functional Classification” and range from state highways, which serve higher speed, longer distance trips to local streets that are designed for lower speeds and shorter trips (Table 1). Figure 1 shows the facilities that make up the City of Durango’s and La Plata County’s roadway network.

Two important variables which define roadway function are mobility and access. Expressways have full access control that allows vehicles to enter and exit only at interchange ramps or limited at grade signalized intersections since mobility is the primary function of an expressway. Local streets on the other hand have numerous driveways and connections because their primary function is to provide local access to business and residences.





FIGURE 1: EXISTING (2004) ROADWAY NETWORK

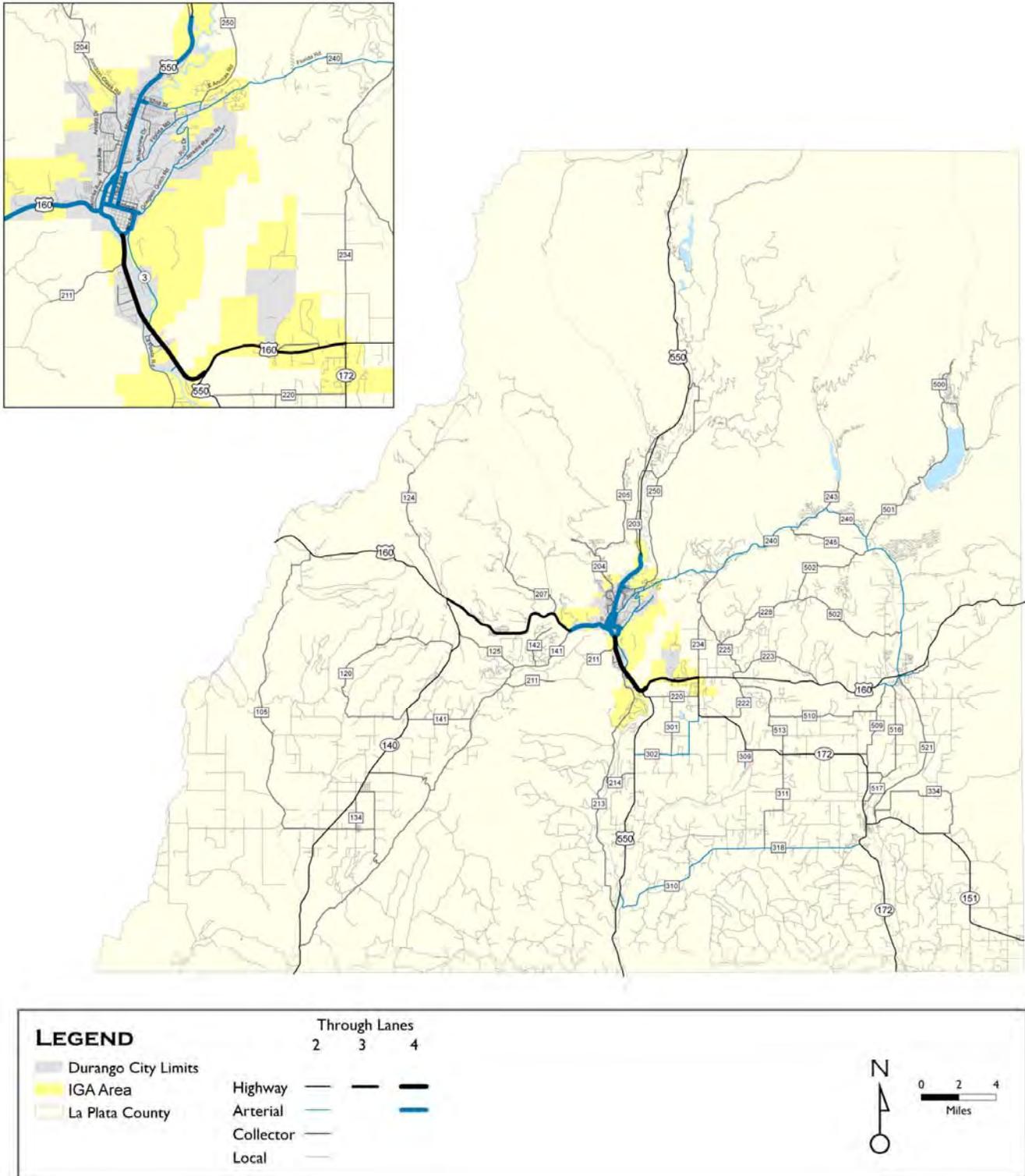


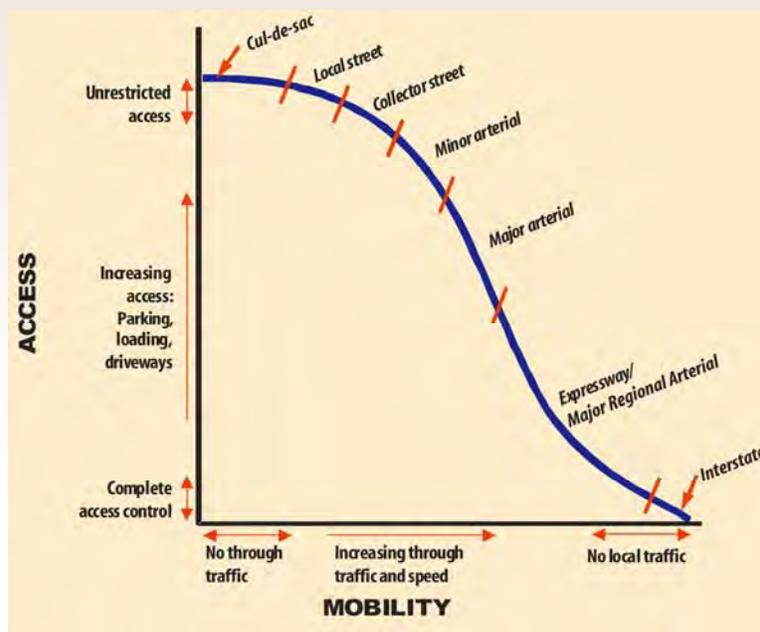


TABLE 1: FUNCTIONAL CLASSIFICATION

	Lane Miles	Percent of Total
Highway	312	31%
Arterial	156	15%
Collector	549	54%
Total	1,017	100%

ROADWAY FUNCTIONAL CLASSIFICATIONS

- **Freeway:** Roadways that serve high-speed and high volume regional traffic. Access to a Freeway is limited to grade separated interchanges with mainline traffic signals.
- **Highway:** Roadways that serve high-speed and high-volume traffic over long distances. Access is highly controlled with a limited number of intersections, medians with infrequent openings, and no direct parcel access. Adjacent, existing and future, land uses shall be served by other network roadways, service roads and inter parcel connections.
- **Arterials:** Roadways that currently serve medium speed and high-volume traffic over medium distances. Access is restricted through prescribed distances between intersections, use of medians, and no or limited direct parcel access.
- **Collectors:** Roadways that serve as links between local access facilities and arterial facilities over medium-to-long distances, outside of or adjacent to subdivision developments. Collectors are managed to maximize the safe operation of through-movements and to distribute traffic to local access.
- **Locals:** Roadways that provide direct parcel access and deliver parcel generated trips to the collector network.





EXISTING (2004) DAILY TRAFFIC VOLUMES AND LEVELS OF CONGESTION

The City of Durango, La Plata County and the Colorado Department of transportation maintains a comprehensive daily traffic count program which is used for evaluating traffic congestion and for assessing trends in traffic growth. Current daily traffic volumes are presented graphically on the Daily Traffic Volumes and Level of Service (Congestion) maps in Figures 2A and 2B. The relative traffic volumes are presented by different band widths, where the wider the band, the greater the number of vehicles counted. Traffic volumes experience a wide variation throughout the year. In order to represent a worse case condition, the volumes presented in this map represent a typical summer peak condition.

Congestion levels for the City of Durango and La Plata County are also depicted in the following Daily Traffic Volumes and Level of Service (Congestion) map. These link levels of service are indicators of the ability of the arterials segment to accommodate existing daily traffic volumes.

It should also be noted that this map has color coded circles at key intersections which depict how well the intersection is operating during the p.m. peak hour.



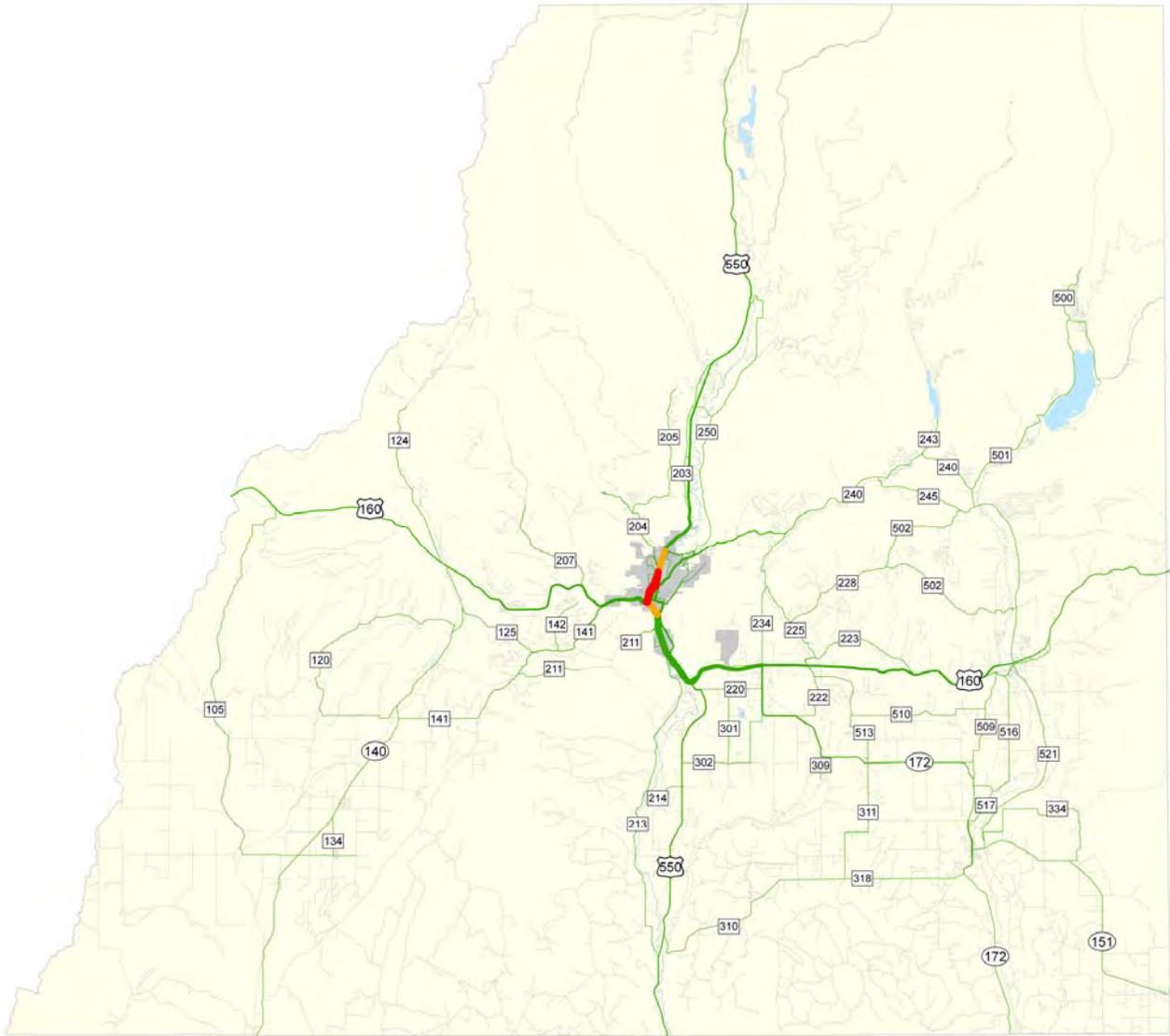
LEVELS OF SERVICE - CONGESTION

Transportation planning assesses congestion based on a relationship between traffic volumes and capacity called Level of Service. These congestion levels fall into one of three ranges:

- **Uncongested:** Roadways that generally operate in free-flow conditions, where the driver tends to be able to travel without undue delay except for typical traffic control operations, such as stop signs or traffic signals. During the peak hour, there might be some delay at a controlled intersection, but generally the driver can get through the intersection within one cycle of the traffic signal.
- **Congesting:** These are roadways where the driver can generally travel in free-flow conditions during the off-peak hours, but might experience having to wait more than one cycle at a signalized intersection during the peak hours. Because these roadways have existing traffic volumes approaching capacity, there can be significant variations in congestion from day to day, fluctuating between acceptable to congested.
- **Congested:** The congested roadways are those roadways where traffic volumes have either reached or exceeded the facilities capacity to accommodate these volumes. These facilities experience daily congestion delays where it is not uncommon that a driver might have to wait two or more signal cycles to get through the intersection during the morning or afternoon peak periods.



FIGURE 2A: EXISTING (2004) DAILY TRAFFIC VOLUMES AND LEVEL OF SERVICE



LEGEND

- Durango City Limits
- La Plata County
- Local Roads

- Uncongested (LOS A - C)
- Congesting (LOS D)
- Congested (E - F)
- Thicker lines indicate higher traffic volume

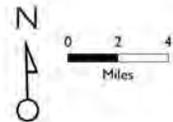
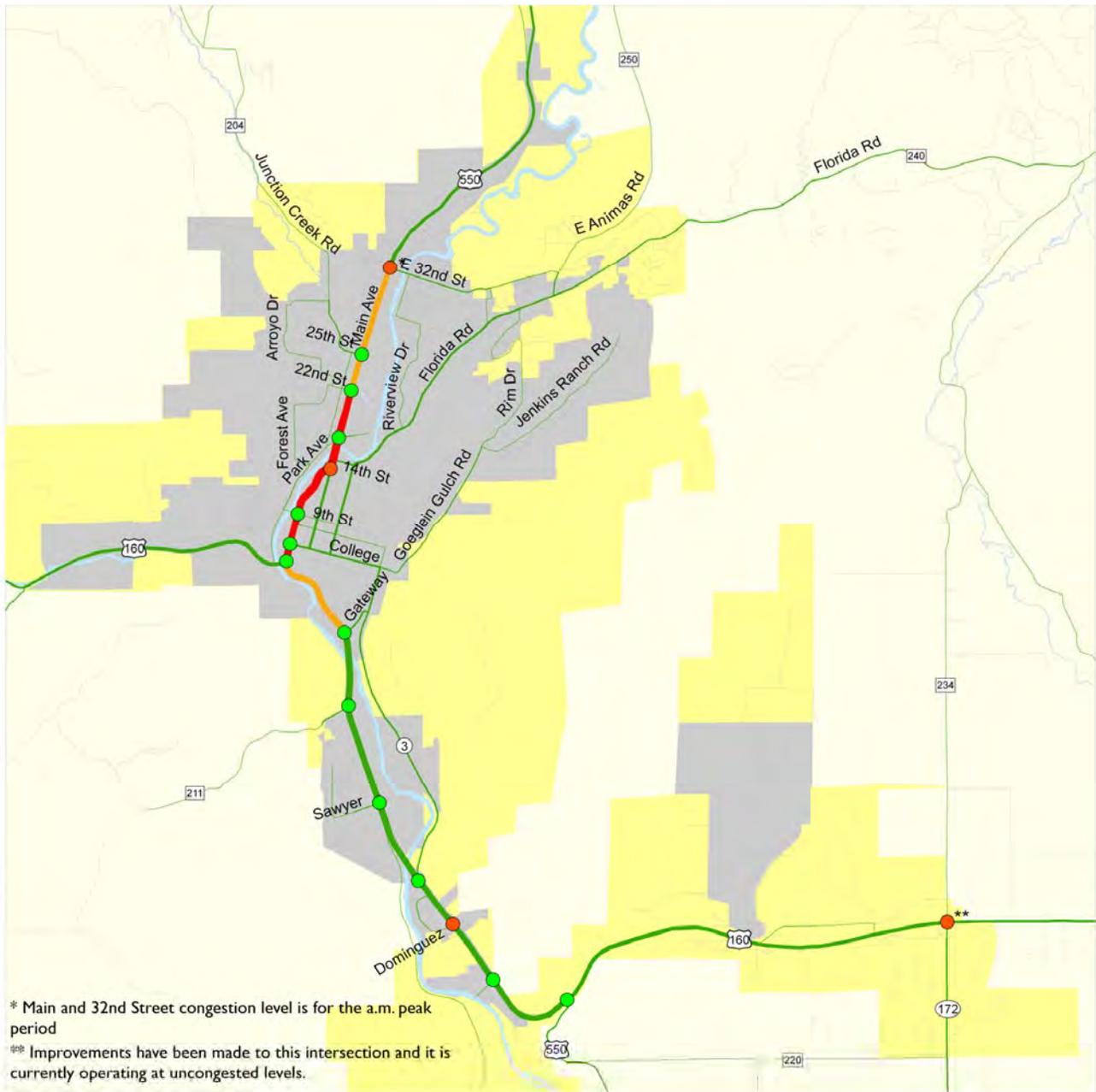




FIGURE 2B: EXISTING (2004) DAILY TRAFFIC VOLUMES AND LEVEL OF SERVICE



LEGEND		
Durango City Limits	Uncongested (LOS A - C)	Uncongested (LOS A - C)
La Plata County	Congesting (LOS D)	Congesting (LOS D)
IGA Area	Congested (LOS E - F)	Congested (E - F)
Local Roads		Thicker lines indicate higher traffic volume

N
0 0.5 1
Miles



It should be noted that intersection congestion is based on a summer peak season p.m. peak hour. It should be noted that a.m. peak hour congestion may be different; however, a.m. peak hour traffic counts were not available. One intersection in particular that operates at a different level of congestion in the a.m. as compared to the p.m. is the intersection of 32nd and Main. Whereas the p.m. peak period operates at uncongested conditions, the a.m. peak period operates at congested levels because of heavy westbound left and right turn traffic volumes, which are restricted to two travel lanes.

A second intersection worth noting is the intersection of US 160 and US 550 at Farmington Hills. During the p.m. peak condition, two eastbound through lanes can typically accommodate current traffic. During the a.m. condition, however, the single westbound through lane is not sufficient to accommodate current morning peaks.

It should also be noted that the intersection of US 160 and SH 172 is depicted in Figure 2 as congested. This map represents 2004 conditions. CDOT has made major intersection improvements at this intersection and currently this intersection is operating at uncongested conditions during both a.m. and p.m.

In review of the map, congestion tends to be limited to Main Avenue from 14th to 22nd and Camino Del Rio from US 160 to 14th. It should also be noted that the daily link level of service does not always match the adjacent intersection level of service. As an example, the existing (2004) intersection level of service for the intersection of US 160 and County Road 234 experienced a congesting "D" level of service, whereas the arterial roadways intersecting with this intersection were operating at uncongested levels. This indicates that the intersection controls the flow of traffic through the area. With limited left, through and right turn lanes, traffic backs up from this intersection causing congestion during the peak hours. It should be noted that this intersection was improved in 2005 and the level of service has been improved to uncongested.

	A	B	C	D	E	F
	Uncongested			Congested		
Maneuverability	Almost Completely Unimpeded	Only Slightly Restricted	Noticeably Restricted	Severely Limited	Extremely Unstable	Almost None
Driver Comfort	High	High	Some Tension	Poor	Extremely Poor	The Lowest
Average Traveling Speed	Speed Limit	Close to Speed Limit	Close to Speed Limit	Some Slowing	Significantly Slower than Speed Limit	Significantly Slower than Speed Limit



In review of the downtown corridor of US 550, the facility has been identified as a congested corridor, whereas some of the intersections are estimated at uncongested conditions. This is a result of the flaring of the intersections to accommodate left turn and right turn lanes. It should further be noted that these level of service measurements are based on optimum signal timing. Actual signal timing may be different, which might result in congesting or congested conditions on one movement or another. An example of an intersection timing difference between optimum and actual is the intersection of US 550 (Main Avenue) and East 32nd Street. During the a.m. peak hour, vehicles heading west on 32nd Street, desiring to turn south on Main Avenue often have to wait for a second cycle. If the amount of green time were extended, this demand could be accommodated and minimize overall average delay for all movements to the optimum uncongested conditions.

In conclusion, the arterial street network operates acceptably except on Main Avenue from 14th to 22nd and Camino Del Rio from US 160 to 14th. As will be presented, with increased traffic from future development, these conditions will change and traffic volumes will increase to beyond the capacity (see Table 2 in Chapter 4) of the roadways and their intersections. Whereas arterial and intersection improvements will mitigate some of the problem areas, corridors, such as US 550 in the downtown area, will remain congested as opportunities to improve the geometrics are limited given the development constraints adjacent to the roadway.

TRANSIT

Transit is an important mode of transportation for all communities. Transit is often the only means of mobility for the elderly, children, college students, and those without automobiles. Transit provides a choice for those that might not have an automobile and those that seek environmental solutions for a sustainable community.

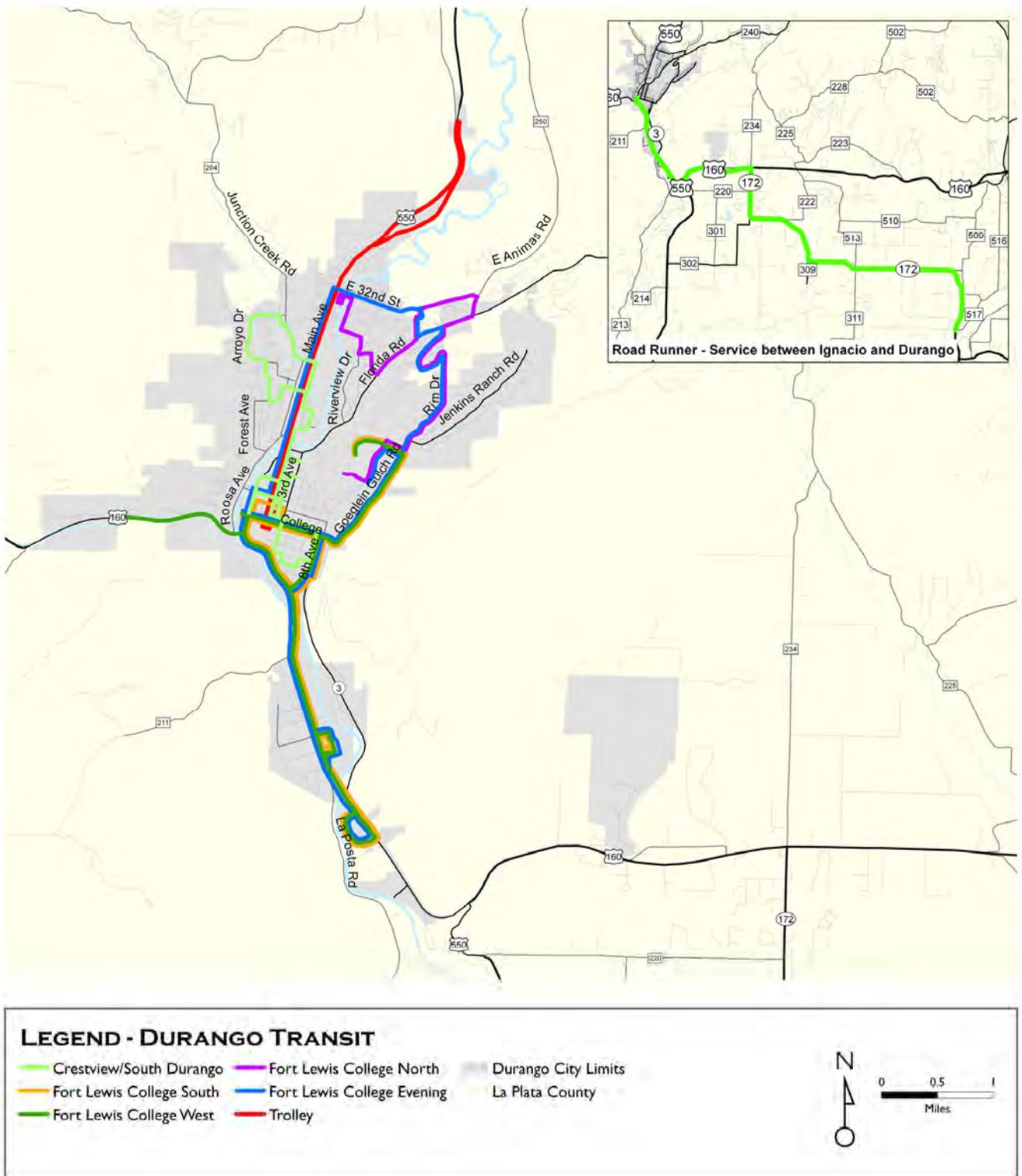
Transit is also becoming a more important element of a community's mix of travel modes as growth and increased traffic occur. Another important fact for supporting transit is the aging of our population. Nationally, 60% of all growth over the next 25 years through 2030 will be in the over 55 category. As this elderly population continues, increased transit solutions will be required for those existing residents that may eventually not be able or elect not to drive.

Transit service within the City of Durango is provided by the city's transit agency, Durango Transit. Durango Transit provides one trolley and three bus routes within the municipal limits of Durango. Service hours generally begin between 6:30 and 7:00 a.m. and end between 6:30 and 7:30 p.m. depending on route. The Trolley service is every 20 minutes. Route 2: Fort Lewis College - South West, Route 3: Fort Lewis College - North, and Route 4: Crestview - Downtown have 30 minute frequencies. Current ridership on the Durango Transit is approximately 800 riders per day.

In addition to Durango Transit, the Ignacio Road Runner provides transit service between Ignacio and the City of Durango as seen in Figure 3.



FIGURE 3: EXISTING (2004) TRANSIT SERVICE MAP





BICYCLE

In the City of Durango and La Plata County, bicycle travel is a viable alternative to traveling by automobile. The urban area of Durango is compact and relatively flat. Distances from one end of town to the other are well within commuter bicycling distances. The Durango/La Plata culture also promotes an outdoor lifestyle and bicycling. In addition to bicycle facilities providing a means of transportation, they also provide an important recreational purpose. Although bicycle improvements are not expected to significantly reduce traffic congestion in the area, they provide a low-impact transportation choice to the Durango community.

The current bicycle system within the City of Durango and La Plata County includes trails, bike lanes, lower traffic volume routes shared with the automobile, and in certain cases, wider shoulders. Bicycle travel is also experienced along corridors where no bicycle facilities are provided and are fully mixed with automobile travel.

The existing bicycle facilities are primarily located within the City of Durango, as illustrated in Figure 4. The backbone of the bicycle network is the Animas River Trail, which extends from 32nd Street through the US 160/550 corridor.



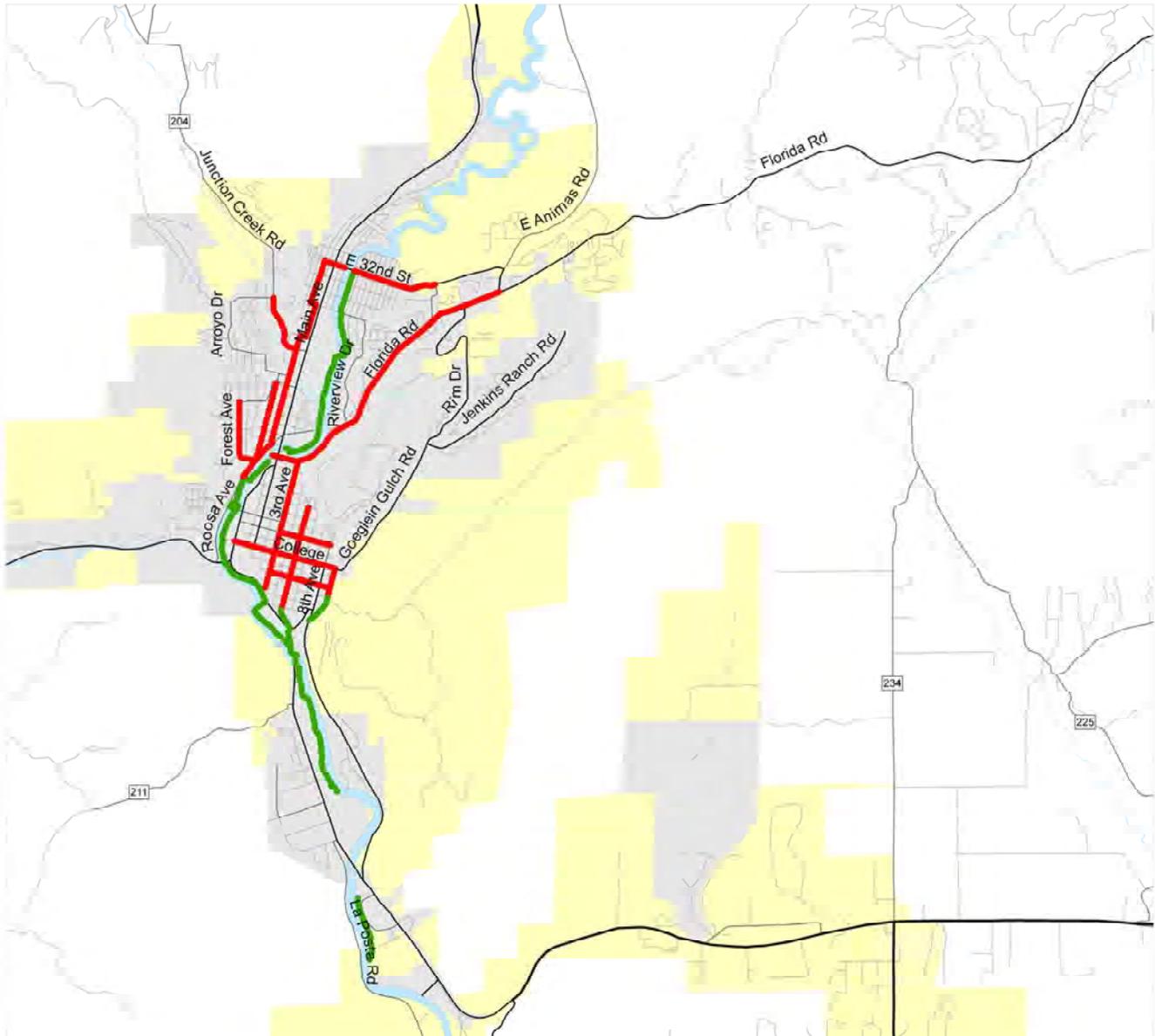
Connected to the Animas River Trail are various bike lanes including Florida Road and 32nd Street. Currently, there are no bike lanes which connect the downtown with the trail. Connections must be made along mixed flow roadways.

To determine whether current bicycle investments have been strategically made in potential corridors of benefit, the City of Durango and La Plata County travel model was used to assign trips less than 3 miles, from 3 to 6 miles, and from 6 to 9 miles. The idea is that trips less than 3 miles are strong candidates for bicycling, 3 to 6 miles a little less, even fewer bicycle trips between 6 and 9 miles, and trips over 9 miles would likely not be via bicycling. These potential bike trips presented in Figure 5 represent all trips of 3, 6, or 9 miles. Only a small portion of these shorter trips are actually made via bicycle.

There is a strong correlation between bicycle demand along the US 550 corridor and the Animas River Trail. Bicycle demand along College and 3rd Avenue are also complimented with on street bicycle lanes for these higher demand corridors.



FIGURE 4: EXISTING BICYCLE FACILITIES MAP

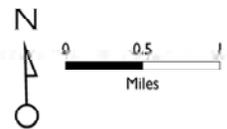


LEGEND

- Grey square: Durango City Limits
- Yellow square: IGA Area

Bicycle Facilities

- Red line: Existing Lane
- Green line: Existing Trail





PEDESTRIAN

Walking is another form of non-motorized transportation that provides health benefits, enhances air quality, and can reduce traffic congestion. Walking is often a primary form of transportation for children, the elderly, and those who cannot afford other transportation modes. It is also the mode of choice for many, particularly in the downtown area, that wants to enjoy the health and environmental benefits in walking, and avoid the issues of driving and parking.

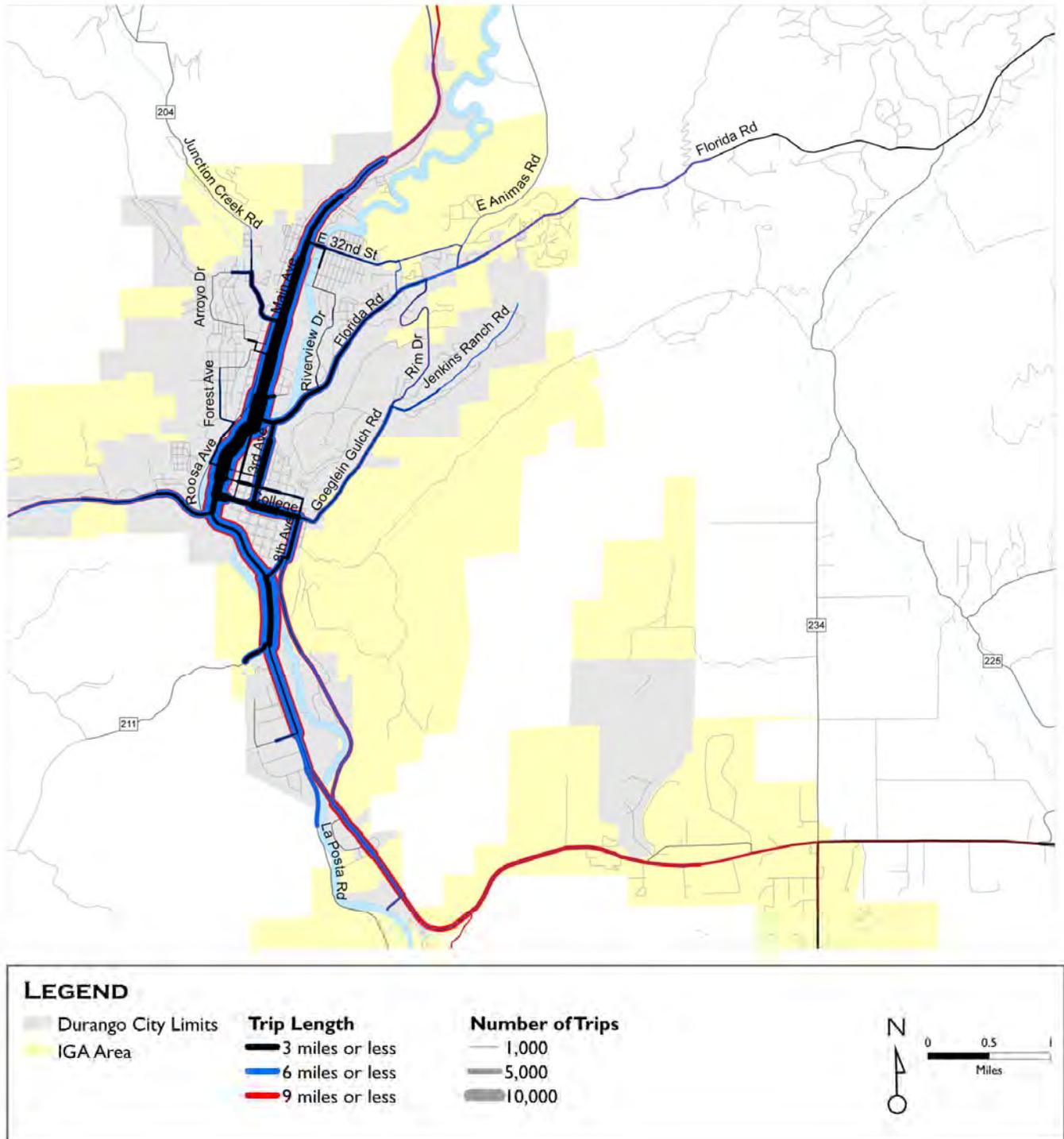
The City of Durango, particularly in the downtown area is fortunate to have an excellent pedestrian system. This system of sidewalks provides direct connections with a grid system. The sidewalks are continuous without major breaks. It is also relatively easy to cross streets within the City, except for traffic barriers along US 550. Many of these downtown intersections have count down pedestrian heads included with the signal that enhances the pedestrians' experience. The downtown area is also visually enhanced and secure.



La Plata County, outside the City of Durango, does not provide sidewalks on their county roads. Distances between trip origins and destinations within the County area are generally of a greater distance such that sidewalks are not typically warranted. In areas of the County where origins and destinations are close together the County should consider sidewalks where they are warranted. Opportunities to walk along a wider shoulder would improve the opportunity to walk in these outlying areas.



FIGURE 5: POTENTIAL EXISTING BIKE TRIPS





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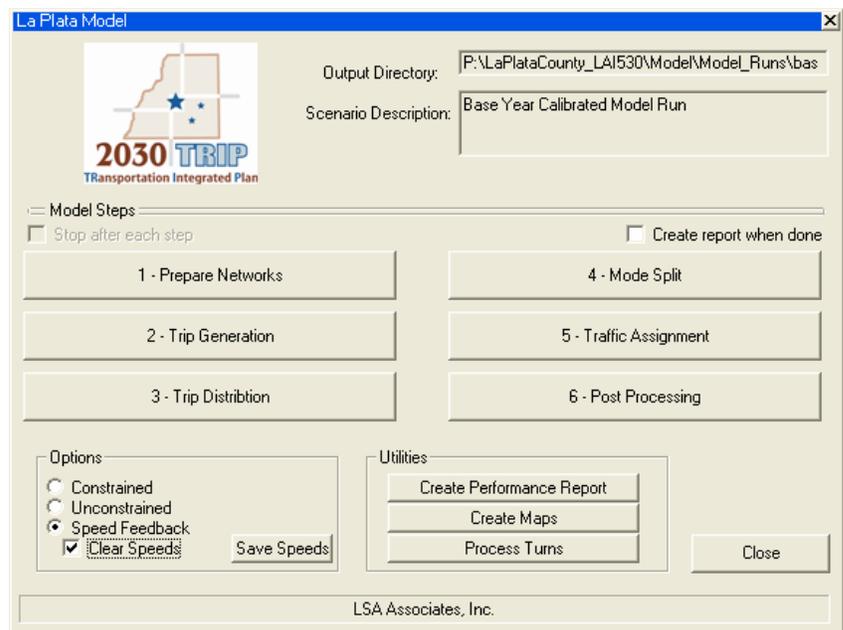
ANALYSIS TOOLS – 2030 TRIP TRAVEL DEMAND MODEL

The 2030 TRIP was developed through an analysis of system deficiencies and potential alternative solutions using estimates of future travel demand. Travel demand, including roadway traffic volumes were forecasted using the City of Durango and La Plata County's Regional Traffic Model, which was developed for this project.

The model allows for the testing of various land use and transportation scenarios. The model produces estimates of summer peak weekday traffic volumes for each roadway segment in the network. These daily forecasts are converted to peak hour traffic volumes for level of service analysis. In this manner, roadway deficiencies can be identified and potential alternative solutions evaluated.

It should be noted that the model is a tool that can be used to assist with the evaluation of alternative land use plans and potential roadway improvements. While the model provides valuable information, it is not sensitive to all aspects of the planning process.

As an example, the forecasted model results are estimates of future conditions based on specific assumptions of socioeconomic activity, transportation system characteristics, and travel behavior. Generally, the model assumes that travel behavior in the future will be similar to today, which may or may not be the case. Issues that might influence the modeling might include the aging population and their changing transportation patterns from less work trips and increased reliance on transit. Other issues that might affect the forecasts are increased fuel costs. On the other hand, the model is a very useful tool to test various land use scenarios, such as the 2030 and Post 2030 conditions. The model is also sensitive to changes in the transportation system, such as roadway widenings, realignments, and closures or construction of new facilities.

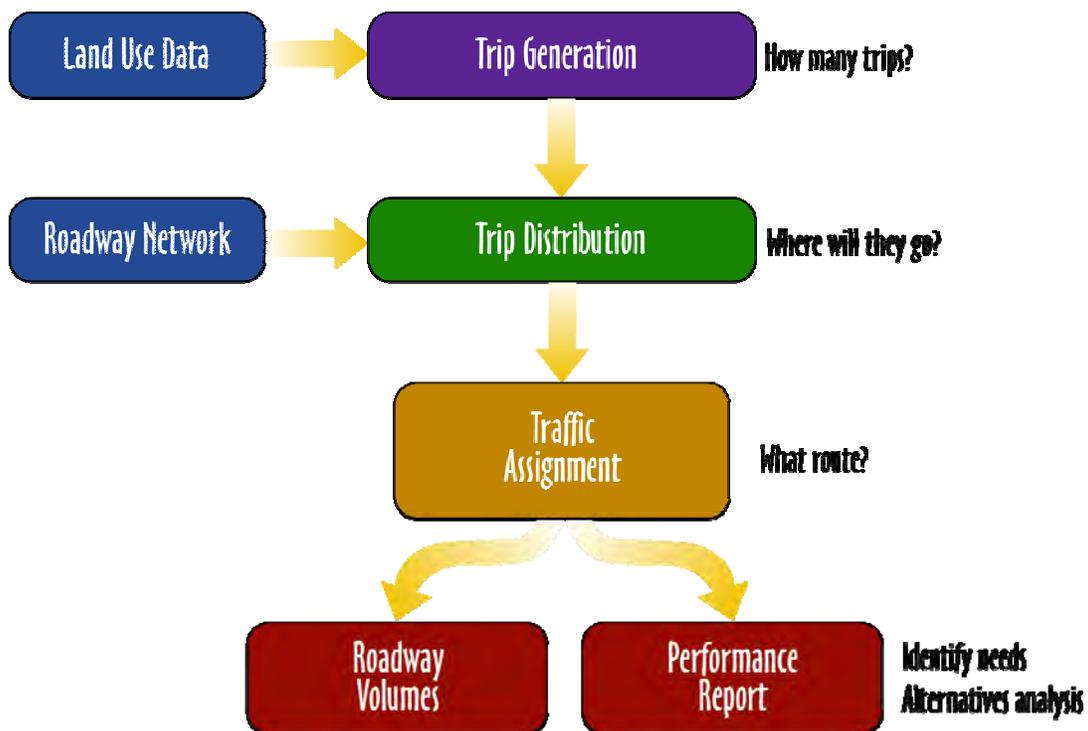




The development of the model was part of the overall preparation of the 2030 City of Durango and La Plata County Long Range Transportation Integrated Plan. The following section highlights key elements of the model and summarizes some key model features. It should also be noted that a detailed operations manual was prepared for using the model and is on file with the City of Durango and La Plata County. This documentation was presented to the City and County at a 3-day workshop on how to use the model.

MODEL STRUCTURE

The City of Durango and La Plata County Travel Model is based on standard modeling procedures and utilizes information from Census 2000, local and regional datasets, and other travel models. The 2030 TRIP model has been calibrated to a 2004 base year peak summer weekday condition and developed in a customized TransCAD environment to provide an up-to-date and user-friendly model. The model process and functions are shown graphically below.



In general, the model answers three (3) critical questions. The first question is how many trips will there be in the future and where will they begin and end? Input to the trip generation module is land use data including number of dwelling units by income, population, and employment by type. These land use and socio-economic data assumptions are allocated by traffic analysis zones throughout the modeling area. Trip activities are based on socio-economic data inputs for the Existing 2004 base year used to calibrate the model to existing ground counts.

Roadway networks are electronic representations of the roadway system in Durango and La Plata County that contain information such as speed, number of lanes, and facility type for

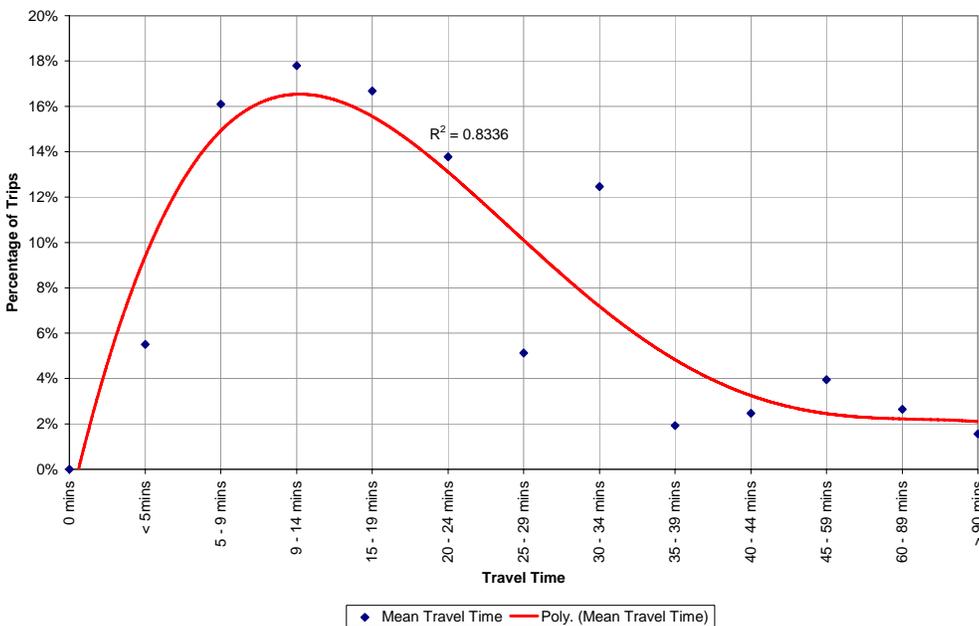


collectors, arterials, and highways. Roadway networks comprise basic input information for use in the travel demand model and represent real-world conditions to the extent possible. Horizon year networks begin with the base year network and include additional capacity from improvements to existing roadways and new roadway facilities.

The second question is where do these trips go? The Trip Distribution module determines the origin and destination of each trip. Trip destination is based on the roadway network. If new roadways are built or existing roadways widened, trip distribution will change in response to those roadway improvements. Trip distribution is also sensitive to land use and socio-economic development allocation. As an example, the model will estimate the number of internal trips for a proposed development that includes both the origin end of the trip (home) and the destination end of the trip (place of work or shopping).

The third question is what route will the trips take? In the Traffic Assignment module, specific routes are computed through consideration of travel time/congestion, and distance. If a route becomes congested, trips will be assigned to alternate routes that are less congested. When a new facility is added or an existing facility is widened, trips might divert or re-divert back to the more attractive route with higher speeds and less congestion.

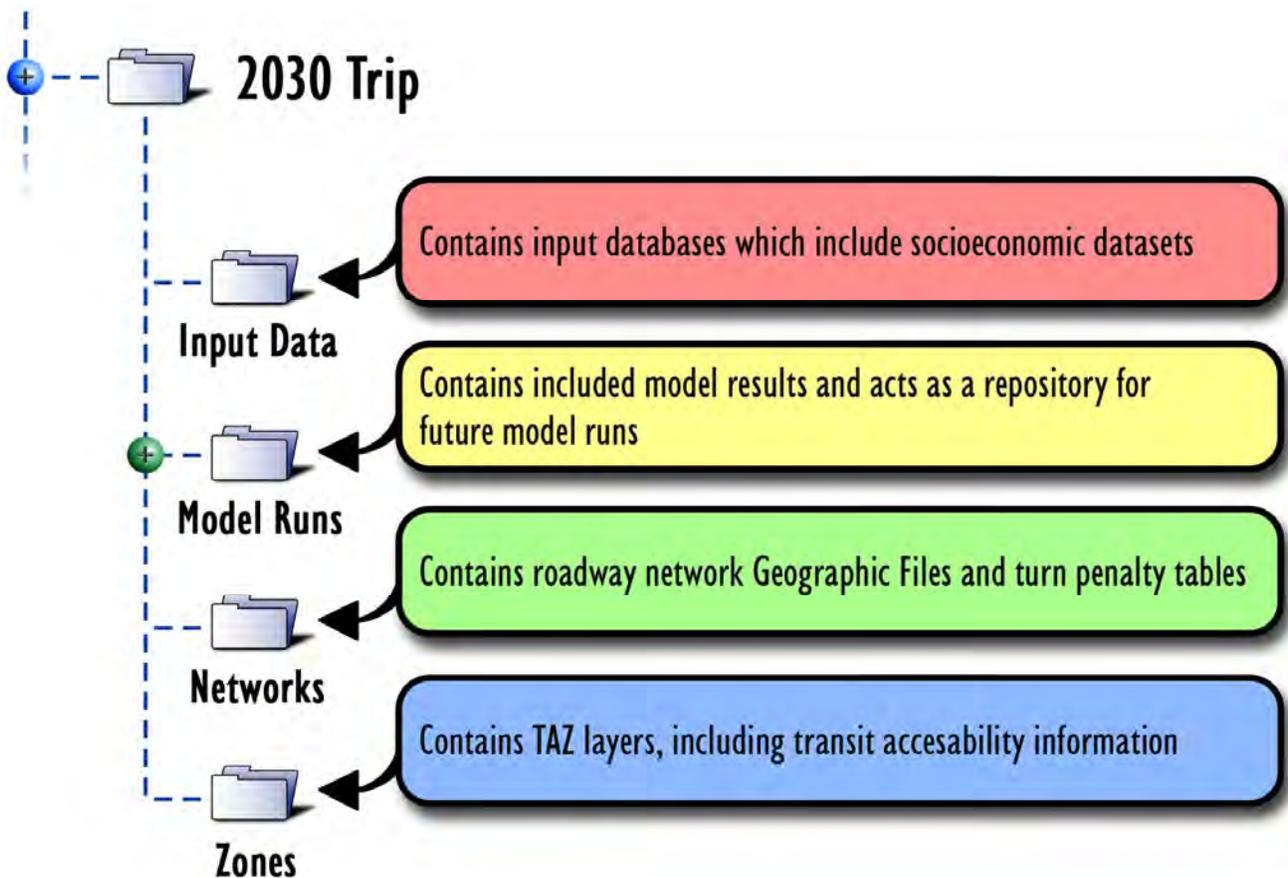
The performance report has many statistical outputs for comparing alternatives. These outputs include statistical information such as vehicle miles of travel, congestion delay, average travel time, level of service, and other performance measures.



Networks provide the base on which travel model results can be displayed. Because information is available through the open architecture TransCAD GIS format, key information can also be assembled and compared between alternatives. As an example, the travel time between Grandview and the downtown can be calculated and compared to different alternatives.



The travel model is a roadway based model and does not assign transit trips per se. The model utilizes a GIS-based mode split model to identify transit trips. While this model can provide a general indication of transit potential in a given corridor, it is not a full-fledged mode choice model and should not be interpreted as such. The La Plata County/Durango travel model estimates transit trips using an enhanced mode split procedure. While the predictive capabilities of this transit model are limited, it does provide value in observing relative totals when comparing different transit options. Transit ridership forecasts are based on availability of transit, quality of transit service, and implicitly reflect land use implications on transit performance. Transit availability is represented in the travel model at the traffic analysis zone (TAZ) level.

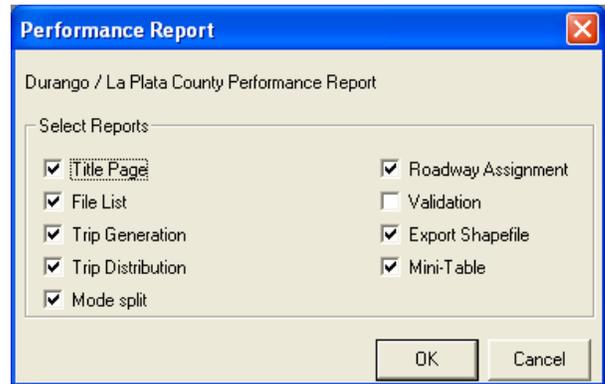


POST PROCESSING

After the model was run, the results were post-processed and summarized to provide information in a useful form. The post-processing procedures included in the City of Durango and La Plata 2030 TRIP model are described below. Data from the model and post-processing procedures are provided in a format that is readily loaded into GIS applications, spreadsheet applications, and database applications.



- **Performance Module** - In order to compare one alternative with another, the performance report summarizes each alternative. The report includes information such as trip generation, vehicle miles of travel, speeds, vehicle hours of travel, and congestion. In addition, the standardized performance module includes standardized mapping such as volumes by bandwidth and level of service by color maps. Level of service is determined by comparing model results to the capacities shown in Table 2.



- **NCHRP #255 Module** - Although the 2030 Trip model is calibrated to existing peak summer month average daily traffic ground counts, no calibration is perfect. To account for differences between current traffic counts and estimated model volumes, the model includes an adjustment module based on procedures defined in the National Cooperative Highway Research Program (NCHRP 255) report. This adjustment accounts for the differences between modeled and counted volumes that are inevitable in any travel model.

- **Intersection Turn Movement Module** - the intersection turn movement module provides the ability to interface the results of a TransCAD model with the Synchro intersection analysis package. This package uses multiple user defined techniques to convert unreliable raw turn movement data into more acceptable forecasts that can be used for general planning purposes. This module also allows the user to choose from varying levels of complexity when running the program. Adjustments are based purely on TransCAD model outputs and base year counts. This module provides a reliable and well documented method of interfacing TransCAD with simulation packages such as Synchro and VISSIM. The results of this work effort include forecast peak hour turn movements and level of service.

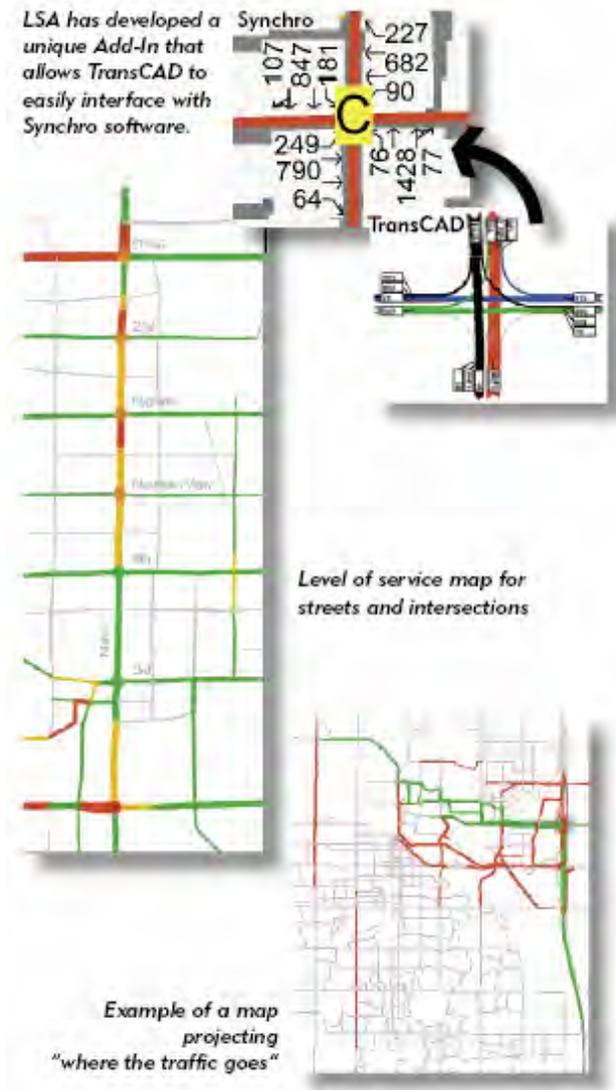




TABLE 2: LEVEL OF SERVICE CAPACITIES

	A	B	C	D	E	F
Upper Limit V/C Cutpoints						
Freeways/Expressways						
(Regional Arterial)	0.31	0.50	0.71	0.87	1.00	n/a
Arterials/Collectors	0.51	0.67	0.79	0.90	1.00	n/a
Freeway/Interstate/Tollway (Daily Capacity Per Lane - 20,000)						
4 Lane	25,000	40,000	57,000	70,000	80,000	n/a
6 Lane	37,000	60,000	85,000	104,000	120,000	n/a
Expressway/Highway (Daily Capacity Per Lane - 13,500)						
2 Lane	8,400	13,500	19,200	23,500	27,000	n/a
4 Lane	16,700	27,000	38,300	47,000	54,000	n/a
6 Lane	25,100	40,500	57,500	70,500	81,000	n/a
Major Arterial (Daily Capacity Per Lane - 9,000)						
2 Lane	9,200	12,100	14,200	16,200	18,000	n/a
4 Lane	18,400	24,100	28,400	32,400	36,000	n/a
6 Lane	27,500	36,200	42,700	48,600	54,000	n/a
Minor Arterial (Daily Capacity Per Lane - 7,000)						
2 Lane	7,100	9,400	11,100	12,600	14,000	n/a
4 Lane	14,300	18,800	22,100	25,200	28,000	n/a
Collector (Daily Capacity Per Lane - 6,000)						
2 Lane	6,100	8,000	9,500	10,800	12,000	n/a
4 Lane	12,200	16,100	19,000	21,600	24,000	n/a



- **Traffic Tracker Module** – The traffic tracker module provides a select zone assignment and comparison assignment for a given zone with two different land use assumptions. This select zone assignment provides for both estimates of daily traffic as well as the zones percent of traffic as compared to total traffic. This module is beneficial in evaluating a given area’s change in land use and what impacts this change might have on requiring mitigation.



- **Cost Estimator Module** - Because it is necessary to test various improvements to accommodate short- and long-range transportation demands, the tradeoff of performance versus costs is typically addressed. Given the TransCAD modeling platform, which is GIS based, a planning level unit cost estimate module was developed for various improvements. This module examines the differences in the existing and future network, and applies this unit cost to estimate planning level project costs. This module is particularly beneficial when developing a Fiscally Constrained Alternative or evaluating the cost benefits of one improvement over another.



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The amount and distribution of population and employment growth for 2030 and post 2030 conditions is important in the travel modeling process. The travel model is based on trip activity that begins at home (population) and has destinations to places of work and shopping (employment).

The 2030 population estimate is from the State Demographer that forecasts economic and development trends for the state and counties within the state. The total 2030 population forecasts for La Plata County are consistent with the state estimates.



The distribution of population, dwelling units, and employment within the County was based on an iterative process with City and County planning staff, which examined current development trends and recent development applications. Given the size of some of these proposed developments, estimates were made as to how much development might occur within the 2030 Transportation Plan horizon, and how much development would occur after 2030.

As difference land use plans are considered, the model can be manipulated to forecast travel patterns, however land use plans that reduce housing or employment numbers within the IGA areas, for instance, will serve only to increase housing and employment numbers in the remainder of La Plata County in accordance with the State demographics forecasts.

The timeline for post 2030 will be a function of actual market demand and absorption. Based on current trends, this timeframe might be in the 2050 to 2060 horizon. Actual trends may change, and with factors such as infrastructure investments and cost of fuel, actual growth may be different than what has been estimated. However, from a planning perspective, examining a possible post 2030 condition provides valuable insight into examining improvements for the 2030 horizon.

It should also be noted that the Long Range Transportation Plan for the City and County should be regularly updated approximately every five years. These updates provide the opportunity to compare actual growth and distribution of growth with estimates made as part of this work effort. This process permits ongoing refinement.

YEAR 2004 BASE YEAR DATA

The 2004 base year residential data began with the year 2000 census data. Inconsistencies and errors in the census data collection effort were reviewed and corrected. Additional residential construction since the year 2000 was identified and added to the dataset.



Employment data was based on a database of all businesses in the County. This data was extensively reviewed by consultant, City and County staff and corrected for accuracy and reasonableness.

YEAR 2030 FORECAST DATA

The total La Plata County forecast horizon year 2030 population forecasts are from the Colorado Department of Local Affairs (DOLA), the state demographer. This forecast served as the control total for population within La Plata County. Employment control totals were based on population/employment ratio trends in the City and County.

The distribution of both population and employment was based on a combination of development trends and City of Durango and La Plata County land use plans. Recently adopted area plans, such as the Grandview Plan and the Ewing Mesa Plan, were incorporated in the forecasts. The Three Springs development plan in the Grandview area was also incorporated in the forecast. The forecast year 2030 data then underwent a review process by City and County staff to ensure that it represents likely development patterns.

Figures 6 and 7 show the general distribution of population and employment for the base and horizon years with the lighter colored dots indicating existing development and the darker colored dots showing predicted growth between 2004 and 2030. Both Countywide and City of Durango maps are shown here. It is important to note that the dots shown on the maps are representations of much more general data and do not represent actual locations or actual numbers of people, houses, or development. They do, however, show the relative location and intensity of growth.

POST-2030 FORECAST DATA

Historically, long-range transportation plans have been developed for the 20 to 30 year timeframe. Given the length of time it takes to identify, design, fund, and construct some of the larger corridor improvements, and the uncertainty of the rate and location of growth, the 20 to 30 year timeframe has proven to be too short for comprehensive transportation planning. This post-2030 horizon data seeks to address this limitation. The objective of this forecast is to test post-2030 development, identify additional improvements, and preserve the necessary right-of-way.

The post-2030 dataset is based on City of Durango and La Plata County land use plans and assumes full buildout of those plans. In areas outside of these plans, residential development was assumed to occur at current densities and no commercial development was assumed. It does not take into account other policies, economics, availability of water, infrastructure, or other factors that may influence the overall growth and development of the region. No control totals for total population and employment were imposed. It is not an exact representation of future population and employment growth. However, the forecast is still valuable from a planning perspective. The data will help determine the improvements that might be necessary to accommodate this scenario and provide insight into necessary corridor rights-of-way so that future improvements can be made in an efficient manner and with minimal impact to the community.



FIGURE 6: EXISTING AND FORECAST 2030 DWELLING UNITS – COUNTY AND CITY DETAIL

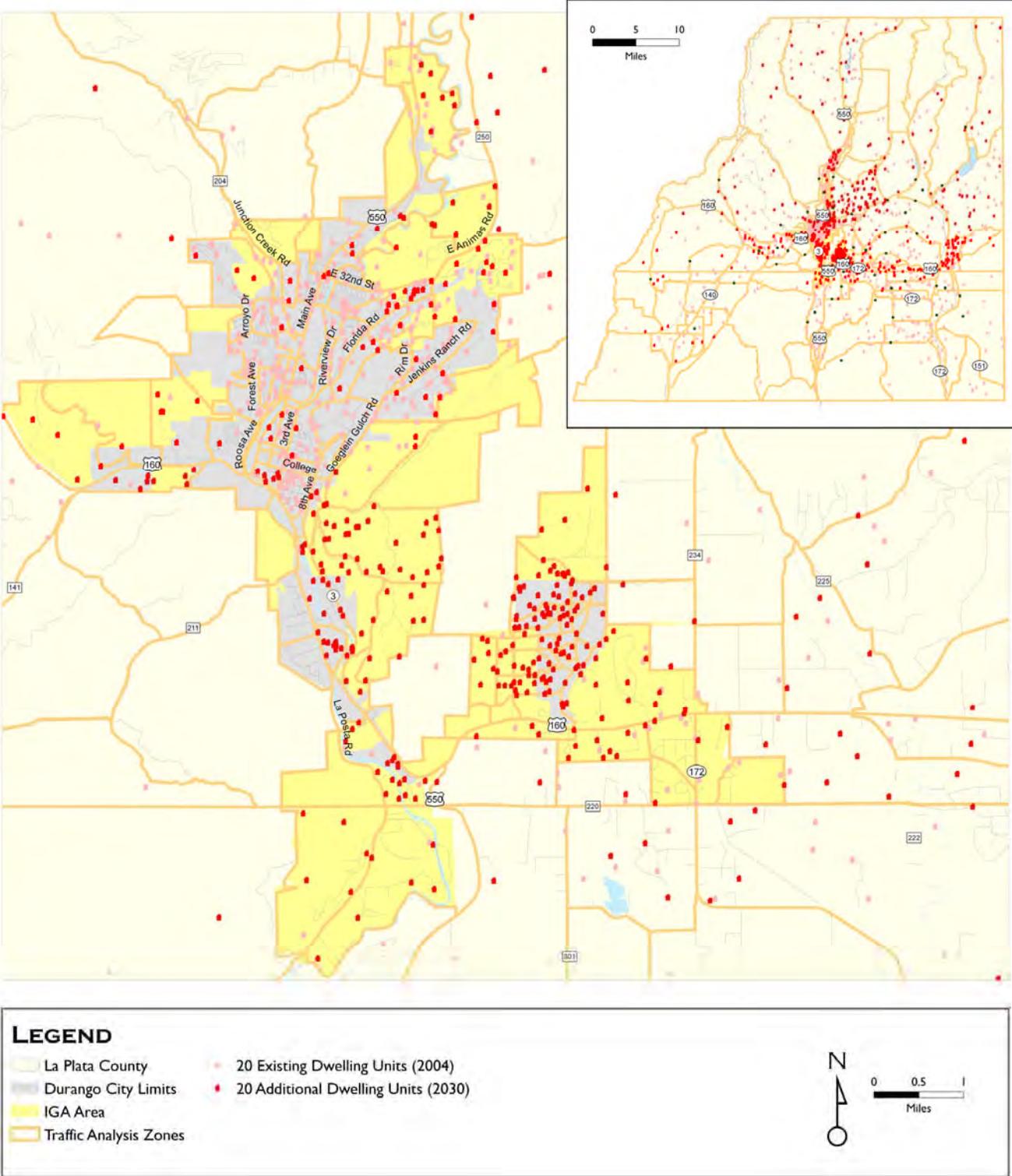
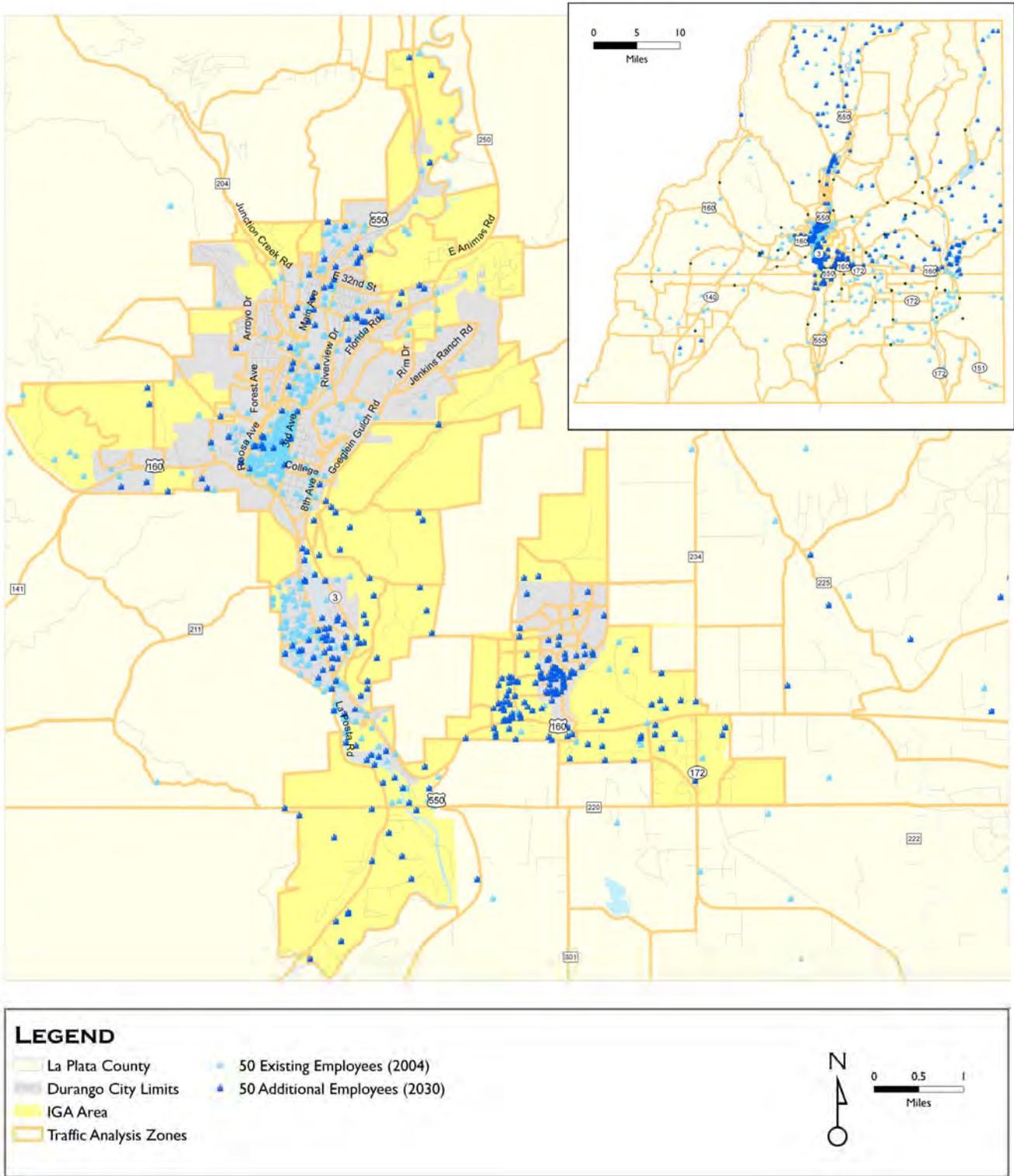




FIGURE 7: EXISTING AND FORECAST 2030 EMPLOYMENT – COUNTY AND CITY DETAIL





Similar to the existing and forecast growth maps, Figures 8-9 show the general distribution of population and employment for year 2030 and the post-2030 horizon years. The lighter colored dots indicate development expected by year 2030 and the darker colored dots show predicted growth after the year 2030. Both Countywide and City of Durango maps are shown here. It is important to note that the dots shown on the maps are representations of much more general data and do not represent actual locations or actual numbers of people, houses, or development.

EXISTING AND FORECASTED POPULATION AND EMPLOYMENT GROWTH

The resulting 2004, 2030, and Post 2030 population and employment forecasts for the City of Durango and La Plata County are presented in Table 3. It should be noted that the City estimates include some areas that are currently unincorporated, but are within the City's planning boundary. Graphically, this information is presented in chart form after the table.

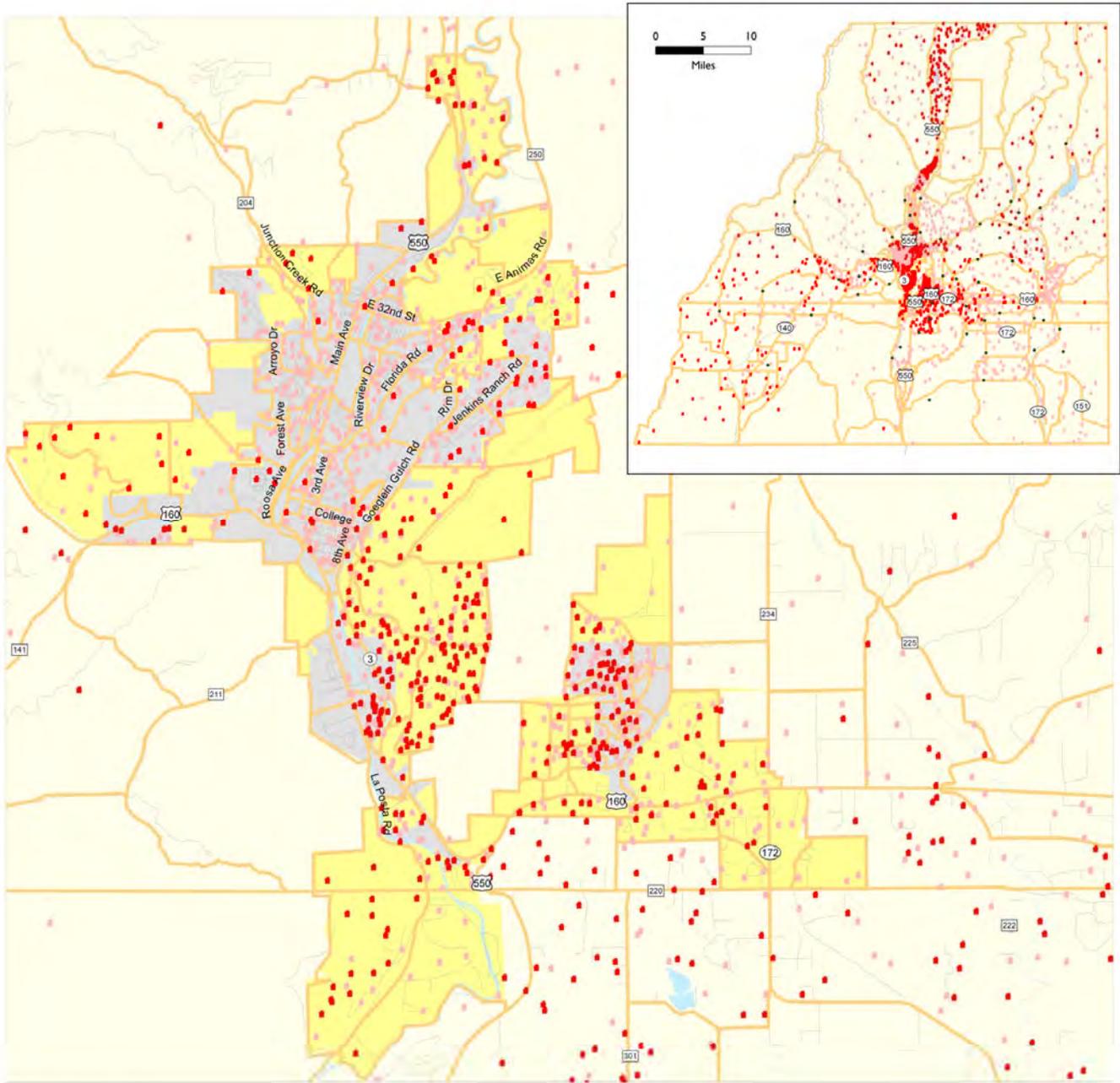
TABLE 3: 2004, 2030, AND POST 2030 POPULATION AND EMPLOYMENT FORECASTS

	2004	Increase (2004 to 2030)	2030	Increase (2030 to Post 2030)	Post 2030	Percent Growth 2004-2030	Percent Growth 2004- Post 2030
Population							
City of Durango	17,200	15,100	32,300	18,100	50,400	88%	193%
La Plata County	29,100	19,600	48,600	31,600	80,300	67%	176%
Total	46,300	34,700	80,900	49,800	130,700	75%	182%
Employment							
City of Durango	20,900	13,200	34,100	16,600	50,600	63%	143%
La Plata County	9,200	7,800	17,000	6,200	23,200	85%	152%
Total	30,100	21,000	51,100	22,800	73,800	70%	146%

The details of where existing and future socio-economic data was assigned is included in Appendix A. This Appendix includes a Traffic Analysis Zone (TAZ) map and tables that reflect existing 2004, 2015, forecast 2030, and Post 2030 population and employment by TAZ.



FIGURE 8: YEAR 2030 AND POST-2030 FORECAST DWELLING UNITS



LEGEND

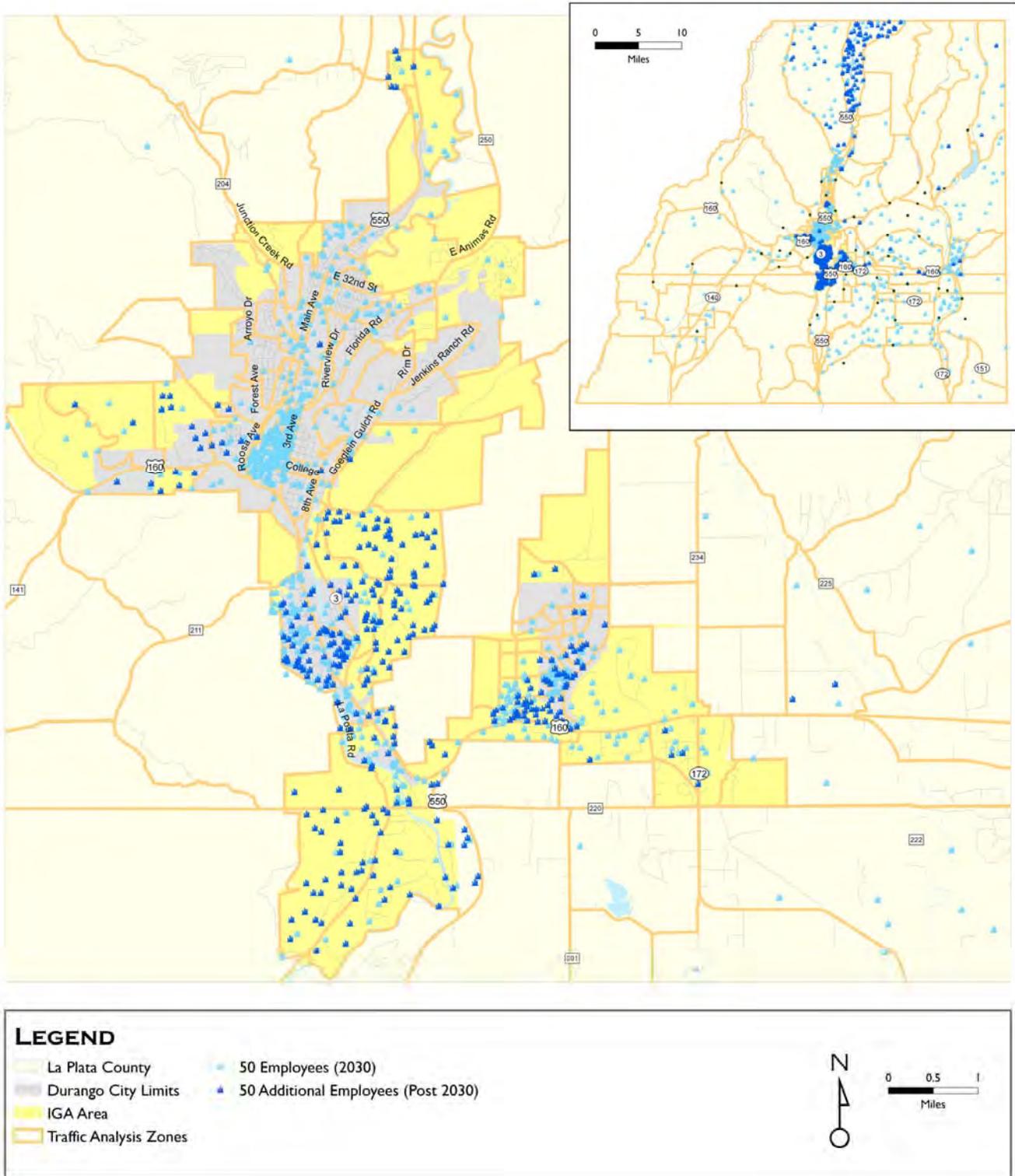
La Plata County	20 Dwelling Units (2030)
Durango City Limits	20 Additional Dwelling Units (Post-2030)
IGA Area	
Traffic Analysis Zones	

N

0 0.5 1
Miles

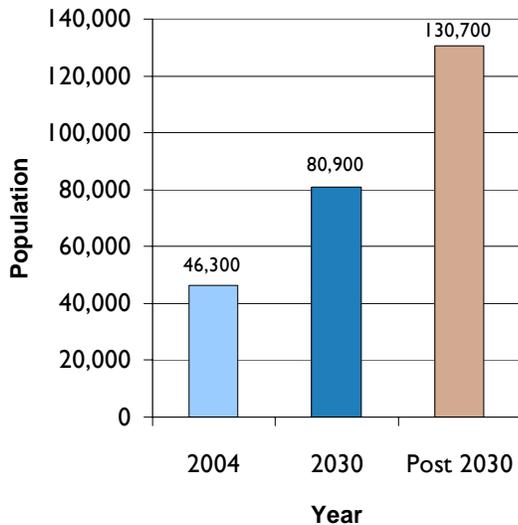


FIGURE 9: YEAR 2030 AND POST-2030 FORECAST EMPLOYMENT

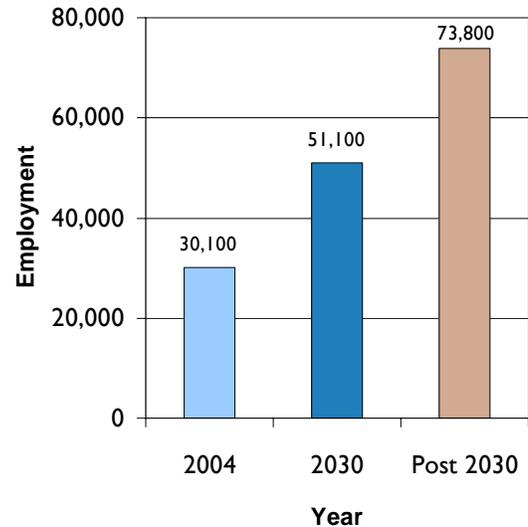




**La Plata County
Existing and Forecast
Population**



**La Plata County
Existing and Forecast
Employment**

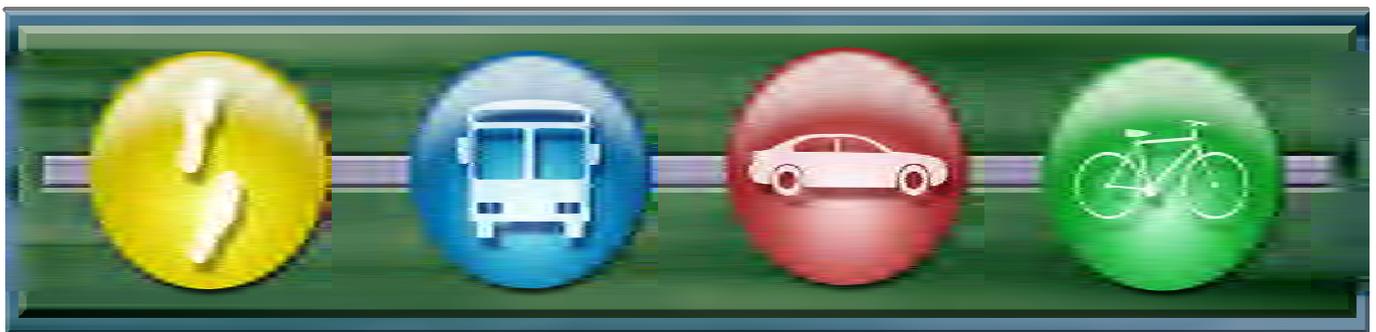


As can be seen in the table, the amount of 2030 population growth will be similar in magnitude between the City and the County. Employment growth, however, will be higher within the City than in unincorporated La Plata County. In the Post 2030 scenario, employment growth will continue to be higher in the City; however, population growth will be higher in the County as infill residential development within the City is completed.

The 2030 transportation demand analysis was based on the use of the 2030 TRIP travel demand model. This analysis examined travel desires between various parts of the County and City, and then assigned these trips to the existing street system to determine where the deficiencies in the transportation system would exist and identify improvements to mitigate those deficiencies. Because there are improvements currently funded and committed, the future base condition assumed the construction of the committed and funded projects.

TRAVEL DESIRES

The following section describes the forecasted travel desires of La Plata County and the City of Durango with 2030 and Post 2030 growth. These travel desires reflect the model's output of where trips begin and end and where the travel demand is expected. This is a useful tool to examine existing travel desires with increased travel desires for the future. Locations where increased trip activity occur, suggest locations where improvements should be provided.



Figures 10-12 show how much traffic needs to travel from one location to another. The width of the line and the diameter of the circle reflects how much traffic will travel between and within an area. It should be noted that these areas reflect geographic regions within the County. Actual travel desires would occur throughout a region.

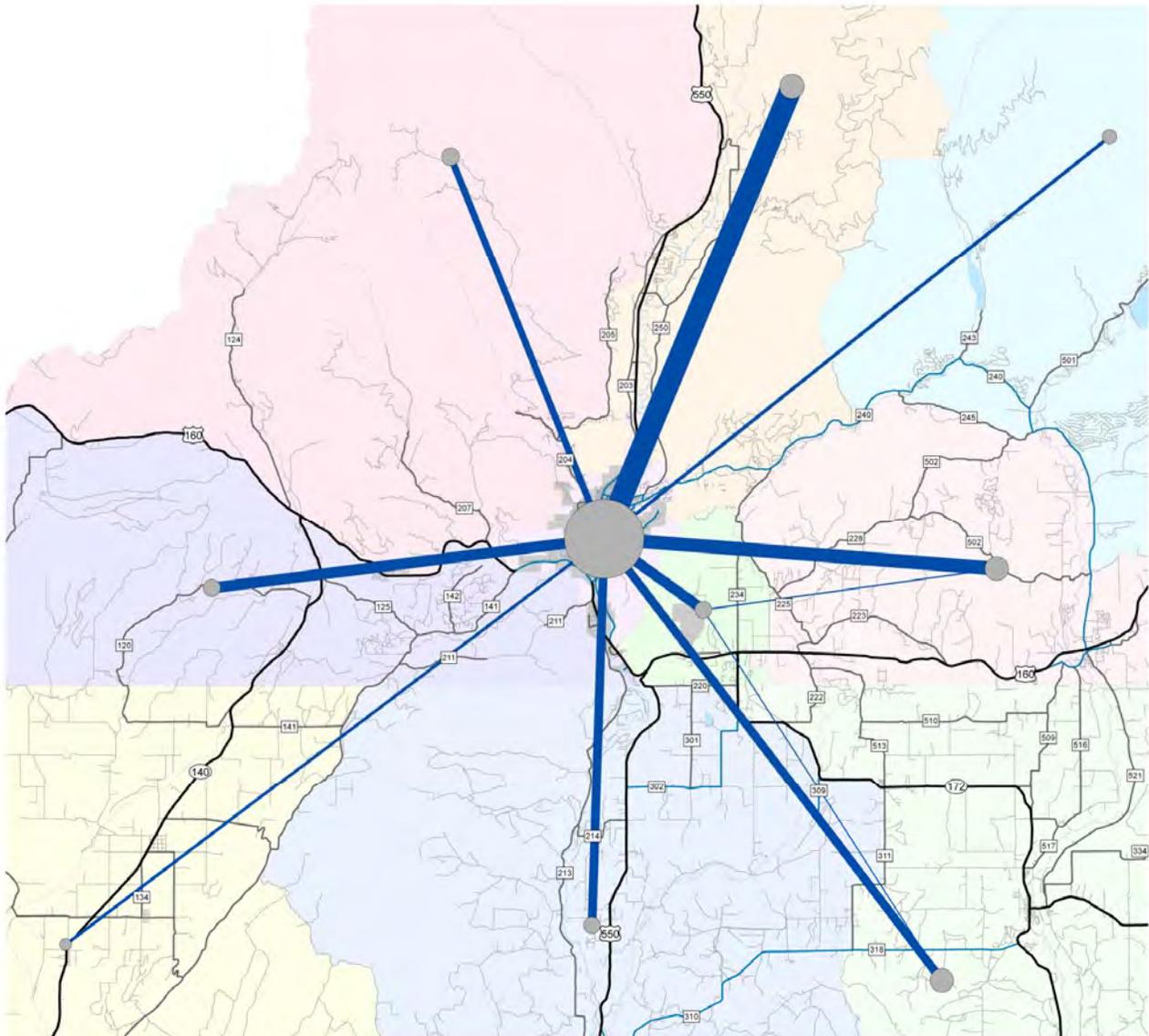
HOW ARE AREAS WITHIN THE CITY AND COUNTY DEFINED?

The areas within the City and County used for identify travel desires between one area and another are collections of traffic analysis zones that reflect a general area within the County and City. As an example, traffic analysis zones for the City of Durango's current development area are aggregated together. Similarly, traffic analysis zones were aggregated for the larger Grandview area. Zones in the outlying unincorporated La Plata County are for planning purposes only and do not represent a particular destination within that area. These areas outside the City also include trip activity to areas outside of La Plata County.



As can be seen in Figure 10, most existing traffic occurs within the City of Durango. Traffic traveling into the City primarily originates from the north along US 550 and from the east (Bayfield) along US 160. Lesser inbound travel corridors are from the west along US 160 and the south along US 550. Inbound traffic also originates from Ignacio and southwest La Plata County.

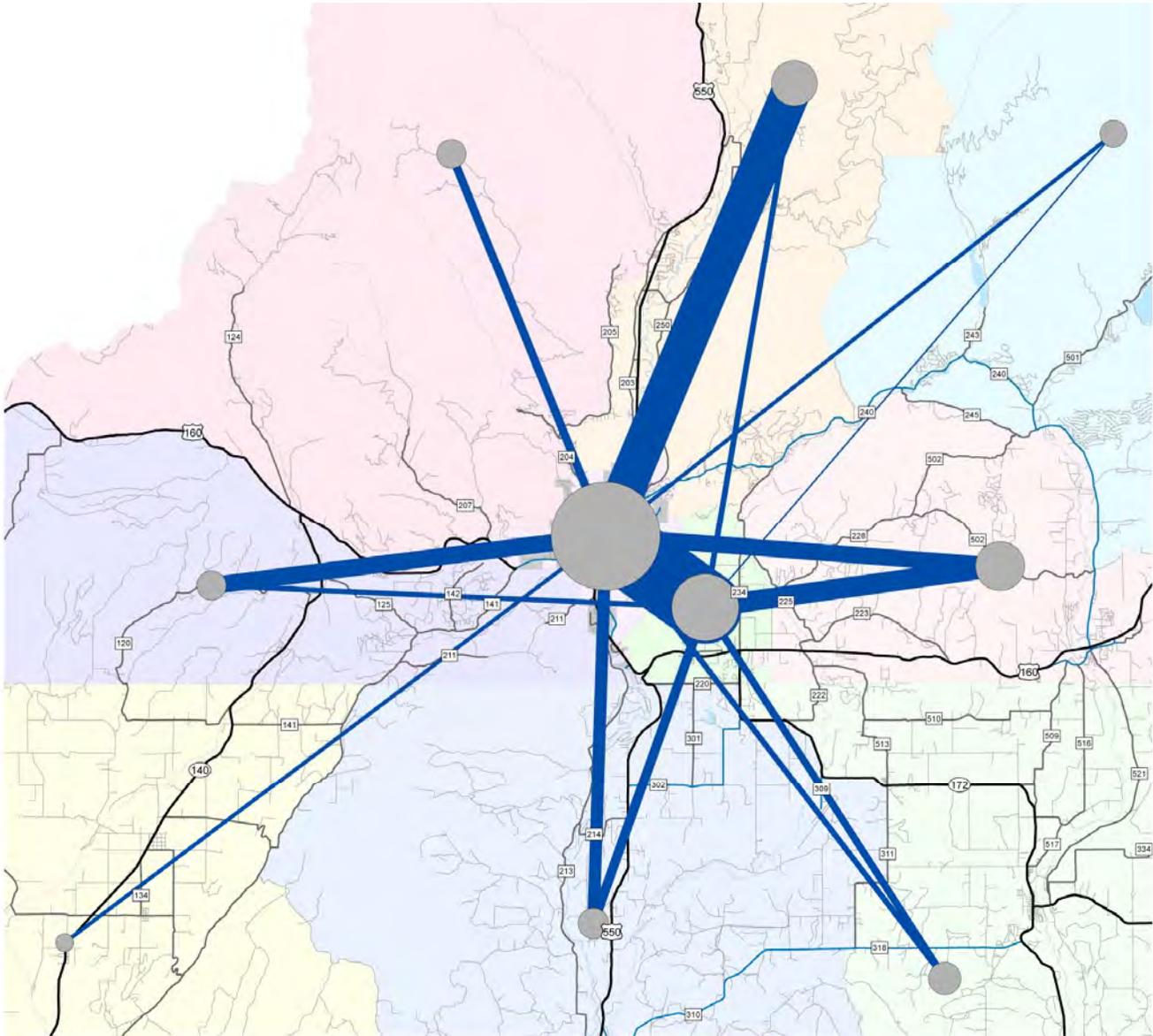
FIGURE 10: EXISTING TRAVEL DESIRES





As can be seen in Figure 11, with 2030 travel desire forecasts, traffic traveling to and from locations within the City will occur within projected growth. Significant increases in traffic will occur from the Grandview area and from the north along US 550. Increased travel desires are also projected for eastern La Plata County to the City of Durango and Grand view. This traffic from eastern La Plata County to the City will likely travel along two corridors, US 160 and Florida Road. Increased travel desires will occur along other corridors.

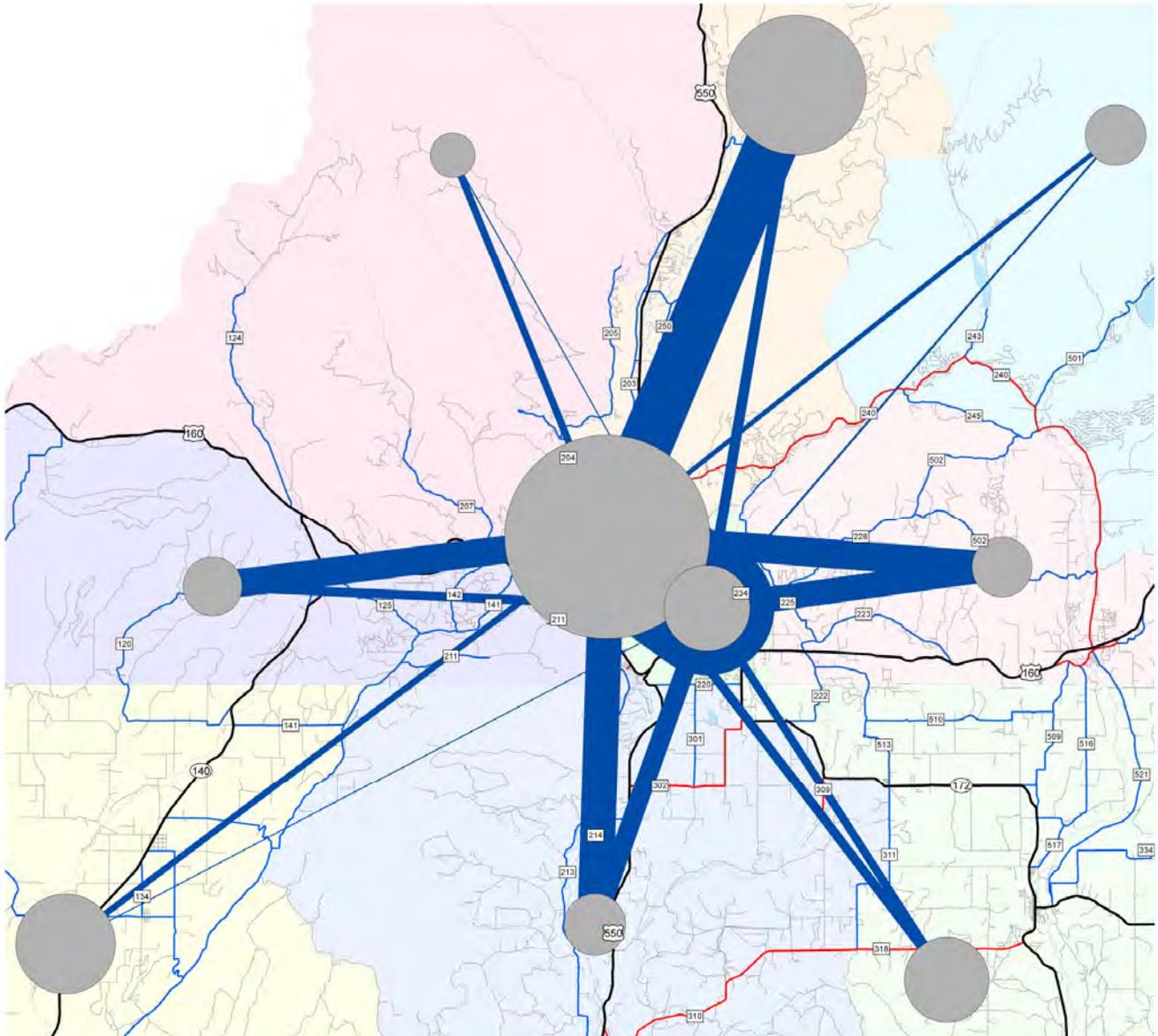
FIGURE 11: 2030 TRAVEL DESIRES





As can be seen in Figure 12, the Post 2030 travel desires reflecting a long-term buildout of the City and County will see major growth in all travel corridors when compared to existing or 2030 travel desires. Corridors of greatest impacts will be from Grandview, US 160 east and west, and US 550 north and south.

FIGURE 12: POST 2030 TRAVEL DESIRES



As these graphics reflect the relative magnitude of growth in travel it is evident that major transportation improvements will be required to accommodate 2030 and Post 2030 City of Durango.



TRAVEL DESIRES KEY FINDINGS

The analysis shows a growth in trips of 75% between now and 2030, and an additional 60% of growth between 2030 and Post 2030. This growth will occur both within the City of Durango, between La Plata County and Durango, and between various areas within La Plata County to outside of La Plata County.

A major observation in the review of the trip activity and travel desires is the growth in the Grandview area and travel desires between Grandview to Durango. This area will experience a significant growth in trip activity in 2030, and further intensification in the Post 2030 horizon. As this increase in trip activity occurs, there will be a shift of the travel center of the County from downtown Durango toward the Grandview area.

These travel desires reflect where trips want to go from and to. Understanding travel desires assists in the development and evaluation of alternatives. As would be expected, a major effort in identifying the long-term circulation needs for the region will be through identifying critical transportation improvements from Grandview, and points east, with Durango.

EXISTING PLUS PLANNED IMPROVEMENT CONDITIONS

In general, the existing roadway system handles current traffic demands quite well. Congestion problems are noted along US 550 in Durango downtown area and along US 160/550 approaching the downtown. Congestion tends to be a summer peak condition and generally occurs at intersections with deficient signalization or where the addition of turn lanes could alleviate the congested condition.

Since 2004, several roadway improvements have been constructed, are under construction, or have committed funds and will be constructed in the near future. These projects are important because they help in establishing a baseline roadway network upon which to evaluate alternatives.

A list of the committed and funded improvements for the City of Durango and La Plata County are presented in Table 4.

TABLE 4: COMMITTED AND PROGRAMMED PROJECTS

Realignment of CR 211 due to the Animas La Plata project
Realignment of CR 222/223 across US 160
Construction of Roadways internal to the Grandview development
Reconstruction and Widening of CR 238 Goeglein Gulch Road

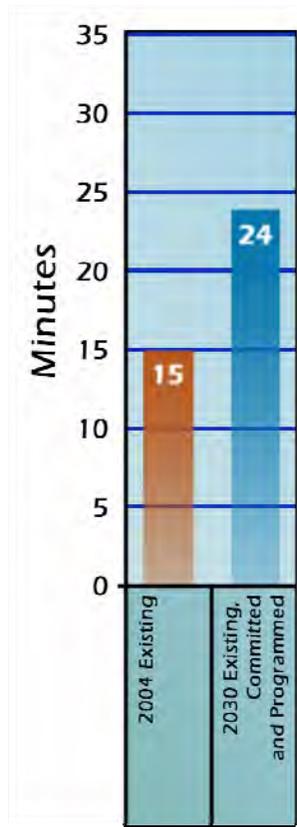


2030 TRAFFIC CONGESTION

In general, projected growth within the City of Durango and La Plata County will result in a significant increase in traffic between now and 2030 as presented in Figures 13A and 13B, Existing, Committed, and Programmed 2030 Traffic Congestion. The primary increase in travel demand and traffic will be between the Grandview area and Durango's downtown. Another corridor with significant impact in traffic is along Florida Road. This impact is both a result in increased development in both the unincorporated portion of La Plata County and the City of Durango traveling between one another and in part lack of capacity along the US 160/550 corridor, which causes diversion to Florida Road.

In order to convey the affect of the congestion, one measure to compare current conditions to future conditions is the time it might take to travel from one location to another.

As presented in the following graphic, the average travel time to travel during the a.m. from Grandview to Downtown Durango or in the p.m. peak hour from Downtown Durango to Grandview is approximately 15 minutes. This condition is a typical summer peak condition. With anticipated 2030 development and associated traffic, this same trip will increase by 60% to 24 minutes. This increase in nine minutes will result from congestion along the corridor and waiting at signals to get through the critical intersections along the corridor.



Travel between Grandview and Downtown Durango



FIGURE 13A: 2030 TRAFFIC CONGESTION WITH EXISTING, COMMITTED, AND PROGRAMMED TRANSPORTATION IMPROVEMENTS

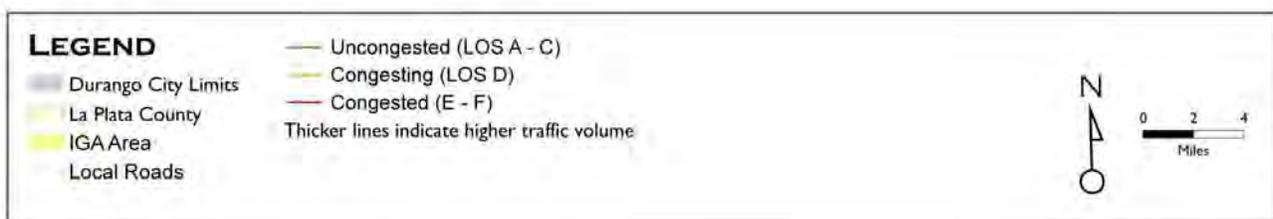
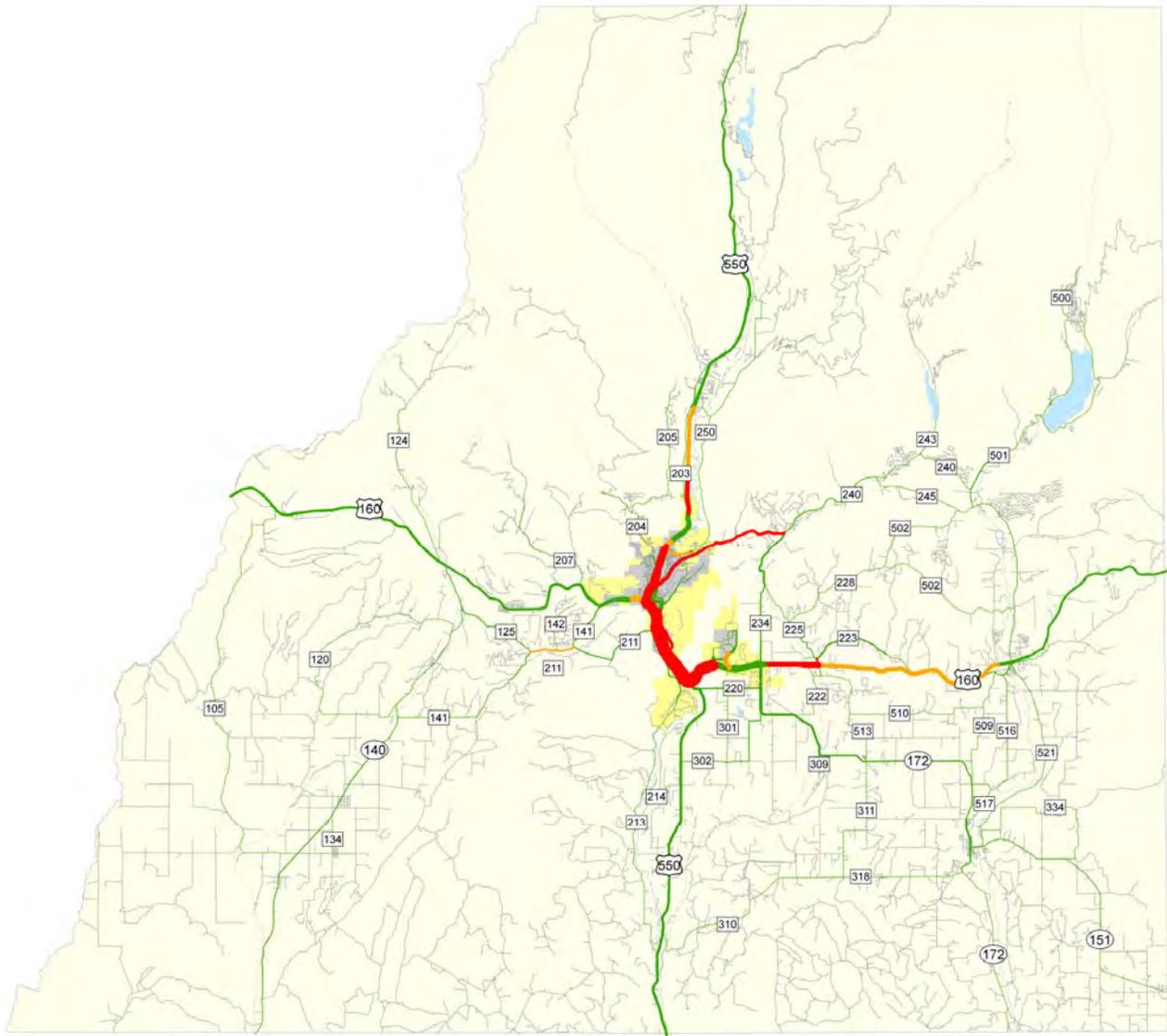
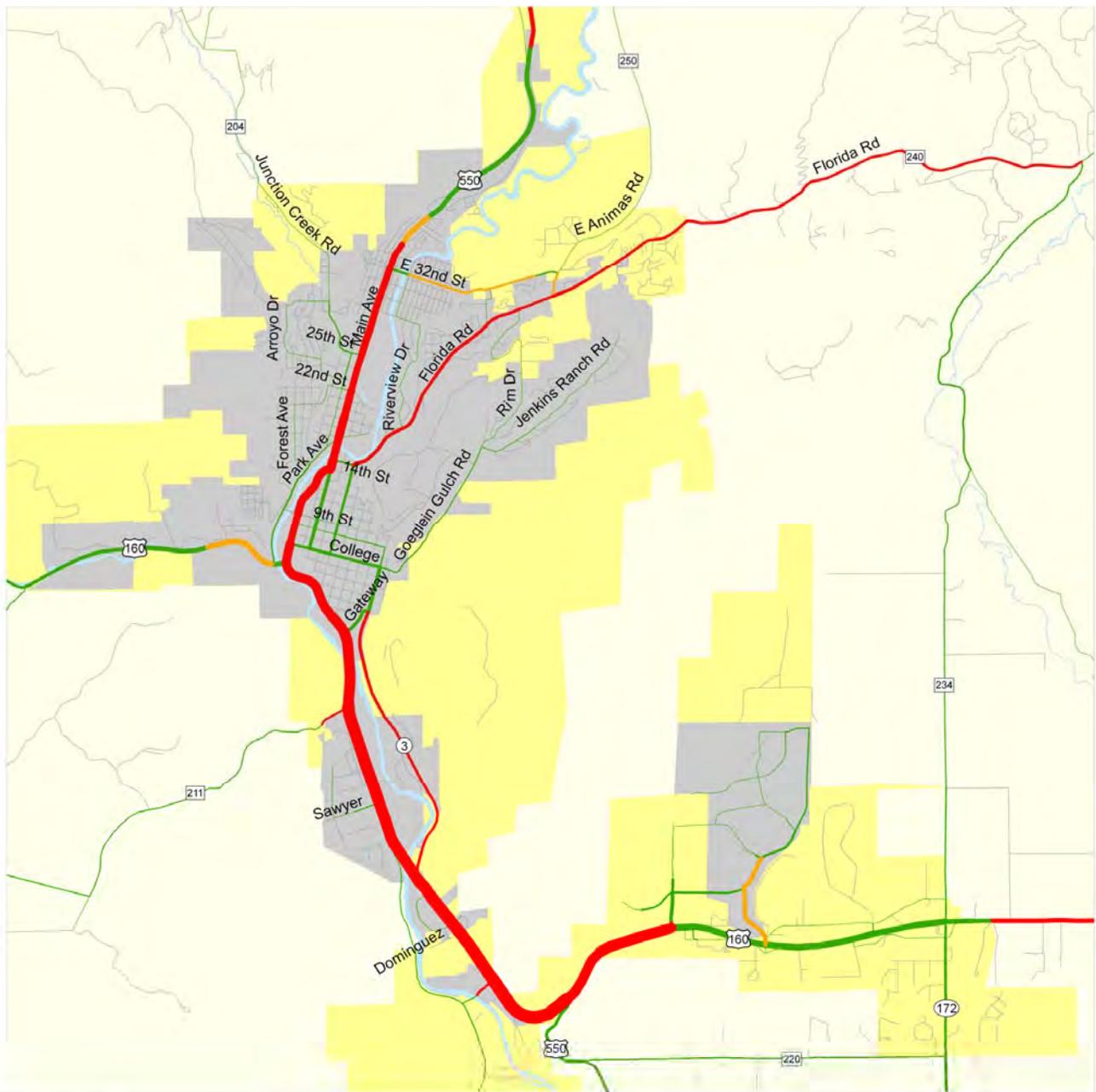




FIGURE 13B: 2030 TRAFFIC CONGESTION WITH EXISTING, COMMITTED, AND PROGRAMMED TRANSPORTATION IMPROVEMENTS



LEGEND

- Durango City Limits
- La Plata County
- IGA Area
- Local Roads
- Uncongested (LOS A - C)
- Congesting (LOS D)
- Congested (E - F)

Thicker lines indicate higher traffic volume

N

0 0.25 0.5 1 Miles

Based on future development forecasts and the deficiencies analysis, major transportation improvements will be required in the future for the City of Durango and La Plata County. The following chapter presents the alternatives analysis that was conducted to test various solutions for addressing these future transportation needs and presents the plan recommendations to accommodate forecast development. This alternatives analysis and plan recommendations include roadway, transit and bicycle/pedestrian transportation plan recommendations.

ROADWAY

The roadway alternatives analysis and plan recommendations address three components of the study areas roadways as follows:

1. **Major Roadways** that provide transportation mobility for the City and County. These roadways are the arterial and highway links that will need to be improved with additional travel lanes and also include the addition of new facilities. These roadways are the transportation links between future trip origins and destinations.
2. **City of Durango's Major Intersections.** As traffic increases, the ability to accommodate traffic at these critical intersections between major roadway links will require improvements. The City of Durango's intersection alternatives analysis and plan recommendations also include the analysis of three critical intersections that may warrant signals in the future.
3. **La Plata County Roads.** Many of La Plata County's roads are unpaved. As growth occurs in the county area, traffic will increase on many of these unpaved roads to where increased maintenance costs will warrant paving. The La Plata County roads analysis and plan recommendations also include estimates of where intersection improvements might be required. As traffic increases in these rural areas, more conflicts will occur at the Country road intersections where flair-outs of these intersections will be required to minimize the conflicts between through traffic and turning traffic. Some of these recommended improvements are between two county roads. This analysis and recommendations also include locations where a county road intersects with a State highway.

MAJOR ROADWAYS

As indicated in the previous Chapter, traffic within the City of Durango and La Plata County will increase significantly by the year 2030 and will result in extensive congestion and increased travel times for existing and future residents. As an example, travel time from Grandview to downtown Durango will increase from approximately 15 minutes today, to 24 minutes in 2030 without major transportation improvements.



RECOMMENDED 2030 ROADWAY NETWORK

To determine what improvements might be recommended, a series of traffic model runs were conducted to identify which improvements would best address this increase in traffic. The selection of recommended improvements was based on a larger list of potential roadway projects, which were presented to the public in June 2005. The recommended improvements were selected based on performance and cost effectiveness.

The recommended 2030 Roadway Network included a variety of improvements, including roadways currently on the City's Comprehensive Plan and the County's general plan, the recommended improvements presented in CDOT's US 550/160 EIS, and new Grandview and Ewing Mesa connectors. Thirteen major corridor improvements were identified for recommendations. These improvements, project description and planning level costs are presented in Table 5 and graphically in Figure 14.

TABLE 5: RECOMMENDED 2030 ROADWAY NETWORK

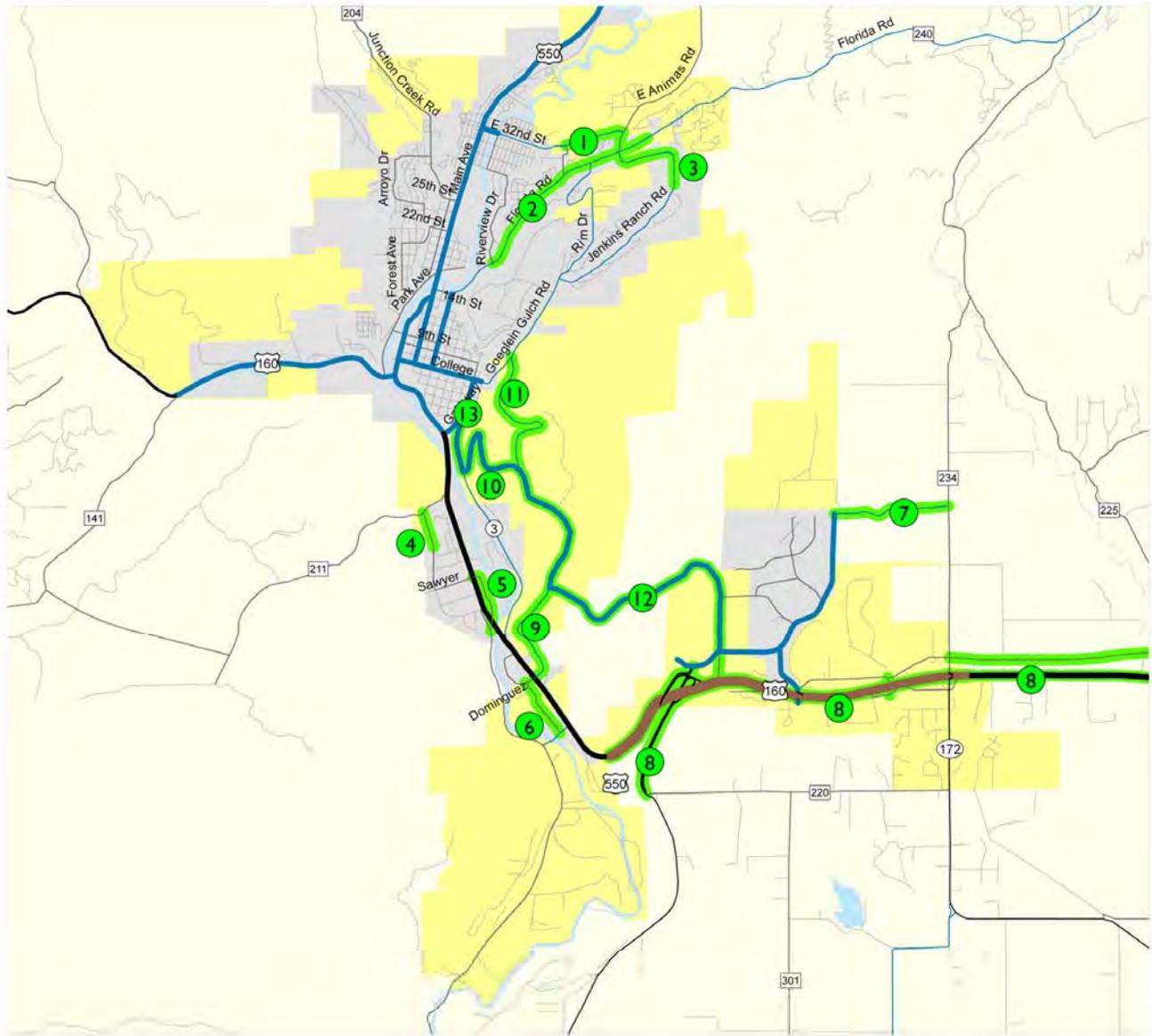
#	Location	Improvement	Length	Estimated Cost
1	E 32nd St / CR 250 from Holly Ave to Florida Rd	Add center turn lane, curb, gutter, and bike lane	0.7 mi	\$1,700,000
2	Florida Rd from E 3rd Ave to East of CR 250	Add center turn lane, curb, gutter, and bike lane	1.8 mi	\$9,500,000
3	Jenkins Ranch Road from Existing Terminus to Florida Rd	Extend as Arterial	0.8 mi	\$8,250,000
4	Turner Drive from Existing Terminus to CR 211	Extend Collector	0.3 mi	\$1,614,000
5	Frontage Road from La Posta south of Turner to Sawyer at US 550	New Underpass and Frontage Road	0.9 mi	\$11,526,000
6	Escalante from Dominguez Dr. to River Road	New Collector	0.6 mi	\$2,180,000
7	County Road 235 from New Grandview Arterial to CR 234	New Arterial	1.1 mi	\$1,769,000
8	US 160 EIS Preferred Alternative	Relocation of the Farmington Hill Interchange and widening of US 160 from 2 to 4 lanes east to Bayfield	n/a	*
9	Ewing Mesa Access (Dominguez)	New Arterial	1.0 mi	\$6,124,000
10	Ewing Mesa Access (Hwy. 3)	New Arterial	1.9 mi	\$14,784,000
11	Ewing Mesa Access (Goeglein)	New Arterial	2.3 mi	\$15,592,000
12	Grandview Connection (South alignment)**	New Arterial	2.0 mi	\$21,515,000
13	St. Highway 3 from Ewing Mesa to 8th Ave.	Widen to 4 lanes	0.5 mi	\$163,000
	TOTAL			\$94,717,000

* Based on the "Draft Environmental Impact Statement/Draft Section 4(F) Evaluation for US Highway 160 From Durango to Bayfield La Plata County, Colorado (2005)" preferred alternative, these improvements are estimated to cost \$455.6 million.

** See Appendix B for alignment and cost estimate.



FIGURE 14: RECOMMENDED 2030 ROADWAY NETWORK



LEGEND

Durango City Limits	IGA Area	La Plata County	2030 Selected Alternatives
Freeway	Highway	Arterial	Collector
Local			

Through Lanes
2 3 4

2
 3
 4

N
 0 0.5 Miles



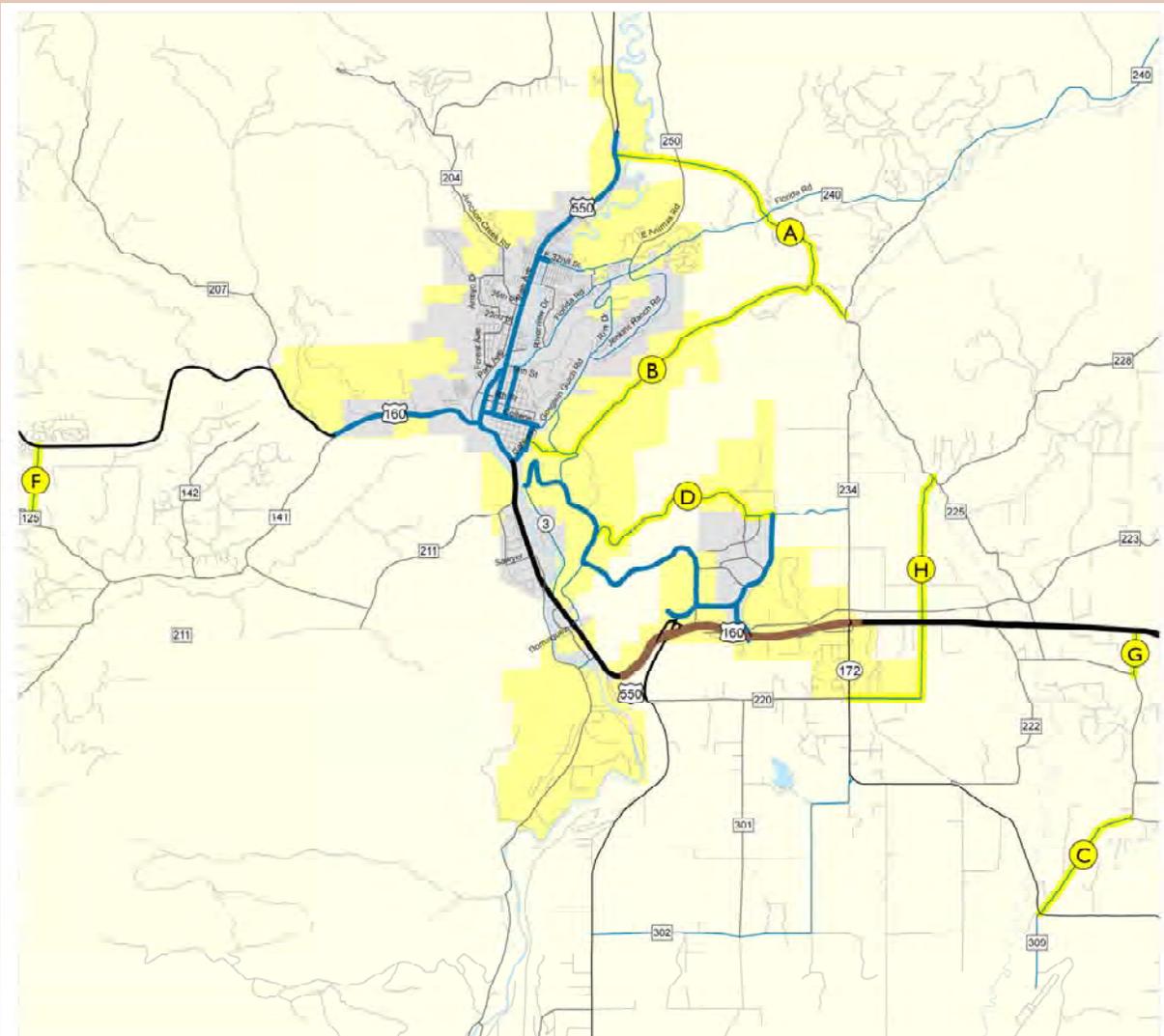
OTHER CONSIDERED ALTERNATIVES NOT SELECTED

Multiple alternative roadway improvements were identified as candidates for inclusion in the roadway portion of 2030TRIP. Some of these alternatives had been considered in the past and may already be included in city and county plans. Others are relatively new ideas that do not appear in any previous plans or documents. All of these alternatives were included in an analysis to determine the usefulness, viability, and feasibility of inclusion in 2030TRIP. The map below shows the location of the "other considered alternatives." The table below lists alternatives that were not selected for inclusion and explains why each alternative was excluded from further analysis.

Number	Location	Improvement
A	Ute Pass Bypass	New Arterial: This facility has the potential to carry some traffic, but the costs of constructing this facility far outweigh the benefits.
B	Horse Gulch Road	Improve to and open as an arterial: This connection would not serve enough traffic to be justified.
C	New County Road	New collector between Hwy. 172 and County Road 513: This connection would not serve enough traffic to be justified.
D	Grandview Connection (North alignment)	New Arterial: This alternative was dropped in favor of the south alignment. The south alignment provides a more direct, shorter route and connects to a commercial area instead of a residential area in Grandview.
E	US 160 Interchange (not listed on map)	Interchange to serve Grandview (no realignment of US 550): This was dropped in favor of building an interchange and realigning US 550. However, this may be a candidate for a short term improvement to improve traffic flow through the US 160 corridor before the US 550 realignment takes place.
F	US 160/CR 125 Connection	New Collector: This alternative provides additional travel options, but is not necessary to relieve congestion.
G	Connection from CR 510 to US 160	New County Road: This alternative provides access, but is not otherwise necessary. It continues to be a candidate for



OTHER CONSIDERED ALTERNATIVES NOT SELECTED MAP



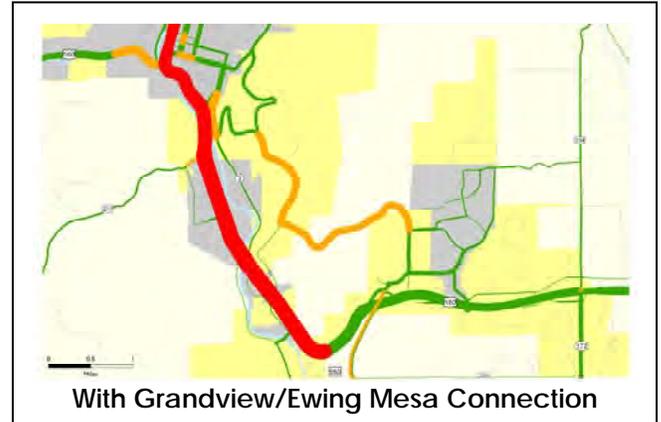
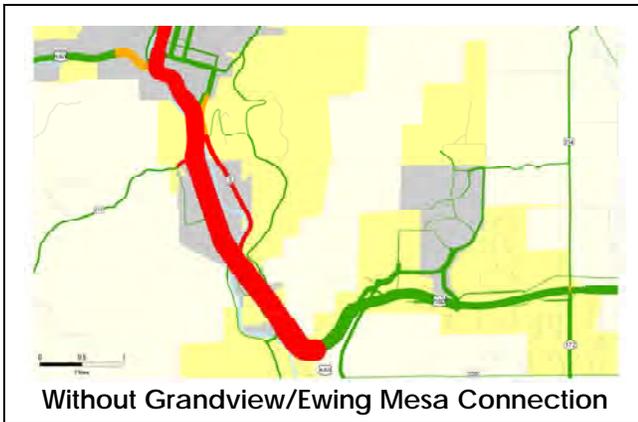
LEGEND	
La Plata County	Through Lanes
Durango City Limits	2 3 4
IGA Area	Freeway
Other Considered Alternatives	Highway
	Arterial
	Collector
	Local

N

0 0.5 1
Miles



A key component of the recommended roadway plan is a connection from the fast-growing Grandview area to Ewing Mesa and then into the heart of Durango. However, this connection would be costly, would pass through BLM land, and would significantly increase traffic on a portion of State Highway 3. Without this connection, travel between Grandview and the rest of Durango will become very difficult and time consuming. Even with this connection, improvements to US 550/160 defined in CDOT's US 550/160 EIS are vital to providing adequate transportation capacity in this corridor. The forecast level of congestion in 2030, both with and without a Grandview/Ewing Mesa connection, is shown in the maps below. These maps are followed by Figures 15A and 15B that shows 2030 congestion for the entire county.



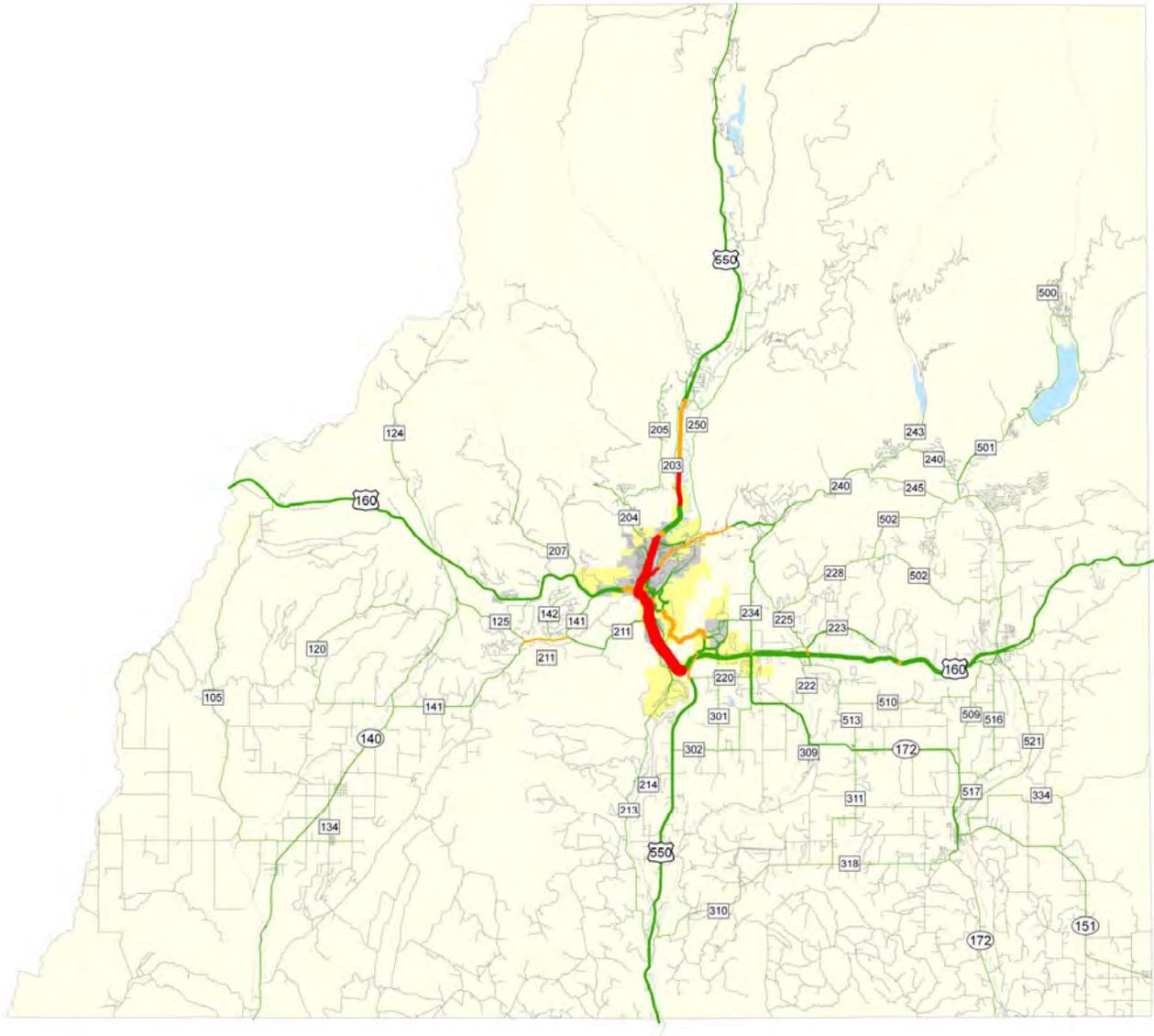
These maps are similar to roadway congestion maps previously represented, where the wider the line, the more traffic, and the color reflects uncongested (green), congesting (orange), and congested (red).

The critical need for the Grandview/Ewing Mesa connection is to provide an alternative route for Grandview/Three Springs Area traffic to downtown Durango as an alternative to the heavily congested forecast corridor of US 550/160. In review of the comparison maps, the addition of a Grandview/Ewing Mesa connection will have a sufficient demand to warrant a four lane facility.

When comparing the maps, it is noted that the US 550/160 corridor does not experience a significant reduction in traffic with the addition of the Grandview/Ewing Mesa connection and congestion on US 550/160 remains. This is true because the actual demand for this travel corridor exceeds the capacity of US 550/160, even with the Grandview/Ewing Mesa connection. Without the Grandview/Ewing Mesa Connection, many trips that originate in easterly portions of La Plata County with destinations to Grandview, find the US 550/160 corridor so congested, that they divert to other routes to enter the City such as Florida Road. With the additional capacity added with the Grandview/Ewing Mesa Connection, some trips will divert to the US 550/160 corridors from other routes such as Florida Road to the US 550/160. Even with a redirection of traffic back to the US 550/160 corridor with the Grandview connection, overall congestion and delay will be reduced and travel time will decrease.



FIGURE 15A: 2030 CONGESTION FOR THE ENTIRE COUNTY

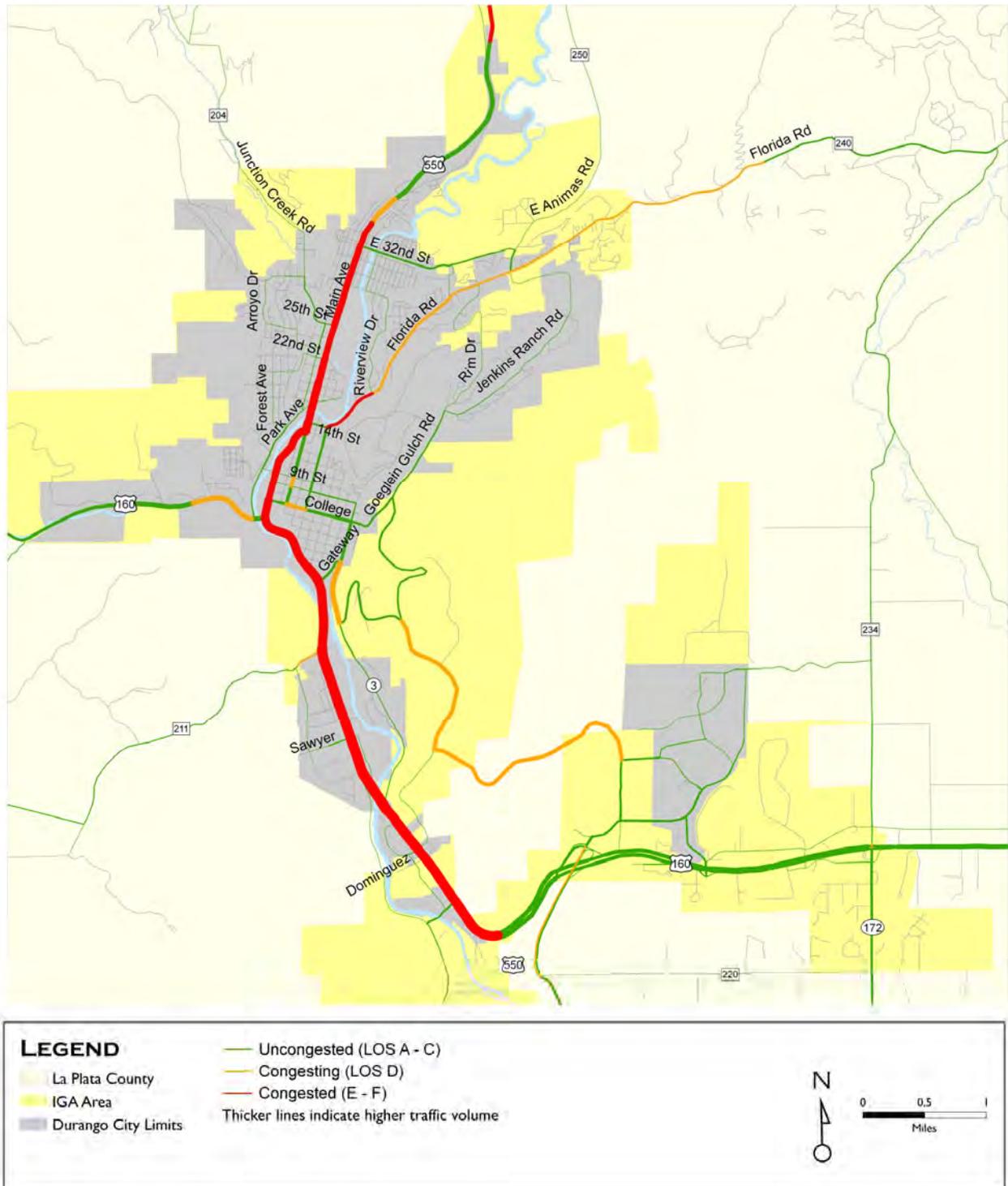


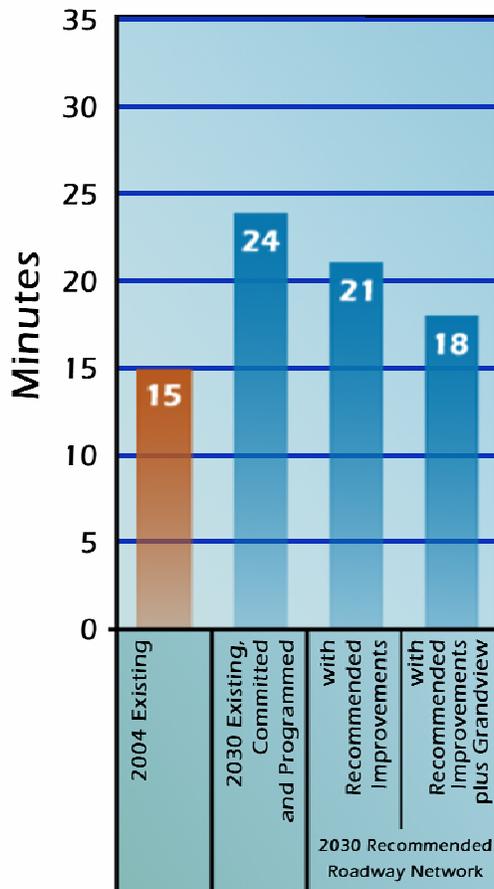
LEGEND	— Uncongested (LOS A - C)
La Plata County	— Congesting (LOS D)
IGA Area	— Congested (E - F)
Durango City Limits	Thicker lines indicate higher traffic volume

N
0 2 4
Miles



FIGURE 15B: 2030 CONGESTION FOR THE CITY OF DURANGO





Travel between Grandview and Downtown Durango

A comparison of travel times from Grandview to downtown Durango is presented in the following graphic. As previously presented, it currently takes approximately 15 minutes during the peak hours to travel from Grandview to downtown Durango. With forecast 2030 traffic and the existing network with only minor programmed improvements, travel time will increase to approximately 24 minutes. With all of the recommended improvements except the Grandview/Ewing Mesa connection, the roadway system will be improved to the point where the resulting travel time will be reduced to approximately 21 minutes. Adding the Grandview/Ewing Mesa improvements further improves the corridor travel time to approximately 18 minutes. Even with the list of recommended improvements including the Grandview/Ewing Mesa connection, 2030 travel time will take longer (18 minutes) than it does currently (15 minutes).

Ultimately what is needed to address long range transportation demand for the City and County is the Grandview/Ewing Mesa Connection plus major improvements along the US 550/160.

Three alternatives for the US 550/160 corridor were examined. These included:

- 1. Widen To Six Lane Expressway:** This corridor is currently a four lane expressway with limited at grade access at signalized intersections. This alternative would increase the number of through lanes from four to six lanes.
- 2. Four Lane Freeway:** Under this alternative, the US 550/160 corridor would remain as a four lane facility, however all intersections between the US 550/160 intersections would be grade separated. This improvement would significantly increase the capacity per lane as there will be no intersecting traffic along the corridor.
- 3. Six Lane Freeway:** This alternative is similar to the four lane freeway, but provides six travel lanes. An option on this alternative would be to limit the additional 5th and 6th lane to bus rapid transit or high occupancy vehicles (HOV).

Each alternative was tested for the 2030 forecast growth conditions utilizing the travel model. The results of this analysis are presented in the following level of service figures.



2030 Recommended - No US 160/550 Improvements - 18 minutes



Alternative 1 - 2030 Recommended with Six Lane US 160/550 Improvements - Expressway - 16 minutes



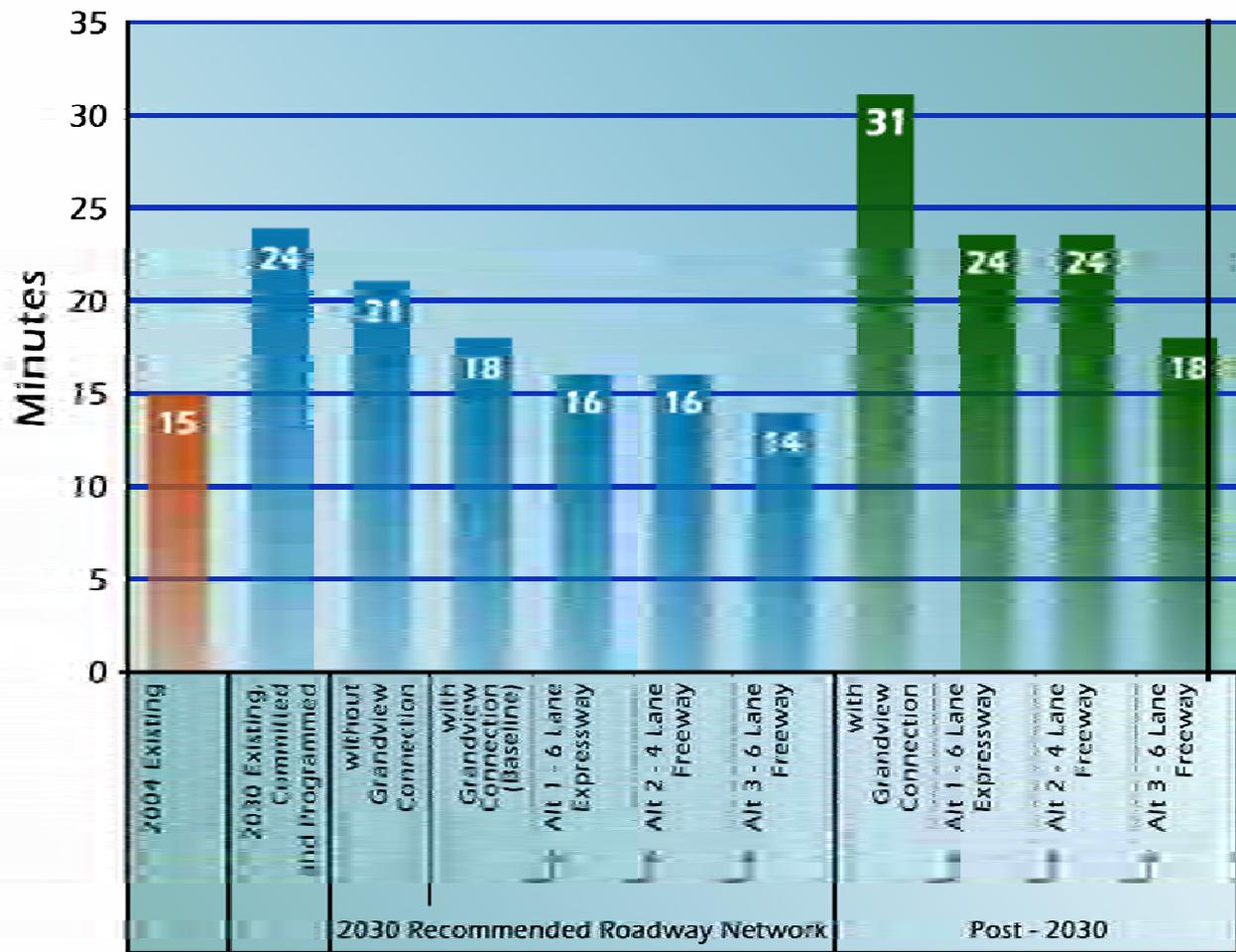
Alternative 2 - 2030 Recommended with Four Lane US 160/550 Restricted Access Freeway - 16 minutes



Alternative 3 - 2030 Recommended with Six Lane US 160/550 Restricted Access Freeway - 14 minutes

As can be seen, providing corridor improvements along the US 550/160 corridor provide a significant and positive benefit to the City of Durango and La Plata County. As illustrated in the chart below, travel times between Grandview and downtown Durango will be reduced to 16 minutes with either the six lane expressway or four lane freeway. This travel time is only one minute longer than what is currently experienced. It should be recognized that these US 550/160 improvements require the recommended improvements and the Grandview/Ewing Mesa connections to yield these results. With the consideration of a six lane freeway, travel times will reduce to 14 minutes, which is actually less than the current travel time. This improvement is a result of both increasing the capacity of the corridor and increasing travel speeds with restricted access.

It should be noted that any major improvements to the US 550/160 corridor would require extensive alternatives and environmental analysis and require funding.



Travel between Grandview and Downtown Durango

In addition to the 2030 analysis, a post 2030 forecast was made. As the chart above illustrates, adding Post 2030 development will result in increased congestion and reduced travel speeds along the corridor. With full improvements of a 6-lane US 550/160 corridor with restricted freeway interchange type access, the travel time is estimated at about 18 minutes, which is three minutes slower than the current drive time during the peak conditions. Travel times during the off-peak will remain similar to current conditions with improvements. Even though the peak travel speeds will be slower than they are currently, the magnitude of potential Post 2030 development traffic is significantly reduced throughout the roadway system with major improvements to US 550/160.



SUMMARY OF RECOMMENDED IMPROVEMENTS

In order to provide the best level of service for forecast 2030 development growth, it will be necessary to make the 12 major roadway improvements as identified in Table 5 and Figure 14 and major improvements to the US 550/160 corridor.

Based on the three US 550/160 alternatives tested, it is recommended that a six lane freeway with the fifth and sixth lanes being used for bus rapid transit and high occupancy vehicles be considered as the preferred alternative. This would include a freeway system of one way frontage roads with on and off ramps and periodic grade separated crossing to accommodate north and southbound local traffic.

With implementation of these improvements, acceptable uncongested levels of service could be accommodated throughout the system for the year 2030. With Post 2030 development, which might be another 20 or 30 years (2050 to 2060), increased traffic will once again result in congestion even with the recommended improvements as illustrated in Figures 16A and 16B.

2015 PROJECT PRIORITIZATION

Although all of the recommended roadway improvements will be needed in order to have uncongested traffic by 2030, some of these projects will be necessary in the short term. To identify these projects, an interim analysis was performed using the travel model. Conditions in 2015 with existing, committed, and programmed improvements were analyzed and the most urgent improvements were identified. The improvements were then grouped into short-term, mid-term, and long term categories.

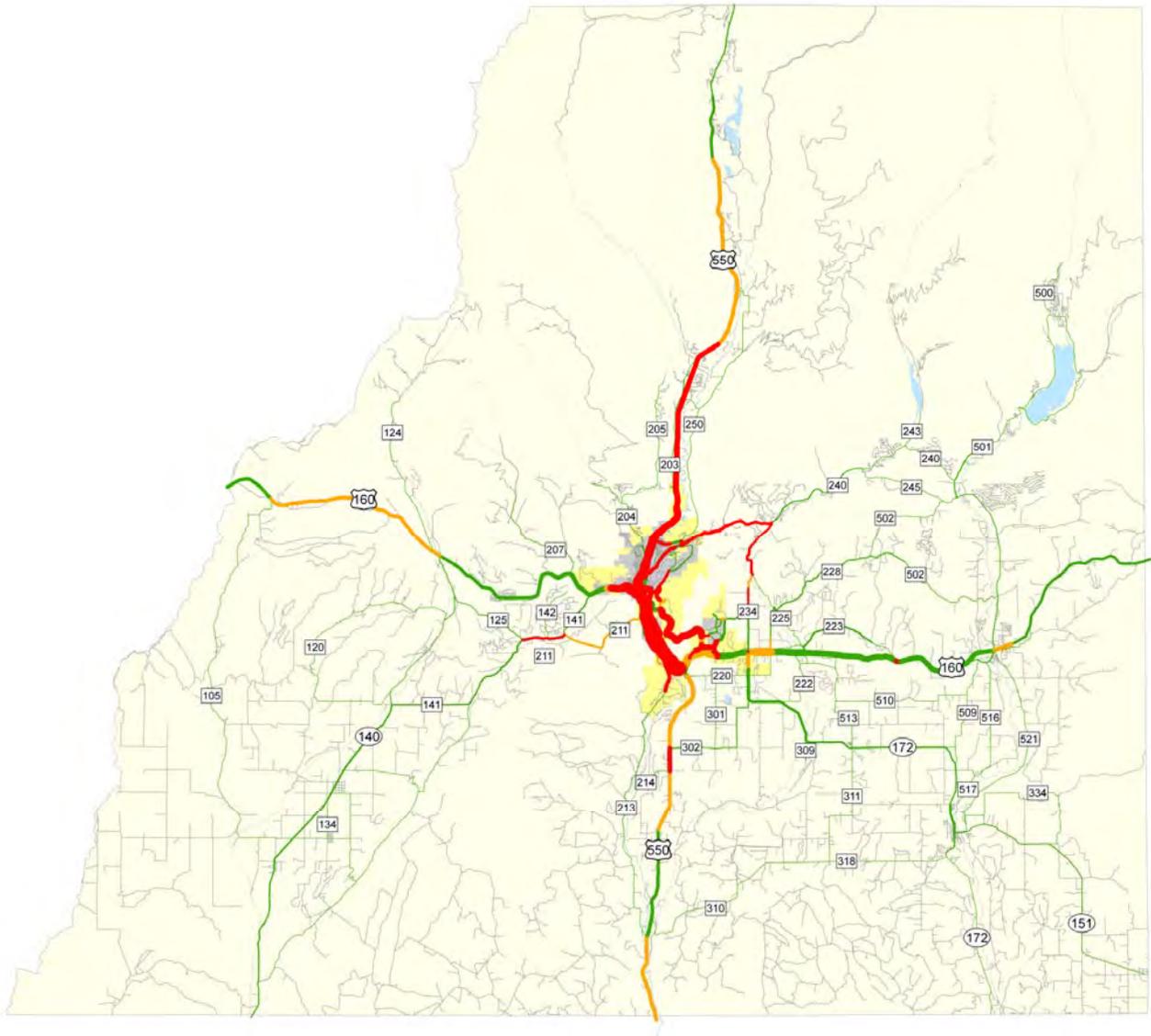
An analysis of 2015 conditions with existing, committed, and programmed improvements shown in Figures 17A and 17B emphasized several needs. Without improvements, Florida Road will soon become congested. Completion of the Florida Road improvements will alleviate this congestion. Improvements to nearby 32nd street will also be necessary, but can be built at a later time.

The US 550/160 corridor will become congested within the next 10 years, even if the Grandview connection is built in the short term. However, due to its complexity, the Grandview connection is listed as a mid-term project. Other improvements directly affecting this corridor are listed as short-term or mid-term priorities based on their contribution to congestion relief. Interim improvements directly adjacent to the US 550/160 corridor should be built in a manner consistent with long term improvement suggestions such as conversion of this corridor to a freeway with one-way frontage roads.

The US 160 corridor east of Farmington Hill will begin to experience slight congestion in the 2015 timeframe. Because the forecast congestion on this corridor is not as severe as other areas, improvements identified in the US 160 EIS are listed as mid-term priorities. However, congestion will progressively worsen in this corridor after 2015 and these improvements will become a high priority.



FIGURE 16A: POST 2030 TRAFFIC VOLUMES AND CONGESTION WITH RECOMMENDED IMPROVEMENTS



LEGEND	
La Plata County	Uncongested (LOS A - C)
Durango City Limits	Congesting (LOS D)
IGA Area	Congested (E - F)
Local Roads	Thicker lines indicate higher traffic volume



FIGURE 16B: POST 2030 TRAFFIC VOLUMES AND CONGESTION WITH RECOMMENDED IMPROVEMENTS

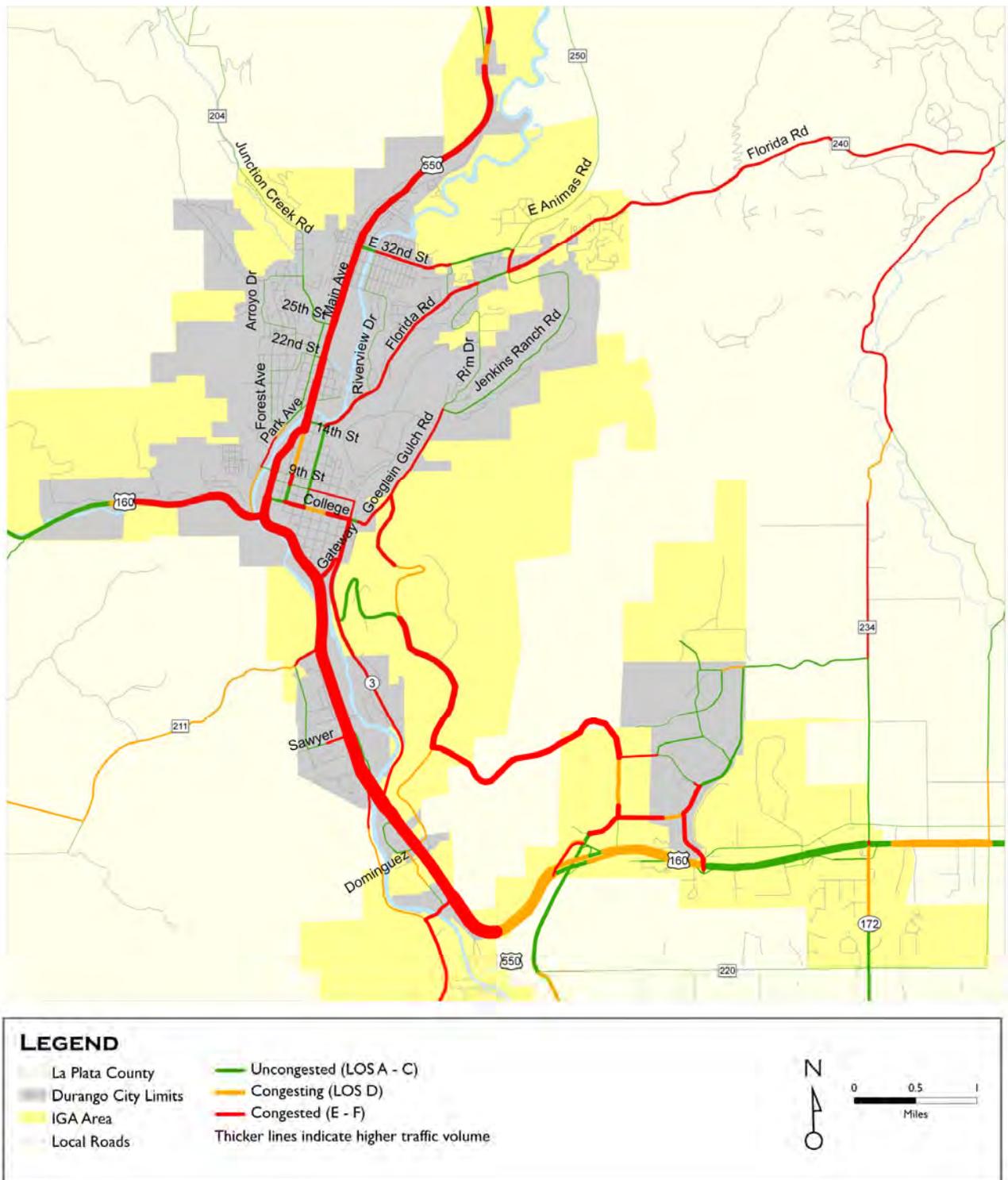
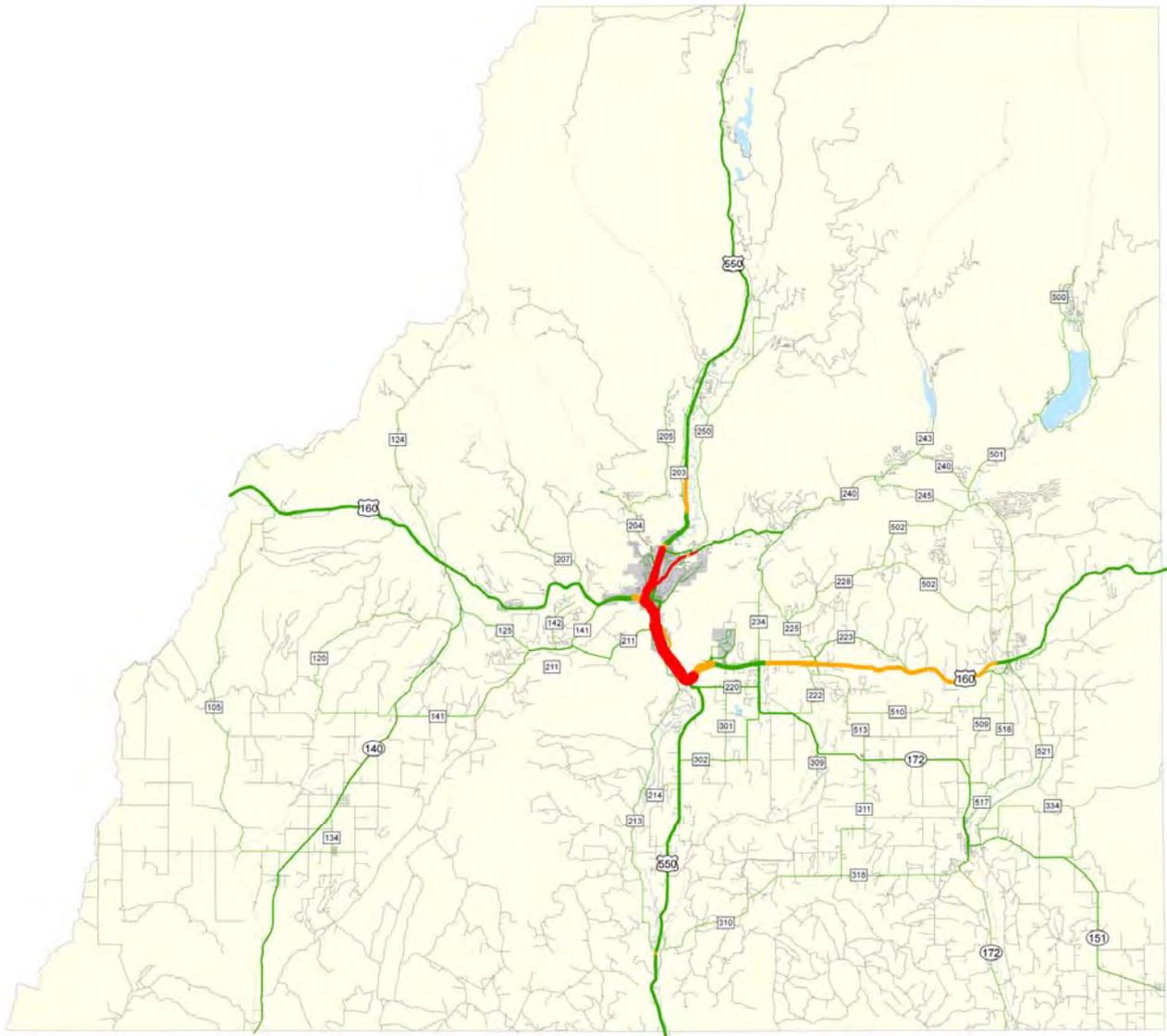




FIGURE 17A: 2015 CONGESTION ANALYSIS WITH EXISTING, COMMITTED, AND PROGRAMMED ROADWAYS

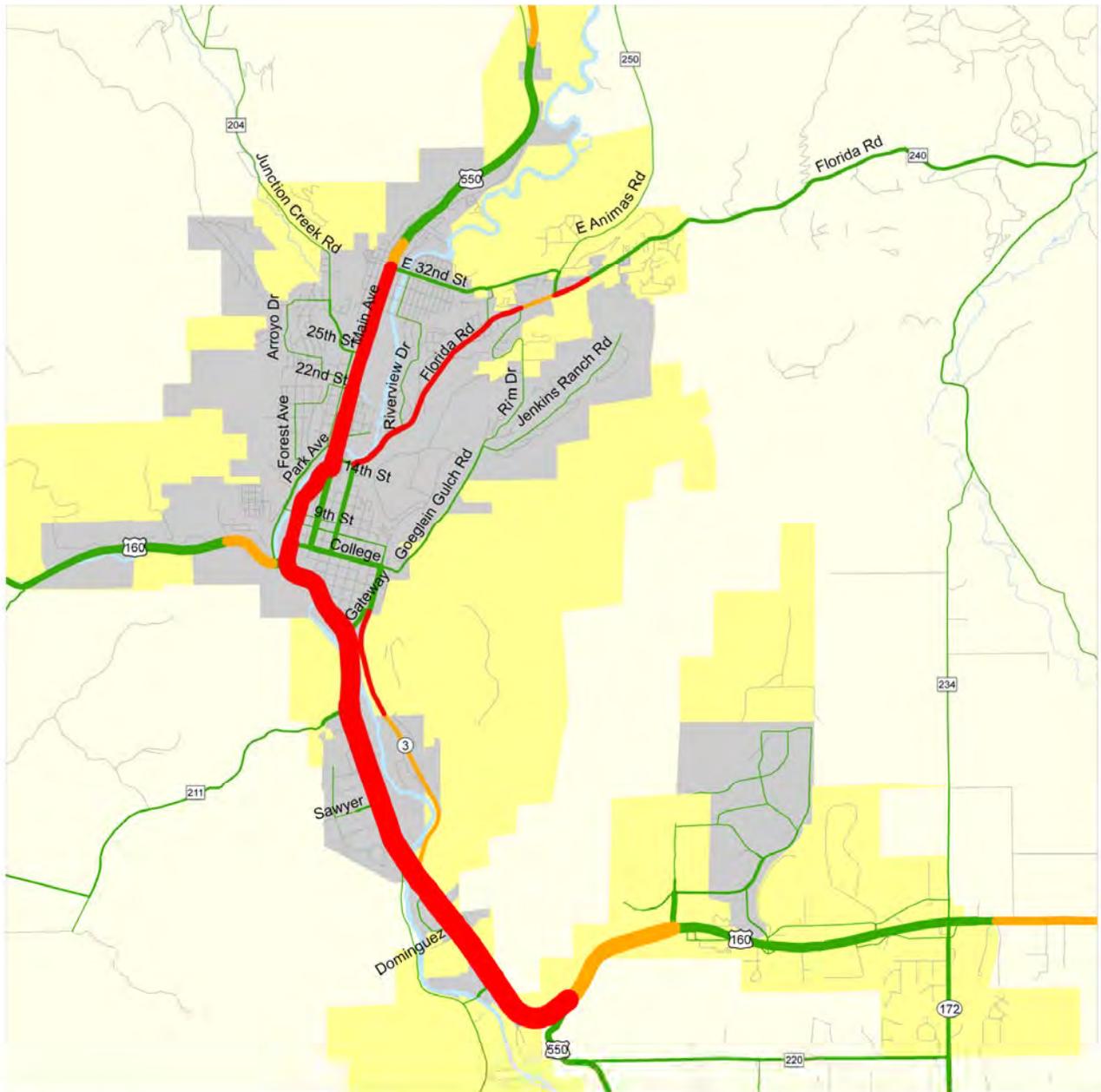


LEGEND	— Uncongested (LOS A - C)
■ Durango City Limits	— Congesting (LOS D)
□ La Plata County	— Congested (E - F)
□ Local Roads	Thicker lines indicate higher traffic volume

N
0 2 4
Miles



FIGURE 17B: 2015 CONGESTION ANALYSIS WITH EXISTING, COMMITTED, AND PROGRAMMED ROADWAYS



LEGEND

- Uncongested (LOS A - C)
- Congesting (LOS D)
- Congested (E - F)
- Thicker lines indicate higher traffic volume

- Durango City Limits
- La Plata County
- IGA Area
- Local Roads

N

0 0.5 1 Miles



Improvement priorities are listed along with project descriptions in Table 6. If all short-term and mid-term projects are constructed by 2015, most potential congestion can be avoided. However, the US 550/160 corridor will become congested even with these improvements. An analysis of congestion in 2015 with construction of short-term and mid-term projects is presented in Figures 18A and 18B.

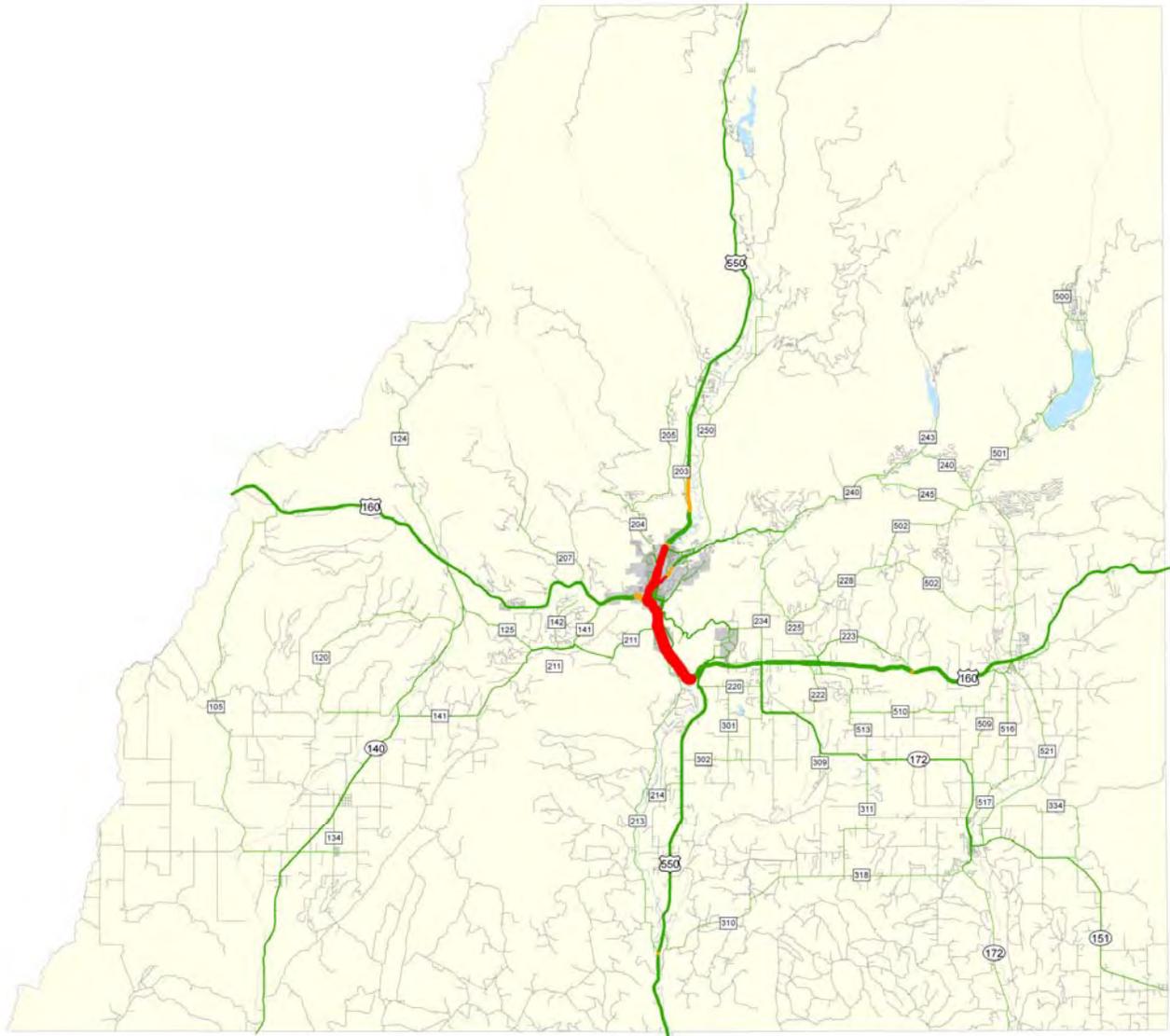
TABLE 6: PRIORITIZED ROADWAY NETWORK

Number	Location	Improvement	Length	Priority	
2	Florida Rd from E 3rd Ave to East of CR 250	Add center turn lane, curb, gutter, and bike lane	1.8 mi	Short-Term	\$9,500,000
5	Frontage Road from La Posta south of Turner to Sawyer at US 550	New Underpass and Frontage Road	0.9 mi	Short-Term	\$11,526,000
6	Escalante from Dominguez Dr. to River Road	New Collector	0.6 mi	Short-Term	\$2,180,000
7	County Road 235 from New Grandview Arterial to CR 234	New Arterial	1.1 mi	Short-Term	\$1,769,000
Short-Term Subtotal					\$24,975,000
1	E 32nd St / CR 250 from Holly Ave to Florida Rd	Add center turn lane, curb, gutter, and bike lane	0.7 mi	Mid-Term	\$1,700,000
4	Turner Drive from Existing Terminus to CR 211	Extend Collector	0.3 mi	Mid-term	\$1,614,000
8	US 160 EIS Preferred Alternative	Relocation of the Farmington Hill Interchange and widening of US 160 from 2 to 4 lanes east to Bayfield	n/a	Mid-term	*
12	Grandview Connection (South alignment)	New Arterial	2.5 mi	Mid-Term	\$21,515,000
13	St. Highway 3 from Ewing Mesa to 8th Ave.	Widen to 4 lanes	0.5 mi	Mid-Term	\$163,000
Mid-Term Subtotal					\$24,992,000
3	Jenkins Ranch Road from Existing Terminus to Florida Rd	Extend as Arterial	0.8 mi	Long-Term	\$8,250,000
9	Ewing Mesa Access (Dominguez) through Grandview	New Arterial	1.0 mi	Long-Term	\$6,124,000
11	Ewing Mesa Access (Goeglein)	New Arterial	2.4 mi	Long-Term	\$15,592,000
10	Ewing Mesa Access (Hwy. 3)	New Arterial	1.0 mi	Development	\$14,784,000
Long-Term Subtotal					\$44,750,000

* Based on the "Draft Environmental Impact Statement/Draft Section 4(F) Evaluation for US Highway 160 From Durango to Bayfield La Plata County, Colorado (2005)" preferred alternative, these improvements are estimated to cost \$455.6 million.



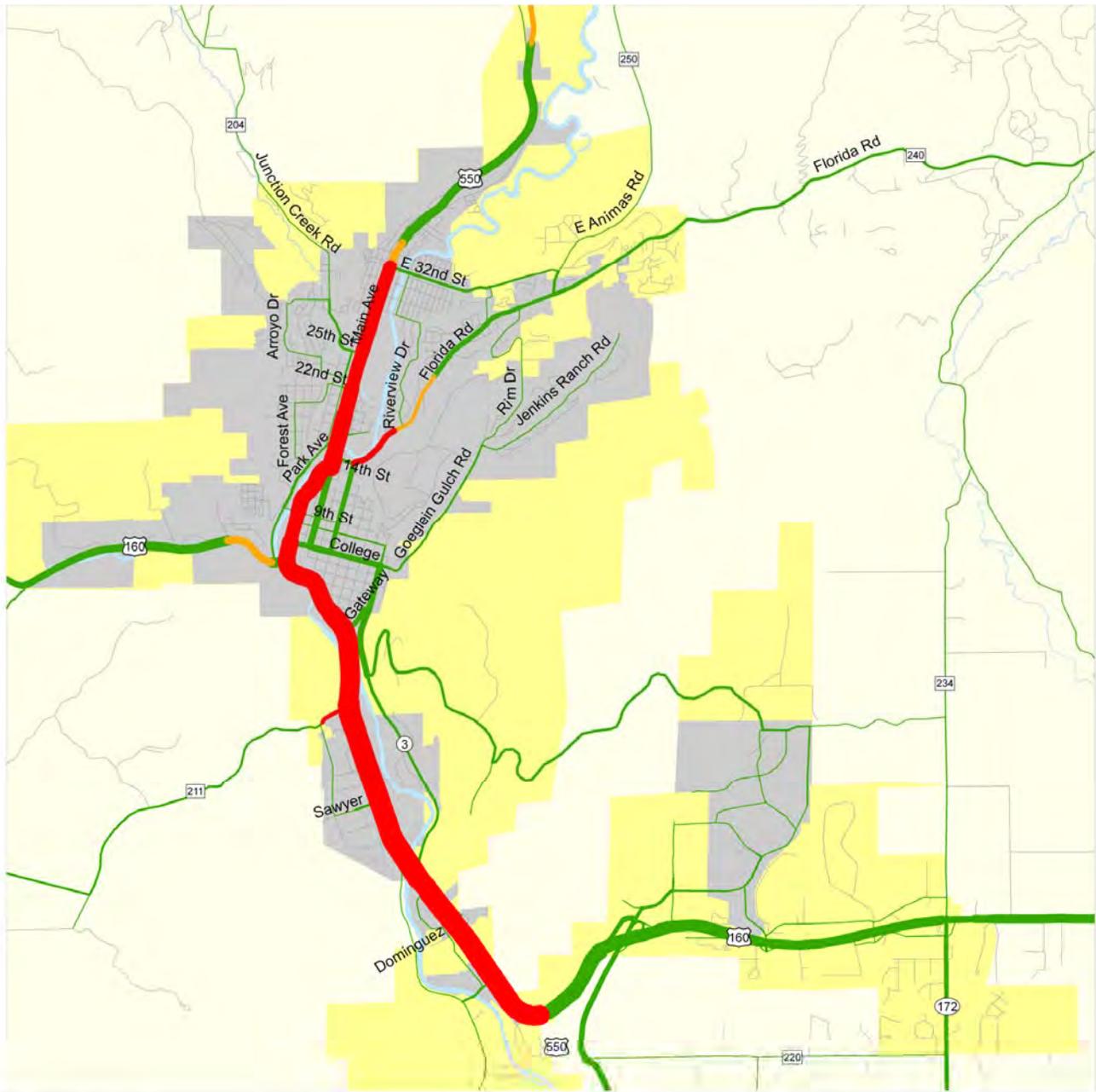
FIGURE 18A: 2015 CONGESTION ANALYSIS WITH SHORT-TERM AND MID-TERM IMPROVEMENTS



LEGEND	— Uncongested (LOS A - C)
■ Durango City Limits	— Congesting (LOS D)
□ La Plata County	— Congested (E - F)
— Local Roads	Thicker lines indicate higher traffic volume



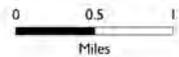
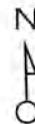
FIGURE 18B: 2015 CONGESTION ANALYSIS WITH SHORT-TERM AND MID-TERM IMPROVEMENTS



LEGEND

- Durango City Limits
- La Plata County
- IGA Area
- Local Roads

- Uncongested (LOS A - C)
- Congesting (LOS D)
- Congested (E - F)
- Thicker lines indicate higher traffic volume





RECOMMENDED 2030 CITY OF DURANGO INTERSECTION IMPROVEMENTS

In addition to the recommended roadway improvements necessary to accommodate future 2030 development, major intersection improvements will need to be made within the City. The following discussion presents the methodology that was used for evaluating and making recommendations for the major signalized intersections along the US 550/160 corridors. This discussion is followed by a signal warrant assessment for three intersections along Florida Road.

INTERSECTION IMPROVEMENT ANALYSIS

The primary City of Durango's signalized intersections which provide major access and circulation are those intersections along US 550/160 corridor. These intersections are maintained by the Colorado Department of Transportation. A map of the signalized intersections evaluated in this analysis is presented in Figure 19.

The base year data for the analysis was provided by the Colorado Department of Transportation (CDOT). This data was in the form of a Synchro data file. Synchro is signal timing software that is used by transportation engineers to optimize signal timing and calculate intersection level of service. Inputs to the software include turn volumes, lane geometrics, and signal phasing. Based on these inputs, Synchro creates an optimized signal timing plan for an intersection or corridor. The Synchro software also permits testing of various improvements and reports level of service and average delay.

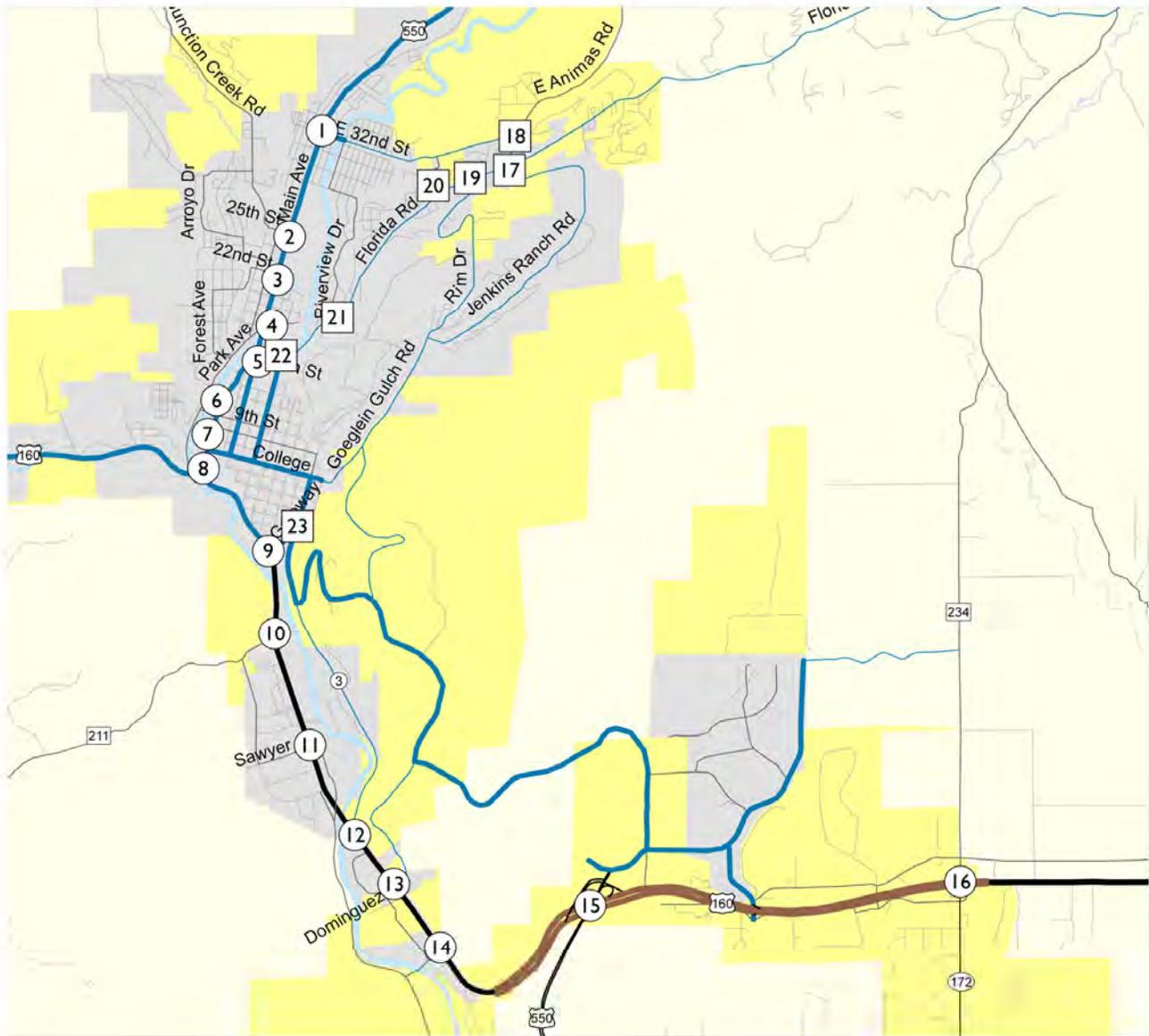
The Synchro file provided by CDOT contains information for 17 signalized intersections along US 160/550 from 32nd Street to the Farmington Hill intersection. The data contained in the files was reviewed and some minor corrections were made regarding the number of lanes and signal timing in order to prepare a base year existing level of service analysis. In addition, one intersection was added, US 160 and SH 172, as supplemental turn movement volumes were available.

Intersection analysis is based on PM peak hour data since PM volumes typically represent a worst case scenario. However, in cases where the AM peak condition is more congested, this is indicated. It should also be noted that the CDOT supplied volumes were adjusted to reflect a summer peak season condition to be consistent with the peak summer season arterial analysis.

The resulting 2004 base condition, the 2015/2030 condition without improvements, the 2015/2030 condition with recommended improvements and the 2030 with recommended improvements and a 6-lane US 550/160 are presented in Table 7. The recommended Improvements are highlighted. This table includes lane assumptions by approach direction and level of service (LOS) where LOS A-C is uncongested, LOS D is congesting and LOS E and F are congested. The acceptable threshold in the City of Durango is Level of Service D or better. Also included in this table is the average delay per vehicles which is the basis for identifying level of service. This is also useful when we see how much improvement might be achieved, even though a level of service threshold might not have been crossed.



FIGURE 19: CITY OF DURANGO INTERSECTION IMPROVEMENT LOCATIONS



LEGEND	Durango City Limits	2030 Network	Through Lanes	Intersection Number (Congestion Analysis)	Intersection Number (Signal Warrant Analysis)		
	IGA Area		2			3	4
	La Plata County		Freeway				
			Highway				
			Arterial				
	Collector						
	Local						

N
0 0.5 1
Miles



INTERSECTION IMPROVEMENT PRIORITIZATION

To prioritize intersection improvements, an intersection analysis was also performed for 2015 conditions with construction of short-term and mid-term roadway improvements. This analysis was performed using the same technique as the 2030 intersection analysis and is presented in Table 7 below.

TABLE 7: CITY OF DURANGO INTERSECTION IMPROVEMENTS

Intersection 1: 32nd and Main	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B*	16
2015 without improvements		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	C*	21
2015 with improvements	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	B	16
2030 without improvements		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	D	42
2030 with improvements	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	28

* The westbound left turn movement operates at level of service D

Intersection 2: 25 th and Main	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	24
2015 without improvements		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	29
2030 without improvements		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	D	40
2030 with improvements	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	30

Intersection 3: 22 nd and Main	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	A	4
2015 without improvements		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B	12
2030 without improvements		⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B	12

Intersection 4: Park and Main	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	⬆	⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B	12
2015 without improvements	⬆	⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B	12
2030 without improvements	⬆	⬆	⬇		⬆	⬇	⬆	⬆	⬆	⬆	⬆	⬆	B	12

Intersection 5: 14th, Camino Del Rio, and Main	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	⬆	⬆			⬆			⬆			⬆	⬆	E	37
2015 without improvements	⬆	⬆			⬆			⬆			⬆	⬆	F	132
2030 without improvements	⬆	⬆			⬆			⬆			⬆	⬆	F	143



Table 7: Continued

Intersection 6: 9th and US 550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (\$)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		⬆	⬆		⬆	⬆	⬆	⬆		⬆	⬆	⬆	C	23
2015 without improvements		⬆	⬆		⬆	⬆	⬆	⬆		⬆	⬆	⬆	D	48
2015 with improvements	⬆	⬆	⬆	⬆	⬆		⬆	⬆		⬆	⬆	⬆	C	25
2030 without improvements		⬆	⬆		⬆	⬆	⬆	⬆		⬆	⬆	⬆	E	78
2030 with improvements	⬆	⬆	⬆	⬆	⬆		⬆	⬆		⬆	⬆	⬆	D	35

Intersection 7: College and US 550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (\$)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	34
2015 without improvements	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	E	78
2015 with improvements	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	E	67
2030 without improvements	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	106
2030 with improvements	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	88

Intersection 8: US 550 and US 160 (north)	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (\$)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	⬆		⬆				⬆	⬆			⬆	⬆	C	22
2015 without improvements	⬆		⬆				⬆	⬆			⬆	⬆	E	70
2015 with improvements	⬆		⬆				⬆	⬆			⬆	⬆	C	31
2030 without improvements	⬆		⬆				⬆	⬆			⬆	⬆	E	79
2030 with improvements	⬆		⬆				⬆	⬆			⬆	⬆	D	40
2030 plus 6 lane US 550/160	⬆		⬆				⬆	⬆			⬆	⬆	C	27

Intersection 9: Gateway and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (\$)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		⬆			⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	B	14
2015 without improvements		⬆			⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	150
2015 with improvements		⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	E	70
2030 without improvements		⬆			⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	150
2030 with improvements		⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	E	63
2030 plus 6 lane US 550/160		⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	27

Intersection 10: CR 211 and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (\$)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	B	20
2015 without improvements	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	107
2015 with improvements	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	87
2030 without improvements	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	111
2030 with improvements	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	F	86
2030 plus 6 lane US 550/160	⬆	⬆	⬆		⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	C	31



Table 6: Continued

Intersection 9: Gateway and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004		🚗			🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	B	14
2015 without improvements		🚗			🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	150
2015 with improvements		🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	E	70
2030 without improvements		🚗			🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	150
2030 with improvements		🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	E	63
2030 plus 6 lane US 550/160		🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	C	27

Intersection 10: CR 211 and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	B	20
2015 without improvements	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	107
2015 with improvements	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	87
2030 without improvements	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	111
2030 with improvements	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	86
2030 plus 6 lane US 550/160	🚗	🚗	🚗		🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	C	31

Intersection 11: Sawyer and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	C	29
2015 without improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	198
2015 with improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	182
2030 without improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	229
2030 with improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	173
2030 plus 6 lane US 550/160	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	81

Intersection 12: SH 3 and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004				🚗		🚗		🚗	🚗		🚗		B	11
2015 without improvements				🚗		🚗		🚗	🚗		🚗		C	28
2030 without improvements				🚗		🚗		🚗	🚗		🚗		E	56
2030 plus 6 lane US 550/160				🚗		🚗		🚗	🚗		🚗		B	15

Intersection 13: Dominguez and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	D	41
2015 without improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	277
2015 with improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	240
2030 without improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	329
2030 with improvements	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	F	176
2030 plus 6 lane US 550/160	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	🚗	E	74



Table 7: Continued

Intersection 11: Sawyer and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗🚗	↑	🚗	🚗	🚗	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	C	29
2015 without improvements	🚗🚗	↑	🚗	🚗	🚗	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	F	198
2015 with improvements	🚗🚗	↑	🚗	🚗🚗	🚗	🚗	🚗🚗	↑↑	🚗	🚗🚗	↑↑	🚗	F	182
2030 without improvements	🚗🚗	↑	🚗	🚗	🚗	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	F	229
2030 with improvements	🚗🚗	↑	🚗	🚗🚗	↑	🚗	🚗🚗	↑↑	🚗	🚗🚗	↑↑	🚗	F	173
2030 plus 6 lane US 550/160	🚗🚗	↑	🚗	🚗🚗	↑	🚗	🚗🚗	↑↑↑	🚗	🚗🚗	↑↑↑	🚗	F	81

Intersection 12: SH 3 and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004				🚗		🚗		↑↑	🚗		↑↑		B	11
2015 without improvements				🚗		🚗		↑↑	🚗		↑↑		C	28
2030 without improvements				🚗		🚗		↑↑	🚗		↑↑		E	56
2030 plus 6 lane US 550/160				🚗		🚗		↑↑↑	🚗		↑↑↑		B	15

Intersection 13: Dominguez and US 160/550	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗🚗	↑	🚗	🚗	↑	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	D	41
2015 without improvements	🚗🚗	↑	🚗	🚗	↑	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	F	277
2015 with improvements	🚗🚗	↑	🚗	🚗	↑↑	🚗	🚗🚗	↑↑	🚗	🚗🚗	↑↑	🚗	F	240
2030 without improvements	🚗🚗	↑	🚗	🚗	↑	🚗	🚗	↑↑	🚗	🚗	↑↑	🚗	F	329
2030 with improvements	🚗🚗	↑	🚗	🚗	↑↑	🚗	🚗🚗	↑↑	🚗	🚗🚗	↑↑	🚗	F	176
2030 plus 6 lane US 550/160	🚗🚗	↑	🚗	🚗	↑↑	🚗	🚗🚗	↑↑↑	🚗	🚗🚗	↑↑↑	🚗	E	74

Intersection 14: River and US 550/160	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗🚗		🚗				🚗🚗	↑↑			↑↑	🚗	A	8
2015 without improvements	🚗🚗		🚗				🚗🚗	↑↑			↑↑	🚗	C	32
2030 without improvements	🚗🚗		🚗				🚗🚗	↑↑			↑↑	🚗	E	58
2030 plus 6 lane US 550/160	🚗🚗		🚗				🚗🚗	↑↑↑			↑↑↑	🚗	C	27

Intersection 15: US 550 and US 160 (south)	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗		🚗				🚗	↑			↑↑	🚗	B*	14
2015 and 2030 Scenarios	Replaced with interchange - US 160 EIS													

*This intersection operates at level of service C in the AM peak hour

Intersection 16: SH 172 and US 160	Eastbound			Westbound			Northbound			Southbound			LOS	Delay (s)
	L	T	R	L	T	R	L	T	R	L	T	R		
2004	🚗	↑	🚗	🚗	↑↑			🚗			🚗		D	45
2015 and 2030 Scenarios	Replaced with interchange - US 160 EIS													



It should be noted that although many of the intersections can be mitigated, not all congested intersections can be mitigated. If a potential solution was determined it would have a major unacceptable impact on local development, then the improvement was not recommended. Therefore, the proposed recommendations present only improvements deemed reasonable and solutions are not identified for all locations.

For each intersection where an intersection improvement was recommended, a sketch of the intersection and recommended improvement is provided in Figures 20-28.

One final note is that the level of service reported from the Synchro analysis might be different than which is actually experienced. Synchro is software that attempts to optimize the timing for the best possible performance that can be achieved. Actual signal timing at the signal might be different and delays could occur. Similarly, field modifications could result in actual operations which are better than what is reported in the Synchro database calculations.



FIGURE 20: INTERSECTION 1 – 32ND & MAIN RECOMMENDED IMPROVEMENTS

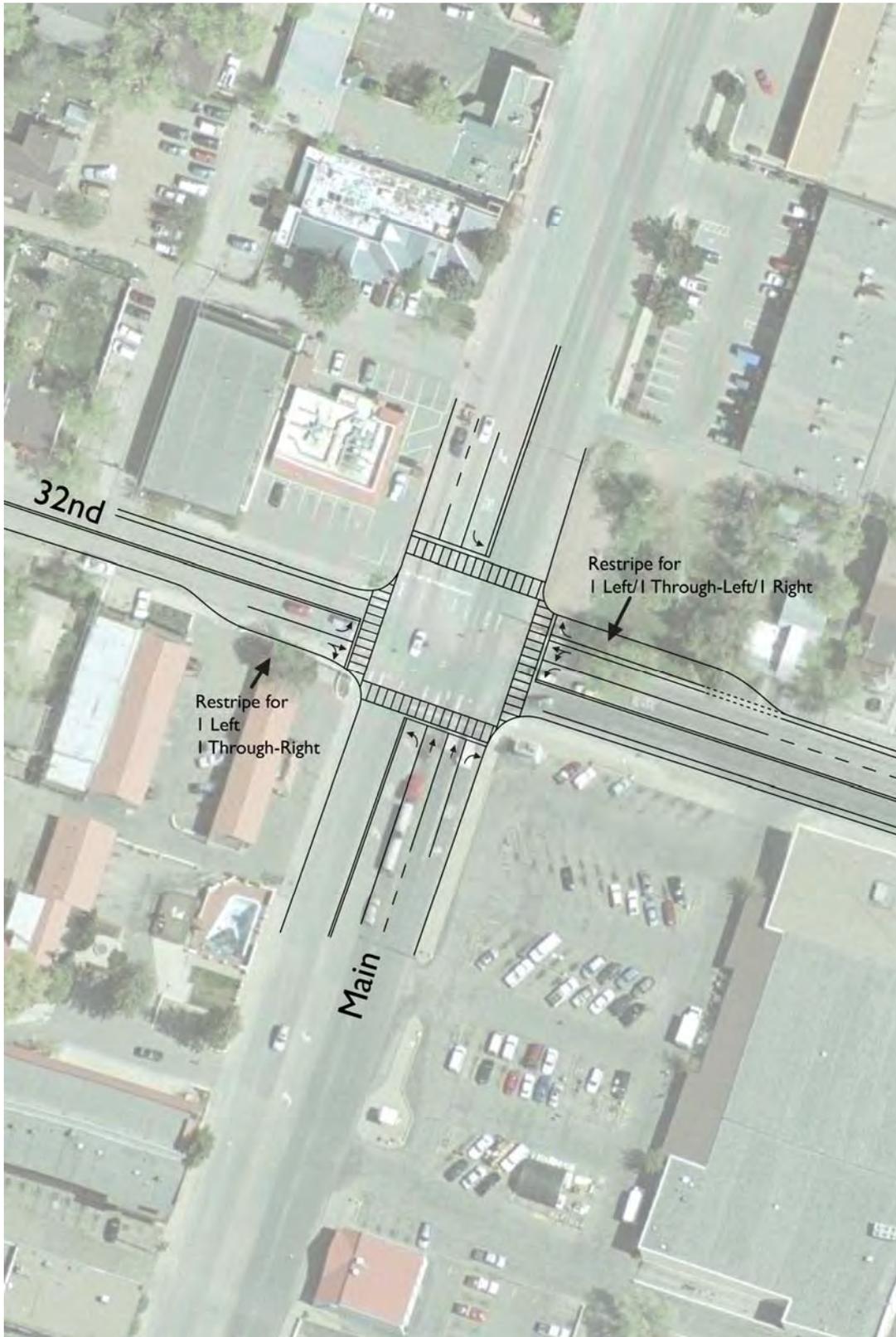




FIGURE 21: INTERSECTION 2 – 25TH & MAIN RECOMMENDED IMPROVEMENTS





FIGURE 22: INTERSECTION 6 – 9TH & US 550 RECOMMENDED IMPROVEMENTS

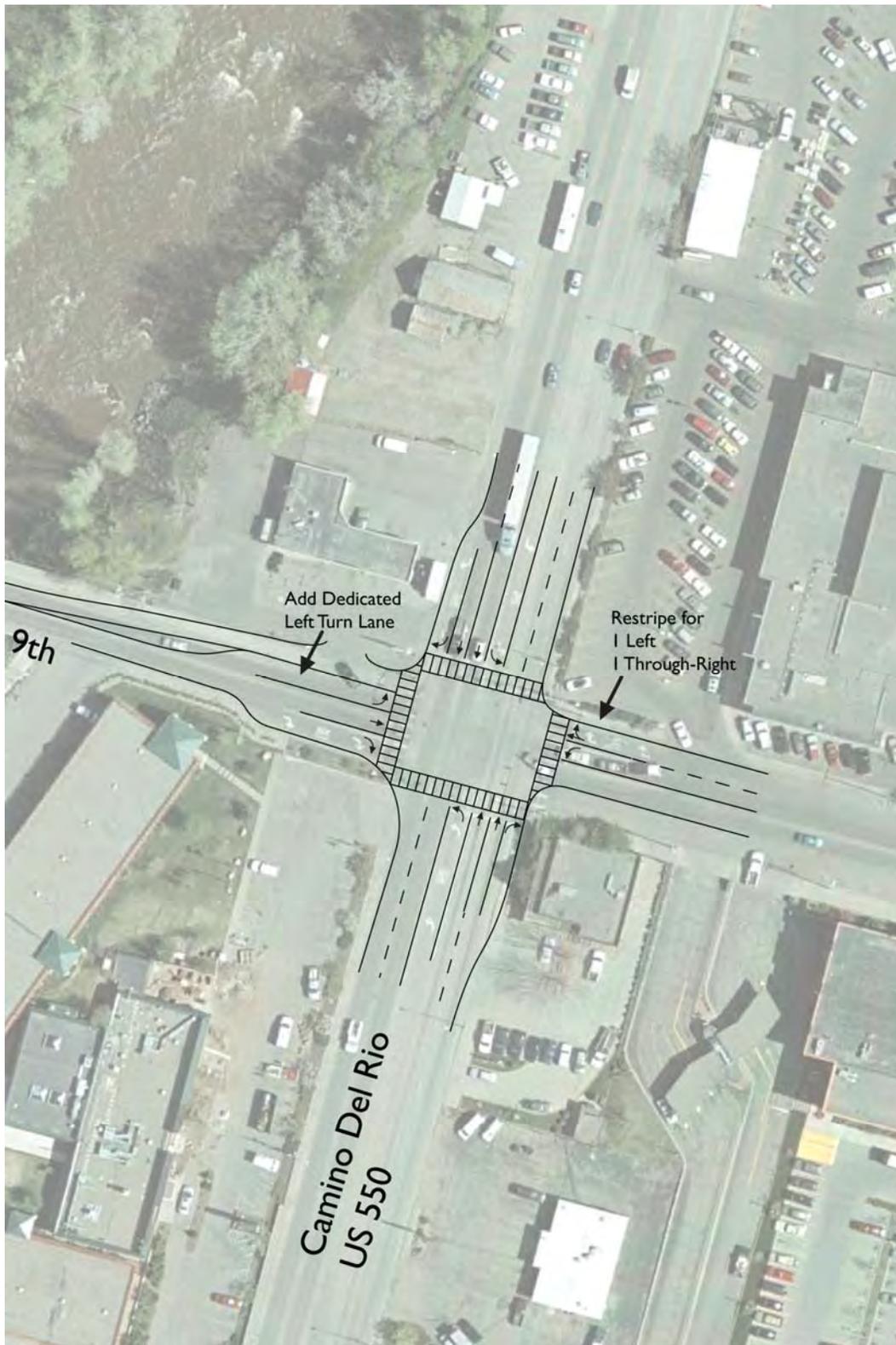




FIGURE 23: INTERSECTION 7 – COLLEGE & US 550 RECOMMENDED IMPROVEMENTS

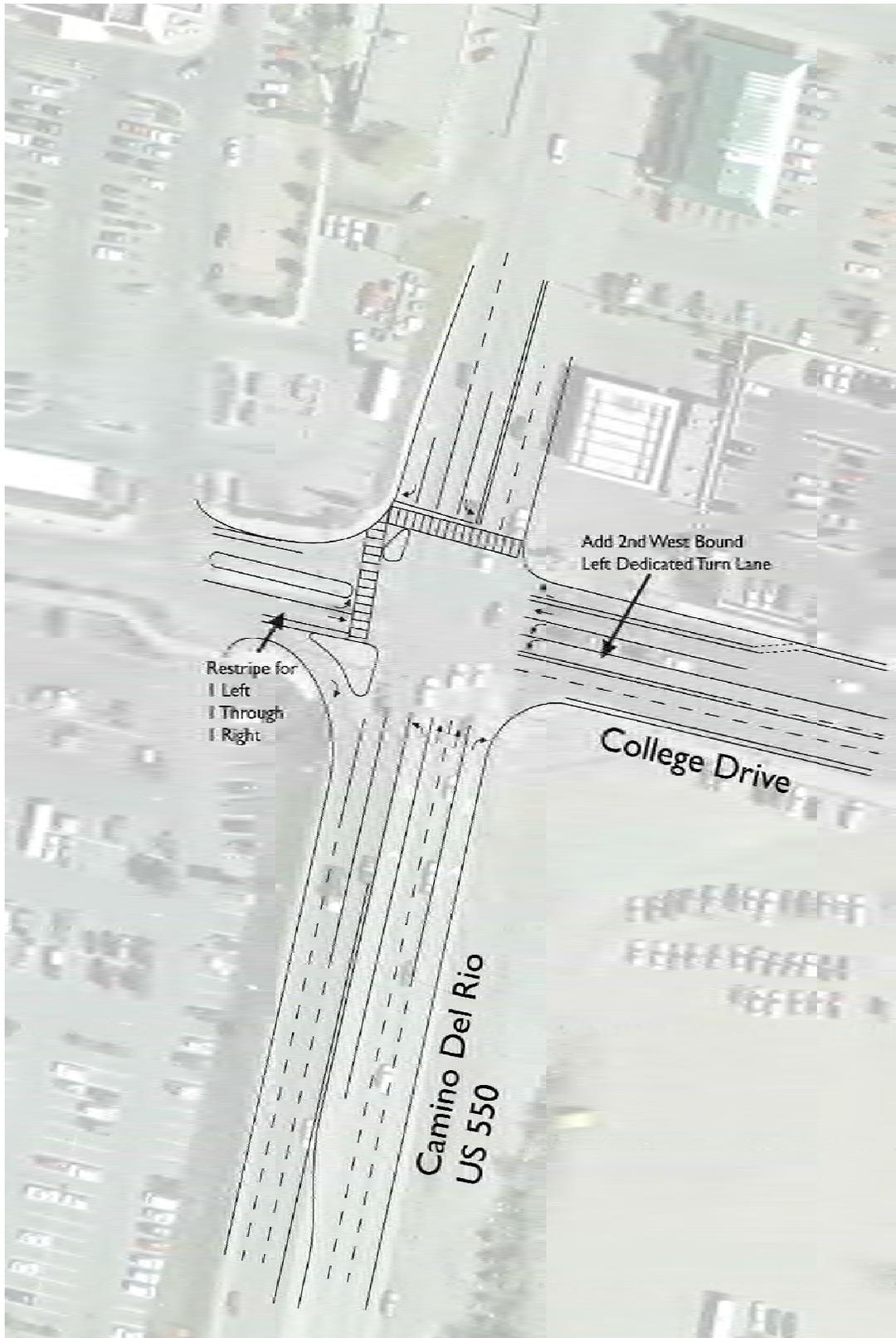




FIGURE 24: INTERSECTION 8 – US 550 & US 160 (NORTH) RECOMMENDED IMPROVEMENTS

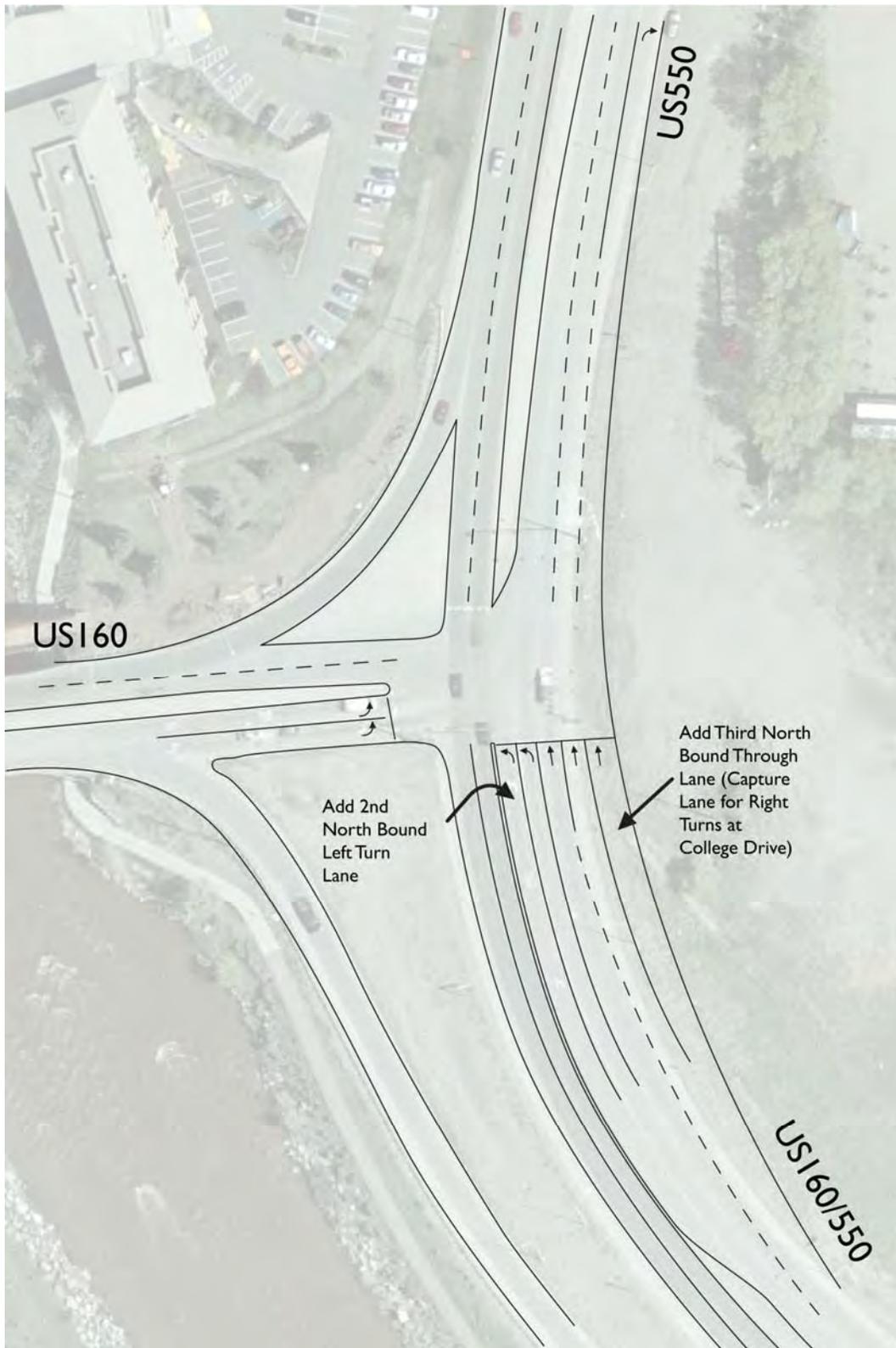




FIGURE 25: INTERSECTION 9 – GATEWAY & US 550/160 RECOMMENDED IMPROVEMENTS





FIGURE 26: INTERSECTION 10 – CR 211 & US 550/160 RECOMMENDED IMPROVEMENTS

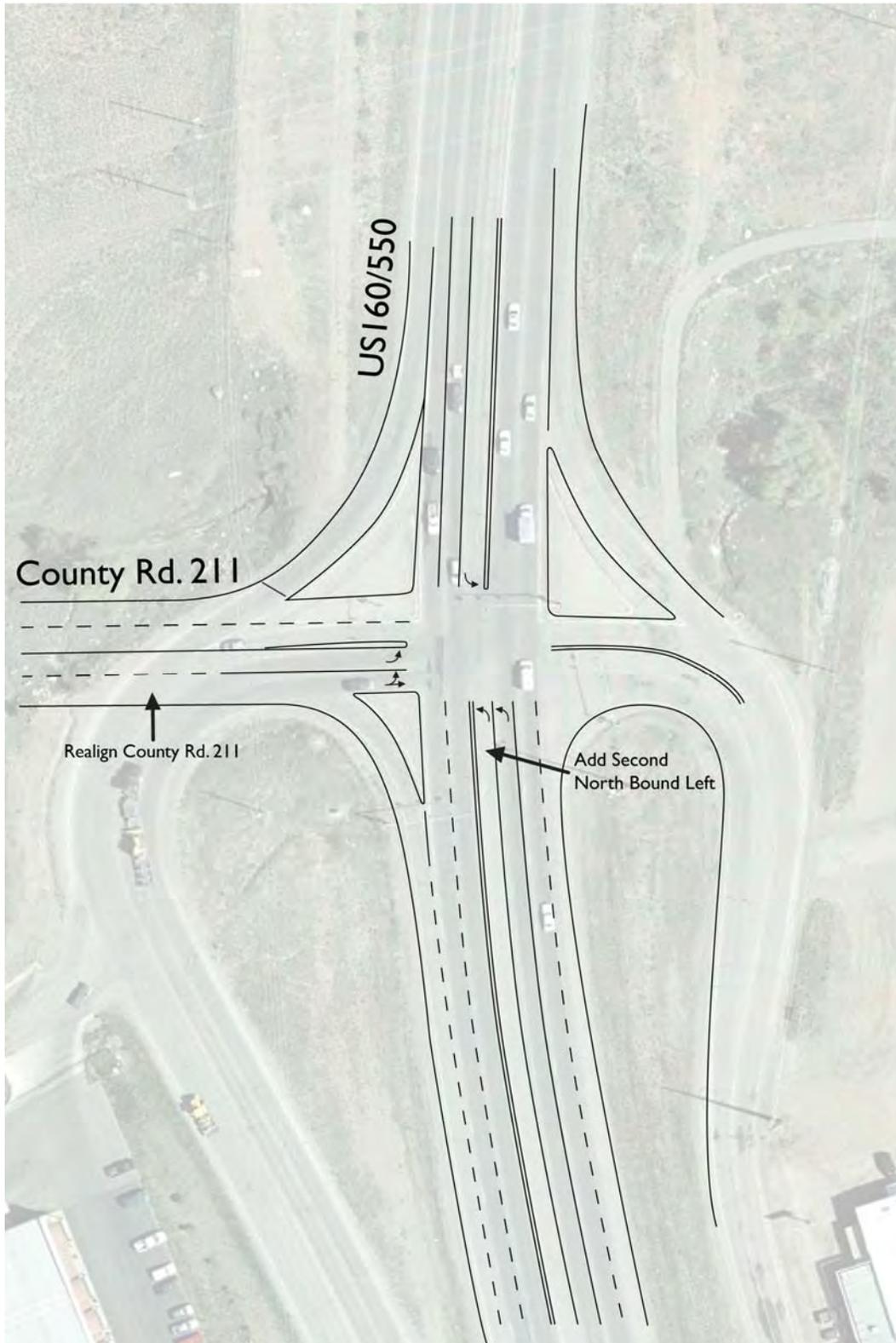




FIGURE 27: INTERSECTION 11 – SAWYER & US 550/160 RECOMMENDED IMPROVEMENTS

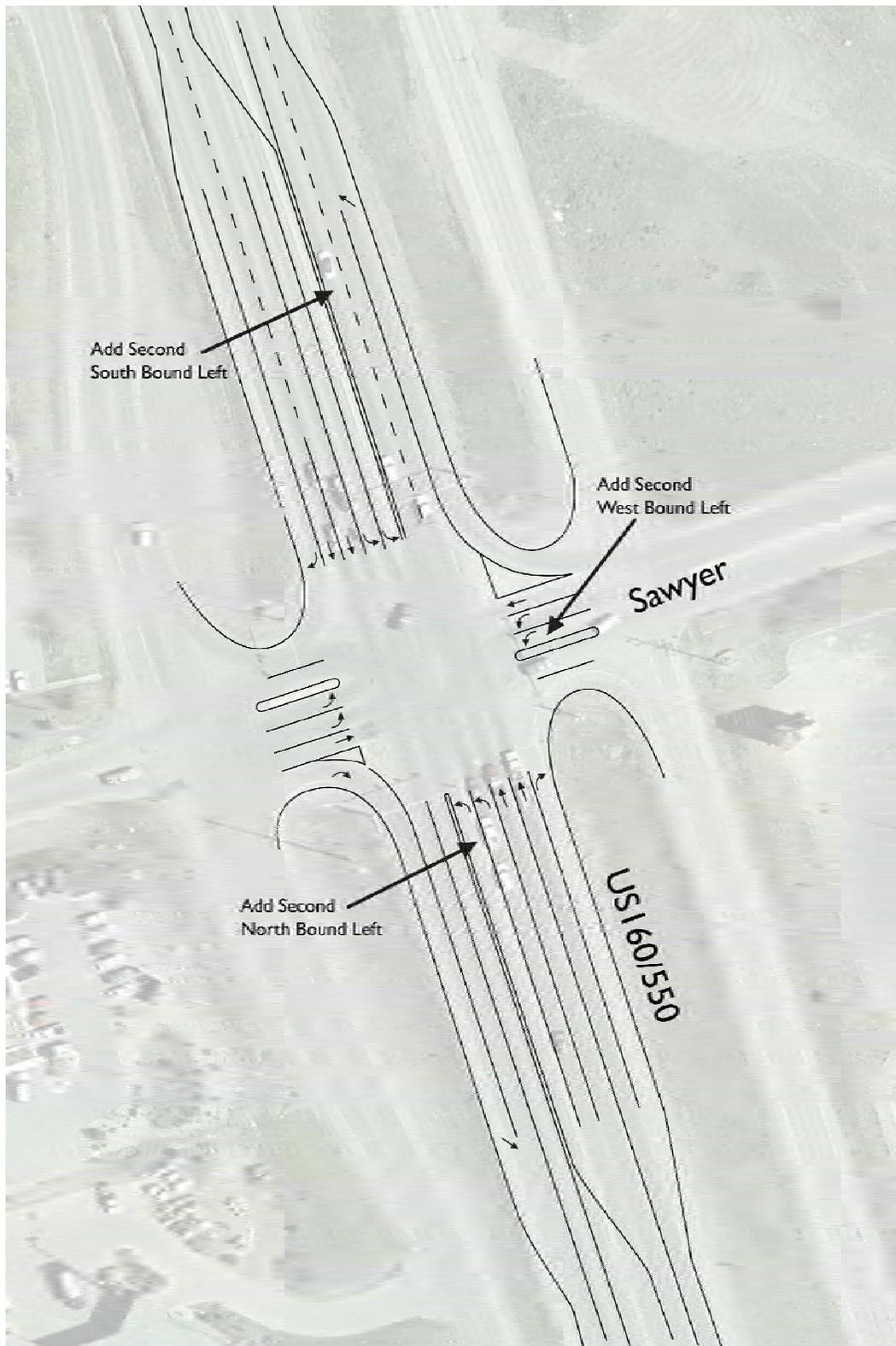
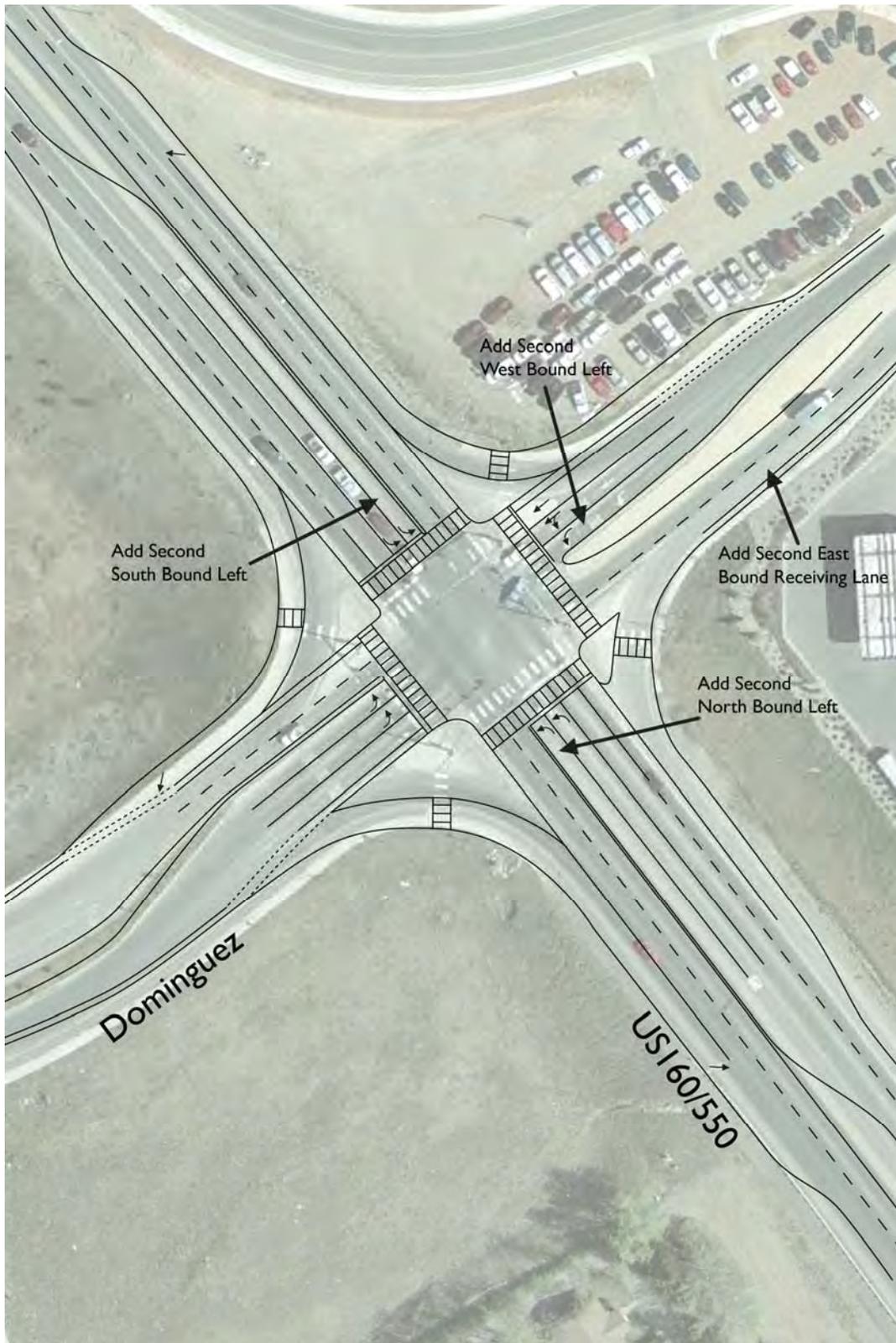




FIGURE 28: INTERSECTION 13 – DOMINGUEZ & US 550/160 RECOMMENDED IMPROVEMENTS





SIGNAL WARRANT ANALYSIS

In addition to the intersection improvement analysis, three intersections were analyzed as to whether they should be signalized. Signal warrants are identified in the Manual of Uniform Traffic Control Devices (MUTCD). The warrant compares the number of vehicles traveling in both directions on the major roadway with the approach volume on the minor approach. When it is determined that the magnitude of minor approach volumes exceed the reasonable capacity of available gaps on the major street, then a signal is warranted. It should be noted that even if a signal is warranted, extenuating circumstances should be considered to determine if a signal is actually required. These extenuating circumstances might include an upstream signal which platoons traffic on the major street and allows additional gaps in the travel stream as compared to random arriving vehicles.

Three intersections were examined on Florida Road at East Animas Road, Riverview and College Drive. The findings for this analysis is presented in the following table and discussed as follows.

TABLE 8: SIGNAL WARRANT ANALYSIS

		Signal Warranted	Recommended Lanes by Approach			
			Northbound	Southbound	Eastbound	Westbound
17 - Florida Road and East Animas Road	2004	Yes	-	1L 1R	1L 1T	1R 1L
	2030	Yes	1 LTR	1L 1TR	1L 1TR	1L 1T 1R
	Post 2030	Yes	1 LTR	1L 1TR	1L 1TR	1L 1T 1R
18 – 32nd St and East Animas Road	2004	No	1LT	1TR	1LR	-
	2030	Probably	1L 1T	1R 1T	1L 1TR	1L 1TR
	Post 2030	Yes	1L 1T	1R 1T	1L 1TR	1L 1TR
19 - Florida Road and College Drive	2004	No	1LT		1L 1TR	1L 1T
	2030	Probably	1L 1R		1L 1TR	1L 1T
	Post 2030	Yes	1L 1TR		1L 1TR	1L 1T
20 – Florida Road and Holly Avenue	2004	No		1LR	1LT	1T 1R
	2030	Probably		1L 1T	1L 1T	1T 1R
	Post 2030	Yes		1L 1R	1L 1T	1T 1R
21 - Florida Road and Riverview	2004	No		1LR	1L 1T	1LR
	2030	Probably		1L 1R	1L 1T	1L 1R
	Post 2030	Yes		1L 1R	1L 1T	1L 1R
22 – Florida Road and 3 rd Avenue	2004	No	1L 1R		1L 1R	1L 1R
	2030	No	1L 1R		1L 1R	1L 1R
	Post 2030	Yes*	1L 1R		1L 1R	1L 1R
23 Santa Rita Drive and 8 th Avenue	2004	Possible**	1L 1T	1R 1T	1L 1R	
	2030	Yes	1L 2T	1R 2T	1L 1R	
	Post 2030	Yes	1L 2T	1R 1T	1L 1R	

* Although Post-2030 Volumes indicate a signal would be warranted, a signal is not recommended at this location due to approach grades into this intersection

**No turn movement counts available.



- **Florida Road and East Animas Road:** With increased westbound Florida Road traffic in the a.m. peak hour and increased eastbound traffic in the p.m. peak hour, it is becoming increasingly difficult for southbound Animas to turn onto Florida Road. Based on the MUTCD signal warrant requirements, the current volumes along Florida and Animas warrant a signal at this intersection, and will further warrant signalization in the future. Recommended lane improvements are presented in the above table.
- **E 32nd St and East Animas Road:** Currently the traffic approaching this intersection is low enough that a signal is not warranted. Based on forecast growth in traffic and the future connection of Metz Lane to the east side of this intersection, a signal will probably be warranted in the 2030 time period.
- **Florida Road and College Drive:** Similar to Riverview, the approach volumes on College Drive currently do not warrant signalization and with future development probably will warrant signalization by 2030. It should also be noted that with the planned signalization at East Animas, there will be some platooning of traffic along Florida Road which will help create additional gaps in the traffic stream for College Drive traffic.
- **Florida Road and Holly Ave:** Currently, the traffic approaching Florida Road from Holly Ave in the PM peak is low enough that a signal is not warranted. As traffic on Florida Road increases over time, it will become more difficult for increasing traffic on Holly Ave. to make left and right turns onto Florida Road. A signal will probably be warranted in the 2030 time period.
- **Florida Road and Riverview:** Currently the Riverview Road traffic as it approaches Florida Road is relatively minor and does not warrant signalization. Based on forecast growth and traffic, this intersection will probably warrant signalization in the 2030 time period.
- **Florida Road and 3rd Avenue:** Based on MUTCD signal warrant requirement 7, a signal is not currently required at this intersection and will not be required in the 2030 timeframe. In the Post-2030 timeframe, increased traffic volumes will warrant a signal but a signal is not recommended due to approach grades at this intersection. Some other improvement rather than a signal should be made to satisfy the increased traffic volumes
- **Santa Rita Drive and 8th Avenue:** Although traffic counts are not available, the travel model indicates that a signal is not currently warranted at this intersection. As traffic approaching this intersection increases, especially with the development of Ewing Mesa and the opening of a Grandview/Ewing Mesa connection, a signal will be warranted in the 2030 time period.



RECOMMENDED 2030 LA PLATA COUNTY ROADWAY PAVEMENT AND INTERSECTION IMPROVEMENTS

As development occurs in unincorporated La Plata County, traffic will increase on many of the roads maintained by the County. Many of these roads are low volume unpaved facilities. As traffic increases, the ability to maintain these roads becomes more expensive and difficult. Significant research has been conducted throughout the United States that indicates that when traffic increases above 200 vehicles per day, consideration should be given to paving these facilities. Many county jurisdictions throughout the State of Colorado have identified the threshold for paving at between 200 and 400 vehicles per day. The La Plata development code states that all new roads having a projected trip generation of 400 or greater ADT (average daily traffic) shall be paved.

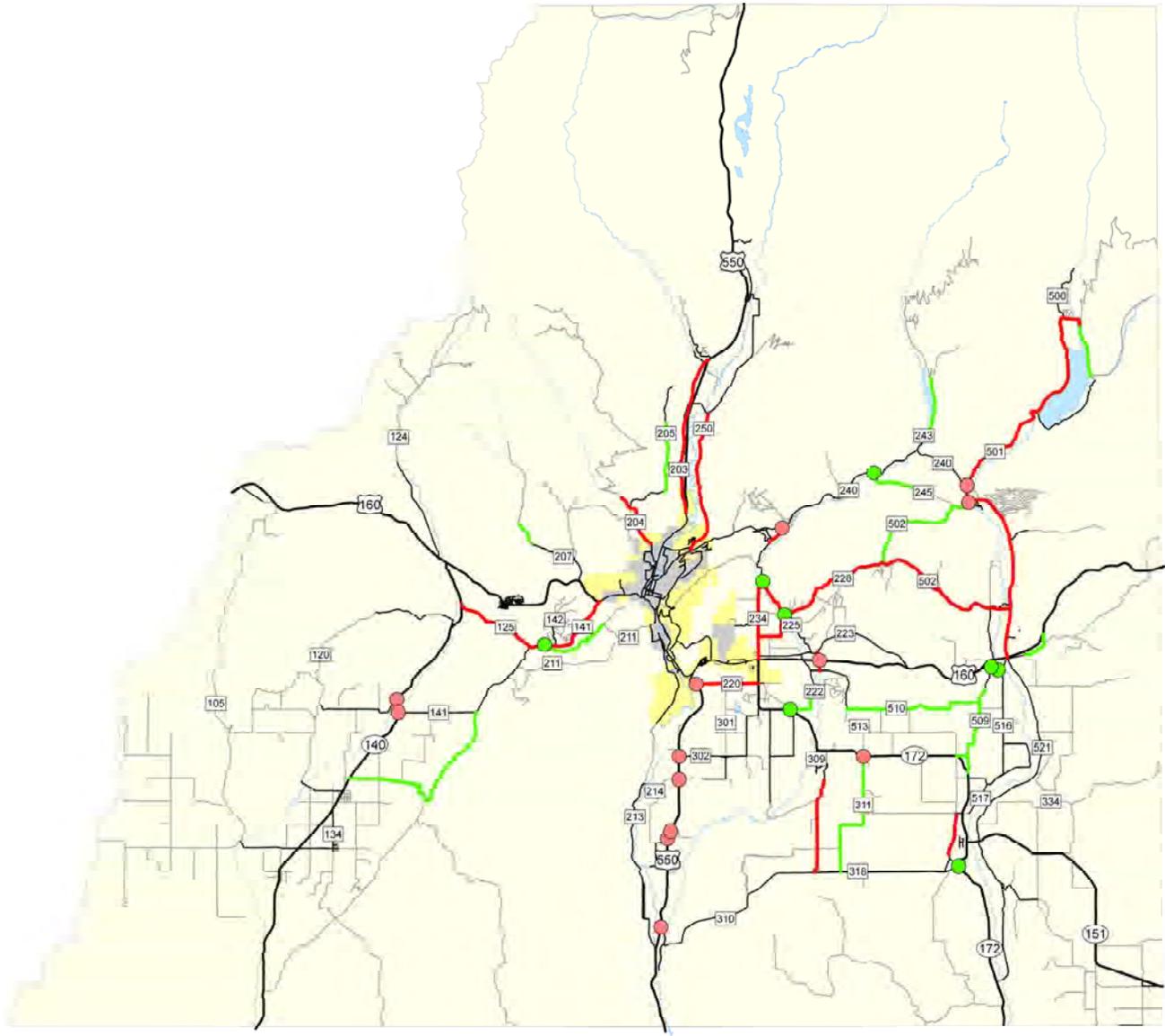
It should also be noted that there are different options when it comes to surfacing gravel roads. A low end pavement for a typical 24 foot roadway consisting of a double chip and seal costs approximately \$100,000 per mile. This low end pavement improvement works for low volume roadways between 400 and 1,000 vehicles per day as long as there is not much truck traffic and grades are not steep. With increased traffic, it is recommended that paving include reconstruction to a 30' wide paved road section, which involves horizontal and vertical alignment corrections where practical. The reconstruction typically consists of 8" of a class 4 base, topped with 6" inches of a class 6 base, and topped with a 5" asphalt mat at a typical cost of \$1,000,000 per mile.

In order to determine the magnitude of pavement costs between now and 2030 for new roads that are currently not paved but will exceed the above thresholds, the forecast traffic model was used. Unpaved roads forecasted to have traffic volumes in 2030 between 400 and 1,000, and greater than 1,000 are identified on Figure 29. In certain situations, some roads identified will not require paving and others not identified will require paving. It should be understood that actual 2030 traffic volumes will be based on where development occurs and how access is made to the county road system, but this map reasonably reflects the magnitude of paving needs.

Based on the traffic forecasts and Figure 29, the resulting miles of road by traffic volume, pavement type and 2030 construction costs are presented in Table 9.



FIGURE 29: RECOMMENDED COUNTY ROADWAY PAVING IMPROVEMENTS



LEGEND

La Plata County	Paved Roads	Roadway Paving Improvements	
IGA	Highway	Higher Level Paving	
Durango City Limits	Arterial or Collector	Lower Level Paving	
		Intersection Improvements	
		Higher Level	
		Lower Level	



TABLE 9: RECOMMENDED COUNTY PAVING IMPROVEMENTS

Level of Paving	Approximate Daily Traffic Volume (vehicles per day)	Miles of Pavement	Estimated Cost
Higher Level	> 1,000	73.3	\$75,248,200
Lower Level	400 to 1,000	48.8	\$6,815,500
	TOTAL	122.1	\$82,063,700

The cost for paving unpaved county roads is estimated at approximately \$82 million and is not insignificant. Altogether, the high level paving accounted for most of the estimated paving costs (\$75 million). Recommended lower level paving improvements account for almost 50 miles of paving improvements. More detailed paving costs can be found in Appendix C, including a map with all improvements, as well as the identification, end limits, and estimated cost for each segment.

In addition to paving County Roads, increased traffic will require intersection improvements be made to accommodate this increase in traffic. As an example, the Colorado Department of Transportation currently requires of developers, or the jurisdiction that approves development intersection improvements that intersect with the State Highways. Based on their access code, these improvements might include turn lanes, acceleration lanes and deceleration lanes.

Using the traffic model, intersections that have 2030 traffic volume forecasts that warrant intersection improvements have been identified in Figure 29. These intersections have been identified as to whether they will require minor flaring of the intersection to accommodate increased traffic or more substantive intersection improvements that might include turn lanes and acceleration and deceleration lanes. For planning purposes, the minor intersection improvements have been estimated at \$150,000 per intersection and \$350,000 for the more intensive intersections.

Based on this, the total estimated cost of intersection improvements is \$6.5 million. Thirteen intersections, with an estimated \$5.3 million cost, are recommended for higher level improvements, either due to their intersection with a State highway or due to traffic volumes. Lower level intersection improvements were identified for County roads or where only minor improvements are expected to be necessary on State Highways. Eight intersections are recommended for these lower level improvements and are estimated to cost \$1.2 million. Table 10 presents the resulting number of intersections by type and total cost. More detailed intersection costs can be found in Appendix D, including a map with each intersection identified.



TABLE 10: RECOMMENDED COUNTY INTERSECTION IMPROVEMENTS

Intersection Improvement	Number of Intersections	Estimated Cost
Higher Level	13	\$5,275,000
Lower Level	8	\$1,200,000
TOTAL	21	\$6,475,000

COUNTY ROAD RECOMMENDATIONS

Based on the need to plan for and pave new county roads and construct new intersection improvements, it is recommended that the County identify a funding program to provide these improvements as the need arises.

TRANSIT

With a 70 to 75 percent increase in population and employment over the next 25 years, it will be critical to increase the current transit service just to maintain existing transit service levels. The majority of this growth will also occur in areas outside the current transit service area and will require new and expanded transit service.

Identifying where future transit service should be provided is a function of where increased density might be occurring in the future as higher mixed-use, transit oriented type development is necessary to support a viable transit system. The type of transit service and the connections to that transit service is another factor that affects transit ridership.

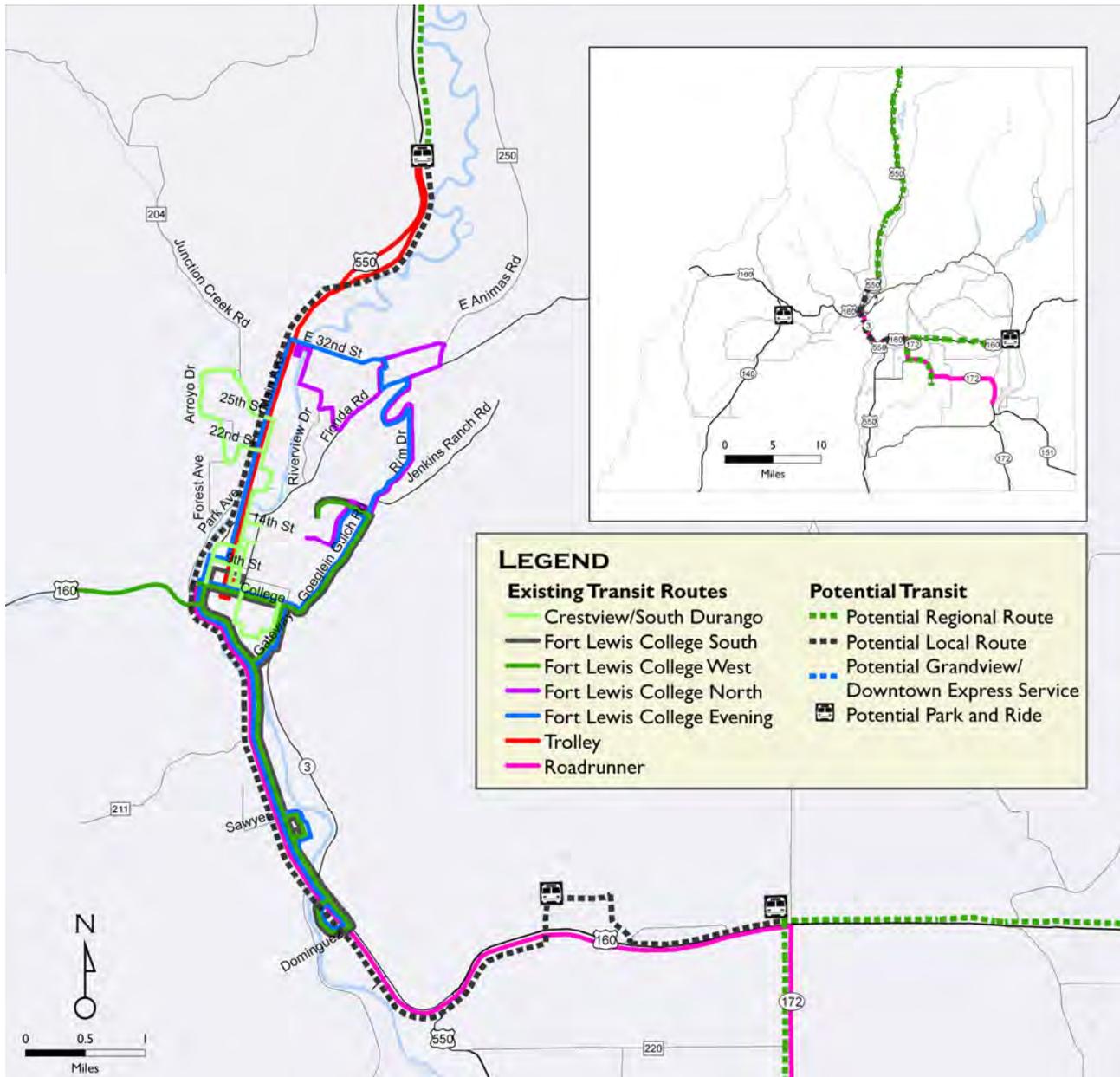
As a starting point, the Recommended Transit Improvements for 2030 for Durango (see Figure 30) retains the current trolley and bus service that exists today. Refinement of those routes or modifications of schedules will be logical changes. New routes would be added to reflect development growth to the north along US 550 and to the east of US 160/US 550 intersection area, particularly in the Grandview area and the intersection of US 160/CR234. These expanded services should at a minimum be at 30 minute frequencies and preferably 20 minutes or less. Transit service is also recommended to Bayfield, the Airport, and north La Plata County along US 550. Frequencies along these routes would be less at one per hour.

The Recommended Transit Plan also includes park 'n' ride facilities at four locations; US 550 north of Durango to Durango Mountain Resort, Grandview, US 160/CR234 intersection, and Bayfield.

As development continues to occur through 2030 and beyond, conventional road improvements will not be able to accommodate forecasted traffic. To serve this future growth, transit will need to take on a much greater role. It is vital that work begin as soon as possible to identify potential high capacity transit corridors before the opportunity is lost and to develop accompanying land use planning and urban design requirements to support transit.



FIGURE 30: 2030 RECOMMENDED TRANSIT PLAN



Transit ridership will depend on a mix of land uses along the transit corridor, which contain both trip origins (the home) and trip destinations (places to work and shop). Increased transit ridership also requires a higher density of uses around these stations where more people are within walking distance to the transit stations and stops. A transit friendly urban design character is also critical to support transit. As an example, the City of Durango's downtown provides the mix of land uses, intensity of development, and the urban design that can support transit.

Future mixed-use, retail, office, and residential development areas should similarly provide a pedestrian type design where building fronts are within proximity to the street and transit stop,



and potential transit riders do not have to cross expansive parking areas. It is also important to have these new developments designed with short block lengths and have an integrated sidewalk system that connects buildings with the transit stops.

There are a number of candidate transit technologies that could be considered for the Transit Vision Plan, including some form of light rail, bus rapid transit, or new designed low platform buses. As transit is becoming increasingly important in solving a region's transportation demands, these transit technologies are changing and will continue to change in the future.

Regardless of which transit technology is ultimately selected, for transit to be competitive with the automobile, a dedicated right-of-way will be required so transit is not forced to operate in mixed flow congested traffic.

One option that warrants further study and planning is the potential use of the existing narrow gauge railroad. The US 550 corridor north will see high levels of congestion and the railroad has expressed a willingness to work with local government on use of their tracks for transportation. Similarly, the installation of a new track south to Three Springs should also be explored.

A second option might be a Bus Rapid Transit system between downtown and Three Springs. A Bus Rapid Transit system would be similar to light rail in being a multi-door, low platform vehicle that would use an exclusive lane. The advantage is that it could leave the dedicated corridor and travel directly to a key stop or transfer facility. If the US 160/550 corridor was improved to a four-lane freeway facility between Three Springs and downtown, widening to six-lanes where the fifth and sixth lanes are used as a dedicated transit way and not used for general purpose lanes, an unimpeded, high-level transit connection could be provided. Variations on this concept might include a Transit/High Occupancy Vehicle lane or a High Occupancy (including transit) Toll (HOT) lane might be an option. In order to minimize overall travel times, this alternative would only stop at a minimum number of locations at key destinations along the corridor.

Crucial to the consideration of any transit system with a separate facility, is identification and acquisition of the right-of-way. The current rapid growth of Durango to the south and east



Low Platform Hybrid Bus



Bus Rapid Transit



Ultra Light Rail



presents an opportunity to acquire the right-of-way for a separated transit system over time. Much as the alignment for the Animas River Trail was acquired at a low cost over many years, a transit corridor could be assembled in much the same fashion. Key to this strategy is to study the feasibility of narrow gauge rail transit and develop a corridor plan. Over time, this will be the tool that will allow for the City of Durango to acquire very specific corridor segments from projects as they develop and annex them to the City.

TRANSIT RECOMMENDATIONS

There are a number of proposed short term recommendations for transit. The first is the construction of the proposed transit center at Camino Del Rio between 7th and 8th. This transit center will be a focused downtown location for existing routes and potential future regional routes. It is also strategically located in the heart of downtown Durango, providing easy walking to businesses, work, services, commercial and restaurants.

Another important short term transit strategy is a transit shift from city focus to regional service. As the outlying areas of Grandview, Bayfield, Ignacio and unincorporated La Plata County grow, it will be important to provide regional transit service to these areas. With aging population, increased transit dependent riders will become more prevalent. It will be important for the City of Durango and La Plata County to work cooperatively on how these services can be expanded and contracted.

It is also important to find a long-term funding strategy for transit. Currently funding is from the City's General Fund and Parking Fund. An alternative funding option that has been used elsewhere in Colorado and might be considered in Durango and La Plata County is a Regional Transportation Authority (RTA). An RTA is a local sales tax that is directed to the maintenance, operation and construction of an areas future transportation needs. Included in a RTA could be a portion of the collected sales tax that would be dedicated for transit service.

In order to incorporate transit as a meaningful alternative to serve the City of Durango and La Plata County in the longer-term 2030 and Post 2030 plan horizons, it is important that the City and County establish key transit and pedestrian oriented mixed use centers as the focal point for connecting transit.

Two corridors are forecasted with high travel demands such that transit corridors should be actively pursued. These include the Grandview/Three Springs area to downtown Durango and north along US 550. Based on current long range forecasts there is not sufficient travel demand to support high capacity transit to the airport or Bayfield. These connectors would be served by high speed conventional express bus transit service.

Local interest has favored narrow gage rail, and narrow gage rail might ultimately be promising. However, it is currently an untried technology in the United States which will not be deemed favorable by FTA if the City were to request partial federal funding. The mix of narrow gauge light rail for passenger service mixed with the Durango and Silverton Narrow Gauge Railroad service is also problematic unless the narrow gauge light rail can pass the Federal government's crash tests. Rather than plan on just one technology, alternatives should be considered so that if the narrow gage railroad concept can not be realized, alternate transportation technologies can connect the pedestrian and transit oriented mixed use



centers. Planning for the corridor, stop locations, land use, design and amenities should plan for and work with all technologies. Regardless of the transit technology that is ultimately employed, a dedicated right-of-way may be desirable, particularly between Durango and Grandview. In order for implementation of such a transit corridor to take place, it would be necessary to conduct a detailed analysis and feasibility study.

One option that is highly recommended is the Bus Rapid Transit which could be incorporated in some future CDOT improvements along the US 550/160 corridors that would connect Grandview/Three Springs and downtown Durango on an exclusive bus lane or shared high occupancy vehicle lane.

BICYCLE

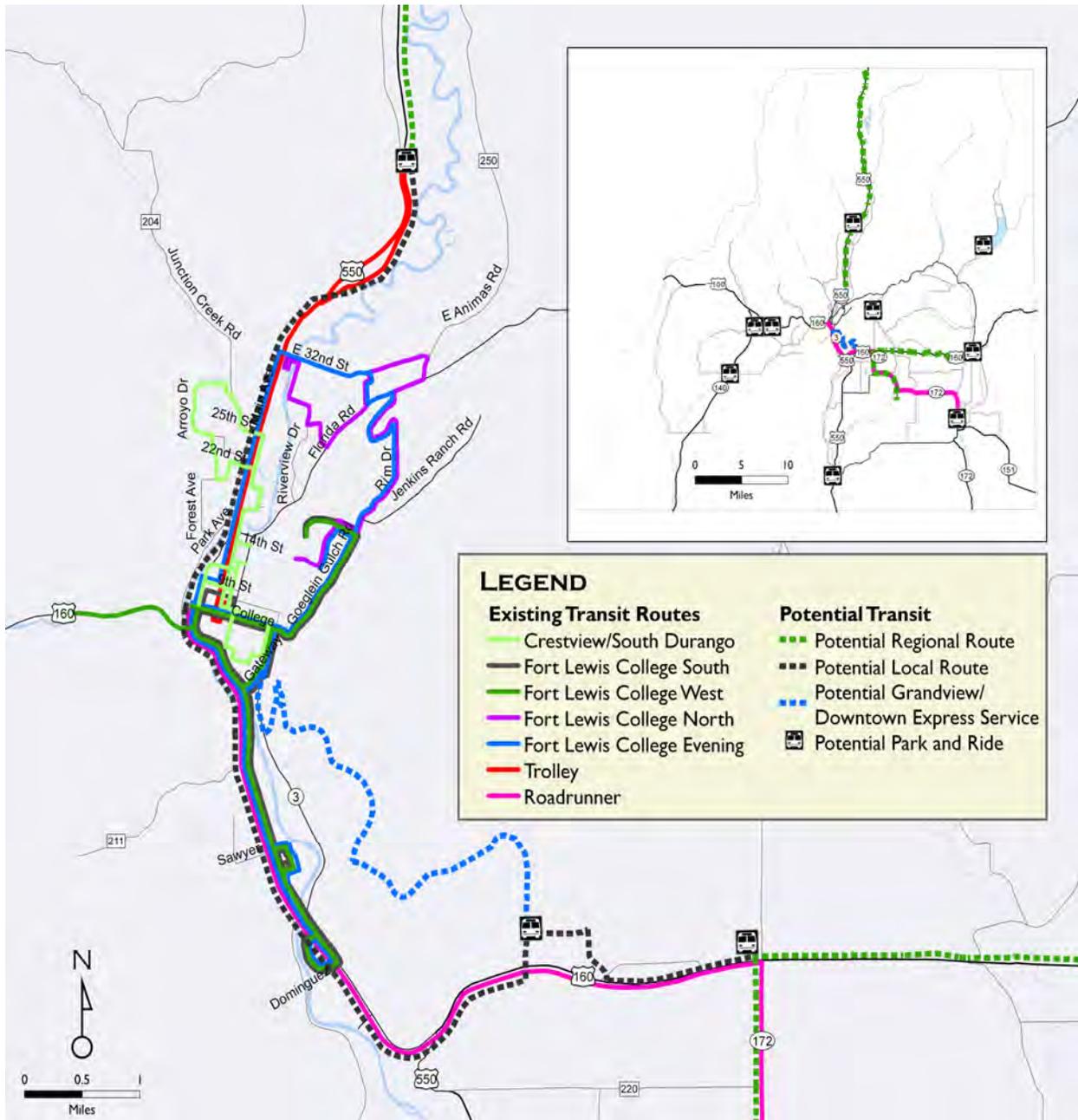
As previously stated, bicycle travel is a viable alternative to traveling by automobile in the City of Durango and La Plata County. Bicycle facilities provide a means of transportation and an important recreational purpose. Although bicycle improvements are not expected to significantly reduce traffic congestion in the area, they provide a low-impact transportation choice to the Durango community.

The recommended plan for bicycle improvements reflects analyses and input from several sources which include:

- An analysis of potential bicycle trips based on trip length (see Bicycle Trip Assessment below),
- Identification of new connections where facilities are not currently connected,
- Public input suggesting that all County roads that are newly constructed or reconstructed as collector facilities or above have 3-foot paved shoulders that could be used for both bicycle transportation and recreational use, and
- Recognition of the high demand for bicycle trips between Grandview and Durango via the proposed Grandview arterial connector.



FIGURE 31: POST 2030 RECOMMENDED TRANSIT PLAN





Based on the above input, the following 2030 bicycle network plan was developed (see Figure 32). As can be seen in this plan, existing bicycle facilities are shown in solid lines and proposed improvements are shown by dotted lines.

The existing City of Durango Bicycle Network consists of the Animas River Rail and a system of on-street bike lanes and designated bike routes. The Animas River Trail follows the primary US 550 corridor, which is also the primary development spine within the City. While existing bike lanes and routes provide some interconnection with the Animas Trail, the connections are incomplete or missing in a number of locations.



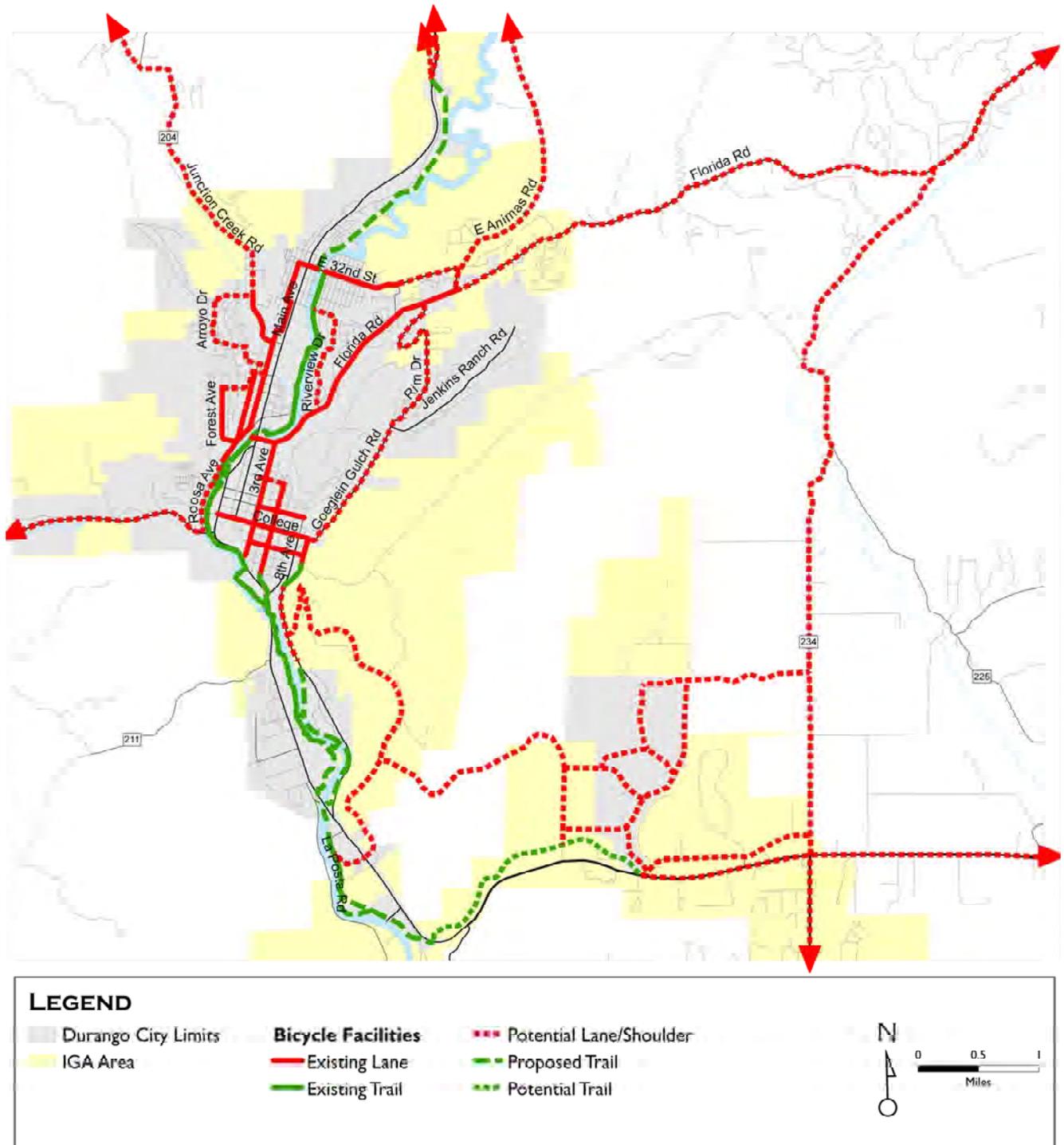
BICYCLE POLICIES

During the course of development of the City of Durango Long Range Transportation Plan, several suggestions were presented by the public with regard to the bicycle system. These policies serve to guide the City's implementation of the bicycle improvement plan. They are:

- Extend and complete the Animas River off-street path system that comprises the core of the bicycle network.
- Coordinate local bicycle improvements with the planning and construction of the city and county streets.
- Provide direct connections between new activity centers and downtown.
- Expand the City's current on-street bicycle lane striping program.
- Integrate bicycle facilities and secure bicycle storage in the planning and design of new development.
- Increase the use of "Share the Road" signs and other education opportunities to identify facilities, connections, directions, etc. and to enhance bicycle use and safety.



FIGURE 32: 2030 RECOMMENDED BICYCLE PLAN





In order to identify where future bicycle improvements should be proposed and how they are prioritized, trips from the 2030 travel model were assigned for trips less than 3 miles, from 3 to 6 miles, and from 6 to 9 miles. The idea was that trips less than 3 miles would be strong candidates for bicycling, 3 to 6 miles a little less, some trips between 6 and 9 miles might ride a bicycle, and trips over 9 miles would likely not be via bicycling.

Bicycle lanes should also be provided on all new roadways proposed as part of the 2030 Roadway Plan. These include connections via the Grandview/Ewing Mesa connection and new roads in the Grandview area. Proposed bicycle improvements on existing roadways such as Florida Road are also important for developing a system of connected bicycle trails and lanes and for safety.

It is further recommended that as County Roads are maintained, paved and reconstructed, a three foot shoulder be provided with a white edge line that can be used for bicyclists.

This assignment is presented in Figure 33.

As can be seen, the extension of the Animas River Trails provides the most important improvement to the existing bicycle system. It is also important to identify some connections from the downtown area to the Animas River Trail. Currently there are no bike lanes and bicycle users must travel the street system in mixed flow lanes.

PEDESTRIAN

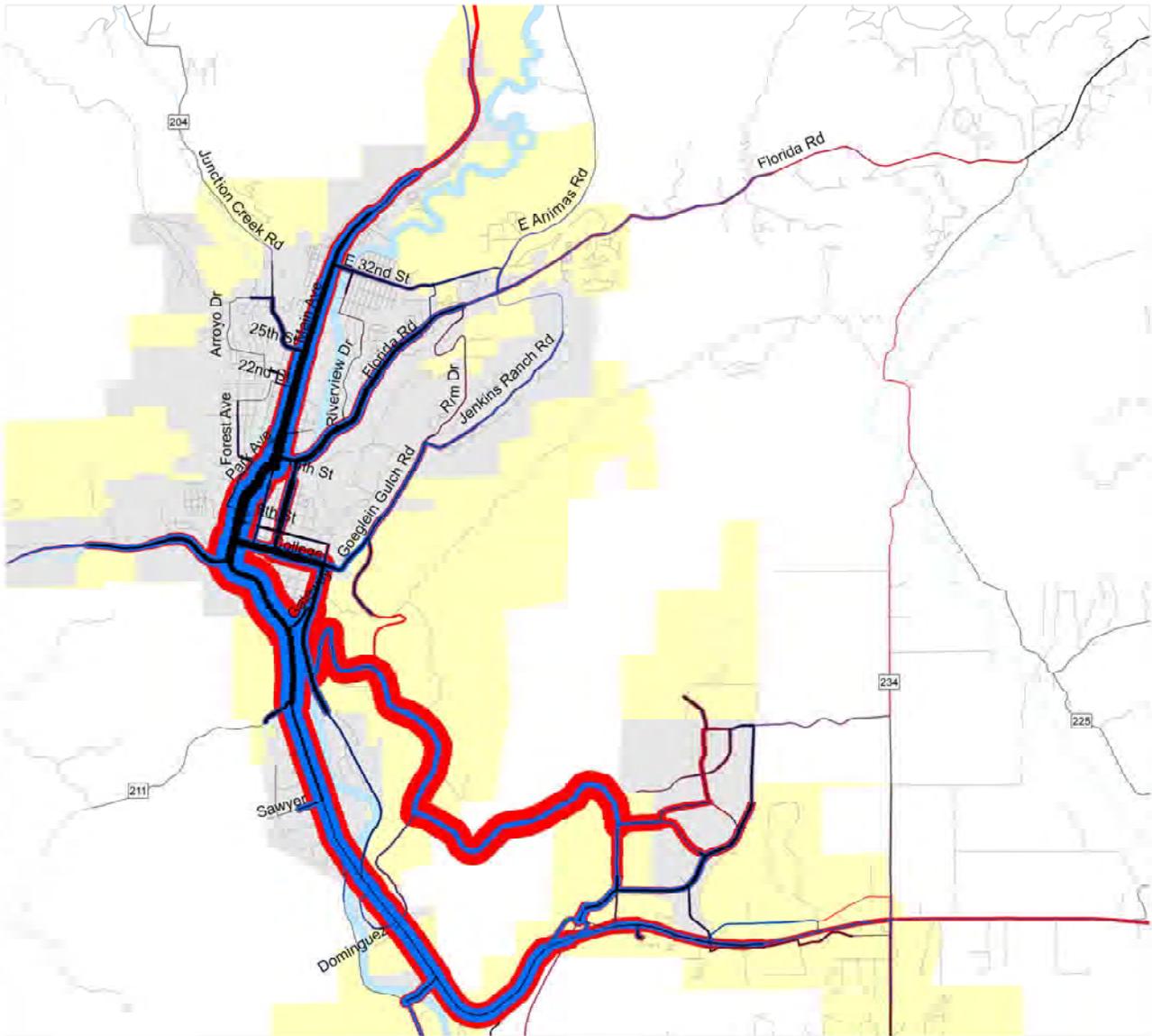
Virtually every trip we make involves a pedestrian component – whether it be walking between a building and an automobile or bus, parking a bike and walking to a destination, or simply walking between home and the corner store. Walking is an essential part of our daily activities, and the pedestrian network of sidewalks, trails, crosswalks and paths is an important element of a multi-modal transportation system.

In addition to serving basic traveling needs, the pedestrian system can enhance the character of our community. For example, amenities such as wide sidewalks, good lighting, benches and planters (i.e., street furniture), distinctive street crossings, and curb extensions make Durango's downtown a unique, inviting place.

Walking is fundamental to an urban area's efficient ground transportation system. In order to elevate the pedestrian travel mode in the transportation network, special pedestrian districts have been designated, each with different needs and investment levels. The pedestrian districts provide a focus for investment for this affordable and healthy travel mode.



FIGURE 33: POTENTIAL BICYCLE TRIPS



LEGEND		
Durango City Limits	Trip Length	Number of Trips
IGA Area	3 miles or less	1,000
	6 miles or less	5,000
	9 miles or less	10,000

N
0 0.5 1
Miles



Several pedestrian recommendations were provided by the public. They include:

- Enhance street crossing safety,
- Provide accessibility for all populations,
- Identifying missing sidewalk segments and connections,
- Modifying codes and standards to increase pedestrian opportunities,
- Locate overpasses and underpasses to increase safety for walkers on high volume roadways such as US 550/160, and
- Incorporate pedestrian design characteristics in new mixed use development areas.

Pedestrian design characteristics are defined as compact, walkable areas of intense pedestrian use where walking is or should be the primary travel mode and access and safety for pedestrians are paramount.

These characteristics should be provided in areas of a dense mix of uses, including residential, office/retail, recreation, and others. They impart a sense of place and are activity destinations with a distinct urban character. Building and site design features include facades with visual interest, street canopies of trees and awnings, and buildings oriented to the street and often built to the property line at the sidewalk.

Pedestrian areas bring together all travel modes. They should have good transit service with benches and shelters at frequent bus stops. Connections to the on-street bike network and the off-street path system should be provided where possible. Storage racks and lockers should also be provided for cyclists. The pedestrian areas should include parking lots with direct pedestrian connections, but the lots should not dominate the view. On-street parking is desirable and serves to separate pedestrians on sidewalks from the traffic flow while also slowing speeds as a form of traffic calming.

PEDESTRIAN CHARACTERISTICS

Several pedestrian characteristics are desirable. They include:

- **Frequent, well-marked, and safe street crossings;**
- **A well-connected, possibly gridded local street system;**
- **Wide sidewalks with level surfaces that are buffered from traffic;**
- **Accommodations for older people and persons with disabilities;**
- **Adequate lighting;**
- **Street furniture and art where appropriate;**
- **Traffic signal timing that allows time for pedestrian crossings at intersections;**
- **Shaded seating and landscaped areas;**
- **Play areas;**
- **Public restrooms;**
- **Access to on and off-site activity destinations using direct pedestrian connections; and**
- **Special treatments, such as curb extensions and pedestrian-only signal phasing.**



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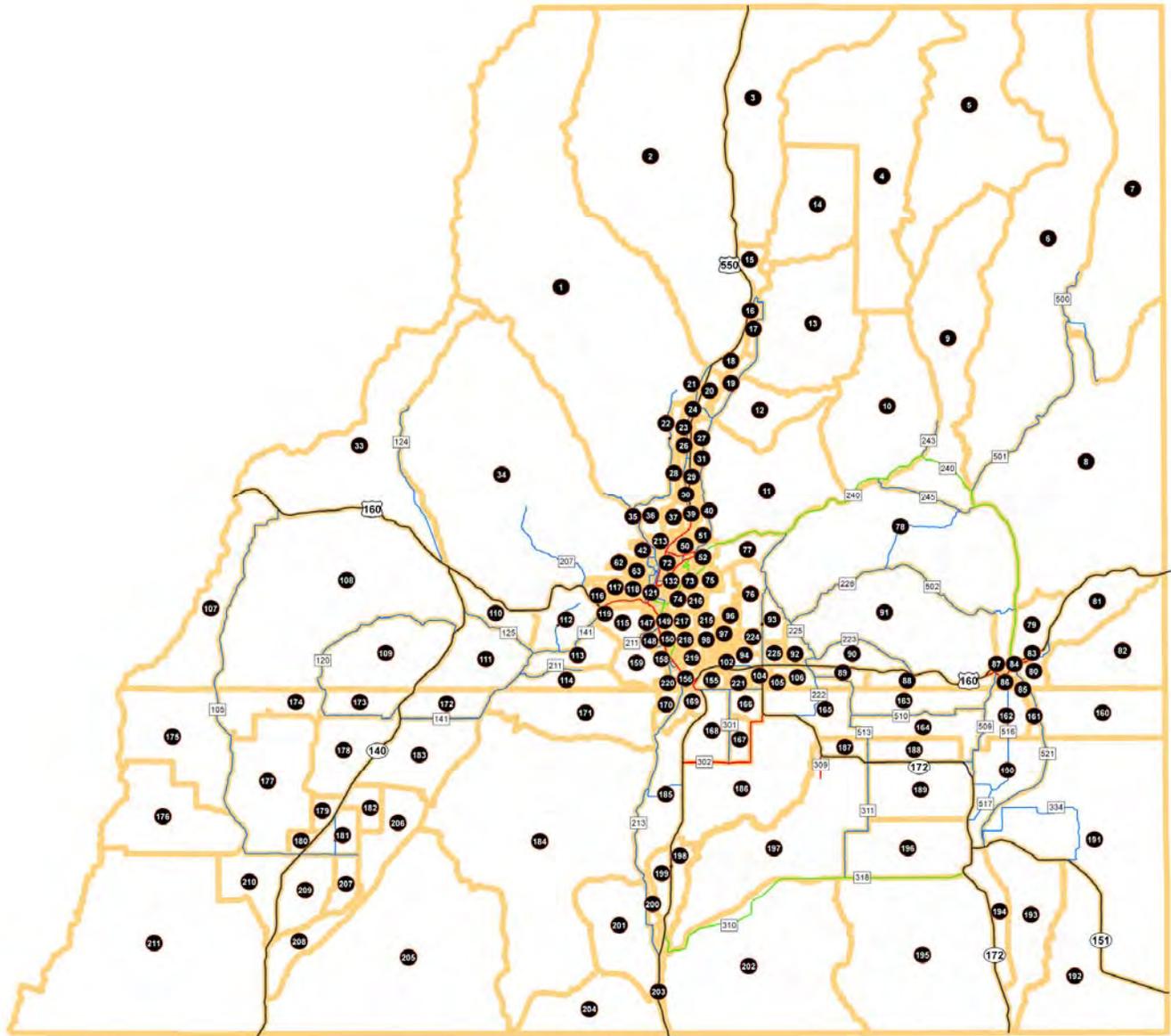


Existing and Forecast Socio-Economic Data by Traffic Analysis Zone

Three socioeconomic data tables are included. Table A1 shows the socioeconomic data by zone for the base year 2004. Table A2 shows the data by zone for the 2030 forecast year and Table A3 shows the data for the post-2030 forecast year. Each table includes the population, number of households by income level (low, medium, and high) and employment by type (basic, retail and service) for each TAZ. The tables also include an identifier to indicate whether each zone is considered to be inside (represented by a "1") or outside (represented by a "0") of the IGA area.



FIGURE A1: LA PLATA COUNTY TRAFFIC ANALYSIS ZONES



LEGEND

- Facility Type
- Highways
- Principal Arterial
- Minor Arterial
- Collector
- Local
- Zones
- City Limits
- Zone ID

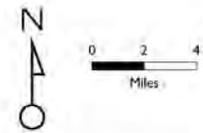
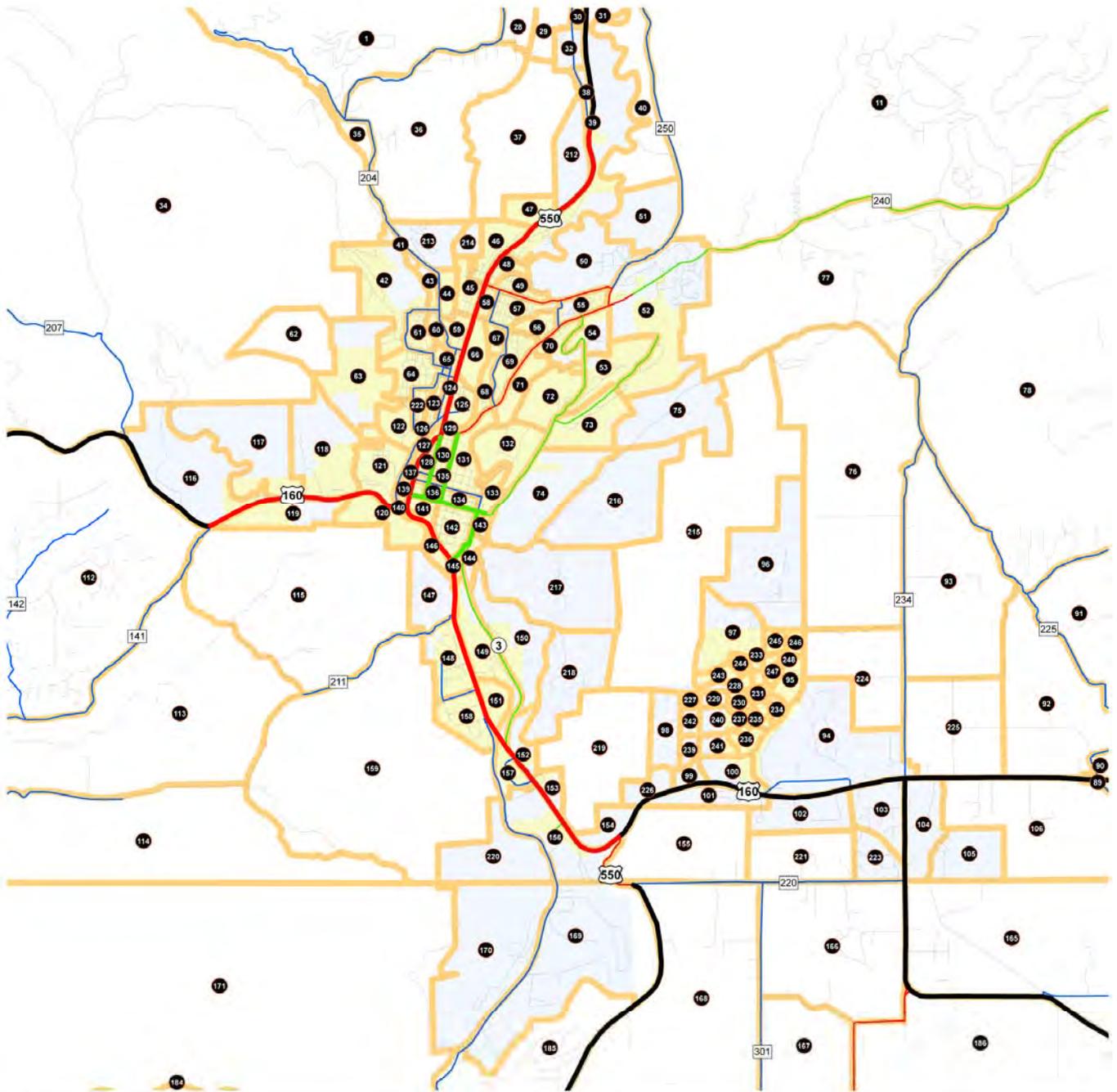




FIGURE A2: IGA AREA TRAFFIC ANALYSIS ZONES



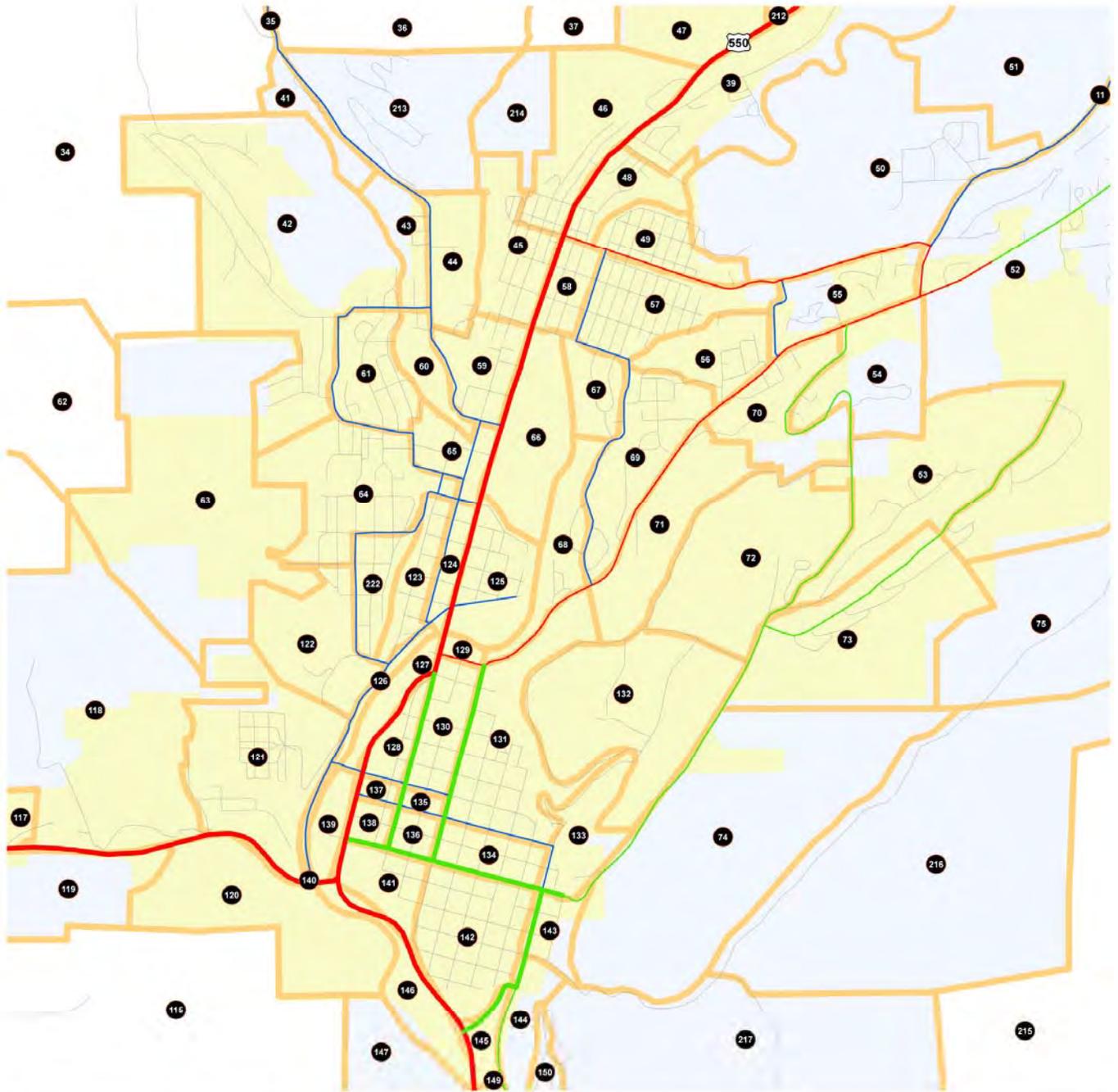
LEGEND

Facility Type	— Highway	— Principal Arterial	— Minor Arterial	— Collector	— Zones	— Planning Area Boundary	— City Limits	⊗ Zone ID
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0 0.5 1 Miles



FIGURE A3: CITY OF DURANGO TRAFFIC ANALYSIS ZONES



LEGEND	
Facility Type	Zones
Highway	City Limits
Principal Arterial	Planning Area Boundary
Minor Arterial	Zone ID
Collector	

N
0 1,000 2,000
Feet



Table A1: La Plata County Base Year (2004) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
1	0	330	40	80	37	157	30	0	14	44
2	0	777	96	192	103	391	20	268	294	582
3	0	700	80	162	86	328	81	136	189	406
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	194	27	53	20	100	43	0	30	73
7	0	345	45	89	33	167	20	41	73	134
8	0	1,441	156	308	119	583	115	63	65	243
9	0	296	31	77	25	133	47	1	5	53
10	0	296	28	88	26	142	32	1	46	79
11	0	677	69	142	57	268	92	9	19	120
12	0	55	6	12	5	23	4	12	2	18
13	0	172	19	38	20	77	22	0	4	26
14	0	0	0	0	0	0	0	0	0	0
15	0	49	5	12	7	24	11	1	6	18
16	0	22	3	6	4	13	0	0	18	18
17	0	47	5	11	5	21	1	0	1	2
18	0	260	30	60	33	123	32	1	27	60
19	0	65	6	15	6	27	8	0	2	10
20	0	805	84	179	69	332	42	7	140	189
21	0	620	66	139	54	259	27	15	15	57
22	0	143	18	28	18	64	23	0	11	34
23	0	58	8	15	6	29	14	0	0	14
24	0	179	19	40	16	75	11	2	19	32
25	0	74	7	14	6	27	11	2	4	17
26	0	155	17	36	14	67	7	1	2	10
27	0	44	6	11	5	22	7	0	11	18
28	0	29	2	6	2	10	5	0	1	6
29	0	237	26	57	22	105	1	0	3	4
30	0	202	20	43	17	80	1	0	14	15
31	0	12	1	1	1	3	5	0	0	5
32	1	120	13	24	12	49	18	2	2	22
33	0	125	8	22	19	49	49	18	0	67
34	0	1,307	94	235	188	517	153	41	32	226
35	0	33	4	7	4	15	0	0	2	2
36	0	161	19	31	19	69	4	0	6	10
37	0	8	0	2	1	3	0	0	0	0
38	1	27	6	8	2	16	0	0	17	17
39	1	573	110	143	43	296	27	143	230	400
40	0	55	7	13	5	25	11	0	6	17
41	1	66	8	14	8	30	0	0	0	0
42	1	607	44	86	92	222	27	6	23	56
43	1	157	21	30	15	66	1	0	159	160
44	1	111	16	22	11	49	1	0	5	6
45	1	390	59	102	16	177	5	9	39	53
46	1	220	33	45	12	90	57	87	636	780
47	1	0	0	0	0	0	22	91	47	160
48	1	229	35	49	13	97	32	0	37	69
49	1	279	39	63	12	114	32	0	19	51
50	1	121	23	10	14	47	96	0	9	105
51	1	37	6	6	4	16	1	2	0	3
52	1	798	179	83	106	368	112	21	153	286
53	1	762	19	84	172	275	1	4	9	14
54	1	293	47	47	29	123	14	0	26	40
55	1	271	52	53	32	137	4	5	43	52
56	1	233	35	35	22	92	14	1	72	87
57	1	547	74	126	22	222	46	8	39	93
58	1	99	15	26	4	45	4	164	54	222
59	1	279	40	56	27	123	5	0	78	83
60	1	91	16	21	11	48	1	0	8	9
61	1	605	74	124	55	253	24	6	18	48
62	0	0	0	0	0	0	0	0	0	0
63	1	0	0	0	0	0	0	0	0	0



Table A1: La Plata County Base Year (2004) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
64	1	919	112	183	79	374	0	0	14	14
65	1	164	26	41	16	83	32	4	232	268
66	1	38	5	9	3	17	4	0	187	191
67	1	234	27	53	13	93	0	0	43	43
68	1	213	28	56	13	97	5	0	42	47
69	1	560	81	158	37	276	50	6	82	138
70	1	423	79	79	49	207	11	1	22	34
71	1	79	17	18	10	45	0	0	6	6
72	1	137	21	19	11	51	8	1	41	50
73	1	841	168	164	64	396	42	25	45	112
74	1	312	54	54	2	110	0	0	2	2
75	1	11	1	2	1	4	0	0	3	3
76	0	98	13	17	10	40	25	0	0	25
77	0	641	80	117	115	312	30	2	9	41
78	0	1,004	104	218	96	418	211	4	45	260
79	0	987	79	191	82	352	68	71	118	257
80	0	450	61	92	16	169	100	2	82	184
81	0	170	15	38	17	70	31	0	3	34
82	0	47	5	15	6	26	16	0	1	17
83	0	69	8	13	2	23	0	0	18	18
84	0	161	26	37	5	68	4	0	1	5
85	0	266	45	64	8	117	26	11	47	84
86	0	60	8	14	6	28	24	0	9	33
87	0	38	6	10	4	20	0	0	0	0
88	0	136	15	25	11	51	5	5	0	10
89	0	402	44	75	35	154	15	0	4	19
90	0	216	25	43	19	87	170	0	17	187
91	0	1,125	124	219	100	443	190	9	40	239
92	0	68	10	14	7	31	6	0	6	12
93	0	113	14	21	11	46	22	2	2	26
94	1	217	33	44	25	102	198	22	51	271
95	1	0	0	0	0	0	0	0	0	0
96	1	23	3	4	2	9	3	0	0	3
97	1	9	1	2	1	4	1	0	0	1
98	1	7	1	1	0	2	0	0	0	0
99	1	0	0	0	0	0	42	0	0	42
100	1	9	1	1	1	3	24	0	15	39
101	1	124	15	18	13	46	18	9	14	41
102	1	124	15	20	13	48	105	50	0	155
103	1	213	26	36	23	85	11	0	26	37
104	1	81	9	13	8	30	5	1	56	62
105	1	135	15	20	12	47	5	0	2	7
106	0	100	12	17	9	38	18	6	55	79
107	0	35	3	5	5	13	27	0	0	27
108	0	253	25	43	40	108	208	5	27	240
109	0	72	7	11	10	28	109	0	3	112
110	0	771	66	114	102	282	45	2	18	65
111	0	206	23	41	36	100	46	0	11	57
112	0	900	86	146	132	364	150	35	52	237
113	0	21	2	3	3	8	1	0	0	1
114	0	31	3	5	5	13	4	0	0	4
115	0	0	0	0	0	0	0	0	0	0
116	1	5	1	1	0	2	22	8	250	280
117	1	64	12	11	4	27	5	0	2	7
118	1	57	10	9	3	22	101	9	20	130
119	1	41	6	7	2	15	0	57	38	95
120	1	19	4	4	1	9	4	27	34	65
121	1	55	7	9	4	20	108	18	268	394
122	1	282	41	66	29	136	55	5	62	122
123	1	333	50	83	31	164	47	0	26	73
124	1	125	20	35	11	66	11	4	23	38
125	1	230	34	58	19	111	9	1	1,296	1,306
126	1	31	5	9	3	17	0	0	4	4



Table A1: La Plata County Base Year (2004) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
127	1	0	0	0	0	0	11	0	98	109
128	1	35	12	12	4	28	335	310	654	1,299
129	1	10	1	3	1	5	0	11	10	21
130	1	229	67	63	28	158	55	639	1,273	1,967
131	1	630	125	121	53	299	23	1	41	65
132	1	452	76	76	50	202	11	16	660	687
133	1	71	15	15	6	36	38	0	2	40
134	1	438	92	88	39	219	11	60	54	125
135	1	26	8	8	3	19	329	118	345	792
136	1	46	11	11	5	27	66	390	267	723
137	1	0	0	0	0	0	0	138	138	276
138	1	3	1	1	1	3	147	310	310	767
139	1	0	0	0	0	0	127	204	534	865
140	1	0	0	0	0	0	0	0	0	0
141	1	126	32	28	8	68	273	488	261	1,022
142	1	1,086	231	195	49	475	85	101	190	376
143	1	162	40	34	8	82	9	40	4	53
144	1	0	0	0	0	0	0	23	0	23
145	1	0	0	0	0	0	0	0	0	0
146	1	0	0	0	0	0	0	0	0	0
147	1	0	0	0	0	0	0	0	0	0
148	1	10	1	2	1	4	1,208	53	796	2,057
149	1	81	10	17	7	34	5	26	2	33
150	1	17	3	2	1	6	55	18	28	101
151	1	3	0	1	0	1	0	137	5	142
152	1	2	0	1	0	1	0	19	30	49
153	1	0	0	0	0	0	4	138	6	148
154	1	3	0	1	0	1	0	6	0	6
155	0	55	21	10	6	37	4	0	4	8
156	1	152	29	27	12	68	447	132	74	653
157	1	0	0	0	0	0	4	483	94	581
158	1	0	0	0	0	0	608	146	138	892
159	0	1	0	1	0	1	43	0	0	43
160	0	124	13	24	6	43	38	4	2	44
161	0	40	4	8	2	14	94	0	1	95
162	0	193	14	39	13	66	28	1	2	31
163	0	306	25	72	23	120	42	2	12	56
164	0	457	34	96	30	160	57	5	4	66
165	0	565	41	118	46	205	289	26	47	362
166	0	192	15	45	21	81	18	7	6	31
167	0	88	6	16	8	30	19	0	2	21
168	0	179	14	43	18	75	35	2	30	67
169	1	51	4	17	4	25	15	0	0	15
170	1	59	5	16	5	26	3	0	2	5
171	0	34	3	9	3	15	16	0	0	16
172	0	27	3	6	2	11	14	0	0	14
173	0	92	12	23	8	43	11	0	9	20
174	0	34	4	8	3	15	18	0	0	18
175	0	21	2	5	2	9	39	0	0	39
176	0	32	4	7	2	13	55	0	0	55
177	0	135	13	25	10	48	49	4	40	93
178	0	262	28	50	19	97	26	27	6	59
179	0	27	3	6	2	11	5	0	4	9
180	0	32	3	7	2	12	4	0	0	4
181	0	111	13	26	9	48	16	0	0	16
182	0	96	9	18	7	34	34	0	55	89
183	0	171	17	33	13	63	78	0	9	87
184	0	212	14	43	14	71	66	2	2	70
185	0	757	56	175	56	287	39	9	13	61
186	0	579	41	125	56	222	383	2	69	454
187	0	43	4	11	3	18	8	1	1	10
188	0	276	21	58	19	98	100	4	7	111
189	0	382	36	80	24	140	31	1	5	37



Table A1: La Plata County Base Year (2004) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
190	0	603	71	104	23	198	135	46	556	737
191	0	463	56	100	25	181	115	15	10	140
192	0	421	47	84	21	152	76	5	20	101
193	0	148	18	32	8	58	51	12	0	63
194	0	379	50	62	11	123	18	78	1	97
195	0	129	11	32	10	53	66	1	2	69
196	0	1,018	169	207	39	415	92	42	276	410
197	0	532	39	116	53	208	116	15	143	274
198	0	210	16	47	21	84	63	12	2	77
199	0	253	21	66	21	108	3	1	6	10
200	0	43	3	11	3	17	16	0	2	18
201	0	40	4	12	4	20	19	0	0	19
202	0	72	4	13	7	24	15	0	1	16
203	0	33	3	8	4	15	24	0	1	25
204	0	13	2	2	1	5	0	0	1	1
205	0	2	0	1	0	1	5	0	0	5
206	0	58	6	12	5	23	18	0	0	18
207	0	38	6	12	4	22	8	4	0	12
208	0	13	1	2	1	4	11	0	0	11
209	0	173	18	34	13	65	27	4	0	31
210	0	125	11	23	8	42	23	0	0	23
211	0	25	4	7	2	13	50	4	0	54
212	1	41	6	9	3	18	8	0	2	10
213	1	21	2	5	2	9	0	0	0	0
214	1	0	0	0	0	0	0	0	0	0
215	0	81	10	14	8	32	4	0	0	4
216	1	0	0	0	0	0	1	0	0	1
217	1	3	0	1	0	1	3	0	0	3
218	1	16	2	2	2	6	0	0	0	0
219	0	27	4	4	3	11	0	0	0	0
220	1	0	0	0	0	0	1	0	0	1
221	0	154	20	26	15	61	5	0	2	7
222	1	249	31	51	23	105	14	14	4	32
223	1	97	12	16	9	37	8	5	6	19
224	0	22	3	4	2	9	6	0	0	6
225	0	62	10	13	7	30	6	0	0	6
226	1	5	1	1	0	2	0	0	0	0
227	1	0	0	0	0	0	0	0	0	0
228	1	0	0	0	0	0	0	0	0	0
229	1	0	0	0	0	0	0	0	0	0
230	1	5	2	0	0	2	0	0	0	0
231	1	0	0	0	0	0	0	0	0	0
232	1	0	0	0	0	0	0	0	0	0
233	1	0	0	0	0	0	0	0	0	0
234	1	6	2	0	0	2	0	0	0	0
235	1	0	0	0	0	0	0	0	0	0
236	1	7	0	2	0	2	0	0	0	0
237	1	0	0	0	0	0	0	0	0	0
238	1	0	0	0	0	0	0	0	0	0
239	1	3	0	1	0	1	0	0	0	0
240	1	0	0	0	0	0	0	0	0	0
241	1	3	0	1	0	1	0	0	0	0
242	1	3	0	1	0	1	0	0	0	0
243	1	0	0	0	0	0	0	0	0	0
244	1	0	0	0	0	0	0	0	0	0
245	1	2	0	0	1	1	0	0	0	0
246	1	3	0	1	0	1	0	0	0	0
247	1	0	0	0	0	0	0	0	0	0
248	1	0	0	0	0	0	0	0	0	0
TOTAL		46,259	5,754	9,441	4,252	19,447	10,485	5,932	13,639	30,056
IGA Area		17,186	2,713	3,374	1,562	7,649	5,374	4,823	10,657	20,854



Table A2: La Plata County Forecast Year (2030) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
1	0	500	60	111	51	222	30	67	63	160
2	0	1,464	176	325	159	660	20	314	1,346	1,680
3	0	1,293	142	277	134	553	81	162	881	1,124
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	375	46	87	36	169	43	68	147	258
7	0	649	77	147	59	283	20	41	309	370
8	0	2,498	266	512	207	985	131	196	511	838
9	0	537	57	123	45	225	47	1	5	53
10	0	554	55	137	48	240	32	9	94	135
11	0	3,592	399	785	324	1,508	92	9	105	206
12	0	55	6	12	5	23	4	12	2	18
13	0	313	34	65	32	131	22	0	4	26
14	0	9	1	2	1	4	0	0	0	0
15	0	91	10	20	11	41	11	17	34	62
16	0	69	4	9	5	18	29	0	18	47
17	0	47	5	11	5	21	34	0	1	35
18	0	458	60	101	47	208	40	4	27	71
19	0	65	6	14	6	26	14	18	26	58
20	0	1,340	164	286	111	561	47	188	197	432
21	0	905	108	194	76	378	27	190	176	393
22	0	143	17	27	17	61	23	0	11	34
23	0	110	13	25	11	49	14	9	9	32
24	0	198	23	44	17	84	11	53	57	121
25	0	74	7	13	6	26	11	19	18	48
26	0	264	33	59	22	114	31	1	2	34
27	0	51	7	12	6	25	16	0	11	27
28	0	29	2	6	2	10	5	0	1	6
29	0	237	25	55	21	101	1	0	3	4
30	0	254	27	52	21	100	1	6	22	29
31	0	17	2	2	1	5	5	0	0	5
32	1	120	14	25	11	50	18	12	17	47
33	0	157	13	30	20	63	49	18	0	67
34	0	1,913	163	349	234	746	153	41	56	250
35	0	33	4	7	4	15	0	0	2	2
36	0	161	18	30	18	66	4	0	6	10
37	0	8	1	2	1	4	0	0	0	0
38	1	39	8	10	3	21	0	10	17	27
39	1	714	220	228	96	544	100	197	280	577
40	0	55	7	12	5	24	11	0	6	17
41	1	66	8	14	8	30	0	0	0	0
42	1	768	69	100	118	287	27	6	23	56
43	1	157	21	30	15	66	1	10	90	101
44	1	192	25	39	18	82	1	0	5	6
45	1	390	59	102	16	177	76	9	65	150
46	1	220	33	45	12	90	209	87	636	932
47	1	0	0	0	0	0	0	0	0	0
48	1	325	41	66	32	139	158	0	141	299
49	1	279	39	63	12	114	32	0	19	51
50	1	192	34	25	20	79	96	0	9	105
51	1	275	14	18	93	125	1	2	0	3
52	1	1,337	265	199	153	617	112	21	153	286
53	1	811	31	84	180	295	1	4	9	14
54	1	403	49	50	73	172	14	0	26	40
55	1	785	142	83	148	373	4	119	108	231
56	1	233	35	35	22	92	14	80	400	494
57	1	547	74	126	22	222	46	8	39	93
58	1	100	15	26	4	45	150	50	100	300
59	1	279	40	56	27	123	107	0	177	284
60	1	147	22	33	16	71	1	0	8	9
61	1	628	74	124	55	253	24	6	18	48
62	0	0	0	0	0	0	0	0	0	0
63	1	8	1	1	1	3	0	0	0	0



Table A2: La Plata County Forecast Year (2030) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
64	1	919	112	183	79	374	20	10	40	70
65	1	164	26	41	16	83	93	4	236	333
66	1	50	7	12	4	23	100	0	196	296
67	1	234	27	53	13	93	5	0	10	15
68	1	226	30	59	14	103	5	0	42	47
69	1	560	81	158	37	276	50	46	82	178
70	1	423	79	79	49	207	11	1	22	34
71	1	250	32	35	60	127	0	0	6	6
72	1	137	21	19	11	51	8	1	41	50
73	1	1,081	168	180	152	500	42	25	45	112
74	1	461	82	82	14	178	0	45	45	90
75	1	19	2	3	2	7	0	0	3	3
76	0	207	25	38	19	82	31	0	0	31
77	0	936	109	173	136	418	30	2	9	41
78	0	1,763	183	365	158	706	211	147	148	506
79	0	2,367	233	485	209	927	68	478	466	1,012
80	0	570	71	112	25	208	100	116	196	412
81	0	268	25	57	25	107	31	0	3	34
82	0	95	10	25	10	45	16	0	1	17
83	0	184	21	38	12	71	0	34	83	117
84	0	275	37	60	14	111	4	4	4	12
85	0	380	56	85	17	158	26	11	47	84
86	0	84	11	18	8	37	24	0	9	33
87	0	76	10	18	7	35	0	14	23	37
88	0	738	87	147	67	301	5	39	76	120
89	0	609	65	114	52	231	15	0	4	19
90	0	373	41	74	32	147	170	32	28	230
91	0	1,480	158	282	128	568	190	309	362	861
92	0	229	34	47	23	104	12	42	63	117
93	0	113	13	20	11	44	22	2	2	26
94	1	988	89	336	29	454	100	200	499	799
95	1	66	8	14	6	28	0	3	32	35
96	1	219	25	45	19	89	3	0	1	4
97	1	1,113	119	187	172	478	1	25	119	145
98	1	285	35	60	25	120	0	0	0	0
99	1	0	0	0	0	0	42	476	156	674
100	1	15	2	2	1	5	24	188	104	316
101	1	336	38	65	30	133	18	256	248	522
102	1	524	60	104	48	212	70	215	200	485
103	1	248	28	47	23	98	11	90	196	297
104	1	155	17	29	14	60	5	85	113	203
105	1	149	17	23	13	53	5	0	2	7
106	0	486	58	93	44	195	18	6	55	79
107	0	59	6	10	7	23	27	0	0	27
108	0	448	45	82	56	183	208	29	27	264
109	0	124	12	21	14	47	109	8	3	120
110	0	1,282	119	214	143	476	45	48	18	111
111	0	387	42	76	51	169	46	20	33	99
112	0	1,176	119	212	145	476	150	35	52	237
113	0	29	3	5	3	11	1	0	0	1
114	0	31	3	5	5	13	4	0	0	4
115	0	0	0	0	0	0	1	0	1	2
116	1	199	34	42	15	91	30	0	100	130
117	1	107	17	20	8	45	50	45	50	145
118	1	258	22	19	72	113	101	19	41	161
119	1	477	18	18	168	204	70	67	115	252
120	1	19	4	4	1	9	110	20	20	150
121	1	94	12	16	6	34	116	30	405	551
122	1	282	41	66	29	136	55	5	62	122
123	1	333	50	83	31	164	47	0	26	73
124	1	125	20	35	11	66	101	4	92	197
125	1	273	41	68	22	131	100	0	600	700
126	1	31	5	9	3	17	0	0	4	4



Table A2: La Plata County Forecast Year (2030) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			Total
			Low	Medium	High	Total	Basic	Retail	Service	
127	1	3	0	1	0	1	148	0	121	269
128	1	161	20	34	31	85	352	310	654	1,316
129	1	12	1	4	1	6	18	11	15	44
130	1	229	67	63	28	158	215	639	1,273	2,127
131	1	736	142	145	61	348	23	1	41	65
132	1	452	76	76	50	202	11	16	660	687
133	1	88	15	19	10	44	38	7	13	58
134	1	438	92	88	39	219	11	60	54	125
135	1	26	8	8	3	19	329	118	345	792
136	1	46	11	11	5	27	122	390	267	779
137	1	0	0	0	0	0	94	138	138	370
138	1	3	1	1	1	3	148	310	310	768
139	1	0	0	0	0	0	340	204	534	1,078
140	1	0	0	0	0	0	0	0	0	0
141	1	372	47	28	104	179	273	488	261	1,022
142	1	1,086	231	195	49	475	85	101	190	376
143	1	280	58	61	17	136	9	72	67	148
144	1	32	5	7	3	15	0	36	48	84
145	1	0	0	0	0	0	0	0	0	0
146	1	0	0	0	0	0	0	0	1	1
147	1	0	0	0	0	0	0	0	1	1
148	1	10	1	2	1	4	1,208	55	796	2,059
149	1	653	47	48	188	283	419	26	195	640
150	1	516	47	66	123	236	55	169	244	468
151	1	413	0	20	169	189	545	188	160	893
152	1	114	0	1	46	47	76	19	69	164
153	1	3	0	1	0	1	80	30	21	131
154	1	3	0	1	0	1	20	20	6	46
155	0	96	22	19	9	50	4	0	4	8
156	1	927	97	47	282	426	624	385	264	1,273
157	1	0	0	0	0	0	200	350	250	800
158	1	0	0	0	0	0	340	191	800	1,331
159	0	1	0	1	0	1	43	0	0	43
160	0	124	12	23	6	41	38	4	2	44
161	0	40	4	8	2	14	94	0	1	95
162	0	193	13	37	12	62	28	1	2	31
163	0	596	57	135	49	241	42	2	12	56
164	0	513	39	109	34	182	57	5	4	66
165	0	937	81	189	77	347	289	26	47	362
166	0	340	31	73	34	138	18	7	6	31
167	0	99	8	19	9	36	19	0	2	21
168	0	290	28	66	28	122	35	2	30	67
169	1	312	10	42	90	142	100	90	300	490
170	1	275	39	64	23	126	10	120	130	260
171	0	72	7	17	6	30	16	0	0	16
172	0	46	5	10	4	19	14	0	0	14
173	0	118	14	28	10	52	11	0	9	20
174	0	156	19	38	13	70	18	0	0	18
175	0	38	4	8	4	16	39	0	0	39
176	0	56	7	12	4	23	55	0	0	55
177	0	223	22	42	17	81	49	4	40	93
178	0	281	29	52	20	101	26	27	6	59
179	0	46	5	10	4	19	12	0	8	20
180	0	53	5	12	4	21	4	0	0	4
181	0	111	12	25	9	46	21	0	0	21
182	0	131	12	25	10	47	34	23	88	145
183	0	285	29	56	22	107	78	0	9	87
184	0	342	28	67	25	120	66	2	2	70
185	0	952	75	208	71	354	39	49	46	134
186	0	983	84	203	89	376	450	2	69	521
187	0	55	5	13	4	22	8	1	1	10
188	0	390	30	84	28	142	100	4	7	111
189	0	445	42	94	28	164	31	1	5	37



Table A2: La Plata County Forecast Year (2030) Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
190	0	654	73	108	26	207	158	46	604	808
191	0	641	73	133	39	245	115	15	10	140
192	0	698	76	137	44	257	76	5	20	101
193	0	253	29	52	17	98	51	12	0	63
194	0	421	53	68	14	135	30	78	57	165
195	0	227	21	51	18	90	66	1	2	69
196	0	1,461	224	302	76	602	110	107	360	577
197	0	759	62	157	71	290	522	15	488	1,025
198	0	273	22	58	26	106	63	12	2	77
199	0	389	36	91	32	159	3	1	6	10
200	0	43	3	11	3	17	16	0	2	18
201	0	78	8	20	7	35	19	0	0	19
202	0	89	7	17	8	32	15	0	1	16
203	0	33	3	8	4	15	24	0	1	25
204	0	16	2	3	1	6	0	0	1	1
205	0	5	0	2	0	2	5	0	0	5
206	0	100	11	20	9	40	18	0	0	18
207	0	78	11	19	8	38	56	4	2	62
208	0	20	2	3	2	7	11	0	0	11
209	0	290	30	57	23	110	27	33	33	93
210	0	201	19	37	14	70	23	0	0	23
211	0	43	6	11	4	21	50	4	0	54
212	1	41	6	9	3	18	8	0	2	10
213	1	35	4	8	3	15	0	0	0	0
214	1	0	0	0	0	0	0	0	0	0
215	0	81	10	13	8	31	4	0	2	6
216	1	0	0	0	0	0	1	0	0	1
217	1	1,143	95	249	185	529	100	36	100	236
218	1	372	59	80	32	171	100	36	100	236
219	0	27	4	4	3	11	1	0	1	2
220	1	0	0	0	0	0	1	2	18	21
221	0	196	24	36	18	78	5	0	2	7
222	1	249	31	51	23	105	14	14	4	32
223	1	137	15	26	12	53	0	0	0	0
224	0	189	23	36	18	77	6	0	0	6
225	0	72	10	15	7	32	6	0	0	6
226	1	7	1	1	0	2	0	0	0	0
227	1	48	6	10	4	20	0	0	0	0
228	1	60	7	10	9	26	0	0	68	68
229	1	18	2	3	3	8	0	0	14	14
230	1	136	15	23	21	59	0	0	50	50
231	1	151	16	25	23	64	0	34	41	75
232	1	27	3	4	4	11	0	0	0	0
233	1	188	20	31	29	80	0	0	0	0
234	1	47	6	10	4	20	0	15	163	178
235	1	148	16	25	23	64	0	23	46	69
236	1	343	37	57	53	147	0	56	1,717	1,773
237	1	17	2	3	3	8	0	5	68	73
238	1	121	13	20	19	52	0	39	63	102
239	1	143	17	30	13	60	0	421	104	525
240	1	267	29	45	41	115	0	0	146	146
241	1	398	43	67	61	171	0	84	166	250
242	1	143	17	30	13	60	0	0	0	0
243	1	289	31	48	45	124	0	0	73	73
244	1	282	30	47	44	121	0	2	2	4
245	1	240	31	50	22	103	0	13	25	38
246	1	48	6	10	4	20	0	0	0	0
247	1	69	9	14	6	29	0	4	8	12
248	1	93	12	19	8	39	0	15	28	43
TOTAL		80,921	9,501	15,787	8,707	33,995	14,543	11,136	25,384	51,063
IGA Area		32,285	4,296	5,816	4,386	14,498	8,702	7,824	17,527	34,053



Table A3: La Plata County Post 2030 Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
1	0	515	63	116	53	232	30	67	63	160
2	0	2,565	308	547	256	1,111	20	314	1,968	2,302
3	0	6,643	721	1,349	596	2,666	81	162	5,484	5,727
4	0	8	1	1	1	3	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	800	92	173	72	337	43	152	147	342
7	0	989	113	217	88	418	20	41	389	450
8	0	2,837	304	583	237	1,124	131	196	511	838
9	0	1,450	154	307	124	585	47	1	5	53
10	0	902	92	208	78	378	32	9	94	135
11	0	3,592	399	785	324	1,508	92	9	105	206
12	0	55	6	12	5	23	4	12	2	18
13	0	365	39	77	36	152	22	0	4	26
14	0	23	2	5	2	9	0	0	0	0
15	0	293	32	60	28	120	11	38	37	86
16	0	73	4	9	5	18	29	0	18	47
17	0	47	5	11	5	21	66	0	1	67
18	0	5,922	880	1,281	457	2,618	40	4	27	71
19	0	65	6	15	6	27	14	112	112	238
20	0	1,546	196	331	129	656	47	188	197	432
21	0	930	113	202	79	394	27	205	176	408
22	0	143	18	28	18	64	23	0	11	34
23	0	165	20	36	15	71	14	9	9	32
24	0	241	28	53	21	102	11	62	57	130
25	0	74	7	14	6	27	11	19	18	48
26	0	273	34	61	23	118	31	1	2	34
27	0	52	7	12	6	25	16	0	11	27
28	0	29	2	6	2	10	5	0	1	6
29	0	237	26	57	22	105	1	0	3	4
30	0	258	28	54	22	104	1	6	22	29
31	0	49	5	9	4	18	5	0	0	5
32	1	439	64	91	36	191	18	168	184	370
33	0	210	17	39	26	82	49	18	0	67
34	0	1,965	170	364	244	778	153	41	56	250
35	0	33	4	7	4	15	0	0	2	2
36	0	161	19	31	19	69	4	0	6	10
37	0	54	6	11	6	23	0	0	0	0
38	1	67	12	16	5	33	0	14	17	31
39	1	1,611	266	362	122	750	100	197	280	577
40	0	55	7	13	5	25	11	0	6	17
41	1	66	8	14	8	30	0	0	0	0
42	1	812	71	134	118	323	27	6	23	56
43	1	157	21	30	15	66	1	10	90	101
44	1	222	28	44	20	92	1	0	5	6
45	1	390	59	102	16	177	76	9	65	150
46	1	220	33	45	12	90	209	87	636	932
47	1	76	12	16	5	33	0	0	0	0
48	1	331	48	69	32	149	158	0	141	299
49	1	279	39	63	12	114	32	0	19	51
50	1	378	60	62	36	158	96	0	9	105
51	1	275	14	18	93	125	1	2	0	3
52	1	2,386	418	408	237	1,063	112	21	153	286
53	1	1,003	46	132	192	370	1	4	9	14
54	1	410	63	70	73	206	14	0	26	40
55	1	1,011	159	202	148	509	4	119	108	231
56	1	233	35	35	22	92	14	80	400	494
57	1	547	74	126	22	222	46	8	39	93
58	1	100	15	26	4	45	150	50	100	300
59	1	279	40	56	27	123	107	0	177	284
60	1	151	22	33	16	71	1	0	8	9
61	1	629	74	124	55	253	24	6	18	48
62	0	0	0	0	0	0	0	0	0	0
63	1	18	2	3	2	7	0	0	0	0



Table A3: La Plata County Post 2030 Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
64	1	919	112	183	79	374	20	10	40	70
65	1	164	26	41	16	83	93	4	236	333
66	1	51	7	12	4	23	100	0	245	345
67	1	234	27	53	13	93	5	0	10	15
68	1	227	30	59	14	103	5	0	42	47
69	1	560	81	158	37	276	50	46	82	178
70	1	423	79	79	49	207	11	1	22	34
71	1	271	45	57	60	162	0	0	6	6
72	1	137	21	19	11	51	8	1	41	50
73	1	1,096	200	214	152	566	42	25	45	112
74	1	930	146	185	48	379	0	45	45	90
75	1	19	2	3	2	7	0	0	3	3
76	0	278	33	52	25	110	31	0	0	31
77	0	1,399	167	263	208	638	30	42	69	141
78	0	3,241	342	663	287	1,292	211	147	148	506
79	0	2,487	237	486	209	932	68	496	466	1,030
80	0	580	74	117	26	217	100	216	196	512
81	0	276	26	59	26	111	31	0	3	34
82	0	132	14	32	13	59	16	0	1	17
83	0	193	21	38	12	71	0	92	88	180
84	0	285	39	62	15	116	4	4	4	12
85	0	390	58	89	18	165	26	11	47	84
86	0	86	11	19	8	38	24	0	9	33
87	0	84	11	19	8	38	0	23	23	46
88	0	1,195	128	233	100	461	5	191	191	387
89	0	627	68	119	54	241	15	0	4	19
90	0	471	52	93	41	186	170	32	28	230
91	0	1,510	165	294	133	592	190	372	362	924
92	0	509	69	102	45	216	12	100	118	230
93	0	113	14	21	11	46	22	2	2	26
94	1	1,979	280	397	172	849	100	200	500	800
95	1	70	8	14	6	28	0	12	66	78
96	1	221	25	45	19	89	3	0	1	4
97	1	2,202	270	434	189	893	1	68	151	220
98	1	504	58	99	43	200	0	0	0	0
99	1	0	0	0	0	0	42	477	582	1,101
100	1	18	3	3	1	7	15	803	809	1,627
101	1	783	85	148	68	301	18	256	253	527
102	1	901	96	174	78	348	37	260	260	557
103	1	504	57	94	47	198	5	237	234	476
104	1	159	17	29	14	60	5	91	113	209
105	1	149	17	23	13	53	5	0	2	7
106	0	1,178	129	224	101	454	18	6	55	79
107	0	241	25	46	23	94	27	0	0	27
108	0	1,560	165	304	152	621	208	29	27	264
109	0	304	32	57	30	119	109	8	3	120
110	0	1,984	195	355	205	755	45	48	18	111
111	0	664	72	132	75	279	46	8	33	87
112	0	1,513	151	268	184	603	150	35	52	237
113	0	75	8	13	8	29	1	0	0	1
114	0	31	3	5	5	13	4	0	0	4
115	0	0	0	0	0	0	1	0	1	2
116	1	524	67	104	42	213	30	0	100	130
117	1	432	51	84	35	170	27	27	173	227
118	1	269	41	51	72	164	101	143	302	546
119	1	503	64	98	168	330	70	67	414	551
120	1	19	4	4	1	9	110	20	20	150
121	1	276	38	54	20	112	116	382	405	903
122	1	282	41	66	29	136	55	5	62	122
123	1	333	50	83	31	164	47	0	26	73
124	1	125	20	35	11	66	101	4	92	197
125	1	276	41	68	22	131	100	0	600	700
126	1	31	5	9	3	17	0	0	4	4



Table A3: La Plata County Post 2030 Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
127	1	3	0	1	0	1	148	0	121	269
128	1	177	29	40	31	100	352	310	654	1,316
129	1	12	1	4	1	6	18	11	15	44
130	1	229	67	63	28	158	215	639	1,273	2,127
131	1	743	142	145	61	348	23	1	41	65
132	1	452	76	76	50	202	11	16	660	687
133	1	250	42	53	19	114	38	69	69	176
134	1	438	92	88	39	219	11	60	54	125
135	1	26	8	8	3	19	329	118	345	792
136	1	46	11	11	5	27	122	390	267	779
137	1	0	0	0	0	0	94	138	138	370
138	1	3	1	1	1	3	148	310	310	768
139	1	0	0	0	0	0	340	204	534	1,078
140	1	0	0	0	0	0	0	0	0	0
141	1	396	67	81	104	252	273	488	261	1,022
142	1	1,086	231	195	49	475	85	101	190	376
143	1	287	58	61	17	136	9	72	71	152
144	1	101	15	21	8	44	0	48	48	96
145	1	0	0	0	0	0	0	0	0	0
146	1	0	0	0	0	0	0	0	1	1
147	1	0	0	0	0	0	0	0	1	1
148	1	10	1	2	1	4	1,208	568	796	2,572
149	1	690	87	137	188	412	419	26	440	885
150	1	2,011	304	419	156	879	35	772	767	1,574
151	1	938	138	200	169	507	545	453	996	1,994
152	1	121	13	24	46	83	76	19	69	164
153	1	3	0	1	0	1	80	30	405	515
154	1	3	0	1	0	1	20	20	138	178
155	0	535	76	105	47	228	4	0	4	8
156	1	1,341	204	279	282	765	408	554	930	1,892
157	1	0	0	0	0	0	200	350	451	1,001
158	1	0	0	0	0	0	340	1,036	1,002	2,378
159	0	1	0	1	0	1	43	0	0	43
160	0	124	13	24	6	43	38	4	2	44
161	0	40	4	8	2	14	94	0	1	95
162	0	193	14	39	13	66	28	1	2	31
163	0	663	63	142	53	258	42	2	12	56
164	0	513	39	109	34	182	57	5	4	66
165	0	2,037	198	411	172	781	129	12	21	162
166	0	796	79	165	73	317	18	7	6	31
167	0	614	62	122	53	237	19	0	2	21
168	0	1,808	189	368	158	715	35	2	30	67
169	1	335	43	73	90	206	300	300	900	1,500
170	1	929	136	198	73	407	5	828	828	1,661
171	0	94	9	21	8	38	16	0	0	16
172	0	147	16	30	12	58	14	0	0	14
173	0	120	15	29	10	54	11	0	9	20
174	0	207	22	42	18	82	18	0	0	18
175	0	422	45	85	37	167	39	0	0	39
176	0	549	59	111	46	216	55	0	0	55
177	0	541	56	106	45	207	49	4	40	93
178	0	283	30	54	21	105	26	27	6	59
179	0	154	17	31	13	61	18	10	12	40
180	0	58	6	12	4	22	4	0	0	4
181	0	111	13	26	9	48	28	4	4	36
182	0	134	13	26	10	49	34	33	88	155
183	0	410	42	81	33	156	78	0	9	87
184	0	1,015	100	203	83	386	66	2	2	70
185	0	969	78	217	74	369	39	49	46	134
186	0	2,153	209	438	191	838	450	2	69	521
187	0	56	5	14	4	23	8	1	1	10
188	0	390	30	84	28	142	100	4	7	111
189	0	445	42	94	28	164	31	1	5	37



Table A3: La Plata County Post 2030 Socioeconomic Data

TAZ	IGA	Population	Households by Income Level				Employment by Type			
			Low	Medium	High	Total	Basic	Retail	Service	Total
190	0	658	76	113	27	216	158	46	604	808
191	0	657	76	139	41	256	115	15	10	140
192	0	723	79	143	47	269	76	5	20	101
193	0	298	34	61	21	116	51	12	0	63
194	0	425	55	71	15	141	30	78	57	165
195	0	670	69	140	56	265	66	1	2	69
196	0	1,461	224	302	76	602	110	107	360	577
197	0	779	65	164	74	303	522	15	488	1,025
198	0	278	23	60	27	110	63	12	2	77
199	0	401	37	95	33	165	3	1	6	10
200	0	43	3	11	3	17	16	0	2	18
201	0	172	18	39	15	72	19	0	0	19
202	0	136	11	26	12	49	15	0	1	16
203	0	33	3	8	4	15	24	0	1	25
204	0	67	8	12	6	26	0	0	1	1
205	0	58	6	12	5	23	5	0	0	5
206	0	231	25	46	20	91	18	0	0	18
207	0	242	28	53	21	102	56	4	2	62
208	0	115	12	22	10	44	11	0	0	11
209	0	493	52	98	40	190	27	33	33	93
210	0	369	37	71	29	137	23	0	0	23
211	0	483	53	99	41	193	50	4	0	54
212	1	41	6	9	3	18	8	0	2	10
213	1	226	24	46	19	89	0	0	0	0
214	1	0	0	0	0	0	0	0	0	0
215	0	81	10	14	8	32	4	0	2	6
216	1	210	22	42	18	82	1	0	0	1
217	1	2,579	389	532	207	1,128	64	950	1,040	2,054
218	1	2,517	381	521	202	1,104	64	653	1,076	1,793
219	0	27	4	4	3	11	1	0	1	2
220	1	156	23	34	11	68	1	113	113	227
221	0	415	48	78	37	163	5	0	2	7
222	1	249	31	51	23	105	14	14	4	32
223	1	147	17	27	13	57	0	0	0	0
224	0	261	31	49	23	103	6	0	0	6
225	0	94	14	20	10	44	6	0	0	6
226	1	7	1	1	0	2	0	0	0	0
227	1	84	10	17	7	34	0	0	0	0
228	1	120	15	24	10	49	0	0	86	86
229	1	37	4	7	3	14	0	0	17	17
230	1	269	33	53	23	109	0	0	63	63
231	1	299	37	59	26	122	0	92	52	144
232	1	53	7	11	5	23	0	0	0	0
233	1	372	46	74	32	152	0	0	0	0
234	1	50	6	10	4	20	0	66	341	407
235	1	293	36	58	25	119	0	61	58	119
236	1	678	83	134	58	275	0	151	2,180	2,331
237	1	33	4	7	3	14	0	14	86	100
238	1	239	29	47	20	96	0	106	80	186
239	1	252	29	50	21	100	0	421	104	525
240	1	529	65	104	45	214	0	0	185	185
241	1	788	97	156	67	320	0	228	210	438
242	1	252	29	50	21	100	0	0	0	0
243	1	572	70	113	49	232	0	0	92	92
244	1	558	69	110	48	227	0	4	2	6
245	1	256	31	50	22	103	0	58	52	110
246	1	51	6	10	4	20	0	0	0	0
247	1	73	9	14	6	29	0	18	16	34
248	1	99	12	19	8	39	0	66	59	125
TOTAL		130,677	16,066	26,479	12,356	54,901	14,244	18,942	40,654	73,840
IGA Area		50,400	7,184	10,082	5,321	22,587	8,518	14,911	27,186	50,615

This appendix includes detailed cost estimates for Alternative 12, the Grandview Connection (southern alignment). The cost estimate includes right of way acquisition and common unit costs and work descriptions. The cost estimate includes a planning level cost estimate of \$3,165,000 for the portion of this alignment along High Llama Lane north of US 160. The remainder of the alignment of this alternative is estimated to cost \$18,350,000. This cost is detailed on the following pages and is shown in Figure B1 as "Option B." These costs are based on the following assumptions:

- 100 foot Right of Way
- 60 foot pavement width (four 12-foot travel lanes with two 6-foot shoulders)
- Length = 2.13 miles
- One bridge span of 745 feet (approximately \$4,500,000)
- Total Estimated Cost = **\$18,350,000**



OPTION B
Grandview - Ewing Mesa Connecting Roadway
Preliminary Engineer's Estimate

	Description	Unit	Quantity	Unit Price	Amount
A.	GENERAL				
1.	Right of Way Acquisition	Ac	25	\$ 50,000.00	\$ 1,250,000.00
2.	Utility relocation (gas line)	LS	LS	\$ 300,000.00	\$ 300,000.00
3.	Mobilization	LS	LS	\$ 500,000.00	\$ 500,000.00
4.	Bonding (3% of contract)	LS	LS	\$ 350,000.00	\$ 350,000.00
A.	<i>Subtotal - General</i>				\$ 2,400,000.00
B.	DRAINAGE IMPROVEMENTS				
1.	Major Drainage structures	EA	4	\$ 350,000.00	\$ 1,400,000.00
2.	Minor Drainage Structures	EA	18	\$ 5,000.00	\$ 90,000.00
3.	Rip Rap roadside ditch (10,000 l.f., 0.33 cy/lf)	CY	3,333	\$ 30.00	\$ 99,990.00
B.	<i>Subtotal - Drainage Improvements</i>				\$ 1,589,990.00
C.	ROADWAY IMPROVEMENTS				
1.	Clearing & Grubbing	Ac	25	\$ 12,500.00	\$ 312,500.00
2.	Earthwork - Embankment	CY	280,000	\$ 3.00	\$ 840,000.00
3.	Earthwork - Excavation	CY	350,000	\$ 4.00	\$ 1,400,000.00
4.	Earthwork - Rock Excavation (10%)	CY	35,000	\$ 15.00	\$ 525,000.00
5.	Asphalt Pavement (12,550 CY, 6" HBP mat, 145 lb/cf)	ton	24,570	\$ 60.00	\$ 1,474,200.00
6.	Class 6 ABC	CY	12,760	\$ 27.50	\$ 350,900.00
7.	Class 2 A.B.C	CY	20,840	\$ 17.50	\$ 364,700.00
8.	Retaining Wall	PF	50,000	\$ 40.00	\$ 2,000,000.00
9.	Guardrail (Assume continual one-side)	LF	11,240	\$ 20.00	\$ 224,800.00
10.	Bridge (including abutments)	LF	750	\$ 6,000.00	\$ 4,500,000.00
C.	<i>Subtotal - Roadway Improvements</i>				\$ 11,679,600.00
D.	PROFESSIONAL SERVICES				
1.	Planning & Entitlement (4% of subtotal)	LS	LS	\$ 626,783.60	\$ 626,783.60
2.	Engineering & Admin. (12% of subtotal)	LS	LS	\$ 1,880,350.80	\$ 1,880,350.80
3.	Surveying (5% of subtotal)	LS	LS	\$ 783,479.50	\$ 783,479.50
D.	<i>Subtotal - Professional Services</i>				\$ 3,290,613.90
E.	Summary				
A.	Subtotal - General				\$ 2,400,000.00
B.	Subtotal - Drainage Improvements				\$ 1,589,990.00
C.	Subtotal - Roadway Improvements				\$ 11,679,600.00
D.	Subtotal - Professional Services				\$ 783,479.50
	10% Contingency				\$ 1,896,020.39
	Total Cost				\$ 18,349,089.89

Roadway Option B Data

length = 11,240 ft.

2.13 miles

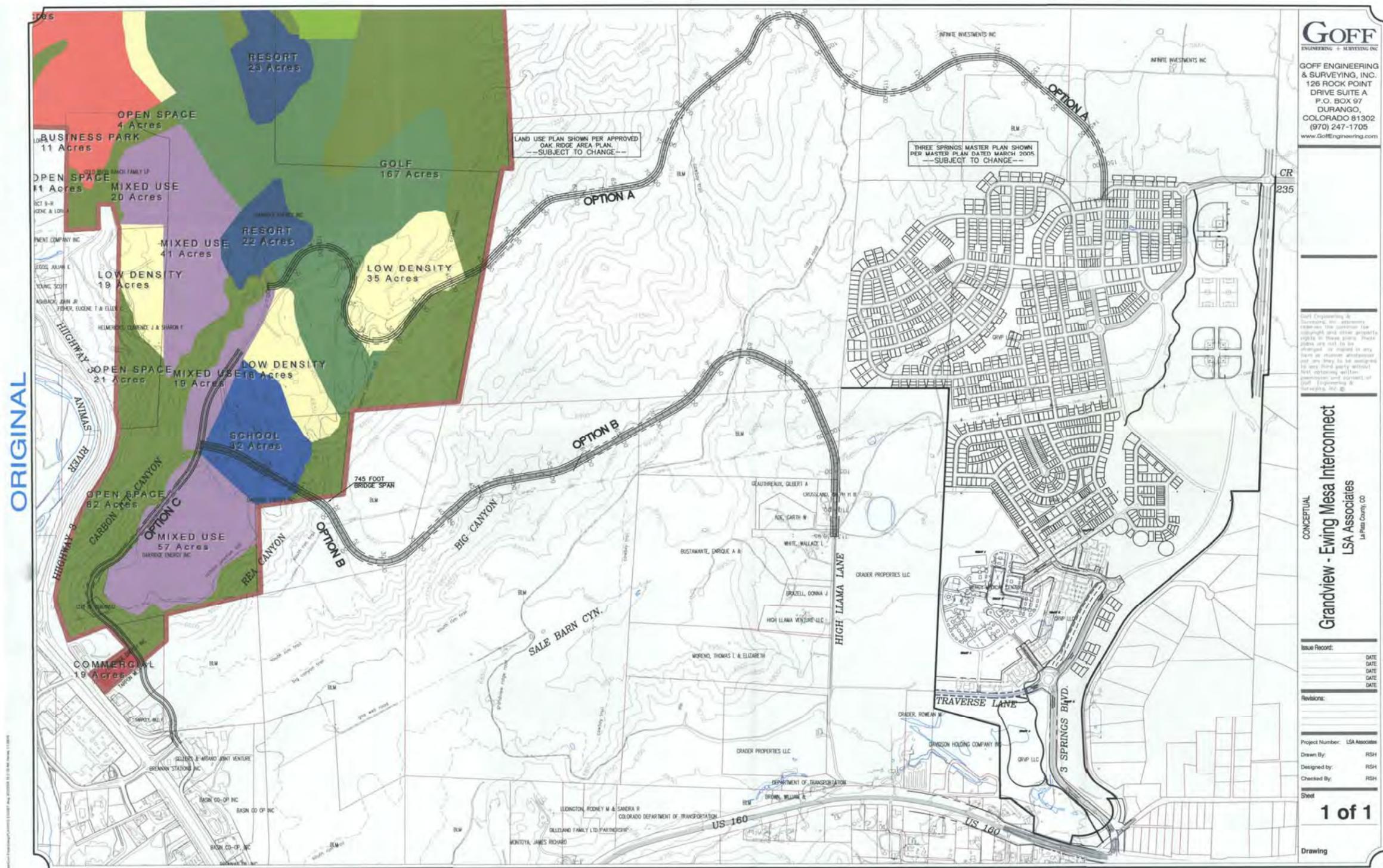
ROW width = 100 feet

60 ft. pavement width (4-12 ft. lanes)

Cost per mile = \$8,614,596 (Incl. Bridge)



FIGURE B1 – CONCEPTUAL GRANDVIEW – EWING MESA CONNECTION ALIGNMENT



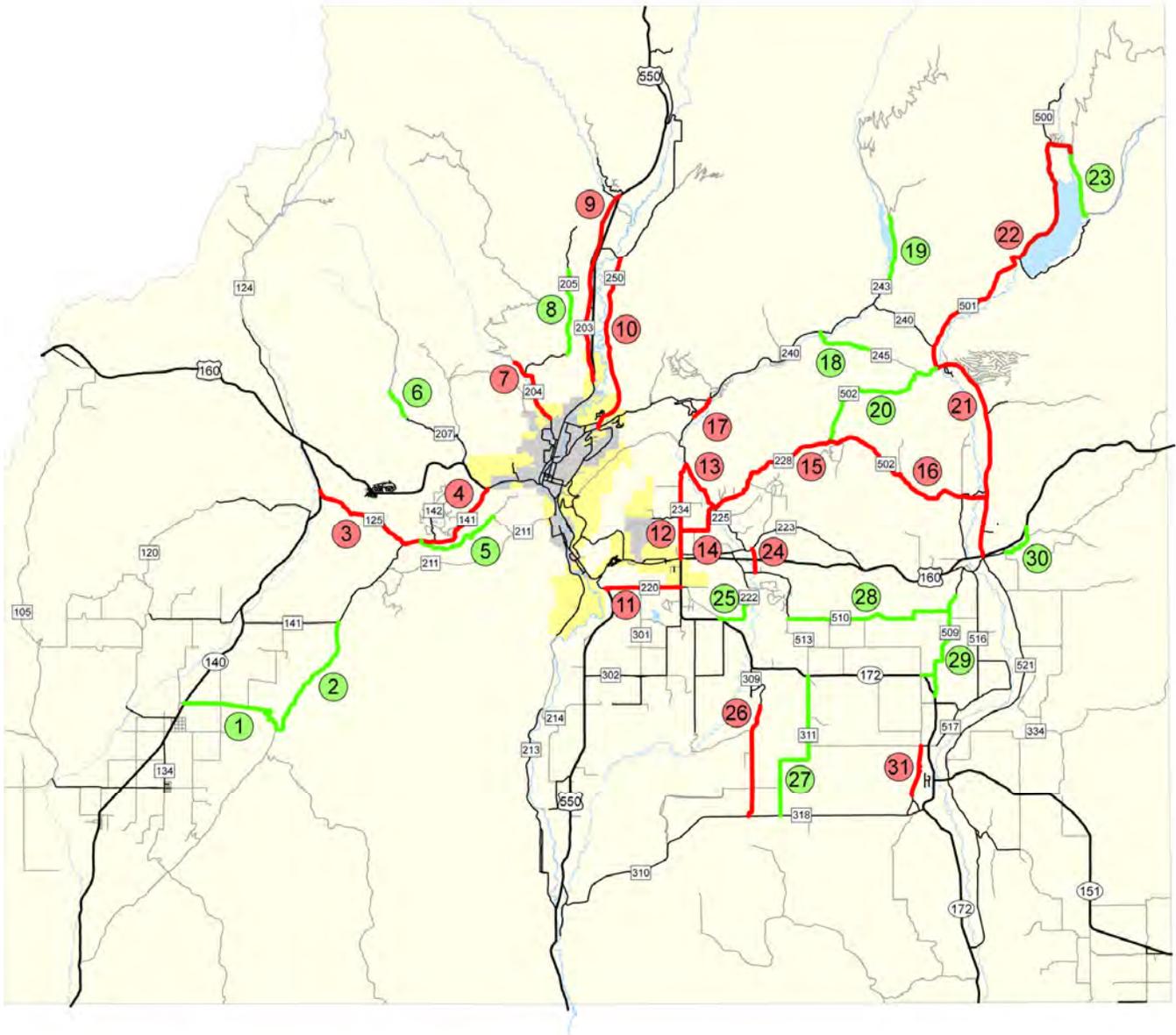
This appendix includes estimated costs for County roadway paving improvements. Figure C1 shows each paving alternative on a map with a number that corresponds to those in Table C1. Table C1 below includes details of each alternative including end points, length, and estimated cost.

TABLE C1: RECOMMENDED COUNTY PAVING IMPROVEMENTS

Map No.	Location	From	To	Length (miles)	Estimated Cost
1	CR 128	SH 140	CR 136	4.2	\$932,700
2	CR 136	CR 128	CR 141	4.8	\$482,700
3	CR 125	SH 140	CR 141	3.8	\$3,833,000
4	CR 141	CR 125	US 160	4.1	\$4,132,700
5	CR 212 extension	CR 141	CR 212	3.4	\$342,200
6	CR 207	End of pavement	Destination Ranch Rd	1.1	\$107,000
7	CR 204	Durango City Limits	National Forest	2.6	\$2,605,300
8	CR 205	CR 205B	Starwood Tr	3.1	\$310,800
9	CR 203	US 550/Durango	US 550/Hermosa	6.9	\$6,907,500
10	CR 250	CR 240	CR 252	6.5	\$6,538,800
11	CR 220	US 550	SH 172	2.8	\$2,769,600
12	CR 234	US 160	CR 225	3.5	\$3,465,500
13	CR 225	CR 228	CR 234	1.8	\$1,805,300
14	CR 228	CR 234	CR 225	2.0	\$1,972,000
15	CR 228	CR 225	CR 502	5.3	\$5,289,300
16	CR 502	CR 228	CR 501	6.7	\$8,740,000
17	CR 234	CR 240	south for approx 1 mile	0.9	\$863,200
18	CR 245	CR 240	south for approx 2 miles	2.1	\$1,027,600
19	CR 243	CR 243 end of pavement	Sawmill Rd	2.6	\$261,400
20	CR 502	CR 228	CR 501	5.6	\$558,100
21	CR 501	US 160	CR 502	8.0	\$8,008,100
22	CR 501	CR 502	FS 2274	11.4	\$11,441,500
23	CR 501	FS 2274	S. for approx 2.5 miles	2.5	\$246,000
24	New CR 223/510 alignment for relocated US 550 intersection	CR 510	CR 223	0.9	\$858,600
25	CR 222	SH 172	east for approx 1.5 miles	1.4	\$144,300
26	CR 309A	CR 318	CR 309A end of pavement	4.1	\$4,094,500
27	CR 311	CR 318	SH 172	5.9	\$594,400
28	CR 510	CR 513	CR 509	6.1	\$605,700
29	CR 509/509A	SH 172	CR 509 end of pavement	4.6	\$457,600
30	CR 526	CR 526A	US 160	1.5	\$745,000
31	New road in Candelaria Heights in Ignacio	Cedar Point Subdivision	CR 314	1.9	\$1,923,300
TOTAL				122.1	\$82,063,700



FIGURE C1: RECOMMENDED COUNTY PAVING IMPROVEMENTS



LEGEND

La Plata County	Paved Roads	Unpaved Roadway Improvements	Higher Level Paving
IGA	Highway	Lower Level Paving	Higher Level Paving
Durango City Limits	Arterial or Collector		Lower Level Paving

N
0 2 4
Miles



This appendix includes estimated costs for County intersection improvements. Figure D1 shows each intersection on a map with a number that corresponds to those in Table D1. Table D1 below includes details of each alternative including estimated costs and the source of the cost information if that information had already been estimated by another source.

TABLE D1: RECOMMENDED COUNTY INTERSECTION IMPROVEMENTS

Map No.	Location			Estimated Total Cost	Cost Source
1	SH 140	at	CR 120	\$350,000	
2	SH 140	at	CR 141	\$350,000	
3	CR 141	at	CR 212 extension	\$150,000	
4	US 550	at	CR 220	\$350,000	
5	US 550	at	CR 302	\$350,000	
6	US 550	at	CR 214	\$350,000	
7	US 550	at	CR 218	\$350,000	
8	US 550	at	CR 215	\$350,000	
9	US 550	at	CR 310	\$350,000	
10	CR 240	at	CR 234	\$425,000	County
11	CR 240	at	CR 245	\$150,000	
12	CR 234	at	CR 225	\$150,000	
13	CR 225	at	CR 228	\$150,000	
14	US 160	at	CR 222/223	\$1,000,000	County
15	US 160B	at	CR 509	\$150,000	
16	US 160B	at	CR 516	\$150,000	
17	CR 501	at	CR 240	\$350,000	
18	CR 501	at	CR 502	\$350,000	
19	SH 172	at	CR 222	\$150,000	
20	SH 172	at	CR 311/513	\$350,000	
21	SH 172	at	CR 318	\$150,000	
			TOTAL	\$6,475,000	

