

EXECUTIVE SUMMARY OF THE

FINAL REPORT

GRAHAM COUNTY/SAFFORD/THATCHER/PIMA *SMALL AREA TRANSPORTATION STUDY*

JULY 31, 2009



prepared for

GRAHAM COUNTY



SAFFORD



THATCHER



PIMA

prepared by



TABLE OF CONTENTS

TABLE OF CONTENTS	I
1.0 INTRODUCTION	1-1
1.1. SCOPE OF WORK.....	1-1
1.2. STUDY AREA OVERVIEW.....	1-2
1.3. STUDY AREA BOUNDARY	1-2
1.4. REPORT ORGANIZATION	1-4
1.5. COMMUNITY INVOLVEMENT.....	1-4
1.6. TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS	1-5
1.7. PUBLIC MEETINGS.....	1-5
2.0 INVENTORY OF EXISTING CONDITIONS	2-1
3.0 FUTURE CONDITIONS.....	3-1
3.1. SOCIOECONOMIC DATA	3-1
3.2. DEVELOPMENT ACTIVITIES.....	3-2
3.3. PLANNED STREET SYSTEM.....	3-2
3.4. FUTURE OPERATING CONDITIONS.....	3-3
3.5. DEFICIENCIES.....	3-3
4.0 EVALUATION & IMPROVEMENT PLAN	4-1
5.0 OTHER NEEDS	5-1
5.1. ENVIRONMENTAL OVERVIEW	5-1
5.2. FINANCIAL INCENTIVES/COMMUNITY PARTNERSHIPS/ JOB CREATION	5-1
5.3. REVIEW OF THE GRAHAM COUNTY TRANSIT FEASIBILITY REVIEW	5-2
6.0 EVALUATION OF IMPROVEMENTS.....	6-1
6.1. EVALUATION CRITERIA	6-1
7.0 RANKING OF PROJECTS.....	7-1
7.1. IMMEDIATE NEEDS.....	7-1

7.2. MID- AND LONG-RANGE DEFICIENCIES 7-8

1.0 INTRODUCTION

The Graham County, Safford, Thatcher, Pima Small Area Transportation Study (SATS) was initiated by Graham County, in conjunction with the Arizona Department of Transportation (ADOT), to develop a countywide, long-range multimodal transportation plan for this growing rural Arizona community. The project sponsors selected the PB Americas (PB) team to conduct this study under the direction of a Technical Advisory Committee (TAC), which included representatives from Graham County, City of Safford, Town of Thatcher, Town of Pima, Southeastern Arizona Governments Organization (SEAGO), and ADOT.

1.1. SCOPE OF WORK

Seven (7) tasks were identified in this study. The tasks and descriptions are below:

- Task 1 – Refine the Work Plan: This task presented a detailed work plan which included a scope of work, study area boundary, project schedule, and staffing requirements.
- Task 2 – Current and Future Conditions: This task required the collection and incorporation of background data and information that was used to create a picture of current and future conditions in Graham County. This working paper included an inventory of current conditions and the forecasting of future conditions and deficiencies for the horizon years 2013, 2018, and 2023.
- Task 3 – First Phase of Public Involvement: This task included the first public meeting, which was held on August 7, 2008, at the Graham County General Services Building in Safford. An overview of the study, the study schedule, information on existing and future conditions, and future work task information was available for participants to review. Please see the Public Meeting Summary Reports in the Final Report appendix for detailed public meeting information.
- Task 4 – Evaluation Criteria and Improvement Plan: This task required the development of evaluation criteria and potential projects and strategies to address the needs and deficiencies identified in Task 2. In addition, a list of ranked projects was developed addressing short-, medium- and long-term improvements.
- Task 5 – Second Phase of Public Involvement: The second public meeting was held on April 28, 2009. The proposed improvement plan and projects were displayed and project information was available for distribution. Please see the Public Meeting Summary Reports in the Final Report appendix for detailed public meeting information.
- Task 6 – Final Draft Report: A draft report was created which documented the information, evaluation and recommendations from Tasks 2 & 4. In addition, the Public Meeting Summary Reports were included.

- Task 7 – Final Report: The report was finalized after the draft report was reviewed and approved by the TAC.

1.2. STUDY AREA OVERVIEW

Located in the Gila Valley, Graham County encompasses 4,630 square miles; which includes 22 square miles of water. The geography of the region comprises mostly high desert plains surrounded by the Gila, Pinaleno, Galiuro and Santa Teresa Mountains. The three incorporated communities of Safford, Thatcher, and Pima represent the principal center of population and economic activity in the County. The County also includes part of the San Carlos Indian Reservation. While agriculture has traditionally been a mainstay of the region, it has evolved into a center for light industry as well as the retail and service hub in Southeastern Arizona.

The major highways in the area are United States (US) Highway 191, which runs north-south through the City of Safford, and US Highway 70, which runs east-west and connects the cities of Safford, Thatcher, and Pima. National protected areas in the region include the Coronado National Forest and Gila Box Riparian National Conservation Area.

1.3. STUDY AREA BOUNDARY

The study area boundary for the Graham County SATS is shown in Figure 1-1. The limits are:

- West: San Carlos Indian Reservation border. (SATS to include the Town of Geronimo.)
- East: to include eastern US 191/US 70 junction
- South: to include SR 266/US 70 junction
- North: San Carlos Indian Reservation border

1.4. REPORT ORGANIZATION

This report is organized into seven sections, as follows:

1.0 Introduction

Provides background information and sets the stage for the study.

2.0 Inventory of Existing Conditions

Background data for the region is presented and used to create a picture of the current socioeconomic and transportation characteristics of the region.

3.0 Future Conditions

This section details the planned residential and employment changes and evaluates their traffic impact to the regional transportation network in horizon years 2013, 2018 and 2023.

4.0 Evaluation and Improvement Plan

This section describes the needs and deficiencies and details the evaluation of improvements to address such needs. A description of recommended improvement projects is also provided.

5.0 Other Needs

This section details an environmental overview, recommends financial incentives/community partnerships/job creation as tools for managing growth, and provides a review of the Graham County Transit Feasibility Review Study.

6.0 Evaluation of Improvements

This section details the evaluation criteria creation and review process that will be used to evaluate improvement projects in section 7.0.

7.0 Ranking of Projects

Using the evaluation criteria created and approved in section 6.0, a ranking of improvement projects, both motorized and non-motorized, was created.

1.5. COMMUNITY INVOLVEMENT

The Graham County SATS public involvement activities provided means for key stakeholders and members of the public to have meaningful involvement in the development of all recommendations. Public involvement activities included TAC meetings and Public Meetings.

1.6. TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS

The Technical Advisory Committee was formed when the study began and included key stakeholders from throughout Graham County and ADOT. Meetings were held to discuss the accuracy and completeness of data collection, as well as to review recommendations.

Members of the TAC included:

- Will Wright, Graham County
- Michael Bryce, Graham County
- Drew John, Graham County
- Jim Palmer, Graham County
- Randy Petty, City of Safford
- Robert Porter, City of Safford
- Heath Brown, Town of Thatcher
- Gerald Schmidt, Town of Pima
- Sharon Mitchell, SEAGO
- Charlene FitzGerald, ADOT
- Reza Karimvand, ADOT
- Bill Harmon, ADOT
- Robert Obregon, ADOT
- Tom Engel, ADOT
- Art Baeza, ADOT
- Paul David, ADOT
- Jess Segovia, PB
- Jennifer Love, PB
- Krishna Anantuni, PB

1.7. PUBLIC MEETINGS

Two public meetings were held to provide members of the public information about the study and to share their comments and suggestions regarding this effort to improve Graham County's transportation system. The meetings included oversized color graphics of maps and tables/charts, comment cards for the public to share their input, and TAC and consultant team members present to address any questions or concerns.

The first meeting, held on August 7, 2008, shared the results of Task 2 - Existing and Future Conditions. The second meeting was held on April 28, 2009 and presented the recommended improvements. Please see the Public Meeting Summary Reports in the appendix for detailed public meeting information.

2.0 INVENTORY OF EXISTING CONDITIONS

This section of the Graham County, Safford, Thatcher, and Pima Small Area Transportation Study provides background data for the region and is presented and used to create a picture of the current and future socioeconomic and transportation characteristics of the region.

The Inventory of Existing Conditions establishes the roadway characteristics of the study area roadways, presents accident history, current funding information, traffic volumes, regional environmental justice, existing roadway level of service, and an existing conditions traffic model.

Existing Conditions

The existing conditions chapter establishes the baseline conditions of the Graham County region for this study. It provides a review of the current operational conditions as well as a basis for projecting future conditions. The measures of existing conditions which have been selected for documentation and analysis include:

- Land use
- Socioeconomic data
- Environmental justice considerations
- Existing Street System
- Other modes of transportation
- Traffic crash data
- Existing traffic and operating conditions

3.0 FUTURE CONDITIONS

The Graham County area population and employment has steadily increased over the past twenty years and will continue to grow in the future. The impact of this growth on the transportation system needs to be quantified so that necessary improvements can be identified and programmed for future projects. The future horizon years for this transportation study are 2013, 2018, and 2023. This section presents estimates of the anticipated residential and employment changes and projects the traffic impact to the regional transportation network based on growth estimates. The estimates developed for the study were gathered from local planning agencies during a period of significant economic growth and development. In the more recent time frame (2009) some of these proposed developments failed and many have been scaled back. Although this data represents the potential for development, in retrospect, the timing of the traffic impacts may be extended as a result of the current, more moderate growth climate.

3.1. SOCIOECONOMIC DATA

The primary measure of growth used in this study was population and employment. The current 2008 population of the Graham County study area is 34,270 with 10,132 employees.

The population growth in the study area by 2023 can be foreseen along the US 191 Corridor and the suburban area of Safford-Thatcher metropolitan area as a result of new subdivision developments. Most significantly, it is assumed that the planned Sierra Del Sol Development located on the east side of US 191, south of the study area, will cause a dramatic increase in population in the southern portion of the study area.

The total employment projection for the entire study area by the Year 2023 is 20,456. The employment growth by the year 2023 will focus on the areas north of Safford with the anticipation of Freeport-McMoRan mining expansion, River View development and Greenberg II development, as well as areas along the US 191 corridor with the proposed residential and commercial development.

3.2. DEVELOPMENT ACTIVITIES

New developments are associated with an increase in roadway traffic volumes. If the existing roadway capacity is not sufficient to accommodate the additional traffic, it will cause congestion and other problems. To identify whether a proposed development will have a significant traffic impact; a traffic impact analysis should be conducted. According to the ITE Manual, generally, a comprehensive traffic analysis should be completed whenever a development is expected to generate 100 or more new inbound or outbound trips during the peak hours.

With the new residential and commercial development that is anticipated, it is projected that Graham County will have an increase in the use of its transportation network. The proposed new subdivision developments along the US 191 Corridor and the Safford-Thatcher-Pima urbanized area will result in increased traffic volumes.

3.3. PLANNED STREET SYSTEM

In order to perform an analysis of future traffic operations for the final horizon year 2023, a future base street system must be established. The future base network was obtained by updating the existing street system with the schedule of all the confirmed projects listed in the current transportation improvement program (TIP) as well as the previous 1998 Graham County SATS recommended projects. The transportation improvement projects that were incorporated in the future base network are listed in Table 3-1.

Table 3-1: TIP in the Study Area

Name	Location	Fund Source	Type of Work	Program Year
Discovery Park	Safford	ENHNCMNT	Enhancements	2008
8th Ave Bridge	8th Ave – Gila River Bridge, Safford	HPP/BR	Bridge Construction	2008
8th Ave Bridge	8th Ave – Gila River Bridge, Safford	BR/SEC 115	Bridge Design	2008
Peterson Wash	Safford-Bryce Road	HES	Widen to 4 lanes	2008
20th Ave Sidewalks	20th Ave from US 70 to Relation St	TE	Sidewalk, Multi-Use Path, and Street Lights Construction	2010
US 191	Ten Ranch to Owl Canyon (SEG III)	STP	Construct Parallel Roadway	2008
US 191	Dial Wash to Ten Ranch (SEG II)	STP	Construct Parallel Roadway	2011
US 191	I-10 to Jct US 70 *(SEG IV – 8th St)	State	Widen to 4 lanes	NP
US 191	8th St – US 70	State	Upgrade to 4 lanes	NP
US 70	Hollywood Dr to Solomon	State	Widening to 4 lanes with a continuous center left-turn lane	2011

Source: ADOT and Southeastern Arizona Governments Organization (SEAGO)

3.4. FUTURE OPERATING CONDITIONS

A review of future traffic conditions involved the capacity analysis of roadway segments with projected traffic volumes. The results of the analysis are expressed in terms of Level of Service (LOS).

To examine the operating conditions of arterial street segments, the daily traffic volumes are compared to capacity threshold volumes for various types of roadways.

Future capacity of the planned street system was calculated to account for all the roadway improvements to be completed at the future target year. The 2013, 2018, and 2023 forecasted traffic volumes were compared with the capacity thresholds to obtain the operating condition of the roadways. Roadway segments that are predicted to be at or over capacity for 2013, 2018, and 2023 were identified. The modeling of the roads for level of service assumed a minimum of a 2-lane paved road being in place.

3.5. DEFICIENCIES

Based on the analysis of projected operating conditions, deficiencies in the future roadway network were identified. These were used in the subsequent section of this study which recommended improvements to the regional transportation network.

According to Highway Capacity Manual 2000 (HCM 2000), LOS C is recommended as the acceptable LOS in the rural areas and LOS D in the urban areas. The roadway capacity deficiency therefore is defined when a roadway segment experiences LOS D or worse for rural area and LOS E or worse for urban area in this study.

The roadway segment of US 191 south of Armory Road to SR 266 was programmed to be widened as a 4-lane divided highway after year 2020.

Other major roadway deficiencies within the Graham County study area are summarized in Table 3-2.

Table 3-2: Roadway Capacity Deficiencies Summary

ID	Roadway	Segments		2007	2013	2018	2023
		From	To	LOS	LOS	LOS	LOS
1	US 191	US 70	11th St	D	F	F	F
2	US 191	20th St	Discovery Park Blvd	B	B	C	E
3	US 191	Discovery Park Blvd	Armory Rd	B	B	C	F
4	US 191	Armory Rd	Swift Trail	B/C*	B/E/F*	F	E
5	US 191	Swift Trail	Artesia Rd	B	D	E/F*	C/D*
6	US 70	Study Limit	Bryce Eden Rd	B	C	C/D*	D
7	US 70	Bowie Ave	San Jose Rd	C	D	D	E
8	US 70	San Jose Rd	US 70/US 191 Split	C	C	C	D
9	8th Ave	Airport Rd	1st St	B	C	C	D
10	14th Ave	Relation St	20th St	C	C/D*	D	D/E*
11	20th Ave	Relation St	26th St	C	E	E	F
12	8th St	20th Ave	14th Ave	D	D/E*	E	E
13	Relation St	20th Ave	14th Ave	C	D	E	E
14	Lone Star Rd	US 191	US 70	A	B/C*	B/D*	C/E*
15	Discovery Park Blvd	14th Ave	US 191	C	B	D	E
16	Armory Rd	US 191	Stockton Rd	B	B	E	E
17	Lebanon Rd	20th Ave	US 191	N/A	C	C	D
18	Quail Trail	US 191	Stockton Rd	B	C	D	E
19	Artesia Rd	US 191	East Side	B	C	D/E*	E/F*
20	Stockton Rd	Armory Rd	Powerline Rd	B	B	E	E
21	Stockton Rd	Quail Trail	Artesia Rd	B	C	C	E

/ # *: Part of the segment has a better LOS.

4.0 EVALUATION & IMPROVEMENT PLAN

Introduction

The Graham County, Safford, Thatcher, Pima Small Area Transportation Study examines current and projected travel demand to provide recommendations for future transportation improvements. The study area encompasses Safford, Pima, Thatcher, and Graham County. Working Paper #1 evaluated existing and future conditions throughout the study area. Working Paper #2 used the data collected and generated in Working Paper #1 to make recommendations for improved transportation facilities. It includes identification of needs and deficiencies, evaluation of improvements to address such needs, and a ranking of projects. The potential improvement projects are evaluated based on the criteria set with input from the TAC, and ranked as short-, mid-, and long-term programs. The rankings of projects are based on priorities, costs, and financing options.

Mobility Needs

Mobility needs are related to the circulation and access requirements of the existing and future developments. It is evaluated in terms of access to and travel time between activity centers.

As the major developments are expected along US 191 Corridor and the suburban area of the Safford-Thatcher-Pima metropolitan area, access management will be required in these areas. Also, access by different modes will be needed to facilitate multimodal transportation circulation. In terms of circulation, street connectivity was identified as a concern by some of the residents. They indicated a need for an extension of certain streets to provide connection to a nearby street and to new corridors.

5.0 OTHER NEEDS

5.1. ENVIRONMENTAL OVERVIEW

The environmental justice issues are related to the environmental and human health conditions of minority and low-income population. In Graham County, according to Census 2000, 32.9 percent of the Graham County residents were minorities and nearly 21 percent of the population lived below the poverty level. Approximately 16 percent of the population was 60 years or older. In the study area, based on the census data, no general clustering of minority and low-income population was identified. The equitable distribution of transportation services to provide access to jobs and services to all, including minority and low-income populations, must be provided.

Other environmental issues which related to the noise and air pollution corresponding to traffic congestion were also identified by the residents. Communities adjacent to the US 191 corridor from Lebanon Road to Artesia Road were identified by people as affected by the increased traffic.

5.2. FINANCIAL INCENTIVES/COMMUNITY PARTNERSHIPS/ JOB CREATION

Financial incentives such as travel allowances, transit, and ridership benefits are required to encourage the use of alternative modes of transport. Currently, many park and ride facilities are used by the Freeport McMoRan mine employees. The mine also offers a shuttle service for employees. Partnerships with the governmental organization at the state and city level, elected officials, community, and other non-profit organization should be strived to get support for transport related projects. Transportation improvement should support job creation and thus by increasing access to good jobs, help the economic development of the region. Access to underutilized land would be helpful in the development of such land, therefore increasing the opportunity for economic growth and job creation.

5.3. REVIEW OF THE GRAHAM COUNTY TRANSIT FEASIBILITY REVIEW

The Graham County Transit Feasibility Study identified transit dependent populations, the need for connections between major community activity centers, and funding alternatives. The study identified a substantial demand for transit in this region and recommended operating alternatives. Unfortunately, the complexities of the funding and management issues were not resolved and no transit service was implemented based on this study.

The study recommended that some sort of variable route operating on a fixed schedule would be preferable to meet the identified travel demand. Specifically, they suggested the creation of a deviated fixed route service on a predetermined time schedule, but with the provision for the vehicle to follow any route needed to pick up individuals along the way and make it to the fixed points on schedule. At this point, the TAC and local government staff decided to revisit the implementation phase in order to bring transit services to Graham County after a specific period of time.

6.0 EVALUATION OF IMPROVEMENTS

6.1. EVALUATION CRITERIA

The evaluation measures are a list of factors that should be considered in the review of a potential improvement project. The measures are included in the project descriptions to identify potential benefits, impacts, and constraints. More detailed analysis of the measures would be required during the concept development and design phase of a project. Evaluation criteria outline both qualitative and quantitative factors which are used to evaluate potential projects. The application of the criteria may vary depending on the category of road. Initially, a list of evaluation criteria was developed to provide direction to the TAC in identifying the most applicable and significant criteria for use in this study. This criterion is provided below.

Cost

Construction cost estimates will be calculated for each potential improvement. The costs are planning level costs based on a unit cost for each project type. Costs are a major factor in establishing priorities for improvements and are used to compare to available revenue.

Right of Way Impacts

The need for new right of way for an improvement should be determined as early as possible in the project development process since the acquisition of right of way typically takes longer than the design and construction. This is a qualitative measure that identifies if additional right of way is needed for a project.

Building Acquisitions

This is a quantitative measure that documents the number of buildings expected to be acquired as part of the improvement. The number is a conservative estimate at the planning stage.

Relief of Congestion

Relief of congestion is a quantitative measure that compares the base condition level of service with the LOS after the improvement. This measure gives an indication of the overall impact of the improvement on the area transportation system.

Traffic Service

This is a measure of the projected traffic volumes that an improvement is expected to attract. The description of each improvement will include the daily traffic volume.

Mobility and Accessibility

This is a qualitative measure of the project's ability to improve the circulation in an area and provide access for new developments. Its will be measured in terms of improved travel time between activity centers.

Engineering Challenges

There can be unique conditions that must be overcome in order to develop a feasible project. These often require special design features in order to construct a project. Engineering challenges are identified in the project descriptions so that they can be used in the prioritization of projects. Engineering challenges could include drainage patterns, terrain, railroad crossings, and utilities.

Other criteria to be considered are:

- Public development goals
- Private development responsibilities
- Level of service
- Accident rates
- Environmental issues
- Historical preservation
- Community support
- Funding prospects

After consultation with the TAC members, the following evaluation criteria and priority levels were identified for use, as shown in Table 6-1:

Table 6-1: Evaluation Criteria

Planning Factor	Goal	Criteria
Safety	Maintain and enhance safety for all transportation system users	Improve safety at high incident locations
Level of Service	Relieve congestion and improve mobility	Improve delay at intersections and roadway segments by both direct improvements and alternate or relief routes
		Improve roadway access management
Regional Connectivity	Create a network which provides for mobility and accessibility accommodating local needs as well as connectivity throughout the region for both personal mobility and freight	Improve multimodal network connectivity, including parallel or alternative routes to facilitate mobility for incident management
		Increase modal choices and improve mobility options
		Supports vital regional industry
Conservation and Preservation	Protect the open space, farmland, historic areas and critical environmental areas	Minimize impact to farmland and environmentally sensitive areas (biological, cultural, scenic)
Engineering Challenges	Avoid extreme terrain and other cost-excessive engineering concepts to make the best use of public funds to meet the long-term multimodal transportation needs of the region	Provide cost effective transportation improvements
		Encourage context-sensitive solutions that fit with the physical setting
		Avoid significant impact to floodplains, drainage features, and flood control structures

7.0 RANKING OF PROJECTS

All of the projects identified from the capacity analysis, input from TAC members, and public involvement, are categorized into three timeframes according to the recommended evaluation criteria described above. The actual implementation of projects will depend on a number of factors including available funding, cost sharing, and joint participation and development contributions. It is important to note that the recommended motorized and non-motorized projects should be implemented using complete streets guidelines to ensure that the projects support future transit investment.

7.1. IMMEDIATE NEEDS

Projects to be included in the 2008-2013 five-year program, with type of project, costs, and financing options, are shown in Table 7-1 and in Figure 7-1 through Figure 7-4.

Non-motorized projects such as sidewalk and multi-use path projects were assumed to be completed along with associated roadway widening. The construction costs for some projects were provided by Safford, Thatcher and Graham County. Construction costs for the rest of the projects were calculated using unit prices and guidelines provided by Safford.

Table 7-1: Short-Term Recommended Improvement Projects 2008-2013

Item Number	Project	Location	Type of Improvement	CIP Project	Cost
1	US 191 between 11th St and US 70 – restripe to 5 lanes	Safford	Restriping		\$19,834
2	US 191 between Armory Rd and Swift Trail – widen to 4 lane highway	Graham County	Widening		\$9,379,791
3	US 191 between Swift Trail and Artesia Rd- widen to 4 lane highway	Graham County	Widening		\$4,750,123
4	US70 between Bowie Ave and San Jose Rd - widen to 3 lane highway	Graham County	Widening		\$4,058,701
5	Hollywood Rd – widen to 4 lanes from Route 70 to east city limits	Safford	Widening	Yes	\$1,997,745
6	Relation St – widen to 4 lanes from 14th Ave to 20th Ave	Safford	Widening	Yes	\$1,209,683
7	8th St – widen to 3 lanes from 8th Ave to 20th Ave	Safford	Widening	Yes	\$4,759,950
8	20th Ave – widen to 5 lanes from Relation St to Discovery Park Blvd	Safford	Widening	Yes	\$4,167,586
9	Discovery Park Blvd– widen to 5 lanes from US 191 to 20th Ave	Safford	Widening	Yes	\$4,167,586
10	1st St – widen to 5 lanes from 8th Ave to 20th Ave	Safford	Widening	Yes	\$3,051,118
11	1st Ave (Thatcher) – widen to 3 lanes from US 70 to 8th St	Thatcher	Widening	Yes	\$600,000
12	Allred Ln Widening	Thatcher	Widening	Yes	\$625,000
13	8th Ave – widen to 4 lanes from City of Safford limits to Safford-Bryce Rd	Graham County	Widening		\$2,638,540
14	US 70 14th Ave-Safford (MP338)	Safford	Intersection		\$350,000
15	US 191 MP118+ (Armory Rd)	Safford	Intersection		\$350,000
16	US 191 MP119+ (Discovery Park Blvd)	Safford	Intersection		\$350,000
17	US 191 MP114+ (SR366/Swift Trail)	Safford	Intersection		\$350,000
18	SR 366 MP118+	Safford	Intersection		\$350,000
19	20th Ave at 8th St	Safford	Intersection		\$350,000
20	Main St at 3rd Ave	Safford	Intersection		\$350,000
21	8th St at 14th Ave	Safford	Intersection		\$350,000
22	US 191 at 8th St	Safford	Intersection		\$350,000
23	8th Ave at US 70	Safford	Intersection		\$350,000
24	8th Ave at 8th St	Safford	Intersection		\$350,000
25	8th Ave at Airport Rd/Safford Bryce Rd	Safford	Intersection		\$1,000,000
26	Relation St at 14th Ave	Safford	Intersection		\$350,000
27	Hollywood Rd – traffic signal at Route 70	Safford	Intersection	Yes	\$350,000
28	Relation St – traffic signal at 20th Ave	Safford	Intersection	Yes	\$350,000
29	Traffic signal at Lone Star Ln and US 191	Safford	Intersection		\$350,000
30	Stop sign at 11th Ave and 8th St	Safford	Intersection		\$350,000

Table 7-1: Short-Term Recommended Improvement Projects 2008-2013 (continued)

Item Number	Project	Location	Type of Improvement	CIP Project	Cost
31	US 70 at MP337 (Church St)	Thatcher	Intersection		\$350,000
32	Reay Ln at Safford Bryce Rd	County	Intersection		\$350,000
33	Main St (US 70) at College Ave	Thatcher	Intersection		\$350,000
34	Main St (US 70) at Stadium Ave	Thatcher	Intersection		\$350,000
35	Reay Ln/US 70 traffic signal or roundabout	Thatcher	Intersection	Yes	\$1,000,000
36	20th St – new 4 lane wide roadway from 17th Ave to 20th Ave	Safford	New Roadway	Yes	\$602,649
37	26th St connection to US 191	Safford	New Roadway	Yes	\$714,179
38	Reay Ln - Multi-Use Path from Norton Rd to Golf Course Rd	Thatcher	Multi-Use Path		\$466,667
39	Stadium Ave - Multi-Use Path from US 70 to Fry Mesa Rd	Thatcher	Multi-Use Path	Yes	\$466,667
40	8th St - Multi-Use Path from Reay Ln to Thatcher east City Limit	Thatcher/Safford	Multi-Use Path	Yes	\$466,667
41	Relation St - sidewalk from US 191 to west Safford City Limit	Safford	Sidewalk		\$320,000
42	20th Ave - sidewalk from US 70 to Discovery Parkway	Safford	Sidewalk		\$320,000
43	8th St - sidewalk from US 70 to 20th Ave	Thatcher/Safford	Sidewalk		\$320,000
44	1st Ave (Thatcher) - sidewalk from 8th St north to Church St	Thatcher	Sidewalk		\$160,000
45	1st Ave (Thatcher)/Union Canal Bridge Widening	Thatcher	Bridge Widening	Yes	\$100,000
Total Project Cost					\$54,367,486

Figure 7-1: Short-Term Projects 2008-2013

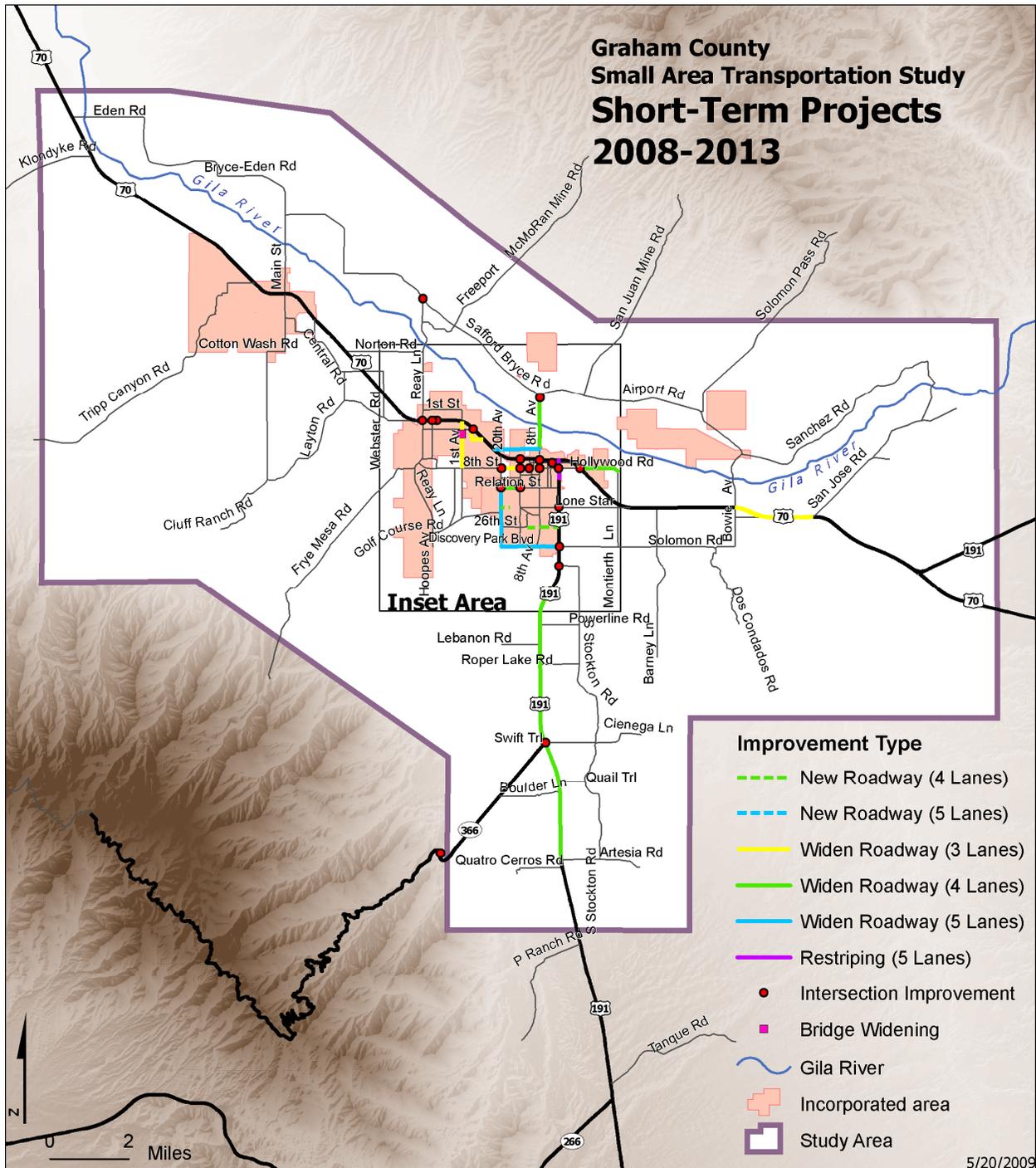


Figure 7-2: Short-Term Projects 2008-2013 (Inset)

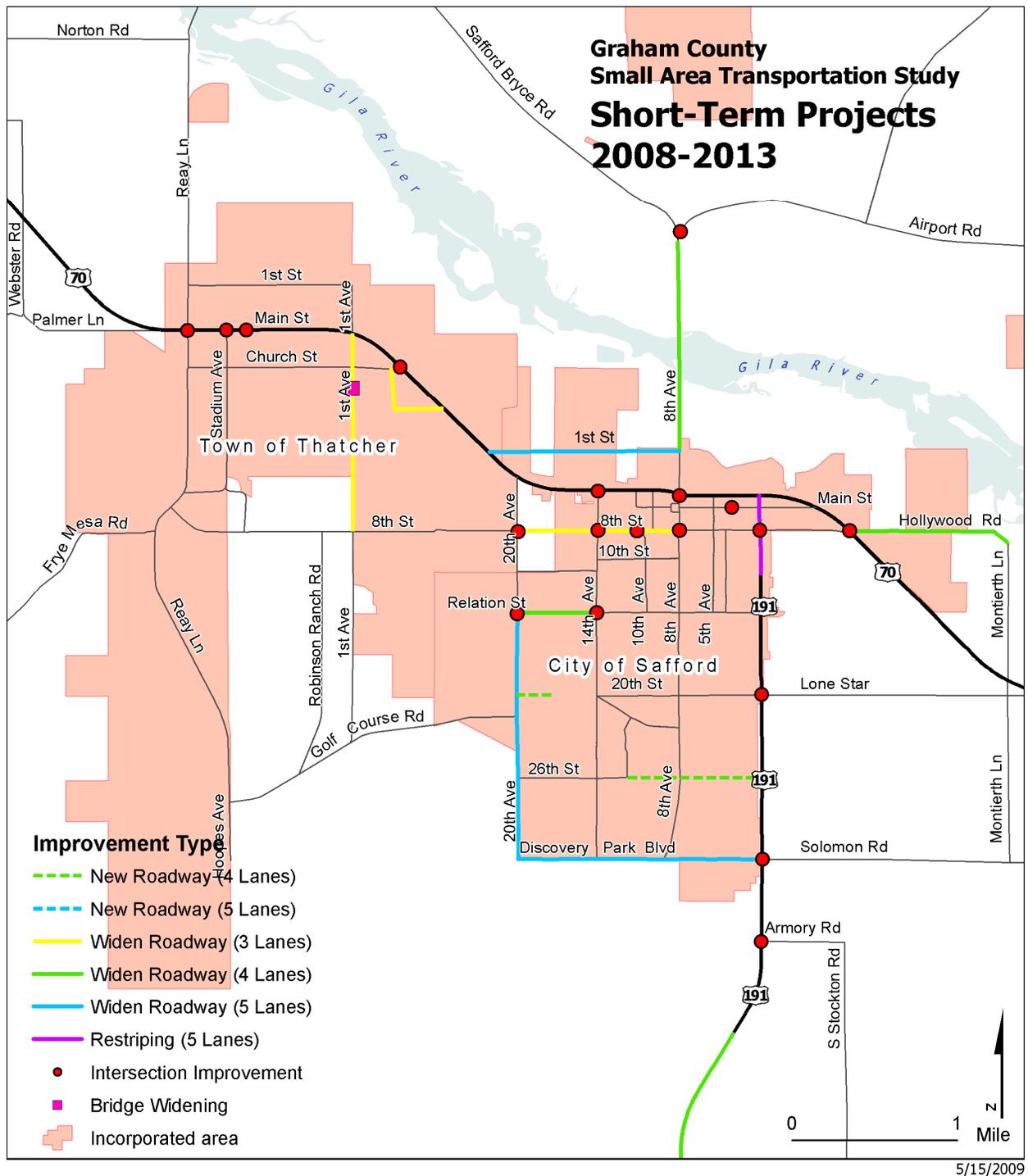


Figure 7-3: Short-Term Non-Motorized Projects 2008-2013

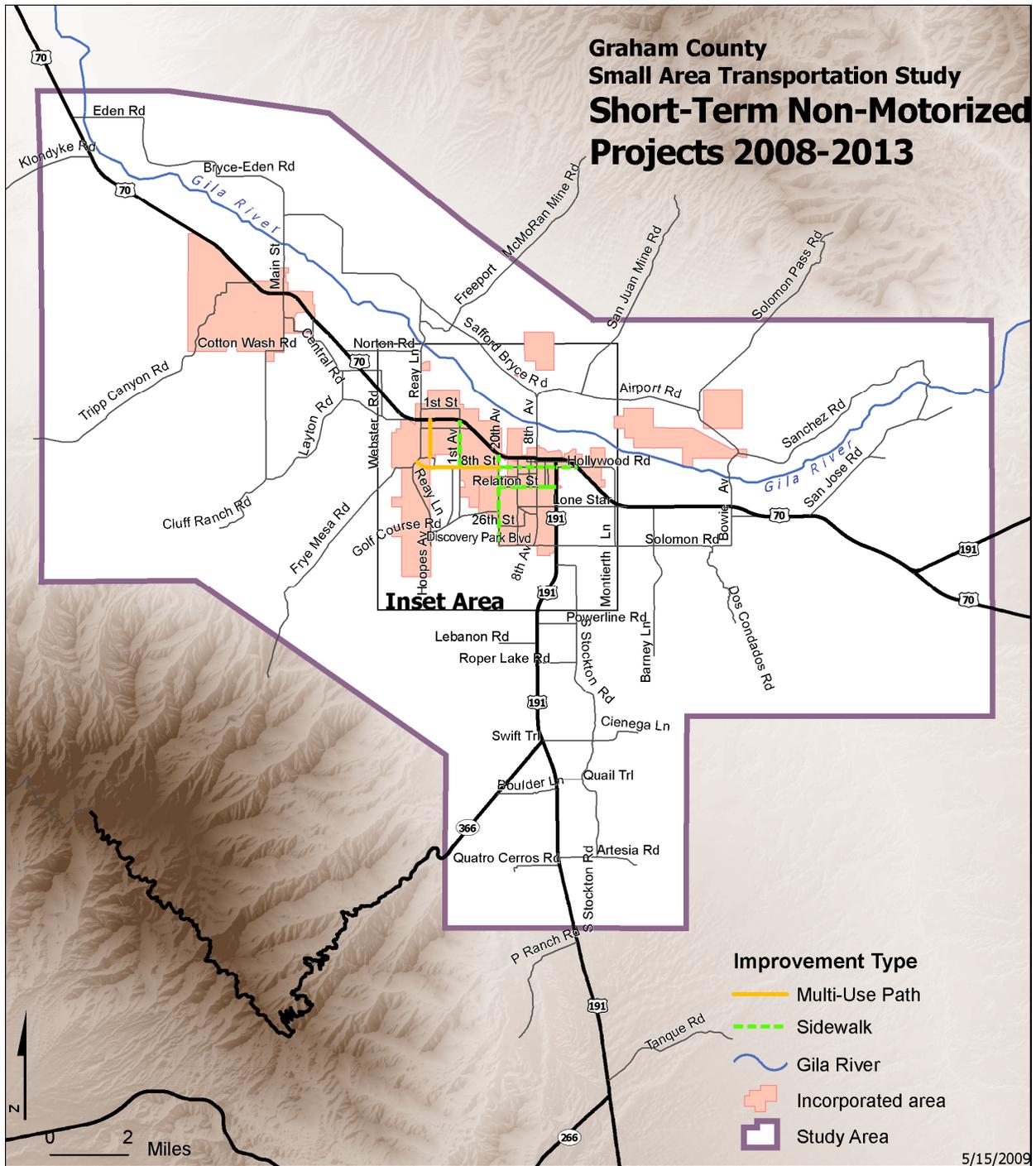
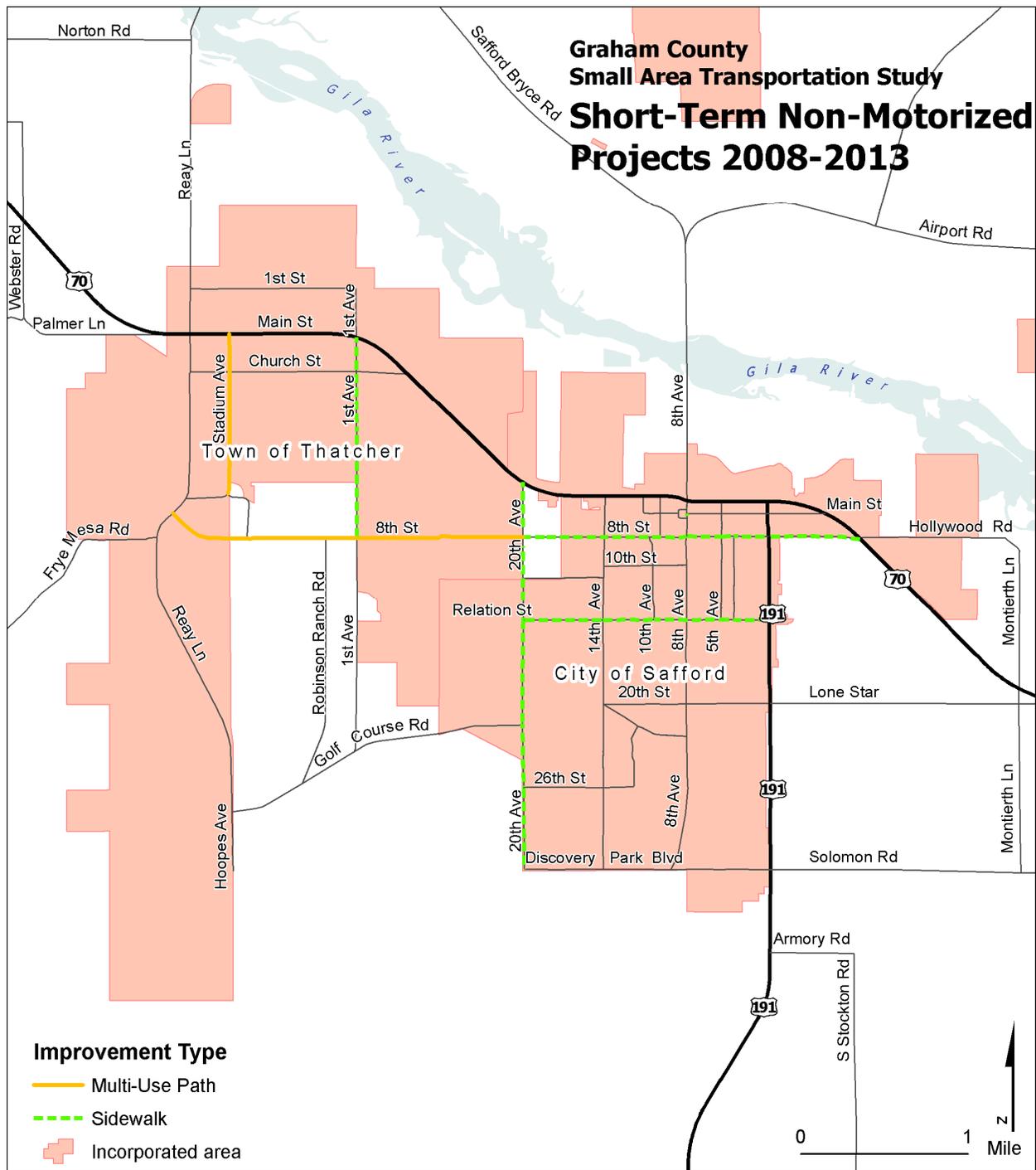


Figure 7-4: Short-Term Non-Motorized Projects 2008-2013 (Inset)



5/18/2009

7.2. MID- AND LONG-RANGE DEFICIENCIES

Projects to be included in the 2013-2018 five-year program (mid-range) and 2018-2023 (long-range) five-year program with type of project, costs, and financing options are shown in Table 7-2 and 7-3, as well as in Figure 7-5 through 7-12.

Non-motorized projects such as sidewalk and multi-use path projects were assumed to be completed along with associated roadway widening.

Table 7-2: Mid-Term Recommended Improvement Projects 2013-2018

Item Number	Project	Location	Type of Improvement	CIP Project	Cost
1	US 70 between Study limit and Bryce-Eden Rd - add a center turn lane	Safford	Graham County		\$13,480,222
2	Armory Rd between US 191 and Stockton Rd – widen to 3-lane section	Safford	Widening		\$614,367
3	Quail Trail between US 191 and Stockton Rd - add one lane in each direction	Safford	Widening		\$962,873
4	Artesia Rd from US 191 to East - add one lane in each direction	Safford	Widening		\$2,888,619
5	Stockton Rd between Armory Rd and Powerline Rd- add one lane in each direction	Safford	Widening		\$2,805,934
6	14th Ave – widen to 4 lanes from 20th Street to Highline Canal	Safford	Widening	Yes	By developer
7	14th Ave – widen to 4 lanes from Highline Canal to 24th St	Safford	Widening	Yes	\$618,252
8	14th Ave – widen to 4 lanes from 26th St to 30th St	Safford	Widening	Yes	\$701,085
9	14th Ave – widen to 4 lanes from 30th St to Discovery Park Blvd	Safford	Widening	Yes	\$402,870
10	26th St – widen to 4 lanes from 12th Ave to 20th Ave	Safford	Widening	Yes	\$1,313,009
11	8th Ave – widen to 4 lanes from 26th St to Discovery Park Blvd	Safford	Widening	Yes	\$722,345
12	8th Ave – widen to 4 lanes from 8th St to Relation St	Safford	Widening	Yes	\$416,764
13	8th St – widen to 4 lanes from US 191 to 8th Ave	Safford	Widening	Yes	\$305,591
14	Golf Course Rd – widen to 4 lanes from 800 feet west Of 20th Ave to East CL	Safford	Widening	Yes	\$503,453
15	Reay Ln – widen to 3 lanes from US 70 to Church St	Thatcher	Widening	Yes	\$610,000
16	8th St – widen to 3 lanes from 20th Ave to 1st Ave	Thatcher	Widening	Yes	\$2,100,000
17	East Church St extension	Thatcher	New Roadway	Yes	\$1,700,000
18	Relation St and 8th St connection	Thatcher	New Roadway	Yes	\$1,150,000
19	Reay Ln Railroad Crossing Improvements – US 70 to Church St	Thatcher	New structure	Yes	Included in Reay
20	Golf Course Rd - Multi-Use Path from Safford City limits to Reay Ln	Graham County	Multi-Use Path		\$600,000
21	8th Ave - sidewalk from 1st St to 26th St	Safford	Sidewalk		\$320,000
22	14th Ave - sidewalk from US 70 to Discovery Parkway	Safford	Sidewalk		\$320,000
23	Traffic signal at US 191 and Artesia Rd	Graham County	Intersection		\$450,000
Total Project Cost					\$32,985,384

Table 7-3: Long-Term Recommended Improvement Projects 2018-2023

Item Number	Project	Location	Type of Improvement	CIP Project	Cost
1	US70 between Bowie Ave and San Jose Rd - widen to four lane divided highway	Graham County	Widening		\$1,301,180
2	US70 between San Jose Rd and US70/US191 Split -widen to four lane divided highway	Graham County	Widening		\$4,516,019
3	14th Ave between Relation St and 20th St - add one lane in each direction	Safford	Widening		\$1,059,658
4	Lebanon Rd between 20th Ave and US191 - add one lane in each direction	Safford	Widening		\$1,621,929
5	Stockton Rd between Quail Trail and Artesia Rd- add one lane in each direction	Safford	Widening		\$3,741,246
6	20th St – widen to 4 lanes from US191 to 14th Ave	Safford	Widening	Yes	\$864,522
7	US 191 – restripe to 5 lanes from Lebanon Rd to Artesia Rd	Graham County	Restriping		\$4,268,804
8	Safford-Bryce Rd – widen to 3 lanes from Reay Ln to 8th Ave	Graham County	Widening		\$8,806,237
9	Lone Star Rd – widen to 3 lanes from US 191 to US 70	Graham County	Widening		\$2,852,259
10	Solomon Rd – widen to 3 lanes from US 191 to Bowie Ave	Graham County	Widening		\$7,546,734
11	14th Ave - widen to 4 lanes from 8th St to Relation St	Safford	Widening		\$800,000
12	US 191 between 20th St and Discovery Park Blvd-Find an Alternative Route	Safford	New Roadway		Alt. Route Study
13	US 191 between Discovery Park Blvd and Armory Rd - Find an Alternative Route	Safford	New Roadway		Alt. Route Study
14	20th Ave – extend south from Discovery Park Blvd to 45th St	Safford	New Roadway		\$3,672,158
15	US 191 extend north from US 70 to 8th Ave and perhaps to Church St	Safford	New Roadway		\$2,754,118
16	8th St – extend west to connect to Cluff Ranch Rd	Thatcher	New Roadway		\$5,713,431
17	Central Rd and US 70 – connect to Cluff Ranch Rd	Thatcher	New Roadway		\$3,570,895
18	New road in alignment with Norton Rd from US 70 to Reay Ln for truck traffic	Graham County	New Roadway		\$3,672,158
19	20th St - sidewalk from 14th Ave to US 191	Safford	Sidewalk		\$160,000
Total Project List					\$56,921,384

Figure 7-5: Mid-Term Projects 2013-2018

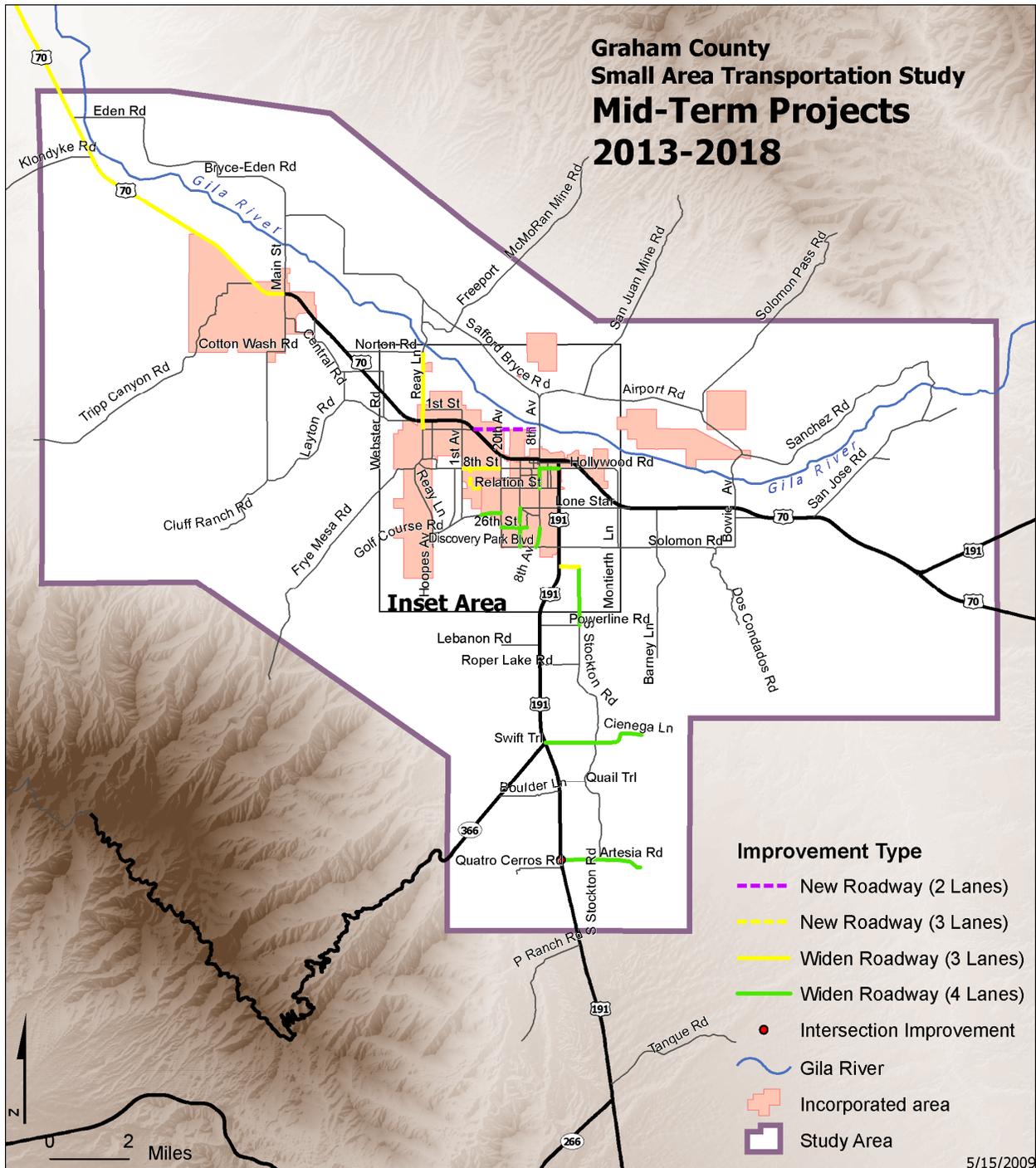


Figure 7-6: Mid-Term Projects 2013-2018 (Inset)

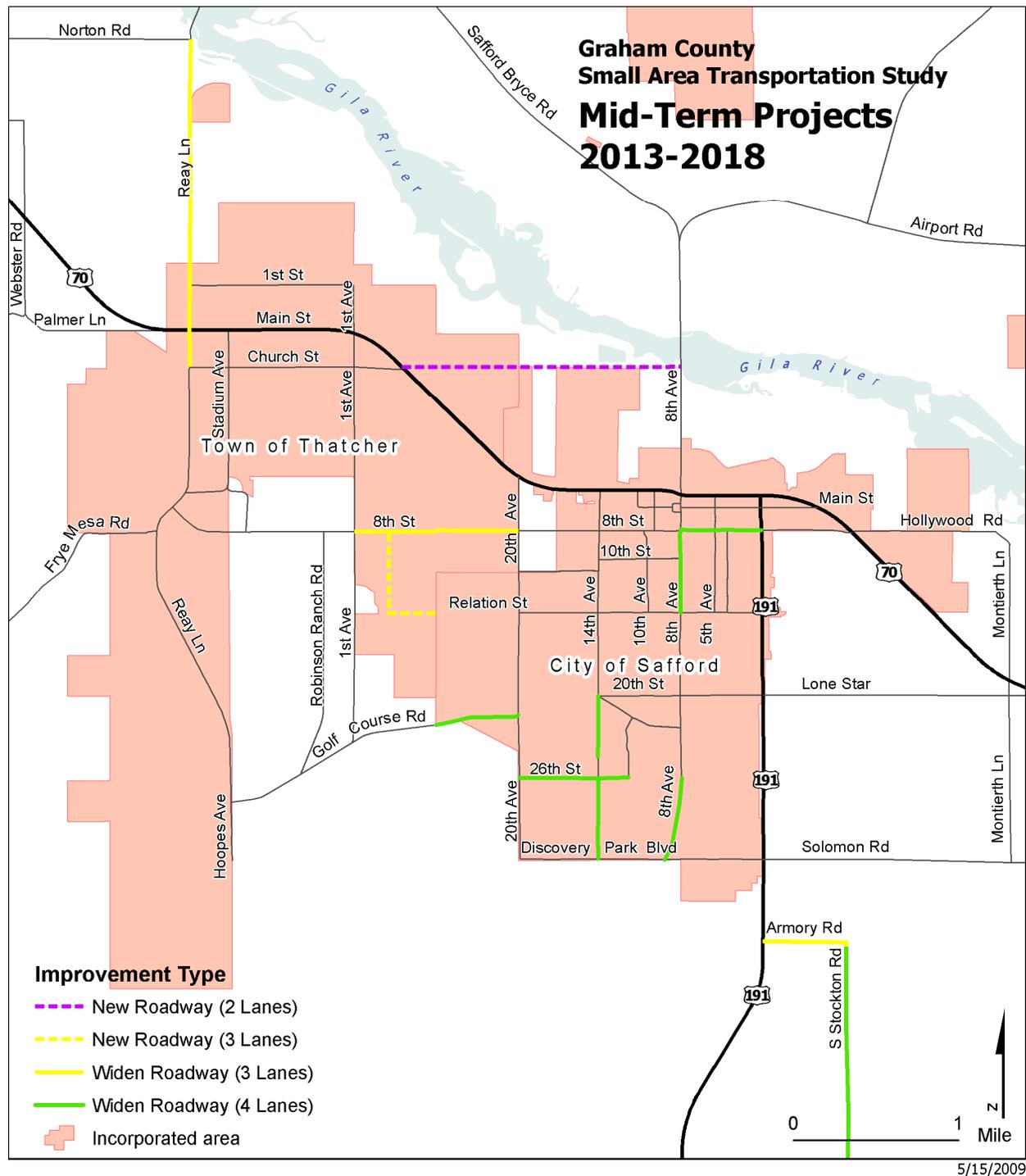


Figure 7-7: Mid-Term Non-Motorized Projects 2013-2018

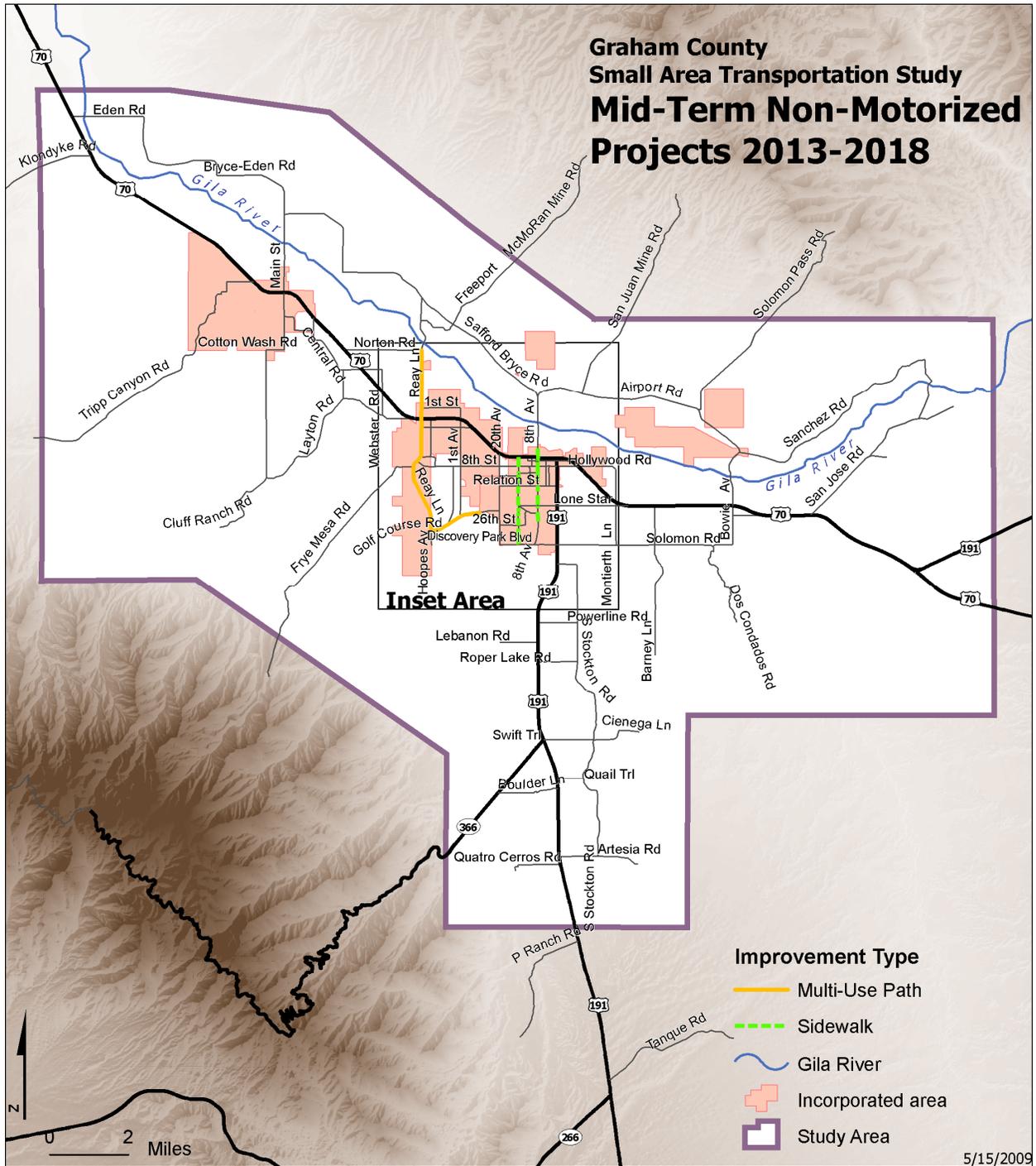


Figure 7-8: Mid-Term Non-Motorized Projects 2013-2018 (Inset)

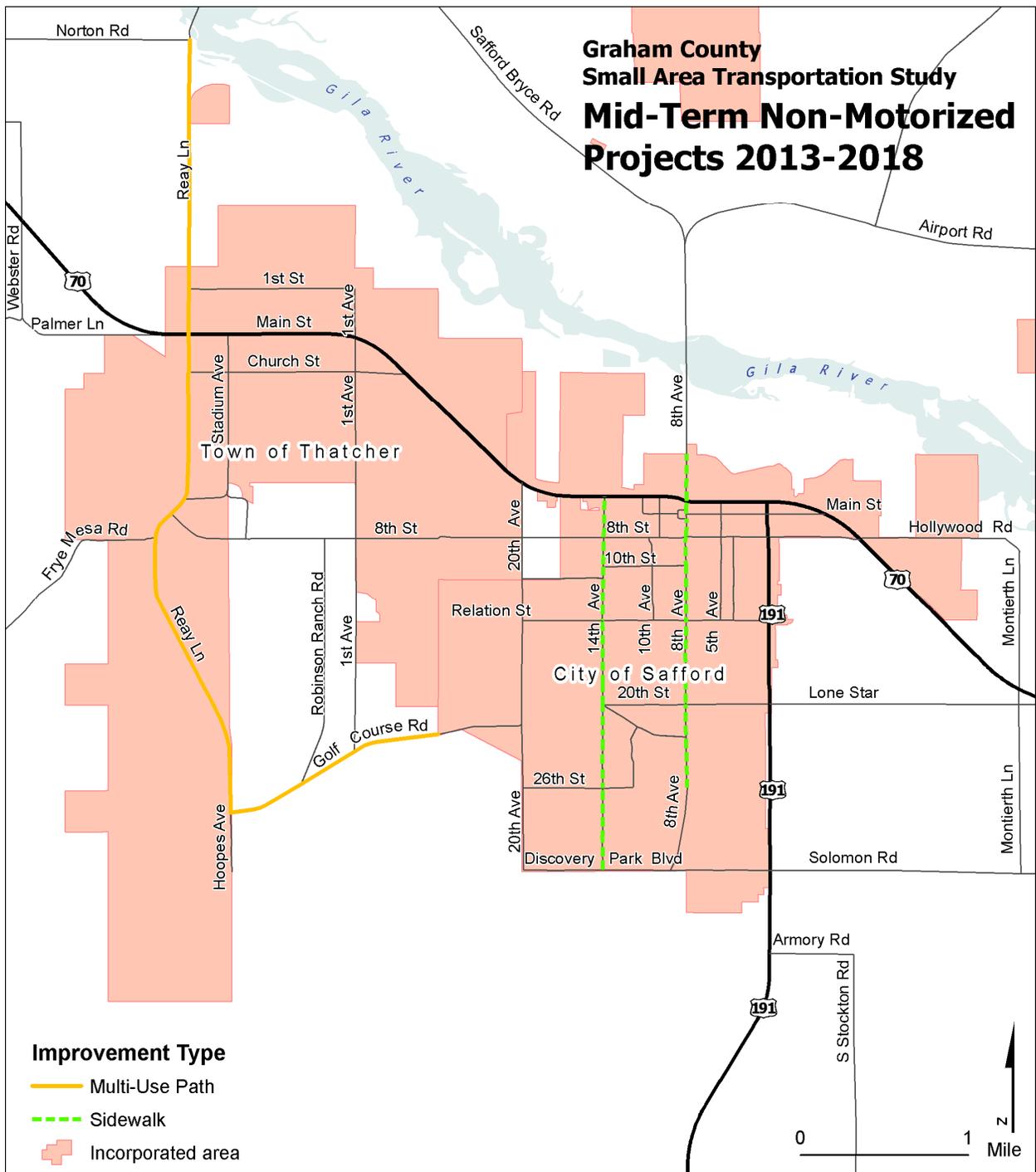


Figure 7-9: Long-Term Projects 2018-2023

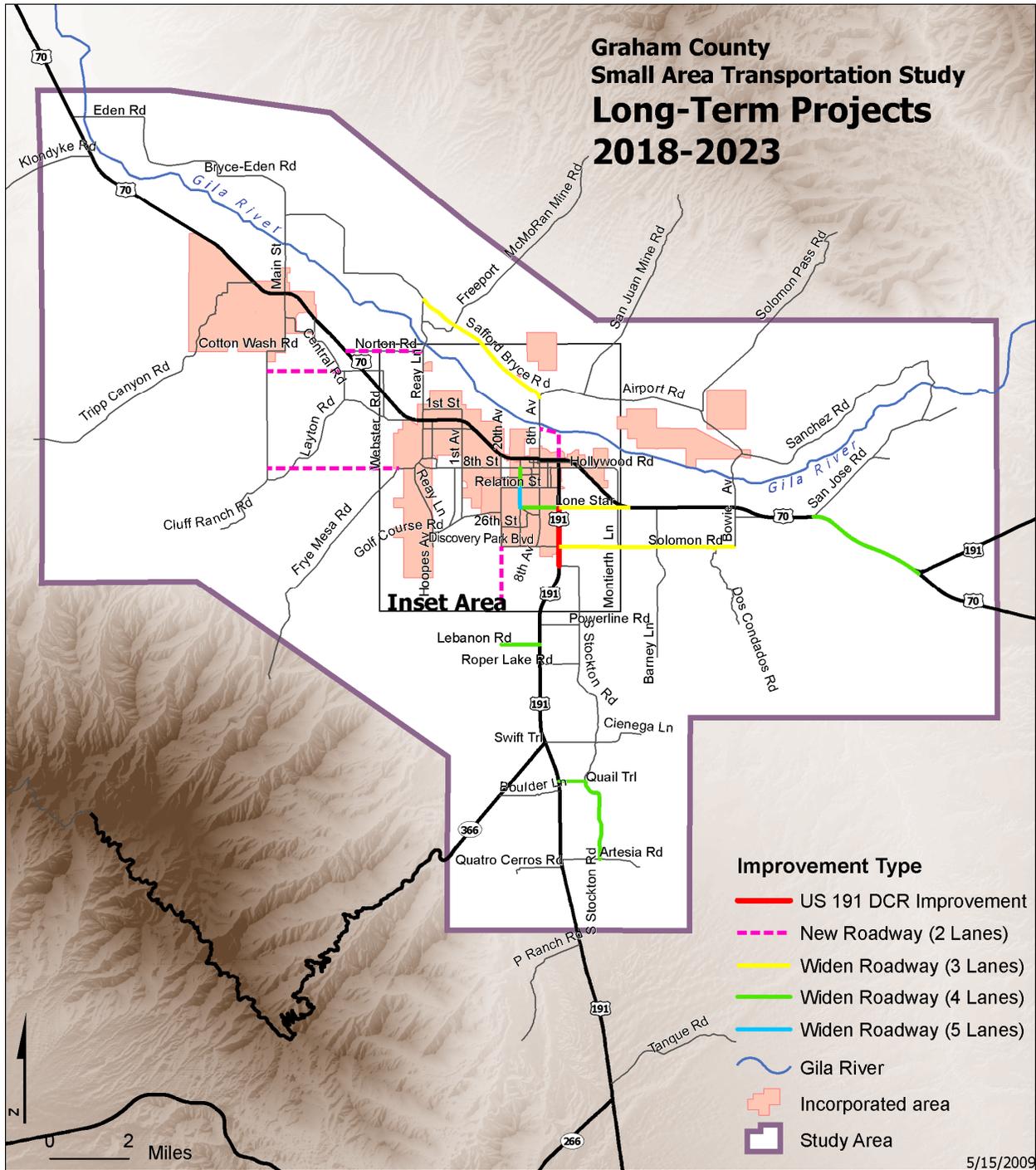
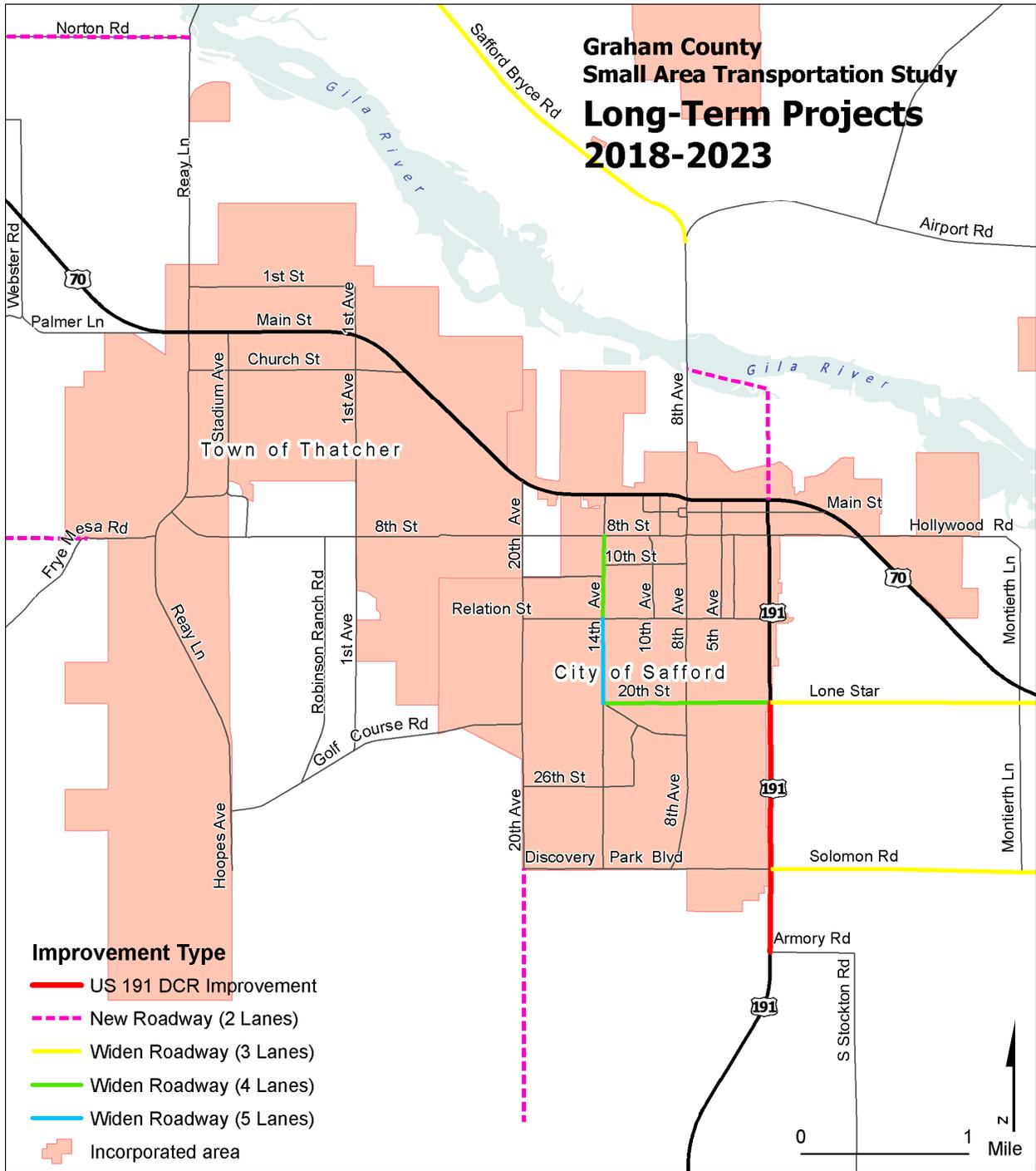


Figure 7-10: Long-Term Projects 2018-2023 (Inset)



5/15/2009

Figure 7-11: Long-Term Non-Motorized Projects 2018-2023

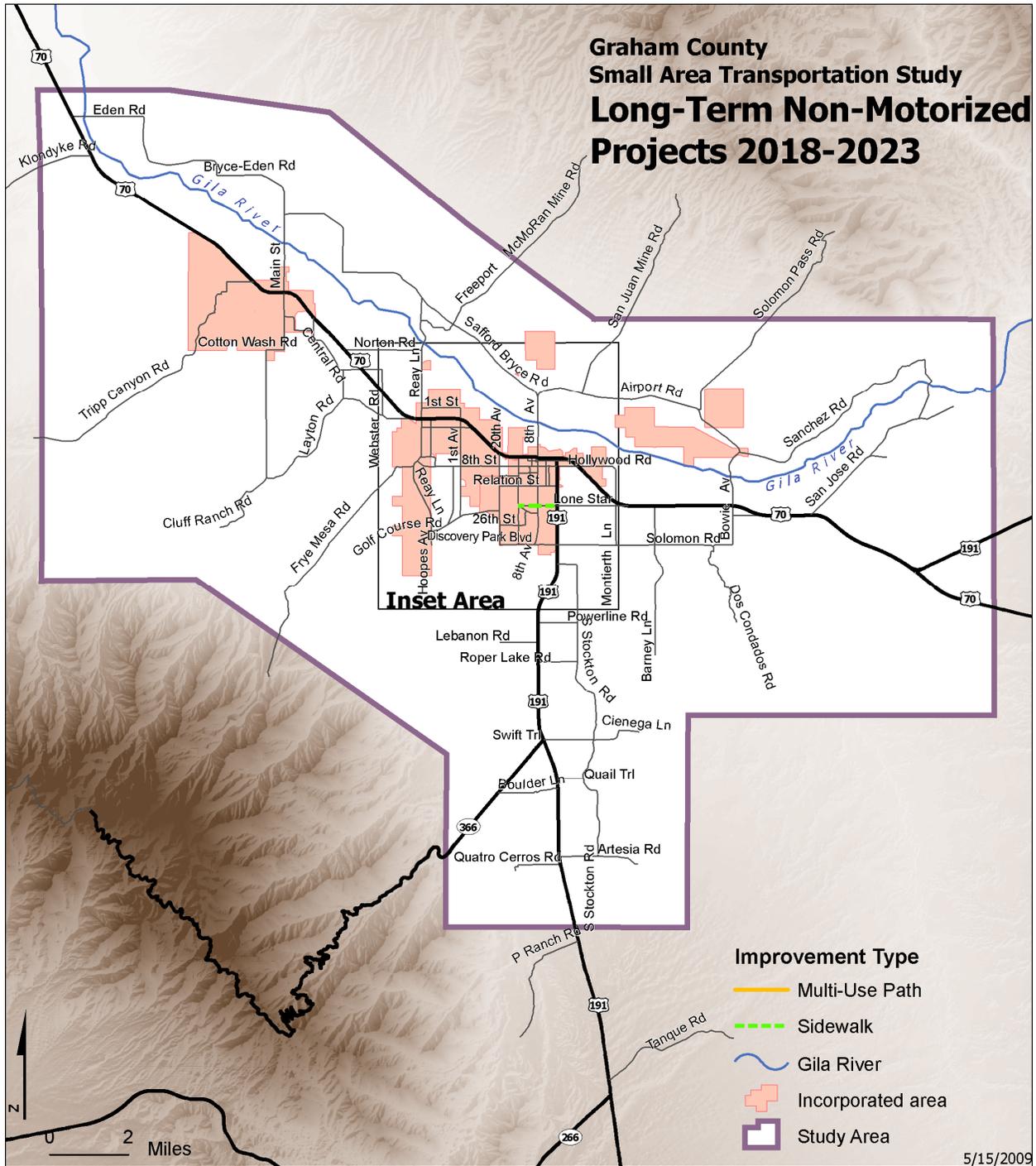
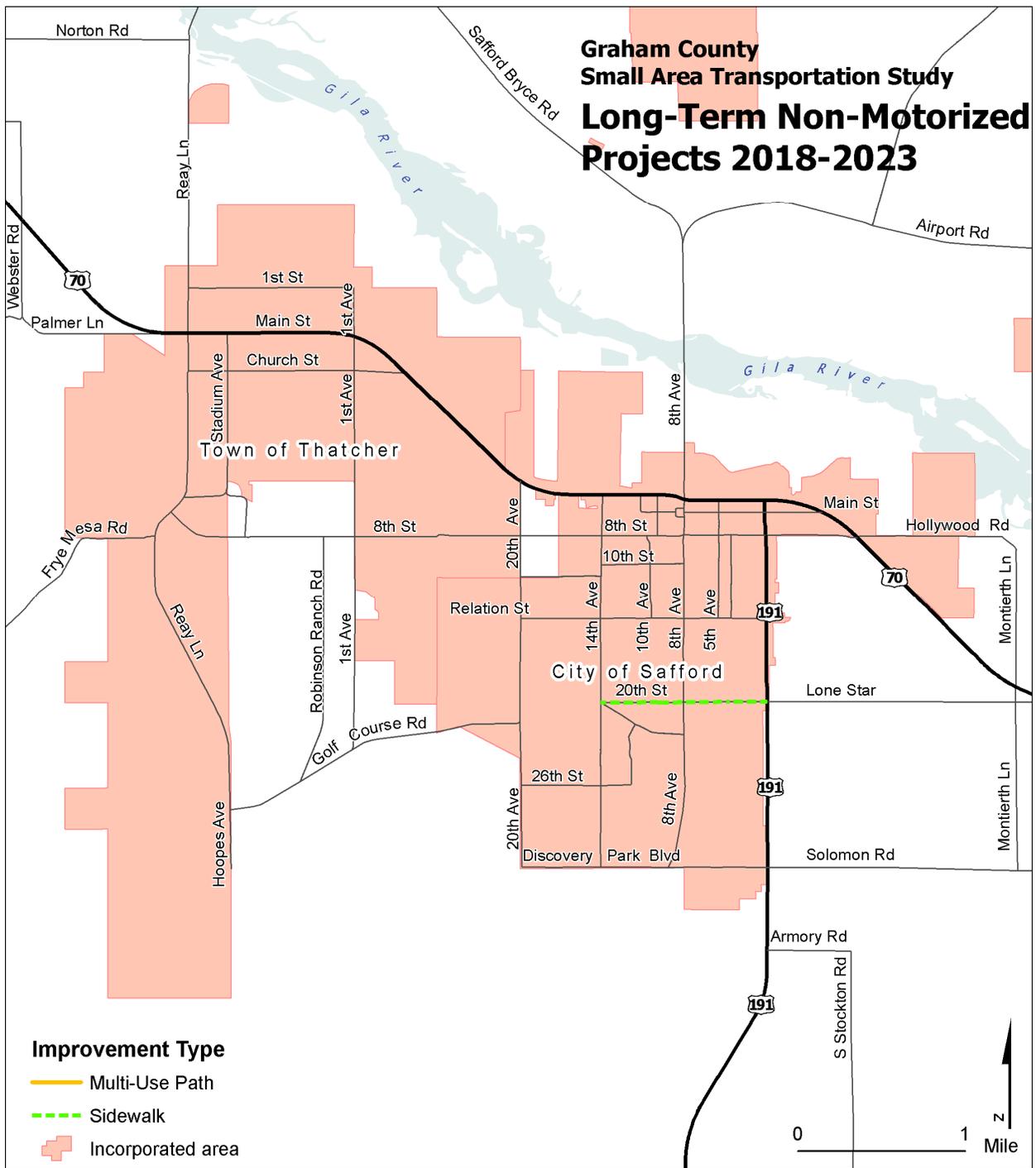


Figure 7-12: Long-Term Non-Motorized Projects 2018-2023 (Inset)



5/15/2009