

**RESOLUTION NO. 3347**

**A RESOLUTION ADOPTING A MASTER PLAN ENTITLED PASCO  
BICYCLE & PEDESTRIAN MASTER PLAN**

**WHEREAS**, the City of Pasco, as required by the Growth Management Act, is responsible for land use planning within the Pasco Urban Growth Boundary; and,

**WHEREAS**, the Growth Management Act [RCW 36.70A.070(6)(a)(iii)] requires the City to address pedestrian and bicycle facilities to encourage community access and to promote healthy lifestyles; and,

**WHEREAS**, various Comprehensive Plan goals and policies encourage greater use of bicycle and pedestrian facilities throughout the City; and,

**WHEREAS**, following a public hearing on September 15, 2011, the Planning Commission unanimously recommended the Pasco Bicycle & Pedestrian Master Plan for approval; and,

**WHEREAS**, the City Council has reviewed the Planning Commission's recommendation for a Bicycle & Pedestrian Master Plan;

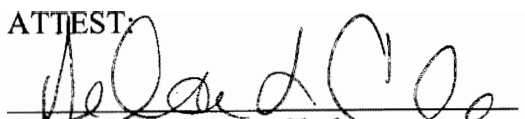
**NOW, THEREFORE,**

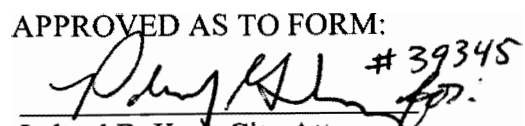
**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PASCO:**

1. That the Pasco Bicycle & Pedestrian Master Plan attached hereto as "Exhibit 1" is hereby adopted as a supplement to the Comprehensive Plan.

**Passed** by the City Council of the City of Pasco this 17<sup>th</sup> day of October, 2011.

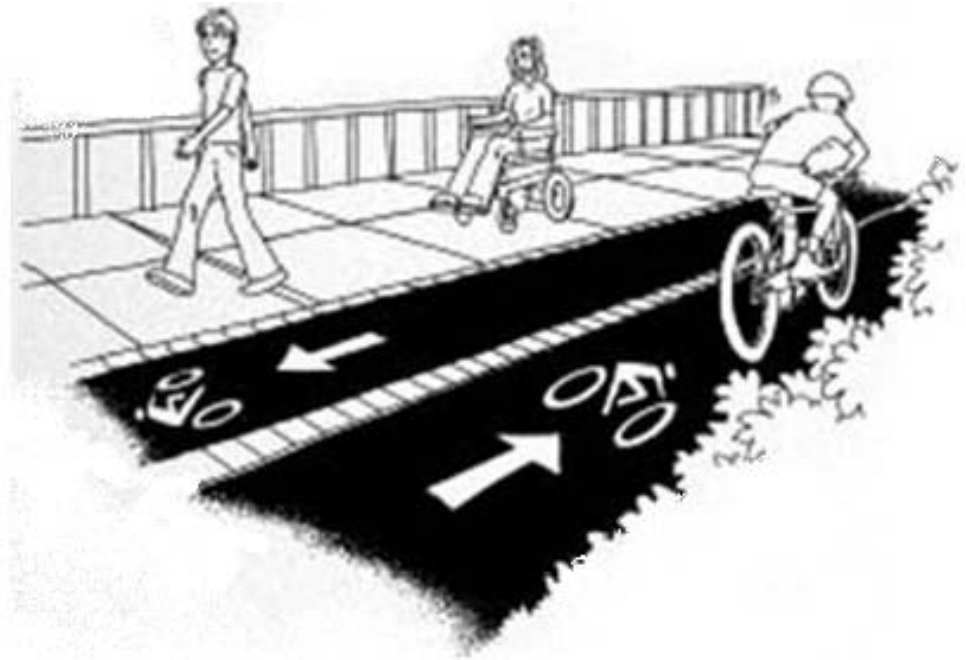
  
Matt Watkins, Mayor

ATTEST:  
  
Debra L. Clark, City Clerk

APPROVED AS TO FORM:  
 #39345  
Leland B. Kerr, City Attorney



# Pasco Bicycle & Pedestrian Master Plan



City of Pasco

Date: 9/15/11

Community & Economic  
Development Department

## Contents

Introduction.....	2
Master Plan Purpose Statement .....	2
Time Frame .....	2
Background .....	2
Legal Requirements .....	2
Adopted Local Plans .....	3
Goal, Policies & Objectives.....	5
Goal.....	5
Policies and Objectives .....	5
Existing Conditions.....	7
City-Wide Challenges.....	8
Proposed Facilities .....	9
Area Descriptions (1-6).....	11
Overview Map .....	11
Area 1.....	12
Area 2.....	19
Area 3.....	21
Area 4.....	25
Area 5.....	28
Area 6.....	33
Alternative Solutions .....	38
Sharrows .....	39
Signage.....	39
Bike Boxes/Green Boxes .....	40
Potential Funding Sources .....	41
Federal.....	41
State.....	41
Local .....	43
Prioritization and Ranking .....	43
Scoring .....	45
Maps.....	45
Additional Bicycle Facility Components.....	45
Transportation SYSTEM Plan .....	45
Install municipal bike racks (identify effective locations).....	46

## **Introduction**

Bicycling and walking as means of recreation and transportation have been growing in popularity as many communities work to create more balanced transportation systems by giving bicyclists and pedestrians a greater share in use of the roadway networks. In addition, recent national surveys find that more people are willing to cycle more frequently if better bicycle facilities are provided.

## **Master Plan Purpose Statement**

The purpose of this document is to consolidate existing efforts addressing bicycle and pedestrian facilities; to provide a prioritized action plan for improving listed travel routes; and to analyze the costs and potential funding sources.

## **Time Frame**

Pasco's Comprehensive Plan has a horizon to year 2027; this Plan will adhere to the same time frame.

## **Background**

In 2006 the Pasco City Council authorized appointment of an *ad hoc* advisory Committee to assist staff in developing policies relating to the design, location and maintenance of bikeways throughout the City. The Committee was charged with the following tasks: 1) propose design standards and options for bikeways throughout the City; 2) propose policies regarding bicycle accommodation in the City; and, 3) propose maintenance standards for the bikeway system. This Committee convened a total of six times in late 2006 and early 2007.

In 2007 City Council approved Resolution No. 3021 adopting a three page "Bikeway Plan". The Bikeway Plan is the culmination of ideas generated by the *ad hoc* committee and contains a total of one (1) overall goal, six (6) policies and thirty (30) related objectives aimed at creating a contiguous network of safe and convenient bicycle pathways. The Plan provides insight into the values of the local bicycling community, but lacks specific data needed for cost estimates and construction planning. The Committee also produced a map (see attached *Bike Route Map*) delineating both existing and proposed routes and pathways where bicycles should be able to travel safely and comfortably.

## **Legal Requirements**

With the intent of promoting healthier and more physically active communities two pertinent bills (ESSB 5186 and 2SHB 1565) were passed by the State of Washington.

Engrossed Substitute Senate Bill (ESSB) 5186, passed in 2005, requires communities to consider urban planning approaches that promote physical activity, and also requires a bicycle and pedestrian component be included in the Transportation Element of a comprehensive plan. ESSB 5186 also added a

requirement to the Land Use Element of the comprehensive plan for jurisdictions fully planning under the GMA: “Wherever possible, the Land Use Element should consider utilizing urban planning approaches that promote physical activity” [RCW 36.70A.070(1)] citing that several studies have demonstrated that a person’s immediate environment is the most important determination of physical activity.

Bill 2SHB 1565 also passed in 2005, specifies that multiple modes of transportation may be included in concurrency programs when reviewing the transportation impacts of new development.

This Plan together with the Pasco Comprehensive Plan and the Benton Franklin Council of Governments 2010 Regional Bicycle and Pedestrian Transportation Plan, are all collaborative efforts aimed at meeting the requirements set by ESSB 5186 and 2SHB 1565.

### Adopted Local Plans

#### Pasco Comprehensive Plan

Pasco’s Comprehensive Plan contains a number of Goals and Policies which support the objectives of this Plan. The following Comprehensive Plan Goals and Policies apply:

- Goal **TR-1** aims to continue to provide and maintain an effective and convenient street system.
- Policy **TR-1-G** supports development of an interconnected network of streets, trails and other public ways while preserving neighborhood identity; and building streets and sidewalks without interrupted or patchwork rights-of-way or construction.
- Goal **TR-2** aims to encourage efficient, alternate and multi-modal transportation systems.
- Policy **TR-2-D** encourages greater use of bicycles and walking by providing safe and purposeful bicycle and pedestrian routes.
- Policy **TR-2-E** encourages park-and-ride lots for bicycles and automobiles.
- Policy **CF-3-A** aims to assure land development proposals provide land and/or for facilities for pedestrian and bicycle trails.

#### Pasco Parks and Recreation Plan

The city’s 2010 Park and Recreation Plan indicates trail corridors should be developed to include trees, landscaped areas, open lawn areas, seating areas, and some picnic facilities. The plan proposes ten future parks and improvements or expansions at many existing parks.

Locations containing the amenities listed above may at least serve as rest areas or destinations for bicyclists. Adding landscaping features to pathways will require irrigation and continuous maintenance creating additional costs.

Landscaping feasibility should consider a sites' proximity to FCID irrigation water and relative benefits of the additional amenities.

#### Benton Franklin Council of Governments (BFCG) 2010 Regional Bicycle and Pedestrian Transportation Plan

The Benton-Franklin Council of Governments (BFCG) 2010 Regional Bicycle and Pedestrian Transportation Plan discusses many aspects of pedestrian and bicycle related issues throughout Benton, Franklin and Walla Walla Counties.

The 2010 BFCG Regional Bicycle and Pedestrian Plan fulfills federal requirements (23 CFR 450) that a metropolitan transportation plan contain a bicycle and pedestrian component as well as state mandates (RCW 36.70A) that regional transportation plans encourage efficient multi-modal transportation systems which are based on regional priorities and coordinated with city and county comprehensive plans. The BFCG Bike/Ped. Plan includes a useful bike route map at the Tri-Cities scale. The map is included in the appendices for reference.

It is the policy (Policy 13) of the BFCG to promote pedestrian and bicycle travel as essential modes of transportation both within existing communities and new development and to provide opportunities for the safe and efficient use of pedestrian and bicycle facilities as a legitimate alternative to motorized travel and for improved health.

#### Pasco Municipal Code (PMC) Titles 12 (Streets & Sidewalks), 25 (Zoning) & 26 (Residential Subdivision Regulations)

Pasco Municipal Code does not require installation of sidewalks in the Suburban (RS-12 and RS-20) zones and bicycle facilities are not presently required as part of residential, commercial or industrial development in any zone. The absence of concurrency requirements for bicycle/pedestrian infrastructure improvements acts as a barrier to achieving the overall goal of this Plan by transferring the responsibility of pedestrian facilities (sidewalks) from private developers to the City. Modifications to PMC Title 26 (Pasco Urban Area Subdivision Regulations) and Title 12 (Streets & Sidewalks) requiring sidewalks on arterial and collector streets in Suburban (RS-1, RS-12 and RS-20) zoning districts may be an effective approach to establishing development requirements relative to bicycle/pedestrian infrastructure on arterial and collector streets.

Amending Title 12 to require curbs, gutters, sidewalks and bicycle lanes be installed concurrent with both commercial and residential development in Suburban zones would help meet the Goal of this Plan.

## Goal, Policies & Objectives

### Goal

Create and maintain a high-quality bikeway and pedestrian network that is safe, direct, comfortable, aesthetically pleasing, and which allows cyclist to access destinations accessible to automobiles where practical.

### Policies and Objectives:

The overall Goal can be broken down into Policies and Objectives that help quantify the goal statement.

- 1) **Policy: Connectivity/Access**—Bicyclists should have safe access to City destinations accessible by motorized vehicles, where practical.

### **Objectives**

- a) Encourage bicycle lanes, paths, or trails and bicycle access points in new development design.
- b) Design bike paths for the most direct routes possible.
- c) Mitigate major barriers such as freeways and railroad crossings by including over/underpass facilities. Crossing points should be at right angles and to be as short as possible.
- d) Provide for bike path continuity.
- e) Loop and interconnect paths, or trails to provide a variety of trail lengths and destinations including small and large loops for a broad range of experiences and ability levels.
- f) Provide safe bicycle access and parking facilities for major commercial destinations, where practical.
- g) Provide safe bicycle access and parking facilities for major civic destinations, (e.g., library, post office, schools) where practical.
- h) Design bicycle routes and paths to minimize conflicts between motorists and bicyclists and increase the separation of cyclists from motorized vehicles.
- i) Design intersections with bicycle-friendly facilities such as bicycle-first signaling so as not to interfere with traffic flow.
- j) Include secure bicycle lock-up facilities at appropriate destinations.
- k) Design landscaping to be open and “visually secure”.
- l) Install clear right-of way indicators such as 8” wide edge line stripes, sharrow stencils and freestanding bicycle signs for automobiles and bicyclists.
- m) Utilize “Traffic Calming” measures where appropriate.
- n) Mark bike paths and lanes for safety.
- o) Install lighting along bike paths and trails as appropriate.

- 2) **Policy: Comfort/Convenience** - Bikeways shall be designed to encourage non-motorized travel citywide.

**Objectives:**

- a) Plant shade trees along bicycle paths that do not possess a destructive root pattern.
- b) Include rest areas with water, air, and toilet facilities at convenient intervals along bicycle routes.
- c) Design bicycle lanes, paths, or trails for “flow,” with as few stops as possible.
- d) Mark trails for distance monitoring.

- 3) **Policy: Aesthetics** - Bikeways shall be aesthetically pleasing so as to encourage non-motorized travel citywide.

**Objectives:**

- a) Plan bike paths and trails to provide visual and physical access to natural areas and to the Columbia/Snake Rivers.
- b) Landscape bicycle lanes, paths, or trails to be interesting and attractive to the user.

- 4) **Policy: Incentives/Promotion** - Encourage non-motorized travel

**Objectives:**

- a) Develop bikeway maps that are easily available (brochures and internet) and provide safety guides/education.

- 5) **Policy: Maintenance** - Establish bike path maintenance policies and schedules.

**Objectives:**

- a) Maintain roadways and bikeways to a relatively hazard-free standard.
- b) Encourage bicyclists to report maintenance problems and other hazards.
- c) Include maintenance costs and maintenance procedures in bicycle facility projects as appropriate.
- d) Include reasonable estimates for the maintenance costs in the project budget.
- e) Establish clear maintenance responsibilities in advance of construction.



## Existing Conditions

Much of the residential development west of SR395 and south of Hwy I-182 is developed to a rural standard, without curbs, gutters and sidewalks and edge lines. The absence of the fore mentioned improvements facilitates road widening and bike lane striping by eliminating physical barriers which may complicate project implementation and add to the costs.

A large majority of roadways east of SR395 and south of Hwy I-182 are fully developed with curbs, gutters and sidewalks. Right-of-way widths on proposed routes vary from 50ft. to 150ft. The most common right-of-way width is 60 feet.

Roadways within residential development north of Hwy I-182 and west of Road 36 contain curbs, gutters and sidewalks. Most streets in this area have a 60ft. wide right-of-way with curbs, gutters and sidewalks adjacent to the roadway. Road 60 between Burden Boulevard and Sandifur Parkway is a fully developed roadway containing bike lanes and sidewalks and could be used as a model for many routes identified on the Overview Map.

This Plan contains an Overview Map of roadways with needed bicycle and pedestrian facilities; though many facilities are needed some currently exist. There are existing bicycle and pedestrian facilities throughout the City which provide excellent opportunities for establishing connectivity to the proposed bicycle lanes and bicycle/ pedestrian pathways listed in this Plan. These existing amenities include the following:

- A paved east-west bicycle/pedestrian pathway north of I-182 extending from Road 100 to the Argent underpass at I-182.
- The Sacajawea Heritage Trail (a paved east-west bicycle/pedestrian pathway traversing the river shore from the I-182 overpass at Court Street to Sacajawea State Park) covers approximately 14 miles of the Columbia River shoreline.
- Road 60 from Sandifur Parkway to Burden Blvd. contains stripped bicycle lanes and sidewalks along both travel lanes.
- Court Street contains paved shoulders with striping between the I-182 Bridge and approximately Road 48.
- Road 84 adjacent Chiawana High contains approximately 1200 feet of bike lane and sidewalk.

- Road 36 north of I-182 and south of Burden Blvd. contains striped bicycle lanes in both directions. Intermittent segments of sidewalks exist on the west side of the Road 36 (adjacent residential development). The east side of Rd 36 abuts the Pasco Airport. This undeveloped area contains the runway and will remain in the current condition unless right-of-way improvements are initiated via a City Public Works project.

## City-Wide Challenges

Although each Area contained in this Plan contains the sub-heading “Challenges”, it is important to address challenges at a larger (City-wide) scale.

The following list generally describes challenges to project implementation/construction. For more detailed descriptions of issues and conditions see the Area Descriptions section for Areas 1-6.

- Sandifur Parkway between Convention Drive and Road 68 lacks bike lanes and sidewalks. Edge lines are present, but paved shoulders are of insufficient width to accommodate bike lanes. The paved shoulder is 22 inches wide eastbound 3 feet wide westbound. Each travel lane is 14 feet wide with no left-hand turn lane.
- Burden Blvd. between Road 60 and Road 68 is a fully developed roadway and lacks bicycle lanes. This section of roadway may play an important role in the Plan by providing enhanced transportation at a location experiencing ever increasing traffic congestion. This location is arguably the most congested roadway in Pasco.
- Bike lanes are needed on Sandifur Parkway from Road 100 to Road 44. Sidewalks are needed along most of the undeveloped properties fronting Sandifur Parkway. A significant challenge related to bicycle lanes on this roadway segment is that most of Sandifur Parkway is fully developed curb-to-curb without edge lines or shoulders.
- Areas 5 & 6 are proposed in long established areas of Pasco. The proposed facilities primarily front residential development which do not contain curbs, gutters, sidewalks or edge line striping. Many of the road shoulders are too narrow to support the addition of a bicycle lane. In such instances, fill material and additional paving may be needed to provide the minimum

four (4) foot wide bike lane with 8” stripes. This is the predominant condition in areas south of I-182.

- 20<sup>th</sup> Avenue, contained in Area 5, presents significant constraints. Much of 20<sup>th</sup> Ave. experiences very high traffic volumes, especially around Court Street. Current roadway features impeded bicycle facility construction.
- Areas 3 & 5 contain primarily residential roadways developed to rural standards. This means sidewalks and wire road shoulders are largely lacking throughout both areas. Substantial infrastructure improvements are required to meet the goals of this Plan.
- The Road 100/I-182 Overpass Bridge contains edge line striping and five (5) foot wide shoulders in both directions. The existing shoulder may be wide enough to accommodate either a bike lane or a sidewalk, but not both adjacent one another. The ideal solution to this spatial constraint is widening the bridge.

#### Right-of-way Policies

This Plan poses policy changes related to right-of-way development requirements for new development proposals in suburban zones. Contrary to past practices, development proposals on arterial and collector roads in suburban zoning districts will be required to accommodate right-of-way facility needs in the way of sidewalks, bike lanes and ADA features.

Materials costs estimate tables indicate sidewalks are needed on various roadways however, the cost estimate dollar amounts do not include sidewalk construction costs because it is unlikely the City will construct sidewalks as part of any right-of-way project. Rather, sidewalk construction will be a concurrency requirement for new development.

#### Proposed Facilities

The Master Plan Overview Map (Map “M-1”) illustrates a connected network of proposed bicycle and pedestrian routes to serve as a structural “backbone”. Proposed bicycle/pedestrian routes generally follow arterial streets. All routes identified as solid lines in the Overview Map are in need of bicycle facilities. City-wide, bicycle lanes are needed on the following street segments:

- Sandifur Parkway (Rd 100 to Rd 44)
- Road 100 (Powerline Road to Court Street)
- Road 103 (Court Street to Argent Rd)
- Argent Road (Rd 103 to 4<sup>th</sup> Ave) \*with the exception of segments in front of McLoughlin and Chiawana Schools
- Road 60 (Argent Road to the river shore)

- Road 76 (Sandifur to I-182)
- Burden Blvd. (Convention to Road 36)
- Madison Ave (Burden to Road 44)
- Road 44 (Sandifur Parkway to Argent Rd)
- Road 52 (Sandifur Parkway to Burden Blvd)
- Road 88 (Argent Rd to pathway south of Whipple Ave.)
- Road 52 (Argent to Sylvester)
- Road 60 (Court St to Sylvester St.)
- Livingston Rd (Rd 48 to Rd 36)
- Wernett Rd (Rd 48 to Rd 36)
- Pearl St (Rd 48 to Rd 32)
- Road 36 (I-182 to Havstad St)
- Road 40 (Sylvester St to Riverhaven St)
- Riverhaven St (Rd 40 to Rd 39)
- Rd 39 (Riverhaven St to Havstad St)
- Havstad St (Rd 39 to Rd 36)
- Road 40 (Livingston Rd to Wernett Rd)
- Court Street (Rd 48 to 26<sup>th</sup> Ave)
- 26<sup>th</sup> Ave (Court St to Henry Street) to 24<sup>th</sup> Ave to West Henry Pl to 22<sup>nd</sup> Ave to Henry St to 20<sup>th</sup> Ave)
- Henry Street (26<sup>th</sup> Ave to 24<sup>th</sup> Ave)
- 24<sup>th</sup> (Henry St to Henry Pl) (Approx. 180 feet)
- Henry Pl (24<sup>th</sup> Ave to 22<sup>nd</sup> Ave)
- 22<sup>nd</sup> Ave (Henry Pl to Henry St.) (Approx. 180 feet)
- Henry St (22<sup>nd</sup> Ave to 18<sup>th</sup> Ave)
- 20<sup>th</sup> Ave (Argent Rd to “A” St)
- West Lewis Street (Rd 28 to Heritage Blvd)
- Road 28 (Sylvester to “A” St)
- “A” St (Road 28 to Heritage Blvd)
- Hopkins St (Sacajawea Trail @ 395 Bridge to Road 28)
- 4<sup>th</sup> Ave (Boeing St to 3<sup>rd</sup> Ave)
- 3<sup>rd</sup> (4<sup>th</sup> to Columbia St)
- Columbia St (3<sup>rd</sup> Ave to 4<sup>th</sup> Ave)
- Elm Ave (Sheppard St to Lewis St)
- 4<sup>th</sup> (Columbia to Ainsworth Ave)
- Beech Ave (Sheppard St to Park View Blvd)
- Wehe Ave (Park View Blvd to “A” St)
- Oregon Ave (“A” St to Ainsworth Ave)
- 14<sup>th</sup> Ave (Pearl St to “A” St)
- Pearl St (20<sup>th</sup> to 14<sup>th</sup>)
- Octave St (18<sup>th</sup> Ave to 16<sup>th</sup> Ave)
- Henry St (16<sup>th</sup> Ave to 3<sup>rd</sup> Ave)
- 5<sup>th</sup> Ave (Henry St to Margaret St)
- Margaret St (5<sup>th</sup> Ave to 4<sup>th</sup> Ave)
- Nixon St (4<sup>th</sup> Ave to 3<sup>rd</sup> Ave)
- 4<sup>th</sup> Ave (Washington St to Ainsworth Ave)
- Sheppard St (Beech Ave to Elm Ave)

The bicycle and pedestrian infrastructure proposed by this Plan is summarized in the table below. Infrastructure types are abbreviated for use in the Area Description roadway lists to indicate the needs of each particular roadway.

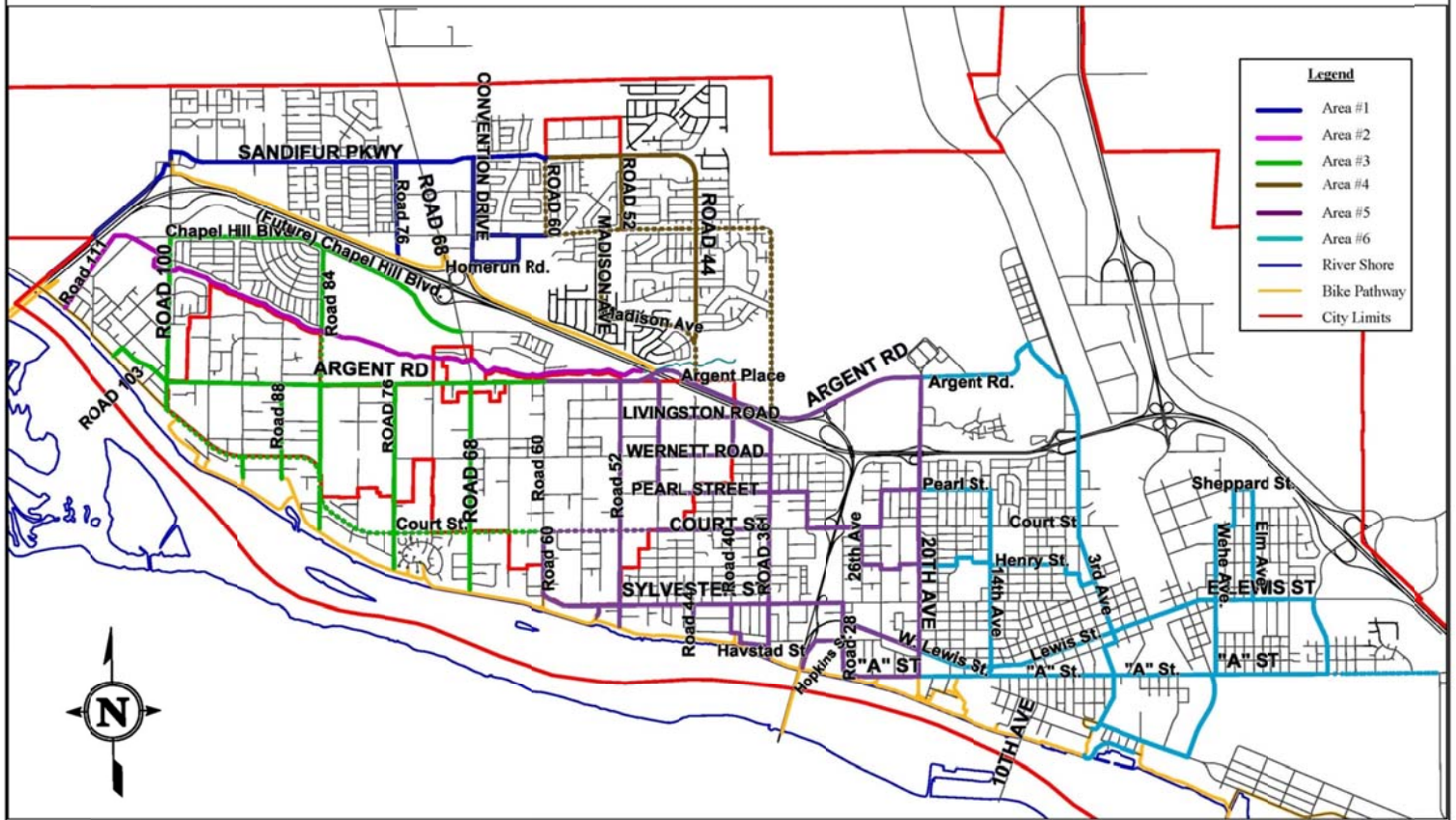
Sidewalks	SW
Striping	ST
Road Widening	RW

## **Area Descriptions (1-6)**

### **Overview Map**

Large scale plans such as this one benefit from logical spatial division to establish some degree of organization. This Plan divides the City into six (6) “Areas” which were chosen to spatially consolidate roadways based upon relative similarity of existing right-of-way conditions. Dividing the City into Areas is useful for discussion purposes and for assigning unit costs at an implementable scale. The Overview Map (Map “M-1”) below and attached illustrates the way in which the City is divided and how the Areas connect to one another.

# Pasco Bicycle/Pedestrian Master Plan Overview Map



## Area 1

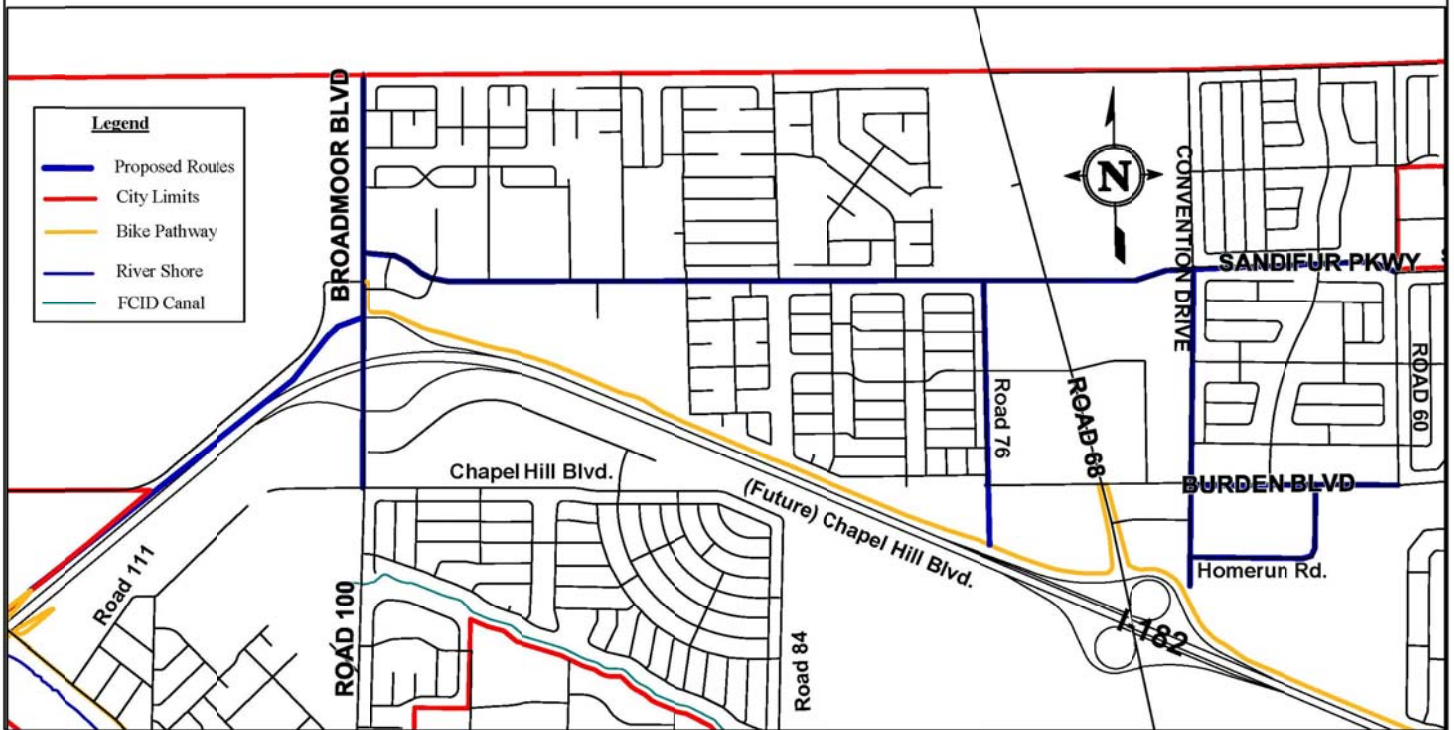
### Area description

Area 1 is bound by the Columbia River to the west, Powerline Road to the north, Chapel Hill Boulevard to the south and Road 60 to the east. Bicycle facilities are proposed on the following roadways:

Roadway	Needed Improvements
Road 100	SW, ST, RW
Harris Road	NA
Sandifur Parkway	ST
Road 76	SW, ST
Convention Drive	ST
Homerun Road	ST
Burden Blvd.	ST



# Bicycle/Pedestrian Master Plan - Area #1



## Existing Facilities

Most of the proposed routes indicated in the Bike Master Plan Area 1 Map contain standard sidewalks. The west side of Road 76 contains sidewalks from Sandifur Parkway to Burden Boulevard.

## Needed Facilities

No sidewalks or bicycle lanes exist on the Sandifur Parkway between Road 68 and Convention Drive. This portion of Sandifur Parkway is undeveloped on both the north and south sides (see photo below). As development occurs on Sandifur Parkway the adjoining properties will be required to construct the right-of-way improvements.



(Sandifur Parkway between Rd. 68 & Convention Dr.)

Sandifur Parkway serves as a primary/arterial connection between large residential subdivisions and the Road 68 commercial corridor. A high priority should be placed on the installation of bike lanes to provide a safe connection between residences and the Rd 68 commercial center. Edge lines are present, but existing paved shoulders are of insufficient width to accommodate bike lanes. The paved shoulder is 22 inches wide eastbound and 3 feet wide westbound. Each travel lane is 14 feet wide with no left-hand turn lane. Development proposals adjacent to Sandifur Parkway must install bike lanes on their portion of Sandifur Parkway.

Area 1 includes the proposal for a bicycle/pedestrian pathway to be constructed from Court Street at the I-182 river overpass bridge to Harris Road. The pathway would parallel I-182 at the base of the elevated roadway embankment gradient; extending to Harris Road from the existing pathway which currently leads riders and walkers up to the sidewalk on the bridge. Approximately 2,600 linear feet of pathway is needed in order to achieve this connection. To avoid the need to cross Harris Road, while maintaining pedestrian/bicycle travel in both directions, the pathway should connect directly to Road 100.





(Future pathway extension from Court St @ I-182 to Harris Road)



(Existing pathway @ I-182/Court St. Bridge)



(Area proposed to extend pathway to Harris Rd.)

The Road 100/I-182 overpass bridge should be widened to provide sidewalks and striped bicycle lanes without reducing the existing number or width of travel lanes. The bridge currently contains edge lines with 5 foot wide shoulders on both sides without sidewalks.



(Rd.100/I-182 Overpass Bridge)



(Rd.100/I-182 overpass bridge 5' shoulder)

The entire length of Road 100 should be treated with bicycle lanes and sidewalks to foster neighborhood scale transportation between residential subdivisions and commercially zoned lands. A significant percentage of the commercially zoned land surrounding the Road 100 corridor remains vacant. Facilitating intra-neighborhood non-vehicular transportation may promote the marketability of these vacant tracts and invite commercial investors. The Area Description table indicates road widening is needed on Road 100 when in fact the I-182 Bridge is the only portion of Rd 100 needing to be widened.

Road 100 currently terminates at the north city limits, soon to be Powerline Road. The west side of Road 100 at its northern terminus remains vacant.



(Road 100 south of Vincenzo Dr. – looking south)



(Road 100 north of Vincenzo Dr. - looking south)

### Challenges

Connecting bicycle/pedestrian facilities on Road 76 to the existing pathway by I-182 (behind Lowe's) presents some challenges created by the vacant parcels (117530015 & 117500118) owned by the Washington State Department of Natural Resources (DNR).

Convention Drive from Fairchild Cinema to Powerline Road is currently constructed to ½ the standard width as the west side of Convention Drive is largely undeveloped.

Road 100 north of Chapel Hill Blvd. is a relatively high-traffic area which contains varied striping configurations. This roadway segment contains two (2) freeway on-ramps and two (2) freeway off-ramps. This relatively complex roadway layout may require creative solutions to accommodate safe bicycle lanes while maintaining acceptable vehicle traffic flow.

Sandifur Parkway between Road 100 and Road 68 is a fully developed roadway without edge lines or shoulders to allow for widening.



(Sandifur Parkway at Rd 76)



(Sandifur Parkway at Rd. 90)

Undeveloped commercial parcels exist on Sandifur Parkway, however the roadway, sidewalks, curbs, gutters and landscaping improvements are currently contiguous from Road 68 to Road 100 with the exception of a few vacant parcels on the north side of Sandifur Parkway. This existing infrastructure is not configured to allow for safe bicycle travel. A majority of this roadway is laid out with a single 25.5' wide travel lane in either direction and a 10.5 wide center turn lane, providing a total road surface width of 61.5 feet.

The pathway parallel to Harris Road is proposed to be located within WSDOT right-of-way. Prior to beginning construction of the pathway, an agreement granting permission to the City, must be made between the City and WSDOT. The existing pathway is located in WSDOT right-of-way and the same is true for the proposed pathway.

### Opportunities

Physical constraints created by fully developed roadways require creative solutions for accommodating bicycle infrastructure. Some possible solutions for the challenges presented along Sandifur Parkway include freestanding signs located roadside at a minimum rate of 1/block; and/or, "sharrows". Sharrows are a combination of freestanding signs and painted symbols on the road surface. While sharrows are a feasible method they are not without drawbacks. Designating a travel lane for bicyclists to share already busy streets can create a false sense of security in the riders' mind.

Sandifur Parkways' 25.5' wide travel lanes could each be reduced by 4'8" resulting in approximately 21' wide travel lanes; allowing the minimum 4' wide bike lanes.

This Plan supports the need for widening the I-182/Rd 100 Overpass Bridge. During the planning stage of the I-182 Bridge construction project, a larger width than currently exists was requested of the WSDOT. The request for extra width was denied at that time. The high rate of residential development in Pasco in recent years has greatly contributed to the need for this bridge to be widened. The bridge has edge lines and five (5) foot wide shoulders bound by a wall. The five foot shoulders are sufficient to accommodate bike lanes or sidewalks on both sides, but not both bike lanes and sidewalks on both sides. These factors support the need to widen the bridge.

#### Key Route

Key routes are identified within each Area as having particular importance based on a variety of factors; particular emphasis is placed on the function of east/west connectivity. Key routes can be interpreted as having high implementation priorities. Not all key routes connect in a contiguous fashion.

The key route in Area 1 is Sandifur Parkway which extends from Road 100 to Road 60. Sandifur Parkway is a main thoroughfare connecting dense pockets of homes to the Road 68 commercial corridor.

#### Materials Cost Estimate

Materials cost estimates developed by the City Engineering Department are shown below. Area-wide materials cost estimate tables provide detailed estimates of cost and quantity as they relate to the individual components of construction. Subsequently, estimates have been pared down into linear foot cost figures which can be applied when attempting to estimate costs for various project configurations within an area. Materials Cost Estimate tables apply to an entire Area; not individual roadway segments within an Area.

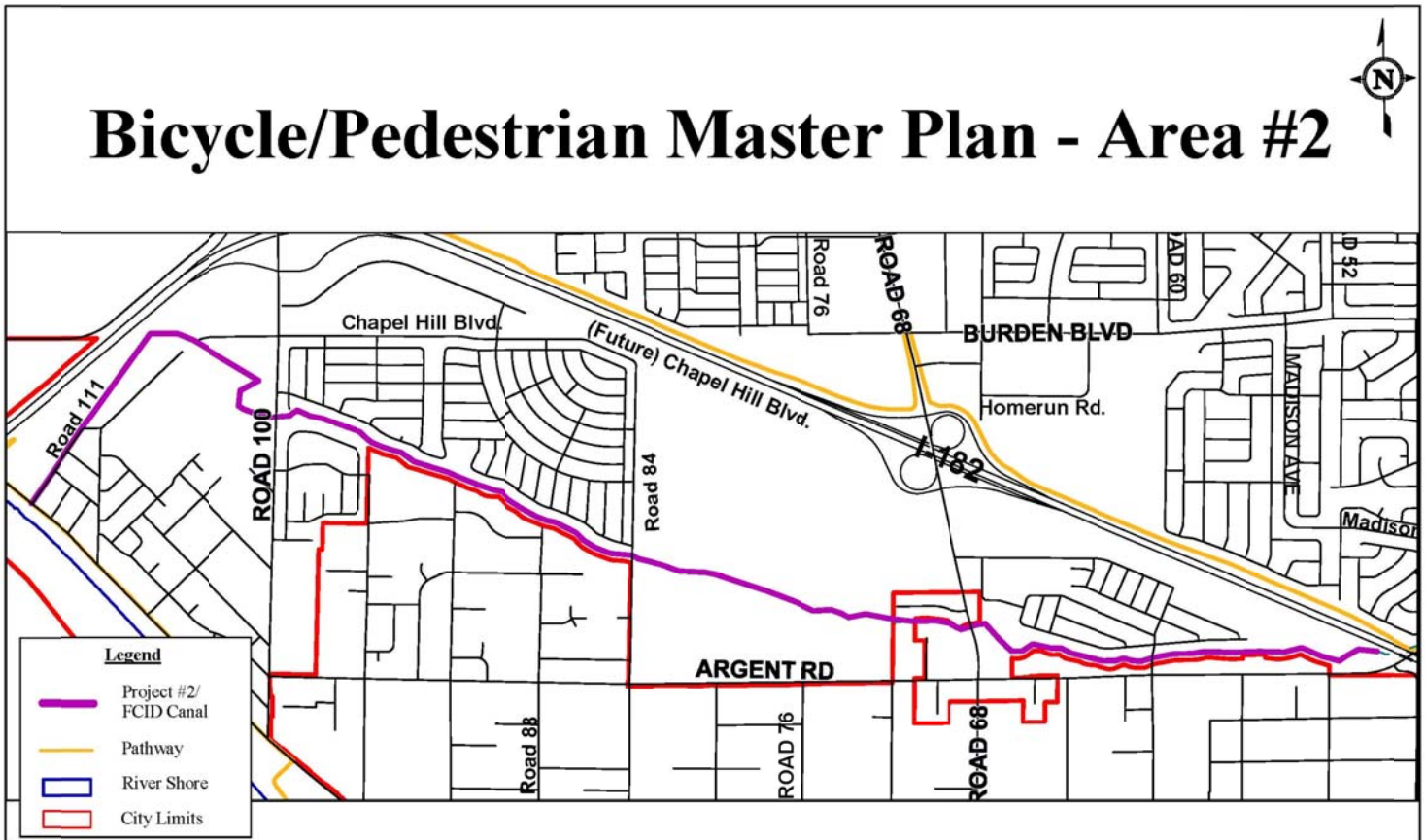
#	Roadway(s)	Required Improvements	Cost
1a	<b>Broadmoor Blvd.</b> (Pwrline to Bedford)	SW, ST, RW	\$13,260.00
1b	<b>Rd 100 Bridge</b>	SW, ST, RW	
1c	<b>Harris Rd</b> (pathway)	NA	\$148,568.60
1d	<b>Rd 76</b> (Sandifur - I-182)	SW, ST	\$7,710.00
1e	<b>Convention Dr. &amp; Homerun Rd.</b>	ST	\$41,650.00
1f	<b>Sandifur Prkwy</b> (Rd 100 - Rd 60)	ST	\$18,230.00
1g	<b>Burden Blvd.</b> (Convtn - Rd 60)	ST	\$4,500.00
<b>TOTAL</b>			<b>\$197,518.60</b>



## Area 2

### Area Description

Area 2 is unique in that the proposed bicycle/pedestrian facility and key route is a stand-alone pathway located on the Franklin County Irrigation District canal extending from Road 111 at Court Street to the I-182/Argent Road underpass. The paved bicycle/pedestrian pathway is proposed within the Franklin County Irrigation District FCID canal right-of-way.



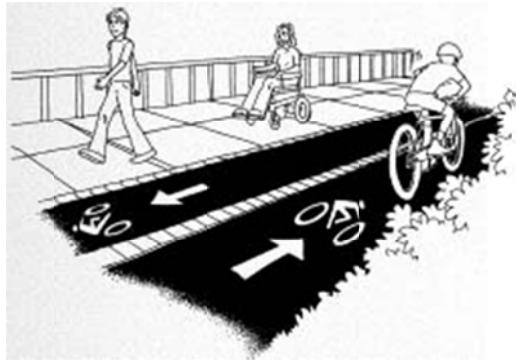
### Existing Facilities

The irrigation canal and gravel service road are currently contained within the FCID right-of-way (see photos below taken at Road 84) which narrows, approximately, from 134 feet to 55 feet east of Road 84 to the western terminus of Valley View Place. This right-of-way varies in width from 50 feet to approximately 130 feet; providing enough space for a future pedestrian trail and bicycle pathway. The irrigation canal from Court Street to Road 100 was placed in underground piping several years ago.

### Needed Facilities

Additional information about pathways can be found on the US Department of Transportation Federal Highway Administration website:

<http://www.fhwa.dot.gov/environment/sidewalk2/sidewalks214.htm>



(A well designed shared-use paths that provide different lanes for users who travel at different speeds prevent conflicts between user groups on high use trails.)



(Frequent rest areas that include benches and wheelchair spaces provide relief from prevailing grades.)



(FCID canal @ Road 84)

### Challenges

Timing of Area 2 facilities construction is dependent upon the completion of work to underground the canal by FCID. An agreement between the Irrigation

District and the City securing shared use of the FCID right-of-way must also be arranged.

### Opportunities

The right-of-way trail would be ideal for walking/biking. Opportunities for using existing public rights-of-way for augmentation of the trail network will likely occur in the future following completion of the FCID plan to bury the canal.

### Materials Cost Estimate

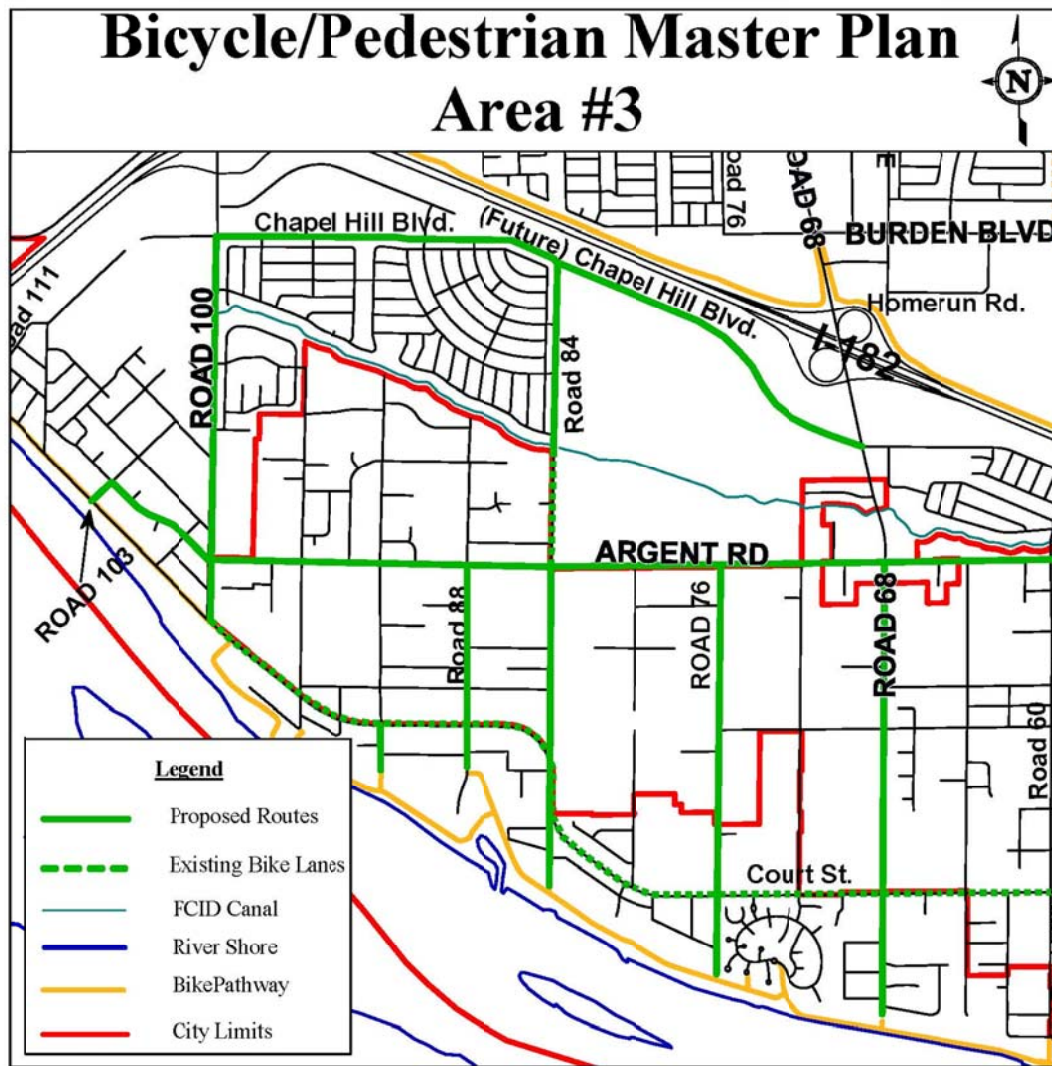
#	Pathway	Required Improvements	Cost
2	Court St. @ Rd 111 - Rd. 68	Pedestrian/Bike Pathway	\$609,637.30

### Area 3

#### Area Description

Area 3 is bound by Road 103 to the west, Chapel Hill Boulevard to the north, the Columbia River shoreline to the south and Road 60 to the east. Bicycle facilities are proposed on the following roadways:

Roadway	Needed Improvements
Chapel Hill Boulevard	ST
(future) Chapel Hill Blvd.	ST, SW
Argent Rd	SW, ST
Road 103 (350')	ST
Road 100	ST, SW
Road 88	SW, RW, ST
Road 84	SW, RW, ST
Road 76	SW, RW, ST
Road 68	SW, RW, ST
Road 92	SW, RW, ST



### Existing Facilities

Bike lanes exist on certain portions of Court Street. Sidewalks exist on very limited sections of Court Street west of Road 100.

### Needed Facilities

The edge lines on Court Street need to be widened to the 8 inch standard for bike lanes. All of the proposed routes indicated on the Bike/Pedestrian Master Plan Area 3 Map require construction of bicycle facilities. As well, many of the proposed routes lack sidewalks with the consistent exception of those segments bordering public schools. The schools may serve as good beginning points from which to extend facilities outward. Development in Suburban zones, even when fronting arterial streets, does not currently require installation of sidewalks.



A more detailed site survey should be performed to identify spots where the Court Street road surface needs to be widened. Due to the extent of existing roadway bike lanes and wide shoulders, the need for shoulder widening on Court Street will be very limited. Part of Court Street (between Rd 48 and Rd 42) has steep shoulders intended to facilitate stormwater drainage which may require modification to accommodate widening. Additional striping may be needed in some areas to define the outer boundary of the bike lanes and to meet the minimum 8 inch wide striping standard for bicycle lanes.



(Existing bike lanes on Court Street at I-182 looking east)

Chapel Hill Boulevard from Road 100 to Road 84 is a fully developed 4-lane roadway without a left-hand turn lane or edge lines. Sidewalks exist along all developed parcels fronting this roadway. Bike lanes do not exist on any portion of Chapel Hill Blvd., but travel lanes could be reduced to allow bike lane striping.



(Chapel Hill Blvd. westbound)



(Chapel Hill Blvd. eastbound)

Road 84 between the FCID canal and Argent Road contains bike lanes as shown on the Area 3 Map. The bike lanes are not contiguous from the canal to Argent Road. Between the FCID canal and Sterling Road the bike lane is on the west side of Road 84 only. A bike lane exists on the east side of Road 84 south of Sterling Road (fronting Chiawana High School). Even though the Area 3 Map indicates existing bicycle facilities, improvements are needed to make them functional.

### Challenges

Road 100 north of the irrigation canal is a relatively high traffic area and is largely developed with two travel lanes in either direction and a center turn lane. This short segment of roadway contains right and left-hand turn lanes and center-turn lanes.



(Road 100 north of the FCID canal)



(Road 100 at Massey Drive)

Chapel Hill Blvd. east of Road 100 does not contain an unimproved shoulder where bike lanes could be installed. One possibility for the inclusion of bicycle lanes on Chapel Hill Blvd. is the use of freestanding bicycle logo pole signs and/or sharrow stencils painted on the road surface. Another option is reducing the width of travel lanes to provide bike lanes.

The extension of Chapel Hill Blvd. from Road 84 to Road 68 is complicated by the current ownership (WA Dept. of Natural Resources). Opportunities to develop this extension are contingent upon transfer of ownership and rezoning.

### Opportunities

The west side of Road 100 between I-182 and the FCID canal is mostly vacant. As in most cases, undeveloped properties present opportunities to install needed bicycle infrastructure. Much of the west side of Road 100 south of the irrigation canal has wide paved or graveled shoulders. Sufficient shoulder width exists on both east and west sides to allow re-striping and to accommodate a bicycle lane with the exception of the east side of Road 100 south of Maple Drive.

Plans exist to extend Chapel Hill Blvd, from Road 84 to Road 68 concurrent with development proposals. At the time development is proposed in this location, conditions should be placed on all land divisions/development projects to require 4' wide bicycle lanes be stripped in both eastbound and westbound directions.

Chapel Hill Blvd from Road 100 to Road 84 contains a total of four (4) travel lanes, two in each direction, and each lane is 14 feet wide. If each travel lane were reduced to twelve (12) feet, six (6) feet would become available on each side of the road where bike lanes could be installed without affecting the level of service. Once the roadway striping configuration has been decided, the same should be applied to the future extension of Chapel Hill Blvd.

#### Key Route

The key route in Area 3 is Argent Road. Within Area 3 Argent Road extends from Road 100 to Road 60. This key route will extend into Areas 5 & 6 finally connecting with 4<sup>th</sup> Avenue.

#### Materials Cost Estimate

#	Roadway(s)	Required Improvements	Cost
3a	<b>Rd. 100</b> (I-182 - Court) <b>Chapel Hill</b> (Rd. 100 - Rd 84) <b>Rd 84</b> (Chapel Hill - Argent)	ST, SW, RW	\$68,816.00
3b	<b>Rd. 92</b> (Court - River), <b>Rd. 88</b> (Argent - s/Whipple), <b>Rd. 84</b> (Argent - S/Sunset), <b>Rd. 76</b> (Argent - S/River Blvd.)	ST, SW, RW	\$106,885.00
3c	<b>Future Chapel Hill</b> (84 - 68)	NA	
3d	<b>Rd. 68</b> (Argent - River)	ST, SW, RW	\$57,590.00
3e	<b>Argent Rd. &amp; Rd. 103</b> (Court - Rd 60)	ST, SW, RW	\$116,860.00
<b>TOTAL</b>			<b>\$350,151.00</b>

### Area 4

#### Area Description

Area 4 is bound by Road 60 to the west, Sandifur Parkway to the north, Argent Road to the south and Road 36 to the east. Bicycle facilities are proposed on the following roadways:





### Needed Facilities

Additional shoulder widening on the east side of Road 44 is needed to accommodate bike lanes. Sandifur Parkway is currently developed at one half of the standard width bordering the County island between Road 60 and Road 52.

To date, Madison Avenue is incomplete. Madison Avenue lies within the Linda Loviisa and First Place residential subdivisions. No connection exists between Madison Avenue at Salem Drive and Madison Avenue at El Paso Drive.

Sidewalks are lacking on the east side of Road 36 bordering the Paso Airport.

No sidewalks exist along Burden Blvd. when bordering undeveloped parcels. Several undeveloped parcels exist on Burden Blvd. between Road 60 and Road 68 creating the need for approximately 1235 feet of sidewalk in order to complete pedestrian facilities on Burden Blvd. Promoting safe bicycle travel on Burden Blvd. has the potential to alleviate traffic congestion by providing a reasonable option to access the Road 68 commercial corridor.

### Challenges

The Franklin County “island” bordering Sandifur Parkway and Road 60 presents a challenge for concurrency development of bicycle and pedestrian facilities as the timeline for annexation is undetermined.

The roadway on Burden Blvd. from Road 60 to Road 68 is fully developed with two travel lanes in both directions and a landscaped median with street lights. No edge lines or shoulders exist on which to locate bike lanes and the edge of road ends in curbs. Reduction of vehicle travel lanes is not advisable due to the existing traffic volume at this location.

### Opportunities

The landscaped area with sidewalk on the south side of Burden Blvd. west of Road 60 is twenty five (25) feet wide. This may be the only area allowing for the installation of bicycle facilities. The sidewalk in this area is constructed as an asphalt pathway. The pathway could be widened and striped to provide a designated a bicycle lane.

### Key Route

The key route in Area 4 is Sandifur Parkway combined with Road 44. In Area 4 Sandifur Parkway extends from Road 60 eastbound to connect with Road 44 continuing southbound to Argent Place.

## Materials Cost Estimate

#	Roadway(s)	Required Improvements	Cost
4a	<b>Road 52</b> (Sandifr - Burdn) <b>Madison Ave.</b> (Brdn - El Paso)	ST	\$19,950.00
4b	<b>Rd. 44</b> (Sandifr -Madison Ave)	ST, SW, RW	\$43,680.00
4c	<b>Sandifur Prkwy</b> (Rd 60 - Rd 44)	ST, SW, RW	\$42,030.00
<b>TOTAL</b>			<b>\$105,660.00</b>

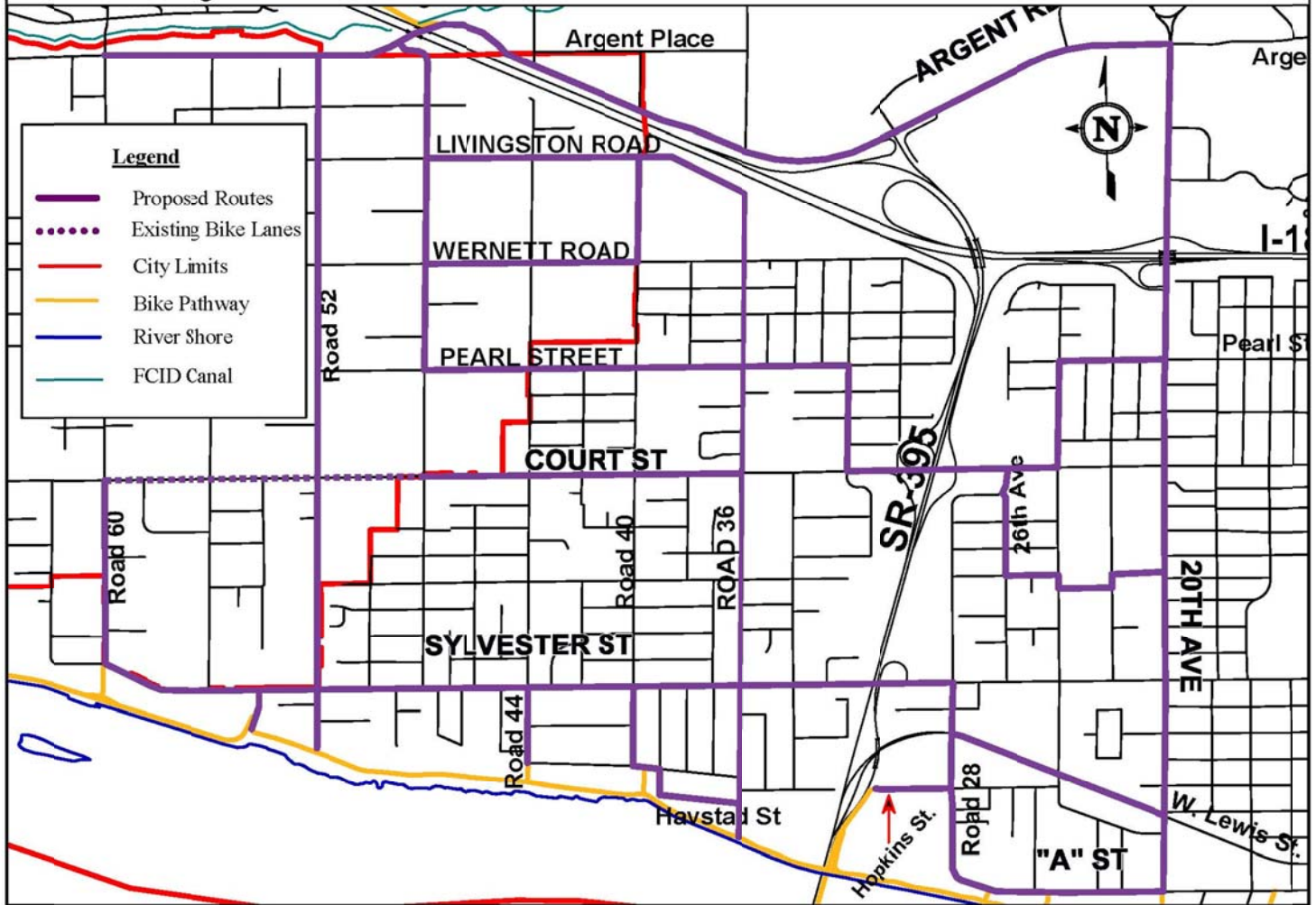
## Area 5

### Area Description

Area 5 is bound by Road 60 to the west, Argent Road to the north, the Columbia River shore to the south and 20<sup>th</sup> Avenue to the east. Most of the rights-of-way within this area is rural residential, 2 lane roads lacking edge lines (designated shoulders), curbs, gutters or sidewalks. Bicycle facilities are proposed on the following roadways:

Roadway	Needed Improvements
Road 60	ST, SW, RW
Road 52	ST, SW, RW
Road 48	ST, SW, RW
Livingston Road	ST, SW, RW
Wernett Road	ST, SW, RW
Pearl Street	ST, SW, RW
Court Street	ST, SW
Sylvester Street	ST, RW, SW
Road 32	ST, SW, RW
Road 36	ST, SW, RW
Road 40	ST, SW, RW
Havstad Street	ST, SW, RW
26 <sup>th</sup> Avenue	ST
Henry Street (fragmented)	ST
24 <sup>th</sup> Ave (200 ft.)	ST
22 <sup>nd</sup> Ave (200 ft.)	ST
Henry Place	ST
20 <sup>th</sup> Avenue	ST, RW
"A" Street	ST, SW, RW
W. Lewis Street	ST
Road 28	ST
Hopkins Street	ST, SW, RW
Road 39 (300 ft.)	ST, SW, RW

# Bicycle/Pedestrian Master Plan - Area #5



## Existing Facilities

Generally, sidewalks exist adjacent to commercial development and adjacent to a majority of the proposed routes east of Hwy 395. Court Street between Roads 48 & 36 contains 5'-6' wide shoulders on both sides of the roadway. Meaning, this segment of Court Street only requires edge line striping (4") to establish bike lanes.

## Needed Facilities

All of the proposed routes indicated on the Area 5 Map require bicycle lane striping. Most of the proposed routes are in need of sidewalks with the exception of those segments bordering commercially developed properties.

Shoulder widening should be completed where needed to achieve the minimum bike lane width of four feet. Shoulder widening is needed on most of the identified routes in the Area Map.

Critical features of Area 5 are the east/west crossings over SR-395 at Court Street and Sylvester Street. These State Highway crossings will serve as the primary connecting routes between residential west Pasco and the commercial core east of Hwy 395.



(Sylvester St./Hwy 395 Overpass - looking east)

A third critical feature is the Argent Road/I-182 underpass which, once striped, will provide much needed north-south connectivity. Since west Pasco is bifurcated by the I-182 freeway this connection point should receive particular attention and priority.

### Challenges

Road 40 between W. Pearl and Ella Street has not been dedicated to the City at this time. Right-of-way dedications need to be obtained prior to construction of improvements proposed in this Plan.

The need for right-of-way dedications, although fragmented, should be closely examined on the following roadways:

- Wernett Road
- Road 40
- Road 52
- Sylvester Street
- Court Street

20<sup>th</sup> Avenue, particularly north of Court Street, presents significant challenges for installing bike lanes due to high traffic volumes and fully developed right-of-way improvements. Sharrows may be an unsafe recommendation at this location.

Bike lanes are proposed on the Court Street/SR 395 Overpass Bridge. The bridge is currently too narrow to accommodate bike lanes; widening is needed. The same is true for the Sylvester Street/SR 395 Overpass Bridge. Overpass



widening is beyond the scope of this Plan. Cost estimates in this situation reflect striping only. Bicycle and pedestrian facilities will have to be included in any future project to widen the overpass.

All bike routes proposed on Sylvester Street require road widening and striping. Bicycle lanes are needed on the Sylvester Street /SR 395 Overpass Bridge however; the Bridge requires widening to accommodate additional road improvements. Sidewalks are also needed on much of Sylvester Street.

Argent Road, from 20<sup>th</sup> Avenue to 4<sup>th</sup> Avenue, is identified as a bike route. Said portion of Argent belongs to the Port of Pasco. In 2011 the Port widened Argent Rd in this location, but did not provide bicycle facilities. Cost estimates are provided for this portion of Argent, however installation of bicycle & pedestrian facilities is not likely to be a City funded or implemented project.

### Opportunities

The lack of right-of-way infrastructure west of Hwy 395 poses fewer site specific limitations caused by existing infrastructure. Improvements have the potential to contain comparatively uniform and easy to follow bicycle/pedestrian routes.

Completion of bicycle facilities on Sylvester Street and “A” Street will provide eight (8) separate connection points to the Sacajawea Heritage Trail; six (6) of which will clearly indicate connection between residential neighborhoods and the Trail. Particularly useful are the Road 44 and Havstad Street connections to the Sacajawea Trail.



(Sylvester Street between Road 45 & Road 40 – looking east) (Sylvester Street/Road 60 pathway connection)



(Road 26/Hopkins St. pathway connection point)



(Pathway @ Wade Park boat launch)

Once constructed, bicycle/pedestrian facilities at the Argent Rd./I-182 underpass will provide much needed north/south connectivity crossing Highway I-182.

The southbound lane on Road 52 between Court Street and Whitetail Court contains a 6.5' wide shoulder without an edge line. This wide shoulder eliminates the need to add paving to the road surface in order to accommodate a bike lane for approximately 616 linear feet on Road 52.

### Key Route

Two key routes are identified in Area 5; they are: 1) Argent Road from Road 60 to 20<sup>th</sup> Avenue, and 2) Sylvester Street from Road 60 to Road 28. Both of these key routes enable cyclists to cross State highways.

### Materials Cost Estimate

#	Roadway(s)	Required Improvements	Cost
5a	<b>Rd. 60</b> (Court - S/Sylvester) <b>Rd. 52</b> (Argent - Rivershore)	ST, SW, RW	\$9,750.00
5b	<b>Rd. 48</b> (Argent - Pearl) <b>Livingston Rd.</b> (Rd. 48 - Rd 36) <b>Rd. 40</b> (Livingston - Wernett) <b>Wernett</b> (Rd.84 - Rd. 36) <b>Pearl St.</b> (Rd. 48 - Rd. 32)	ST, SW, RW	\$225,958.40
5c	<b>Court St</b> (Rd. 48 - Rd. 36)	ST, SW	\$23,310.00
5d	<b>Rd. 36</b> (Livingston - rivershore)	ST, SW, RW	\$85,108.40
5e	<b>Sylvester St.</b> (Rd. 60 - Rd. 28)	ST, RW, SW	\$301,125.60

5f	<b>Rd. 32</b> (Pearl - Court) <b>Court St.</b> (Rd. 32 - 26th Ave.) <b>26th Ave.</b> (Court St - Henry St.) <b>W. Henry Pl.</b> (24th Ave. - 20th Ave.) <b>24th Ave.</b> (Henry St - W. Henry Pl.) <b>22nd Ave.</b> (W. Henry Pl. - Henry St)	ST, SW, RW	\$97,768.80
5g	<b>20th Ave.</b> (Argent - "A" St.)	ST, RW	\$7,500.00
5h	<b>Rd. 28</b> (Sylvester - "A" St.) <b>W. Lewis St.</b> (Rd. 28 - 20th) <b>"A" St.</b> (Rd. 28 - 20th Ave.) <b>Hopkins St.</b> (HWY 395 - Rd. 28)	ST, SW, RW	\$72,290.00
5i	<b>Argent</b> (Rd 60 - 20th Ave)	ST, SW, RW	\$104,372.00
5j	<b>Court</b> (26 <sup>th</sup> – 24 <sup>th</sup> ) <b>24<sup>th</sup></b> (Court – Pearl) <b>Pearl</b> (24 <sup>th</sup> – 20 <sup>th</sup> )	ST	\$5,220.50
<b>TOTAL</b>			<b>\$932,403.70</b>

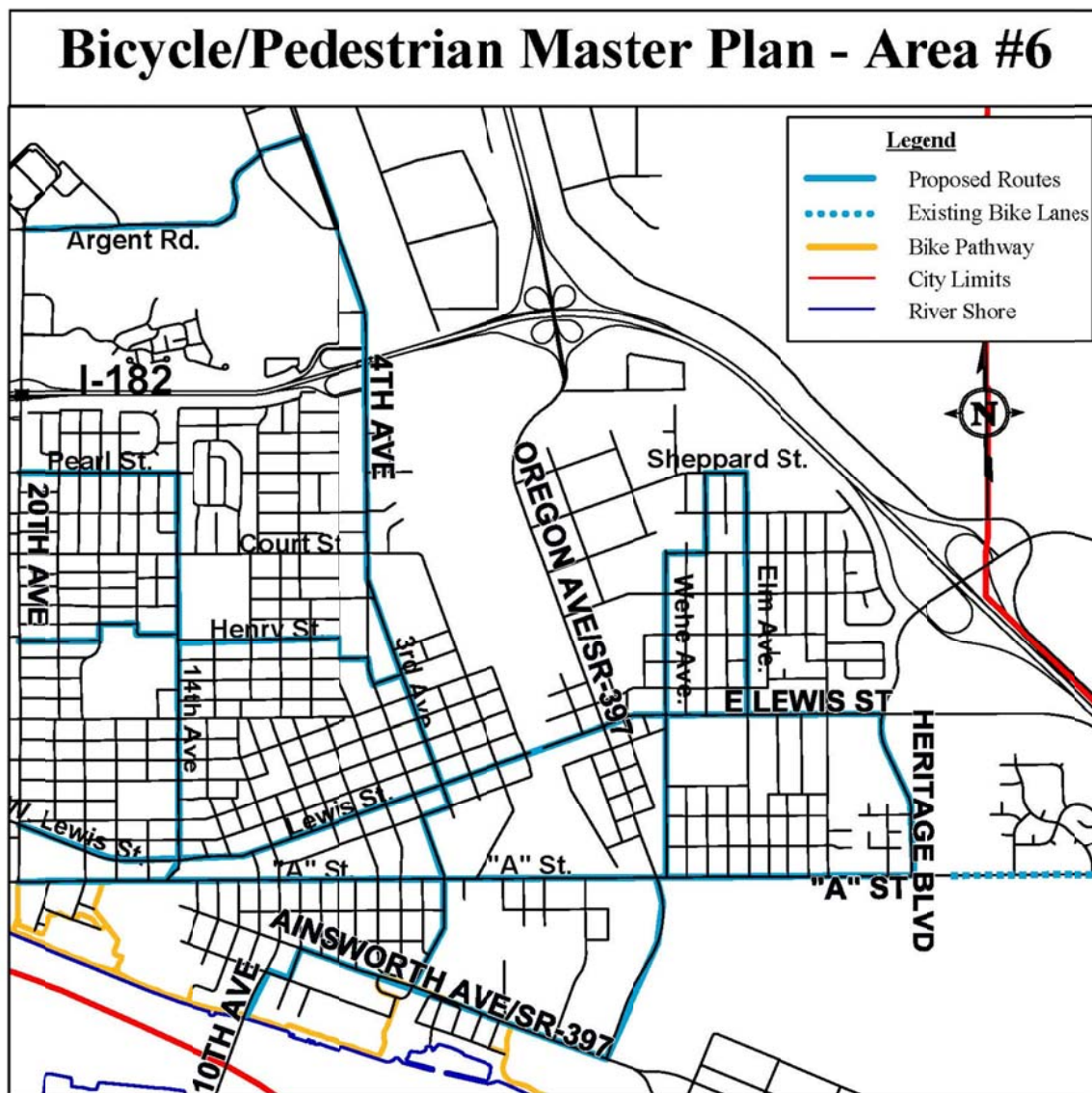
## Area 6

### Area Description

Area 6 is bound by 20<sup>th</sup> Avenue to the west, Argent Road/Boeing Street to the north, the Columbia River shore to the south and Heritage Blvd. to the east. Bicycle facilities are proposed on the following roadways:

<b>Roadway</b>	<b>Needed Improvements</b>
Argent Road	ST, SW, RW
Boeing Street	ST, SW, RW
Pearl Street	ST
Henry Street	ST
Henry Place	ST
E. Lewis Street	ST
5 <sup>th</sup> Avenue	ST
"A" Street	ST, SW
4 <sup>th</sup> Avenue	ST
3 <sup>rd</sup> Avenue	ST
Ainsworth Avenue	ST, SW
Whehe Avenue	ST
Elm Avenue	ST
Sheppard Street (1,000')	ST
Highland Street (300')	ST
Beech Avenue	ST

18 <sup>th</sup> Ave (270')	ST
Octave Street (620')	ST
16 <sup>th</sup> Ave (200')	ST
5 <sup>th</sup> Ave (350')	ST
Margaret St (450')	ST
Nixon Street (450')	ST
Columbia Street (450')	ST
Washington Street (350')	ST, SW
9 <sup>th</sup> Ave (600')	ST, SW, RW



Approximate distances are provided in the preceding list for those bicycle/pedestrian facilities proposed on relatively short sections of a road. This circumstance occurs when routes make a “jog” in order to make the desired connection between points. The proposed route containing Henry Street; extending from 20<sup>th</sup> Ave to 3<sup>rd</sup> Ave. is a good example.

#### Existing Facilities

Bike lanes exist on “A” Street from unimproved Spokane Street to Road 40 East. Said section of “A” Street also contains sidewalk on the north side of the road and a 9’ wide asphalt pathway with a 6’ landscaping strip on the south side of the road. A large majority of routes indicated in the Area 6 map currently contain sidewalks with some exceptions.

#### Needed Facilities

All routes indicated in the Area 6 map are in need of bicycle facilities. Sidewalks are needed on those roadways indicated in the Area Description table.

#### Challenges

A large majority of the proposed routes in Area 6 are located on fully developed roadways in older established areas of town. Most roadways are fully developed without striping.

Traffic from the Highland Park neighborhood (north of Lewis St. and east of Wehe Ave.) is funneled through the Lewis Street underpass in order to access the central downtown area. There are plans to convert this underpass into an overpass. Bike lanes are incorporated into the design of this project. Much of the roadway design work has been completed at this time. The City has established a high priority to conversion of the existing underpass to an overpass. The current design of the Lewis Street/railroad overpass includes a six (6) foot wide sidewalk and five (5) foot wide bike lanes.

The C-2 (Central Business) District zoning regulations do not require businesses to provide off-street parking. On-street parking is the predominant condition while some small off-street parking lots are scattered throughout the downtown area. Lewis Street provides only parallel parking stalls which cannot be eliminated to install bicycle facilities.

#### Opportunities

The downtown area east of Hwy 395 is an active commercial area serving residents of the surrounding neighborhoods. The C-2 zoning regulations in the central downtown area emphasize pedestrian access and circulation. Enhancing pedestrian and bicycle safety in the downtown area will promote the economy of the Pasco downtown area.



Residential neighborhoods east of Oregon Avenue and north of “A” Street contain three public schools: Whittier and Robinson Elementary Schools and Helen Ochoa Middle School. Establishing safe, well marked bicycle facilities on Wehe Ave., Elm Ave., Lewis St. and short segments of other roadways will enhance bicycle/pedestrian travel in the neighborhood.

Railroad tracks intersect “A” Street at two points east of Oregon Avenue. Curbing extends approximately eight (8) feet into the travel lanes; reducing the lanes’ width and interfering with the availability of area to locate a uniform bike lane. It is recommended the curbing be removed and the area within it be paved to match the roadway allowing bike lanes to be striped.



(“A” Street @ Railroad tracks – note extended curbing)



(Pedestrian pathway along "A" Street)



(Bicycle & pedestrian facilities on "A" Street – looking east)

A recently completed Local Improvement District (LID) installed bike lanes and sidewalk and pathway along the eastern portion of "A" Street. The layout/design of these improvements should serve as a model with which to match the proposed facilities in Area 6.

#### Key Route

Two key routes are identified in Area 6; they are: 1) Lewis Street from Road 28 to Heritage Blvd., and 2) "A" Street from Road 28 to Heritage Blvd. The Lewis Street route provides access to residential neighborhoods, commercial business areas and a school.

## Materials Cost Estimate

#	Roadway(s)	Required Improvements	Cost
6a	<b>4th Ave.</b> (Argent - X/3rd&4th) <b>3rd</b> (4th - Columbia)	ST	\$32,375.00
6b	<b>W. Lewis St.</b> (20th - Heritage)	ST	\$106,550.00
6c	<b>"A" St.</b> (20th - Heritage)	ST,SW	\$106,490.00
6d	<b>Columbia</b> (3rd - 4th)	ST	\$33,700.00
6e	<b>Pearl St.</b> (20th - 14th) <b>14th Ave.</b> (Pearl - W. Lewis St) <b>Henry St.</b> (20th - 5th) <b>5th Ave.</b> (Henry - Margaret) <b>Margaret St.</b> (5th - 4th) <b>4th Ave.</b> (Maragret - Nixon) <b>Nixon St.</b> (4th - 3rd)	ST, SW, RW	\$118,630.00
6f	<b>Owen Ave.</b> (Sheppard - Park View) <b>Park View Blvd</b> (Owen - Wehe) <b>Wehe Ave.</b> (Park View - "A" St.) <b>Elm Ave.</b> (Sheppard St. - E. Lewis)	ST	\$87,260.00
6g	<b>Argent Rd.</b> (20th - 4th)	ST, SW, RW	\$41,710.00
6h	<b>Heritage Blvd.</b> (E. Lewis - "A" St.)	ST, SW	\$20,580.00
6i	<b>10th Ave./397</b> (shore - Washington) <b>Washington St.</b> (10th - 9th) <b>9th Ave.</b> (Washington - Ainsworth) <b>Ainsworth Ave.</b> (9th - Oregon Ave/397)	ST, SW, RW	\$52,040.00
<b>TOTAL</b>			<b>\$599,335.00</b>

## Alternative Solutions

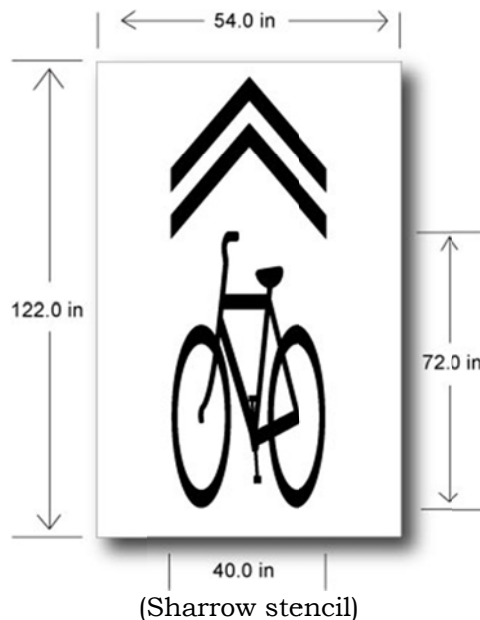
It should be noted that all of the bicycle and pedestrian facilities proposed in this Plan should be designed and constructed in accordance with the most current edition of the Manual of Uniform Traffic Control Devices (MUTCD) at the time of design. The following methods are presented as ways to accommodate bicycle and pedestrian infrastructure improvements where physical constraints exists due to the layout of previously constructed right-of-way infrastructure. Incorporating bicycle facilities into existing roadways without eliminating vehicle travel lanes is paramount. Facilities serving pedestrians and bicyclists should not come at the expense of vehicle traffic flow rates.



## Sharrows

Sharrows are a relatively new method of bicycle route identification whereby a roadway is marked on the road surface (see roadway surface stencil below) and a freestanding pole sign with the image of a bicycle is placed near the edge line or curb at a minimum rate of 1/block. Due to their recent introduction, sharrows require an educational component in order to be safe and effective. The intent of the sharrow is to indicate to the motorist they are traveling on an identified bike route and to use caution when passing a bicycle. If a center/left-hand turn lane exists, the vehicle can pass the bicyclists safely without stopping. If a center/left-hand turn lane is not present, the vehicle is supposed to wait until on-coming traffic clears before passing the bicyclist.

The City of Spokane has implemented sharrows with limited success. Due to the necessity of an educational component in order to facilitate safety, sharrows can create a false sense of safety in the cyclists' mind. The use of sharrows should be more closely examined prior to their implementation.



## Signage

Either as stand-alone features or together with sharrow roadway markings, freestanding pole signs may be installed adjacent to the roadside. Examples of sign designs extracted from the 2009 edition of the Manual of Uniform Traffic Control Devices (MUTCD) are provided below.



The signs above are intended to serve a variety of purposes which include conveying a message to vehicles, directional signs for bicyclists and pathway use divisions and should be used accordingly.

### [Bike Boxes/Green Boxes](#)

The bike box is an intersection safety design to prevent bicycle/car collisions, especially those between drivers turning right and bicyclists going straight. It is a green box on the road with a white bicycle symbol inside. It includes green bicycle lanes approaching and leading from the box.



The main goal is to prevent collisions between motorists turning right and cyclists going straight. It's all about visibility and awareness. At a red light, cyclists are more visible to motorists by being in front of them. At a green light, the green bike lane through the intersection reminds motorists and cyclists to watch for each other.

## Potential Funding Sources

There are a wide range of potential funding sources for improving pedestrian and bicycle transportation options. Federal funding is administered through the state and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs and projects must relate to the surface transportation system. Many of the funding sources included below require local cities to take the lead to provide bicycle facility improvements.

### Federal

The Intermodal Surface Transportation Efficiency Act of 1991 included several funding categories wherein improvements for pedestrian and bicycle transportation could be funded, either as part of a road improvement project or an independent improvement. The 1998 TEA 21 legislation perpetuated those funding categories. Of particular significance is the ten percent set aside of surface transportation funds for enhancements, which contains a specific category for pedestrian and bicycle facilities.

2005 marked the passage of the Safe, Accountable, Flexible, Efficient Transportation Act – A Legacy For Users (SAFETEA-LU), which reauthorizes the federal highway and transit programs through FY 2009. The bill increased funding of the Surface Transportation Program (STP) by roughly 30 percent. Transportation Enhancements continue to be funded through a 10 percent set-aside of STP funds or the amount set aside in 2005, whichever is greater. As of 2009, over \$5.3 million in enhancement funds have been allocated to projects in the RTPO area since the inception of the program, with \$3.0 million, or 57 percent, awarded to bicycle/pedestrian.

### State

#### Pedestrian and Bicycle Safety Funding

In 2005, the Governor and Washington State Legislature increased the state's role in safety by providing funding that supports pedestrian and bicycle safety and safe routes to school projects (ESSB 6091). In addition, with the passage of SAFETEA-LU in 2005, a new federal Safe Routes to School program was established that provided federal funding to the state.

#### Pedestrian and Bicycle Safety Grant

This program focuses on pedestrian and bicycle safety and providing children a safe, healthy alternative to riding the bus or being driven to school. Its purpose is to aid public agencies in funding cost-effective projects that improve pedestrian and bicycle safety through engineering, education and enforcement.

### Safe Routes to School Grant

The purpose of this program is to aid public agencies in funding cost-effective projects within two-miles of primary and middle schools (K-8) that provide children a safe, healthy alternative to riding the bus or being driven to school. These two programs are very lightly funded and highly desired. Grant cycles are based on the budget biennium, so there have been three full funding periods to date: 2005-2007, 2007-2009 and 2009-2011.

The Pedestrian and Bicycle Safety program, over the combined 2005-2007 and 2007-2009 periods, had \$15 million available which funded 47 projects from the over \$63 million in requests. In the RTPO, a single project in Kennewick was funded during these two cycles.

Safe Routes to Schools had a total of \$10 million available to fund 39 projects from the over \$49 million requested. In the RTPO, two projects were funded in Walla Walla during these two cycles.

For the 2009-2011 biennium, approximately \$11 million was available to fund the over \$82 million in requests received. WSDOT received 92 Pedestrian and Bicycle Safety project applications totaling approximately \$35 million. Statewide, 16 projects were funded. Four were submitted from within the RTPO and one, from Richland was funded. The State received 112 Safe Routes to Schools project applications and funded 21. Three were submitted from the RTPO and none were funded.

### Additional Funding Sources

Under RCW 47.30, Paths and Trails, 0.3 percent of state construction expenditures must be spent on paths and trails: WSDOT estimates that it spends about 0.5 percent. This amounted to about \$2.4 million in 1994. Some of these monies are distributed to cities and counties.

The Transportation Improvement Board (TIB) has assorted legislatively funded categories wherein cities and counties annually compete for project funds. Some of these categories are specifically earmarked for pedestrian or bicycle improvements. Other categories for roadway and street improvement projects require pedestrian elements on either one or both sides.

Community Development Block Grants target communities and neighborhoods that are principally low and moderate income. Such communities tend to have high demand for pedestrian and bicycle travel and public transit services. Funding is for street improvement projects, presumably including non-motorized and transit elements.

## **Local**

Local revenue sources include: the road portion of “impact fees,” county-wide vehicle license fees, commercial parking tax, local street utility tax, county-wide fuel tax, property tax, Local Improvement Districts, real estate excise tax, Transportation Benefit Districts, toll roads, and bonds.

### **Funding and Implementation Practices**

Bike lanes, shoulder bikeways, and sidewalks, which make up the majority of the bicycle and pedestrian system, are usually implemented as part of a standard roadway project and represent a small fraction of a project’s cost. As new arterials and collectors are constructed or old ones are reconstructed to current standards, appropriate bikeways and walkways should be included in the project.

Walkways and bikeways may also be provided as a part of routine roadway repairs. Resurfacing of an arterial or collector is an excellent time to restripe for bike lanes at little additional cost. In this way a bikeway system can develop incrementally in step with the road system.

In private developments, pedestrian and bicycle facilities are made a condition of approval, just as are the roads and parking lots. In some cases, System Development Charges (SDCs) or transportation impact fees can be imposed. If the impact of a development on adjacent streets is not immediate, the developer may participate in future improvements through a Local Improvement District (LID).

## **Prioritization and Ranking**

Roughly forty (40) miles of bikeways, in all of their various forms, are needed in order to meet the Plan goals. The total mileage of needed striping is twice the length of the total roadways needing striping due to the need for striping on both sides of the road. Clear guidance for dedicating funds is needed.

The materials cost estimates separate and list roadways (or groups of roadways) within each Area to organize construction phasing and to narrow the scale of individual projects for the purpose of securing reasonable funding amounts. When funding becomes available ranking scores can be used to quickly choose roadway improvement projects based on their effective importance.

The following criteria were developed to serve as a guide for implementing roadway improvement projects. Ranking scores should apply to individual projects and be used to prioritize the project list. The criteria scale ranges from 0 to 3. The prioritization criteria are as follows:

- 1) Traffic Volume
- 2) Gap Closure/Increase Connectivity
- 3) Land Use

#### Definition of Terms:

The definitions below are included to assist in conducting an objective scoring of routes. The following terms are used in the evaluation criteria:

- 1) SIGNIFICANT ROUTE. “Significant route” includes all key routes and other routes located on major/minor arterial roads.
- 2) MINOR ROUTE. “Minor route” means a route on a collector road.
- 3) MAJOR BARRIER. “Major barrier” means a feature preventing or obstructing access or travel (i.e. SR 395, I-182, BNSF Rail).

#### **Traffic Volume**

The traffic volume criterion is based on gross volume. Data used to inform this criterion is based on actual traffic volumes or public works estimates. A higher ranking value indicates higher traffic volumes and therefore a greater likelihood of dangerous incidents, and a greater number of people that would benefit from this improvement. The higher speeds that tend to accompany higher traffic corridors typically require improvements to allow separation of users. This criterion was given a scale of 0 to 3 based on the following guidelines:

0. Very Low volume.
1. Low to moderate traffic volumes and low speeds. Average daily traffic is less than 4,000 vehicles and speeds less than or equal to 30 mph.
2. Moderate traffic volumes and/or vehicle speeds. Average daily traffic equals 4,000 vehicles or greater and speeds equal 30 mph or greater.
3. Traffic volumes exceed 10,000 vehicles per day and/or traffic speeds are 35 mph or greater.

#### **Closure of a Gap / Increases Connectivity**

This criterion focuses on facilities that would close a gap or remove a barrier along an existing route, or would address a major safety concern for pedestrians and bicyclists at transition points such as bridges, interchanges, and other difficult environments for pedestrians and bicyclists to navigate. This criterion was given a scale of 0 to 3 based on the following guidelines:

0. Does not provide significant connection, safety improvement or improved access.
1. Provides limited connection or safety improvement to a minor route.
2. Provides connection on significant route and/or makes pedestrian and bicyclist environments better.



3. Provides multiple connections, closes significant gap, significantly improves safety or mitigates major barriers such as I-182, SR 395, BNSF Rail Line, or others.

### **Land Use Criterion**

The land use criterion ranks projects based on connections or access to multiple land uses. Facilities that provide access to schools, shopping, transit, and public open space or parks rank favorably according to this criterion. Projects that connect compatible land uses or provide a critical link between two or more major land uses rank higher than projects that do not connect origins with destinations. This criterion was given a scale of 0 to 3 based on the following guidelines:

0. Does not go to specified destination; is not part of school, employment, or transit route.
1. Makes some connection to, or part of, a significant route.
2. Multiple connections or school route.
3. Multiple connections and school route or significant employment/shopping route.

### **Scoring**

The simple chart below can be used to evaluate and compare priority ranking scores amongst the various roadway improvement projects identifiable in this Plan.

Roadway	Criterion	Score
	Traffic	
	Gap Closure/Connectivity	
	Land Use	
	<b>TOTAL</b>	

### **Maps**

(see attached)

## **Additional Bicycle Facility Components**

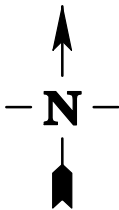
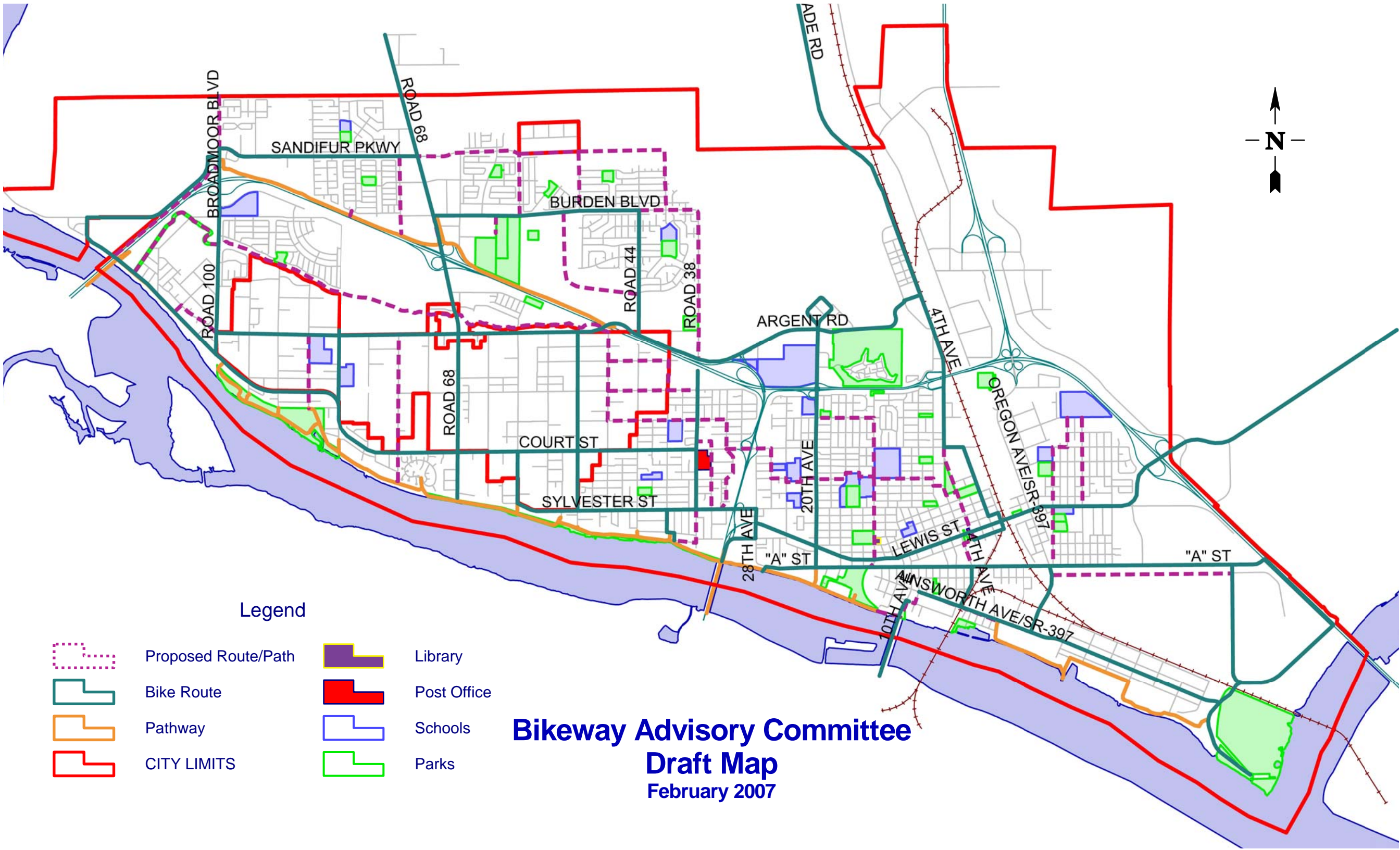
### **Transportation SYSTEM Plan**

The Pasco Public Works Department plans to initiate a City-wide comprehensive traffic study to evaluate various needs related to vehicle circulation. The Transportation SYSTEM Plan is proposed to include elements

addressing needed bicycle and possibly pedestrian facilities. The Plan may duplicate and contribute to efforts made in compiling this Bicycle/Pedestrian Master Plan.

**Install municipal bike racks (identify effective locations)**

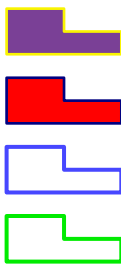
A concurrency requirement for the installation of bicycle lock-up racks should be considered for new businesses locating on roadways identified as proposed bike/pedestrian routes in the Master Plan Overview Map. Such a development requirement may be imposed by amending PMC Title 12 (Streets and Sidewalks). The availability of convenient ways to secure bicycles in front of businesses may foster bicycle transportation; thereby advancing the stated goal, policies and objectives of this Plan.



Legend



Proposed Route/Path  
Bike Route  
Pathway  
CITY LIMITS

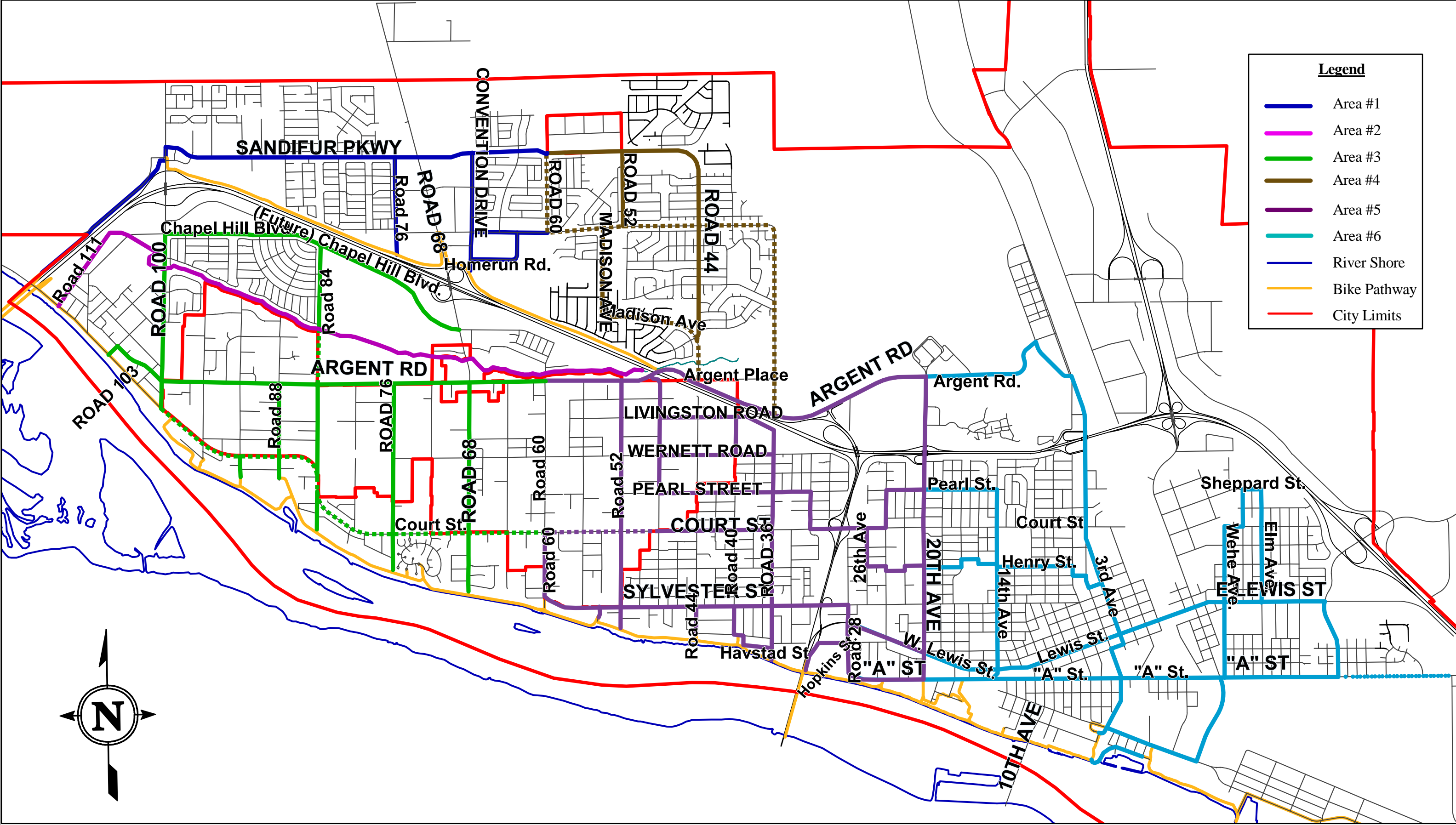


Library  
Post Office  
Schools  
Parks

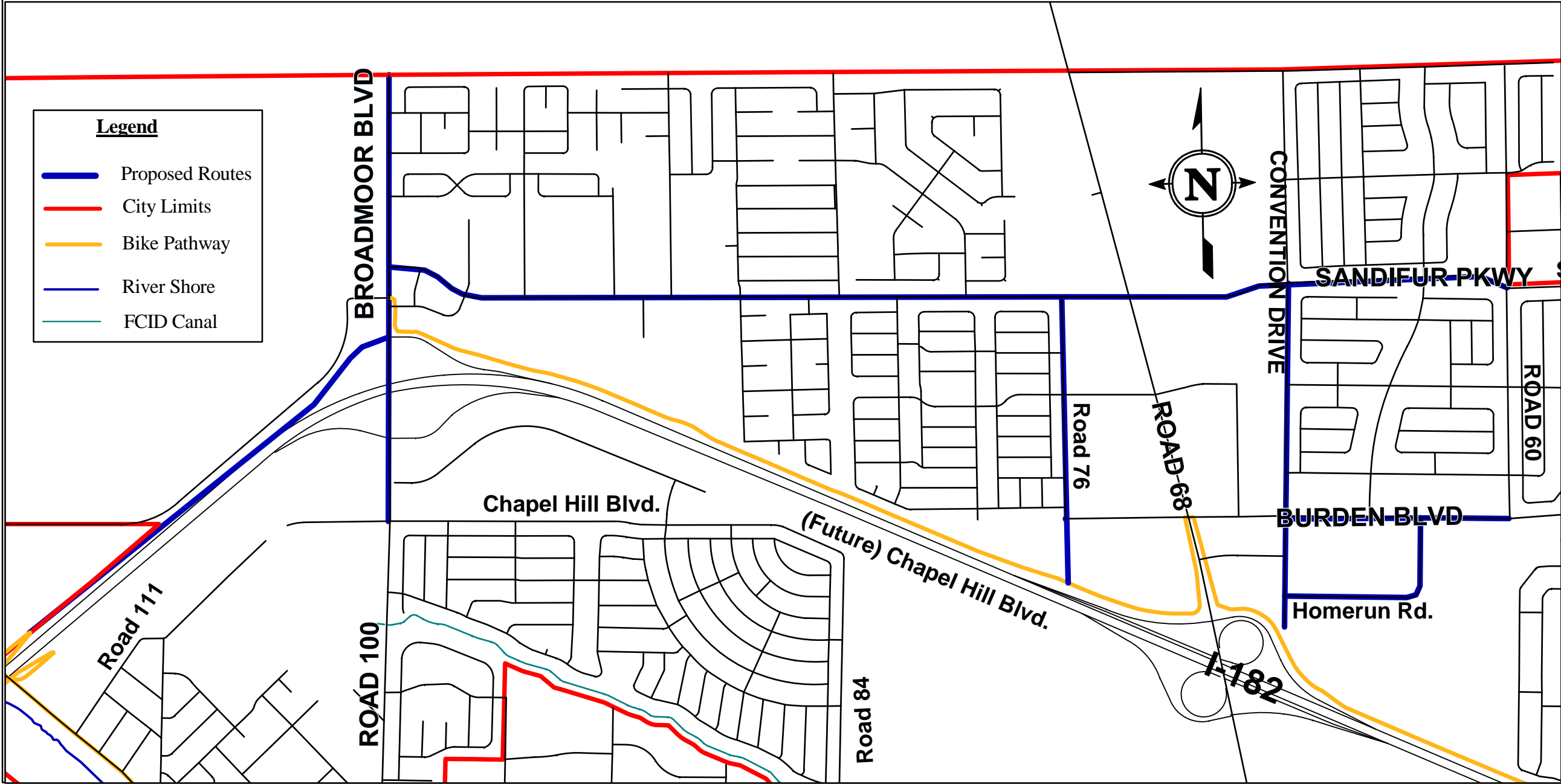
**Bikeway Advisory Committee**  
**Draft Map**  
February 2007



# Pasco Bicycle/Pedestrian Master Plan Overview Map

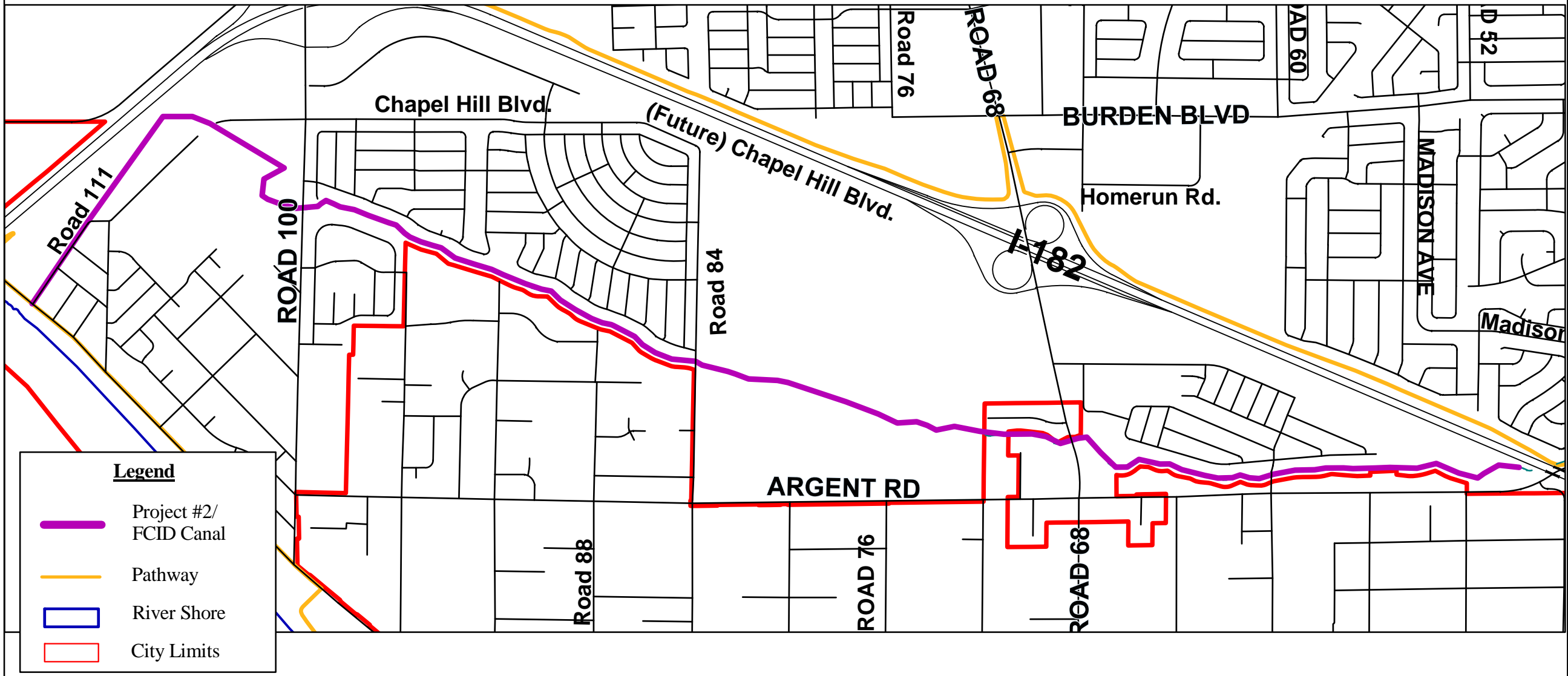
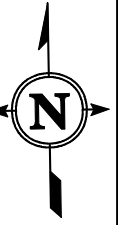


# Bicycle/Pedestrian Master Plan - Area #1



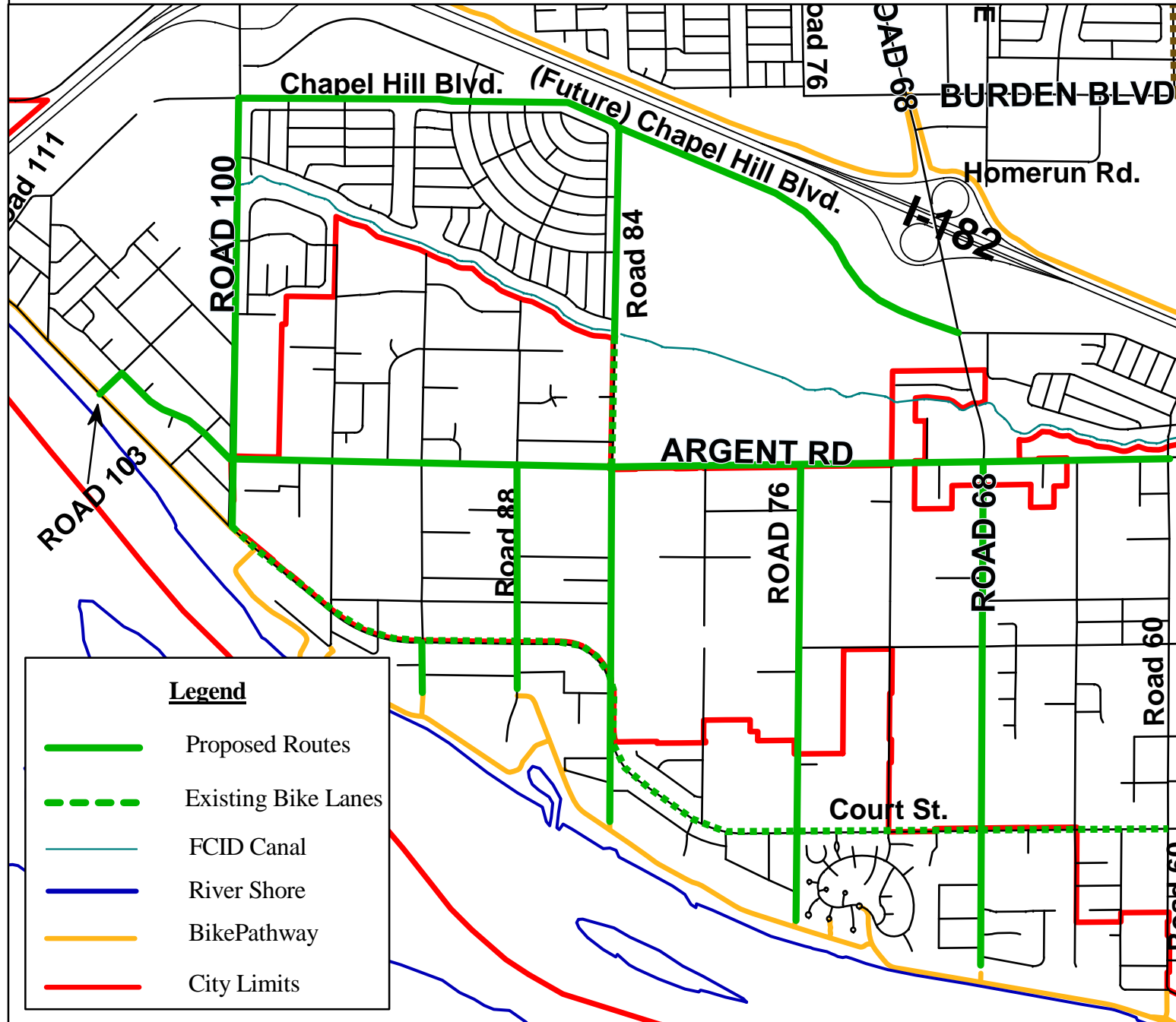


# Bicycle/Pedestrian Master Plan - Area #2

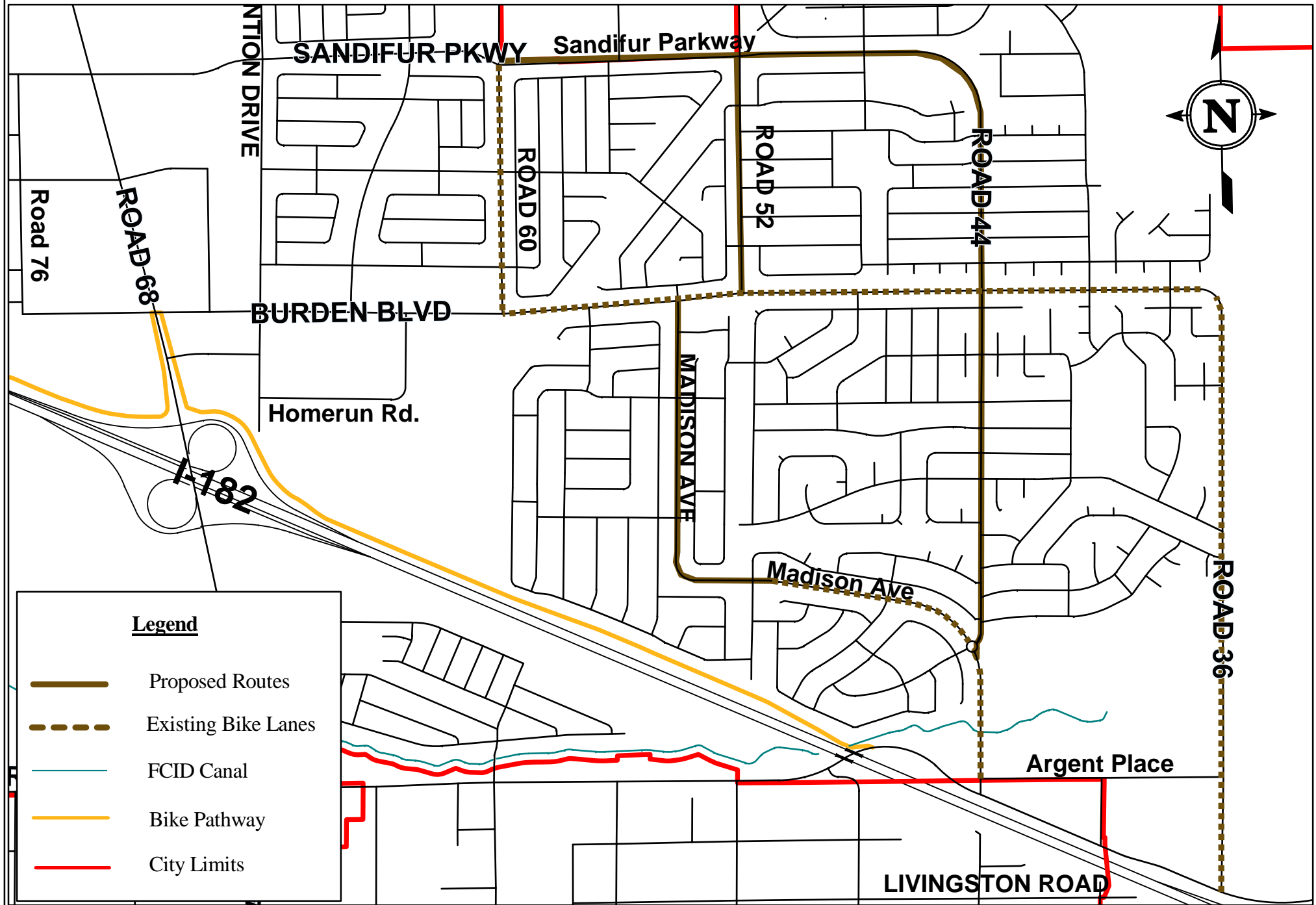


# Bicycle/Pedestrian Master Plan

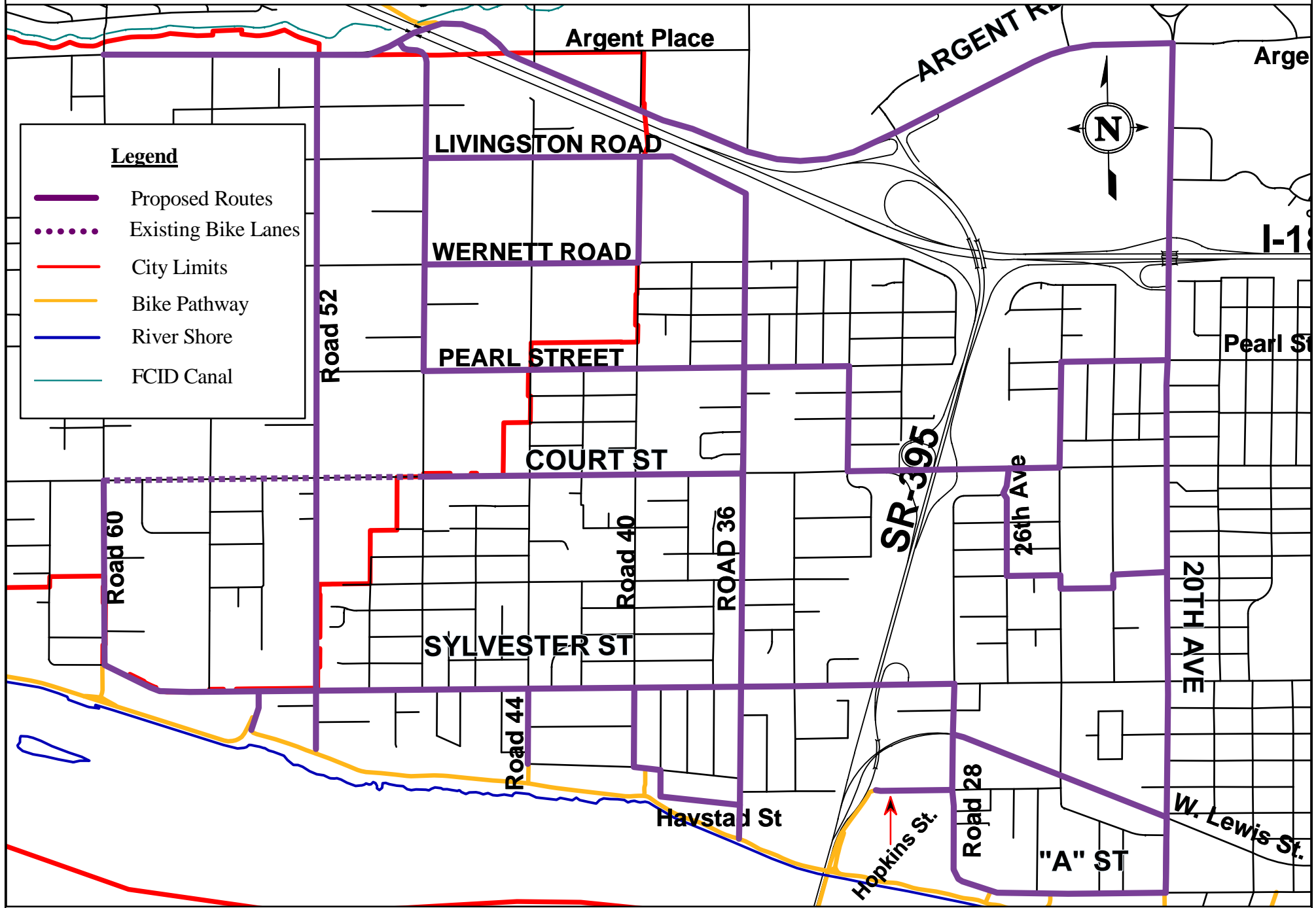
## Area #3



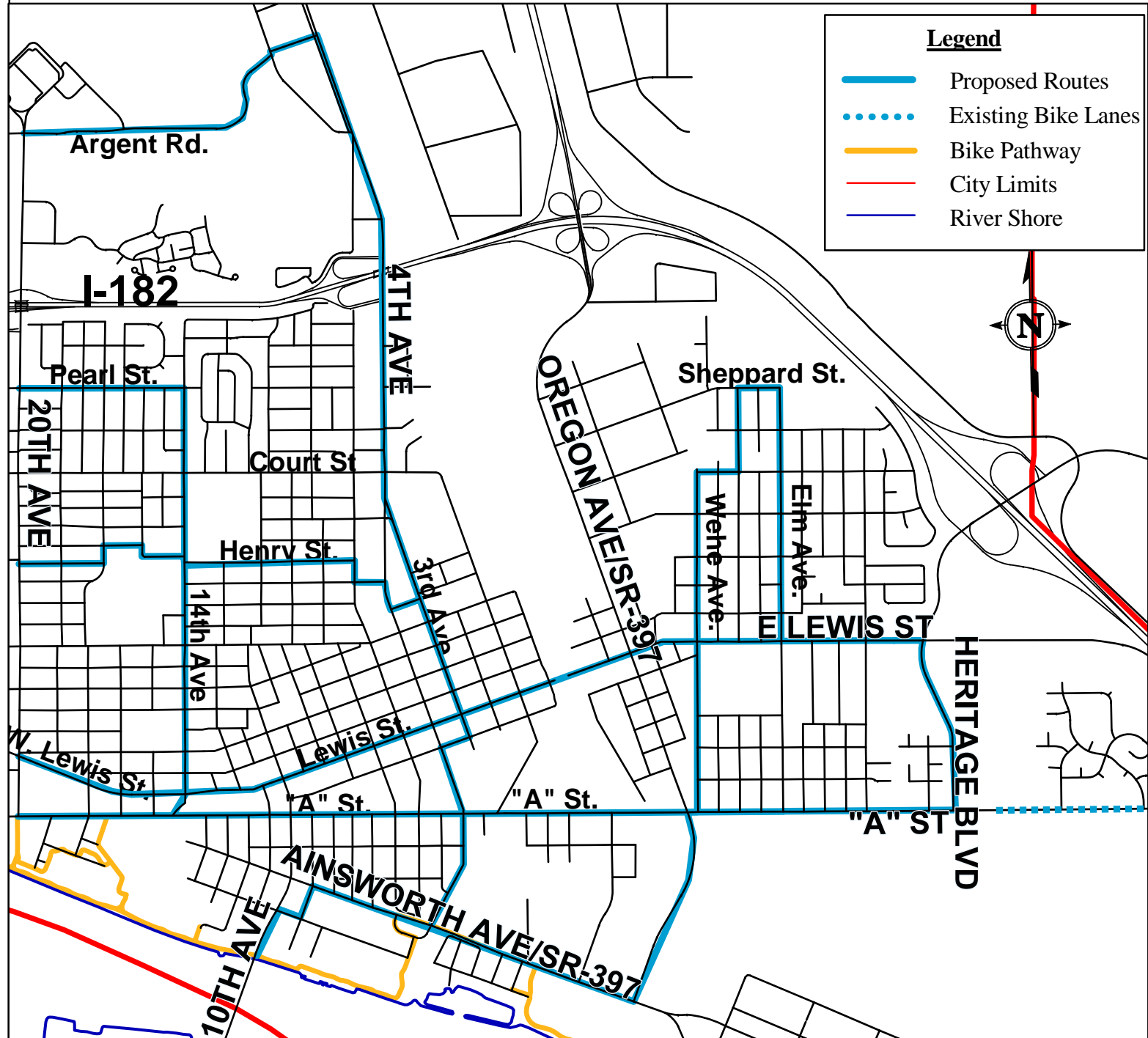
# Bicycle/Pedestrian Master Plan - Area #4



# Bicycle/Pedestrian Master Plan - Area #5



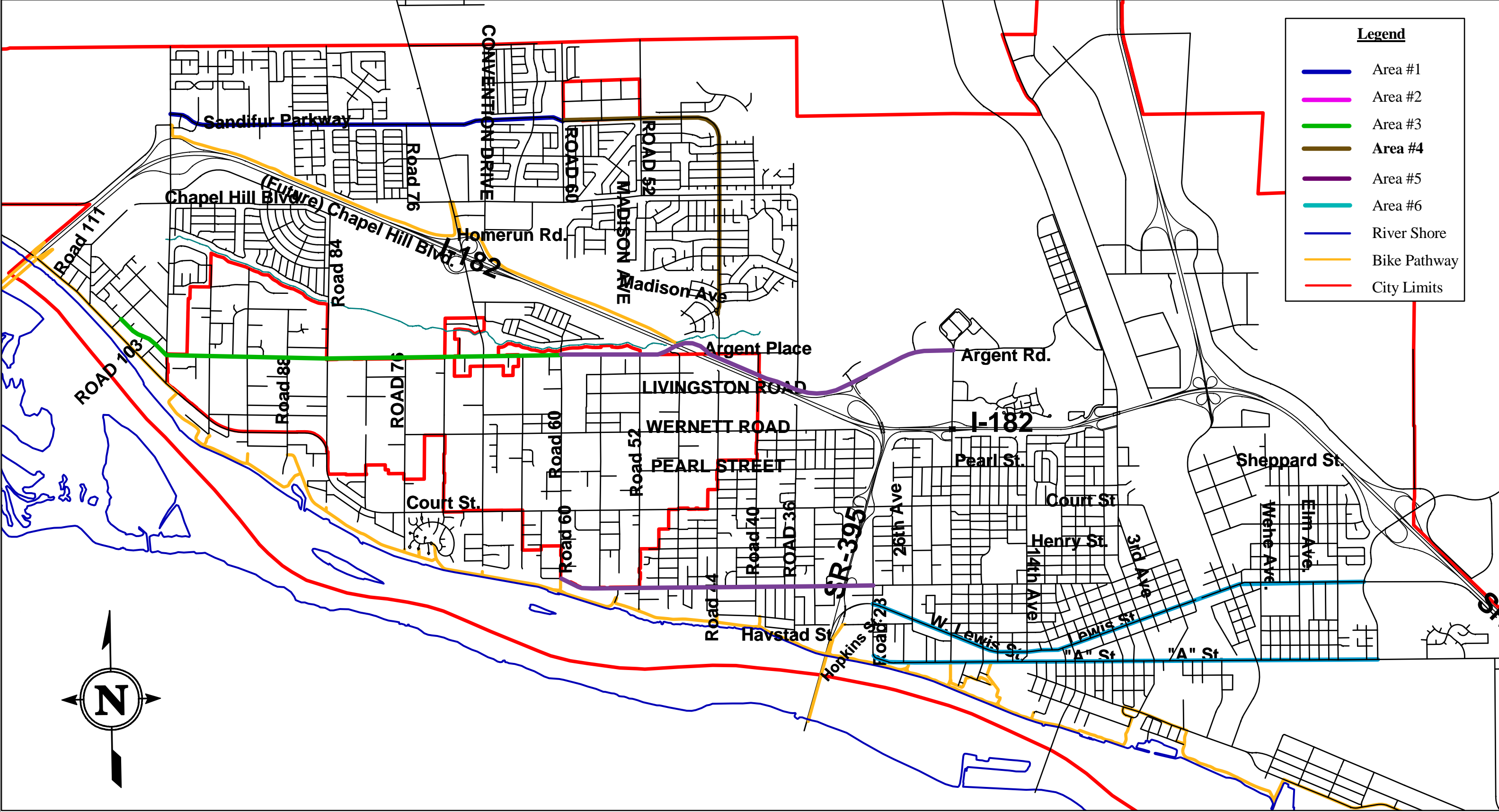
# Bicycle/Pedestrian Master Plan - Area #6





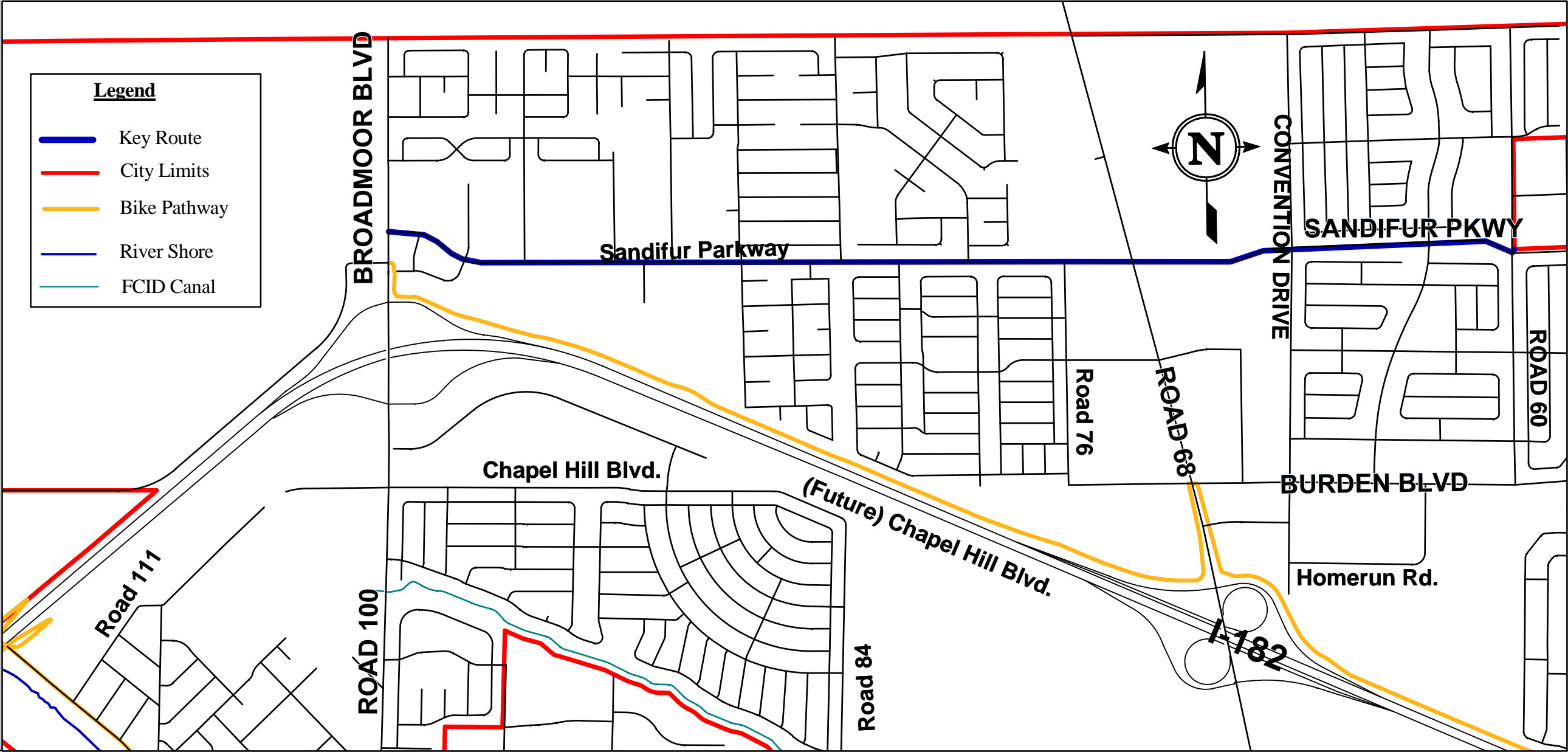
# Pasco Bicycle/Pedestrian Master Plan Overview

## Key Route Map



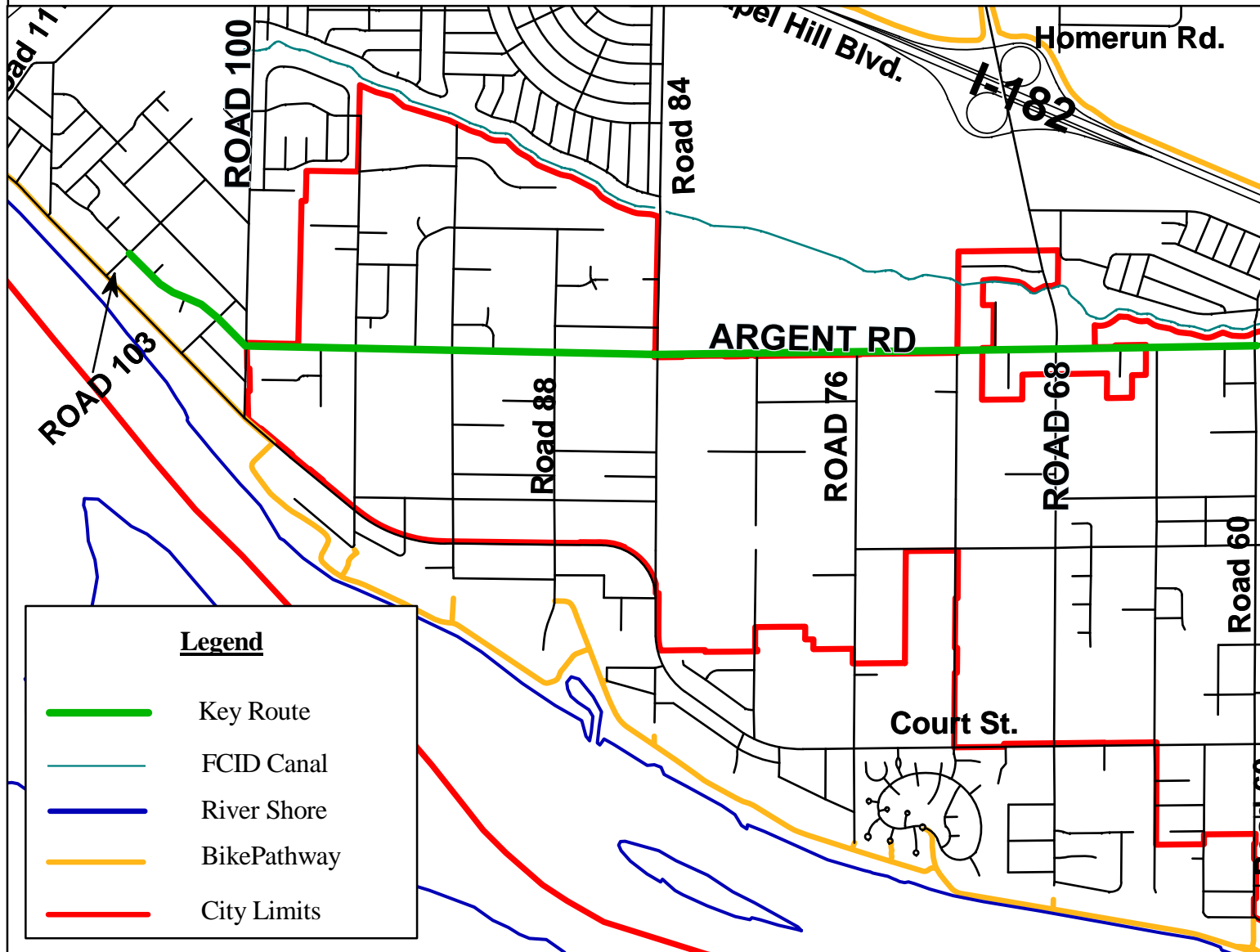
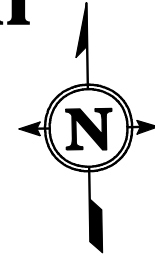
# Bicycle/Pedestrian Master Plan - Area #1

## Key Route



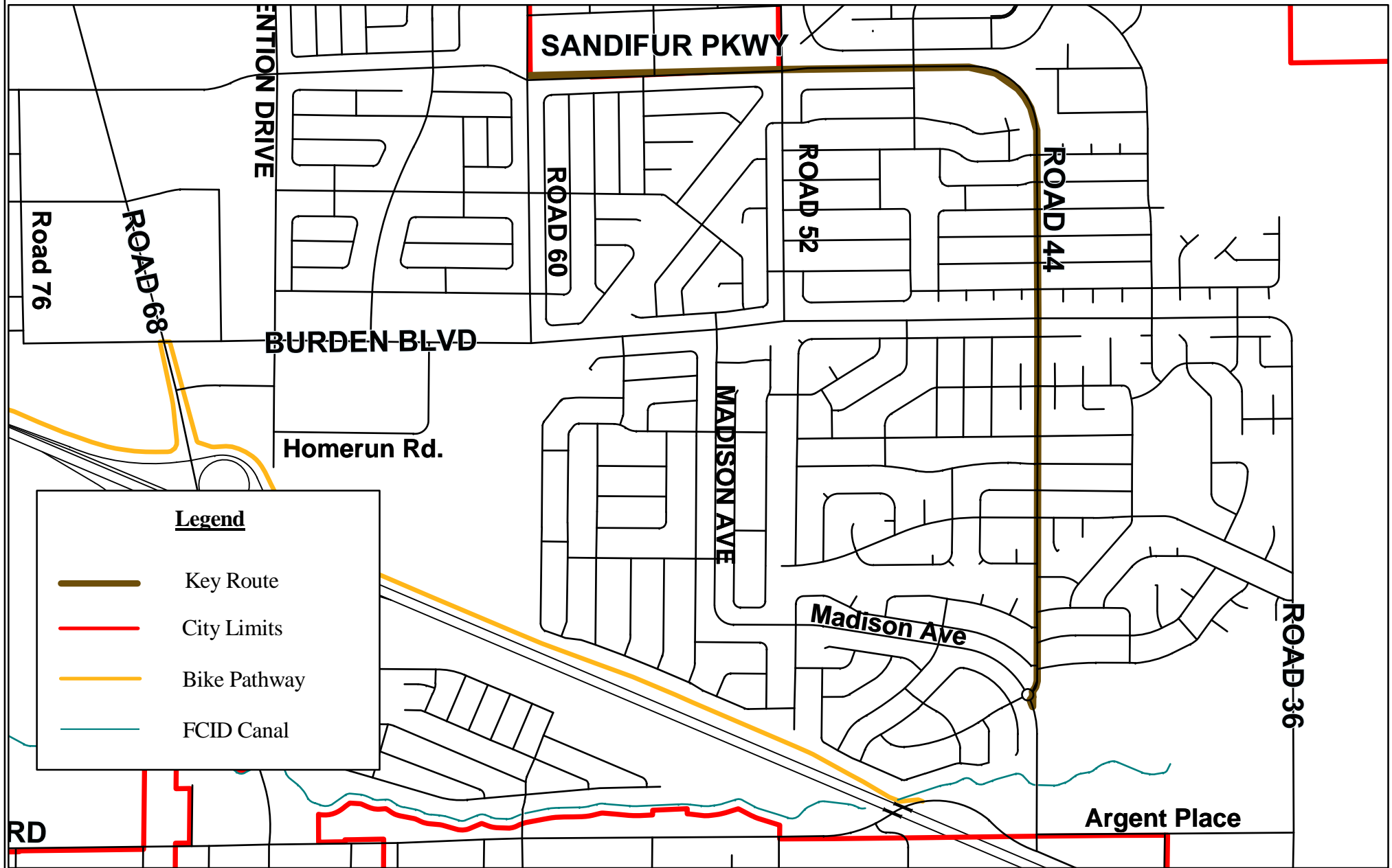
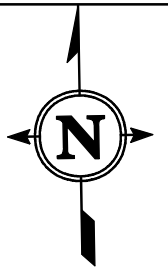
# Bicycle/Pedestrian Master Plan

## Area #3 Key Route



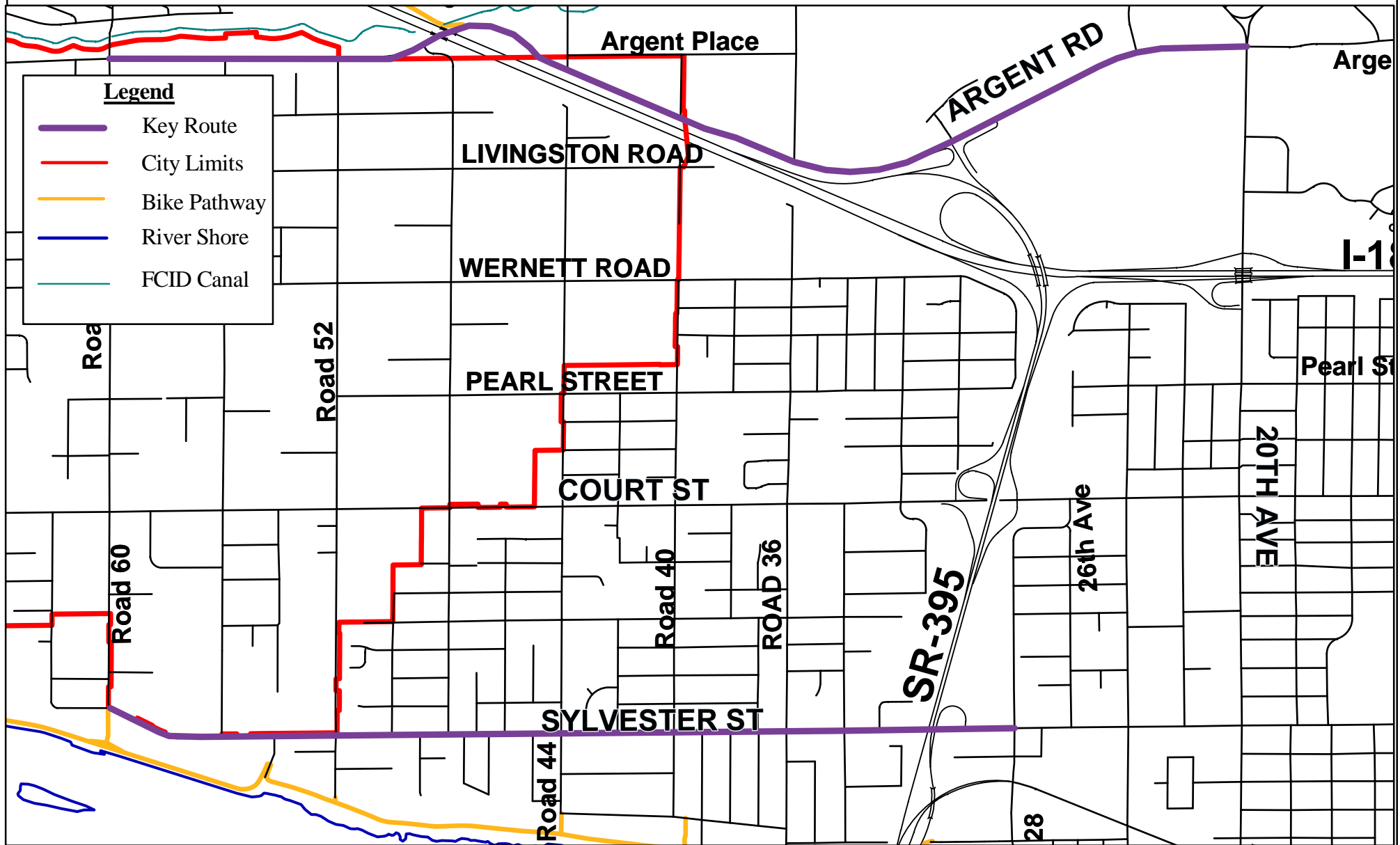
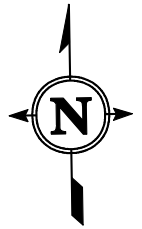
# Bicycle/Pedestrian Master Plan

## Area #4 Key Route



# Bicycle/Pedestrian Master Plan

## Area #5 Key Routes





# Bicycle/Pedestrian Master Plan

## Area #6 Key Routes

