



Executive Summary

Rock Springs Road From Welch Road to Lester Road

Prepared for: MetroPlan Orlando

Prepared by: Vanasse Hangen Brustlin, Inc. 225 East Robinson Street, Suite 300 Orlando, FL 32801

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Abstract

MetroPlan Orlando conducted an Access Management Study for Rock Springs Road from Welch Road to Lester Road and an Intersection Study at the intersection of Park Avenue with Sandpiper Street. Alternatives were developed, analyzed, and shared with the public and local agencies for input to develop a Recommended Alternative. The Recommended Alternative improvements along Rock Springs Road included intersection improvements at Welch Road, the Publix North Entrance, and Lester Road. The Recommended Alternative also includes improvements to the Park Avenue and Sandpiper Street intersection and along Sandpiper Street from Lake Avenue to Ustler Road. The estimated total project cost for the final design and construction of the Recommended Alternative is \$10.26 million, not including the cost of right-of-way acquisition. The anticipated additional right-of-way required for the Recommended Alternative is 0.56 acres from 14 parcels of land.

Introduction

MetroPlan Orlando conducted an Access Management Study for Rock Springs Road from Welch Road to Lester Road (approximately 0.55 miles) and an Intersection Study at the Sandpiper Street and Park Avenue intersection. The Intersection Study includes the addition of sidewalks to the south side of Sandpiper Street, from east of Park Avenue to Ustler Road; and to the north side of Sandpiper Street, from west of Park Avenue to Lake Avenue. In addition to sidewalks, the Recommended Alternative will align the section of Sandpiper Street east of Park Avenue to the section west of Park Avenue.

The study area is located in Orange County and is within the boundary of the City of Apopka. The study area location map is shown in **Figure 1**.

Purpose and Need

The purpose of the study is to evaluate access management and intersections along Rock Springs Road from Welch Road to Lester Road, perform an intersection analysis and evaluation for the realignment of the Sandpiper Street and Park Avenue intersection, and recommend improvements to the studied facilities.

Existing Conditions

A Level of Service (LOS) Analysis was conducted for the study area intersections. Operations at the intersection of Rock Springs Road with Welch Road are failing under existing conditions. Additionally, the minor street approaches are failing at the intersection of Sandpiper Street with Park Avenue.

Within the project limits, Rock Springs Road is a four-lane divided urban major collector with a two-way left turn lane (TWLTL). **Table 1** provides corridor specific information for Rock Springs Road, Park Avenue, and Sandpiper Street.







Corridor Study - Lester Rd to Welch Rd.

Intersection Improvements

Sidewalk - north side of W Sandpiper St.

Sidewalk - south side of E Sandpiper St.



Figure 1

Study Area Location Rock Springs Road Access Management Study



Table 1 | Roadway Characteristics

Characteristic Observation						
Rock Springs Road / Park Avenue Corridor						
Roadway Maintaining Agency	Rock Springs Road: Orange County Park Avenue: Orange County					
Access Management Type	Non-Restrictive (Access Class 6) ¹					
Functional Classification	Urban Major Collector					
Context Classification	Suburban Residential (C3R)					
Level of Service (LOS) Target	LOS E					
Posted Speed Limit	45 miles per hour (mph)					
Jurisdiction	Orange County					
Signalized Study Intersections from south to north	Welch Road Lester Road					
Land Use	Residential and Commercial					
Lane Width	11 to 12 feet					
Median	TWLTL, 12 to 14 feet					
Sidewalks	5-foot-wide concrete sidewalk on west side of the roadway					
Shared Use Path and Bike Lanes	12 to 14-foot-wide asphalt trail on east side of the roadway $/$ no bike lanes					
Lighting	Present along both sides of Rock Springs Road with lighting at all four corners of the Rock Springs Road/Welch Road intersection					
Transit Routes	LYNX Route #405 operates along the west leg and south leg of the Rock Springs Road/Welch Road intersection and along Park Avenue					
Nearest Bus Stop	arest Bus Stop LYNX Stop #5914 is 500 feet west of Rock Springs Road on Welch Road					
	Sandpiper Street Corridor					
Roadway Maintaining Agency	City of Apopka					
Access Management Type	Non-Restrictive (Access Class 6) ¹					
Functional Classification	Urban Local Road					
Context Classification	C3R					
LOS Target	LOS E					
Posted Speed Limit	25 mph - Lake Avenue to Park Avenue 40 mph - Park Avenue to Ustler Road					
Jurisdiction	City of Apopka					
Study Intersection	Park Avenue (Orange County Jurisdiction)					
Land Use	Residential, Public, and Industrial					
Lane Width	12 feet					
Median	None					
Sidewalks	West of Park Avenue: 4-foot-wide concrete sidewalk on south side of the roadway East of Park Avenue: 5-foot-wide concrete sidewalk on north side of the roadway					
Shared Use Path and Bike Lanes	None					
Lighting	Present in the southeast corner of the Sandpiper Street/Park Avenue intersection					
Transit Routes	LYNX Route #405 operates along Park Avenue in the study area					
Nearest Bus Stop	LYNX Stop #3029 is 1000 feet north of Sandpiper Street on Park Avenue					

1) Access Class not officially assigned by the Florida Department of Transportation (FDOT) for Rock Springs Road, Park Avenue or Sandpiper Street





Safety Analysis

A total of 268 crashes were reported within the study area limits over five years, from January 1, 2016, to December 31, 2020. This includes 91 injury crashes (163 total injuries) and 4 fatal crashes (5 total fatalities). The largest proportion (43.65%) of these crashes occurred during the PM peak hours from 3 pm to 7 pm.

Bicycle & Pedestrian Crashes

A total of eleven crashes, four involving bicycles and seven involving pedestrians, have occurred in the study area during the study period. Of the eleven crashes, two were fatal and seven caused injuries. Three crashes each occurred at the following intersections: the Park Avenue and Sandpiper Street intersection, the Rock Springs Road and Welch Road intersection, and the Rock Springs Road and Tanglewood Drive intersection. One crash each occurred at the Rock Springs Road and Lester Road intersection and at the Rock Springs road and Tahoe Street intersection. The locations of the fatal crashes are shown in **Table 2**.

Fatal Crash Summaries

Four fatal crashes, resulting in five fatalities, occurred during the study period within the study area. **Table 2** provides a summary of the locations and conditions of each crash.

Crash Type	Report Number	Location	Weather Condition	Lighting Condition	Road Surface Condition	Alcohol/Drug- Related	Distraction -Related	Number of Fatalities
Pedestrian	N/A	Park Ave at Sandpiper Street	Clear	Dark – Not Lighted	Dry	No	No	1
Bicycle	87121265	Rock Springs Rd at Tahoe Street	Clear	Dark – Not Lighted	Dry	Yes	No	1
Off-Road	88113121	Rock Springs Rd at Tahoe Street	Clear	Dark – Lighted	Dry	No	No	2
Off-Road	85523176	Rock Springs Rd at Welch Road	Clear	Daylight	Dry	No	No	1

Table 2 | Fatal Crash Summary

Crash Rate

The Rock Springs Road study corridor has an average crash rate higher (8.244) than the average crash rate for similar facilities (5.600). The Rock Springs Road intersection with Welch Road has an average crash rate (2.081) approximately three times the statewide average (0.722).

The intersection of Park Avenue and Sandpiper Street has a slightly higher average crash rate (0.750) compared to the statewide average (0.722).





Study Alternatives

Two Build Alternatives were considered for this study, Alternative 1 and Alternative 2, in addition to a No-Build Alterative.

No-Build Alternative

The No-Build Alternative, carried as a viable option throughout the corridor study process, assumes no construction beyond the programmed improvements shown below. The advantages of the No-Build Alternative include no additional ROW) acquisition, no impacts to the environment from construction, no disruption of traffic during construction, and no project cost. The disadvantages of the No-Build Alternative are that the purpose and need for the project are not satisfied.

Programmed Improvements

The realignment and signalization of the Sandpiper Street intersection with Park Avenue is currently in design by the City of Apopka and funded for construction to begin in year 2023.

Alternatives Considered

Each alternative includes intersection improvements at the intersections of Park Avenue and East Sandpiper Street; Rock Springs Road and Welch Road; Rock Springs Road and Publix North Entrance; and Rock Springs Road and Lester Road.

There are few differences between the two Build Alternatives; therefore, only their differences are summarized below. See Figure 2 and Figure 3 for a side-by-side comparison of the two alternatives.

Welch Road Intersection

Build Alternative 1 differs, at this intersection, from Build Alternative 2 by proposing to additionally include a dedicated right-turn lane on the north and south legs of the intersection.





Figure 2 | Build Alternatives Side-by-Side - Rock Springs Road at Welch Road



Figure 3| Build Alternatives Side-by-Side - Rock Springs Road at Publix North Entrance







Recommended Alternative

Alternatives Selection and Recommendations

After developing the alternatives, analyzing the impacts of each alternative, and gathering public feedback, Alternative 2 was selected as the Recommended Alternative. Of the alternatives, the Recommended Alternative has the least anticipated amount of additional ROW required, the least anticipated number of parcels impacted, and the lowest expected cost.

At the Welch Road intersection, the Recommended Alternative does not provide the greatest improvement to intersection delay; however, it provides a smaller footprint and lowers the conflict points for bicyclists and pedestrians using the intersection. Given the two Build Alternatives reduce the overall delay at the Welch Road intersection by about 70%-75% over the No-Build alternative and the main goal of this project is to increase safety, the Recommended Alternative was chosen despite its marginally higher intersection delay compared to the other build alternative considered.

The Recommended Alternative includes intersection improvements at Welch Road, Publix North Entrance, Lester Road, and Sandpiper Street. The geometry of the Recommended Alterative for Rock Springs Road and Sandpiper Street is shown in **Figure 4** and **Figure 5**, respectively. See the Rock Springs Road Corridor Study Report, under separate cover, for additional information regarding the concept plans and study alternatives.

Welch Road Intersection

At the intersection of Rock Springs Road and Welch Road, the Recommended Alternative proposes additional approach lanes and turn lanes to improve traffic operations at the intersection. See **Figure 4** for the recommended geometry at this intersection. All legs of the intersection will have two receiving lanes. Additionally, at all four legs of the intersection, the Recommended Alternative proposes to add traffic separators between directions of travel, which improves safety by reducing conflict points in the vicinity of the intersection.

Publix North Entrance Intersection

At the intersection of Rock Springs Road and the Publix North entrance, the Recommended Alternative proposes to signalize the intersection. See **Figure 4** for the recommended geometry at this intersection. Additionally, a traffic separator will separate all directions of travel. At the east leg of the intersection, the current all directional westbound lane will become a dedicated left-turn lane and a dedicated right-turn lane.

Publix North Entrance to Lester Segment

Between the Publix North entrance and Lester Road, the Recommended Alternative proposes to study the need to add a future midblock crossing. Once the Publix North Entrance intersection is modified, further analysis will be conducted to determine if the midblock crossing is needed, or if the crosswalks at the signalized Publix North Entrance intersection can handle all the crossing pedestrian traffic. The rest of this segment proposes to maintain the existing condition.





Lester Road Intersection

At the intersection of Rock Springs Road and Lester Road, the Recommended Alternative proposes to increase the storage length of the left-turn lanes at the south, west, and north legs of the intersection. Additionally, the west leg of the intersection will switch from a through-right lane and dedicated left-turn lane to a dedicated right-turn lane and through-left lane configuration. See **Figure 4** for the recommended geometry at this intersection. No widening or additional lanes are proposed at this intersection.

Park Avenue Improvements

Sandpiper Street Intersection

At the intersection of Park Avenue and East Sandpiper Road, **Figure 5**, the Recommended Alternative proposes realignment of the eastern leg of East Sandpiper Street to align with the current western leg of East Sandpiper Street. Currently, the legs are misaligned by approximately 45 feet. Additionally, the east leg of the intersection will be widened to accommodate a dedicated right-turn lane and a through-left lane. As part of the realignment, the Recommended Alternative proposes to signalize the intersection. At the north leg of the intersection, the Recommended Alternative proposes to increase the storage length of the southbound left-turn lane.

Sandpiper Street Sidewalks

The Recommended Alternative proposes to add a 5-foot sidewalk on the north side of East Sandpiper Street between North Lake Avenue and Park Avenue, and a 5-foot sidewalk on the south side of East Sandpiper Street between Park Avenue and Ustler Road. Together these additional sidewalks will provide East Sandpiper Street with sidewalks on both sides of the street between North Lake Avenue and Ustler Road.

Furthermore, the existing sidewalk on the north side of Sandpiper Street of the intersection will be realigned to follow the realigned Sandpiper Street. Additionally, the intersection of Park Avenue and Sandpiper Street will be improved by the addition of crosswalks over Park Avenue, along with Americans with Disabilities Act (ADA) standard curb ramps leading to these crosswalks.









Figure 4

Recommended Alternatives Rock Springs Road Rock Springs Road Access Management Study









Figure 5

Recommended Alternatives Sandpiper Street Rock Springs Road Access Management Study



Access Management

It is recommended that the bidirectional left turn be changed to a raised median near the Rock Springs Road and Welch Road intersection, changing access at 12 openings. The access classification for Rock Springs Road/ Park Avenue and Welch Road are proposed to change as detailed below:

- Rock Springs Road/Park Avenue Access Class 5
- Welch Road Access Class 5
- East Sandpiper Street Access Class 6

Table 3 shows the proposed median changes. As a result of the proposed median changes, all median openings satisfy standards of *Rule 14-97* of the *Florida Administrative Code (F.A.C.)*.

#	Spacing	East Side/North Side Road/Connection	West Side/South Side Road/Connection	Existing Median Opening Type	Proposed Median Opening Type
		Roe	ck Springs Road		
1	-	Fifth Third Bank Entrance	Rock Springs Plaza North Entrance	Full	Close
2	355	Welch Road	Welch Road	Full-Signal	Full-Signal
З	360	South Wekiva Plaza Entrance	N/A	Full	Close
4	325	N/A	Marco's Pizza Entrance	Full	Close
5	310	Publix North Entrance	N/A	Full	Full-Signal
6	115	N/A	Dollar General Entrance	Full	Close
7	1,730	Trader Mae's Entrance	Lester Road	Full-Signal	Full-Signal
			Welch Road		
1	-	Curless Ave	N/A	Full	Close
2	210	N/A	Rock Springs Plaza Entrance	Full	Close
3	190	WMG Acquisitions LLC	N/A	Full	Close
4	245	Rock Springs Road	Rock Springs Road	Full-Signal	Full-Signal
5	225	7-Eleven	N/A	Full	Close
6	155	Wekiva Plaza Shopping Center West Entrance	Duke Energy Florida Inc	Full	Close
7	260	Wekiva Plaza Shopping Center East Entrance	N/A	Full	Close
Sandpiper Street					
1	-	Park Avenue	Park Avenue	Full	Full-Signal
2	360	Coin Laundry	N/A	Full	Full

Table 3| Proposed Changes to Median Openings – Rock Springs Road

Notes:

1. Red text indicates change in median opening access

2. Green text indicates no change in median opening access





Right of Way Needs

The total amount of additional anticipated ROW required for the Recommended Alternative is 0.56 acres. The Recommended Alternative is anticipated to require ROW from 14 parcels. No relocations are anticipated for any segment of the Recommended Alternative.

Recommended Alternative	Impact (acres)	Parcels Impacted	Potential Relocations		
Segment		Total	Total	Business	Residential
Sandpiper Street Intersection	0.003	2	0	0	0
Welch Road Intersection	0.472	6	0	0	0
Publix North Intersection	0.089	6	0	0	0
Lester Road Intersection	0	0	0	0	0

Table 4 | Recommended Alternative ROW Impacts

Impacts Summary

The Recommended Alternatives are contained primarily within the existing ROW. Within the Recommended Alternatives, the most prominent land use is Residential followed by Retail/Office. No additional drainage ponds are required, and no floodplain encroachment is anticipated for the project area. It is unlikely that contamination would affect completion of any of the Recommended Alternatives. No social or cultural facilities are located within the Recommended Alternatives. No Cultural Resource Assessment Surveys (CRAS) have been conducted within the recommend alternative to identify historic or archeological resources. A wildlife crossing was identified for analysis but was ultimately deemed an inappropriate crossing location.

The Recommended Alternative may affect, but is not likely to adversely affect the following species:

- Eastern Indigo Snake
- Sand Sink
- Gopher Tortoise

Cost Estimates

The Recommended Alternative has an estimated total project cost of \$10.26 million, which includes costs for final design and construction. Estimated ROW cost has not yet been determined and will be analyzed during the design phase of this project. **Table 5** provides a summary of the Recommended Alternative cost estimates by segment.

Table 5 | Recommended Alternative Cost Estimates Summary

Recommended Alternative Segment	Estimated Design Cost (millions)	Estimated Construction Cost (millions)
Welch Road, North Publix Entrance, and Lester Road Intersections	\$1.30	\$6.51
Sandpiper Street Intersection	\$0.33	\$1.64
Sandpiper Street Sidewalks	\$0.10	\$0.38

Notes: Project Costs are in 2022 dollars





Public Involvement

Local input was sought throughout the study process. Engagement with local stakeholders and the community began early on with a survey and questions for input on the issues and opportunities.

Surveys

Over the course of the project, three surveys were developed and shared with the public. The surveys were developed to provide the opportunity for the public to view proposed concepts and give feedback on the preferred study alternatives. A summary of each is provided below.

Survey #1

The first online survey was posted along with the website launch. The purpose of the first survey was to help the study team better understand the public perception of existing conditions in the study area and the types of improvements the public would like considered. It ran from June 5th to July 18th, 2021, and received 261 responses.

Survey #2

The second online survey was posted to the project website following the virtual public meeting. The purpose of the survey was to receive input on the public's preference for the proposed alternatives. This survey was open from January 27 to February 28, 2022, and received 321 responses.

Survey #3

The third online survey was posted to the project website along with the second public meeting. The purpose of the survey was to receive input from the public regarding the study recommendations prior to finalization. This survey was open from September 22 to October 20, 2022, and received 102 responses.

Local Agency and Stakeholder Meetings

Over the course of the study, several meetings were held with local agencies and stakeholders. MetroPlan Orlando, the City of Apopka, Orange County, Orange County Parks and Recreation, Bike/Walk Central Florida, Florida Department of Environmental Protection (FDEP), Wekiwa River Basin State Park, and LYNX were amongst the groups that were engaged with the project's development.

Public Meetings

Two public meetings were held during the study. The public meetings were held at two key milestones in the study (1) during the alternative's development and selection stage and (2) during the recommended improvements refinement and documentation stage. The first public meeting, Alternatives Community Meeting, was held on January 27, 2022. The second public meeting, Recommended Alternative Community Meeting, was held on September 22, 2022.

Alternatives Community Meeting

The following is a summary of questions and feedback received during the question and answer (Q&A) session of the first public meeting:





- Questions about existing traffic volumes along Rock Springs Road at Welch Road and Sandpiper Street
- Questions about the westbound dual right turn lanes being reintroduced into the study corridor
- Desire for gridded street network in Apopka
- Request for traffic remediation eastbound on Welch Road from Rock Springs Road to Thompson Road

Recommended Alternative Community Meeting

The following is a summary of questions and feedback received during the Q&A session of the second public meeting:

- Questions about changes to access at the Rock Springs Road and Welch Road intersection
- Questions about the proposed improvement to add westbound dual right turn lanes from Welch Road onto Rock Springs Road as this change was previously ineffective
- Request for signalization at the Wekiva Townhomes at Vista Crest Drive
- Desire for addition of bike lanes along Rock Springs Road and Welch Road
- Desire for traffic calming measures and lower speed limits throughout the corridor
- Concerns for environmental impacts to Wekiwa Springs State Park as a result of the recommended alternatives

Additional Community Engagement

A study website was developed and made live at the start of the study. The website was frequently updated and a constant contact list, populated by email sign up, was used through the study to provide up to date information on changes to the website and information relating to upcoming events including public meetings to the public. Reports from the study were also made available for download on the website. A record of all communication received outside of scheduled meetings was documented throughout the study.

Yard signs were placed throughout the study area along Rock Springs Road, Welch Road, and Ponkan Road for the website launch and prior to the two public meetings. The signs contained a quick response (QR) code which directed to the study website.

Post card mailers were distributed to property owners adjacent to the study area for the website launch. Direct mail notifications were sent to property owners along Sandpiper Street prior to the first public meeting and sent to property owners along Sandpiper Street, portions of Welch Road, and to the Sweetwater Park Village community prior to the second public meeting

Final Recommendations and Next Steps

The next steps for this study are design and ROW acquisition. The design phase will refine the conceptual plans recommended in this corridor study to provide implementable construction plans.

Additionally, once the Publix North Entrance intersection is constructed, further analysis will be conducted to determine if the crosswalks at the signalized Publix North Entrance intersection satisfies the need for crossing pedestrian traffic in the area or if a midblock crossing between Public North Entrance and Lester Road is needed.





Funding

Future phases of this Access Management study are not funded; however, The Sandpiper Street intersection improvements are in design by the City of Apopka and are funded for construction to begin in year 2023.

