

DRAFT

SIDEWALK FEASIBILITY STUDY

**San Juan Drive from Solana Road to
Ponte Vedra Boulevard
St. Johns County, FL**

Prepared for:



Prepared by:

Kimley»Horn

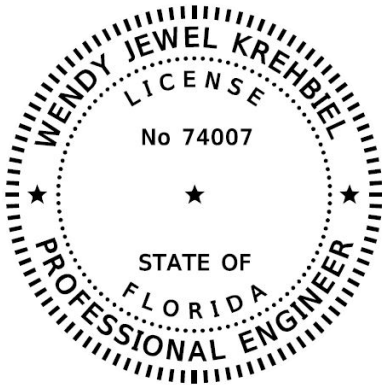
April 2022

PROFESSIONAL ENGINEER CERTIFICATE

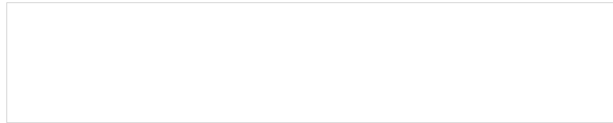
I hereby certify that I am a registered professional engineer in the State of Florida practicing with Kimley-Horn and Associates, Inc., a Florida corporation authorized to operate as an engineering business by the State of Florida Department of Professional Regulation, Board of Engineers, and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice hereby reported for:

Title: San Juan Drive Sidewalk Feasibility Study

Location: Ponte Vedra Beach, St. Johns County, FL



This item has been digitally signed and sealed by:



on the date adjacent to the signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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The above-named Professional Engineer shall be responsible for this report in accordance with rule 61G15-23.004, F.A.C.

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1.0 INTRODUCTION

Kimley-Horn and Associates, Inc., was retained by the Ponte Vedra Beach Municipal Service District (MSD) to study the feasibility of constructing a sidewalk along San Juan Drive from Solana Road to Ponte Vedra Boulevard in St. Johns County, Florida. The MSD is considering sidewalk installation through the limits to accommodate pedestrian and bicycle safety as desired by the neighborhood residents. The purpose of this evaluation is to determine the parameters and constraints involved in the sidewalk design that would affect constructability in order to determine a construction cost estimate for budgeting future funding of the improvements.

While the MSD has independently contracted Kimley-Horn to perform this Sidewalk Feasibility Study, it has also formally petitioned St. Johns County to perform a separate Traffic Calming Study along San Juan Drive, Le Master Drive, Rutile Drive, and Solana Drive. The outcomes of the two studies will complement each other yet do not overlap in scope: the sidewalk feasibility focuses on providing an optimal dedicated facility for recreational pedestrians and bicyclists to remove them from the shared vehicular lanes while traffic calming focuses more on reducing speeding and excessive cut-through traffic on the local roadways.

2.0 EXISTING CONDITIONS

2.1 Roadway and Context

San Juan Drive is a two-lane local road with 20 feet of pavement width to accommodate both directions of travel for all modes. This conforms to the St. Johns County standard typical section for a residential road with flush shoulders and less than 1,500 Annual Average Daily Traffic. The estimated right-of-way width is 60 feet based on the Property Appraiser's online database. The posted speed limit on San Juan Drive is 25 mph and the regulatory signs are supplemented with solar-powered electronic speed feedback signs. There are no sidewalks, bicycle lanes, or street lighting present.

The study segment is approximately two miles in length primarily developed with single-family residential along both sides. The Ponte Vedra Inn & Club golf course also abuts sections of San Juan Drive and there are four marked golf cart crossings. The Christ Episcopal Church campus is located at the southern project limits at the intersection of San Juan Drive and Solana Road.

There are nine intersections within the study limits inclusive of the beginning and ending nodes. Three major intersections are all-way stop-controlled (AWSC) where all approaches are controlled by a STOP sign. The remaining six intersections are two-way stop-controlled (TWSC) where the major street has the right-of-way to proceed uninterrupted and the side street approaches are controlled by a STOP sign. At all TWSC except Ponte Vedra Boulevard, San Juan Drive is the major street with no stop condition.

Table 1 summarizes the intersections, control type, and sidewalk connectivity along side streets. A project location map is shown in **Figure 1** depicting the full study limits and the locations of intersections.

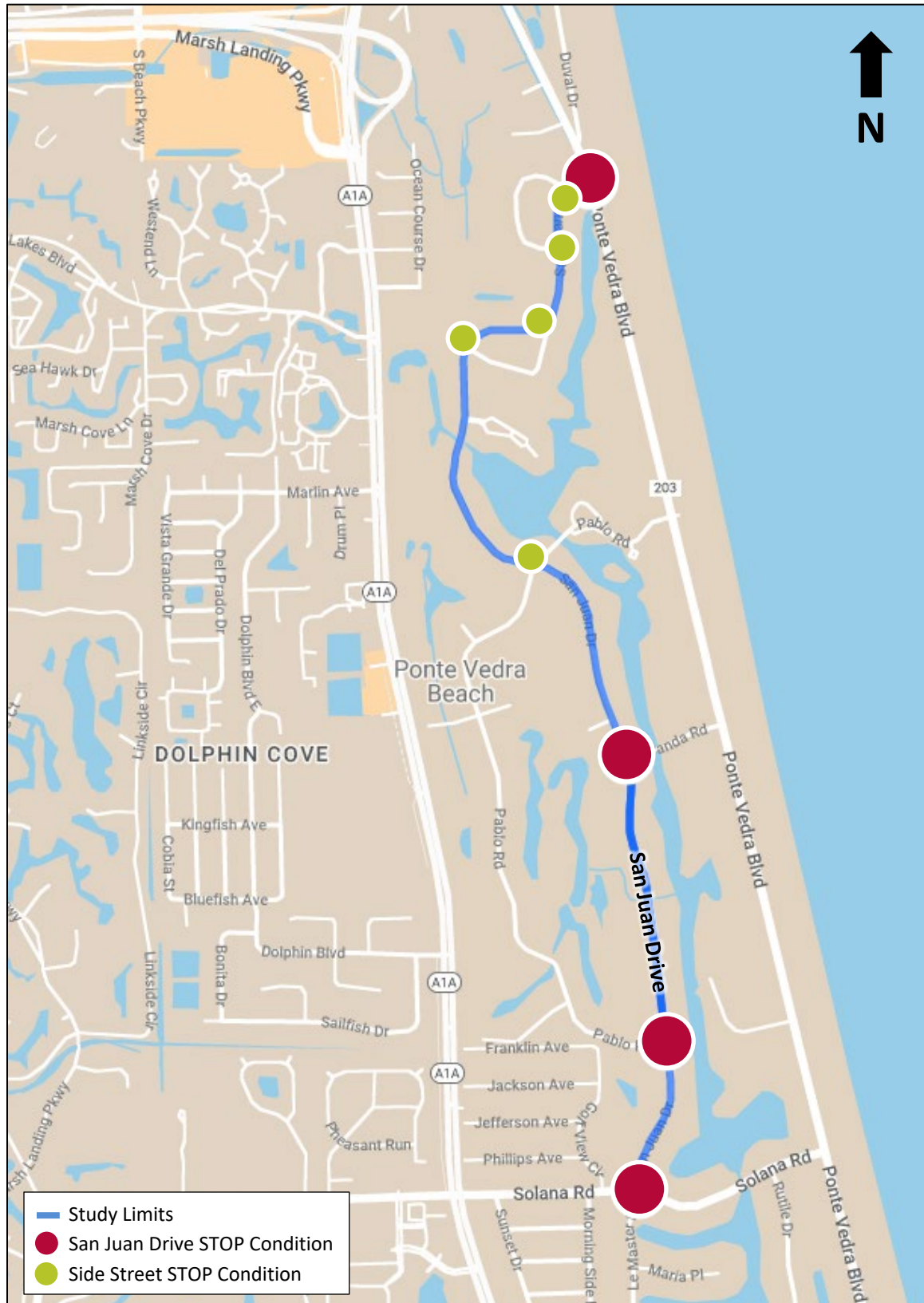
TABLE 1: Summary of Intersections

Intersection	Control Type	Sidewalk Connectivity
Solana Road	All-Way	Yes
Pablo Road (South)	Side Street STOP	None
Miranda Road	All-Way	Partial to the east
Pablo Road (North)	All-Way	Partial to the east
San Juan Circle (South)	Side Street STOP	None
San Juan Circle (North)	Side Street STOP	None
Ponte Vedra Circle (South)	Side Street STOP	None
Ponte Vedra Circle (North)	Side Street STOP	None
Ponte Vedra Boulevard	San Juan Drive STOP	None

2.2 Crash History

Historic crash data was reviewed from January 1, 2016 to April 1, 2022 to evaluate if any existing crash trends are present involving vehicles conflicting with non-motorists that may affect sidewalk recommendations. There were 12 crashes during the study period, which averages to fewer than one crash per year per mile. This rate is considered to be a very low crash frequency in comparison to similar roadway facilities. None of the crashes involved pedestrians or bicyclists. Most were related to parked cars on the side of the road or vehicles entering or exiting driveways.

FIGURE 1: Project Location Map



3.0 FIELD INVENTORY

A field inventory was conducted on Monday, March 14, 2022 by a registered Professional Engineer to confirm the existing conditions along San Juan Drive. The entire corridor was traversed on foot to identify constraints or advantages that impact placement of the future sidewalk within the right-of-way 20 feet on either side of the edge of pavement. Major characteristics reviewed include preferred side of the road, crosswalk locations, visually observable drainage impacts, above-ground utilities, on-street parking concerns, and conflicts with personal property (mailboxes, pavers, landscaping, etc.).

3.1 Pedestrian and Bicycle Activity

Recreational pedestrians and bicyclists were observed using the travel lanes during the field inventory. Conflicting traffic was minimal, and the pedestrians/bicyclists were able to safely maneuver. Several personal golf carts were observed traveling along San Juan Drive.

The only existing full sidewalk connectivity is at the intersection with Solana Road. Miranda Road and Pablo Road (North) have sections of sidewalk crossing the bridges over Lake Vedra east to Ponte Vedra Boulevard, but no continuous path.





3.2 Observable Conflicts

Some property owners have landscaping extending well into the right-of-way or up to the edge of the asphalt. In order for the sidewalk to be continuously accommodated through the study limits, some of the landscaping will need to be removed within the right-of-way and residents will need to be informed.



Two locations along San Juan Drive have canals leading up to the roadway at an offset of approximately 13 feet from the edge of travel lane. In order to accommodate the sidewalk, the head walls should be extended and handrail will be required along the canal frontage to ensure pedestrian safety. At the location south of Lagoon Circle, landscaping conflicts within the right-of-way further complicate placement around the canal.



There is mature landscaping, primarily live oak and palm trees, on both sides of San Juan Drive from Ponte Vedra Circle (South) to Ponte Vedra Boulevard at the northern project limits. These pose a constructability constraint for sidewalk installation. It may be possible to meander the sidewalk behind and around some of the trees. Or, since there is no sidewalk connectivity at Ponte Vedra Boulevard, it may be desirable to terminate the proposed sidewalk south of Ponte Vedra Circle (South) and avoid the tree conflicts.



4.0 FEASIBILITY ASSESSMENT

4.1 Minimum Standards

The Florida Department of Transportation (FDOT) *Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways 2018 Edition*, commonly known as the Florida Greenbook, was used as the basis for engineering recommendations in combination with the *St. Johns County Standards and Details Manual*. Chapter 8 of the Greenbook, Pedestrian Facilities, details minimum criteria and desirable characteristics of pedestrian routes:

- Minimum sidewalk width of 60 inches (5 feet)
 - May be reduced to 32 inches (2.67 feet) for a distance of less than 24 inches (2 feet) long
- Minimum 1-foot wide graded area on both sides flush with sidewalk with a maximum 1:6 slope
- Grade not to exceed 5% longitudinally along sidewalk
- Maximum cross slope not to exceed 2% across sidewalk
- Placement shall be as far from the roadway as practical
- Clear zone for < 40 mph and < 1500 AADT = 10 feet

4.2 Design Recommendations

Based on the field inventory, the west side of San Juan Drive is recommended for continuous sidewalk installation to pose the fewest conflicts. A 5-foot wide sidewalk can be accommodated within the existing right-of-way along the west side of San Juan Drive at a 10-foot offset from the edge of travel lanes. Due to driveway, drainage, and utility constraints, portions of the sidewalk will need to meander closer to or further from the roadway at spot locations. It is recommended to install crosswalks parallel to San Juan Drive at the stop-controlled minor street approaches to the sidewalk at the west legs of Pablo Road (South), Ponte Vedra Circle (South), and Ponte Vedra Circle (North). It is also recommended to install crosswalks across San Juan Drive at the north legs of the existing all-way stop-controlled intersections at Miranda Road and Pablo Road (North) to allow for connectivity to the east.

4.3 Additional Considerations

Beyond meeting minimum standards and mitigating the conflicts noted in this report, the following additional considerations may also be evaluated for optimal pedestrian accommodations moving forward into concept and design:

- ***Both Sides of the Road*** – Since residences are equally located on both sides of San Juan Drive, the demand for sidewalk facilities is equal on the west and east sides of the road. With sidewalk only constructed on one side, there will likely still be crossing movements at random locations as pedestrians travel between their homes on the east side and the sidewalk on the west side. Construction on both sides of the road would double the cost and require additional coordination for the types of conflicts previously noted.
- ***Shared-Use Path*** – The 5-foot sidewalk is the standard minimum sidewalk width and will allow for two adult pedestrians to pass each other. Bicycles were also observed through the corridor. With a 5-foot sidewalk, bicyclists will either have to share the sidewalk with slower-moving pedestrians and use caution or continue to share the vehicular travel lanes. A wider shared-use path would require more clearing and relocations along the west side of the road to accommodate.
- ***Lighting*** – There is no existing street lighting along San Juan Drive. One of the primary considerations for pedestrian safety is nighttime visibility, especially at intersections or unmarked crossing locations.
- ***Driveway Crossings*** – The driveways along San Juan Drive are comprised of a variety of surfaces, from standard concrete to decorative pavers to historic reclaimed brick. Most driveways fell within the allowable sidewalk cross slope less than 2%. Several driveways were identified that exceeded this allowable cross slope and would require regrading and restoration in order to satisfy Florida Greenbook and ADA criteria. The optimal walking surface would include pouring continuous sidewalk across each driveway within the corridor; however, the MSD and St. Johns County may elect to allow compliant driveways to remain and to install the sidewalk abutting each side of the driveway rather than reconstructing. This should be further evaluated with survey during the design phase and with public outreach to the affected residents.

FIGURE 2: Sidewalk Feasibility (Sheet 1 of 7)



FIGURE 3: Sidewalk Feasibility (Sheet 2 of 7)



FIGURE 4: Sidewalk Feasibility (Sheet 3 of 7)



FIGURE 5: Sidewalk Feasibility (Sheet 4 of 7)



FIGURE 6: Sidewalk Feasibility (Sheet 5 of 7)



FIGURE 7: Sidewalk Feasibility (Sheet 6 of 7)



FIGURE 8: Sidewalk Feasibility (Sheet 7 of 7)



5.0 OPINION OF PROBABLE CONSTRUCTION COST

An Opinion of Probable Construction Cost (OPCC) was prepared based on the preliminary field review. It is assumed that a 5-foot concrete sidewalk on one side of the road will be accommodated. With the goal of providing a conservatively high estimate for budgeting purposes, it was also assumed that the sidewalk will be constructed across the existing driveways and require restoration to decorative pavers. The unit costs were derived from the FDOT 12-Month Statewide Moving Historical Item Averages.

The estimated construction cost at the draft phase of this report is \$500,000. A detailed breakdown of costs by work item will be included in the final submittal.