TOWN OF WINDERMERE

MULTI MODAL AND SAFETY ANALYSIS

JUNE 2015

Prepared By:

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Prepared for:

Town of Windermere

Prepared by:

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CA #696

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INTRODUCTION AND PURPOSE

The Town of Windermere is located in western Orange County and is surrounded by a chain of lakes. The Town contains several distinct residential areas and a downtown area with retail and office uses. The Town has several objectives and policies in the Comprehensive Plan that support, require, and encourage bicycle and pedestrian facilities. Policy 1.6.1 states that "Bicycle and pedestrian walkways shall connect schools, the Town Center District, parks, and recreational areas…" Policy 1.6.2 then addresses coordination with the county, stating: "The County shall be encouraged to provide bikeways in areas adjacent to the Town that will connect to the Town system".

The purpose of this Multi Modal and Safety Analysis is to accelerate the implementation of projects that support walking, cycling, and golf cart travel within the Town and to adjacent areas, while improving multi modal safety. The plan provides the following components:

- An inventory and assessment of existing bicycle and pedestrian facilities, identifying existing and potential connections to key destinations within the City. Sidewalk gaps and recommended improvements are identified.
- An assessment of the current Golf Cart District with recommended revisions.
- An implementation plan for improvement projects, including preliminary cost estimates and recommendations.

DATA COLLECTION

Inventories of pedestrian and bicycle facilities throughout the Town of Windermere were conducted on September 1st and 2nd, 2014.

The inventory was performed via windshield surveys for Town roadways. For sidewalk conditions, every roadway was driven twice, once in the N/E travel lane, and once in the S/W travel lane. Gated residential neighborhoods were not surveyed.

Each roadway was observed for:

- existing bicycle and pedestrian conditions such as sidewalk gaps,
- mid-block crossings,
- bike lanes,
- sidewalk connectivity, and
- golf cart signs and accommodations.

All information gathered was entered into a geographic information system (GIS) data set. This data set contains information collected in the field and existing data provided by the Town. The data set includes the locations and lengths of existing sidewalk gaps, and the presence of bike facilities.

Crash data was collected throughout the town and mapped using GIS. Crashes were mapped based on the crash type and the number of crashes within an area.

EXISTING CONDITIONS

As shown in **Exhibit 1**, the Town of Windermere is surrounded by several large lakes. The center of Windermere is bisected by the intersection of Conroy Windermere Road (6th Avenue) and Main Street. Conroy Windermere Road provides the primary route to and from the east. However, it does not extend west of Town, so connections to the west are via Chase Road, Park Avenue, or Windermere Road. The central portion of Town is characterized by a grid network of streets, most of which are dirt roads with low speeds and no sidewalks. The northern and eastern portions of Town are primarily cul-de-sac style neighborhoods that lack a grid network and typically have one collector or local road that provides access.

There are no State Roads or transit facilities through town, with most travel occurring via Town or County roads.

There are no major roadway trail systems through town, and the nearest trail systems are the West Orange Trail and the Horizon West Trail. These trails are located approximately three to four miles north and west of Town.

SIDEWALKS – GENERAL FINDINGS

Many of the collector roads in Windermere have sidewalks, though there are several sidewalk gaps. For the purpose of this analysis and report, a sidewalk "gap" is defined as a location that is missing sidewalk on one or both sides of the road. In areas with low speed and low volume roads, a sidewalk on one side of the road is typically sufficient. However, roadway volumes and/or speeds increase, they become more difficult to cross and it becomes increasingly important to have sidewalks on both sides of the road and crosswalks in appropriate locations.

Sidewalk gaps of various lengths were found throughout the Town, in a variety of locations. In some cases, the sidewalk is only on one side of the road, then the sidewalk crosses over and switches to the other side of the road. While still providing mobility, these configurations are inconvenient and lead to potential conflicts with vehicles in the roadway. Recognizing that it is difficult to cross Main Street, there is a benefit to having sidewalks on both sides of the road. Note that several of the side streets through the historic downtown area lack sidewalks but are still walkable due to low speeds and low traffic volumes.

Exhibit 2 depicts the locations of existing sidewalks within Town.

Marked crosswalks are provided in multiple locations through Town, as depicted in Exhibit 2. The locations are mid-block crosswalks and are signed and marked. None of the locations have special lighting notifications.

EXHIBIT 1: Base Map

Windermere Multi-Modal Study

EXHIBIT 2: Existing Sidewalks & Crosswalks

Windermere Multi-Modal Study

SIDEWALK CONDITIONS

Many of the existing sidewalks are only partially usable due to their condition or need for maintenance. For example, some sidewalks are badly cracked, with large portions that are not traversable. Other sidewalks are covered with dirt from the adjacent dirt road. If the dirt was removed, it would likely return quickly, likely after the first significant rain event. Therefore many of the sidewalks in town are not conducive to traveling on a bicycle, in-line skates, or on a skateboard. Several of the sidewalks have settled differently or been uprooted, resulting in vertical differences that are tripping hazards. Any vertical difference greater than one fourth of an inch should be repaired, based on ADA requirements. ***Exhibits 3, 4, and 5*** provide examples of poor sidewalk conditions.

Exhibit 3 – Example of sidewalk joints with tripping hazards

Exhibit 4 – Sidewalk on the South Side of 6th Avenue, just east of Lake Street.

Exhibit 5 – View of Old Main Street, looking south, between the canal and North Drive

Though there are several areas where the sidewalk conditions have deteriorated to some degree, there is an overall positive experience for pedestrians, particularly in the downtown area. Downtown Windermere is very walkable, with abundant amenities, large shade trees, and sidewalks. Pictures of sidewalks in the downtown area are provided in **Exhibit 6.**

Exhibit 6 – Two examples of shaded sidewalks along Main Street

BICYCLE FACILITIES

There are minimal bicycle facilities in town. Bicycles typically ride in the center of general use lanes or on the sidewalks, depending on the rider's level of capability and comfort. There are no bike lanes, shared lane markings, or other facilities dedicated for bicycles to use. While there are bike racks in some locations, there are many destinations without bike racks.

MID-BLOCK CROSSINGS

Several areas of Town were observed to better understand the potential demand for mid-block crossings. Existing mid-block crossings and potential sites for new mid-block crossings were observed in the following locations:

- Existing crossing on Main Street between 9th Ave and 10th Ave
- Existing crossing on 6th Ave just east of Lake St
- Existing crossings on Main Street at 1st Avenue and 2nd Avenue

- Park Avenue School crossings
- Main Street at Chase Road
- Downtown Area

EXISTING CROSSING BETWEEN 9TH AVE AND 10TH AVE

The pedestrian activity at this location was observed on a weekday afternoon. No pedestrian crossings were observed in this time period. There were pedestrians on Main Street and on Old Main Street, though they did not attempt to cross Main Street.

EXISTING CROSSING ON 6TH AVE JUST EAST OF LAKE ST

The pedestrian activity at this location was observed on a weekday afternoon. No pedestrian crossings were observed in this time period. It is also noted that the sidewalk along 6th Avenue on the south side of the road near the crosswalk is in poor condition.

EXISTING CROSSINGS ON MAIN STREET AT 1ST AVENUE AND 2ND AVENUE

The pedestrian activity at these locations was observed on a weekday afternoon. No pedestrian crossings were observed in this time period.

The crosswalk at 1st Avenue has limited usefulness since there are no major generators or attractions on either side of the road and the sidewalk on the east side of the road does not continue beyond 1st Avenue.

The crosswalk at 2nd Avenue extends into grass, with no sidewalk or landing on the east side of the road. This is shown in ***Exhibit 7***. The ramp and pedestrian detection surface on the west side should be realigned with the middle of the crosswalk and point directly across the road.

Although there is not a sidewalk along the west side of Main Street, there is a sidewalk on Old Main Street, which is directly adjacent. The sidewalk on Old Main Street is well used, with seven (7) pedestrians/bicyclists observed during the 30 minute timeframe.

Exhibit 7 – Crosswalk at 2nd Avenue

PARK AVENUE SCHOOL CROSSINGS

The pedestrian activity at this location was observed on a weekday afternoon. The school crossing on Park Avenue was well used by pedestrians from the school. Two police cars and a crossing guard were on duty directing pedestrians and vehicles. The roundabout at Park Avenue and Maguire Road also experiences several pedestrian crossings associated with the school. Five pedestrians crossed the north leg, six pedestrians crossed the east leg, five pedestrians crossed the south leg, and two pedestrians crossed the west leg.

MAIN STREET AT CHASE ROAD

The pedestrian activity at this location was observed on a weekday afternoon. No pedestrians were observed traveling during this time period. It is possible that there are pedestrians in this area during other parts of the day.

TOWN CENTER DISTRICT

Pedestrian activity in downtown Windermere was observed at lunch time, then again in the late afternoon.

Many of the northbound and southbound crosswalks along the west side of Main Street direct pedestrians to sidewalks along Old Main Street, which is immediately west of Main Street. Due to this configuration, many pedestrians traveling north or south along Main Street do not use the crosswalks, choosing to take a more direct route.

OVERALL SUMMARY AND ANALYSIS OF MID-BLOCK CROSSINGS

Two primary references are used to determine whether crosswalks should be added and how they should be controlled. The manuals are the Manual on Uniform Traffic Control Devices (MUTCD) and the Florida Department of Transportation's Traffic Engineering Manual. In general, any locations considered for mid-block crosswalks should have well defined pedestrian generators and attractors or a well-defined pattern of existing crossings. The specific volume criteria is that there needs to be a minimum of 20 pedestrians during an hour, and 60 pedestrians over the course of four hours. The amount of vehicles on the street being crossed then affects the type of warning or control system that should be in place, such as rectangular rapid flashing beacons, pedestrian hybrid beacons, or a full traffic signal.

Throughout the observations most of the crossings occur near the school. Other locations had very few or no mid-block crossings. The weekday typical demand does not warrant additional mid-block crossings. It is noted, however, that there may be higher levels of pedestrian demand at other times of the week. With exception to the school and the downtown area, there are no major generators or attractors that help to concentrate the demand for crossings – therefore there are no locations where a crosswalk would likely be warranted. Based on the comparison of observations to the criteria established in the Traffic Engineering Manual, additional mid-block crossings are not recommended at this time.

It is noted, however that the Town routinely hosts events that attract significantly more pedestrians and visitors than are in Town during typical times. It is likely that there is a significant increase in crossings during such events.

SAFETY ANALYSIS

DATA COLLECTION

Five years of crash data were obtained, covering the period from January 2011 to January 2015. All roads within the Town of Windermere were considered. Crashes are shown over aerial photography based on the crash type in ***Appendix A.***

CRASH ANALYSIS, TRENDS, AND QUALITATIVE ASSESSMENT

The five years of crash data is summarized by type in ***Table 1:***

Table 1 – Five Year Crash Data

Crash Type	Number of Crashes
Rear End	78
Off Road	31
Left Turn	16
Angle	5
Sideswipe	4
Rollover	3
Head On	3
Pedestrian	1
Bicycle	0
Other	37
Total	178

Crashes in Windermere are generally concentrated near intersections, consistent with typical findings. As shown in the table, most of the crashes are Rear End collisions. Based on the narratives in the crash reports, many of these collisions were caused by distracted driving.

Unlike typical locations, many of the rear end collisions occurred in areas far from an intersection, where drivers did not expect to be slowing down or stopping. For example, several westbound rear end collisions occurred on 6th Avenue (Conroy Windermere Road) near Horizon Circle. This is over a mile away from the roundabout at Main Street, far enough away that many drivers are not expecting traffic to come to a complete stop. However, traffic often backs up to Horizon Circle during the afternoon peak hour. Drivers who are not paying close attention are therefore at risk of causing a rear end collision. Similarly, several vehicles traveling eastbound on 6th Avenue from the Main Street intersection were involved in rear end collisions, typically due to a vehicle in front of them slowing down to turn.

Many of the collisions that occurred within the Town's roundabouts were due to drivers traveling at unsafe speeds then crashing into a curb near the roundabout or crashing into the inner circle within the roundabout. There were also typical angle-type collisions where approaching drivers failed to yield the right-of-way to vehicles that were already in the roundabout. These are rarely severe crashes and usually do not result in injuries.

There was only one pedestrian collision reported in the 5-year period, indicating that there is not a pedestrian safety issue in the Town. It is also reflective of the roadway geometry through town – all roads are two lane roads (rather than four-lane or six-lane roads), which require less time to cross. Roads with

frequent pedestrian crashes are typically multi-lane roads with high speeds. The roads in Windermere are also relatively low speed roads, where pedestrians need a shorter gap between vehicles to safely cross, and vehicles are more able to slow down when needed. These factors contribute to a more pedestrian friendly environment when compared to many Central Florida Communities that have wider roads with higher speeds. Conditions are not ideal, but the crash history indicates that there is a general lack of pedestrian crashes. In fact, the crash that did occur was with a pedestrian sitting on the curb of a side street that was hit by a vehicle that turned too sharply.

No bicycle crashes were reported. This is likely due to a number of factors. The lack of bicycle facilities causes an environment where and beginner novice bicyclists are likely not comfortable riding through town on the main roads. Only more experienced riders are typically comfortable riding in lanes mixed with general traffic (rather than in a bike lane or on a trail). As such, there are not many bicyclists who ride through town and the cyclists who do ride are experienced and thereby more likely to use safer techniques and protective gear, including appropriate lights and reflective material.

POTENTIAL IMPROVEMENTS

SIDEWALK GAP RECOMMENDATIONS

Several areas within the Town of Windermere lack sidewalks. Many of the roads with sidewalk gaps are high traffic roads that are not easy to cross and therefore should have sidewalks on both sides. The gaps are mapped in ***Appendix B.***

Some gaps were identified as having conditions or constraints that affect the feasibility of providing a sidewalk. For example, drainage features or existing drainage problems in some locations will significantly increase the cost of providing a sidewalk. In other locations, it appears that a minimal amount of right-of-way is available. In these locations, the recommended next step is a detailed feasibility analysis to better estimate the likely costs, impacts, and potential typical sections. A feasibility analysis generally consists of site visits, measurements of specific conditions, and a more refined analysis of the anticipated alignment. The deliverables for a feasibility analysis typically include a final report with concept plan sheets depicting the conceptual design over aerial photography. Feasibility analyses can also include preliminary community outreach to better understand the local desire for and potential benefits of a sidewalk. An example where a feasibility analysis is recommended is along Lake Butler Boulevard, where landscaping encroachments and right-of-way restrictions may be a significant constraint to adding a sidewalk. Another example where a feasibility analysis is recommended is 6th Avenue, where additional analysis is needed to determine if a sidewalk can fit within the existing right-of-way. The locations recommended for design, feasibility analysis, or other steps, are described further in the recommendations portion of the report.

Cost estimates were developed based on general cost-per-mile models that use several assumptions based on a typical sidewalk construction. Design costs, the cost of a feasibility study (if needed), and a contingency amount were added to the cost-per-mile estimates to develop total cost estimates. More refined construction cost estimates can be developed during a feasibility study or during the design of the sidewalks. Once the design is finalized, several factors still affect the eventual construction cost including the cost of materials, industry demand, and the overall size of the project (economy of scale).

The next step towards implementation for many of the sidewalks is a town-wide design project. Rather than implementing each project separately, they should be grouped together. Once designed, the sidewalks are likewise recommended to be implemented as a town-wide construction project. The primary benefit of grouping all of the projects together is efficiency by reducing mobilization and equipment procurement costs through economy of scale.

BICYCLE FACILITIES

Most roads within Windermere are too narrow to implement bike lanes. There are few paved shoulders and most travel lanes are 10 to 11 feet wide, which is relatively narrow for vehicular traffic and far too narrow to allow a bicycle and a vehicle to share the lane. Since there is not enough space to reconfigure the roadway striping to add bike lanes and there are not enough paved shoulders, the only way to add on-street bicycle facilities is to completely reconstruct the road. This method is generally cost prohibitive, as the costs include elements of roadway construction, drainage modifications, utility relocations and modifications, and landscaping costs. Right-of-way may also be needed to reconstruct a road, though acquisition could be limited to construction easements and minor acquisition needed to tie driveways and cross streets into a revised roadway edge.

There is an opportunity to provide additional bicycle parking options throughout town. Bicycle parking areas in front of businesses will help establish the Town as a more bicycle-friendly environment.

MULTI-USE PATH THROUGH TOWN

A railroad once traversed Windermere, adjacent to Main Street. The alignment, sometimes referred to as Old Main Street or Dirt Main Street, bisects private properties. As such, there is a linear swath of land between Main Street and Old Main Street that is owned by approximately 30 different property owners. This space has limited discernable value for the property owners and could be used as a linear park or to provide a trail through town.

The old railroad alignment was considered as a potential alignment for a multi-use path. Recognizing that several roads parallel to Main Street are designated as Golf Cart Friendly Roads, it is not critical to provide golf cart travel options along Main Street. It is, however, critical for the bridge over the canal to be wide enough to accommodate golf carts. In areas that have no sidewalk now, the old railroad alignment is likely the preferred location to build a new path.

Much of downtown Windermere already has sidewalks on both sides of Main Street, a sidewalk on the west side of Old Main Street, and Old Main Street is designated as Golf Cart Friendly. A new multi-use facility would not be well utilized in these areas since so many modes are already accommodated. The redundancies are illustrated conceptually in ***Exhibits 8 and 9***, which show existing conditions and a potential path alignment, respectively. Additional views are provided in ***Appendix C.*** Due to the availability of multiple options to travel through downtown, it would be difficult to obtain funding for an additional path. As such, in areas that already have sidewalk, the likely recommendation is to replace the existing sidewalk with a wider asphalt path.

Exhibit 8 – Existing View of Main Street and Old Main Street through Downtown Windermere

Exhibit 9 – Conceptual Multi-Use Path through Downtown Windermere

GOLF CART FACILITIES

The existing Golf Cart District includes Golf Cart Friendly Roads that allow travel throughout most of the town. However, there are critical points where connectivity is hindered or otherwise lacking. It is possible to travel through some portions of Windermere, but not throughout the entire town. There is also a lack of connectivity to the two adjacent golf courses and shopping areas that are outside of the Town limits.

Golf cart mobility within the Town of Windemere could be improved by providing new connections in four key areas:

1. A connection to the Windermere Country Club
2. A new multi-use bridge over the canal that facilitates two-way golf cart traffic, bicycle traffic, and pedestrians.
3. A connection to Isleworth Country Club and to The Grove shopping center (the intersection of Apopka Vineland Road and Conroy Windermere Road (6th Avenue))
4. A connection from The Willows and The Manors to the existing Golf Cart District (via Tryon Place)

CONNECTION TO WINDERMERE COUNTRY CLUB

Lake Butler Boulevard is designated as a Golf Cart Friendly Road, and it terminates as a “T” intersection that ends at Park Avenue. This ending point is approximately ¼ mile away from Butler Bay Drive, which provides access to the Windermere Country Club. By providing a relatively short connection between Lake Butler Boulevard and Butler Bay Drive, a significant benefit is gained, connecting the Town of Windermere to the Windermere Country Club. Note that the Windermere Country Club, Butler Bay Drive,

and the western portion of Park Avenue are outside of the Town limits, so coordination with Orange County would be important.

The potential connection includes a crossing of Park Avenue at the Lake Butler Boulevard intersection, removal of existing sidewalk, and constructing a wider pathway on the north side of Park Avenue that can be shared by multiple modes. The preferred typical section should be determined based on community outreach, costs, and construction feasibility. It appears that there is available space to construct a suitable multi-use pathway in this area.

As an alternative to the ¼ mile connection between Lake Butler Boulevard and Butler Bay Drive, a longer connection could be made by providing a wide path along the north side of Park Avenue between the golf course and Windermere Road. While this connection is significantly longer (with a total length of approximately 1.4 miles), it facilitates travel from Tryon Place and from Park Avenue.

NEW CANAL BRIDGE

The existing pedestrian bridge over the canal was not designed to accommodate multiple modes and does not facilitate travel on golf carts. Bicycles can travel over the bridge, but not comfortably, and likely only in one direction, in a single file line. Due to the narrowness and slope of the ramps, many bicyclists may feel uncomfortable using the bridge. The existing ramps are also not wide enough for pedestrians to pass each other while traveling in opposite directions. The concerns with the bridge are compounded when considering golf cart travel. It is a critical juncture that is necessary to ensure the success of connections to other parts of town and beyond. Due to its current limitations, the bridge should be replaced as part of a multi-use path or golf cart focused project.

The walkway approaching the bridge is steep and narrow, as pictured in ***Exhibit 10***. The north side of the bridge includes a section of two 90^0 turns near the top, as pictured in ***Exhibit 11***. It is possible that some golf carts can traverse the bridge, but many are likely not narrow or maneuverable enough to even try.

A new bridge should facilitate golf cart travel between the north and south portions of the town. A new bridge should be wide enough for multiple modes to travel on the bridge without causing conflicts. The preferred typical section should be determined based on community outreach and costs. Design elements to include are an improved slope on the ramps, a typical section that is wide enough for golf carts, bicycles, and pedestrians, aesthetic improvements, and a clearance height under the bridge that is equal to or greater than the clearance height of the adjacent bridge.

Exhibit 10 – Narrow Path to Existing Pedestrian Bridge

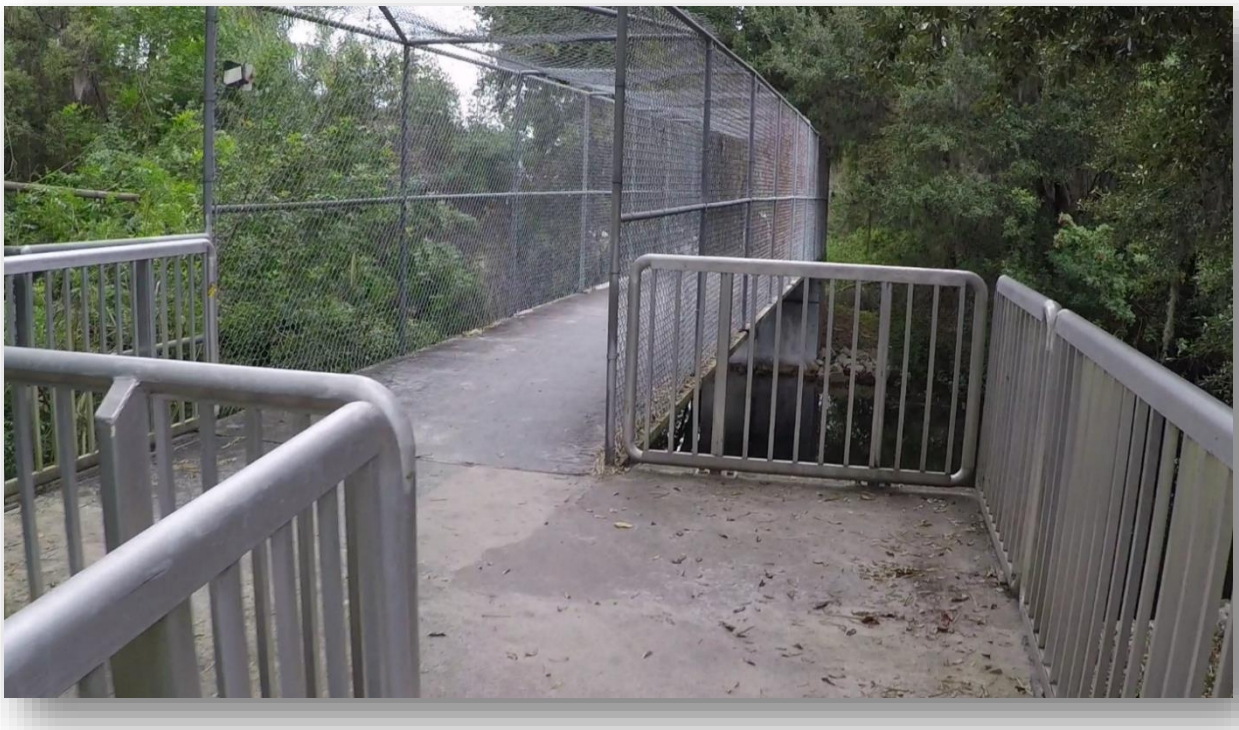

Exhibit 11 – Sharp Turns Approaching Pedestrian Bridge

CONNECTION TO ISLEWORTH AND THE GROVE

Existing conditions along 6th Avenue include sections with a sidewalk on one side of the road, sections with no sidewalks, and sections with sidewalks on both sides of the road. In general, the sidewalk on the south side of the road is too narrow and too windy to facilitate golf cart travel. It also appears that much of the path may be outside of the roadway right-of-way, and some portions are outside of the Town boundaries. Due to these factors, a wide path would need to be closely coordinated with and supported by the adjacent property owners. A feasibility analysis should be conducted, including elements of public involvement to determine the typical section, location, and support for a connection, as well as to estimate the anticipated costs.

CONNECTING THE WILLOWS AND THE MANORS TO THE GOLF CART DISTRICT

There is no existing connection between The Willows and The Manors neighborhoods and the Golf Cart District. Tryon Place and the other streets within The Manors could be designated as Golf Cart Friendly, thereby providing most of the needed connection. A Golf Cart crossing would be needed across Windermere Road at the entrance to The Willows, with a path connecting to Tryon Place. The path should be clearly marked for Golf Carts and only wide enough for one cart at a time (to discourage cars and trucks from using the path as a route to access Tryon Place). Tryon Place could then be added to the Golf Cart District as a Golf Cart Friendly Road. A multi-use path along Tryon Place would provide a limited improvement since the existing sidewalks provide access for pedestrians. Once Tryon Place meets Park Avenue, a connection to the rest of the Golf Cart District can be made by constructing a path along Park Avenue that connects to Lake Butler Boulevard and crosses Park Avenue, a connection of approximately ¼ mile. The location of the connections and designations are shown in ***Exhibit #.***

RECOMMENDATIONS

BICYCLE FACILITIES

There are few opportunities to improve bicycling conditions within the Town of Windermere, other than along a potential multi-use trail. Complete roadway reconstruction would be necessary to provide bike lanes along most roads. While the side streets in the historic downtown area are generally low speed roads, they are not paved and therefore do not provide preferential conditions for bicyclists. If the town initiates a roadway paving program, some of these roads should be considered as designated shared facilities that would include shared lane signage and markings.

SIDEWALK RECOMMENDATIONS

A sidewalk project could be implemented to add new sidewalks in all of the areas that currently lack sidewalks. To provide an efficient project at the lowest cost possible, the sidewalk project should be implemented as one project. If it is broken into several smaller projects, inefficiencies with mobilization, procurement of materials, and other construction steps will combine so that the sum of several smaller projects will be much higher than one larger project.

Some sidewalks are relatively easy to build, typically when there is available space within the right-of-way on level ground, and there are no major utility conflicts. Sidewalk construction increases in difficulty when any of those features are in place. For example, if the roadway edge of pavement quickly transitions to a steep ditch for drainage, the construction of a sidewalk would likely entail filling the ditch and adding a pipe or reconstructing the ditch. There may also be a need to accommodate the drainage facilities somewhere else after the sidewalk is constructed, causing the need for off-site improvements or other changes.

As a separate example, sidewalk construction should have an extensive public involvement phase if it will require right-of-way acquisition or if there are several instances where adjacent property owners have encroached on the right-of-way by adding extensive landscaping. Due to these potential complicating aspects, some locations are likely ready for design of a sidewalk, while other locations should have a feasibility study to determine the likely costs and impacts, and other locations are likely not feasible.

As an alternative to performing a feasibility study, some of the projects could proceed directly to design. However, proceeding directly to design carries a risk if the fatal flaws, costs, and schedule constraints are not well known.

MULTI USE PATH RECOMMENDATIONS

Multi use paths are recommended that connect the Town of Windermere to the Windermere Country Club, to the Grove, and connect the different areas within Windermere together. A primary component of this network is a new bridge over the canal. The multi use path should accommodate pedestrians, bicycles, and golf carts.

RECOMMENDATION MAP AND TABLE

All project recommendations are shown in ***Exhibit 12*** and described in ***Table 2***. The improvements are divided into two Tiers based on the priority of implementation. A third group of improvements was identified in order to provide a complete system, but many of these facilities are within gated areas, private roads, or do not provide a significant benefit. As such, this third group of improvement is not considered a high priority for implementation at this time.

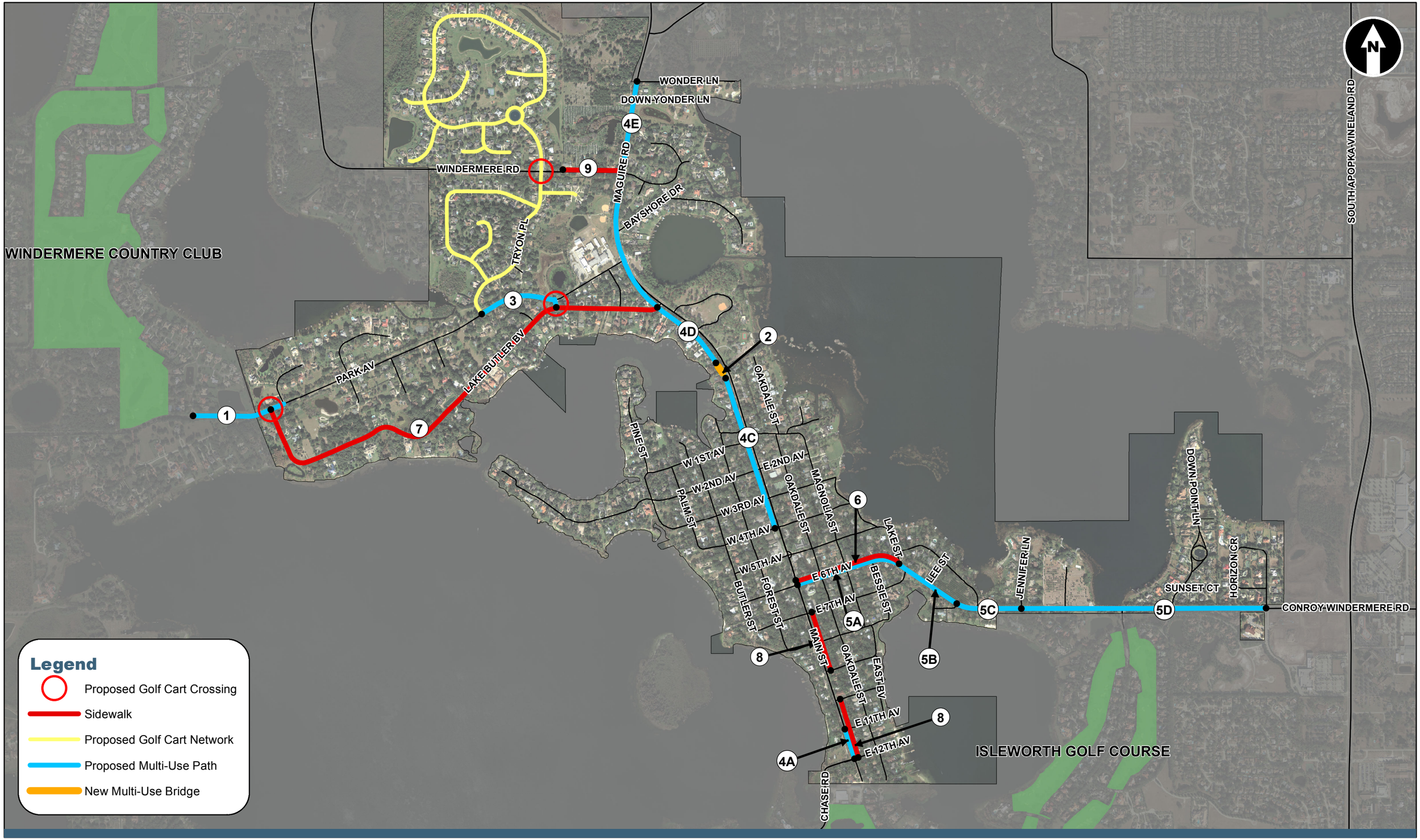

EXHIBIT 12 : Improvements Map

Windermere Multi-Modal Study

Table 2a – Improvement Recommendations

Segment ID	Roadway Segment	From	To	Segment Length (mi)	Improvement	Notes	Next Step	General Cost per mile	Construction Cost Estimate	Planning, Design, CEI, Contingency Costs	10% CEI	15% Contingency	Total Opinion of Probable Cost
Tier I - Critical Connections													
1	Park Avenue	Lake Butler Boulevard	Butler Bay Drive	0.25	Trail	Short segment to connect Town to Golf Course.	Feasibility Study	$334,772	$83,700	$37,740	$8,400	$12,600	$142,440
2	New Canal Bridge	N Bay Road	S Lake Butler Boulevard	0.0152		Necessary connection / link	Obtain funding	$27,899,715	$424,100	$190,820	$42,400	$63,600	$720,920
3	Park Avenue	Tryon Place	Lake Butler Boulevard	0.25		Short link provides connection between north Windermere and remaining system.	Feasibility Study	$334,772	$83,700	$37,740	$8,400	$12,600	$142,440
4A	Main Street	12th Avenue	11th Avenue	0.09	Trail	No existing SW or path.	Feasibility Study	$308,372	$27,800	$12,560	$2,800	$4,200	$47,360
4B		11th Avenue	7th Avenue	0.35	Trail	Remove existing sidewalk, replace with path	Feasibility Study	$334,772	$117,200	$52,740	$11,700	$17,600	$199,240
4C		4th Avenue	Bridge	0.48	Trail	Remove existing sidewalk, replace with path	Feasibility Study	$334,772	$160,700	$72,340	$16,100	$24,100	$273,240
4D		Bridge	Park Avenue	0.42	Trail	No existing SW or path.	Feasibility Study	$308,372	$129,500	$58,300	$13,000	$19,400	$220,200
4E		Park Avenue	Wonder Lane (North Town Limits)	0.52	Trail	No existing SW or path.	Feasibility Study	$308,372	$160,400	$72,180	$16,000	$24,100	$272,680
5A	E 6th Avenue	Main Street	Lake Street	0.3	Trail	No existing SW or path.	Feasibility Study	$308,372	$92,500	$41,700	$9,300	$13,900	$157,400
5B		Lake Street	Highland Avenue	0.25	Trail	Remove existing sidewalk, replace with path	Feasibility Study	$334,772	$83,700	$37,740	$8,400	$12,600	$142,440
5C		Highland Avenue	Mid-block crosswalk before Jennifer Lane	0.11	Trail	No existing SW or path.	Feasibility Study	$308,372	$33,900	$15,280	$3,400	$5,100	$57,680
5D		Mid-block crosswalk before Jennifer Lane	Horizon Circle	0.77	Trail	Remove existing sidewalk, replace with path	Feasibility Study	$334,772	$257,800	$116,060	$25,800	$38,700	$438,360
												Total Tier I Cost:	**$2,814,400**
Tier II - Other Primary Connections													
6	E 6th Avenue	90' from Main Street	Lake Street	0.28	Sidewalk, North side	Right-of-way encroachments are likely, utilities may be conflicts (drainage features, fence lines, utility poles) and limited space available at boat ramp. Possible route of multi-use path.	Feasibility Study - Determine costs, impacts, fatal flaws. Determine typical section.	$110,392	$30,900	$19,880	$3,100	$4,600	$58,480
7	Lake Butler Boulevard	Park Avenue	Maguire Road	2.77	Sidewalk	Likely right-of-way constraints. Landscaping often continues up to the pavement edge. Overhead utilities on north side. Limited space.	Feasibility Study	$110,392	$305,800	$147,660	$30,600	$45,900	$529,960
8	Main Street	12th Avenue 9th Avenue	10th Avenue 7th Avenue	0.36	Sidewalk, East side	SW on east side of road	Feasibility Study	$110,393	$39,700	$22,940	$4,000	$6,000	$72,640
9	Windermere Road	11355 Windermere Road	Maguire Road	0.17	Sidewalk, North side	Sidewalk gap on north side. Intersection with Maguire Road needs crosswalks, ramps, and sidewalk connections.	Design Improvements	$110,392	$18,800	$8,460	$1,900	$2,800	$31,960
												Total Tier II Cost:	**$693,040**
												Tier I and Tier II Total Length (mi)	**7.4**
												Tier I and Tier II Total Cost	**$3,507,440**

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Table 2b – Additional Improvements

Segment ID	Roadway Segment	From	To	Segment Length (mi)	Improvement	Notes	Next Step	General Cost per mile	Construction Cost Estimate	Planning, Design, CEI, Contingency Costs	10% CEI	15% Contingency	Total Opinion of Probable Cost
Tier III -Additional Needs and Alternatives													
n/a	Bayshore Drive	2375 Bayshore Drive	10972 Bayshore Drive	0.78	Sidewalk	There is likely space on the south side for construction of a sidewalk.	Determine Public Support then Design	$110,392	$86,100	$38,720	$8,600	$12,900	$146,320
n/a	Down Point Lane	4414 Down Point Lane	4413 Down Point Lane	0.39	Sidewalk	Construct sidewalk along the east side of roadway.	Determine Public Support then Design	$110,392	$43,100	$19,420	$4,300	$6,500	$73,320
n/a	Down Yonder Lane	Maguire Road	End of Roadway	0.34	Sidewalk	Private Road.	Determine whether this sidewalk should be included.	$110,392	$37,500	$16,900	$3,800	$5,600	$63,800
n/a	E 6th Avenue	Boat ramp entrance	Isleworth Country Club Drive	0.09	Sidewalk, North side	Low Priority	Feasibility Study - Determine costs, impacts, fatal flaws. Determine typical section.	$110,393	$9,900	$10,480	$1,000	$1,500	$22,880
n/a	Horizon Circle	7085 Horizons Circle		0.1	Sidewalk	Sidewalk stops at vacant properties. Town should require construction of sidewalk by home builder.	Require from builders	n/a	n/a	n/a	n/a	n/a	n/a
		7134 Horizons Circle		0.1									
n/a	Park Avenue	Western Town limit	Lake Butler Blvd	0.19	Sidewalk	No sidewalk on south side of Park, west of Lake Butler. This portion is likley low demand and should be a low priority compared to other projects.	No action recommended at this time - low priority	n/a	n/a	n/a	n/a	n/a	n/a
n/a	Park Avenue	Elementary School	Maguire Road	0.19	Sidewalk	North side (in front of school) has no sidewalk. This would cross both Bus driveways.	Coordiante with school.	$110,392	$21,000	$9,300	$2,100	$3,000	$35,400
n/a	Schooner Way	Maguire Road	End of Roadway	0.49	Sidewalk	Trees, mailboxes, and landscaping are likely constraints/concerns. It is not clear which side should have a sidewalk.	Feasibility Study	$110,392	$54,100	$32,320	$5,400	$8,100	$99,920
n/a	Willow Gardens Drive	Entire Length of Roadway		1.09	Sidewalk	Neighborhood road, sidewalk is mostly continuous on one side, lacks ramps and crossings.	Determine whether this sidewalk should be included.	$110,392	$120,300	$54,060	$12,000	$18,000	$204,360
n/a	Wonder Lane	Maguire Road	End of Roadway	0.54	Sidewalk	Private Road. Available space appears to be limited due to landscaping and drainage features.	Determine whether this sidewalk should be included.	$110,392	$59,600	$26,820	$6,000	$8,900	$101,320
n/a	Park Avenue	Main Street	Butler Bay Drive	1.34	Trail	Long segment all along Park Avenue.	Determin priority	$334,772	$448,600	$201,920	$44,900	$67,300	$762,720
n/a	Tryon Place	Park Avenue	Windermere Road	0.5	Trail / District	Rather than builting a trail, the road could become part of the Golf Cart District.	Determine Priority	$334,772	$167,400	$75,280	$16,700	$25,100	$284,480

POTENTIAL FUNDING SOURCES

Several potential sources of funding are available for bicycle and pedestrian improvement projects.

VISIT FLORIDA GRANTS

VISIT FLORIDA is the state's official tourism marketing corporation created in 1996. VISIT FLORIDA is not a government agency, but rather a not-for-profit corporation that carries out the work of the Florida Commission on Tourism, which was created as a public-private partnership by the Florida Legislature in 1996. The Commission, in partnership with the Governor's office, took over the functions of what was then the Tourism Division of the Florida Department of Commerce. VISIT FLORIDA maintains the following grant programs:

- Cultural Heritage and Nature Tourism Grant Program: The Cultural Heritage and Nature Tourism (CHNT) Grant Program is a reimbursement program designed to provide funding for multi-county and multi-partner marketing projects for the promotion of Florida's cultural heritage and nature tourism and education efforts. Total funds available for this grant program during the 2012-2013 Fiscal Year (July 1, 2012-June 30, 2013) equal $140,000.
- Advertising Matching Grants Program: VISIT FLORIDA administers an advertising matching grants program to publicize the tourism advantages of the State of Florida. This program is administered on behalf of the Florida Commission on Tourism, in cooperation with the Governor's Office of Tourism, Trade, and Economic Development. Notices of the grants program are sent out by the second Friday in March. The deadline for applications is the third Friday in April. The total for all grants under this program shall not exceed $40,000 per year.

OFFICE OF GREENWAYS AND TRAILS - THE RECREATIONAL TRAILS PROGRAM (RTP)

The Recreational Trails Program (RTP) is coordinated by the Office of Greenways and Trails. The RTP is a competitive program that provides grants for projects that provide, renovate, or maintain recreational trails, trailheads, or trailside facilities. The Florida Department of Environmental Protection (FDEP) administers the program in coordination with the U.S. Department of Transportation and the Federal Highway Administration (FHWA). Municipal or county governments, state or federal governmental agencies, recognized state and federal Indian tribal governments, and organizations approved by the State are eligible to apply. RTP grants have a minimum 20 percent local match. Applications are typically due at the end of March.

FLORIDA COMMUNITY TRUST'S FLORIDA FOREVER GRANT PROGRAM

Florida Communities Trust is a state land acquisition grant program that provides funding to local governments and eligible non-profit environmental organizations for acquisition of community-based parks, open space, and greenways that further outdoor recreation and natural resource protection needs as identified in local government comprehensive plans. Approximately $66 million (unless otherwise allocated by the legislature) is available each funding cycle.

FLORIDA DEPARTMENT OF TRANSPORTATION: TRANSPORTATION ALTERNATIVES

The Transportation Alternatives Program (TAP) is a federal program administered by the Florida Department of Transportation (FDOT). This funding is intended for projects including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design or construction of boulevards and other roadways. TAP is not a grant program; rather, projects are undertaken by project sponsors and eligible costs are reimbursed. These funds can be used for a variety of purposes, and the first listed eligible activity is construction, planning and design for bicyclist, pedestrians, and other forms of non-motorized transportation.

BIKES BELONG COALITION GRANT PROGRAM

This program assists in the development of bicycle facility projects by providing $180,000 in grants each year. This program is administered by the Bikes Belong Coalition, which is a bicycle advocacy organization aimed at "putting more people on bikes more often." Contact the Coalition at (303) 449- 4893 or visit their website at www.bikesbelong.org.

FLORIDA RECREATION AND DEVELOPMENT ASSISTANCE GRANT PROGRAM

The Florida Recreation and Development Assistance Program provides grants for the acquisition or development of land for public outdoor use or for the construction or renovation of recreational trails. This program is administered by the Florida Department of Environmental Protection, Bureau of Design and Recreation Services. Contact Diane Langston at (850) 488- 7896, or visit the program website at www.dep.state.fl.us/parks/bdrs/.

BIKE FLORIDA MINI-GRANTS

This small-scale grant program is established through the sale of "Share the Road" specialty license plates to provide funds for bicycle and pedestrian programs. These grants provide assistance in the purchasing of equipment (such as road or trail signage, bike repair, and educational programs), print materials (printing of bicycle safety information, safety signage for bicycle events, trail maps, etc.), or other safety-related projects. The program website can be found at www.bikeflorida.org.

LAND AND WATER CONSERVATION

Land and Water Conservation is a federal competitive program which provides grants for acquisition or development of land for public outdoor recreation use. The matching ratio is one applicant dollar to one federal dollar for all grant awards (50% / 50%). The maximum grant request is $200,000. For more information call (850) 245-2501 or email rita.ventry@dep.state.fl.us.

DEPARTMENT OF ECONOMIC OPPORTUNITY COMMUNITY PLANNING TECHNICAL ASSISTANCE GRANT

Community Planning Technical Assistance grants are available to counties and municipalities. The purpose of the grants is to assist counties and municipalities in developing economic development strategies, meeting the requirements of the Community Planning Act, addressing critical local planning issues, and promoting innovative planning solutions to challenges identified by local government applicants. They are used for a variety of projects, such as developing neighborhood plans, recreational master plans, urban design master plans, updating comprehensive plans, and establishing mainstreet programs. For more information call (850) 717-8492 or email nia.clark@deo.myflorida.com.

MULTI MODAL IMPROVEMENT CHAMPION

Grants and funding opportunities must be applied for by the local government and are often competitive in nature. To obtain funding for various improvements, it is recommended to designate a Multi-Modal Improvement Champion. This person would periodically check the submission dates for various grants and prepare grant applications to advance the recommended projects. This role is typically filled by existing planning or engineering staff.

APPENDIX A

Crashes

0 250 500 1,000 Feet

CRASH DATA

Windermere Multi-Modal Study

5-YR Data
01-10-10 TO 01-10-15

0 250 500 1,000 Feet

CRASH DATA

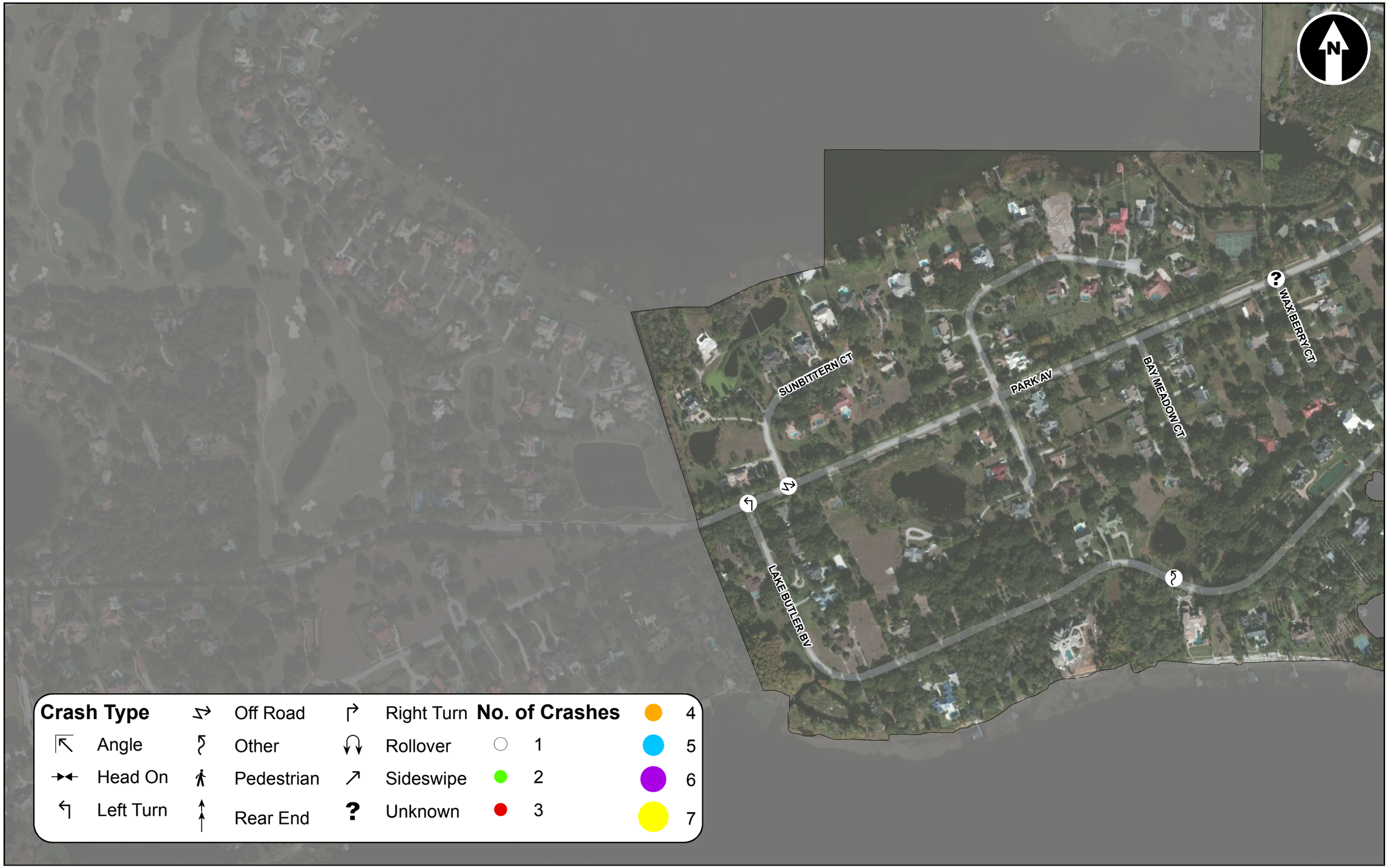
Windermere Multi-Modal Study

5-YR Data
01-10-10 TO 01-10-15

CRASH DATA

Windermere Multi-Modal Study

5-YR Data
01-10-10 TO 01-10-15



0 250 500 1,000 Feet

CRASH DATA

Windermere Multi-Modal Study

5-YR Data
01-10-10 TO 01-10-15

0 250 500 1,000 Feet

CRASH DATA

Windermere Multi-Modal Study

5-YR Data
01-10-10 TO 01-10-15

APPENDIX B

Sidewalk Gaps

Existing Sidewalk Gaps

Windermere Multi-Modal Study

APPENDIX C

Conceptual Path between Main Street and Old Main Street

Existing

Proposed

Existing

Proposed

Existing

Proposed

Existing

Proposed

Existing

Proposed

Existing

Proposed