



Beaches



E-Bike Study

Jacksonville Beach - Neptune Beach - Atlantic Beach



2026



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List of Acronyms

ABEA	American Bicycling Education Association
ANPRM	Advance Notice of Proposed Rulemaking
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
COJ	City of Jacksonville
CPSC	Consumer Product Safety Commission
CPSRMS	Consumer Product Safety Commission Risk Management System
DIA	Downtown Investment Authority
ECG	East Coast Greenway
FDOT	Florida Department of Transportation
FGTS	Florida Greenways and Trails System
FHWA	Federal Highway Administration
HB	House Bill
JTA	Jacksonville Transportation Authority
MPO	Metropolitan Planning Organization
NEISS	National Electronic Injury Surveillance System
NHTSA	National Highway Traffic Safety Administration
NPS	National Park Service
OHV	Off-highway Vehicle
SB	Senate Bill
SUN	Shared-Use Non-Motorized
SUP	Shared Use Path
SWOT	Strengths, Weaknesses, Opportunities, Threats
TPO	Transportation Planning Organization

1.0 Introduction

The communities of Atlantic Beach, Neptune Beach, and Jacksonville Beach have identified a growing need for clearer and more consistent policy regarding electric bicycle (E-Bike) use. As E-Bikes become more common for recreation, short-distance travel, and other everyday trips, questions have emerged related to rider behavior, facility compatibility, enforcement, and the safety of all roadway and pathway users. This study was prepared to examine the role of E-Bikes within the Beaches communities and to identify policies, programs, and infrastructure strategies that can improve safety, reduce confusion, and support predictable use across municipal boundaries.

Under Florida law, E-Bikes are defined using a three-class system.

A **Class 1** E-Bike is equipped with a motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches 20 mph.

A **Class 2** E-Bike is equipped with a throttle-actuated motor that ceases to provide assistance when the bicycle reaches 20 mph.

A **Class 3** E-Bike is equipped with a motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches 28 mph.

These distinctions matter because they affect operating speed, rider behavior, facility compatibility, and the extent to which local governments may wish to tailor rules for different devices or contexts. At the state level, the 2026 Florida Legislature approved Senate Bill 382, symbolizing a shift toward more structured micromobility oversight through pedestrian-focused operating rules, improved crash reporting requirements, and the creation of a statewide Micromobility Device Safety Task Force. At the local level, however, regulations in and around the Beaches remain varied, with differences in speed limits, permitted operating areas, and enforcement from one jurisdiction to another. The

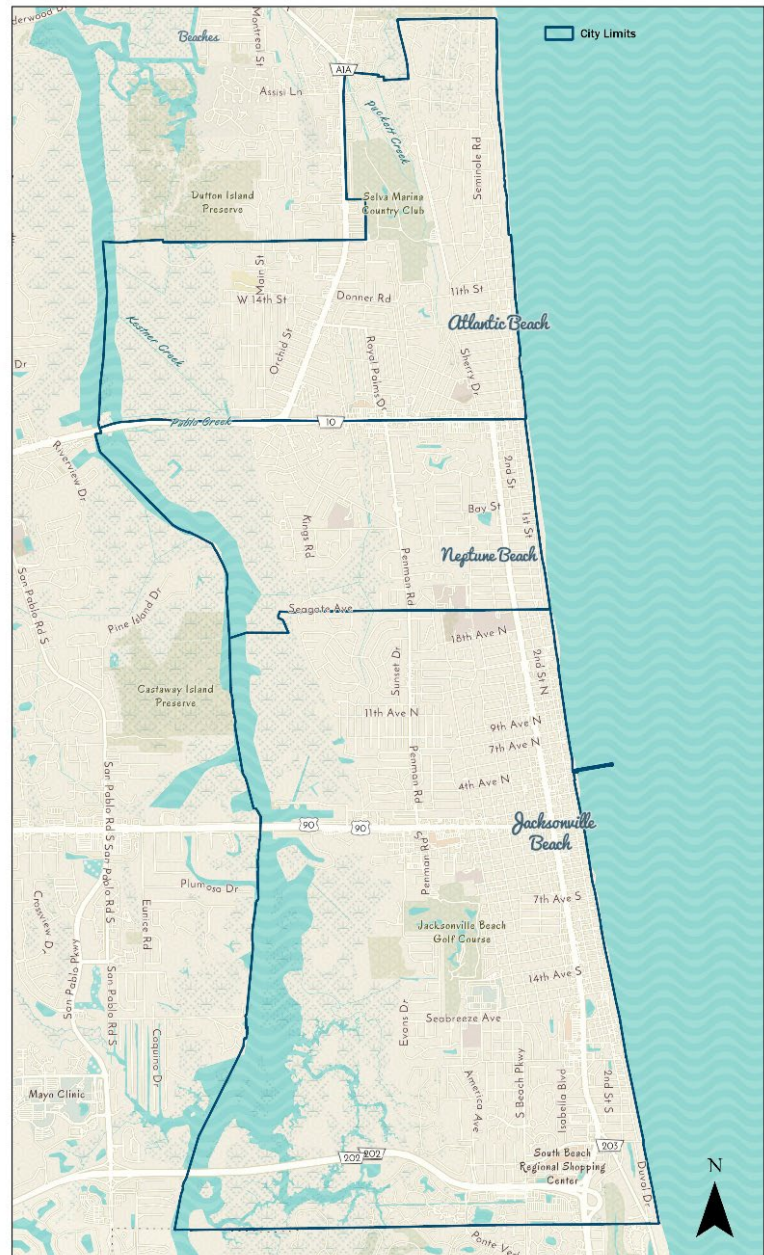


Figure 1. Study Area



result is a regulatory environment that can be difficult for riders to understand and challenging for municipalities to manage consistently.

This study was undertaken in response to the local need for greater clarity, consistency, and safety regarding micromobility operations. It evaluates how E-Bikes and other forms of micromobility are currently being used throughout the Beaches municipalities, what safety issues are emerging, how existing federal, state, and local policies frame micromobility operations, and what strategies may be available to improve outcomes for riders and non-riders alike.

This study is organized into five sections:

Current Trends in E-Bike Usage

Existing Laws and Policies

Safety Analysis

Public Outreach

Recommendations

Overall, this study is intended to provide a clear and policy-focused framework for understanding E-Bike activity within the Beaches communities. By evaluating current use patterns, reviewing the regulatory context, analyzing available safety data, and incorporating community input, this report identifies practical considerations for how E-Bikes can be more safely and consistently adapted. The findings of this study are meant to support future coordination between the Beaches municipalities and guide decisions related to policy development, infrastructure planning, public education, and enforcement.



Current Trends in E-Bike Usage

In the United States, E-Bikes are rising in popularity as a form of non-motorized transportation. The increasing use of E-Bikes, better known as “E-Bikes,” has spurred an emerging question for many municipalities and local law enforcement offices regarding their safety, regulation, and overall use. To understand the current trends surrounding E-Bike use within the United States, a literature review was conducted assessing recommendations and best practices from around the country. A total of 14 studies were reviewed: seven case studies from the U.S. Department of Transportation Federal Highway Administration (FHWA) and seven reports from various municipal resources.

A study conducted by the Consumer Product Safety Commission (CPSC) in 2024 where epidemiology data from the National Electronic Injury Surveillance System (NEISS) and Consumer Product Safety Risk Management System (CPSRMS) was reviewed, showed that from 2017 through 2023, 87,000 emergency department visits were caused by E-Bikes. Within that same time period, there were 193 reported fatalities associated with E-Bike use with the majority (113) of these fatalities caused by a collision with a motor vehicle. This CPSC report states that the number of emergency department visits for E-Bikes has increased nearly 10-fold from 2017 to 2023.

Highlights from these reports are shown below and two literature review summary tables are also provided in this section.

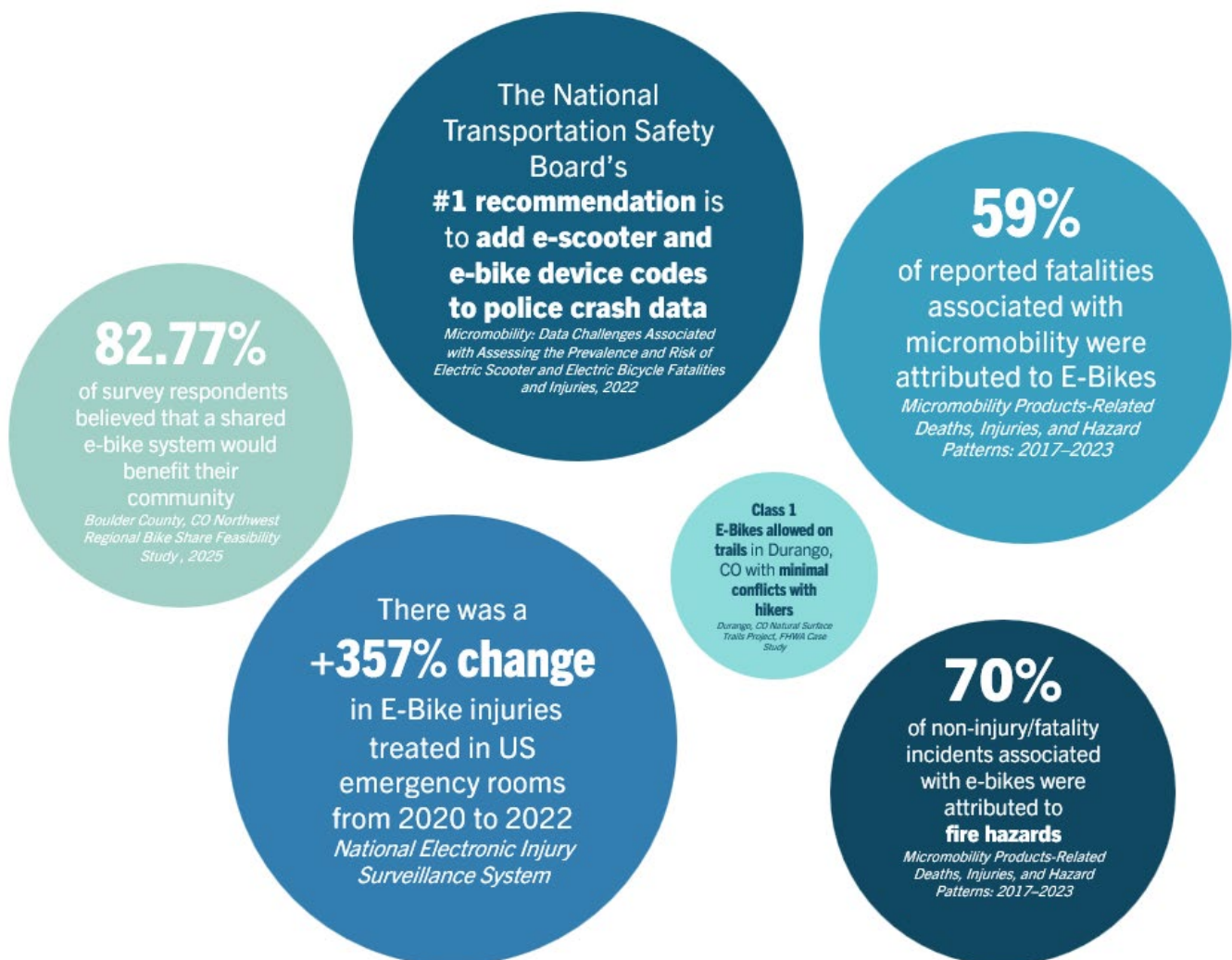


Table 1. FHWA Case Study Literature Review Matrix

Category	Case Study						
	Durango – E-Bike Trails Pilot	Minneapolis – E-Bike Bike Share	NYC – Cargo E-Bikes	Philadelphia – Bike Share	Portland – Adaptive Bike Share	Seattle – Parks and Trails	Virginia – State Park Regulations
Commercial Application			☒				
Bike Share System		☒		☒	☒		
Recreation	☒	☒		☒	☒	☒	☒
Infrastructure	☒		☒			☒	
Operating Rules	☒	☒	☒	☒		☒	
Survey	☒					☒	
Bike Parking		☒	☒	☒	☒		
Theft Prevention		☒					

Table 2. Municipal Report Literature Review Matrix

Category	Report						
	St. Lucie TPO Micromobility Report, 2022	Micromobility Products Hazard Patterns: 2017–2023	Data Challenges With Assessing the Risk of Micromobility Injuries, 2022	Boulder County Regional Bike Share Study, 2025	E-Bike Safety Policy Study, San Mateo County, 2025	On-Street Bikeway Feasibility Study, Des Moines Area MPO, 2014	Safer Micromobility: Technical Background Report, 2024
Commercial Application						☒	☒
Bike Share System				☒			
Recreation	☒			☒			
Infrastructure	☒	☒				☒	☒
Operating Rules	☒	☒				☒	☒
Survey		☒	☒	☒			
Bike Parking				☒			
Theft Prevention				☒			
Statistics			☒		☒		☒



Within the Beaches municipalities, E-Bikes have become a more common form of transportation and recreation. Based on survey responses collected for this study, E-Bike owners often ride their E-Bikes for recreation and errands, commonly using bike lanes where accessible. When bike lanes are unavailable, riders regularly resort to using the sidewalk. The most common class of E-Bike among respondents were Class 3 E-Bikes: the highest speed E-Bike available. Helmet usage trends were almost evenly split between use (51%) and non-use (49%). More E-Bike usage trends can be found in **Section 4.1**.



Photo 1. E-Bike, Cyclist, and Pedestrians Using 1st Street Facilities



Field Review

A field review was conducted on Tuesday, November 18, 2025. The AtkinsRéalis project team surveyed the 1st Street corridor as well as sections of Mayport Road, 3rd Street (A1A), and Atlantic Boulevard. The purpose of this field review was to observe micromobility behavior and assess existing infrastructure within the project area. The results of the field review have been structured into a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.

SWOT Analysis

Strengths:

- **Ridership:** High rates of E-Bike ridership reflect strong user demand and are a primary reason for conducting this report. While high ridership rates do account for higher E-Bike crash totals, these usage rates also reflect a practical alternative to vehicle trips for both recreation and utilitarian trips. Having more E-Bikes on the road creates the opportunity to enhance the Beach's existing bike and pedestrian facilities, while also developing an expanded facility network.



Photo 2. Bicyclists on 1st Street in Jacksonville Beach



Photo 3. E-Scooter Utilizing the Bike Lanes on 1st Street in Jacksonville Beach

- **Existing Infrastructure:** The existing bicycle and pedestrian infrastructure in the Beaches communities is one of the reasons ridership is so high. The existing facilities along the 1st Street corridor in Jacksonville, Neptune, and Atlantic Beach promote an easily accessible E-Bike "highway."

Weaknesses:

- **Driveways and Crossings:** Driveways for commercial and residential access are a substantial threat to the safety of E-Bikes and other micromobility users. Close calls were observed in the field and collisions were documented in the safety analysis (Section 3.0). The conflict at driveways and crosswalks comes primarily from E-Bikes and other micromobility devices traveling on sidewalks at speeds which drivers are not responsive to. Encouraging enhanced visibility at driveways and crosswalks through signage and intersection design could improve this threat.



Photo 4. Driveways on Mayport Road (A1A) Facing North



Photo 5. Minors Riding E-Bikes with Helmets

- **User Behavior:** Observed E-Bike rider behavior presents safety and operational challenges within the Beaches communities. Field observations, further supported by survey responses, indicated instances of excessive speeds, aggressive or unpredictable maneuvering, and failure to comply with traffic rules, thus increasing the risk of conflicts with pedestrians, cyclists, and motor vehicles. In addition, inconsistent helmet use among riders elevates the potential severity of injuries in the event of a collision.



Opportunities:

- Bike Parking:** Although bike parking is present within the Beaches communities, the field review indicated an opportunity to expand and standardize E-Bike-appropriate parking infrastructure. E-Bikes are heavier and more valuable than conventional bicycles, requiring secure, reinforced racks that can accommodate larger frames and locking mechanisms. Additionally, best practices call for siting E-Bike parking in highly visible, well-lit locations to deter theft, while maintaining adequate setbacks from buildings and flammable structures to reduce potential risks associated with battery charging or electrical malfunction. Strategic investment in E-Bike parking could enhance user confidence and support continued growth in ridership.



Photo 6. Bike Racks in Downtown Jacksonville Beach

- Connectivity:** The Beaches communities already possess a foundation of on-street bikeways, shared-use paths, and low-stress local streets that can be leveraged to improve E-Bike connectivity. By strategically enhancing and linking existing facilities the network can be built out into a more continuous and predictable system for E-Bike users. Reinforcing logical, direct corridors using existing infrastructure can reduce route ambiguity, minimize conflicts with motor vehicles, and improve rider expectations and behavior. Building upon the current network rather than relying solely on new facilities presents an efficient opportunity to create safer, intuitive travel routes that better accommodate E-Bike operating speeds and support both recreational and utilitarian trips.



Photo 7. Shared Use Path on Florida Boulevard in Neptune Beach



- **First-Mile/Last-Mile:**

A comprehensive E-Bike network offers a substantial opportunity to strengthen first-mile/last-mile connections to the regional transit system. E-Bikes can effectively bridge the distance between residential areas, employment centers, and Jacksonville Transportation Authority (JTA) bus stops, particularly in areas where fixed-route transit coverage or service frequency may be limited. By improving access to transit, E-Bikes can enhance overall mobility, reduce dependence on private vehicles, and support multimodal travel options for residents and visitors in the Beaches communities.

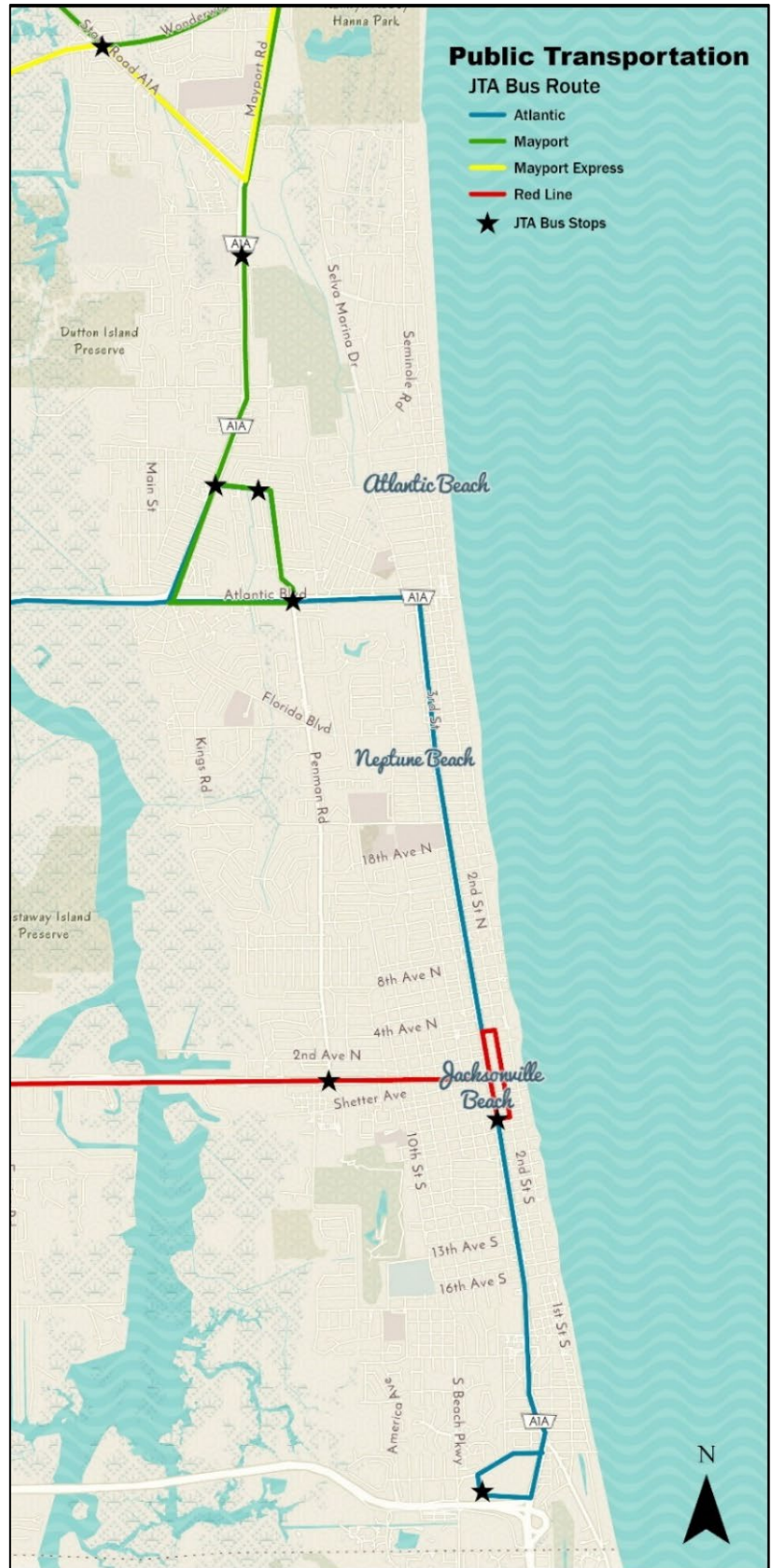


Figure 2. Public Transportation Routes and Stops

Threats:

- Difficult to Enforce:** Enforcing laws on E-Bikes presents unique operational challenges for law enforcement due to their speed, maneuverability, and regulatory ambiguity. Many E-Bikes can rapidly accelerate and reach speeds that exceed posted limits for bike paths or shared-use facilities yet pursuing them with patrol vehicles is often impractical or unsafe, especially in pedestrian spaces. Officers frequently face limitations related to pursuit policies, risk to bystanders, and jurisdictional constraints when E-Bikes transition between roadways, sidewalks, and off-street paths. Additionally, inconsistent identification of E-Bikes by class, appearance, or aftermarket modification makes it difficult to visually assess legality or establish probable cause for speeding or reckless operation in real time, thus reducing the effectiveness of traditional traffic enforcement methods.

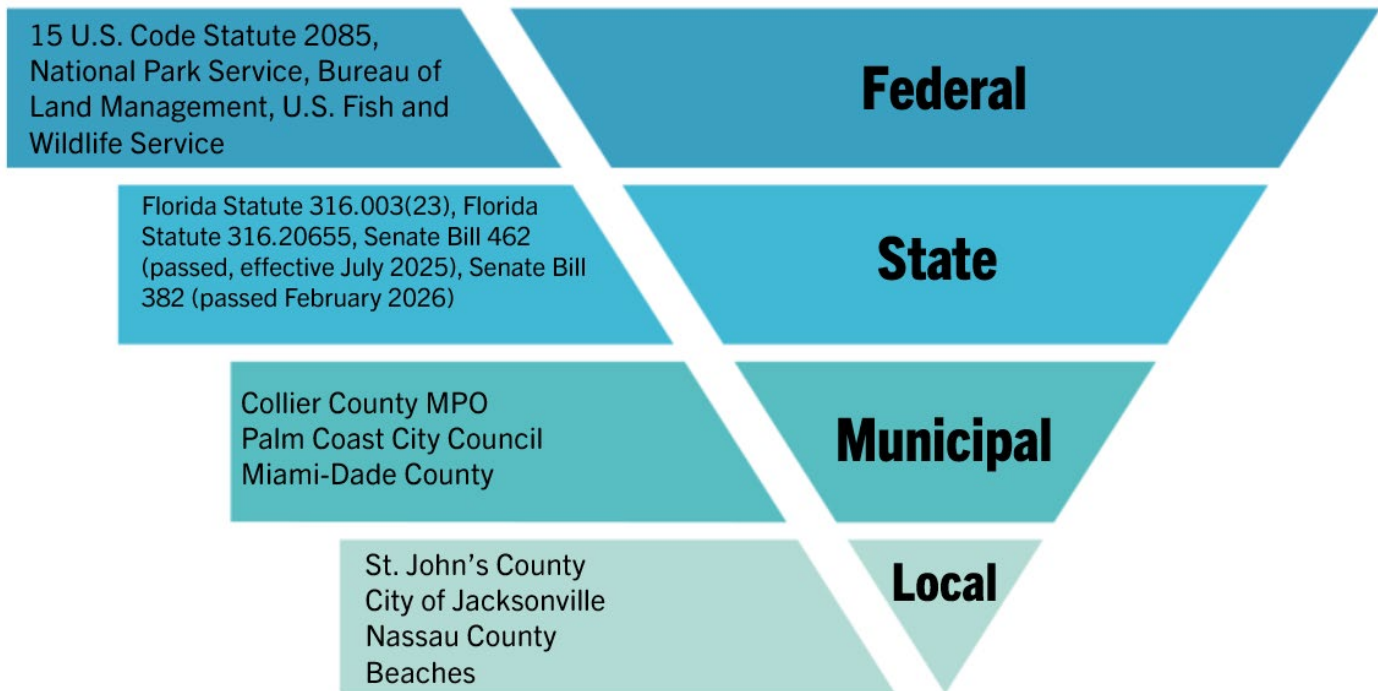


Photo 8. E-Bike Near-Miss at Jacksonville Drive and South Beach Parkway



2.0 Existing Laws and Policies

E-Bike laws are generally sparse and/or confusing with many communities calling for state-published, plain-language rules similar to a “drivers handbook.” Federal laws define what an E-Bike is but give more freedom in policy making to State powers. State laws further define the E-Bike 3-class system and give municipalities the responsibility of enacting more specific policy.



Federal Laws

Under federal consumer-product law, a “low-speed electric bicycle” is a 2- or 3-wheeled vehicle with fully operable pedals and an electric motor less than 750 W that can travel up to 20 mph on motor power alone. This brings such E-Bikes under Consumer Product Safety Commission (CPSC) bicycle equipment standards (16 CFR part 1512), not National Highway Traffic Safety Administration (NHTSA) motor-vehicle rules. CPSP opened an Advance Notice of Proposed Rulemaking (ANPRM) in 2024 seeking comments on E-Bike safety, reaffirming the 750W/20pmh statutory definition from 15 U.S.C. §2085.

As for national regulations on where you can ride an E-Bike, the National Park Service (NPS) states that E-Bikes are generally allowed where traditional bikes are allowed but local jurisdictions can set site-specific rules. The Bureau of Land Management (BLM) amended its off-highway vehicle (OHV) regulations in 2020 to define Class 1-3 E-Bikes and let field offices authorize E-Bike use on non-motorized roads/trails. Finally, the U.S. National Fish and Wildlife Refuge regulate E-Bikes by allowing them only on roads/trails already open to traditional bicycles unless otherwise prohibited.



State Laws

Florida's regulatory framework for E-Bikes has evolved rapidly in recent years as the state responds to increasing ridership, safety concerns, and the expanding diversity of micromobility devices. Legislative activity during the 2026 session reflects a transition from a relatively simple statutory foundation toward a more sophisticated statewide policy structure emphasizing standardized operational rules and improved crash data reporting. House Bill (HB) 243 (2026) and Senate Bill (SB) 382 (2026) served as companion initiatives intended to modernize Florida's approach to E-Bike oversight; however, the measures diverged as HB 243 underwent significant revision before being ultimately set aside in favor of SB 382. HB 243 moved through several committees beginning in late 2025, but as the legislative process advanced, its more stringent provisions were stripped from the bill during committee review. These provisions included licensing requirements for Class 3 E-Bikes, penalties for unauthorized motor modifications, expanded definitions relating to electric motorcycles, and revisions to driver education testing. What remained in HB 243 by early 2026 was a narrower set of operational rules and data-reporting requirements, closely aligned with its Senate companion.

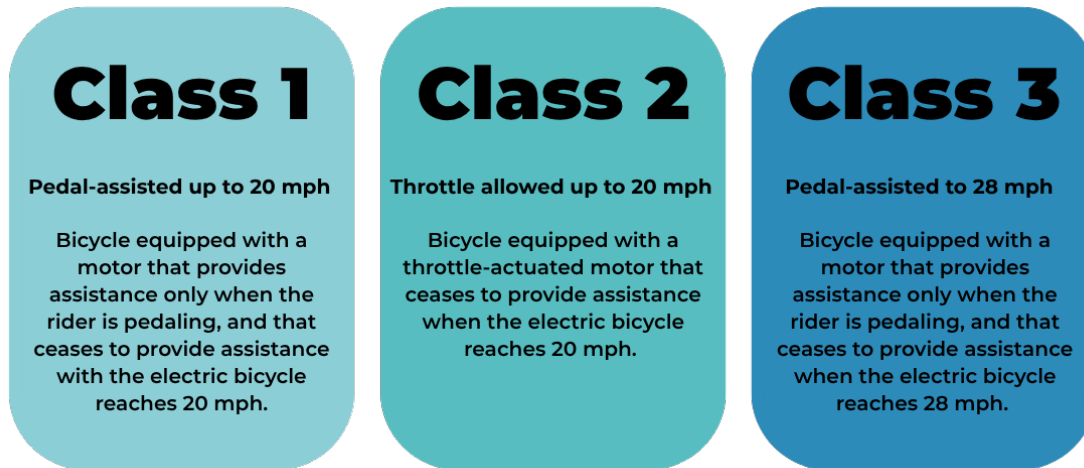
Senate Bill 382, filed in November 2025 and designed as the companion to HB 243, progressed smoothly through the Senate Transportation, Appropriations, and Fiscal Policy Committees before receiving unanimous approval in both chambers, passing the Senate on February 25, 2026, and the House on March 9, 2026, after which it was transmitted to the Governor. SB 382 emerged as the definitive legislative vehicle for statewide E-Bike regulation, carrying forward the surviving provisions initially contemplated in HB 243. The enacted bill establishes uniform operational requirements for E-Bike use around pedestrians, including mandatory yielding, the use of an audible signal before passing, and a requirement to slow to under 10 mph when a pedestrian is within 50 feet on sidewalks or pedestrian-designated areas. The bill also mandates standardized statewide crash documentation for E-Bikes and other micromobility devices, directing law enforcement agencies to include device classifications in crash reports and requiring the Department of Highway Safety and Motor Vehicles to publish a statewide summary in October 2026. Additionally, SB 382 creates the Micromobility Device Safety Task Force to evaluate long-term regulatory strategies and provide recommendations regarding safety, definitions, and enforcement practices. These provisions collectively form the core of the updated regulatory framework.

SB 382 Highlights:

- 10 mph speed limit within 50 ft of pedestrians on sidewalks and in pedestrian-heavy areas
- Mandatory yielding and audible warning to pedestrians on all shared use paths and park trails
- Standardized statewide crash documentation for E-Bikes and other micromobility devices
 - Crash date and time
 - E-Bike class
 - Rider age and possession of photo identification (if applicable)
- Statewide summary of micromobility crash events to be published by the Department Highways Safety and Motor Vehicles



In addition to the new operational and data-collection requirements, Florida continues to rely on its foundational statutory structure under §316.20655 and Title XXIII (F.S. §316.003(23)), which establishes the state’s three-class E-Bike system within a 750-watt power cap.



These classifications not only determine the operational rights and responsibilities of riders but also anchor the state’s approach to enforcement and device labeling requirements. It should be noted that any E-Bike equipped with a throttle can be modified (commonly referred to as “jailbreaking”) in ways that override manufacturer speed limiters and allow travel at speeds up to 40 mph. This practice is typically carried out through app-based settings on commercial E-Bike models and voids manufacturer warranties, but it remains a growing safety concern for both regulators and local jurisdictions.

Equally important are the elements that did not survive the legislative process. Despite early public discussions and preliminary bill language, neither HB 243 nor SB 382 ultimately introduced licensing or registration requirements for any class of E-Bike, nor did they impose modification penalties, create a new “e-moto” vehicle classification, or revise driver education testing requirements. These provisions—part of earlier drafts of HB 243—were removed during committee refinement due to concerns about feasibility, enforcement, and rider access, particularly for youth and low-income commuters. When the House laid HB 243 on the table on March 9, 2026, and deferred to SB 382, the more ambitious regulatory components of the original bill were effectively abandoned. The final legislation therefore reflects a deliberate narrowing of focus toward operational behavior around pedestrians and establishing a statewide data-collection framework rather than creating new licensing or enforcement systems.

The outcomes of Florida’s 2026 legislative session demonstrate a clear policy trajectory: preserving broad statewide access for E-Bikes consistent with bicycle regulations, supplementing these rules with targeted pedestrian-focused safety measures, and supporting evidence-based policymaking through mandatory crash data collection. Removing the more restrictive measures from HB 243 marks a shift away from licensing and enforcement toward operational standardization and improved information systems. As E-Bike technology and ridership patterns continue to evolve, combining statutory foundations—including the three-class system—new statewide safety initiatives, and continued local regulatory authority, positions Florida to adapt its legal framework to emerging mobility trends.

***Florida Municipal Examples:***

Collier County Metropolitan Planning Organization (MPO) voted unanimously in April 2025 to approve amendments to their Pedestrian Safety Ordinance specifying that:

- E-Bikes of any class must not exceed 15 mph when operated on sidewalks.
- Individuals under 16 are prohibited from riding Class 3 E-Bikes
- All E-Bike classes are permitted on sidewalks; however, riders over 16 using a Class 3 E-Bike must use bike lanes when available and are not allowed on sidewalks. They must also adhere to the 15 mph speed limit.

Palm Coast City Council voted 4-1 on October 7, 2025 to bring forward and adopt Ordinance 2025-18 amending Chapter 42, Article I of the City's Code of Ordinances by creating Section 42-7, "Use and Operation of Electric Bicycles" wherein:

- E-Bike operators must be 11 years of age
- Student IDs can be used as valid identification

Miami-Dade County created Section 2-98.3 in May of 2024 which addressed micromobility by:

- Prohibiting tow riders on E-Bikes unless adult and child
- 20 mph speed limit on county-owned right of way
- Operation of a micromobility device on a public sidewalk is prohibited
- Micromobility devices shall only be operated in bike lanes, if available, or upon streets with a posted speed limit of 30 mph or less
- Ticketing for traffic violations starting at \$250

E-Bike Education Campaigns

Education and outreach campaigns are beginning to become more common around Florida and beyond. In Orlando, kindergarten through high school students have the opportunity to enroll in an in-person E-Bike safety course offered free in partnership with the School District of Osceola County, the Osceola County Sheriff's Office, and the American Bicycling Education Association (ABEA). This pilot E-Bike education program has been funded and presented through Orlando's Vision Zero safety initiative. St. Johns County recently established a resolution from the County Commission establishing a public education and enforcement coalition with the St. Johns County Sheriff's office and School District targeting E-Bike safety in schools. Additionally, the City of Atlantic Beach is launching an E-Bike awareness campaign, targeted parental outreach, point-of-sale disclosure, messaging, and youth & school outreach.

The Florida Department of Transportation (FDOT) currently hosts an online resource guide for E-Bike safety materials through their Alert Today Florida and Pedestrian and Bicycle Strategic Safety Plan website.



Local Laws

In the City of Jacksonville (COJ), personally owned E-Bikes that meet Florida's definition are permitted to ride anywhere bicycles can ride (streets, bike lanes, multi-use paths), unless COJ or a managing agency posts a restriction. Within City Code, Title XXIII, Ch. 804, local rules for bicycles, by state law, also apply to E-Bikes unless a local E-Bike-specific restriction is adopted.

COJ ordinance 2020-26-E (Chapter 235, Dockless Mobility Programs) established the Dockless Mobility pilot, permitting shared E-Bikes and e-scooters, and set a Downtown Dockless Mobility Zone with geofenced operations. The Jacksonville Downtown Investment Authority (DIA) in partnership with COJ published a Dockless Mobility Permit Application stating devices must meet the NHTSA/CPSC low-speed E-Bike definition (<750 W) with a maximum motor-powered speed of <15 mph (and <10 mph on sidewalks). Additionally, other operated and education requirements were required for E-Bike and e-scooter vendors. It should be noted that this governs permitted *shared* fleets and does not automatically bind privately owned E-Bikes unless separately codified.

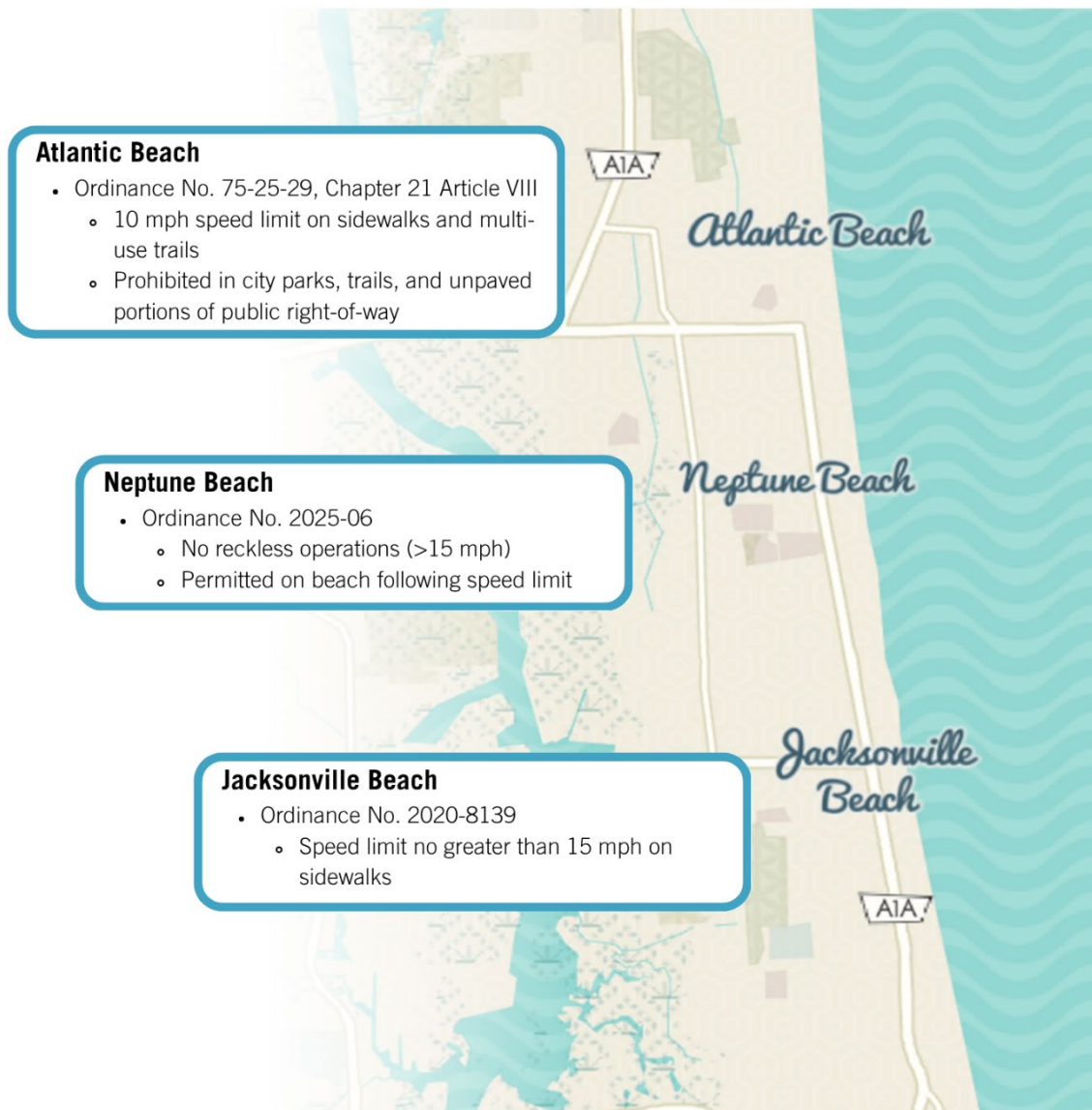


Figure 3. Jacksonville DIA Geofencing Map



Across the Beaches communities, municipalities have adopted a range of ordinances governing E-Bike operations, with notable variation in speed limits, permitted operating locations, and enforcement approaches. Atlantic Beach, through Ordinance No. 75-25-29, Chapter 21, Article VIII, establishes a maximum operating speed of 10 mph for E-Bikes on sidewalks, paths, and multi-use trails, while prohibiting E-Bike use entirely within city parks, trails, unpaved portions of public rights-of-way. Under Ordinance No. 2022-02, Amendment 2025-06, Neptune Beach prohibits reckless operation of E-Bikes (defined in part as speeds exceeding 15 mph) while allowing E-Bike use on the beach provided applicable speed limits are observed. Jacksonville Beach regulates E-Bike activity through Ordinance No. 2020-8139, which limits E-Bike speeds on sidewalks to no greater than 15 mph and relies largely on statewide statutory definitions and classifications for other aspects of operation, supplemented by local safety education efforts.

Outside the Beaches municipalities, regulatory approaches expand further. Nassau County enacted Ordinance No. 2021-09, which sets a 10-mile-per-hour speed limit for E-Bikes operating on county sidewalks, paths, trails, and multi-use facilities and establishes enforcement through a second-degree misdemeanor penalty structure. In St. Johns County, Ordinance No. 2024-5





amended the County’s Beach Code to define E-Bikes and prohibit careless operation of E-Bikes and other micromobility devices on beaches, effectively imposing a functional 10-mile-per-hour standard alongside behavioral restrictions such as failing to yield to pedestrians. This regulatory framework is reinforced by Resolution No. 2025-217, which formalized a coordinated education and enforcement initiative involving the Sheriff’s Office and the School District to address rising E-Bike safety concerns, particularly among youth. St. Augustine Beach adopted these County standards through Ordinance No. 2007-17, Section 3.15, permitting E-Bike use on beaches while explicitly defining “safe” operation and prohibiting careless behaviors, including excessive speed, weaving through pedestrians, and failure to yield.

Nassau County

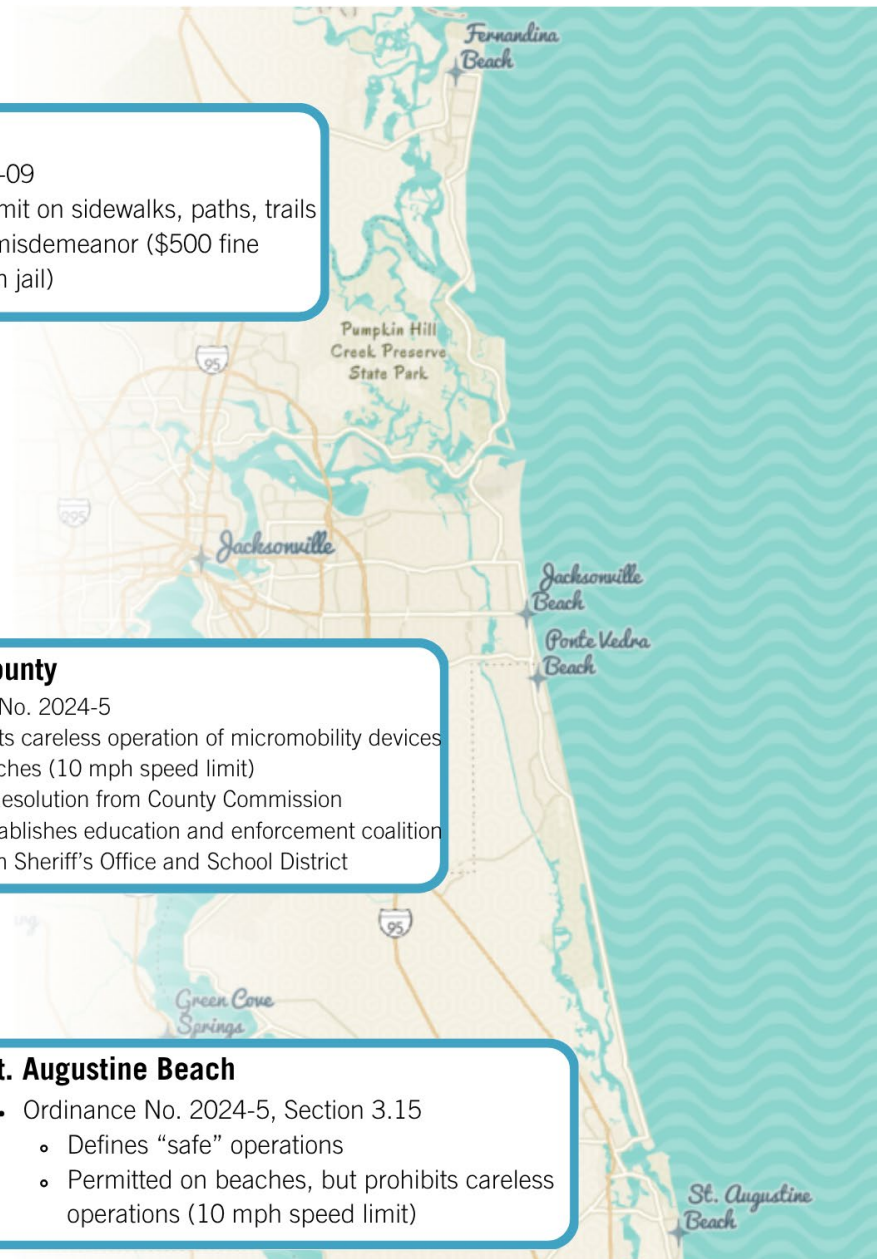
- Ordinance No. 2021-09
 - 10 mph speed limit on sidewalks, paths, trails
 - Second-degree misdemeanor (\$500 fine and/or 60 days in jail)

St. Johns County

- Ordinance No. 2024-5
 - Prohibits careless operation of micromobility devices on beaches (10 mph speed limit)
 - 2025 Resolution from County Commission
 - Establishes education and enforcement coalition with Sheriff’s Office and School District

St. Augustine Beach

- Ordinance No. 2024-5, Section 3.15
 - Defines “safe” operations
 - Permitted on beaches, but prohibits careless operations (10 mph speed limit)





Current E-Bike policy within the Beaches region and adjacent jurisdictions reflects a patchwork of ordinance structures, speed thresholds, and permitted operating areas, which may contribute to public confusion and inconsistent enforcement. The unification of E-Bike regulations among the Beaches municipalities, particularly with respect to speed limits, beach access, and operational standards, could enhance regulatory clarity, improve user compliance, and promote safer, more predictable interactions among pedestrians, cyclists, and E-Bike users across jurisdictional boundaries.

Atlantic Beach

- Ordinance No. 75-25-29, Chapter 21 Article VIII
 - 10 mph speed limit on sidewalks and multi-use trails
 - Prohibited in city parks, trails, and unpaved portions of public right-of-way

Nassau County

- Ordinance No. 2021-09
 - 10 mph speed limit on sidewalks, paths, trails
 - Second-degree misdemeanor (\$500 fine and/or 60 days in jail)

Neptune Beach

- Ordinance No. 2025-06
 - No reckless operations (>15 mph)
 - Permitted on beach following speed limit

St. Johns County

- Ordinance No. 2024-5
 - Prohibits careless operation of micromobility devices on beaches (10 mph speed limit)
 - 2025 Resolution from County Commission
 - Establishes education and enforcement coalition with Sheriff's Office and School District

Jacksonville Beach

- Ordinance No. 2020-8139
 - Speed limit no greater than 15 mph on sidewalks

St. Augustine Beach

- Ordinance No. 2024-5, Section 3.15
 - Defines "safe" operations
 - Permitted on beaches, but prohibits careless operations (10 mph speed limit)



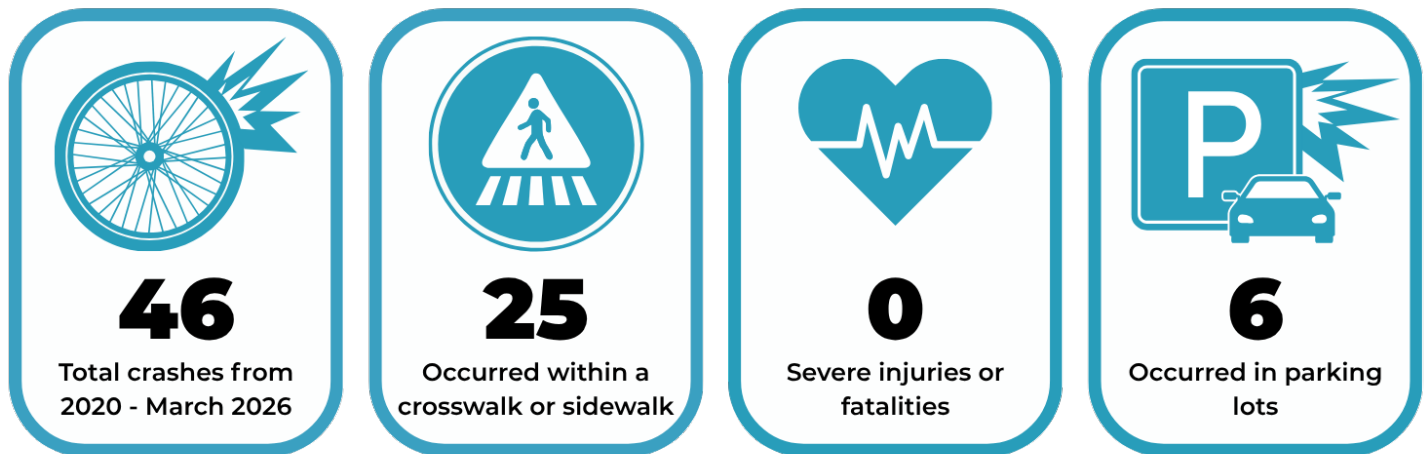
3.0 Safety Analysis

This project analyzed crash reports from January 1, 2020, to March 4, 2026. The year of 2026 was not reflected in entirety but was used nonetheless to best reflect the data. Crash data was retrieved from Signal 4 Analytics as geo-points and long-form crash reports. Initially, only crash reports involving “bicycles” were reviewed, but the crash report category was expanded to include “pedestrian” and “moped” crashes as many E-Bike crashes are often misreported. Crash reports were hand filtered, looking specifically for micromobility (E-Bike, e-scooter, e-skateboard) crash events as there is no current option in law enforcement reporting for micromobility collisions. A total of 215 crash reports were reviewed and of those reports, 46 collisions involving E-Bikes were found.

Of those 46 E-Bike crashes, 21 occurred in Jacksonville Beach, 16 occurred in Atlantic Beach, 6 occurred in Jacksonville, and three occurred in Neptune Beach. The six E-Bike crashes that occurred in Jacksonville were included due to their proximity to the study area although they are not directly within the project boundaries.

There were 15 recorded E-Bike crashes in 2025, marking it the highest number of E-Bike crashes in the last five years. There have been six documented E-Bike crashes in 2026 at the time of this report’s finalization (April 2026) and E-Bike crashes are anticipated to continue throughout the year, mirroring the crash rate growth trends observed over the last five years.

Of the 46 total E-Bike crashes, 24 occurred at intersections while 22 occurred at non-intersection locations. Within the crash narrative, it was found that cars were most often at fault in these collisions (39%) while E-Bike riders held 37% of crash fault, 17% were situations where both the E-Bike rider and vehicle driver were held at fault, and 6% were stationary crashes.





Crash Severity

Thirty-six (36) of the 46 total E-Bike crashes resulted in injuries (78%), while 10 were non-injury crashes (22%). More specifically, a majority (22) were non-incapacitating injury crashes; “non-incapacitating” referring to an injury that does not render the effected person unconscious or unable to perform daily activities. Fourteen (14) crashes resulted in possible injuries; “possible” being defined as an injury that is reported or claimed but not evident at the scene of the crash. The additional 10 crashes did not result in any injuries. Figure 4 illustrates the location and severity of each E-Bike crash. There does not appear to be any inferred correlation between crash severity and location.

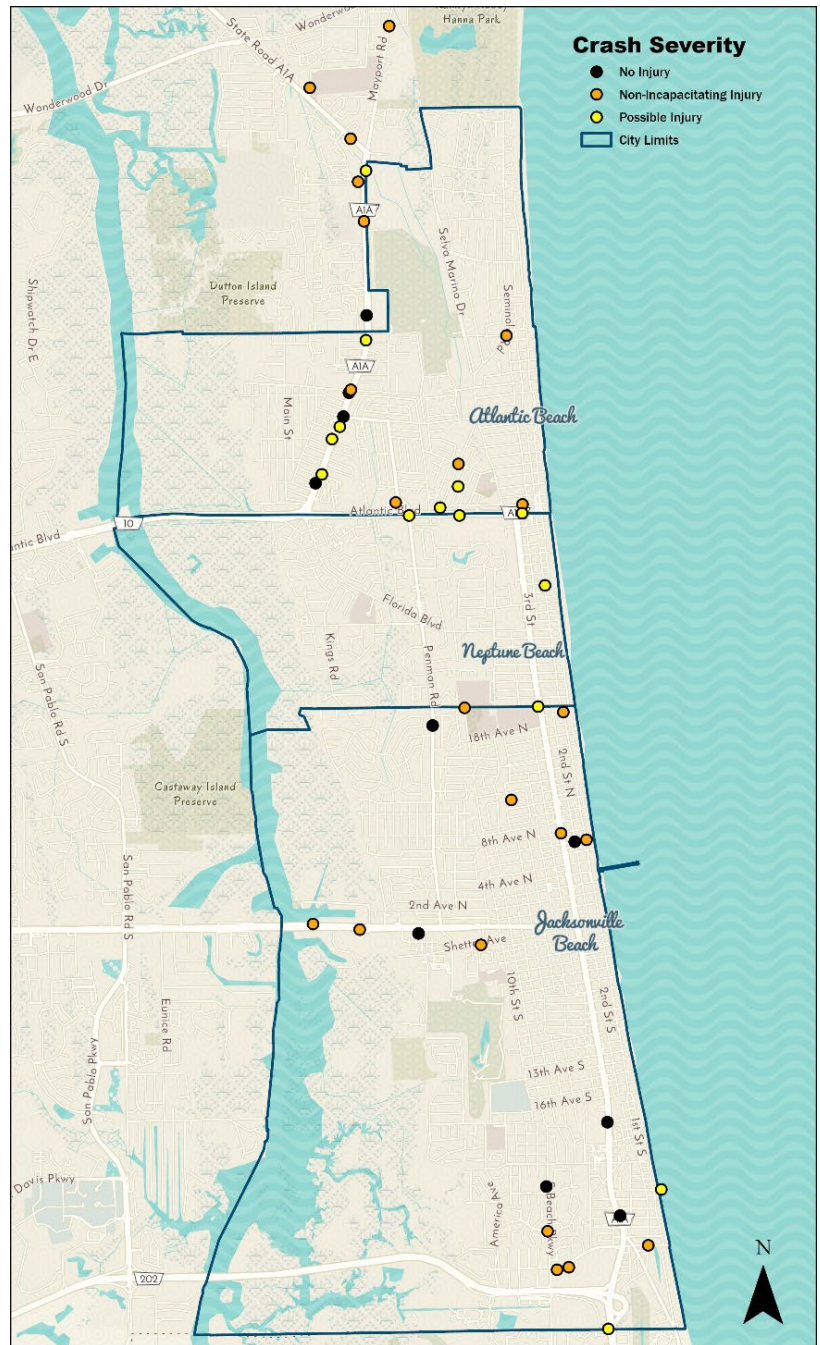
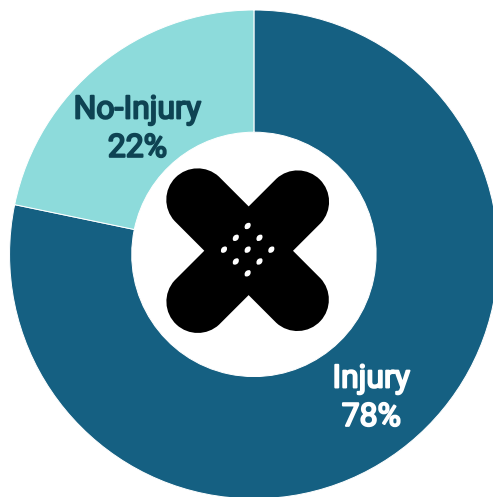


Figure 4. E-Bike Crash Severity



Relationship to Intersection

A majority of E-Bike crashes took place at an intersection (24). Intersection types include four-way and T-intersections. Many of these noted collisions also took place within a crosswalk. A common theme in crash report narratives noted vehicles failing to notice E-Bikes traveling on the sidewalk, resulting in collisions at intersections, crosswalks, and commercial driveways. The speed at which the E-Bikes or other micromobility devices were traveling was often cited as the reason for reduced reaction time by the vehicle operator.

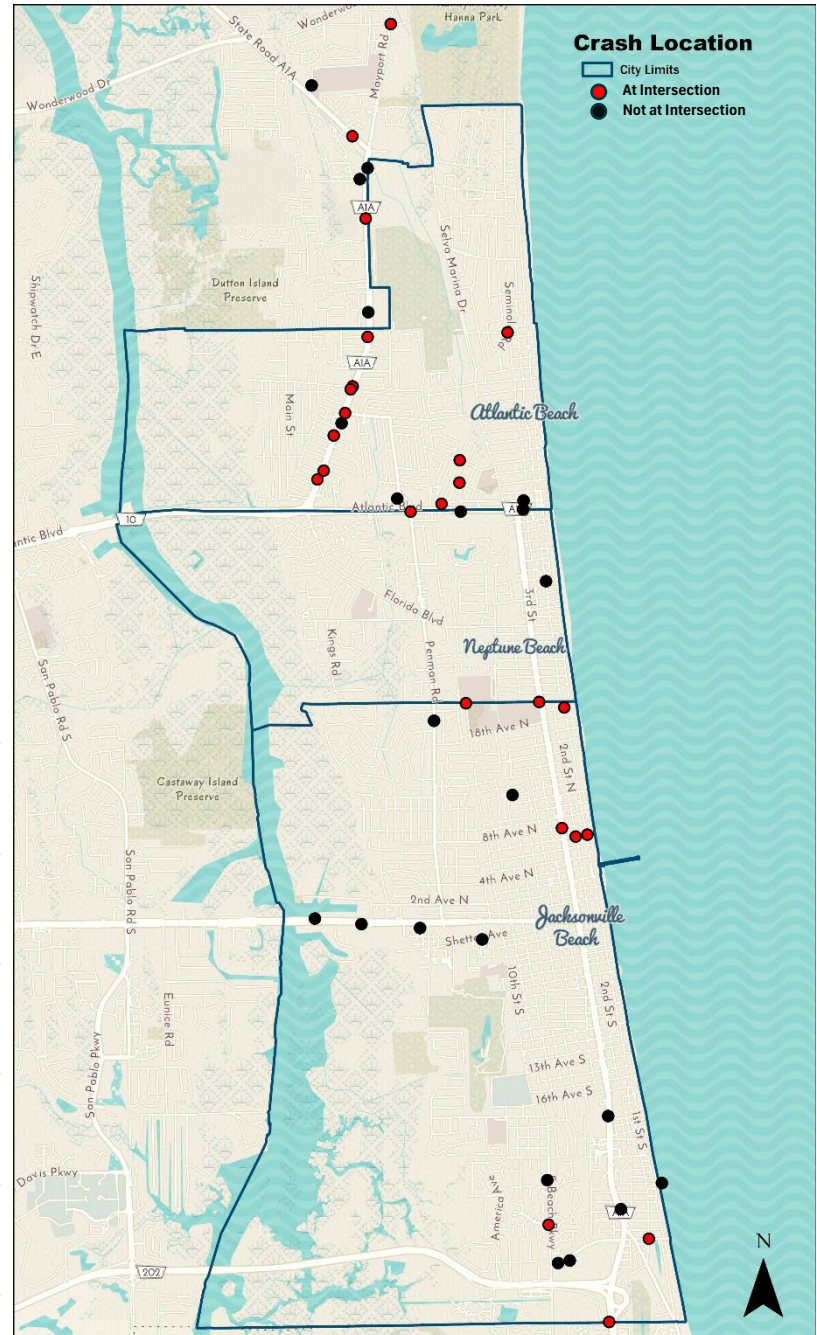
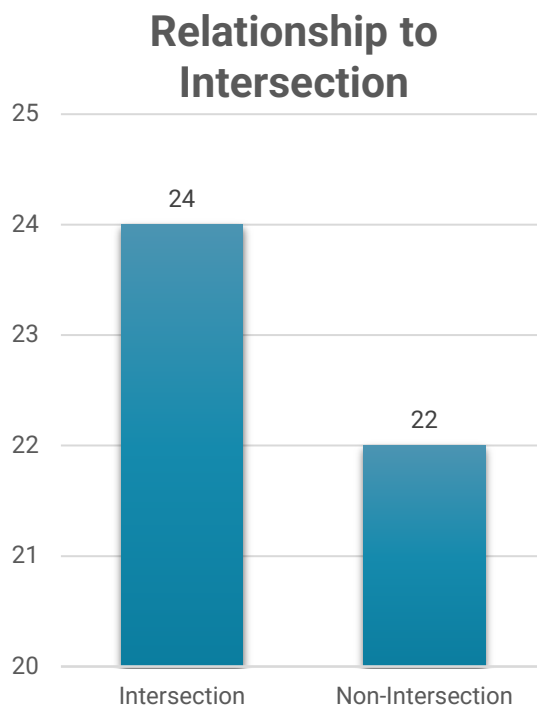


Figure 5. Crash Location

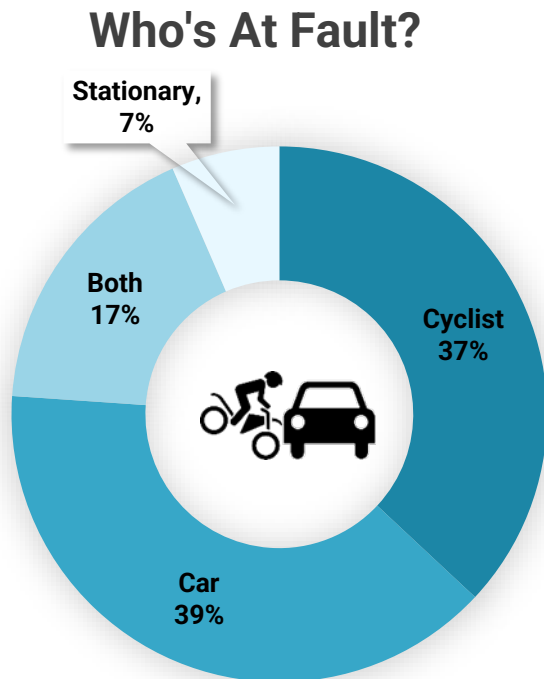


Who's At Fault?

After reviewing the crash report narrative from each of the 46 E-Bike crash reports, both vehicles and E-Bike users were found to be at fault at an almost identical rate. E-Bike users were found to be at fault for 37% of crashes while cars were at fault for 39% of crashes.

The high rate of at-fault E-Bike users was often attributed to the Florida Statue requiring bicycles to follow the same rules as vehicles and assuming the same duties (F.S. 316.2026(1)). While in theory this statute seems to protect cyclists legally, it often puts them at fault for making decisions to reduce anticipated harm from car collisions.

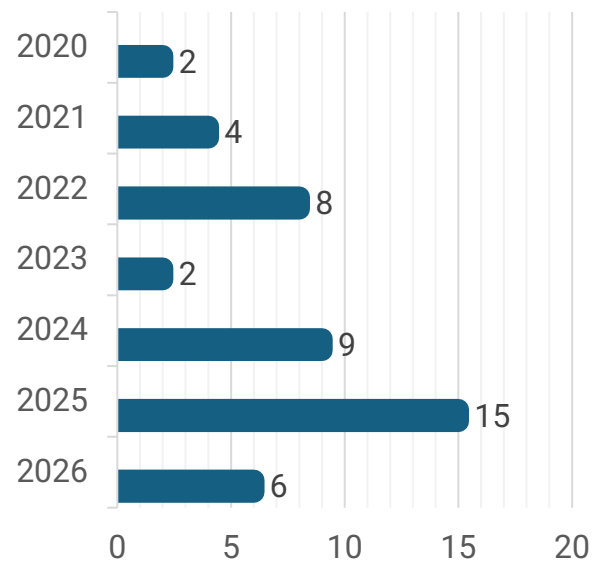
A smaller sub-set of E-Bike crashes (17%) were deemed to have both parties at fault. This was often due to the officer being unable to confirm the direct violation of either party, or that both were equally at fault for the resulting collision. In the small category of stationary E-Bike crashes (7%), the collision occurred with a fixed object or was the result of simply falling off the bike.



E-Bike Crashes Per Year

Since 2020, E-Bikes have continued to rise in popularity and use, thus, so have E-Bike crashes. Between the years of 2020 and 2025, E-Bike crashes have increased by 800%. The chart below illustrates the steady increase in E-Bike collisions from 2020 to 2026 with 2023 being the only outlying year. Crashes for 2026 were retrieved through March 4, 2026, and expected to continue to increase through the year, and across years to come.

E-Bike Crashes Per Year





4.0 Existing and Planned Infrastructure

Bike Lanes and Shared Use Paths

Currently, there are existing bike lanes in each of the three Beaches municipalities, primarily operating on continuous arterial corridors.

The three existing shared use paths (SUPs) act as separated facilities that are typically more scenic than traditional sidewalks or bike lanes. These shared use paths are located along Plaza in Atlantic Beach, Florida Boulevard in Neptune Beach, and Jacksonville Drive in Jacksonville Beach.

The existing 1st Street corridor currently functions as an effective north-south “E-Bike highway” connecting Jacksonville Beach, Neptune Beach, and Atlantic Beach. Its continuous low-stress environment, adjacency to destinations, and existing bicycle facilities represent a major system strength.

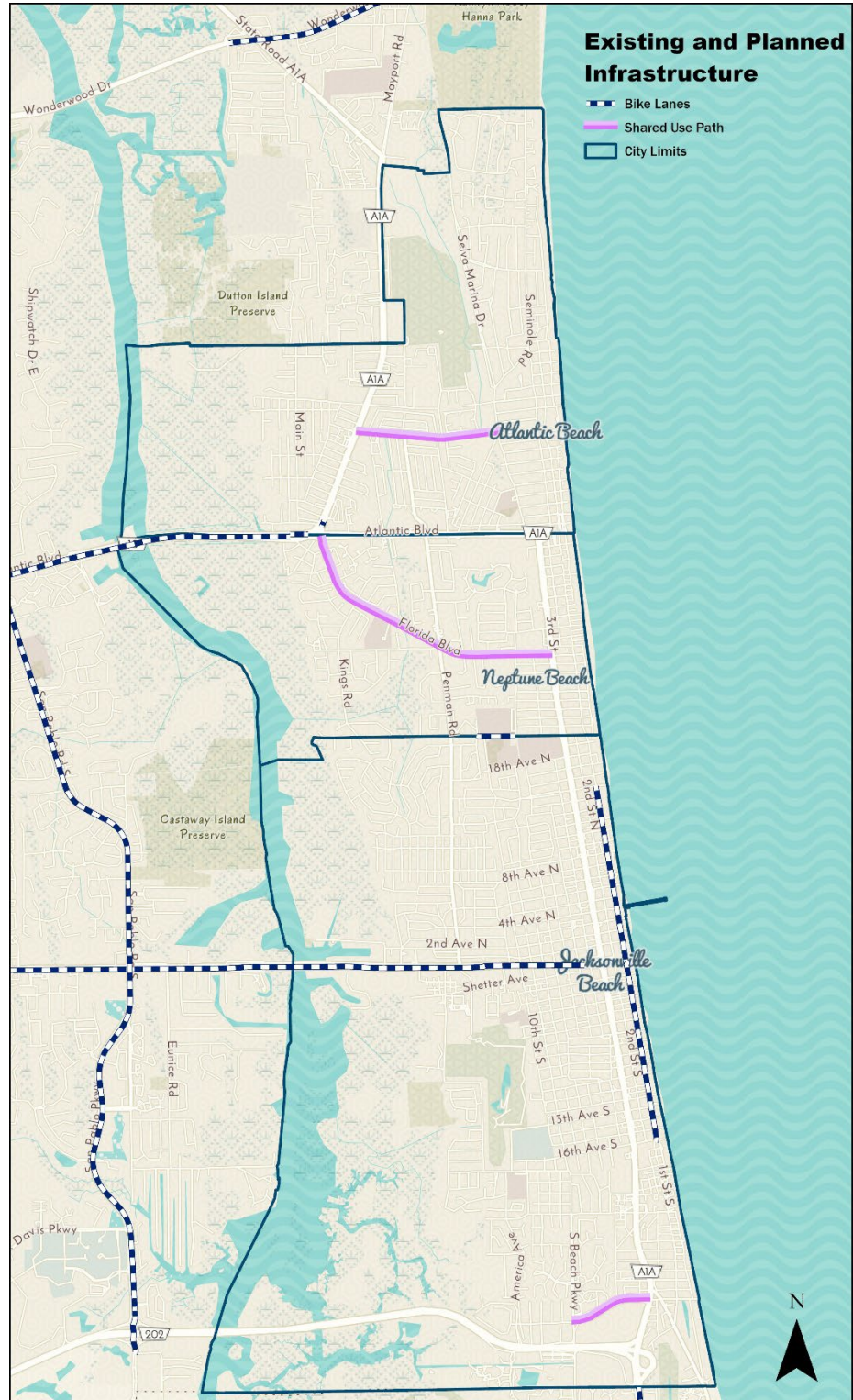


Figure 6. Bike Lanes and Shared Use Paths



East Coast Greenway

In 2015, FDOT established the Florida Shared Use Non-Motorized (SUN) Trail program which provides funding to a statewide system of interconnected paved multi-use trails. The SUN Trail network aligns with the Florida Greenways and Trails System (FGTS) Priority Trail Corridors. A SUN Trail network trail is defined as a paved shared use path which is typically 12 feet wide but may vary from 10 to 14 feet wide depending on constraints or usage.

The East Coast Greenway (ECG) is an over 3,000 mile route for biking and walking from Maine to Florida. Currently, the ECG is 37% complete with approximately 1,060 miles of off road, protected, multi-use paths.

These regional and statewide trail systems provide long-distance, continuous routes that are well suited for E-Bike travel.

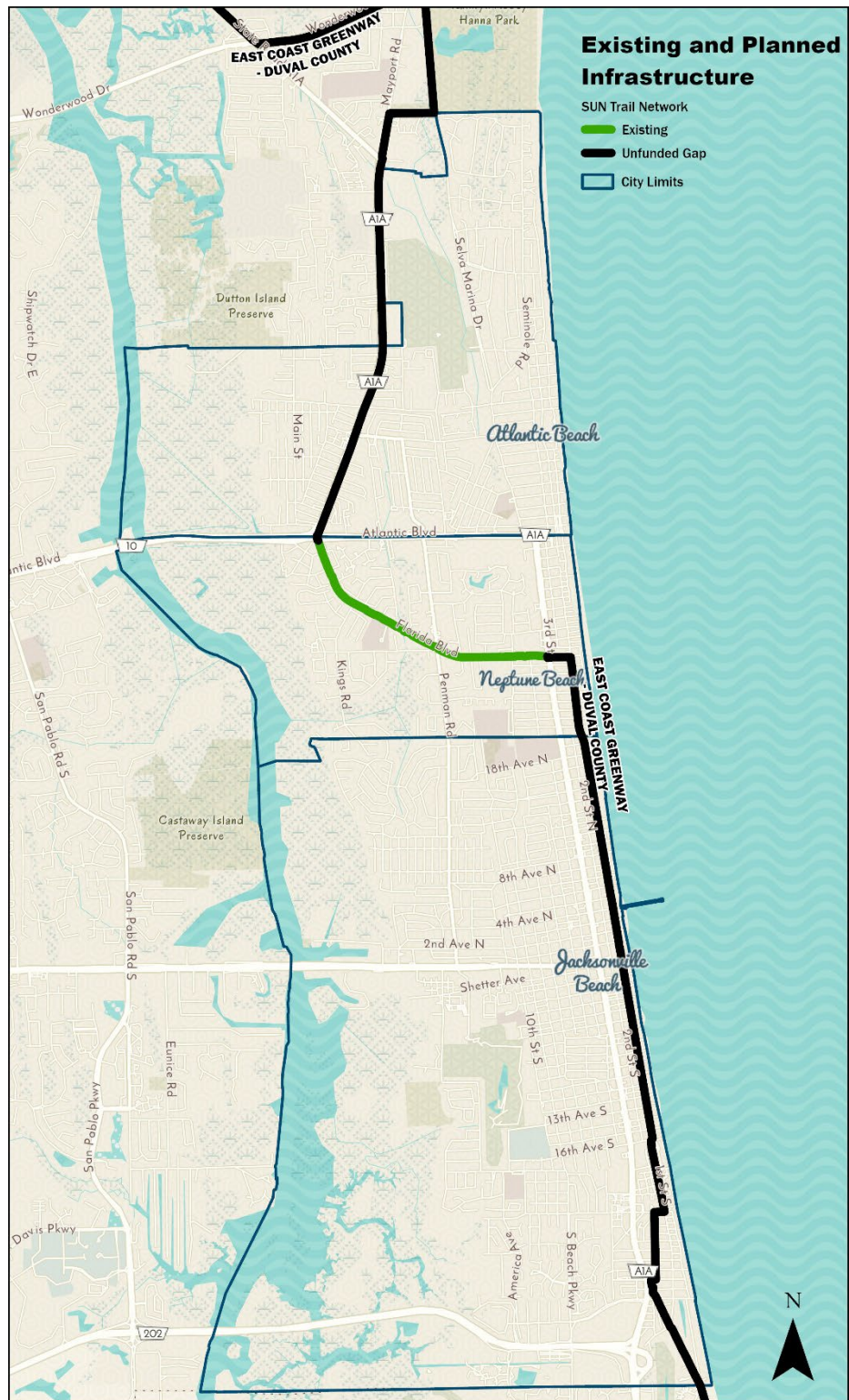


Figure 7. SUN Trail/East Coast Greenway Trail

Mayport Road Diet

A road diet for Mayport Road from Atlantic Boulevard to Dutton Island Road West is currently in its design phase with an anticipated construction start date of early 2026 and expected project conclusion in late 2028. This project is being administered by the Florida Department of Transportation (FDOT) with the express goal of increasing safety for motorists, pedestrians, bicyclists, children, and other vulnerable users. Some proposed improvements include milling & resurfacing, upgrading signalized intersections, lane repurposing (reducing the number of traffic lanes), adding a southern bike lane, northbound sidewalk widening, and a vision of a 12-foot shared use path on one side of the road. The proposed improvements included in this road diet directly align with the physical recommendations we endorsed in the recommendation section of this report.

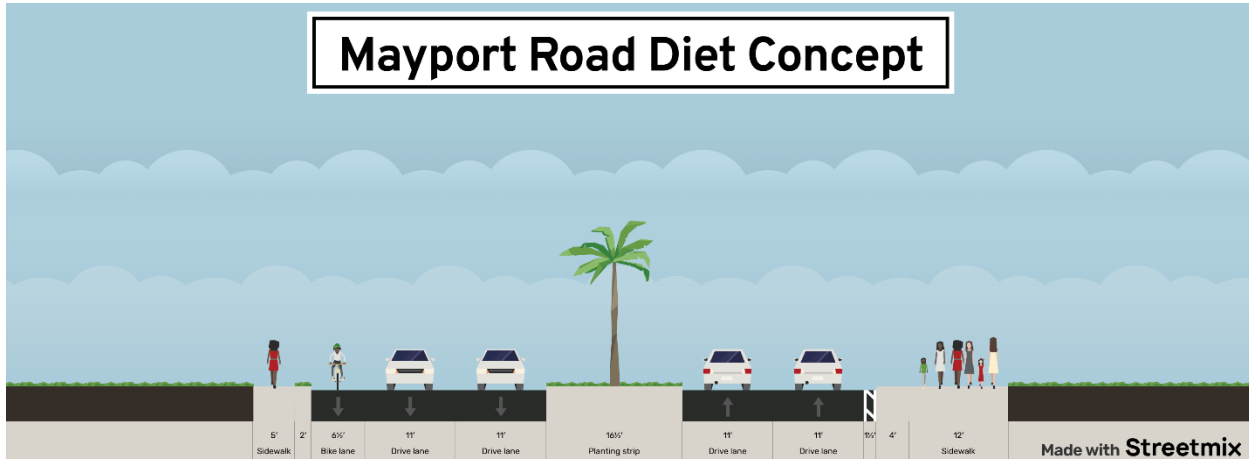
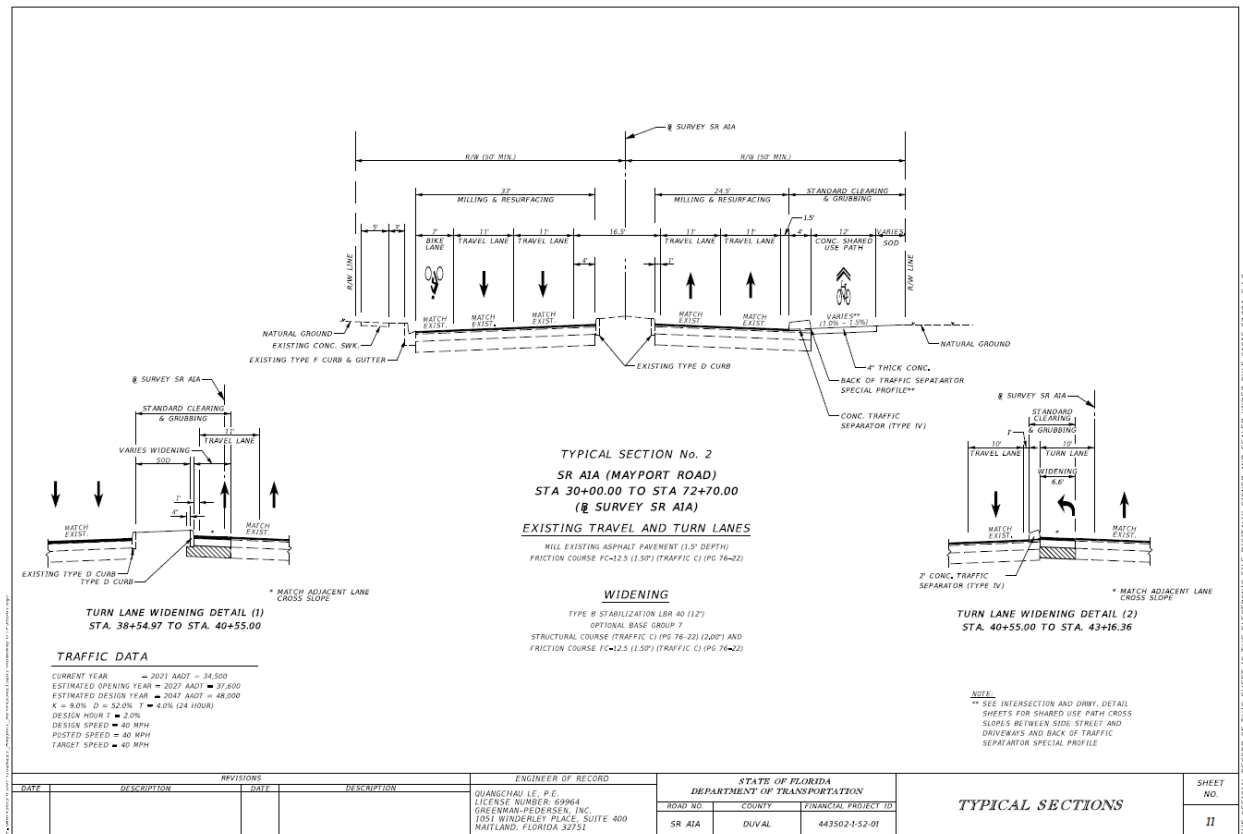


Figure 8. Mayport Road Diet Concepts



Crash analysis identified Mayport Road as the single highest concentration of E-Bike crashes in the study area, accounting for nearly one-third of documented collisions. This roadway also represents an unfunded gap in the East Coast Greenway (ECG) and a critical SUN Trail connection.

The planned FDOT road diet presents a unique opportunity to transform Mayport Road from a high-risk corridor into a regional-scale micromobility spine. Proposed elements including lane reductions, sidewalk widening, on-street bicycle facilities, and a potential 12-foot shared-use path directly align with best practices for accommodating E-Bike travel at higher operating speeds while separating modes.

Once constructed, Mayport Road should be designated as a primary High Demand Network corridor, supported by:

- Clear identification of preferred facilities for E-Bike travel
- Reduced reliance on sidewalks for higher-speed riders
- Improved intersection and driveway visibility consistent with crash patterns

5.0 Public Outreach

Public engagement is a critical component of the transportation planning process, ensuring that community needs, experiences, and concerns meaningfully shape project outcomes.

5.1 Survey

For this study, an online survey was used to reach a broad cross-section of the Beaches community in a convenient and accessible way. Online tools offer a flexible, low-barrier method for gathering feedback, allowing residents and visitors to participate on their own time and from any device. This approach helped capture a diverse range of perspectives on E-Bike use and safety within the Beaches area.

To support broad participation, the survey was promoted through multiple channels, including the project website, social media, partner agency newsletters, and community networks throughout the Beaches area. This approach helped ensure the survey reached residents, visitors, bicyclists, pedestrians, and other roadway users who regularly interact with E-Bikes.

The online questionnaire remained open for **approximately one month** (January 18 – February 16) and ultimately received **552 responses**, providing a strong sample of community perspectives to inform the study's findings.



Summary Findings

The survey findings highlight important trends in local E-bike ownership, riding habits, and perceptions of safety that help advise planning efforts in the Beaches community.

While most respondents did not currently have an E-bike in their household, those who did largely rode their own E-bike and use it frequently—primarily for recreation, errands, and other short local trips. Helmet use among adults was evenly divided, whereas most children were reported to wear helmets. Collisions involving E-bikes were rare, with only a small number of respondents reporting any crash history.

Riders commonly use bike lanes, sidewalks, and paved trails, and they report feeling most comfortable in dedicated or separated facilities. In contrast, travel lanes and roadway shoulders are considered the least comfortable. Open-ended comments highlighted that interactions with motor vehicles, especially distracted or fast-moving drivers and gaps in bike infrastructure contribute most to rider unease, alongside concerns about unpredictable behavior from other cyclists.

The survey results are summarized in this section by question and were utilized to inform the recommendations of this study. The full survey results are included in **Appendix A**.



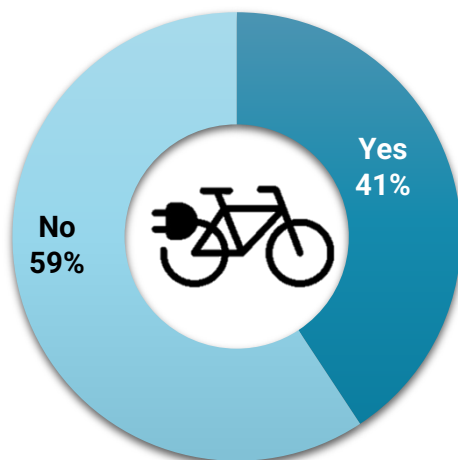
E-Bike Survey: Key Takeaways



- The survey highlights important trends in local E-bike ownership, riding habits, and safety perceptions that **help inform planning efforts in the Beaches community**.
- Riders who own an E-bike tend to **use it frequently**—most often for recreation, but also for errands, short trips, and commuting.
- **Helmet use is mixed** among adults but reported to be much more consistent among children. Crash involvement is generally rare.
- **Respondents rely on a range of facilities**, with bike lanes, sidewalks, and paved trails used most often—and rated as the most comfortable.
- **Travel lanes and roadway shoulders** were identified as the **least comfortable** environments for riding.
- Open-ended responses revealed that **interactions with motor vehicles** and **gaps in bike infrastructure** are the **primary sources of rider unease**, followed by concerns about unpredictable behavior from other riders.

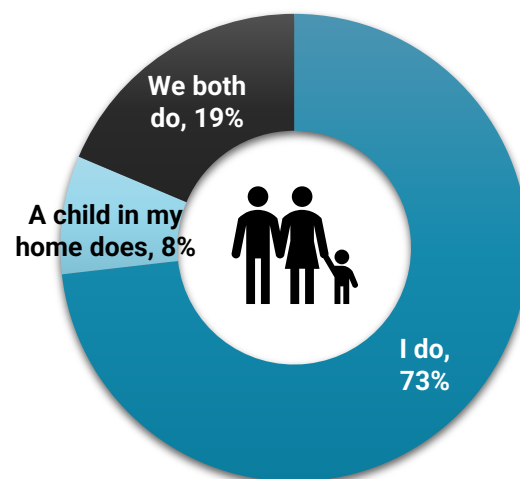
Q1. Household E-Bike Ownership & Access

Question 1 asked “Do you or a child under the age of 18 in your home own or rent an E-Bike?” More than half of the survey takers (59%) indicated that nobody in their household currently owned or rented an E-Bike.



Q2. Who Owns or Rents an E-Bike?

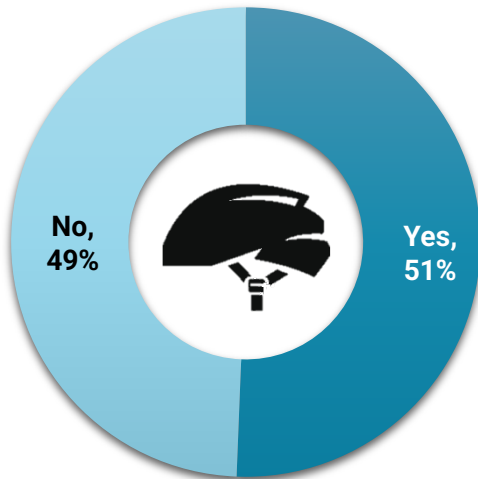
As a follow up to Question 1, Question 2 asked “Who owns or rents an E-Bike?”. A majority of the respondents (73%) indicated that they were the ones that rented or owned an E-Bike. Approximately 19% indicated that “we both do”, and 8% indicated that a child in their home owns or rents an E-Bike.





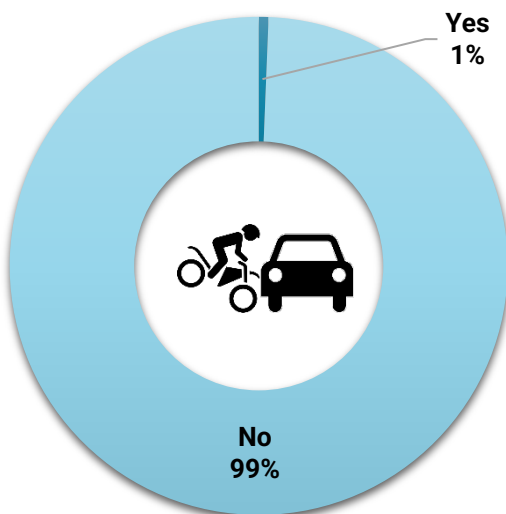
Q3. Helmet Usage

Question 3 asked “When riding your E-Bike, do you wear a helmet?”. About half of the respondents (51%) indicated that they do wear a helmet, and about half indicated that they do not wear a helmet (49%).



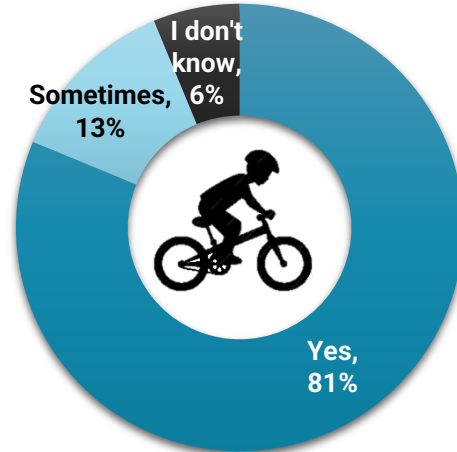
Q4. E-Bike Collisions

Question 4 asked “Have you ever been involved in an E-Bike collision?”. Only one respondent (<1%) indicated that they had been involved in an E-Bike collision. The remaining 99% of survey respondents had not been involved in a collision.



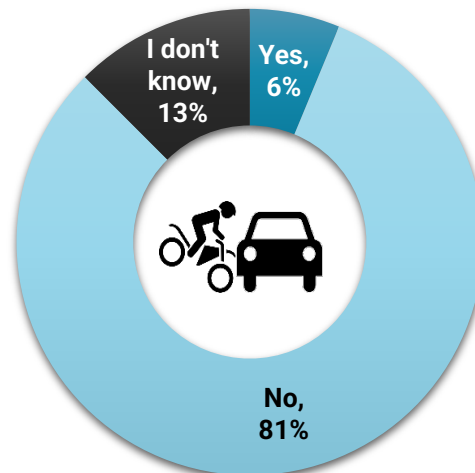
Q5. Child Helmet Usage

Question 5 asked “When riding an E-Bike, does the child wear a micromobility helmet?”. Approximately 81% of the survey respondents indicated that their child did wear a helmet while riding an E-Bike, whereas 13% indicated that they sometimes wore a helmet, and 6% did not know if their child wore a helmet or not.



Q6. Child E-Bike Collision

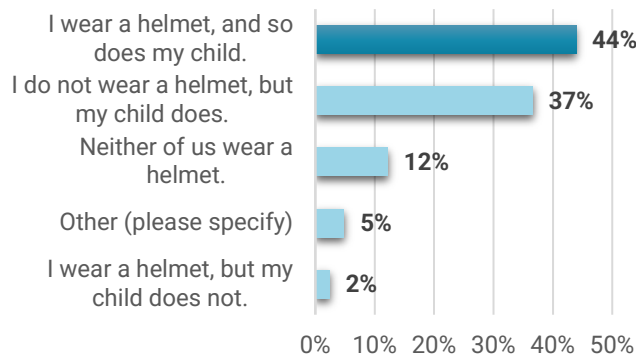
Question 6 asked “Has the child been involved in an E-Bike collision?”. The majority of respondents (81%) indicated that their child had not been involved in an E-Bike collision. One respondent indicated that their child had been involved in a collision, and 13% indicated that they did not know if their child had been involved in a collision.





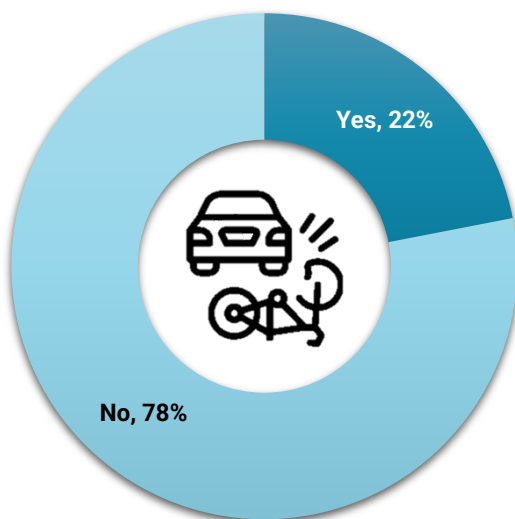
Q7. Family Helmet Usage

Question 7 asked “Please tell us about helmet usage when you and your child ride E-Bikes.” This was a check all that apply question. Nearly half of the respondents (44%) indicated that they and their child wear a helmet. Conversely, 37% indicated that they did not wear a helmet, but their child does. Approximately 12% indicated that neither they *nor* their child wears a helmet, and 2% wear a helmet and their child does not.



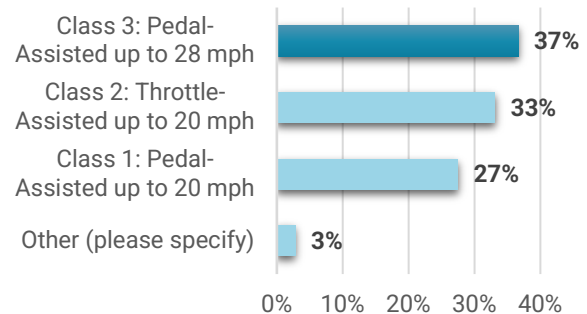
Q8. Family Crash

Question 8 asked “Have you or your child been involved in an E-Bike collision?”. A majority of respondents (78%) indicated that they had *not* been in an E-Bike collision whereas 22% of respondents indicated that they *had* been involved in a collision.



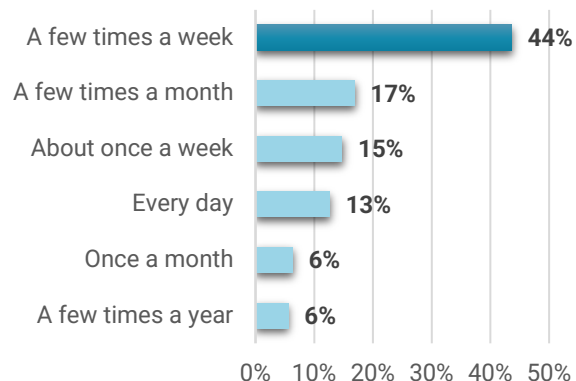
Q9. E-Bike Class

Question 9 asked “What class of E-Bike do you own or rent most often?”. Most respondents most often used a Class 3 Pedal - Assisted up to 28 mph (37%) or a Class 2 Throttle - Assisted up to 20 mph (33%). Approximately 27% of respondents indicated that they utilized a Class 1 Pedal-Assisted up to 20 mph (27%). The remaining 3% selected Other which were either an e-scooter up to 20 mph, both pedal and throttle assist up to 20 mph, or throttle assist up to 28 mph.



Q10. Riding Frequency

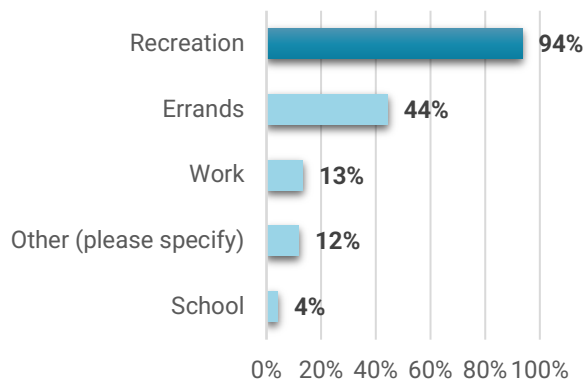
Question 10 asked “How often do you ride an E-Bike?”. More than half of the respondents indicated that they ride a few times a week (44%). Approximately 17% of respondents indicated they ride a few times a month, 15% ride about once a week, 13% ride every day, and 12% ride either once a month or a few times a year.





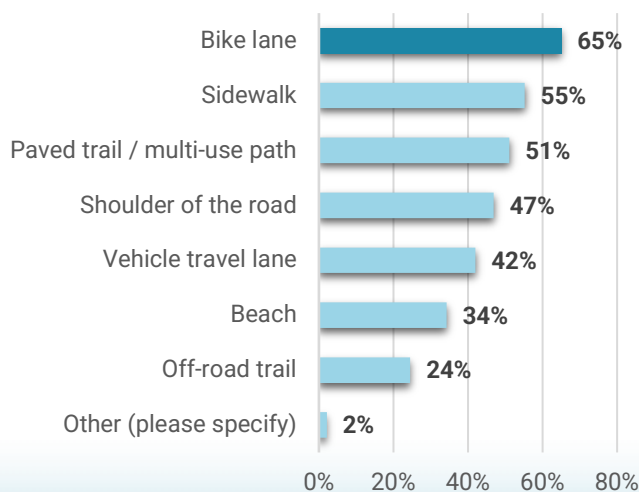
Q11. Ride Origins/Destinations

Question 11 asked “Where do you ride your E-Bike to/from?”. This was a check all that apply question. Almost all respondents (94%) rode their E-Bike for recreation and approximately 44% rode their E-Bike for errands. Approximately 13% rode their E-Bike to work, and 4% to school. The remaining 12% selected Other, with write-in responses including the gym, doctor/appointments, restaurants/eating out, to the beach, and volunteering.



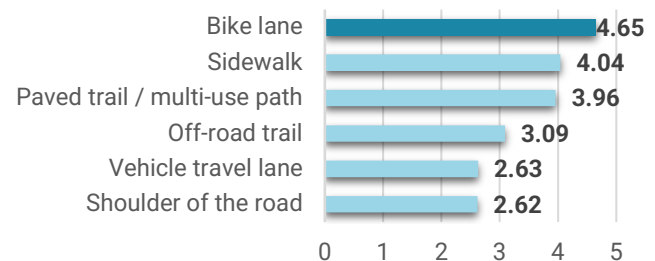
Q12. E-Bike Facility

Question 12 asked “Where do you typically ride an E-Bike?”. This was a check all that apply question. Most participants indicated that they either used a bike lane (65%), sidewalk (55%), or paved trail/multi-use path (51%). Other popular facilities were a shoulder (47%) or vehicle travel lane (42%). Approximately 34% ride on the beach and 24% utilize an off-road trail.



Q13. E-Bike Facility Comfort

Question 13 asked “Please rank where you feel most comfortable riding an E-Bike”. There were five facility types listed on this question. Bike lanes ranked highest with an overall score of 4.65, followed by sidewalks with a score of 4.04. Paved trails/multi-use paths and off-road trails scored in the middle, with scores of 3.96 and 3.09, respectively. The two lowest rated facilities for comfort were vehicle traffic lanes with a score of 2.63 and shoulder with a score of 2.62.



Q14. E-Bike Riding Comfort

Question 14 asked “What makes you feel uneasy while riding an E-Bike?”. This was an open-ended question. Most respondents said they feel uneasy riding an E-Bike because of interactions with motor vehicles—especially distracted, speeding, or inattentive drivers and cars passing too closely. Many also mentioned discomfort due to limited or poor bike infrastructure, such as narrow sidewalks, missing bike lanes, or unsafe crossings. Some noted concerns about other riders, particularly children or teens riding recklessly or not following the rules. A few riders said they generally feel safe.

“Speeding cars nearby.”

“Distracted drivers.”

“Children going too fast and trying wheelies.”

“Lack of infrastructure.”

“Our lack of multi-use/paved trail/ dedicated bike lanes.”

“Cars just don’t see you”

5.2 Stakeholder Engagement

Throughout this project, stakeholders were active participants in project updates and information gathering. Two stakeholder meetings were held. The first was held August 14, 2025, and served as a scoping and project kick-off. The second meeting was held via Microsoft Teams December 10, 2025, and was an opportunity for the project team to share updates with the stakeholder group. A list of stakeholders engaged throughout this project includes:

- The North Florida Transportation Planning Organization (TPO)
- The East Coast Greenway (ECG) Trail Alliance
- The City of Atlantic Beach
- The City of Neptune Beach
- The City of Jacksonville Beach
- The Neptune Beach Police Department
- The Orange Park Police Department (supplemental knowledge)
- Open Road Bicycles



Key Takeaways:

- E-Bike regulations can be difficult to enforce with current law enforcement tools
- Law enforcement reporting of crashes involving micromobility is variable and may be reported as “pedestrian” or “moped” crashes
- The unfunded gaps of the East Coast Greenway (ECG) Trail may be highly beneficial in recommending a “high demand E-Bike corridor”
- Using E-Bikes as a first-mile last-mile tool would be highly beneficial for Atlantic and Neptune Beach’s limited vehicle parking



6.0 Recommendations

In developing recommendations to be implemented in the Beaches communities, information gathered from nationwide “best practice” studies, state-specific studies and policies, E-Bike crash analysis, and survey results were reviewed.

These recommendations are intended to supplement the established State laws requiring helmet use under the age of 16 and obligation to obey traffic signals, stop signs, and lane rules just as a standard bicycle would.

The recommendations provided in this section are proposed for consistent application across all three Beaches municipalities. Adopting uniform E-bike policies by each municipality is strongly encouraged to establish a cohesive, predictable, and easily understood E-bike operating environment for riders, motorists, and enforcement agencies alike. These recommendation categories were created based on the results of this analysis:

Programmatic:

- **Affirm the 3-class system and label requirement**
- **Establish an E-Bike Advisory Committee within the Beaches Municipalities.**
- **Set off-street path rules:** allow Class 1 & 2 on multi-use paths and exclude Class 3 on narrow shared-use trails unless signed otherwise
- **Post a unified E-Bike speed limit (10 mph)** on sidewalks, multi-use paths, greenways, and all pedestrian areas.
- **Age and ID rules:** require a minimum age (15 years old) and photo ID (including school ID) for E-Bike operation on certain facilities.
- **Registration:** require E-Bike registration within each municipality.
- **Education and Outreach:** Launch education campaign targeting school-age users, adult users, and parents.
- **Law Enforcement Reporting:** require clarity in crash reporting standards to clearly capture and differentiate collisions involving E-Bikes.

Physical:

- **Separated Facilities**
- **E-Bike Parking & Charging Stations**
- **Signs and Wayfinding**

High Demand Network



6.1 Programmatic Recommendations

- **Affirm the 3-class system and label requirement**

Codifying the 3-class E-Bike system is imperative to effective regulation. Clearly defining each E-Bike class creates a clear definition, limiting legal grey area and improving enforcement. Clear definitions support consistency with state law and separates true E-Bikes from modified devices.

- **Establish an E-Bike Advisory Committee** within the Beaches Municipalities.

The Beaches communities should establish a multi-jurisdictional E-Bike Advisory Committee to provide ongoing technical guidance and coordination as E-Bike use, technology, and policies continue to evolve. The committee would serve as a formal forum for representatives from Atlantic Beach, Neptune Beach, and Jacksonville Beach, along with law enforcement, to review emerging issues, evaluate data and public feedback, and recommend policy, infrastructure, and education adjustments as needed. Establishing an advisory body supports a proactive approach to E-Bike management, while also ensuring regional consistency across municipal boundaries.

- **Set off-street path rules:** allow Class 1 & 2 on multi-use paths and exclude Class 3 on narrow shared-use trails unless signed otherwise.

Designating which E-Bike classes are permitted on multi-use paths helps align operating speeds with facility design and user expectations. Allowing lower-speed E-Bikes on shared paths while restricting higher-speed use to facilities built to accommodate it reduces conflicts with pedestrians and reinforces predictable rider behavior.

Potentially, limits on beach riding could be introduced to combat erosion and safety concerns associated with beach riding. Riding E-Bikes on the beach could be prohibited by:

- A complete ban on E-Bike beach riding
- Hour regulations - similar to that of Jacksonville Beach's dogs on beach policy*

These restrictions would ensure greater separation between E-Bikes and heavy pedestrian use.

- **Post a unified E-Bike speed limit (10 mph)** on sidewalks, multi-use paths, greenways, and all pedestrian areas.

Posting a consistent E-Bike speed limit in pedestrian-heavy environments reinforces expected behavior and makes operating rules visible and understandable to both riders and pedestrians. Signage helps translate statutory requirements into practical guidance and provides a clear basis for voluntary compliance and targeted enforcement in high-conflict areas.

Areas such as Downtown Jacksonville Beach and the Atlantic Beach Town Center should be designated as "Pedestrian Zones" with the installation of E-Bike-specific speed limit signage.

Other areas, including Mayport Road (A1A) could also benefit from "reminder" signage as many E-Bikes ride on the sidewalk along this roadway and often conflict with pedestrians and vehicular traffic.



- **Age and ID rules:** require a minimum age (15 years old) and photo ID (including school ID) for E-Bike operation on certain facilities.

Minimum age requirements and basic identification expectations for higher-speed E-Bike operation help align device capability with rider maturity and accountability. These standards support safer operation on complex or high-demand facilities while remaining adaptable to contexts where operating speeds and interaction risks are greatest.

- **Registration:** require E-Bike registration within each municipality.

The Beaches communities should establish a municipal E-Bike registration program to support device identification, policy compliance, and public understanding of E-Bike classifications. Under this recommendation, E-Bike owners would register their device with the city, complete a free online education course covering local rules of the road and E-Bike safety, and receive a standardized sticker displaying the bike's class designation to be placed in a visible location. Registration eligibility will be based upon the previously mentioned age requirement. Partnering with local bicycle retailers and repair shops to issue registration stickers at the point of sale or service would help verify that E-Bikes are accurately classified and unmodified, while improving accessibility and participation in the program. A registration system would enhance consistency across Atlantic Beach, Neptune Beach, and Jacksonville Beach, and provide a practical tool for enforcement.

- **Education and Outreach:** Launch education campaign targeting school-age users, adult users, and parents.

A comprehensive E-Bike Safety Program aimed at improving rider knowledge and reducing risk among both school-age users and adults should be established by the Beaches municipalities. The program would provide age-appropriate safety education that addresses safe operation, facility expectations, and interaction with pedestrians and motor vehicles, with a particular emphasis on informing parents about the functional and performance differences between E-Bikes and traditional bicycles. Targeted outreach to parents would help ensure that purchasing and supervision decisions are aligned with a child's age, skill level, and local operating rules. By addressing E-Bike-specific characteristics such as higher speeds, acceleration, and braking, the program would support safer use, reinforce consistent community expectations, and complement broader education and registration initiatives across Atlantic Beach, Neptune Beach, and Jacksonville Beach.

The E-Bike Safety Program also poses an opportunity to encourage E-Bike riders to use effective forms of protective gear. The US CPSC tests standard bike helmets with an impact velocity of roughly 6.2 m/s (~14 mph). This speed test does not accurately reflect the speeds at which most E-Bikes travel. Therefore, the golden standard of E-Bike helmet safety standards falls to a safety standard (NTA 8776) implemented in the Netherlands in 2016. NTA 8776 certifies helmets for use up to 28 mph (the maximum speed of an unmodified class 3 E-Bike). Helmets certified under NTA 8776 should be recommended for all E-Bike users, especially those 16 and under.



- **Law Enforcement Reporting:** encourage clarity in crash reporting standards to clearly capture and differentiate collisions involving E-Bikes.

Clear and consistent crash reporting standards are essential for understanding where and how E-Bike crashes occur. Improving device identification in reporting allows agencies to track trends more accurately, evaluate the effectiveness of adopted policies, and make informed adjustments to safety strategies and infrastructure investments over time.

Adopting an internal local operating definition sheet to accompany the newly required reporting form from SB 382 could be beneficial to officers in identifying and differentiation between the different E-Bike classes and other micromobility devices.



Photo 9. Jacksonville Beach Police Department Vehicle

6.2 Physical Recommendations

The physical recommendations described in this section should be implemented first along the High Demand Network outlined in Section 6.3, then expanded throughout the Beaches municipalities.

- **Separated Facilities:** Separating E-Bikes and other bicycles from pedestrian facilities such as sidewalks increases predictability and safety for all road users.

Separated bike facilities reduce hazards most effectively where bicycle/micromobility users would otherwise be exposed to higher-speed/volume traffic, frequent overtaking, or complicated turning conflicts. Separate or protected facilities work by reducing direct conflicts, lowering exposure to severe crash types, and improving predictability. A separated or protected facility would be ideal for Mayport Road (A1A) where many vehicular conflicts with E-Bikes result from conflicts in commercial driveways, collisions in intersections and crosswalks, and unpredictable micromobility speeds on sidewalks.



Photo 10. Protected Cycle Track



• E-Bike Parking & Charging Stations

E-Bike parking is generally a lower risk investment than public charging because secure, visible racks or access-controlled storage can reduce disorderly parking and improve theft deterrence without introducing an electrical hazard. Public charging, while potentially useful for extending trip range, adds combustion risk because lithium-ion batteries can fail when damaged, modified, or charged with incompatible equipment, and it can also increase theft exposure by concentrating high-value bikes and removable batteries in predictable locations; in Florida, theft of property valued at \$750 or more may constitute felony grand theft.



Photo 11. Existing Bicycle Parking in Downtown Jacksonville Beach

Signs and Wayfinding: Speed limit signs, E-Bike trail wayfinding.

Installing E-Bike speed limit signs will help enforce the new 10 mph state mandated speed and inform E-Bike users of the required speed. This mandate is effective once in 50 feet of pedestrians and often applies to sidewalk riding. Speed limit signs should be placed intermittently, but specifically in high-conflict locations and within "Pedestrian Zones." Speed limit signage provides a clear legal basis for citations. Signage can also take the form of wayfinding and messaging. Wayfinding can encourage E-Bike users to travel on "preferred" routes and facilities. Messaging signage can be used in an effort to curb user behavior with signs such as "respect the space" or "yield to pedestrians."



Photo 12. Bicycle Speed Limit Sign in Atlantic Beach



6.3 High Demand Network

To support safer, more predictable E-Bike travel within the Beaches communities, this study recommends establishing a High Demand E-Bike Network. This network would intentionally concentrate higher-speed micromobility activity onto corridors and facilities that are best suited to accommodate it, reducing conflicts with pedestrians while improving comfort, safety, and predictability for both riders and drivers.

Findings from the crash analysis (Section 3.0), public outreach (Section 5.0), field review (Section 1.0), and existing and planned infrastructure assessment (Section 4.0) consistently demonstrate that E-Bike demand is already high within the proposed network. This was observed in relation to long corridors that offer continuity, visibility, and access to destinations, beach access points, commercial areas, and regional trail connections, thus solidifying the need for a designated route to access these community amenities.

The High Demand Network builds upon existing strengths, addresses documented safety weaknesses, and leverages near-term infrastructure investments including the Mayport Road (A1A) road diet and other SUN Trail Network opportunities.



Figure 9. Proposed High Demand Network



7.0 Conclusion

The results of this study confirm that E-Bikes are no longer an emerging micromobility mode, but an established and expanding part of the transportation network in Atlantic Beach, Neptune Beach, and Jacksonville Beach. Data collection, crash analysis, field observations, and public input consistently show that E-Bikes are being used for a wide range of trips and by users of varying experience levels, often in environments that were not designed with higher-speed micromobility in mind. As E-Bike use continues to grow, these conditions present both opportunities to expand travel options and challenges related to safety and operational consistency.

The crash and safety analysis showed that E-Bike-involved crashes have increased in recent years, with patterns that closely mirror broader bicycle safety trends but are influenced by higher operating speeds and interactions with both vehicles and pedestrians. A notable share of crashes occurred at intersections and driveways, where visibility, speed differentials, and uncertainty around user behavior are most evident. Observed behavior and survey responses further highlighted the tension between the need for separation from traffic and the risks associated with operating on sidewalks or in shared pedestrian spaces.

While Florida's three-class E-Bike framework establishes a clear foundation, differences in local interpretation and practice across the Beaches communities reduce clarity for users and complicate education and enforcement. This lack of consistency, combined with limited public awareness of E-Bike classifications and operating rules, contributes to confusion and increases the likelihood of conflicts in higher-activity areas.

The recommendations presented in this report respond directly to these findings by emphasizing consistency, predictability, and alignment between policy, infrastructure, and user behavior. Key elements include a coordinated approach to speed management in pedestrian environments, clearer guidance on where different classes of E-Bikes are expected to operate, and education strategies designed to reach both riders and other roadway users. The proposed High Demand Network builds on this framework by identifying corridors and facilities where higher-speed E-Bike travel can be better accommodated, allowing E-Bikes to function as a practical transportation option while reducing pressure on sidewalks and shared use paths.

The findings and recommendations provided in this report provide practical options for managing E-Bike use across the Beaches. By coordinating efforts across municipal boundaries and responding to existing conditions, the Beaches communities can improve safety and user understanding while preserving the mobility benefits that have driven E-Bike popularity. This approach positions the Beaches to proactively integrate E-Bikes into the broader multimodal system as demand continues to evolve.