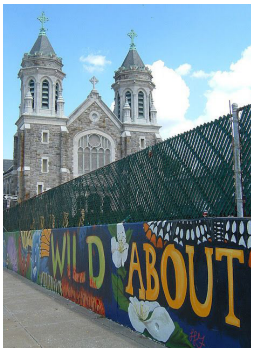
US 1 Overlea Community Safety Improvement Project










2022 RAISE Grant Application

Funding Request: **$15.34 million**
Total Project Cost: **$47.59 million**

April 14, 2022

MARYLAND DEPARTMENT OF TRANSPORTATION

State Highway Administration
707 N Calvert St, Baltimore, MD 21202

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1 | Project Description

The US 1 Overlea Community Safety Improvement Project is a critical infrastructure investment that will improve safety, quality of life, and economic opportunity for Overlea and surrounding communities, including historically disadvantaged communities. The Maryland Department of Transportation (MDOT), in partnership with Baltimore County, requests $15.34 million in Rebuilding American Infrastructure with Sustainability and Equity (RAISE) funding to support the construction of pedestrian infrastructure, including sidewalk improvements, crosswalks, and up-to-date traffic lights. The project also includes significant traffic and drainage improvements. The project goal is to make the corridor safer, more resilient, and accessible for all.

Project Snapshot

Location

Belair, MD

US 1 from Baltimore County Line to I-695

Census tracts 4402 (a historically disadvantaged community), 4404 and 4405

Schedule

Begin Preliminary Engineering: 2023

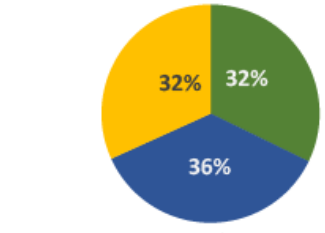
Project Completion: 2031

Funding

RAISE Request: $15.34 Million

Total Project Cost: $47.59 Million

Funding Sources



Benefits

Safety Improves pedestrian safety in a corridor with a high number of crashes

Environmental Sustainability: Makes an important corridor more resilient and sustainable and encourages a modal shift to walking and transit

Quality of Life: Allows people with disabilities to access community amenities and transportation options

Mobility and Community Connectivity: Connects historically disadvantaged communities to resources with or without automobile ownership

Economic Competitiveness and Opportunity: Increases residents' access to opportunities while encouraging economic activity

State of Good Repair: Modernizes a core infrastructure asset for pedestrians and transit users

Partnership and Collaboration: Strongly supported by the community, leaders, and public and private partners

Innovation: Lays the groundwork for electric vehicle infrastructure in the area

1.1 Project Need

The segment of US 1 (Belair Road) through Overlea is an important and historic main street corridor connecting many Baltimore-area communities, including historically disadvantaged communities in the project area, to economic opportunities, parks, churches, a community center, and crucial social services. Transit along this corridor connects the Overlea community, including students and staff at the nearby Maryland School for the Blind, to downtown essential services, schools and jobs in Baltimore, Johns Hopkins University, White Marsh, and other job centers and community focal points.

Within the project area, there is a half-mile segment of US 1 that experiences a pedestrian crash rate four times higher than the statewide average for similar routes.

Unfortunately, the project segment presents barriers and challenges to the community, limiting access and mobility for pedestrians and vehicles in a very tight right-of-way (ROW). The project corridor experiences a high pedestrian crash rate, which is two times higher than the statewide average. Within the project area, there is a half-mile segment of US 1 that experiences a pedestrian crash rate four times higher than the statewide average for similar routes. There have also been recent pedestrian fatalities in this segment of US 1. For decades, the corridor has experienced long traffic queues during peak travel periods, creating congestion and safety concerns. The corridor has also experienced flooding due to drainage issues that could be exacerbated by the effects of climate change, and both the sidewalks and parts of the roadway are in poor condition. Two census tracts in the project area have been identified by U.S. DOT as experiencing transportation access disadvantage, meaning they "spend more, and longer, to get where they need to go."[1] This vital corridor is overdue for updates to pedestrian infrastructure and roadway safety enhancements, including roadway infrastructure and drainage improvements.

A visit to US 1 through the Overlea community today reveals school buses dropping off children on narrow sidewalks and pedestrians, including school children, crossing the four-lane road mid-block to take advantage of gaps in traffic or to seek better infrastructure on the opposite side of the road. Sidewalks and driveways are littered with debris from recent crashes, and utility poles throughout the corridor block mobility for strollers and wheelchairs. Not only are the sidewalks narrow and full of impediments, but in some sections, pedestrians must lean or walk around utility poles and into the street to get a clear view of traffic, putting them at risk as oncoming vehicles speed by mere feet away. In many parts of the road, pedestrians must traverse the sidewalk single file to navigate obstructions and retaining walls. The walkway is completely impassable for wheelchairs or pedestrians pushing strollers, forcing them onto the road at some locations.

[1] Census tract 4402 and 4404. Source: U.S. DOT, Transportation Disadvantaged Census Tracts (Historically Disadvantaged Communities) lookup tool, Transportation Disadvantaged Census Tracts (arcgis.com), accessed 4/12/2022.

Figure 1. A Student Exits a School Bus along the US 1 Overlea Corridor as Traffic Builds Up

Pedestrian infrastructure is crumbling in some locations within the project area and virtually nonexistent in others, and the roadway infrastructure is not accessible for many people with disabilities. Although the US 1 corridor includes existing concrete sidewalks on both sides of the road, most of the sidewalk length is not compliant with the Americans with Disabilities Act (ADA) due to deficient width, cross slopes, and insufficient passing zones. The sidewalk is impassable in many areas due to the locations of utility poles and other obstructions. In many places, utility poles divide a 5-foot sidewalk into segments that are under 3 feet on either side, creating a pinch point that limits mobility even for able-bodied pedestrians and makes them entirely impassible for those using a mobility device. Crosswalk markings at some key intersections along the corridor are no longer visible, while others lack sufficient visibility given the context. Level of service (LOS) along the corridor is insufficient given the high traffic volume and the lack of a shoulder or buffer.

2017–2021 Crash Data (4-Year Average)	
Total Crashes	119.5
Pedestrian Incidents	3.25*
Injuries	65.5*
Fatalities	0.25
* *Significantly above state average*	

The poor state of pedestrian infrastructure on this segment contributes to crashes that result when pedestrians step into the roadway to cross. It is extremely unfortunate that a pedestrian death on January 5, 2022, occurred when a vehicle fatally injured a pedestrian in the project area, near the

Figure 2. A Recent View of US 1 in Overlea in the Project Area, including Evidence of a Recent Vehicular Crash and Utility Poles Limiting Sidewalk Connectivity

intersection of Belair Road (US 1) and Taylor Road. The pedestrian had stepped into Belair Road mid-block when they were tragically struck by an automobile.

US 1 is an important corridor for the Overlea community, including the historically disadvantaged community bordering the north side of the road (census tract 4402). Disadvantaged communities in Baltimore County and Baltimore City to the south of Overlea also rely on the US 1 corridor to access jobs, services, opportunities, schools, and community amenities in suburban Baltimore. Transit riders along this portion of roadway access MDOT Maryland Transit Administration (MTA) routes that are part of the agency's frequent transit network. With over 1,400 riders on MDOT MTA bus routes boarding and alighting in this small section alone as of fall 2021, this portion of Belair Road is a crucial connector for the entire region, providing access to areas around the Baltimore Beltway and downtown Baltimore.

Despite the condition of pedestrian infrastructure, this portion of Belair Road is well-traveled by people on foot, suggesting the potential for this corridor to serve as a community amenity that could influence a modal shift from driving to walking or transit for area residents. The many small businesses on both sides of the corridor; the nearby community amenities, including parks, churches, and community facilities; the presence of high-frequency MDOT MTA bus routes; and the residential street connections reinforce the need for better mobility and access to alternative modes of transportation in this essential corridor. Improving pedestrian facilities could move some travelers out of single-occupancy vehicles to sidewalks and transit, as well as enhance connectivity and quality of life for individuals using wheelchairs and other mobility devices. Improving the route for non-motorized travelers could also make mobility more affordable for community members who rely on or simply prefer transit and active transportation, like walking, over car ownership.

Figure 3. Waiting for a Bus Along the US 1 Corridor in Overlea

The roadway itself is currently in a state of disrepair, with drainage concerns and pavement degradation contributing to slower travel times for users of all modes of transportation. The pavement structure along US 1 within the project limits currently has an average remaining service life of 4 years according to the latest MDOT performance data. This condition is a system vulnerability for a critical route connecting Baltimore-area communities,

including disadvantaged communities, to jobs, opportunities, and resources in Baltimore City and the region. Drainage is poor along the corridor, with flooding occurring during storms. As storms become more frequent due to global climate change, drainage issues are likely to have an even larger negative impact on mobility in the corridor and could further degrade the infrastructure.

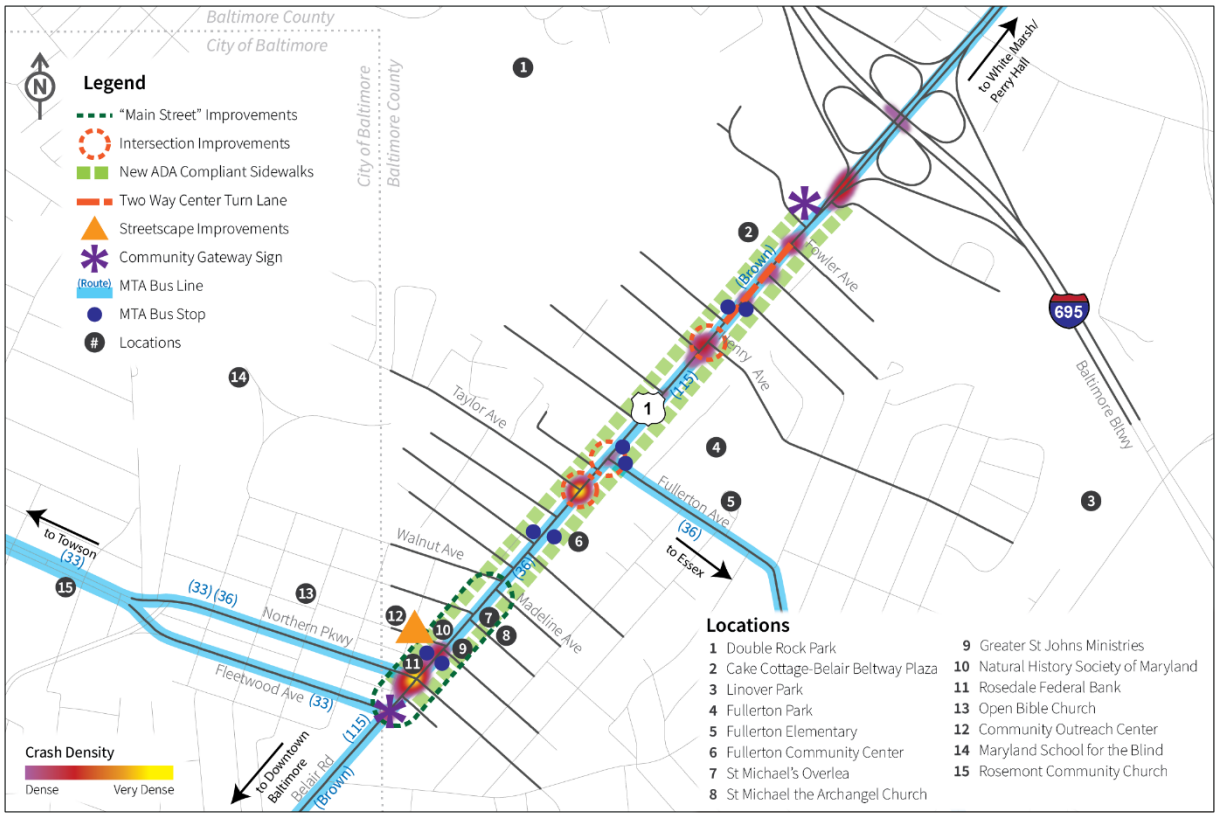


Figure 4. Project Area, US 1 from the Baltimore County Line to I-695, and Community Amenities, Transit Connections, and Crash Density Along the Corridor

1.2 The Solution

The US 1 Overlea Community Safety Improvement Project will address critical safety risks and community concerns, reduce congestion delays, and provide more reliable travel times in order to support equitable access to opportunity and economic growth. A major component of the project will be the removal of physical barriers to mobility: curbs that block access for community members using mobility devices and utility poles blocking sidewalks. The project will also add turn lanes and significantly enhance access and mobility through ADA improvements to sidewalks accessing the transit station and other amenities. Finally, the project includes drainage improvements to prevent flooding

Figure 5. Sidewalks along US 1

The sidewalks along US 1 in the project area are in disrepair to the point of being impassable in places.

during increasingly frequent storms and increase the resilience of the roadway and new pedestrian infrastructure once installed, as discussed in Section 4.2, Environmental Sustainability. As discussed in Section 4.4, Mobility and Community Connectivity, these improvements will connect communities that have been cut off by impassable sidewalks and treacherous intersections. These changes will also enable healthy, active transportation on US 1 between I-695, the Baltimore Beltway, and the Baltimore City line. Safety and quality of life benefits are discussed in more detail in Section 4.1, Safety, and Section 4.3, Quality of Life.

Since US 1 is a major artery linking the Overlea community and surrounding neighborhoods and suburbs with downtown Baltimore City, the proposed improvements will significantly increase access to jobs and opportunities for residents of the region, particularly those traveling by transit and by foot. The route also connects residents of Baltimore City to opportunities in Overlea. Communities much farther north such as Perry Hall, White Marsh, and some parts of Harford County also use the corridor as a commuter route to Baltimore City and other parts of the region. Section 4.5, Economic Competitiveness and Opportunity, discusses the economic benefits of the project.

> *In addition to improving safety, accessibility, and quality of life for the neighborhood and region, the US 1 Overlea Community Safety Improvement Project will create economic opportunity. The project will improve walkability, roadway design, community character, streetscape, and public space. These physical interventions will encourage connection and mobility, a sense of place, and active street environments benefiting local and regional economies.*

The project includes components that will ensure that core infrastructure along Belair Road is resilient and sustainable for years to come, even as climate change impacts the Baltimore region. These improvements, discussed in detail in Section 4.2, Environmental Sustainability, and Section 4.6, State of Good Repair, incorporate stormwater management components including constructing a new drainage system throughout the corridor as well as streetscaping and landscaping adjacent to the sidewalk. Along with the obvious aesthetic benefits of street- and landscaping, the improvements will provide shade for pedestrians, additional drainage benefits, surface cooling, and energy savings for adjacent residential and commercial structures, all critical during increasingly likely heat events. Section 4.8, Innovation, describes plans for adding electric vehicle infrastructure in the corridor and the area, and additional innovations to support sustainability.

The US 1 Overlea Community Safety Improvement Project is truly a community project. Baltimore County has been, and continues to be, a key partner on this project, and is providing $7 million in local matching funds to support the project's completion. The project has long been supported by business owners, residents, local organizations, and nonprofits. Although the project was delayed due to the economic recession in 2008, the community's support for the infrastructure improvements has not diminished. Section 4.7, Partnership and Collaboration, describes the partnerships and collaborative efforts that have gone into the project's development.

Figure 6. Pedestrians Cross a Street in the Project Area at a Faded Crosswalk near a Bus Stop

1.3 Project Background and Scope

Community Outreach for the US 1 Overlea Community Safety Improvement Project first began in 2005. Between 2005 and 2008, the project was studied extensively, and concept plans were developed. After the 2008 recession, the project received design funding in late 2014. Extensive design took place up to 2016, and the project reached 65% design completion. The scope of work currently includes the following:

- ADA-compliant sidewalks and ramps
- Marked crosswalk at all intersections with Accessible Pedestrian Signals
- New curb and gutter
- Two-way left-turn lane and exclusive left-turn lanes at multiple locations
- Relocation of 94 utility poles and other underground utilities
- Improved drainage system replacing an early 1900s cast iron pipe system
- Three stormwater management facilities
- Retaining and landscape walls
- Roadway resurfacing
- Streetscaping and street tree plantings where feasible

A Programmatic Categorical Exclusion (PCE) was obtained in 2015, as described in detail in Section 5, Project Readiness: Environmental Risk.

The MDOT State Highway Administration (SHA), in collaboration with Baltimore County and other project partners, has identified goals and objectives for the US 1 Overlea Community Safety Improvement Project. The following performance design metrics ensure that the project meets its original goals for the least cost and avoiding scope creep:

- Goal 1: Improve vehicular and pedestrian safety.
  - Objective 1-1: Reduce the crash rate within the corridor by 40% to the statewide average of 376.5 crashes per 100 million vehicle miles traveled.
- Goal 2: Ensure pedestrian connectivity and accessibility throughout the corridor.
  - Objective 2-1: For Origin-Destination pairs between major generators within or adjacent to the project limits, ensure a maximum pedestrian-route-directness score (actual distance/straight-line distance) of 1.5 for all routes greater than 500 feet.
  - Objective 2-2: Provide an accessible pedestrian facility along US 1 within the project limits with an average LOS of C and no segment functioning worse than LOS D.
- Goal 3: Ensure a state of good repair for fixed assets.
  - Objective 3-1: Ensure an estimated 15 years of functional service life for the pavement section after construction completion.
  - Objective 3-2: Ensure a minimum drainage asset Condition Rating of 2, on a scale of 1 to 5, with 1 being the best, for all drainage assets.

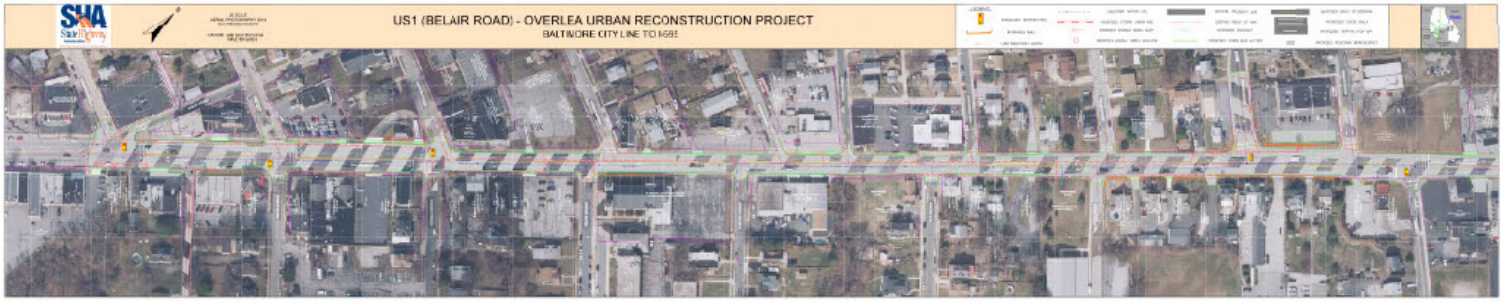


Figure 7. The Planned Community Safety Improvement Project along US 1 (Belair Road) in Overlea

The US 1 Overlea Community Safety Improvement Project will have a dramatic and immediate effect on the community's mobility, connectivity, and critical safety needs in this essential corridor. The investment will transform a corridor marred by crumbling infrastructure, drainage issues, and outdated automobile-oriented features into a community amenity that will create a sense of place for Overlea residents while encouraging active transportation, transit usage, and mobility for people of all abilities, enabling better and safer access and mobility in the corridor. This corridor is a prime example of a project that can connect communities, leading to a more resilient, sustainable, and equitable future for Overlea and the region.

2 | Project Location

The US 1 Overlea Community Safety Improvement Project will be constructed along a 1.31-mile segment of Belair Road between I-695, the Baltimore Beltway, and the Baltimore City boundary. Belair Road is classified as an urban other principal arterial with a posted speed limit of 35 mph. The US 1 corridor is considered a Suburban Activity Center due primarily to the density of surrounding uses, the presence of schools and transit, and the number of zero-car households. Belair Road serves as a route for the MDOT MTA City Link Brown Line bus route connecting downtown Baltimore to White Marsh, and provides access to the entire Baltimore transit system. Additionally, the Belair corridor has ideal access to regionally significant automobile transportation routes including I-695, I-95, White Marsh Boulevard, and Joppa Road connecting the project area to the regional employment and commercial centers, only 12 miles from the urban core of Baltimore City and 50 miles to Washington DC.

> *A large amount – and possibly the majority – of project funding, as well as the benefits of this project, will be concentrated in census tract 4402, a historically disadvantaged community, due to retaining walls, sloping, and utility poles blocking sidewalks at that location within the project area.*

The project is located within the unincorporated community of Overlea, a Census-Designated place with a total population of 12,832. It intersects three census tracts in Baltimore County: 4402, 4404, and 4405. Census tract 4402 is considered a historically disadvantaged community by the U.S. Department of Transportation. A large amount – and possibly the majority - of the project funding as well as the benefits will be focused on this census tract due to retaining walls, narrow sidewalks, and sloping through that area. While the project area does not include any Areas of Persistent Poverty and is not in a federally-designated Opportunity Zone, Empowerment Zone, Promise Zone, or Choice Neighborhood, it does provide essential connections to Areas of Persistent Poverty, which exist just southwest of the project area in Baltimore City, as well as to the northeast. This project would provide safer connections

and improve access and mobility to key resources and opportunities, including fresh food at farmer's markets, community services, banks, schools, and jobs. In addition, Overlea has received the Sustainable Community designation from the State of Maryland after an extensive review process.

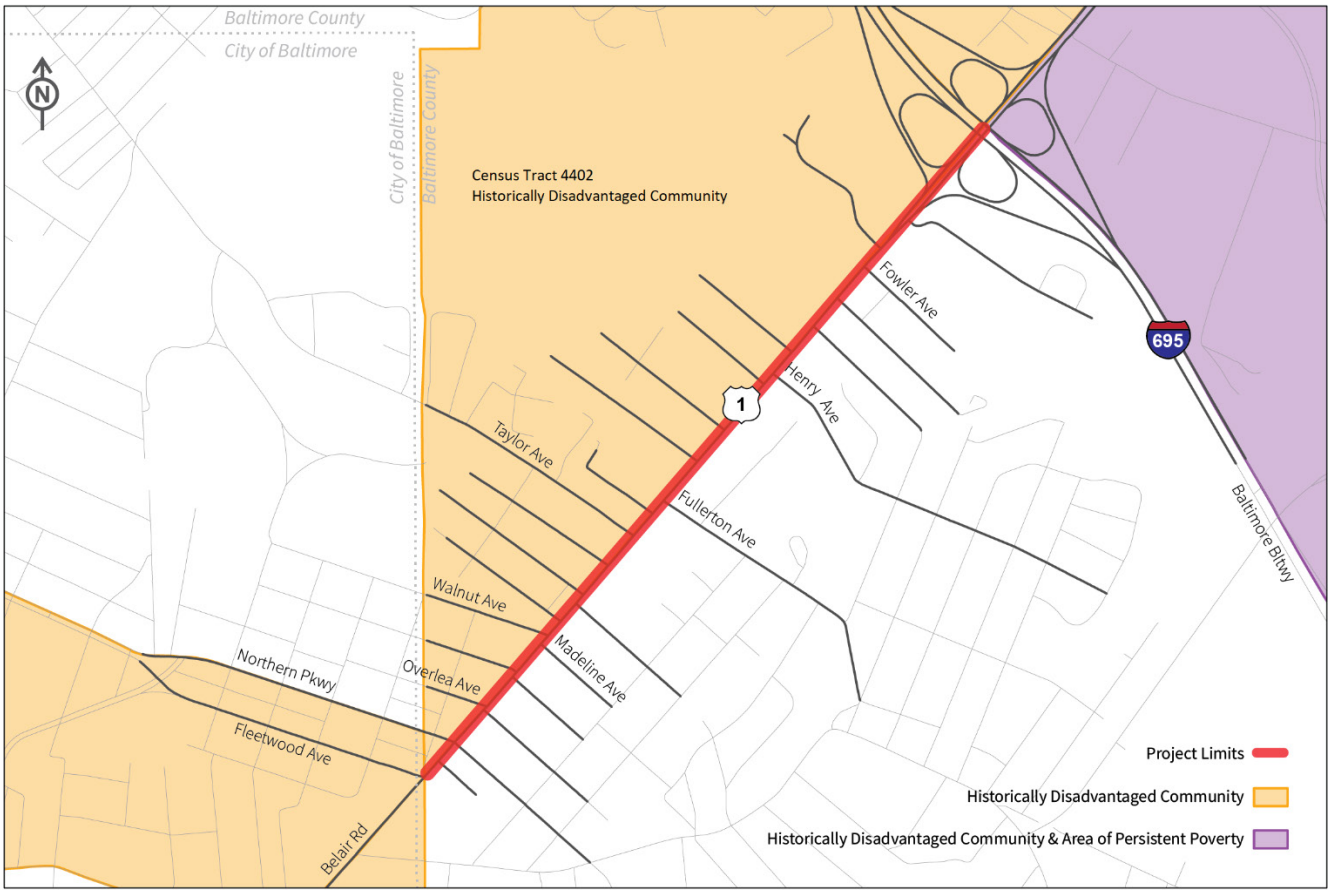


Figure 8. Areas of Persistent Poverty and Historically Disadvantaged Communities Map
Census tract 4402, classified as a Historically Disadvantaged Community, is part of the US 1 Overlea Community Safety Improvement Project area, US 1 from the Baltimore County Line to I–695. While the project does not include any Areas of Persistent Poverty, the corridor does serve those communities, including a census tract classified as an Area of Persistent Poverty and Historically Disadvantaged Community just to the northeast. The project's benefits to disadvantaged communities are further outlined in Section 4.4, Mobility & Community Connectivity.

The community of Overlea is a mature suburb with a diverse population and over 100 years of history. The neighborhood is composed of tree-lined residential streets with US 1, also known as Belair Road, as the main commercial corridor. The neighborhood embodies a strong sense of community with active community organizations, a busy community center, and an active art scene. There are several neighborhood amenities surrounding the project area including parks, schools, museums, community centers, a well-known bakery, and commercial centers. The community comes together for farmers' markets, art fairs, and community festivities. US 1 provides access to many amenities including schools, parks, stores, and services.

Notable community amenities include:

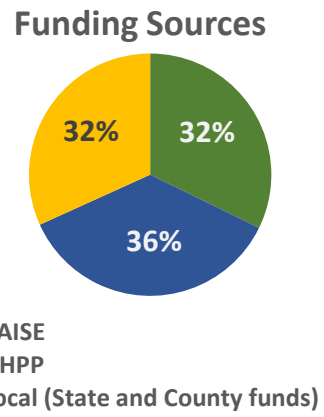
Figure 9. A Mural in Overlea along the US 1 Corridor in the Project Area

- **Fullerton Elementary School:** Roughly 1,000 feet from the corridor, Fullerton Elementary School serves the nearby neighborhoods and is closely connected with US 1, including school bus traffic.
- **Maryland School for the Blind (MSB):** MSB is a private non-profit school founded in 1853 serving as a resource center for students identifying as blind or visually impaired throughout the entire state. The school serves approximately 1,200 students. The MSB campus is about 0.5 miles from US 1 and the project area.
- **Maryland Natural History Society Museum:** A private non-profit museum founded in 1929, the Maryland Natural History Society is dedicated to conserving Maryland's natural heritage and educating the community. The museum offers workshops, lectures, and courses featuring natural sciences and Maryland's natural history. The property is directly adjacent to the US 1 and the project area and offers their parking lot for neighborhood farmers' markets.
- **Overlea Fullerton Community Center:** The Community Center serves the Overlea Fullerton Recreation Council offering numerous public recreational programs for children and adults. The community center hosts year-round activities and programs with an emphasis on health, sustainability, and enjoyable leisure.
- **Overlea Fullerton Senior Center**: Located within the same facility as Fullerton Elementary School, this County-maintained center serves the area's senior population.
- **Fullerton Park**: This Baltimore County Parks and Recreation facility includes football fields and baseball diamonds and is located next to Fullerton Elementary School and the Overlea Fullerton Senior Center. The park hosts kids' sporting events and annual Independence Day fireworks display hosted by a local committee that swamps the area with nearby residents looking to enjoy the show.
- **Overlea Waiting Station:** The Overlea waiting station is a historic transit stop in the project area on US 1. The original transit stop was built in 1917 and was used as a streetcar turnaround and station. Due to the importance of the structure in the community, the MDOT MTA constructed a modern facsimile in 2000 when the original building had to be demolished due to its poor condition. The station currently serves the MDOT MTA and sees an average of over 1000 daily boardings and alighting's from MDOT MTA buses.
- **Holt Park and Center for the Arts:** Unique to Baltimore County, the park features several hiking trails, an outdoor amphitheater, a historic Victorian house, and several cabins. Additionally, the park offers educational programs for all ages with a focus on nature and the arts. The park is located within a mile of the project area, contributing to the neighborhood's culture and lifestyle.

3 | Grant Funds, Sources and Uses of Project Funds

The total project cost for the US 1 Overlea Community Safety Improvement Project is $47.59 million, not including previously incurred design and pre-construction costs of $4.1 million. The total future cost consists of preliminary engineering, construction, utility relocation and ROW acquisition expenses.

MDOT is requesting $15.34 million in RAISE grant funding to complete the US 1 Overlea Community Safety Improvement Project. This represents 32% of the future eligible project cost. Federal funding for the project includes RAISE funds and National Highway Performance Program (NHPP). The match for NHPP funding is assumed at 20% in state dollars. These state funds come from the Transportation Trust Fund which is funded primarily by gas taxes and titling fees. Local funds will include $8.12 million in state funds and $7.00 million in Baltimore County funds. Letters of commitment are attached to this document as Appendix E, Financial Documents.



3.1 Sources and Uses of Funds

Table 1. Project Budget Summary by Source and Use

	RAISE Funding ($ million)	Other Federal Sources (NHPP) ($ million)	Non-Federal Sources (State and County Funds) ($ million)	Total ($ million)
Pre-construction	$7.72		$1.93	$9.65
Construction	$5.72	$13.70	$10.46	$29.88
Contingency	$1.91	$3.43	$2.73	$8.06
TOTAL	**$15.34**	**$17.13**	**$15.12**	**$47.59**

Table 2. Project Budget Summary by Project Element

Overlea Community Safety Improvement Project Element	Cost ($ million)
Clearing and Grubbing, Mobilization, Mot	$4.07
Grading	$.62
Drainage and SWM Materials	$2.93
Structures	$2.74
Paving, Concrete, and Markings	$7.22
Roadside Items	$1.31
Landscaping	$.36
Traffic Signals	$1.58
Contingency	$4.00
Admin/Overhead	$3.58
Construction Subtotal	**$28.41**
Preliminary Engineering	**$2.10**
Utility Relocation Design	**$1.91**
Utility Relocation	**$9.53**
ROW Acquisition	**$5.64**
TOTAL PROJECT COST	$47.59

4 | Merit Criteria

The following section describes how the US 1 Overlea Community Safety Improvement Project aligns with each of the merit criteria for the RAISE program.

RAISE Merit Criteria	How this Project Addresses the RAISE Merit Criteria
Safety	• Protects non-motorized travelers and communities from health and safety risks • Reduces fatalities for underserved, overburdened, or disadvantaged communities • Mitigates Systemic Safety Issues
Environmental Sustainability	• Supports fiscally responsible land use and transportation-efficient design • Reduces vehicles miles traveled • Improves the resilience of at-risk infrastructure • Promotes energy efficiencies
Quality of Life	• Removes barriers for individuals and communities to transportation, jobs, and business, opportunities • Increase accessibility for travelers specifically for underserved, overburdened, or disadvantaged communities • Enhance the unique characteristics of the community for underserved, overburdened, or disadvantaged communities
Mobility and Community Connectivity	• Increases the accessibility for all users of a project, particularly non-motorized travelers (those walking, cycling, rolling, or using transit • Encourages thriving communities for individuals to work, live, and play by creating transportation choices for individuals to move freely with or without a car
Economic Competitiveness and Opportunity	• Increases transportation options and system connectivity to revitalize underserved, overburdened, or disadvantaged communities, increases access to jobs and location-efficient affordable housing • Improve system operations to increase travel time reliability, velocity of goods movement, and multimodal freight mobility
State of Good Repair	• Addresses current or projected system vulnerabilities for underserved, overburdened, or disadvantaged communities • Restores and modernizes core infrastructure assets
Partnership and Collaboration	• Collaborating with other public and private entities • Ensures that equity considerations for underserved, overburdened, or disadvantaged communities are meaningfully integrated into planning, development, and implementation of transportation investment • Incorporates private sector entities, particularly DBEs, in transportation infrastructure planning, designing, or building
Innovation	• Deploys technologies and other practices that drive safety, equity, climate and resilience, or economic outcomes for underserved, overburdened, or disadvantaged communities or augment workers

4.1 Safety

4.1.1 Reducing Accidents for Non-motorized Travelers and Mitigating Systemic Safety Issues in a Dangerous Corridor

The US 1 corridor through Overlea is the site of frequent crashes involving both vehicles and pedestrians, and risks to non-motorized travelers are especially high. Just months ago, tragedy struck when, on January 5, 2022, a pedestrian was hit and killed by a vehicle after stepping off a sidewalk into the northbound lanes of US 1 near Taylor Avenue, within the proposed project area. Even in the years before this tragic occurrence, segments of the corridor have regularly appeared on the Candidate Safety Improvement Sections List, including the latest 2019 list. The high risk to pedestrians in the corridor has prompted a call to action from the Overlea community and across the State of Maryland.

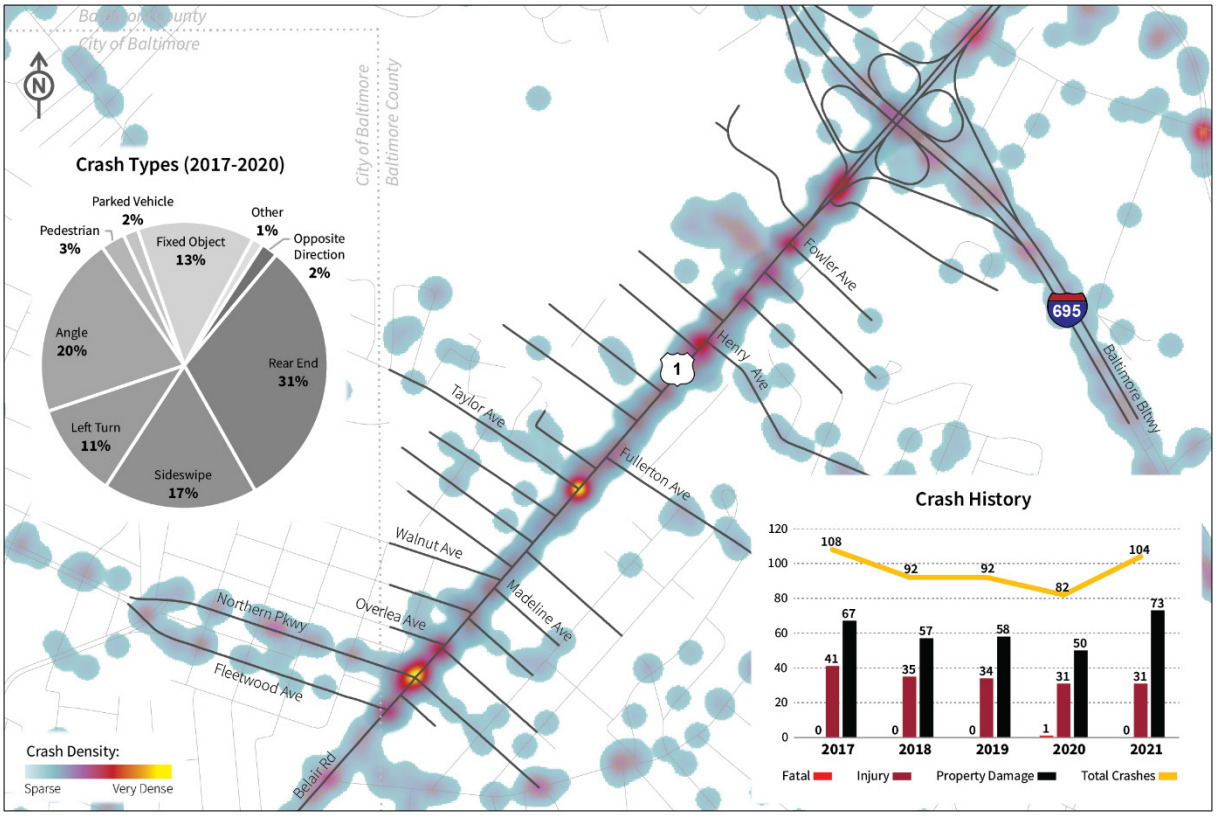


Figure 10. Map Showing Crashes along the Corridor

As the map and tables above show, crashes are especially dense at intersections along the corridor, which will be improved as part of the US 1 Overlea Community Safety Improvement Project.

478 Crashes	
4X	Statewide average
929	Vehicles
13	Pedestrians

Data from 2017–2021

Official data tells a concerning story about crashes along the corridor. MDOT SHA crash data for US 1 from log mile (LM) 15.69 to LM 17.0 shows the project corridor experiences a significantly high pedestrian crash rate which is two times higher than the statewide average. Within this project area, there is a half-mile segment of US 1 that experiences a pedestrian crash rate four times higher than the statewide average for similar routes. According to the MDOT SHA, there have been a total of 478 crashes involving 929 vehicles between the years 2017 to 2021 along the target 1.31-mile stretch of US 1 (Belair Rd). Of the 478 incidents, 13 of them involved pedestrians.

Table 3. US 1 (Belair Road) from Baltimore City Line to I-695, 1.31-Mile Interval

Year	2017	2018	2019	2020	2021	Total	Study	Statewide
Fatal	0	0	0	1	0	1	1.3	1
Injury	41	35	34	31	31	172	221.7	139.2
No. Injured	64	51	58	44	45	262		
Property Damage	67	57	58	50	73	305	393.2	211.5
Total Crashes	108	92	92	82	104	478	616.2	351.7
Pedestrian	4	2	3	1	3	13	16.8	8.7

Source: MDOT SHA Office of Safety Traffic Development Support Division

PED Infrastructure Additions	
30	ADA-compliant Ramps
14	Signalized audible Crosswalks
2	Pedestrian Islands

Many of these crashes would be preventable with the proper provision of accessible walkways, a key component of the US 1 Overlea Community Safety Improvement Project. Many pedestrians choose to cross mid-block due to the lack of pedestrian infrastructure currently available. Sidewalk improvements will reduce the likelihood of pedestrians sharing the roadway with high-speed vehicles, thereby putting themselves at risk. This project also implements additional pedestrian flow safety measures, including over 30 ADA-compliant pedestrian ramps, 14 signalized audible crosswalks, and two pedestrian islands at major commercial centers. Currently, these intersections are without signalized audible crosswalks. Adding these pedestrian-centered enhancements will incentivize pedestrians to use the crosswalks rather than crossing mid-block where the probability for crashes is higher. These connections are critical for children accessing their school buses and community members accessing transit, jobs, and services.

Vehicular crashes are also a concern along this corridor. MDOT has found that the high vehicular crash rates in the Overlea segment of US 1 can be largely attributed to the number of conflict points caused by the high density of commercial access points along the roadway, the lack of separation between opposing vehicle lanes, and the lack of dedicated turning lanes. This is demonstrated by angle, rear-end, and sideswipe crashes that are all significantly higher than the statewide average. Providing left-turn bays at critical locations along the corridor will improve traffic flow resulting in a reduction in the number of rear-end, sideswipe, and left-turn crashes. Vehicular traffic will also see benefits and a

reduction in crashes. With intersection improvements addressing vehicular crashes, the US 1 Overlea Community Safety Improvement Project will reduce the scope and severity of collisions overall.

4.1.2 Creating Safe and Accessible Sidewalks for All

The sidewalks along US 1 in the project area are in desperate need of improvements to support all travelers, especially those using mobility devices. There are significant accessibility issues throughout the US 1 corridor. Currently, more than 90 utility poles obstruct the sidewalk along the 1.31-mile stretch of Belair Road targeted for improvements. This creates discomfort and stress for all pedestrians and is of particular concern for pedestrians with disabilities, especially those using wheelchairs, who cannot navigate through the narrow spaces between the utility poles and the road. A retaining wall along portions of the corridor sidewalk contributes to the mobility challenges faced by community members who use wheelchairs as well as cyclists, pedestrians pushing strollers, and even able-bodied pedestrians who must squeeze through narrow spaces single file, often leaning into the road. When sidewalks are impassable, wheelchair users and other pedestrians may be tempted to step into the roadway to travel along the corridor or cross the 4-lane highway to seek better sidewalks with fewer obstructions. These actions put them at high risk of injury or even death as vehicles pass at speeds of over 35 mph.

Figure 11 Narrow Sidewalks with Obstacles
The sidewalks are narrow, blocked by utility poles, and bordered by retaining walls.

This project addresses the corridor's safety risks and the concerns of the Overlea community by proposing the construction and expansion of a connected and functional walkway, with ADA-accessible curb ramps and without sidewalk obstructions. The utility poles currently obstructing the walkway will be moved outside of the sidewalk area so pedestrians can pass safely. This will allow wheelchair users to pass through the corridor without the risks of having to use the road with traffic moving at highway speeds. The project will relocate more than 90 utility poles along the US 1 (Belair Road) corridor. In doing so, MDOT will dramatically enhance sidewalk conditions, increase pedestrian ROW, and comply with ADA guidance for sidewalks, creating a safer environment for all users, but especially for those with disabilities who use mobility devices, as well as families with strollers.

4.2 Environmental Sustainability

4.2.1 Encouraging a Modal Shift

The US 1 corridor includes transit routes that are part of MDOT MTA's high-frequency network connecting the Overlea community and the region to the jobs, services, and opportunities of downtown Baltimore, as well as White Marsh, major cultural centers, the Johns Hopkins University, and other

resources. The transit routes along this corridor have ridership at levels higher than before the COVID-19 pandemic began, with over 1,400 boardings and alightings along the corridor each day. Currently, however, transit is difficult to access due to the condition of the sidewalks, curbs, and utility poles blocking pedestrian travel. According to the U.S. DOT transportation disadvantaged definition, two of the census tracts in the project area (4402 bordering the north side of US 1 and 4404 in the southwest portion of the project area) experience transportation access disadvantage, meaning they spend more, and longer, to get where they need to go. In addition, all three of the census tracts that the project intersects have been identified by the U.S. DOT as experiencing environmental disadvantage, defined as "disproportionate pollution burden and inferior environmental quality."

Supporting increased access to transit and non-motorized travel could encourage a modal shift and contribute to long-term environmental sustainability. With improved sidewalk infrastructure, accessible curb cuts at intersections, and intersection improvements, the US 1 Overlea Community Safety Improvement Project has the potential to encourage a modal shift away from the automobile and towards both transit and active transportation, including walking, along this corridor. The corridor supports many different businesses and cultural institutions that are accessible from the road currently. These elements are further discussed at length below in Section 4.5, Economic Competitiveness & Opportunity.

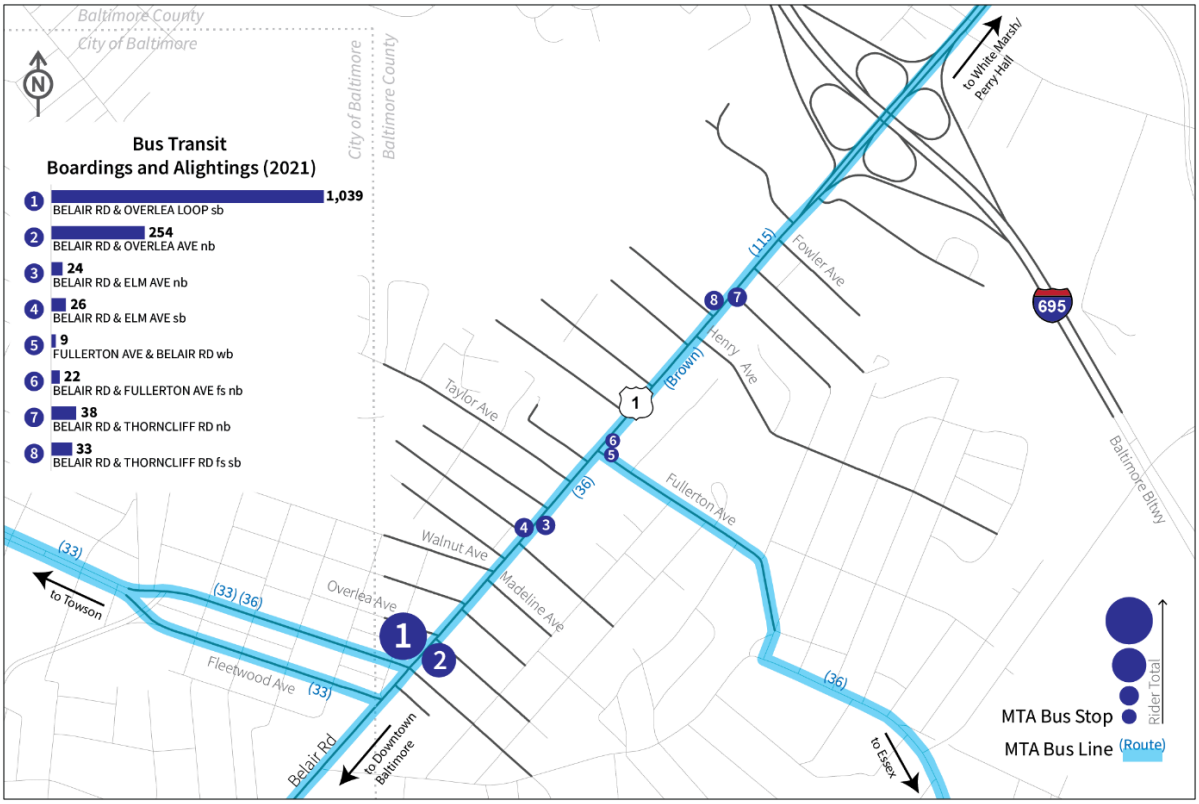


Figure 12. Transit Map of MDOT MTA Routes, Stops, Boardings, and Alightings
Transit is heavily used along the project corridor.

4.2.2 Addressing Heightened Flood Risk and Climate Change Impacts with Drainage Improvements

Due to Overlea's aging infrastructure and the increasing risk of storm events in the project area due to global climate change, improving stormwater utilities is a fundamental part of the US 1 Overlea Community Safety Improvement Project. The MDOT SHA has received complaints from multiple property owners regarding poor drainage on US 1. As reported in the 2014 drainage design study, many of the existing side roads that intersect the project limits have large drainage areas with little or no existing drainage infrastructure. The drainage study also identified the majority of the drainage for the corridor to be inadequate in terms of pipe capacity, inlet spread and efficiency. Pipe video inspection performed on the existing storm drain network also showed that many of the existing pipes are in poor condition, contain sediment, and exhibit joint failures, corrosion, and other structural concerns. The poor condition of the infrastructure in the project area is also discussed in Section 4.6, State of Good Repair.

For these reasons, a new storm drain system is being proposed for the project. The new storm drain system will use curb opening inlets along US 1 and grate inlets along select intersecting streets where large amounts of offsite runoff is expected. Trench drains and yard inlets will also be proposed on side streets and low spot elevations near or at sidewalks. The drainage system will be designed to meet 2-year storm events and alleviate any potential ponding or flooding. In addition, bioretention areas will address drainage issues, as discussed in Section 4.8, Innovation.

Figure 13. Drainage Issues along the US 1 Corridor in Overlea

Currently, drainage is substandard at many points along the corridor. The US 1 Overlea Community Safety Improvement Project will include drainage improvements to address the issue and improve the resilience of the infrastructure along the corridor as storms become more frequent. Currently, a water main replacement project is underway, contributing to substandard conditions along the US 1 corridor.

4.2.3 Improving the Resiliency of At-Risk Infrastructure with Appropriate Pavement Technologies

The Federal Highway Association's Order 5520 addresses preparedness and resilience to climate change, which presents as a growing risk to the safety and reliability of infrastructure. In addition to ensuring that a major portion of revitalizing the corridor is devoted to ensuring an estimated 15 years of functional service life for the pavement section is developed, the project will also focus on resilient infrastructure to adapt to changing conditions and disruptions of climate change. Maryland's climate is becoming more extreme due to global climate change: the state is expected to be impacted by more heatwaves, severe storms, and flooding in the next twenty years. The Overlea area is expected to experience more heat events and storms. One of the biggest challenges for maintaining paving infrastructure is flooding, including flooding caused by storms, and extreme temperatures. These climate factors can cause disruption and negatively impact pavement performance.

Superpave (Superior Performing Asphalt Pavements) asphalt is the mix design method that will be used in this project to address performance response to temperatures and aging characteristics in Overlea's infrastructure. Asphalt pavement is the most resilient and sustainable pavement type, which is appropriate for US 1 Overlea's need for structural capacity.

4.2.4 Mitigating Climate Risks with Street Trees

Street trees are the only infrastructure that gets better with age, making them a crucial tool for improving resilience. Street trees provide stormwater runoff retention, surface cooling, and energy savings on heating and cooling for residential and commercial structures. The temperature difference between a street that has no street trees and a street that has street trees with 70% canopy cover is 10 degrees—a lifesaving difference during a heat event, which are expected to rise in the Baltimore area as climate change effects the region. Pedestrians also favor shaded walkways, another incentive to walk rather than drive through the corridor. The US 1 Overlea Community Safety Improvement Project includes 141 street trees, 409 shrubs, and 8,234 perennials along the corridor.

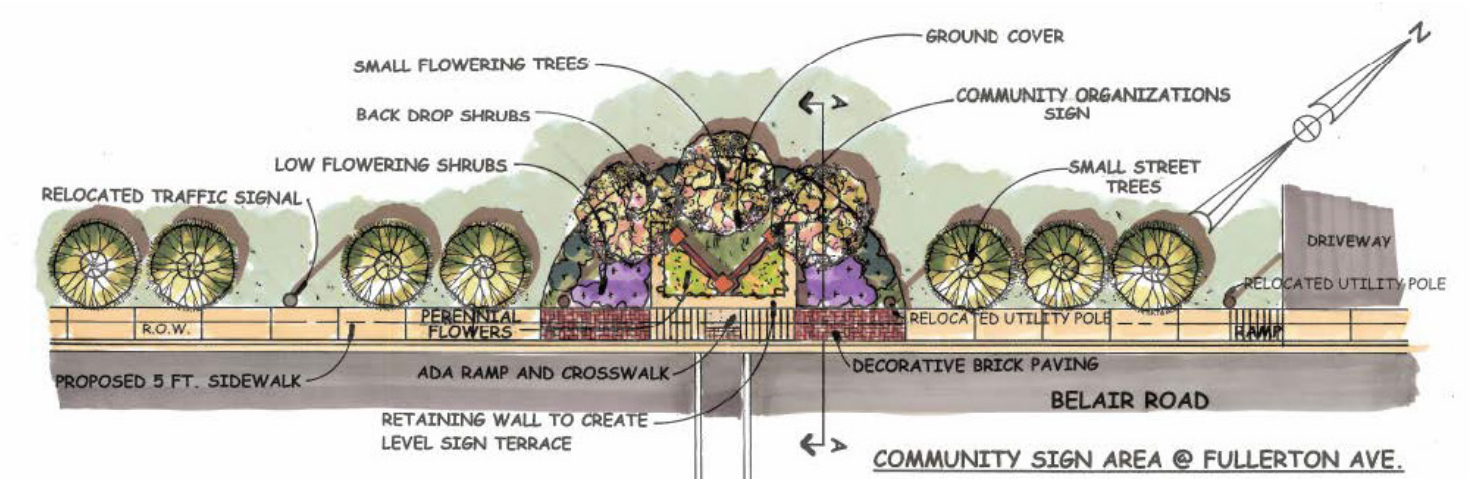


Figure 14. Rendering of Landscaping Improvements included in the Project

The project will include landscaping, street trees, and other components to beautify the area as well as support drainage and flood control, cool the corridor, and provide shade.

4.3 Quality of Life

4.3.1 Removing Barriers and Increasing Accessibility

The US 1 Overlea Community Safety Improvement Project will remove the physical barriers of utility poles blocking sidewalks and preventing accessibility for pedestrians and travelers using mobility devices. In addition, by making progress towards increased investment in safer crossings and better sidewalk connectivity, the project will further increase accessibility and enhance quality of life. Because all transit riders are also pedestrians before boarding or after alighting from buses, these improvements also increase access to transit that can connect the Overlea community and communities throughout the region to employment and services throughout the Baltimore area, especially downtown. Furthermore, these improvements could reduce cost burdens for residents who will now be able to access affordable public transportation services more easily rather than owning a vehicle.

4.3.2 Enhancing the Overlea Community

Figure 15. Overlea Welcome Sign

Currently, the Belair Road corridor in the project area is marred by unsightly utility poles and street frontage that was designed with automobiles in mind, not pedestrians. Narrow sidewalks, cracked curbs, and many areas that are inaccessible to pedestrians as well as those using mobility devices prevent the corridor from becoming the community amenity that neighborhood residents would prefer.

Overlea has been designated a Sustainable Community by the State of Maryland and is known for its historic urban streets, but Belair Road (US 1) is underutilized by pedestrians despite the many community amenities and businesses that line the road. This project aims to improve the corridor by creating a beautiful and sustainable streetscape design. Benefits will include: (1) Increase in economic stability for the community and its business owners along US 1, (2) Improving human health and social activity as pedestrians mingle in this major corridor, and (3) ADA accessibility (also discussed in Section 4.1, Safety).

The corridor is a gateway to culture and a center for community identity and is also important to the state, region, and county. With schools including St. Michael the Archangel School located along Willow Avenue and US 1, the Natural History Society of Maryland Museum, the Overlea United Methodist Church, the Fullerton Community Center, and other community amenities all within walking distance, this project will reinforce and enhance the vitality and positive character of the Overlea community. The many

> *"The US 1 Overlea Community Safety Improvement Project will address critical community safety concerns, reduce congestion delays, and provide more reliable travel times in order to support equitable access to opportunity and economic growth."* **Overlea Community Association President, Melissa Davis**

landscaping improvements included in the project will not only increase safety and accessibility, but also will create a sense of place.

4.4 Mobility and Community Connectivity

4.4.1 Accessible Sidewalk Routes for All Users

Upgrading the sidewalks along Belair Road for ADA compliance and accessibility is a key element of the US 1 Overlea Community Safety Improvement Project. According to the most recent (July 2021) available census data, 7.6% of individuals under 65 years old in Overlea live with a disability, while 15.5% of the local population is over the age of 65. The accessible sidewalks that will be a component of this project will keep the pedestrian path of travel open and usable for all persons regardless of abilities. This is important for community members accessing the community center, the Natural History Museum of Maryland, the farmer's market, schools, banks, and other community resources. In addition, with the Maryland School for the Blind, a Maryland school resource for children and youth around the state who are blind or visually impaired, located in the Overlea area, applying ADA safety elements, such as upgraded audible pedestrian crossing signals, is an essential element of this project that will change lives.

> *"The US 1 Overlea Community Safety Improvement Project will... significantly enhance access and mobility through Americans with Disability Act (ADA) improvements and enable healthy, active transportation on US 1 between I-695 and the Baltimore City line."*
> **MSB Communications Specialist Dotty Raynor**

4.4.2 Improving Access to Transportation Choices

Enhancing the walkability of the US 1 corridor enables safe, convenient access to multiple transit options whether the trip is to one of the multiple businesses on US 1 or accessing one of the eight transit stops that currently accommodate an average of over 1,400 daily riders. US 1 (Belair Road) in Overlea is home to many bus routes that connect to downtown Baltimore City as well as other Baltimore-area communities in the region, providing car-free commuting opportunities for residents and workers in the neighborhood and in communities throughout the Baltimore region. The road serves historically disadvantaged communities, as well as Areas of Persistent Poverty that connect to Overlea via transit.

MTA Ridership (Project Area)	
1,400	2021 Daily Average
Source: MTA Office of Planning and Programming	

With the improvements described in the project, the corridor will provide convenient and safe access to transportation choices, improving access to job opportunities locally and regionally including Baltimore's Central Business District and Johns Hopkins University Hospital.

The transit turnaround at US 1 and Overlea Ave has served the community since 1917 and currently functions as a primary stop, transfer point, and layover location for the CityLink Brown route that provides service south toward downtown Baltimore and north to White Marsh. The station loop also provides access to LocalLink 33, LocalLink 36, and Express BusLink 115. A focal point in the community, the station serves over 1,000 riders daily, and ridership in this location is already higher than pre-pandemic levels. The station structure was replaced in 1999, and this project will upgrade the

surrounding pedestrian infrastructure to ADA compliance, add streetscape furnishings, and install decorative paving. The project team will continue to coordinate with the MDOT MTA for the planning and design of the improvements.

Transit along US 1 and connecting to other routes along this corridor provides a crucial connection from communities throughout the region to and from downtown Baltimore to essential services, jobs, and amenities. However, there may be more potential transit users who do not currently use transit due to the poor condition of the pedestrian infrastructure in this stretch of US 1, which limits their mobility unless they become automobile owners.

> *"The US 1 Overlea Community Safety Improvement Project will effectively mitigate these challenges, improving transit access for pedestrians and reducing travel delays for passengers riding transit to, from, and through the corridor. Therefore, the MDOT MTA fully supports this effort and looks forward to partnering in its implementation."* **MDOT MTA Administrator, Holly Arnold**

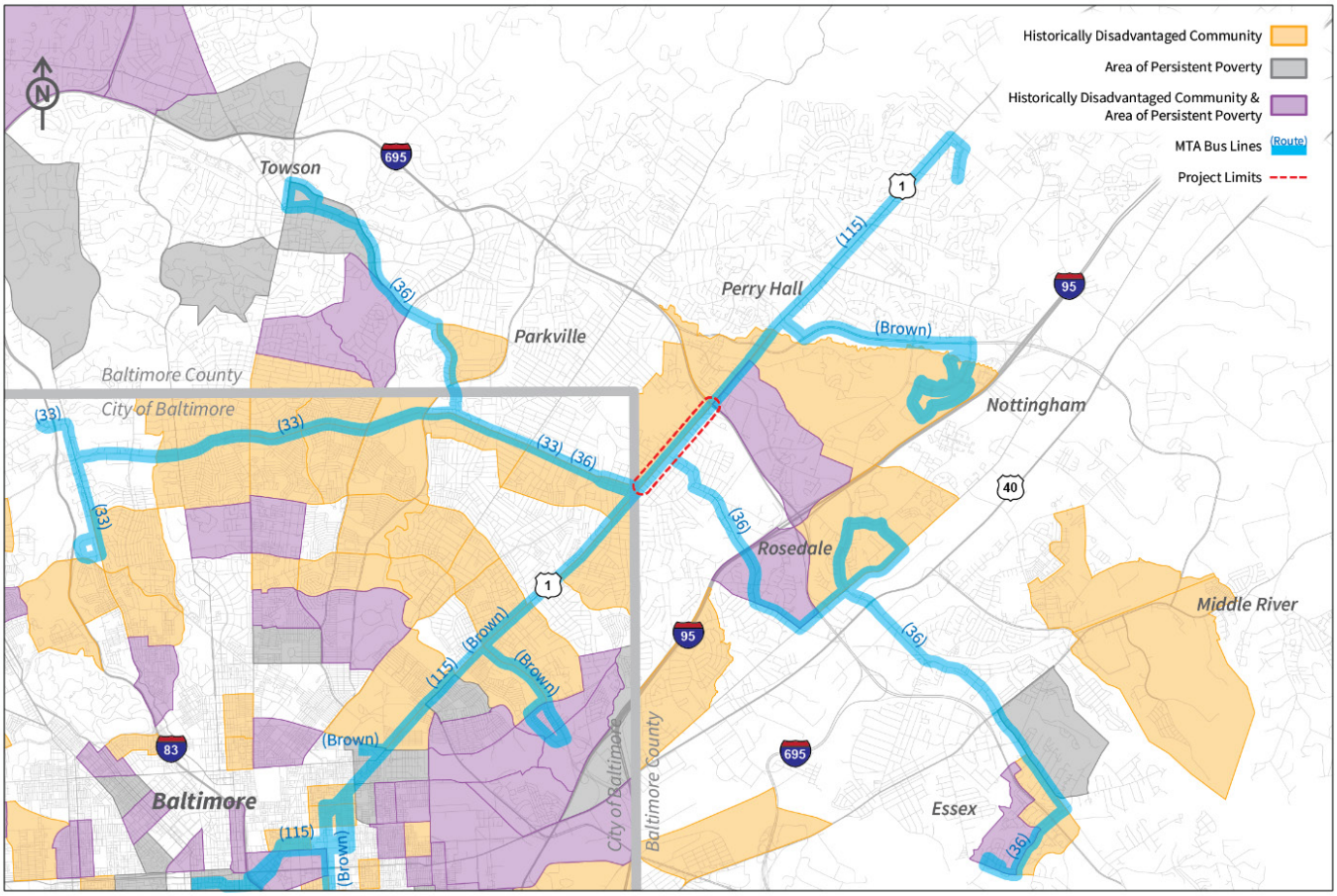


Figure 16. Map of Transit Routes and Communities Served, including Historically Disadvantaged Communities and Areas of Persistent Poverty

Figure 17. Bus Passengers at the Busy Overlea Bus Station Loop

Improving mobility both within and beyond the Overlea community itself is a significant goal of the US 1 Overlea Community Safety Improvement Project. The improvements will be transformational for residents of the region who rely on public transportation, walking, and other non-motorized forms of travel.

4.5 Economic Competitiveness and Opportunity

4.5.1 Improvements to Traffic and Pedestrian Flow

A key element of the *US 1 Overlea Community Safety Improvement Project* is safer automobile and pedestrian flow. The project improvements to roadway design include four new left-turn bays at four signalized intersections where three of the intersections currently have zero left-turn bays. These roadway design improvements show overall LOS improvements to peak time traffic flow, according to a 2013 Traffic Operational Analysis, which is included as an appendix. Improving overall traffic flow on US 1 has significant

> "This proposal has the potential to be massive for making Route 1 corridor a major economic engine and hub for regional tourism. Route 1 in Overlea is home to the Natural History Museum of Maryland, who is in the process of expanding their operation. It is my belief that major upgrades to Route 1 would have an immense impact on making that a reality."
> Baltimore County Councilwoman Cathy Bevins

economic impacts including decreasing transportation costs and improving travel time reliability. Decreased traffic congestion through these project improvements can result in fewer auto accidents, decreasing transportation costs and improving travel time reliability. Additionally, enhancements such as ADA-compliant pedestrian ramps, signalized audible crosswalks, and pedestrian islands increase travel time reliability for pedestrians and automobiles, reducing the potential for accidents. These enhancements are discussed in detail in Section 4.1, Safety.

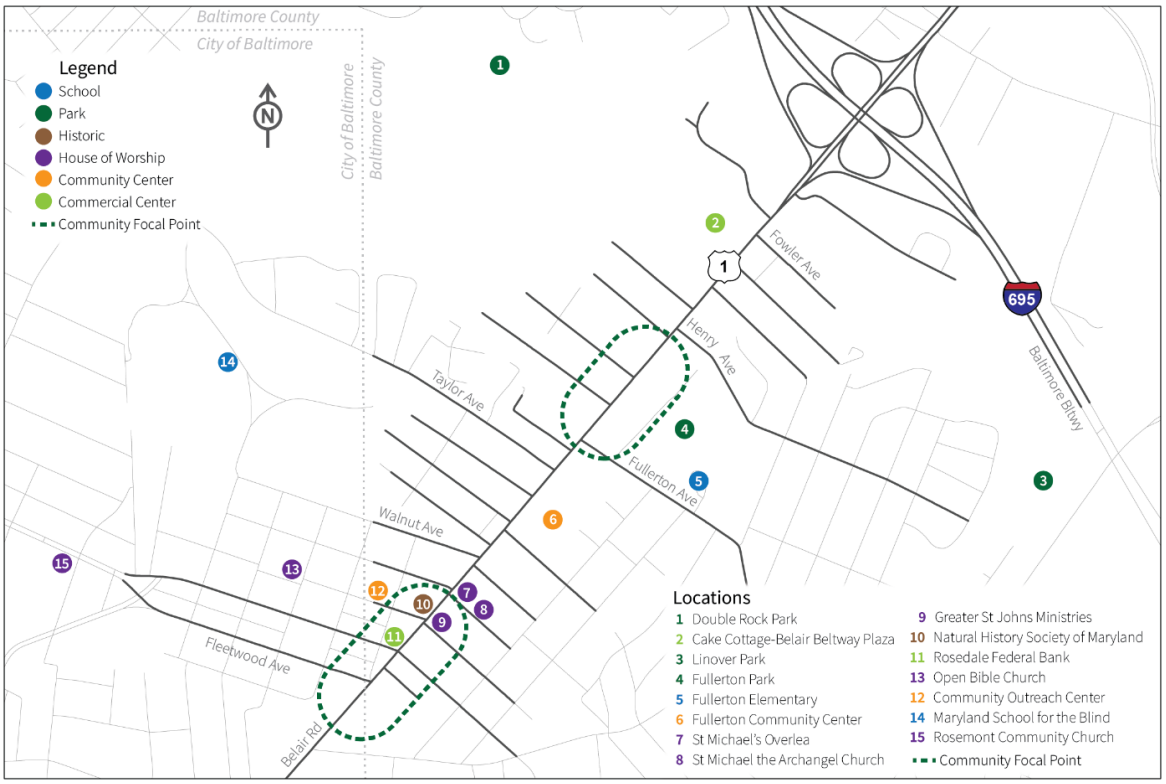


Figure 18. Businesses, Houses of Worship, and Other Community Amenities

4.5.2 Economic Value of Walkability

The current walkability situation in the project area along US 1 is unique. As discussed in previous sections, the pedestrian experience in the project area is poor and unsafe. However, the neighborhood has strong potential with an active community presence and a strong business community as well as tourism opportunities due to the nature museum, parks, and other attractive sites in the area.

Belair Road Economic Potential	
39,000	Households
585	Businesses
2,300	Jobs
370M	Retail Leakage

Source: Belair Road Comprehensive Real Estate and Economic Development Assessment 2014

The Urban Land Institute (ULI) Technical Advisory Panel (TAP) study in 2013 previously discussed in earlier sections, considers US 1 in Overlea a strong retail trade area with 39,000 households, 585 businesses, and 2,300 jobs. The households in the Overlea/Fullerton neighborhoods spend

$16,370 per year which is above the Baltimore City average of $13,724 and below the national average of $20,500. The market study conducted from the ULI TAP shows households are spending significantly on goods and services outside of the neighborhood indicating an annual retail leakage of $370 million. The market study presents a major opportunity to capture lost market value within the study area. Strategies to capitalize on this opportunity include leveraging public investment to pedestrian infrastructure that encourages walkability and facilitates safe, easy access to commercial and residential land uses.

4.6 State of Good Repair

4.6.1 Restoring and Modernizing Core Infrastructure

The US 1 Overlea Community Safety Improvement Project improves the condition and safety of multiple elements of US 1. If left unimproved, primary infrastructure will continue to deteriorate, increasing travel time delays and threatening the efficient mobility of goods and people, overall quality of life, and economic growth. The existing condition contributes to significant travel delays and unnecessary congestion leading to a corridor that has 40% more accidents than the average for the state.

In 2018 an average of 46,000 vehicles passed through this portion of US 1. The US 1 Overlea Community Safety Improvement Project upgrades critical automobile and pedestrian infrastructure to a state of good repair. Note that some of the pictures reflect the ongoing county project water line construction, which clears the way for this project.

Figure 19. Sidewalks along US 1 in the Project Area in a State of Disrepair

4.6.2 Upgrading Aging Infrastructure and Addressing Projected Vulnerabilities

The original construction of Belair Road dates to the early 1900s, when US 1 was the primary transportation route for travelers bringing agricultural goods to market in the Baltimore Central Business District. The roadway was resurfaced in 1972, 1988, and 2004 and is scheduled for biannual resurfacing. There is a quarter-mile portion of the roadway in the project area that has not been resurfaced since 1995. The roadway structure has deteriorated, and the current maintenance schedule does not improve the overall condition of the roadway due to underlying vulnerabilities. Roadway improvements from the US 1 Overlea Community Safety Improvement Project aim to improve the overall condition with new pavement beyond the current maintenance schedule. As part of the long-term maintenance for the project, the roadway is designed to ensure an estimated 15 years of functional service life for the pavement section and is resurfaced biannually.

The existing drainage system is aging and requires modernization and repair. The existing drainage inlets are designed for a 2-year storm event, and when flooding occurs it is exacerbated by the number of impervious surfaces surrounding the inlets. Additionally, intersecting roadways bring offsite stormwater to the system, exceeding the capacity of the existing drainage system. Recently, a cast iron waterline pipe dating back to 1923 was replaced in 2021. Additional detail is provided in the 2014 Drainage Report attached as an appendix.

This community safety project proposes to construct a new drainage system throughout the corridor and install new and additional inlets to capture runoff from offsite areas and improve inlet spacing for better spread and efficiency. The deteriorated condition of all facilities throughout this section of US 1 results in frequent need for maintenance. Poor drainage and freeze-thaw conditions along the corridor often cause damage to sidewalks and the roadway. This project would greatly help reduce maintenance costs for MDOT SHA, other stakeholders, and taxpayers for many decades to come.

4.7 Partnerships and Collaboration

4.7.1 Community Involvement and Collaboration

The *US 1 Overlea Community Safety Improvement Project* incorporates extensive and robust public collaboration and is a prime example of grassroots community-led planning. The project was initiated by neighborhood and community leaders in 2005 witnessing and experiencing the deterioration of the US 1 commercial corridor. The community leaders petitioned the creation of a plan to the County Council and Planning Office, envisioning a brighter future for the community. In collaboration with the Baltimore County Office of Planning the Overlea/Fullerton Community Plan was published in 2009 and the US 1 Overlea Community Safety Improvement Project is a special initiative under this plan.

The US 1 Overlea Community Safety Improvement Project planning process ran concurrently with the Community Plan leading to a thorough understanding of the importance of US 1 to the community. The US 1 Overlea Community Safety Improvement Project vision and goals are aligned with the Baltimore County Master Plan 2010 ensuring project goals benefit the local neighborhoods and region. The Citizen Advisory Committee created through these planning efforts became an integral part of the community's vision and direction.

> "Investing in the US 1 Overlea Community safety Improvement Project is long overdue and cannot move forward without strong collaboration between local, state, and federal governments. Providing funding for this effort would go a long way toward strengthening our local communities and businesses, while finally providing equitability mandated by the ADA". **Baltimore County Councilwoman Cathy Bevins**

During the planning and design phase of the project during the years of 2006 and 2007 the MDOT SHA held five formal public meetings and three informal meetings ensuring neighborhood involvement and public participation. The project's citizen advisory committee evolved into a project task force with direct involvement in developing concept designs and providing consultation to neighborhood, and business associations, elected officials, and individual stakeholders. The Overlea Community Safety and Enhancement Project Task Force advertised public meetings and project updates in the neighborhood newsletter to consistently inform citizens and allow the opportunity for additional community members to get involved in the planning process.

The US 1 Overlea Community Safety Improvement Project is a unique project improving a high-priority commercial corridor serving historically disadvantaged communities. The project has several published studies from community organizations, non-profit groups, and government agencies to realize the vision created in 2006. The extensive partnerships and collaborations over that time have led to an in-depth understanding of the primary issues in the project area and the strategies to alleviate these issues. The partnering agencies include ULI, the Overlea/Fullerton community organization, Gardenville/Belair Road Business Associations, HARBEL Community Organization, Baltimore County, the MDOT MTA and the MDOT SHA. The robust collaboration with local, regional, and state partners for this grant application is an example of how this project planning process was collaborative and innovative.

In addition to the robust partnerships throughout the project's history, community leaders of Overlea/Fullerton are critical lynchpin to this project's success. It was the local community organization that first expressed concern to the Baltimore County Council Planning Office, which led to a large collaborative effort with local, regional, and state agencies.

4.7.2 Partnerships

Baltimore County has partnered with MDOT on the US 1 Overlea Community Safety Improvement Project and is providing funding to support the project's success. In 2011, Baltimore City and Baltimore County partnered with the non-profit research group ULI to conduct an analysis of US 1 exploring corridor revitalization and redevelopment opportunities. The ULI panel engaged in public workshops, meeting with a diverse range of community leaders, business owners, and area residents. The workshops included extensive public input, including brainstorming exercises and the panel experts walking the Belair corridor. The ULI panel formulated a framework strategy identifying key nodes and opportunity sites along Belair Road. The ULI panel made several findings and recommended further research studies including comprehensive market and economic analyses in their report, Revitalizing the Belair Road Corridor (2011), attached as an appendix. The ULI TAP spurred additional community engagement and partnerships in efforts to strategically make a difference on US 1 in the project area. The subsequent market and economic analysis studies engaged new partnerships with local nonprofits and community organizations while engaging the active community organizations in the Overlea/Fullerton neighborhood.

MDOT DBE Goals	
Typical DBE Goals, Community Enhancement Projects	**12% to 25%**
FFYs 2022 through 2024 Proposed DBE Participation Goals for SHA	**26.39 %**
MDOT-Planning Overall DBE Goals for FFYs 2022-2024 DBE Participation Goals	**26.2%**

DBE = Disadvantaged Business Enterprise

Source: MDOT MBE/DBE Program

The Partnership process for the US 1 Overlea Community Safety Improvement Project includes state and local governments, public, elected officials, and private entities. The partnership agreement signed in 2014 (attached as an appendix) outlined the project scope and schedule and expectation with accommodating goals of the participating agencies. Government agencies involved are the MDOT SHA, the MDOT MTA, the Baltimore County Department of Public Works, and the Baltimore City Department of Transportation. The partnership agreement set milestones for ROW plat issuances and acquisitions in 2015 and 2016 with a bid opening in April 2018.

In addition, MDOT partners with DBEs to deliver projects like the US 1 Overlea Community Safety Improvement project. MDOT SHA looks at each contract individually based on the exact contract bid

items, quantities, etc. and then compares that information to the available DBE subcontractors in the geographic area of the state for each bid item. This information is used along with other factors to determine the DBE goal for each specific contract. Recent community enhancement contracts have yielded DBE goals in the range of 12% to 25%. Because Overlea is in Baltimore County, MDOT SHA anticipates that the DBE goal for this contract will likely be on the higher end of that range.

4.8 Innovation

4.8.1 Incorporating Innovative Technology to Improve Accessibility and Adapt to Climate Change

The *US 1 Overlea Community Safety Improvement Project* will include innovative technology to further project goals whenever possible. A driving force of the project includes the lack of pedestrian infrastructure and the conflicts and barriers pedestrians face using the existing sidewalk and crosswalk. The project proposes about 14 audible crosswalk signs and the project team is considering adaptive crosswalk technology that gathers data to improve pedestrian travel time at major intersections.

Under the Maryland Zero Emission Vehicle Infrastructure Plan, the US 1 corridor, including the project area, is designated as an alternative fuel corridor with infrastructure ready for electric vehicle charging stations. Electric vehicles and charging infrastructure are critical to local and national climate change mitigation strategies. Establishing alternative fuel corridors with infrastructure ready to adapt to this technology is critical to swift implementation. The Federal Highway Administrations is establishing a national network of alternative fueling and charging infrastructure along priority corridors which US 1 and Interstates 695 and 95 are a part of. The national network provides an opportunity for a formal corridor designation annually while encouraging collaboration locally, regionally and with alternative fuel providers enabling quick adoption. By upgrading the roadway and pedestrian facilities, this project will lay the groundwork for the installation of electric vehicle infrastructure.

In addition, as part of the project improvements to stormwater management, three micro-bioretention facilities are being proposed. These facilities are intended to retain and treat stormwater. Together the three facilities will provide treatment for a total of 1.35 acres of impervious area, resulting in a project water quality credit of 0.45 acre within the Patapsco River watershed. These facilities will also provide a total recharge volume of 1,075 cubic feet of storage reservoir volume beneath the inverts of the subdrains, exceeding the required total of 112 cubic feet. In addition to contributing to the resilience of the new infrastructure under today's conditions, the facilities will be especially important given the increase in flood risk due to climate change. The potential bioretention facilities are discussed in the 2016 stormwater management report attached as an appendix.

5 | Project Readiness: Environmental Risk

The US 1 Overlea Community Safety Improvement Project has a strong history of establishing working relationships across government agencies and the community as well as with consultants who can deliver the project. Local jurisdictions are extremely familiar with the project scope as analyses and designs were completed during the initial planning process. The established relationships and project familiarity will play a significant role in expediting the implementation process.

The MDOT SHA is responsible for numerous capital transportation projects annually. For example, the MDOT Consolidated Transportation Program currently allocates the MDOT SHA over $250 million dollars to their Major Construction Program for FY22 alone. Capital Transportation projects that include federal funding like the US 1 Overlea Community Safety Improvement Project are standard for the agency.

In January 2021, Baltimore County began replacing an approximately one-mile stretch of the water line on Belair Road between the Baltimore City line and Fowler Avenue. The $6.5 million project will replace an old, 12-inch diameter, cast iron pipe dating from 1923 with a larger, 24-inch diameter line. The older pipe has been prone to frequent breaks. The new line should be completed in the next month and will improve the reliability of the system along the US 1 corridor. This new water line infrastructure clears the way for the utility relocation and road infrastructure improvements that are part of this project, significantly reducing any risks in the timeline for this project.

5.1 Project Schedule

Table 4. US 1 Overlea Community Safety Improvement Project Schedule

Milestone	Approx. Duration	Start Date	End Date	Notes
Grant awarded		August 2022		
Project restart and review process	4 months	October 2022	December 2022	Assumed start date
Design updates, traffic analyses, permit applications, develop plats	9 months	December 2022	September 2023	
65% design reevaluation			September 2023	
Design updates, request final permits, NEPA reevaluation	9 months	September 2023	June 2024	
90% design milestone			June 2024	
Final design updates	4 months	June 2024	October 2024	
Utility relocation design	8-10 months	September 2023	Summer 2024	
Plats + ROW acquisition process	1+ year	Summer 2024	Fall 2025	Starts after 65% design milestone Assumes prioritizing utility ROW
Utilities relocation	3+ years	Fall 2025	Summer 2028	94 utility poles with multiple owners need to be relocated
Receive final permits			Spring 2028	
Assemble construction documents	3 months	July 2026	Spring 2028	
Advertisement			Summer 2028	
Notice to proceed			Summer 2028	Dependent on utility relocation completion date
Construction	3-4 years	Summer 2028	Mid-2031	

5.2 Required Approvals

The US 1 Overlea Community Safety Improvement Project has garnered support from constituents and affected parties. More than a dozen letters of support from community organizations, businesses, and elected officials are included with this application.

The project is consistent with to the Baltimore County Comprehensive Plan and Baltimore Region Transportation Improvement Program and State Transportation Improvement Program.

The project was approved by the Federal Highway Administration for a PCE. This approval is consistent with the 2012 Programmatic Agreement and shows no significant environmental impacts, exempting this project from National Environmental Policy Act and Maryland Environmental Policy Act. The PCE is included with this application in Appendix D: Technical Documents.

The project requires a minimal amount of ROW and will not displace residences or business along the project area corridor. The ROW acquisition will not have a substantial impact on land use and property values within the project area. MDOT SHA intends to complete a comprehensive ROW acquisition process that includes public participation, coordination with affected properties, and a compensation plan.

Table 5. Assessment of Project Risks and Mitigation Strategies

Project Risks	Mitigation Strategy
Project Restart and Review Delays	MDOT SHA has maintained consistent partnerships from project initiation, keeping key parties and stakeholders informed and limiting the potential for a project restart delay.
Delay in ROW Process	Relationships with affected property owners and the community has been consistent and robust since project initiation.
Permitting Process Delays	MDOT SHA has a strong relationship with Baltimore County and has transparent communications regarding ongoing projects.
Utilities Design and relocation	Establish design alternatives for various scenarios in which utilities can be safely located while clearing the sidewalk.

6 | Benefit-Cost Analysis

A benefit-cost analysis was conducted for the US 1 Overlea Community Safety Improvement Project for submission to U.S. DOT as a requirement of a discretionary grant application for the 2022 RAISE program. The complete benefit-cost analysis technical memorandum is attached to this application as Appendix A.

The analysis was conducted in accordance with the benefit-cost methodology as outlined by the U.S. DOT in the Benefit-Cost Analysis Guidance for Discretionary Grant Programs, revised in March 2022. The period of analysis corresponds to 28 years and includes eight years of design and construction and 20 years of benefits after operations begin in 2032.

The benefits of the US 1 Overlea Community Safety Improvement Project comprise of ADA accessibility, implementation of operational safety improvements (to address higher than statewide average crash rates), and replacement/repair of aged roadway infrastructure. The following benefits were considered:

- **Sidewalk Widening and Utility Relocation**: A major aspect of the Corridor Improvement Project it to provide pedestrians with an ADA compliant and safe means of traveling through the area. Using the U.S. DOT Benefit-Cost Analysis Guidance for 2022, a Demand and Benefit model was developed in order to understand the benefits to pedestrians by widening the sidewalks along the corridor, to a uniform width of five feet.
- **Installation of Signalized Crossings Along Corridor**: As per the intended design, five intersections along the corridor will receive new signalized crossings. The installation of these signal provides a safety benefit to pedestrians of the area in the sum of $0.46 per signal per person-mile. The reconfiguration of these five intersection geometries and the installation of traffic signals will also benefit drivers by providing safer travel along the corridor.
- **Health Benefits:** Due to the high rate of accidents, the narrowness of the available pathways and the disrepair of the area along the corridor, pedestrian traffic has been in a steady decline over the years. Using RAISE Grant Benefit-Cost Analysis Guidance for 2022 and projected pedestrian data at completion of the project, provided by MDOT, the health benefits associated with active transportation mode has been determined.

Table 6. Summary of Benefits and Costs

Benefits and Costs	Net Present Value
Benefits	
Sidewalk Extension	$ 253,458
Signalized Crossing	$ 1,943,176
Mortality Reduction due to Walking	$ 4,729,639
Fatality Crash Reduction	$ 11,234,020
Injury Crash Reduction	$ 10,762,072
PDO Crash Reduction	$ 280,500
Residual Assets	$ 2,340,080
Total Benefits	**$ 31,542,945**
Costs	
Preliminary Engineering	($ 1,408,910)
Utility Relocation Design	($ 1,310,069)
ROW Acquisition	($ 3,852,124)
Utility Relocation	($ 5,871,683)
Corridor Improvements	($ 15,132,673)
Total Costs	**($ 27,575,459)**
Net Benefits	**$ 3,967,485**
Benefit/Cost Ratio	**1.14**

* 2020 base year and 7 percent real discount rate

- **Residual Benefits:** Residual value is the estimated value of the project at the end of the study period and represents a depreciated value of the assets that are expected to continue to provide benefits after the end of the study period. Residual value is estimated based on U.S. DOT 2020 Benefit-Cost Analysis Guidance (Project Study Period / Project Life * Capital Costs). A 35-year project life is assumed and the project study period is 20 years.
- These benefits are quantified and Table 6 provides a summary of the benefits and costs for the project. Capital costs for the project are estimated to be $47,587,00. It is estimated that construction will start in 2023 and finish in 2031. Based on this construction schedule, the net present value for the capital costs is estimated to be $27,575,459. At a 7 percent real discount rate, the benefit-cost ratio is 1.14 and the estimate net benefits is $3.97 Million.

Appendices

Appendix A: Benefit-Cost Analysis Technical Memorandum

Appendix B: Benefit-Cost Analysis Spreadsheets

Appendix C: Letters of Support

The following letters of support are included:

- Maryland Delegation including members of the US Senate and members of congress
- Governor Larry Hogan, State of Maryland
- State Senator Kathrine Klausmeier representing District 8 in Baltimore County
- The Maryland General Assembly
- Councilwoman Cathy Bevins representing the Sixth District in Baltimore County
- Maryland Transit Administration
- Baltimore Regional Transportation Board
- Maryland Transportation Commission
- AAA Club Alliance, AAA Mid-Atlantic
- Elmwood Belmar-Park Community Association
- President, Linover Improvement Association
- Overlea Community Association
- Maryland School for the Blind
- The Natural History Society of Maryland
- Raymond Geddes & Company
- Rosedale Federal Savings & Loan
- Board of Directors, Linover Improvement Association
- Lifelong Overlea Resident Caitlin Klimm-Kellner

Appendix D: Technical Documents

Programmatic Categorical Exclusion (PCE) (2015)

Traffic Operational Analysis (2013)

Drainage Report (2014)

Site Development Stormwater Management Report (2016)

Urban Land Institute Technical Advisory Panel, *Revitalizing the Belair Road Corridor* (2011)

Partnering Agreement (2014)

Appendix E: Financial Documents

Funding Commitment Letters

Construction Budget Table

Utilities Budget Table

Right of Way Budget Table