Basic Project Information	
What is the Project Name?	Connecting Erie's Waterfront
	Bayfront Parkway Mobility and Freight
	Improvement Program
Who is the Project Sponsor?	Pennsylvania Department of Transportation
	(PennDOT)
Was an INFRA application for this project submitted	No
previously? (If Yes, please include title)	
Durainet Conto	¢cc 501 200
	\$66,501,206
INFRA Request Amount	\$27,601,206
Estimated Federal funding (excl. INFRA),	\$12,300,000
anticipated to be used in INFRA funded future	
Estimated non-Federal funding anticipated to be	\$20,000,000
used in INFRA funded future project.	
Future Eligible Project Cost (Sum of previous three	\$59,901,206
rows)	
Previously incurred project costs (if applicable)	\$6,600,000
Total Project Cost (Sum of 'previous incurred' and 'future eligible')	\$66,501,206
Are matching funds restricted to a specific project	The \$5,000,000 2020-2022 State Multimodal
component? If so, which one?	Funds committed by PennDOT is restricted to CSX
	rail track relocation purposes.
Project Eligibility	The project falls into the following categories:
To be eligible, all future eligible project costs must	 Highway or bridge projects carried out on
fall into at least one of the following four	the National Highway System (NHS);
categories:	Railway-highway grade crossing or grade
	separation projects; and
	A freight project that within the
	boundaries of a public or private freight
Approximately how much of the estimated future	Idli.
eligible project costs will be spent on components	No project component is located on Nin N.
of the project currently located on National	
Highway Freight Network (NHFN)?	
Approximately how much of the action at a first of	¢45,007,810
Approximately now much of the estimated future	\$45,907,819
of the project currently located on the National	
Highway System (NHS)?	

Basic Project Information	
Approximately how much of the estimated future eligible project costs will be spent on components constituting railway-highway grade crossing or grade separation projects?	\$57,587,113
Approximately how much of the estimated future eligible project costs will be spent on components constituting intermodal or freight rail projects, or freight projects within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	\$6,676,519
Project Location	Bayfront Pkwy, Erie, Pennsylvania
State(s) in which project is located	Pennsylvania
Small or large project	Small
Urbanized Area in which project is located, if applicable	Erie
Population of Urbanized Area (According to 2010 Census)	196,611
Is the project located (entirely or partially) in an Opportunity Zone?	Yes, entirely.
 Is the project currently programmed in the: TIP STIP MPO Long Range Transportation Plan State Long Range Transportation Plan State Freight Plan? 	Yes. • TIP • STIP • Erie LRTP



Connecting Erie's Waterfront

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ACTIVITY INTO SAL

Bayfront Parkway Mobility and Freight Improvement Program

Funding Opportunity Number NSFHP-20-INFRA20 Significant Freight And Highway Projects (INFRA) Transportation Discretionary Grant - FY2020 CDFA Number: 20.934 National Significant Freight And Highway Projects

> Type of Application: Capital Location: City of Erie, Pennsylvania INFRA Area Type: Rural Amount Requested: \$27.6 million

15 01915

Pennsylvania Department of Transportation District 1 225 Elm Street Oil City, PA 16301

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EXECUTIVE SUMMARY

The *Connecting Erie's Waterfront* project is a small construction project that has the potential to generate massive benefits. Over the past several decades, Erie Pennsylvania has been working hard to overcome the challenges of being economically outpaced by its national counterparts. Located on the south shore of Lake Erie, the City of Erie is the state's fourth-largest city, as well as the largest city in northwestern Pennsylvania. It is situated due north of Pittsburgh, halfway between Buffalo, New York and Cleveland, Ohio. Despite its strategic location, it has suffered a great deal of economic strife compared to the whole of Erie County and the nation.

After producing many studies and visionary documents over the years, the City discovered that poor connectivity between Downtown Erie and the Lake Erie waterfront was one of the most significant reasons for its longstanding issues. Bayfront Parkway, an important regional corridor (as part of the National Highway System) and freight connection to the National Highway Freight Network (NHFN), bisects both portions of the City with steep elevation changes and limited access points. The *Connecting Erie's Waterfront* project, which is ready to move forward, intends to resolve these issues with strong partnerships and investments.

The *Connecting Erie's Waterfront* project will complement more than \$750 million in private, public, and philanthropic investment in Erie by building new and improved multimodal access between the Downtown District and the Lake Erie waterfront. Bayfront Parkway will be enhanced with newly designed connections that maximize the use of existing infrastructure and landscape.

The Connecting Erie's Waterfront project satisfies INFRA's merit criteria by:

- Improving the area's economic vitality through expanding its capacity to support increased production and movement of goods and services;
- Leveraging federal funding to spur non-federal investment;
- Exploring innovative project delivery; and
- Implementing accountability and performance measures to ensure on-time delivery and the project's intended outcomes related to travel-time savings.

The project will also produce a positive return on investment by:

- Improving freight connectivity between the City of Erie (which includes the Port of Erie) and the surrounding region.
- Increasing connectivity between Downtown Erie and the Lake Erie waterfront;
- Smoothing traffic flow to improve safety for all travelers; and
- Reinforcing the ongoing economic revitalization of the City.

The overall project is technically feasible and is within the normal scope of work that PennDOT performs daily across its 40,500 miles of state-owned roadways.

PROJECT TYPE

This narrative is for a Small, Rural (population less than 200,000), Construction project.

PROJECT DESCRIPTION

The *Connecting Erie's Waterfront* project consists of **reconfiguring three major intersections**, completing a **multi-use trail network**, and constructing a **multimodal bridge**. The three intersections (**Exhibit 1**) are:

- Bayfront Parkway at Sassafras Street Extension;
- Bayfront Parkway at State Street; and
- Bayfront Parkway at Holland Street.

The **Bayfront Parkway at Sassafras Street Extension** intersection will be upgraded to a duallane three-leg roundabout.

The **Bayfront Parkway at State Street** intersection will be upgraded to a grade-separated roadway with a new structure to carry State Street at its current elevation above Bayfront Parkway, which will be lowered. New sidewalks and crosswalks will be added along State Street.

The **Bayfront Parkway at Holland Street** intersection will be upgraded to a dual-lane four-leg roundabout. Sidewalks, crosswalks, and an elevated pedestrian bridge will be added to connect the University of Pittsburgh Medical Center (UPMC) Hamot Hospital's campus and Downtown Erie to the Waterfront District.

A **multi-use trail** connecting all three intersections on the north side of the Bayfront Parkway will be completed to enhance bicycle and pedestrian access within the project area.

Lowering the Bayfront Parkway below State Street requires the **removal of approximately 2,400 feet of <u>railroad tracks</u>** that are currently used by CSX for <u>storing rolling stock</u>. To mitigate the loss of this rail segment and increase operational benefits for CSX, a **multimodal bridge** will replace an existing at-grade crossing to the east, adjacent to the historic Pennsylvania Soldiers' and Sailors' Home (PSSH) property (**Exhibit 2**). Removing the existing at-grade crossing and constructing the bridge will make way for:

- An extension to the existing CSX rail yard, farther east of its current endpoint;
- Safety improvements for residents of Pennsylvania Soldiers' and Sailors' Home (PSSH) and visitors to the Commonwealth-owned Veterans Memorial Cemetery (the Commonwealth's only state-owned veterans' cemetery); and
- The improvements planned for the **Bayfront Parkway at State Street** intersection.



Exhibit 1. Roadway Improvements: Intersection Reconfigurations

Exhibit 2. Multimodal Bridge Improvement



Challenges the Project Will Address

The *Connecting Erie's Waterfront* project will address **Mobility and Connectivity Issues** within Erie and the region, mitigate **Safety Issues** between vehicle traffic and pedestrians, and reduce **Operations and Efficiency Issues** that cause traffic and freight delays. Below is a summary of the existing challenges that have been identified by the project's stakeholders during the public involvement process:

Mobility and Connectivity Issues

- Disconnected public and private assets:
 - In general, the majority of Downtown Erie is about 620-650 feet above sea level, while the adjacent Bayfront District to the north, starting at Bayfront Parkway, drops to 550-580 feet above sea level. Due to this abrupt <u>elevation change</u> and limited access to the project area, the Bayfront Parkway acts as a <u>barrier</u> separating the Central Bayfront District from downtown.
 - Neighborhoods adjacent to the Bayfront Parkway and along each project intersection lack sufficient access to the project area.
- Lack of north-south connections:
 - Waterfront business owners and developers interested in increasing economic activity have urged the City of Erie to address the lack of north-south connections to help them leverage waterfront property.
 - Bicycle and pedestrian connections between these two areas are scarce.
 - Transit access is limited along the Bayfront Parkway corridor: Investments in the <u>Erie Intermodal Center</u> on the Bayfront could be maximized with improved connectivity to Downtown Erie.

Safety Issues

- The crash rate on Bayfront Parkway is much higher than the crash rate for the City of Erie as a whole.
- Traffic hinders access to <u>UPMC Hamot Hospital</u> for employees and emergency vehicles.
- There is a lack of consistent bicycle and pedestrian facilities along, or parallel to, Bayfront Parkway, compromising safety for non-motorized transportation users.
- Red-light violations tend to increase on Bayfront Parkway during peak hours.
- Higher vehicle speeds near intersections make it unsafe for other users to cross the street.
- The <u>public increasingly perceives Bayfront Parkway as an unsafe corridor</u> to walk or bike.

Freight-Related Issues

• The Port attracts large freight ships at the industrial port and <u>Donjon Ship Building and</u> <u>Repair</u> brings huge freighters for repair at its facility just east of the Port Authority offices. Over the past five years, total tons of shipments at the Port of Erie have increased 14.5 percent (2.7 percent¹ per year).

• Because of increased freight volumes, the City of Erie and the Commonwealth of Pennsylvania have committed funds for improvement projects at the Port of Erie (e.g., Donjon Shipbuilding and Repair). Such improvements are also likely to further increase port shipments and land freight traffic; Bayfront Parkway will not be able to accommodate increased freight traffic along with passenger vehicles.

Operations and Efficiency Issues

- The traffic signal system throughout Downtown Erie and along Bayfront Parkway lacks the technology for synchronization.
- The signals at the intersection of **Bayfront Parkway and State Street** as well as the intersection of **Bayfront Parkway and Holland Street** have left-turn lanes along Bayfront Parkway; however, they do not have separate signal phases for left-turn movements, leading to backups during peak hours.
- Traffic delays are already significant on the corridor; future economic development initiatives will likely increase the traffic volume, worsening traffic flow.

How the Project will Address the Challenges

Businesses along the Bayfront Parkway and users of the corridor have cited these issues to point out a greater need; the City of Erie must transform this regional corridor to sustain future growth and activity within the region. *Connecting Erie's Waterfront* will replace three existing intersections with roundabouts, utilize grade separation to reduce unsafe conflict points, and improve traffic operations to increase mobility and accessibility into Erie's growing economic hub. The project proposes the following methods for addressing the existing challenges:

Mobility and Connectivity Improvements

- Replacing traffic signals with roundabouts will improve traffic flow for vehicles traveling in all directions.
- The underpass lanes at **Bayfront Parkway and State Street** intersection will improve the flow of through traffic on the Bayfront Parkway by eliminating idling time.
- The proposed multimodal trails north of the Bayfront Parkway will provide better linkages for bicyclists and pedestrians passing through the waterfront area.
- With the proposed pedestrian bridge at Bayfront Parkway, the Downtown Business Opportunity Zone and waterfront Erie Intermodal Transportation Center will become more accessible and more connected with each other for all transportation users.

Safety Improvements

- Roundabouts will help reduce traffic speeds throughout the project area.
- At the **Bayfront Parkway and State Street** intersection:

¹ This number is the Compound Annual Growth Rate (CAGR).

- The lowering of Bayfront Parkway will eliminate cross-traffic crashes with vehicles traveling on State Street.
- Improved sidewalks and crosswalks will reduce vehicle crashes with bicyclists and pedestrians.
- Construction of a pedestrian bridge over the **Bayfront Parkway and Holland Street** Intersection will eliminate bicycle and pedestrian interactions with roadway traffic on Bayfront Parkway.

Freight-Related Improvements

• The project will increase port access, roadway capacity, and mobility along Bayfront Parkway—an important regional corridor (as part of the National Highway System) and connection to the National Highway Freight Network.

Operations and Efficiency Improvements

- Roundabouts will allow higher volumes of traffic to move throughout the project area more efficiently.
- Eliminating Bayfront Parkway's through traffic signals at all three intersections will improve traffic flow.
- Building the multimodal bridge and removing the existing at-grade driveway will help CSX and PennDOT extend an existing railyard east, thereby mitigating the removal of approximately 2,400 feet of railroad track.

Project History

Erie's desired future is very much built upon its past. Over the years, Erie developed a series of comprehensive plans in an effort to revitalize its stalled economy, aging infrastructure, and shifting population. These plans aimed to bridge gaps in the city's demographics and economic development scene and bring renewed interest and socioeconomic balance to the area. The 2014 plan provided a decision-making framework to guide investments to achieve two significant outcomes:

- 1. Stabilizing prices and rents by bringing supply and demand for private real estate and supportive infrastructure into equilibrium.
- 2. Transforming Erie into a community of choice in the region by improving the quality and appeal of its remaining real estate supply and by taking advantage of the city's outstanding assets—making the city's housing, streets, parks, and economic opportunities highly desirable.

The *Connecting Erie's Waterfront* project fulfills a vital part of this vision by connecting previous enhancements with the area that saw Erie's first steps toward widespread redevelopment since its peak in the 1960s.

Description of Previously Completed Components

Both the Bayfront and Downtown Erie areas have been the focus of numerous studies over the past two decades. Many of the recommendations have been constructed; others have yet to be realized. The following studies have guided the development of the current project:

- <u>*Waterfront Comprehensive Plan*</u> Erie, Pennsylvania, City of Erie, May 1986
- <u>Toward an Economic Development Strategy for Erie</u> (Bosworth Report) Economic Development Corporation of Erie County (EDCEC), October 2001
- <u>Erie Downtown Master Plan</u> Erie Redevelopment Authority and the City of Erie, 2005
- <u>Erie Parking and Transit Study</u> June 2008
- <u>Erie Waterfront Master Plan Summary Report</u> Erie-Western Pennsylvania Port Authority, March 2009
- <u>Completing the Bayfront</u> Bayfront Place Concept Plan Report Erie County Convention Center Authority, April 2012
- <u>Unlocking the Bayfront's Full Potential</u> Destination Erie: A Regional Vision, 2013
- Destination Erie: A Regional Vision Vision Report, October 2013
- Background Analysis: City of Erie Comprehensive Plan City of Erie, 2014
- <u>Erie Refocused: Comprehensive Plan and Community Decision-Making Guide City of</u> <u>Erie, 2016</u>
- Erie Downtown Master Plan Erie Downtown Partnership, 2016
- <u>Bayfront Parkway Study</u>, 2017

Other Transportation Infrastructure Investments being Pursued by the Project Sponsor

A **traffic signal corridor improvement project on SR 5/12th Street** complements the *Connecting Erie's Waterfront* project. This roadway is an east-west corridor that bisects Erie south of the *Connecting Erie's Waterfront* corridor. One project purpose is to improve traffic flow through the corridor's 26 intersections so that 12th Street can be used as an effective east-west alternative route while Bayfront Parkway is under construction. The project is currently in the preliminary engineering phase and proposes to upgrade traffic signals, coordinate signal timings, and possibly eliminate up to six signals.

PROJECT LOCATION

All project maps can be reviewed in detail on the project website.

The *Connecting Erie's Waterfront* project is located on the SR 4034 (Bayfront Parkway) corridor within the City of Erie, in Erie County, Pennsylvania. It is in the heart of several of the City's Opportunity Zones. The City of Erie is situated on I-90 and I-79, due north of Pittsburgh, Pennsylvania, halfway between Buffalo, New York and Cleveland, Ohio. **Exhibit 3** shows the *Connecting Erie's Waterfront* project area in relation to Pennsylvania.



Exhibit 3. Context Map: The City of Erie in Relation to Pennsylvania

While there have been many efforts to study the whole of Bayfront Parkway and land use within the Bayfront District, Erie's Opportunity Zones, and Downtown Erie, the *Connecting Erie's Waterfront* project is limited to a one-half-mile roadway section and a multimodal bridge over CSX-owned right-of-way.

Exhibit 4 shows that the project is central to Erie's business and tourism assets. The project is adjacent to the Port of Erie and the entrance to Presque Isle State Park. Combined, these destinations receive a significant number of visitors each year.





Exhibit 5 through Exhibit 8 show the roadway portions of the project, which begin west of the Sassafras Street Extension intersection and continue through the State Street and Holland Street intersections. To the east of these three intersections, a multimodal bridge (Exhibit 9) will connect the PSSH to Veterans Memorial Cemetery and accommodate the improvements at Bayfront Parkway and State Street.

Exhibit 4. Context Map: Total Project Area







Exhibit 5. Bayfront Parkway at Sassafras Street Extension Intersection Improvement

Exhibit 6. Bayfront Parkway and State Street Intersection Improvement







Exhibit 7. Bayfront Parkway at Holland Street Intersection Improvement

Exhibit 8. PSSH Multimodal Bridge Improvement





PROJECT PARTIES

As shown in **Exhibit 10**, a broad range of stakeholders are collaborating to make the *Connecting Erie's Waterfront* project a reality. In addition to these partners, numerous members of the public have participated in online surveys and public meetings throughout the planning process.

Exhibit 9. Project Partners

Project Partners	Role
Grant Recipient	
Pennsylvania Department of Transportation (PennDOT)	PennDOT is leading the project and is the applicant for the FY 2020 INFRA Discretionary Grant Program.
Key Partners	
City of Erie Erie Convention Center Authority Erie County Erie Insurance Erie-Western PA Port Authority Scott Enterprises UPMC Hamot Hospital Erie Downtown Development Corporation Other Regional and Local Partners of the Plann	Investors and project partners who have participated throughout all or most of the planning process since the project's inception.
Bayfront Eastsido Taskforzo (BEST)	
Bayfront Eastside Taskforce (BEST) Bayfront Project Advisory Committee (PAC) CSX Destination Erie Erie County MPO Erie Downtown Partnership Erie Metropolitan Transit Authority Erie Regional Chamber & Growth Partnership Erie Water Works Our West Bayfront PA Dept of Community and Economic Dev. PSSH	Engaged members who either participated during public outreach phases, current project design, and coordination phases or advocated to shape the future of the project.
PA Dept of Community and Economic Dev. PSSH S.O.N.S. of Lake Erie	

GRANT FUNDS, SOURCES, AND USES OF PROJECT FUNDING

A comprehensive public funding strategy is in place to implement the *Connecting Erie's Waterfront* project. The funding program includes \$38.9 million in state and federal grant assistance. PennDOT is requesting \$27.6 million from this INFRA grant cycle for additional project funding.

Project Costs

The estimated total construction cost eligible for federal funding is \$59.2 million. This includes all project components and related costs such as right-of-way acquisition. A detailed cost estimate is provided on the <u>project website</u>. **Exhibit 11** presents a summary of the estimated project costs (approximately \$59.2 million) and total costs (approximately \$66.5 million). It also includes a \$7.3 million contingency fund. All cost estimates are in 2020 dollars.

Component	Item	Estimated Cost ²	Percentage of Project Costs ³	
CSX Railroad	CSX Railroad Track Relocation and Crossing Upgrades	\$5,000,000	8.4%	
Relocation	Soldiers & Sailors Access Improvements	\$1,676,519	2.8%	
Sassafras Street Extension	Dual-lane Roundabout & Sidewalk Improvement	\$2,314,093	3.9%	
State Street	Grade Separated with Signal	\$21,225,062	35.9%	
Holland Street	Dual-lane Roundabout & Pedestrian Bridge	\$9,025,964	15.3%	
Corridor Construction Costs	Corridor Improvements	\$2,342,700	4.0%	
	Construction Management / Construction Inspection	\$4,000,000	6.8%	
Miscellaneous Costs	Utility Relocation	\$1,000,000	1.7%	
	Right-of-Way Acquisition	\$2,000,000	3.4%	
	Engineering / Design	\$10,600,000	17.9%	
Total w/o contingency	y	\$59,184,338	100%	
Contingency		\$7,316,868		
Total w/ Contingency		\$66,501,206		

Exhibit 10. Estimated Project Costs

Source: MS Consultants, Inc.



² High-level construction cost estimates based on past project experience and subject to change upon more detailed investigations and engineering. Additional construction costs may be incurred with phased construction.

³ Percentages based on total cost w/o contingency. May not sum to 100% due to rounding.

Funding Commitments

PennDOT has allocated \$15 million from the State Appropriations 581 Fund, which provides funding for state highway and capital projects, and \$5 million from State Multimodal Funds, which provides funding for CSX relocation. Additionally, the federal government has allocated \$18.9 million to the project using the Surface Transportation Program (STP) and Railroad Section 130 funding. The STP provides funding for projects to preserve and improve upon the conditions and performance of federally aided projects. The Section 130 program provides funds for eliminating hazards at railway–highway crossings. **Exhibit 12** shows the project's funding plan. **Exhibit 13** lists project expenditures and funding sources.

Exhibit 11. Project Funding Plan by Pl	iase
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Entity	Project Phase	Eligible Costs	Percentage of Total ⁴
PennDOT Commitment			
2020-2022 State Multimodal Funds	Construction	\$5,000,000	7.5%
2022 A-581 Funds	Construction	\$10,000,000	15.0%
2023 A-581 Funds	Construction	\$5,000,000	7.5%
Federal Commitment			
2017 STP Funds ⁵	Preliminary Engineering (PE)	\$2,600,000	3.9%
2019 STP Funds ⁵	PE	\$4,000,000	6.0%
2020 STP Funds	Final Design	\$1,000,000	1.5%
2021 STP Funds	Final Design	\$1,000,000	1.5%
2021 STP Funds	Utilities	\$1,000,000	1.5%
2021 STP Funds	Right-of-Way	\$1,500,000	2.3%
2022 STP Funds	Construction	\$5,500,000	8.3%
2023 STP Funds	Construction	\$1,000,000	1.5%
2022-2024 RRX Section 130 Funds	Construction	\$1,300,000	2.0%
Subtotal Committed Funds		\$38,900,000	58.5%
INFRA Grant		\$27,601,206	41.5%*
Total Project Funding		\$66,501,206	100%

* Percentage values in the SF424C Form are rounded to whole numbers, creating a discrepancy on Line 17 of the Form.

Exhibit 12. Project Costs by Funding Source

Project Component	Cost	Eligible Funding Partners		
		Federal	State	INFRA
CSX Railroad Relocation	\$6,676,519	٠		
Sassafras Street Extension Intersection	\$2,314,093			

⁴ May not sum to 100% due to rounding.

⁵ 2017 and 2019 STP funds has already been released.



State Street Intersection	\$21,225,062	•	•
Holland Street Intersection	\$9,025,964	•	٠
Corridor Construction Costs	\$2,342,700	٠	٠
Miscellaneous Costs	\$17,600,000		٠
Contingency	\$7,316,868		
Total	\$66,501,206		

MERIT CRITERIA

The following sections demonstrate that *Connecting Erie's Waterfront* closely aligns with INFRA merit criteria.

Support for National or Regional Economic Vitality

Erie has always been one of the Great Lakes' best natural harbors, making it a key U.S. port. During its early development, it quickly became an economic hub for northwestern Pennsylvania and neighboring communities in Ohio and New York State. The city's rapid expansion peaked around 1960, after which growth stalled, vacant real estate increased, and development moved away from the downtown core.

In the 1980s, Erie began to develop a series of comprehensive plans that ushered in a new era of regional revitalization. The *Connecting Erie's Waterfront*, which supports national and regional economic vitality by connecting the region's major interstates to the waterfront, is a product of those plans. Erie witnessed new development in its downtown and along the waterfront, as well as an increase in trips generated along Bayfront Parkway, and an increase in freight at the port.

The tourism, healthcare, and manufacturing sectors are represented in the businesses along the waterfront, where many of Erie's anchor destinations are located, such as the Port of Erie, UPMC, and Presque Isle Bay and State Park. These sites, in addition to many others, attract thousands of trips daily. A recent origin-destination (OD) study found that 50 percent of originating and destined State Street trips were to or from Interstate 79 or West 8th Street, which suggests that a significant portion of trips are for work, medical care, or recreation.

As of 2019, Erie County had eight Opportunity Zones (**Exhibit 14**) with a total of 22,561 residents in those zones. State Street bisects two of them, meaning the *Connecting Erie's Waterfront* project will strengthen connections between the two Opportunity Zones. Updating the Bayfront Parkway will increase the capacity of the three study-area intersections to better serve the local market, Opportunity Zones, and downtown assets. More information about the Opportunity Zones in Erie can be reviewed on the project website within the *City of Erie Investment Prospectus*.

New development along the waterfront increases Erie's economic vitality by adding opportunities for employment, tourism, and residential property tax revenue. Updates to the surrounding road infrastructure thus become increasingly critical to keep pace with current and future user demand

along the waterfront. The *Connecting Erie's Waterfront* project will improve the flow of traffic throughout Erie and accommodate the increase in trips generated by new development.

Port of Erie Investments and Freight Traffic

In 2018, Pennsylvania Governor Tom Wolf's administration announced \$2.7 million in new state investments in the Erie Western PA Port Authority, designed to spur economic development through the Port of Erie. This award increases PennDOT's three-year commitment to the Port of Erie to \$11,589,000, including a \$6,737,750 grant award to Donjon Shipbuilding and Repair to upgrade its facilities and expand employment opportunities.



Exhibit 13. Map of Erie Opportunity Zones in Relation to Project Area

The funding will be used for multiple projects which support the maritime economy in northwestern Pennsylvania. Highlighted projects include \$1,600,000 for the reconstruction of the northern seawall on East Dobbins Landing, \$350,000 toward a new mobile crane, and \$90,000 for a road salt pad expansion at the terminal. The most recent investments were made possible through PennDOT's Multimodal Transportation Fund.

Erie plays an important role in the state's commerce and goods movement. The economic impacts generated by marine cargo activity in Erie, including U.S. domestic commerce, Canadian domestic commerce, and international traffic, support 757 jobs. Additionally, the direct business revenue associated with marine activity in Erie exceeds \$63.6 million—including \$49.6 million in direct and indirect wages and generation of state taxes in the amount of \$5.1 million annually, as outlined in the July 2018 Economic Impact Study commissioned by the Erie Western PA Port Authority.

Over the past five years, total tons of shipments at the Port of Erie have increased 14.5 percent (2.7 percent⁶ per year). The improvement projects funded by the City of Erie and the Commonwealth of Pennsylvania will likely further increase port shipments and land freight traffic; Bayfront Parkway will not be able to accommodate increased freight traffic along with passenger vehicles. The *Connecting Erie's Waterfront* project will increase port access, roadway capacity, and mobility along Bayfront Parkway—an important regional corridor (as part of the National Highway System) and connection to the National Highway Freight Network.

More information about the Port of Erie, including its Master Plan and recent economic data supporting the Master Plan, can be reviewed on the <u>Port Downloads website</u>.

Project Benefits in Safety and Travel Time Savings

PennDOT's crash data indicates that the number of crashes along Bayfront Parkway increased by 44.9 percent between 2009 and 2017, in stark contrast to the citywide increase of only two percent. During the same time period, 94 crashes occurred at one of the three project intersections (Sassafras, State, and Holland), resulting in 76 injuries or fatalities.

Connecting Erie's Waterfront will address these safety concerns. The project features two roundabouts, at the intersections of Bayfront Parkway with Sassafras and Holland streets. The FHWA Office of Safety recognizes roundabouts as a proven safety countermeasure because they organize the flow of traffic and reduce speeds. The State Street intersection will be grade-separated, improving traffic flow and safety for travelers on State Street and between the adjacent project intersections. The project's pedestrian overpasses will separate vulnerable roadway users from high-volume automobile traffic, thereby reducing the likelihood of crashes at these locations.

Analysis of safety impacts is included in the Benefit/Cost Analysis (BCA) portion of this application and the supporting data can be found on the *Connecting Erie's Waterfront* project website. Crash reductions were determined based on PennDOT's Crash Facts & Statistics and Crash Modification Factors Clearinghouse, funded by FHWA. Previous studies by PennDOT estimated the total cost in dollars of crashes and injuries of various severities. These costs were applied to Bayfront Parkway data to quantify project benefits (while recognizing that health and life are priceless). The project is expected to eliminate 120 injuries/fatalities and 47 property-damage-only crashes over the 20-year analysis horizon. The monetized benefits of these safety improvements over the same period amount to \$14.8 million, or \$6.0 million in present discounted value terms.

The project will produce travel time savings for vehicles in both the east-west and north-south connections, estimated at 7.5 million hours and a monetized time savings of \$66 million. Together, the improvements will provide connectivity between downtown and the waterfront, produce travel time savings for commuters, and create a safer environment for pedestrians.

⁶ This number is the Compound Annual Growth Rate (CAGR).

Travel time savings will be generated by the enhanced traffic flow throughout the intersections. From 2014 to 2018, traffic volumes increased on average by 697 vehicles during the AM peak (9.2 percent average annual increase) and 532 vehicles during the PM peak (6.3 percent average annual increase). By intersection, traffic volumes increased as follows:

- Sassafras Street Extension: 541 AM peak; 358 PM peak
- State Street: 873 AM peak; 644 PM peak
- Holland Street: 676 AM peak; 593 PM peak

As traffic volumes continue to increase, the Level of Service (LOS) of Bayfront Parkway will inevitably decrease. The worsened congestion will become a bottleneck for visitors, residents, and commuters accessing the waterfront area, the medical center, and other major downtown destinations. *Connecting Erie's Waterfront* relieves such issues and promotes the existing roadway routes by providing a smarter intersection solution with roundabouts and underpass lanes.

Project Benefits for Communities in Rural Areas

Over the years, Erie's comprehensive plans have all produced visions that propose analogous solutions to these growth-related issues. The *Connecting Erie's Waterfront* project is the fulfillment of a critical component of those visions, which is to link the civic, economic, land use, and entertainment opportunities of the waterfront to Downtown Erie and to the rest of the region.

The project's new connections and multimodal focus complement more than \$750 million in private, public, and philanthropic investment in Erie. Together, all components of the project:

- Enhance the connectivity of Erie's eight Opportunity Zones, the Lake Erie waterfront (one of Erie's most significant assets), and surrounding neighborhoods;
- Smooth traffic flow;
- Improve safety for all travelers; and
- Reinforce Downtown Erie's ongoing economic revitalization.

These elements support continued economic growth and increased appeal to businesses and residents.

Leveraging Federal Funding

PennDOT supports the Department's commitment to garner matching funds from its non-federal project partners. *Connecting Erie's Waterfront* is supported by both federal funds and non-federal funds.

The *Connecting Erie's Waterfront* project is a massive undertaking to not only enhance a major roadway but revitalize a city. In order to deliver all the critical components of project, PennDOT needs to allocate an estimated \$59,184,338. This includes the following components:

• Grade separation at State Street;

- A dual-lane roundabout and pedestrian bridge at Holland Street;
- The relocation of CSX rail segments, crossing upgrades, and access improvements;
- A dual-lane roundabout at Sassafras Street Extension;
- Various corridor construction costs; and
- Other miscellaneous (e.g., construction management/inspection, utility relocation, ROW acquisition, engineering/design) costs.

Per PennDOT's project financial plan, the federal funds allocated toward the project (\$12,300,000) are 21 percent of the future eligible project costs. These funds are documented in Erie County Regional Planning Commission MPO's draft 2021 Transportation Improvement Program (TIP) as "STP" (Surface Transportation Program) funds and "RRX" (Railroad Section 130) funds. This amount does not include the \$6.6 million already encumbered as part of the 2017 STP funds and the 2019 STP funds.

The non-federal funds allocated toward the project total 33 percent of the future eligible project costs. PennDOT has allocated \$20 million in State Appropriations 581 Funds (used for state highway and capital projects) and 2020-2022 State Multimodal Funds. In particular, the State Multimodal Funds will be used for the CSX track relocation.

PennDOT requests that the remaining 46 percent (\$27,601,206) in future eligible project costs be funded through an INFRA Grant award to complete the project funding plan.

These investments complement more than \$750 million in private, public, and philanthropic investment in revitalizing Erie. As the *Connecting Erie's Waterfront* project gains more financial support, Erie is seeing more non-federal support coming from its local partners, such as the Erie Downtown Development Corporation, which is planning to invest \$150 million over the next three years into revitalizing large portions of Erie near the project.

Potential for Innovation

Innovative Technologies

No innovative technologies are anticipated for the Connecting Erie's Waterfront project.

Innovative Project Delivery

The Department is exploring the use of design-build as an alternate delivery mode and has extensive experience using it in other projects, such as the <u>Rapid Bridge Replacement public-private-partnership (PPP)</u>. It will enable the Department to reduce risks and overall costs.

Innovative Financing

No innovative financing techniques will be used for the Connecting Erie's Waterfront project.

Performance and Accountability

The *Connecting Erie's Waterfront* project will improve the travel efficiency of Bayfront Parkway by redesigning the segment between east of Holland Street and west of Sassafras Street Extension. The life cycle costs (in the year of expenditure dollar values) are summarized below:

- Design and Right-of-Way \$12.6 million (2020-2021)
- Construction \$53.9 million (2021-2023)
- Operating and Maintenance \$31,942 per year; \$0.64 million total (2024-2043)

Bayfront Parkway is a state-owned roadway maintained by PennDOT. Based on PennDOT's maintenance work order records in the past five years, the average annual roadway maintenance cost along the Bayfront Parkway corridor is \$13,145 per lane-mile. The funding sources include PennDOT's County 582 Appropriation Funds for maintenance (e.g., roadway pavement and painting) and City of Erie funds for operating (e.g., signals). Rebuilding the segment will reduce maintenance costs for several years after the project's completion.

To guarantee the project's accountability, PennDOT, as the project sponsor, **agrees to meet the specific construction start and completion dates** described in the Project Schedule section. The key dates include:

- Project start date October 21, 2018
- NEPA start date October 24, 2018
- Preliminary Engineering Phase start date September 10, 2019
- Right-of-Way Phase start date January 13, 2020
- Construction Phase start date October 11, 2021
- Construction Phase completion date December 29, 2023

Currently, the project is undergoing NEPA Environmental Assessment (EA) and Line and Grade Development for Preliminary Engineering. The EA public hearing is anticipated to be held in May 2020.

In addition, PennDOT has selected **travel time savings** as the performance measure to define project success. According to the Benefit/Cost Analysis, the project is expected to reduce the total daily travel time by 29 percent compared to that of the No-Build scenario. In the first 12 months after completion, the total daily traffic volume on the Bayfront Parkway corridor is projected to be 21,205 and average travel time spent at the three intersections to be 127 seconds per vehicle (compared to the 179 seconds for the No-Build scenario). **This represents 306 hours of total daily travel time savings during weekdays and 91,729 hours per year (assuming six days per week, excluding 12 holidays per year)**.

PROJECT READINESS

Connecting Erie's Waterfront is a long-planned initiative with preliminary phases well underway and construction expected to begin in a timely manner.

Technical Feasibility

The overall project is technically feasible and is within the normal scope of work that PennDOT performs daily across its 40,500 miles of state-owned roadways. Bayfront Parkway consists of two 12-foot travel lanes with 12-foot turning lanes at the project-scoped intersections. The existing pavement structure is 10-inch-thick plain cement concrete pavement with concrete curbs and gutters on both sides. Changes to the intersection include a grade separation and general intersection improvements at the State Street intersection. Other improvements consist of roundabouts at the intersections of Sassafras Street and Holland Street along the Bayfront Parkway. Any repaving of Bayfront Parkway within project limits should include pavement patching if necessary, to maintain consistency with the existing repaved roadway. All preliminary assessments and engineering, as well as ROW development/acquisition and final design, are set to be completed by October 2021. PennDOT anticipates that the project will require multiple environmental permits. More detailed information about its technical feasibility can be found on the project website.

Project Schedule

Exhibit 15 shows a simplified project schedule. A more detailed schedule is provided on the project website.



Exhibit 14. Simplified Project Schedule

The *Connecting Erie's Waterfront* project will be delivered in a total of 1,345 days (from October 21, 2018, when the NEPA process began, to December 29, 2023), allowing INFRA funds to be obligated well in advance of the September 30, 2023 statutory deadline. The process includes the following phases, many of which are concurrent:

- Preliminary Engineering Agreement (30 days) Establish initial agreements with key stakeholders on the decisions related to preliminary engineering
- CSX (835 days) Obtain acceptance from CSX regarding rail track relocation design and operations; obtain executive approval; establish agreements on final designs; complete the Pennsylvania Public Utility Commission (PUC) process; and relocate trackwork.
- EA/NEPA (427 days) Develop and refine alternatives; conduct public meetings and address comments; complete EA preparation, submittal, review, hearing, and approval.
- Preliminary Engineering (234 days) Develop preliminary designs including line and grade, structure Type, Size and Location (TS&L), preliminary drainage/ structural stormwater best management practices (SWM BMP), and design field view.
- Right-of-Way (ROW) Development/Acquisition (455 days) Develop ROW plan and obtain approval; complete ROW acquisition process.
- Final Design (310 days) Finalize the project designs and obtain environmental permits.
- Utility Relocation (310 days) Relocate utility infrastructure as needed.
- Construction (580 days) Build the project, including advertising, bid letting, awarding, and the actual construction.

Required Approvals

NEPA Status

PennDOT submitted a Purpose and Need Statement to FHWA in November 2018. The statement, which focused on increasing mobility, reducing crashes, and improving operations and efficiency, was **approved** by FHWA in November 2018. The project is scoped as an Environmental Assessment (EA). Copies of the correspondence confirming this are available for review on the project website. The Draft EA was submitted to PennDOT District 1 in January 2020. The EA Public Hearing is scheduled for April 2020. The Threatened & Endangered Species Study was completed in December 2019 and found no impacts.

Review, Approvals, and Permits by Other Agencies

PennDOT has concurrence from, and is in the process of finalizing agreements with, CSX to complete the multimodal bridge connecting the Pennsylvania Soldiers' & Sailors' Home with the cemetery. This includes all coordination with CSX to complete the proposed improvements at State Street because there is an existing structure at the intersection that carries Bayfront Parkway over CSX railroad tracks.

Public Engagement

Engagement among the design team, project stakeholders, and the community will be conducted throughout the process to ensure the improvements meet both transportation and community needs. A Project Advisory Committee (PAC) was developed during the Bayfront Parkway Study and will be continually engaged during the *Connecting Erie's Waterfront* project. To date, the PAC has held ten meetings designed to update members on project progress. Further, the design team has held three public plan displays to discuss the project and its details.

State and Local Approvals

The *Connecting Erie's Waterfront* project is included in both the Erie Long-Range Transportation Plan (LRTP) and the Statewide Transportation Improvement Plan (STIP). Copies of these plans are available for review on the <u>project website</u>.

Federal Transportation Requirements Affecting State and Local Planning

The *Connecting Erie's Waterfront* project does not impact any state or local planning and is therefore not included in any plans other than the Erie LRTP and STIP.

Assessment of Project Risks and Mitigation Strategies

The potential risks are associated with the relocation of CSX rail tracks, the agreements on afterconstruction responsibilities, and right-of-way acquisitions. Early communications, a flexible schedule, and a contingency budget are the keys to mitigating these risks. **Exhibit 16** summarizes the risk factors and mitigation strategies.

Risk Factor	Probability	Project Impact	Mitigation
If the Department of Military and Veterans Affairs does not accept ownership and maintenance responsibility of the proposed bridge over the railroad, redesign of the project would be necessary.	Low	Higher construction costs and time delays with CSX coordination, jeopardizing the letting date.	Communication and adequate negotiation time.
If CSX ultimately does not agree with the proposed track relocations, the scope of most of the project will need to be revised.	Low	Many of the improvements such as the grade separation at State Street and the roundabout at Holland Street would not be possible.	Communication and adequate negotiation time.

Exhibit 15. Project Risks and Mitigation Matrix

SMALL PROJECT REQUIREMENTS - BENEFIT/COST ANALYSIS

Because the estimated project cost is less than \$100 million, *Connecting Erie's Waterfront* is considered a small project, whose cost-effectiveness and effect on mobility is measured through a Benefit/Cost Analysis.

The period of analysis used to estimate benefits and costs related to the differences between the Build and No-Build scenarios runs from 2020 to 2043, including the project development and construction years through 2023, and 20 years of infrastructure service life. All monetary values are expressed in 2020 dollars. A real discount rate of 7 percent is applied to this period to calculate present values, while other potential discount rates (3 percent and 5 percent) are applied as comparisons.

Findings

As shown in **Exhibit 17**, the total monetized benefits of the proposed improvements are projected to be \$80.5 million (in present discounted value terms), reflecting travel time savings and safety benefits. The total costs of the project are \$60.6 million (in present discounted value terms) including capital expenses, travel time increase during construction, and operating and maintenance costs. The project produces a net benefit in present value terms of \$19.9 million (discounted) and a benefit/cost ratio of 1.33. The corresponding internal rate of return (IRR) of the project is projected at 10.1 percent. For more details, the benefit/cost analysis spreadsheet is fully documented on the project website.

	2020-2043 Totals (in Thousands of 2020 Dollars)			
Benefit and Cost Metrics	Before Discounting	Discounted at 3%	Discounted at 5%	Discounted at 7%
Project Benefit				
Travel Time Saving				
(Non-Truck)	\$182,270.9	\$118,930.7	\$91,469.7	\$71,534.7
Travel Time Saving				
(Truck)	\$6,618.0	\$4,318.2	\$3,321.1	\$2,597.3
Safety	\$14,824.3	\$10,091.7	\$7,979.4	\$6,409.9
Total Benefit	\$203,713.2	\$133,340.5	\$102,770.2	\$80,541.9
Project Costs				
Capital	<u>\$66,501.2</u>	\$62,416.8	\$59,916.5	\$57 <i>,</i> 576.8
Construction Delay	\$3 <i>,</i> 589.5	\$3,332.9	\$3,176.2	\$3,029.9
O&M	\$0.0	\$0.0	\$0.0	\$0.0
Total Costs	\$70,090.7	\$65,749.7	\$63,092.7	\$60,606.7
Total Net Benefits	\$133,622.5	\$67,590.9	\$39,677.5	\$19,935.2
Benefit-Cost Ratio	2.91	2.03	1.63	1.33
Internal Rate of Return	10.1%	N/A	N/A	N/A

Exhibit 16. Benefit/Cost Analysis Summary

Key Parameters

According to the 2018 Traffic Impact Analysis for the Bayfront Parkway Central Corridor improvements, the corridor traffic volume is projected to increase by 35 percent from 2018 to 2040, inducing the average vehicle travel time to increase by 126 percent. With the *Connecting Erie's Waterfront* project being built, however, vehicles are expected to spend 29 percent less time traveling through the corridor compared to that of No-Build scenario. These rates are used as key assumptions for calculating travel time benefits. In addition, the project is expected to improve safety performance with roundabouts. Data from the Crash Modification Factors Clearinghouse indicates the percent reduction in crashes resulting in fatalities or injuries to be 19%-71% for such designs. Additional crash reduction benefits and a summary of key parameters are detailed in **Appendix A**. Based on PennDOT's calculated cost of fatalities and injuries by severity, monetized safety benefits are estimated over an assumed 20 years of project life.

APPENDIX A: KEY PARAMETERS AND ASSUMPTIONS USED FOR BENEFIT/COST ANALYSIS

Parameter Name	Value	Unit
Project Life	20	Years
Real Discount Rate	7.0%	% per annum
Values Expressed in	2020	\$
Value of Time (inflation-adjusted from 2017 value)	\$25.30	per hour (median HH income \$48,192/2080 hours)*(1+0.045)^(2020-2017-1)
Truck Driver Value of Time (inflation- adjusted from 2015 value)	\$29.70	per hour
Annualization Factor	300	days/year that benefits accrue
Maintenance Cost	\$13,145	per lane mile per year
Corridor Travel Time Reduction	29.00%	of No-Build Scenario Travel Time (Operation)
Corridor Travel Time Increase	10.00%	of "Before" Total Travel Time (Construction)
Fatality/Injury Reduction - Holland St.	71.20%	of "Before" Number of Crashes
Other Crash Reduction - Holland St.	19.10%	of "Before" Number of Crashes
Fatality/Injury Reduction - State St.	57.00%	of "Before" Number of Crashes
Other Crash Reduction - State St.	36.00%	of "Before" Number of Crashes
Fatality/Injury Reduction - Sassafras St.	71.20%	of "Before" Number of Crashes
Other Crash Reduction - Sassafras St.	19.10%	of "Before" Number of Crashes
Value of Fatalities	\$7,136,696	per person (inflation-adjusted from 2008 dollars)
Value of Major Injuries	\$1,563,727	per person (inflation-adjusted from 2008 dollars)
Value of Moderate Injuries	\$104,492	per person (inflation-adjusted from 2008 dollars)
Value of Minor Injuries	\$8,279	per person (inflation-adjusted from 2008 dollars)
Value of Unknown Injuries	\$8,279	per person (inflation-adjusted from 2008 dollars)
Value of Property Damage Only	\$3,311	per crash (inflation-adjusted from 2008 dollars)

APPENDIX B: APPLICATION PACKAGE WEBSITE

For reference, the table below denotes the elements of the *Connecting Erie's Waterfront* application that can be found on the website.

Connecting Erie's Waterfront Website		
https://bayfrontparkwayproject.com/INFRA2020/		
Website Password		
Er1Econnects		
Website Contents	Application Narrative Sections and Pages	
website contents	Referenced	
Benefit/Cost Analysis	B/C Findings, pg. 25	
Detailed Project Map	Project Location, pg. 8	
Detailed Cost Estimate	Grant funds, sources, and uses of project	
	funding , pg. 14	
Detailed Project Schedule	Project Readiness, pg. 22	
GIS and Map Files	Project Location, pg. 8	
STIP Documentation	Required Approvals, pg. 23	
Letters of Support		
PA Governor Wolf		
US Senator Toomey		
US Senator Casey		
US Representative Kelly		
PA Senator Laughlin		
PA Representative Sonney		
PA Representative Harkins		
PA Representative Merski		
PA Representative Bizzaro		
City of Erie	Project Website	
Erie County		
Erie Convention Center Authority		
Erie County Redevelopment Authority		
Erie Downtown Development Corporation		
Erie Regional Chamber of Growth		
Partnership		
Erie-Western Pennsylvania Port Authority		
Erie Insurance		
Gannon University		
Logistics Plus, Inc.		
University of Pittsburgh Medical Center		
Other Supporting Documents	Project Website	

