

**Fiscal Years 2024 through 2026 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Competitive Grant Program
Resilience Grant Application Template**

This is the Resilience Grant Application Template for the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Competitive Grant Program Fiscal Years 2024 through 2026 Notice of Funding Opportunity (NOFO).

Submission of this Application Template is required as part of a complete application package. The Application Template, in conjunction with the allowable attachments and standard forms, should provide all information necessary for U.S. Department of Transportation (DOT), the Federal Highway Administration (FHWA) to determine if the project satisfies the eligibility requirements described in NOFO Section B and to evaluate the criteria specified in NOFO Section F. DOT will consider applications submitted without the completed template as incomplete and will not review the submission. DOT encourages applicants to review the NOFO in its entirety to verify their project is eligible and ensure all required information is provided with their application.

Summary

Project Title	Park Avenue Stormwater Resilience and Roadway Improvements
Lead Applicant Name	Town of Lake Park, Florida
Lead Applicant Type	☐ A State or political subdivision of a State. ☐ A metropolitan planning organization. ☒ A unit of local government. ☐ A special purpose district or public authority with a transportation function, including a port authority. ☐ A federally recognized Indian Tribe (as defined in Section 207(m)(1)). ☐ A Federal land management agency that applies jointly with a State or group of States. ☐ A multi-State or multijurisdictional group of entities described above.
Type of Grant(s)	☒ Resilience Improvement ☐ Community Resilience and Evacuation Route ☐ At-Risk Coastal Infrastructure
Eligible Activities	Resilience Improvement Grants (23 United States Code (U.S.C.) § 176(d)(4)(A)(ii)): <i>Identify the eligible construction activities to improve the resilience of surface transportation infrastructure that the proposal addresses (check all that apply):</i> ☒ Resurfacing, restoring, rehabilitating, replacing, improving, or realigning a facility eligible for assistance under this program (see eligible facilities in the row below). ☒ Incorporating natural infrastructure.

	☐ Upgrading existing surface transportation facilities to meet/exceed FHWA design standards. ☒ Installing flood mitigation measures. ☒ Strengthening rainwater removal systems. ☒ Upgrading or installing structural stormwater controls. ☐ Constructing a resilience project that addresses vulnerabilities described in the Resilience Improvement Plan (RIP) in your jurisdiction. ☐ Relocating roadways in a base floodplain. ☐ Stabilizing slide areas or slopes. ☐ Installing riprap. ☐ Lengthening or raising bridges. ☒ Increasing size or number of drainage structures. ☐ Installing seismic retrofits on bridges. ☐ Adding scour protection on bridges. ☐ Adding scour, stream stability, coastal, and other hydraulic countermeasures, including spur dikes. ☐ Implementing vegetation management in the right-of-way. ☒ Installing any other protective features, including natural infrastructure. Community Resilience and Evacuation Route Grants (23 U.S.C. § 176(d)(4)(B)(ii)): <i>Identify the eligible activities to strengthen and protect evacuation routes that the proposal addresses (check all that apply):</i> ☐ Constructing a Resilience Improvement project under 23 U.S.C. § 176(d)(4)(A)(ii) that will improve an evacuation route. ☐ Restoring or replacing an evacuation route to ensure it can provide safe passage and/or making improvements to reduce the risk of damage to evacuation routes (e.g., steps to protect routes from mud, rock, or other debris slides). ☐ Expanding capacity of evacuation routes. This includes installation of communications and intelligent transportation systems, counterflow measures, and shoulders. <i>(Note: if yes, explain how existing evacuation routes are not sufficient to adequately facilitate evacuations)</i> ☐ Constructing new or redundant evacuation routes. <i>(Note: if yes, explain how existing evacuation routes are not sufficient to adequately facilitate evacuations)</i> ☐ Acquiring evacuation route or traffic incident management equipment/signage ☐ Constructing a project that will ensure access or service to critical destinations¹
--	---

¹ “Critical destinations” could include hospitals and other medical or emergency service facilities, major employers, critical manufacturing centers, ports and intermodal facilities, utilities, and Federal facilities. See 23 U.S.C. § 176(d)

	At-Risk Coastal Infrastructure Grant (23 U.S.C. § 176(d)(4)(C)(iii)): <i>Does the application include one of the following eligible activities? (check if yes):</i> ☐ Strengthening, stabilizing, hardening, elevating, relocating, or otherwise enhancing the resilience of highway and non-rail infrastructure that are subject to, or face increased long-term future risks of, a weather event, a natural disaster, or changing conditions. Infrastructure includes: bridges, roads, pedestrian walkways, bicycle lanes, and associated infrastructure, such as culverts and tide gates to protect highways.
Long-Term Infrastructure Cost Reduction	Not applicable. The Town is applying for a Resilience Improvement Grant; no At-Risk Coastal Infrastructure Grant funds are requested.
Project Area	State of Florida; Palm Beach County; Town of Lake Park. Park Avenue (FDOT Roadway ID 93000054, MP 1.211–1.942) from 7th Street east to U.S. Highway 1.
Amount of Funding Requested Under this NOFO	\$4,471,000 [planning-level; finalize from Engineer of Record OPCC]
Cost Share Requested²	80% PROTECT / 20% Town of Lake Park local funds. No RIP-based cost-share reduction is requested.
Total Project Cost	\$5,589,785 [planning-level; add previously incurred design costs once confirmed]
Which type(s) of natural hazards does the project address?	Rainfall-induced flooding; storm-sewer surcharge on the capacity-limited Southern Outfall system; compound rainfall and tailwater flooding; changing conditions (18–20% higher extreme rainfall and sea-level rise evaluated for 2050 and 2080, with coastal surge reaching Park Avenue in future scenarios).
Which transportation modes are addressed by the project?	Highway (passenger and freight vehicles on an Urban Minor Collector), pedestrian (ADA sidewalks and crossings), and emergency and public-safety access to the Town's municipal complex.
Project Description:	
The Town of Lake Park will rebuild the drainage of Park Avenue between 7th Street and U.S. Highway 1 (0.731 mile; FDOT Roadway 93000054, MP 1.211–1.942). This Urban Minor	

(4)(B)(ii).

² The build case should account for the non-hazard maintenance costs associated with the project as well as the expected reduction in maintenance or rebuilding costs. For projects involving the construction of new infrastructure, total non-hazard maintenance costs would be zero in the base case, so net non-hazard maintenance costs would typically be positive, reflecting the ongoing expenditures needed to maintain the new asset over its lifecycle. For projects intended to replace, reconstruct, or rehabilitate existing infrastructure, however, the net change in non-hazard maintenance costs under the proposed project will often be negative, as newer infrastructure requires less frequent and less costly maintenance to keep it in service than would an aging, deteriorating asset.

Collector serves the Town's municipal complex (Town Hall, a Sheriff's Office substation and the Library) and the east end of its downtown. The Town's 2025 Flooding and Sea Level Rise Vulnerability Assessment rates Park Avenue at High exposure (more than 6 inches of water above the centerline) in all 14 rainfall-induced and all 14 compound-flood scenarios for 2024, 2050 and 2080. It also models floodwater above the lowest elevation of Town Hall and of a sanitary lift station on 6th Street. Surplus travel-lane pavement will be converted into green stormwater infrastructure: about 3,000 feet of vegetated bioswale with underdrains, exfiltration trench, 69 inlets and 4,021 feet of storm sewer, per signed and sealed 100% plans. The corridor's two connections to the Southern Outfall at 4th and 6th Streets will be improved and water-level sensors added. Pavement, curbs, sidewalks and ADA ramps disturbed by the work will be restored. The project continues the Town's CDBG-MIT program, which has rebuilt the Southern Outfall pipe, added storage at Bert Bostrom Park, lined 1,200 feet of pipe and is building the 10th Street green-infrastructure corridor. Design plans and calculations exist. PROTECT would fund a design update, NEPA documentation and permits (4% of the grant) and construction; the Town provides the 20% match.

Attachments:

- A. Project location, limits, census tract and network map
- B. FDOT RCI records: functional classification, intersections and 2025 AADT (Roadway 93000054)
- C. 100% civil engineering plans (Engenuity, Feb. 2024, 17 sheets) and drainage calculations (Sept. 2023)
- D. Town VA Final Report (6/17/2025, FDEP 24PLN36) Tables 2-8, 3-1, 3-5 to 3-7; Attachment A critical-asset tables
- E. Park Avenue flood-depth exhibit: 100-year depth map and profile, and 2- to 500-year results (Town 1D/2D ICPR4 model, WRMA)
- F. Detailed budget, OPCC, and sources and uses (Excel)
- G. Project schedule (critical path to closeout)
- H. BCA memorandum and unlocked BCA workbook (Excel)
- I. Town Commission resolution committing the match, cost-overrun coverage and O&M
- J. Operations and maintenance plan
- K. Permitting and environmental clearance matrix; NEPA CE screening
- L. Letters of support [list those received: FDOT District 4, Palm Beach TPA, Seacoast Utility Authority, PBSO]

I. Project Information

Expand the response blocks as necessary but limit the Project Information section of the application to three total pages in length.

1	Project Title	Park Avenue Stormwater Resilience and Roadway Improvements
2	Project State	Florida

3	Project Location	Park Avenue from 7th Street (26.79862° N, 80.06645° W) east to U.S. Highway 1 (26.79820° N, 80.05470° W), Town of Lake Park, Palm Beach County. FDOT Roadway ID 93000054, mileposts 1.211–1.942 (0.731 mile, about 3,860 feet), crossing 6th, 5th, 4th, 3rd and 2nd Streets. Park Avenue is the Town's main east–west street. West of the project it runs through the downtown to 10th Street and Old Dixie Highway, then continues as the same FDOT roadway to SR 850/Northlake Boulevard. At its east end it meets U.S. 1. The Town's municipal complex (Town Hall, Palm Beach County Sheriff's Office substation and Library) drains to the corridor's 6th Street connection. Map: Attachment A.
4	Which Census tract(s) does the project encompass?	12099001101 (Census Tract 11.01). Points on both sides of the corridor at 7th Street, 4th Street and U.S. 1 all fall in this tract (U.S. Census Geocoder, Sept. 24, 2026). [Re-confirm with the DOT Grant Project Location Verification tool, including the 4th and 6th Street connections.]
5	Is the project fully located in a Rural area? ³	☐ Yes ☒ No Located in the Miami–Fort Lauderdale, FL 2020 Census Urban Area (population over 200,000).
6	Is the project located in a base floodplain?	☐ Yes ☐ No The 2023 drainage report states the site is "partially located in FEMA flood zone X" (Engenuity Group, Sept. 5, 2023). [Check Yes if any part is in Zone A/AE; identify the panel and zone.] Corridor ground elevations range from about 6.8 ft NAVD88 at the east end to 13.3 ft. The VA's coastal surge analysis shows Park Avenue unaffected today but reached by the 2050 500-year surge and most 2080 scenarios (VA Table 3-5). The Town participates in the Palm Beach County Local Mitigation Strategy (Comprehensive Plan Policy 8.7).
7	Other Parties	Single applicant. Delivery partners and roles: • Town of Lake Park (lead applicant, owner, sponsor): grant management, procurement, construction administration and long-term O&M through the Public Works Stormwater Division. • Engineer of Record: Engenuity Group, Inc. (Adam Swaney, P.E.), author of the signed and sealed drainage calculations [confirm contract for the design update, permits, OPCC, bidding and construction-phase services]. Tierra South Florida:

³ See NOFO Section C.2 for Cost Sharing or Matching information.

		geotechnical testing (September 15, 2022). • FHWA Florida Division / FDOT District 4: grant agreement and NEPA; delivery by direct FHWA agreement or FDOT Local Agency Program [to be confirmed]. Palm Beach TPA: TIP/STIP amendment after award. • SFWMD (Environmental Resource Permit); FDEP (NPDES construction permit); FDOT District 4 (any work at the U.S. 1 intersection); Seacoast Utility Authority (water, sewer and lift station LS 012), FPL and telecom owners (relocations).
8	Eligible Facility Type	☒ Highway project eligible for assistance under Title 23; ☐ Public transportation facility or service eligible for assistance under chapter 53 of Title 49; ☐ Facility or service for intercity rail passenger transportation (as defined in Section 24102 of Title 49); or ☐ Port facility, including a facility that: a. Connects a port to other modes of transportation; b. Improves the efficiency of evacuations and disaster relief; or c. Aids transportation. (23 U.S.C. § 176(d)(5)C). FDOT's Roadway Characteristics Inventory classifies Roadway 93000054 (MP 0.000–1.942) as an Urban Minor Collector (FUNCLASS 18). An urban minor collector is a Federal-aid highway under 23 U.S.C. 101(a)(6), which excludes only local roads and rural minor collectors. Drainage structures in the right-of-way are part of the "highway" under 23 U.S.C. 101(a)(11). Attachment B.
9	Project Background	Resilience context. Park Avenue drains through 4th and 6th Streets to the Southern Outfall, which serves about half the Town and lacks capacity; sea-level rise limits its discharge and inlets surcharge in minor storms (VA §6.2). The Town's Flooding and Sea Level Rise Vulnerability Assessment (VA; June 2025; FDEP 24PLN36) rates Park Avenue High in every rainfall and compound scenario. Work already done. With its \$11.4 million CDBG-MIT grant (Agreement MT130) the Town replaced the Southern Outfall pipe, built storage/filtration chambers at Bert Bostrom Park and lined 1,200 feet of pipe; the 10th Street corridor is scheduled for construction in 2027. Park Avenue is the next upstream deficiency and has no other funding. How the project evolved. First planned as a corridor improvement with green infrastructure (2023), it did not secure construction funding [program(s), dates]. The Town has refocused it on the core need, missing stormwater capacity: pavement wider than a 6,000-vehicle collector needs becomes bioswales and subsurface storage. Design status. Complete: signed and sealed 100% civil plans (Engenuity, Feb. 2024; survey Aug. 2022; utility locates by Colliers), drainage calculations (Sept. 2023), geotechnical testing (Tierra, Sept. 2022) and BMPTrains (May 2026). Remaining: Federal-aid bid documents and specifications, a

		tailwater/groundwater check, the SFWMD permit application (not yet submitted) and a current OPCC. Previously incurred costs. [\$__ of Town-funded design through (date)], not claimed for reimbursement or match.
10	Is the proposed project prioritized on a RIP developed in accordance with 23 U.S.C. § 176(e)?	☐ Yes ☒ No Neither FDOT nor the Palm Beach TPA has a Resilience Improvement Plan under 23 U.S.C. 176(e) that prioritizes this project [confirm in writing]. A BCA is attached.
11	Has a RIP been incorporated into an applicable State DOT or MPO long range transportation plan?	☐ Yes ☒ No

II. Budget and Funding

1	PROTECT Competitive Grant Program Request Amount	\$4,471,000 [planning-level]. 80% of future eligible project cost.
2	Other Federal Funding	\$0. No other Federal funds are committed to this project.
3	Non-Federal funding	Source: Town of Lake Park Stormwater Utility / General Fund, FY2028–FY2029 CIP [confirm fund and resolution no.]. Amount: \$1,118,785 (20% of future eligible cost). The Town has also applied to FDEP Resilient Florida (FY2026–27) for this project. If awarded, those state funds will serve as the non-Federal share and fund the locally paid streetscape items; the PROTECT request will be reduced so no cost is funded twice.
4	Future Eligible Project Cost	\$5,589,785
5	Previously incurred project costs (if applicable)	Amount: [\$__]. Town-funded design and calculations prepared through [date]. Not proposed for PROTECT reimbursement or match.
6	Total Project Cost	\$5,589,785 [plus previously incurred costs once confirmed]
7	Grant Funds, Sources and Uses of Project Funds (Detailed Budget)	Detailed budget by phase and source (year-of-expenditure \$; Attachment F): Activity: Design update, NEPA documentation, permits (after obligation). Cost: \$150,000: PROTECT \$120,000; Town \$30,000 Activity: Construction + CEI. Cost:

		\$5,439,785: PROTECT \$4,351,000; Town \$1,088,785 Total: \$5,589,785. PROTECT \$4,471,000; Town \$1,118,785. Construction by component (incl. CEI): drainage, bioswales, exfiltration and outfall connections \$3,508,491; pavement, curb, sidewalk and driveway restoration required by the drainage work \$1,769,664; ADA ramps \$161,630. Contingency and escalation. A 15% contingency and 3%/yr escalation to a mid-2029 construction midpoint are carried. The overrun plan is in Section IV. No right-of-way acquisition is anticipated [confirm]. Utility work is limited to conflicts created by the drainage.
8	Does the project involve the construction of new capacity?	☐ Yes ☒ No No. The project adds no travel lanes. It converts surplus pavement to green stormwater infrastructure, reducing Park Avenue from four travel lanes (two in each direction) to one 12-foot lane in each direction, with turn lanes at U.S. 1 and 8.5-foot on-street parking on one side (100% plans, typical section Sheet C-9). 2025 AADT of 6,000 is far below the 25,000 vehicles/day FHWA cites as the upper range for this reconfiguration [EOR/traffic engineer to confirm LOS].
9	Does the project involve development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities described under 23 U.S.C. § 176(d)(5)(F)(i)?	☒ Yes ☐ No Yes: design update to 100%, NEPA documentation and permitting, \$120,000 of PROTECT funds (2.7% of the grant, within the 10% limit). All of it occurs after obligation.
10	Has the applicant submitted previous applications for Federal funding for this project?	☐ Yes ☒ No No prior Federal funding application. The Town has applied for state funding for this project through FDEP Resilient Florida (FY2026–27) [application no., date, amount requested].

III. Merit Criteria

In the space below, describe how the project will meet the merit criteria and the associated objectives as found in Section F of the FYs 2024 through 2026 PROTECT Competitive Grant Program NOFO. Where appropriate, reference attachments or other sections of the application. Expand the response blocks as needed but limit the length of the merit criteria section of the application to eight total pages in length.

Criterion #1: Vulnerability and Risk

A. Weather events and changing conditions to which the project area is exposed

Park Avenue faces **rainfall-induced flooding made worse by a capacity-limited downstream system**, and in future scenarios **coastal surge**.

- **Modeled roadway exposure (VA, June 2025).** The VA uses the Town-wide 1D/2D ICPR4 model (TLP_MASTER_v2024.01). It rates Park Avenue (asset TLP-CA-220) at **High exposure, more than 6 inches of water above the centerline (VA Table 3-1), in all 14 rainfall-induced and all 14 compound-flood scenarios** for the 100- and 500-year storms in 2024, 2050 and 2080 (VA Tables 3-6 and 3-7; Attachment A).
- **Measured depths on the corridor.** Sampling WRMA's 2024 100-year, 72-hour depth raster along Park Avenue: 32% of the corridor is more than 6 inches deep at the centerline, and 50% has more than 6 inches somewhere across the 24-foot roadway, with a maximum of 1.7 feet at the centerline (1.9 feet in the roadway) between 5th and 3rd Streets. In the 500-year storm the shares are 60% and 96%, with a maximum of 2.2 feet. On 6th and 4th Streets south of Park, where the corridor discharges, the 100-year depth exceeds 2 feet along 83% and 74% of the first 1,260 feet. WRMA's structure analysis for the same storm identifies 18 flooded structures along Park Avenue and on 6th and 4th Streets downstream (Attachment D: depth exhibit and WRMA maps).
- **Frequent storms, not just rare ones.** WRMA's 2026 model (TLP_MASTER_v2026.01) shows Park Avenue flooding in the 2-year storm, which has a 50% chance every year: up to 0.7 foot deep at the low east end, and more than 6 inches at the centerline along 15% of the 2nd Street to U.S. 1 block (35% in the 25-year storm). On 6th Street south of Park, depth exceeds 1 foot along 45% of the first 1,260 feet in the 10-year storm and 59% in the 25-year storm (Attachment D, page 2).
- **Undersized downstream system.** The Southern Outfall, which receives Park Avenue's runoff, serves about half the Town's watersheds and lacks capacity. The VA documents inlet surcharge in the middle of the network "with only minor storm events," and estimates the Town's drainage level of service at about a 2-year storm (VA §5, §6.2).
- **Changing conditions.** SFWMD rainfall change factors of 1.18 (2020–2059) and 1.20 (2050–2089) raise extreme rainfall 18–20% (VA Table 2-8). Sea-level rise raises tailwater at the Lake Worth Lagoon outfall. Coastal surge does not reach Park Avenue today but rates it High in the 2050 500-year and most 2080 scenarios (VA Table 3-5); the 2080 compound-flood maps show surge flooding reaching U.S. 1 at the project's east end (VA Appendix D).

Observed flooding on Park Avenue: **[insert Public Works work orders, complaint logs and photos with dates and rainfall]**.

B. Exposure, sensitivity and adaptive capacity

- **Exposure.** The whole 0.731-mile segment is rated High in every rainfall and compound scenario. Adjacent critical assets are exposed in the same storms (VA Attachment A,

rainfall-induced):

- Town Hall (lowest elevation 11.38 ft NAVD88): modeled flood elevation 11.96 ft in today's 100-year storm, rising to 12.24 ft in the 2080 500-year storm
- Seacoast Utility Authority lift station LS 012 on 6th Street (9.56 ft): 11.70 ft in today's 100-year storm, 12.38 ft in the 2080 500-year storm
- Lake Park Community Church, 501 Park Ave (11.02 ft): 12.12 ft in today's 500-year storm
- **Sensitivity.** Standing water saturates the pavement base and speeds its failure. It blocks sidewalks, ramps and driveways to public buildings. Flooding at LS 012 risks inflow to the sanitary system and loss of pumping.
- **Adaptive capacity (low today).** The corridor relies on a conventional pipe system discharging to a network that surcharges in minor storms. It has little storage, infiltration or treatment. The Town has already rebuilt the outfall and added storage at Bert Bostrom Park, so upstream collection is now the limiting link.

C. High risk to the transportation asset (likelihood × consequence)

Likelihood is high. The street floods in the 5-year storm today, is rated High in every 100- and 500-year scenario through 2080, and the system serving it surcharges in minor storms.

Consequence is high for a small town. Flooding cuts the direct route to Town Hall, the Sheriff's Office substation and the Library, and it threatens a sanitary lift station. Parallel local streets drain to the same flooded grid. The design lowers the corridor's peak discharge into those flooded blocks; the size of the reduction will be confirmed with proposed-condition modeling.

Criterion #2: Criticality to American Families and Communities

A. Continued operation and rapid recovery of a crucial local asset

- **Traffic.** 2025 AADT 6,000 (FDOT site 935223, SR 850/Northlake Blvd to U.S. 1); 5.1% trucks [confirm a Park Avenue-specific count].
- **Network role.** Park Avenue is the Town's main street. It links U.S. 1 with the downtown, the Palm Beach County Fire Rescue station at 1000 Park Avenue and Old Dixie Highway. Six local streets (2nd–7th) cross it. When it floods, the alternatives are local streets in the same flooded grid or a longer loop via Northlake Boulevard [confirm detour by GIS]. Park Avenue has four lanes (two each way) for 6,000 vehicles per day. Converting the surplus lanes to drainage leaves one 12-foot lane each way plus turn lanes at U.S. 1, well within FHWA's guidance for this reconfiguration (roads up to 25,000 vehicles/day), so the project does not trade flooding for congestion [confirm LOS].
- **Government and public safety.** The municipal complex houses Town Hall, the Palm Beach County Sheriff's Office substation and the Library. After a storm it is where the Town runs its response and residents come for help. Keeping Park Avenue open keeps that access open.
- **Downstream school.** Lake Park Elementary School (404 Evergreen Drive) is in the blocks that receive the corridor's runoff; the VA models the 100-year flood 1.9 feet above its lowest elevation (VA Table 3-6).
- **Utilities and community facilities.** Seacoast LS 012 (6th Street); Lake Park Community Church (501 Park Ave); and homes and businesses fronting the corridor [___ parcels; ___ jobs from PBC Property Appraiser and LEHD].

B. Timeliness and severity of consequences

The exposure exists now, in today's storms, and every future scenario remains High. The downstream outfall has been rebuilt, so the Town is ready to fix the upstream collection that still floods. Repaving Park Avenue without the drainage would lock in the problem for another pavement life.

C. Critical to community functions

The corridor carries the Town's civic functions (government, law enforcement, library) and a utility lift station. It also carries the east end of the downtown business district that the VA identifies along Park Avenue. After storms it carries debris-removal, utility and recovery crews.

D. National freight / NHS

Not applicable. Park Avenue is not on the NHS, NHFN or NMFN. It connects to U.S. 1.

Criterion #3: Design Elements, including Addressing Core Infrastructure**A. Service life and design elements addressing current and future vulnerability**

Design service lives [confirm with Engineer of Record]: storm sewer, inlets and exfiltration trench 50 years; pavement 20 years; bioswales indefinite with routine maintenance. The signed and sealed calculations (Engenuity, 2023) size the system for the SFWMD water-quality standard: 2.5 inches of runoff over the impervious area, or 1.05 acre-feet, for the 6.96-acre corridor. The exfiltration trench needs 490 feet at a safety factor of 2 using a site-tested hydraulic conductivity of 4.33×10^{-4} cfs/ft²-ft of head; 567 feet are provided. The design update will add a flood level-of-service check [roadway design storm] against the VA's 2050 rainfall (+18%), tailwater and higher groundwater. Each element answers a failure mechanism:

- **Runoff with too few inlets → ponding.** 67 new inlets and about 4,021 feet of storm sewer collect runoff along the whole corridor.
- **No room for storage in a built-out right-of-way → no storage.** Surplus travel-lane pavement is removed (impervious area falls from 5.56 to about 5.05 acres) and replaced with 10-foot vegetated bioswales over perforated underdrains in aggregate, discharging to exfiltration trenches (100% plans, Sheet C-16). Like the Bert Bostrom Park system, storage and filtration are distributed upstream instead of sent directly to the outfall.
- **Surcharging downstream system → backwater.** About 3,000 feet of vegetated bioswale (10-ft top width, 2-ft bottom) and 567 feet of exfiltration trench store and infiltrate runoff before it reaches the Southern Outfall. BMPTrains (May 2026) estimates that average annual surface discharge from the corridor falls from about 23.0 to 2.1 acre-feet per year, roughly 91% of annual runoff retained. That relieves a network that surcharges in minor storms.
- **Uncontrolled connections → system-wide backflow.** The two connections at 4th and 6th Streets are rebuilt to the Southern Outfall northern tributary [describe control, e.g., weir or backflow prevention].
- **Saturated base → pavement failure.** Pavement is restored over a drained base.

B. Evidence-based data, projections and scenarios

Design and screening rely on NOAA Atlas 14 precipitation frequency, SFWMD rainfall change factors and NOAA sea-level-rise scenarios (Intermediate-Low, Intermediate and Intermediate-High) for 2050 and 2080. They also use the Town's 1D/2D ICPR4 model

(v4.07.08, TLP_MASTER_v2024.01), LiDAR, the Town's stormwater inventory and geotechnical data [borings, seasonal high groundwater].

C. How the design reduces vulnerability and risk

The design collects runoff that now ponds, stores and infiltrates it in the right-of-way, and sends less water to the outfall. Impervious area falls from 5.56 to about 5.05 acres (Engenuity, 2023). The 1.05 acre-foot water-quality volume is treatment volume, not new flood storage.

Changing conditions in the design: the calculations assume groundwater at 2.2–4.5 ft NAVD88 (5.5 ft below grade). Sea-level rise will raise groundwater and reduce infiltration, so the design update will set trench and swale bottoms against projected seasonal high groundwater [EOR]. At the east end, proposed pipe inverts are as low as 0.3–1.7 ft NAVD88 (Sheet C-10), below today's Lake Worth Lagoon mean higher high water (about 1.0 ft) and the 2050 projection of 1.6–2.0 ft (VA Table 2-3); the Federal-aid design check will add tailwater analysis and backflow control where needed. Existing-condition depths on Park Avenue are measured from the Town's 1D/2D model (Attachment E). A proposed-condition run, which will quantify the reduction in depth, duration and flooded length and in flood stages at Town Hall and LS 012, is the first task of the design update.

D. Condition and safety of the transportation infrastructure

Removing standing water reduces hydroplaning and splash. It also ends the need for pedestrians to walk around ponded crossings at public buildings. Reconfiguring four undivided lanes to two 12-foot through lanes with turn lanes at U.S. 1 (100% plans) is an FHWA Proven Safety Countermeasure (Road Diets/Roadway Reconfiguration). Signal Four Analytics records 33 crashes on the corridor from January 2023 to July 2026: 1 serious injury, 1 minor injury, 8 possible injury and 23 property damage only. Twenty-two were at the 2nd to 6th Street crossings, mostly right-angle crashes by side-street drivers crossing four lanes. After the project they cross two, and pedestrian crossings are shorter. Restored pavement, sidewalks, ADA ramps and MUTCD markings improve predictable operation.

E. Maintenance for the life of the facility

The Town's Public Works Stormwater Division will own and maintain all elements, as it does the rebuilt Southern Outfall and the Bert Bostrom Park chambers. Funding comes from the dedicated Stormwater Utility fee [current rate and annual revenue]. The O&M plan (Attachment J) covers quarterly bioswale inspections, inspection after large storms, annual jet-vac cleaning of inlets, pipes and trench, vegetation management, sensor calibration and pavement preservation. Estimated incremental O&M is about \$20,200/year (Attachment J), with a renewal reserve for sensors, trench and swale media, and resurfacing.

F. Wayfinding and accessibility

The project rebuilds [24] ADA curb ramps with detectable warnings at seven intersections. It removes ponding at crossings used to reach Town Hall, the Library and the Sheriff's Office substation. Sensor data will support public flood advisories.

Criterion #4: Innovation

A. Nature-based solutions

About 3,000 feet of vegetated bioswale are the natural-infrastructure element. They convert impervious and turf right-of-way into planted storage that infiltrates and treats runoff. With the exfiltration trench, BMPTrains (v4.3.1) estimates 91% removal of nitrogen and phosphorus, about 87 lb/yr of nitrogen and 11 lb/yr of phosphorus kept out of Lake Worth Lagoon. That

directly advances the Stormwater Master Plan's 5% Roadway Bioswale Program and its goal of cutting impervious area in the right-of-way by 10% (VA §6.2). The approach decentralizes storage upstream instead of relying only on a larger downstream pipe, and the Town's model shows it works on this system: WRMA's pre- versus post-construction runs for Bert Bostrom Park show visibly less 5- and 25-year flooding on 6th Street after upstream storage was added. The Town is applying it across the Southern Outfall system (Bert Bostrom Park, 10th Street). It is replicable for small municipalities with narrow rights-of-way and legacy drainage.

B. Technologies that increase reliability over the service life

Real-time water-level sensors with telemetry at the corridor low point and a connection structure will:

- Verify modeled performance against observed storms
- Trigger maintenance before clogging reduces capacity
- Give Public Works and law enforcement real-time information for closure decisions

Observed data will be used to recalibrate the Town's 1D/2D model, so future capital decisions rest on measured performance. The sensors are equipment directly related to improving system performance under 23 U.S.C. 176(d)(5)(F)(i).

IV. Project Readiness

In the space below, describe how the project will meet the readiness considerations and the associated elements as found in Section F of the FYs 2024 through 2026 PROTECT Competitive Grant Program NOFO. Where appropriate, reference attachments or other sections of the application. Expand the response blocks as needed but limit the length of the project readiness section of the application to six total pages in length.

Readiness: Technical Assessment

A. Resources to deliver

The project is managed by Public Works Director Jaime J. Morales. He has more than 18 years of municipal and county public works leadership, is a Florida Certified General Contractor, and holds degrees in business administration (finance, supply chain). He is supported by the Stormwater Division, Finance and the Town Clerk (procurement).

Under CDBG-MIT Agreement MT130 the Town has procured and administered Federally funded construction under 2 CFR 200 and Davis-Bacon: the Southern Outfall pipe replacement, the Bert Bostrom Park storage/filtration project and 1,200 feet of pipe lining are complete. The 10th Street corridor is scheduled for construction February–August 2027, so the same team will have delivered four projects on this system before Park Avenue is bid. Engineer of Record: **[firm and contract]**. CEI will be procured by qualifications-based selection.

B. Compliance with Federal requirements

The Town will comply with Title 23 and 2 CFR 200 (as adopted at 2 CFR 1201), including:

- NEPA with FHWA as lead agency
- Buy America (23 U.S.C. 313; 23 CFR 635.410) and BABA (2 CFR 184)
- Prevailing wage (23 U.S.C. 113) and FHWA-1273 contract provisions

- DBE (49 CFR 26) as applicable, Title VI and ADA
- Brooks Act selection for engineering services
- Semi-annual progress reports and SF-425
- Inclusion in the Palm Beach TPA TIP and the STIP before obligation

Delivery will be through a direct FHWA grant agreement or the FDOT District 4 Local Agency Program [confirm; LAP certification status]. The Federal-aid cost of compliance (Buy America, prevailing wage, CEI, oversight) is carried in the budget.

C. Schedule and obligation deadlines

Milestone	Target
Selection announced	[2027, est.]
Grant agreement for development phase; funds obligated	Q4 2027
Design update to 100%; NEPA CE documentation to FHWA	Q4 2027 – Q2 2028
SFWMMD ERP issued; CE determination; TIP/STIP amendment	Q3 2028
Construction funds obligated	By Sep 30, 2028 (FY2025 funds); no later than Sep 30, 2029 (FY2026)
Advertise; bid; award; NTP	Q4 2028 – Q1 2029
Construction (about 10–12 months)	Q1 2029 – Q4 2029
Final acceptance, record drawings, closeout	Q2 2030

The schedule meets the FY2026 obligation deadline with about 12 months of float. It meets the FY2025 deadline only if the design update and NEPA finish on time [adjust after EOR confirms]. The period of performance is about 2.5 years, within the NOFO's 1–4-year range.

D. Technical feasibility

The corridor has signed and sealed drainage calculations (2023), site-specific geotechnical testing (2022), a current pollutant-loading analysis (2026) and signed and sealed 100% plans (February 2024). The drainage types used (pipe, inlets, exfiltration trench, bioswales) are standard in South Florida, and the Town has recently built comparable systems on the same network. Remaining technical work is limited: conversion to Federal-aid bid documents, a flood level-of-service and tailwater check, and confirmation of seasonal high groundwater.

Readiness: Financial Completeness Assessment

A. Reasonable and necessary costs

The budget uses a planning-level OPCC built from the design quantities [replace with the Engineer of Record's current OPCC, dated ____]. It carries 16% general conditions (mobilization, MOT, erosion control), a 15% contingency, 3%/yr escalation and 10% CEI. Construction before CEI is \$4,945,259. The Town's earlier planning figure was \$4,000,000. Widened sidewalks and multi-use path, landscape buffers and decorative crosswalk patterns in the 100% plans are excluded from the PROTECT project and funded separately.

B. Plan for cost overruns

- The 15% contingency is carried in the budget.
- Town Commission Resolution [No. ____] (Attachment I) commits Stormwater Utility and General Fund reserves to cover any overrun, up to [\$ ____].
- Value engineering at 100% design; any discretionary items are bid as additive alternates.

C. Availability of all funding

The Town's \$1,118,785 match is programmed in the [FY2028–FY2029 CIP] and committed by resolution. No funding source depends on a future, unsecured application.

D. Future operation, maintenance and preservation

Funded by the Town Stormwater Utility fee and the Public Works operating budget (Section III-E).

E. Development-phase limit

PROTECT funds \$120,000 of development-phase work (2.7% of the grant, against the 10% limit).

Readiness: Permitting Risk Assessment**A. NEPA**

FHWA will be lead agency. The work lies within the existing operational right-of-way, so the anticipated class of action is a Categorical Exclusion under 23 CFR 771.117(c)(22) [confirm with FHWA Florida Division / FDOT D4]. Screening to be documented:

- Section 106 / Florida Master Site File check, including the historic Kelsey Theater just west of the limits [result]
- Contamination screening (FDEP-listed small-quantity generator at 701 Park Ave, west of the limits) [result]
- Protected species (urban, previously disturbed right-of-way)
- Floodplain (Section I-6)

B. Permits and approvals

- SFWMD Environmental Resource Permit: not yet applied for, because the project was held for construction funding. The application will be filed from the updated design (about 60–90 days for review)
- FDEP NPDES Construction Generic Permit (disturbance over 1 acre)
- FDOT District 4 permit for any work at the U.S. 1 intersection
- Seacoast Utility Authority, FPL and telecom agreements

The schedule carries 30–60 days of float for each permit.

C. Public engagement

The Town will hold a public workshop at the design update and meet with property owners fronting the corridor, as it did for 10th Street (April 25, 2026 workshop and on-site owner meetings). Project presentations to the Town Commission: [dates].

D. Known risks

There is no open litigation, known public controversy or agency opposition on environmental grounds [confirm with Town Attorney]. Residual risks (utility conflicts, groundwater for the exfiltration trench, prices) are covered by SUE, geotechnical investigation and contingency.

V. Statutory and DOT Selection Priorities

In the space below, describe how the project will meet the selection priorities in Section F of the FYs 2024 through 2026 PROTECT Competitive Grant Program NOFO. Where appropriate, reference attachments or other sections of the application. Expand the response blocks as needed but limit the length of the statutory and DOT selection priorities section of the application to three total pages in length.

Statutory Selection Priorities
For Resilience Improvement Grants: ☐ The benefits of the eligible activity proposed to be carried out by the eligible entity exceed the costs of the activity (as demonstrated by the economic analysis); and ☒ There is a need to address the vulnerabilities of surface transportation assets of the eligible entity with a high risk of, and impacts associated with, failure due to the impacts of weather events, natural disasters, or changing conditions, such as sea level rise, wildfires, and increased flood risk; or ☐ The eligible activity is included in a RIP as described by 23 U.S.C. 176(e)(2). ☐ None of the above apply to the project. For Community Resilience and Evacuation Route Grants: ☐ The activities are cost-effective (as demonstrated by the results of the economic analysis), taking into account: (1) current and future vulnerabilities to an evacuation route due to future occurrence or recurrence of emergency events that are likely to occur in the geographic area in which the evacuation route is located; and (2) projected changes in development patterns, demographics, and extreme weather events based on the best available evidence and analysis. ☐ None of the above apply to the project.
Statutory Selection Priorities: <i>Briefly describe below how the project meets the checked statutory priorities.</i>
High-risk vulnerability. Park Avenue is an existing Federal-aid Urban Minor Collector. The Town's VA rates it High in all 28 rainfall and compound scenarios, and future surge reaches it by 2050 (Criterion 1). Flooding cuts access to Town Hall, the Sheriff's Office substation and the Library and threatens a sanitary lift station (Criterion 2). Benefits exceed costs. Not claimed. The screening BCA is below 1.0 (Section BCA). The box is left unchecked. RIP. None applicable.
DOT Selection Priorities
☐ The project supports critical infrastructure for industries of national interest. ☒ The project would contribute to promoting economic prosperity in communities, including rural areas and Tribal communities. ☒ The project prioritizes improvement of the condition and safety of existing transportation infrastructure, particularly infrastructure with high cost of failure, such as bridges with lengthy detours, impacts to critical corridors, or failures that will cause economic disruption. ☒ The project demonstrates an ability to meet PROTECT Competitive Grant Program obligation deadlines. ☐ The project improves access to national security and defense facilities or facilitate

movement of military cargo or personnel.

☐ The project will reduce roadway traffic congestion.

☐ The project repurposes existing specialized travel lanes for bicycles, buses, or pedestrians for general purpose use by all motor vehicles, including single-occupant motor vehicles, and the applicant demonstrates the repurposing will meet the PROTECT program purpose, will reduce congestion on the facility, will utilize 40 percent or less of requested PROTECT funds for adding capacity consistent with 23 U.S.C. 176(d)(5)(G)(i)(I), will address safety consistent with the merit criteria described in Section F of the NOFO, and will comply with applicable federal requirements, including the Clean Air Act and criteria under 23 U.S.C. 217(e).

☐ None of the above apply to the project.

DOT Selection Priorities: Briefly describe below how the project meets the checked DOT priorities.

Condition and safety of existing infrastructure. The project restores an existing collector over a drained base, removes standing water at crossings that serve public buildings, and reconfigures four undivided lanes carrying 6,000 vehicles/day, an FHWA Proven Safety Countermeasure. The corridor had 33 crashes from 2023 to mid-2026, 22 of them at side-street crossings where drivers now cross four lanes.

Obligation deadlines. Design is complete (signed and sealed 100% plans), the anticipated NEPA class is a Categorical Exclusion, no right-of-way is needed, and the Town has delivered four projects on the same system. The Town can obligate construction funds by September 30, 2029 (FY2026) with margin.

Economic prosperity. Park Avenue is the Town's downtown street. Reliable access in frequent storms supports the businesses at its east end and the Town's CRA redevelopment efforts [confirm CRA boundary].

VI. Benefit-Cost Analysis

The purpose of the Benefit-Cost Analysis (BCA) is to enable FHWA to assess the project's cost effectiveness by comparing its expected benefits to its expected costs, relative to a no-build scenario for the purpose of project prioritization.

Resilience Improvement Grant 23 U.S.C. § 176(d)(5)(E)(ii)(I)	BCA is required for the project to be prioritized, unless the project is prioritized in a RIP. (see <i>Completing a BCA</i> below) Please check the appropriate box: ☐ The applicant is not requesting Resilience Improvement Grant funds. ☒ The applicant requests Resilience Improvement Grant Funding, and the project is <u>not</u> prioritized in a RIP. A BCA is attached. ☐ The applicant requests Resilience Improvement Grant funding, and the project <u>is</u> prioritized in a RIP. ☐ The application is from a federally recognized Indian Tribe that is requesting Resilience Improvement Grant funds but is opting to provide raw data with its application to support the need for a project, without additional BCA*. The raw data is attached.
--	---

	The BCA (Attachment H) follows the USDOT BCA Guidance 2026 Update: 7% real discount rate, 2024 dollars, 30-year analysis period, and full project cost including previously incurred costs. It compares the build case with a no-build baseline. Benefits counted: safety from the lane reconfiguration; avoided flood damage to 128 buildings in the corridor and its receiving blocks (upper bound); pavement life-cycle savings; residual value of 50-year drainage assets; avoided Town storm response; and travel time and vehicle operating cost from closures. Flood depths come from the Town's 1D/2D ICPR4 model (WRMA): existing-condition 2-, 5-, 10- and 25-year rasters (v2026.01) and 100- and 500-year rasters (v2024.01), with SFWMD future-rainfall factors (1.18 by 2050, 1.20 by 2080). Safety uses the Signal Four Analytics crash history for 2023-2026 (33 crashes, including 1 serious and 1 minor injury crash and 8 possible-injury crashes), with a road-diet CMF of 0.71 (FHWA CMF Clearinghouse). Result: PV costs \$3.67 million; PV benefits \$3.41 million; BCR 0.93 (sensitivity range 0.63 to 1.39). The Town does not claim that benefits exceed costs. Resilience, access to the municipal complex, lift-station protection and water quality to Lake Worth Lagoon are described but not monetized.
Community Resilience and Evacuation Route Grant 23 U.S.C. § 176(d)(5)(E)(ii)(II)	BCA is required for the project to be prioritized. (see <i>Completing a BCA</i> below) Please check the appropriate box: ☒ The applicant is not requesting Community Resilience and Evacuation Route Grant funds. ☐ The applicant requests Community Resilience and Evacuation Route Grant funding, and a BCA is attached. ☐ The application is from a federally recognized Indian Tribe that is requesting Community Resilience and Evacuation Route Grant funds but is opting to provide raw data with its application to support the need for a project, without additional BCA.* The raw data is attached.
At-Risk Coastal Infrastructure Grant 23 U.S.C. § 120(g)	BCA is not required, but applications must demonstrate that the project will reduce long-term infrastructure costs by avoiding larger future maintenance or rebuilding costs. Please check the appropriate box: ☒ The applicant is not requesting At-Risk Coastal Infrastructure Grant funds. ☐ The applicant requests At-Risk Coastal Infrastructure Grant funding and provides a demonstration of such long-term infrastructure cost reductions in the project application Summary section.