

INFRASTRUCTURE RESTORATION

ISSUE C1: WORKFORCE LIMITATIONS: The workforce to repair/rebuild/operate/recover may not be available after a major disaster as local personnel and their families may be impacted by the event.

Strategy C1.1: Ensure that the county has sufficient personnel to respond and recover in an emergency.

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
<p>Action C1.1.1: Complete and update, as appropriate, departmental Continuity of Operations (COOP) Plans, including the identification of “mission essential” personnel and their associated responsibilities during and after the disaster event.</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> • PC Emergency Management 	<ul style="list-style-type: none"> • All County Departments 	<ul style="list-style-type: none"> • Existing / Updated emergency procedures • COOP Plans

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<p>Action C1.1.2: Promote existing training opportunities related to infrastructure repair and mitigation, including Federal, State, and local training, Emergency Management Institute (EMI) courses, and appropriate association training (e.g. APWA).</p>	<p>Pre-Disaster: 2012-2013 and ongoing</p>	<ul style="list-style-type: none"> • PC Emergency Management 	<ul style="list-style-type: none"> • PC Department of Environment & Infrastructure (PC DEI) 	<ul style="list-style-type: none"> • Coordination with public works/utilities and emergency management for local training • Federal Emergency Management Agency (FEMA) Online courses • Emergency Management Institute (EMI) Training (e.g. IEM community course)
<p>Action</p>	<p>Timeframe</p>	<p>Responsible Agency</p>	<p>Required Collaboration</p>	<p>Resources Needed</p>
<p>Action C 1.1.3: Identify training needs and training strategies for staff performing infrastructure rapid impact assessments, damage assessment, public assistance, hazard mitigation, etc.</p>	<p>Pre-Disaster: 2012-2013 and ongoing</p>	<ul style="list-style-type: none"> • PC Emergency Management 	<ul style="list-style-type: none"> • PC DEI • Municipalities 	<ul style="list-style-type: none"> • Coordination with public works/utilities and emergency management to identify local training needs through Regional Domestic Security Task Force (RDSTF) (see also Action C.1.1.2) • Additional “Train the trainer” courses • State and Federal partners

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<p>Action C 1.1.4: Develop/implement a community-specific training exercise</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> • PC Emergency Management 	<ul style="list-style-type: none"> • County Departments • FEMA & EMI • Municipalities • Tampa Bay Regional Planning Council (TBRPC) 	<ul style="list-style-type: none"> • Multi-jurisdictional collaboration
<p>Action C1.1.5: Establish/maintain the agreements necessary to facilitate timely mutual aid as well as temporary hires.</p>	<p>Pre-Disaster: 2012-2013 and ongoing</p>	<ul style="list-style-type: none"> • PC Emergency Management 	<ul style="list-style-type: none"> • PC DEI • PC Office of Management & Budget (OMB) • PC Economic Development • Municipalities • Private Utilities • Pinellas County Construction Licensing Board (PCCLB) 	<ul style="list-style-type: none"> • Copies of Mutual Aid Agreements; • List of Emergency Contractors; • List of Temporary staffing support
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<p>Action C1.1.6: Determine the best method and mechanism for supporting mission essential personnel and their families following a disaster such as the Public Works Department’s Family Assistance Team and Family Liaison/Resource Center-program which assists mission-essential personnel with emergency home repairs, child care, communication with family members, etc., after the disaster).</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> ● PC Human Resources 	<ul style="list-style-type: none"> ● County Departments ● PCCLB ● PROUD/COAD ● PC Emergency Management 	<ul style="list-style-type: none"> ● Federal and State Partners ● Southwest FL Water Management District (SWFWMD) ● <u>Funding</u>
<p>Action C1.1.7: Annually review/update the list of pre-approved vendors and construction contractors (and the “job order contracting” procedure) to assist with major infrastructure recovery projects – placing an emphasis on using local businesses.</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> ● PC Purchasing 	<ul style="list-style-type: none"> ● PCCLB ● PC DEI ● PC Emergency Management ● FL Department of Transportation (FDOT) 	<ul style="list-style-type: none"> ● Job Order Contracting information ● Credentialing information (re: FEMA requirements, to assure reimbursement potential)

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ISSUE C2: THERE WILL BE PRESSURE TO BUILD BACK QUICKLY; but there is also a need to place emphasis on the quality of restoration and future resiliency.

Strategy C2.1: Ensure that an emphasis is placed on mitigation and planning for resiliency as a part of the infrastructure restoration process

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C2.1.1: Consolidate and/or complete a comprehensive inventory and vulnerability assessment of County infrastructure (transportation, surface water management, utilities and public buildings) to use as a basis for prioritizing mitigation or replacement projects in both the pre- and post-disaster environment. Include life cycle analysis as a part of the assessment.	Pre-Disaster: 2012-2013	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> PC Real Estate Management 	<ul style="list-style-type: none"> Funding Technology Assessment Hazard/Vulnerability data Facility-specific analyses
Action C2.1.2: Develop and maintain preliminary cost estimates, funding scenarios and design plans, where appropriate, to expedite the recovery decision-making process, incorporating mitigation and adaptive strategies for the most vulnerable infrastructure.	Pre-Disaster: 2012-2013, with periodic updates	<ul style="list-style-type: none"> OMB 	<ul style="list-style-type: none"> PC DEI PC Real Estate Management 	<ul style="list-style-type: none"> Funding Preliminary engineering analysis, as appropriate Local Mitigation Strategy (LMS) Project lists/ rankings Adaptive strategies

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Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C2.1.3: To facilitate funding eligibility, incorporate and prioritize projects in the Local Comprehensive Plan and Local Mitigation Strategy (LMS).	Pre-Disaster: 2011-2012, with periodic updates	<ul style="list-style-type: none"> OMB 	<ul style="list-style-type: none"> PC Planning Department Municipalities PC DEI PC Real Estate Management 	<ul style="list-style-type: none"> Capital Improvement Program (CIP) LMS
Action C2.1.4: Include disaster resiliency and LMS priority as a key criteria/factor in the annual capital improvement project ranking process.	Pre-Disaster: 2011-2012	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> OMB PC Planning Department Municipalities 	<ul style="list-style-type: none"> LMS CIP
Action C2.1.5: Review/update standards and regulations for utility and road infrastructure as a part of the update to the land development code (i.e., site development regulations).	Pre-Disaster: 2012-2013,	<ul style="list-style-type: none"> PC Planning Department 	<ul style="list-style-type: none"> PC DEI PC Building & Development Review Services (PC BDRS) 	<ul style="list-style-type: none"> Research on technology and innovation
Action C2.1.6: Develop specific resiliency goals, criteria and/or standards for all infrastructure construction and re-construction projects to minimize the potential for future infrastructure losses.	Pre-Disaster: 2012-2013,	PC DEI	<ul style="list-style-type: none"> PC Planning Department St. Petersburg/ Clearwater International Airport PC Real Estate Management FDOT, SWFWMD, FL Department of Environmental Protection (FDEP) Pinellas Suncoast Transit Authority (PSTA) 	<ul style="list-style-type: none"> Research on technology and innovation Funding

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Strategy C2.2: Implement resiliency improvements during the recovery process.				
Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C2.2.1: Coordinate long range infrastructure planning/build-back decisions with land use planning and future vulnerability scenarios.	Post Disaster: D+30 days – D+5years	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • PC Planning Department • Municipalities with water supplies and distribution systems • SWFWMD • Tampa Bay Water 	<ul style="list-style-type: none"> • Existing inventories • GIS Support • Multi-jurisdictional team approach
Action C2.2.2: Using vulnerability information, capital improvement plans, local mitigation strategy information, cost-benefit and life-cycle analysis, etc., determine which impacted facilities should undergo short term temporary/immediate repairs versus long term adaptive reconstruction	Post-Disaster: D+30 –D+5years	<ul style="list-style-type: none"> • PC DEI • PC Real Estate Management 	<ul style="list-style-type: none"> • Municipalities • SWFWMD • Progress Energy • TECO Energy • LMS Committee • FDOT • CSX Corporation (Railroad) 	<ul style="list-style-type: none"> • Federal and State Partners • Data inventories, GIS data, etc. • COOP • Funding
Action C2.2.3: Utilize the recovery, restoration and re-building process as a means to implement and achieve watershed management plan goals.	Post-Disaster: D+3- D+ 5 years	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • PC Planning Department • SWFWMD • FDEP • Tampa Bay Estuary Program 	<ul style="list-style-type: none"> • Approved watershed plans

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ISSUE C3: BUDGET LIMITATIONS: Local governments have limited budgets, with limited flexibility to respond to unanticipated disasters (which impacts the ability to - for example - acquire land, relocate vulnerable facilities, mitigate structures and facilities, etc.)

Strategy C3.1: Coordinate with other governmental agencies (local, federal and state) and the private sector to identify pre- and post-disaster funding programs and mechanisms for infrastructure mitigation, relocation, hardening, and rebuilding.

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
<p>Action C3.1.1: Identify and maintain information on federal and state programs and funds available to leverage local funds for pre-disaster mitigation and to implement both short-term and long-term infrastructure recovery plans; pre-assess eligibility requirements where possible to better position the County to take advantage in the immediate post disaster environment.</p>	<p>Pre-Disaster: 2011-2012 Post-Disaster: D+7- D+365</p>	<ul style="list-style-type: none"> • OMB 	<ul style="list-style-type: none"> • PC DEI • PC Planning Department • PC Emergency Management • PC Real Estate Management • Municipalities • TBRPC • Private Utilities • LMS • FDOT • PC Metropolitan Planning Organization (MPO) 	<ul style="list-style-type: none"> • Existing / Updated emergency procedures • Federal and State Partners

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ISSUES C4: INFRASTRUCTURE NEEDS OF A DISPLACED POPULATION. There will be a need to coordinate infrastructure with the needs of a displaced population, including those in temporary disaster housing.

Strategy C4.1: Establish necessary linkages between infrastructure placement and services for post-disaster displaced populations.

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C4.1.1: Set up an Infrastructure Team to review the temporary housing plan and assess the pre- identified sites to determine, and schedule if possible, those site preparation and infrastructure installations that can be pre-planned to facilitate rapid deployment of temporary housing in the post disaster environment.	Pre-Disaster: 2012-2013	<ul style="list-style-type: none"> PC Community Development 	<ul style="list-style-type: none"> PC DEI PC Emergency Management PC Economic Development PC School District Municipalities Private Utilities Health and Human Services Agencies FEMA PSTA, FDOT, US Army Corps of Engineers (USACOE) 	<ul style="list-style-type: none"> Funding Staff Resources
Action C4.1.2. Ensure that the Department of Environment and Infrastructure is represented on the Disaster Housing Task Team	Pre-Disaster 2011 - 2012	<ul style="list-style-type: none"> Disaster Housing Task Team 	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> Staff Resources
Action C4.1.3: Annually review the temporary housing plan to re-assess infrastructure needs.	Ongoing	<ul style="list-style-type: none"> Disaster Housing Task Force 	<ul style="list-style-type: none"> PC Emergency Management PC Planning Department PC DEI Municipalities 	<ul style="list-style-type: none"> Staff Resources

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Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
<p>Action C4.1.3: Ensure transit routes facilitate transportation needs in the post disaster environment, including meeting the needs of displaced residents needing to get to jobs, school, services, etc.</p>	<p>Post-Disaster: D+3- D+5 years</p>	<ul style="list-style-type: none"> ● PSTA and Disaster Housing Task Force 	<ul style="list-style-type: none"> ● PC Planning Department ● MPO ● FDOT ● PC Emergency Management ● Social Service Providers ● PC Economic Development ● Municipalities ● PC School District 	<ul style="list-style-type: none"> ● Staff Resources ● State and Federal Partners

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ISSUE C5: MINIMIZE ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS ASSOCIATED WITH DISRUPTION OF UTILITY INFRASTRUCTURE SERVICES IN A POST DISASTER ENVIRONMENTAL: Following a disaster there is a likelihood that basic infrastructure (water, sewer, power, etc.) will be damaged, inoperable or destroyed and resulting disruptions have the potential to contribute to a public health hazard.

Strategy C5.1: Ensure that plans are in place to address potential public health issues arising from the disaster through efficient and effective debris management and utility system restoration

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
<p>Action C5.1.1: Identify and maintain information on vulnerability of sewer, septic and drainage system to overflows, etc., from storm surge, flooding, etc., and prioritize for mitigation or relocation, as feasible</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • Municipalities • PC Health Department • FDEP 	<ul style="list-style-type: none"> • Funding • LMS/CIP
<p>Action C5.1.2.: Review, assess and document emergency plans for potable water interconnection; and schedule capital projects, if necessary to fill in potential gaps</p>	<p>Pre-Disaster: 2012-2013</p>	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • Municipalities • Private Utilities • PC Emergency Management • Private haulers • Tampa Bay Water • PC Purchasing 	<ul style="list-style-type: none"> • Prequalified contracts
<p>Action C5.1.3.: Ensure debris management and resource recovery operations are operational quickly, address the myriad of debris issues, and monitored carefully to insure issues such as air quality (e.g., asbestos) and potential debris contamination (chemicals, mold, etc.) are addressed.</p>	<p>D+1day – D+30 days</p>	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • PC Parks & Conservation Resources • Municipalities • Private providers • PC Health Department • FDEP • FDOT 	<ul style="list-style-type: none"> • County and municipal debris management plans

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ISSUE C6: DOCUMENT PUBLIC NEED AND ECONOMIC BENEFIT OF PUBLIC FACILITIES: Recognize the economic benefit and regional significance of critical infrastructure (e.g. airport, wastewater treatment plants, etc.) and physical vulnerabilities in light of current locations to avoid controversy in post disaster environment.

Strategy C6.1: Identify the County’s regionally significant infrastructure

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C6.1.1.: Identify the County’s regionally significant infrastructure	Pre-disaster 2011-2012	<ul style="list-style-type: none"> PC Planning Department 	<ul style="list-style-type: none"> PC DEI PC Emergency Management PC Parks & Conservation Resources PC Real Estate Management County Attorney Municipalities 	
Action C6.1.2: Conduct a vulnerability assessment of the key regional infrastructure and determine if there is any cost-benefit or public benefit to relocation in the event of a disaster.	Pre-Disaster 2011-2013	<ul style="list-style-type: none"> PC DEI St. Petersburg/ Clearwater International Airport 	<ul style="list-style-type: none"> PC Planning Department LMS Committee PC School District (e.g., re: bus facilities, etc.) PSTA (bus and maintenance facilities) 	
Action C6.1.3: Take the findings from a comprehensive analysis of the County’s regionally significant infrastructure to elected officials for their information and direction as it pertains to rebuilding/ reconstruction in a post–disaster environment; formalize findings and decisions.	Pre-Disaster 2011-2013	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> PC Planning Department LMS Committee 	

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Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C6.1.4: Acquire property adjacent to critical/regionally significant infrastructure as the opportunity arises.	Post disaster	<ul style="list-style-type: none"> PC Real Estate Management 	<ul style="list-style-type: none"> PC DEI PC Parks & Conservation Resources 	<ul style="list-style-type: none"> Funding

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ISSUE C7: AVAILABILITY OF COMPREHENSIVE VULNERABILITY DATA: There is not a comprehensive county-wide inventory and vulnerability assessment and mitigation strategies of key infrastructure. There is a need to identify gaps in data, mapping, responsibility for maintenance of these inventories, etc., as rapid assessment and determination of build-back priorities can be affected by data availability, including accuracy, currency and comprehensiveness of data.

Strategy C7.1: Organize available data and establish an effective method to maintain the data and information

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C7.1.1: Establish a task team to assess/organize infrastructure data, identify gaps and determine responsibilities for maintenance and for updates.	Pre-Disaster: 2012-2015	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> BTS TBRPC PC Planning Department Municipalities Private providers (e.g., Progress Energy) 	<ul style="list-style-type: none"> GIS data
Action C7.1.2: Develop a long-term plan (20+ year vision) for infrastructure redevelopment highlighting the most vulnerable facilities and identifying mitigation and adaptation strategies.	Pre-Disaster: 2012-2015	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> PC Emergency Management PC Planning Department TBRPC 	<ul style="list-style-type: none"> CIP LMS Funding
Action C7.1.3: Establish and maintain emergency operation and coordination documents and procedures for infrastructure restoration (county and municipal, as well as private provider data).	Review annually	<ul style="list-style-type: none"> PC DEI 	<ul style="list-style-type: none"> Municipalities Private Utilities 	<ul style="list-style-type: none"> Staff Resources

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ISSUES C8: EFFECT OF GEOGRAPHY ON RECOVERY OPERATIONS. Pinellas County’s geography will present unique significant challenges following a flood event with regard to potential damage to transportation facilities and resulting extended disruption to traffic and supply chains, (e.g., commuter traffic, fuel delivery, emergency supplies, construction materials, etc.).				
Strategy C8.1: Open the transportation corridors and re-establish access to the county as quickly as possible				
Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C8.1.1: Establish/formalize communications/commitments with federal and state partners as well as adjacent counties to expedite the inspection and repair of key transportation corridors, especially the bridges and causeways accessing the beaches and crossing Tampa Bay.	D+3 – D+30	<ul style="list-style-type: none"> • PC Emergency Management (ESF 1) • PC DEI 	<ul style="list-style-type: none"> • FDOT • USACOE • CSX Corporation (Railroad) • St. Petersburg/Clearwater International Airport • OMB • Municipalities • Private Utilities • PCCLB • Adjacent Counties 	<ul style="list-style-type: none"> • Federal and State Partners • COOP
Strategy C8.2: Provide access to sufficient fuel supplies in the short-term recovery and long-term redevelopment phases.				
Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C8.2.1: Identify fuel storage facilities and capabilities, fuel needs to support critical infrastructure, rapid assessment procedures for fuel storage and transport facilities, and strategies for bringing fuel supplies into the County.	Pre-disaster 2011-2012	<ul style="list-style-type: none"> • PC DEI 	<ul style="list-style-type: none"> • FDOT • USACOE • PC Emergency Management • Municipalities • Private Utilities/Progress Energy • PSTA • PC Real Estate Management (Fleet) 	<ul style="list-style-type: none"> • Federal and State Partners

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ISSUE C9: SEA LEVEL RISE: Infrastructure planning and build-back decisions currently do not factor in the potential of sea level rise.

Strategy C9.1: Incorporate the potential for, and adaptation to, sea level rise in infrastructure build-back policies

Action	Timeframe	Responsible Agency	Required Collaboration	Resources Needed
Action C9.1.1: Identify the potential for sea level rise under different scenarios	Pre-disaster 2012-2015	<ul style="list-style-type: none"> • PC Planning Department 	<ul style="list-style-type: none"> • PC Extension • TBRPC • Tampa Bay Estuary Program 	<ul style="list-style-type: none"> • Federal and State Partners
Action C9.1.2: determine a cost-benefit to adaptive strategies.	Pre-disaster 2012-2015	<ul style="list-style-type: none"> • PC Planning Department 	<ul style="list-style-type: none"> • PC DEI • PC Extension • LMS Committee 	<ul style="list-style-type: none"> • Federal and State Partners