*Table 13 - Estimated Asset Values*

| Sector | # of Critical Assets at Risk | Asset Value |
|---|---|---|
| **Food and Agriculture** | 0 | --- |
| **Banking and Finance** | 8 | $4,048,509 |
| **Chemical and Hazardous** | 0 | --- |
| **Commercial** | 323 | $75,624,242 |
| **Communications** | 0 | --- |
| **Critical Manufacturing** | 24 | $1,810,599 |
| **EM** | 0 | --- |
| **Healthcare** | 6 | $2,103,984 |
| **Government Facilities** | 31 | $2,756,582 |
| **Nuclear Reactors, Materials and Waste** | 0 | --- |
| **Postal and Shipping** | 0 | --- |
| **Transportation Systems** | 0 | --- |
| **Energy** | 7 | $289,387,377 |
| **Emergency Services** | 10 | $2,397,892 |
| **Water** | 26 | $3,640,001 |
| **Education** | 5 | $28,156,000 |

# Phase 2

## Potential Solutions

Through a review of the resources and previous studies, initial potential resiliency projects were identified. Then the Community Action Team brainstormed additional project ideas and finally the citizen survey results were used to guide the chosen implementation locations and prioritization of projects. Timelines of Long-Term, Near-Term, and currently In-Progress were assigned to each project. Currently in progress projects were included in the initial project list because they play an important role in developing resiliency on Hatteras Island and many of them have not been in progress long enough for the effect of the efforts to be evident yet. The initial project list sorted by time horizon is listed below.

*Table 14 -Project List (Part 1 of 4)*

| Time Horizon | Project Name | Project Description |
|---|---|---|
| **In-Progress** | Beach Nourishment - Avon & Buxton | Beach nourishment for Avon beach and renourishment for Buxton, project is coming up summer 2022. |
| **In-Progress** | Elevate Structures | Provide assistance to elevate structures and homes that are currently below the BFE or are repetitive loss properties, to meet current ordinance requirements and protect against flooding and sea level rise. Repetitive loss areas are identified in the 2020 Dare Repetitive Loss Area Analysis Update. Fourteen homes on Hatteras Island are anticipated to be elevated over the next two years through FEMA's Hazard Mitigation Grant Program. An additional twenty-two home elevation applications have been submitted by Dare County for Hatteras residents. |

*Table 15 - Project List (Part 2 of 4)*

| Time Horizon | Project Name | Project Description |
|---|---|---|
| **In-Progress** | Flood Gauges | Install flood gauges at each village and areas subject to frequent flooding in order to better monitor and alert individuals to changing conditions. This project was identified in the Outer Banks Hazard Mitigation Plan (Action #DAR9). Dare County will be installing five new flood gauges on Hatteras Island during 2022 to add to the existing four flood gauges already located on the island. |
| **In-Progress** | Stormwater Master Plan Study | Update the 2001 Dare County Stormwater Master Plan with a focus on the Hatteras Island Villages. This was identified in the Outer Banks Hazard Mitigation Plan (Action #DAR3). Dare County will begin updating the Stormwater Master Plan in 2022. |
| **In-Progress** | Stormwater/Flood Ordinance Review | Review and recommendation of stormwater ordinances for unincorporated Dare County. Dare County will review and recommend updates to stormwater ordinance as part of the Stormwater Master Plan update. |
| **In-Progress** | Flood Insurance Education and Outreach Program | In the citizen survey 11% of respondents indicated that their residence was not elevated above the BFE and 41% were unsure; an education and outreach program seeks to educate those who are unsure. Dare County currently educates the public on flood insurance via the “Low Risk is not No Risk” campaign, which informs the public about flood risk and flood insurance via social media, traditional forms of media, and other forms of public outreach. |
| **Near-Term** | County Stormwater Funding/Utility Study | To implement many of the other projects and the sheer number and scale of projects that will be needed, as well as on-going maintenance additional funding will be needed. This project would serve to study different funding options and recommend to the county. Identifying funding to improve stormwater drainage and land management preparation for flooding was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR1) |
| **Near-Term** | Storm Drainage Study/Improvement - Avon | Drainage study and improvement of roadside swales, culverts, grading along NC 12 from the post office to Ace Hardware. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Near-Term** | County Resiliency Staff Position | Establish a full time staff position to promote resiliency efforts, seek funding, and provide support for projects. |
| **Near-Term** | Engineered Wetland - Peter's Ditch Area | Building a constructed wetland to provide additional flood storage and water quality treatment in the Peter's Ditch watershed and alleviate some strain on the storm drainage system. |
| **Near-Term** | Establish County Stormwater Management Taskforce | Establishing a public/private taskforce to focus on stormwater issues, including rainfall flooding, and to address stormwater improvements and projects from a joint perspective. |

*Table 16 - Project List (Part 3 of 4)*

| Time Horizon | Project Name | Project Description |
|---|---|---|
| **Near-Term** | Establish Resilience Hubs | Establish sites that are well known and trusted by the community and have resilient energy and communications systems, and are able to provide programs and services needed to sustain the community before, during and after a disaster. These Hubs could be fully developed at fire stations, county facilities, or faith-based locations that are well known and protected during extreme weather events |
| **Near-Term** | Living Shorelines - Cape Hatteras Secondary School | Adjacent to Cape Hatteras Secondary School- a living shoreline at this location can also be utilized as a teaching tool and source of public education. Encouraging the use of natural barriers over hard structures to control shoreline erosion was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR13). |
| **Near-Term** | Living Shorelines- Frisco/Hatteras Village | Between Frisco and Hatteras Village - a living shoreline at this location serves to protect the soundside of a vulnerable section of NC 12 that was also identified as a hotspot in the citizen survey. Encouraging the use of natural barriers over hard structures to control shoreline erosion was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR13). |
| **Near-Term** | Living Shorelines- Rodanthe Harbor | Rodanthe Harbor - a living shoreline at this location provides some additional stabilization and protection at the emergency ferry route and helipad. Encouraging the use of natural barriers over hard structures to control shoreline erosion was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR13). |
| **Near-Term** | Storm Drainage Improvement - Buxton | Drainage study and improvement of roadside swales, culverts, grading along the turn in NC 12 and Old Lighthouse Road. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Near-Term** | Storm Drainage Improvement - Tri-Villages (Rodanthe, Waves, Salvo) | Drainage study and improvement of roadside swales, culverts, grading along NC-12 through the Tri-Villages and specifically in the Wind Over Waves area. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Near-Term** | Storm Drainage Maintenance (Ditch Maintenance) | Work with private landowners and NCDOT to ensure maintenance of drainage ditches and maximize the capability of existing drainage systems and minimize flooding from rainfall and poor drainage. This Drainage study and improvement of roadside swales, culverts, grading along NC-12 through the Tri-Villages and specifically in the Wind Over Waves area. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway.was identified in the Outer Banks Hazard Mitigation Plan (Action # DAR11) and was identified as a common concern in the citizen survey. |

*Table 17- Project List (Part 4 of 4)*

| Time Horizon | Project Name | Project Description |
|---|---|---|
| **Near-Term** | Storm Drainage Study/Improvement - Hatteras Village | Drainage study and improvement of roadside swales, culverts, grading throughout Hatteras Village, specifically along NC 12, Eagle Pass Road, and Pole Road. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Near-Term** | Property Buyout | Property buyouts of repetitive loss properties located throughout Hatteras Island. Properties bought out through the FEMA buy-out program can be used for limited purposes and would primarily serve as land returned to an open space condition and associated increased infiltration and natural floodplain function. Areas are identified in the 2020 Dare Repetitive Loss Area Analysis Update. |
| **Near-Term** | Public Education and Outreach Program | A targeted education and outreach program to encourage property buyout or granting of conservation easements. |
| **Near-Term** | Dune Restoration | Projects to plant and stabilize dunes and enforce "keep off the dunes" during peak visitor times, across the island. |
| **Near-Term** | Backup Communications | Establish redundant communications paths that do not rely on ground-based fiber optic cables. Solutions might include acquisition and installation of satellite equipment to allow cellular providers to maintain service, installation of commercial satellite equipment to provide data transmission capabilities, and access to satellite-based internet service from companies like Starlink. Non-terrestrial solutions like these will provide connectivity with the mainland to provide backup communications when service from the single CenturyLink fiber is disrupted. Damage to the fiber line is especially disruptive on Hatteras Island because repairs cannot occur until flooding has receded. Reliable non terrestrial communications are vital not only for emergency response but also to the economy |
| **Long-Term** | Beach Nourishment - Frisco to Hatteras Village | Beach nourishment along NC 12 between Frisco and Hatteras Village is an option for protection of NC 12 presented in the NC 12 Feasibility Study for Hatteras Village. |
| **Long-Term** | Bridge NC 12- Hatteras Village Frisco | Replace a section of NC 12 between the towns of Frisco and Hatteras Village with a bridge. This area was identified as a hot spot location in the citizen survey and the solution was presented as an option in the NC 12 Feasibility Study for Hatteras Village. |
| **Long-Term** | Utilities Interconnections | Connecting the Rodanthe and South Hatteras Water Systems so in the case of failure in one of the systems, redundancy exists. |
| **Long-Term** | Sewer Feasibility Study | A feasibility study of the possibility, potential cost, and funding options for a municipal sewer system to replace septic systems. With rising ground water levels and increased development, the reliance on septic is unstainable and was also recognized as a concern in the citizen survey. |

Projects were then prioritized through two surveys, one sent to the CAT and one to the citizens who indicated a desire to remain involved and receive updates in the initial citizen survey. The survey listed each project idea and asked respondents to rank them as Lowest Priority, Low Priority, Neither Low Priority nor High Priority, High Priority, or Highest Priority, which was then assigned a numeric value of 1-5 respectively. See Appendix C for the full surveys and results. The projects were then sorted by average score and ranked. To assign priority, the top five projects were ranked high priority, the bottom five were ranked low priority, and the remainder were ranked medium priority. This process was followed for both the CAT survey results and the second citizen survey results. Consideration of the CAT priority, Citizen priority, and additional factors such as cost, effort required, and alignment with program goals was made and an overall priority assigned to each project.

***Table 18 - In-Progress Project Prioritization***

| Project | CAT Average | CAT Ranking | CAT Priority | Citizen Average | Citizen Ranking | Citizen Priority | Overall Priority |
|---|---|---|---|---|---|---|---|
| **Beach Nourishment - Avon & Buxton** | 4.33 | 1 | High | 3.94 | 5 | High | **High** |
| **Stormwater Master Plan Study** | 3.89 | 4 | High | 4.02 | 3 | High | **High** |
| **Elevate Structures** | 3.67 | 12 | Medium | 3.68 | 16 | Medium | **Medium** |
| **Flood Gauges** | 3.33 | 18 | Medium | 3.64 | 17 | Medium | **Medium** |
| **Stormwater/Flood Ordinance Review** | 3.50 | 16 | Medium | 3.58 | 21 | Medium | **Medium** |
| **Flood Insurance Education and Outreach Program** | 3.00 | 26 | Low | 3.36 | 26 | Low | **Low** |

***Table 19 - Long-Term Project Prioritization***

| Project | CAT Average | CAT Ranking | CAT Priority | Citizen Average | Citizen Ranking | Citizen Priority | Overall Priority |
|---|---|---|---|---|---|---|---|
| **Beach Nourishment - Frisco to Hatteras Village** | 4.00 | 2 | High | 3.73 | 12 | Medium | **High** |
| **Bridge NC 12- Hatteras Village Frisco** | 3.22 | 22 | Medium | 3.46 | 25 | Low | **Medium** |
| **Utilities Interconnections** | 3.78 | 7 | Medium | 3.75 | 11 | Medium | **Medium** |
| **Sewer Feasibility Study** | 2.56 | 27 | Low | 3.59 | 19 | Medium | **Low** |

***Table 20 - Near-Term Project Prioritization (Part 1 of 2)***

| Project | CAT Average | CAT Ranking | CAT Priority | Citizen Average | Citizen Ranking | Citizen Priority | Overall Priority |
|---|---|---|---|---|---|---|---|
| **County Stormwater Funding/Utility Study** | 4.00 | 2 | High | 3.71 | 15 | Medium | **High** |
| **Dune Restoration** | 3.78 | 7 | Medium | 4.41 | 1 | High | **High** |
| **Storm Drainage Maintenance (Ditch Maintenance)** | 3.56 | 14 | Medium | 4.11 | 2 | High | **High** |
| **Backup Communications** | 3.67 | 12 | Medium | 3.90 | 7 | Medium | **Medium** |
| **County Resiliency Staff Position** | 3.33 | 18 | Medium | 3.52 | 23 | Low | **Medium** |

*Table 21 - Near-Term Project Prioritization (Part 2 of 2)*

| Project | CAT Average | CAT Ranking | CAT Priority | Citizen Average | Citizen Ranking | Citizen Priority | Overall Priority |
|---|---|---|---|---|---|---|---|
| **Engineered Wetland - Buxton** | 3.33 | 18 | Medium | 3.73 | 12 | Medium | **Medium** |
| **Establish County Stormwater Management Taskforce** | 3.78 | 7 | Medium | 3.63 | 18 | Medium | **Medium** |
| **Establish Resilience Hubs** | 3.56 | 14 | Medium | 3.72 | 14 | Medium | **Medium** |
| **Living Shorelines - Cape Hatteras Secondary School** | 3.11 | 23 | Low | 3.53 | 22 | Medium | **Medium** |
| **Living Shorelines- Frisco/Hatteras Village** | 3.44 | 17 | Medium | 3.97 | 4 | High | **Medium** |
| **Living Shorelines-Rodanthe Harbor** | 3.33 | 18 | Medium | 3.59 | 19 | Medium | **Medium** |
| **Storm Drainage Study/Improvement - Avon** | 3.89 | 4 | Medium | 3.78 | 9 | Medium | **Medium** |
| **Storm Drainage Study/Improvement - Buxton** | 3.78 | 7 | Medium | 3.78 | 9 | Medium | **Medium** |
| **Storm Drainage Study/Improvement - Hatteras Village** | 3.78 | 7 | Medium | 3.91 | 6 | Medium | **Medium** |
| **Storm Drainage Study/Improvement - Tri-Villages (Rodanthe, Waves, Salvo)** | 3.89 | 4 | High | 3.89 | 8 | Medium | **Medium** |
| **Property Buyout** | 3.11 | 23 | Low | 3.49 | 24 | Low | **Low** |
| **Public Education and Outreach Program** | 3.11 | 23 | Low | 3.19 | 27 | Low | **Low** |

## Project Portfolio

From the initial project list, 13 projects have been further developed for inclusion in the project portfolio. All the projects selected are in the near-term time horizon and were given a priority ranking of either high or medium. Only near-term projects were included in the portfolio to best align with Phase 3 and 4 of the program. However, that does not preclude further development of any of the remaining projects included on the near term or in-progress lists, nor does it mean some of the long term projects are not important to further develop and pursue.

*Table 22 - Portfolio Project #1*

| | |
|---|---|
| **Project Name** | County Stormwater Funding/Utility Study |
| **Project Description** | In order to implement many of the other projects and the sheer number and scale of projects that will be needed, as well as on-going maintenance, additional funding will be needed. This project would serve to study different funding options, such as implementing a stormwater utility fee or additional apportionment from the general fund, and make a recommendation to the county. Identifying funding to improve stormwater drainage and land management preparation for flooding was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR1). |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Funding Source |
| **Project Estimated Cost** | $50,000 - $100,000 |
| **Potential Implementation Funding Sources** | General Fund |
| **Projected Estimated Timeline** | 1 year |
| **Priority Rating** | High |
| **Project Map** | N/A |

*Table 23 - Portfolio Project #2*

| | |
|---|---|
| **Project Name** | Dune Restoration |
| **Project Description** | Projects to plant and stabilize dunes and enforce "keep off the dunes" during peak visitor times, across the island. Installing plantings and sand fencing on dunes on public lands and establish grant programs to support installation of similar projects on private land. Initial installation could occur immediately and then will require ongoing maintenance. This project was ranked the highest by the citizen survey. |
| **Hazard(s) Addressed by Project** | Flooding, Sea Level Rise, Hurricane and Tropical Storms |
| **Type of Solution** | Nature Based |
| **Project Estimated Cost** | $500 per LF |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 1 year to establish, then ongoing |
| **Priority Rating** | High |
| **Project Map** | N/A |

*Table 24 - Portfolio Project #3*

| | |
|---|---|
| **Project Name** | Storm Drainage Maintenance (Ditch Maintenance) |
| **Project Description** | Work with private landowners and NCDOT to ensure maintenance of drainage ditches and maximize the capability of existing drainage systems and minimize flooding from rainfall and poor drainage. This was identified in the Outer Banks Hazard Mitigation Plan (Action # DAR11) and was identified as a common concern in the citizen survey. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Plans and Policies, Infrastructure |
| **Project Estimated Cost** | $50,000 - $100,000 annually |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds, Tax or Tax Incentive Program |
| **Projected Estimated Timeline** | 1 year to establish, then ongoing |
| **Priority Rating** | Medium |
| **Project Map** | N/A – all of Hatteras Island |

*Table 25 - Portfolio Project #4*

| | |
|---|---|
| **Project Name** | Backup Communications |
| **Project Description** | Establish redundant communications paths that do not rely on ground-based fiber optic cables. Solutions might include acquisition and installation of satellite equipment to allow cellular providers to maintain service, installation of commercial satellite equipment to provide data transmission capabilities, and access to satellite-based internet service from companies like Starlink. Non-terrestrial solutions like these will provide connectivity with the mainland to provide backup communications when service from the single CenturyLink fiber is disrupted. Damage to the fiber line is especially disruptive on Hatteras Island because repairs cannot occur until flooding has receded. Reliable non terrestrial communications are vital not only for emergency response but also to the economy. |
| **Hazard(s) Addressed by Project** | Hurricane and Tropical Storms |
| **Type of Solution** | Infrastructure |
| **Project Estimated Cost** | $200,000 - $2,000,000 |
| **Potential Implementation Funding Sources** | Grant Funds, FEMA |
| **Projected Estimated Timeline** | Dependent on solution selected |
| **Priority Rating** | Medium |
| **Project Map** | N/A |

*Table 26 - Portfolio Project #5*

| | |
|---|---|
| **Project Name** | Engineered Wetland – Buxton |
| **Project Description** | Building a constructed wetland to provide additional flood storage and water quality treatment in the Buxton watershed and alleviate some strain on the storm drainage system. |
| **Hazard(s) Addressed by Project** | Flooding, Sound Water Quality |
| **Type of Solution** | Nature Based Infrastructure |
| **Project Estimated Cost** | $100,000 - $200,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 1 year |
| **Priority Rating** | Medium |
| **Project Map** |  |

*Table 27 - Portfolio Project #6*

| | |
|---|---|
| **Project Name** | Establish County Stormwater Management Taskforce |
| **Project Description** | Establishing a public/private taskforce to focus on stormwater issues, including rainfall flooding, and to address stormwater improvements and projects from a joint perspective. It is critical that this taskforce include representatives from NCDOT and the county planning department as significant coordination and cooperation will likely be needed from both parties to address some of the most pressing issues of flooding along NC 12. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Planning & Policy |
| **Project Estimated Cost** | $0 |
| **Potential Implementation Funding Sources** | General Fund |
| **Projected Estimated Timeline** | 1 year to establish, then ongoing |
| **Priority Rating** | Medium |
| **Project Map** | N/A |

*Table 28 - Portfolio Project #7*

| | |
|---|---|
| **Project Name** | Establish Resilience Hubs |
| **Project Description** | Establish sites that are well known and trusted by the community and have resilient energy and communications systems, and are able to provide programs and services needed to sustain the community before, during and after a disaster. These Hubs could be fully developed at fire stations, county facilities, or faith based locations that are well known and protected during extreme weather events |
| **Hazard(s) Addressed by Project** | Flooding, Hurricane and Tropical Storms |
| **Type of Solution** | |
| **Project Estimated Cost** | $250,000 per hub |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 1 year |
| **Priority Rating** | Medium |
| **Project Map** | N/A |

*Table 29 - Portfolio Project #8*

| | |
|---|---|
| **Project Name** | Living Shorelines – Cape Hatteras Secondary School |
| **Project Description** | Living shorelines use plantings and other natural elements such as oyster bags or rock to stabilize the shoreline. This project proposes to design and install approximately 300 LF of living shoreline adjacent to Cape Hatteras Secondary School in Buxton. A living shoreline at this location can also be utilized as a teaching tool and public education resource. Encouraging the use of natural barriers over hard structures to control shoreline erosion was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR13). |
| **Hazard(s) Addressed by Project** | Soundside erosion, Sound water quality, Storm Surge |
| **Type of Solution** | Nature Based |
| **Project Estimated Cost** | $50,000 - $100,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 1 year |
| **Priority Rating** | Medium |
| **Project Map** |  |

*Table 30 - Portfolio Project #9*

| | |
|---|---|
| **Project Name** | Living Shorelines – Frisco to Hatteras Village |
| **Project Description** | Living shorelines use plantings and other natural elements such as oyster bags or rock to stabilize the shoreline. This project proposes to design and install approximately 1,400 LF of living shoreline along NC 12 between the communities of Frisco and Hatteras Village. A living shoreline at this location serves to protect the soundside of a vulnerable section of NC 12, that was also identified as a hotspot in the citizen survey. Encouraging the use of natural barriers over hard structures to control shoreline erosion was also identified in the Outer Banks Hazard Mitigation Plan (Action #DAR13). |
| **Hazard(s) Addressed by Project** | Soundside erosion, Sound water quality, Storm Surge |
| **Type of Solution** | Nature Based |
| **Project Estimated Cost** | $250,000 - $300,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 1 year |
| **Priority Rating** | Medium |
| **Project Map** |  |

*Table 31 - Portfolio Project #10*

| | |
|---|---|
| **Project Name** | Storm Drainage Study and Improvement - Avon |
| **Project Description** | Drainage study and improvement of roadside swales, culverts, and grading along NC 12 from the post office to Ace Hardware. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. There is also potential for the inclusion of nature-based solutions. As a result of the well-known and frequent drainage issues in this area, this project was given high priority. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Infrastructure |
| **Project Estimated Cost** | $50,000 - $1,000,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 2-5 years (1 year drainage study and 1-4 years implementing recommended improvement |
| **Priority Rating** | High |
| **Project Map** |  |

*Table 32 - Portfolio Project #11*

| | |
|---|---|
| **Project Name** | Storm Drainage Study and Improvement - Buxton |
| **Project Description** | Drainage study and improvement of roadside swales, culverts, grading along the turn in NC 12 and Old Lighthouse Road. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Infrastructure |
| **Project Estimated Cost** | $50,000 - $1,000,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 2-5 years (1 year drainage study and 1-4 years implementing recommended improvement |
| **Priority Rating** | Medium |
| **Project Map** |  |

*Table 33 - Portfolio Project #12*

| | |
|---|---|
| **Project Name** | Storm Drainage Study and Improvement – Hatteras Village |
| **Project Description** | Drainage study and improvement of roadside swales, culverts, grading throughout Hatteras Village, specifically along NC 12, Eagle Pass Road, and Pole Road. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Infrastructure |
| **Project Estimated Cost** | $50,000 - $1,000,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 2-5 years (1 year drainage study and 1-4 years implementing recommended improvement |
| **Priority Rating** | Medium |
| **Project Map** |  |

*Table 34 - Portfolio Project #13*

| | |
|---|---|
| **Project Name** | Storm Drainage Study and Improvement – Tri-Villages (Rodanthe, Waves, and Salvo) |
| **Project Description** | Drainage study and improvement of roadside swales, culverts, grading along NC-12 through the Tri-Villages and specifically in the Wind Over Waves area. This area was identified as a hot spot in the citizen survey and presents a safety hazard with ponding on the roadway. |
| **Hazard(s) Addressed by Project** | Flooding |
| **Type of Solution** | Infrastructure |
| **Project Estimated Cost** | $50,000 - $1,000,000 |
| **Potential Implementation Funding Sources** | General Fund, Grant Funds |
| **Projected Estimated Timeline** | 2-5 years (1 year drainage study and 1-4 years implementing recommended improvement |
| **Priority Rating** | Medium |
| **Project Map** |  |