

ANNE ARUNDEL COUNTY NUISANCE FLOODING PLAN



September 2020

Executive Summary

This Plan is adopted as the Anne Arundel County Nuisance Flooding Plan. It addresses the framework for nuisance flooding which dictates increased preparedness, response, recovery, and mitigation efforts due to shoreline communities facing increasing disturbances from episodic nuisance flooding events.

Each of the departments, agencies, and non-governmental organizations who are assigned responsibilities in this Plan have participated in the development, review, and revision process.

This Plan is designed to comply with applicable Federal and State emergency planning criteria and provides the policies and procedures to be followed in dealing with emergency and disaster situations. It replaces all other Nuisance Flooding Plans (NFP) and is effective immediately upon receipt for implementation in accordance with its provisions.

Acknowledgements

The Office of Emergency Management would like to acknowledge the following entities for their contributions to the Plan:

- Anne Arundel County Fire Department
- Anne Arundel County Police Department
- Anne Arundel County Department of Public Works
- Anne Arundel County Office of the County Executive
- Town of Highland Beach

Signature Page

Anne Arundel County is committed to an inclusive approach to ensure all stakeholders have the tools they need to save lives, protect public health and safety, property and the environment.

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Anne Arundel County, Maryland

Record of Plan Changes				
Revision Number	Revision Date	Insert	Remove	Changes Made By

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SECTION I: BASE PLAN

1.0 Introduction

Pursuant to Maryland House Bill 1427 (2019), §3-1018(b) and (c), on or before Oct. 1, 2020, a local jurisdiction that experiences nuisance flooding (NF) shall develop a plan to address nuisance flooding. In addition, a local jurisdiction shall update the plan every five years; publish the plan on the local jurisdiction's website; and shall submit a copy of the plan to the Maryland Department of Planning (Planning).

1.1 Purpose and Scope

Flooding is one of the most common natural hazards experienced in Anne Arundel County. Depending on the circumstances, flooding may be widespread or isolated, developing slowly or quickly. It may take the form of coastal, overland, or flash flooding. Floods may originate from ice jams, storm surges, or from the failure of dams or levees. Nuisance flooding is a more specific and commonplace phenomenon which dictates a slighter response and threatens the community in less intrusive ways.

The National Oceanic and Atmospheric Administration (NOAA) defines nuisance flooding, or high tide flooding, as “flooding that leads to public inconveniences such as road closures. It is increasingly common as coastal sea levels rise.” The language of SB 1006 refers to nuisance flooding as “high-tide flooding that causes public inconvenience.” Nuisance flooding is typically unrelated to particular storm events, though it may be exacerbated by long-duration wind events or passing storm systems. As such, it is frequently referred to as “sunny day flooding.” In short, nuisance flooding is minor tidal flooding that can occur at high tide although it is not usually a major threat to structures or public safety. Examples include overtopping of sea walls, water on low-lying areas of roads, or storm-water systems in which water may come up outtake pipes.

Nuisance flooding is capable of disrupting daily activities through a variety of mechanisms, such as the closure of roads due to high water, the inundation of yards and parks, and the impairment of engineered and natural drainage systems. Currently, these disruptions typically occur for a period of several hours and then abate; however, as a changing climate drives sea levels higher, these repeated “nuisance” impacts will become significant stressors on the infrastructure, emergency response, public health, and fabric of the community.

In Anne Arundel County, nuisance flooding occurs in locations near or adjacent to tidal bodies of water. Anne Arundel County consists of many tidal rivers to include, but not limited to: Magothy River, Marley Creek, Patapsco River, Patuxent River, Rhode River, Severn River, South River, West River, and the Chesapeake Bay.

2.0 Preparing for Nuisance Flooding

Because nuisance flooding is a complex problem, strong partnerships between planning and zoning, public works, emergency management, and geographic information systems (GIS) are necessary for Anne Arundel County to properly prepare for the inevitable impacts. In particular, it is important that departments collaborate to inventory and map chronically inundated areas.

As part of the nuisance flood planning process for Anne Arundel County, a thorough inventory of known flood hazard areas was created: *Appendix I - Nuisance Flooding Location Inventory - Modeled* and *Appendix II - Nuisance Flooding Location Inventory - Observed*.

In addition to mapping, accurate flood forecasting and warning is critical to the preparedness of a community. Weather forecast data is received from the National Weather Service (NWS) forecasting office at Sterling, Virginia (LWX). Critical tide information is received from the NOAA tide gauge stationed at Severn River in Annapolis, Maryland (APAM2). These gauges allow Anne Arundel County to be aware of and prepare for possible nuisance flooding impacts.

The Anne Arundel County Office of Emergency Management (OEM) maintains a close relationship with NWS Sterling, receiving notifications of special hazards and watches or warnings of severe weather before the community is impacted.

When significant nuisance flooding is expected; it is the responsibility of the Anne Arundel County OEM to disseminate information to key stakeholders to prepare for nuisance flooding impacts and respond accordingly. In extreme cases where nuisance flooding reaches such a severity that life safety, critical infrastructure, and key resources are threatened, Anne Arundel County OEM may disseminate public safety information via the Alert Anne Arundel Mass Notification System and through additional methods.

3.0 Responding to Nuisance Flooding

3.1 Response Thresholds

Thresholds are maintained for Anne Arundel County which direct a set of actions based on a particular inundation level or frequency of flooding. These thresholds are meant to supplement actions directed by the Anne Arundel County Emergency Operations Plan.

Threshold	Response Level	Required Action
Forecast data from the NWS or NOAA tide gauge indicates likely nuisance flooding impacts	Level I – Monitor	The Office of Emergency Management (OEM) monitors forecast data and Department of Public Works (DPW) and State Highway Administration (SHA) personnel monitor flood levels as needed and place high water signs at impacted locations.
Flood waters are present and are high enough to warrant temporary road closures	Level II – Notification and Response	OEM provides internal notification; DPW and SHA personnel are on standby and close roads and reroute traffic as flooding reaches hazardous levels. Fire and Police will monitor potential impacted areas and provide notification, as needed.

When flooding reaches such a severity that life safety, critical infrastructure, and key resources are threatened, “nuisance” flooding levels have been exceeded and additional actions are required. Below are response concepts consistent with Anne Arundel County Emergency Operations Plan which may become necessary as flood waters rise beyond nuisance levels.

- Response
 - Lifesaving activities
 - Incident containment
 - Public health concerns
 - Maintenance of transportation routes
 - Maintenance of critical facilities
 - Public warning mechanisms
 - Responder health & safety
 - Media & VIP management
 - Control & Coordination of operations

- Provision of transport, shelter and documentation of displaced persons
- Restoration of normality
- Recovery
 - Handover from life saving
 - Facilitate the restoration of systems to normality
 - Assess damage and return vital life support systems to minimum operating standards
 - Collate financial cost of the event
 - Legal implications, claim investigation
 - Debrief & compilation of final report
 - Community & restoration of services

3.2 Documentation

Documenting the extent and impacts of nuisance flooding is critical to maintaining infrastructure and the long-term resilience of Anne Arundel County. This information will be documented and updated on a regular basis for emergency planning purposes. A review of flood documentation should provide Anne Arundel County a comprehensive view of trends in flooding over time. The following factors will be recorded by Anne Arundel County OEM on a semi-annual basis through contact and records provided by DPW. Date, time, and location of nuisance flooding.

- Impacts (e.g. “x amount of water on the roadway,” “ditch overflow,” “docks underwater,” etc.)
- Agency notified and action taken

Reference *Appendix V - Nuisance Flooding Documentation Tool* for a sample version of the Anne Arundel County nuisance flooding documentation tool. Additional tools may be implemented to provide documentation and data management.

Additionally, the Department of Public Works (DPW) maintains the SeeClickFix platform and allows for users to submit information and concerns through the Anne Arundel County 311 application. This application will provide an area for the public to submit observed nuisance flooding impacts to DPW and OEM to track and monitor potentially impacted areas.

4.0 Mitigating Nuisance Flooding Impacts

4.1 Mitigating Nuisance Flooding Impacts

Both the Emergency Operations Plan (EOP) and the Hazard Mitigation Plan (HMP) for Anne Arundel County address measures by which the impacts of flooding can be mitigated, or lessened, by structural and nonstructural means. The purpose of the Nuisance Flooding Plan is to augment and support the information and recommended actions found in other planning documents. According to the *Anne Arundel County, Maryland – 2018 Hazard Mitigation Plan Update*:

The 2018 Emergency Operations Plan addresses the County's accelerated erosion by high winds and high tides, overland flow, and shoreline cliff sluffing and identifies strategies to reduce erosion along Anne Arundel's 533 linear miles of tidal shoreline. Both the 2018 Emergency Operations Plan and the Hazard Mitigation Plan identify shoreline control/stabilization measures and both residential and agricultural best management practices as viable means of reducing accretion/erosion of Anne Arundel's highly erodible soils. Both plans also emphasize the maintenance, enforcement, and strengthening of floodplain regulations and participation in the Community Rating System. All County projects will be evaluated for consistency with both the 2018 Emergency Operations Plan and the Hazard Mitigation Plan.

The principles of floodplain management are fundamental to the proper mitigation of nuisance flooding in Anne Arundel County. Higher standards – such as freeboard, development restrictions in the floodplain, etc. – can be effective in mitigating the effects of both nuisance flooding and other major flooding events.

Anne Arundel County's HMP identifies four areas in which focus is directed regarding mitigation activity. These four areas include:

- Ensure that existing structures are resistant to flood-related damage,
- Create awareness of floodplain hazards and protective measures,
- Protect critical facilities, and
- Prepare/update stormwater management plans for various areas in the County.

In addition to actions specified in the HMP, the NFP includes activities which Anne Arundel County will implement or consider implementing to mitigate the impacts of nuisance flooding. These activities support the four areas of focus found in the Hazard Mitigation Plan. They also support recommendations and actions from Anne Arundel County's National Flood Insurance Program (NFIP) Flood Risk query provided by the Federal Emergency Management Agency

(FEMA) and goals and strategies of the Anne Arundel County Emergency Operations Plan.

Structural

- Enact floodplain ordinance or codes which mandate the use of freeboard beyond current requirements.
- Improve stormwater management infrastructure to more effectively convey water from flood-prone areas.
- Conduct regular maintenance of drainage and stormwater control systems.
- Consider green infrastructure options rather than conventional stormwater solutions.

Nonstructural

- Public Information
 - Communicate the risk of nuisance flooding in non-emergency times to residents and businesses via mass mailings, social media, press releases, or automated phone calls.
 - Disseminate flood preparedness information to enable a safer and more aware public in the face of flooding.
 - Integrate nuisance flooding-related public messaging in Anne Arundel County's existing public information plan and materials.
- Planning
 - Ensure Anne Arundel County's NFP is kept up to date and referenced in the Hazard Mitigation Plan and other pertinent locations.
 - Schedule meetings of the nuisance flooding planning committee on an as-needed basis to address flood-related issues and review plans. The planning committee consists of subject matter experts who collectively designed the NFP. Reference *Appendix IV – Nuisance Flooding Committee Members*.
 - Improve stormwater management planning and strengthen policies to reduce runoff.
- Implementation
 - Educate and train County staff on responsibilities under the NFP.
 - Preserve floodplains as open spaces through the use of legal protection status.
 - Protect and restore natural coastal features (forests, marshes, dunes, underwater grasses, and oysters) that can reduce the impacts of flooding.

4.2 Projections for Future Impacts

One hundred and fifty-four (154) flood prone roads have been modeled and fifteen (15) flood prone roads have been observed through a collaborative effort by the OEM, DPW, GIS, County Fire and County Police. These areas impacted by nuisance flooding will increase gradually in the coming years as changing climatological patterns elevates water levels to new extremes; likely to accelerate gradually over time. New areas will also become impacted, leading to an increased number of businesses, residents, and critical infrastructure at risk. Public services will also be more frequently impaired as flooding increases.

Anne Arundel County will maintain a level of awareness of data made available by NOAA, the State of Maryland, the University of Maryland Center for Environmental Science, and other scientific institutions as it pertains to the community and local flood risks. These risks of increased nuisance flooding will be communicated appropriately to residents and decision makers and direct them to take appropriate action in the areas of emergency response and hazard mitigation. Venues such as Planning Commission meetings can be used to communicate information on long-term flood risks. Future projections of sea level change and nuisance flooding should also be integrated into land use planning, floodplain management, comprehensive planning, and capital investment planning.

SECTION II: APPENDICES

Appendix I – Nuisance Flooding Location Inventory - Modeled

Street Name ↓	Zip	Status	ADC Grid	DPW District	FD #	FD Station Name	PD Post	Council	Cross Street
2ND ST	20751	Modeled	5772D5	Southern	42	Deale	4C3	District 7	TBD
2ND ST	21122	Modeled	5059D6	Northern	10	Jacobsville	3A3	District 3	TBD
5TH ST	20751	Modeled	5772E5	Southern	42	Deale	4C3	District 7	TBD
7TH ST	20751	Modeled	5772E5	Southern	42	Deale	4C3	District 7	TBD
ADMIRAL MELVILLE CIR	21402	Modeled	5417E3	Central	17	Arnold	3D3	District 5	TBD
AL JONES DR	20764	Modeled	5656K10	Southern	41	Avalon Shores	4C2	District 7	TBD
ANNAPOLIS AVE	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
ARGIRO DR	21402	Modeled	5417E3	Central	17	Arnold	3D3	District 5	TBD
ARUNDEL AVE	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
ARUNDEL BEACH RD	21146	Modeled	5174G7	Northern	12	Earleigh Heights	3C3	District 5	TBD
BAKER RD	20764	Modeled	5656K9	Southern	41	Avalon Shores	4C2	District 7	TBD
BATTEE DR	20733	Modeled	5772F3	Southern	42	Deale	4C3	District 7	TBD
BAY AVE	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
BAY DR	20751	Modeled	5772E5	Southern	42	Deale	4C3	District 7	TBD
BAY FRONT DR	21122	Modeled	5176A4	Northern	20	Lake Shore	3A4	District 3	TBD
BAY HEAD RD	21409	Modeled	5296B3	Central	19	Cape St. Claire	3D3	District 5	TBD
BAY PARK WAY	21146	Modeled	5174C10	Northern	23	Jones Station	3C3	District 5	TBD
BAY VIEW AVE	20764	Modeled	5657A8	Southern	41	Avalon Shores	4C2	District 7	TBD

BEACH DRIVE BLVD	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
BEACH RD	21405	Modeled	5294E6	Central	40	West Annapolis	5D3	District 6	TBD
BRANHUM RD	21037	Modeled	5536H4	Southern	2	Woodland Beach	4B3	District 7	TBD
BREWERS ISLAND RD	21060	Modeled	5057F4	Other Jurisdictions	18	Marley	2C2	District 2	TBD
BROADVIEW TER	21401	Modeled	5415J6	Southern	3	Riva	4A2	District 6	TBD
BROADWATER CREEK RD	20733	Modeled	5772E3	Southern	42	Deale	4C3	District 7	TBD
BROADWATER RD	20733	Modeled	5772F4	Southern	42	Deale	4C3	District 7	TBD
BROADWATER WAY	21056	Modeled	5296A1	Other Jurisdictions	20	Lake Shore	3A4	District 3	TBD
CADLE AVE	21037	Modeled	5536J9	Southern	2	Woodland Beach	4B3	District 7	TBD
CALHOUN ST	21037	Modeled	5415J10	Southern	2	Woodland Beach	4B2	District 7	TBD
CALIFORNIA AVE	20714	Modeled	5888D5	Southern	42	Deale	4C3	District 7	TBD
CARROLLTON RD	21403	Modeled	5417F9	Southern	8	Annapolis Neck	4A3	District 6	TBD
CARRS CREEK RD	20733	Modeled	5772E4	Southern	42	Deale	4C3	District 7	TBD
CEDAR AVE	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD
CEDAR AVE	21037	Modeled	5536J10	Southern	2	Woodland Beach	4B3	District 7	TBD
CHERRY TREE LN	21403	Modeled	5537C2	Southern	8	Annapolis Neck	4A3	District 6	TBD
CHESAPEAKE AVE	20751	Modeled	5772E5	Southern	42	Deale	4C3	District 7	TBD
CHESAPEAKE AVE	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
CHESAPEAKE AVE	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD

CHESAPEAKE AVE	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD
CHICHESTER RD	20764	Modeled	5657A10	Southern	41	Avalon Shores	4C2	District 7	TBD
CLAGETT AVE	20779	Modeled	5772B10	Southern	42	Deale	4C3	District 7	TBD
CLAIBOURNE RD	21403	Modeled	5417E8	Southern	8	Annapolis Neck	4A3	District 6	TBD
COLUMBIA BEACH RD	20764	Modeled	5656K10	Southern	41	Avalon Shores	4C2	District 7	TBD
COLUMBIA COVE CT	20764	Modeled	5657A9	Southern	41	Avalon Shores	4C2	District 7	TBD
COTTER DR	21037	Modeled	5536G7	Southern	2	Woodland Beach	4B3	District 7	TBD
COUNTRY CLUB DR	21060	Modeled	5057E5	Northern	18	Marley	2C2	District 2	TBD
COVE VIEW TRL	21146	Modeled	5174C10	Northern	23	Jones Station	3C3	District 5	TBD
CREEK DR	21403	Modeled	5537E3	Southern	8	Annapolis Neck	4A3	District 6	TBD
CREEKS END LN	21032	Modeled	5293G2	Central	6	Herald Harbor	5D3	District 4	TBD
CROSS RD	21403	Modeled	5537E2	Southern	8	Annapolis Neck	4A3	District 6	TBD
DEALE BEACH RD	20751	Modeled	5772D4	Southern	42	Deale	4C3	District 7	TBD
DEEP COVE CT	20733	Modeled	5772F1	Southern	41	Avalon Shores	4C2	District 7	TBD
DEFENSE HWY	21032	Modeled	5415B3	Central	7	Arundel	5D2	District 6	TBD
DENT RD	20733	Modeled	5656H10	Southern	41	Avalon Shores	4C2	District 7	TBD
DEPRIEST DR	20764	Modeled	5657A9	Southern	41	Avalon Shores	4C2	District 7	TBD
DOCK RD	21122	Modeled	5175J2	Northern	20	Lake Shore	3A4	District 3	TBD
DOUGLASS AVE	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
DOVER ST	20733	Modeled	5772H3	Southern	42	Deale	4C3	District 7	TBD

DRUM POINT RD	20751	Modeled	5772A7	Southern	42	Deale	4C3	District 7	TBD
DUTCHSHIP ISLAND RD	21122	Modeled	5175F7	Other Jurisdictions	20	Lake Shore	3A4	District 3	TBD
E CHALK POINT RD	20778	Modeled	5656D7	Southern	41	Avalon Shores	4C2	District 7	TBD
E END RD	21401	Modeled	5415J5	Southern	3	Riva	4A2	District 6	TBD
E LAKE DR	21403	Modeled	5417G9	Southern	8	Annapolis Neck	4A3	District 6	TBD
EXETER ST	20733	Modeled	5772H2	Southern	42	Deale	4C3	District 7	TBD
FAIRFAX AVE	20733	Modeled	5772F2	Southern	42	Deale	4C3	District 7	TBD
FISHING CREEK RD	21403	Modeled	5537F3	Southern	8	Annapolis Neck	4A3	District 6	TBD
FOREST DR	21012	Modeled	5295G1	Central	17	Arnold	3D2	District 5	TBD
GARST RD	20764	Modeled	5656K10	Southern	41	Avalon Shores	4C2	District 7	TBD
GEORGES LN	20778	Modeled	5656D8	Southern	41	Avalon Shores	4C2	District 7	TBD
GLADSTONE AVE	20733	Modeled	5772G1	Southern	41	Avalon Shores	4C2	District 7	TBD
GLOUCESTER ST	20733	Modeled	5772H2	Southern	42	Deale	4C3	District 7	TBD
GODDARD DR	21402	Modeled	5417E3	Central	17	Arnold	3D3	District 5	TBD
GOOSE DR	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD
GRANDVIEW RD	21122	Modeled	5175K5	Northern	20	Lake Shore	3A4	District 3	TBD
GREENLEE RD	21402	Modeled	5417E3	Central	17	Arnold	3D3	District 5	TBD
GRINER LN	20764	Modeled	5656F4	Southern	41	Avalon Shores	4C2	District 7	TBD
HARBOR DR	21403	Modeled	5537A2	Southern	8	Annapolis Neck	4A3	District 6	TBD

HARBOR RD	21403	Modeled	5537E3	Southern	8	Annapolis Neck	4A3	District 6	TBD
HARFORD ST	20733	Modeled	5772J2	Southern	42	Deale	4C3	District 7	TBD
HENRY RD	21032	Modeled	5293H4	Central	6	Herald Harbor	5D3	District 4	TBD
HILLSIDE AVE	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
HOLLY AVE	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
HOLLY BEACH FARM RD	21409	Modeled	5418C1	Central	19	Cape St. Claire	3D3	District 5	TBD
HOLLY DR	21037	Modeled	5536H7	Southern	2	Woodland Beach	4B3	District 7	TBD
HOLLY RD	21037	Modeled	5536G7	Southern	2	Woodland Beach	4B3	District 7	TBD
HOLLYWOOD AVE	21403	Modeled	5537F4	Southern	8	Annapolis Neck	4A3	District 6	TBD
HONEYSUCKLE DR	21037	Modeled	5537A7	Southern	2	Woodland Beach	4B3	District 7	TBD
HOWARD RD	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
ILCHESTER ST	20733	Modeled	5772J2	Southern	42	Deale	4C3	District 7	TBD
INNOVATION DR	21402	Modeled	5417F3	Central	17	Arnold	3D3	District 5	TBD
IRVIN AVE	20751	Modeled	5772B7	Southern	42	Deale	4C3	District 7	TBD
JORDAN DR	20764	Modeled	5656H7	Southern	41	Avalon Shores	4C2	District 7	TBD
KURTZ AVE	21122	Modeled	5059G7	Northern	10	Jacobsville	3A3	District 3	TBD
LAKE AVE	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD
LAKE VIEW DR	21403	Modeled	5537A2	Southern	8	Annapolis Neck	4A3	District 6	TBD
LAKEVIEW AVE	21037	Modeled	5536J10	Southern	2	Woodland Beach	4B3	District 7	TBD
LEE WAY	21037	Modeled	5537A8	Southern	2	Woodland Beach	4B3	District 7	TBD

LERCH DR	20764	Modeled	5656G6	Southern	41	Avalon Shores	4C2	District 7	TBD
LERITZ LN	21037	Modeled	5536D2	Southern	2	Woodland Beach	4B3	District 7	TBD
LINCOLN RD	20764	Modeled	5656K9	Southern	41	Avalon Shores	4C2	District 7	TBD
LITTLE JOHN HL	21405	Modeled	5294D6	Central	40	West Annapolis	5D3	District 6	TBD
MAGOTHY RD	21146	Modeled	5174H9	Central	23	Jones Station	3D1	District 5	TBD
MAID MARION HL	21405	Modeled	5294D7	Central	40	West Annapolis	5D3	District 6	TBD
MAIN AVE	21122	Modeled	5059E6	Northern	10	Jacobsville	3A3	District 3	TBD
MAIN ST	20751	Modeled	5772E5	Southern	42	Deale	4C3	District 7	TBD
MAIN ST	21226	Modeled	5058G3	Northern	11	Orchard Beach	3A1	District 3	TBD
MANISTIQUE CT	20733	Modeled	5772H2	Southern	42	Deale	4C3	District 7	TBD
MANOR RD	21012	Modeled	5175A10	Central	23	Jones Station	3D1	District 5	TBD
MAYWOOD RD	21122	Modeled	5059D10	Northern	10	Jacobsville	3A3	District 3	TBD
MCGREADY RD	21146	Modeled	5294E3	Northern	23	Jones Station	3D1	District 5	TBD
MELBOURNE AVE	20751	Modeled	5772B7	Southern	42	Deale	4C3	District 7	TBD
MILTON AVE	20751	Modeled	5772D5	Southern	42	Deale	4C3	District 7	TBD
NARRAGANSETT AVE	21403	Modeled	5537G4	Southern	8	Annapolis Neck	4A3	District 6	TBD
NEWPORT AVE	21403	Modeled	5537F4	Southern	8	Annapolis Neck	4A3	District 6	TBD
NIAGARA RD	21403	Modeled	5537E3	Southern	8	Annapolis Neck	4A3	District 6	TBD
NORTH AVE	21122	Modeled	5059E6	Northern	10	Jacobsville	3A3	District 3	TBD
OWINGS BEACH RD	20751	Modeled	5772B7	Southern	42	Deale	4C3	District 7	TBD

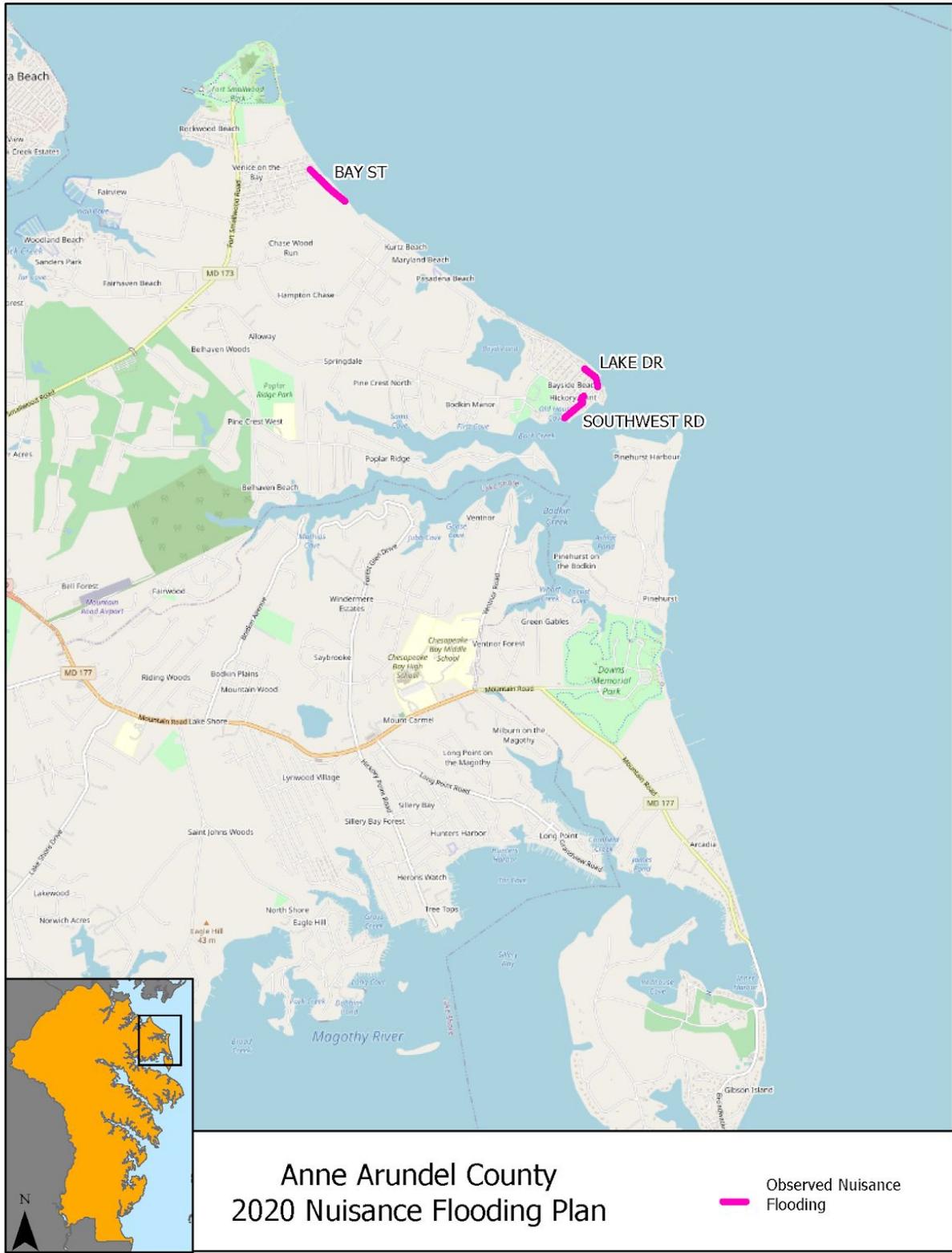
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PARKERS CREEK RD	20751	Modeled	5772C6	Southern	42	Deale	4C3	District 7	TBD
PINE ST	20764	Modeled	5656H7	Southern	41	Avalon Shores	4C2	District 7	TBD
PINE WHIFF AVE	21037	Modeled	5416B10	Southern	2	Woodland Beach	4B3	District 7	TBD
POPLAR AVE	20764	Modeled	5657A7	Southern	41	Avalon Shores	4C2	District 7	TBD
PURDY POINT RD	21056	Modeled	5176A7	Other Jurisdictions	20	Lake Shore	3A4	District 3	TBD
REDWOOD AVE	21403	Modeled	5537F3	Southern	8	Annapolis Neck	4A3	District 6	TBD
RIDOUT RD	21146	Modeled	5294C1	Northern	23	Jones Station	3D1	District 5	TBD
RIO LN	21146	Modeled	5294E3	Northern	23	Jones Station	3D1	District 5	TBD
RIVER DR	21403	Modeled	5417H10	Southern	8	Annapolis Neck	4A3	District 6	TBD
RIVER RD	21032	Modeled	5293H5	Central	6	Herald Harbor	5D3	District 6	TBD
RIVERSIDE DR	21012	Modeled	5175A10	Central	23	Jones Station	3D1	District 5	TBD
RIVERVIEW RD	21146	Modeled	5294C1	Northern	23	Jones Station	3D1	District 5	TBD
ROBINSON RD	20764	Modeled	5657A9	Southern	41	Avalon Shores	4C2	District 7	TBD
ROUND BAY RD	21146	Modeled	5294C1	Northern	23	Jones Station	3D1	District 5	TBD
SANDS AVE	21403	Modeled	5417G9	Southern	8	Annapolis Neck	4A3	District 6	TBD
SARATOGA AVE	21403	Modeled	5537F4	Southern	8	Annapolis Neck	4A3	District 6	TBD
SHADY SIDE RD	20764	Modeled	5656H7	Southern	41	Avalon Shores	4C2	District 7	TBD
SHIPLEY RD	21122	Modeled	5059H9	Northern	10	Jacobsville	3A3	District 3	TBD

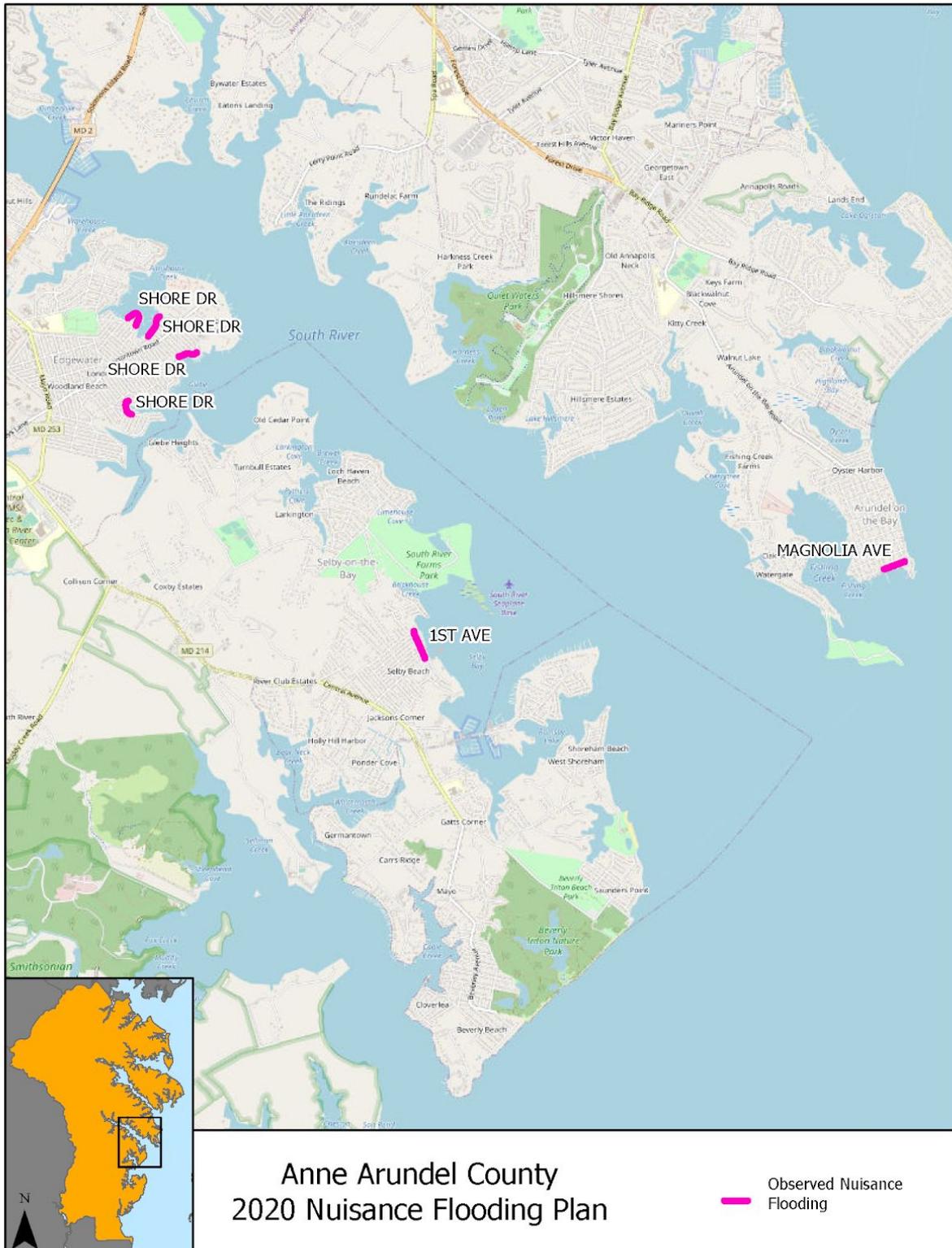
SHORE ACRES RD	21012	Modeled	5295G1	Central	17	Arnold	3D2	District 5	TBD
SHORE DR	20733	Modeled	5772F3	Southern	42	Deale	4C3	District 7	TBD
SHORE DR	20779	Modeled	5771K7	Southern	42	Deale	4C3	District 7	TBD
SHORE DR	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
SILVER RUN RD	21037	Modeled	5536C1	Southern	2	Woodland Beach	4B3	District 7	TBD
SKIPPERS ROW	21056	Modeled	5176B7	Other Jurisdictions	20	Lake Shore	3A4	District 3	TBD
STALLINGS RD	21122	Modeled	5176A5	Northern	20	Lake Shore	3A4	District 3	TBD
TURKEY POINT RD	21037	Modeled	5537A5	Southern	2	Woodland Beach	4B3	District 7	TBD
W CHALK POINT RD	20778	Modeled	5656D7	Southern	41	Avalon Shores	4C2	District 7	TBD
W SHADY SIDE RD	20764	Modeled	5656F5	Southern	41	Avalon Shores	4C2	District 7	TBD
WAESCHE AVE	21226	Modeled	4939K9	Northern	11	Orchard Beach	3A1	District 3	TBD
WALNUT AVE	20714	Modeled	5888F6	Southern	42	Deale	4C3	District 7	TBD
WAREHOUSE RD	21226	Modeled	4939H10	Northern	18	Marley	2A2	District 1	TBD
WASHINGTON DR	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
WAYMAN AVE	21403	Modeled	5537F2	Southern	8	Annapolis Neck	4A3	District 6	TBD
WHIPPLE WAY	20764	Modeled	5657B7	Southern	41	Avalon Shores	4C2	District 7	TBD
WILDWOOD LN	20733	Modeled	5772F2	Southern	42	Deale	4C3	District 7	TBD
WILLIAMS ST	21037	Modeled	5536H5	Southern	2	Woodland Beach	4B3	District 7	TBD
WOODS WHARF RD	20764	Modeled	5656J6	Southern	41	Avalon Shores	4C2	District 7	TBD

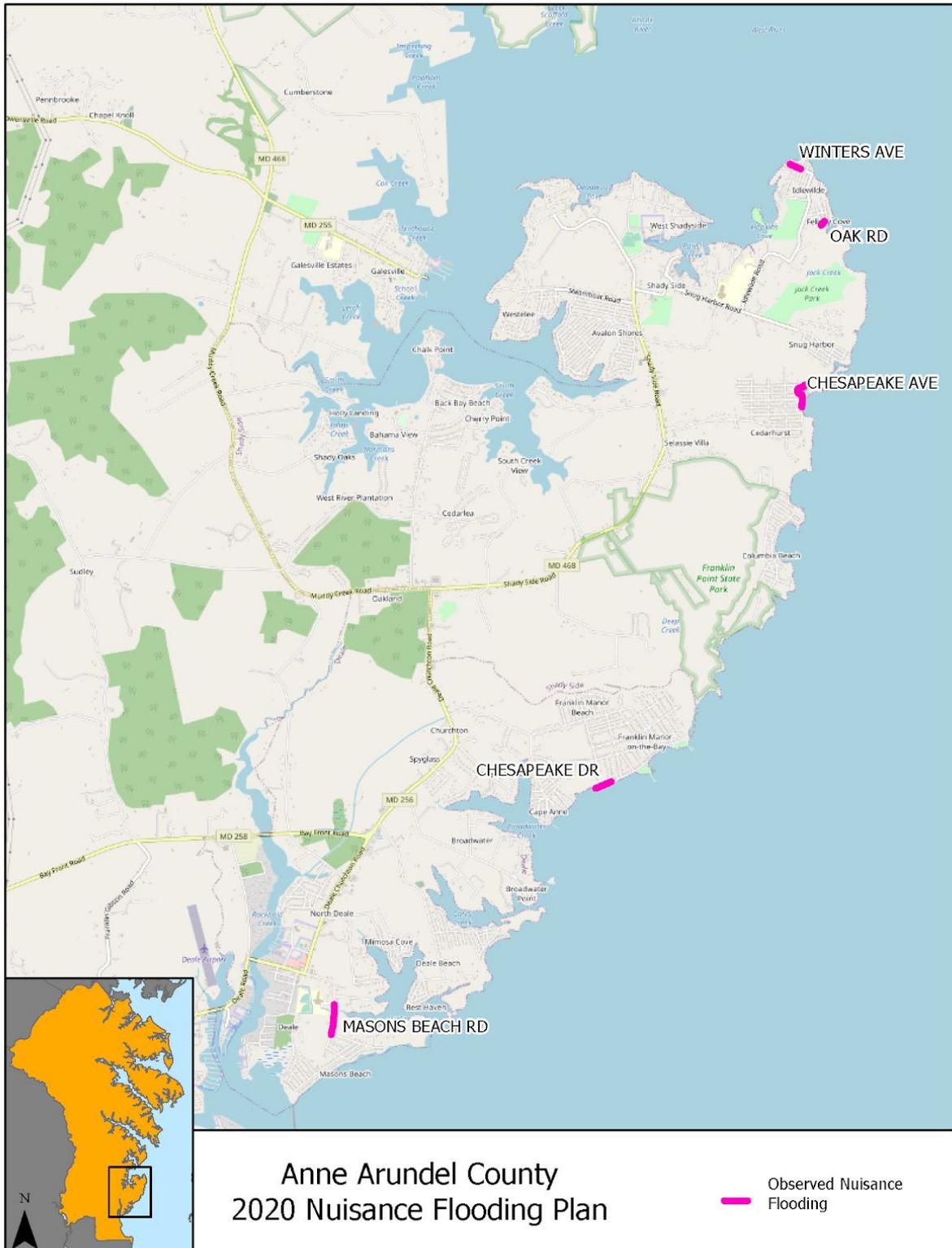
Appendix II – Nuisance Flooding Location Inventory - Observed

Street Name ↓	Zip	Status	ADC Grid	DPW District	FD #	FD Station Name	PD Post	Council	Cross Street
1ST AVE	21037	Observed	5536H5	Southern	2	Woodland Beach	4B3	District 7	SELBY BLVD
BAY ST	21122	Observed	5059E6	Northern	10	Jacobsville	3A3	District 3	HILLTOP RD
CHESAPEAKE AVE	20764	Observed	5657A7	Southern	41	Avalon Shores	4C2	District 7	GROVE AVE TO PINE AVE
CHESAPEAKE DR	20733	Observed	5772G3	Southern	42	Deale	4C3	District 7	CARVEL ST
GRINER LN	20764	Observed	5656F4	Southern	41	Avalon Shores	4C2	District 7	W SHADY SIDE RD
LAKE DR	21122	Observed	5059K9	Northern	10	Jacobsville	3A3	District 3	HARBOR RD
MAGNOLIA AVE	21403	Observed	5537G4	Southern	8	Annapolis Neck	4A3	District 6	COHASSET AVE
MASONS BEACH RD	20751	Observed	5772B6	Southern	42	Deale	4C3	District 7	PARKERS CREEK RD
OAK RD	20764	Observed	5657A5	Southern	41	Avalon Shores	4C2	District 7	CHESTNUT RD
SHORE DR	21037	Observed	5536D1	Southern	2	Woodland Beach	4B3	District 7	BISHOP DR
SHORE DR	21037	Observed	5536D1	Southern	2	Woodland Beach	4B3	District 7	ARUNDEL DR TO GRANGE RD
SHORE DR	21037	Observed	5536D1	Southern	2	Woodland Beach	4B3	District 7	RIVERSIDE DR
SHORE DR	21037	Observed	5536D1	Southern	2	Woodland Beach	4B3	District 7	LORELEY RD TO CHESAPEAKE DR
SOUTHWEST RD	21122	Observed	5059K9	Northern	10	Jacobsville	3A3	District 3	BODKIN VIEW DR
WINTERS AVE	20764	Observed	5657A4	Southern	41	Avalon Shores	4C2	District 7	FREDERICK AVE

Appendix III – Observed Nuisance Flooding Maps







Appendix IV – Nuisance Flooding Committee Members

Name	Agency	Title
Joseph Seborowski	Anne Arundel County Office of Emergency Management	UASI Recovery Planner
Preeti Emrick	Anne Arundel County Office of Emergency Management	Director
Alexander Baquie	Anne Arundel County County Department of Public Works	Acting Deputy Director, Bureau of Highways
Ken Pensyl	Anne Arundel County County Department of Public Works	Project Manager
Erik Michelsen	Anne Arundel County County Department of Public Works	Acting Deputy Director, Bureau of Watershed Protection & Restoration
Karen Henry	Anne Arundel County County Department of Public Works	Assistant Director
Matt Johnston	Anne Arundel County Office of the County Executive	Environmental Policy Director
Brenda Morgan	Anne Arundel County County Department of Public Works	Engineering Manager
Joanie Appell	Anne Arundel County Fire Department	GIS Analyst
John Lane	Anne Arundel County Fire Department	Division Chief
Ross Dinkel	Anne Arundel County Fire Department	Deputy Chief
Herbert Hasenpusch	Anne Arundel County Police Department	Captain
William H. Sanders III	Town of Highland Beach	Mayor

