City of Annapolis

DEPARTMENT OF PLANNING AND ZONING
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June 8, 2023

MEMORANDUM

To: Planning Commission

From: Eric Leshinsky, Chief of Comprehensive Planning

Re: Ordinance O-15-23: Building Height and Elevation Limit - Exception for FEMA Flood Zones in Annapolis – For the purpose of exempting building construction in Federal Emergency Management 3 Agency's AE flood zones including the Annapolis' City Dock area from certain elevation 4 restrictions; setting exception criteria; and generally related to Planning and Zoning height 5 measurement. ZTA2023-015
UPDATED – SEE HIGHLIGHTED SECTION BELOW

Attachments:
1. O-15-23 First Reader
2. Map of AE Flood Zone at City Dock
3. FEMA Flood Insurance Rate Map for Annapolis
4. Map of AE Flood Zone and Height Districts
5. Consensus Plan Diagram from the 2020 City Dock Action Committee Final Report "Transforming City Dock

SUMMARY

The purpose of this ordinance is to update existing City standards for measuring building height within the AE flood zone of the City Dock area to align with standards set by the Federal Emergency Management Agency (FEMA) governing new construction or substantial reconstruction. Aligning the standards will allow the City to comply with FEMA requirements for participation in the National Flood Insurance Program (NFIP) in which it has participated since 1981, and unlock critical federal funding for the City Dock project, which is being designed to meet FEMA standards.

FEMA defines the AE flood zone as an area estimated to have a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. The AE zone is clearly identified on FEMA's flood insurance rate maps (FIRMs), the standard product provided by FEMA to clarify areas of flood risk. In actuality, the AE Zone at the City Dock is flooded as much as 50 days per year, and is anticipated to be flooded 365 days per year by 2065 based on sea level rise projections. Nuisance flooding has increased by 925% during the past 50 years in Annapolis.

Section 21.56.170 of the City's Code of Ordinances sets the standards for measuring building height within the Historic District overlay zone, which governs the City Dock area, and stipulates that: "*For the purpose of achieving a permanent height limit, the height of a building shall not be allowed to increase because of an increase in the elevation of the front setback line occurring after the effective date of this Zoning Code*." Yet, because of chronic flooding, the elevation at the City Dock area is being raised as a primary flood mitigation strategy and to meet FEMA requirements for new construction to be built above the Base Flood Elevation (BFE).

To participate in the NFIP, FEMA requires that the first floor elevation of all new construction or substantial reconstruction is set above the base flood elevation (BFE) within the AE zone. According to FEMA: "*The BFE is determined by statistical analysis for each local area and is designated on the FIRMs. This elevation is the basis of the insurance and floodplain management requirements of the NFIP*." For the City Dock area, the BFE is five feet above sea level.

City of Annapolis policy for new construction or substantial reconstruction within all of its flood hazard zones actually exceeds FEMA requirements for BFE. Section 17.11.179 of the Code of Ordinances which guides Building and Construction practices defines "*Flood Protection Elevation*" as "*The base flood elevation plus two feet of freeboard. Freeboard is a factor of safety that compensates for uncertainty in factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, obstructed bridge openings, debris and ice jams, climate change, and the hydrologic effect of urbanization in a watershed*."

Section 17.11.420 then articulates where the *Flood Protection Elevation* is required: "*New buildings and structures (including the placement and replacement of manufactured homes) and substantial improvement of existing structures (including manufactured homes) that are located, in whole or in part, in any special flood hazard area shall:*

(A) Be designed (or modified) and constructed to safely support flood loads. The construction shall provide a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. Structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses, including hydrodynamic and hydrostatic loads and the effects of buoyancy,

> *from flooding equal to the flood protection elevation or the elevation required by this chapter or the Building Code, whichever is higher.*

For nonresidential structures and nonresidential portions of mixed use structures, City code goes one step further when such structures propose enclosures below the lowest floor which must be floodproofed. In these cases, section 17.11.540 (B) (3) (a) states: "If floodproofing is proposed, structures shall: Be designed to be dry floodproofed such that the building or structure is watertight with walls and floors substantially impermeable to the passage of water to the level of the flood protection elevation plus one foot".

It is for these reasons-- both the City's flood protection elevation and floodproofing requirements-- that the ordinance amends section 21.56.170 (C) to reference the City's required "*flood protection elevation plus one foot*":

> 2. **Exception Criteria.** Exempted structures will be measured from the new grade at the front setback line not to exceed the flood protection elevation plus one foot.

The City Dock Resilience and Revitalization Project is currently being designed to meet these requirements, yet key elements of the project cannot be realized because the method by which building height is measured in the City's most vulnerable flood hazard zone does not account for either FEMA's or City's own requirements to build above the Base Flood Elevation or Floor Protection Elevation. The current ordinance corrects this issue by requiring buildings within the AE zone of the City Dock area to measure their height from the established base elevations set by FEMA and the City of Annaplis. The existing height measurement guidelines will continue to guide the rest of the Historic District overlay zone.

ANALYSIS

This legislation is needed to advance the City Dock Resilience and Revitalization Project, which has been underway since 2019 when the City Dock Action Committee (CDAC) was formed as a diverse coalition of ninety-two (92) City, County, State, Federal and community partners. The Committee released its Final Report (known as the "CDAC Consensus Plan-Transforming City Dock") in 2020 which addressed a comprehensive range of issues impacting the City Dock area including parking, water access, mobility, recreation, place-making, and preservation. Most significantly, this plan identified a new vision for the City Dock area incorporating a comprehensive resiliency strategy to address the significant increase in flooding. This multifaceted resiliency strategy includes raising the elevation for bulkheads, deployable flood devices and increasing a portion of the City Dock area to an elevation of 8". The CDAC Consensus Plan is being implemented through the launch of the design phase of what will be the largest, most costly, and most consequential project in the City's history.

The boundaries of the City Dock project defined in the CDAC Consensus Plan are the limits of what is in essence an intensely master planned site where infrastructure, the public realm, and buildings are being highly coordinated to serve the long term environmental, economic, and social interests of the City and the broader region. The limits of this area are based on a detailed analysis of the flood risk and collateral impacts from future flooding to the downtown area. Indeed, it is precisely for this reason that a significant portion of the funding for this critical project comes from FEMA through its resilience grant programs.

In addition to the restored Burtis House, the only other planned building for the City Dock project is the adjacent Maritime Welcome Center which is a foundational element of the project as it will provide necessary services and amenities to support public waterfront activities and the use the City Dock as the preeminent civic space and gateway for the city and region. The height of these buildings is regulated by the provisions of the Historic District overlay zone and the measurement of their height is currently based on an elevation of three feet above sea level, an elevation that is well below the Base Flood Elevation required by FEMA (five feet above sea level) and the Flood Protection Elevation required by the City of Annapolis' own code (seven feet above sea level).

Given that a key component of the City Dock project's resilience strategy is the raising of the base elevation of the public right of way to mitigate flooding, not allowing the future building heights adjacent to the right of way to be measured from the new base elevation will result in limited design options or oddly proportioned buildings that don't provide enough space to adequately serve the needs of the community and thus will not appear even remotely coordinated with the broader design for the City Dock project.

While the provisions of this ordinance do, in theory, have broad application to other areas of the city within the AE flood zone, the circumstances of the City Dock project are unique and there is an urgency to fixing the code for this area before other areas of the city. First, nowhere else in the city outside of the City Dock project is there currently a plan with funding in hand to raise the elevation of the public right of way around existing or planned future buildings. Second, a significant portion of this funding is from FEMA and tied directly to the design for City Dock resilience which includes the public waterfront and Maritime Welcome Center. These circumstances, combined with the fact that key elements of the City Dock project cannot advance without this code amendment, support the targeted scope of this ordinance.

Following the adoption of this ordinance, the City would support the introduction of a similar ordinance that guides development in the City's other AE flood zones which include portions of Murray Hill, Eastport, and West Annapolis.

CODE COMPLIANCE AND RECOMMENDATION

Chapter 21.34 Zoning Text Amendments establishes the process for enacting amendments to the zoning code. It requires, in accordance with section 21.32.010 Purpose and authority that amendments shall be in accordance with the following:

For the purpose of promoting the public health, safety, morals and general welfare, and conserving the value of property throughout the city, the city council, from time to time, in the manner set forth in this chapter, may amend the regulations imposed in the districts created by this title; provided, that in all amendatory ordinances adopted under the authority of this chapter, due allowance shall be made for existing conditions, the conservation of property values, the direction of building development to the best advantages of the entire city and the uses to which property is devoted at the time of the adoption of the amendatory ordinance.

The 2009 Comprehensive Plan provides several policy recommendations aimed at advancing the resilience and value of the City Dock area and which underscore the intent of the ordinance.

- In Chapter 3 which addresses Land Use and Economic Development, Policy 6 is "Enhance the Public Realm of the City Dock and its Environs.". This policy recommends that "Given the importance of the City Dock area to Annapolis, a plan for its future must be developed with broad participation by the entire community, as well as downtown residents and businesses." This recommendation resulted in the formation of the City Dock Action Committee and the resulting 2020 Consensus Plan.
- Also in Chapter 3, Policy 10 is "Evaluate risks from sea level rise in decisions involving land use along the waterfront." This policy recommends that "The parts of the established downtown which are prone to severe flooding and may be expected to be impacted by sea level rise should be the subject of a study to determine the costs and benefits of public decision-making in mitigating property damage." This scope was addressed as part of the 2020 Consensus Plan as well as the 2018 Weather It Together: A Cultural Resources Hazard Mitigation Plan, and the 2018 Hazard Mitigation Plan.

The 2018 Weather It Together: A Cultural Resource Hazard Mitigation Plan, provides several recommended projects in Chapter 4: Adaptation in Our Landmark City that align with this ordinance.

- Project 1 is "Tools and Practices for Flood Preparedness and Adaptation" and within the description of this project, the plan acknowledges: "*In light of the ongoing and increasing threat of rising sea levels and storm surges, approaches to mitigate flooding damage must recognize the unique aspects of the historic fabric of the study area, but, at the same time, recognize that certain traditional approaches to historic preservation (such as building elevation) may have to be re-examined in light of the threat of the possible ultimate destruction of these valuable resources*." The Plan further acknowledges: "*The issue of elevating historic structures is a challenge. While raising a building changes the historic relationship of the structure to its site, given the tragic losses of the physical heritage that could occur through sea level rise and coastal flooding, it may be the most appropriate preservation direction to take…. Because preservation*

includes the history of change, the reasons for elevating a building could be part of an interpretative narrative of a property (the Sands House on Prince George Street, for example, was elevated by 14" early in the twentieth century)."

- Project 3 is "Structural Adaptation Measures" and directly addresses the strategy of the City Dock project to raise the public right of way areas and the need for adjacent buildings to adapt to this new elevation. In the description, the Plan acknowledges: "*Raising streets and roads within the public right-of-way is an option. It is an incremental process that can provide a barrier to flood waters, protecting many (not all) structures in the City Dock area of the study area. Access to adjacent properties will be changed and must be addressed in the overall project design and specifications…. The interface between a raised street surface and the adjacent sidewalk and building entry elevations is of prime consideration…."*

- Project 5 is "Flood Preparedness and Adaption Responses in City Plans and Policies". In the description of this project, the Plan acknowledges: "*In Annapolis, a significant characteristic of the Historic District is the consistent rhythm of the colonial buildings at the street level, with their stoops and porches and street level windows. A challenge for Annapolis is to ensure that there is a path forward for rebuilding structures after a catastrophe in a way that contributes to the city's historic character and streetscape. To achieve this, any new flood adaptation standards for the retrofit and rehabilitation of historic buildings should incorporate flexibility in design. For example, design flexibility may require relief in the height or building envelope in order to recoup lost space due to freeboard requirements."* Among the action items for this recommended project are "*Revise Historic District Design Guidelines to incorporate adaptation techniques accepted by FEMA as compliant with the floodplain management regulations and the Secretary of the Interior's Standards for Rehabilitation."* And *"Update Zoning ordinance to encourage and incentivize hazard mitigation and flood adaptation techniques."*

The 2018 City of Annapolis Hazard Mitigation Plan also provides several recommended projects in Chapter 12: New Mitigation Goals, Objectives, & Projects that align with this ordinance.

- Prevention Goal #1: "Implement and enforce floodplain management ordinance."
- Prevention Goal #2: "Integrate hazard mitigation planning, recommendations, and mitigation strategies into other City planning tools and documents."
- Property Protection Goal #3: "Protect infrastructure and facilities."
- PROJECT B: "Annapolis Flood Mitigation-Drainage Improvements". In the description for this recommended project, the Plan acknowledges that "The Annapolis Flood Mitigation Project seeks to mitigate damages to repeatedly flooded commercial properties via drainage improvements. There are 44 recorded events from 2005-2015 (~4.4 events per year) where MLLW (mean lower low water) was 3 feet or greater. In some cases, multiple flood events occurred within the same year, but were added and entered as one single event. Roughly 39 commercial buildings would benefit from drainage improvements along several streets, including:
    - Compromise Street;
    - Craig Street;
    - Dock Street;
    - Main Street;
    - Market Space;
    - Newman Street; and

- Prince George Street.

The 2020 City Dock Action Committee Final Report Transforming City Dock (the "Consensus Plan") outlines the ultimate vision for the City Dock project and clarifies the extent of the City Dock area included in the master plan. The Plan also identifies recommendations which support this ordinance.

- The chapter entitled "Resiliency and Environemnt" notes that "*There is no single means of response; adapting to anticipated changes associated with climate change and sea level must be incorporated into all aspects of City Dock planning*", and "*Recent improvements to the City Dock seawall were designed based on current conditions (100- year flood level) and did not take into account future changes in sea level rise.*". Recommendations include: "*Establish design standards based on anticipated impacts over the design life of a given structure in combination with an analysis of risk tolerance. For example, a project with a 75-year design life should be adapted to at least 4.3 feet of future sea level rise (Intermediate Projection, NOAA 2017)*."

Based on the above recommendations and the analysis herein, the staff recommends the proposed O-15-23 be APPROVED with the following clarifications:

- "FEMA Zone AE flood hazard map covering Annapolis City Dock" should be replaced with "the FEMA Flood Insurance Rate Map (FIRM) which encompasses the site limits of the City Dock Resilience and Revitalization Project as defined in the City Dock Action Committee Final Report"

- Strike the website link to the FEMA map as it is unnecessary and will likely change over time.

Report Prepared by:

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Eric Leshinsky
Chief of Comprehensive Planning

..Title
Building Height and Elevation Limit - Exception for FEMA Flood Zones in Annapolis –
For the purpose of exempting building construction in Federal Emergency Management Agency's AE flood zones including the Annapolis' City Dock area from certain elevation restrictions; setting exception criteria; and generally related to Planning and Zoning height measurement.

..Body

CITY COUNCIL OF THE
City of Annapolis

Ordinance 15-23

Introduced by: Mayor Buckley
Co-sponsored by:

Referred to
Planning Commission
Rules and City Government Committee

AN ORDINANCE concerning

Building Height and Elevation Limits - Exception for FEMA Flood Zones in Annapolis

FOR the purpose of exempting building construction in the Federal Emergency Management Agency's AE flood zones including the Annapolis' City Dock area from certain elevation restrictions; setting exception criteria; and generally related to Planning and Zoning height measurement.

BY repealing and reenacting with amendments the following portions of the Code of the City of Annapolis, 2022 Edition

SECTION I: BE IT ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY COUNCIL that the Code of the City of Annapolis shall be amended to read as follows:

Title 21 - Planning and Zoning
Division IV - Overlay District
Article II - Height and Bulk Limits
Section 21.56.170 - Height measurement

21.56.170 Height measurement.

The height of buildings shall be determined in the following manner:

A. All measurements shall be taken from the center of the building at the front setback line; provided, however, that if the building is greater than forty-four feet wide, the massing shall conform to Section 21.56.210. In buildings greater than forty-four feet in width, the building height measurement shall be taken at the highest point of each building element at the front setback line.

B. Antennas and mechanical equipment up to thirty inches high shall not be counted in computing height, and penthouses, other structures and mechanical equipment thirty inches in height shall be used in computing height; chimneys are excluded.

C. For the purpose of achieving a permanent height limit, the height of a building shall not be allowed to increase because of an increase in the elevation of the front setback line occurring after the effective date of this Zoning Code

1. **Exception**. Buildings that must comply with the Federal Emergency Management Agency (FEMA) Floodplain Management elevation requirement for AE flood zones are exempted from subsection C above. The area included is found in the FEMA Zone AE flood hazard map covering Annapolis City Dock. (see FEMA Policy #204-078-1 and FEMA's National Flood Hazard Layer NFHL Viewer at https://www.fema.gov/flood-maps/national-flood-hazard-layer).

2. **Exception Criteria.** Exempted structures will be measured from the new grade at the front setback line not to exceed the flood protection elevation plus one foot.

D. Height Measurement in Special Height Limit Districts.

1. Two limits are established for each height district:

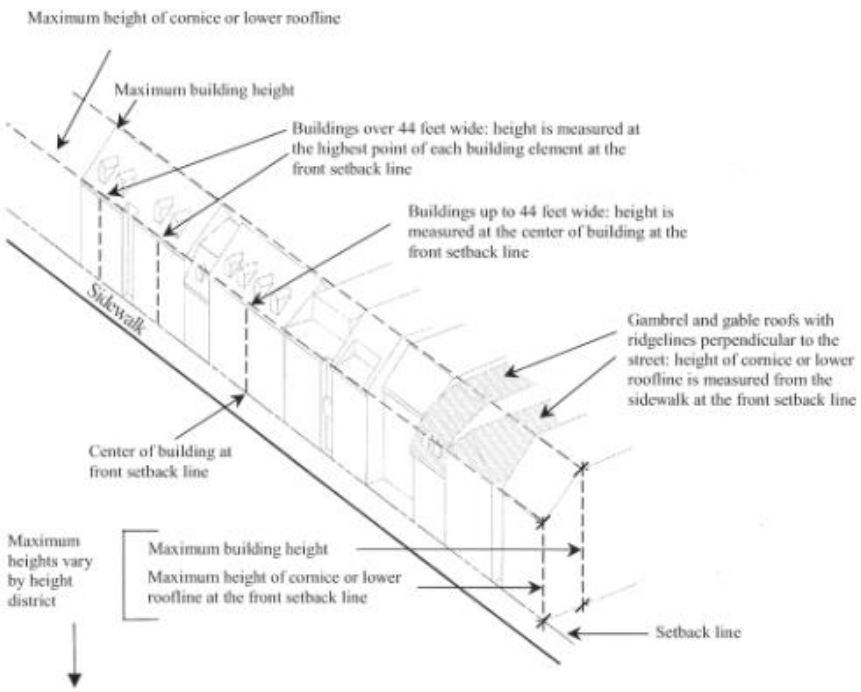
   a. The height of a building at its highest point.

   b. The height of a cornice or lower roofline of the building at the front setback line.

2. The height of a building behind the front setback line may be increased provided it does not exceed a plane projected at an angle of forty-five degrees upward from the maximum allowable cornice or lower roofline height at the front setback line. The plane may contain roof dormers provided the sum of their widths does not exceed fifty percent of the street front linear dimensions of the building.

3. For gambrel and gable roofs with ridge lines perpendicular to the street, the height of a cornice or lower roofline will be measured at the side wall at the front setback line, and the height of the building at its highest point will be measured at the ridge line.

Illustration for height measurement.



Height District per 21.56.180	Height of Cornice or Lower Roofline at Front Setback	Maximum Building Height
1	22′	32′
2	28′	38′
3	35′	45′

SECTION II: AND BE IT FURTHER ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY COUNCIL that this ordinance shall take effect from the date of its passage.

Explanation:
~~Strikethrough~~ indicates matter stricken from existing law.
Underlining & black indicate copyediting or reformatting of existing law
Underlining & red indicate new matter added to code.

1

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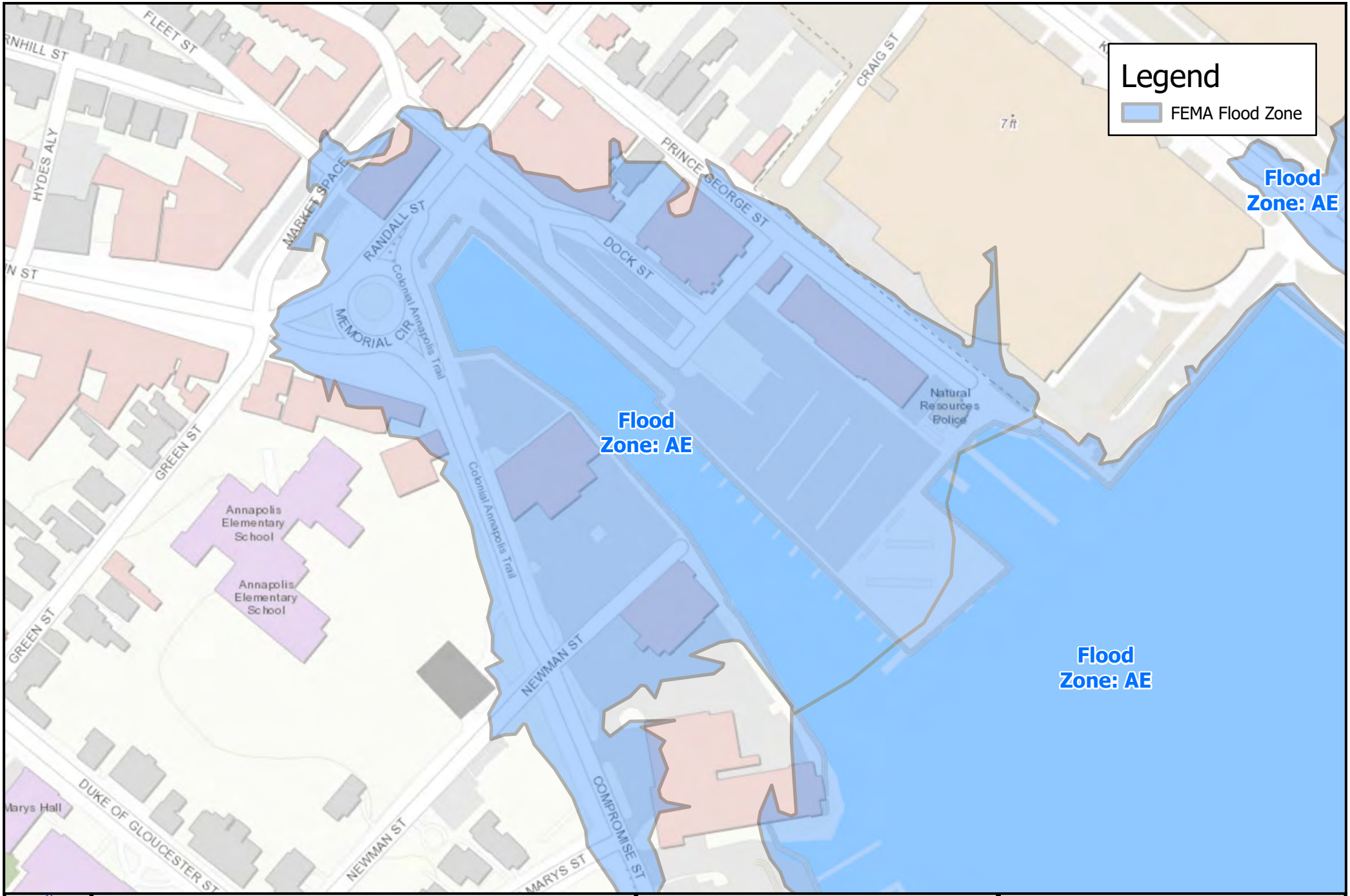


N W E S

Flood Zone Map O-15-23

City of Annapolis MIT GIS

Map Created By: MIT GIS

Department Use:

By acceptance of this map material, you agree as follows: This map material (the "material") is made available by Annapolis, Maryland (the "City") as a public service. The material is for reference purposes only, and the City makes no representatives, warranties, or guarantees of the accuracy of the material. THE City MAKES NO AND DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES RELATING TO THE MATERIAL, INCLUDING WARRANTIES OF MERCHANTABILITY, INTEGRATION, TITLE, AND FITNESS FOR A PARTICULAR PURPOSE. You release the City, its agents, servants, and employees, from any and all liability related to the material or any of it, including its accuracy, availability, use, and misuse. In no event shall the City be liable for any direct, indirect, incidental, consequential, or other damages, including savings, profits, fees, costs, loss of data, or business interruption, related in any way to the material or any of it, including its accuracy, availability, use, and misuse. The material is in the public domain and may be copied without permission. Citation to the source is requested. Any errors or omissions in the material should be reported to the City of Annapolis Management of Information Technology.

Path: \\gismo\d$\mayors_office\ord_height_flood

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18N. The **horizontal datum** was NAD 83, GRS 80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of information shown on this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information was provided by the Anne Arundel County GIS Department. The digital ortho imagery was compiled by Axis Geospatial at a scale of 1:100 with a 6 inch ground pixel resolution, and published by the Maryland Department of Information Technology in 2011.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

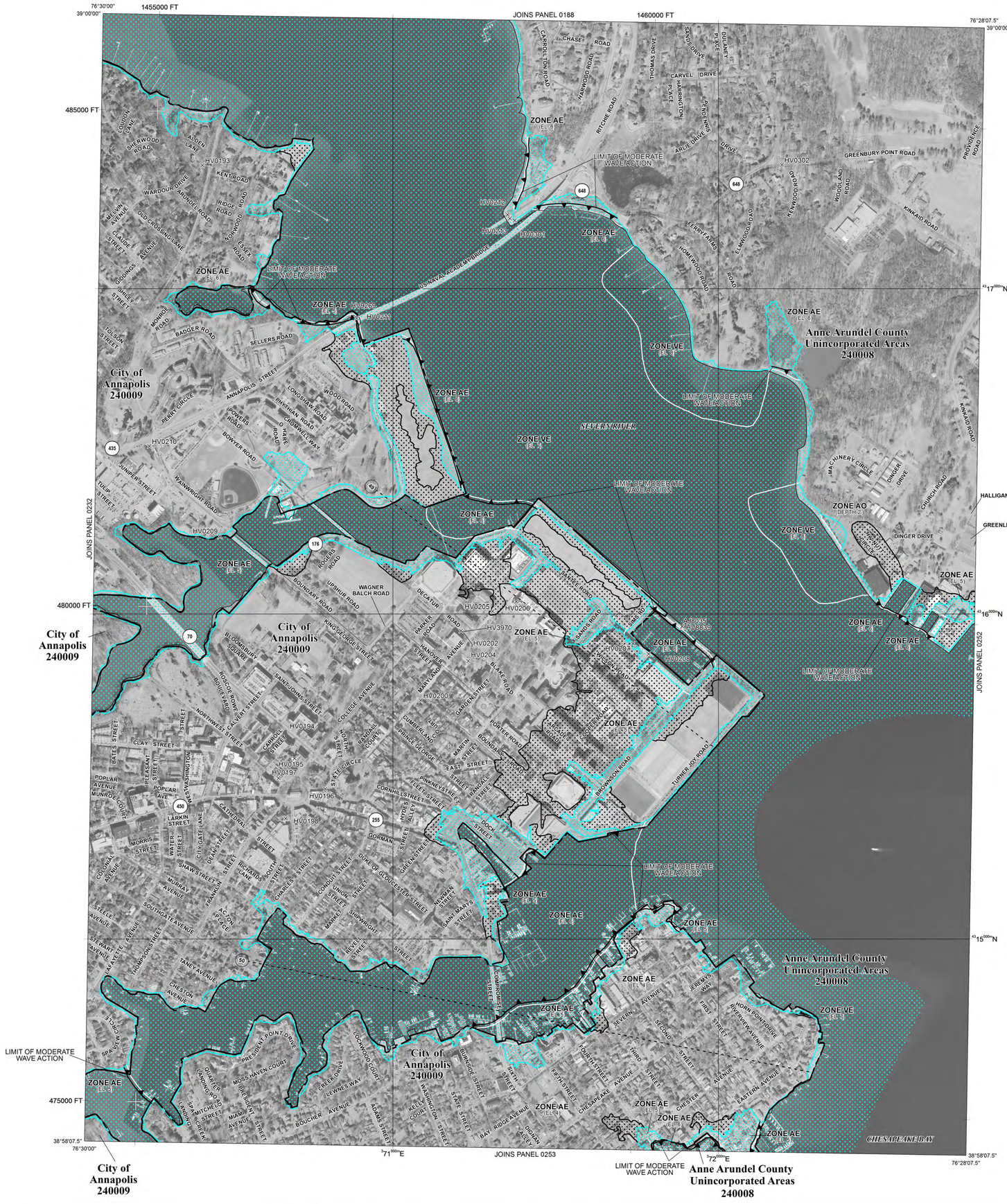
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

The AE Zone category has been divided by a **Limit of Moderate Wave Action (LiMWA).** The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Contact the **FEMA Map Information eXchange** at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

Limit of Moderate Wave Action

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

2 76 000 N — 1000-meter Universal Transverse Mercator grid values, zone 18N

600000 FT — 5000-foot grid values: Maryland State Plane coordinate system (FIPSZONE 1900), Lambert Conformal Conic projection

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
October 16, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2015 - To incorporate new detailed coastal flood hazard analysis and to reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0251F

FIRM

FLOOD INSURANCE RATE MAP

ANNE ARUNDEL COUNTY, MARYLAND
AND INCORPORATED AREAS

PANEL 251 OF 385

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

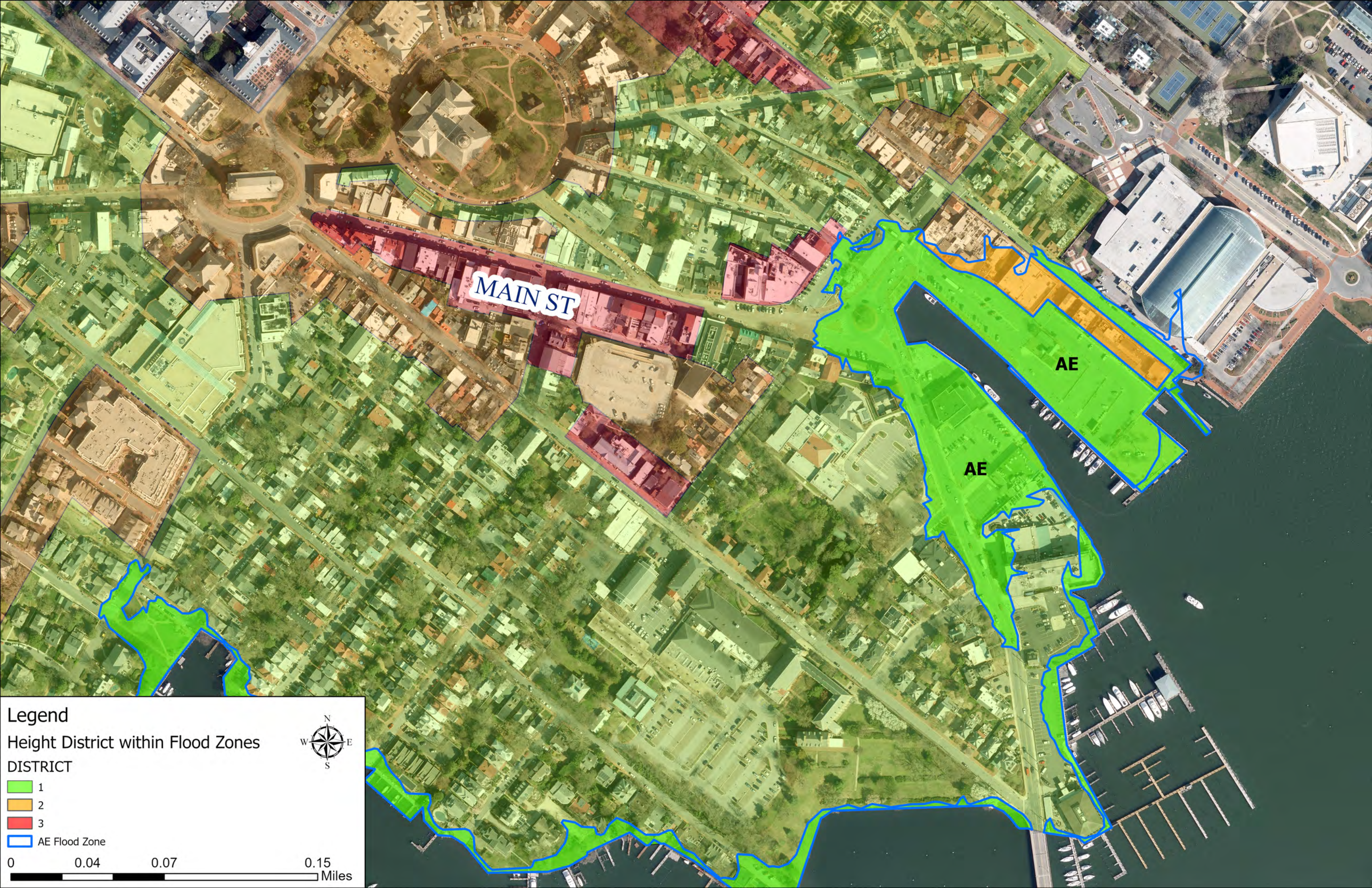
COMMUNITY	NUMBER	PANEL	SUFFIX
ANNAPOLIS, CITY OF	240009	0251	F
ANNE ARUNDEL COUNTY	240008	0251	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
24003C0251F

MAP REVISED
FEBRUARY 18, 2015

Federal Emergency Management Agency


MAIN ST
AE
AE
Legend
Height District within Flood Zones
DISTRICT
1
2
3
AE Flood Zone
0
0.04
0.07
0.15
Miles
N
W
E
S

Consensus Plan Diagram