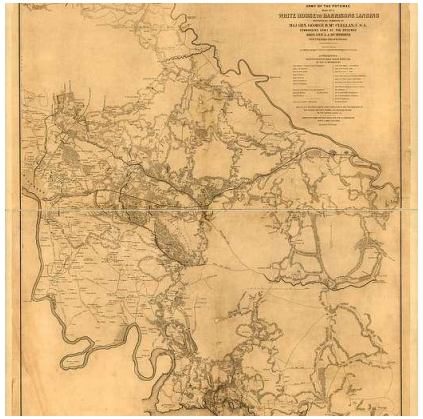
Mapping Charles City County: Guiding Comprehensive Planning, Development, and Environmental Stewardship

Using maps to support sustainable growth and resource protection

Key Focus Areas

- Overview of Charles City County and Its Comprehensive Plan and planning process so far
- Examples of Maps Used in County Planning and Development
- How Maps Inform County Development Decisions
- Environmental Impact of Development Mapped Across the County
- Map-Based Assessment of Land Incompatibility for Building

Overview of Charles City County and Its Comprehensive Plan



Geographical Diversity

Charles City County encompasses varied landscapes that shape local land use and natural resource management.

Demographic Profile

The county's unique demographic characteristics impact community needs and development planning.

Planning Priorities

Local geography and demographics should guide tailored approaches to sustainable development.

Objectives and Principles of a Comprehensive Plan

Balanced Growth Strategy

The plan promotes balanced growth that supports development while preserving community resources and quality of life.

Infrastructure Development

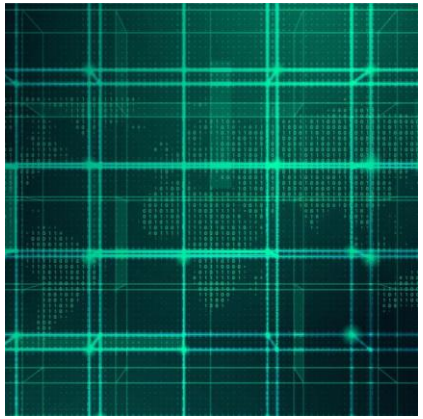
Focus on enhancing infrastructure to meet future needs and support sustainable community services.

Environmental Stewardship

Guiding principles emphasize protecting natural environments and promoting sustainable practices.

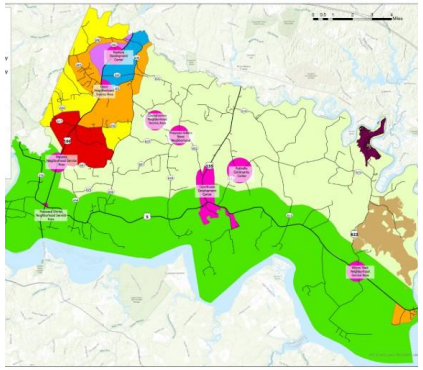
Community Values Integration

Objectives are informed by community input to ensure the plan reflects shared values and priorities.



Spatial Context for Decisions

Mapping offers essential spatial context that helps decision-makers understand land use and geographic relationships effectively.



Visualization of Land Use

Visual maps illustrate land use patterns clearly, aiding stakeholders in identifying development opportunities and constraints.

Guiding Strategic Development

Mapping guides strategic development efforts to align with comprehensive planning goals and sustainable growth.

Types of Maps Used in County Planning and Development

Land Use and Zoning Maps

Land Use vs. Zoning

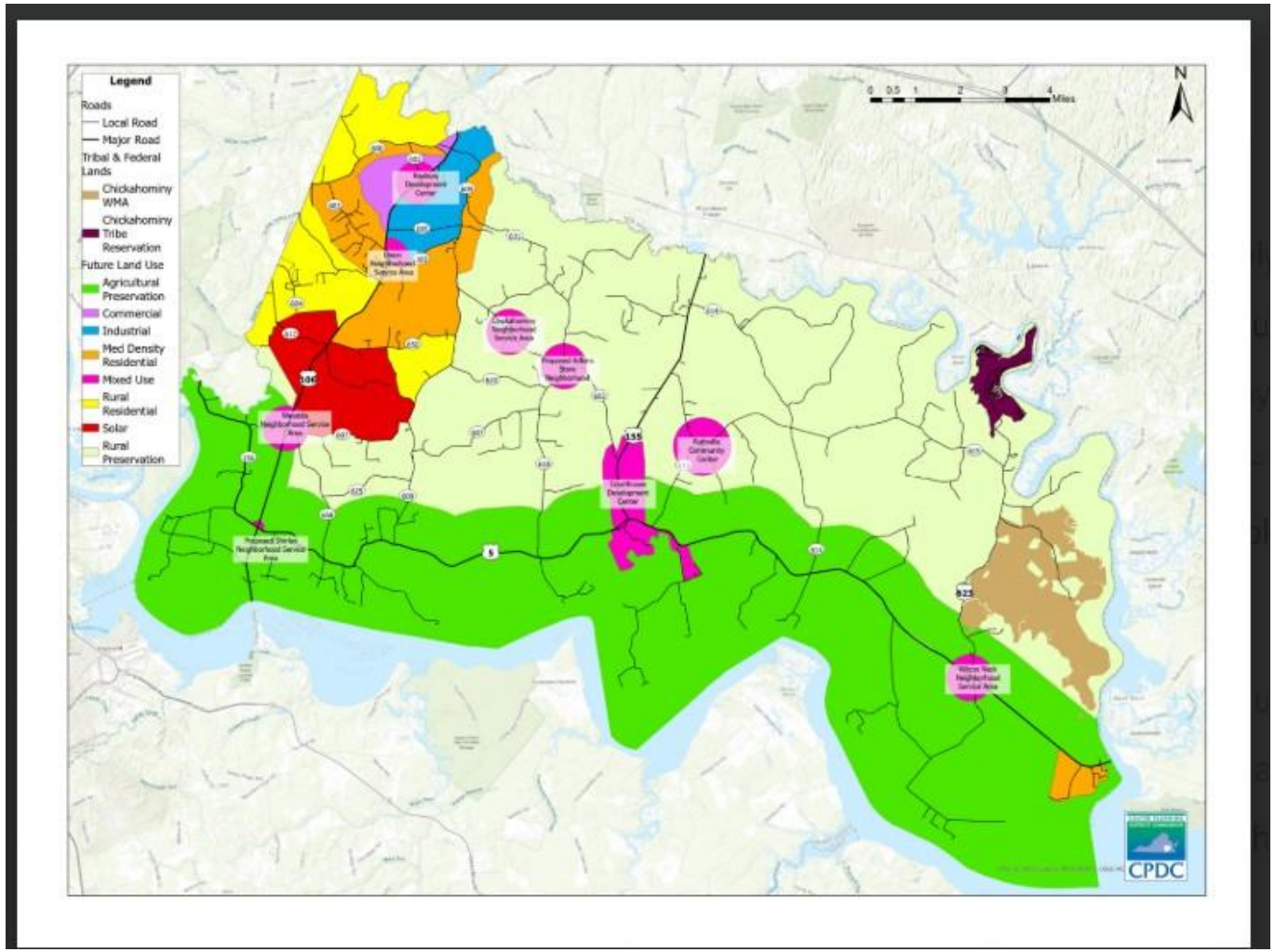
Land use provides the overall strategy vision while zoning implements the specific regulations to achieve the land use goals.

Parcel Categorization

Maps classify land parcels based on permitted uses and zoning categories for organized planning.

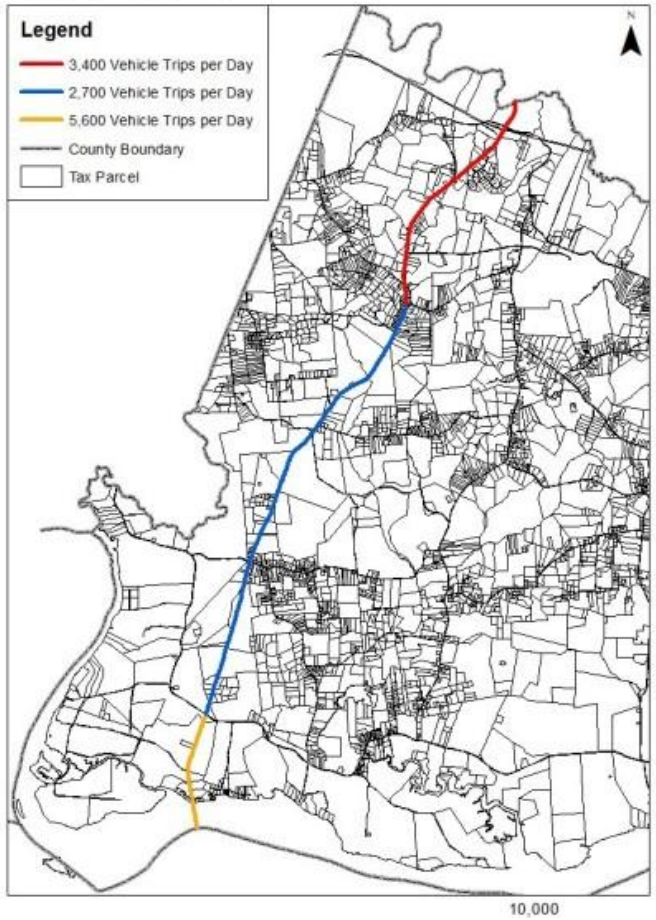
Legal Development Framework

Zoning maps establish legal guidelines for land development and conservation efforts.



Transportation and Infrastructure Maps

Figure 6: Average Daily Traffic (Virginia Department of Transportation, Traffic Engineering Division, 2017)



Mobility Planning

Transportation maps help plan efficient routes to improve mobility across urban and rural areas.

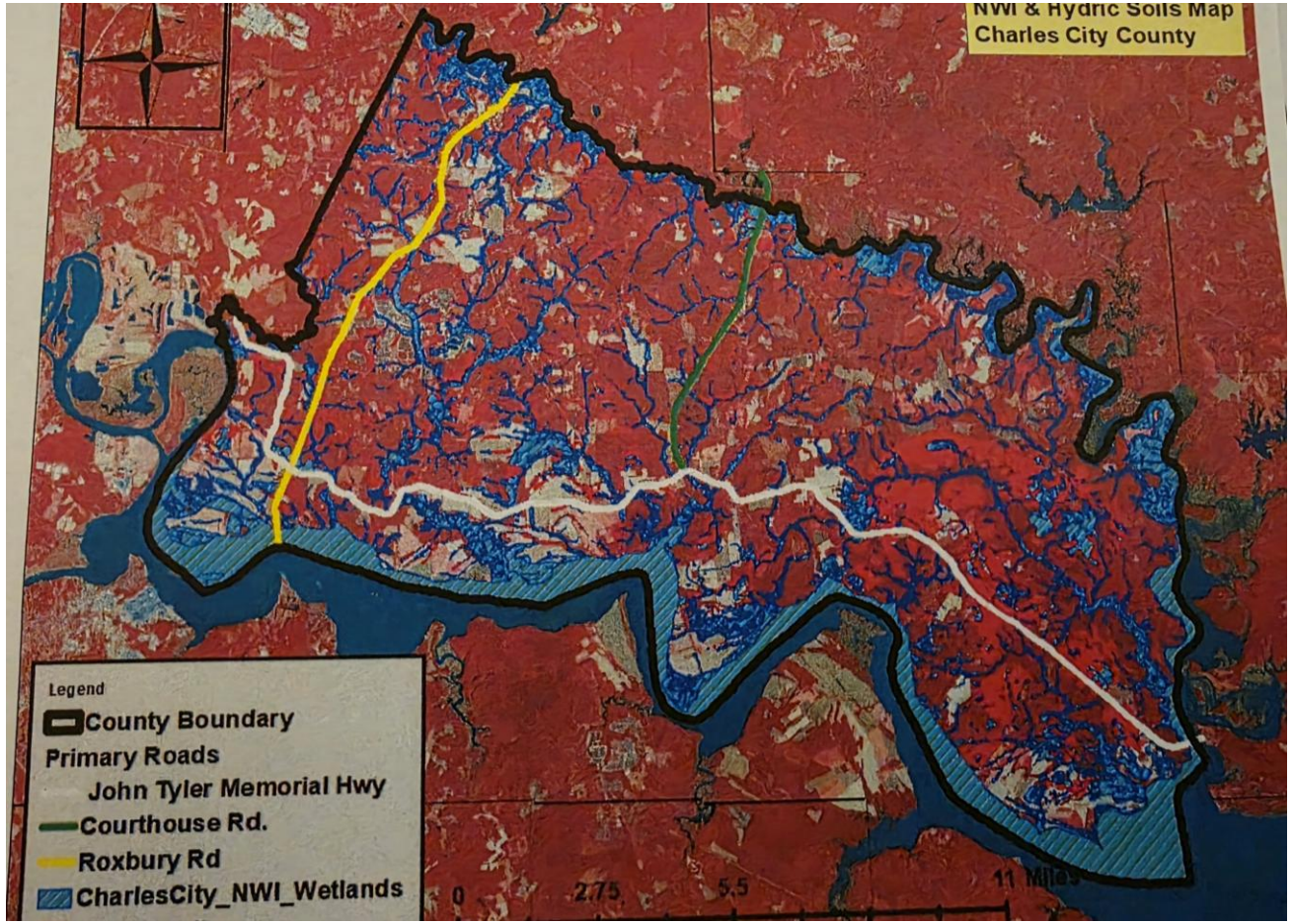
Connectivity Enhancement

Infrastructure layouts enable better connectivity between regions supporting economic and social growth.

Public Services Support

Mapping supports planning for public services like utilities and emergency response routes.

Environmental and Topographic Maps



Identification of Natural Features

Maps highlight natural features like rivers, forests, and mountains critical for environmental planning.

Habitat and Terrain Mapping

Topographic maps depict terrain elevation and habitats to support ecological sustainability.

Guiding Sustainable Development

These maps help plan developments away from sensitive ecological areas to reduce environmental impact.

How Maps Inform County Development Decisions

Mapping Patterns of Existing Development

Visualizing Development Patterns

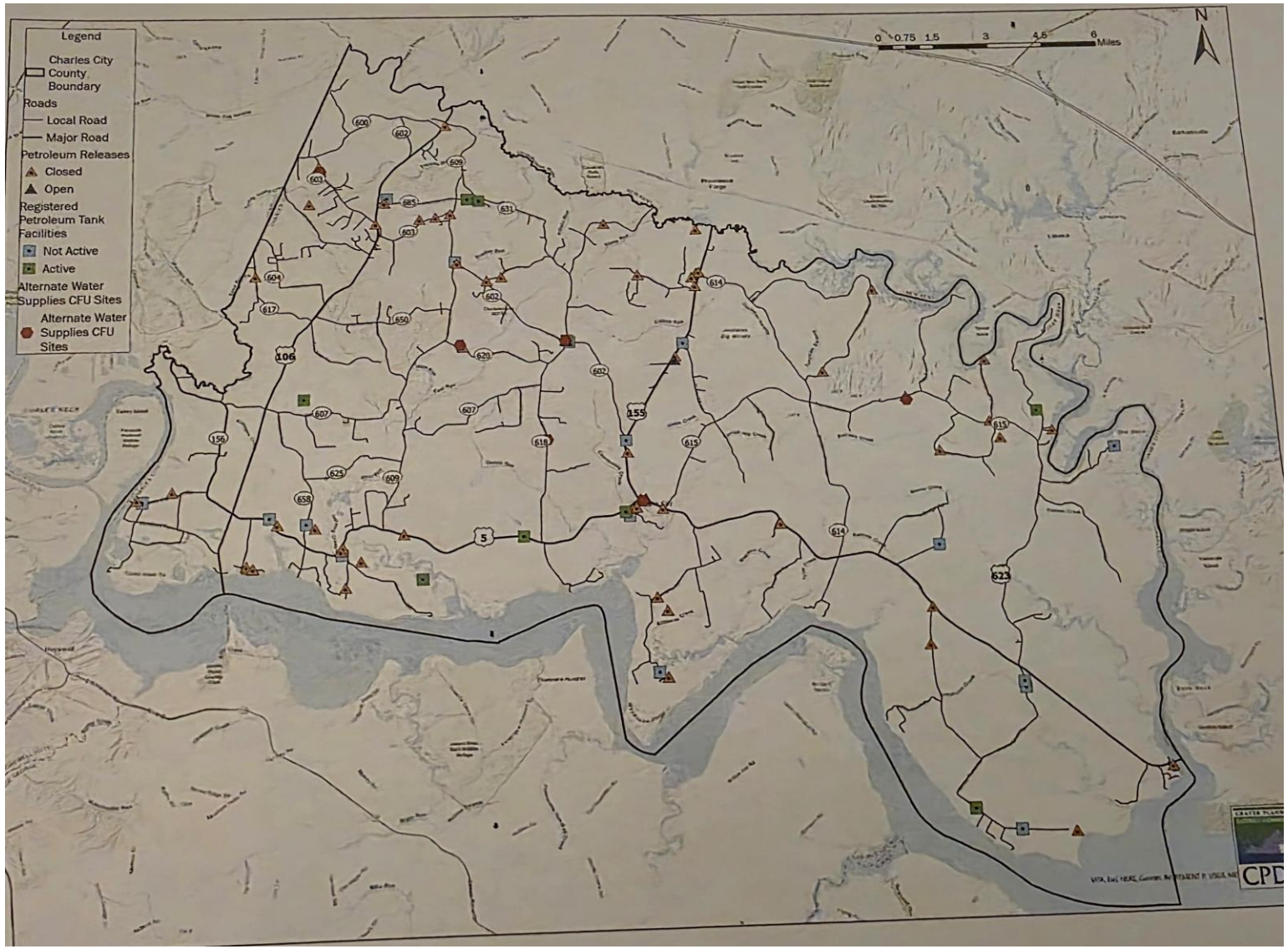
Mapping helps identify urban centers and rural areas by clearly showing current development patterns.

Guiding Expansion Plans

Understanding development patterns assists planners in guiding sustainable urban expansion effectively.

Supporting Conservation Efforts

Identifying rural and undeveloped areas supports conservation and protection of natural spaces.



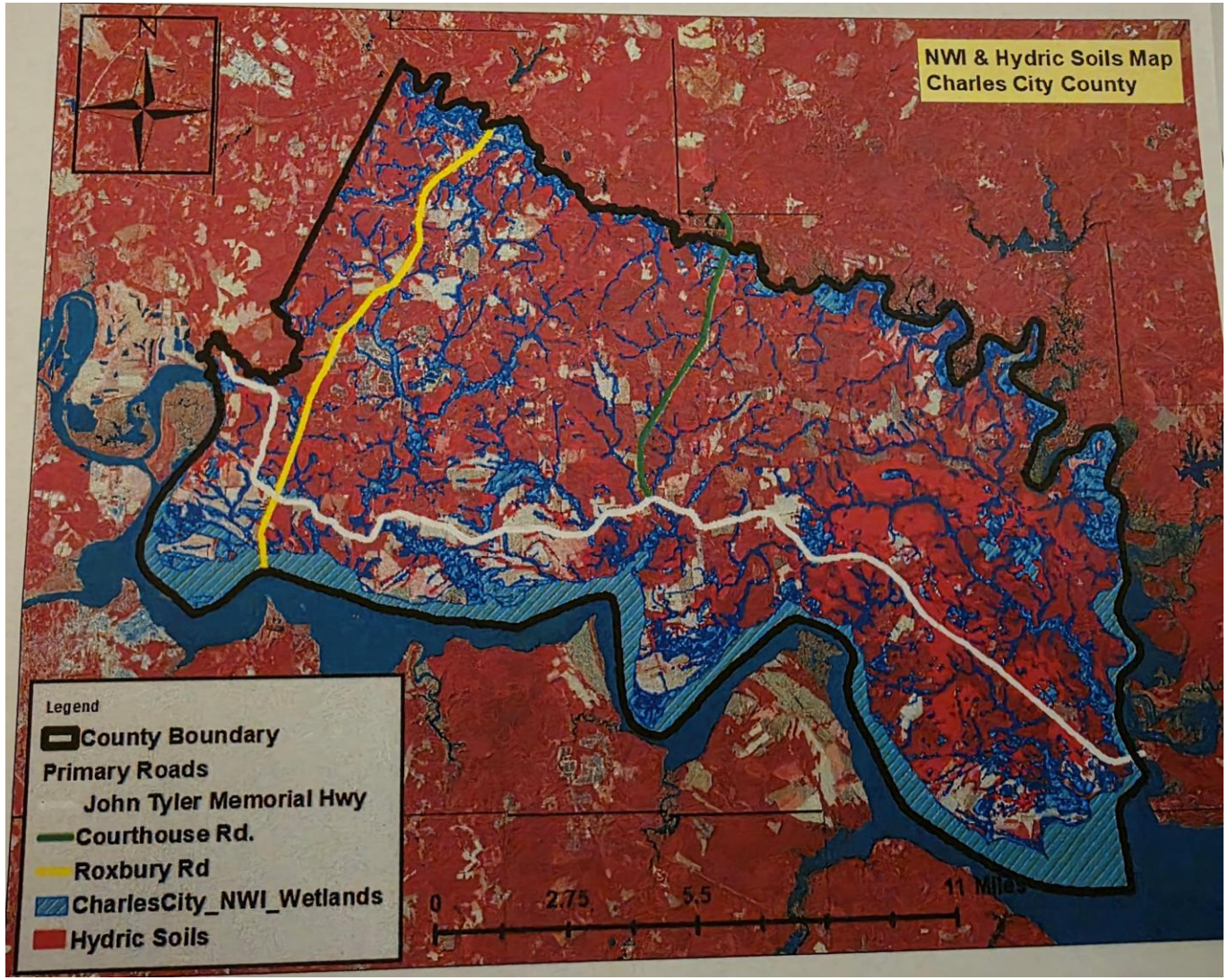
Identifying Suitable and Unsuitable Areas for Growth

Mapping Suitable Areas

Maps identify regions ideal for growth considering infrastructure availability and environmental safety.

Avoiding High-Risk Zones

Development plans use maps to avoid areas prone to environmental or infrastructural risks.



Using Maps to Guide Future Land Use Allocation

Demographic Trends Mapping

Maps visualize population growth and distribution to help plan future land use effectively.

Environmental Concerns Integration

Environmental data in maps ensures sustainable land allocation considering natural resources and habitats.

Infrastructure Capacity Analysis

Infrastructure capacity maps reveal current and future demands to support land use decisions.

Environmental Impact of Development Mapped Across the County

Mapping Sensitive Ecological Areas and Natural Resources

Purpose of Ecological Maps

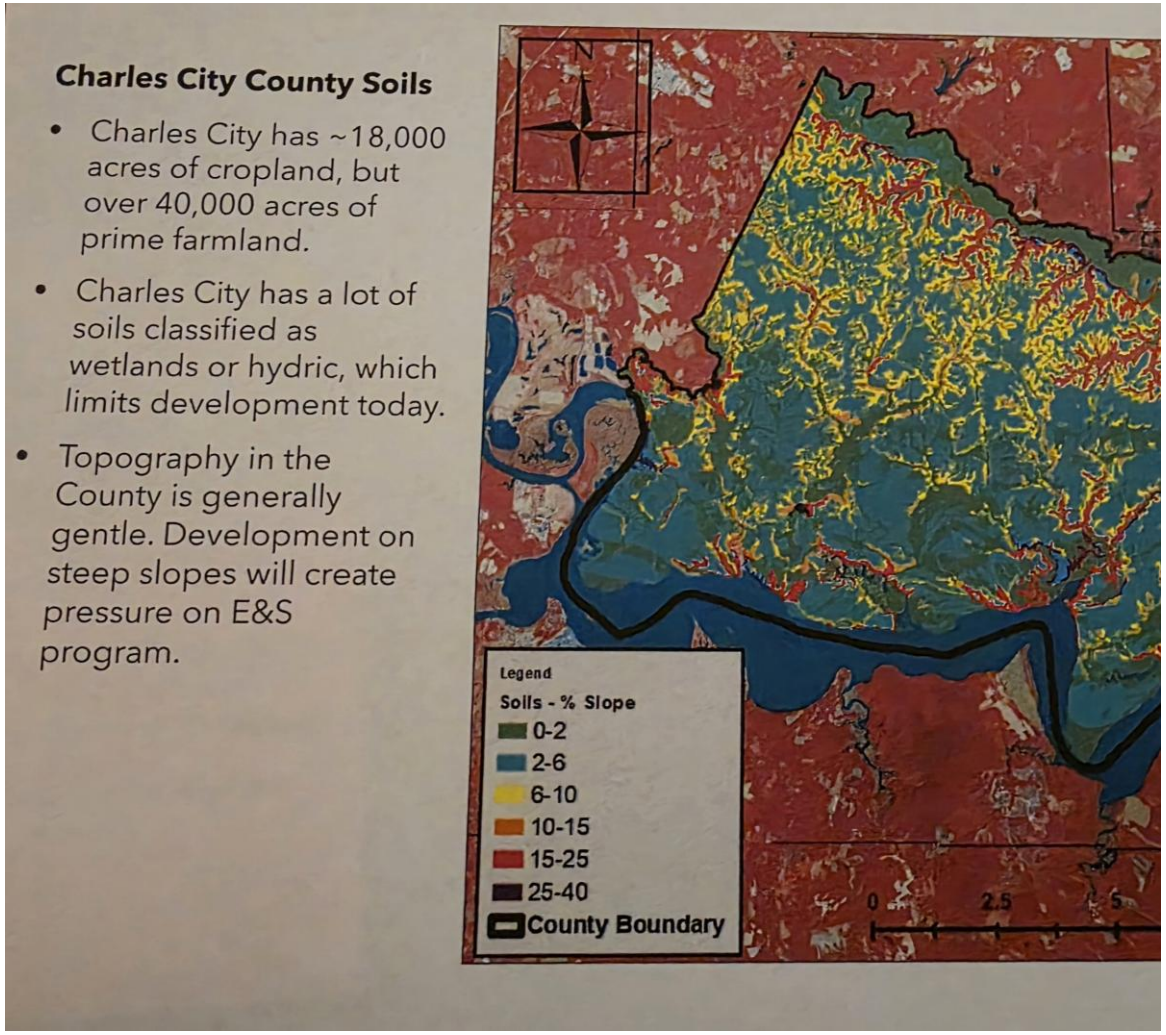
Ecological maps help identify sensitive habitats and natural resources to protect them from harmful development.

Protection of Wetlands

Wetlands are identified in ecological maps to ensure they remain preserved and unaffected by construction or development.

Limiting Development

Mapping sensitive areas guides regulations to limit or prohibit development in critical ecological zones.



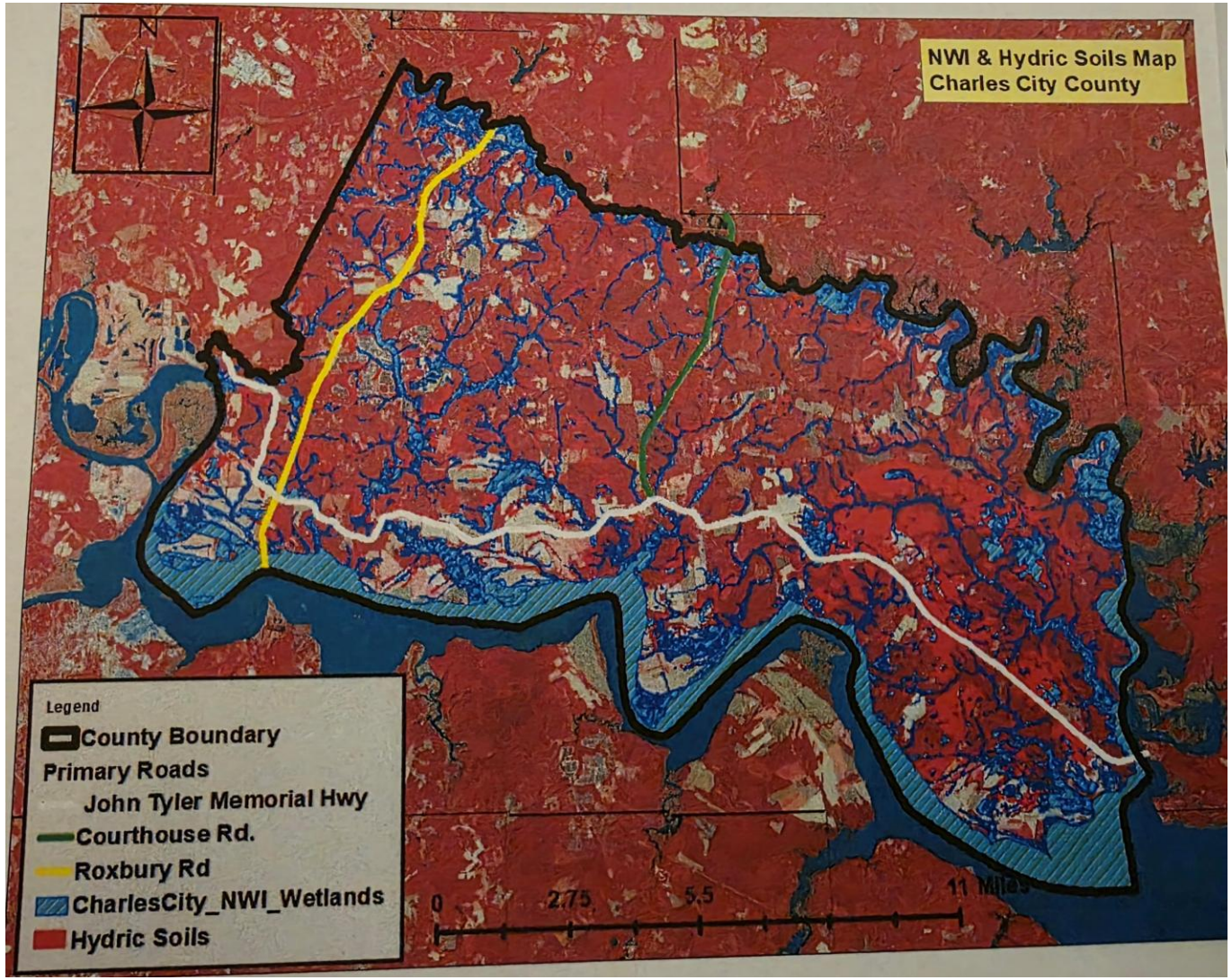
Assessing Impacts of Proposed Developments on the Environment

Use of Environmental Maps

Overlaying development plans on environmental maps helps identify sensitive areas at risk before project approval.

Evaluating Negative Effects

Planners assess potential negative environmental impacts early to make informed decisions on project feasibility.



Strategies to Mitigate Negative Environmental Effects

Haupts Lane Photograph showing the water runoff from the instillation of a solar farm. Picture taken by Abigail Colon-Montgomery July 13, 2025

Role of Mapping

Mapping helps identify critical areas for implementing environmental mitigation strategies effectively.

Buffering Techniques

Buffer zones act as protective barriers to reduce the impact of human activities on sensitive ecosystems.

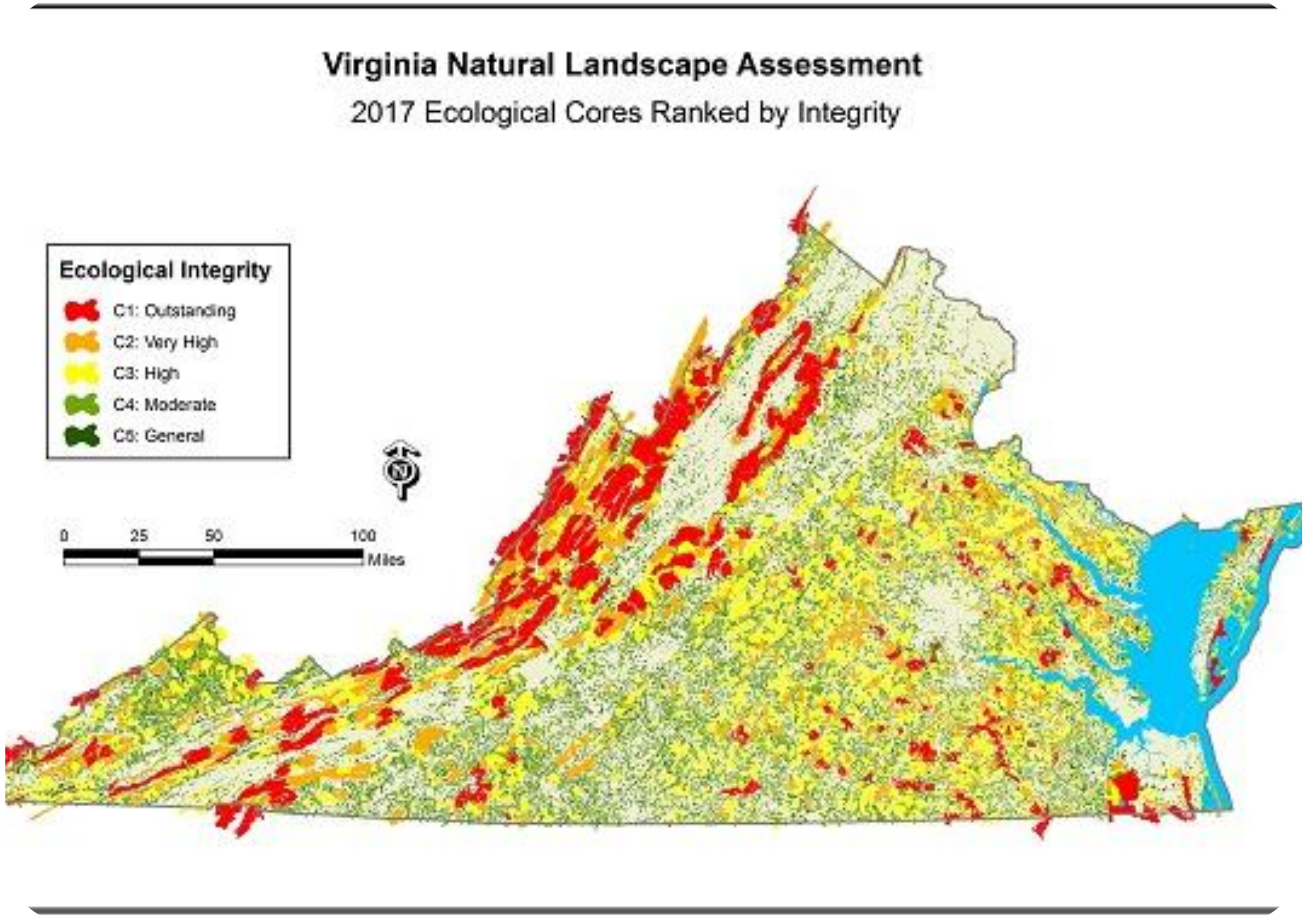
Green Corridors

Green corridors connect wildlife habitats and support biodiversity by allowing species movement and growth.

Sustainable Drainage

Sustainable drainage systems manage water flow to prevent flooding and reduce environmental degradation.

Virginia Natural Landscape Assessment



- Habitat loss is the greatest threat to biodiversity
- When residential and commercial development occurs, habitat is lost permanently
- Fragmentation of the landscape takes an immeasurable tool on biodiversity
- Fragmentation can cause isolation of species
- Maintaining natural landscapes is essential for basic ecosystem services such as cleaning the air and filtering the water.

Chesapeake Bay Preservation Requirements

https://law.lis.virginia.gov/admincode/title9/agency25/chapter830/section190/

9VAC25-830-190. Land development ordinances, regulations, and procedures.

A. Local governments shall review and revise their land development regulations, as necessary, to comply with § 62.1-44.15:74 of the Act. To achieve this:

1. Local zoning ordinances shall ensure that the uses permitted by the local zoning regulations are consistent with the Act and this chapter;

2. Local land development ordinances and regulations shall incorporate either explicitly or by direct reference the performance criteria in Part IV (9VAC25-830-120 et seq.) of this chapter. Specific development standards that implement the performance criteria from subdivisions 1, 2 and 4 of 9VAC25-830-130 (minimizing land disturbance and impervious cover and preserving existing vegetation) shall be included;

3. Local land development ordinances and regulations shall protect the integrity of Chesapeake Bay Preservation Areas by incorporating standards to ensure (i) the protection of water quality; (ii) the preservation of Resource Protection Area land categories, as set forth in 9VAC25-830-80, including the 100-foot wide buffer area; and (iii) the compatibility of development with Resource Management Area land categories, as set forth in 9VAC25-830-90;

Chesapeake Bay and Comprehensive Planning

https://law.lis.virginia.gov/admincode/title9/agency25/chapter830/section160/

1. Local governments shall establish and maintain, as appropriate, an information base from which policy choices are made about future land use and development that will protect the quality of state waters. This element of the plan should be based upon the following, as applicable to the locality:

a. The location and extent of Chesapeake Bay Preservation Areas;

b. Physical constraints to development, including soil limitations;

c. The character and location of commercial and recreational fisheries and other aquatic resources;

d. Shoreline and streambank erosion problems;

e. Existing and proposed land uses;

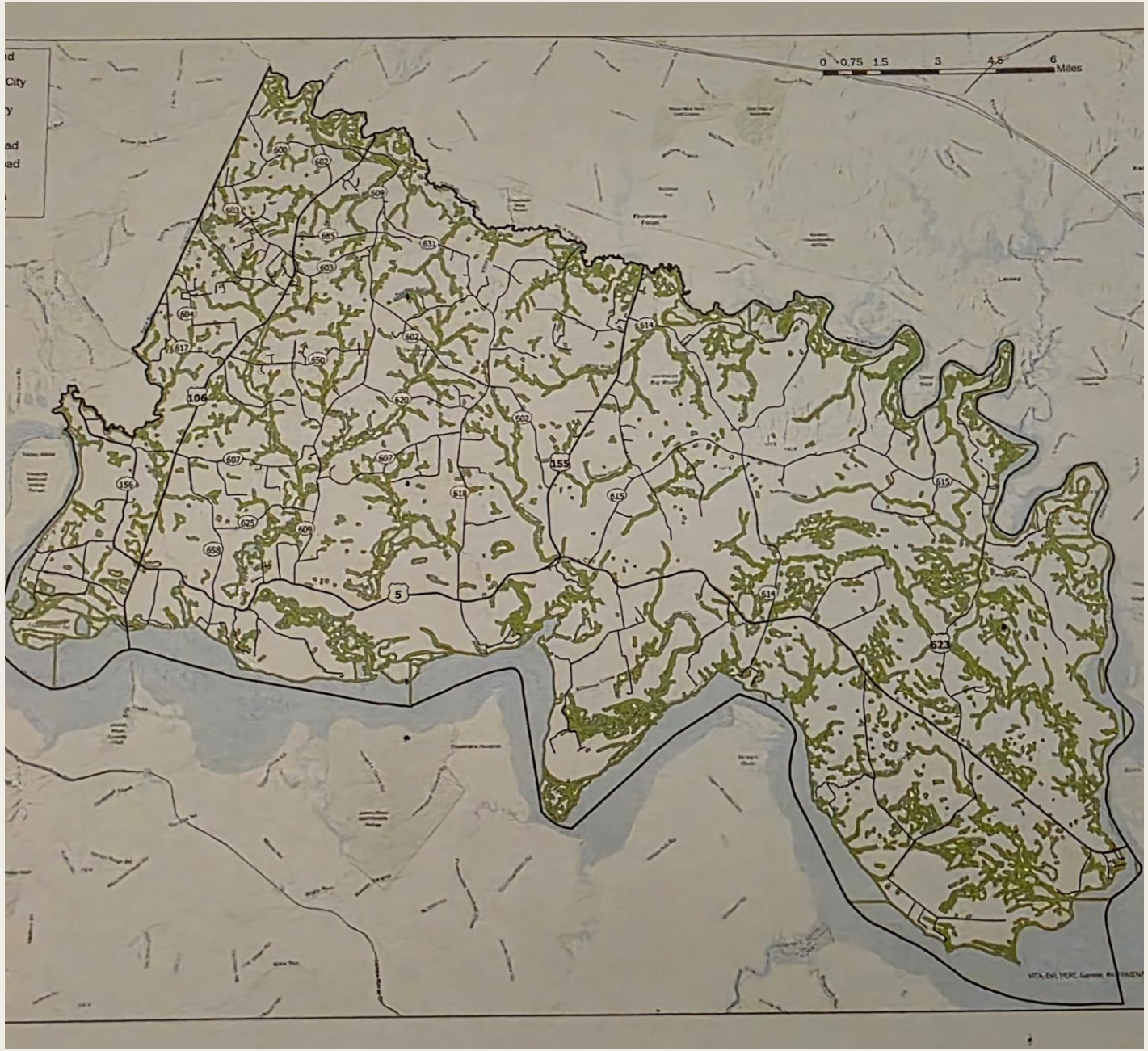
f. Catalog of existing and potential water pollution sources;

g. Public and private waterfront access areas, including the general locations of or information about docks, piers, marinas, boat ramps, and similar water access facilities;

h. A map or map series accurately representing the above information.

2. As part of the comprehensive plan, local governments shall clearly indicate local policy on land use issues relative to water quality protection based on an analysis of the data referred to in subdivision 1 of this section. Local governments shall ensure consistency among the policies developed.

Map-Based Assessment of Land Incompatibility for Building



Identifying Floodplains, Wetlands, and Other Restricted Zones

Floodplain Identification

Floodplains are areas prone to flooding, which require careful mapping to avoid construction hazards.

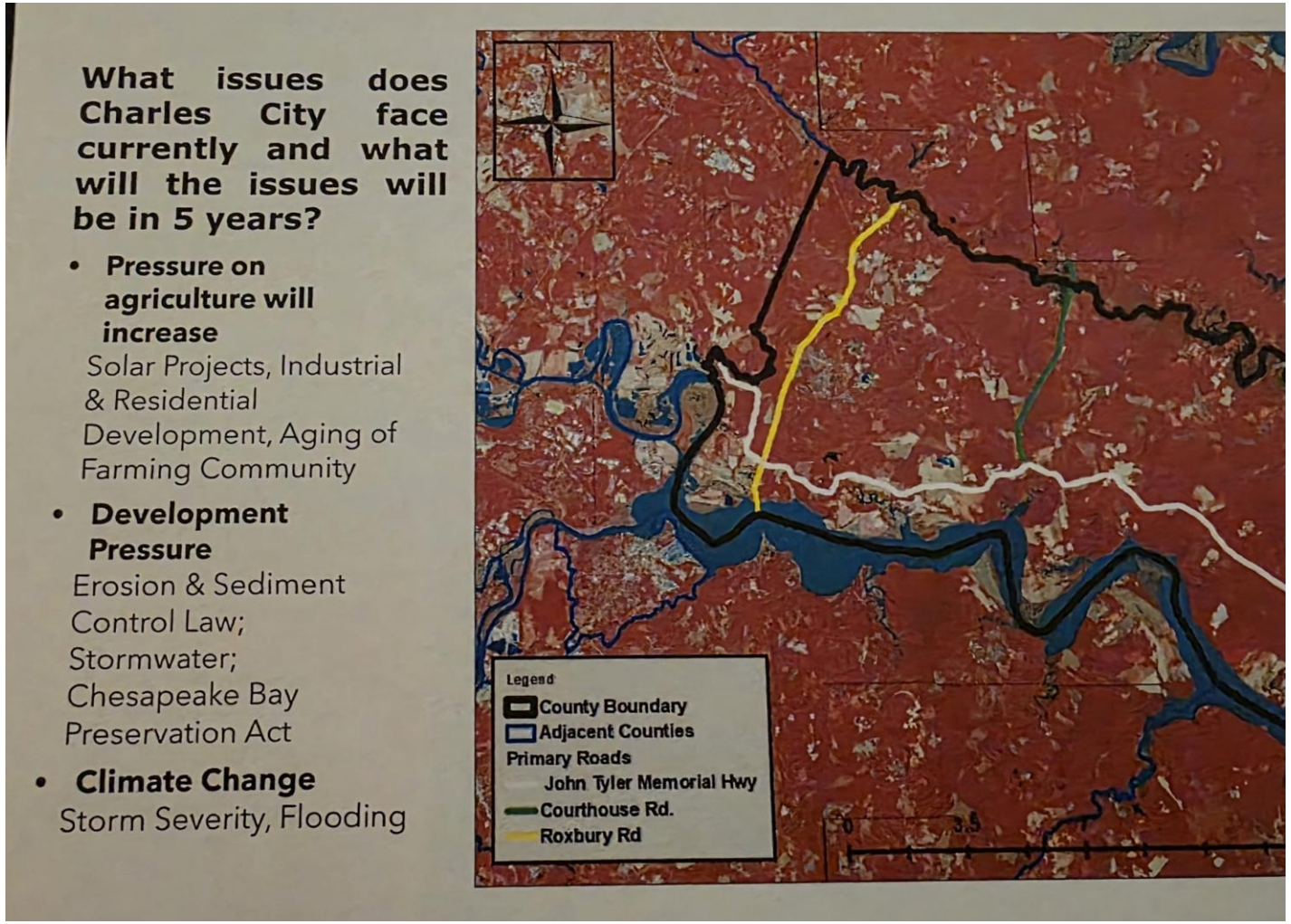
Wetlands Preservation

Wetlands are protected environments essential for biodiversity and water filtration, restricting development.

Restricted Development Zones

Other restricted zones are designated to prevent hazardous construction due to environmental or safety concerns.

Soil Quality, Slope, and Hydrology Constraints



Soil Stability Analysis

Assessment of soil quality is essential to determine stability for safe construction projects.

Slope Impact on Buildability

Slope gradients influence the feasibility and design of building structures.

Hydrology Considerations

Water flow characteristics help assess flood risks and drainage requirements on sites.

Legal and Regulatory Factors Affecting Buildability

Zoning Laws Compliance

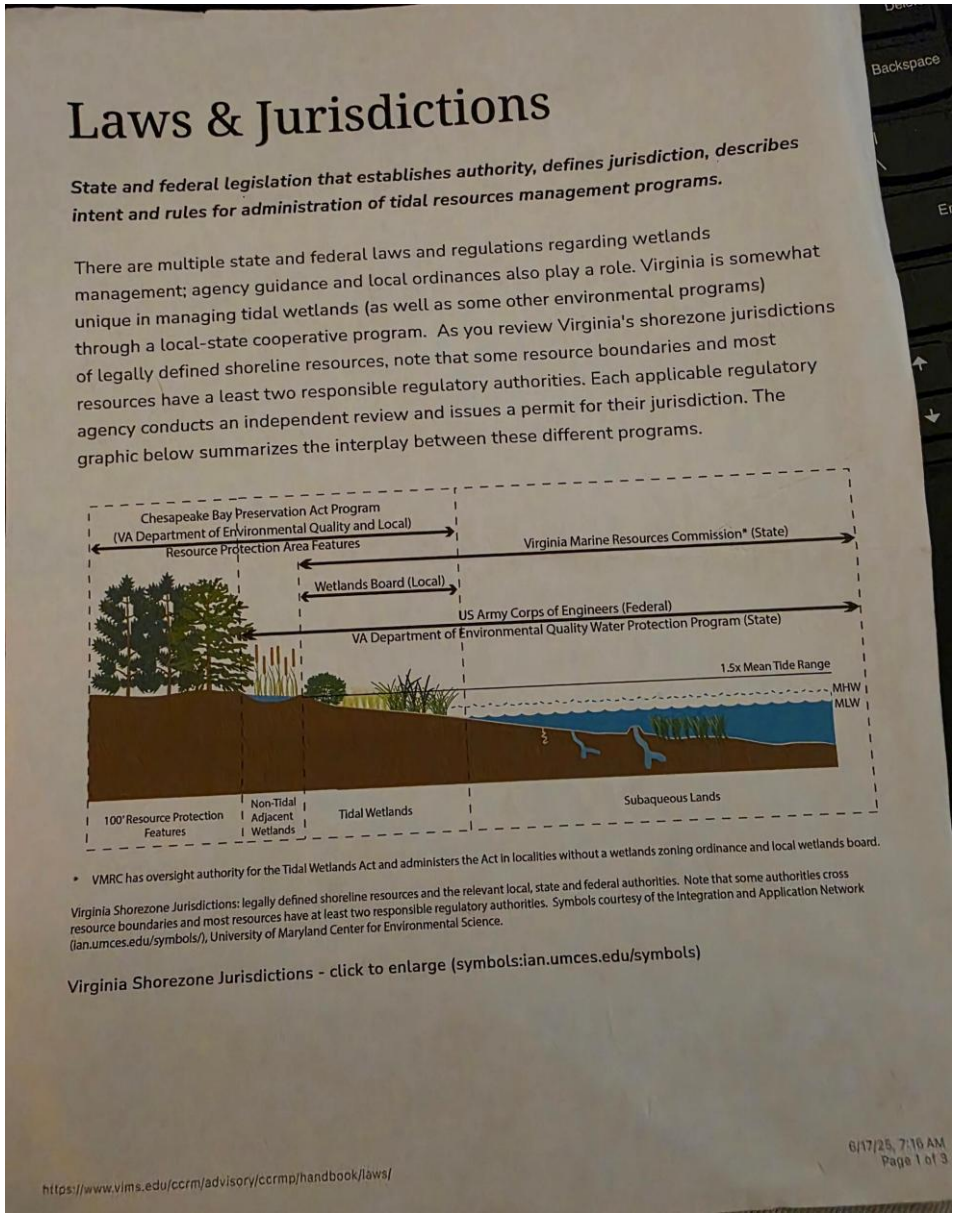
Understanding zoning laws is essential to ensure construction projects meet legal land use requirements.

Easements Identification

Identifying easements protects existing rights and guides permissible development areas.

Protected Areas Mapping

Mapping protected areas ensures preservation of environmentally sensitive lands during development.



Citizen Survey

County-Wide Survey

Timeframe

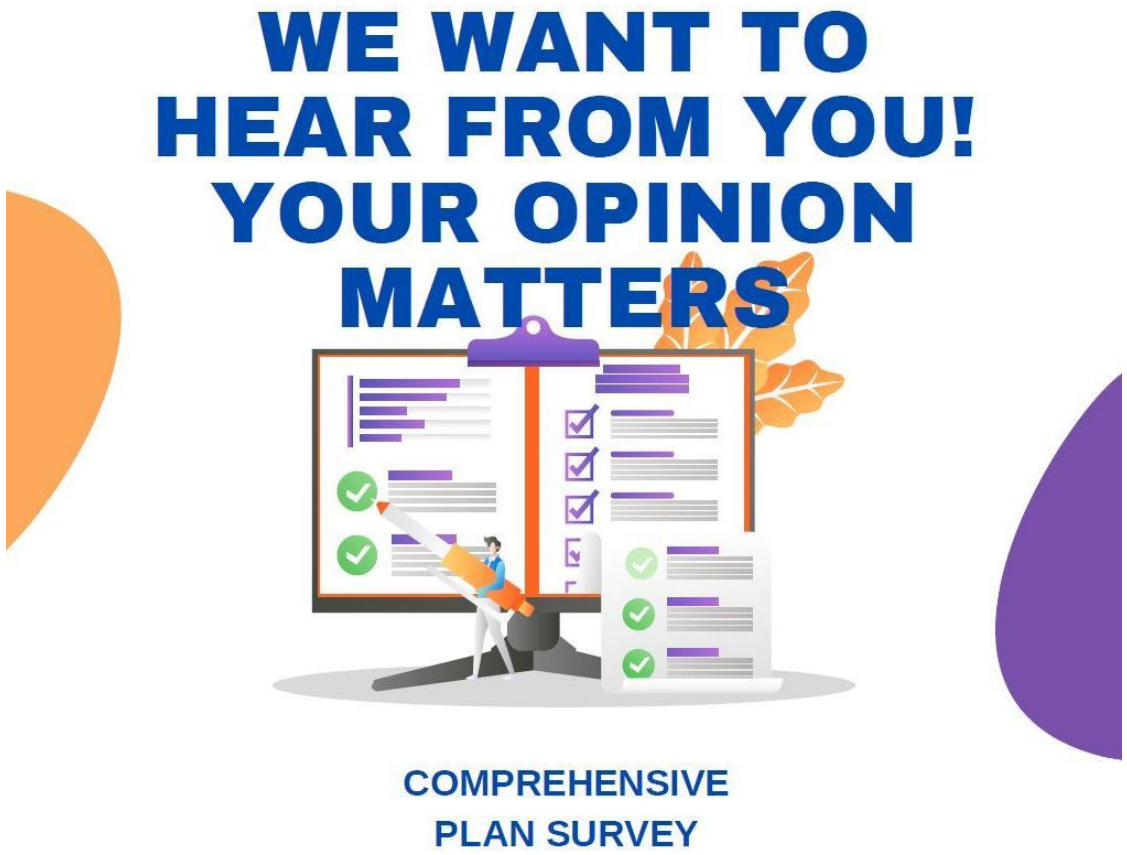
Charles City County Community Development put together a digital survey for residents of the county to complete from September to November 2024.

Data Collected

Various demographic questions were asked such as if participating residents owned or rented their home, their income, educational level, household income, why people live in this county and what they want to see out of the county over the next several years development-wise.

Participant Comments

There were over 50 comments from residents attached to the survey. Among those comments were remarks about keeping the county rural, listening to the citizens and not developing just to develop.



Flaws of the Survey

Survey only offered online.

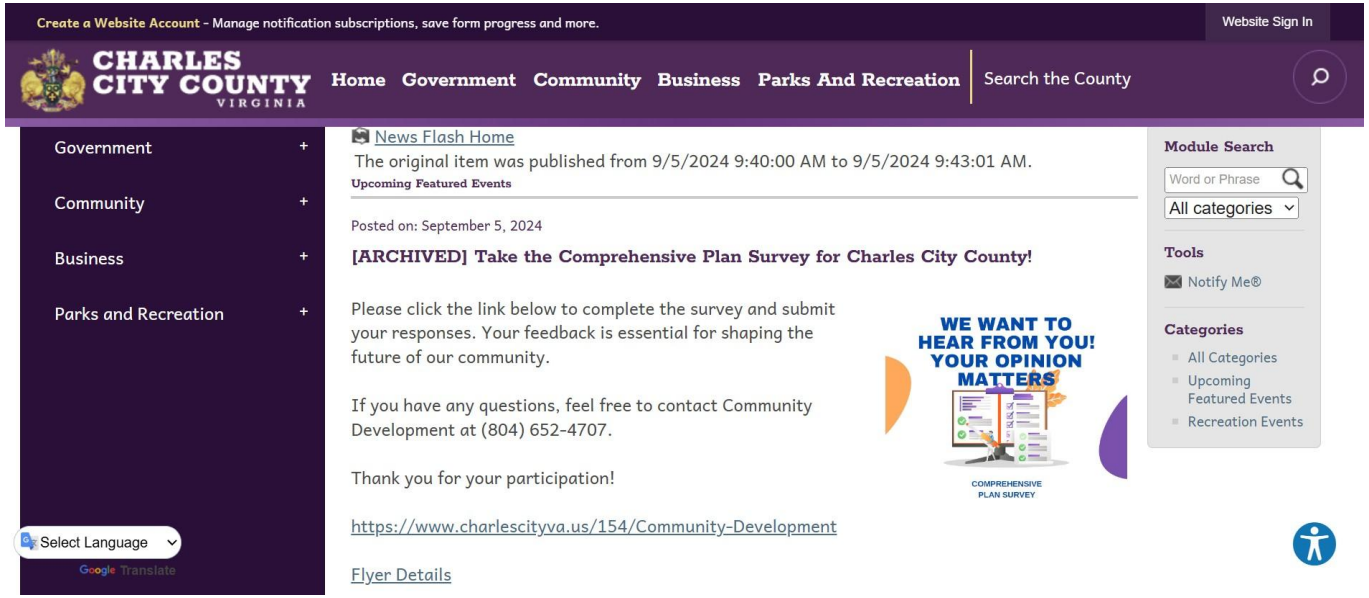
Residents without internet were not given the opportunity to participate

Survey was difficult to find online

Of those who knew about the survey, many reported having difficulty finding the link online to complete it.

Little public awareness of survey's existence

In asking a room of 20 people if they knew about the survey, only three stated that they knew of and participated in the survey.



Conclusion: Mapping as a Pillar of Sustainable Development

Essential Role of Maps

Maps provide crucial data that helps balance growth and environmental stewardship in Charles City County.

Guiding Informed Decisions

Maps guide responsible development by visualizing growth areas and environmental resources clearly.

What YOU Can Do:

1. Research, research, research!
2. Counter what is being told to you with factual information
3. Relate what's being discussed to how it will affect you on a personal level
4. Be present and engaged as much as possible
    1. Attend meetings
    2. Share your suggestions for development with the Planning Commission, Board of Supervisors and Community Development
    3. Connect with your neighbors and share information and come up with suggestions and ideas for moving the county forward

We need to be part of the CHANGE,
not the bystanders.

References

https://www.vims.edu/ccrm/advisory/ccrmp/handbook/laws/

Various maps created by the Crater Planning District Committee

Moving Charles City Forward: A Study on Route 106. https://capitalregionland.org/wp-content/uploads/2021/11/Route-106-Master-Plan-Charles-City-County-2019.pdf

Do You Know the Difference Between Land-Use Planning and Zoning? https://www.nadigroup.com/insights/do-you-know-the-difference-between-land-use-planning-and-zoning

Soil Conservation and Land Use. Presented by: Jim Wallace. Colonial Soil and Water Conservation District

Chesapeake Bay Land Use Requirement
https://law.lis.virginia.gov/admincode/title9/agency25/chapter830/section180/#:~:text=The%20purpose%20of%20this%20part,the%20Act%20and%20this%20chapter.

Chesapeake Bay Comprehensive Planning Requirement
https://law.lis.virginia.gov/admincode/title9/agency25/chapter830/section170/
Virginia Natural Landscape Assessment. https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla#dd

Virginia Department of Conservation and Recreation. https://vanhde.org/