THE VALLEYS
PLANNING COUNCIL INC

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The Valleys Planning Council (VPC) has completed a study on *Climate Conditions and Associated Impacts*, focusing specifically on northern Baltimore County. The goal of the study was to identify changing environmental conditions, evaluate the potential for future changes in environmental conditions, and explore what actions might be taken to manage or mitigate effects on land use, natural resources, livelihoods, and quality of life. The VPC area contains rural residential areas along with forests, pastures, and productive farmland. Thanks to the county's history of growth management and land preservation, almost two-thirds of the county is zoned for Resource Conservation, a circumstance that could be used to help ensure a sustainable economic and environmental future. The study takes a look at recent changes in environmental conditions as well as what the area may face under future "high" and "low" scenarios of climate change projections and offers recommendations on how government, farmers, and residents might be better prepared to deal with these trends.

The study identifies favorable, mixed, and unfavorable outlooks, such as an increase in growing degree days (favorable), decrease in frost-free days (mixed), increase in number of days above 90°F (unfavorable), and increase in extreme precipitation events (unfavorable). The study further notes greater changes/challenges in other parts of the country, suggesting Baltimore County could have some comparative advantages when it comes to agriculture and dealing with changing weather patterns in the coming decades. Managing stormwater, especially during the more intense rain events anticipated, will be one of the key challenges facing the county and rural area, and management of forests, farms, invasive species, and pests will be central to a successful sustainability strategy.

Existing stormwater management facilities were designed with certain volumes and frequencies anticipated, and those factors are now changing. Also, the watersheds in northern Baltimore County have different topography and varying soils, making some areas more flood prone, in particular the low-lying valley floors. Heavier and more frequent rains dumping larger volumes into low-lying areas is a major issue, and areas inside the Urban Rural Demarcation Line (URDL), that were intensely developed before the advent of stormwater management, will have more runoff to contend with. Recommendations include: targeting areas within the URDL for redevelopment to incorporate green infrastructure and add stormwater management in deficient areas; identifying the most beneficial areas for tree plantings and stream restoration to help mitigate flooding; exploring and utilizing new technologies for monitoring and managing stormwater in real time; better protecting low-lying and flood-prone areas; and revisiting stormwater design variables and existing facilities to determine if changes/upgrades are warranted.

Based on forest health assessments performed by the county, the VPC study suggests efforts to diversify tree stock, manage for invasive tree species, implement prescriptive thinning, take measures to guard against pests and fungi, and keep a database to observe trends in these areas. In addition, the study recommends a focus on the health of oak trees, as they are considered robust against future climate change and offer significant benefits compared to other species. Another recommendation is to learn more about the NASA Carbon Monitoring System, which has a pilot study focused on forest land cover that includes evaluation of Maryland and Baltimore County.

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With its steady year-round rainfall and good soils, the agriculture industry in Baltimore County should be able to withstand projected changes in climate, providing farmers continue to adopt sustainable practices, and that new techniques for managing large rain events emerge. As population continues to grow, it is anticipated that farmers will be called upon to produce more food on fewer acres. This could mean an increase in demand and price for farm products produced in Baltimore County, where climate trends will likely increase the length of the growing season. The challenge for Baltimore County farmers will be adapting to changing conditions which might include an earlier spring, but then a chance of late/post-planting frost; inundated fields after heavy rain events; and an increase in pests and weeds fueled by warmer temperatures. Recommendations for farmland are centered on maintaining prime soils and continuing support for land preservation; taking advantage of research and new techniques regarding regenerative/sustainable farming; and discovering new methods for dealing with flooded fields after heavy rain events.

A copy of the study is available on the VPC website: www.thevpc.org. Questions about the study can be directed to Teresa Moore, VPC executive director: 410-337-6877 or Dr. Rawlings Miller, Principal at WSP: 978-626-4320.