

Docket Item #11  
MASTER PLAN AMENDMENT# 2006-0001

Planning Commission Meeting  
March 9, 2006

**ISSUE:** Consideration of a request for an amendment to the City's Master Plan, adopting the Four Mile Run Restoration Master Plan as a chapter of the Master Plan.

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**CITY COUNCIL ACTION, MARCH 18, 2006:** City Council approved the Planning Commission recommendation

**PLANING COMMISSION ACTION, MARCH 9, 2006:** On a motion by Mr. Komoroske, seconded by Ms. Fossum, the Planning Commission approved the master plan amendment, with the revision to the text boxes on pages 19 and 48 of the Four Mile Run Restoration Master Plan. The vote carried on a 5-0 vote; Mr. Dunn and Mr. Jennings were absent.

**Reason:** The Commission endorsed the long work by many parties on the Four Mile Run Restoration Master Plan. Having been involved in the process itself, the Commission noted how inclusive it was and thanked staff and involved citizens for their efforts. The Commission stated that it looked forward to working with staff in the future as the goals of the Master Plan are implemented.

**Speakers:**

Judy Noritake, Alexandria resident and co-chair of the Four Mile Run Joint Task Force, stated that she has dedicated a tremendous amount of her time over the last five years to this project and that the impetus for the project was the invitation by Arlington County to participate with them to plan for the future of Four Mile Run. She noted that Arlington County considers Four Mile Run its waterfront and that the Master Plan reflects big thinking to create a grand plan for the future of Four Mile Run. She stated that significant public and private investment will be occurring in this area over the next ten years, so having the Master Plan and vision in place will direct thoughtful investment decisions that address and improve Four Mile Run.

Neal Sigmon, Arlington County resident and co-chair of the Four Mile Run Joint Task Force, stated that last Monday night, the Arlington County Planning Commission unanimously voted to take the Master Plan forward and that it will be heard by the Arlington County Board on Tuesday night, March 14, 2006. He stated that many residents pass by Four Mile Run during their daily lives and noted that the environmental potential of Four Mile Run has not been realized. He said that the residents had ideas about how to improve it, but until this process, did not have an opportunity to share these ideas and think about the stream. He stated that this master planning process and the elements of the Master Plan will encourage residents of both jurisdictions to

come to Four Mile Run.

Jim Hurysz, Arlington resident who is running for the United States Congress, stated that he has heard from people who do not attend civic meetings or normally participate in planning processes, that they have concerns about flooding, debris consisting of glass and plastic bottles in Four Mile Run, inadequate open space due to the development of Potomac Yard and a concern about the potential loss of affordable housing.

Jim Snyder, Alexandria resident, stated that he supports the Master Plan and noted that the challenge will be implementing the Master Plan. He encouraged the provision of active recreation uses for the new residents who will be living at Potomac Yard, including the reuse of the bridges at Potomac Yard with recreation uses and to facilitate the ability for people to get onto the Potomac River.

**STAFF RECOMMENDATION:**

That the Planning Commission, by resolution, recommend approval of the Four Mile Run Restoration Master Plan as an amendment to the City's Master Plan, including the revised language of the two text boxes located on pages 19 and 48 of the Four Mile Run Restoration Master Plan dated January 2006.

**BACKGROUND:**

*No changes are proposed to existing land use designations or zoning as part of this amendment to the City's Master Plan.*

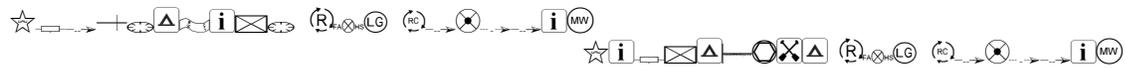
The Four Mile Run Restoration Master Plan (Master Plan) is a project to restore roughly two miles of a highly degraded and impacted stream in Northern Virginia. The stream, Four Mile Run, is a 9-mile long stream located in a highly urbanized area that includes portions of Arlington County and the City of Alexandria. The watershed also includes Fairfax County and the City of Falls Church. The lower portion of Four Mile Run, from I-395 at the upstream end to the mouth at Ronald Reagan Washington National Airport, is contained in a hardened flood channel and marks a rough boundary between Arlington County and the City of Alexandria. This channel was constructed in the 1970's by the U.S. Army Corps of Engineers to provide flood protection to Alexandria and Arlington after Hurricane Agnes severely flooded this area. It is this 2.3-mile hardened flood control channel, or levee corridor, that is the focus of the Restoration Master Plan.

The Four Mile Run Restoration Master Plan is a long range plan, which could take up to 20-30 years to implement. The magnitude of this project, including its \$261.0 million cost (excluding \$94.0 million for undergrounding of powerlines) will result in this plan being implemented over a number of decades. Implementation will be highly dependent on the availability of substantial federal and state grants as well as joint local funding by the City of Alexandria and Arlington County. The adoption of this plan does not commit the City of Alexandria, or Arlington County, to fund this Master Plan but provides a roadmap through the guiding principles and conceptual design options to use as opportunities to gain funding, as funding possibilities arise, and as redevelopment occurs within the corridor as the corridor is restored. Funding for improvements within the corridor will most likely be phased over a long period of time, and due to the joint effort of both the City of Alexandria and Arlington County, shared between both jurisdictions. This Master Plan provides guidance for stream restoration, future recreation, the

placement of new public infrastructure and the replacement of existing infrastructure, once it has reached its useful life. The Master Plan discusses a variety of funding sources and strategies, ranging from local funds to state/federal grants and matching funds to public/private partnerships. Funding for all elements of the Master Plan are subject to competition in the City's Capital Improvement Program (CIP) with all other City projects for limited public funds. The current City CIP is already not fully funding all City capital facility and infrastructure needs, so the competition for new funding will be present for the foreseeable future. There is potential for significant leveraged federal funding for the flood control and environmental restoration elements of the Master Plan, through the City and County's partnership with the U.S. Army Corps of Engineers.

**HISTORY**

In 2000, a joint effort between the City of Alexandria and Arlington County, through Congressman James P. Moran's office, secured an EPA grant of \$1 million dollars in funding for a joint Arlington-Alexandria study to include the "demonstration of environmental improvements to Four Mile Run". Subsequently, the Congressman secured appropriations for the U.S. Army Corps of Engineers to be actively involved in the project. Partnering with Arlington County, the U.S. Army Corps of Engineers (USACE), and the Northern Virginia Regional Commission (NVRC), the City of Alexandria began a 6 year process to develop the Four Mile Run Restoration Master Plan (Master Plan). The City-County Agency Coordinating Group (ACG) was formed in 2002. In addition, in early summer 2003, an eighteen member citizen Joint Task Force (JTF) was formed with citizens from both jurisdictions. Members of the JTF were appointed by the City Manager and County Manager of each jurisdiction.





The public process included a joint kick-off press event (July 7, 2003), monthly JTF meetings,

monthly ACG Meetings, a very well-attended community visioning session (February 5, 2005), roundtable discussions, two update presentations to City Council and four community open houses. All comments received throughout the process were captured and posted on the project's website that is maintained by the NVRC: <http://www.novaregion.org/history.htm>. In addition, the NVRC website offers current and historical information about Four Mile Run and the master planning process, along with upcoming meeting announcements. An email distribution list was created to notify people about community meetings and other events related to Four Mile Run. ACG staff attended civic association meetings and other community events, and wrote newsletter articles (including FYI Alexandria) to promote awareness of and participation in the Four Mile Run effort. Included in the broader effort underway was the focus on the watershed as a whole. In early 2004, Alexandria and Arlington executed a formal cost-sharing agreement with the USACE for a watershed-wide Four Mile Run restoration Feasibility Study, which will eventually incorporate the Master Plan for the restoration of the levee corridor as well as analyses and recommendations for restoration projects throughout the watershed. Projects identified in this study, including components of the Master Plan, will be eligible for federal construction cost share funds. The Master Plan can be viewed on-line at the website listed above. (*Attachment 3, U.S. Army Corps of Engineers Letter of Support*)

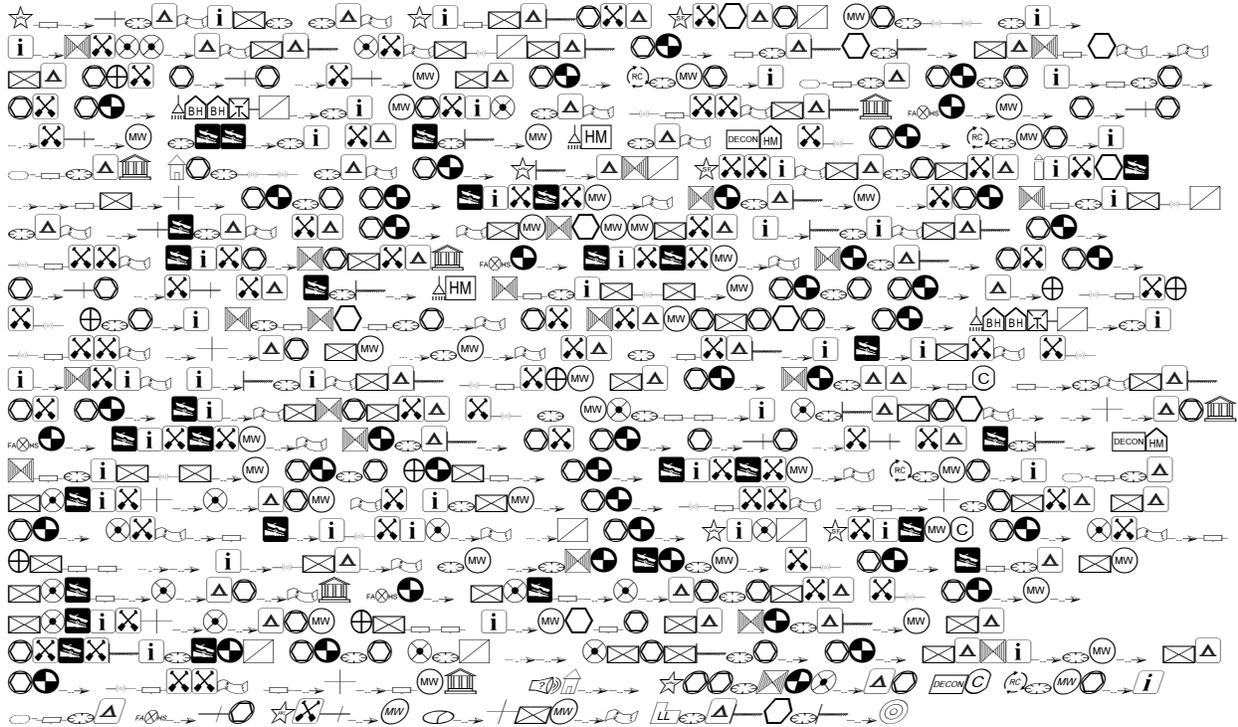
### **FLOOD PROTECTION**

As part of the Four Mile Run Master Plan process, the NVRC, in coordination with the U.S. Army Corps of Engineers, conducted an updated hydraulics and hydrology analysis of the channel. This analysis was undertaken to establish the limits of improvements within the channel that could be

provided without negatively impacting the channel's ability to carry the flow from a 100-year flood event. The 100-year flood event is defined as the 1 percent probability of a flood event occurring during any given year.

As a result of this analysis, the estimate of the flow of water which constitutes a 100-year event in Four Mile Run could be reduced by about 30 percent, from 22,500 cubic feet per second to 15,970 cubic feet per second. In effect, based on knowledge and data available today, we now can state that when the U.S. Army Corps of Engineers designed the Four Mile Run project in the 70's, the project's flood handling capacity calculated was more than was necessary. This reduction in the flow is based on the longer historical record data available today. Based on this new flow, the Flood Insurance Rate Maps (FIRM) for the City of Alexandria and Arlington County will be adjusted by the Federal Emergency Management Agency (FEMA). This will result in some properties that are currently mapped in the 100-year flood plain being removed from that designation. This means that those properties will no longer be required by federal law to purchase flood insurance if they hold a federally backed mortgage. If those properties choose to continue with flood insurance coverage, they will be able to purchase the insurance at a reduced rate. While these properties will not be technically in the 100-year floodplain, they may still be subject to flooding, as all calculation based upon statistical models tract project probabilities. City staff will be implementing a public outreach program with FEMA to work with all of these properties and discuss their risk of flooding and options for insurance.

Part of the hydraulics and hydrology analysis evaluated the impact of the proposed Master Plan improvements on the flood carrying capacity of Four Mile Run. These improvements do decrease the capacity of the channel slightly, and increase the area and depth of the 100-year flood plain. However, this increased area is small and is less than the area of the previous 100-year floodplain, based on the flow value of 22,500 cubic feet per second. The implementation phase of the Master Plan will evaluate ways to mitigate the risk of flooding to this area including measures such as constructing berms.



## **FOUR MILE RUN RESTORATION MASTER PLAN**

The purpose of the Master Plan is to provide a framework and vision for future changes in the Four Mile Run corridor. The Master Plan seeks to direct future public and private land use decisions and investment in the area in a manner that both promotes environmental restoration of the stream and encourages access and connections to the stream and the adjacent jurisdictions. The Master Plan envisions that the Four Mile Run corridor will become a model of urban ecological restoration and will help to overcome the legacy of past decision-making related to land uses and the siting of infrastructure that have contributed to the sense of isolation and created a barrier between the stream and the adjacent neighborhoods in both jurisdictions.

Through the sensitive and sustainable integration of natural areas with active urban nodes, the Four Mile Run corridor will be a place where the communities of Alexandria and Arlington County can gather, recreate and celebrate a shared waterfront legacy. Guiding Principles to

achieve this goal were developed, based on community and governmental input, which include eight key elements:

- (1) ***Flood protection.*** Maintain a minimum 100 year event flood protection; examine the current extent of the 100 year flood-prone area; and explore flood protection measures for areas not currently protected.
- (2) ***Environment.*** Create a “dynamically stable stream channel” using natural stream channel design techniques; improve corridor habitat and ecology to support native terrestrial and aquatic plant and animal species; and develop upstream strategies to improve water quality in the stream and the environmental quality and long-term viability of a restored levee corridor.
- (3) ***Aesthetics and design.*** Improve overall corridor aesthetics and viewshed opportunities; encourage urban design that develops the corridor's aesthetics and reflects the excitement of the watershed citizenry for this resource; incorporate “green design” principles for all design and development activities within and adjacent to the corridor; and incorporate innovative and creative urban design and watershed solutions.
- (4) ***Recreation and urban life.*** Enhance existing recreational opportunities; create new recreational opportunities that afford interaction with the waters of Four Mile Run; develop urban life opportunities along the Four Mile Run corridor; and encourage appropriate siting of recreational facilities in the context of the overall project goals.
- (5) ***Integration and balance.*** Connect the project to the efforts underway in the watershed to improve the water quality of Four Mile Run; integrate the corridor with surrounding communities and proposed adjacent urban development efforts; and coordinate with other ongoing planning activities such as the Four TMDL/Implementation Plan (which strives to create a cleaner Four Mile Run through pollutant reduction) the local Chesapeake Bay Preservation Act programs, the Potomac Tributary Strategies, affordable housing initiative, recent master planning efforts such as the Arlandria Neighborhood Plan and similar planning efforts in Arlington County, such as the Shirlington, and other planning and economic development activities.
- (6) ***Access and connectivity.*** Create a place for people to reconnect with water and nature within an urban context; increase pedestrian and bicycle access and amenities; ensure that Four Mile Run is accessible to all who wish to use it; increase connectivity between the two communities; and enhance the corridor's effectiveness as a non-motorized and mass transit corridor.
- (7) ***Education and interaction.*** Provide interpretive opportunities to educate and inform the public about the stream corridor; and stress the interrelatedness of positive individual, institutional, and political actions and behavior changes with improved water quality and habitat in the corridor.

- (8) ***The planning horizon.*** Think big-create a plan that provides the parameters for change over time as opportunities become available; and provide a mix of short-term discrete improvements blended with long-term large-scale corridor changes.

The Master Plan describes the characteristics of the 2.3 mile corridor study area as it exists today (Chapter 2), the process used to develop the Master Plan (Chapter 3), the elements of the Master Plan Vision (Chapter 4), the design language to create the vision (Chapter 5), and the range of implementation strategies and preliminary cost assessments to achieve the vision (Chapter 6).

## **THE VISION**

The Master Plan for Four Mile Run transforms the corridor by incorporating improvements in environmental quality, open space amenities, transportation options and improving the overall quality of urban life within the near-stream area.

### ***Highlights of the Vision:***

#### **A. Environment**

The Master Plan emphasizes the “greening” of the Four Mile Run corridor. Flood protection remains the most important element, but through channel restoration and stabilization, Four Mile Run becomes a model of environmental responsibility with a healthy ecosystem.

Hydrology and flood control are the core of the plan. The ecological character of the corridor will be restored with the creation of new habitat area and significant improvements to existing habitat areas. Comprehensive stormwater management techniques will be incorporated throughout the corridor to reduce, retain, and filter stormwater such as daylighting and bioretention, before it reaches the stream. Litter control was identified as a major concern within the corridor. The Master Plan identifies several stormwater management facilities that can be installed to help control trash entering the stream. Green Building technologies will be incorporated in development as redevelopment occurs. The inclusion of a small, neighborhood-serving recycling station within the corridor will facilitate educational opportunities to teach community awareness and encourage participation at the local level.

#### **B. Public Spaces**

The Master Plan envisions a vibrant public realm that functions as a destination for nearby residents and visitors. It recognizes and addresses the importance of accessibility for all. The network of trails and pedestrian bridges provides significantly improved access to almost all parts of the corridor and safe connections to neighborhoods in Alexandria and Arlington. A commuter trail is maintained through the corridor with the addition of a recreational, or community trail on the south side of the Run. There are informal trails, ramps, and stream crossings. Pedestrian/cyclist bridges will connect Alexandria and Arlington together, such as a proposed non-vehicular bridge spanning Four Mile Run between S. Eads Street and

Commonwealth Avenue. Promenades and plazas will attract activity and visitors, and the open lawn or “green spaces”, sports facilities and public art will add character, meaning and direction to the corridor. In particular, art that addresses the history and ecology of the area and a relationship to the space is strongly encouraged as part of this Master Plan. It is envisioned that the main activity centers along Four Mile Run in Alexandria would be located at Potomac Yard, at Mt. Vernon Avenue and the Four Mile Run Park and adjacent commercial properties in Arlandria, and along West Glebe Road near the boundary with Arlington County. Conceptual renderings of both the Potomac Yard and Mt. Vernon Avenue areas are included in the draft Master Plan (see pages 44-46). These areas would provide opportunities to interact with the stream along with active and passive recreational opportunities for users of all ages, and be integrated into the urban fabric. The balance of land along Four Mile Run is envisioned as being in a more natural state, with environmental restoration of the stream banks where possible and appropriate. Included in this Master Plan is a study to underground the power lines within the corridor. While the Master Plan considers this a desirable long-term outcome, the vision also accommodates above-ground power lines.

The Master Plan identifies the need to, at a minimum, maintain the current recreational facilities, specifically, the current number of fields. The Master Plan acknowledges that future realignment of the Four Mile Run multi-purpose field and relocation of the ball field toward Mt. Vernon Avenue could open the potential for wetland enhancement. These field renovations would require adequate timing and sequence within the City’s overall field renovation schedule, to ensure that play time continues in a favorable manner. This Master Plan does not change the current plans for the renovation of the Four Mile Run multi-purpose field, or current timeline associated with the field development.

Maintenance for the enhanced Four Mile Run will be incorporated in both the existing inter-jurisdictional agreements, and within the existing resources. The Master Plan anticipates quality, sustainable restoration, with native plant materials and species appropriate to the conditions of the restored channel.

### **C. Built Features**

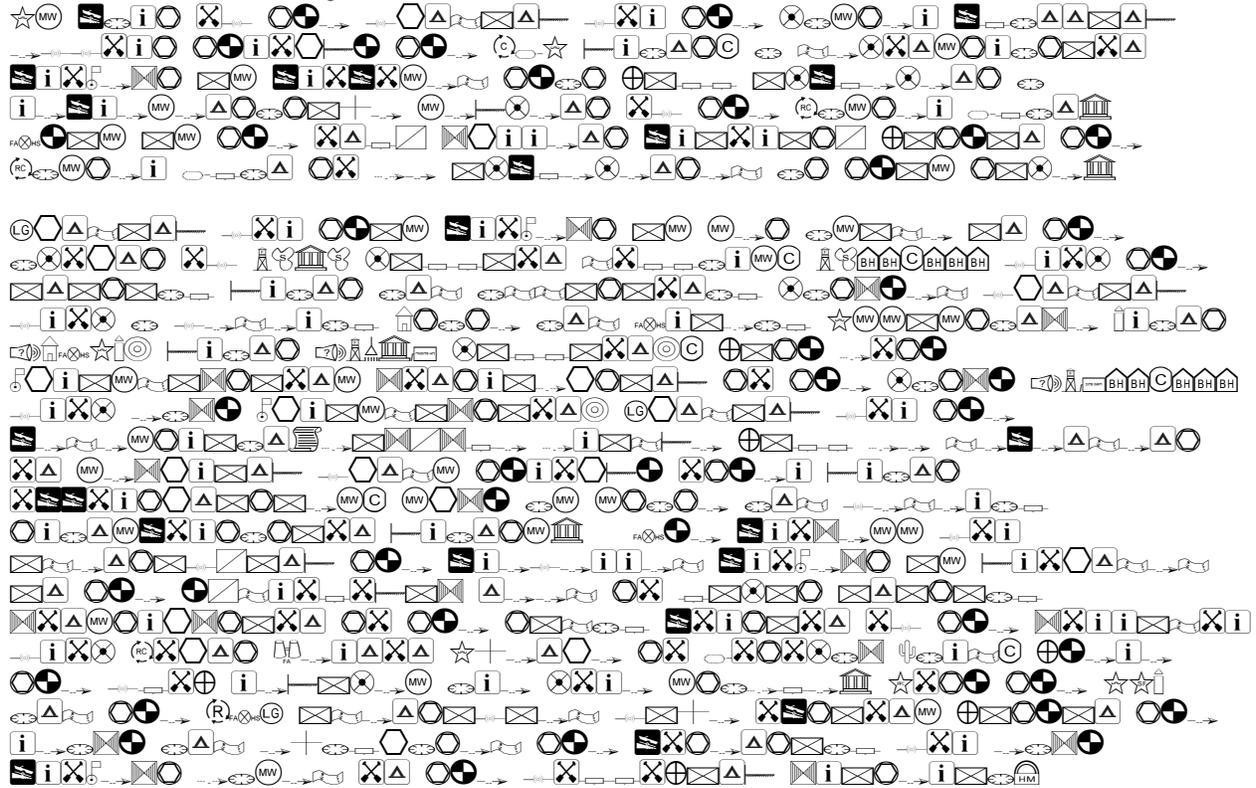
The Master Plan envisions a built environment that both acknowledges and respects the stream and contributes positively to the public realm. The highest quality of form and materials that supports the Master Plan vision should be used in the design approach. Any new development within the corridor should engage, and directly face and turn its face to, the stream. The Master Plan recognizes the importance of providing affordable housing to ensure that the surrounding community maintains its diverse character, and that the restored Four Mile Run is a community asset that serves all. As new development occurs within the corridor, the Master Plan promotes the City’s adopted affordable housing policy. Transportation options within the Master Plan encourage change in the way the corridor currently functions, as a place where people pass through. As opportunities present themselves, revised intersections and improvements should be considered to facilitate compatibility with the restored corridor. The transportation improvements proposed in the Master Plan will require future studies, additional information

and community outreach to assess the viability of the individual project. While not actively seeking funding for infrastructure improvements, until such time replacement is deemed necessary, the Master Plan identifies areas that could benefit from future design considerations.

## THE IMPLEMENTATION OF THE MASTER PLAN

### *Next Steps:*

#### **A. Demonstration Project**



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**FISCAL IMPACT**

The Four Mile Run Restoration Master Plan is a long-term (ie, decades long) vision for the future of the lower Four Mile Run corridor and a framework for developing this vision. The adoption of this plan does not commit the City of Alexandria, or Arlington County, to implementation of this Master Plan but provides a roadmap through the guiding principles and conceptual design options to use as opportunities to gain funding, as funding possibilities arise, and as redevelopment occurs within the corridor as the corridor is restored. Implementation of any master plan (transportation, open space,

etc.) is subject to future funding and resource allocations and priorities. The concept-level cost estimate for all of the components of the Master Plan for Areas 1-7 totals \$261 million, not including \$94.0 million for undergrounding the power lines, (see page 98, Order of Magnitude Cost Estimate). An overall cost breakdown of the major elements within the Master Plan and the possible funding sources describes the variety of funding opportunities for implementation (*Attachment 5, Snapshots of Costs for Major Elements*). There are additional possible private stormwater management costs of \$4.5 million dollars, if and when redevelopment occurs within the corridor. Of the \$261 million, 27% (with a possible additional 10% depending upon design) would be considered eligible for the U.S. Army Corps of Engineers cost sharing construction programs, most of which match at a very low amount. Also, through aggressive grant research, additional funding of the future implementation costs could be secured through state and federal grants. For example for some of in-channel stream restoration elements (\$70.5 million) the U.S. Army Corps of Engineers could (subject to federal funding allocations) fund about \$14 million of the eligible costs.

Local funding which would generally be split 50%/50% between the City of Alexandria and Arlington County would need to be provided through each jurisdiction's Capital Improvement Program (CIP) planning and funding process. The merits of each phase of the Four Mile Run Restoration Project would need to compete for funding with other facility and infrastructure needs as both jurisdictions CIP's now are not in a position to be substantially expanded. In the City's case there is already desirable and needed CIP projects not funded in the current FY 2007-FY2012 proposed CIP. State and federal funding possibilities are also likely to be limited as those entities also have significant budget constraints.

The power line undergrounding study was commissioned as a direct result of the significant public discourse on the topic. In order to gain a better understanding of the feasibility of undergrounding these lines, both physically and financially, the ACG tasked RHI and CH2M Hill to investigate the feasibility of undergrounding the power lines. Through their work, they examined two separate technologies that have been used to underground similar power lines, Pipe-type, which is the tried-and-true technology that has been in existence since the early 1920s, and XLPE which has a shorter track record dating back only to the 1990s and in discussions with Dominion Virginia Power is met with some skepticism. Once the analysis was completed it was revealed that in the Four Mile Run situation the XLPE installation would be more expensive than a pipe-type installation. Since most engineering efforts are implemented through value-engineering judgments staff deemed it appropriate to use the less expensive and more readily accepted technology in our planning level cost estimate. The cost associated with the undergrounding using the pipe-type technology is \$94 million dollars. The range for the undergrounding is \$94 million on the low end and \$175 million on the high end. While undergrounding the power lines is desired by the community and technically feasible, the cost to do this work is exceptionally expensive and unlikely to be undertaken. If there is a need in the future for the

infrastructure to be upgraded, these studies would be taken into consideration.

The Four Mile Run Restoration Master Plan is a long range plan, which could take up to 20-30 years to implement. Funding for these improvements will most likely be phased over a long period of time. The costs will be shared between both jurisdictions and will be dependent on substantial state and federal allocations. This Master Plan provides guidance on the placement of new public infrastructure and the replacement of existing infrastructure, once it has reached its useful life.

The Master Plan discusses a variety of funding sources and strategies, ranging from local funds to state/federal grants and matching funds to public/private partnerships. These will be explored in the next phase of the project. Funding for these and all capital projects are subject to competition among all City projects for limited public funds. There is potential for significant leveraged federal funding for the flood control and environmental restoration elements of the master plan.

### **CONSISTENCY WITH CITY COUNCIL STRATEGIC PLAN**

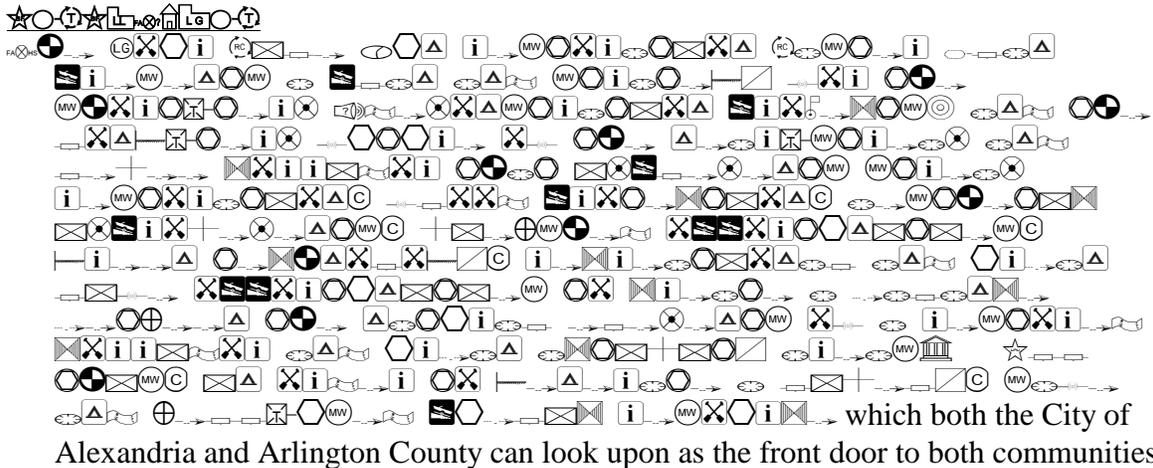
Of particular relevance to the Master Plan, among City Council's Strategic Plan goals is Goal #2: *A City That Respects, Protects And Enhances The Natural Environment*. This goal identifies six objectives aimed at approaching new development and redevelopment and public facilities in an environmentally sensitive way; increasing the amount of open space, recreation space and park acreage per resident; protecting and expanding the city's overall tree canopy; improving the appearance of gateways, entrances and corridors, increasing the number of people who travel in the City by mass transit, bicycling or walking and become less auto dependent and; improving the quality of air and water in Alexandria. It is also noted that among the management actions identified in the Strategic Plan for this goal is the Four Mile Run Restoration Master Plan (*Goal 2, Action 10, Alexandria City Council Strategic Plan*).

The Four Mile Run Restoration Master Plan fully supports and encourages environmental restoration improvements for Four Mile Run that achieve City Council's goal of respecting, protecting, and enhancing the natural environment. Rigorous study of existing in-stream and near-stream conditions of Four Mile Run underpin the many environmental and habitat restoration improvements, such as the partial removal of floodwalls, gabions, and riprap and replacement with environmentally sensitive bank stabilization methods. The inclusion of sand bars, riparian edge plantings, enhancements to the existing wetlands at Four Mile Run Park, daylighting of streams, removal of invasive species and replacement with native plants, will all contribute to restoring the natural stream environment.

With regard to new development or redevelopment of properties that abut Four Mile Run, the Master Plan identifies general planning principles for building form, orientation and setbacks to ensure that new construction engages and addresses Four Mile Run and promotes public accessibility and visibility to the stream. The Master Plan also includes a variety of stormwater management techniques to control run-off, promotes

sustainable building and design, and encourages environmental stewardship of the stream by residents and businesses.

The Master Plan also fully supports Council's desire to increase the number of people who walk, bicycle or take public transportation rather than rely upon their automobile. The Master Plan recommends the establishment of new walking and bicycle trails, with non-vehicular connections across Four Mile Run, to increase the connectivity between the City and Arlington County. The community strongly desires these connections to satisfy their recreational and non-recreational needs, and staff heard consistently that people want to be able to walk or bicycle safely from their neighborhoods to Four Mile Run and beyond. The community also expressed a desire to be able to access Four Mile Run by public transportation, especially on the weekends and holidays when people have more time for leisure. The Four Mile Run Restoration Master Plan is consistent with Council's express goal of respecting, protecting and enhancing the natural environment.



**STAFF:**

- Mark Jinks, Deputy City Manager, City Managers Office
- Kirk Kincannon, Director, Parks, Recreation and Cultural Activities
- Aimee Vosper, Landscape Architect Supervisor, Parks, Recreation and Cultural Activities
- Eileen Fogarty, Director, Planning and Zoning
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- Emily Baker, City Engineer, Transportation and Environmental Services
- William Skrabak, Division Chief, Environmental Quality
- Claudia Hamblin-Katnik, Watershed Program Administrator