



MONTGOMERY COUNTY PLANNING DEPARTMENT

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Item # 5
02/17/10

MEMORANDUM

TO: Montgomery County Planning Board

VIA: John Carter, Chief, *JAC* 2/9/2011
Area 3

FROM: Mary Beth O'Quinn, *MBO*
Planner Coordinator (301.495.1322)

SUBJECT: Mandatory Referral No. 2011302: City of Rockville Water Treatment Facility
10930 Sandy Landing Road, Potomac, MD
RE-2 Zone, Potomac Subregion Master Plan (2002)

The City of Rockville, Maryland has applied under Mandatory Referral to expand its existing water treatment plant located at 10930 Sandy Landing Road, Potomac, MD. The additional water treatment structures are necessary to meet new Federal and Maryland Department of the Environment regulations for the quality of drinking water as well as to accommodate future capacity needs of the City.



RECOMMENDATION Approval to transmit comments:

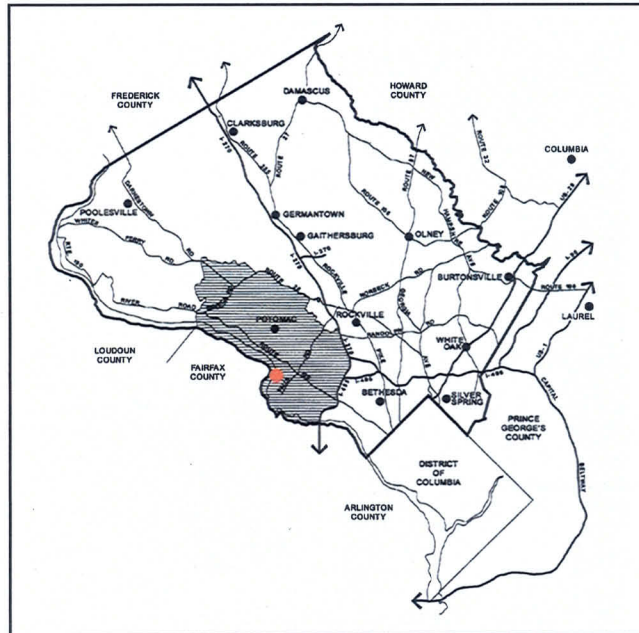
1. Landscape and Lighting:
 - a. Specify black chain link fencing for any necessary fencing at the site perimeter.
 - b. Provide a lighting plan indicating fixture type, mounted height, fixture base detail, and performance specifications for cut off shields that direct light away from the perimeter boundaries; limit mounting height for pole fixtures to 16 feet; utilize cut-off lighting shields for all fixtures to reduce light spill; lighting levels at the site boundaries should read 0.01 footcandles, maximum.
 - c. Provide additional tree planting to screen the buildings from the National Park Service property to the north; provide a mix of 5 deciduous and 5 coniferous trees; deciduous trees should be 3-inch caliper at the time of planting, coniferous trees at 6 feet in height at the time of planting.
 - d. Trim or limb up the trees on the City's property that overhang the rear lot line of the owner's property located at 10960 Martingale Court.
3. Install a sign not more than two feet square affixed near the property entrance identifying the owner, operator, and maintenance service provider of the facility, and the name and telephone number of a contact person.
4. Submit documentation of building height and building setbacks to the Department of Permitting Services prior to final inspection of the building permit.

PROJECT DESCRIPTION

Surrounding Neighborhood

The site lies in the southern portion of the Potomac Subregion Master Plan area, close to the Chesapeake and Ohio Canal National Historic Park at the Mile 15 marker. The area's character is expressed by predominately large residential lots serviced by narrow country roads that feed into major vehicular routes revealing a thoughtful, well planned suburban-to-rural transition.

The site is juxtaposed between the natural resources of the park to the south and west, and the large size residential estates zoned RE-2 and RE-2C that are curvilinear in form, and surround the site on its north, east and portions of the south.



The Potomac River lies 1,500 feet to the west, lined on the north and west by the Chesapeake and Ohio Canal and its National Historic Park, designated in 1971. Rising topography, visually layered by river, bluff, and canal dramatically defines the western boundary of the site. River Road rises more than 150 feet in height from the Potomac River to River Road. The Canal's system of river-edge locks richly define the vicinity and the site envelope, as do the abundant natural resources of the park, articulated by Swain's Lock (No. 21) to the north of the site, along with Great Falls Tavern to the south. The park features of trails that extend from the terminus of MacArthur Boulevard that offer recreational opportunities. The site does not include any historical assets.

River Road, the major arterial, lies one mile to the north of the site, and its intersection with Falls Road lies almost two miles to the east. Sandy Landing Road provides access to the site and the adjoining Federal property. The road was dedicated for public use in the 1800's so that residents could reach Sandy Landing on the Canal. Since then, the plant has been constructed and the City of Rockville has become the major user, assuming maintenance responsibilities. Montgomery County does not list the road as a public right-of-way, which is consistent with tax records. One other private lot has access from the road, in addition to the Federal Government. The National Park Service wishes to retain access as the road maintains some historical significance to the C and O Canal.

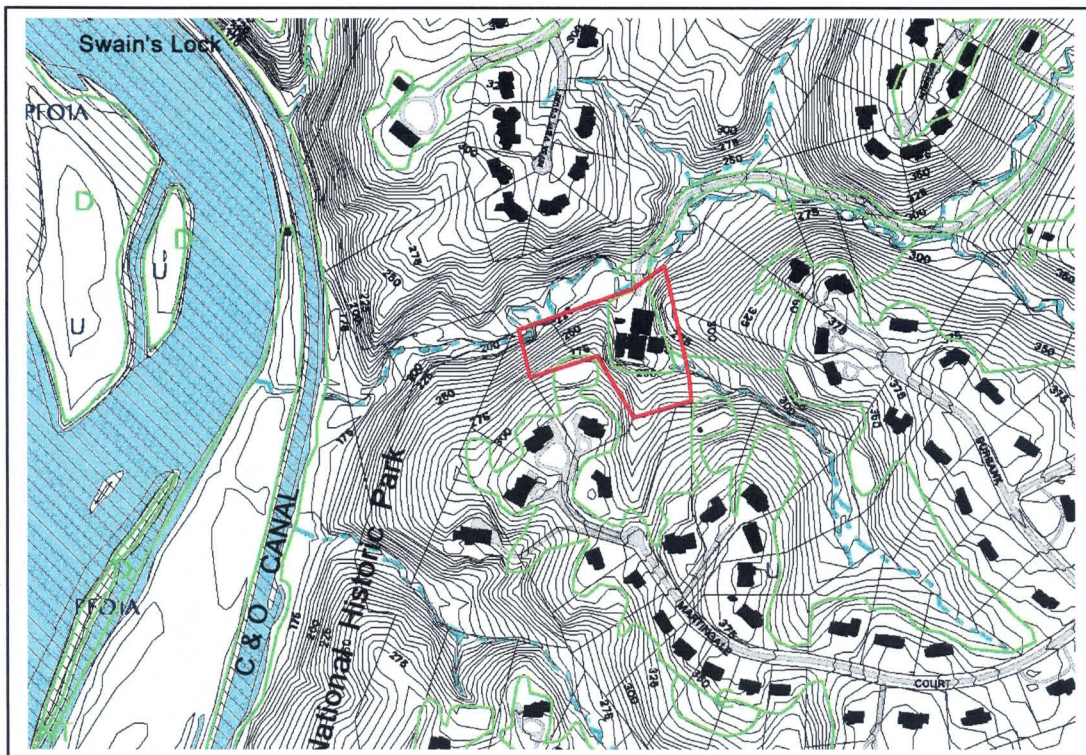


Site Description

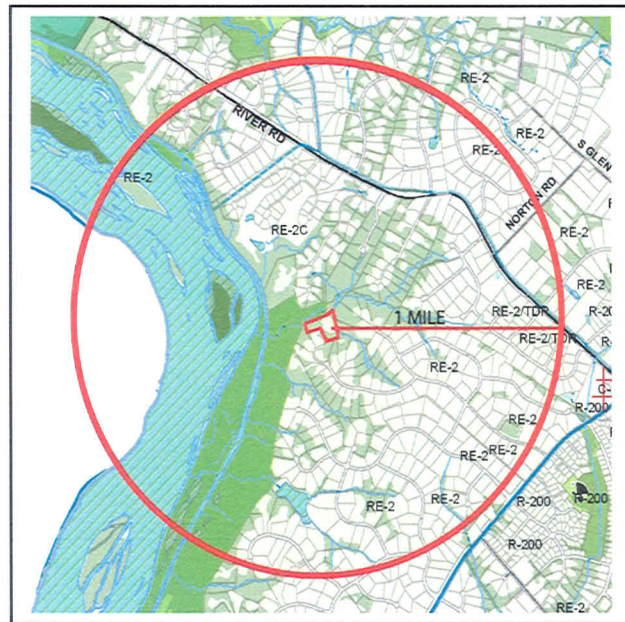
This unique, L-shaped site occupies a strategic place, both physically and culturally within the context of the county's Potomac River bed and its historic C and O Canal. The site is characterized most strongly by the dramatic topography formed by the rising river bluffs and its confluence with the stream valleys that fall toward the river.

The 5.51-acre parcel, cradled in its valley between two streams, is shaped by steep slopes whose descending contours converge almost precisely at the "joint" of the "L." The flat, graded center point, or "bowl," supports the water plant structures, while the site's three gradients yield drainage almost equidistantly, from the north, east and south site boundaries. The site, accessed with minimal road frontage (approximately 20 feet) by Sandy Landing Road that follows the stream bed topography. The 5.51-acre site features 4.03 acres (73%) of forest within four forest stands on the property.

The site is adjoined by residential lots on five of its six sides. On the north side is property owned by the Federal government that provides connection to the National Historic Park; this government-controlled parcel is not designated as part of the Historic Park. The surrounding residential developments each sit high on a ridge 80-120 feet above the water plant. The ridges are accessed by Martingale Court to the south, Burbank Drive to the east, and River View Court on the north.



The site is zoned RE-2, as is the surrounding area, with a required minimum lot size of 2 acres. The Marwood Estates subdivision just north of the site is zoned RE-2C, a cluster development that is intended to preserve the natural forestation of the area. Note the clearly demarcated edge of the National Historic Park on left, bisected by the C & O Canal.



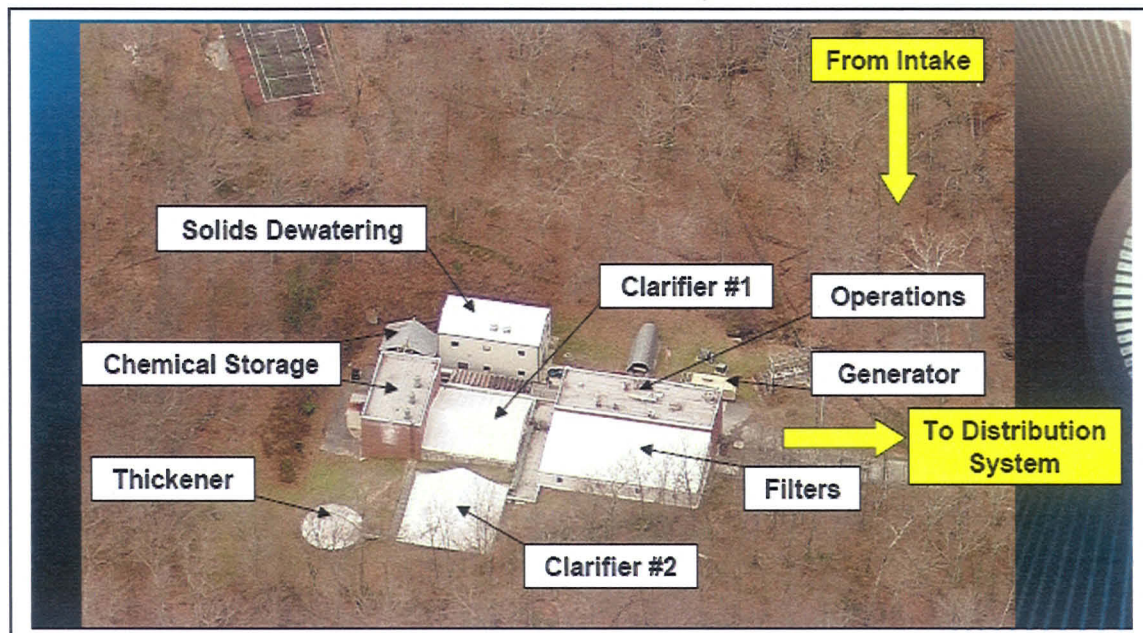
Potomac Village commercial complex at the intersection quadrant of River Road and Falls Road is zoned C-1.

Existing Conditions: Infrastructure and Filtration Process

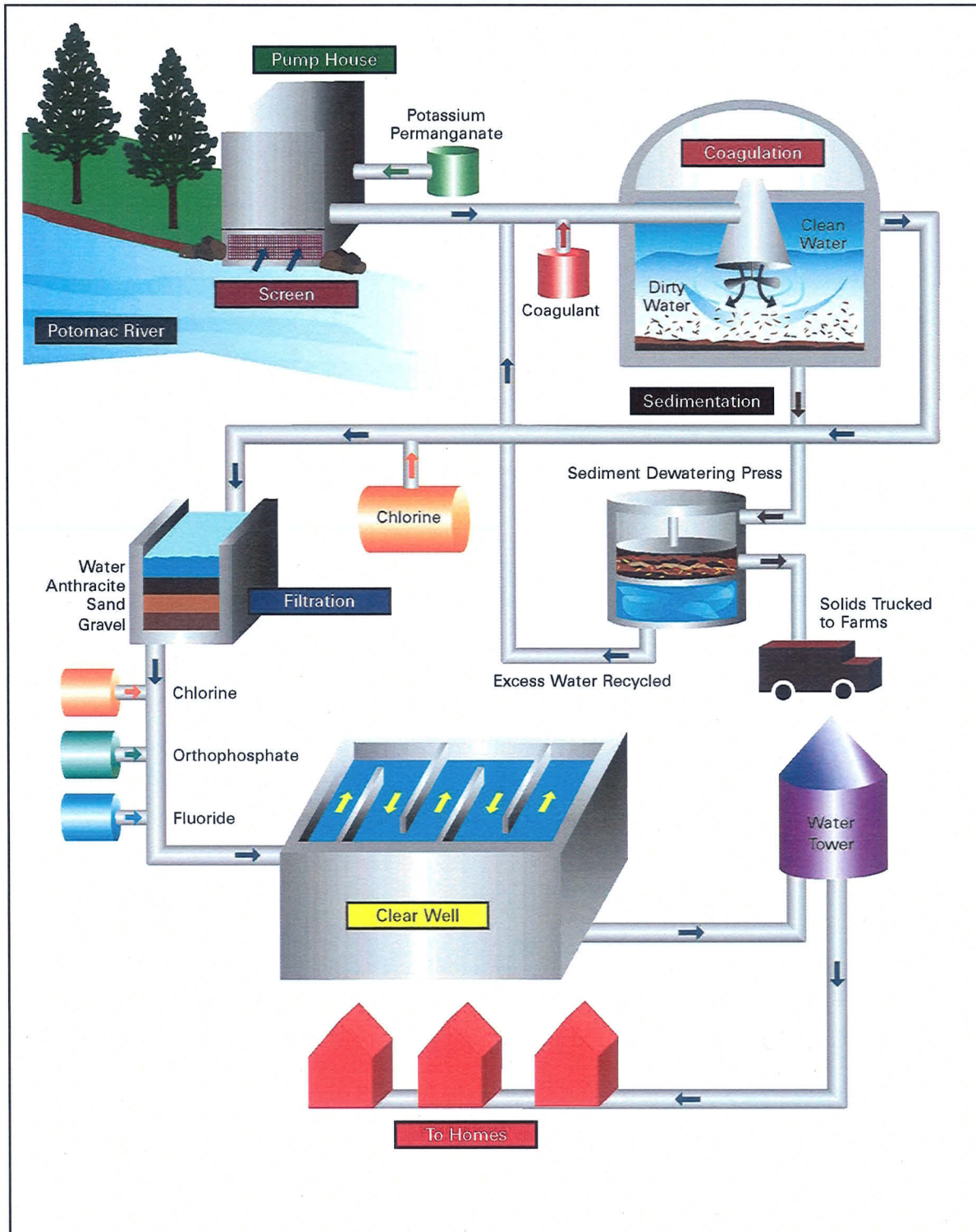
The City of Rockville Water Treatment Plant was constructed in 1958, drawing water supply from the Potomac River to meet the needs of the newly growing suburban county: 4 million gallons per day (MGD). The plant was expanded further in 1965 to increase production to eight MGD. In 1995, additional upgrades were made to meet Environmental Protection Agency (EPA) for solids handling and Maryland Department of the Environment (MDE) plant and distributed to the City's customers. Since then, the plant treats approximately 5 MGD and 8 MGD summer use, with a cap of 12 MGD.

River water is treated in a six-step process:

1. Screening, 2. Coagulation, 3. Sedimentation, 4. Filtration, 5. Disinfection, 6. Distribution.



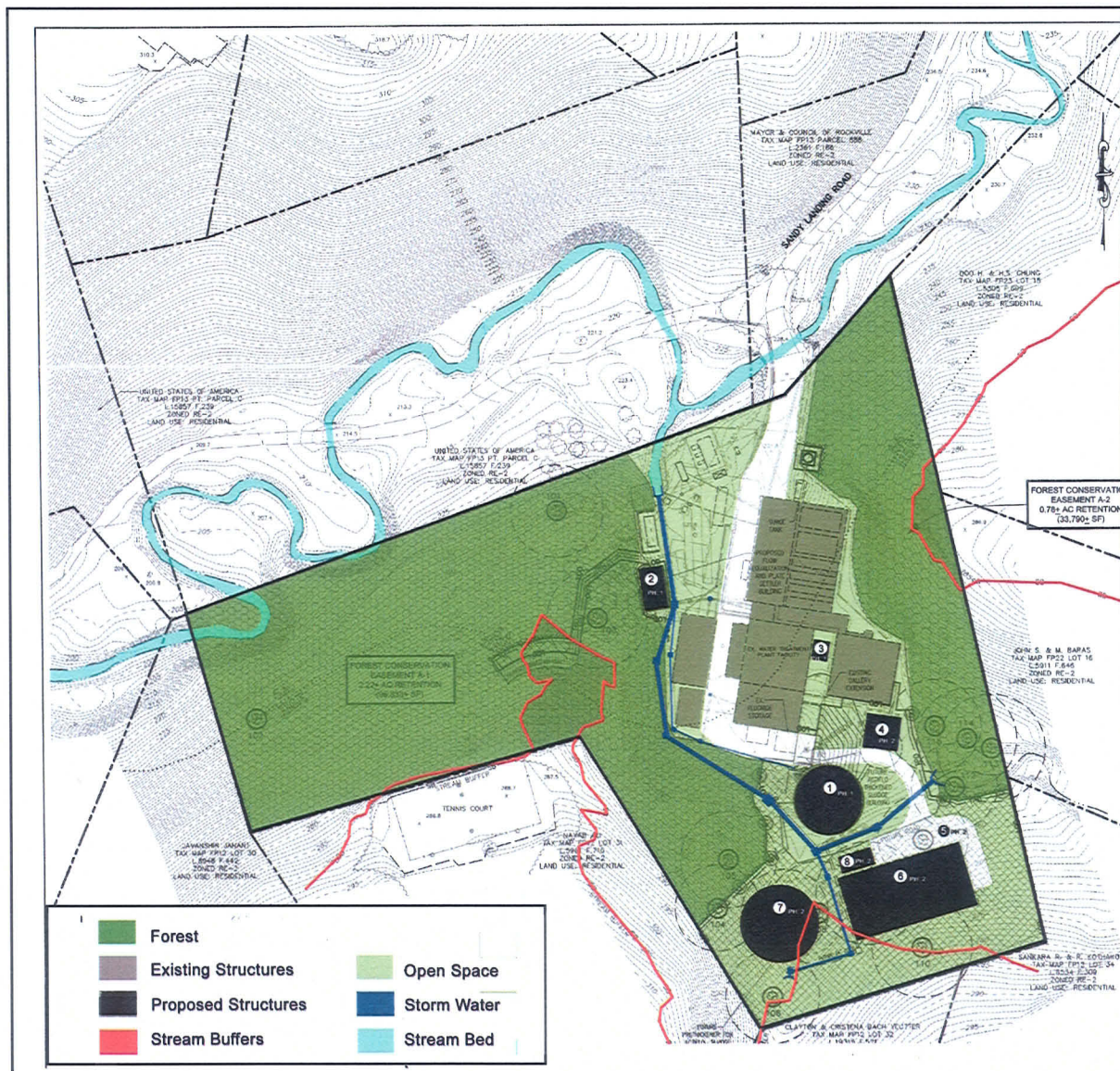
Water is withdrawn directly from the Potomac River through an underwater intake structure located on the towpath of the C & O Canal National Historical Park. The intake pipe is divided into two channels. Each channel has two 36-inch diameter screens. The screens can continue to withdraw up to 12 million gallons per day even if River levels drop half way down the screens. During the drought years of 2007 and 1008, the river never fell below a level that was 2 feet above the top of these intake screens.



The Proposed Plan

The City was initially awarded \$1.3 million in stimulus funds for the Water Treatment Plant Energy Conservation Project and was recently awarded an additional \$435,000 to cover contractual costs bringing the total award to more than \$1.7 million. The project will improve energy conservation and rehabilitate aging components at the City's plant, constructed in 1958. The projected drinking water needs of the resident and nonresident populations in 2030 will require an additional 0.82 million gallons per day. By 2040, the amount will increase to 1.37 million over the current withdrawals for a total need of 6.55 million gallons per day. The proposed improvements to the plant allow for the treatment of such volume, which may be met through current river withdrawal allotments.

The proposed plan addresses the needs for expansion in two phases. Phase I accommodates a five-year expansion plan featuring two built structures, a Thickener Tank (Coagulation), Plate Settlers, and a concrete pad enclosure, for a total of 6,505 square feet of construction.



Phase II addresses the sequential 10-year plan, featuring 4 structures and a driveway expansion: Sludge Building, Actiflo Building, a larger Pre-Thickener, and a Chemical Feed Building. In general, Phase I utilizes portions of the site that are currently cleared, re-using the soon-to-be demolished tank for the concrete pad enclosure. Phase II uses the southern portion of the site, with forest clearing required.

Phasing and Master Plan: Rockville Water Treatment Facility					
Phase	Building/Structure	Map Key	SF	Bldg Ht.	Notes
# 1 [2011-2016]	Proposed Thickener	1	2613	27 ft	
	Proposed Plate Settlers	2	756	20 ft	
	Proposed Concrete Pad	3	3,136	20 ft	Enclosure
Construction Phase I			6,505		
# 2 [2021-2031]	Sludge Building	4	900	20 ft	Existing Thickener (to be removed)
	Access Road Extension	5	surface	0 ft	Access Road - pervious pavement
	Actiflo/GAC Building	6	6213	25 ft	Green Roof
	Pre-Thickener	7	3484.8	27 ft	
	Chemical Feed Building	8	450	25 ft	
Construction Phase II			11,048		
Total Construction Phases I, II			17,554		

Facility and Site Design: Site design accommodates, to the greatest extent possible, the reuse of existing structures and foundations. The placement of the driveway extension features a tight, compact fit while allowing access to each of the structures. Building placements allow efficient location of the all necessary utility lines, including power and storm drains.

Landscaping and Lighting: Lighting will be needed on new structures for security and for safety of the night-shift staff. Lighting will be kept to a minimum and used at points of ingress/egress. Entrances/exits on new structures will be oriented inward, towards the existing facilities with lighting directed interior to the site. Additionally, the City will be recording a new Forest Conservation Easement that will preserve approximately 3 acres of forest on the water treatment plant site. This easement will surround the existing facilities and act as a permanent forest buffer to surrounding neighbors.

Road Conditions and Traffic: The proposed improvements at the Water Treatment Plant will not require changes to Sandy Landing Road other than possibly re-crowning the existing gravel road and re-establishing the drainage ditches to keep the road stable and drivable. This will not involve any paving. This project will not necessitate changes to the access easements that currently exist on adjoining properties.

Sandy Landing Road also serves as an access point to the National Park Service property that is adjacent to the City property. As the National Park Service property is open to the public for recreational purposes the National Park Service has requested that access be

maintained. The Water treatment Plant maintains security cameras at the main gate and staff monitors and reports any suspicious activities they observe.

Current staffing levels at the facility will remain unchanged. However, as water demand increases there may be a need to increase a number of deliveries, but not a significant number. With the exception of construction traffic and UPS/FedEX, the plant currently receives two truck deliveries monthly. These deliveries usually arrive at 9 AM. If there are deliveries being made outside of the usual hours of 8 AM -5 PM, please contact Vernon Simmons, Superintendent of the Water Treatment Plant, at 240-314-8556 or via e-mail at vsimmons@rockvillemd.gov.

Materials Safety: There is currently no plan to store anything more harmful or dangerous than is currently stored at the plant.

REGULATORY FRAMEWORK

The Mandatory Referral Review

Planning staff notified adjoining and abutting property owners at the time of application submission and subsequently within the past 30 days with notice of the concurrent hearing date for the Forest Conservation Plan and the Mandatory Referral; the notice was placed in the Planning Board meeting agenda and on the agency's website.

ANALYSIS

Master Plan

The proposed project is consistent with the recommendations in the Master Plan. The *2002 Approved and Adopted Potomac Subregion Master Plan* discusses the Public Water Supply primarily with respect to the Washington Suburban Sanitary Commission Water Filtration Plant located on River Road, just west of the City of Rockville Plant. The master plan addresses the EPA Clean Water Act requirements and the importance of adequate disposal of sediment generated at water treatment facilities. Although the plan carries no specific recommendations regarding City of Rockville Water Treatment Facility, the plan recommends the provision for Public Water Supply:

- **Continue to address the provision of community water service in the Subregion consistent with Comprehensive Water Supply and Sewerage Systems policies.**

The plan makes the following recommendations for preserving the sensitive environment for the Watts Branch Watershed, which are largely followed in the proposed plan:

- **Protect the function and value of stream buffers by placing storm water management and sediment and erosion control measures outside the stream buffer areas.**
- **Maintain and protect existing stream buffer forest and supplement the existing riparian forest by replanting any unforested buffer.**

Development Standards in the RE-2 Zone

Rockville Water Treatment Facility 10930 Sandy Landing Road, Potomac, MD 20854				
RE-2 Zone	Development Data	RE-2 Zone Std.	Existing	Proposed
§59-C-1.322(a)	Lot and Tract Area min.			
	Lot Area sf	687,120 sf	687,120	687,120
§59-C-1.322(b)	Lot Area - acres	0.1377 ac.	0.1377 ac	0.1377 ac
	Lot Width min.			
§59-C-1.328	Lot Width - front building line	150 ft.	106	106
	Lot width - proposed street line	25 ft.	none	none
§59-C-1.323(a)	Lot Coverage max.			
	Sum of building coverage	35%	7.0%	14.0%
§59-C-1.323(a) (2) (D)	Setbacks/ Yard Requirements min.			
	Street (front)	50 ft.	78 ft	78 ft
	Side [one side]	17 ft.	120 ft (left)	77 ft (left)
	Side [sum of two]	35 ft.	269 ft	169 ft
	Rear	35 ft.	240 ft	35 ft (per bldg # 6)
§59-C-1.327	National Historical Park			
	C & O Canal National Park	200 ft.	200+ ft	200+ ft
§59-C-1.327	Building Height ¹ max.			
	Main Building	50 ft.	38.5	20-27 ft (See below)
Additional Info	Site Area Cleared-Total LOD sf		N/A	42,253
	Addl Forest Clearing by Phase ac			Phase 1 = 0.03 ac. Phase 2 = 0.84ac. New Clearing = 0.87 ac.
	Total Forest Clearing		N/A	1.03 ac.
	Impervious Area sf			Phase 1 = 3,842 sf Phase 2 = 16,988 sf Total (incl. Ex.) =56,498
	Impervious Area %		14.90%	23.50%
	Forest Conservation		N/A	3.04 ac
	Building area sf			Phase 1 = 6,506 Phase 2 = 11,048 Total new = 17,554
	Parking - Staff Parking - Visitor		none	3-5 spaces none none none

Transportation

Transportation staff has reviewed the proposed plan and finds there is no traffic issue associated with the Mandatory Referral. No roadway improvements are proposed outside of the site's boundaries. There are no traffic impacts except for a minimum traffic disturbance during the construction period. [See Attachment 9.]

Environmental

The plan submitted by the City of Rockville for the Phasing and Construction of the 20-year Master Plan proposed to retain, on the 5.51-acre site, 3.0 acres of forest from the 4.03 acres of forest currently contained on the site. The plan shows the removal of 1.03 acres of forest, of which .93 acres are located within the stream buffer and the retention of 3.0 acres of the forest on site. The four forest stands are composed of:

1. American Beech in a Chestnut Oak, and Red Maple [0.67 ac.];
2. Red Maple, American Beech, White Oak, Tulip Poplar, one specimen sized trees [0.13 ac.];
3. American Beech, with Chestnut Oak, White Oak, and 2 specimen sized trees [1.94 ac.];
4. American Beech, Chestnut Oak, White Oak [1.94 ac.]

Compatibility

The proposed project is compatible with existing and proposed adjacent development. The challenge of achieving compatibility in the siting and construction of an infrastructure plant is significant, never more so than in a rural or naturalistic setting. There is no question that this site, and more particularly, its surrounding environment, is unique in its landscape and historicism—its physical, visual and functional beauty. The deep and rich role of the river upon the form of the land and the way in which its occupants plied their trades is felt by all, visitors and residents alike. It is interesting to observe that this historic setting was generated by river trade, the infrastructure of locks, landings and dams inserted to serve desired sources of commerce, such as the quarries and farms. So too, does the proposed Water Treatment Plant serve commerce, lifestyle, community service, and even safety: a balancing of need with aesthetics.

The sensitive handling of building structure, height, and limited footprints all serve to limit the effects of the infrastructure expansion on the surrounding view sheds. The low-slung buildings, not more than 27 feet in height, rest with the grade, amidst stands of mature forest, which will serve to occlude their appearance. The demolition of existing structures and the reuse of the specific areas offer efficient use of the lot, sparing forest and clustering the new facilities for efficient access and service. Finally, the phasing plan, in its logic, proposes to construct the largest structures in the final phase, subject to demonstrated need within the next 20 years; thus, not incurring expense and impact on the land until necessary.

Community Outreach

Staff has encouraged the applicant to schedule presentations with community and professional groups in the area. City of Rockville staff from the Department of Public Works held a Community Outreach Meeting on October 16, 2010 to present the proposal to for public discussion. Two households from the community attended. In addition, Planning Staff mailed notices in December 2010 notifying the community of the application submission; a second notice was mailed in January 2011 for the hearing date.

Staff has heard directly from three residents from the adjoining Potomac Manor neighborhood whose lots are located on Burbank Drive and Martingale Court. Concerns expressed by several residents include noise levels, road traffic and conditions, trespassing onto residential properties, light spill, and the handling of hazardous materials. Another resident requested that the City of Rockville obtain appropriate permits and trim the trees on the Plant property which overhang the residential lot. [See above, pages 7-9 for explanation.]

CONCLUSION

Staff finds that proposed design for the expansion of the City of Rockville Water Treatment Plant is consistent with the zoning ordinance and the master plan recommendations. The City's Master Plan, in two phases, will accommodate the increased need of water supply capacity and higher water quality standards over the next twenty years, until Year 2031. The plan proposed offers a surprisingly sensitive and low-profile infrastructure installation, especially so, with respect to the significant enhancement of services. The City's intelligent approach to this infrastructure design and the other investment pieces of the Water Services Master Plan, including sewage and pollution control promise to lessen the burden of water and sewage treatment in other jurisdictions, provide a better balance in handling natural resources, and offer Montgomery County residents and workers a better living environment.

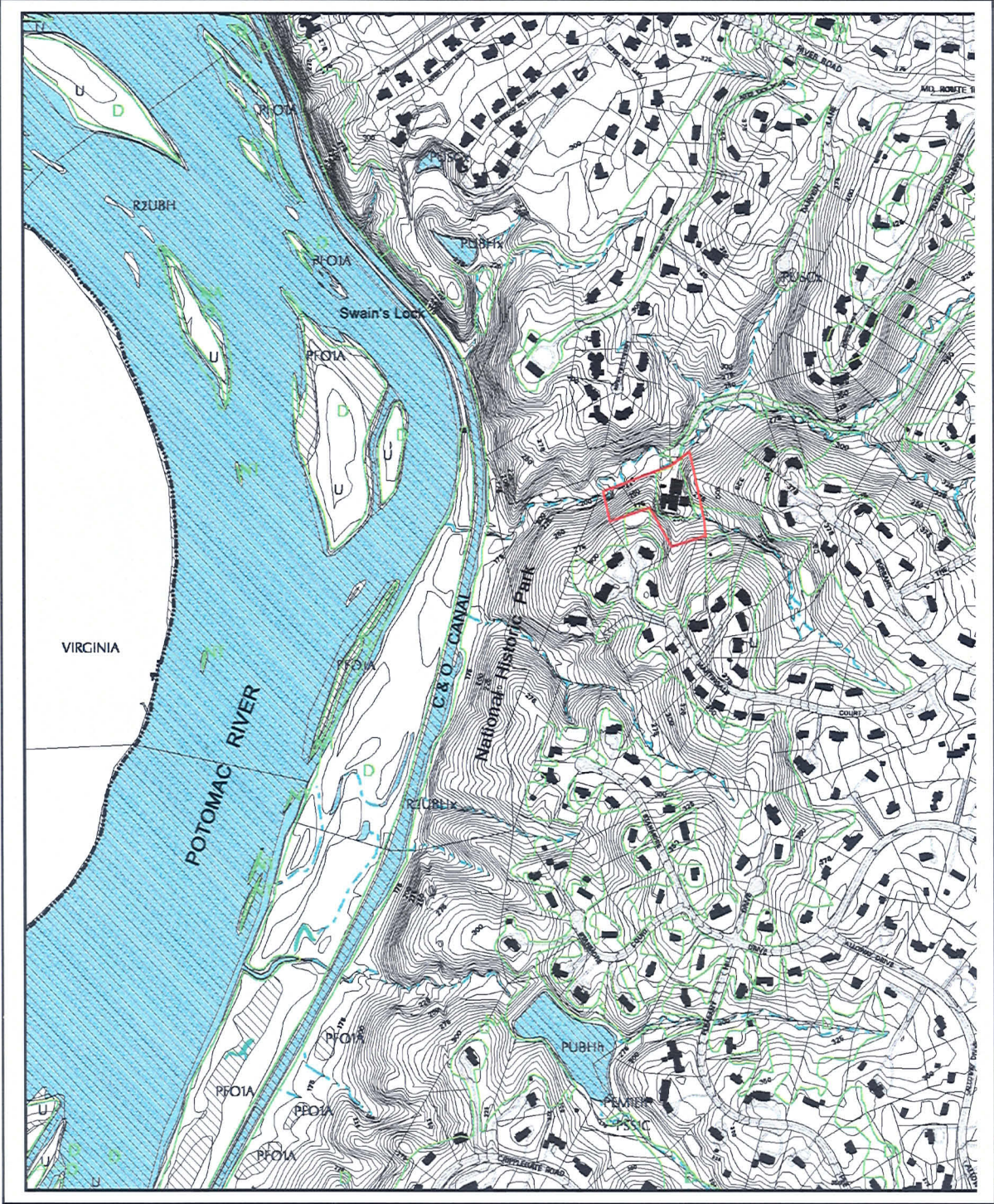
Attachments

1. Vicinity: Oblique Aerial Site Photographs
2. Vicinity Plan
3. Vicinity: C & O National Historic Park
4. Area Photographs
5. Watts Branch Watershed
6. Water Treatment Facility Expansion Phasing Plan
7. Site Engineering Drawing
8. Site Engineering Drawing
9. Transportation Planning Staff Communication

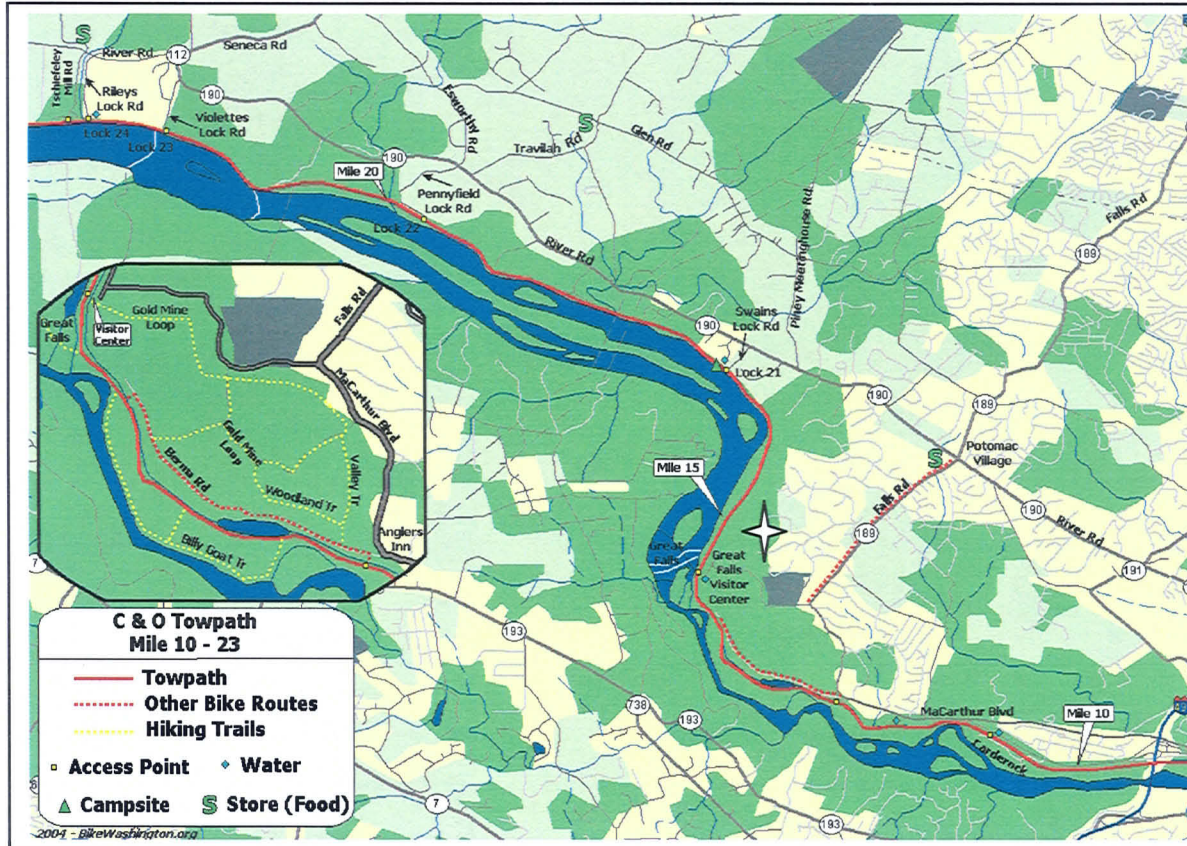
Attachment 1: Oblique Aerial Photography



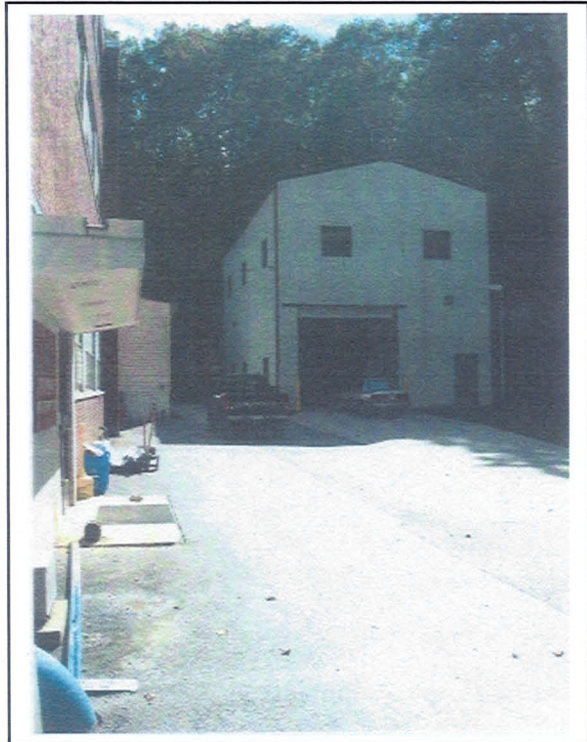
Attachment 2: Vicinity Plan



Attachment 3: C & O National Historic Park



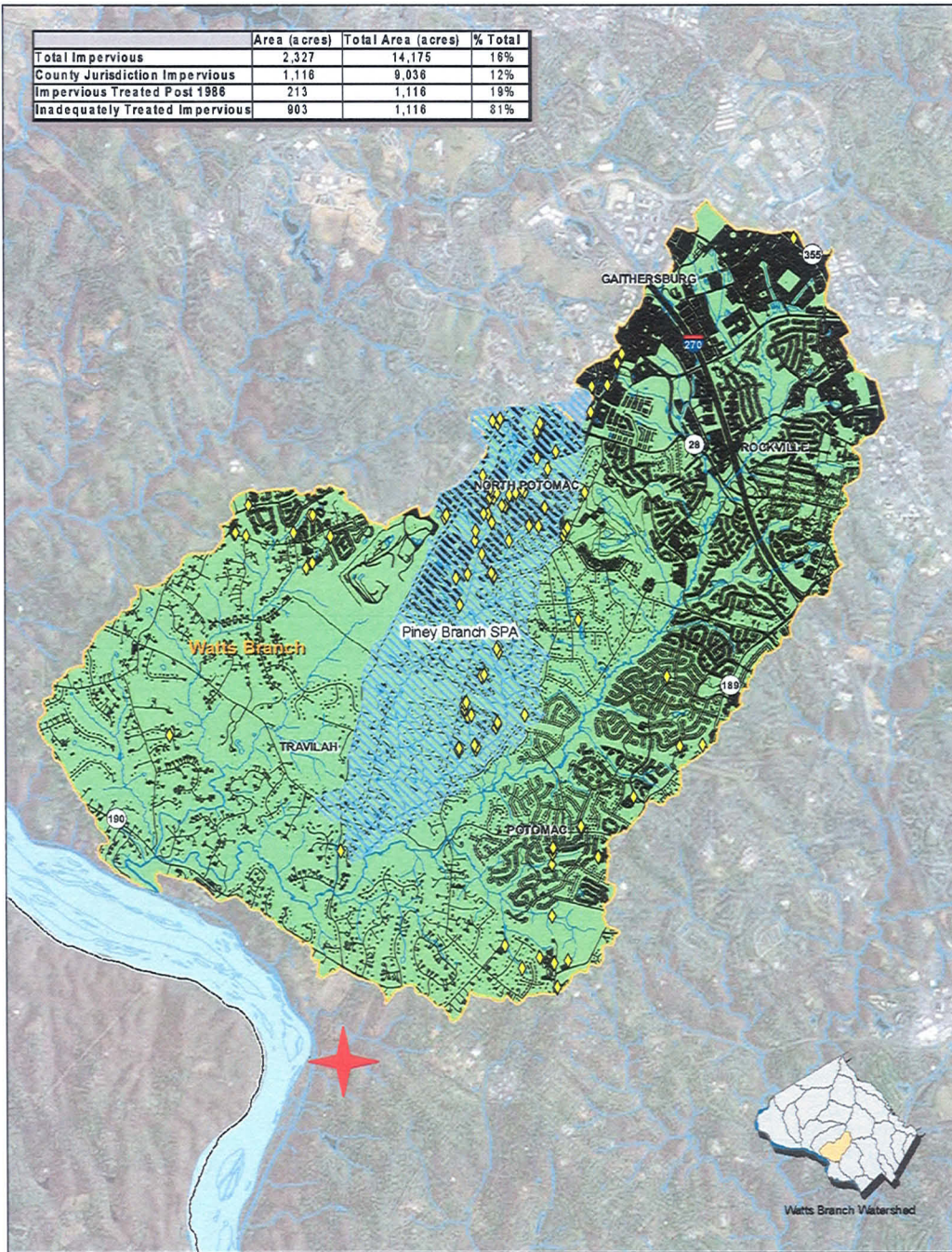
Attachment 4: Area Photographs



Attachment 5: Watts Branch Watershed

MAP 1. WATTS BRANCH WATERSHED EXISTING CONDITIONS

	Area (acres)	Total Area (acres)	% Total
Total Impervious	2,327	14,175	16%
County Jurisdiction Impervious	1,116	9,036	12%
Impervious Treated Post 1988	213	1,116	19%
Inadequately Treated Impervious	903	1,116	81%



Legend

- ◆ Existing Well Performing Best Management Practices (120 sites)*
- ⊕ Completed Stream Restoration Sites (0 sites)*
- ▨ Special Protection Areas
- ~ Streams
- ⬭ Watts Branch Watershed Boundary
- 🌿 Pervious Cover (forest, turf, meadow, farm fields)
- ⬛ Impervious Cover
- ⬜ Montgomery County Boundary

DRAFT

FEBRUARY 2010

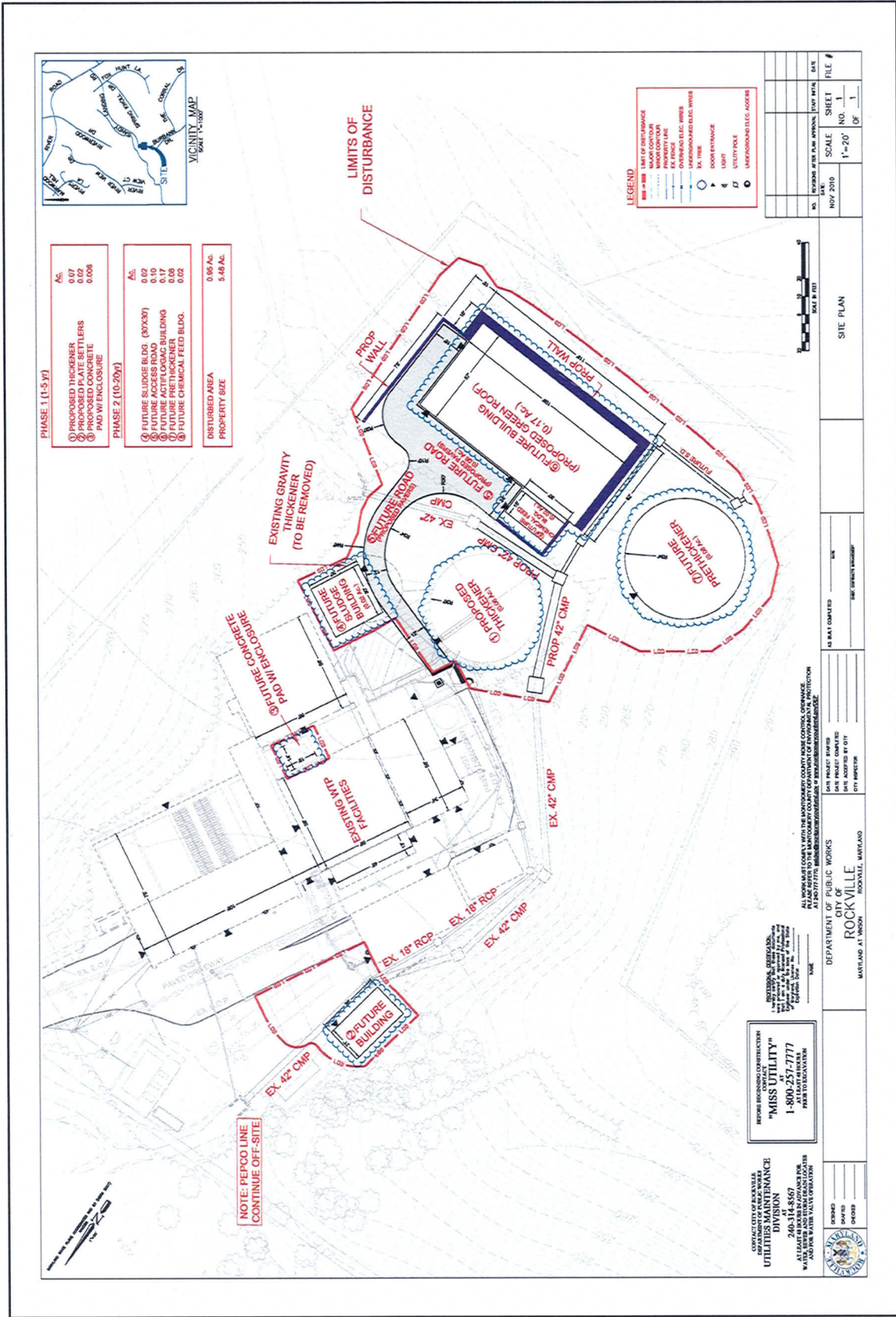


Location



*Excludes other municipalities, all MNCPPC lands, rural areas, Federal and State property, and Federal and State Roads

Attachment 6: Water Treatment Facility Phasing Plan



PHASE 1 (1-5 Yr)	
As	PROPOSED THICKENER
0.07	PROPOSED PLATE SETTLERS
0.02	PROPOSED CONCRETE
0.006	PAID W/ ENCLOSURE
PHASE 2 (10-20 Yr)	
As	FUTURE SLUDGE BLDG. (80'X30')
0.02	FUTURE ACCESS ROAD
0.10	FUTURE ACTIFLO/AG BUILDING
0.17	FUTURE CHEMICAL FEED BLDG.
0.02	FUTURE GREEN ROOM
0.02	FUTURE PRECHLORINATOR
0.02	FUTURE BUILDING
0.06 AC.	DISTURBED AREA
5.86 AC.	PROPERTY SIZE

NO.	REVISIONS AFTER P.L.M. APPROVAL	DATE	FILE #
1		NOV 2010	

SCALE	1" = 20'
SHEET NO.	1
OF	1

SCALE: 1" = 20'

DEPARTMENT OF PUBLIC WORKS
CITY OF ROCKVILLE
MAYLAND AT WISDOM

PROJECT NUMBER: _____
DATE APPROVED BY CITY: _____
CITY ENGINEER: _____

ALL WORK SHALL COMPLY WITH THE MARYLAND COUNTY HOME CONTROL, ORDINANCE, AND REGULATIONS, AND THE MARYLAND COUNTY HOME CONTROL, ORDINANCE, AND REGULATIONS, AND THE MARYLAND COUNTY HOME CONTROL, ORDINANCE, AND REGULATIONS.

REGISTRATION NUMBER: _____
PROJECT NUMBER: _____
DATE APPROVED BY CITY: _____
CITY ENGINEER: _____

REGISTRATION NUMBER: _____
PROJECT NUMBER: _____
DATE APPROVED BY CITY: _____
CITY ENGINEER: _____

CONTACT CITY OF ROCKVILLE
UTILITIES MAINTENANCE
DIVISION
240-314-5567
AT 1845 WALKER ROAD
ROCKVILLE, MARYLAND 20850
AND FOR WATER VALVE OPERATIONS



Attachment 9: Transportation Planning Staff Communication

From: Kim, Ki
To: Oquinn, Marybeth;
Subject: Rockville Water Plant Mandatory Referral
Date: Tuesday, February 08, 2011 1:15:35 PM

I have reviewed and found that there is no traffic issue associated with this Mandatory Referral. There is no roadway improvement proposed and no traffic impact except a minimum traffic disruption during the construction period.

Ki Kim
Transportation Planner/Coordinator, Area 3
M-NCPPC
8787 Georgia Avenue, MD 20910
(p) 301-495-4538 (f) 301-495-1302
ki.kim@mncppc-mc.org