Full Sewer Separation with Stormwater Greenways

An Opportunity to Revitalize the Face of Atlanta

Prepared for: The Mayor's Clean Water Advisory Panel

Submitted by:
Clean Streams Task Force
July 15, 2002

Executive Summary

As the City of Atlanta emerged from the Consent Decree negotiations in 1998, it was clear that the 2007 deadline was dictating all aspects of the combined sewer overflow remediation project. This artificial deadline has resulted in the development of an option that is admittedly not the best nor the one that is the most cost effective. With a request for an extension of the 2007 deadline all but a certainty, the emphasis must shift to what is the best solution for the citizens of Atlanta – complete sewer separation with stormwater greenways.

The Clean Streams Task Force applauds the City's efforts to increase the amount of sewer separation included into the tunnel and treatment option – currently 80% separation is under consideration. Conversely, it is critical that the City recognizes that failure to integrate stormwater greenways into the sewer separation scenario will only exacerbate the water pollution problem in Atlanta.

Operationally, greenways are inextricably tied to water quality. The lack of emphasis placed by the City on the importance of greenways and other best management practices (BMPs) in the sewer separation option raises serious and as yet unanswered questions about feasibility and ultimately commitment. There exists a large and credible body of research and literature that supports greenways as an inextricable component of effective sewer separation where optimal water quality is the goal. When considered in this manner the combination of greenways with sewer separation must be viewed as a unified whole, and not simply as additional or optional greenspace and ponds. There can be no trade off between separation and greenways. The results will be polluted streams, which will not be acceptable to the Environmental Protection Agency (EPA) or to the citizens of Atlanta.

The citizens of Atlanta place high value on quality of life. Therefore, complete sewer separation with stormwater greenways is the solution of choice of Atlanta's citizens. We are the ones who are ultimately responsible for paying for the solution. For our investment we want to see an increase in our stakeholder value much like corporate shareholders want to see an increase in shareholder value.

The Clean Streams Task Force supports complete sewer separation with stormwater greenways because, in contrast to the tunnel option, it provides Atlanta's citizens: (1) Many quality of life improvements; (2) Better environmental results; and (3) Lower costs, and improvements in Atlanta's economy.

Quality of Life

- Rebuilds the crumbling inner city infrastructure
- Brings sewer systems in the oldest 15% of the city up to the modern standards enjoyed by the newer 85 % of the city
- Eliminates raw sewage flooding homes, parks, streets, and streams
- Reduces raw sewage disease sources, such as rats
- Eliminates chlorine disinfecting which adds priority pollutants to our streams and rivers
- Eliminates perpetual disruptions caused by:
    - Collapsing sewers. Some have led to tragic deaths.
    - Combined sewage overflows and back-ups into restaurants, private residences, parks, streets, and streams in the CSO area.
    - Trucks hauling chlorine (triple-strength Clorox bleach) through residential neighborhoods and past public schools.
    - Combined sewer overflows into parks and greenways downstream of the CSO area. Downstream jurisdictions post health hazard signs to keep people away from streams and rivers.

- Brings us 600 acres of new parkland and greenspaces with spring and rainwater fed ponds
- Revitalizes the face of the city with redevelopment opportunities

Environmental Advantages

- Produces cleaner water faster for our urban streams and rivers
- Removes 3 million pounds per year more pollution than the tunnels with 27% separation
- Eliminates 100 percent of human sewage from our urban streams
- Eliminates heavy chlorinating which creates priority pollutants
- Reduces flooding
    - Tunnel captures 3-month rain event.
    - Greenways will capture a 10-year rain event and in some cases a 25-years rain event.
    - Tunnel does not address localized flooding
- Replenishes our urban streams. The tunnel plan will dry up the streams by removing all of the natural stream flow and 85% of the stormwater.

Contrary to popular myth, sanitary sewage is the source of 77% of the pollution flowing from Atlanta's CSOs into our urban streams and rivers. Only 23% comes from stormwater. Sewer separation will eliminate all of the household, hospital, and industrial sewage overflowing into our streams. Stormwater greenways will remove 83% of stormwater pollution, most of which is the tiny particles that cloud stormwater (Total Suspended Solids (TSS)). Sewer separation with stormwater greenways, in contrast to the tunnel with 27% separation, will remove 3 million more pounds of pollution per year from our urban streams and rivers based on data developed for the Remedial Measure Report.

Lower Costs and Economic Benefits

Full sewer separation can be completed in 10 years at a cost of $500 million (12,200 acres @ $41,000 per acre) plus $300 million for 600 acres of greenspace for a total cost of $800 million. These costs are based on a realistic cost basis for land in the affected areas. The cost of the tunnel is now up to $627 million plus $500 million for sewer separation for a total cost of $1.127 billion. Full sewer separation with greenways will save ratepayers $327 million. Atlanta's residential ratepayers especially seniors, fixed and low-income families, will save $20 per month on their water and sewer bills.

Sewer separation with stormwater greenways creates economic benefits for Atlanta. The economic stimuli that can be derived from the availability of lakeside property in the Center City are significant and could serve as the impetus for public/private development partnerships. Some additional benefits include lower property tax rates because of the increased tax base, or land lease income; the creation of more unskilled and semi-skill jobs; lower capital and O&M costs, thus moderating sewer rate increases; and avoidance of the $627 million capital spike to fund the tunnel in 2004 which will eliminate the need for greatly increased sewer rates.

Contrary to the views of the City, we believe the Water and Sewer Revenue Fund can be used for CSO stormwater greenways. This fund is already being used to pay for the $25 million Greenways Acquisition Program, a Supplemental Environmental Project (SEP) under the Consent Decree. It is evident that the stormwater greenways proposed here can be offered to the EPA as a SEP – producing cleaner water – in exchange for a timeline extension under the Consent Decree. It is also evident that if the water and sewer fund can be used to pay for a $627 million tunnel and treatment system, it can certainly be used to fund the far less costly $300 million stormwater greenways proposal. As is the case for the tunnel, as soon as the city implements a stormwater utility, the

greenways can be transferred to that utility. From a cost standpoint, it makes infinitely more sense to commit funds, particularly funds that are scarce, to the solution that will not only solve the problem but also pay dividends to the City and its citizens.

Greenways have emerged as the pivotal issue in the sewer separation debate. One consultant estimates the cost for stormwater greenways at $300 million. A second consultant says the cost for their approach will be $1.2 billion. The City touts the $1.2 billion approach and sweeps aside serious evaluation of the more cost effective stormwater greenways opportunity. The EPA will not accept sewer separation without stormwater treatment under the Consent Decree.

Only sewer separation with greenways is guaranteed to get us off of the EPA/EPD regulatory hook. For the same money, it is self-evident that an approach to treating sewage and stormwater run-off for the City of Atlanta that incorporates greenways and landscaping, beautification is preferable. Conversely, it is counter-intuitive to contemplate an approach that co-mingles raw sewage, which requires serious remediation, with stormwater run-off, which can be treated in a far less drastic fashion, using natural methods. At the end of the day, full sewer separation is the only long-term solution that our city should responsibly consider given that growth prospects and the supreme importance of high water quality. The City of Atlanta, as recent studies have pointed out, is vastly under-parked. Green spaces and parks make a city great, and if they can do “double duty” as “cleaning factories” for storm water run-off (for which funds are available), then such a once-in-a-generation possibility should be explored very carefully.

This Panel has the moral obligation to recommend that the City address these issues alongside the sound recommendations for complete sewer separation with stormwater greenways presented by the Clean Streams Task Force and preferred by the citizens of this City.

Preface

Avoidance of Serious Evaluation of the Stormwater Greenways Opportunity is the Greatest Flaw in the City's CSO Decision-making Process

- One consultant estimates the cost for stormwater greenways at $300 million.
- A second consultant, avoiding greenways in favor of seven times as many more complex and costly BMPs as well as inflated land costs, says the cost for their approach will be $1.2 billion. (See next page.)
- The City touts the $1.2 billion approach and sweeps aside serious evaluation of the more cost effective stormwater greenways opportunity. Indeed, the City throws up barriers to this approach.
- The EPA will not accept sewer separation without stormwater treatment under the Consent Decree.
- We ask the Mayor's Clean Water Advisory Panel to recommend that the City develop cost and benefits information on the stormwater greenways opportunity. The Panel cannot make sound decisions without this information.

Draft

HDR/WLJorden

TECHNICAL MEMORANDUM –Best Management Practices

Re: City of Atlanta
Department of Public Works
Atlanta CSO Separation HDR 80308 -040
Combined Sewer Separation - A Watershed Approach

Date: May 1, 2002

Subject: HDR/WLJ responses to questions and comments asked by the Program Management Team related to the concept design and cost estimates for Best Management Practices (BMP).

Background: Summary of issues to be addressed:

1. PMT indicated that the costs developed for the BMP plans by HDR were substantially inflated and that they could be reduced to approximately ¼ of the current projected totals.
2. PMT stated that they could reduce the costs primarily by revising the BMP development criteria previously set, and by changing the unit rates assigned to land acquisition.
3. Given the need to adjourn the meeting, no discussion or debate of the updated methodology occurred.
4. Supporting documentation for PMT revisions has not yet been delivered to HDR/WLJ..

Design Criteria & Philosophy

PMT conclusions regarding BMP installation costs are based on the following two primary considerations:

Item 1. The PMT analysis assumed that Bioretention zones, exhanced swales, and vaults would be eliminated as these BMP's are not cost effective when compared to detention ponds. The number of features and their associated buffers was to be reduced by consolidating the smaller features into larger ponds which would reduce the amount land top be acquired.

Item 2. The PMT analysis assumed that the property values assigned to the Greensferry land acquisition costs were too high and did not represent current market value. The PMT stated that research indicated the property value to be approximately $30,000 per acre. This value was then arbitrarily increased to an acquisition cost of $250,000 per acre for the purposes of the PMT cost estimates. Even with this increase in the unit rate for land, they are less than one half of the cost per acre estimated by HDR for land value.

Item 3. The PMT assumed that the proposed BMP's would be removed from public land and placed into the Right-of-Way, city easements, and within the properties of other governmental agencies. Such placement would eliminate a large percentage of the requirements for land acquisition.

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The Problem

- Sewage from 12,200 acres of homes, hospitals and businesses – including the Central Business District combines with storm water from this same area whenever it rains (115 times per year on average). This results in combined sewage overflows 60 times per year.

- At the time the Consent Decree was signed the city's consultants led Atlanta's Chief Operating Officer, Larry Wallace, to believe that the city's CSO woes could be resolved with storage and treatment at a cost of $140 million by 2007. (See AJC news article next page.)

- Since 1998, these consultants have continuously promoted the storage and treatment option and downplayed the full sewer separation with stormwater greenways option, even though the price for the tunnel option has now soared to $627 million and cannot be completed by 2007.

Repair bill for sewers to hit users

Cost awaits engineering study on Atlanta system a year away

The Atlanta Constitution, April 15, 1998

By Carlos Campos and Julie Hairston
STAFF WRITERS

How much money Atlanta water customers will have to pump into fixing the city's troubled sewer treatment system was anybody's guess at City Hall on Tuesday.

Just one day after the city agreed in a federal lawsuit to make major improvements to its method of treating sewage by 2007, city officials guessed it could cost anywhere up to, and possibly more than, $1 billion.

Larry Wallace, the city's chief operating officer, said Tuesday he believes a system of underground storage tanks could be constructed at a maximum cost of $140 million. Public Works Commissioner Jarvis Middleton said separating the city's storm water pipes from its sanitary sewers, what he called a worst-case scenario, would cost a minimum of $1 billion. There are dozens of scenarios and related costs in between, Middleton said.

But the city won't know what it's facing until completion of a yearlong, $9.2 million examination of the sewage system by CH2M Hill, a Colorado-based engineering firm, Middleton said.

"Everything hangs on this study," Middleton said.

Mayor Bill Campbell said the city's water and sewer rate payers will foot the bill, including about 28,000 customers in parts of Sandy Springs and south Fulton County.

"Whatever it takes, we'll spend, because we want the best system, and the most environmentally sensitive," Campbell said. "If it does involve raising water and sewer rates, then that's what we will do."

But Campbell and Wallace said it's too early to determine the magnitude of a solution, and whether it will require any rate increase.

Wallace said the city is spending about $100 million a year, from a variety of sources, on sewer system improvements through 2002. That program could be extended through 2007 without increasing rates, Wallace said. The water and sewer departments had combined revenues of $152 million in 1997.

When asked how the city would finance $1 billion of improvements in a worst-case scenario, Wallace replied: "The truth is, we haven't even looked at that."

Since the U.S. Environmental Protection Agency ordered the city in the 1980s to fix combined sewer overflows into creeks, the city has spent $135 million to install mini-treatment plants at four CSOs. U.S. District Judge Thomas Thrash ruled in November those facilities don't work. That ruling, in a lawsuit brought by the Upper Chattahoochee Riverkeeper and cities and counties downstream, resulted in this week's agreement.

Councilwoman Clair Muller said the city is suffering the consequences of its decisions

"We took some political actions and had some managerial practices that got us into this situation," Muller said. "We've got to say this is our responsibility and we will clean it up."

MORE COVERAGE, E4

- **An advisory panel** will identify sites along riverfronts that the city will buy.
- **Robert Hancock,** who owns a cabin downriver from Atlanta, used to dream "about emptying my septic tanks into a truck, driving up to Atlanta and spraying untreated sewage on Atlanta City Council members' front lawns . . . like they did to us."
- **Atlanta's sewer system** will be under federal court supervision, but state and federal regulators will oversee the plans.

Clean Streams Task Force Supports Complete Sewer Separation with Stormwater Greenways. In Contrast to the Tunnel Option, It Gives Atlanta Citizens:

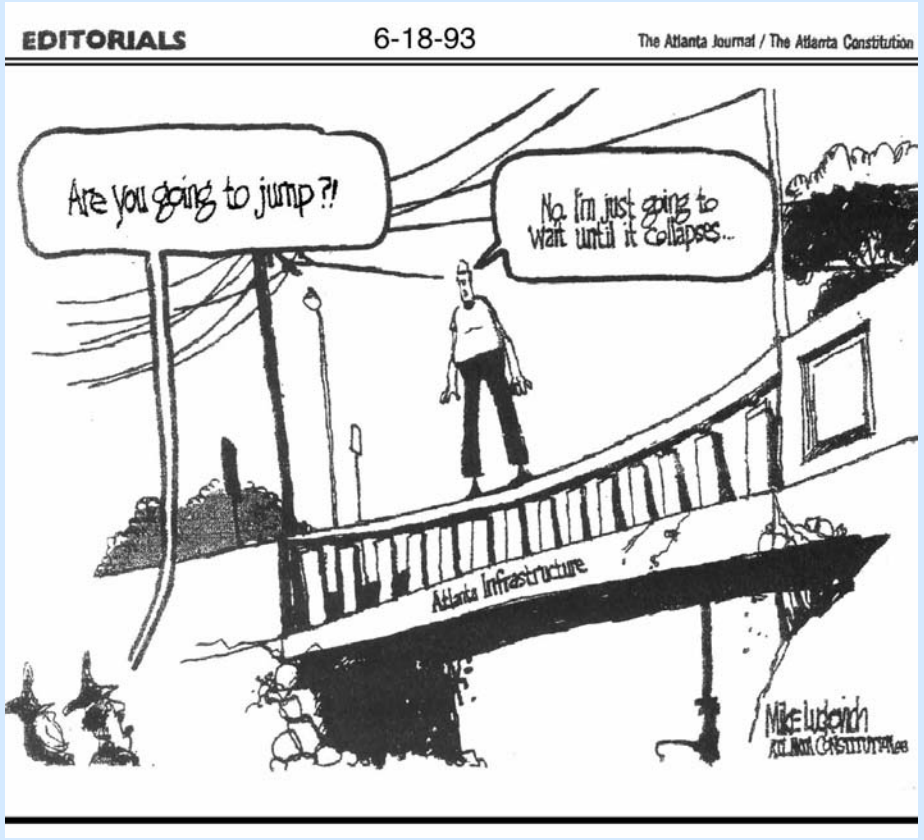
- Many quality of life improvements
- Better environmental results
- Lower costs, and improvements in Atlanta's economy
  (Note: Costs and timeline are interrelated.)

Citizens Place High Value on Quality of Life:

- We are the ones who are ultimately responsible for paying the bills.
- For our investment we want to see an increase in our stakeholder value much like corporate shareholders want to see an increase in shareholder value

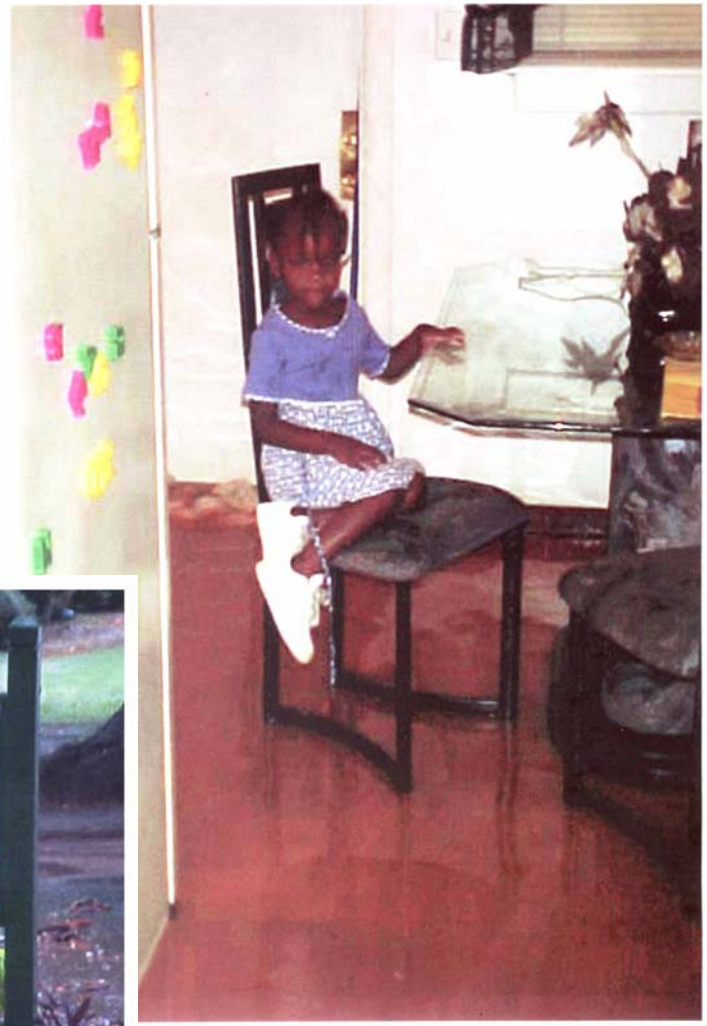
Quality of Life Improvements

- Full Sewer Separation with Stormwater Greenways rebuilds the crumbling inner city infrastructure.
- Brings sewer systems in the oldest 15% of the city up to the modern standards enjoyed by the newer 85 % of the city.



Quality of Life Improvements (continued)

- Eliminates raw sewage flooding homes, parks, streets, and streams.
- Reduces raw sewage disease sources, such as rats.
- Eliminates chlorine disinfection which adds priority pollutants to our streams and rivers.



Stockade Trunk Sub-Basin

Quality of Life Improvements (continued)

Eliminates perpetual disruptions caused by:

- Collapsing sewers. Some have led to tragic deaths.
- Combined sewage overflows and back-ups into restaurants, private residences, parks, streets, and streams in the CSO area.
- Trucks hauling chlorine (triple-strength Clorox) through residential neighborhoods and past public schools.
- Combined sewer overflows into parks and greenways downstream of the CSO area. Downstream jurisdictions post health hazard signs to keep people away from streams and rivers.

Engineering News Record June 21, 1993

ACCIDENTS

Two die in lot collapse

Parking lot collapse in Atlanta was above a 70-year-old sewer that had failed and been fixed before.

The City of Atlanta received a grim wakeup call June 14, when a hotel parking lot collapsed into a giant hole, killing two. The parking lot of the Marriott Courtyard Hotel, built on flat earth fill above a 70-year-old sewer main, caved in after severe storms dumped nearly two inches of rain in 40 minutes. The hole grew rapidly, expanding to about 200 x 150 ft within four hours. Firemen recovered the body of a female hotel employee, crushed in her car at the bottom of the hole, and a male employee roughly 2 miles away in the combined sanitary and stormwater line.

The sudden and freakish nature of the collapse has raised new concerns about the city's aging infrastructure in anticipation of the 1996 Olympics. Similar old sewer lines run beneath both the Georgia Dome and the site of the planned Olympic Stadium, sources say.

City officials are examining the possibility of a failure in the 22-ft-wide by 11-ft-high Orme Street Trunk Line, which was built of brick in 1915. The section that failed was reconstructed about 30 years ago after a failure, using pouredin place nonreinforced concrete, officials say. It ran diagonally under the parking lot 50 ft underground. Progressive cavering from leaks, plus heavy rains, may have caused the collapse.

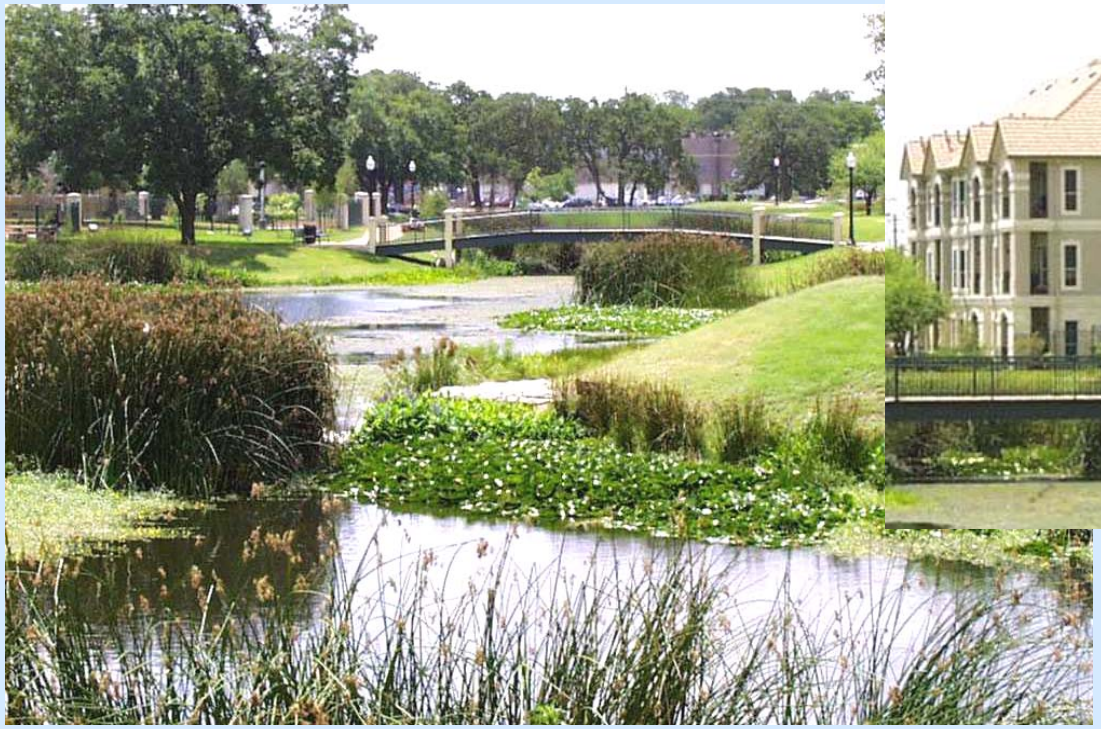
A stormwater system for the hotel, beneath the parking lot and above the sewer but not linked, is also being investigated. The two 5-ft-square, 120-ft concrete box culverts could have cracked the sewer line after settling, officials say. "There are a number of potential contributing factors," says Douglas Hooker, Commissioner of Public Works.

City officials were notified June 10 of cracks in a retaining wall in the parking lot and were monitoring it, says Hooker. Beers Construction Co., contractor on the two-year-old hotel, had examined the hotel stormwater system two weeks before and found no problems, says a Beers spokesman. ▣

Quality of Life Improvements (continued)

- Brings us 600 acres of new parkland and greenspaces with spring and rainwater fed ponds

- Revitalizes the face of the city with redevelopment opportunities



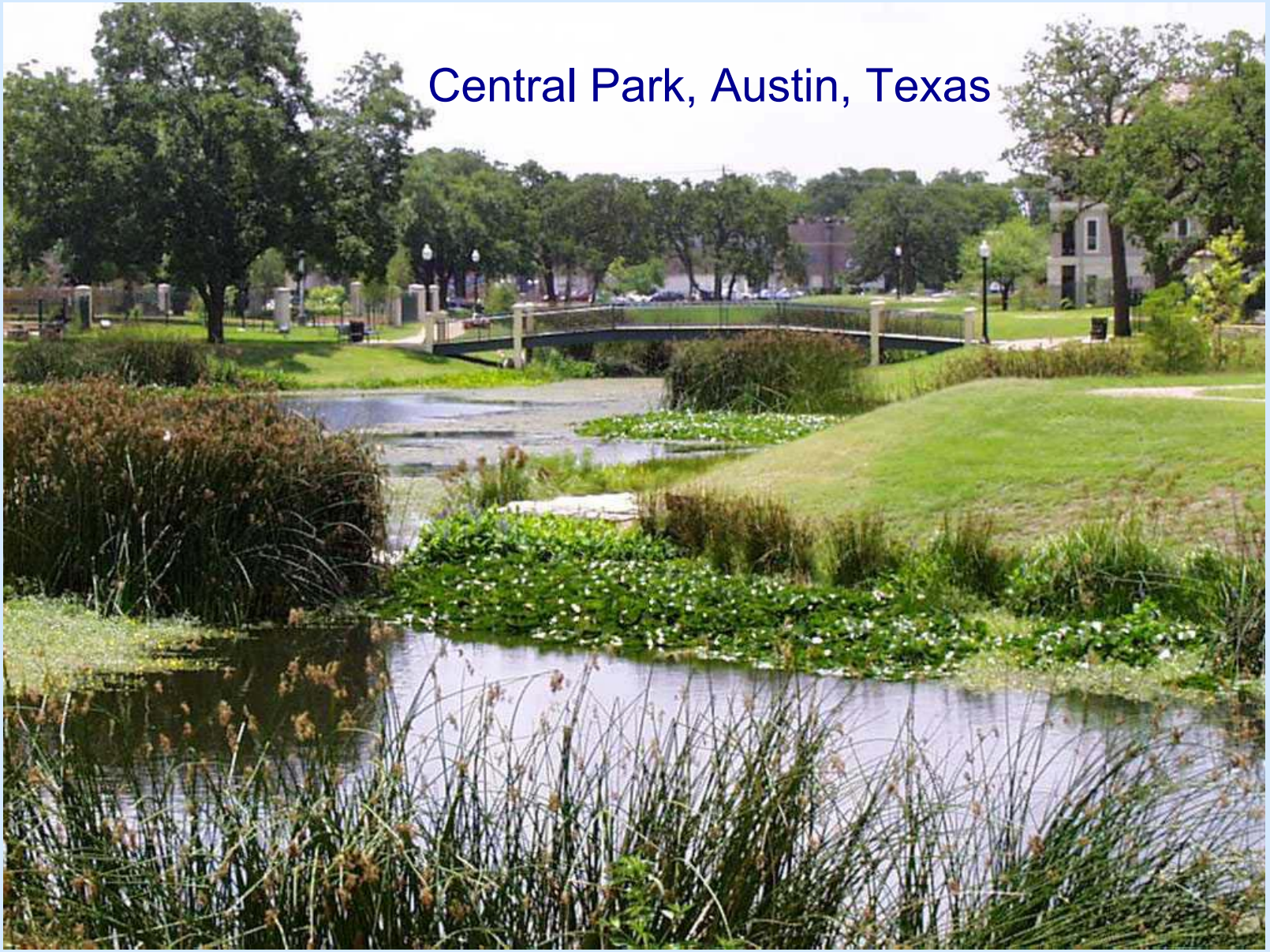
Central Park

Austin, Texas

Stormwater Greenways Work

They:

- Clean the Stormwater,
- Reduce Floods
- Are Safe
- Have Aesthetic Appeal


Central Park, Austin, Texas

Austin, Texas

Flows into these ponds are Pre-Treated to remove visible solids

Forebay removes sediment. Water coming out of pipe slows down when it enters the forebay, the sediment falls out.

Austin, Texas

Ponds remove the following pollutants:

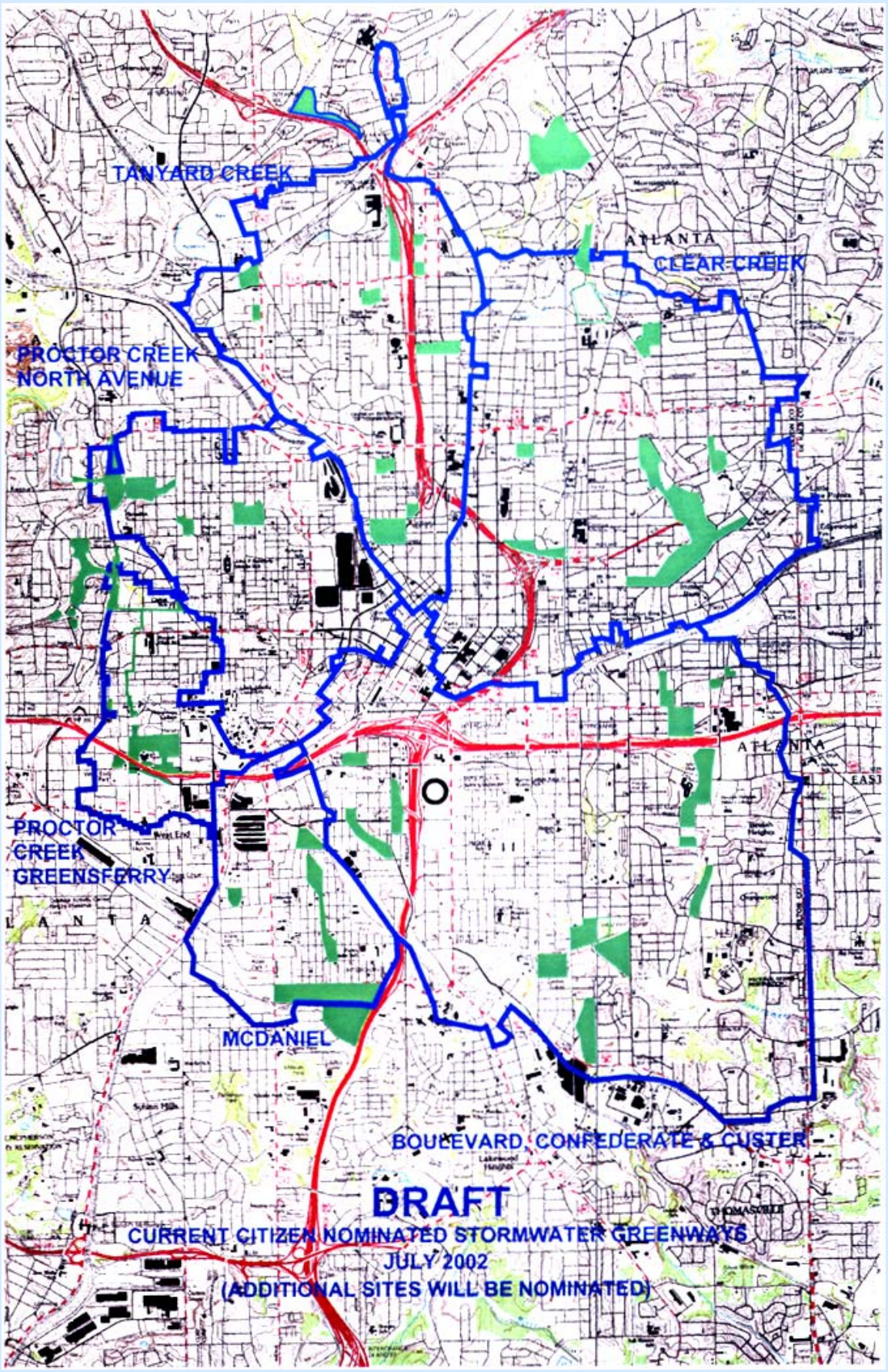
- Total Suspended Solids 85%
- Total Phosphorus 62%
- Lead 98%
- Zinc 76%
- Copper 66%

Central Park, Austin, Texas

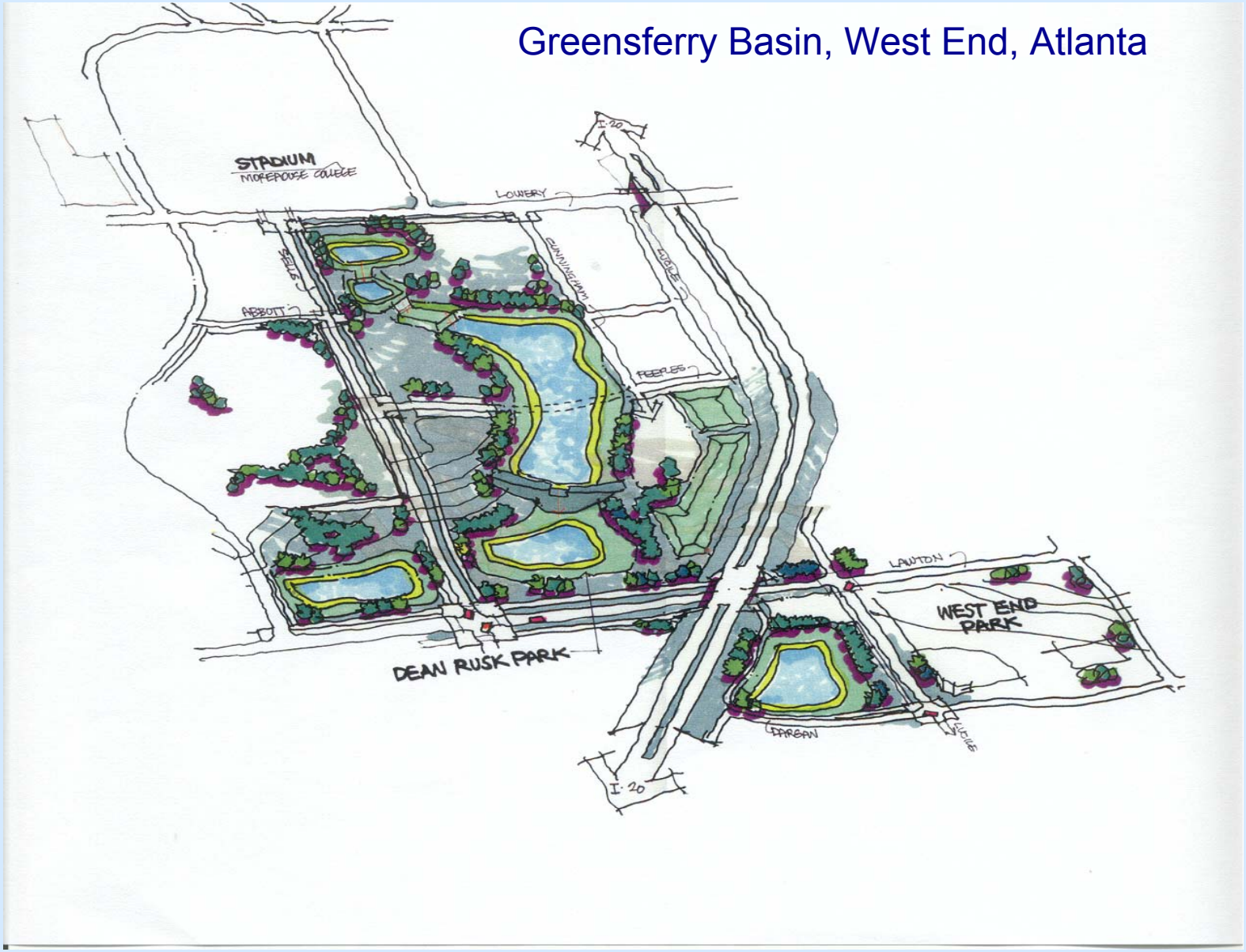
Greenways are Mosquito-free (Gambusia fish) and carefully designed to address both safety and maintenance concerns.

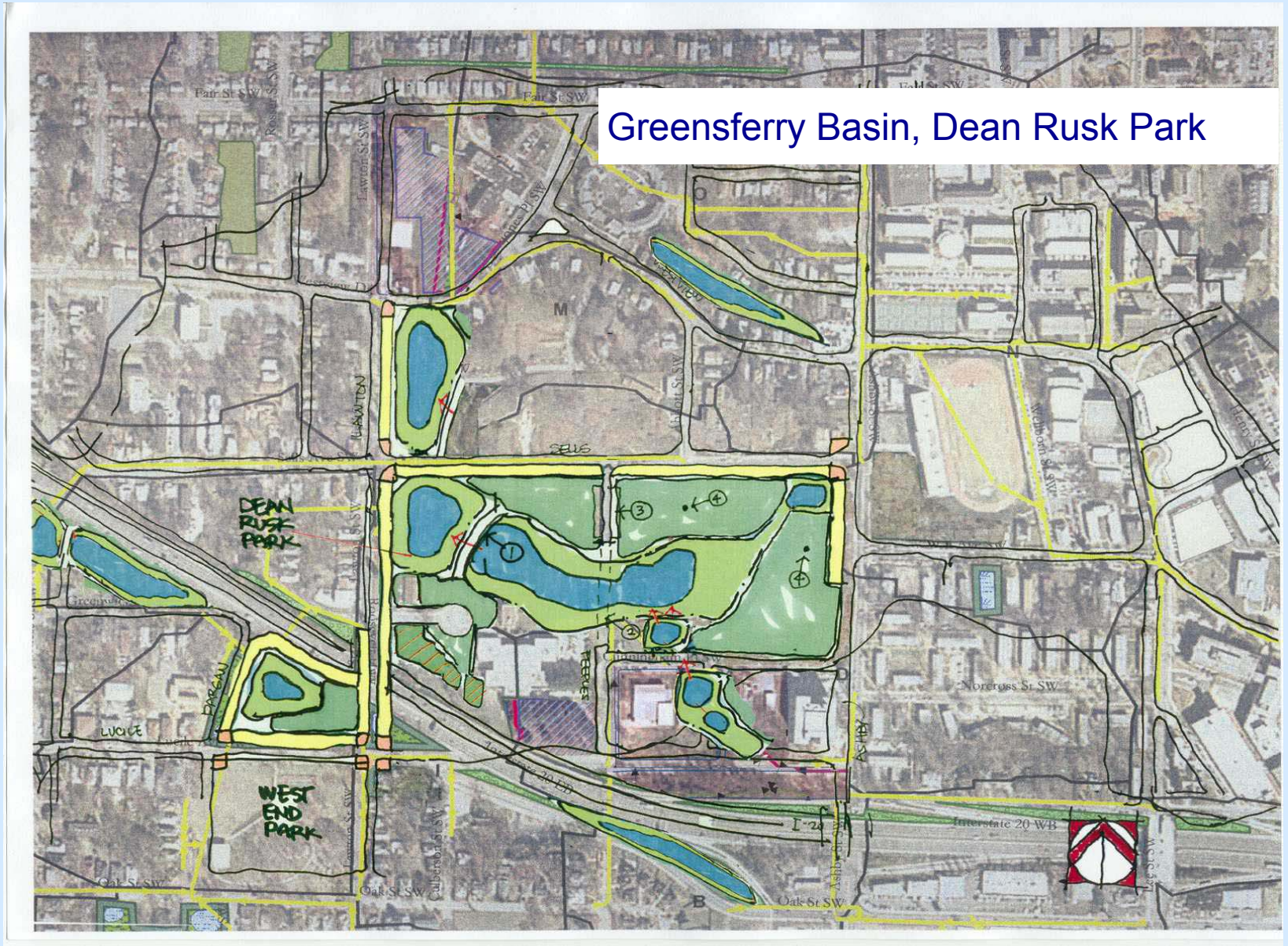
According to the City's consultants, CH2MHill, we need 611 acres, of which 272 acres would be stormwater ponds.
The balance, or 339 acres, would be "lakefront parkland".

Here in Atlanta, we have already identified and nominated ***631 acres of land*** suitable for this kind of stormwater greenways, and more is being identified each month.

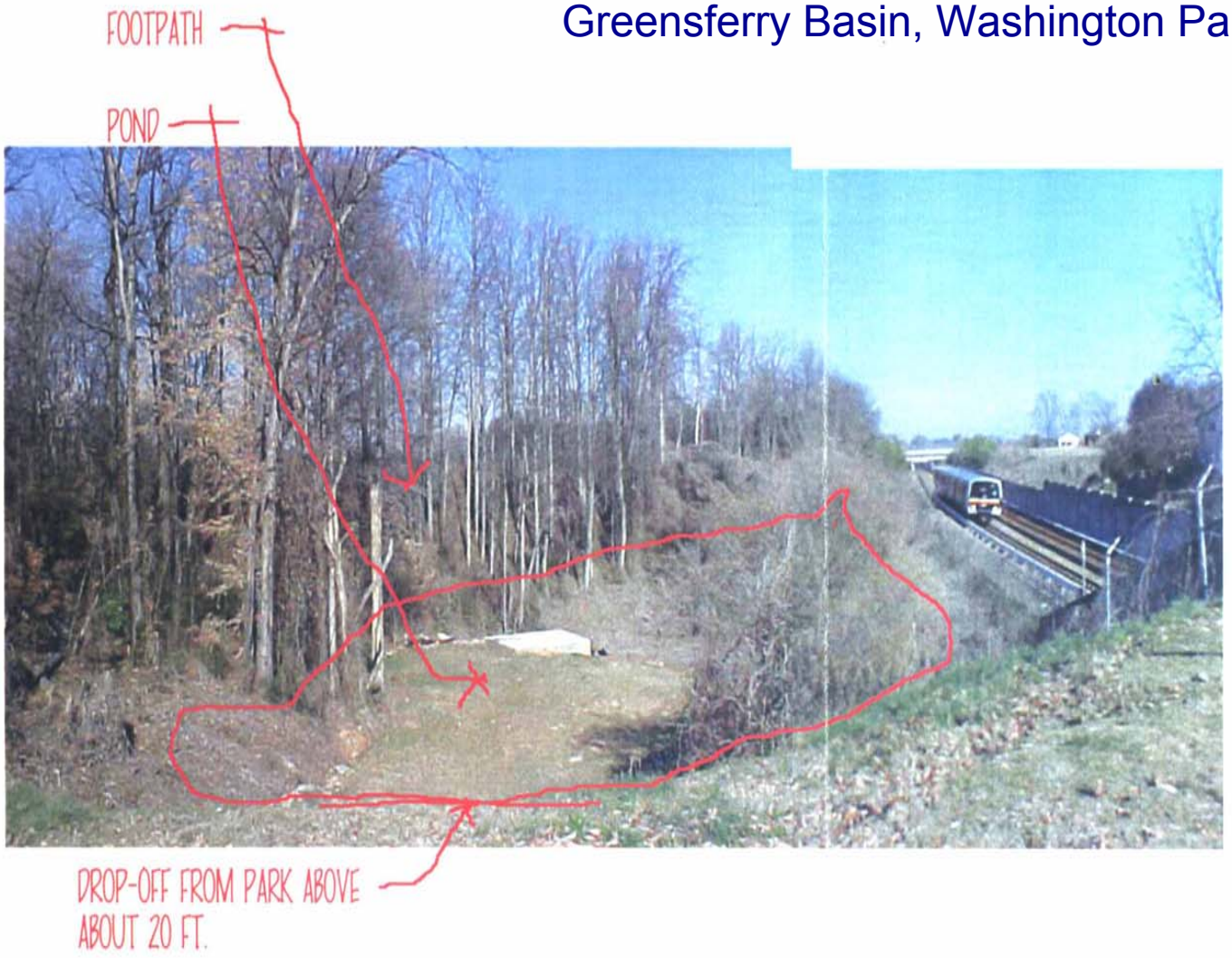

TANYARD CREEK
ATLANTA
CLEAR CREEK
PROCTOR CREEK
NORTH AVENUE
ATLANTA
EAST
PROCTOR
CREEK
GREENSFERRY
MCDANIEL
BOULEVARD, CONFEDERATE & CUSTER
DRAFT
CURRENT CITIZEN NOMINATED STORMWATER GREENWAYS
JULY 2002
(ADDITIONAL SITES WILL BE NOMINATED)

Greensferry Basin, West End, Atlanta

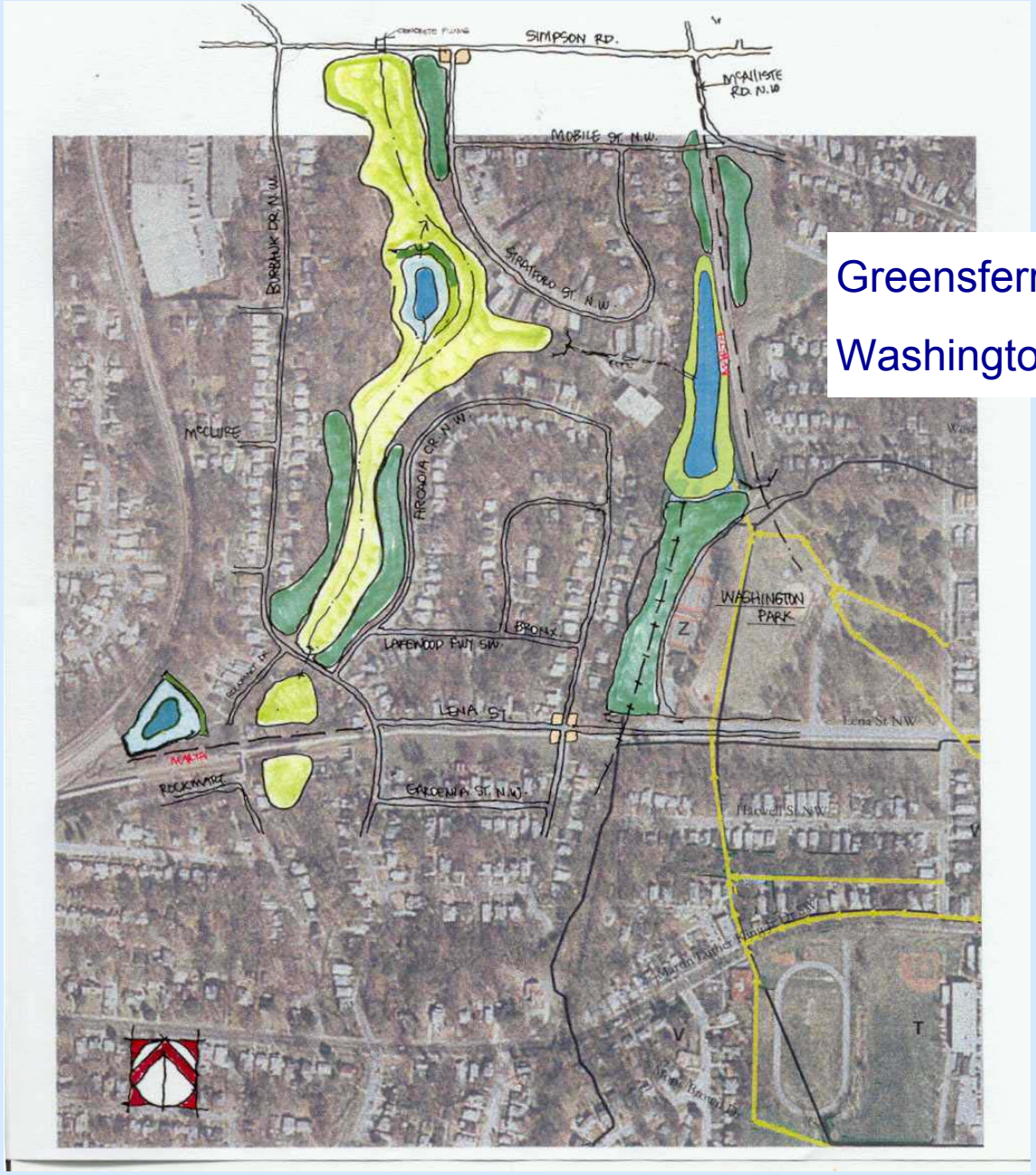



Greensferry Basin, Dean Rusk Park
DEAN RUSK PARK
WEST END PARK
Norcross St SW
Interstate 20 WB
Oak St SW

Greensferry Basin, Washington Park



Greensferry Basin, Washington Park



Greensferry Basin,

Washington Park


Clear Creek Basin,
View North to City Hall East

CLEAR CREEK PARK

South of City Hall East -- Part of an 84 Acre Proposed Greenway Connecting Neighborhoods from Inman Park to Piedmont Park; 60 Million Gallon Capacity.


We already have Stormwater
Greenways working in Atlanta


We already have Stormwater Greenways
working in Atlanta


We already have Stormwater
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We already have Stormwater Greenways
working in Atlanta

Atlanta's Choice

Atlantans are at a crossroads. With one path, we get a parkland bonanza and revitalize the face of the city.

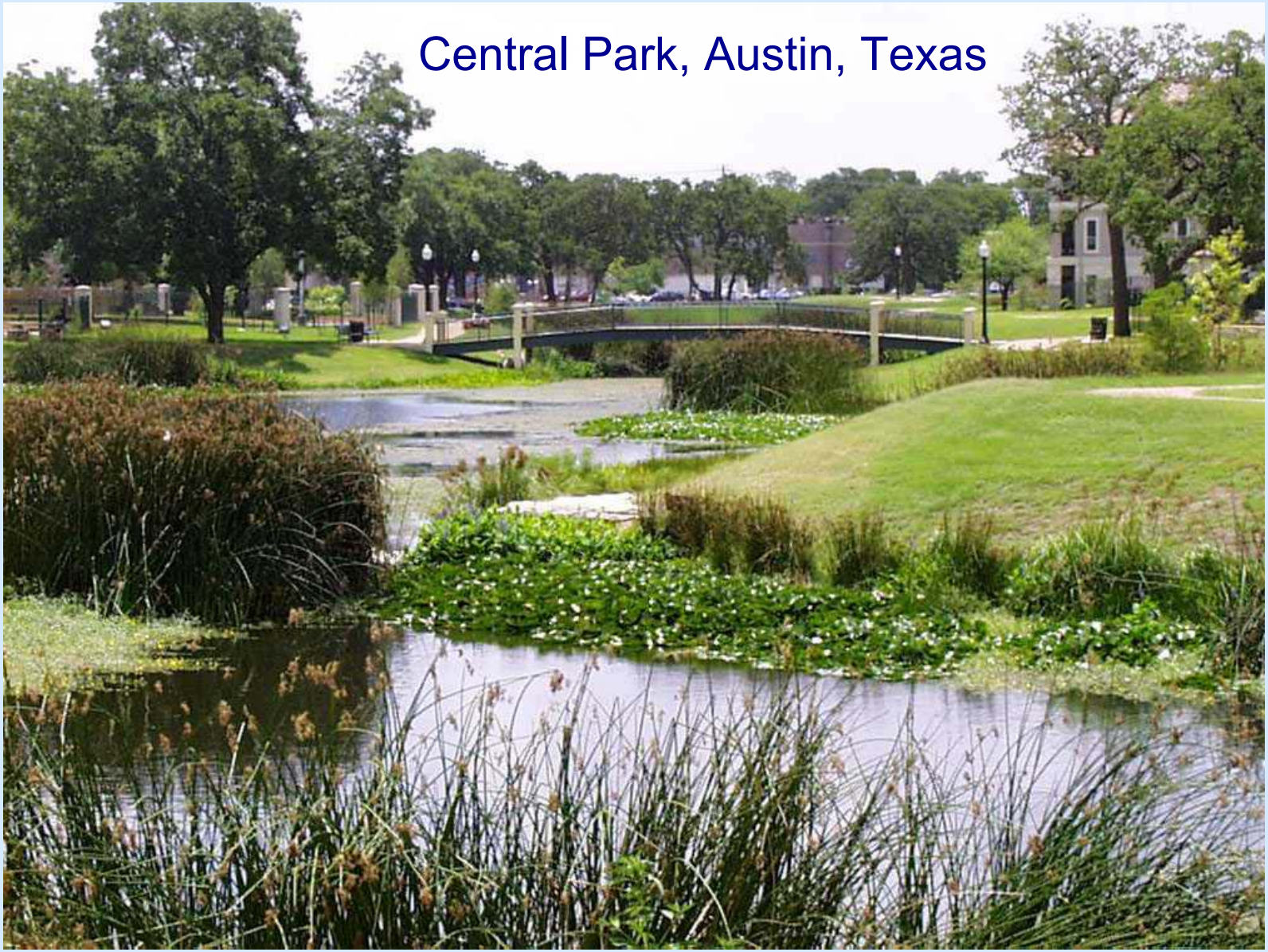
With the other path, we get an underground tunnel of sewage not suitable for kayaking.

Greensferry CSO Facility - Vacant Housing


Central Park, Austin, Texas

Greensferry CSO Outfall - Children Playing

Central Park, Austin, Texas



Environmental Advantages

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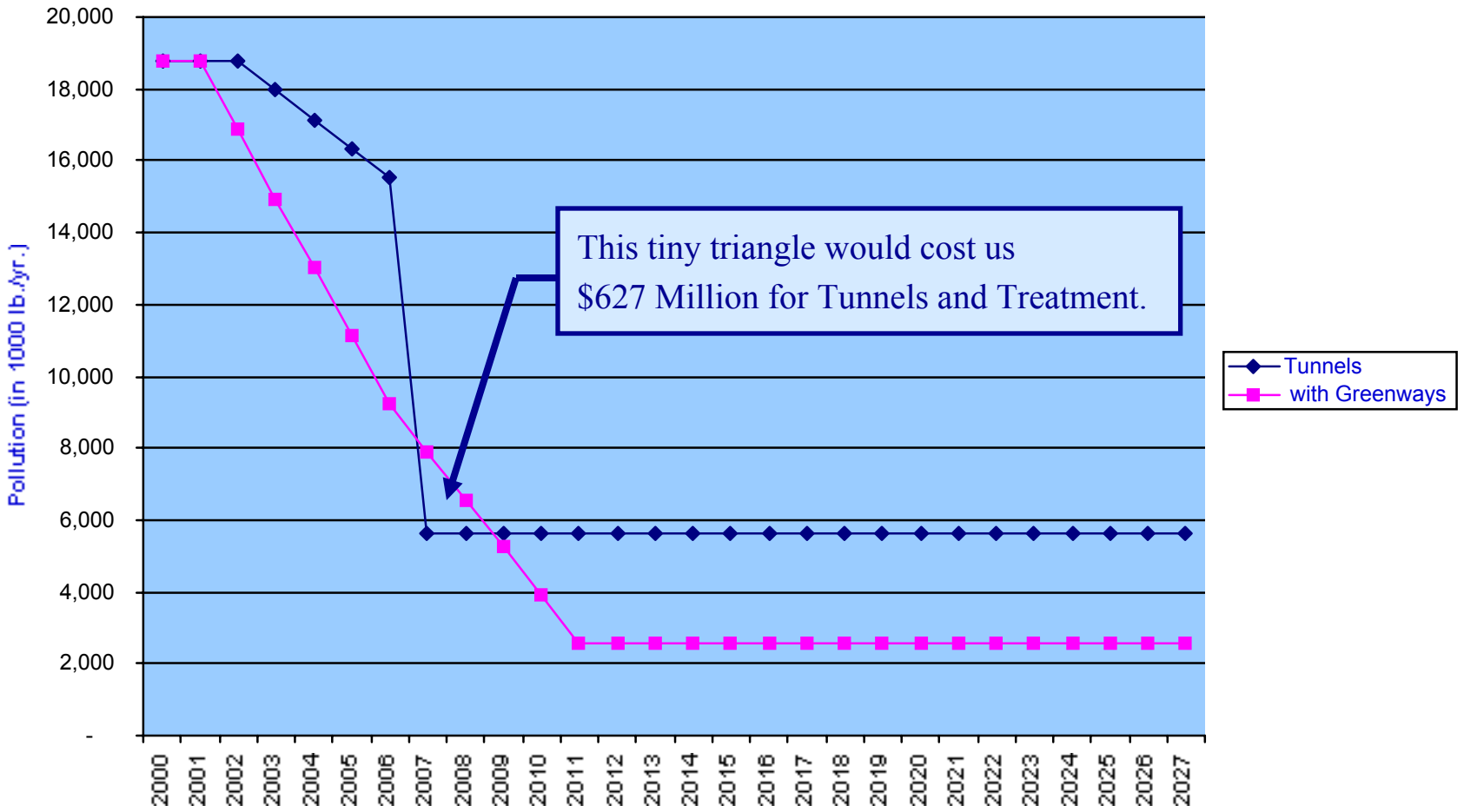
- Reduces flooding:
  - Tunnel captures 3 month rain event.
  - Greenways will capture a 10-year rain event and in some cases a 25-year rain event.
  - Tunnel does not address localized flooding.

Reduction in Total Pollutant Loadings to the Environment

(in 1000 lb./year)



Note: Excludes Priority Toxins -- Organochlorine compounds required for disinfection by the tunnel option

Table 1
Reduction in Total Pollutant Loading to the Environment
(thousands of pounds per year)

Year	Full Separation with Greenways	Tunnels
2000	18,764	18,764
2001	18,764	18,764
2002	16,856	18,764
2003	14,948	17,956
2004	13,040	17,147
2005	11,132	16,339
2006	9,224	15,530
2007	7,898	5,619
2008	6,572	5,619
2009	5,246	5,619
2010	3,920	5,619
2011	2,594	5,619
2012	2,594	5,619
2013	2,594	5,619
2014	2,594	5,619
2015	2,594	5,619
2016	2,594	5,619
2017	2,594	5,619
2018	2,594	5,619
2019	2,594	5,619
2020	2,594	5,619
2021	2,594	5,619
2022	2,594	5,619
2023	2,594	5,619
2024	2,594	5,619
2025	2,594	5,619
2026	2,594	5,619
2027	2,594	5,619

Assumptions:

Separation with Greenways:
100% Sewer Separation with Greenways Over 10 Years

Tunnels:
Tunnel Completion in 5 Years and 27% Sewer Separation Over 5 Years

Note: Excludes priority toxins -- organochlorine compounds -- required for disinfection by the tunnel option

Source: Based on Remedial Measures Report (2001) CH2MHill Table 3-3 "Total Discharge to the Environment After Treatment for the Preliminary Evaluation Conceptual Alternatives". (Table 3-3 follows this page)

TABLE 3-3
Total Discharge to the Environment after Treatment for the Preliminary Evaluation Conceptual Alternatives
City of Atlanta CSO Remedial Measures

		Citizens' Plan				Option C		
Pollutant (1,000 lb/y)	**Existing CSOs**	**Full Separation with No BMPs**	**Full Separation with High Level of BMP Implementation**	**Approx. 60% Separation with Consolidated Storage, No BMPs**	**Approx. 60% Separation with Consolidated Storage and BMPs**	**Approx. 25% Separation with Consolidated Storage, No BMPs**	**Approx. 25% Separation with Consolidated Storage and BMPs**	**Consolidated Storage and No Separation**
Preliminary Eval. Alternative		**1a**	**1b**	**2a**	**2b**	**2c**	**2d**	**4**
BOD	4,449	881	571	1,791	1,762	2,004	1,948	2,121
Total Suspended Solids	14,277	6,893	2,009	6,169	4,137	4,536	3,656	3,633
Total Phosphorus	19.92	8.59	6.24	7.07	6.12	5.28	4.85	4.29
Total Copper	3.26	1.16	0.68	1.30	1.18	1.15	1.07	1.07
Total Zinc	14.99	12.56	7.10	13.61	13.36	9.95	8.96	7.93

Note: Alternative 3a discharge will be about the same as Alternative 4 discharge.

Total = 2,594.02

Best Results

Citizens' Plan

Option 1b

Total = 5,618.88

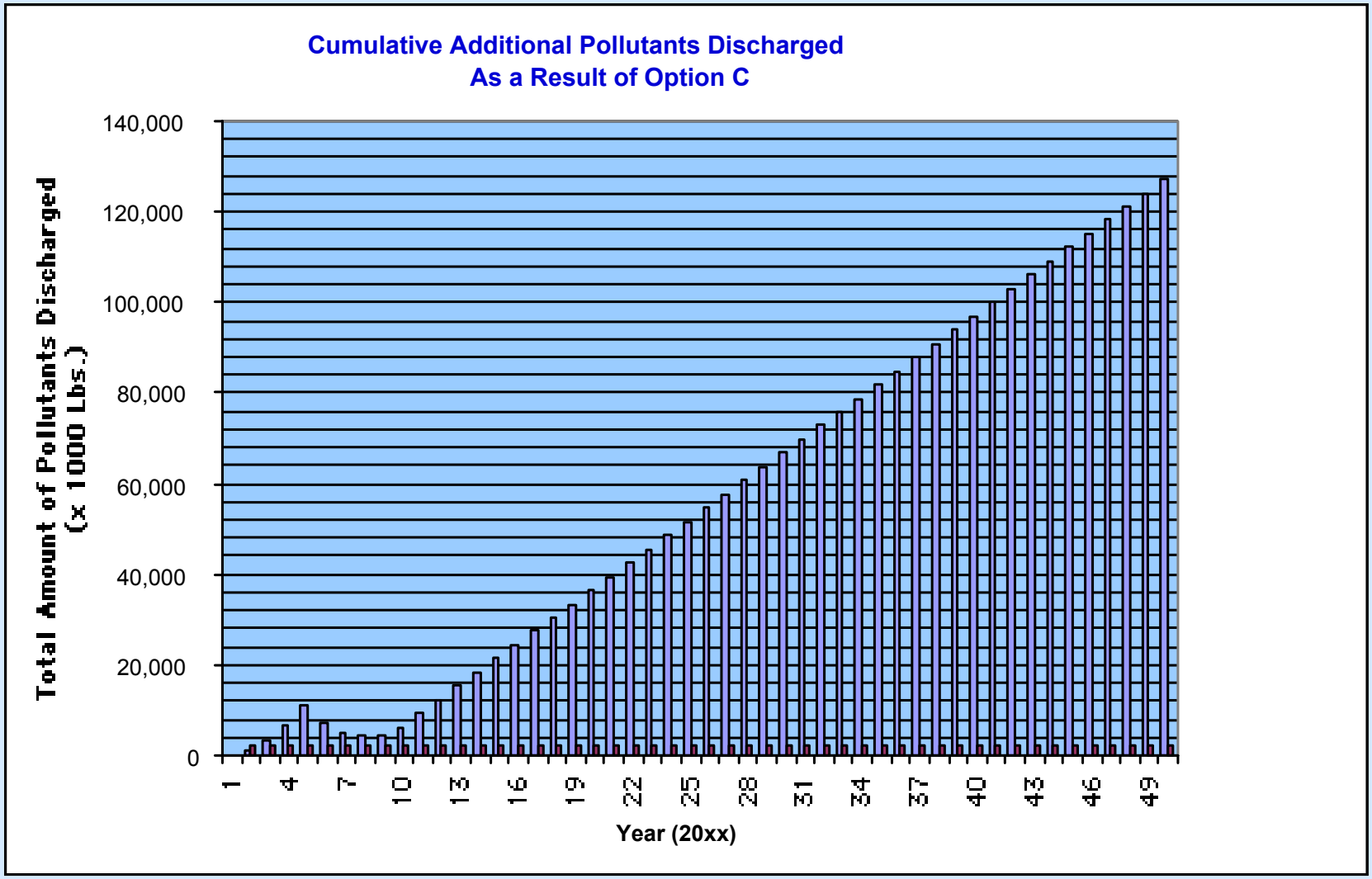
Poorer Results

City's Plan

Option 2d

5,618,880 - 2,594,020 = 3,024,860 Pounds More Pollutants Per Year

Full Sewer Separation With Greenways Removes 3 Million More Pounds of Pollutants Per Year Than Option C.



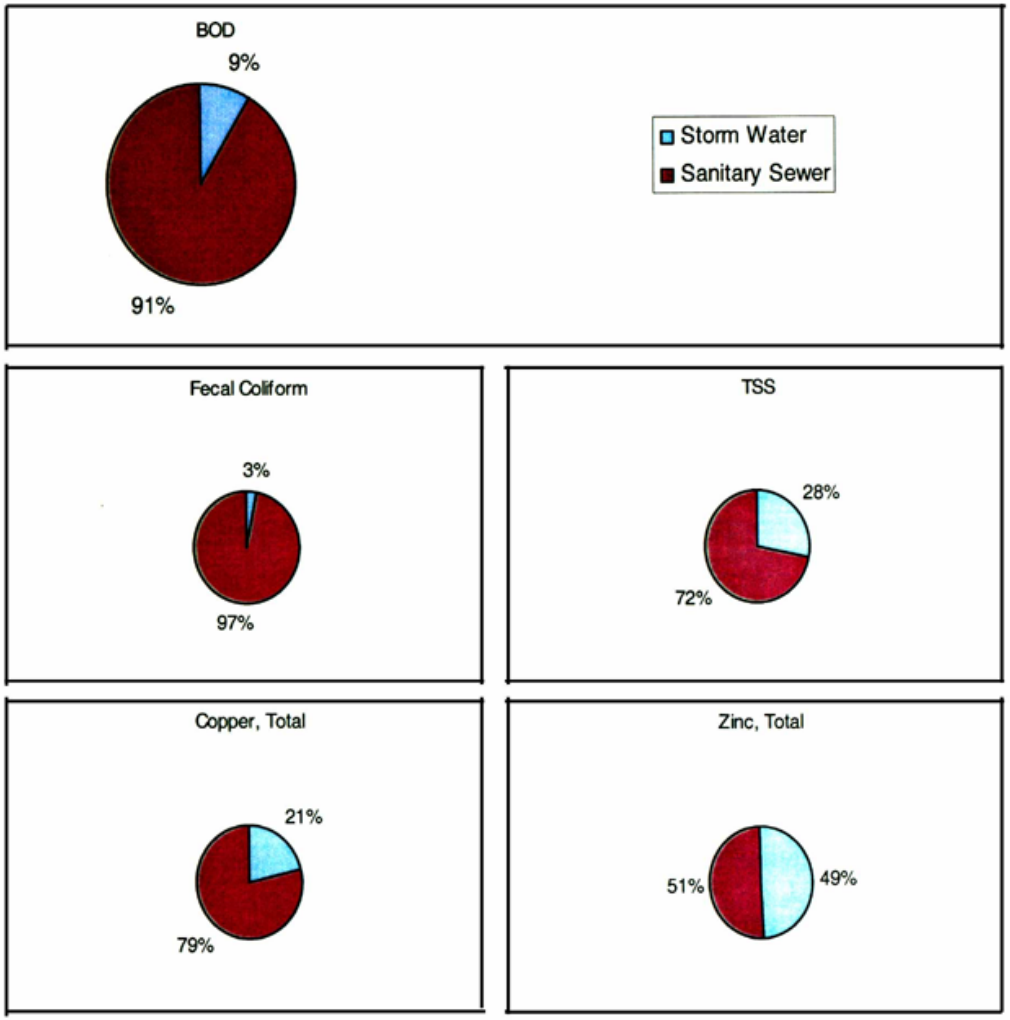
New Slide - 7/16/02

Sewage, Not Stormwater, is the Major Source of Pollution Overflowing from Atlanta's Combined Sewer Systems

- Contrary to popular myth, sanitary sewage is the source of 77% of the pollution flowing from Atlanta's CSOs into our urban streams and rivers.
- Only 23% comes from stormwater.
- Sewer separation will eliminate all of the household, hospital, and industrial sewage overflowing into our streams.
- Stormwater greenways will remove 83% of stormwater pollution, most of which is the tiny particles that cloud stormwater. (Total Suspended Solids)
- Sewer separation with stormwater greenways, in contrast to the tunnels with 27% separation, will remove 3 million more pounds of pollution per year from our urban streams and rivers.

(Based on data developed for the Remedial Measure Report.)

Relative Source of Pollutants Estimated in the CSO Loads



Source: CH2MHill

Cost and Timeline: The Citizens' Plan

- Complete full sewer separation in 10-years

- Reclaim 600 acres of underutilized land for new parkland – stormwater greenways

- Ask EPA for a 5-year timeline extension until 2012 in exchange for improved water quality through the use of stormwater greenways.

Proposed 2001 Cost: ~~$1,371 million~~
Revised 2002 Cost: $800 million

(See tables 2-5)

How the Citizens Cut Costs

- Shorten timeline needed for full sewer separation from 25 to 10 years and reduce unit costs to net a total cost of $500 million.

- Limit commitment to $300 million for 600 acres of stormwater greenways.

(See tables 2-5)

Cost and Timeline: The City's' Plan

- Complete full sewer separation in 25-years.

- Build massive deep tunnels with dedicated treatment facilities as a stop gap measure to meet the 2007 deadline.

Proposed 2001 Cost: ~~$1,684 million~~
Revised 2002 Cost: $1,127 million
Budgeted Up To 2007: $950 million

(See tables 2-5)

How the City Cut Costs

- Include only 27% sewer separation up until 2007.

- Exclude costs for remaining 73% sewer separation.

- Exclude 600 acres of parkland for stormwater greenways.

(See tables 2-5)

Table 2

Greenways Versus Tunnels Cost Comparison: 2001

Estimated Capital Costs from the Conceptual CSO Remedial Measures Report, April 2001, CH2MHill

Item	Cost for 12,200 Acre Atlanta CSO Area (Excludes Operating and Maintenance Costs 1/) Citizens' Plan 10 years Full Sewer Separation with Greenways		City's Plan 25 years Full Sewer Separation With Tunnels (No Greenways)
I. General Piping and Related Needs, Including Full Sewer Separation			
Storm Capacity Upgrades	$134 Million	***Equal***	$134 Million
Capacity for Growth	0 Million	***Equal***	0 Million
Rehabilitation of pipes	52 Million	***Equal***	52 Million
Easement Costs	60 Million	***Equal***	60 Million
Dechlorination - Both chlorination and dechlorination will be elimanted after full sewer separation.	15 Million	***Equal***	15 Million
Full Sewer Separation	911 Million	***Equal***	911 Million
SUBTOTAL	$1,172 Million	***Equal***	$1,172 Million
	$96,000 per acre	***Equal***	$96,000 per acre 2/
II. Stormwater Options			
Greenways with Ponds	$199 Million		0 Million
Tunnels and Treatment	0 Million		$512 Million
TOTAL	$1,371 Million		$1,684 Million
CAPITAL SAVINGS	**$313 MILLION**		

1 / Operating and maintenance costs should be much lower for the Citizens' Plan. The City's Plan would add a whole new tunnel infrastructure with its own additional operating and maintenance costs. One example is electricity costs for pumping tunnel waste from 250 feet below ground to the surface treatment facility. O & M for either approach could be outsourced.

2 / CH2MHill estimated the total cost for general piping and related needs including full sewer separation at $1,172 Million/12,200 Acres = $96,000/Acre

Table 3

2001 Costs Refined and Updated to 2002

I. Comparative Costs for General Piping Including Full Sewer Separation

Area	Cost	Acres	Cost/Acre
Utoy Creek, Atlanta, Georgia	**$45 Million**	**2,177**	**$ 20,700**
St. Paul, Minnesota	$217 Million	15,700	$ 13,900
Minneapolis, Minnesota	$67 Million	4,263	$ 15,800
Atlanta CSO Areas Conceptual Estimate from Remedial Measures Report (CH2MHill, April 2001)	**$1,172 Million**	**12,200**	**$ 96,100**
Preliminary Engineering Cost Estimates:			
MSE/HDR WL Jordan 2002			
Stockade Basin	$42 Million	1,200	$ 35,000
Greensferry Basin	$40 Million	748	$ 53,500
Clear Creek Basin	$159 Million	3,047	$ 53,200
MSE/HDR WL Jordan 2002 - Totals and Average	**$241 Million**	**4,995**	**$ 48,000**
PMT Oversight Team 2002			
Stockade Basin	$25 Million	1,200	$ 20,800
Greensferry Basin	$32 Million	748	$ 42,800
Clear Creek Basin	$91 Million	3,047	$ 29,900
PMT Oversight Team - Totals and Average	**$148 Million**	**4,995**	**$ 30,000**

Conclusion: Generously estimated 2002 sewer separation costs including the Central Business District: $41,000/Acre x 12,200 Acres = $500 Million.

Table 3

2001 Costs Refined and Updated to 2002 continued

II. Comparative Costs for Storm Water Greenways	
RMR Storm Water Ponds Estimate	$199 Million
MSE/HDR WL Jordan Estimate	$1,200 Million
Current Program Management Team (PMT) Estimate	$300 Million
Conclusion: Best 2002 Estimate	**$300 Million**

Note also that Atlanta's investment in storm water greenways can be limited to $300 Million by agreeing to a Supplemental Environmental Project (SEP) at this amount in exchange for a 5-year timeline extension from EPA under the Consent Decree.

III. Comparative Costs for Storage Tunnels and Treatment	
RMR Tunnel Cost	$462 Million
Preliminary Engineering 2002 Best Estimate	$542 Million
Current 2002 PMT Best Estimate	$542 Million
RMR Treatment Cost	$50 Million
Currently Estimated Cost Increases	$20 Million to $50 Million
Current 2002 Cost	$70 Million to $100 Million
Total 2002 Cost	$612 Million to $642 Million
Conclusion: Best 2002 Estimate	**$627 Million**

Table 4

Greenways Versus Tunnels Cost Comparison: 2002

ojected Costs Expected from the City's Parallel Track Studies to be Concluded in August 2002
(See Table 2, 2001 Costs Refined and Updated to 2002.)

Item	Cost for 12,200 Acre Atlanta CSO Area (Excludes Operating and Maintenance Costs 1/) Citizens' Plan 10 years Full Sewer Separation with Greenways	City's Plan 25 years Full Sewer Separation With Tunnels (No Greenways)
I. General Piping and Related Needs		
Storm Capacity Upgrades Capacity for Growth Rehabilitation of pipes Easement Costs Dechlorination Full Sewer Separation		
SUBTOTAL Above Items = 12,200 Acres at $41,000/Acre	$500 Million	$500 Million
II. Storm water Options		
Greenways with Ponds	$300 Million	0
Tunnels and Treatment	0	$627 Million
TOTAL	$800 Million	$1,127 Million
CAPITAL SAVINGS	**$327 Million**	

1/ Operating and maintenance costs should be much lower for the Citizens' Plan. The City's Plan would add a whole new tunnel infrastructure with its own additional operating and maintenance costs. One example is electricity costs for pumping tunnel waste from 250 feet below ground to the surface treatment facility. O & M for either approach could be outsourced.

Table 5

Time Required for General Piping Including Full Sewer Separation

Area	Acres	Time
Utoy Creek, Atlanta, Georgia	2,177	30 months
St. Paul, Minnesota	15,700	70 months

Conclusion 1: The speed of full sewer separation is directly related to the number of crews put on the job. The CSO Remedial Measures Report, April 2001, estimates a total construction time of 105 months, and employs from 9 to 16 crews at various times. If just 15 crews are employed consistently, the total construction time can be reduced to 59 months, including a 10% contingency.

The City has already acknowledged that the East side CSO representing 40% of the total CSO area can be separated in 60 months. If St. Paul can separate 15,700 acres in 70 months of construction time, Atlanta can separate 12,200 acres in 60 months.

The independent validation process currently underway by the PMT is likely to show how the west side CSO representing 55% of the total 12,200 acre CSO area can also be separated in 60 months.

Atlanta, Georgia	12,200	60 months

Conclusion 2: The City should ask for an additional 60 months to integrate the full sewer separation process with the stormwater greenways option.

The extra time will also make the CSO solution more affordable. EPA's CSO Guideline for Financial Capability Assessment and Schedule Development lists implementation periods of up to 10 years for projects which fall under the category of "Medium Burden" as is the case for Atlanta.

Atlanta, Georgia	12,200	120 months

The Water and Sewer Revenue Fund Can Be Used For CSO Stormwater Greenways.

- This fund is already being used to pay for the $25 million Greenways Acquisition Program, a Supplemental Environmental Project (SEP) under the Consent Decree.
- It is evident that the stormwater greenways proposed here can be offered to the EPA as a SEP – producing cleaner water – in exchange for a timeline extension under the Consent Decree.
- It is also evident that if the water and sewer fund can be used to pay for the $627 million tunnel and treatment system, it can certainly be used to fund the far less costly $300 million stormwater greenways proposal.
- Atlanta's residential ratepayers especially seniors, fixed and low-income families, will save $20 per month on their water and sewer bills.
- As is the case for the tunnel, as soon as the city implements, a stormwater utility, the greenways can be transferred to that utility.

Sewer Separation with Stormwater Greenways Creates Economic Benefits for Atlanta

- Center City lakeside property for sale or lease for magnificent public/private development partnerships.
- Lower property tax rates because of the increased tax base, or land lease income.
- More jobs because full sewer separation with greenways will create a lot more local jobs than funneling the money into the hands of a few tunnel builders.
- Lower capital and O&M costs, thus moderating sewer rate increases.
- More time and more options to raise Federal, State and private funding support, thus moderating sewer rate increases.
- Elimination of financial risk: Complete sewer separation is the only solution guaranteed to meet the water quality standards of the Clean Water Act.
- Avoidance of the $627 million capital spike to fund the tunnel in 2004 will ` eliminate the need for greatly increased sewer rates just before the 2005 election.

Financial Risk
Wrong Objectives Lead to Ill-Advised Public Investments

In the 1980's, Atlanta invested $48 million in storage and treatment solutions (including a 34 million gallon deep-rock tunnel) to resolve East area CSO problems. The same engineering report estimated the cost of full sewer separation at $51 million at that time.

The project achieved its objective of reducing biological oxygen demand (BOD) attributed to CSOs and has been labeled a success.

But . . .

The city has been sued by the EPA because of CSO discharges still do not meet water quality requirements. Stormwater contaminated with sewage still flows down Intrenchment Creek.

The antiquated combined sewer infrastructure still has not been replaced.

The city must forever pay operating and maintenance costs for this second tunnel and treatment infrastructure. Some examples: Under the Consent Decree the EPA required the city to spend an additional $25 million to repair and upgrade this ill-advised investment. The city has also committed to spending $3 million to clean out this tunnel.

Conclusion: The city should not make the same mistake in 2002. Totally separate the remaining combined sewer systems and manage stormwater as a valuable resource.

Financial Risk

Only Sewer Separation with Stormwater Greenways is Guaranteed to End Atlanta's CSO Woes

Experts say the tunnel approach:

- Will fail to meet the 2007 deadline.
  ". . . Very ambitious and aggressive schedules were developed that contained minimal contingencies for delay" (CSO Remedial Measures Report, April 2001, p. 4-25).
- Will fail to reduce combined sewer overflows to 4 per year. Computer models are not fail-safe.
- Will fail to meet water quality criteria. The city is asking for lower "site specific" criteria.
- Does not consider the "fishable" designated use. Instead it dries up the streams by removing all of the natural stream flow and 85% of the stormwater.

Any of these failures can trigger fines of millions of dollars as well as sewer hook-up moratoria.

No one is willing to guarantee successful compliance. Failure will open the city to further lawsuits.

Only sewer separation with greenways is guaranteed to get us off of the regulatory hook.

Financial Risk

The Proposed Ballasted Flocculation Reactor (BFR) and High Rate Solids Contact (HRSC) Treatment Processes are Untested Technologies for Intermittent CSO Flows

Although these processes have performed well at continuously operating wastewater facilities, pilot testing must be performed on treating Atlanta's intermittent CSO flows to determine:

- Pollutant removal efficiencies
- Start up and shut down requirements
- Chemical and polymer usage
- Sludge characteristics and management requirements
- Provisions to eliminate or minimize sand accumulation due to intermittent use
- General operating and maintenance requirements
- Whether chlorine rather than UV disinfection may be necessary to disinfect the resulting effluent

Answers to these questions should weigh heavily in the selection of the CSO solution. Unfortunately, critical evaluation of these untested technologies has been postponed until the final design phase.

Source: Final City of Atlanta CSO Remedial Plan, CSO PRE-DESIGN REPORT for the Consolidated Storage Tunnel Component, May 2002, pp. 4-16, 4-20, 4-24.

Full Sewer Separation with Stormwater Greenways Has Broad Public Support

- More than 170,000 Atlanta citizens represented by 10 Neighborhood Planning Units (NPUs) have already voted in favor of full sewer separation with greenways. Additional NPUs are expected to get on board soon.

- The city sponsored Citizens Advisory Group (CAG) which was technically informed as a result of 100 meetings, during which they were heavily lobbied by the city's tunnel consultants, voted unanimously against the tunnel and treatment option, 37 for full sewer separation with greenways and 2 for separation without greenways.

- "The City of Atlanta considers full sewer separation of its combined sewers to be part of its 25-year environmental agenda." (Remedial Measures Report, p. 4-22.)

- "The thing I like about separation is the elimination of the permits and reductions in O&M costs." (EPD Official, May 23, 2001.)

Other Organizations and Officials That Support Full Sewer Separation With Stormwater Greenways

Sierra Club, Atlanta Group

Board of Commissioners, Rockdale County
Several Georgia Legislators
Fulton County Citizens Commission on the Environment

South River Watershed Alliance, Inc.
West Atlanta Watershed Alliance
Peachtree/Nancy Creeks Technical Advisory Council
PW3 (Peachtree Woodall Whetstone Watershed Alliance)

CSO Citizens Advisory Group, City of Atlanta
Grant Park Neighborhood Association
Inman Park Neighborhood Association
SAND (South Atlantans for Neighborhood Development, Inc.)

Intrenchment Creek Coalition
Safely Treating Our Pollution
Save Atlanta's Fragile Environment
Southern Organizing Committee
Southwest Community Roundtable
Upstream Clear Creek Safe Water Action

Congressman John Lewis Joins Call to Improve Atlanta's Park System

July 2, 2002 at Utoy Creek Basin Area In Southwest Atlanta

During a press conference at Beecher Hills Elementary School in Southwest Atlanta, Congressman John Lewis joined community residents and members of Park Pride, the Conservation Research Institute, Georgia Conservation Voters, the Georgia Recreation and Parks Association, the Grant Park Conservancy, the Olmstead Linear Parks Alliance, the Piedmont Park Conservancy, Trees Atlanta, the West Atlanta Watershed Alliance, SPACE, and the Trust for Public Land to sign the Park Atlanta Rescue Campaign's Nine Point Plan and announce his support for a unified group of local park, environmental and neighborhood associations, **Parks Atlanta Rescue Coalition 9-1-1 (PARC 911).**

In his remarks to those gathered, Congressman Lewis said, "It's time for Atlanta's leadership to make parks a priority. Parks benefit everyone regardless of race or age. They hold a community together. They give our children a place to play, and animals a place to live. I am honored to be the first person to officially lend my voice to an effort that can improve the quality of life for all Atlanta residents."

Congressman Lewis went on to say, "Now is the time to save what greenspace we have left. Now is the time to rescue the City of Trees, to save our home. This is why I am endorsing PARC's nine-point plan. Because I want parks. Because I want greenspace to be part of my home." Adding, " This year, in Congress, I am seeking funding to add an additional eighty to one hundred acres of parkland to Atlanta. I am hopeful that my efforts will be successful. But there is only so much I can do. I am just one of Atlanta's many business, political and civic leaders."

According to the Biological Monitoring Results for Utoy Creek Wastershed Assessment Final Report in March 2000, (CH2H Hill): "after the separation of the combined sewer system in Utoy Creek, the number of native fish species increased from 2 to 12…the number of fish caught per hour increased from 2 to 193…the macroinvertebrate community also showed improvement. These improvements are likely because of water quality conditions and a more natural hydrologic regime resulting from separation of the combined sewers."

Complete separation of the 2,177-acre Utoy Creek Basin cost $45 million or $20,700 per acre.
For more information on the Utoy Creek Basin, please phone (404)-699-5639