Toward Better Water Resource Management

In the Jefferson-Chalmers Community

Toward Better Water Resource Management

06.21.21

• Encourage Innovation and Collaboration •
• Challenge Conventional Policies •
• Engagement Community •

in order to

In the Jefferson-Chalmers Community

Note

Toward Better Water Resource Management in the Jefferson-Chalmers Community is the brain trust of the author. It has been reviewed and vetted by numerous Detroit stakeholders and national experts from a variety of sectors including design, construction, planning, engineering, community and economic development, politics, real estate, public agency management and the environment. Several current and former residents of the Jefferson-Chalmers community also reviewed the White Paper before it was distributed in its final form.

Acknowledgements

While I was primarily responsible for the content of this document, family, friends, neighbors in Brooklyn and Detroit, colleagues new and old in Detroit and around the country – provided technical advice, editing and graphic design skills, printing and photography services, financial support, sage wisdom and so much more.

Introductions were made to new acquaintances in every sector and they quickly became supportive. They contributed in many ways which demonstrates to me the issues discussed here are not just popular, but important.

For more than 30 years, I have had the fortunate opportunity to be engaged in important work in the public spaces we all occupy. From affordable housing to infrastructure to saving historic structures, and a program that connects children of incarcerated parents to the landmarks in their community. This work and my success is based entirely on the supportive community of souls that I am fortunate to have in my sphere.

Adding all the names of those that have mentored, cajoled, supported, tolerated and challenged to do and be better – over the years and in the last few months – would this make document longer than it already is and I dare not test your patience. They know who they are.

When struggling to find the words or a gift that might express the appreciation for the actions of one of those supporters in the past, he said, “Just simply say, ‘thank you’. Acknowledgement is really quite enough.”

To me their contributions seem to be worthy or more, but I will heed his advice.

Thank You – one and all!!

The Freighter's Horn

In the dark of a warm weather evening, when the kids are quiet, the devices are off and the windows are open, you'll hear it – the long, deep, base moan of a freighter's horn, marking its departure from or entry into the straights – the French called it ***le détroit.***

From the moment it fills your ears and rattles your bones, you'll remain completely still as you wait for the next verse in a chorus that confirms where you are fortunate to sit – less than a mile away from the mighty Great Lakes and the Detroit River that connects them.

Throughout the Jefferson-Chalmers community, water is undoubtedly part of life. It is from water its life began. Beyond the freighter's moan, if you listen close enough, you'll hear early 20th Century engineers pull land from a swamp.

Two centuries prior, the many footsteps of French troops rumbled through, chasing and massacring the Fox Indians, like many Native Peoples' story, untold yet evidenced only by a Creek that bears their name. Civil War era quiet includes the whispers of slaves in their last steps to freedom paddling through the narrowest crossing to Canada.

As swamp became land, children's laughter filled the air from swimming and fishing and chasing creatures in soggy spaces, not far from where they lay their head surrounded by a nicely trimmed lawn. During Prohibition, the Feds chased the Purple Gang and other rumrunners into the speakeasies that dotted the landscape.

Today, the water's clap-clap-clap splashes against a boat, seawall or piece of shore where you might be lucky enough to put your feet in. Canoe and kayak paddles slap the water, powering visitors who feed on rich history and later dine on rich culinary treats. While the breeze blows past your ears and through your hair, the quiet could be punctuated by the z-z-z-z-z of reel being cast, in hopes of a tall tale catch or just something big enough to fill the dinner plate.

The freighter's horn testifies to all within range, the water's magnetic pull, amazing calm and unquestionable power. In recent years, the power of the largest system of fresh surface water in the world has elbowed its way into the yards, streets and basements of a community fortunate to hear the freighter's call.

And now, that sound is a call to arms. It demands a modern-day army of scientists, engineers, bureaucrats, electeds, activists, business owners and residents be assembled to listen, not only to frequency of historic vibrations, but also to each other, as they find their cadence and march **Toward Better Water Resource Management** and the promise of a safe, healthy, resilient and robust **Jefferson-Chalmers Community.**

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EXECUTIVE SUMMARY

In 2019, agencies from every level of government, elected officials up and down the roster, community organizations and residents mobilized in an unprecedented collaboration seldom seen today as the power of the Great Lakes found its way into Fox Creek and adjacent canals. Waters spilled over the banks, filling streets and adjacent properties causing not only property damage, but fear, anxiety and panic for residents in the Jefferson-Chalmers community.

EVERY stakeholder – community resident and business, NGOs, elected officials and public agencies who were brought together to address Great Lakes flooding at essential participants at this very important table – must sustain their commitment to successfully address the INTERCONNECTED water resource management challenges in the community by achieving three primary objectives.

KEEP

FIGURE 1: RAW SEWAGE IN FOX CREEK

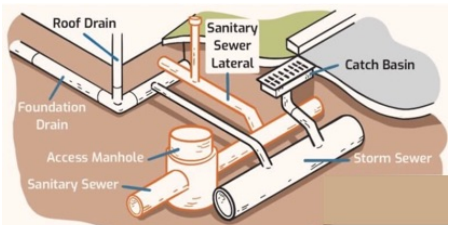

FIGURE 2: COMBINED SYSTEM DIAGRAM

FIGURE 3: GREAT LAKES FLOODING

Sewage out of Basements & Canals	Stormwater out of the System	Great Lakes out of the Neighborhood
In 1995, Grosse Pointe Park (GPP) sought to renew its legal right to dump raw sewage in Fox Creek under its National Pollution Discharge Elimination System (NPDES) Permit. Jefferson-Chalmers residents challenged the renewal and it was revised to require GPP implement a variety of infrastructure investments to end the discharges. The outfall was bulkheaded in 2000. Residents continue to see evidence of discharges, but the source is not known. Massive disinvestment in the area north of Jefferson over 50-60 years has resulted in an enormous amount of vacant land. Remains. This should have created a significant reduction in demand opportunity for managing stormwater in that area which includes the Conner Creek and Fox Creek Watersheds. Yet, heavy rains continue to cause combined sewer overflows and sewage back-ups throughout the neighborhood.	As the DWSD and GLWA undertake analysis of the area's hydrology and plan for capital improvements in the Jefferson-Chalmers community, it is essential that we learn lessons from the past and use best practices when horizontal assets are replaced. Because of community's low-lying topography, GLWA spends an enormous amount of money pumping the combined storm and sewage uphill into the Jefferson Interceptor. Separating storm and sanitary flows will reduce the costs to transport and treat millions of gallons of water a year. Developing stormwater capacity within the community will provide the opportunity to improve floodplain management, create additional amenities, and attract investment. At the same time, the proximity to the Detroit River allows for easy release of sustainably treated stormwater.	Great Lakes have receded for now and the Jefferson-Chalmers community escaped significant flooding in 2021. Most of the Great Lakes Basin saw historical high-water levels in the past 2-3 years as the past five years have been the wettest ever recorded in the Basin. The largest source of fresh surface water in the world will continue to experience dramatic swings in water levels due to climate change and predictions of more intense rainfall. While the immediate crisis may be over for now, interagency and intergovernmental collaboration and coordination will be required for diligent surveillance, long-term solutions and additional infrastructure investments will be necessary beyond the temporary protective measures.

Public agency support appears to have waned but renewed, continuous and intentional support remains critical to protect this historical and culturally relevant canal district in Detroit. Detroit's Nantucket or Little Venice of Michigan is a treasure worth saving. Creative solutions are available and with Federal investments for infrastructure at greater levels than ever – **NOW IS THE TIME TO ACT!**

Accomplishing the three identified objectives will require action. Each of the six recommendations listed below and contained in more detail in the section dedicated to them, have both short and long-term actions. More actions may become apparent after the work begins. Taken together, the recommendations are designed to address the intersectionality of challenges that are often treated separate, due in large part to the:

- siloed nature of large institutions;
- way programs are managed; and
- the focus of program funds.

These characteristics can be overcome. They do not have to and they must not, stand in the way of progress. In order to demonstrate what is possible and look beyond this notion, the recommendations seek to exploit the enormous creative expertise within the public agencies by challenging conventional wisdom, inspiring them to identify dynamic solutions that will address the **INTERCONNECTED** water resource management challenges in the Jefferson-Chalmers community. They include:

A. Use Fox Creek Gates and Other Assets to Mitigate Flooding and End Sewage Discharges
B. Review Flood Insurance Rate Maps and Take Actions to Reduce Insurance Costs;
C. Extensively Examine the Hydrology of Conner Creek and Fox Creek Watersheds;
D. Modify and Increase Floodplain and Stormwater Capacity with Innovation;
E. Research Alter Road Flood Prevention Project, Revisit New Floodplains Standards and Acquire Fox Creek's Western Edge; and
F. Leverage Every Possible Federal Resource Available to Implement Eligible Projects and Pursue Philanthropy

Beyond the bounds of the Jefferson-Chalmers community, a Detroit Watershed Plan should be created in order to address stormwater runoff at a macro-level. The success of the Rouge River Wet Weather Demonstration Project can be linked to the first watershed plan, developed in 1975,

The Jefferson-Chalmers community's future could continue to languish if stakeholders ignore the "elephant in the room." It is acknowledged that the scope of the six (A-F, as above) recommended actions contained in this report might appear overwhelming and these challenges could result in institutional gridlock and paralysis. But Bishop Tutu's *"one a bite at a time"* advice can guide the collaborative efforts to identify small, manageable efforts that will provide stepwise, early victories, demonstrating success and providing momentum for future action.

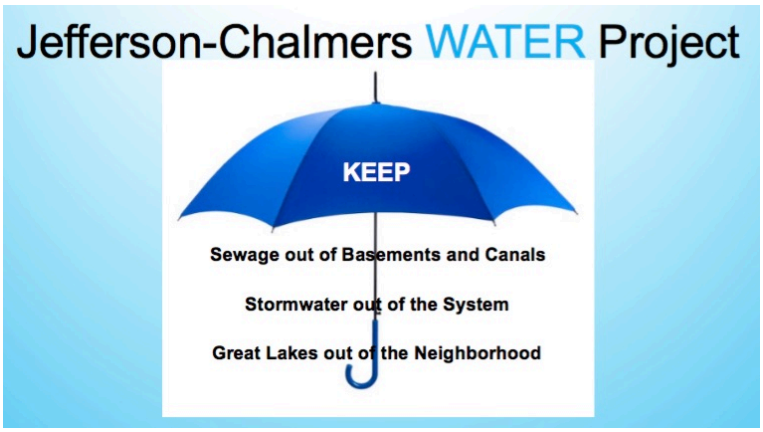

Figure 4: Jefferson-Chalmers WATER Project Objectives

Finally, this White Paper proposes the creation of the **Jefferson-Chalmers Water Assets Technology, Education and Recreation (WATER) Project** – a conceptual umbrella under which residents, businesses, NGOs, elected officials and public agencies can collaborate to find solutions for the community. Roles and responsibilities of all those represented have yet to be determined and the only thing that is certain – this work must continue!

Purpose

This White Paper is penned to offer technical details and historical background that will provide a baseline of information and a common language for residents, NGOs, elected officials and public agencies. Additionally, it is intended to empower residents and challenge public agencies to maintain their collaborative efforts asking those involved to look outside the limitations of their programs, budgets and funding.

Initial efforts might be a little clumsy and disorganized as those involved find their rhythm. However, it is imperative silos be replaced with a strong, interconnected structure of engagement that will lead to success. The city's interagency collaboration is already in place and stands as an example.

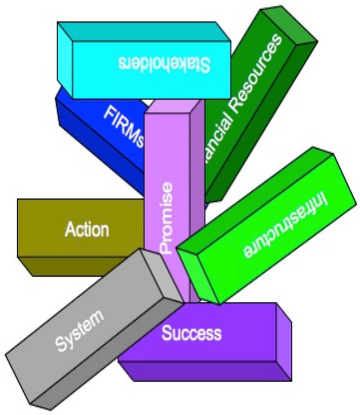

Figure 5: Unorganized Stakeholders, Narrow & Detrimental Project Impact, Failure to Secure Funds

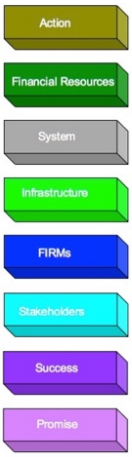

Figure 6: Siloed Stakeholders, Uncreative Actions, Limited Financial Resources

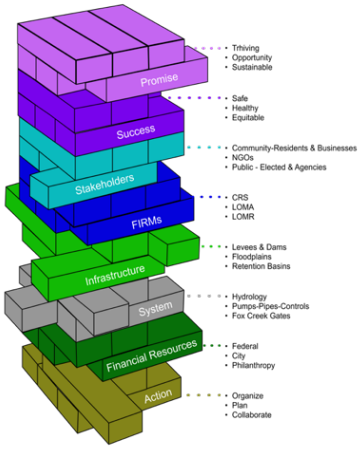

Figure 7: INTERCONNECTED Water Resource Management

Demonstrating the need for Better Water Resource Management

Great Lakes flooding has highlighted and punctuated the community's problems, yet, it is only one of the many **INTERCONNECTED** challenges facing the Jefferson-Chalmers community and its water resources. Like the neighborhood's fractured urban fabric (that includes highly individualized real estate projects), many residents and stakeholders hope to challenge the engaged group of public agencies to expand their vision in a sustained collaboration to collectively and comprehensively address the water resources challenges confronting the Jefferson-Chalmers community. Consider the following.

- Raw Sewage Discharges Continue in Fox Creek
- Management of Individual Great Lakes Water Authority (GLWA) and City of Detroit Water and Sewerage Department (DWSD) Assets is Confusing
- Alter Road Levee National Environmental Protection Act (NEPA) does not Appear to have been Administered Correctly
- Victoria Park's Floodplain Only Benefits Its 157 Homes
- Implementation of Fox Creek's Western Seawall is a Burden to Property Owners
- New Flood Insurance Rate Maps (FIRMs) will Continue to Negative Impact Investment
- Sewage Back-Ups in Area Basements Plagues Homeowners, Negatively Impacting Homeowners' and the Community's Health
- Conner Creek Levee Protection is Limited
- Significant Fluctuations in Great Lakes Levels caused by Climate Change will Require Constant Diligence

The community was once a marsh and so, WATER has been at the center of the community's past and will play a critical part of its future, but if and only if, its water resources are more effectively managed. The Great Lakes flooding response provides the opportunity to strengthen and expand existing collaborative efforts to address these challenges.

If the draining of the Grand Marais is the bookend for the neighborhood's beginning, the community's current water challenges create an opportunity to leverage these unique Jefferson-Chalmers assets for a bright future.

Examining the road – or water – ahead will require honesty regarding large organizations. Whether they be private corporations or public agencies, they all face the challenge of being siloed. In order for public agencies to sustain support and funding it is essential they stay focused on their primary mission and purpose. They must be held accountable for meeting benchmarks and must achieve specific objectives. This often prevents professionals within public agencies from looking beyond the limits of their program or outside the walls of their agency. While some individuals attempt to look beyond the confines of programs, transparency about these limitations is essential. Cross program and cross agency collaboration will not only be encouraged, it will be absolutely necessary.

Conclusion

Given the enormous impact of the Jefferson-Chalmers', one might expect it to be an important place and worthy of the attention of a long list of stakeholders. Yet, the opposite is true. This community, with an outstanding history and unmatched collection of very unique assets, struggles to secure the human and financial resources necessary for it to realize its promise. Bu,t a new tomorrow and a rejuvenated vision is an exciting possibility. From its beginnings, water has, can and will play a significant role in the community's future, ONLY IF the **INTERCONNECTED** water resource challenges are resolved and more effectively managed.

Taking the First Steps – Many of the recommendations contained in this White Paper will require several years to be realized. A common, shared vision, shared goals, patience and vigilance must rule the day. Jefferson-Chalmers future cannot be stalled by inaction or largesse. Nor should it buckle under the weight of what seems like an insurmountable set of challenges, fraught with real or perceived obstacles. Instead, stakeholders' collaborative efforts will identify small, doable and manageable projects that could provide for easy wins, demonstrating success and propelling the work forward.

Detailed more in Tables 1, the first efforts undertaken by the Jefferson-Chalmers WATER Project should include:

- **Re-establish Operation of the Fox Creek Gates** - to lower the water level and improve water quality, readying the GLWA to partner with its Local and Federal partners to mitigate flooding. Identify the source of sewage discharges.
- **Revisit the Final Design of the Lenox Center and Alfred Brush Ford Park** – and consider reducing the proposed hard surfaces and determine if the EPA funds might be reprogrammed to support a new canal instead of the proposed upland excavation at the Detroit River's edge.
- **Commit to Sustaining the Collaborative** – ensuring logistics and management of initial organizing efforts.
- **Consider Long-term Organizational Framework** – and support thoughtful deliberation of alternatives.
- **Venture to Examine Public Sector Agency Programs** – while seeking opportunities to identify resources that support any of the recommended actions and any others that may be identified.
- **Establish Creative Problem-solving as the High-Water Mark** – and identify how projects might fit within program limits and challenge conventional policies to allow for easy underwriting.

TABLE 1: RECOMMENDED SHORT-TERM ACTIONS

Recommendations	Short-Term Action	Stakeholder	Time Frame
A. Use Fox Creek Gates and Other Assets to Mitigate Flooding and End Sewage Discharges	Calculation Capacity of Fox Creek and Other Horizontal Assets	Great Lakes Water Authority (GLWA) and Detroit Water and Sewerage Department (DWSD)	Summer 2021
	Investigate Source of Sewage Discharges	GLWA, DWSD and Michigan Department of Environment, Great Lakes and Energy (EGLE)	Summer 2021
B. Review Flood Insurance Rate Maps and Take Actions to Reduce Insurance Costs	Continue Outreach and Education	City of Detroit	Summer 2021 and On-going
	Survey Flood Insurance Costs via NextDoor; Begin Community Engagement Efforts	NGO	Summer 2021
	Develop Scope of Services for Civil Engineering Firm	NGO and City of Detroit (possibly Detroit Building Authority	Summer 2021
	Identify, Pursue and Secure Philanthropy	NGO	Summer/Fall2021
C. Extensively Examine the Hydrology of Conner Creek and Fox Creek Watersheds	Identify Sewage Back-ups through Community Engagement	GLWA and DWSD	Summer 2021
	Examine Stormwater Capacity and Analyze System Controls (see A, above)	GLWA and DWSD	Summer/Fall 2021
D. Modify and Increase Floodplain and Stormwater Capacity with Innovation	Consider Modifications to Proposed Alfred Brush Ford Park	City of Detroit	Summer 2021
	Determine if EPA Funds can be used for New Canal	City of Detroit	Summer 2021
	Survey Vacant Land and Identify Opportunities for Upland Excavations and/or Retention Basins	City of Detroit	Fall 2021 and into 2022
	Conduct Percolation Tests	Academic Institution (i.e. Wayne State University)	Fall 2021 and into 2022
E. Research Alter Road Flood Prevention Project, Revisit New Floodplains Standards and Acquire Fox Creek's Western Edge	Survey and Confirm Portion of Property Currently Not Protected	City of Detroit, NGO and Community Residents, Property Owners	Summer 2021
	Request and Review USACE NEPA and Related Decisions	City of Detroit and Community Residents, Property Owners	Fall 2021 and into 2022
	Community Engagement Regarding Land Acquisition	NGO and City of Detroit, Community Residents, Property Owners	Fall 2021 and into 2022
	Pursue HMGP Funds	City of Detroit	Fall 2021
F. Leverage Every Possible Federal Resource Available to Implement Eligible Projects and Pursue Philanthropy	Dedicated Recovery Funds for Jefferson-Chalmers Projects	City of Detroit	Summer 2021
	Dedicate American Jobs Plan funds for Jefferson-Chalmers Projects	City of Detroit	Summer 2021
	Pursue HMGP Funds	City of Detroit	Fall 2021
	Identify and Pursue Philanthropy	NGO	Summer 2021 and On-Going
	Identify Program Funds for Jefferson-Chalmers Projects	City of Detroit, Wayne County, State of Michigan, Federal Agencies	Summer 2021 and On-Going

Table 2: Recommended Long-Term Actions

Recommendation	Long-Term Action	Stakeholder	Time Frame
A. Use Fox Creek Gates and Other Assets to Mitigate Flooding and End Sewage Discharges	Memorandum of Agreement to Mitigate Great Lakes Flooding Negotiated and Signed	DWSD, GLWA, City and State Safety and Emergency Management Agencies, US Army Corp of Engineers, National Weather Service	Negotiate: September 2021 through February 2022 Signed: March 2022
B. Review Flood Insurance Rate Maps and Take Actions to Reduce Insurance Costs	Provide Elevation Certificates	NGO and Community Residents, Property Owners	Fall 2021/2022 and On-going
	Pursue Letter of Map Amendment	NGO and Community Residents, Property Owners	2022
	Additional Actions to Improve CRS	City of Detroit, NGO and Community Residents, Property Owners	2022-2023
	Infrastructure Investments to Shift Floodplain and Improve CRS	City of Detroit	2022-2024
	Pursue Letter of Map Revision	City of Detroit	2023-2024
C. Extensively Examine the Hydrology of Conner Creek and Fox Creek Watersheds	Continue Community Engagement, Stormwater Analysis, Adjust Controls and Plan Capital Improvements	GLWA and DWSD	Summer 2022
D. Modify and Increase Floodplain and Stormwater Capacity with Innovation	Site Selection	City of Detroit	Summer 2022
	Negotiate and Execute Public-Private Partnerships	City of Detroit and Property Owners	2023 and On-going
	Build New Marina and Retention Basins	City of Detroit and Property Owners	2024
E. Research Alter Road Flood Prevention Project, Revisit New Floodplains Standards and Acquire Fox Creek's Western Edge	Acquire Fox Creek Western Edge and Bid Seawall Construction	City of Detroit	Summer 2023
	Begin Construction on Western Seawall	City of Detroit and NGO	Fall 2023
F. Leverage Every Possible Federal Resource Available to Implement Eligible Projects and Pursue Philanthropy	Identify Program Funds for Jefferson-Chalmers Projects	City of Detroit, Wayne County, State of Michigan, Federal Agencies	Summer 2021 and On-Going

Collaboration and innovation must be not only encouraged, but will be required. This philosophical approach must serve as the cornerstone necessary to overcome identified challenges. Seizing this opportunity will require a mobilized, well-informed community and interagency cooperation at every level, City, County, State and Federal. Creativity not seen before and certainly not common – but expected from a city like Detroit, recently named United Nations Educational, Scientific and Cultural Organization (UNESCO) City of Design – must be applied to every program, funding source and project. Everyone inside government stakeholder agencies, elected officials, NGOs and the community must engage in creative problem solving and coloring outside the lines.

Figure 8: Great Lakes Flooding

In 2019, the high Great Lake water levels and wind-driven flooding has caused significant community engagement and an unprecedented rallying of diverse collection of public agencies. It has allowed for enormous attention from elected officials from every level of government as well as interested NGOs. These efforts are genuinely appreciated. As the current flood threat diminishes, the impact of climate change on the Great Lakes Basin means that sustained current efforts will be needed to address future uncertainty.

Even though flooding has been front and center, it has created an opportunity for unique cooperation and collaboration.

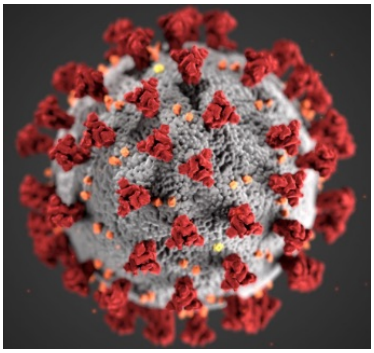

Figure 9: COVID-19

2020 brought the world a new disease turned pandemic. COVID-19, combined with the century's old infectious disease of structural, institutional racism has caused creativity and collaboration in ways never thought possible. While also born of necessity for sheer survival, the threat to our world and reconciling a history of not only bad, but abhorrent acts has brought forth the opportunity for new voices not heard, different perspectives and creative solutions previously not considered.

Communities are having deliberate conversations about how their neighborhoods can be safe, without exclusive reliance on law enforcement, and financial resources are being reviewed to determine the best ways to create safety. The City's COVID response has been remarkable and noteworthy, serving as an example of what can be done to address a crisis.

Figure 10: BLACK LIVES MATTER!!!

This new way of collaborating, ensuring greater diversity of voices are included, unconventional/non-traditional program administration is the new construct for public purpose decision-making and a new paradigm. If stakeholders addressing the **INTERCONNETED** water resources are going to find success, they must use the same approach.

Continuing the collaborative might follow the encouraging words of Liesl Eichler Clark, Director of the Michigan Department of Environment, Great Lakes, and Energy from the Department's *State of the Great Lakes 2020* where she states, "*We made significant strides this past year, now we need to keep the momentum going.*"

Jefferson-Chalmers has benefited from innumerable investments, while it has also fallen victim to many bad acts. The threat to the community that results from poor water resource management is real, as evidenced by the recent Great Lakes-caused floods. Creating a healthy, vibrant community will require revisiting past solutions, avoiding blame and ensuring accountability. New, innovative policies, strategies and investments will be necessary to move the community **Toward Better Water Resource Management** and a bright, culturally rich, economically viable and sustainable future. It is essential to continue the dynamic collaborative effort under the proposed **Jefferson-Chalmers Water Assets Technology, Education and Recreation (WATER) Project.**

It will honor the legacy of Bronson Gentry's civil disobedience!

It can be the powerful vehicle that moves the community forward

--like Gar Wood's boats-- **--Ford's 999 or--** **--Garland's Grumman seaplane!**

Creative Recommendations Toward Better Water Resource Management

Consistent with this White Paper's Purpose, six (6) interconnected creative recommendations are offered in the following pages. Each recommendation includes necessary background information, technical details and an explanation of technical terms to level the playing field for all involved and for all those who read this document. A rationale for each recommendation is also contained within the narrative. Finally, these recommendations will require significant community engagement and it demands public agency stakeholders look beyond the limits of their programs and walls of their agency.

A. **Use Fox Creek Gates and Other Assets to Mitigate Flooding and End Sewage Discharges**

B. **Review Flood Insurance Rate Maps and Take Actions to Reduce Insurance Costs**

C. **Extensively Examine the Hydrology of Conner Creek and Fox Creek Watersheds**

D. **Modify and Increase Floodplain and Stormwater Capacity with Innovation**

E. **Research Alter Road Flood Prevention Project, Revisit New Floodplains Standards and Acquire Fox Creek's Western Edge**

F. **Leverage Every Possible Federal Resource Available to Implement Eligible Projects and Pursue Philanthropy**

A) Use Fox Creek Gates and Other Assets to Mitigate Flooding and End Sewage Discharges

Before many older, urban cities were established, every kind of natural creek, canal and river were open and had natural watershed that fed them during rains and following the winter thaw. As the population of cities grew, raw sewage spilled out of homes and business onto the newly established streets, create unsanitary and unsafe conditions for the cites' new and existing residents.

Growing metropolises, especially those in the north that experienced significant urban growth during or shortly after the Industrial Revolution (1870-1920) covered the bodies of water. The culverted waterways were designed to collect sewage as well as rain run-off (referred to as stormwater) from those very streets into a single, combined sewer.

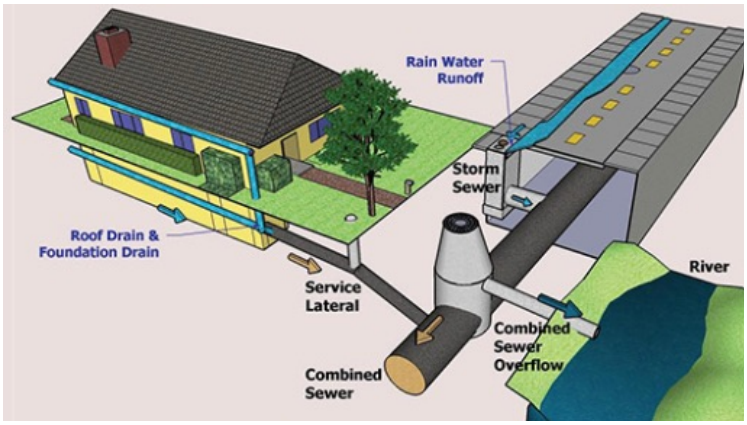

Figure 11: Combined Sewer System

Some cities developed treatment facilities others simply allowed the polluted water to make its way to larger bodies of water During a typical day, as people drain their tubs and sinks and flush their toilets, the polluted water runs through a systems' pipes for treatment before being released into a public body of water. Wet Weather Events are defined as rain, but can also be other precipitation, including snow. When the capacity of the pipes is exceeded municipalities dump Combined Sewage Overflows (CSO) into public bodies of water.

The Federal Water Pollution Control Act of 1948 was the first major US law to address water pollution. The creation of the Environmental Protection Agency (EPA) and the 1972 Clean Water Act established the regulatory framework for discharging pollutants into public waters via a National Pollution Discharge Elimination System (NPDES) Permit. EPA delegates its authority for the issuing of NPDES Permits to the Department of Environment, Great Lakes & Energy (EGLE) (formerly Department of Environmental Quality [DEQ]).

Figure 12: Raw Sewage in Fox Creek Evidence of a Discharge

In 1995, Grosse Pointe Park (GPP) sought to renew its legal right to dump raw sewage in Fox Creek. GPP's permit allowed them to discharge their Combined Sewage Overflows (CSOs) after they had exceeded the volume of untreated water, they were allowed to pump into the Jefferson Avenue Interceptor under contract with the Detroit Water & Sewerage Department (DWSD). The Interceptor runs under Jefferson and collects combined sewage all the way to the Detroit Sewage Treatment Plant, located at 9300 West Jefferson in southwest Detroit. A renewed NPDES permit would have allowed GPP to discharge the CSO into Fox Creek for five (5) more years, under the same terms and conditions that had been in-place since the 1920s.

After seven decades, the Jefferson-Chalmers community mobilized and organized direct action through non-violent civil disobedience. Residents peacefully protested by picketing in front of the Grosse Pointe Park Municipal Building and quietly attended the GPP City Council Meeting that evening with picket signs. Community leaders became technical experts, demanded public hearings from the DEQ and prepared sophisticated testimony presented at hearings with State and multiple City agencies. In addition, the Jefferson-Chalmers residents legally challenged DEQ's proposed action.

These collective actions combined with a class-action law suit of Detroit residents, impacted by the raw sewage discharges, resulted in significant changes to the Permit. Ultimately, the Permit required GPP to implement a variety of infrastructure investments, including ending discharges and bulkheading of the outfall opening, which occurred in 2000.

Often referred to as infrastructure, an asset is a piece of or collection of components which are managed by public agencies. An asset can be roads, bridges and the elements of a water system, including, pipes, pumps and the control panels technical staff use to manage their function.

Figure 13: T-Shirt Worn by Jefferson-Chalmers' Activists

Figure 14: Historic Fox Creek Gates Pump House

Figure 15: Current Pumps and Equipment

Following GPP discharges, the Detroit Water and Sewerage Department (DWSD) would open the Fox Creek Gates at the head of the Creek on the northwest side of Ashland and East Jefferson. The open Gates would lower the water level of the Creek, drawing fresh water from the Detroit River into the Creek – flushing the waste into the Jefferson Avenue Interceptor. The creation of Great Lakes Water Authority (GLWA) has created some confusion over which agency has responsibility for different assets.

Table 3: GLWA and DWSD

GLWA Great Lakes Water Authority		City of Detroit Water & Sewerage Department
• Operates regional system for eight southeast Michigan counties • Bills member municipalities for services	**Roles & Responsibilities**	• Operates the city of Detroit's local water and wastewater systems • Bills residential and commercial accounts in Detroit
• Serves 3.8 million people in 112 communities	**Customers**	• More than 230,000 residential, commercial and industrial users in Detroit
• Operates and maintains facilities and infrastructure	**How it Works**	• Retains system ownership; responsible for residential lead line replacement

FIGURE 16: ORIGINAL PATH OF FOX CREEK

Fox Creek north of Jefferson was buried and culverted when the Village of Fairview was developed. A portion of Fairview annexed to Detroit and the remainder became Grosse Pointe Park. The absence of a natural watershed eliminated the Creek's former positive flow, causing the water to become stagnant. At the urging of community residents and in order to improve the Creek's water quality, DWSD would activate the Gates, even in the absence of a Wet Weather discharge by GPP.

The flushing of Fox Creek occurred once a week, especially in the summer, regardless of the weather. This activity ceased in 2017.

While westerly winds are pushing water from Buffalo to Toledo, the first opportunity for stakeholders to collaborate exists when the same mechanics used that lower the Creek's water level to flush sewage and improve the water quality should be used to mitigate the wind propelled surge. Through a network of 122 weather forecast offices in six regions the National Weather Service (NWS) collects data, provides forecasts and issues warnings. The local office is located in White Lake and is part of the Central Region.

TABLE 4: NATIONAL WEATHER SERVICE FLOOD ADVISORY SYSTEM (SYSTEM)

Flood Advisory	Flood Watch	Flash Flood Warning	Flood Warning
• specific weather event that may become a nuisance • flooding is not expected to be bad enough to issue a weather or warning • caution should be exercised to avoid threats to life and property	• conditions are favorable for hazardous weather event • conditions are favorable for flooding, but may not occur	*A flash flood is a sudden violent flood that can occur quickly or over hours.* • flash flood is imminent or occurring • people in flood prone area should move immediately to high ground. • risk for flash flooding may occur without rain close-by	• hazardous weather event is imminent or already happening • flooding is imminent or occurring

With the exception of Wet Weather Events that might otherwise fill the Interceptor and other horizontal assets in the general area, various Federal, State and City agencies could demonstrate their ability to collaborate **WHEN**:

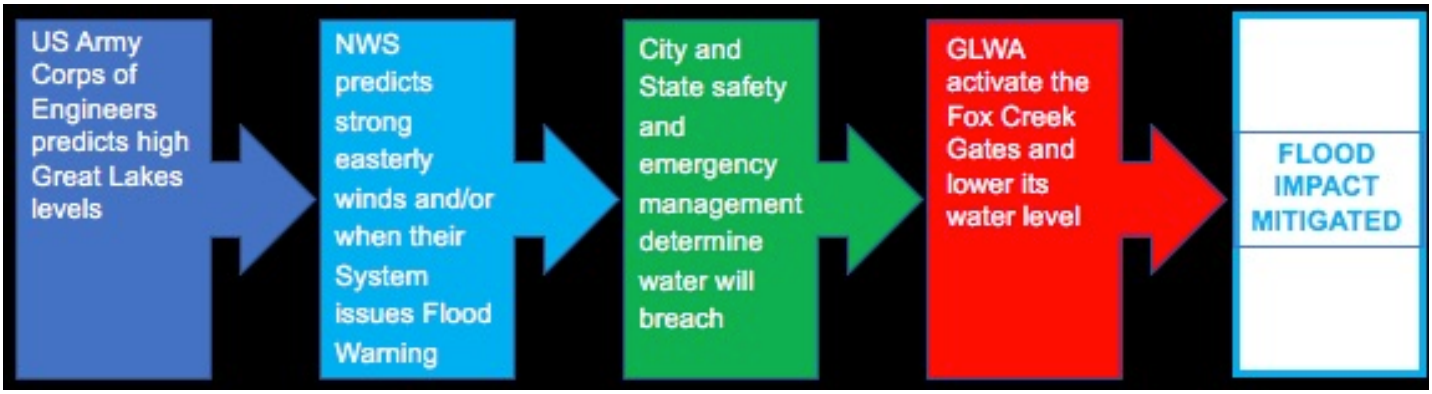

FIGURE 17: COLLABORATIVE FLOOD MITIGATION STRATEGY

Prior to potential flooding, GLWA could calculate the maximum amount of volume that can be drafted from Fox Creek filling the Interceptor and potentially "backfilling" into extremely large pipes within the Conner Creek Basin that are currently feeding the Conner Creek Plant. The two 24' x 18' pipes under Detroit City Airport demonstrate the capacity of assets that might aid in flood mitigation. And, more importantly, the costs for managing and treating the water will be the same – whether it spills over the Creek's banks and into catch basins or is drawn into the system by the Gates.

Even though GPP terminated discharging raw sewage, there is evidence that discharges continue, as demonstrated by photos in *Appendix C*. After re-establishing the flushing of the Creek for water quality and staging for flood mitigation, the GLWA, in cooperation with State and Local regulators need to identify the source of discharges. This second collaborative opportunity would seek to ensure the responsible party is brought into compliance with necessary NPDES regulations, including the legally required Public Notice when discharges occur.

Finally, the National Oceanic and Atmospheric Administration (NOAA) has cataloged more than a century of hydraulic and hydrological data on the Great Lakes collected Observed Water Level Monitors like NOAA's Windmill Point Monitor Station. Evaporation and precipitation (snow, rain, hail, and wintry mixes) dictate water levels and the past five years have been the wettest ever recorded in the Great Lakes Basin with 27 more inches of rain above average that fell in the same five-year period of time previously. While the Great Lakes have receded and the Jefferson-Chalmers community escaped significant flooding in 2021, the Basin will continue to experience dramatic swings in water levels due to climate change.

Diligent surveillance and additional infrastructure investment will be required as will interagency and intergovernmental collaboration

Figure 18: Location of NOAA Windmill Pointe, MI Monitoring Station – 9044049

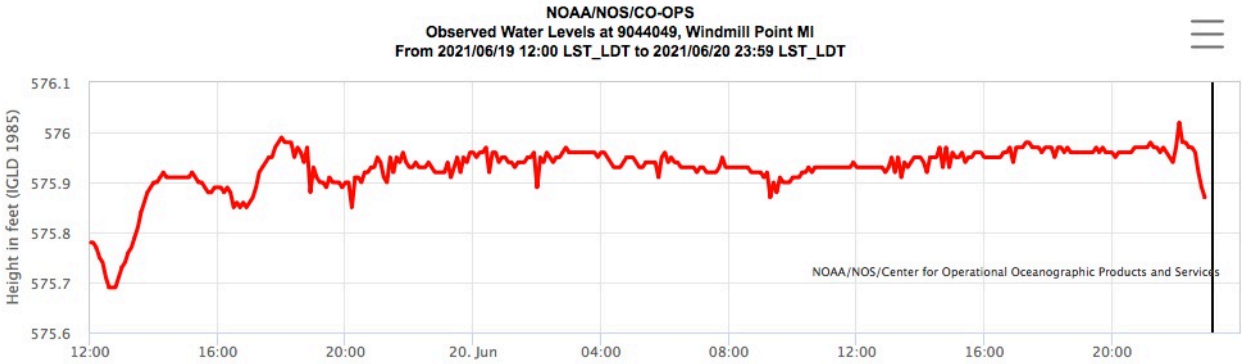

Figure 19: NOAA Windmill Pointe Monitoring Station Data

Table 5: Short and Long-Term Actions for Recommendation A

Short-Term Action	Stakeholder	Time Frame
Calculation Capacity of Fox Creek and Other Horizontal Assets	Great Lakes Water Authority (GLWA) and Detroit Water and Sewerage Department (DWSD)	Summer 2021
Investigate Source of Sewage Discharges	GLWA, DWSD and Michigan Department of Environment, Great Lakes and Energy (EGLE)	Summer 2021
Long-Term Action		
Memorandum of Agreement to Mitigate Great Lakes Flooding Negotiated and Signed	DWSD, GLWA, City and State Safety and Emergency Management Agencies, US Army Corp of Engineers, National Weather Service	Negotiate: September 2021 through February 2022 Signed: March 2022

B) EXAMINE IMPACT OF FLOOD INSURANCE RATE MAPS AND TAKE ACTIONS TO REDUCE INSURANCE COSTS

Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs) for the Jefferson-Chalmers community were published in 2012. updates will be effective October 21, 2021. FIRMs delineate areas subject to flood hazards, Base Flood Elevations (BFEs), and Flood Zones and they establish the risk associated with a 1% chance of flooding at or above the Base Flood Elevation (BFE) using, topography as the primary determinant. Zones are identified using a variety of alphanumeric codes. Freeboard is the dimension between BFE and building's lowest floor.

FEMA's Emergency Management Institute, Floodplain Management: Principles and Current Practices, Chapter 4: Flood Risk Assessment states: "a flood hazard is the potential for inundation that involves risk to life, health, property . . ." While a building's lowest floor may be the basement and damage to property may occur, the true risk to ***life and health*** really begins at the OCCUPIED FIRST FLOOR of a building – creating an inherent conflict in how risk is defined and therefore, how costs are determined. Under FEMA's new Risk Rating 2.0, insurance premiums will take advantage of cutting-edge technology incorporating private sector data, catastrophe models, and evolving actuarial science.

FIGURE 20: JEFFERSON-CHALMERS 2012 FIRMS

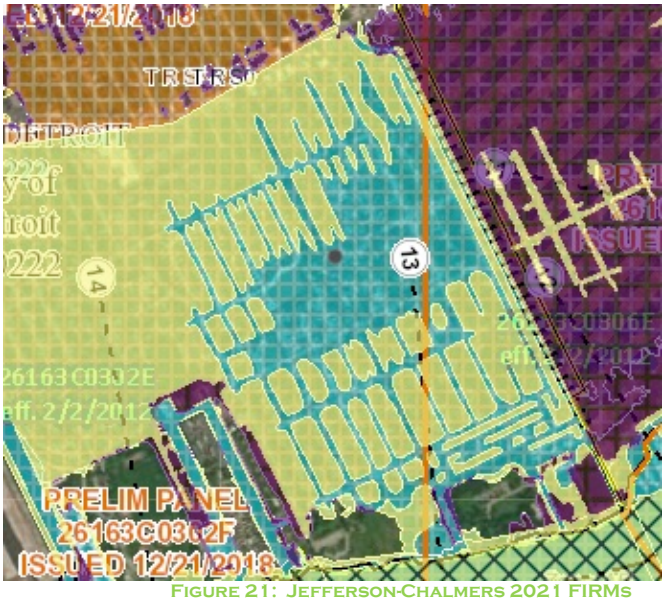

FIGURE 21: JEFFERSON-CHALMERS 2021 FIRMS

Homes and businesses in high-risk flood areas with mortgages from government-backed lenders are required to have flood insurance. In the absence of a mortgage, FIRMs only impact the cost of housing if the owner elects to purchase Flood Insurance beyond their boilerplate home owners' policy, many of which include riders for additional protection. Metro-Detroit's home sales market is robust. Fifty percent of residents in Jefferson-Chalmers are over 40 and 51% of homes are owner occupied. As residents age and sell their homes, those transactions will require a mortgage for the purchasers followed by mortgagee's requirement for flood insurance. Flood insurance costs will continue to detrimentally impact purchaser buying power as they nearly match mortgage (principal and interest) payments.

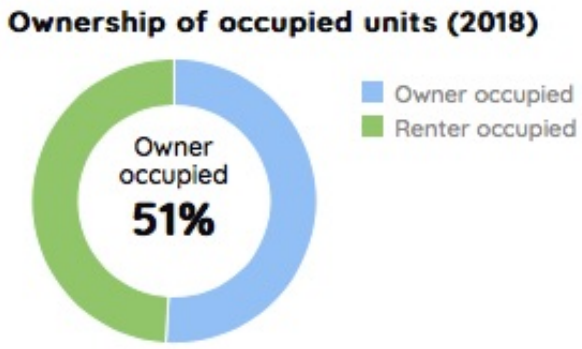

FIGURE 22: HOME OWNERSHIP IN JEFFERSON-CHALMERS
SOURCE: DATADRIVENDETROIT.ORG

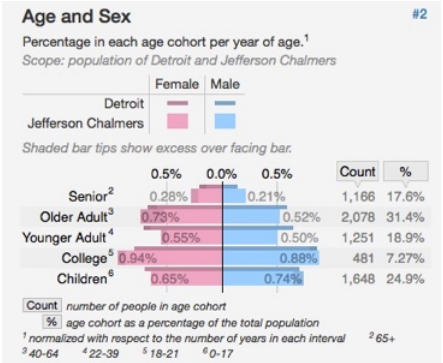

FIGURE 23: AGE AND GENDER IN JEFFERSON-CHALMERS
SOURCE: STATISTICALATLAS.COM

TABLE 6: PROPERTY VALUE AND FLOOD INSURANCE COSTS

		Annual Costs	Monthly Payment (P+I)(1)	Value
Percentage Below:	40%			$40,000
Percentage Above:	16%			$140,000
Average Sales (2):			$314	$70,000
Average Flood Insurance:		$3,000	$250	$55,700
Average Flood Insurance as Percent of Average Value:				80%
Average Current Listings (2):				$85,500
Percent More than Average Value:				22%

(1) Mortgage Principal and Interest; 30-year term, 3.5% interest rate
(2) Source: Multi-List Service, May 26, 2021 (18-month period)
(3) Historic core herein defined as areas east and south Victoria Park built between 1910 and 1930

The first wave and the overwhelming majority of homes in the historic core(2) of Jefferson-Chalmers were built before the Depression. Occupied First Floors sit high above the surrounding grade and occupy one-third or more of their parcels causing the grade to steeply fall away from the building edge to the curb. This locates the Occupied First Floor as much as 6-8' above the street and curb.

FIGURE 24: TYPICAL ARTS & CRAFTS BUNGALOW AND FOUR SQUARE WITH 5 STAIRS AT 7" TO 8" AN ADDITIONAL STAIR PORCH TO INTO HOME, PLACES THE FIRST FLOOR AT NEARLY 48" ABOVE GRADE

While scattered throughout, but mostly in the center of the community, immediately south of Victoria Park, homes designed and built following World War II have first floors 2-3' above the surrounding grade.

A B C D

FIGURE 25: PRE-DEPRESSION FOUR SQUARE (A) AND TUDOR (B) WITH TWO POST-WAR HOMES (C +D) IN JEFFERSON-CHALMERS

Streets are purposely designed to channel water from traffic at the center where a slight knoll (high ground) exists to the ditch-like/lower area along the curb to the catch basin. These components support surface water management during everyday Wet Weather Events but also play important role in floodplain management as demonstrated by the light blue areas on the FIRMs in Figures 20 and 21. The blue areas beyond the streets are part of the community's topographical swale (bathtub) which generally includes the blocks north and south of Essex between Philip and Drexel.

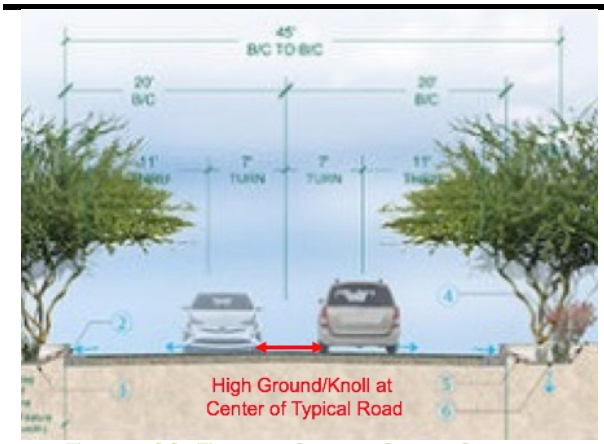

FIGURE 26: TYPICAL STREET CROSS SECTION

The impending changes in the FIRMs and insurance rates requires immediate action. There are actions residents, NGOs and the City can take to reduce insurance costs or property owners.

For example, an agile and effective NGO, working collaboratively with neighborhood residents, should secure philanthropy and engage a qualified Civil Engineering firm to:

a) conduct detailed analysis of neighborhood typography;
b) examine building typologies and develop prototypical models;
c) identify areas of the neighborhood where reduced flood risk will support a **Letter of Map Amendment (LOMA)**;
d) prepare **Elevation Certificates** for property owners;
e) and assist in preparation of a LOMA.


ELEVATION CERTIFICATE

FIGURE 27: ELEVATION CERTIFICATE - FEMA FORM 086-0-33 (12/19)

A LOMA from FEMA states: *that an existing structure or parcel of land – that is on naturally high ground and has **not** been elevated by fill – would not be inundated by the base flood.*

Residents can submit an **Elevation Certificate** to FEMA can be used to reduce their costs. The Elevation Certificate must be to be completed by a land surveyor, engineer, or architect who is authorized by law to certify elevation information. Community officials who are authorized by law or ordinance to provide floodplain management information may also complete the required forms. While they may cost as much as $2,000, the NGO's contract could also assist residents in securing **Elevation Certificates** for a nominal cost. Certified elevations must be included as part of a LOMA application. The opportunity to save money will provide for a relatively easy community engagement effort, especially, given the popular Nextdoor blog.

Additionally, the engineering firm might also identify other actions the City might undertake to gain Community Rating System (CRS) points from FEMA.

Managed by FEMA, the National Flood Insurance Program (NFIP) provides insurance through a network of approximately 60 insurance companies to help reduce the impact of floods. The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages floodplain management best practices and flood insurance premium rates are discounted to reflect the reduced flood risk resulting from efforts that address the three goals:

1. Reduce and avoid flood damage to insurable property;
2. Strengthen and support the insurance aspects of NFIP; and
3. Foster comprehensive floodplain management.

At over 600 pages, the CRS Manual is a complex set of rules, regulations, recommendations, process and scoring criteria in four primary categories:

- Public Information Activities (Section 300)
- Mapping and Regulations (Section 400)
- Flood Damage Reduction Activities (Section 500)
- Warning and Response (Section 600).

However, many of the activities are quite simple to execute and easy to achieve, some of which are already underway, including the outreach by the City of Detroit and the May 27, 2021, Floodplain Management Zoom Meeting. In addition, pursuing the proposed Elevation Certificates will add points as well open space preservation and drainage system maintenance. If the City currently cleans and maintains catch basins, they simply need to document those activities to gain additional points. Those activities could be supplemented in partnership with an NGO-sponsored, community-based, social media-supported program that employs neighborhood youth. A program of with this approach would have multiple benefits while also adding CRS points.

FIGURE 28: COMMUNITY RATING SYSTEM MANUAL

Even though more expensive efforts like levees and dams also add CRS points., the City might modify the topography of the park inside Victoria Park, creating a swale within the swale, increasing stormwater and floodplain capacity. Other strategic investments are also proposed later in part D.

Over a longer period of engagement, these collaborative efforts could lead to a Letter of Map Revision (LOMR) which is a FEMA-approved modification to an effective FIRM. LOMRs are generally based on the implementation of physical changes that affect the change and action of flood waters. The LOMR applicant must be the City.

Properties removed from the FIRM through an Elevation Certificate, LOMA or LOMR would no longer be required to purchase Flood Insurance, unlocking an enormous amount of investment potential.

Table 7: Short and Long-Term Actions for Recommendation B

Short-Term Action	**Stakeholder**	**Time Frame**
Continue Outreach and Education	City of Detroit	Summer 2021 and On-going
Survey Flood Insurance Costs via NextDoor; Begin Community Engagement Efforts	NGO	Summer 2021
Develop Scope of Services for Civil Engineering Firm	NGO and City of Detroit (possibly Detroit Building Authority	Summer 2021
Identify, Pursue and Secure Philanthropy	NGO	Summer/Fall2021
Long-Term Action		
Provide Elevation Certificates	NGO and Community Residents, Property Owners	Fall 2021/2022 and On-going
Pursue Letter of Map Amendment	NGO and Community Residents, Property Owners	2022
Additional Actions to Improve CRS	City of Detroit, NGO and Community Residents, Property Owners	2022-2023
Infrastructure Investments to Shift Floodplain and Improve CRS	City of Detroit	2022-2024
Pursue Letter of Map Revision	City of Detroit	2023-2024

C) Extensively Examine the Hydrology of Conner Creek and Fox Creek Basins

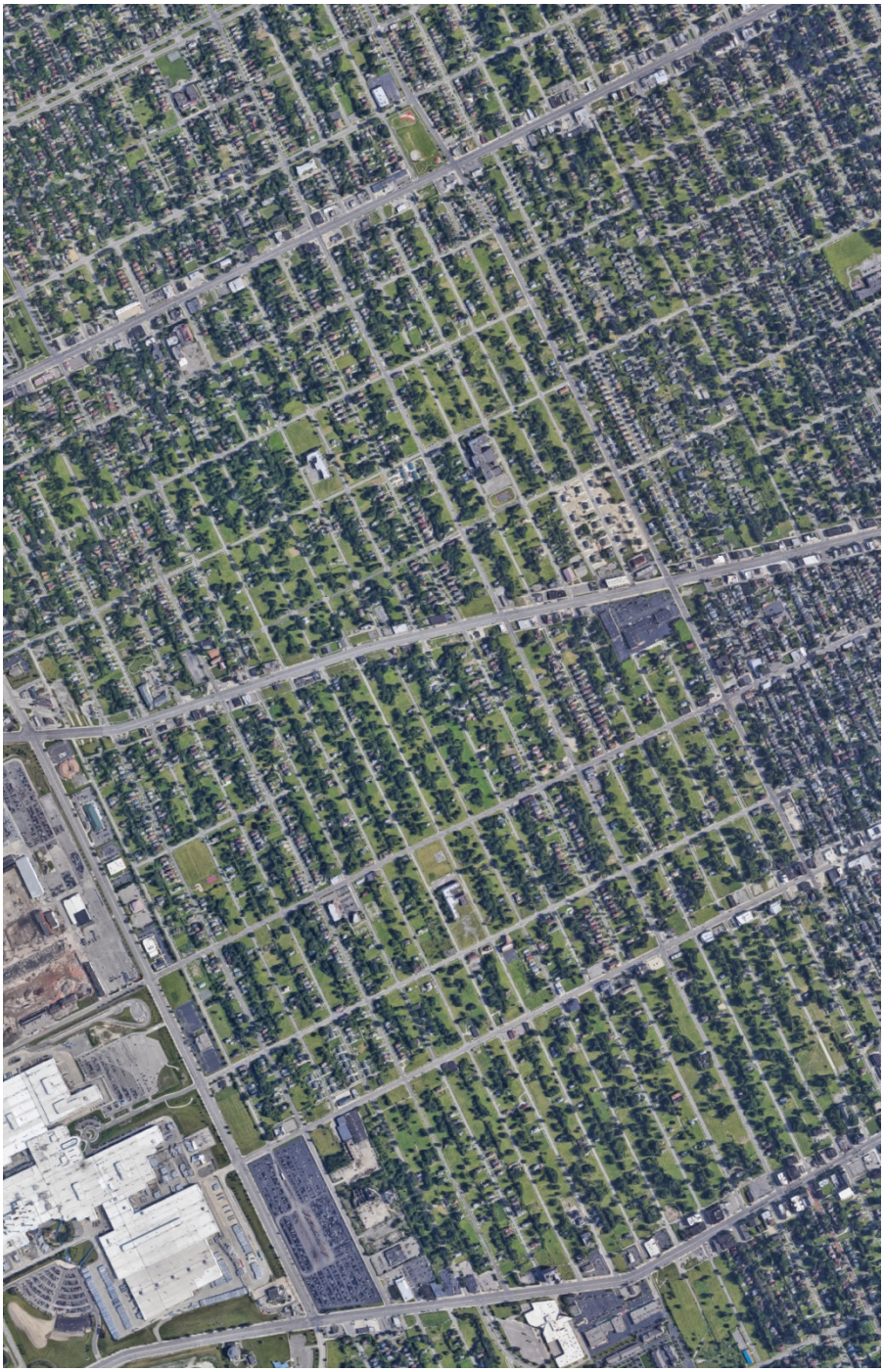

Figure 29: Aerial Photo of Neighborhood Disinvestment
Approx. E. Jefferson Ave. to E. Warren Ave., Conner Ave. to Alter Rd

Massive disinvestment in the area for more than five decades has resulted in the loss of thousands of roof tops, driveways, parking lots. An enormous amount of vacant, permeable land remains. This should have created a significant reduction in demand for managing stormwater in that area which include the Conner Creek and Fox Creek Watersheds.

Yet, heavy rains continue to cause sewage back-up in places throughout the neighborhoods seem inconsistent with what should be occurring hydrologically. Homes in the blocks north and south of Essex have been subjected to three or more feet of mixed stormwater and sewage in their basements during or after heavy rains. These properties are in the topographical swale (bathtub) as identified in both the Framework and FIRMs (Figures 30 and 20/21, respectively.

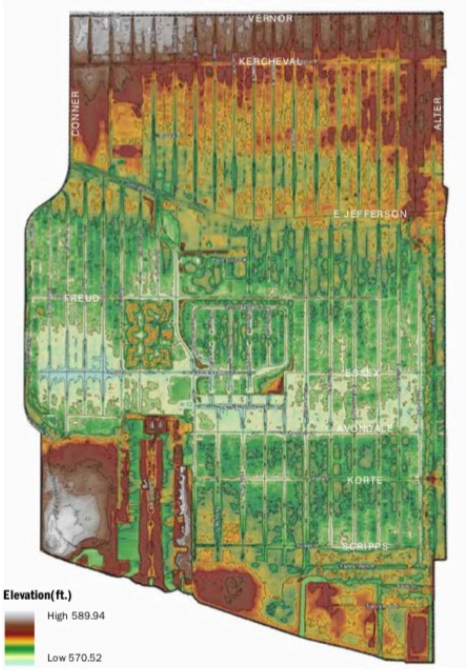

Figure 30: Neighborhood Topography
Source: Jefferson-Chalmers Framework Plan

At the same time, properties adjacent to Fox Creek also experience sewage back-ups although not as consistent nor as to same levels, even though they are immediately adjacent to Fox Creek.

Certified professionals and expert technicians are responsible for the day-to-day management of the high-tech GLWA's. assets. No matter how sophisticated the system nor how well it is managed, sewer inlets and all types of wastewater conveyances are very old and many factors can impact the flow of sewage.

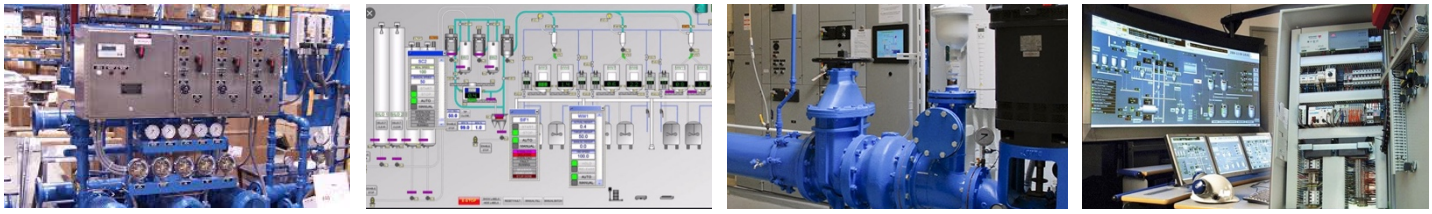

Figure 31: Assets: Pipe, pumps, Control Panels and Software used to Manage complex Water Systems

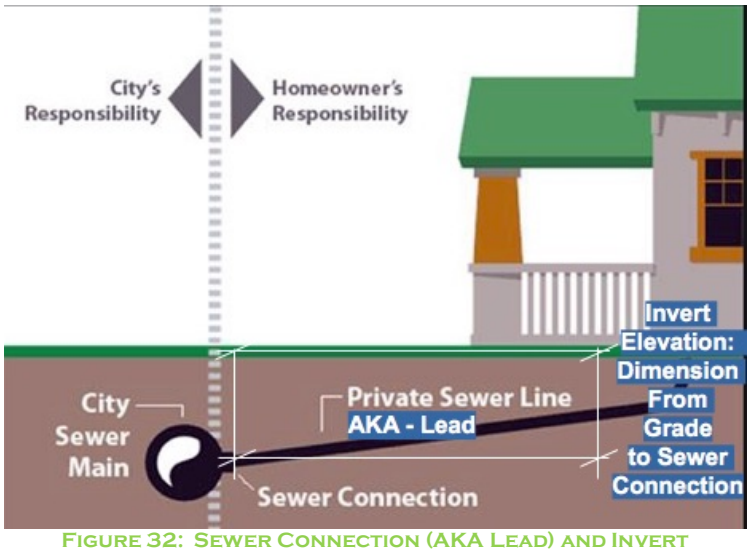

Figure 32: Sewer Connection (AKA Lead) and Invert Elevation Diagram

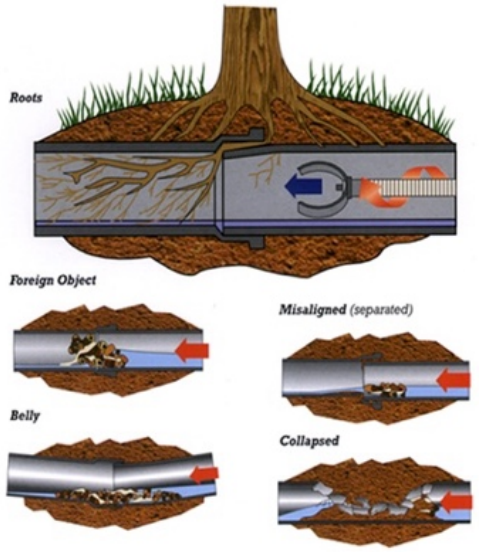

Figure 33: Why Sewer Main Flows may be Reduced

There are likely two primary causes of sewage back-up into sewer pipes and basements during heavy or extreme Wet Weather Events:

1. When the invert elevation of the connection (aka lead) for a property's sewer pipe into the sewer main, typically in the alley right-of-way, is low in relationship to adjacent properties.
2. When collapses in any one sewer main results in reduced flow capacity.

Taken together, distance between collapses, along with gaps in joints, cracks, and the like, can allow free exchange with groundwater in any one sewer main and the capacity between any of these breaches may also cause mains to fill during Wet Weather Events – which, in turn, causes back-ups into the connections and basements. Collectively, the number and location of collapses could be dramatically impacting the hydrology of the area.

Just west of the vacant residential neighborhoods, industrial development from East Warren Avenue to the Detroit River has created a significant amount of hard surface. Chrysler's new Jefferson North Assembly Plant (JNAP) launched the first production of the newly designed Jeep Grand Cherokee.

Figure 34: JNAP's Jeep Grand Cherokee

Home to the popular Jeep Grand Cherokee SUV, plant expansions continued over the next 14 years. Adjacent rail yards, an additional assembly facility, along with paint and engine plants grew to consume land and make it impervious. Support facilities, like the parking lots for Cassens at Conner and Jefferson, along with other industrial developments to the south exacerbate this condition, which continues to the south.

Figure 35: Northeast Guidance Center

Figure 36: Detroit Police Dept. – Fifth Precinct

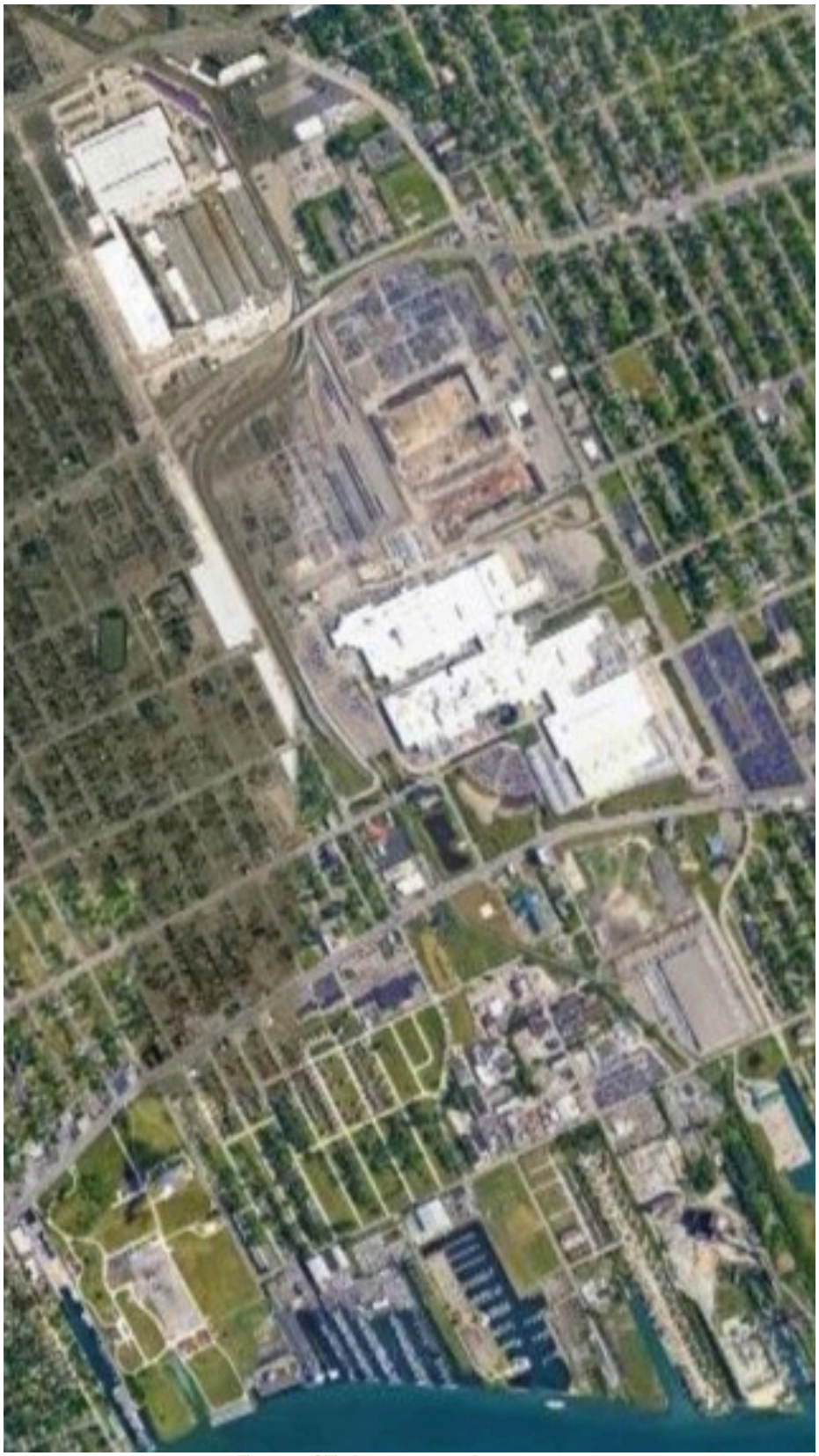

Figure 37: Industrial Area from East Warren Avenue to the Detroit River

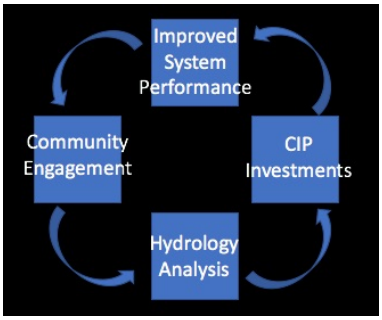

Figure 38: Interactive and Iterative Process to End Sewage Back-ups

The GLWA should consider examining the hydrology of the area due to:

- the sheer size of the Conner Creek Watershed,
- significant changes in land use,
- more recent infrastructure investment,

The purpose:

- determine why residents are experiencing sewage back-ups; and
- identify what actions might be taken so they will cease.

While a street-by-street analysis of invert elevations for existing sewer connections is likely excessive, a qualified and agile Civil Engineering firm could:

- conduct macro-analytics to might begin at the Northeast Treatment Plant located at 11036 East 8 Mile Road;
- examine stormwater retention basins
- launch a significant public engagement effort;
- catalog back-ups or other problems when they occur; and
- collect input from technical staff currently finessing the pipes and pumps as well as those working in the street.

The results could also inform capital program priorities and those decisions should be communicated to the community. The iterative and interactive effort should be sustained, as the hydrology evolves and management of the systems improves.

Figure 39: Conner Creek CSO Facility

Figure 40: Northeast Water Treatment Plant,

Table 8: Short and Long-Term Actions for Recommendations C

Short-Term Action	**Stakeholder**	**Time Frame**
Identify Sewage Back-ups through Community Engagement	GLWA and DWSD	Summer 2021
Examine Stormwater Capacity and Analyze System Controls (see Recommendation A)	GLWA and DWSD	Summer/Fall 2021
Long-Term Action		
Continue Community Engagement, Stormwater Analysis, Adjust Controls and Plan Capital Improvements	GLWA and DWSD	Summer 2022

D) Modify and Increase Floodplain and Stormwater Capacity with Innovation

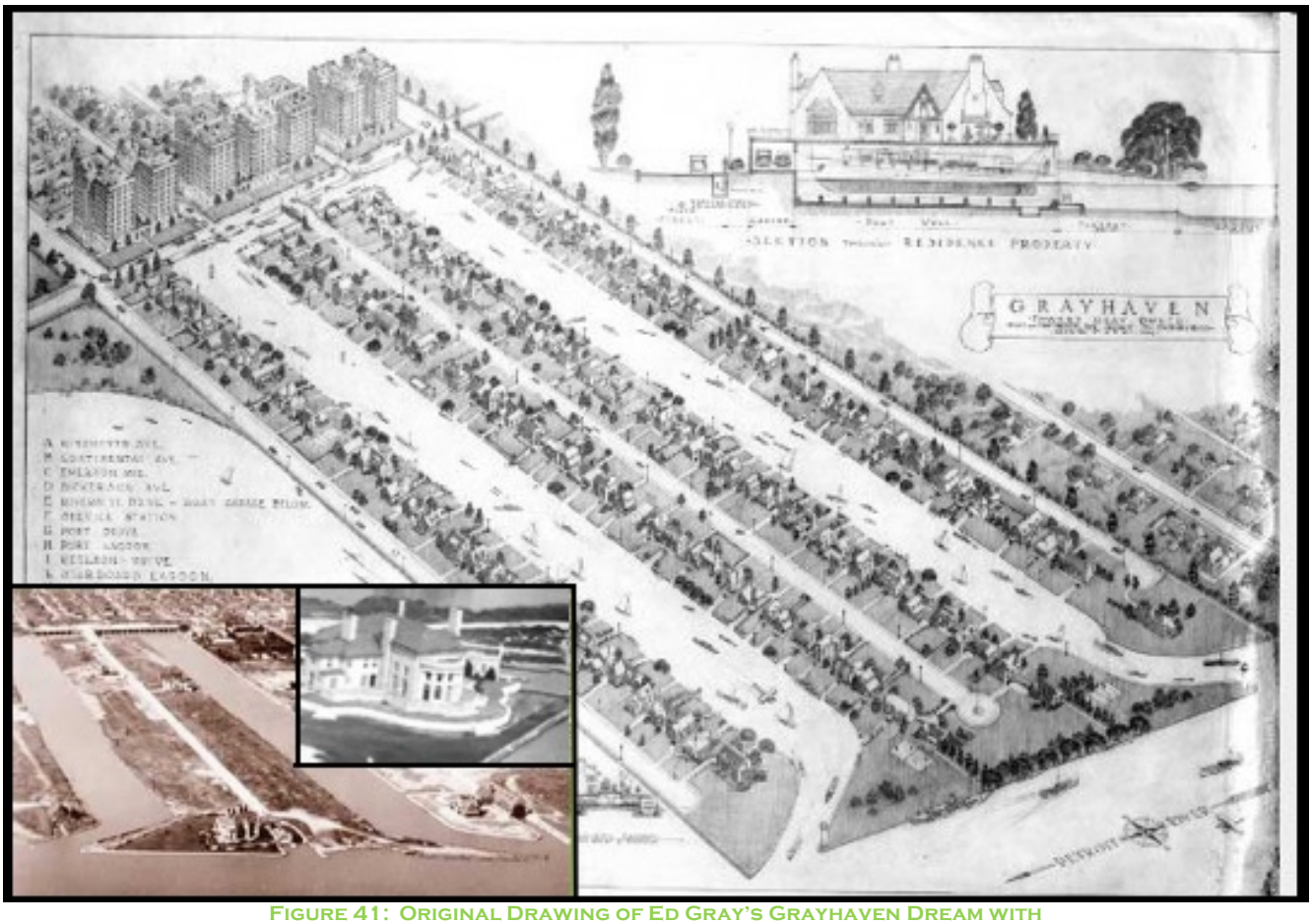

Figure 41: Original Drawing of Ed Gray's Grayhaven Dream with the Gar Wood Mansion show in the inset and Island c. 1924

When Ford's Chief Engineer, Edward Gray, dreamed of his boating community in 1923, he ensured that the mouth of the eastern canal was designed to capture inflows from Detroit River, then moves around the island and back to the Detroit River on the development's western edge. When Gar Wood built his opulent 46-room mansion in 1924, he joined Mr. Gray and Lawrence Fisher. His waterfront estate included a ballroom that faced the river and could accommodate 1,000 guests.

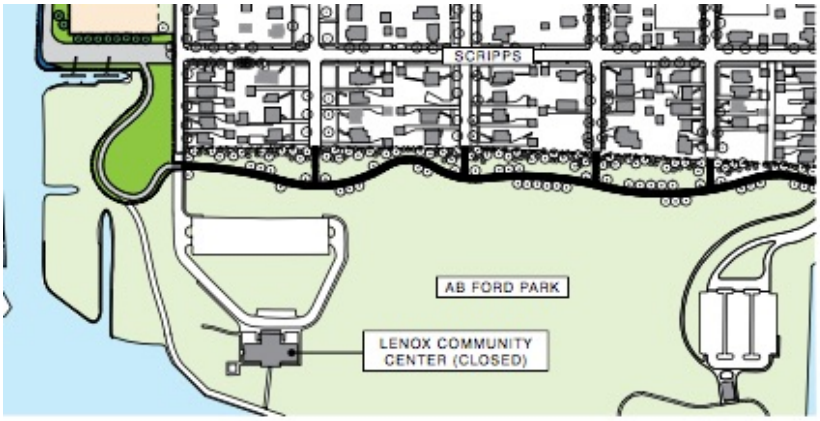

Figure 42: Framework Plan Recommendations for Alfred Brush Ford Park, April 2019

P&DD's Framework Plan was published in April 2019 and the Penske Foundation announcing the commitment to Alfred Brush Ford (AB Ford) Park occurred the next month. While planning for AB Ford and Lenox Center (Center) has been underway for some time and is near complete, there is no evidence of the Framework's recommendations in the proposed Alfred Brush Ford Park plans.

The consideration of sustainable landscaping surrounding the new Center is a wise use of the topography to not only protect the building, but there are several other changes that could significantly improve floodplain and stormwater management on the site and for the neighborhood.

Figure 43: Proposed Plan

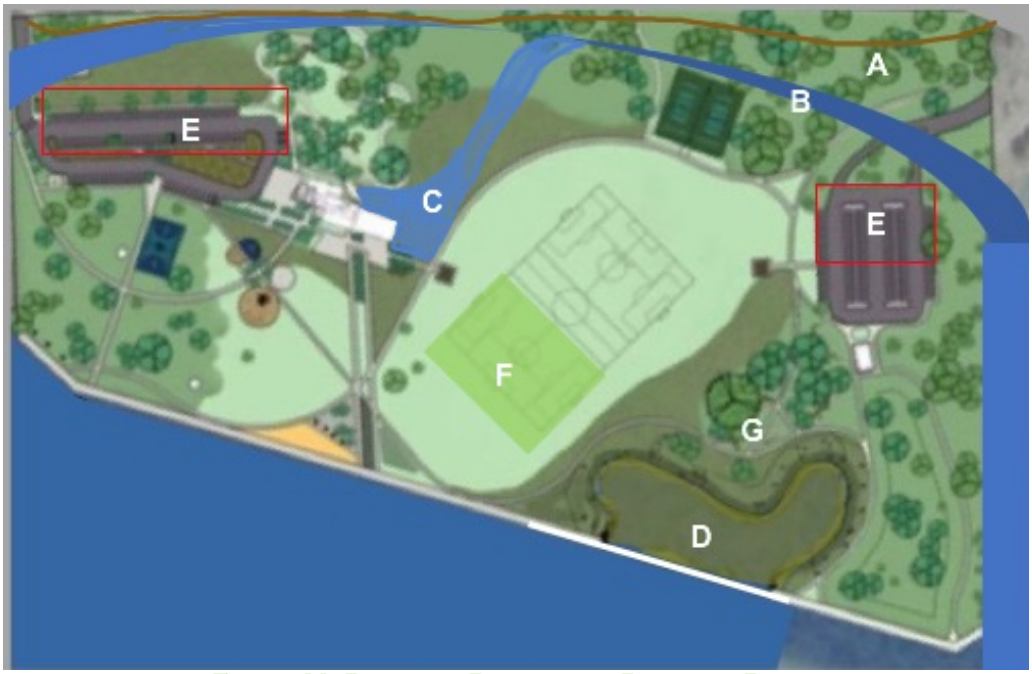

Figure 44: Potential Revisions to Proposed Plan

Potential revisions to the Proposed Plan might include:

A. create a levee at the northern edge of the park with a bike trail on top;
B. construct new canal connecting Lakewood Canal to Starboard Lagoon of Grayhaven;
C. excavate around the building for water amenity linked to new canal;
D. maintain boardwalk at river's edge;
E. minimize traditional parking, maximize permeable pavers;
F. eliminate one basketball court; and
G. maintain and enhance playground, picnic tables and shelters for current passive uses and family gatherings.

Figure 45: Fox Creek Park, southwest corner of Ashland and East Jefferson Avenue

Canoes, kayaks and feet-powered paddle boats could be rented at the Fox Creek Park on the southwest corner of Ashland and East Jefferson Avenue. Paddlers could make their way to a ball game at Peter Maheras/Bronson Gentry Historic Park.

Figure 46: Kayaks, Canoes and Paddle Boats – OH MY!

Floodplain, Stormwater and Flood Mitigation Alternatives

FIGURE 47A: UPLAND EXCAVATIONS FOR MARINAS + RECREATION

Private-Public Partnerships

Concept: City joint ventures with vacant property owners to excavate and provide seawall for marina, recreation, research, education and other water related activities.

Benefits:

- Generates income for City to recoup its costs through cooperative management and revenue sharing
- Provides for inexpensive expansion of community-wide protective infrastructure
- Avoids costs for other protective infrastructure
- Provides economic opportunity
- Leverages water resources
- Activates vacant land

Short and Long-Term Retention Basins on Vacant Land

Concept: Vacant land excavated for large basins similar to Recovery Park linked to Fox Creek using inexpensive horizontal drilling technology and flow outlets could be regulated by engineered conveyance.

Benefits:

- Large quantity of vacant land in or near topographical swale
- Relatively inexpensive to excavate and link to canal and cheap to maintain
- Provides flood mitigation, may potentially shift floodplain management, reducing flood insurance costs
- Creates opportunity for long-term amenity that may attract investment
- May provide additional stormwater management volume when housing development occurs
- Reduces excavation costs for future housing development

FIGURE 47B: UPLAND EXCAVATIONS FOR MARINAS + EDUCATION

FIGURE 48: BASINS AS MITIGATION OR AMENITY

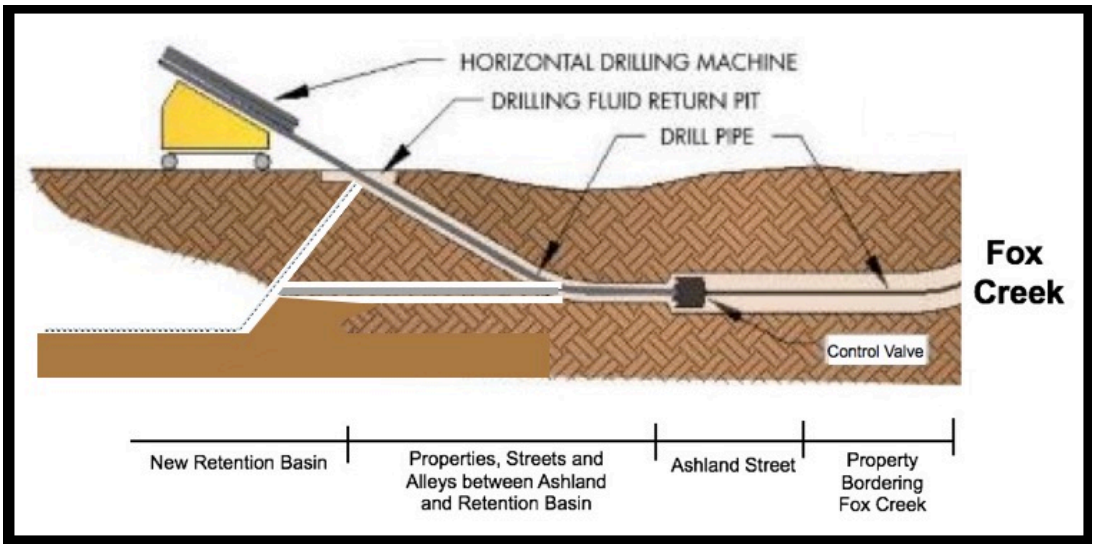

FIGURE 49: SCHEMATIC OF UNDERGROUND HORIZONTAL DRILLING LINKING FOX CREEK AND PROPOSED BASINS

Strategic decisions would include selection of land to maximize benefit (examination of soils [percolation testing], topography, amount of vacancy, ownership, etc.), short versus long-term use (mitigation, amenity, floodplain and stormwater management, redevelopment, etc.), of land based upon maximum benefit and placement on parcels.

In its broadest terms, percolation testing is simply observing how quickly a known volume of water dissipates into the subsoil of known surface area. A percolation test (colloquially called a perc test) is a test to determine the water absorption rate of soil – that is, its capacity for percolation. Perc testing will aid in site selection and should be conducted throughout the community.

This and other proposed infrastructure also create new neighborhood amenities. Their role in reducing potential hazards might allow the cost of these new flood prevention assets to qualify for Federal funding under Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant Program (HMGP). According to FEMA,

> *"Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Mitigation planning breaks the cycle of disaster damage, reconstruction and repeated damage. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future."*

Table 9: Short and Long-Term Actions for Recommendation D

Short-Term Action	**Stakeholder**	**Time Frame**
Consider Modifications to Proposed Alfred Brush Ford Park	City of Detroit	Summer 2021
Determine if EPA Funds can be used for New Canal	City of Detroit	Summer 2021
Survey Vacant Land and Identify Opportunities for Upland Excavations and/or Retention Basins	City of Detroit	Fall 2021 and into 2022
Conduct Percolation Tests	Academic Institution (ie Wayne State University)	Fall 2021 and into 2022
Long-Term Action		
Site Selection	City of Detroit	Summer 2022
Negotiate and Execute Public-Private Partnerships	City of Detroit and Property Owners	2023 and On-going
Build New Marina and Retention Basins	City of Detroit and Property Owners	2024

E) Research Alter Road Flood Prevention Project, Revisit New Floodplains Standards and Acquire Fox Creek's Western Edge

Years before the GPP bulkhead for the CSO was installed in Fox Creek the rusted seawall along its eastern shoreline was failing, occasionally falling into the creek and interrupting navigation.

Between 1995-2000 (approximately), as GPP completed its work to terminate discharges, a Flood Prevention Project along Alter Road was constructed, herein referred to as the Alter Road Levee. The Alter Road Levee was a combination of components that included:

- new eastern seawall for the Fox Creek's entire length;
- an earthen berm between the seawall and Alter Road paving;
- cyclone fencing on top of the entire seawall;
- trees at regular and consistent intervals on the earthen berm;
- new bridges at Korte Street and for Klenk Island;
- bridge and intersections connecting Riverside Boulevard in Detroit to Windmill Pointe Drive in Grosse Pointe Park was removed.

The trajectory of new bridge at the southern end of the community was changed to directly link Alter Road to Riverside Drive. This permanently severed the connection between the communities.

While it has yet to be confirmed, the sheer size and scope of the project had to have involved US Army Corps of Engineers (USACE or The Corps). The Corps may have delegated authority to the State or City. Fox Creek is a transportation resource and navigable waterway. Together with the new levee would have also required The Corps involvement.

Figure 50: Alter Road Levee

Figure 51: Alter Road Levee's Eastern Seawall

Beyond its role as a likely funder, USACE's role as a regulatory agency, similar to their role with the GLWA proposed levee along Clairponte. This would have required The Corps' review and approval and the decisions related to the project would have required a review as part of their National Environmental Policy Act (NEPA) obligations.

NEPA requires all Federal agencies to assess the environmental impact of any and every decision – referred to as an "action." There are three (3) different levels of assessments that vary in detail and time based upon the size and complexity of the action/decision.

- Categorical Exclusions (CatEx) are for routine activities that include day-to-day business functions.

FIGURE 52: AERIAL PHOTO – KLENK ISLAND AND ALTER ROAD-RIVERSIDE BOULEVARD BRIDES – NOTE TERMINATION OF WINDMILL POINT DRIVE

- Environmental Assessments (EA) use a structured approach to predicting the impacts of a proposed action with projects whose scope is specific, often limited and typically, familiar to the agency.
- Environmental Impact Statements (EIS) are used for large, multi-faceted major projects that can be implemented in a variety of ways. The impact of alternative approaches is examined and the selection of a preferred alternative includes in its decision-making criteria the impacts and proposed mitigation.

No Jefferson-Chalmers community members received the required Public Notice regarding the statutory NEPA and Detroit residents were not engaged in a dialogue with the project's sponsor regarding the project's impact. The lack of consultation has clearly resulted in flood prevention exclusively benefitting residents to the east shifting the entire risk to Detroiters on the westside of Fox Creek.

The lopsided impact of the Alter Road Levee is evidenced today by the current Great Lakes flooding where Tiger Dams are providing temporary protective measures – but only necessary on the Creek's western side. In addition, insurance rates for GPP will be reduced when the new FIRMs go into effect later this year. The Alter Road Levee has caused a new requirement and now seawalls on the westside of Fox Creek must be at the Median High-Water Mark of the 100-Year Floodplain which is currently 579' above Sea Level based upon the International Great Lakes Datum (IGLD), established 1985. However, The Corps, EGLE and City through the Joint Permitting Authority is requiring that owners add another foot to top off their seawalls.

This will require Detroit's property owners on Fox Creek to reconstruct their portion of the Creek's western seawall to a height as much as **3-5' above the *current* grade,** eliminating views of and reducing access to the Creek. The Alter Road Levee was constructed entirely with public resources. Currently, the construction of western seawalls are the responsibility of individual property owners, causing costs to be extremely prohibitive.

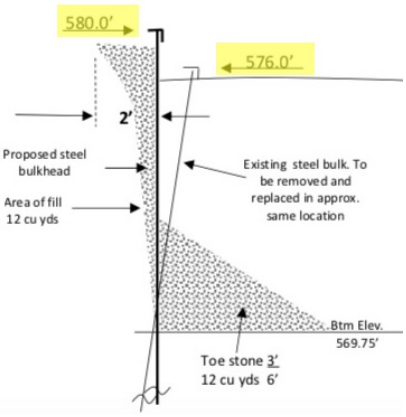

FIGURE 53: SAMPLE SECTION OF SEAWALL ABOVE CURRENT GRADE

If residents cannot afford the investment, they may be forced to sell their property to wealthier individuals, rapidly accelerating gentrification already occurring the community. With the assistance of Jefferson East, Inc., the City of Detroit is making 0% loans available for seawall improvements through its Housing & Revitalization Department. However, income limitations may prevent some middle-class owners from qualifying and no contractors have been approved because none are willing to run the gauntlet of City requirements.

TABLE 10: SEA WALL COSTS AND PROPERTY VALUES

Seawall Costs (1)	Per Lineal Foot	$500		
	Parcel Width	30	50	
	Total Cost Range	15,000	25,000	
Average Property Value (2)	Vacant	16,000	94%	156%
	Structure	54,000	28%	46%

(1) Variables: Seawall height to achieve 580' IGDL, steel piling profile, gauge thickness, soil conditions base and behind wall; boat well; market context (quantity of projects in a single area impact mobilization and demobilization).

(2) Source: Multi-List Service. Variables: Size, location; structure quantity, size and condition.

The seawall only provides flood protection if EVERY owner installs their section consistent with regulations. Numerous parcels are vacant and abandoned such that in many places, no barrier along the Creek edge will be built.

TABLE 11: SOLUTIONS FOR SEAWALL CHALLENGES

ISSUE	POTENTIAL CHALLENGE	SOLUTION	RATIONALE
Responsibility for Flood Protection (75% Unprotected, Significant Vacancy)	Residents Individual Responsibility	City takes Control of Entire Project	NO Protection without ENTIRE Seawall
Alter Road Levee Impact	Lack of NEPA, Entire flood risk borne by Detroiters, GPP Flood Insurance being reduced	Examine NEPA; Corrective action by The Corps	Failure to comply with regulation should be corrected; Flood risk should be equitable
Cost *$500/LF (worst case)*	Significant burden for residents ($15K-25K)	Reasonable cost for City ($2.6M); Tiger Dams cost $1.4M	City is prepared to provide 0% loans, why not just pay directly
Financial Resources	City lacks funds based upon current resources	Pursue HMGP or American Jobs funds; Special Assessment District	Removes exclusive reliance on existing resources
Contract Management	Inconsistent quality and opportunity for exploitation and poor workmanship	Comprehensive and consolidated planning and management of design and related construction	Ensure consistent construction quality control
Cost Savings	Individuals only potentially benefit if other work being done nearby	Bulk buying capacity reduces costs	Strong negotiating position with the contractor
Boat Wells Costs	Insuring property owner has funds	Contractor provides a not-to-exceed cost and owner escrows, if not escrow when contractor arrives – no boat well	City files Lis Pendens if owner not compliant
Boat Well Logistics	Potential management hassle	Cooperative agreements can be easily constructed to protect all parties	City excavated for Victoria Park builders; builders responsible for staking (relied on basement wall subcontractors)
Boat Houses	Insuring property owner has funds	Contractor provides a not-to-exceed cost and owner escrows, if no escrow contractor works around boat house	City files Lis Pendens if owner not compliant
Owner Seawall Completed before City Begins	Owners penalized for doing work	City provides a Payment In Lieu of Taxes (PILOT) abatement over 10-30 years	Similar approach for larger projects and Neighborhood Enterprise Zones, no immediate out-of-pocket costs for City
Land Ownership and Acquisition	Riparian land privately owned	Property owner can transfer 450-675 SF of land for $1 in exchange for seawall; Property owner can provide easement	Similar ownership of ally and easements granted to City and utility companies
Engineering	City lacks funds for construction documents and bidding	Permitting requires limited engineering; Provided by contractor	NGO could secure philanthropy to assist in preparation of limited bidding documents and project coordination similar to Victoria Park use of private builder to intervene
City Contract Requirements	Robust market limits contractor desire to comply	Scale of project would incentivize, NGO could assist	Expands the pool of contractors

Seventy-five percent (75%) of the parcels have no protection causing the adjacent soil to be so saturated that water infiltration into adjacent basements never ends and buildings may be actually moving in the midst of unstable soil and a breach could be disastrous for the community.

As a navigable waterway, Fox Creek should be viewed as analogous to the Right-of-Way for a street. A typical ROW includes the street, curb (and catch basins), tree lawn and sidewalk. Ownership of components, party responsible for maintenance and/or replacement varies depending on development pattern, age of the community and local policies regarding quality control.

Most cities own the entire ROW which typically ends on the house side of the sidewalk and the private property owner is responsible for maintaining the sidewalk. This includes snow removal and ensuring use of the sidewalk is not blocked by structures, fencing, landscaping, vehicles, etc.

Most communities regularly inspect sidewalks, budget costs to replace some portion and contract for that work. However, residents are typically billed for that work. The seawall is to the Creek as the curb and sidewalk are to the street.

Figure 54: Preparation for Seawall

Figure 55: New Seawall in Jefferson-Chalmers

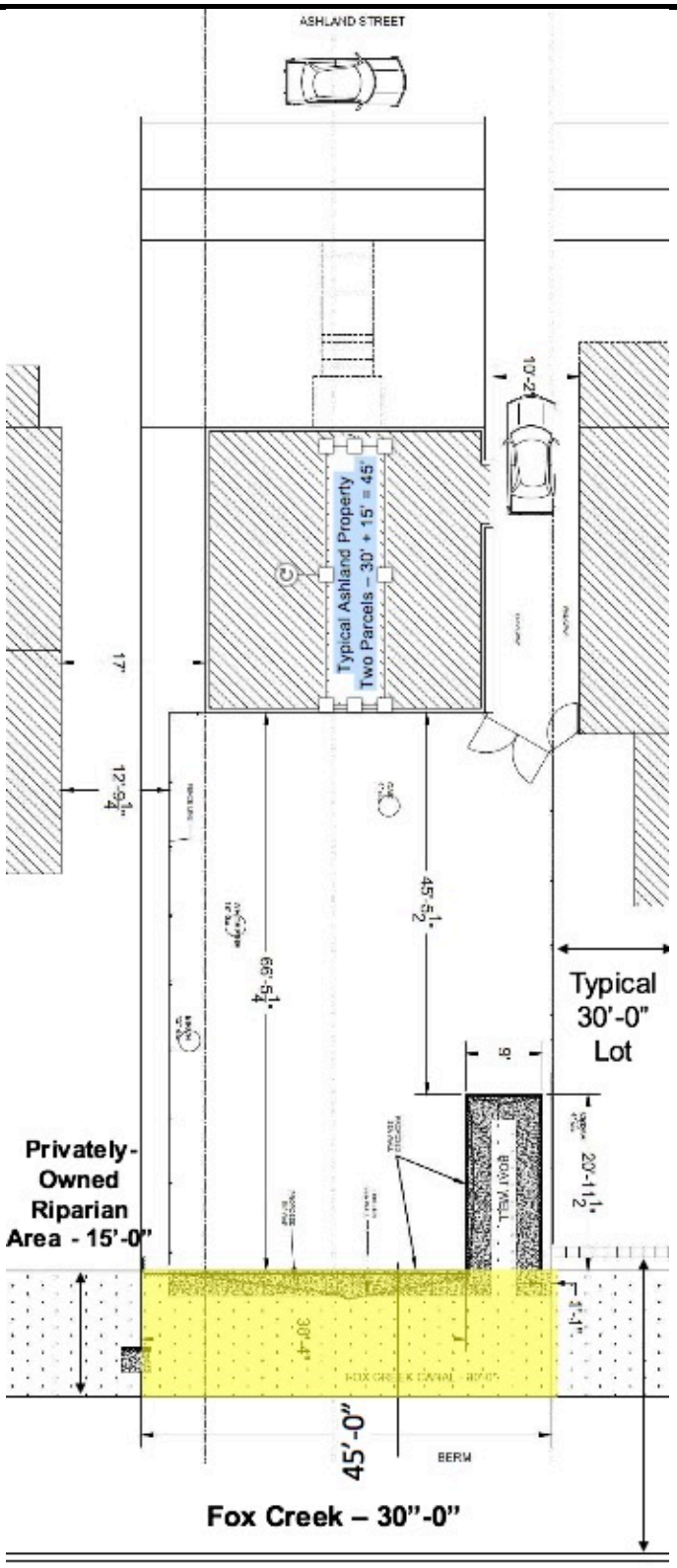

Figure 56: Typical Riparian Area

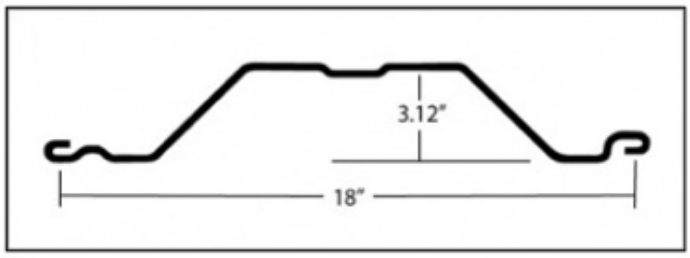

Figure 57: Light weight sheet Piling

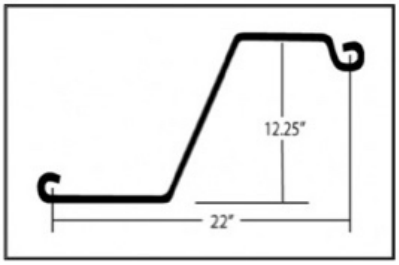

Figure 58: Heavy Weight Sheet Piling

Sheet pilings range in size and gauge thickness based upon their application. A light weight low profile sheet piling of just over 3" will be more than adequate for Ashland property owners. Gauge thickness will increase in relationship to water depth. At nearly 12", the western shore profile is a heavy weight solution.

Concurrent to these actions it is assumed the Alter Road Levee review may cause some redesign and reconfiguration of the floodplain. It is important to recognize that the City neither wants this project nor does it currently have the funds to implement. Like the other stakeholders, the City must get creative and consider resources beyond its current coffers and similar to others, this project qualifies for FEMA Hazard Mitigation Grant Program (HMGP) funds.

HMGP awards pay for 75% of a project's eligible costs. Hazard mitigation measures are ***any sustainable action taken to reduce or eliminate long-term risk to people and property from future disasters.*** FEMA studies have shown that every $1 spent equals $4 of future damages mitigated. Because HMGP serves as a catalyst for local government to proactively help people in communities reduce their losses from natural hazards, the new seawall will in-fact have a measurable and sustainable impact AND reduce/eliminate long-risk for residents and their properties.

Unfortunately, the new floodplain requirement may be the result of obsolete design criteria that excluded Detroiters, which conflicts the fundament regulatory NEPA requirement of EVERY Federal Project. To correct this impact, the City and the community should request, secure and review the Corps' NEPA Decision(s) and determine if there is evidence of technical or regulatory errors, including lack of notice to Detroit residents. Regardless, The Corps should revisit the design of the Alter Road Levee and be obligated to make investments to modify it or support other investments that mitigate the impact of the Alter Road Levee and equitably distributes risk. This effort should be undertaken IMMEDIATELY before residents make unnecessary investments or are forced from their homes. Hopefully, litigation will not be necessary to resolve this problem.

Table 12: Short and Long-Term Actions for Recommendation E

Short-Term Action	**Stakeholder**	**Time Frame**
Survey and Confirm Portion of Property Currently Not Protected	City of Detroit, NGO and Community Residents, Property Owners	Summer 2021
Request and Review USACE NEPA and Related Decisions	City of Detroit and Community Residents, Property Owners	Fall 2021 and into 2022
Community Engagement Regarding Land Acquisition	NGO and City of Detroit, Community Residents, Property Owners	Fall 2021 and into 2022
Pursue HMGP Funds	City of Detroit	Fall 2021
Long-Term Action		
Acquire Fox Creek Western Edge and Bid Seawall Construction	City of Detroit	Summer 2023
Begin Construction on Western Seawall	City of Detroit and NGO	Fall 2023

F) Leverage Every Possible Federal Resource Available to Implement Eligible Projects and Pursue Philanthropy

FEMA's Hazard Mitigation Grant Program (HMGP) resources are competitive. Even though projects proposed would likely score very well and receive funding, the City would still be responsible for the remaining 25% of a project. The City's finances are strained and City agencies are reluctant to take on additional projects. Solutions offered throughout this document will be new elements of the City's infrastructure and each will clearly have a specific capital cost to execute. However, there are many ways the City might finance these infrastructure investments.

For example, the shifting of floodplains resulting from the combination of strategic investments that will aid residents in securing Elevations Certificates and further support the proposed LOMA will result in reducing insurance costs for residents. The City could ask for a portion of realized cost savings to support the investments through a Special Assessment District. As the reduction of insurance costs unlocks investment potential the City could add a small fee to the permits issued for property improvements (including new construction) in the entire Jefferson-Chalmers community and as property values increase, the City could capture a portion of that increased tax revenue. Taken together, these new revenue streams could underwrite bonds necessary to support the improvements.

The projects will address a variety of issues popular with many local and national foundations:

- sustainability for emergency management;
- disaster preparedness and recovery;
- water quality and resource management;
- recreation improving health conditions; and
- resilient economic and community development.

By taking a comprehensive approach, the Jefferson-Chalmers WATER Project could be very competitive at securing foundation resources. The Penske Foundation commitment to the Lenox Center and Alfred Brush Ford Park is the example and should be leveraged to attract other philanthropic investments.

By way of example, the simple naming of the Alfred Brush Ford Park and his link to Henry Ford resulted in the Jefferson East Business Association securing grant funds from the Ford Motor Company and the dedication of volunteers from the Ford College Graduate Community Service Program in the late 1990s.

Figure 59: Rendering of Proposed Lenox Center at Alfred Brush Ford Park

Figure 60: Fitzgerald Project – support from Trust for Public Land, funded by the Doris Duke Foundation.

The historical link to the family should be revisited and leveraged for both the Ford Motor Company Fund and the Ford Foundation. There is a long list of local philanthropies, some which have a national scope, that might be supportive of this work. At the same time, there are several national foundations, some of whom are committed to Detroit in one way or another, but could easily be lured to the Motor City with a demonstration project of this magnitude.

Many are already working in Detroit and the Petosky-based Freshwater Future's website also identifies potential funding sources.

TABLE 13: FOUNDATION RESOURCES

Local Foundations *(some with national scope)*	• The Skillman Foundation • Hudson-Webber Foundation • Ralph C. Wilson, Jr. Foundation, • WK Kellogg Foundation, • Community Foundation for Southeast Michigan • C.S. Mott Foundation
National Foundations *(funding Detroit projects)*	• John S. and James L. Knight Foundation • Annie E. Casey Foundation • Bill and Melinda Gates Foundation • Bloomberg Philanthropies.
Freshwater Future's *Environmental Grant Making Foundations*	• Cottonwood Foundation, • Nathan Cummings Foundation, • Doris Duke Charitable Foundation and • Fields Pond Foundation amongst others. • Jennifer Altman Foundation, • American Express Company, • Beldon Fund, • Ben & Jerry's Foundation, • Captain Planet Foundation

Many elements of the proposed improvements may have naming rights and building components might also bear the name of individual donor often seen in pavers and attached to park furniture and playground equipment. While the water resources in Jefferson-Chalmers are **INTERCONNETED**, so is the community demonstrated by the deep roots of a common history that ties many of the residents together. The 710 members of C-T-C Old Timers Club Facebook page is a social media expression of those multi-generational and block-by-block links.

Alumni from the Creekside Community Development Corporation and Jefferson East Business Association remain in contact and occasionally assemble to share memories and celebrate their successes. C-T-C, Creekside, Jefferson East and former members of the Jefferson-Chalmers Citizens District Council as well as existing residents, business and developers could provide the base of individual contributions. Efforts to support various initiatives could be analogous to a capital campaign, providing funds to underwrite specific projects. The Nextdoor blog creates an easy platform to promote project and engage potential individual donors.

While individual and foundation philanthropy will undoubtedly be helpful, other public sector resources are available. Recently, the EPA announced Great Lakes Restoration Initiative (GLRI) grant applications to fund $9 million in projects in the Great Lakes basin aimed at addressing stormwater runoff which carries pollution from the land into water bodies. These projects include innovative ways to reduce nutrients with special consideration for underserved communities.

Many of the projects also fit well into **President Biden's American Jobs Plan**. The funds provided under the Plan, "will maximize the resilience of land and water resources to protect communities and the environment, safeguard critical infrastructure and services, and defend vulnerable communities."

FIGURE 61: GLRI PROJECTS

FIGURE 62: PRESIDENT BIDEN

The Plan states what stakeholders in Jefferson-Chalmers already know:

People of color and low-income people are more likely to live in areas most vulnerable to flooding and other climate change-related weather events. They also are less likely to have the funds to prepare for and recover from extreme weather events. Black and Hispanic residents were twice as likely as white residents to report experiencing an income shock with no recovery support."

Finally, these efforts must look back at millions of dollars of public funds spent in Jefferson-Chalmers that have had a limiting or detrimental impact on the community. In the early 1970s, Don Ball, an investigative reporter for *The Detroit News* uncovered the systemic corruption of waste, fraud and abuse at the core of a national HUD program. While the program's intent was to support investment, rehabilitation and revitalization. The mismanagement resulted in residents losing their homes after being duped by affiliated construction, mortgage, appraisal and title companies that conspired to bilk the system of millions of dollars.

Jefferson-Chalmers was hit hard by that program as evidenced by *CBS 60 Minutes* reporter, Mike Wallace using a home on Philip as an example of the fraud while also interviewing residents of the neighborhood that fell victim to the scam.

Untold millions went into the pockets of the grifters. Homes deteriorated and were abandoned. The City demolished the homes using precious public resources.

Figure 64: Jefferson-Chalmers Featured on CBS' 60 Minutes

Millions more was spent on new streets and water and sewer mains to excavate basements for home owners in Victoria Park, while infrastructure in the surrounding neighborhood was failing. Public funds were used to provide flood prevention, including the park, berms and levees in the park noted earlier in this paper. Looking to the future, significant public investments MUST be made, not only to make up for past missteps, but City, County, State and Federal government resources must be marshalled and leveraged to support the positive trajectory of Jefferson-Chalmers community.

Table 14: Short and Long-Term Actions for Recommendation F

Short-Term Action	**Stakeholder**	**Time Frame**
Dedicated Recovery Funds for Jefferson-Chalmers Projects	City of Detroit	Summer 2021
Dedicate American Jobs Plan funds for Jefferson-Chalmers Projects	City of Detroit	Summer 2021
Pursue HMGP Funds	City of Detroit	Fall 2021
Identify and Pursue Philanthropy	NGO	Summer 2021 and On-Going
Community Engagement Regarding Land Acquisition	NGO and City of Detroit, Community Residents, Property Owners	Fall 2021 and into 2022
Pursue HMGP Funds	City of Detroit	Fall 2021
Long-Term Action		
Identify Program Funds for Jefferson-Chalmers Projects	City of Detroit, Wayne County, State of Michigan, Federal Agencies	Summer 2021 and On-Going

Historical Overview, Recent Planning & Demonstrating the Need

Jefferson-Chalmers Historical Overview

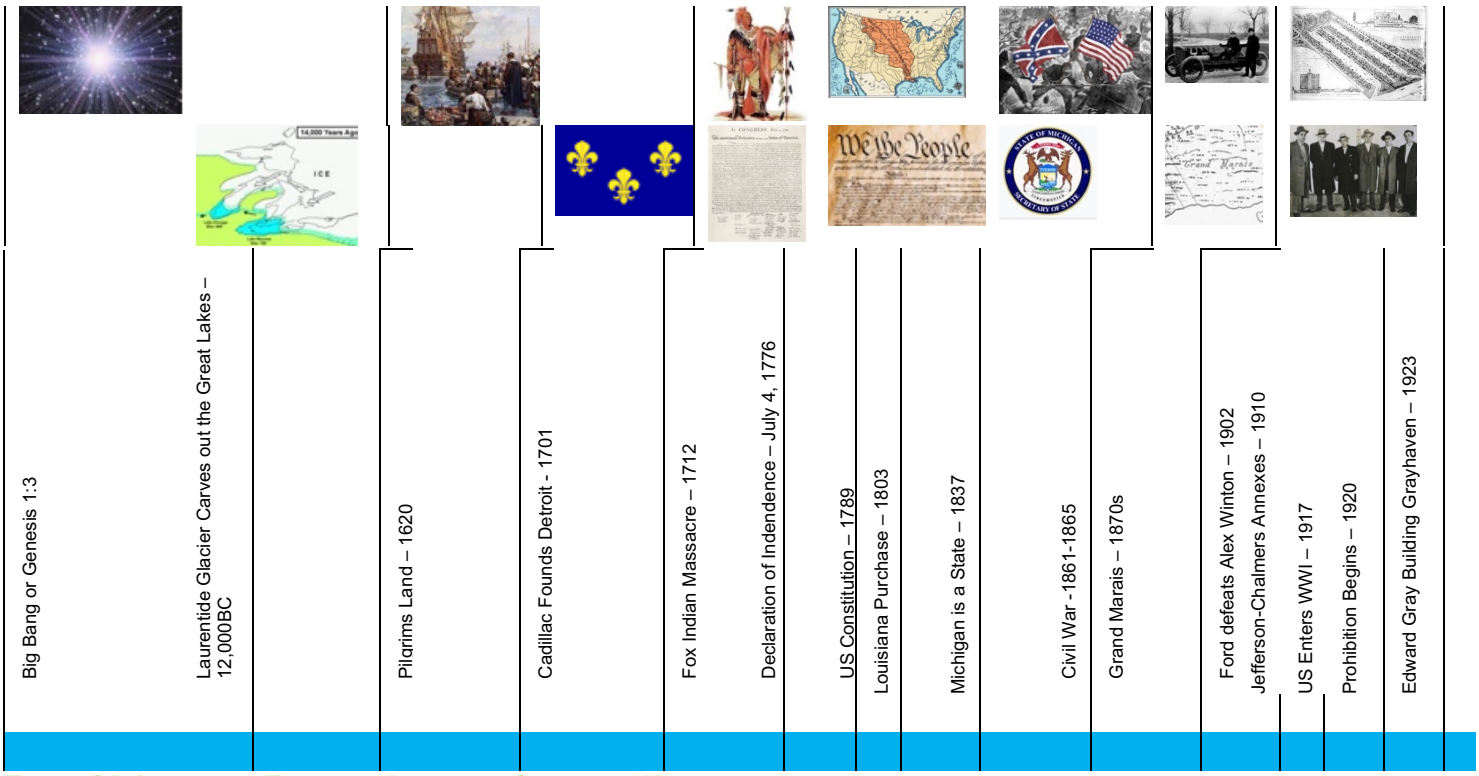

Figure 64: Important Events in Jefferson-Chalmers' History

Planes, Trains and Automobiles

Most people think of the antics of John Candy and Steve Martin in the 1987 movie when those words come to mind. The Jefferson-Chalmers community has a diverse and storied past. Its unique collection of affordable, middle class and up market and exclusive housing. As the midwestern version of Nantucket, there is over 100 acres of riverfront parkland with an interlocking set of canals and creeks. Within it bounds there a rich history of auto barons, auto managers, rumrunners, cocktail sailors, ballroom dancers, fleeing slaves and civil rights leaders. Civil disobedience, scandal, urban renewal and revitalization are also present. There are few communities if any, in all of the US and beyond, that can stake a claim of influence on the auto industry, like Jefferson-Chalmers.

Trains – Understanding how Detroit became the Automotive Capital of the World, requires knowledge about the industries that called it home before cars were invented. Before The Freer Gallery on Art found its stately location on The Mall in Washington, Charles Lang Freer's collection was archived in his home on East Ferry Avenue. Freer's estate was behind the well-known Castle just north of the Detroit Institute of Arts owned by his business partner Colonel Frank Hecker. Their Penninsular Car Company began making railroad cars in 1885.

Automobiles – All of the Big 3 – Not far away, the Fisher Brothers' US Fisher Body made horse drawn carriages. Their brother Lawrence moved up the ladder to be President of Cadillac and moved in to his estate – one of the first in Jefferson-Chalmers' Grahaven. Bright blue carriages centered on every threshold of each General Motors vehicle until 1984. Transferring the manufacturing technology allowed Detroit to become the center of the automotive industry early in the 20th Century

Detroit was late to the Industrial Revolution (1870-1920) and competed for the growing demand for horseless carriages. Auto racing played a critical role during the embryonic stage of America's Big Three as Henry Ford's 999 beat Alex Winton in October 1901 at the horse track turned auto racing track in the Jefferson-Chalmers community. In less than two years, the Ford Motor Company was founded and producing vehicles on Mack Avenue. Ford moved to Piquette in 1904 and his Highland Park plant opened, making Ts by the thousands while the City of Highland Park grew from just over 4,120 to 46,500 in 10 years.

F

Just west of where Ford wooed investors, other well-known name plates found roots in the industrial area near Conner. The high-end Chalmers Motor Car opened in 1908 and evolved into Maxwell Motor Company. Walter Chrysler used the brand-diversification knowledge he learned at Buick to take over the troubling manufacturer as the Chrysler Corporation was born. Across the street and one block west, the Hudson Car Company started making its beloved Super Six engines in 1909. Hudson merged with Nash which became the American Car Company and eventually, Chrysler's Eagle Brand.

Planes – Harry Garland was an influential owner of the parts company that bore his name, Garland Manufacturing Company. One of the first to support America's military by converting his plant to wartime equipment. Residents of Jefferson-Chalmers would often see him taxiing on the Detroit River in his Grumman G-44 Widgeon amphibian making his way to the Garland Seaplane Base and Flight School, now, Lakewood East Park.

And . . . Boats, Too – Garfield (Gar) Wood As the first person to break 100 mph on water. He built a massive international industry from the invention of the small-scale hydraulic lift. He also dominated the watercraft industry with his powerful Gar Wood wooden boats, targeted at the luxury market while making thousands of boats a year through his Chris-Craft Boats, which he also owned. He joined Lawrence Fisher building his 43-room mansion at the foot of Grayhaven Island, overlooking the Dettroit River.

Nameplates and Namesakes – While the history of many auto name plates is linked to Jefferson-Chalmers, Peter Maheras/Bronson Getry bears the names of two, important African-American residents. Maheras was a WWII hero. Gentry's threat of non-violent civil disobedience in the late 1950s caused the City Council to invest over a half a million dollars in a new recreation center and pool. The Pop Gentry Horseshoe Club of Detroit pays homage to the national titles he won.

Gone Fishin' and Bird Chasin' – As the swamp was converted to a neighborhood, children new to the land caught fish and chased birds. Fishing is still very popular in Jefferson-Chalmers and by the turn of the 21st Century, pheasants in the area were trapped and sent to other parts of the state by the Michigan Department of Natural Resources.

JEFFERSON-CHALMERS NEIGHBORHOOD FRAMEWORK

The City of Detroit's Planning & Development Department (P&DD) issued the *Jefferson-Chalmers Neighborhood Framework* (Framework) in April, 2019 after over a year of inspirational discussions and community engagement. The document's Overview states, the Plan is to ***"guide future growth and investment and help determine neighborhood investment strategies."*** Community engaged planning is seldom easy and the City's efforts set the stage for opportunity. However, the waterfront and water-rich heritage is not fully examined. The Framework gives no consideration to expanding or leveraging water assets that might attract investors as well as how current water resource challenges are undermining investment.

While 72% of the residents suggest that "access to the Detroit River" is the community's greatest asset, the miles of canals and unique islands go well beyond the view of the Detroit River. Those canals, both as part of the Grayhaven development and on the community's eastern edge are a significant draw for investment.

The Framework's History section appropriately speaks to the importance of the draining of the Grand Marais, necessary to create the land for development. However, it makes no reference to the linked canals and islands that supported the underground economy of rumrunning of Canadian alcohol during Prohibition. Examining the legacy of legitimate maritime commerce as key elements of the community's past can inform future economic opportunities as demonstrated by the recent investments of Detroit River Sports, Riverside Kayak Connection and the proposed 414 Ashland Street Boathouse.

FIGURE 65: JEFFERSON-CHALMERS FRAMEWORK PLAN

Even with the interruption of the suburban-like development in the community's middle, much of the street grid make for easy navigation as every street has sidewalks on both sides. The abundance of vacant land has plagued many neighborhoods and the land should be used for limited, strategic (short and long-term) surface and stormwater management. Creating amenities that might connect to other water assets, could not only attract investment, but may potentially aid in reducing demand on current infrastructure, especially when demand will increase following redevelopment. Investment should consider re-knitting the neighborhood fabric, strengthening the historic grid of streets and seek to create the highest-and-best use of vacant land by restoring much of the community's original housing density.

FIGURE 66: TRADITIONAL STREET GRID SURROUNDING SUBURBAN-LIKE MIDDLE

Restored housing density equals more rooftops, more families and more demand for goods and services on Jefferson Avenue. It equals the need for educational resources. Consider how Guyton School – a high-performing elementary school – was closed by the Detroit Public Schools due to declining enrollment and projected neighborhood population loss. What if Guyton had received investment, was still open and continuing to stand out amongst its peers? Acting like a magnet, it would have drawn investment to Jefferson-Chalmers.

The Framework effectively examines an economic gap in the market feasibility of rental housing however, it only evaluates the delta in housing costs – neither considering costs for flood insurance not opportunity costs as funds for investment are diverted for clean-up of sewage in basements. At the same time, it also misses the significant opportunities for water-oriented business investment.

By not including these issues, the Framework relieves public agencies from addressing these challenges, undermining the urgency of these matters and the impact they have on the citizens of Jefferson-Chalmers and investment potential. Taken together, its limited recommendations provide neither guidance to overcome the housing challenges, nor leverages its water assets. Yet, it is clear, investment will not come to the Jefferson-Chalmers in a significant way until the community's comprehensive, multi-faceted **INTERCONNECTED** solutions are identified and implemented.

Demonstrating the need for Better Water Resource Management

For decades the community has both benefited from and been challenged by its unique water resources. Public investment, public approvals, complex regulations, citizen engagement, community action and litigations. Often in the context of a crisis, has resulted in project solutions that are not **well integrated**. Therefore, they have neither collectively nor comprehensively addressed the water resources challenges confronting the Jefferson-Chalmers community.

- **Raw Sewage Discharges in Fox Creek** – Grosse Pointe Park's Combined Sewage Overflows (CSO) in Fox Creek ceased in 2000. Discharges, like those documented in *Appendix C,* continue. The responsible party must be identified and brought into compliance, including the legally required Public Notice.

- **Great Lakes Water Authority (GLWA) and City of Detroit Water and Sewerage Department (DWSD) Asset Management** – Confusion regarding asset management makes it difficult to determine which agency might take additional action to address water management issues, as well as which (or both) should be held accountable for various aspects of infrastructure planning, design, construction, and on-going management.

- **Alter Road Levee National Environmental Protection Act (NEPA)** – Alter Road Levee was constructed in the late-1990s and provides extraordinary protection for residents of Grosse Pointe Park. Detroit residents bear the brunt of recent Great Lakes flooding. Given all the various elements of the project, its requisite NEPA approval would have required Notice to and consultation with impacted stakeholders and residents, including Detroit residents. That did not occur.

- **Victoria Park's Floodplain** – Significant public resources, including Community Development Block Grant funds, were used to support the development of Victoria Park. The park within the development serves as a large floodplain. Berms, surrounding the development and those within its park, act as levees. This shifts the entire flood risk onto residents to the east.

- **Fox Creek's Western Seawall** – New floodplain standards will require Detroit residents to dramatically raise their seawalls, undermining their use of the Creek and substantially increasing the costs of construction. Current prices are $500 per lineal foot, not including uncertain soil conditions. Costing on average $20,000 per parcel, seawalls will cost 30-60% of the property value. Beyond the large amount of vacant or abandoned properties, approximately seventy-five percent (75%) of land currently has no protection due to the lack of deteriorating seawalls. Inundation could have disastrous implications if saturated land shifts or fails. Unless the ENTIRE seawall is built, the ENTIRE community is at risk.

- **Flood Insurance Rate Maps (FIRMs)** – New FIRMs are scheduled to be published in October 2021. Insurance costs are nearly 80% the cost of mortgage principal and interest based upon current property values. The majority of area's housing stock's OCCUPIED FIRST FLOOR is three or more feet above the surrounding grade. This architectural attribute significantly reduces actual flood risk. Elevation Certificates and a Letter of Map Amendment (LOMA) will unlock thousands of dollars for improvements and mortgage purchasing power.

- **Sewage Back-Ups** – Residents continue to be plagued with stormwater and raw sewage backups in their basements during and following heavy rains. Uncertainty regarding how DWDS and/or GLWA improvements are addressing the problem undermines investment.

- **Conner Creek Levee** – GLWA's proposed flood prevention project (levee) along Clairpointe Street ends appropriately at the Authority's property edge. Unless the Bayview Yacht Club is consulted and included in GLWA's plans, the Conner Creek Levee's impact will be undermined as flood waters escape around the project's southern edge and inundate the community to its east.

- **Climate Change and Great Lakes Flooding** – The Great Lakes Basin will continue to experience dramatic swings in water levels. Long-term solutions and additional infrastructure investments beyond the temporary protective measures and will be necessary. Residents live with constant fear and anxiety. Public agency support is uncertain and appears to be fading as the waters have temporarily receded.

Appendices

- Appendix A: Case Studies
- Appendix B: List of Tables and Table of Figures
- Appendix C: Resources and References
- Appendix D: Evidence of Sewage Discharge – July 8, 2016
- Appendix E: Jefferson-Chalmers Rich History

Appendix A: Case Studies

- Anacostia Waterfront Initiative, Washington, DC
- Rouge River Wet Weather Demonstration Project/Alliance of Rouge Communities, Metro-Detroit, MI
- Sponge Park, Brooklyn, NY
- Chandler Park, Detroit, MI
- DC Water and Clean Rivers, Washington, DC
- Recovery Park, Detroit, MI

ANACOSTIA WATERFRONT INITIATIVE (AWI)

WASHINGTON, DC

FIGURE 67: AWI FRAMEWORK PLAN

As the nation's capital, the biggest industry in the District of Columbia is housing the Federal Government. More so than any other city, real estate is both big business and a major influencer. As the District began to see economic vitality return after following Receivership (similar to Detroit's Bankruptcy), economic promise continued to leave major portions of the District behind. The Anacostia community was quite literally on the other side of the tracks, but in this instance, the Anacostia River is what separated the poorest neighborhoods in DC from the rest of the city. Communities in Southeast DC, along the Anacostia's northern edge did only slightly better.

Major transportation resources as well as the legacy of industrial uses, including those for the Federal government separated residents from the water. Not that a lot of people wanted to be close to one of the most polluted rivers in the US that flowed through Congress' backyard. Hundreds of acres of surplus and polluted Federal land made redevelopment nearly impossible given the Federal government's arcane land management and disposition regulations.

Shortly after emerging from Receivership, the former Chief Financial Officer, Anthony Williams became Mayor. As CFO, he knew that unlocking the Anacostia waterfront would attract investment to an area of the District that desperately needed it. He not only rebuilt District Government, but set forth policies to encourage building and development.

Under the leadership of a visionary Planning Director, Williams brought together 19 regional and Federal partners that signed a Memorandum of Understanding (MOU) in March 2000, all agreeing to:

- contribute to the revitalization of surrounding neighborhoodsl;
- provide enhanced park areas; and
- develop Government-owned land for the benefit of the people.

Increasing access to the water was the key ingredient in the Anacostia Waterfront Initiative (AWI) Framework Plan. The District created a new quasi-governmental agency, the Anacostia Waterfront Corporation, to implement the agenda and projects outlined in The AWI Framwork Plan. The Initiative has met with amazing success as noted by a long list of projects and billions in investment.

Projects include:

- Redesign of the National Mall Levee to change the Floodplain established by new Flood Insurance Rate Maps;
- DC Water Clean Rivers Project;
- Federal transfer of 150 acres to the District for redevelopment;
- $26 Billion of development including Nationals Stadium, US Department of Transportation Headquarters, The Yards, District Wharf and others;
- Planned redevelopment of RFK Stadium

After nearly 20 years, these efforts take decades to be realized and require patience, diligence and a long-term vision.

TABLE 15: 19 SIGNATORIES TO AWI MEMORANDUM OF UNDERSTANDING

Government of the District of Columbia
General Services Administration
United States Department of the Interior
Naval District Washington
District of Columbia Housing Authority
District of Columbia Sports & Entertainment Commission
District of Columbia Water and Sewer Authority
Marine Barracks of Washington
National Capital Planning Commission
National Capital Revitalization Corporation
US Army Military District of Washington
US Army Corps of Engineers
US Department of Labor
US Department of Transportation
US Department of Housing and Urban Development
US Environmental Protection Agency
US Office of Management and Budget
US Department of Agriculture
US Small Business Administration
Washington Metropolitan Area Transit Authority

FIGURE 68: DISTRICT WHARF

FIGURE 69: THE YARDS

Source: *Anacostia Waterfront Initiative*

Rouge River National Wet Weather Demonstration Project
Alliance of Rouge Communities

Metro-Detroit, MI

The Rouge River National Wet Weather Demonstration Project (Rouge Project) was provided a unique opportunity to demonstrate that a watershed-wide approach to restoring and protecting an urban river system by using a cooperative, locally based approach to pollution control could restore a highly polluted urban river. More importantly, they were given the funds to document their success. Initiated by Wayne County, it began in 1992 and continues today as the Alliance of Rouge Communities.

The Rouge River Watershed covers 466 square miles of southeast Michigan and is home to more than 1.3 million people in parts of Oakland, Wayne and Washtenaw counties. The watershed's 48 communities comprise a diversity of land uses from the urbanized areas of Detroit, Livonia and Southfield to the developing areas of Troy, Canton Township and Novi, to the rural areas of Salem, Superior and Van Buren townships.

Figure 70: Rouge Project Map

Figure 71: Alliance of Rouge Communities Logo

Figure 72: Example of Citizen Lead Streambank Stabilization using Bioengineering techniques – Firefighters Park, Troy MI

The Rouge Project's history dates back to 1975, with the completion of the first wastershed plan under the 208 Program. The Rouge Project took a more holistic approach and considered the impacts from all sources of pollution and use impairments in receiving waters by using known watershed management techniques. The traditional piecemeal approach of focusing only on sources of pollution or a group of sources had not achieved the desired results nor did it achieve the acceptance of the residents of the watershed.

The Rouge Project demonstrated several very important elements of using the watershed management approach including the need to:

- analyze all of the various sources of stressors to the water quality problems in a watershed-physical, chemical and biological;
- establish a hierarchy of pollution sources in a watershed-point sources and nonpoint sources-based upon the adverse water quality impacts of those sources;
- keep reinforcing, at a watershed level, the concept of prioritizing the control of those sources and the other stressors to get desired environmental protection;
- recognize it may take a long time to correct some of these pollution sources or other physical, chemical or biological stressors so it is important to prioritize the control programs to get the maximum environmental improvement as soon as possible; and
- critically assess the cumulative watershed impacts to quantitatively assess the physical, chemical and biological processes and then fashion the watershed-based solutions to prevent treating the symptoms rather than effecting a cure.

The Rouge Project received nearly $300 million in federal grant funds secured by Rep. John Dingell and it required over $300 million of local matching funds. In August 2002, the USEPA's Office of Inspector General (OIG) conducted a nationwide audit and found:

> "*Rouge River Project a Blueprint for Success – The Rouge River National Wet Weather Demonstration in Michigan is an excellent example of how utilizing a watershed approach can help to achieve water quality goals more efficiently."*

Source: *The Rouge River National Wet Weather Demonstration Project: 18 Years of Documented Success*
James W. Ridgway, PE, Executive Director
Alliance of the Rouge Communities

Sponge Park

Brooklyn, NY

Formerly a wetland creek, the Gowanus Canal is now mostly bordered by industrial buildings surrounded by residential neighborhoods. Over decades, industry has polluted the soil and canal bed, accumulating dangerous industrial toxins in the water while CSOs add more pollution. Access to the water's edge is limited to publicly-owned streets that terminate at the canal.

Despite these conditions, increased demand for real estate in Brooklyn has spurred sporadic private development projects that are beginning to open up the edge within their boundaries. This created the need for a unified plan for the development of public access and an environmentally remedial open space system. Local community organizations, government agencies and elected officials designed a unique public open space and a completely modular street-end, known as Sponge Park™.

Figure 73: Pumps and Outfalls on Gowanus Canal

The 1,758-acre watershed boundary contributes water to the canal from several neighborhoods and heavy rain causes the combined sewage to drain directly into the canal.

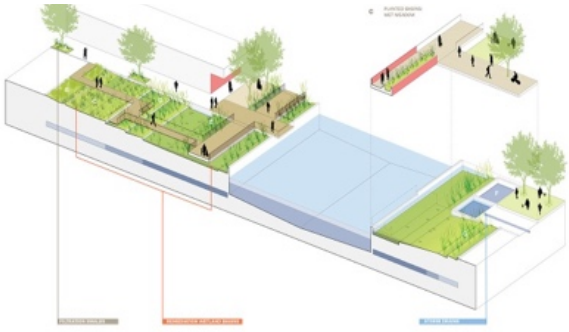

Figure 74: Gowanus Master Plan Section

Sponge Park™ is designed to absorb and manage excess surface water runoff in order to make the water's edge a healthier place for supporting active public engagement with the canal ecosystem.

Figure 75: Gowanus Master Plan

The Masterplan stitched together public and private property adjacent to the canal to create a continuous esplanade with recreational spaces running the length of the canal with access where the park intersects with public streets. Entry locations allow for community-oriented programs such as dog runs, community gardens, public exhibition spaces and temporary markets. Boat launches or ladders creating even more access. Sponge Park is a success.

Figure 76: Sponge Park

Brooklyn-based Artichoke Dance Company sponsors an annual festival of dance, spoken word, music and education. Its Director, Lynn Neuman has been active in turning the Super Fund site into a safe resource for the community, bringing attention to the area's challenges performing on a canoe in the canal.

Figure 77: Activist Draws Attention to the Super Fund Site

***Source**: dlandstudio*

Chandler Park

Detroit, MI

Chandler Park is a historic park located on Detroit's eastside. Originally constructed in the 1800s, it was expanded numerous times between 1922 and 1950 to add amenities including a pool, golf course, and public green space. The Wayne County Aquatic Park was added 1997.

Figure 78: Chandler Park Aquatic Center

In 2014, the Chandler Park Promise Coalition, a project of the Eastside Community Network, formed a new non-profit corporation, The Chandler Park Conservancy. Their mission is to develop exceptional educational, recreational and conservation opportunities at Chandler Park for youth, and people of all ages.

A 5-acre section on the eastern edge of Chandler Park has been dedicated to a recently constructed marshland and several rain gardens. These amenities will have the capacity to hold almost 2.5 million gallons of runoff while creating wildlife habitat for residents to enjoy. The marshland holds up to 4 feet of water which will be recirculated constantly through a pump at the inlet.

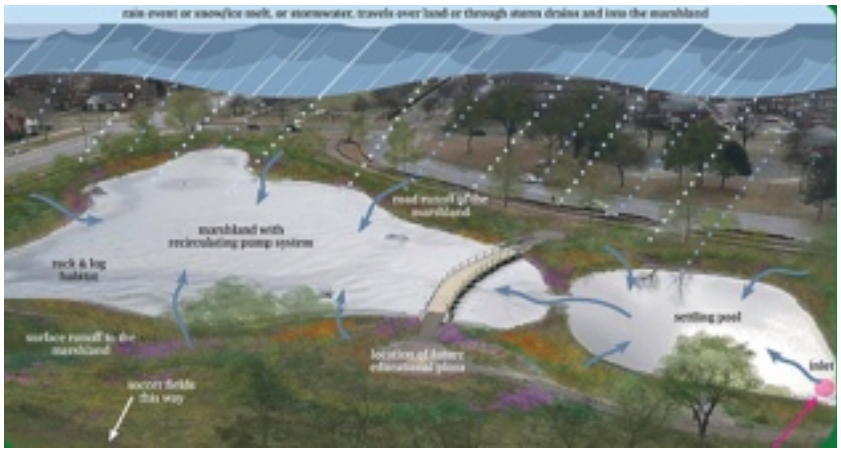

Figure 79: Chandler Park Marshland

This will allow the water to hold more oxygen resulting in a healthy ecosystem. Coupled with the installation of 4,500 native plants and trees, the marshland will attract birds, ducks, turtles, frogs and toads, fireflies, dragonflies and other pollinating insects.

Figure 80: Chandler Park, including Golf Course – Generally bounded by Dickerson, Frankfort, Conner and I-94

The marshland will also prevent runoff from entering the City of Detroit's combined sewer system which can reduce basement back-ups that occur after heavy rainfalls. This will be accomplished by installing new sewers to drain the Wayne County Aquatic Center parking lot and a portion of Chandler Park Drive to the marshland.

The marshland is also providing the foundation for a future environmental education plaza which will include an outdoor classroom, a shade structure and seating for use by the public and educators.

CHANDLER PARK CONSERVANCY
DETROIT

Figure 81: Chandler Park Conservancy Logo

***Source**: The Chandler Park Conservancy*

DC WATER AND CLEAN RIVERS PROJECT

WASHINGTON, DC

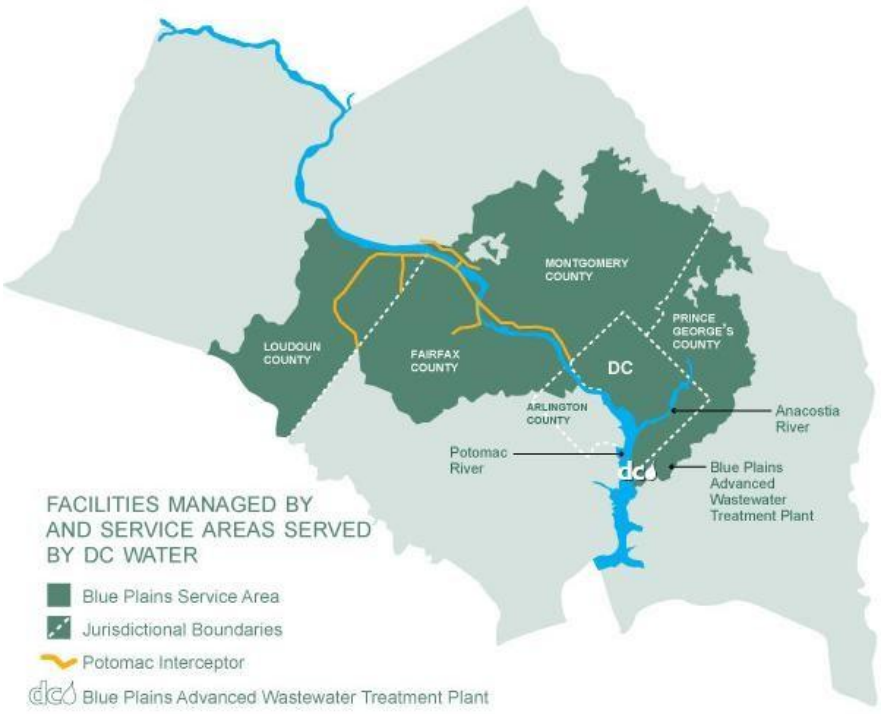

FIGURE 82: DC WATER SERVICE AREA

Created by District of Columbia law and approved by the United States Congress in 1996, The District of Columbia Water and Sewer Authority is one of the largest regional water systems in the country. It is an independent authority of the Government of the District of Columbia and the Authority branded itself as DC Water in 2010.

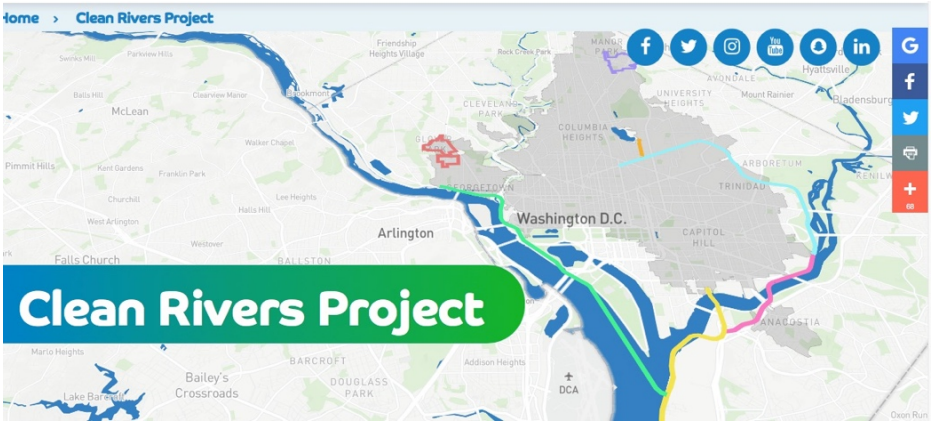

FIGURE 83: FOUR ELEMENTS OF CLEAN RIVERS PROJECT

In 1997, DC Water entered in to a Consent Decree with the EPA to come into compliance with the Clean Water Act, which primarily included controlling the multiple Combine Sewage Outfalls (CSOs) along the Anacostia River.

Started in 2012, Clean Rivers is reducing CSOs into the Anacostia and Potomac Rivers and Rock Creek. It directly captures numerous Anacostia CSOs and carries the polluted water to the Blue Plains Treatment Plant. The project also drains stormwater from a low-lying area in Northwest DC that suffers from chronic flooding during heavy rains. While part of the Consent Decree with the EPA, DC Water customers are assessed a specific fee on water bills to help underwrite the project

TABLE 16: CLEAN RIVERS SUCCESS

98%	**96%**	**498 Acres**
CSO Volume Removed from Anacostia River	CSO Volume Removed System-Wide	Managed by Green Infrastructures
15 Year Storm Conveyance	**1,000,000 Pounds**	**18 Miles of Tunnels**
For Areas Served by Northeast Boundary Tunnel	Reduction of Nitrogen to Chesapeake Bay	Over 100 Feet Below Ground

FIGURE 84: DC WATER'S NEW HQ ON THE ANACOSTIA RIVER

Source: *DC Water*

Recovery Park

Detroit, MI

Near the shuttered Chene-Ferry Market on Detroit's eastside, Recovery Park (Park) was formed in 2010 to spearhead community redevelopment based upon urban farming, food production and job creation for hard to place workers, especially those recovering from addiction and the formerly incarcerated. The Park showcases Detroit as a potential model for providing local produce to restaurants and the creation of jobs in distressed areas and the inclusion of support programs for persons with barriers to employment.

A five-year land deal in 2015 with the City of Detroit, allowed the Park to control 60 acres of a 105-acre footprint using the land primarily for urban farming. Together, with a large number of greenhouses, the organization seeks to take advantage of the "farm to table" movement and harvest produce that will be consumed at local restaurants in 48 hours or less. Recovery Park grows a diverse cornucopia that includes a variety of vegetables (tomatoes, greens, beans, peas, carrots, radishes, kale, cucumbers, arugula, squash) and edible flowers. All in call, the Park has grown about 170 different varieties of produce.

Figure 85: Recovery Park

Recovery Park provides an opportunity for its employees to basic farm skills, helping them overcome whatever life challenges has struggling with a variety of life challenges, including drug addiction or having been formerly incarcerated. Placing soil on an immediately adjacent knoll in the middle of a block, while excavating a moat-like area around the edge, could be easily applied in Jefferson-Chalmers to assist with both storm water and floodplain management.

RECOVERY PARK

Figure 86: Recovery Park Logo

Even though broader economic development, job training and employment opportunities might grow out of future use of vacant land in Jefferson-Chalmers, the selection of Recovery Park as a Case Study was based solely on what appears to be an inexpensive and creative solution to storm water management.

Figure 87: View from Frederick

Figure 88: View from Farnsworth

Source: *Recovery Park and Independent Research*

Appendix B: List of Tables and Table of Figures

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APPENDIX C: RESOURCES AND REFERENCES

ELECTED OFFICIALS: US SENATE AND US HOUSE OF REPRESENTATIVES

SENATOR DEBBIE STABENOW
Southeast Michigan Office
719 Griswold Street, Suite 700
Detroit, MI. 48226
313.961.4330
https://www.stabenow.senate.gov

SENATOR GARY PETERS
Patrick V. McNamara Federal Building
477 Michigan Avenue
Suite 1837
Detroit, MI 48226
(313) 226-6020
https://www.peters.senate.gov

US REPRESENTATIVE BRENDA LAWRENCE
Detroit District Office
400 Monroe Street,
Suite 420
Detroit, MI 48033
Phone: (313) 880-2400
https://lawrence.house.gov

FEDERAL AGENCIES

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FEMA's mission is to help people before, during and after disasters. As the lead Federal agency, it is responsible to support the four (4) phases of the Disaster Life Cycle – mitigation, preparedness, response and recovery – and as such, it has the largest pool of Federal grants available to State, Cities, qualified nonprofit organizations, businesses and individuals during each of the phases.

FEMA Region V
536 South Clark Street
Chicago, IL 60605
312.408.5500

May 27, 2021 – Jefferson-Chalmers Floodplain Management Meeting

National Flood Insurance Program

FEMA Flood Insurance Map Service Center for Flood Insurance Rate Maps (FIRMs) by Address
(*Note: FEMA portal requires high speed internet connection and helpful to close all browser tabs)*

Maps Covering Jefferson-Chalmers 2012
City of Detroit – 260222, reference 26163C0302E, effective 02/02/2012 and
City of Grosse Pointe Park – 260230, reference 26163C0306E, effective 02/02/2012

Proposed Maps Covering Jefferson-Chalmers – Effective October 21, 2021 (Flood Map Changes Viewer)
Flood Insurance Rate Maps (FIRMs) are the official map of a community on which FEMA has delineated the Special Flood Hazard Areas (SFHAs), the Base Flood Elevations (BFEs), and the flood zones applicable to the community. The BFE is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. The BFE is shown on the Flood insurance Rate Map (FIRM) for zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/A0, V1–V30 and VE. The first occupied floor of a structure is not a factor when establishing the Base Flood Elevation, only the 1% annual chance flood event is used to establish the BFE.

First floor height will be one of many rating factors used in the new rating methodology (also called Risk Rating 2.0). Under the current rating methodology, premiums are primarily driven by the zone shown on the FIRM, the elevation of the lowest floor of the structure

compared to Base Flood Elevation, year of construction, compliance with local floodplain management ordinance, and whether or not the structure is the insured's primary residence.

FEMA is building on years of investment in flood hazard information by incorporating private sector data sets, catastrophe models, and evolving actuarial science. With the new rating methodology, FEMA now has the capability and tools to address rating disparities by incorporating more flood risk variables. These include flood frequency, multiple flood types—river overflow, storm surge, coastal erosion and heavy rainfall—and distance to a water source along with property characteristics such as elevation and the cost to rebuild.

Contact:
FEMA Mapping and Insurance eXchange (FMIX)
877.336.2627

Elevation Certificates

Letter of Map Amendment (LOMA) and Letter of Map Revision

Community Resource System

Hazard Mitigation Grant Program (HMGP)
Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Mitigation planning breaks the cycle of disaster damage, reconstruction and repeated damage. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future.

FEMA's hazard mitigation assistance provides funding for eligible mitigation measures that reduce disaster losses. It also:

- Reduces vulnerability of communities to disasters and their effects.
- Promotes individual and community safety and their ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies (resilience).
- Promotes community vitality after a disaster.
- Lessens response and recovery resource requirements after a disaster.
- Results in safer communities that are less reliant on external financial assistance.

Hazard Mitigation Assistance Guidance

US ARMY CORPS OF ENGINEERS (USACE OR COMMONLY REFERRED TO AS THE CORPS) – DETROIT DISTRICT

US Army Corps of Engineering – Detroit District
Patrick V. McNamara Federal Building
477 Michigan Avenue
Detroit, MI 4822
313.226.6413

The Corps is organized into geographic DISTRICTS or regions throughout the United States. Detroit is part of the DETROIT DISTRICT.
https://www.lre.usace.army.mil

The Corps capital construction and managed projects are part of its Civil Works Division.
https://www.lre.usace.army.mil/Missions/Civil-Works/

Click on "**Mission**" and pull down for other mission areas including: Emergency Operations, Environmental Services, Great Lakes Information, Great Lakes Navigation, Great Lakes Restoration Initiative, Military Programs, Operations, Recreation, Regulatory Programs and Permits and Planning.

In its simplest terms, The Corps is the in-house engineering firm of the Army. As such they support the primary client and the Army's mission. As such their mission runs consistent with the military's obligation to protect and defend the United States and its citizens. Maintaining navigable waters for commerce that become important during war, building flood prevention projects that create safe and stable communities, supporting emergency response efforts during natural disasters – to name a few, are clearly identifiable and reasonably fall within the confines of The Corps' mission.

As a result of their primary military mission, The Corps must also regulate the activities consistent with that mission.

USACE Jurisdictional Determinations and Permit Decisions
The Corps Regulatory program, regulates work and structures that are located in, under or over navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899, the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act, and the transportation of dredged material for the purpose of disposal in the ocean (regulated by the Corps under Section 103 of the Marine Protection, Research and Sanctuaries Act). "Waters of the United States" are navigable waters, tributaries to navigable waters, wetlands adjacent to those waters, and/or isolated wetlands that have a demonstrated interstate commerce connection.

Final IPs / Pending Ips – Individual Permits (IPs) are two types of Regulatory permits that the USACE can issue under program authorities. Individual permits include Standard Permits, which are generally more complex in nature and involve notification of the public and commenting agencies, and Letters of Permission, a type of permit issued through an abbreviated processing procedure which includes coordination with Federal and State fish and wildlife agencies, as required by the Fish and Wildlife Coordination Act, and a public interest evaluation, but without the publishing of an individual public notice. In compliance with our regulations at 33 CFR 325.2(a)(8), we are posting a list of issued and denied individual permits. Pending individual permit applications, which have been determined to be "federally complete" but not yet authorized, are also posted to increase Regulatory Program transparency. To be considered federally complete, the application is to contain the information required by regulations at 33 CFR 325.1(d)(9)

Emergency – All Emergency Permits issued under the Alternative Permit procedures (33 CFR 325 (e)(4)) as well as any pending applications are shown.

(Source: USACE Website)

US ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL ENVIRONMENTAL PROTECTION ACT (NEPA)

Established by Executive Order on December 2, 1970, the EPA's mission is to protect human health and the environment. As part of its mission, the EPA oversees programs to promote energy efficiency, environmental stewardship, sustainable growth, air and water quality, and pollution prevention.

US EPA – Region 5 Office
Ralph H. Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604
312.353.2000

https://www.epa.gov
https://www.epa.gov/aboutepa/epa-region-5

GREAT LAKES RESTORATION INITIATIVE

The Great Lakes Restoration Initiative (GLRI) accelerates efforts to protect and restore the largest system of fresh surface water in the world and is committed to creating a new standard of care that will leave the Great Lakes better for the next generation. Built upon the foundation of the Great Lakes Regional Collaboration Strategy, GLRI answered a challenge of the governors of the Great Lakes states. Since 2010 the multi-agency GLRI has provided funding to 16 federal organizations to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward achieving long term goals:

- Fish safe to eat
- Water safe for recreation
- Safe source of drinking water
- All Areas of Concern delisted
- Harmful/nuisance algal blooms eliminated
- No new self-sustaining invasive species
- Existing invasive species controlled
- Native habitat protected and restored to sustain native species

GLRI Action Plan III – Action Plan III was developed with input from states, tribes, local governments, universities, business and others. It outlines priorities and goals for the GLRI for fiscal years 2020-2024, working to accelerate environmental progress in five Focus Areas:

- Toxic Substances and Areas of Concern
- Invasive Species
- Nonpoint Source Pollution Impacts on Nearshore Health
- Habitats and Species
- Foundations for Future Restoration Actions

https://www.glri.us

NATIONAL WEATHER SERVICE

The National Weather Service provides weather, water and climate data, forecasts and warning for the protection of life and property and enhancement of the national economy.

National Weather Service – Central Region
9200 White Lake Road
White Lake, MI 48386
248.620.9804

weather.gov

Local forecast by "City, St" or ZIP code

STATE OF MICHIGAN ELECTED OFFICIALS AND STATE AGENCIES

SENATOR STEPHANIE CHANG
5555 Conner Avenue
Detroit, MI. 48213
313.922.6949
senschang@senate.michigan.gov

https://senatedems.com/chang/

STATE REPRESENTATIVE JOE TATE
124 North Capitol Avenue
Lansing, MI. 48933

192 Lenox Street
Detroit, MI. 48215
313.769.8644
joe@tateformichigan.com

https://housedems.com/joe-tate/

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (EGLE)
Liesl Eichler Clark, Director

EGLE protects the health of Michigan's residents and the environment through its fourteen (14) Divisions and Offices addressing a variety of issues including Air Quality, Drinking Water, Material Management, Climate and Energy, Oil, Gas and Minerals, Water Resources and of course the Great Lakes. The Department also houses Public Advocates for Clean Water and Environmental Justice.
https://www.michigan.gov/egle/
800-662-9278

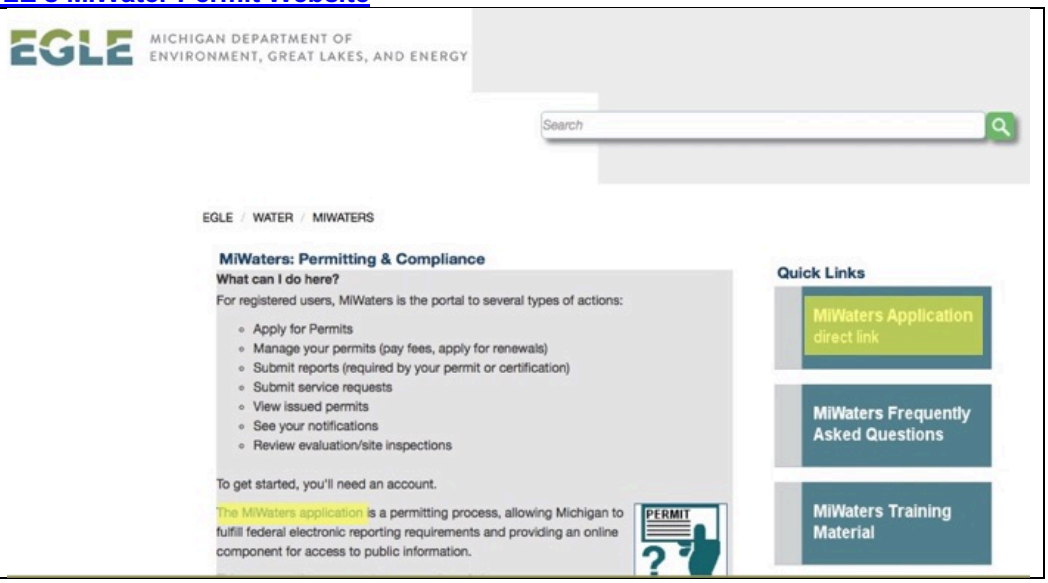
Detroit District Office:
Cadillac Place – 3058 West Grand Boulevard
Suite 2-300
Detroit, MI. 48202
313-456-4700; Fax: 313-456-4692

Regional Office:
2770 Donald Court
Warren, MI 48092

Joint Permitting Authority – EGLE's MIWater Permit Website

Flood Plain Determination
Patrick Durack
District Flood Plain Engineer
Warren District Office
Water Resource Division
27700 Donald Court
Warren, MI. 48092-2793
586.256.7273
durackp@michigan.gov

Note: The City of Detroit relies on the State of Michigan's EGLE permitting expertise and processes. The Corps also has jurisdiction over the issuing of permits. Permits for both agencies are submitted through the EGLE website.



Great Lakes Water Authority (GLWA)

Sue McCormick, Chief Executive Officer

GLWA is a regional water authority in state of Michigan, providing 40% of Michigan's population drinking water and wastewater services for 30% of the state, primarily the Southeast Michigan communities, including Wayne, Oakland, and Macomb counties. The Authority was established as part of the settlement for the Detroit Bankruptcy and representatives from the region the Detroit Water and Sewer Department (DWSD) served were given seats on the GLWA Board and many of DWSD assets were transferred to the GLWA. The Great Lakes Water Authority is supported by two teams working in tandem to ensure GLWA is the provider of choice for water and wastewater services in Southeast Michigan. The Board of Directors brings together representatives from the City of Detroit as well as Wayne, Oakland and Macomb Counties and includes a representative for the State of Michigan. Together, they set GLWA's policies.
https://www.glwater.org
844-455-GLWA (4592)

How Great Lakes Water Authority Differs from the Detroit Water and Sewerage Department
https://www.glwater.org/wp-content/uploads/2018/06/GLWA_DWSD-Roles-and-Responsibilities_FINAL-210331.pdf

County of Wayne – County Commissioner

Wayne County Commissioner

Tim Killeeen, Commissioner – District 1
500 Griswold Street
Detroit, Mi. 48226
313.224.0920

County of Wayne/City of Detroit Agency Jurisdiction

The City of Detroit is part of the County of Wayne in the State of Michigan. Each level of government – City, County and State – has their own Executive overseeing administrative agencies responsible for delivering government services to residents with in those jurisdictions. Each also has a Legislative Branch that provides the administrative and regulatory framework as well as budgeting by enacting laws and ordinances.

In Wayne County, for example, the Department of Public Services is the agency responsible for Parks & Recreation. Public Services' other divisions include Roads and Engineering. Director Beverly Watts manages the Department and reports to Wayne County Executive, Warren C. Evans.

All three levels of government cooperate on a variety of projects, including the parks within Jefferson-Chalmers, Detroit's Home Rule means the City of Detroit has exclusive administrative responsibility for park planning, improvements and management. The County's primary role is to provide financial to support projects that are a priority for both jurisdictions.

Funding decisions to support joint projects are made by the County Commission.

CITY OF DETROIT EXECUTIVE AND CITY AGENCIES

CITY OF DETROIT OFFICE OF THE MAYOR

Michael Duggan
2 Woodward Avenue, Suite 1126
Detroit, MI. 48226
313.224.3400

DISTRICT 4

Roderick Liggons, District Manager
Department of Neighborhoods
2 Woodward Avenue, Suite 1126
Detroit MI 48226
313.224.3392 - O
313.236.3518 - C
rliggons@detroitmi.gov

Dennis E. Perkins, Deputy District Manager
Department of Neighborhoods
2 Woodward Avenue, Suite 1126
Detroit MI 48226
313.224.3392 - O
313.236.3520 - C
dperkins@detroitmi.gov

May 27, 2021 – Jefferson-Chalmers Floodplain Management Meeting

City of Detroit – Flood Information

2020 Temporary Floodplain Mitigation Plan, issued 05.12.2020

DETROIT BUILDINGS, SAFETY, ENGINEERING AND THE ENVIRONMENT

2 Woodward Avenue, Suite 400
Detroit, MI. 48226
313.224.2733

Donny Wright, District 4 BSEED Inspector (Tiger Dams and Seawalls)
313.815.5542
wrightdo@detroitmi.gov

DETROIT BUILDING AUTHORITY

1301 3rd Avenue, Third Floor
Detroit, MI 48226
313.224.0174

Tyrone Clifton, Director
tclifton@detroitmi.gov

DETROIT HOUSING & REVITALIZATION DEPARTMENT

2 Woodward Avenue, Suite 908
Detroit, MI. 48226
313.224.6380

City of Detroit's 0% Interest Home Repair Loan Program

Jefferson East, Inc. Housing Services Intake Form

http://www.detroithomeloans.org
Phone Intake: 313-314-6414

DETROIT PLANNING & DEVELOPMENT DEPARTMENT

2 Woodward Avenue, Suite 808
Detroit, MI. 48226
313.224.1339

Alexa Bush, East Region Director
bushal@detroitmi.gov

- **Jefferson-Chalmers Neighborhood Framework, April 2019,**
  https://detroitmi.gov/sites/detroitmi.localhost/files/2019-05/Jefferson%20Chalmers_Final%20Book.pdf

GENERAL SERVICES DEPARTMENT

18100 Myers Road
8221 West Davidson
115 Elliot
313.628.0900

DETROIT WATER AND SEWERAGE DEPARTMENT.

Water Board Building – 735 Randolph Street
Detroit, MI. 48226
313.267.8000

Detroit City Council

Detroit City Council

Andre L. Spivey – District 4
2 Woodward Avenue, Suite 1340
Detroit, MI. 48226
313.224.3831
councilmanSpivey@detroitmi.gov

Scott Benson – District 3
Green Task Force Chair
2 Woodward Avenue, Suite 1340
Detroit, MI. 48226
313.224.1198
BensonS@detroitmi.gov

City Planning Commission

Lauren Hood, Chair (At-Large)
Marcel Todd, Director
2 Woodward Avenue, Suite 208
Detroit, MI. 48226
313.224.6225
mtodd@detroitm.gov

cpc@detroitmi.gov

NON-GOVERNMENTAL ORGANIZATIONS (NGOS)

DETROIT FUTURE CITY

2990 West Grand Boulevard
Detroit, MI 48202
313.259.4407
https://detroitfuturecity.com

Detroit Future City's Mission: Through the shared vision of the Strategic Framework, Detroit Future City (DFC) is committed to advancing the quality of life for all Detroiters.

EASTSIDE COMMUNITY NETWORK

4401 Conner Avenue
Detroit, MI. 48215
313.571.2800
https://www.ecn-detroit.org

ECN's Mission: Eastside Community Network develops people, places and plans for sustainable growth on Detroit's east side.

JEFFERSON EAST, INC.

300 River Place, Suite 5250
Detroit, MI. 48207
313.331.7939
https://www.jeffersoneast.org

NEIGHBORHOOD RESOURCE HUB

14300 East Jefferson Avenue
Detroit, MI. 48215
313.314.6424

Jefferson East's Mission: Growing Detroit's east Jefferson corridor and its neighborhoods through facilitative leadership, collaborative partnership, innovative and impactful programming.

City of Detroit's 0% Interest Home Repair Loan Program

Jefferson East, Inc. Housing Services Intake Form

http://www.detroithomeloans.org
Phone Intake: 313-314-6414

East Jefferson Main Street Plan

- https://ejdevco.maps.arcgis.com/apps/MapSeries/index.html?appid=bbdfb94a01f14ed98898dd46150cde25

SIERRA CLUB

109 E César East Chávez Avenue
Lansing, MI 48906
517.484.237

Sierra Club Mission is to explore, enjoy and protect the planet. To practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out those objectives.

Erma Leaphart, Associate Organizer
Sierra Club Michigan Chapter
Great Lakes Program
2727 Second Ave, Suite 112
Detroit, MI 48201
313-475-7057

www.sierraclub.org/michigan

DETROIT GREENWAY COALITION

PO Box 32013
Detroit, Michigan 48232
313 649-7249
info@detroitgreenways.org

https://detroitgreenways.org/

The Detroit Greenways Coalition's Mission is to create, conserve and promote greenways and green spaces in order to connect people, places and nature by promoting and building a network of greenways, Complete Streets, and bike lanes.

THE GREENING OF DETROIT

13000 West McNichols Road
Detroit, MI, 48235
313-237-8733
info@greeningofdetroit.com

https://www.greeningofdetroit.com

The Greening of Detroit's Mission is focused on enhancing the quality of life for Detroiters by planting trees, providing job training and involving our youth in the education of the natural environment.

FRIENDS OF THE DETROIT RIVER

20600 Eureka Road, #250
Taylor, MI 48180
734.288.3889
river@detroitriver.org

https://detroitriver.org

The Friends of the Detroit River envisions an ever-improving quality of life for people, plants and animals in southeast Michigan and southwest Ontario.

MICHIGAN STORMWATER-FLOOD PLAIN ASSOCIATION

John Hancock, CFM, Executive Director
JHancock@a2gov.org

https://mifloods.org

The Michigan Stormwater-Floodplain Association (MSFA) is the Michigan Chapter of the Association of State Floodplain Managers. The Association's mission is to mitigate the losses, costs and human suffering caused by flooding and to promote wise use of the natural and beneficial functions of floodplains

Water-Based Area Businesses

Detroit River Sports

14601 Riverside Boulevard
Detroit, Michigan
313.908.0484
paddle@detroitriversports.com

https://www.detroitriversports.com

Detroit River Sports offers a unique way to explore the Motor City, specializing in kayak and stand-up paddle board tours of the Detroit River and the islands of the city's East side.

Riverside Kayak Connection

4016 Biddle Avenue
Wyandotte, Michigan 48192
(734) 285-2925
info@riversidekayak.com

https://riversidekayak.com

Riverside Kayak Connection (RKC) is Metro Detroit's premier paddling shop dedicated to improving kayaking, water trails and public access in Southeast Michigan by offering kayak retail, tours, classes and events for all paddling abilities.

Appendix D: Evidence of Sewage Discharge – July 8, 2016

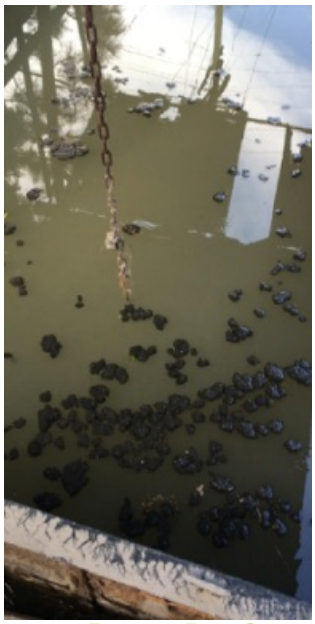


Figure 76: Feces as Part of Raw Sewage Discharge

Figure 77: Condom as Part of Raw Sewage Discharge

Figure 78: Dead Water Creatures as Evidence of Discharge

Figure 79: Dead Water Creatures as Evidence of Discharge

Figure 80: Dead Water Creatures as Evidence of Discharge

Figure 81: Dead Water Creatures as Evidence of Discharge

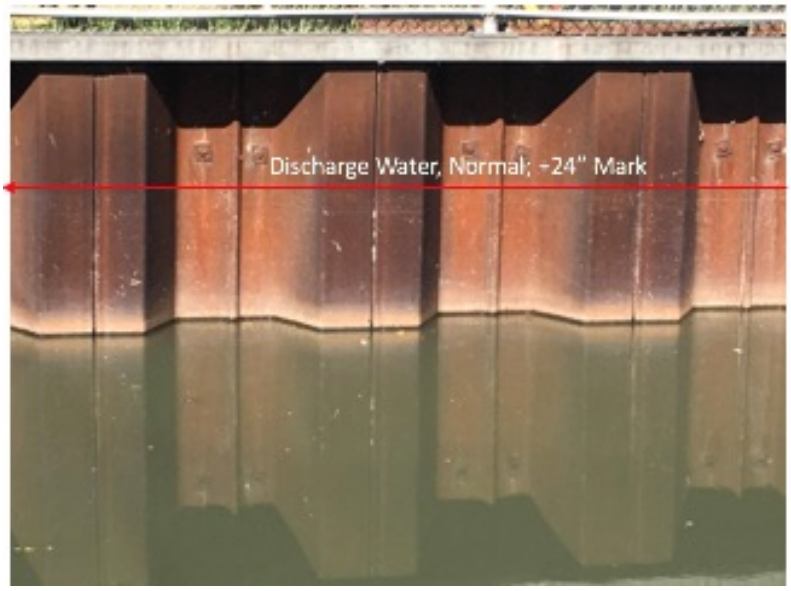


Figure 82: Evidence of water Level 24" Above Normal

Figure 83: Sediment and Debris Carried to Higher Ground Due to Increase in Water Level

Figure 84: Sediment In Basement

Appendix E: Jefferson-Chalmers Rich History

The Jefferson-Chalmers community has a diverse and storied past. Its unique collection of affordable, middle class and up market and exclusive housing, over 100 acres of riverfront parkland, an interlocking set of canals and creeks that includes a rich history of auto barons, auto managers, rumrunners, cocktail sailors, ballroom dancers, fleeing slaves and civil rights leaders. Civil disobedience, scandal, urban renewal and revitalization are also present. There are few if any, in all of the US and beyond, that can stake a claim of influence, like Jefferson-Chalmers.

Billions of dollars to support industry around the world grew from seeds planted in this community.

Three Names – Henry Ford, Gar Wood and Harry Garland.

The 2019 movie *Ford versus Ferrari* highlighted challenges facing Ford in the 1960s. Auto racing also played a critical role during the embryonic stage of America's Big Three as Henry Ford's 999 beat Alex Winton in 1902 at the horse track turned auto racing track in the community. Ford sealed his fate that day, luring investment to his fledgling company. Some 75 years later his great-grandson – along with Elizabeth Reuther (Walter Reuther's Daughter) – would purchase the Grayhaven estate of Lawrence Fisher, Cadillac Motor Car's President. The purchase allowed the mansion to become the center for Hare Krishna community. Less than a half-mile south, at the foot of the Dickerson, Alfred Brush Ford Park continues the legacy of the Ford Motor Company.

Figure 98: Garland Seaplane Base and Flight School. Garland's Home (The Lighthouse Center) in the background.

Figure 100: Gar Wood's Dump Truck of Skeptical Investors

Figure 102: Ford Motor Company logo, streamlined from original designed, introduced in 1912.

Figure 99: Grumman G-44 Widgeon at the Seaplane Base, c. 1947

Figure 101: One of Gar's Luxury Wood Boats.

Figure 103: Ford with his 999

Garfield (Gar) Wood was a legendary industrialist and resident of Jefferson-Chalmers, entrepreneurs Tom and Larry Turcotte continue restoring and building Gar Wood Boats today in Brent Lake, New York. While powerful wooden Gar Wood Boats were targeted at wealthy consumers, he also built thousands of recreational boats when he purchased the makers of Chris-Craft Boats in 1916. As the first person to break 100 mph on water, manufacturing watercraft was a source of pleasure and many trophies, but his wealth came from the invention of the small-scale hydraulic lift. When skeptical investors did not believe him, they fell out of a dump truck and then, fell over themselves to invest. Demand for Gar's invention was so great that he built an international industrial empire around it. The small-scale lift would go on to be used on every dump truck, lift truck, all kinds of heavy construction equipment from backhoes to bulldozers, and semitruck fifth wheels. It was also used elevators and the shocks that support a car's hood or trunk.

Eminent domain in 1952 erased the Garland Seaplane Base and Flight School when the City took Harry Garland's property for Lakewood East Park and the Lighthouse Center – a home he built in 1945. Even though the base and buildings are gone, Harry Garland was an industrial giant, launching Garland Manufacturing Company as an auto parts supplier in 1935. He led the pivot to support the wartime effort as he turned to parts for tanks and planes during World War II. At the Clairpointe Marina, his unique "railroad system" was used to transport deep-keeled boats from the water to the storage areas and back. Garland's Grumman G-44 Widgeon amphibian was often seen taxiing on the Detroit River. Designed by Grumman for the civilian market, it became a critical anti-submarine aircraft and rumors suggest Garland influenced the military's design and technical modification. He sold manufacturing company in 1947, but went on to be the "receiver of choice," often selected by bankruptcy judges to oversee troubled companies. In the 1950s, he developed sophisticated conveyor systems, used for millions of applications from the 1964 World's Fair to airports.

Centuries before, as the French laid claim to this part of the new world and took control by massacring the Fox Indians who were native to the land. Before, during and after the Civil War, the few structures and shanties that occupied the Grand Marais often provided sanctuary to slaves seeking freedom in an important stop on the Underground Railroad as the adjacent stretch of the Detroit River was the narrowest to cross into Canada.

Figure 104: Maheras-Gentry Park Signs

Like much of Detroit, the rich fabric of civil rights actions for and civil disobedience by African-Americans often runs parallel to the history of white industrialists. The restrictive real estate practices that kept blacks from owning property east of Algonquin, on the neighborhoods western edge, resulted in multiple generations and branches of the same families buying homes on Conner, Tennessee and Clairpointe as the streets eventually felt like one big family. Peter Maheras Park was named for a WWII hero from that community. In the late 1950's, when funds for a recreation center were diverted by City Council to a center in a white neighborhood, a resident and activist threatened to bring a bus of young black children into the white neighborhood to use its facilities. City Council quickly reversed its decision allowing for an addition of a Recreation Center and Pool. Decades later, the community would seek Historic Designation and protect it from private development as the activist – Bronson Gentry would be honored by adding his name on the Park and Rec Center, next to his military buddy. The nearby horseshoe club also bears his name. as Pop Gentry was a highly-accomplished shoe pitcher, winning several national titles throughout his career.

In July of every year since those brave actions in the 50's, the family known as the Conner-Tennessee-Clairpointe (C-T-C) Old Timers, gathers reconnecting the three street's three blocks for a weekend festival as food, conversations, laughter, hugs, card games, horse shoes, and a jazz concert that culminate in a sunrise service and gospel concert on Sunday.

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Even neighborhoods like Midtown, Grandmont-Rosedale, Indian Village, Corktown and Green Acres cannot boast this amount of international impact, diverse history and these kinds of assets – especially, when considering the community's water resources that began over a century ago, as land was brought forth from a swamp. That land was filled with homes constructed for workers, managers and executives of the industrial development to the west where Hudson Motor Cars and predecessors to the Chrysler name plate were built. Children of early homeowners swam and fished in what was left of the swamp, interlaced with homes before seawalls formalized the canals and riverfront edge. They chased birds whose habitat lasted long after houses filled the area's lots. In the 1990's residents witnessed Michigan's Department of Natural Resources trap pheasants for breeding in other parts of the state – because they were so hardy.

Plagued with the same urban ills felt throughout the city and around country, the community became a Federally-designated Urban Renewal Area. Eminent domain was followed by the wholesale clearance of homes and businesses. Disinvestment was accelerated by the "HUD Scandal" when a US Department of Housing & Urban Development program designed to support investment, became rife with waste, fraud and abuse, swindled area homeowners.

Figure 105: Evidence of Investment in Jefferson-Chalmers: Signs Marking Each Development

Together, the middle of the community was hollowed out and remained fallow until suburban-styled developments twenty plus years ago brought hundreds of millions of dollars of much needed investment to the community. The new redevelopment pattern that followed allowed each project to often be considered in a vacuum, giving the appearance of no clear comprehensive strategy, while also fracturing of the community's original fabric and street grid.

About the Author: Jay C. Juergensen

With over 35 years of diverse professional experience, Jay C. Juergensen is a nationally recognized expert in community and economic development, disaster preparedness and recovery and capital program/public works/water utility management having implemented $30-billion of investment in more than 31 communities and 20 states. A former resident and current property owner in Jefferson-Chalmers, Mr. Juergensen is considered an expert on the neighborhood's history and his work in the community includes:

- **Victoria Park** – Jay pulled the first new single-family house building permit in the City of Detroit in over 30 years.
- **Historic Preservation** – Raised property values by renovating nearly 20 units in the neighborhood's historic core while promoting the historic commercial corridor.
- **Jefferson East** – Raised funds for the first professional staff as Founding President.
- **Fox Creek Combined Sewage Overflow (CSO)** – Recorded video footage of the sewage rooster tail shooting out of the CSO that played a critical role in the class action lawsuit against Grosse Pointe Park.

Jay has worked collaboratively with State and Federal agencies around the country. In Michigan they include MSHDA, MEDC and DNR. Defense, State, Homeland Security, Interior, and GSA are amongst his list of partners of Federal partners. Most significantly, he has worked with FEMA and US Army Corps of Engineers (The Corps) on disaster recovery, flood prevention projects (levees and dunes), floodplain management, and FIRMs. He has a proven track-record of designing and establishing new and dynamic initiatives, organizations and projects within public agencies. Jay has led multibillion dollar initiatives at DC Water – one the nation's largest regional water utilities, Nassau County's Bay Park Sewage Treatment Facility and the Long Island Power Authority (LIPA).

His professional portfolio includes:

- **National Mall Levee** – Negotiated unprecedented agreement between FEMA, The Corps, National Park Service and the District of Columbia to redesign of the Potomac Park Flood Prevention Project which change FIRMs in the District, unlocking $26 Billion of investment on 150 acres surrounding the new Nationals Stadium.
- **Governor's Office of Storm Recovery** – Appointed by Governor Cuomo to establish a new state agency while managing over $7.9 Billion of Federal resources after Super Storm Sandy.
- **City of Houston and Harris County** – Ensured the agencies responsible for Hurricane Harvey recovery had the necessary administrative resources to manage nearly $2.5 billion in Community Development Block Grant-Disaster Recovery (CDBG-DR) funds.
- **Affordable and Supportive Housing** –Involved directly in the development and construction of over 10,500 housing units, many of which focused on very low-income residents.

Circle of Sustainability™

He believes creating thriving, people-centered resilient communities is his life's calling. Jay's commitment to excellence together with his passion fuels his tenacity for finding solutions to long-standing obstacles that limit re-investment in economically distressed neighborhoods while overcoming the challenges of entrenched bureaucracies. His enthusiasm is contagious and he has a particular ability to gather and engage people in thoughtful and substantive discussions on matters of importance that affect and improve their lives while challenging conventional wisdom and pushing for creative solutions. Jay is committed to collaboration and the respectful engagement of diverse stakeholders as part of the problem-solving process.

It is this very unique combination of skills and experience that has inspired him to craft this White Paper, intent on challenging the community residents, business owners, non-profits, elected officials, and public agency stakeholders to think more comprehensively about Jefferson-Chalmers interconnected water resource management challenges and asking them to consider better solutions.