

# MEMORANDUM

<b>Date:</b>	March 28, 2023	<b>TG:</b>	1.21146
<b>To:</b>	Amy Weymouth, GBNRTC		
<b>From:</b>	Scott Le Vine, Transpo		
<b>cc:</b>			
<b>Subject:</b>	Updated Project Listing and Project Cost Estimates for 2050 MTP Update		

## Objective

As part of GBNRTC's preparation of an updated Metropolitan Transportation Plan (superseding the *Moving Forward* MTP published in 2018), there is a need to establish a fiscally constrained Project Listing. This involves both updating which projects are included in the fiscally constrained Listing, and their cost estimates.

Two contextual points are worth noting relative to the development of the previous MTP in 2018.

The 2021 Bipartisan Infrastructure Law (BIL; formerly known as the Infrastructure Investment and Jobs Act; IIJA) provided a step increase in transportation system funding, which is reflected in an increase in GBNRTC's forecast of resource availability from \$10.2B in the 2018 MTP (2018 dollars) to \$21.5B in the 2023 MTP (2023 dollars).

However, the covid pandemic and its aftermath have led to economy-wide inflation, which has been particularly strong in the construction sector. This has the effect of reducing the purchasing power of each dollar of transportation funding.

## Approach

The approach to updating GBNRTC's Project Listing consisted of the following tasks:

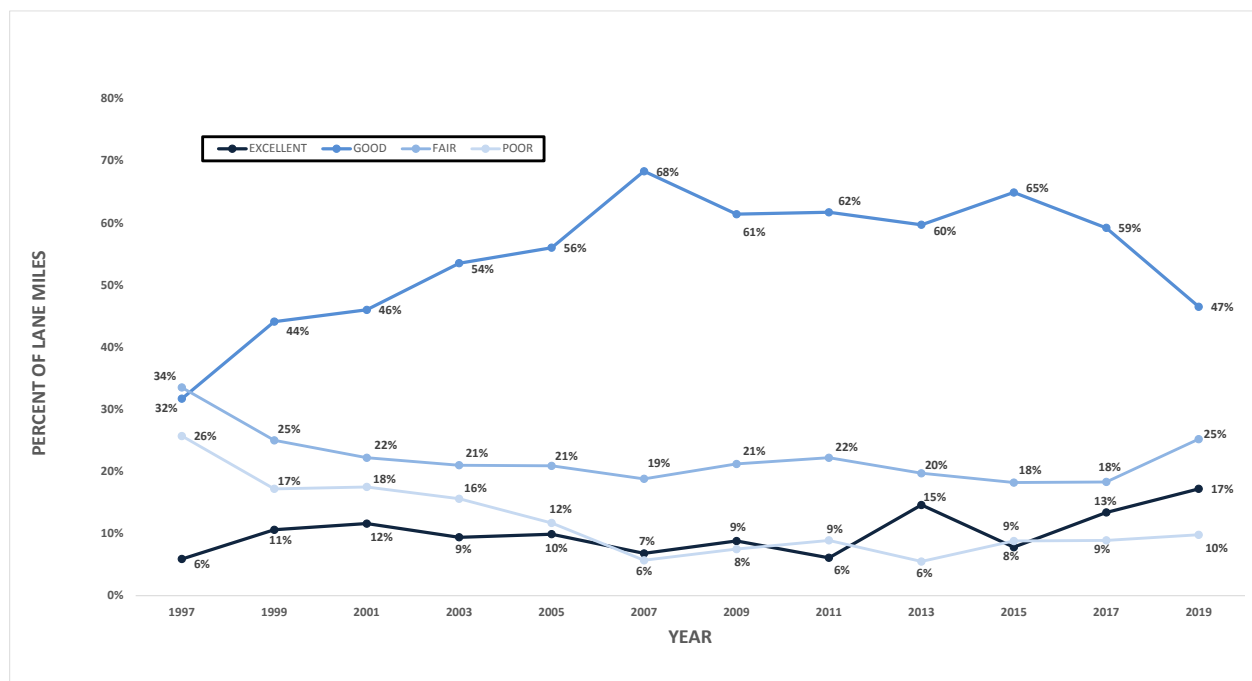
- 1) The 2018 Project Listing was reviewed, at which time completed projects and projects which are no longer regional priorities were removed from the Project Listing.
- 2) At the same time, projects that were previously identified as Illustrative (i.e. unfunded) and had become higher regional priorities were moved onto the fiscally-constrained project listing.
- 3) GBNRTC members were consulted (both through GBNRTC's standing Transportation Projects Subcommittee meeting on 1/18/23 and bilateral consultation with GBNRTC staff), and new projects were also added to the Project Listing.
- 4) For projects having updated (year 2023) cost information available from their sponsoring agency or the Transportation Improvement Program (TIP), these costs were incorporated directly into the 2023 MTP.
- 5) For the remaining projects which appeared in the 2018 MTP and for which more recent cost estimates were not available, updated cost estimates were developed to reflect current conditions (using the approach described in the next section).

- 6) After accounting for the costs of the system enhancement projects, the amount for preservation projects was considered in the context of historical allocation of preservation funds. The historical amount of two-thirds (67%) of available revenue allocated for preservation had been developed and utilized in the previous MTP following a recommendation by FHWA in the 2016 certification review. The increase of funding provided by the BIL, however, comes with the goal to deliver transformational changes to the outcomes from the transportation sector. GBNRTC and its members took this into account and established a preservation amount of \$12.6 B which represents 58% of the overall funding available and an increase in real terms of 32% (after accounting for inflation). In other words, the amount of system maintenance to be performed will increase by nearly one-third. However, the amount allocated in this MTP to enhancement projects represents a 73% real-terms increase – with this prioritization of enhancement reflecting the BIL’s overall emphasis noted above.

GBNRTC notes that the system preservation activities undertaken under the purview of the 2018 MTP have resulted in highway system conditions in the Buffalo-Niagara region which:

- 1) exceed the NYS statewide pavement and bridge condition performance measures, as well as the statewide targets for years 2024 and 2026; and
- 2) have generally been stable as measured by overall condition of the federal-aid highway system (i.e. no indication of systematic worsening of road conditions; see Figure 1)

Figure 1: Federal-aid Eligible Highway System Condition in the Buffalo-Niagara region by year and category, 1997 through 2019 (latest available data).



During this process, GBNRTC consulted with FHWA and FTA regarding GBNRTC's forecasting of fiscal resources after the implementation of the Bipartisan Infrastructure Law. An important feedback item received was guidance that GBNRTC should not specify that any funding from the BIL's many discretionary (competitive) funding programs is available in the fiscally constrained budget. Guidance received was to identify specific projects for which the region is seeking (or expects to seek) discretionary federal funding and include these projects in the 2023 MTP's listing of Illustrative projects, and as/when discretionary funding is awarded GBNRTC would then update its MTP by moving these projects into the fiscally constrained listing to reflect this funding becoming committed to the region.

As is common practice at peer MPOs nationally, GBNRTC includes an 'Illustrative Listing' of projects that have been determined by GBNRTC's members to be worthy projects but which are not budgeted in the fiscally-constrained listing.

GBNRTC also includes certain conceptual projects in the fiscally constrained listing which are generic at the time of the MTP and are later scoped during development/updating of GBNRTC's Transportation Improvement Program (TIP) to specific areas or transportation corridors. It is generally assumed that enhancement projects on roadway corridors (e.g. SEMA corridors, Complete Streets, etc.) will be undertaken during routine major maintenance cycles – cost estimates for these types of projects are therefore comprised the incremental project items that deliver system enhancement, with maintenance budgets accounting for items such as reconstructing pavement that is at the end of its useful life.

## ***Cost Inflation***

As is common knowledge within the infrastructure sector, construction costs have sharply increased in the aftermath of the covid pandemic.

For purposes of developing the 2023 MTP's Project Listing, construction cost inflation was quantified using USDOT's *National Highway Construction Cost Index (NCCHI)*<sup>1</sup>.

Figure 1 below shows the NCCHI trend since year 2002, showing the post-pandemic trend break which started in year 2021 and continued in 2022.

---

<sup>1</sup> <https://www.fhwa.dot.gov/policy/otps/nhcci/>

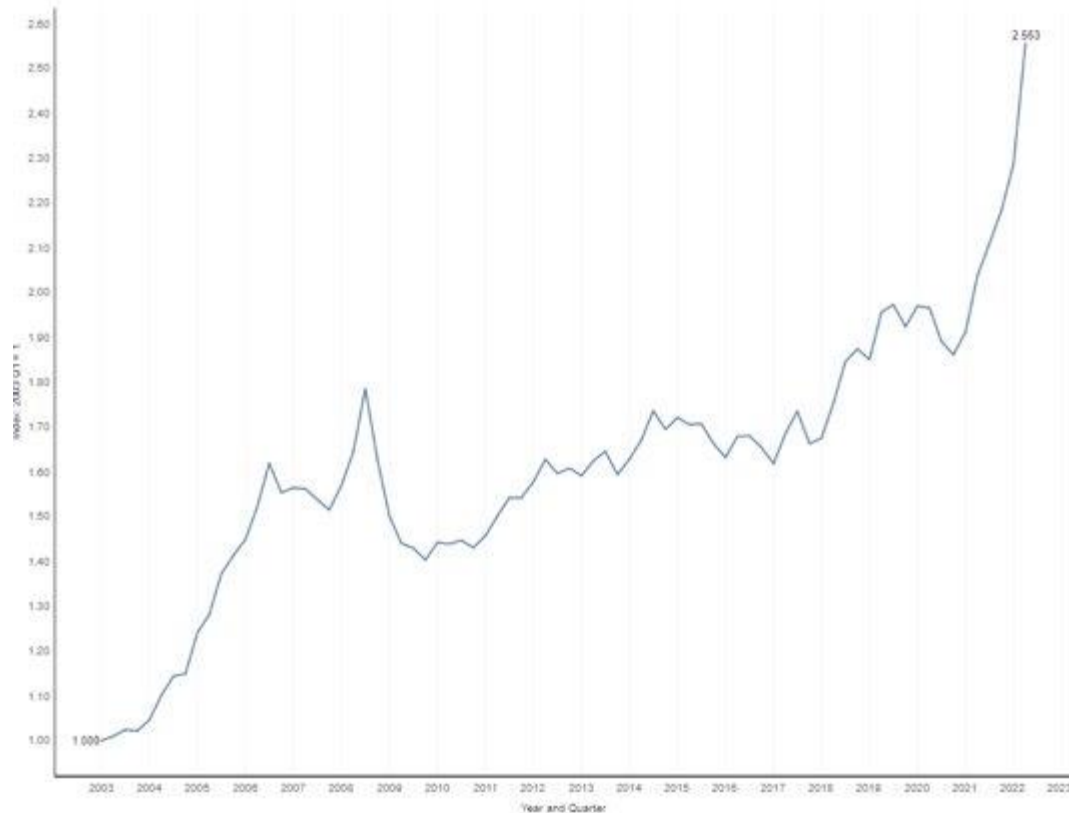


Figure 2: Time series (2003 through 2022) of USDOT's National Highway Construction Cost Index

This trend break raised two issues: 1) how to account for construction cost increases since the 2018 MTP that were greater than anticipated, and 2) how to account for construction cost increases in the future (out to year 2050, the MTP's horizon year).

The first of these issues was dealt with by calculating the extent to which inflation in years 2021 and 2022 (and assumed to have continued to the time of writing, in Q2 2023) exceeded the 2.5% annual rate assumed in GBNRTC's year 2018 MTP. This resulted in a calculation of unanticipated past inflation of 42%. For projects which were carried through from the year-2018 project listing and for which no updated cost estimate was available from the sponsoring-agency (see item #4 in the numbered listing in the *Approach* section of this memorandum), this 42% uplift was applied to the year 2018 cost estimates.

For the second issue – assumed future cost inflation – GBNRTC reviewed MTPs published by peer MPOs in 2021 and 2022, which contained assumptions of future cost inflation in the range of 2-2.5% annually. Therefore, for purposes of GBNRTC's 2023 MTP, the 2.5% annual cost inflation assumed in 2018 was carried forward. In other words, the assumption is that costs will remain elevated relative to the pre-pandemic period, but in future the inflation rate will moderate such that costs will grow at the same rate as previously assumed. However, in recognition of apparently greater uncertainty regarding future cost inflation, project cost estimates that were updated from the year 2018 MTP were modified to include a 25% cost contingency, in contrast to the 10% contingency included in the 2018 MTP.

## Summary of MTP 2023's Fiscally Constrained Plan

Table 1: Summary of MTP 2023 fiscally constrained plan (values in millions; year-of-expenditure)

Item	Value in 2018 MTP	Value in 2023 MTP
Available fiscal resources	\$10,379.63	\$21,554.78
Allocation for preservation/maintenance	\$6,764.57	\$12,655.95
Allocation for system enhancement projects	\$3,615.06	\$8,898.83

## 2023 MTP's Project Listing

Table 2 contains the project listing developed for the 2023 MTP. Project are organized into functional categories, as well as three lists:

- Table 2: The fiscally-constrained listing
- Table 3: The Illustrative listing
- Table 4: "Partnership opportunities" which are outside the direct purview of GBNRTC but are relevant to the GBNRTC region and involve partnership with other agencies

Table 2: MTP-2023 fiscally constrained project listing

Project ID	Project Name	Project Description	Cost (year of expenditure dollars)
<b>New Mobility and Transit</b>			
NMT1	Metro Transit Expansion	Expand high quality transit service in Buffalo to Tonawanda and Amherst.	\$1,698.01
NMT2	Metro State of Good Repair	Metro Rail vehicle replacements, station enhancements, track and catenary replacements.	\$400.00
NMT3	Zero Emissions Bus Purchase and Bus Infrastructure Garage Enhancements	Zero-emissions bus purchases. Infrastructure installation, facility modifications, and the addition of new power supply or other fueling infrastructure.	\$400.00

NMT4	Mobility Hubs	Install varying physical and technology improvements for various modes to better serve travelers at strategic locations.	\$80.96
NMT5	Bailey Avenue High Capacity Transit Enhancements	Implement BRT along Bailey Avenue. Includes transit and streetscape enhancements and smart technology implementation	\$78.44
NMT6	NFTA Bus System-wide High Capacity Transit Enhancements	Implement transit enhancements along select corridors.	\$75.00
NMT7	Access Improvements near NFTA stations	Enhance multimodal access to/from NFTA stations to support usage of the transit network	\$39.49
NMT8	Buffalo CBD, Niagara Falls and Villages Smart Parking	Deploy technology to optimize existing spaces by providing real-time information to users seeking parking.	\$35.50
NMT9	DL&W Access Improvements	Establish a safe, inviting multi-modal network adjacent to the DL+W Terminal that facilitates activity to and from the new station.	\$20.00
NMT10	Commuter Shed EV Charging Demonstration	Install 10 EV charging stations per year for 5 years to demonstrate viability of private operation at Mobility Hubs	\$5.85

#### Regional Highway Systems

RHS1	NYS Route 33, Kensington Expressway Project	Reconnecting neighborhoods in the City of Buffalo that were divided by the construction of the Kensington Expressway	\$1,000.00
RHS2	Exit 50 ramps/interchange Improvements	Improvements to Exit 50 interchange ramps, bridges, and supporting infrastructure connecting I-90 and I-290	\$300.00
RHS3	Next Generation Freeway Technology and Safety Upgrades	Systematic Freeway upgrades to deploy corridor management solutions, operational and safety upgrades	\$280.14
RHS4	Smart Region Coordination Support	Provide operational support for regional Transportation Management Center (TMC) and Transportation Management Assoc (TMA)	\$170.44

RHS5	Freeway Interchange Reconfigurations and Upgrades	Reconfigure selected freeway interchange and arterial interface locations for traffic management and safety	\$129.04
RHS6	I-290/Main Street Interchange Improvements	Consolidate interchange ramps at I-290/Main Street to improve safety and efficiency	\$40.20
RHS7	I-190/Niagara Falls Blvd Interchange Improvements	Improvements to Exit 22 of I-190 (Niagara Falls Boulevard), possibly including a diverging diamond treatment	\$25.00
RHS8	Route 5 Future Considerations	Assess alternatives for longer term Route 5 planning	\$9.65

#### Regional Traffic Signal Enhancement

RTSE1	Regional Traffic Signal Enhancement	Deploy and operate an integrated traffic signal control system for the Buffalo-Niagara region	\$500.00
-------	-------------------------------------	---	----------

#### Smartly Enhanced Multimodal Arterials

SEMA1	Initial SEMA Corridor	Construct upgraded street features, safety improvements and technology integration, and create mobility hubs on SEMA Corridors including Main Street BNMC	\$219.79
SEMA2	2nd Generation SEMA Corridors	Construct two SEMA Corridors with updated designs, safety improvements and technology integration by 2036	\$265.31
SEMA3	3rd Generation SEMA Corridors	Construct two SEMA Corridors with updated designs, safety improvements and technology integration by 2044	\$600.81

#### Secondary Corridors

SC1	Phase 1 Secondary Corridors Complete Streets	Construct five Complete Streets with improved walkability, integrated technology, and enhanced mobility by 2030	\$56.91
SC2	Phase 2 Secondary Corridors Complete Streets	Construct five Complete Streets with improved walkability, integrated technology, and enhanced mobility by 2035	\$72.84
SC3	Phase 3 Secondary Corridors Complete Streets	Construct five Complete Streets with improved walkability, integrated technology, and enhanced mobility by 2050	\$93.25

#### Smaller Cities

SMC1	Neighborhood Walk Access Improvements	Upgrade five miles of sidewalks, crossings, and wayfinding between neighborhoods and main streets annually	\$266.68
SMC2	Neighborhood Complete Streets	Construct one Complete Streets treatment annually on arterials or collectors	\$222.37
<b>Rural Roadways</b>			
RR1	Bridge/Culvert Improvements	Upgrade existing structures to reduce hydraulic vulnerability and improve system resilience	\$312.09
RR2	Safety Upgrades	Install countermeasures at high crash locations along with guiderail, signage, and pavement marking upgrades	\$145.78
RR3	Village Main Street Improvements	Construct 10--12 Complete Streets treatments in Village Center arterials or collectors	\$106.93
RR4	Erie-Niagara Counties Agricultural Access Improvements	Expand and upgrade access roads serving commercial farming and agribusiness establishments	\$40.47
RR5	Niagara County Rural Bridge Improvement Initiative - Hartland Road Bridge over Golden Hill Creek	Rehabilitate the Hartland Road Bridge over Golden Hill Creek to restore the bridge to a state of good repair and meet modern safety and design standards.	\$1.10
<b>Regional Cycle Network</b>			
RCN1	Regional Greenway Trails Network	Build out and close existing gaps in the Regional Greenway Trail Network (off-road) as identified in the Regional Bicycle Master Plan	\$145.60
RCN2	Regional Bicycle Master Plan Implement- Buffalo/Smaller Cities/Villages	Construct recommended bike lane, cycletrack, traffic calming, on-road and off-road facilities, connector, commuter cycling network improvements	\$84.27
RCN3	Olmsted Plan Implementation	Implement pathway rehab, access to water amenities/neighborhoods, traffic calming and related projects	\$44.72
RCN4	Shoreline Trail Gaps & Water Way Access	Complete currently unfinished segments and integrate access to waterway into improvements	\$38.24
RCN5	Next Generation Shoreline Trail Technology Upgrades	Deploy technology along trail network for wayfinding, data collection, smart lighting, and other purposes	\$28.94
<b>Future Freight Network</b>			



FFN1	Shortline Rail Improvements	Upgrade tracks, siding, and other facilities as well as purchase ultra-low emissions locomotives	\$256.95
FFN2	Automated Vehicle (AV) Truck Platoon Facilities	Identify locations for up to 10 facilities with staging areas and alternative fuel charging	\$165.76
FFN3	Truck Parking Facilities	Construct/improve truck parking facilities to improve efficiency and safety	\$20.00
<b>Infrastructure for Reconsideration</b>			
IR1	Region Central Infrastructure Re-Envisioning	Restore community connectivity - Region Central (NY 198 and supporting elements)	\$272.30
IR2	Adapting Underutilized Infrastructure	Restore additional community connectivity by removing, retrofitting, or mitigating highways or other transportation facilities that create barriers to community connectivity, including to mobility, access, or economic development.	\$150.00

Table 3: MTP-2023 Illustrative Project Listing

Project ID	Project Name	Project Description	Cost (year of expenditure dollars)
<b>Regional Highway Systems</b>			
RHS(I)1	Next Generation Freeway Electrification Demonstration	Demonstrate production of in-motion wireless power transfer to charge electric vehicles (EVs) on a high-volume corridor	\$117.72
RHS(I)2	Reimagining Twin Cities Memorial Highway	Reconnect residential neighborhoods in the City of North Tonawanda that were divided by the construction of the Twin Cities Memorial Highway	\$45.00
<b>Safety</b>			
S(I)1	Regional Safety Action Plan Implementation	Federal discretionary funding has been awarded through USDOT's SS4A competitive program to develop a Regional Safety Action	TBD

Plan; this Plan will identify specific implementation items to enhance safety on key corridors which will be pursued in forthcoming applications for SS4A Implementation Grant funding.

#### **Rural Roadways**

RR(I)1	Moving the Rural Economy: Niagara County Rural Bridges Improvement Initiative	<p>Restore bridges to a state of good repair and meet modern safety and design standards</p> <ul style="list-style-type: none"> <li>• Willow Road over East Branch of Twelve Mile Creek</li> <li>• Carmen Road over Golden Hill</li> <li>• Johnson Creek Road over Golden Hill Creek</li> <li>• Gasport Road over 18-Mile Creek</li> </ul>	\$5.10
RR(I)2	Old Niagara Road over the Somerset RR	Remove existing bridge in the Town of Lockport, on Old Niagara Road between Purdy Road and Lake Avenue and. Replace with a small precast concrete structure to allow the abandoned RR line to be used as a trail for pedestrians.	\$3.50

#### **Technology**

T(I)1	Tonawanda/Amherst Signal Communication and Smart Corridor Project	Federal discretionary funding is sought by the Towns of Amherst and Tonawanda through USDOT's SMART competitive program	TBD
-------	---	---	-----

#### **Future Freight Network**

FFN(I)1	International Rail Connection Improvements	Reconstruct/enhance cross-border rail connectivity	\$150.00
FFN(I)2	Improved I-90 Access	Enhance access to the I-90 corridor to better distribute truck trips	\$113.20
FFN(I)3	Regional Freight Rail Bottleneck Improvements	Improve Buffalo River Crossings to relieve bottlenecks and ease rail congestion	\$105.39
FFN(I)4	Transshipment Facility	Construct an intermodal freight facility, potentially in conjunction with the Port Authority of New York & New Jersey	\$51.45

FFN(I)5	Permanent Pre-Clearance Implementation	Work with U.S. and Canadian customs agencies to implement pre-clearance and expedite travel over the Peace Bridge	\$50.68
<b>Regional Cycle Network</b>			
RCN(I)1	Next Generation Shoreline Trail Rebuild	Reconstruct the Shoreline Trail with newer materials and technology upgrades upon end of its useful life	\$214.65
<b>External Opportunities</b>			
EO(I)1	Border Crossing Improvements	Provide pre-clearance, AV-compatible facilities on international bridges	\$240.92

Table 4: MTP-2023 “Partnership Opportunities” Project Listing

Project ID	Project Name	Project Description	Cost (year of expenditure dollars)
PO1	Bi-national Autonomous Green Freight Corridor	Designated bi-national freight corridor with AV/alternative fuel, pre-clearance and available technologies	TBD
PO2	Mobility as a Service	Establish MaaS coordination among service providers including TNCs	TBD
PO3	Bi-national Cycling Network	Integration NY and Ontario cycling networks through bridge infrastructure	TBD
PO4	Buffalo - Niagara Falls Passenger Rail Connection	Commuter rail service (private operator) between Buffalo and Niagara Falls	TBD
PO5	Empire Corridor High Speed Rail to New York City	High-speed rail service between Buffalo and New York City	TBD
PO6	Buffalo Cruise Port Infrastructure	Build a Great Lakes cruise terminal, welcome center and dock space. Existing Great Lakes cruise ships carry between 200 and 300 tourists. There are currently regionally active	TBD

		cruise ship ports in Cleveland, OH and Toronto, ON.	
PO7	Marine Port Expansion	Make port improvements to increase marine cargo tonnage being imported and exported, including bulk, break-bulk and container service.	TBD
PO8	Air Cargo Expansion	Make facility improvements at NFIA and BNIA to process increased tonnage of high value/time sensitive air cargo being imported and exported.	TBD
PO9	International Rail Bridge Replacement	Replace the aging structure which was built in 1873. A new structure will provide a safe and efficient means of goods movement between Canada and USA. Additional freight moving between the two countries by rail would reduce the number of trucks crossing the border, resulting in reduced congestion/delay, lower fuel costs and improved air quality.	TBD
PO10	Erie Canal Flight of Five	Complete the rehabilitation of the Erie Canal Flight of Five Locks. Rehabilitation of Locks 67 & 71 of the Flight of Five would return the Flight of Five to operational condition.	\$17.00