



CAPITAL IMPROVEMENT PLAN FY 2024 - 2028

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Prepared By:

**PUBLIC
ADVISORY
GROUP**

PO Box 1469
Ketchum, ID 83340
(208) 725-3259
www.PublicAdvisoryGroup.com

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INTRODUCTION

SECTION 1.0

ABOUT THE CAPITAL IMPROVEMENT PLAN

The City of Barre has commissioned this update to its Capital Improvement Plan to help guide infrastructure initiatives over the next five fiscal years, from 2024 through 2028. The projects included in this plan have been developed by City leadership, including department subject matter experts. The plan also includes projects identified in City planning documents such as the Hazard Mitigation Plan, Municipal Plan and Stormwater Management Plan. By incorporating all known and expected capital projects of the City, this Capital Improvement Plan (CIP) is intended to help the City of Barre fund and implement projects to enhance community livability and resiliency.

In Section 2, the executive summary, a two-year work plan is provided to help focus the City's capital improvement efforts. A brief summary of projects and their funding sources are presented in this plan.

In Section 3 of this plan, projects are presented for each department. These projects represent the work that City staff believes is necessary to maintain a state of good repair, reduce known hazards, increase the level of service and prepare for expected growth. A brief description of the project is presented along with a cost estimate and the department's relative priority ranking. An expected year of implementation is also provided for each project.

The vehicles and trailers used by City staff are critical to supporting City operations. Recognizing this, Section 4 of the plan includes the current City fleet. For each vehicle and trailer, an estimated replacement cost is provided along with the City's currently planned replacement date.

To inform future budgeting processes, Section 5 of the report includes financial forecasts for both capital project implementation and vehicle replacement.

Finally, Section 6 of the plan includes additional detail on the streets and water distribution division projects annual replacement plans.

USING THE PLAN

As the City moves through its annual planning and budgeting processes, the Capital Improvement Plan will be one of several supporting management tools to aid the decision making process. By reviewing the project lists for each fund, leadership will be able to assess and compare department needs and make informed funding decisions. The multi-year outlook provided by the CIP will also enable phasing and grouping of work to enhance productivity.

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Recognizing that public resources are scarce and current funding mechanisms may be unlikely to sufficiently fund all projects identified within this plan, the CIP is also useful in guiding the pursuit of external funding opportunities including grants, loans and private partnerships. To accomplish this goal, the City should continuously review the plan against emergent funding opportunities which may further benefit the community.

MAINTAINING THE PLAN

The City's Capital Improvement Plan, as enumerated herein, represents the City's capital project needs as of summer 2022. However, the City's capital needs will change as projects are completed and the community grows. To ensure that the CIP continues to reflect the priorities of the City and community, City leadership should periodically review the CIP to ensure department requests and community improvement projects are appropriately included. Similarly, as planning studies are performed and completed, such as the forthcoming Wastewater Facilities Plan, identified projects should be added to the City's overall Capital Improvement Plan.

ACKNOWLEDGEMENTS

This update of the City of Barre's Capital Improvement Plan would not have been possible without the support of many staff members. The resources made available by the leadership and staff of the City of Barre have been critical to compiling the information contained herein. Additionally, City staff have provided local and historical perspective that informs the report.

ABOUT THE AUTHOR

Public Advisory Group is headquartered in Ketchum, Idaho, and provides local government agencies access to specialized professional services. Our team of former public agency officials understands the operating environment for local government entities. Within that framework, we craft unique solutions to challenging issues for communities.

Our team has extensive experience analyzing and managing capital plans and projects. Review project manager Grant Gager began his career overseeing public infrastructure programs for the New York Metropolitan Transportation Authority, Orange County Transportation Authority and Southern California Regional Rail Authority. Grant later served as the Clerk and Treasurer for the City of Ketchum, Director of Finance for the Sun Valley Air Service Board, Treasurer for the Ketchum Urban Renewal Agency and Board Vice-chair for Mountain Rides Transportation Authority. Grant Gager earned a Master of Business Administration in corporate finance from the Pennsylvania State University (2010) and a Bachelor of Arts in economics from the University of Rochester (2003).

EXECUTIVE SUMMARY

SECTION 2.0

In recent years, the City of Barre has had limited resources that it is able to dedicate to capital improvements. As a result, there are certain high-priority projects that will resolve critical capacity and state of good repair needs of the City. For Fiscal Years 2024 and 2025, the City has identified certain one-time external funding sources that will support the delivery of capital projects. Combining these external sources with the City's recently approved local option sales tax will present the City with a meaningful opportunity to address its most critical infrastructure needs in the City's General Fund operating departments.

TWO-YEAR WORK PLAN

Throughout the development of this capital improvement plan, City department heads have identified certain high-priority projects. The projects in the work plan that are funded outside of the utility enterprise funds are presented in summary format in the following pages, additional detail on each project appears in Section 3 of this report

Use of Funds	FY 2024	FY 2025
Planning, Permitting and Assessing Projects	74,000	105,000
Facilities Department Projects	729,000	340,000
Fire Department Projects	101,000	14,000
Information Technology Projects	45,000	-
Department of Public Works Projects	195,000	-
Streets Division Projects	849,000	873,500
Facilities Department Vehicles	119,301	7,500
Fire Department Vehicles	590,000	-
Police Department Vehicles	86,000	61,000
Department of Public Works Vehicles	440,000	661,000
Total Projects and Vehicles	3,228,301	2,062,000

Source of Funds	FY 2024	FY 2025
Unspent Bond Funds	291,426	291,436
ARPA Funding	1,274,621	1,274,621
Local Option Tax(es)	875,000	875,000
Property Tax Allocation to Capital Fund	403,245	415,342
Total	2,844,291	2,856,388

PLANNING, PERMITTING AND ASSESSING DEPARTMENT

Within the City's capital improvement plan, the following projects have been identified for the Planning, Permitting and Assessing Department within the two-year work plan that begins in FY 24. Additional detail on each project included in this summary is included in Section 3 of this document.

Program	Project	FY 2024 Budget	FY 2025 Budget
Housing Initiatives	Downtown Study for Upper-Floors Housing	20,000	-
	Rental Property Purchase Pilot Program	10,000	-
	Housing Preservation Loan Program	6,000	
Mobility Improvements	Bus Stop Density	10,000	-
	Pedestrian Environment Quality Index	5,000	-
	Granite Street Bike Path	-	25,000
	Vermont Granite Museum Bike Path	-	25,000
	Metro Way Bike Path	-	25,000
	Bicycle and Pedestrian Plan	-	20,000
Strategic Planning	North Main to Summer Street Plan	15,000	-
	City-wide Access Management Review	8,000	-
	Open Space Plan	-	10,000

FACILITIES DEPARTMENT

The following projects have been identified for the Facilities Department in the two-year work plan:

Program	Project	FY 2024 Budget	FY 2025 Budget
Auditorium & Alumni Hall Upgrades	Various projects including an electrical assessment and new flooring.	60,000	110,000
Cemetery Upgrades	Various projects including new roofs at Hope Cemetery and the Elmwood Vault.	35,000	10,000
City Hall Upgrades	Various projects including a new HVAC, window replacement and code compliance work.	215,000	45,000
Park Upgrades	Various projects including improvements at both Rotary and Garfield Parks.	89,000	65,000
Public Safety Building Upgrades	Various projects of high priority, including new HVAC.	330,000	85,000

FIRE DEPARTMENT

The following projects have been identified for the Fire Department within the two-year work plan:

Program	Project	FY 2024 Budget	FY 2025 Budget
Equipment Upgrades	Replace Extrication Equipment	45,000	-
	SCBA System Upgrade	56,000	-
	On-vehicle Computer Upgrade	-	14,000

PUBLIC WORKS DEPARTMENT

The following projects have been identified for the Public Works Department in the two-year work plan:

Program	Project	FY 2024 Budget	FY 2025 Budget
Strategic Planning	Data and Records Retention	30,000	-
	Planning for New DPW Facility	150,000	-
	Waste Processing	15,000	-

STREETS DIVISION

The following projects have been identified for the Streets Division within the two-year work plan:

Program	Project	FY 2024 Budget	FY 2025 Budget
Mobility Improvements	Various projects including sidewalk improvements.	125,000	195,000
Pavement Improvements	Rehab and Overlay pave certain sections.	403,500	352,000
Safety Improvements	Various projects to increase right-of-way safety.	6,500	31,500
Stormwater System Improvements	North-end Stormwater System Upgrade	294,000	-
Strategic Planning	Road Standards Adopted Policy	20,000	-
	Complete Streets Policy	-	20,000
Structure Improvements	Rehabilitate Route 302 Bridge	-	200,000
Geotechnical Improvements	Foster Street Upgrades	-	25,000

CAPITAL PROJECTS

SECTION 3.0

This section of the City of Barre's Capital Improvement Plan contains a description of all capital projects currently expected to be undertaken by the City. With the guidance of the City's department heads and subject matter experts, the relevant details of each project are presented. Where appropriate, projects have been grouped into programs of similar projects. A program may involve several projects at one location (e.g. City Hall Upgrades) or, conversely, a program may include several similar projects located throughout the City (e.g. Paving Improvements).

By presenting the City's capital projects in this format, this CIP provides City leadership a full understanding of the City's capital needs and project relationships. Because the level of capital needs can vary widely across both departments and budget years, understanding expected capital requests for the coming five years supports long-term planning and budgeting efforts. The project descriptions included in this section are intended to inform the City's prioritization process and allow for a cogent project delivery process.

PROJECT PRESENTATION

This section of the CIP identifies new infrastructure, maintenance of existing facilities and equipment purchases to be undertaken by the City between 2024 and 2028. Each City department identified their needs as reflected in the Plan. A description of the improvement, the reason for its recommendation, its priority level, the estimated cost (based on 2022 estimates) and the planned budget year are identified in this section of the Plan.

The reason for an improvement is to either: (1) maintain a state of good repair, (2) expand capacity, (3) increase the level of service, or (4) mitigate a known hazard. The priority level assigned to each project is relative to the other projects in the program and department, as assigned by the City subject matter expert. The cost estimate reflects the department director's best effort and may reflect only the noted stage of a project, especially for studies which may generate one or more projects. The date shown for each project represents each department's expectation and plan. In many cases, a high priority project may have a later delivery date than a lower priority one due to project budget, scoping or coordination requirements. In certain places, to enable City planning efforts, the Plan also identifies improvements anticipated beyond 2028 or improvements that have not yet been programmed.

3.1 CAPITAL PROJECTS: PLANNING, PERMITTING AND ASSESSING DEPARTMENT

The City of Barre's Planning, Permitting and Assessing Department provides support and assistance to the community for assessing, planning, zoning, community development and historic preservation matters, among many others. The Department also supports the function of community and planning groups including the Planning Commission.

Based on these responsibilities, the Planning, Permitting and Assessing Department's capital project list includes items derived from community planning documents including the Municipal Plan, as detailed below:

HOUSING INITIATIVES PROGRAM

To support the development and retention of housing units in the City, certain projects and initiatives were identified in the Municipal Plan. The Housing Initiatives being guided by the Planning, Permitting and Assessing Department include:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Downtown Study for Upper-Floors Housing	This study should include an inventory and assessment of the condition, use and occupancy of the upper floors of buildings in the downtown business district. Based on the findings, recommendations should be developed to increase the utilization of upper floor space for housing.	Capacity Expansion	3	2024	20,000
Rental Property Purchase Pilot Program	Develop a pilot program for a City revolving loan fund to provide assistance to purchasers of owner-occupied rental units, as noted in the Municipal Plan.	Level of Service	2	2024	10,000
Housing Preservation Loan Program	Develop a loan program to ensure preservation of existing housing units within the City, as identified in the Municipal Plan.	Level of Service	2	2024	6,000

STRATEGIC PLANNING PROGRAM

Certain long-range planning projects and documents have been identified by the City's municipal plan. Those projects that are most appropriately managed through the Planning, Permitting and Assessing Department include:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
North Main to Summer Street Plan	As identified in the Municipal Plan, create plan to ensure development of the North Main to Summer Street area consistent with community needs.	Capacity Expansion	2	2024	15,000
City-wide Access Management Review	City-wide Access Management Review as recommended by the Municipal Plan.	Level of Service	2	2024	8,000
Open Space Plan	Create plan to ensure sustainable management of open space within the City as recommended in the Municipal Plan.	Level of Service	3	2025	10,000
River Management Plan	Create plan to ensure sustainable management of the river and guide access and development as indicated in the Municipal Plan.	Capacity Expansion	3	2026	15,000
Merchants Row Parking Lot Redevelopment	Need to amend TIF District Plan list of projects to match current vision for the Merchants Row area, as recommended by the Municipal Plan.	Level of Service	3	2027	25,000

MOBILITY IMPROVEMENTS PROGRAM

Certain projects have been identified to enhance and support mobility through the City. While many of these projects are assigned to the Streets Department, several planning projects are more appropriately managed through the Planning, Permitting and Assessing Department. Such projects being managed through the Department include:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Bus Stop Density	Study opportunities for additional public transportation (GMTA) stops within the City, as noted in the Municipal Plan.	Level of Service	2	2024	10,000
Pedestrian Environment Quality Index	Conduct a Pedestrian Environment Quality Index study. Trained assessors can conduct these assessments, which examine both the physical infrastructure available to pedestrians and whether the overall environment is safe and pedestrian-friendly.	Level of Service	3	2024	5,000
Granite Street Bike Path	Study possible redesign of the Granite Street Bike path.	Level of Service	3	2025	25,000
Vermont Granite Museum Bike Path	Study possible design of a new bike path to the Vermont Granite Museum, as noted in the Municipal Plan.	Level of Service	3	2025	25,000
Bicycle and Pedestrian Plan	Create long-range plan to ensure bicycle and pedestrian infrastructure addresses community needs. Planning grant application likely in Fall 2022.	Capacity Expansion	2	2025	20,000
Metro Way Bike Path	Planning for the Metro Way Bike Path, as noted in the Municipal Plan. Land agreement with local property owners may be required to implement.	Capacity Expansion	3	2025	25,000

3.2 CAPITAL PROJECTS: FACILITIES DEPARTMENT

The City of Barre's Facilities Department is responsible for overseeing all buildings and grounds owned by the City of Barre, including providing custodial and maintenance services. Buildings overseen by the Department include: Municipal Auditorium, Alumni Hall, BOR, City Hall and the Public Safety Building. The Department is also responsible for the mowing and upkeep of the courts, fields and playgrounds in City parks. Additionally, the Facilities Department maintains the City pathways and cemeteries.

The Facilities Department is responsible for maintaining a state of good repair on all City facilities and providing level of service and capacity upgrades as required and directed. The following list of programs and projects has been developed by department leadership to ensure that the City of Barre's physical assets are able to support the long-term operations of City government.

CEMETERY UPGRADES PROGRAM

The Facilities Department maintains a state of good repair in the City of Barre's cemeteries while also ensuring sufficient capacity for future needs. In order to do so, the Department recommends the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Roof Replacement	Repair or replace slate roof at Elmwood Vault. Need to confirm historical status of building to determine if slate roof must be replaced with similar materials.	State of Good Repair	1	2024	15,000
Monument Repairs	Repair and re-set historical slate monuments at Elmwood.	State of Good Repair	2	2024	20,000
Roof Repairs	Repair or replace roof at the Hope Cemetery office building.	State of Good Repair	2	2025	10,000
Construct Columbarium	Design and build a new hillside columbarium at an existing location in the Hope Cemetery. A feasibility study effort is ongoing at the Cemetery Board. Capacity needed in approximately 2035.	Capacity Expansion	3	2026	85,000
Construct New Lots	Layout and prepare existing area at Hope Cemetery to be used as new lots for future capacity expansion needs. Capacity need is in approximately 2035.	Capacity Expansion	3	2026	15,000

PARK UPGRADES PROGRAM

The Facilities Department maintains a state of good repair in the City of Barre's parks. In order to do so, the Department recommends the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Recreation Area Upgrades	Garfield Park recreation equipment replacement. Current structure has reached end of useful life. Need to determine future use of the park and engage neighborhood to determine upgrades.	State of Good Repair	2	2024	57,000
Basketball Court Replacement	Replace existing basketball courts at Rotary Park; needs to be fully replaced to base layer. BYSA is possible project partner based on use of facility for programming.	State of Good Repair	2	2024	25,000
Restroom Renovations	Renovate existing restrooms in Rotary Park to be more resistant to damage, possible access control; not currently open to public use. Possible addition of new restroom area to add capacity.	State of Good Repair	2	2024	7,000
Roof Replacement	Replace roof on bath house building at the Pool facility.	State of Good Repair	2	2025	65,000
Fence Upgrades	Repair existing fence at Vine Street Park. Possible re-use of existing portions of fence.	State of Good Repair	3	2023	15,000
Parking and Access Upgrades	Install parking and access upgrades at both Garfield and Vine parks.	Level of Service	3	2027	25,000

CITY HALL UPGRADES PROGRAM

The Facilities Department maintains a state of good repair in the City of Barre's buildings while ensuring they are sufficient to serve the public, as needed and directed. In order to do so at City Hall, the Department recommends the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
HVAC upgrade	Existing roof-top unit is at end of life. New unit is required but will be dependent upon City Hall upgrades that are implemented.	State of Good Repair	1	2024	70,000
Code Compliance Upgrades	Perform certain capital improvements to ensure code compliance for City Hall building.	State of Good Repair	1	2024	85,000
Restroom Renovations	Upgrade restrooms to be compliant with ADA requirements. Project includes addition of restrooms in certain areas as well as conversion of existing to use-by-all rooms.	State of Good Repair	1	2025	45,000
Window Repair and Replacement	Repair or replace City Hall windows to increase energy efficiency and replace failing units.	State of Good Repair	2	2024	60,000
Old Police Station Improvements	Implement certain upgrades to the old police station building to reflect current programming needs.	State of Good Repair	1	2026	150,000
Alarm System Upgrade	Procurement of new alarm system. Prior RFQ is going to be re-issued with modifications.	State of Good Repair	1	2026	32,000
Entryway Improvements	Upgrade City Hall building entries at both Prospect Street and Opera House to include exterior Access Control System.	State of Good Repair	2	2026	40,000
Roof Repairs	Repair or replace existing roof that was constructed in 2009.	State of Good Repair	2	2029	130,000
Interior Improvements	Repair and replace interior fixtures and furnishings of City Hall including paint, flooring, lighting and related items.	State of Good Repair	3	2026	50,000

AUDITORIUM, ALUMNI HALL AND BOR UPGRADES PROGRAM

The Facilities Department maintains a state of good repair in the City of Barre's buildings while ensuring they are sufficient to serve the public, as needed and directed. In order to do so at the Auditorium, Alumni Hall and the BOR, the Department recommends the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Electrical Assessment	Review existing electrical system to determine upgrades necessary to ensure future community use of building.	State of Good Repair	1	2024	20,000
Flooring Repair and Replacement	Repair and replace flooring on hallways and third floor of Alumni Hall.	State of Good Repair	2	2024	40,000
Lighting Upgrades	Replace existing Auditorium lighting with LEDs to reduce operating and maintenance costs.	State of Good Repair	1	2025	65,000
Restroom Renovations	Upgrade remaining six (6) restrooms in Auditorium.	State of Good Repair	1	2025	45,000
HVAC Upgrades	Two existing boilers are reaching end of life and require replacement. Auditorium ventilation is also inadequate for community use.	State of Good Repair	1	2026	150,000
Auditorium Bleacher Upgrades	Repair and replace existing bleachers that are nearing end of useful life.	State of Good Repair	3	2026	75,000
Window Repair and Replacement	Replace windows in certain areas (including restrooms) to ensure sealed building envelope to increase comfort and efficiency of building.	State of Good Repair	2	2026	30,000
Rink Snack Bar Renovation	Provide cooking appliances to enable greater vending opportunities.	State of Good Repair	3	2026	25,000

AUDITORIUM, ALUMNI HALL AND BOR UPGRADES PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Locker Room Renovation	Renovate existing Auditorium locker rooms and create additional restrooms to ensure compliance with ADA.	State of Good Repair	1	2027	90,000
Rink Ventilation Upgrades	Implement upgrades to the existing ventilation and dehumidification in the rink. Moisture damage has affected the roof and is being tested in 2022. Mitigation efforts may be required in roof.	State of Good Repair	1	2028	150,000
Parking Lot Paving	Re-pave existing parking lot that is nearing end of useful life.	State of Good Repair	3	2028	75,000
Gym Floor Upgrades	Evaluate upgrades to gym floor that may be needed to ensure future community use.	State of Good Repair	3	2029	100,000

PUBLIC SAFETY BUILDING UPGRADE PROGRAM

The Facilities Department maintains a state of good repair in the City of Barre's offices. In order to do so at the Public Safety Building, the Department and user groups recommend the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
HVAC Upgrade	Replace existing HVAC rooftop unit system (and boilers) which is nearing end of life and is not adequately maintaining temperature control.	State of Good Repair	1	2024	230,000
Drainage Improvements	Reconfigure landscape in rear by training room to address inadequate drainage and water pooling.	State of Good Repair	1	2024	30,000
Evidence Room Improvements	Implement certain upgrades to the Police Department evidence room to ensure compliance with regulations and ensure timely processing and retrieval of items. Linked to interior upgrades to possibly eliminate evidence storage at Annex.	Hazard Mitigation	1	2024	30,000
Security System Upgrades	Upgrade audio and video system in the public safety building. Replace or upgrade both hardware and software of existing system.	State of Good Repair	1	2024	40,000
Window Repair and Replacement	Repair and replace certain windows in the building. Check seals to ensure quality.	State of Good Repair	2	2025	60,000
Training Room Upgrades	Upgrade training rooms in both fire and police facilities to accommodate current programming needs.	Level of Service	2	2025	25,000
Roof Repairs	Repair or replace existing roof that is approximately 6,800 sq. ft and is original to the building (2006).	State of Good Repair	1	2026	150,000
Jail Cells Renovations	Reduce number of jail cells (to 2-3) and reconfigure existing jail cell area to reprogram existing space to other functions (e.g. processing, storage, ammo storage).	Hazard Mitigation	2	2026	25,000

PUBLIC SAFETY BUILDING UPGRADE PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Public Safety Paving	Overlay pave certain areas of the Public Safety Building parking area including the apron outside of the apparatus bay to address drainage and age issues.	State of Good Repair	2	2026	60,000
Install Carport	Install covered parking area for police patrol vehicles on-duty. Possible incorporation of solar power.	Level of Service	2	2027	70,000
Refinish Apparatus Bay Floor	Refinish the existing original apparatus bay floor to address issues from age of building, including spalling.	State of Good Repair	2	2028	80,000
Carpet Replacement	Repair and replace existing carpet in certain areas as needed.	State of Good Repair	3	2025	25,000
Overhead Door Upgrades	Repair and replace existing overhead garage doors.	State of Good Repair	3	2026	50,000
Processing Room Upgrades	Reconfigure existing processing area to improve processing of persons.	Level of Service	3	2026	25,000
Interview Room Upgrades	Install recording equipment in downstairs interview room to make room functional for interviews.	Level of Service	3	2026	25,000
Storage Room	Upgrade and outfit existing mezzanine area within the Public Safety Building to provide additional storage capacity to the Fire and Police Departments.	Level of Service	3	2028	150,000
Physical Training Room Upgrades	Upgrades to existing physical training room and equipment to ensure fitness for duty of certain staff.	Level of Service	3	2028	35,000

PUBLIC SAFETY BUILDING UPGRADE PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Office Upgrades	Renovate and reconfigure existing offices in both the Police and Fire areas to reflect current programming needs, including: 1. Reconfigure PD upstairs by Detective area 2. Reconfigure PD upstairs interview room 3. Fire Chief office reconfiguration 4. Paint and flooring in certain areas	Level of Service	3	2026	50,000
Dispatch Area Renovations	Replace and upgrade interior finishings (e.g. carpet, paint) of the dispatch area. Also upgrade appliances.	State of Good Repair	3	2026	35,000

3.3 CAPITAL PROJECTS: FIRE DEPARTMENT

The City of Barre's Fire Department is responsible for both fire and emergency medical response for the City, its residents and businesses. The Department's staff responds to approximately 2,500 calls per year. The Department operates from the City's Public Safety Building and that building's capital needs were previously detailed in the facilities section of the this document.

The Fire Department's successful operation requires the acquisition of specialized tools and equipment. The following list of equipment acquisitions has been developed by department leadership to ensure its capability to successfully respond to all hazards as they arise.

EQUIPMENT UPGRADE PROGRAM

In order to provide fire suppression and emergent medical care, the Fire Department requires specialized equipment that must be routinely replaced. The current equipment replacement needs include:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Replace Extrication Equipment	Current extrication equipment has reached end of life and needs to be replaced.	State of Good Repair	1	2024	45,000
SCBA System Upgrade	Replace existing Cascade fill station which is nearing end of life. Also replace existing air packs (26 units) with new.	State of Good Repair	1	2024	56,000
On-vehicle Computer Upgrade	Upgrade of in-vehicle computer system to aid in response.	State of Good Repair	2	2025	14,000
Replace Multi Gas Meters / Galaxy	Routine Replacement of handheld CO2 gas meters to ensure adequate level of response.	State of Good Repair	2	2026	25,000
Replace Rescue Air Bag System	Routine Replacement of the rescue air bag system to ensure adequate level of response.	State of Good Repair	3	2027	30,000
Replace Ambulance Cots	Routine replacement of Ambulance cots to ensure state of good repair.	State of Good Repair	3	2028	15,000
Call Box System Upgrades	The existing Call Box System in the downtown core (85 boxes) is nearing end of life and will require upgrades if the system will continue to be used. The system may be shuttered or expanded to neighborhoods, at Council direction.	State of Good Repair	2	2026	250,000

EQUIPMENT UPGRADE PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Replace Gear Extraction Washer and Dryer	Routine replacement of gear extraction washer and dryer to ensure adequate response.	State of Good Repair	3	2028	16,000
Replace Hose Wash System	Replace existing hose wash system that is nearing end of life.	State of Good Repair	3	2026	16,000
Replace Defibrillators	Routine replacement of defibrillators on vehicles (5 units) to ensure public safety during responses. Recent purchase of \$27k/unit.	State of Good Repair	3	2028	54,000
Gear Locker Upgrade	Improvements to turn-out locker area to meet current programming needs.	Level of Service	3	2028	12,000
Replace Thermal Imaging Cameras	Routine Replacement of thermal imaging cameras to ensure adequate level of response.	State of Good Repair	3	2028	40,000

COMMUNICATION SYSTEM UPGRADE PROGRAM

The City communication system requires certain upgrades to maintain operability to support City operations. The Department's known communication needs include the following project:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Fire Department Radio System Upgrades	Replacement of existing mobile, portable and base station radios. Project may also include network and repeater site improvements to increase communications reliability. Possible joint project with Montpelier and may involve Police Department radios, as well.	State of Good Repair	2	2026	300,000

3.4 CAPITAL PROJECTS: INFORMATION TECHNOLOGY DIVISION

The City of Barre's Information Technology program is managed by the City Manager's Office using contract vendors to support the City's computing needs. Municipal government is a relatively data-dependent environment that requires consistent investment to ensure adequate tools and security measures are available to support the conduct of City business.

INFORMATION TECHNOLOGY UPGRADES PROGRAM

The City of Barre's Information Technology system requires certain upgrades to facilitate the conduct of City business. The below projects have been identified by staff to be supportive of that goal:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Migrate to New Server room	Migrate to new server room.	State of Good Repair	1	2023	5,000
Replace NEMRC Assess module	Replace NEMRC assess module.	State of Good Repair	2	2022	10,000
Network Equipment Upgrades	Upgrade current network equipment to ensure quality and capacity to manage the City's computing needs.	State of Good Repair	2	2024	10,000
Connect Back-up Generator	Connect back-up generator.	Hazard Mitigation	2	2023	5,000
Cloud Storage Solution	Implement Cloud Storage solution for the City.	Hazard Mitigation	2	2024	5,000
Printer Upgrades	Upgrade current City printers to ensure adequate capacity for City needs.	State of Good Repair	2	2024	10,000
Wiring Updates	Wiring/rewiring city bldgs.	State of Good Repair	2	2024	20,000

3.5 CAPITAL PROJECTS: POLICE DEPARTMENT

The City of Barre's Police Department is responsible for law enforcement for the City, its residents and businesses. The Department's staff responds to approximately 11,000 calls per year. The team operates from the City's Public Safety Building and that building's capital needs were previously included in the facilities section.

The Police Department's successful operation requires the acquisition of specialized tools and equipment. The following list of equipment acquisitions has been developed by Department leadership to ensure its capability to successfully serve and protect the City of Barre.

COMMUNICATION SYSTEM UPGRADE PROGRAM

The City communication system requires certain upgrades to maintain operability to support City operations. The Department's known communication needs include the following project:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Police Department Radio System Upgrades	Replacement of existing mobile, portable and base station radios; possible move to P25 digital radios. Project may also include network and repeater site improvements to increase communications reliability. Possible joint project with Fire Department radios, as well.	State of Good Repair	2	2026	190,000

3.6 CAPITAL PROJECTS: DEPARTMENT OF PUBLIC WORKS

The City of Barre's Department of Public Works is responsible for the integration and coordination of the functions of the following divisions: Streets, Water Distribution, Water Treatment, Wastewater Collection and Wastewater Treatment.

As the oversight for all City public works functions, including City utilities, the Department is responsible for providing strategic direction for long-term projects that will ensure the City's ability to provide a livable community. The following list of programs and projects has been developed by Department leadership to ensure its capability to successfully provide public infrastructure.

STRATEGIC PLANNING PROGRAM

To ensure that the City's public works divisions (including streets, water and wastewater) are able to support the long-term development, maintenance and operation of City infrastructure, the Department has identified the following strategic projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Public Works Facility	Planning for new facility for Streets, Water Distribution and Sewer divisions. Project includes site selection, programming, and conceptual design for new facility	State of Good Repair	1	2024	150,000
Data and Records Retention	Establish and implement data retention system to integrate water, sewer and street data sources.	Level of Service	2	2024	30,000
Waste Processing	Perform study to determine feasibility of instituting new wood, bulky waste and metals collection. Study requirements include site, equipment and operations.	Level of Service	2	2024	15,000
Material Source Development	Perform study to identify new sourcing solution (source and processing) for certain granular materials used in City operations.	State of Good Repair	2	2024	15,000
Three Acre Stormwater Projects	Support for implementation of certain stormwater projects affecting City infrastructure. This includes projects at sites over 3 acres at partner agencies such as the school,.	State of Good Repair	3	2026-9	750,000

COMMUNICATION SYSTEM UPGRADE PROGRAM

The City communication system requires certain upgrades to maintain operability to support City operations. The Department of Public Works' known communication needs include the following project:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Communication System Improvements	Communication Systems replacement and integration (Telemetry Receiving Stations – Water at WTP, handhelds and DPW Campus)	State of Good Repair	2	2026	25,000

3.7 CAPITAL PROJECTS: STREETS DIVISION

One of the Streets division's primary responsibilities is to maintain a state of good repair within the City right-of-way, including stormwater systems, while also providing level of service and capacity enhancements as necessary and directed. The following list of programs and projects has been developed by division leadership to ensure that the City maintains a safe right of way in a state of good repair.

PAVEMENT IMPROVEMENTS PROGRAM

The division is responsible for maintaining a state of good repair on road and bridge infrastructure within the City. While certain street sections only require an overlay of new asphalt, others require a complete rehab. For the CIP period, work is planned in the following locations of the City right-of-way:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Rehab and Overlay	City and Division leadership determine priority segments on an annual basis. Additional details are available in Appendix Section 6.1.	State of Good Repair	1	2023-8	Approximately 400,000 Per Year

STRATEGIC PLANNING PROGRAM

The City Municipal Plan noted that several City policies and procedures should be updated to reflect current industry best practices and standards. The items related to the Streets division are included below:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Road Standards Adopted Policy	Create and adopt a policy outlining the standards for roadways and bridges within the City of Barre.	Hazard Mitigation	1	2024	20,000
Complete Streets Policy	Create a policy to ensure development of rights-of-way in a manner that is suitable for multiple modes of transportation (ie. Complete Streets).	Hazard Mitigation	2	2025	20,000
Paper Streets Policy	Create a policy for planned but unbuilt streets (ie. Paper Streets) to ensure future development is compatible with City needs.	State of Good Repair	3	2026	20,000

GEOTECHNICAL IMPROVEMENTS PROGRAM

Certain City rights-of-way have known drainage issues that are adversely impacting both public and private properties during times of higher than normal precipitation. Repairs to City infrastructure and drainage systems would reduce adverse impacts of water events in the following locations:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Foster Street Upgrades	Remove existing non-conforming solid waste and debris pile at private location on Foster Street.	Hazard Mitigation	1	2026	75,000
Bike Path – drainage erosion at MM1.3+/-	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2028	7,000
Lundy Lane Drainage Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2028	50,000
Parkside Development Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2029	35,000
Cleveland Ave. Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2030	35,000
Tremont St. Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2031	40,000
Berlin St. Drainage Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2035	450,000
Gunner Brook (Snow Dump/Hope) Upgrades	Install improvements to infrastructure to mitigate adverse impacts of heavy rainfall.	State of Good Repair	2	2035	600,000
Orange St. Drainage Upgrades	Install improvements to existing stormwater system at end of cul-de-sac to prevent future erosion and damage.	State of Good Repair	2	2035	350,000

MOBILITY IMPROVEMENTS PROGRAM

Certain projects have been identified to enhance and support mobility through the City. The following projects are assigned to the Streets Department for implementation including:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
ADA-Compliant Intersections	Install 16 Tactile waring pads per year within the City. The shown dollar amount is per year.	Hazard Mitigation	2	2024-8	8,000 (Per Year)
ADA-Compliant Sidewalks	Install intersection and sidewalk improvements to ensure compliance with ADA and improve accessibility. Work would include slope adjustments, face heights and other changes to aid mobility and walkability. The shown dollar amount is per year.	Hazard Mitigation	2	2024-8	12,000 (Per Year)
ROW Sight Improvements	Install certain sight improvements at or near intersections to improve safety. Sight improvements may include tree and fence adjustments to maintain ROW standards.	State of Good Repair	2	2024-7	15,000 Per Year
Sidewalk Install or Replace	City and Division leadership determine priority segments on an annual basis. Additional details are available in Appendix Section 6.1	State of Good Repair	2	2024-8	Approximately 100,000 Per Year
Intersection Improvements	Install certain improvements at non-Vtrans intersection located within the City to reduce low-angle intersections.	Hazard Mitigation	3	2022	9,000

SAFETY IMPROVEMENTS PROGRAM

City staff has identified certain safety improvements for areas of the right-of-way. These improvements consist of both signage changes as well as the installation of infrastructure designed to slow traffic and retain vehicles contained in the right-of-way, including:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Replace Non-conforming Signs and Posts	Replace fixed post with break-away street signs at certain locations throughout the City to achieve MUTCD compliance.	Hazard Mitigation	1	2024-6	20,000 Total
Install New Guard Rail Sections	Install new guard rail in certain locations throughout the City including: Belvidere, Cable, Civic Ctr, Prospect, Orange, Lundy.	Hazard Mitigation	2	2025-7	75,000 Total
Install New Signs and Posts	Install new signs and sign posts for both safety and informational signs at certain locations in the City. Two Tiers: (1) urgent safety and (2) informational.	Level of Service	2	2026-8	40,000 Total
Install Speed Enforcement Zone Signs	Install signage to increase awareness of speed enforcement zones in City. Six areas exist currently, 18 more zones are likely to be rolled out; these signs would be placed in those areas to support PD enforcement operations.	Level of Service	2	2026-8	25,000 Total
Install Bulb-outs	Install bulb-outs in certain locations throughout the City to promote traffic calming (est. 36 bulb-outs).	Level of Service	2	2027-9	150,000 Total
Install Neighborhood Signs	Install signage denoting neighborhoods in various locations throughout the City.	Level of Service	3	2028	8,000

SAFETY IMPROVEMENTS PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Traffic Signal Programming	Program Traffic Signal Controllers for downtown events to reduce expense of events and increase safety. Requires traffic analysis on multiple intersections.	Level of Service	2	2028	30,000
Upgrade Traffic Signals	Replace and upgrade seven (7) existing traffic signal controllers and equipment to Generation 3 capabilities. An eighth light will be added in 2023 near the school lights.	Level of Service	3	2028	250,000
Traffic Calming	Install serpentine path deployments that are physical (not line striped) and add roadside cadence (tree plantings) to increase traffic calming.	Level of Service	3	2028	15,000

COMMUNICATION SYSTEM UPGRADE PROGRAM

The City communication system requires certain upgrades to maintain operability to support City operations. The Streets division's known communication needs include the following project:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Streets Department Radio System Upgrades	Replacement of existing mobile, portable and base station radios. Project may also include network and repeater site improvements to increase communications reliability. Possible joint project with Water/Sewer Department radios, as well.	State of Good Repair	2	2026	65,000

STRUCTURE IMPROVEMENTS PROGRAM

The division is responsible for maintaining a state of good repair on road and bridge infrastructure within the City. The below bridge and retaining wall repair projects are planned in the following locations of the City right-of-way:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Trash Rack Improvements	Improve trash racks at all locations in the City to increase hydro-stability and ease of maintenance. Possible move to machine-based cleaning method.	Level of Service	1	2028	45,000
Replace Brook Street Bridge	Replace 1927 bridge on Brook St. at Maple Ave. Project includes engineering and construction of a new bridge including traffic maintenance and protection during construction.	State of Good Repair	2	2026	2,500,000
Rehabilitate Route 302 Bridge	Refurbish Rte. 302 Bridge between GMP and Beverage Bar on.	State of Good Repair	2	2025	200,000
Replace Metal Bin Retaining Wall	Metal Bin Wall replacement at River St.	State of Good Repair	2	2026	550,000
Replace Retaining Wall at River St.	New wall at 129 River St. to replace makeshift wall.	State of Good Repair	2	2026	450,000
Replace Lower Brook St. Bridge	The Upper Brook Street Bridge has been identified as undersized and needing replacement by the Hazard Mitigation Plan. Phase 1 and 2 mitigation projects are complete but long-term issues remain.	Hazard Mitigation	3	2028	1,000,000

STORMWATER SYSTEM IMPROVEMENTS PROGRAM

The division is responsible for maintaining a state of good repair on the City's stormwater system which includes culverts, piping and related infrastructure. The below stormwater repair projects are planned in the following locations of the City right-of-way:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
North-end Stormwater System Upgrade	This is a project stemming from the 2011 Spring flood and is a sister project to the Granite Street Storm Sewer Project what was successfully completed. The project objective is to relieve chronic flooding due to an existing undersized storm sewer in the area of 553-567 North Main St.	Hazard Mitigation	1	2024	294,000
Rehabilitate Nelson St. Culvert	Replace headwall and restore low flow culvert on Nelson St.	State of Good Repair	2	2027	175,000
Replace Washington St. Culvert	Replace stone culvert under Washington St. at Waterman.	State of Good Repair	2	2028	200,000
Replace Rte. 302 Culvert	Replace stone culvert under Rte. 302 at Phelps Place.	State of Good Repair	2	2028	200,000
Mitigate Stormwater Flows	Eliminate storm water surcharge above Spaulding St under Washington (RT 302).	Hazard Mitigation	2	2028	150,000
Replace Stormwater Segment	Replace from V-Trans project at Hope to Gunner Brook.	Level of Service	2	2028	130,000
Mitigate Stormwater Impediments	Breach 2 Dams (Mill St., Jockey Hollow).	Hazard Mitigation	2	2026	250,000
Replace Stormwater Piping	Replace aluminized stormwater pipe that has exceeded its useful life. Runs from Hooker Ave. to the river.	State of Good Repair	2	2030	150,000
Rehabilitate Municipal Roads General Permit (MRGP) Culverts	Review culvert survey by MRGP 2014 select priority fixes.	Hazard Mitigation	2	2030	150,000

3.8 CAPITAL PROJECTS: WATER DISTRIBUTION DIVISION

The City of Barre's Water Distribution division is responsible for maintaining the City's water infrastructure outside of the Treatment plant. The division maintains a state of good repair on the mains, meters and related systems while also keeping fire hydrants operational for emergency use.

The water division's ability to maintain a state of good repair on its assets requires routine replacement of certain infrastructure components and also deployment of improvements to system control and diagnostic abilities. The following list of programs and projects has been developed by division leadership to ensure its capability to distribute clean water to the City and its residents.

WATER VALVE IMPROVEMENTS PROGRAM

In order to maintain a state of good repair and ensure future maintainability and operability of the water distribution system, the division has identified certain improvements to the valving system as identified below:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Automated Valve Installation	Install remotely-controlled and/or automated valves in various locations on pipe less than 12 inches.	Hazard Mitigation	2	2028	250,000
Valve Box Access Program	Restore access to certain water valve boxes that are difficult to access. Project may include new risers and seals in certain locations.	Hazard Mitigation	2	2024-34	50,000 Total Cost
Valve Rotation and Testing	Water valve rotation program (actuatest) to ensure state of good repair of water valves. Approximately 750 valves affected. Requires 1000 ft/lb machinery to perform.	State of Good Repair	2	2024-34	50,000 Total Cost

STRATEGIC PLANNING PROGRAM

The Water Distribution division recognizes that the City of Barre is growing and that its distribution system will require upgrades to accommodate future level of service improvements to water pressure and quality. The following study has been identified by the division:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Analysis of Water Network & Pressure	Conduct a study to evaluate the water system network to determine possible improvements for fire safety and water quality.	Level of Service	3	2025	50,000

WATER MAIN REPLACEMENT PROGRAM

In order to maintain a state of good repair on the water distribution system, the division routinely replaces the 4-inch and 8-inch water mains each year (the division's internal replacement capacity is approximately 2,000 linear ft/year):

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
4-inch Replacement Plan	City and Division leadership determine priority segments on an annual basis. Additional details are available in Appendix Section 6.2.	State of Good Repair	2	2024-8	Approximately 200,000 to 400,000 Per Year
8-inch Replacement Plan	City and Division leadership determine priority segments on an annual basis. Additional details are available in Appendix Section 6.2.	State of Good Repair	2	2024-8	Approximately 400,000 to 500,000 Per Year

TRANSMISSION LINE REDUNDANCY PROGRAM

The City water distribution system includes larger transmission lines that move drinking water over longer distances within the City. In order to maintain a state of good repair on that system, and ensure that it is adequate to serve future growth, the division has identified the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Replace US-302 Piping and Valves	Replace and standardize piping and pressure release valves on US-302 transmission line.	State of Good Repair	2	2030	3,500,000
Replace VT-110 to US-302 Crossing	Replacement of transmission line from VT-110 to US-302 crossing (outside of flood zone). Standardize pipe sizing through section.	State of Good Repair	2	2027	35,000
Replace US-302 To Plant	Design replacement of transmission line from US 302 to the water treatment plant.	State of Good Repair	2	2026	50,000
Emergency Drought Service Study	Feasibility study to determine if reconditioning decommissioned piping to enable the Jail Branch transfer and facilitate emergency water service during drought conditions is possible.	Capacity Expansion	3	2030	30,000

HYDRANT SYSTEM IMPROVEMENTS PROGRAM

A critical part of the water distribution system affecting the City's health, safety and welfare is the fire hydrant system. The Water Distribution division is responsible for maintaining a state of good repair on the system while also working with the Fire Department to ensure that the system is adequate to support future growth. The division has identified the improvements to the hydrant system in conjunction with the Fire Department.

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Break-away Hydrant Installation	Replace certain existing non-conforming hydrants with break-away units. Approximately 180 units to be replaced.	Hazard Mitigation	2	2024-9	1,000,000 Total Cost
Break-away Hydrant Compliance	Repair certain existing break-away hydrants to ensure hydrant height is compliant with standard. Approximately 50 units to be adjusted.	Hazard Mitigation	2	2024-7	50,000 Total Cost
Improve Hydrant Density	Reduce distance between Hydrants to conform with Fire Dept. 500 ft hose requirement. Approximately 200 hydrants affected.	Level of Service	2	2024-32	750,000
Evaluate Pressure System	Perform study to determine need and location of pressure reducers and regulators on the hydrant system.	Level of Service	3	2025	25,000

INTEGRATED TELEMETRY UPGRADE PROGRAM

The City water distribution system is monitored through a supervisory control and data acquisition system (SCADA) that allows administrators to control and gain knowledge about the system. The division has identified the following projects to improve that system

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
SCADA for Hydrants	Install SCADA system on hydrants to include those elements of the water system into the monitoring network.	Level of Service	3	2027	50,000
Sewer Trunk Line Telemetry	Install remote telemetry sensing equipment to enable monitoring of overflows and backflows and enhance coordination.	Level of Service	3	2027	30,000

3.9 CAPITAL PROJECTS: WATER TREATMENT DIVISION

The City of Barre's Water Treatment division is responsible for maintaining safe drinking water supplies for the City, its residents and businesses. The water treatment infrastructure includes the City's facilities at Dix Reservoir.

The Water Treatment division's successful operation requires the acquisition of an appropriate level and mix of capital assets and also maintenance of those assets in a state of good repair. The following list of programs and projects has been developed by division leadership to ensure its capability to successfully provide safe drinking water to City residents and visitors.

DIX RESERVOIR DAM UPGRADE PROGRAM

The Dix Reservoir is the City's primary municipal water storage location. In order to ensure the long-term stability and safety of the City's water supply, the division recommends the following projects affecting the Dix Reservoir Dam to ensure a state of good repair while also mitigating known and likely hazards.

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Dix Dam Shot-crete Repair	Address construction defects of failed Shot-crete at Dix Reservoir Dam. Funding from construction settlement exists.	Hazard Mitigation	2	2024	500,000
Install Screen at Large Orange Gate House	Install 14-inch screen at Large Orange Gate House as secondary protection to intake pump.	Hazard Mitigation	2	2025	25,000
Replace Slide Gate at Silt Dam	Replace failing 4-foot wooden slide gate at silt dam.	State of Good Repair	2	2026	30,000
Dix Reservoir Spill Control System	Add drainage control system, including ditch and swales, for toxin spills.	Hazard Mitigation	3	2027	1,000,000
Dix Reservoir Shoreline Armoring	Construct controlled entry points, including guardrails, on shoreline at Dix Reservoir.	Hazard Mitigation	3	2028	2,000,000
Dam Safety Upgrades	Design of improvements to bring dam into compliance with current back slope standards.	Hazard Mitigation	3	2032	150,000

EQUIPMENT REFURBISHMENT PROGRAM

In order to maintain a state of good repair at the treatment plant, the division has identified the following equipment refurbishment projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Large Pump Upgrades	Mid-life refurbishment to 2 back wash, 3 raw water, 2 recycle pumps. Each pump is \$50k new.	State of Good Repair	1	2024-6	80,000 Total
Generator Transfer Switch Upgrades	Rebuild or replace two (2) generator transfer switches.	State of Good Repair	2	2026-8	80,000 Total
Moisture Removal System Upgrades	Install improvements to moisture removal system for Facility air compressors to ensure adequate operating environment.	State of Good Repair	2	2027	100,000

WATER SOURCE PROTECTION PROGRAM

The Dix Reservoir is the City's primary municipal water storage location. In order to ensure the long-term viability of the site as the City's water source, the division has identified the following projects necessary to mitigate known hazards while ensuring a state of good repair in the reservoir.

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Dix Dam Upgrades Engineering	Study condition of emergency spillway and initiate repairs as necessary.	Hazard Mitigation	1	2028	750,000
Dix Dam Upgrades Construction	Construct improvements to Dix Dam emergency spillway as determined during phase 1 study.	Hazard Mitigation	1	2030	2,500,000
Dix Reservoir Silt Removal Study	Study silt removal opportunities to address safe yield restoration. Study will inform future construction which may include height adjustment.	State of Good Repair	1	2025	150,000
Minimum Flow Release Standards	Study and document revisions to operations to ensure adequate stream flows for wildlife protection.	Hazard Mitigation	2	2026	30,000

WATER TREATMENT PLANT IMPROVEMENTS PROGRAM

The division has identified the following projects to maintain a state of good repair at the Water Treatment Plant while also mitigating known hazards:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Roof Replacement	Replace membrane roof at the WTP Main Building and Pump Station due to end of life.	State of Good Repair	1	2025	200,000
Upgrade SCADA System	Upgrade SCADA system to allow for greater functionality and emerging technologies. ABB iFix program updates.	State of Good Repair	1	2025	90,000
Freeze-Dry Bed Rehabilitation	Replace concrete ramps in sand freeze-dry beds.	State of Good Repair	2	2025	25,000
Pump Station Back-up Power	Add generators and transfer switches for Fire District #8 and Cobble Hill Meadows pump stations to replace portable diesel generators that are currently used in emergency situations. Possible refurbishment of existing generators.	Hazard Mitigation	2	2026	250,000
Bulk Tank Replacement	Replace above ground storage tanks in WTP.	State of Good Repair	3	2028	25,000
Floating Solar Array	Install floating solar array to increase power generation at WTP (possible capacity of 1.7MW). Winter bills ~\$12k, summer bills ~\$6k.	Level of Service	3	2029	3,200,000

STRATEGIC PLANNING PROGRAM

The division has identified the below project as a strategic priority related to the treatment plant and Dix Reservoir:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Spill Response Capacity Study	Create spill response plan for internal response including equipment deployments as first response to spills.	Hazard Mitigation	3	2026	20,000

3.10 CAPITAL PROJECTS: WASTEWATER COLLECTION DIVISION

The City of Barre's wastewater collection division is responsible for maintaining and operating the City's wastewater collection system; including its sewer lines and manholes.

The division's ability to maintain a state of good repair requires routine refurbishment or replacement of certain system infrastructure. The following list of programs and projects has been developed by division leadership to ensure the wastewater collection system operates in a safe manner.

COLLECTION SYSTEM IMPROVEMENTS PROGRAM

The wastewater collection division has identified the following projects as being necessary to maintaining a collection system that adequately serves the needs of the City, its businesses, residents and visitors:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Manhole Replacements	Perform annual replacements of manholes.	State of Good Repair	2	2024-8	15,000 Per Year
Priority Repair Segments	Perform annual priority repairs annually to ensure integrity of the wastewater collection system.	State of Good Repair	2	2024-8	30,000 Per Year
Small Diameter Collection Pipe Improvements	Perform annual small diameter collection pipe repair/ replacement.	State of Good Repair	2	2024-8	25,000 Per Year
Trunk Line Replacements	North Main St. Trunk Line and Washington Street line replacement and capacity increases. Project is joint with the State who will fund \$500,000.	Capacity Expansion	2	2026	75,000
Install Supplemental Manholes and Cleanouts	Add supplemental manholes and cleanouts throughout the system; approx. 200 locations to be determined. Supplemental compliance program to be instituted to monitor source point incursions.	Level of Service	2	2024-8	25,000 Per Year
Manhole Hardware Upgrades	Upgrade or replace older manhole installations that may include brickwork.	State of Good Repair	2	2024-8	15,000 Per Year
Elimination of Bottlenecks	Upgrade or replace older network components with standardized pipe sizes.	State of Good Repair	2	2024-8	25,000 Per Year

3.11 CAPITAL PROJECTS: WASTEWATER TREATMENT DIVISION

The City of Barre's Wastewater Treatment division is responsible for processing sewage received from the City's collection system, managing biosolids and discharging environmentally compliant water into the ecosystem. The Wastewater Treatment Facility handles an average daily flow of approximately 2.2 million gallons of sewage per day while producing approximately 1.3 million gallons of water per day.

The successful operation of the Wastewater Treatment Plant requires maintaining a state of good repair at the plant while also planning for future operations and expansion. The following list of programs and projects has been developed by division leadership to ensure its capability to successfully processes sewage, manage biosolids and provide clean water to the watershed.

WASTEWATER TREATMENT PLANT IMPROVEMENT PROGRAM

The Wastewater Treatment Plant is the City's primary municipal sewage handling resource. The treatment plant requires certain improvements to maintain a state of good repair. To ensure the long-term operation of the plant, the division recommends the following projects:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Digester Rehabilitation	Rehabilitate third digester to ensure adequate capacity of the plant relative to need.	State of Good Repair	1	2024	750,000
Roof Repairs	Repair or replace existing roof.	State of Good Repair	1	2024	125,000
Facility Environmental Improvements	Improve air handling and moisture control systems within the wastewater treatment plant to ensure adequate building environment.	State of Good Repair	2	2026	100,000

STRATEGIC PLANNING PROGRAM

The Wastewater division is assessing the future operating and capital needs of its facilities as follows:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Facilities Plan	Evaluate current facility for improvements including to headworks, primary/supplemental clarifications; deactivated sludge process (aeration distribution); secondary clarifiers (add pool depth from 10 to 14 ft.); solids handling for digestion and waste handling.	State of Good Repair	1	2023	350,000

VEHICLES AND TRAILERS

SECTION 4.0

This section of the City of Barre's Capital Improvement Plan contains a description of all vehicles and trailers currently owned and operated by the City. Under the City's guidance, the relevant details of each vehicle and trailer are presented, grouped by department.

By presenting the City's vehicles and trailers in this format, this CIP provides City leadership a full understanding of the City's current fleet and future replacement requirements. Because the level of vehicle replacement costs can vary widely across both departments and budget years, understanding expected replacement requests for the coming five years supports long-term planning and budgeting efforts. The information included in this section is intended to inform the City's prioritization process and allow for a cogent fleet replacement process.

VEHICLE AND TRAILER PRESENTATION

This section of the CIP identifies the City's current stock of vehicles and trailers, as inventoried by the City in 2022. A description of the type of vehicle or trailer, its age, make, model, estimated replacement cost (based on 2022 estimates) and the planned replacement year are identified in this section of the Plan.

The replacement year has been provided by City staff based on current fleet practices of the City. Under current practice, the average age of a City car at retirement will be as follows:

Type	Age at Retirement
Dump Truck	15.7
Pick-Up Truck	14.2
Sedan	12.6
SUV	11.9

When contemplating the funding of large specialty vehicle purchases (e.g. fire trucks, snow plow trucks), the City may wish to pursue external funding sources including lease-purchase financing arrangements.

4.1 GENERAL FUND VEHICLES AND TRAILERS

FACILITIES DEPARTMENT

The vehicles and trailers assigned to the Facilities Department are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Backhoe	2005	New Holland	Tractor	43,697	2022	17
Dump Truck	2016	Dodge	Ram 3500	60,000	2027	11
Dump Truck	2016	Dodge	Ram 3500	60,000	2027	11
Ice Resurfacer	1973	Zamboni	Ice Resurfacer 550	89,301	2024	51
Ice Resurfacer	2002	Zamboni	Ice Resurfacer 550	89,301	2024	22
Mower	2004	SCAG	Zero-turn Mower 60"	12,000	2022	18
Mower	2016	Kubota	Zero-turn Mower 60"	12,500	2026	10
Mower	2008	SCAG	Zero-turn Mower 48"	10,000	2023	15
Mower	2016	Kubota	Zero-turn Mower 48"	10,000	2026	10
Mower	2016	Kubota	Zero-turn Mower 48"	10,000	2026	10
Mower	2009	Toro	Zero-turn Mower 54"	11,000	2023	14
Mower	1999	SCAG	Walk-behind Mower 54"	7,500	2023	24
Mower	2020	Simplicity	Prestige Mower	10,000	2030	10
Mower	2020	Simplicity	Prestige Mower	10,000	2030	10
Pick-up Truck	2009	Ford	F-150	30,000	2024	15
Pick-up Truck	2021	Ford	F-250	40,000	2041	20
Trailer	2000	Big Tex	16ft. Flatbed	7,500	2025	25
UTV	2016	John Deere	HXP Gator	13,000	2026	10

FIRE DEPARTMENT

The vehicles and trailers assigned to the Fire Department are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Ambulance	2008	Ford	F-450	250,000	2024	16
Ambulance	2019	Ford	F-550	250,000	2029	10
Fire Apparatus	1993	Sutphen	Pumper/ Tanker	550,000	2024	31
Fire Apparatus	2012	HME	Pumper/ Tanker	550,000	2031	19
Fire Apparatus	2009	HME	Pumper/ Tanker	550,000	2029	20
Fire Apparatus	2017	HME	Aerial Platform	1,750,000	2038	21
Fire Apparatus	2012	International	TerraStar	275,000	2027	15
Pick-up Truck	2004	Ford	F-250	40,000	2024	20
Pick-up Truck	2012	Chevrolet	Silverado	30,000	2029	17
Pick-up Truck	2020	Dodge	Ram 2500 Crew	40,000	2030	10
Sedan	2013	Chevrolet	Impala	13,000	2023	10
Sedan	2012	Chevrolet	Malibu	13,000	2029	17
SUV	2018	Ford	Interceptor	33,000	2029	11
SUV	2007	Chevrolet	Suburban	61,000	2029	22
Trailer	2004	Pace	Hazmat Trailer	32,865	2034	30

POLICE DEPARTMENT

The vehicles and trailers assigned to the Police Department are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Comms. Trailer	2008	Pace	Trailer	25,000	2033	25
Pick-up Truck	2017	Nissan	Titan	30,000	2029	12
Sedan	2012	Ford	Fusion	15,000	2024	12
Sedan	2010	Chevrolet	Malibu	13,000	2022	12
Speed Cart	2013	AEP	Trailer	10,000	2024	11
Speed Cart	2011	AEP	Trailer	10,000	2022	11
SUV	2018	Ford	Explorer	61,000	2029	11
SUV	2016	Ford	Explorer	61,000	2028	12
SUV	2017	Ford	Explorer	61,000	2027	10
SUV	2016	Ford	Explorer	61,000	2026	10
SUV	2015	Ford	Explorer	61,000	2025	10
SUV	2018	Ford	Explorer	61,000	2029	11
SUV	2014	GMC	Terrain	17,000	2026	12
SUV	2012	Chevrolet	Tahoe	61,000	2024	12
SUV	2021	Ford	Explorer	61,000	2031	10
SUV	1990	GMC	Hummer	Will Not Be Replaced		
SUV	1986	GMC	Hummer	Will Not Be Replaced		
SUV	2015	Chevrolet	Equinox	17,000	2029	14
SUV	2020	Ford	Interceptor	61,000	2030	10

DEPARTMENT OF PUBLIC WORKS

The vehicles and trailers assigned to the Department of Public Works are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
10-Wheel Truck	1995	International	10W	190,000	2025	30
10-Wheel Truck	2019	International	7400	190,000	2048	29
Bucket Truck	2001	International	7400	215,000	2033	32
Bucket Truck	1993	GMC	K-35	215,000	2025	32
Dump Truck	2010	Ford	F-350	60,000	2029	19
Dump Truck	2012	Ford	F-350	60,000	2027	15
Dump Truck	2021	International	7500	215,000	2035	14
Excavator	2000	Volvo	EW170	225,000	2024	24
Front Loader	2020	Case	590SN	225,000	2040	20
Pick-up Truck	2016	Ford	F-250	40,000	2024	8
Pick-up Truck	2009	Chevrolet	Silverado	30,000	2022	13
Plow Truck	2010	International	7400	175,000	2022	12
Plow Truck	2010	International	7400	175,000	2024	14
Plow Truck	2011	International	7400	175,000	2026	15
Plow Truck	2011	International	7400	175,000	2026	15
Plow Truck	2017	International	7400	175,000	2031	14
Plow Truck	2017	International	7400	175,000	2031	14
Plow Truck	2007	International	7500	175,000	2025	18
Plow Truck	2011	International	7400	175,000	2023	12
Plow Truck	2020	International	7500	175,000	2035	15

DEPARTMENT OF PUBLIC WORKS (CONT.)

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Roller	2001	Superpac	6620	125,000	2031	30
Roller	2018	Case	DV23	65,000	2041	23
Skidsteer	2015	Bobcat	S450	35,000	2025	10
Skidsteer	2011	Bobcat	S130	35,000	2026	15
Skidsteer	2010	Bobcat	S160	35,000	2025	15
Street Sweeper	2017	Freightliner	3000	350,000	2037	20
Trailer	2000	Handmade	26-foot	11,000	2025	25
Trailer	2005	Handmade	22-foot	10,000	2030	25
Trailer	2014	Falcon	14-foot	7,000	2039	25
Trailer	2009	Genie	Lighting	20,000	2034	25
Trailer	2009	Genie	Lighting	20,000	2034	25
Wheel Loader	2008	Komatsu	WA320	180,000	2028	20
Wheel Loader	2012	John Deere	624K	215,000	2034	22
Wheel Loader	2019	John Deere	524K	215,000	2038	19

4.2 SEWER FUND VEHICLES AND TRAILERS

The vehicles and trailers assigned to the Sewer Fund are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Dump Truck	2002	International	7400	180,000	2026	24
Front Loader	2004	Komatsu	WA200	225,000	2030	26
SUV	2010	Chevrolet	Tahoe	61,000	2022	12
Vacuum Truck	2018	Freightliner	Camel 200	525,000	2037	19
Van	2004	Ford	E-350	30,000	2024	20

4.3 WATER FUND VEHICLES AND TRAILERS

The vehicles and trailers assigned to the Water Fund are shown below:

Type	Year	Make	Model	Replacement Cost	Replacement Year	Age at Replacement
Pick-up Truck	2016	Ford	F-250	40,000	2026	10
Pick-up Truck	2012	Chevrolet	Silverado	30,000	2029	17
Sedan	2011	Ford	Fusion	15,000	2023	12
Trailer	1968	Carter	Pump Trailer	35,000	2025	57
Trailer	1983	Norma	12-foot	5,000	2028	45
Trailer	2015	Handmade	Trailer	5,000	2040	25
Van	2009	Ford	E-350	30,000	2022	13

EXPENDITURE FORECAST

SECTION 5.0

This section of the City of Barre's Capital Improvement Plan contains expenditure forecasts for the capital projects identified in Section 3 as well as the vehicle and trailer replacement plan presented in Section 4.

A summary expenditure forecast for the General Fund capital projects contained in Section 3 is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Planning, Permitting and Assessing Department	74,000	105,000	15,000	25,000	-	-	-
Facilities Department	729,000	340,000	1,072,000	185,000	490,000	230,000	-
Fire Department	101,000	14,000	591,000	30,000	137,000	-	-
Information Technology	45,000	-	-	-	-	-	-
Police Department	-	-	190,000	-	-	-	-
Department of Public Works	195,000	-	25,000	35,000	-	-	-
Streets Division	849,000	873,500	4,517,000	855,000	2,678,000	585,000	735,000
Total General Fund	1,993,000	1,332,500	6,450,000	1,130,000	3,305,000	815,000	735,000

A summary expenditure forecast for the Sewer Fund capital projects contained in Section 3 is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Wastewater Collection	135,000	135,000	210,000	135,000	135,000	-	-
Wastewater Treatment	225,000	-	100,000	-	-	-	-
Total Sewer Fund	360,000	135,000	310,000	135,000	135,000	-	-

A summary expenditure forecast for the Water Fund capital projects contained in Section 3 is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Water Distribution	1,030,500	855,500	1,015,500	1,031,750	923,000	93,000	3,623,000
Water Treatment	875,000	515,000	385,000	1,125,000	2,805,000	3,200,00	2,500,000
Total Water Fund	1,905,500	1,370,500	1,400,500	2,156,750	3,728,000	3,293,000	6,123,000

A summary expenditure forecast for the General Fund vehicles and trailers contained in Section 4 is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Facilities Department	208,062	7,500	45,500	120,000	-	-	10,000
Fire Department	590,000	-	-	275,000	-	937,000	40,000
Information Technology							
Police Department	86,000	61,000	78,000	61,000	61,000	169,000	61,000
Department of Public Works	440,000	661,000	385,000	60,000	180,000	60,000	10,000
Total General Fund	1,324,062	729,500	508,500	516,000	241,000	1,166,000	121,000

A summary of the Sewer Fund vehicles and trailer replacement schedule is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Total Sewer Fund	30,000	-	180,000	-	-	-	225,000

A summary of the Water Fund vehicles and trailer replacement schedule is shown below:

Project	2024	2025	2026	2027	2028	2029	2030
Total Water Fund	-	35,000	40,000	-	5,000	30,000	-

When contemplating the funding of large specialty vehicle purchases (e.g. fire trucks, snow plow trucks), the City may wish to pursue external funding sources including lease-purchase financing arrangements. Doing so may help reduce the expenditure in certain years when such purchases are forecast. A 10-year arrangement typically results in the City paying 12% of the purchase price each year for 10 years. A 15-year arrangement typically results in the City paying 8.5% of the purchase price each year for 15 years.

5.1 CAPITAL PROJECTS BY DEPARTMENT

PLANNING, PERMITTING AND ASSESSING DEPARTMENT

The following table contains the Planning, Permitting and Assessing Department's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Rental Property Purchase Pilot Program	10,000	-	-	-	-	-	-
Housing Preservation Loan Program	6,000	-	-	-	-	-	-
Metro Way Bike Path	-	25,000	-	-	-	-	-
Granite Street Bike Path	-	25,000	-	-	-	-	-
Vermont Granite Museum Bike Path	-	25,000	-	-	-	-	-
Bus Stop Density	10,000	-	-	-	-	-	-
North Main to Summer Street Plan	15,000	-	-	-	-	-	-
Downtown Study for Upper-Floors Housing	20,000	-	-	-	-	-	-
Bicycle and Pedestrian Plan	-	20,000	-	-	-	-	-
Pedestrian Environment Quality Index	5,000	-	-	-	-	-	-
City-wide Access Management Review	8,000	-	-	-	-	-	-
Merchants Row Parking Lot Redevelopment	-	-	-	25,000	-	-	-
River Management Plan	-	-	15,000	-	-	-	-
Open Space Plan	-	10,000	-	-	-	-	-
Total	74,000	105,000	15,000	25,000	-	-	-

FACILITIES DEPARTMENT

The following table contains the Facilities Department's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Alumni Hall, Auditorium and BOR Upgrades	60,000	110,000	280,000	90,000	225,000	100,000	-
Cemetery Upgrades	35,000	10,000	100,000	-	-	-	-
City Hall Upgrades	215,000	45,000	272,000	-	-	130,000	-
Park Upgrades	89,000	65,000	-	25,000	-	-	-
Public Safety Building Upgrades	330,000	110,000	420,000	70,000	265,000	-	-
Strategic Planning	-	-	-	-	-	-	-
Total	729,000	340,000	1,072,000	185,000	490,000	230,000	-

FIRE DEPARTMENT

The following table contains the Fire Department's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Fire Department Radio System Upgrades	-	-	300,000	-	-	-	-
Replace Extrication Equipment	45,000	-	-	-	-	-	-
SCBA System Upgrade	56,000	-	-	-	-	-	-
Replace Multi Gas Meters / Galaxy	-	-	25,000	-	-	-	-
On-vehicle Computer Upgrade	-	14,000	-	-	-	-	-
Call Box System Upgrades	-	-	250,000	-	-	-	-
Replace Defibrillators	-	-	-	-	37,000	-	-
Replace Ambulance Cots	-	-	-	-	15,000	-	-
Replace Rescue Air Bag System	-	-	-	30,000	-	-	-
Replace Thermal Imaging Cameras	-	-	-	-	40,000	-	-
Gear Locker Upgrade	-	-	-	-	12,000	-	-
Replace Gear Extraction Washer and Dryer	-	-	-	-	16,000	-	-
Replace Hose Wash System	-	-	16,000	-	-	-	-
Total	101,000	14,000	591,000	30,000	137,000	-	-

INFORMATION TECHNOLOGY DIVISION

The following table contains the Information Technology division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Replace NEMRC Assess Module	-	-	-	-	-	-	-
Network Equipment Upgrades	10,000	-	-	-	-	-	-
Connect back up Generator	-	-	-	-	-	-	-
Cloud Storage Solution	5,000	-	-	-	-	-	-
Printer Upgrades	10,000	-	-	-	-	-	-
Migrate to New Server Room	-	-	-	-	-	-	-
Wiring Updates	20,000	-	-	-	-	-	-
Total	45,000	-	-	-	-	-	-

POLICE DEPARTMENT

The following table contains the Police Department's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Police Department Radio System Upgrades	-	-	190,000	-	-	-	-
Total	-	-	190,000	-	-	-	-

DEPARTMENT OF PUBLIC WORKS

The following table contains the Department of Public Works' capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Communication System Improvements	-	-	25,000	-	-	-	-
Public Works Facility	150,000	-	-	-	-	-	-
Data and Records Retention	30,000	-	-	-	-	-	-
Waste Processing	15,000	-	-	-	-	-	-
Material Source Development	-	-	-	35,000	-	-	-
Total	195,000	-	25,000	35,000	-	-	-

STREETS DIVISION

The following table contains the Streets Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Foster Street Upgrades	-	75,000	-	-	-	-	-
Streets Department Radio System Upgrades	-	-	65,000	-	-	-	-
Orange St Drainage Upgrades	-	-	-	-	-	-	-
Berlin St Drainage Upgrades	-	-	-	-	-	-	-
Gunner Brook (Snow Dump/ Hope) Upgrades	-	-	-	-	-	-	-
Cleveland Ave Upgrades	-	-	-	-	-	-	35,000
Bike Path – drainage erosion at MM1.3+/-	-	-	-	-	7,000	-	-
Parkside Development Upgrades	-	-	-	-	-	35,000	-
Tremont St. Upgrades	-	-	-	-	-	-	-
Lundy Lane Drainage Upgrades	-	-	-	-	50,000	-	-
ADA-Compliant Intersections	8,000	8,000	8,000	8,000	8,000	-	-
ADA-Compliant Sidewalks	12,000	12,000	12,000	12,000	12,000	-	-
ROW Sight Improvements	15,000	15,000	15,000	15,000	-	-	-
Sidewalk Install or Replace (Annual)	90,000	160,000	140,000	100,000	100,000	100,000	100,000
Intersection Improvements	-	-	-	-	-	-	-
Rehab and Overlay (Annual)	403,500	352,000	454,000	449,000	400,000	400,000	400,000

STREETS DIVISION (CONT.)

The following table contains the Streets Division's capital projects included in Section .

Project	2024	2025	2026	2027	2028	2029	2030
Replace Non-conforming Signs and Posts	6,500	6,500	7,000	-	-	-	-
Install New Guard Rail Sections	-	25,000	25,000	25,000	-	-	-
Install New Signs and Posts	-	-	13,000	13,000	14,000	-	-
Install Speed Enforcement Zone Signs	-	-	8,000	8,000	8,000	-	-
Install Bulb-outs	-	-	-	50,000	50,000	50,000	-
Install Neighborhood Signs	-	-	-	-	8,000	-	-
Traffic Signal Programming	-	-	-	-	30,000	-	-
Upgrade Traffic Signals	-	-	-	-	250,000	-	-
Traffic Calming	-	-	-	-	15,000	-	-
North-end Stormwater System Upgrade	294,000	-	-	-	-	-	-
Rehabilitate Nelson St. Culvert	-	-	-	175,000	-	-	-
Replace Washington St. Culvert	-	-	-	-	200,000	-	-
Replace Rte. 302 Culvert	-	-	-	-	200,000	-	-
Mitigate Stormwater Flows	-	-	-	-	150,000	-	-

STREETS DIVISION (CONT.)

The following table contains the Streets Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Replace Stormwater Segment	-	-	-	-	130,000	-	-
Mitigate Stormwater Impediments	-	-	250,000	-	-	-	-
Replace Stormwater Piping	-	-	-	-	-	-	250,000
Rehabilitate CVRPC Culverts	-	-	-	-	-	-	150,000
Road Standards Adopted Policy	20,000	-	-	-	-	-	-
Complete Streets Policy	-	20,000	-	-	-	-	-
Paper Streets Policy	-	-	20,000	-	-	-	-
Trash Rack Improvements	-	-	-	-	45,000	-	-
Replace Brook Street Bridge	-	-	2,500,000	-	-	-	-
Rehabilitate Route 302 Bridge	-	200,000	-	-	-	-	-
Replace Metal Bin Retaining Wall	-	-	550,000	-	-	-	-
Replace Retaining Wall at River St.	-	-	450,000	-	-	-	-
Replace Upper Brook St Bridge	-	-	-	-	1,000,000	-	-
Total	849,000	873,500	4,517,000	855,000	2,678,000	585,000	735,000

WATER DISTRIBUTION DIVISION

The following table contains the Water Distribution Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Break-away Hydrant Installation	25,000	25,000	25,000	25,000	-	-	-
Break-away Hydrant Compliance	12,500	12,500	12,500	12,500	-	-	-
Improve Hydrant Density	83,000	83,000	83,000	83,000	83,000	83,000	83,000
Evaluate Pressure System	-	25,000	-	-	-	-	-
SCADA for Hydrants	-	-	-	50,000	-	-	-
Sewer Trunk Line Telemetry	-	-	-	30,000	-	-	-
Network & Pressure Analysis	-	50,000	-	-	-	-	-
Replace US-302 Piping and Valves	-	-	-	-	-	-	3,500,000
Replace VT-110 to US-302 Crossing	-	-	-	35,000	-	-	-
Replace US-302 to Plant	-	-	50,000	-	-	-	-
Emergency Drought Service Study	-	-	-	-	-	-	30,000

WATER DISTRIBUTION DIVISION (CONT.)

The following table contains the Water Distribution Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
4-inch Replacement Plan (Annual)	400,000	170,000	300,000	325,000	180,000	300,000	300,000
8-inch Replacement Plan (Annual)	500,000	480,000	535,000	461,250	400,000	400,000	400,000
Automated Valve Installation	-	-	-	-	250,000	-	-
Valve Box Access Program	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Valve Rotation and Testing	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Total	1,030,500	855,500	1,015,500	1,031,750	923,000	93,000	3,623,000

WATER TREATMENT DIVISION

The following table contains the Water Treatment Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Dix Dam Shot-Crete Repair	500,000	-	-	-	-	-	-
Install Screen at Large Orange Gate House	-	25,000	-	-	-	-	-
Replace Slide Gate at Silt Dam	-	-	30,000	-	-	-	-
Dix Reservoir Shoreline Armoring	-	-	-	-	2,000,000	-	-
Dix Reservoir Spill Control System	-	-	-	1,000,000	-	-	-
Large Pump Upgrades	25,000	25,000	30,000	-	-	-	-
Generator Transfer Switch Upgrades	-	-	25,000	25,000	30,000	-	-
Moisture Removal System Upgrades	-	-	-	100,000	-	-	-
Spill Response Capacity Study	-	-	20,000	-	-	-	-
Dix Dam Upgrades Engineering	-	-	-	-	750,000	-	-
Dix Reservoir Silt Removal Study	-	150,000	-	-	-	-	-
Dix Dam Upgrades Construction	-	-	-	-	-	-	2,500,000
Minimum Flow Release Standards	-	-	30,000	-	-	-	-
Roof Replacement	-	200,000	-	-	-	-	-
Upgrade SCADA System	-	90,000	-	-	-	-	-
Freeze-Dry Bed Rehab	-	25,000	-	-	-	-	-
Pump Station Back-up	-	-	250,000	-	-	-	-
Bulk Tank Replacement	-	-	-	-	25,000	-	-
Floating Solar Array	-	-	-	-	-	3,200,000	-
Total	525,000	515,000	385,000	1,125,000	2,805,000	3,200,000	2,500,000

WASTEWATER COLLECTION DIVISION

The following table contains the Wastewater Collection Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Manhole Replacements	15,000	15,000	15,000	15,000	15,000	-	-
Priority Repair Segments	30,000	30,000	30,000	30,000	30,000	-	-
Small Diameter Collection Pipe Improvements	25,000	25,000	25,000	25,000	25,000	-	-
Trunk Line Replacements	-	-	75,000	-	-	-	-
Install Supplemental Manholes and Cleanouts	25,000	25,000	25,000	25,000	25,000	-	-
Manhole Hardware Upgrades	15,000	15,000	15,000	15,000	15,000	-	-
Elimination of Bottlenecks	25,000	25,000	25,000	25,000	25,000	-	-
Total	135,000	135,000	210,000	135,000	135,000	-	-

WASTEWATER TREATMENT DIVISION

The following table contains the Wastewater Treatment Division's capital projects included in Section 3.

Project	2024	2025	2026	2027	2028	2029	2030
Facilities Plan	-	-	-	-	-	-	-
Digester Rehabilitation	750,000	-	-	-	-	-	-
Roof Repairs	125,000	-	-	-	-	-	-
Facility Environmental Improvements	-	-	100,000	-	-	-	-
Total	875,000	-	100,000	-	-	-	-

5.2 VEHICLES AND TRAILERS BY DEPARTMENT

FACILITIES DEPARTMENT

The following table contains the Facilities Department's vehicles and trailer replacement forecast:

Year	Make	2024	2025	2026	2027	2028
2009	Ford	30,000	-	-	-	-
2021	Ford	-	-	-	-	-
2016	Dodge	-	-	-	60,000	-
2004	SCAG	-	-	-	-	-
2016	Kubota	-	-	12,500	-	-
2008	SCAG	-	-	-	-	-
2000	Big Tex	-	7,500	-	-	-
1973	Zamboni	89,301	-	-	-	-
2002	Zamboni	89,301	-	-	-	-
2016	Dodge	-	-	-	60,000	-
2005	New Holland	-	-	-	-	-
2016	Kubota	-	10,000	-	-	-
2016	Kubota	-	10,000	-	-	-
2009	Toro	-	-	-	-	-
1999	SCAG	-	-	-	-	-
2016	John Deere	-	13,000	-	-	-
2020	Simplicity	-	-	-	-	10,000
2020	Simplicity	-	-	-	-	10,000

FIRE DEPARTMENT

The following table contains the Fire Department's vehicles and trailer replacement forecast:

Year	Make	2024	2025	2026	2027	2028
2013	Chevrolet	-	-	-	-	-
2018	Ford	-	-	-	-	-
2004	Pace	-	-	-	-	-
2004	Ford	40,000	-	-	-	-
1993	Sutphen	550,000	-	-	-	-
2012	HME	-	-	-	-	-
2009	HME	-	-	-	-	-
2012	Chevrolet	-	-	-	-	-
2017	HME	-	-	-	-	-
2012	Chevrolet	-	-	-	-	-
2007	Chevrolet	-	-	-	-	-
2008	Ford	-	-	-	-	-
2012	International	-	-	-	275,000	-
2019	Ford	-	-	-	-	-
2020	Dodge	-	-	-	-	-

POLICE DEPARTMENT

The following table contains the Police Department's vehicles and trailer replacement forecast:

Year	Make	2024	2025	2026	2027	2028
2018	Ford	-	-	-	-	-
2016	Ford	-	-	-	-	-
2017	Ford	-	-	-	61,000	-
2016	Ford	-	-	61,000	-	-
2015	Ford	-	61,000	-	-	-
2018	Ford	-	-	-	-	-
2014	GMC	-	-	17,000	-	-
2012	Chevrolet	61,000	-	-	-	-
2021	Ford	-	-	-	-	-
2012	Ford	15,000	-	-	-	-
2008	Pace	-	-	-	-	-
2013	AEP	10,000	-	-	-	-

SEWER FUND

The following table contains the Sewer Fund's vehicles and trailer replacement forecast:

Year	Make	2024	2025	2026	2027	2028
\	Ford	30,000	-	-	-	-
2018	Freightliner	-	-	-	-	-
2004	Komatsu	-	-	-	-	-
2002	International	-	-	180,000	-	-
2010	Chevrolet	-	-	-	-	-

WATER FUND

The following table contains the Water Fund's vehicles and trailer replacement forecast:

Year	Make	2024	2025	2026	2027	2028
2009	Ford	-	-	-	-	-
2016	Ford	-	-	40,000	-	-
1968	Carter	-	35,000	-	-	-
1983	Norma	-	-	-	-	5,000
2015	Handmade	-	-	-	-	-
2011	Ford	-	-	-	-	-
2012	Chevrolet	-	-	-	-	-

APPENDIX

SECTION 6.0

This section of the City of Barre's Capital Improvement Plan contains additional tables that provide more supplemental detail to the information contained throughout the report as follows:

6.1 Streets Division Project Detail

6.2 Water Distribution Division Project Detail

6.1 STREETS DIVISION PROJECT DETAIL

Additional detail on certain Streets division programs that annually provide routine improvements and upgrades to city infrastructure are further detailed in this section.

PAVEMENT IMPROVEMENTS PROGRAM

While certain street sections only require an overlay of new asphalt, others require a complete rehab. For the CIP period, work is planned in the following locations of the City right-of-way:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Rehab and Overlay (FY 23)	Rehabilitate or Overlay certain asphalt sections within the City. Sections may include: Warren St (905 ft rehab, Merchant to Plain); Midway (350 ft rehab); Pleasant St (600 ft. overlay); Merchant St. (1000 ft rehab, Wellington to Midway); S. Main St (2300 ft overlay, Branch to Parkside); S. Main St (1420 ft overlay, RR Xing to Ayers); River St. (1490 ft overlay)	State of Good Repair	1	2023	403,000
Rehab and Overlay (FY 24)	Rehabilitate or Overlay certain asphalt sections within the City. Sections may include: Quarry St; Allen St (sidewalk); Newton St (630 ft. rehab, Farwell to end); Nelson St. (765 ft rehab, Washington to Hill); Beckley (1265 ft overlay, Oliver to City Line); Woodland Dr (765 ft, #57 to #92);	State of Good Repair	1	2024	403,500
Rehab and Overlay (FY 25)	Rehabilitate or Overlay certain asphalt sections within the City. Sections may include: Quarry St; Elmwood Ave (785 ft rehab, Perrin to Pleasant); Woodland Dr (298 ft. overlay, #92 to City Line); Nelson St. (1160 ft rehab, Hill to Tremont); Woodland Dr. (1418 ft overlay, Hill to #57).	State of Good Repair	2	2025	352,000

PAVEMENT IMPROVEMENTS PROGRAM (CONT.)

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Rehab and Overlay (FY 26)	Rehabilitate or Overlay certain asphalt sections within the City. Sections may include: Elmwood Ave (835 ft rehab, EA Ext to Per-rin); Mid Camp (875 ft rehab); Westwood Prkwy (2000 ft. over-lay); Upper Merchant St. (1150 ft rehab, Midway to #180); Up-per Merchant St. (765 ft over-lay, #180 to Maple).	State of Good Repair	2	2026	454,000
Rehab and Overlay (FY 27)	Rehabilitate or Overlay certain asphalt sections within the City. Sections may include: Palmisano Pl (1680 ft overlay); Brook St (overlay, Pleasant to Farwell); Blackwell (rehab side-walk); Merchants Row (overlay, Depot to Prospect); Arioli Ave (overlay).	State of Good Repair	3	2027	449,000
Rehab and Overlay (FY 28)	Rehabilitate or Overlay certain asphalt sections within the City at locations to be determined.	State of Good Repair	3	2028	400,000

MOBILITY IMPROVEMENTS PROGRAM

Within the mobility improvements program is the sidewalk install and repair project that annually improves and upgrades sidewalk segments throughout the City. Work is currently planned as follows:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
Sidewalk Install or Replace (FY 24)	Sidewalk reconstruction in various locations throughout the City that may include: Ayers St. (100 feet); Maple Ave (2200 ft, both sides)	State of Good Repair	2	2024	90,000
Sidewalk Install or Replace (FY 25)	Sidewalk reconstruction in various locations throughout the City that may include: Brook St. (2,400 ft); Granite St (1,600 ft, from Main St. to bridge)	State of Good Repair	2	2025	160,000
Sidewalk Install or Replace (FY 26)	Sidewalk reconstruction in various locations throughout the City that may include: Seminary St. (2,350 ft); S. Main St. (200 ft to Merchants Row); Warren St. (960 ft).	State of Good Repair	2	2026	140,000
Sidewalk Install or Replace (FY 27)	Sidewalk reconstruction in various locations throughout the City that may include: Summer St; S. Main St.; N. Main St.	State of Good Repair	2	2027	100,000
Sidewalk Install or Replace (FY 28)	Sidewalk reconstruction in various locations throughout the City that will be determined based on an assessment of conditions and demand.	State of Good Repair	2	2028	100,000
Sidewalk Install or Replace (FY 29)	Sidewalk reconstruction in various locations throughout the City that will be determined based on an assessment of conditions and demand.	State of Good Repair	2	2029	100,000

6.2 WATER DISTRIBUTION DIVISION PROJECT DETAIL

Additional detail on certain water distribution division programs that annually provide routine improvements and upgrades to city infrastructure are further detailed in this section.

WATER MAIN REPLACEMENT PROGRAM

The division has identified certain areas where the 4-inch and 8-inch water mains will require replacement in the coming years as identified below:

Project Title	Description	Reason	Dept. Priority	Year	Cost (\$)
4-inch Replacement Plan (FY 24)	Sections may include: Hale St. (280 ft); Ayers St. (2,040 ft); Hill St. (880 ft).	State of Good Repair	2	2024	400,000
4-inch Replacement Plan (FY 25)	Sections may include: Spaulding St. (360 ft); Liberty St. (320 ft); Willey St. (720 ft).	State of Good Repair	2	2025	170,000
4-inch Replacement Plan (FY 26)	Sections may include: Oliver St (180 ft); Brook St. (960 ft); Farwell St. (480 ft); Pleasant St. (560 ft).	State of Good Repair	2	2026	300,000
4-inch Replacement Plan (FY 27)	Sections may include: East St (760 ft); Averill St (560 ft); Church St. (660 ft); Park St. (480 ft).	State of Good Repair	2	2027	325,000
4-inch Replacement Plan (FY 28)	Sections may include: Basset St. (480 ft); Vine St. (420 ft); Center St. (600 ft)	State of Good Repair	2	2028	180,000
8-inch Replacement Plan (FY 24)	Sections may include: Brook St. (960 ft.); Farwell St. (480 Ft.); Newton St. (630 ft.)	State of Good Repair	2	2024	500,000
8-inch Replacement Plan (FY 25)	Sections may include: Hill St. (880 ft.); Liberty St. (320 ft.); Willey St. (720 ft.); Pleasant St. (560 ft.)	State of Good Repair	2	2025	480,000
8-inch Replacement Plan (FY 26)	Sections may include: Center St. (600 ft.); Vine St. (420 ft.); Bassett St. (480 ft.); Church St. (660 Ft.)	State of Good Repair	2	2026	535,000
8-inch Replacement Plan (FY 27)	Sections may include: East St. (760 ft.); Blackwell St (905 ft.); Oliver St. (180 ft).	State of Good Repair	2	2027	461,250
8-inch Replacement Plan (FY 28)	Sections to be determined	State of Good Repair	2	2028	400,000

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Prepared By:



PO Box 1469
Ketchum, ID 83340
(208) 725-3259
www.PublicAdvisoryGroup.com