

TOWN OF IPSWICH
Department of Planning & Development

TO: Board of Selectmen

Date: July 16, 2013

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SUBJECT: North Green Improvement Project – Total Cost and Funding Sources

REFERENCE: Your Request

This memorandum gives an accounting of the costs, as well as a description of the funding sources, for the North Green Improvement Project. The cost and funding information, which distinguishes between design and construction costs, is provided for the drainage improvements, the water main replacement, and the streetscape enhancements. Although the drainage improvements were undertaken ten years ago, they are included because they constituted Phase I of the North Green improvements.

Project Background

In 1997 the Town of Ipswich, in conjunction with *The Ipswich Partnership*, used \$25,000 in federal Community Development Block Grant (CDBG) funds to develop a needs assessment and action plan for the North Green. The resulting report, which was prepared by the consulting team of Cecil & Rizvi and VHB, identified numerous problems, including poor drainage, significant erosion of the Green, deteriorated and missing sidewalks, excessive road width, haphazard accommodation of on-street parking, and an overall appearance of neglect.

In 2001 the Town Meeting appropriated \$88,500 to undertake the design of drainage and streetscape improvements. The engineering firm of VHB was hired to develop the design plans.

Phase I: Drainage Improvements

The 1997 needs assessment identified two primary deficiencies of the North Green's drainage: (1) Due to the lack of a drainage collection system and the steep grade of North Main Street, rain water flowed rapidly down North Main during storm events, occasionally flooding the Market Square intersection; (This was especially problematic in cold weather, when rain would sometimes freeze and cause dangerous icing conditions.) and (2) The stormwater runoff, which contains fecal coliform and other pollutants, ultimately drains into the Ipswich River via Farley Brook, threatening anadromous fish habitat and the shellfish beds in Ipswich Bay.

To address these problems, VHB designed a closed collection drainage system (catch basins, manholes, drainage pipes) to reduce the flow of runoff, and the installation of a suspended solids unit (stormceptor) and a sand filter to improve the quality of the runoff.¹ The total cost of the drainage improvements, from design to construction, was slightly more than \$467,000, nearly fifty percent of which was federally-funded. Another 14.5% of the cost was paid for by a grant from the Mass Department of Coastal Zone Management. The remaining \$171,250, or 37% of the project cost, was funded by the Town. Of that amount, about two-thirds came from Town Meeting appropriations, with the remainder funded by the DPW operating budget (see Figure 1 and Table 1 below).

Figure 1: Drainage Improvements -- Funding Sources and Share of Total

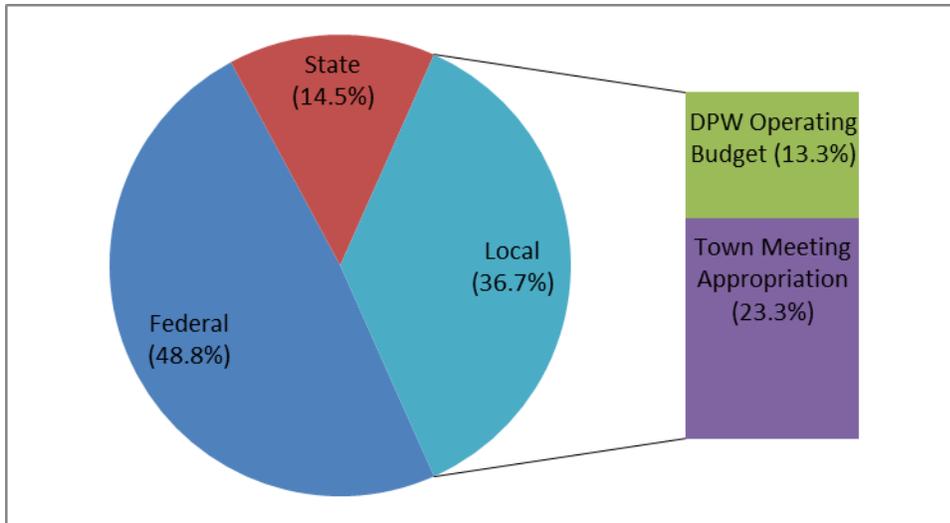


Table 1: Drainage Improvements -- Amounts, Funding Sources, and Share of Total

Item	Amount	Funding Source	% of Total***
DEP Grant (Construction)	\$228,000 (319 Grant)	Federal*	48.8%
CZM Grant (Construction)	\$67,875 (CPR Grant)	State	14.5%
DPW Operating Budget (Construction)	\$62,250	Local	13.3%
Town Meeting Appropriation (Design & Construction)	\$109,000 (\$43,500 4/01 TM** & \$65,500 4/02 TM)	Local	23.3%

* The 319 program is federally-funded, but the monies are allocated through Mass DEP.

** Represents portion of \$88,500 appropriation; remainder was used for the streetscape design.

*** Sum of percentages in Figure 1 & Table 1 does not equal 100% due to rounding.

Total Cost for Drainage Improvements: \$467,125

¹A comparative qualitative analysis of the runoff before and after the improvements showed that the level of fecal coliform measured after the installation of the stormceptor and the sand filter was 50% lower than pre-installation, and the amount of total suspended solids (TSS) was more 20 times less than it was pre-installation.

Phase II: Water Main Replacement

When substantial road improvements are undertaken, the Town assesses the condition of the infrastructure within the right-of-way. In the instance of North Main Street and Meetinghouse Green, it was determined that the aging water main would soon need replacement. Thus, Town Meeting authorized use of the Town's Water Enterprise Account to replace the existing water main with an updated water service, which ultimately included about 1,400 linear feet of 12-inch ductile iron water main and 1,300 linear feet of 8-inch ductile iron water main. By taking this action, the Town minimized the possibility of needing to dig up the newly-paved road in the near term to repair the old and fragile water main.

The total cost of the water main replacement was about \$676,863, with \$119,500 spent on design and engineering, and the remaining \$557,363 expended on construction. Both the design and construction was funded by the Water Enterprise Account, which is supported by the water users (see Figure 2 and Table 2 below).

Figure 2: Water Main Replacement -- Funding Allocation and Share of Total

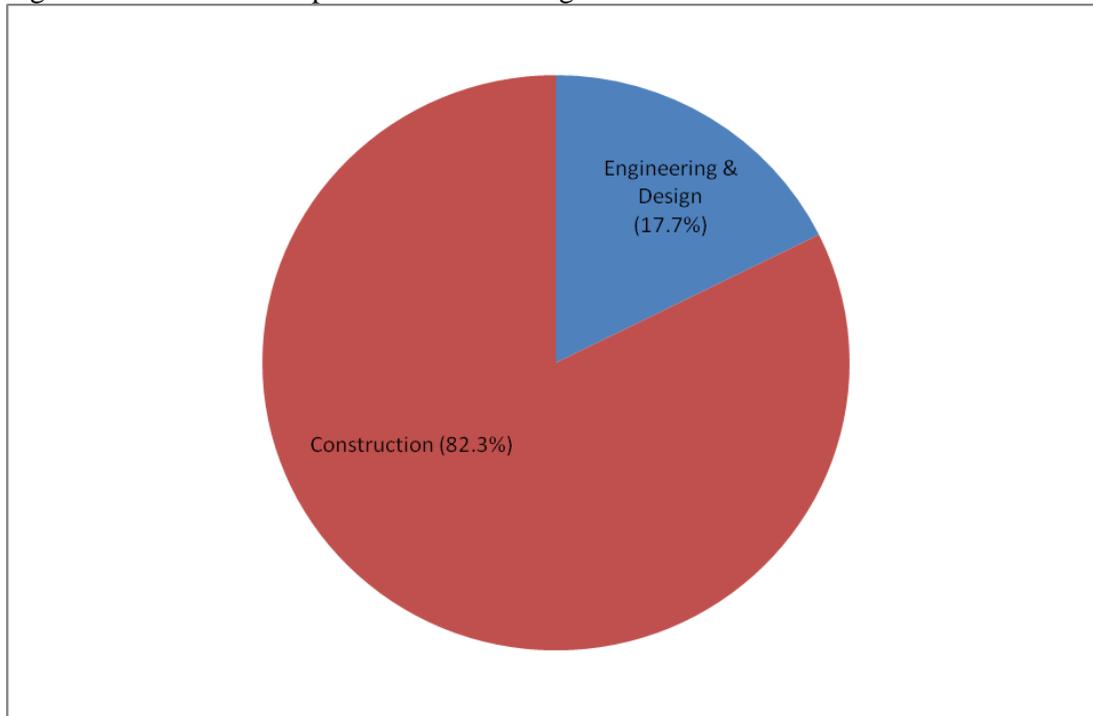


Table 2: Water Main Replacement -- Amounts, Source, and Share of Total

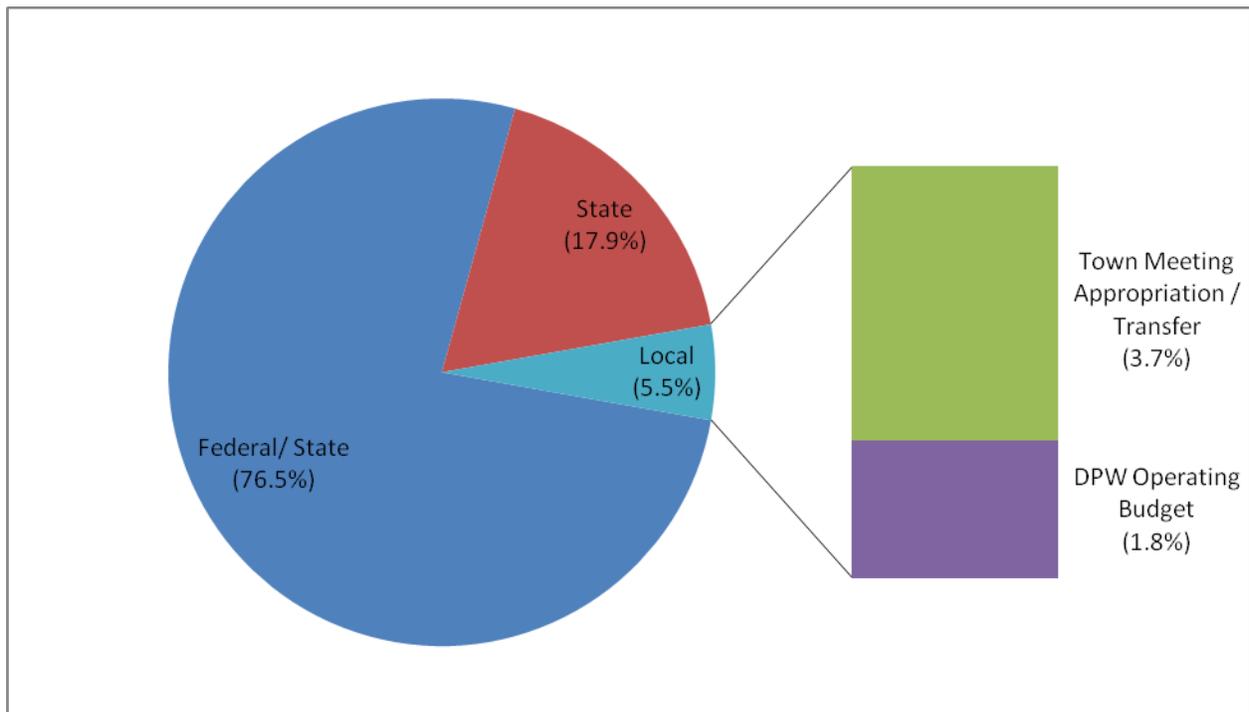
Item	Amount	Funding Source	% of Total
Engineering & Design	\$119,500	Local	17.7%
Construction	\$557,363	Local	82.3%

Total Cost for Water Main Replacement/Upgrade: \$676,863

Phase III: Streetscape Enhancements

Although the design of the drainage and streetscape project components was undertaken simultaneously, the path to funding for the latter was far more arduous and lengthy than for the former. It was not until 2008, five years after the drainage improvements were completed, that a commitment to fund construction was obtained from Mass DOT. The commitment was conditioned upon the Town re-initiating the design in accordance with the MHD design process. Fortunately, despite its policy that communities be responsible for 100% of the design for locally-initiated projects, the State agreed to fund what amounted to 80% of the additional design cost. Using federal Transportation Enhancement monies, the State funded the entire cost of the streetscape project construction (\$1,180,584), except for the cost of the street reclamation and resurfacing (\$282,929), and about \$12,355 in cost overruns, both of which were funded by Chapter 90 funds (See Figure 3 and Table 3). The Town's contribution of locally-generated funds totaled \$92,851, less than 6% of the total streetscape improvement costs.

Figure 3: Streetscape Enhancements* – Funding Source and Share of Total



*The original limits of work for the streetscape enhancements, as designed and bid, were the intersection of Meetinghouse Green and North Main Street at the northerly end, and about halfway up the lower green at the southerly end. Earlier this year the Town was able to secure a commitment from MassHighway to fund additional sidewalks and curbs at both ends of the project. Combined with funds from DPW and Utilities, the additional monies allowed the project improvements to extend to North Main's intersections with South Main/Central Street and East/High Street.

Table 3: Streetscape Enhancements -- Funding Amounts, Sources, and Share of Total

Item	Amount	Funding Source	% of Total*
Initial Design (Town Meeting Appropriation)	\$45,000**	Local	2.7%
Preparation of ROW Plans (DPW Budget)	\$12,000	Local	0.7%
Final Design (TIP Funds)	\$83,403	Federal/State***	5.0%
Final Design (Capital Stabilization Fund)	\$17,000	Local	1.0%
Construction (TIP Funds)	\$1,180,584	Federal/State***	71.5%
Construction (Chapter 90 Funds)	\$295,284	State****	17.9%
Construction (DPW Budget)	\$18,851	Local	1.1%

*Sum of percentages in Figure 3 & Table 3 does not equal 100% due to rounding.

**Represents portion of \$88,500 appropriation; remainder used for design of drainage improvements.

***80% federal, 20% state.

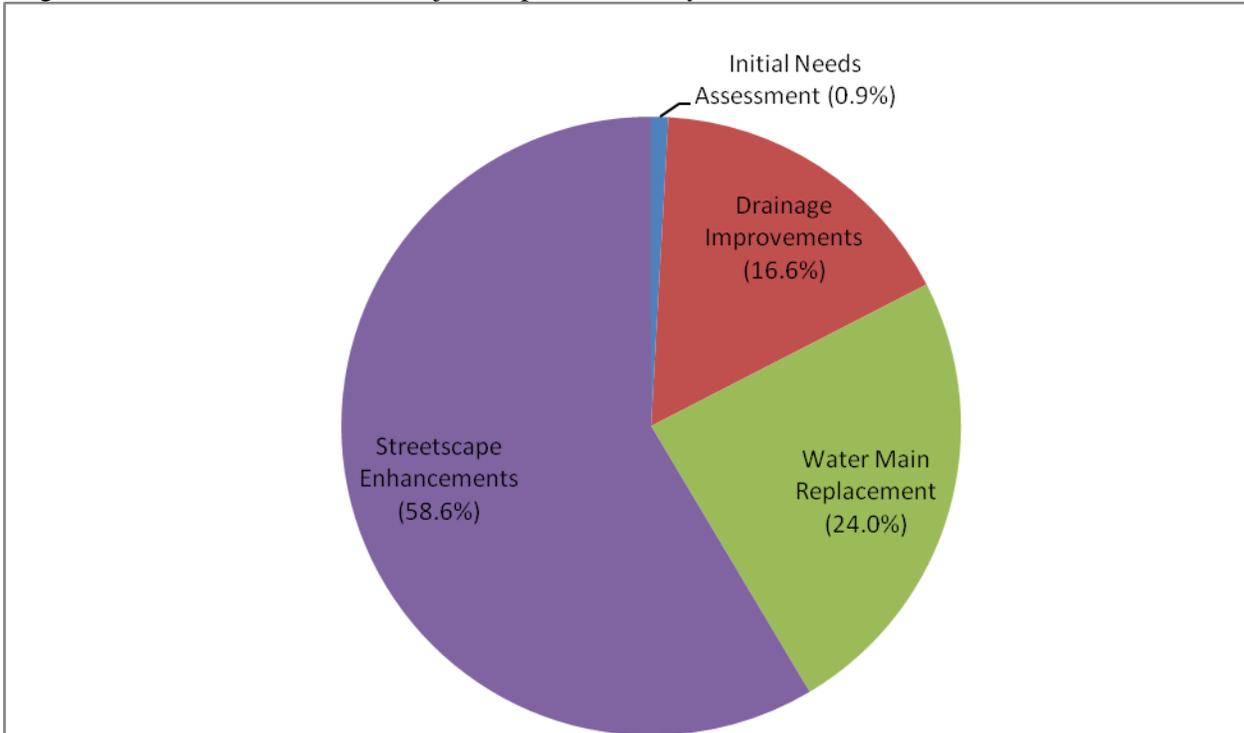
****Chapter 90 Funds are state-allocated, but Town has discretion on how they are expended.

Total Cost for Streetscape Improvements: \$1,652,122

Total Cost of North Green Project by Phase and Funding Source

The total cost of the North Green Improvement Project was approximately \$2,821,000. As shown in figure 4, nearly 60% of the North Green Improvement costs were for the streetscape enhancements, 24% was spent on the water main replacement, and about 17% of the expenses were for the drainage work. Although more than 80% of the project funds were expended on the streetscape and drainage improvements, the Town's share of the costs for those improvements was dramatically lower: about 10% of the streetscape enhancements and less than 20% of the drainage improvements (see Figure 5). On the other hand, the water main replacement expenses, which were less than one-quarter of the total project cost, accounted for over 70% of the Town's costs on the North Green Project. Indeed, if only the drainage and streetscape improvements are considered, the Town's share of the total costs is 12%. When the water main replacement expenses, of which the Town paid 100%, are included in the overall project cost, the Town's cost share is about one-third of the total. The remaining two-thirds of the cost for the North Green Improvement Project were funded by a mix of state and federal funds (see Figure 6 and Table 4).

Figure 4: Overall North Green Project Improvements by Phase and Share of Total



*Sum of percentages in Figure 4 does not equal 100% due to rounding.

Figure 5: North Green Project by Phase and Share of Local Funding

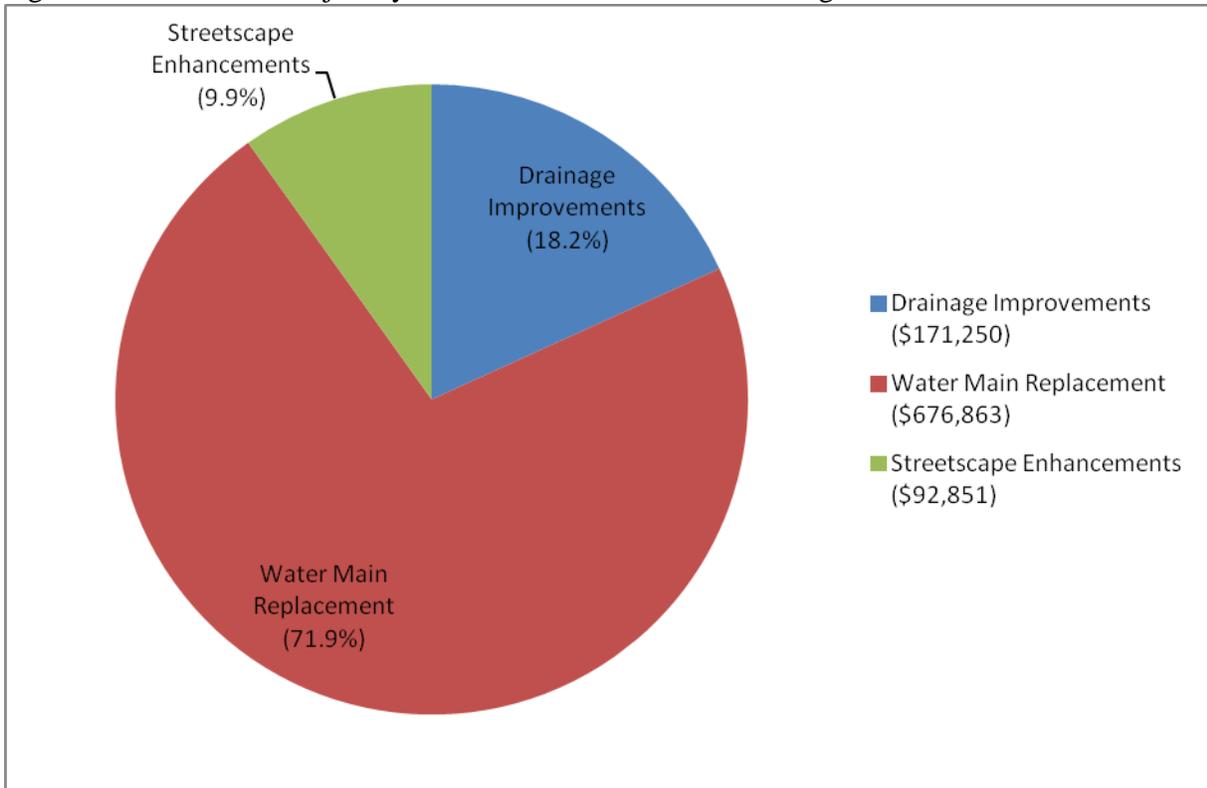


Figure 6: Overall North Green Project Costs by Funding Source and Share of Total

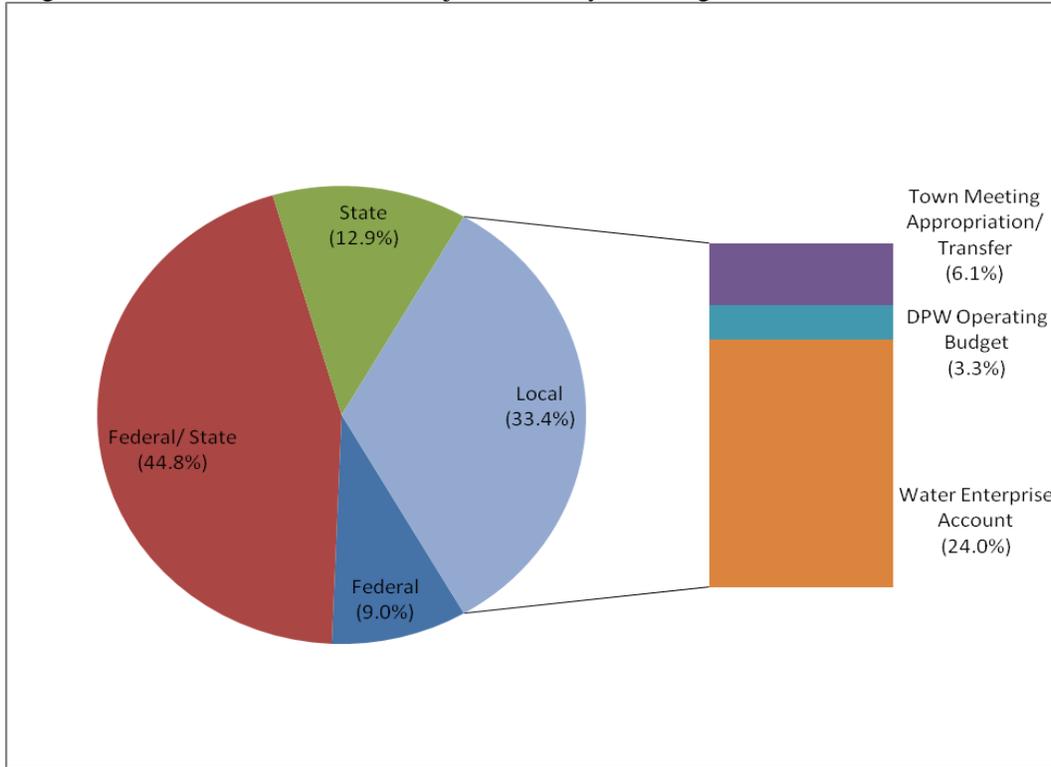


Table 4: Overall North Green Project Costs by Phase and Funding Source

Phase	Federal	Federal/State	State	Local	Phase Total (sum from left to right)
Initial Needs Assessment	\$25,000*				\$25,000
Drainage Improvements	\$228,000	0	\$67,875	\$171,250	\$467,125
Water Main Replacement	0	0	0	\$676,863	\$676,863
Streetscape Enhancements	0	\$1,263,987	\$295,284	\$92,851	\$1,652,122**
Total Share by Source*** (% of total)	\$253,000 (9.0%)	\$1,263,987 (44.8%)	\$363,159 (12.9%)	\$940,964 (33.4%)	

* Funds are from federal CDBG program, but were allocated to Town by MA DHCD.

** Costs still being finalized, so total may change slightly.

***Total Share by funding source in Figure 6 & source percentage in Table 4 does not add to 100% due to rounding.

Total Cost of North Green Improvement Project: \$2,821,110

