



**CAPITAL IMROVEMENT PROJECT (CIP) REQUEST - FY23**  
**FORM A - DESIGN & CONSTRUCTION**

|                                     |   |               |  |
|-------------------------------------|---|---------------|--|
| <b>Project Title:</b>               | Assembly Square Fire Station Fit-Out        |               |  |
| <b>Project Address:</b>             | Corner of Middlesex Avenue and Foley Street |               |  |
| <b>Department:</b>                  | Capital Projects                            |               |  |
| <b>Project Mgr.:</b>                | Melissa Woods                               | <b>Email:</b> | <a href="mailto:mwoods@somervillema.gov">mwoods@somervillema.gov</a> |
| <b>New Project or Modification:</b> | New Project                                 |               |  |

|                             |           |       |
|-----------------------------|-----------|-------|
| <b>Department Priority:</b> | Necessary | First |
|-----------------------------|-----------|-------|

Rank your project(s) in order of priority from your point of view. If you propose four projects, rank them 1, 2, 3, 4, with 1 being the highest, and so forth.

**Project Description/Scope of Work:**

Design and construction for a new fire station in Assembly Square located within a new parking garage at the corner of Middlesex Avenue and Foley Street provided by developer BioMed Realty. The City is leasing space within this new construction and will require construction administration design services and construction to outfit the existing space to build the new fire station.

**Justification:**

Improve fire and emergency services response for Assembly Square and surrounding neighborhoods

**Relationship to Other Projects:**

**Category: Please check all appropriate boxes**

- ☐ Architectural/Engineering Feasibility Study
- ☒ Architectural/Engineering Construction Document Services & Construction Admin
- ☒ Building Alteration/Repair/Renovation/Addition/New Construction
- ☐ Building Improvements (non-construction)
- ☐ Purchase of Equipment (incl. vehicles, office equipment, hardware, etc.)
- ☐ Information Technology Systems/Platforms (e.g. cloud based, internet based, etc.)
- ☐ Street/Sidewalk/Monument Improvements
- ☐ Water Improvements
- ☐ Sewer Improvements
- ☐ Land Development
- ☐ Land Acquisition
- ☐ Land Disposition
- ☐ Parks and Open Space
- ☐ Other

**Operational Impact:**

New facility that will require new operational costs

**What impact will this project have on operational costs?**

- ☐ Reduce Cost (greater than 5%)
- ☐ Reduce Cost (less than 5%)
- ☐ Cost Unchanged
- ☐ Increase Cost (less than 5%)
- ☒ Increase Cost (greater than 5%)

## Design and Construction Project Funding

| Design and Construction Project Funding                                |              |                     |       |              |              |       |       |   |   |
|--|--------------|---------------------|-------|--------------|--------------|-------|-------|---|---|
| Total Estimated Cost   |              | Prior Years Funding | FY 23 | FY 24        | FY 25        | FY 26 | FY 27 |   |   |
| Capital Costs:   |              |                     |       |              |              |       |       |   |   |
| Feasibility Study  | \$ -         |                     |       |              |              |       |       |   |   |
| Land Acquisition/Appraisal   | \$ -         | -                   | -     | -            | -            | -     | -     | - | - |
| Environmental Remediation/LSP  | \$ -         |                     |       |              |              |       |       |   |   |
| Demolition & Site Clearance  | \$ -         | -                   | -     | -            | -            | -     | -     | - | - |
| Owner's Proj. Mgr./Clerk of the Works                                  | \$ -         |                     |       |              |              |       |       |   |   |
| Designer Services (SD)   | \$ 440,912   | 440,912             |       |              |              |       |       |   |   |
| Designer Services (CA)   | \$ 122,250   |                     |       | 100,000      | 22,250       |       |       |   |   |
| Construction   | \$ 5,026,029 | -                   |       | 3,350,686    | 1,675,343    |       | -     |   | - |
| Insurance (builder's risk, addtl. Policies)                            | \$ -         | -                   |       |              |              |       | -     |   | - |
| Furniture & Equipment (FFE)  | \$ 48,000    |                     |       | 40,000       | 8,000        |       |       |   |   |
| Police Details   | \$ -         | -                   |       |              |              |       | -     |   | - |
| Contingency  | \$ 707,697   |                     |       | 471,798      | 235,899      |       |       |   |   |
| Other (Other misc soft costs)  | \$ 326,662   | -                   | -     | 217,775      | 108,887      |       | -     |   | - |
| Other (Signal at Apron, RCN, FA)                                       | \$ 200,000   | -                   | -     | 200,000      |              |       | -     |   | - |
| Total:   | \$ 6,871,550 | \$ 440,912          | \$ -  | \$ 4,380,259 | \$ 2,050,379 | \$ -  | \$ -  |   | - |
| Prior year spend on existing FY21 Building Improvements bond fund 5174 |              |                     |       |              |              |       |       |   |   |

**Please provide suggested sources. This section will be finalized jointly by Finance and the Department.**

| Please provide suggested sources. This section will be finalized jointly by Finance and the Department. |              |                        |       |              |              |       |       |      |      |
|---|--------------|------------------------|-------|--------------|--------------|-------|-------|------|------|
| Funding Sources:  |              | Prior Years<br>Funding | FY 23 | FY 24        | FY 25        | FY 26 | FY 27 |      |      |
| Stabilization Fund  | \$ -         | \$ -                   | \$ -  | \$ -         | \$ -         | \$ -  | \$ -  | \$ - | \$ - |
| GO Bonds  | \$ 6,430,638 |                        |       | 4,380,259    | 2,050,379    |       | -     |      | -    |
| Retained Earnings   | \$ -         |                        |       |              |              |       |       |      |      |
| General Fund  | \$ -         |                        |       |              |              |       |       |      |      |
| Special Assmnt.   | \$ -         | -                      | -     | -            | -            | -     | -     | -    | -    |
| Ch. 90  | \$ -         |                        |       |              |              |       |       |      |      |
| Grants  | \$ -         | -                      | -     | -            | -            | -     | -     | -    | -    |
| Receipts Reserved   | \$ -         |                        |       |              |              |       |       |      |      |
| Other - Existing bond, fund 5174  | \$ 440,912   | 440,912                | -     | -            | -            | -     | -     | -    | -    |
| Other (Specify)   | \$ -         | -                      | -     | -            | -            | -     | -     | -    | -    |
| Total:  | \$ 6,871,550 | \$ 440,912             | \$ -  | \$ 4,380,259 | \$ 2,050,379 | \$ -  | \$ -  | \$ - | \$ - |

**Evaluation Committee Use Only:**

|                                       |   |   |   |                |  |       |  |         |  |          |  |
|---------------------------------------|---|---|---|----------------|--|-------|--|---------|--|----------|--|
| <b>Evaluation Committee Use Only:</b> |   |   |   |                |  |       |  |         |  |          |  |
| Reviewed and Approved By:             | <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px;"></div>  | <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px;"></div> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 5px;"><b>Version</b></td> </tr> <tr> <td style="width: 70%; padding: 5px;">Draft</td> <td style="width: 30%; padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Revised</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Accepted</td> <td style="padding: 5px;"></td> </tr> </table> | <b>Version</b> |  | Draft |  | Revised |  | Accepted |  |
| <b>Version</b>                        |   |   |   |                |  |       |  |         |  |          |  |
| Draft                                 |   |   |   |                |  |       |  |         |  |          |  |
| Revised                               |   |   |   |                |  |       |  |         |  |          |  |
| Accepted                              |   |   |   |                |  |       |  |         |  |          |  |
|                                       | <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 25px;"></div> | <b>Final Approval</b>   |   |                |  |       |  |         |  |          |  |

## Cost Estimate Quality Control

### Questions & Answer Options

The following questions are used to determine the appropriate starting points for contingency and soft costs

*What is the current phase of the project lifecycle / procurement?*

Concept - Initial general proposal for a new project or procurement

Evaluation - Studying different options to fulfill identified need

Preliminary Design - Refining scope of preferred option

Final Design - Defining details of project / procurement

Pre-Construction - Project / procurement ready to bid

Construction - Contract awarded, managing potential change orders

*What is the basis of the cost estimate?*

Judgement based on comparison to historical projects / similar expenses

High-level calculation based on comparison to historical unit costs

Semi-detailed unit cost calculation

Detailed unit cost calculations based estimated quantities

Detailed unit cost calculations based firm take-offs of final design quantities

Firm bid from contractor / vendor

*Who prepared the cost estimate?*

City of Somerville Subject Matter Expert

Consultant with expertise in the project / procurement (e.g. Architect, Engineer)

Professional cost estimator

Hard bid (e.g. contractor, vendor)

*Was the cost estimate reviewed by an independent third party, and/or more than one cost estimate prepared?*

Yes

No

The following questions are used to properly escalate / inflate costs to the time of investment

*When was the cost estimate prepared or last updated?*

(enter date)

*To what date was the cost estimate escalated?*

(enter date, typically mid-point of construction, if escalated)

*If the investment is a lump-sum, what is the estimated date of the expense?*

(enter date)

*If the investment is a project with multiple payments, what are the start and end dates of the expense?*

(enter start date)

(enter end date)

$$F=P(1+i)^n$$

ft cost calculations

pared and reconciled?

## Cost Estimate Contingenies & Soft Costs

Based on Association for the Advancement of Cost Engineering (AACE) Classification Matrix

| Project Lifecycle       | AACE Classifications |                    |  |                                    |
|-------------------------|----------------------|--------------------|--|------------------------------------|
|                         | AACE Class           | Project Definition | Methodology                                    | Prepared by                        |
| Concept                 | 5                    | <5%                | Historical project comparison, Judgement       | CoS SME                            |
| Evaluation              | 4                    | 5 to 15%           | Historical project comparison, Gross unit cost | CoS SME                            |
| Preliminary Design      | 3                    | 15 to 30%          | Semi-detailed unit cost                        | Design consultant                  |
| Final Design            | 2                    | 30 to 70%          | Detailed unit costs with estimated take-offs   | Design and/or cost est. consultant |
| Pre-Construction        | 1                    | 70 to 100%         | Detailed unit costs with firm take-offs        | Design and/or cost est. consultant |
| Construction / Delivery | 1                    | 100%               | Detailed unit costs with firm take-offs        | Contractor and/or consultant       |

**Note:** Matrix is based on vertical & horizontal construction projects; however, the methodology shown is not applicable to all projects. Orange fields are the input values based on the questions on the Quality Control tab. The first set of Blue fields are the default values for calculating contingency and soft costs. There will likely be a second set of Blue fields for projects / procurements not at hard-bid lifecycle, we can use. Grey fields are sub-totals. Note that for projects / procurements not at hard-bid lifecycle, we can use the Yellow fields for soft costs calculated based on Orange input amounts and Blue percentages. The Green fields are the calculated all-in costs that become the input for the CIP form.

| Fit for Purpose                                     |                          |                   |                               |                     |
|---|--------------------------|-------------------|-------------------------------|---------------------|
| Fit for Purpose                                     | Escalated Estimate Input | Undefined         |                               |                     |
|   |                          | Scope Contingency | Scope-Adjusted Estimate (G&H) | Design & Management |
| Concept screening                                   | \$1.00                   | 20%               | \$1.20                        | 15%                 |
| Feasibility study, Alternative screening            | \$1.00                   | 12%               | \$1.12                        | 15%                 |
| Value management, Project funding authorization     | \$1.00                   | 10%               | \$1.10                        | 15%                 |
| Value management, Project funding authorization     | \$1.00                   | 5%                | \$1.05                        | 15%                 |
| Project funding authorization, Hard bid preparation |                          |                   | \$1.00                        | 2%                  |
| Change order approval                               |                          |                   | \$1.00                        | 2%                  |

ould be applied to other procurements (e.g. IT equipment, fleet vehicles, real estate) by drawing analogies. The first set of questions drive the correct row, the second set of questions escalate / inflate the proponent's estimate. The third set of questions are cases in which we will want to adjust those percentages at the administrative level. The fourth set of questions carry an "undefined scope" or "design" contingency to account for inevitable scope creep. The fifth set of questions are these fields should be overridden at the user level if actual costs are known (e.g. we have a designer's estimate).

| Input and Calculations |                       |                       |                |                |                   |
|------------------------|-----------------------|-----------------------|----------------|----------------|-------------------|
| Design & Management    | Construction Services | Construction Services | Police Details | Police Details | Sub-Total (K,M,O) |
| \$1.38                 | 15%                   | \$1.38                | 7%             | \$1.28         | \$1.64            |
| \$1.29                 | 15%                   | \$1.29                | 7%             | \$1.20         | \$1.53            |
| \$1.27                 | 15%                   | \$1.27                | 7%             | \$1.18         | \$1.51            |
| \$1.21                 | 15%                   | \$1.21                | 7%             | \$1.12         | \$1.44            |
| \$1.02                 | 15%                   | \$1.15                | 7%             | \$1.07         | \$1.24            |
| \$1.02                 | 15%                   | \$1.15                | 7%             | \$1.07         | \$1.24            |

ologies to the project lifecycle & cost estimate methodology  
 initial cost estimate.

contract in place) or not appropriate (e.g. no Construction Services or Police Details for IT equipment).

|                     | Output                   |
|---------------------|--------------------------|
| Owner's Contingency | Total Project Cost (P,Q) |
| 20%                 | \$1.97                   |
| 20%                 | \$1.84                   |
| 20%                 | \$1.81                   |
| 20%                 | \$1.73                   |
| 20%                 | \$1.49                   |
| 20%                 | \$1.49                   |

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