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Date: January 26, 2021

To: Transportation, Energy and Utilities Committee of the Burlington City Council

From: Chapin Spencer, Director Public Works  
Martha Keenan, Capital & Asset Management Program Manager  
Gustave Sexauer, Asset Management Administrator  
Megan Moir, Water Resources Division Director  
Brian Lowe, Chief Innovations Officer

Subject: Asset Management Program - Amending Asset Management Consultant Contract; Authorizing Clean Water and Drinking Water State Revolving Fund Loans, GIS hosting contract and CMMS platform contract

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**Request:**

The Department of Public Works (“DPW”) is requesting the Transportation, Energy and Utilities Committee of the Burlington City Council to sponsor:

1. The award of a contract with DTS to implement their VUEWorks CMMS/EAM software for \$449,000.00.
2. The amendment of the Asset Management Consultant Contract to KCI Technologies, Inc. that was awarded April 13, 2020 for an additional \$120,000.00 from \$124,750.00 to \$244,750.00.
3. The award of a contract with a GIS hosting and management vendor to host and manage our GIS platform for up to \$75,420.00, pending an updated procurement process.
4. A resolution for a Vermont Clean Water State Revolving Fund planning loan amendment increasing the existing loan from \$49,791.00 to up to \$275,846.40.
5. A resolution for a Vermont Drinking Water State Revolving Fund planning loan amendment increasing the existing loan from \$44,321.00 to up to \$245,834.60.

**Background:**

The Department of Public Works (DPW) requests approval for a number of items related to the implementation of the City’s Asset Management Program. Specifically, we are seeking approval for advancing a contract with Data Transfer Solutions (DTS) to implement their VUEWorks software as a Computerized Maintenance Management System (CMMS) & Enterprise Asset Management (EAM) application. To support the CMMS & EAM contract, DPW is also seeking to amend the existing contract with KCI Technologies, Inc. (KCI) to assist the City through Task 3 of the City’s asset management and implementation program. Integral to the success of the asset management software implementation effort, DPW is advancing a contract with a GIS hosting and management vendor to host the City’s GIS data in a cloud-based server. Lastly, DPW requests approval for an amendment to the existing Drinking Water and Clean Water (Wastewater/Stormwater) State Revolving Fund planning loans to fund the Water Resources portion of the above costs.

City Council adopted the Asset Management Program and Implementation Resolution on 1/27/2020, supporting this scope of work as it recognized such a program can reduce the total cost of ownership of City assets while also improving the level of service to the public. Given the newly developing financial constraints related to the pandemic, this is a timely opportunity to improve the management of, and minimize the costs associated with purchasing, maintaining, and renewing the City’s assets, including property, infrastructure, facilities, vehicles, and

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equipment. It is critical to the City's long-term financial health and sustainability to proceed with this project now by approving agreements with DTS, KCI, and a GIS hosting vendor.

#### Data Transfer Solutions (DTS):

The Capital and Asset Management Team in collaboration with the Water Resources Division and other General Fund Departments has been working with KCI to plan for asset management and select a vendor for a CMMS/EAM Software as noted in the Board of Finance/City Council memo dated April 13, 2020. A Request For Proposals (RFP) for a CMMS/EAM software was posted on October 2, 2020, with 19 proposals received. A short-list was created with input from all involved departments, and the top four vendors were interviewed in December. Staff from divisions across DPW, Innovations, Burlington Parks, Recreation & Waterfront (BPRW), and Burlington International Airport (BIA) participated in the interviews and post-demonstration discussions to determine the top candidate. DTS, the makers of the asset and work management system VUEWorks, was selected as the vendor that would best suit all of the involved teams' needs.

The proposal from DTS outlines a 12-month schedule from kick-off to final implementation. The VUEWorks software will be linked to the City's existing hosted GIS services, and would store non-spatial assets such as facility equipment and fleet within its owned database. Additionally, work orders and service requests would be tracked and managed through the new system. The implementation process begins by assessing what each City work group will require so that the proper workflows and asset registries can be developed. Data from systems the City will abandon will be migrated to VUEWorks, and integrations will be established to transfer data between legacy systems that the City will continue using, such as SeeClickFix for residents' service requests and GraniteXP for CCTV pipeline inspections. City users will be organized into four "asset groups" for DTS to lead through the training and configuration phases of VUEWorks with each having their own go-live implementation dates. The order of the roll out has been determined based on the relative readiness of the existing asset inventories and work order management systems across the various divisions.

VUEWorks software will provide significant improvements in how we steward City infrastructure, including:

- Improvements to risk evaluation,
  - Condition scores can be calculated for assets via inspections, enabling the calculation of business risk exposure by analyzing likelihood of failure and consequence of failure metrics.
- Life cycle cost tracking,
  - The work order system can track labor, parts, equipment used, and contracting costs during maintenance activities which can then be summarized for each individual asset or group of assets. Life-cycle planning may be assessed by viewing an asset's depreciation curve.
- Reporting of assets,
  - Managers can quickly review real time data with charts, graphs, and other key performance indicators.
- Emphasizing proactive work,
  - Tipping the scales from reactive, emergency work, to proactive and preventative generates cost savings and efficiencies, maximizing remaining life from existing assets.
- Intra and inter-departmental coordination
  - Staff will more clearly see the interrelationship of assets in a more holistic manner.

#### KCI Technologies Inc. (KCI):

Through an RFP for Asset Management Development Phase II, KCI was selected in February 2020 to provide the City with consulting services in the assessment, procurement, and now implementation of a CMMS & EAM application with the purpose of enabling cross-departmental management of work orders, customer inquiries, asset inventories, and preventative maintenance scheduling. They were also tasked with assisting the City in developing best-in-class asset management practices and workflows to achieve the lowest cost of ownership for our assets, minimizing operational and capital costs for the City in perpetuity.

After completing the Tasks 0, 1, and 2, the KCI contract now requires an amendment to specify the scope of work (SOW) for Task 3.

From the April 13, 2020 memo (Attachment C):

*Task 0: Project Initiation and Project Management*

*Task 1: Procurement of CMMS/EAM Solution*

*Task 2: Selection of CMMS/EAM Solutions*

*Task 3\*: Implementation Oversight and Support*

*\*Contract calls for an amendment to define Task 3 at the completion of Task 2*

KCI has come in under budget on the Tasks 0, 1, and 2. Their proposed amendment for Task 3 has been reduced from the estimated \$160,172.00 (seen in Attachment C, Table 1) to \$120,000.00.

### GIS Hosting and Management:

In light of the potential contract with DTS, the Innovation & Technology Department (I&T) does not believe that the City's current GIS infrastructure is adequate to support a new CMMS/EAM software over the next five years. The GIS servers that that department hosts on-site are not built for this scale of use, are not managed to provide the system uptime required, are expected to reach end of life before the conclusion of the asset management contract time period, and were not designed to handle the increased traffic that will come with a move to a GIS based asset management and work order system. Additionally, the City does not have effective disaster recovery (DR) infrastructure to support this system, so either a software or hardware failure could result in significant down time for the CMMS/EAM software. To provide the necessary level of service would require new hardware and service investments, as well as likely the creation of a new FTE position to manage this GIS system, and would also reverse the effort of the I&T team over the past 2.5 years to limit future local hosting and associated hardware costs and risks. Further, the I&T team previously explored multiple DR options, and all proved cost prohibitive and of limited longevity as new options emerge for managing City data. For these reasons, I&T had also independently been evaluating cloud-based GIS service provision options that would be hosted and managed by a third-party. In 2019, I&T reached out for three quotes for a cloud-based managed service. Out of the three options, ROK Technologies (ROK) was selected as the best fit for the City. However, at that time there were insufficient funds to execute a contract.

ROK met with City staff and KCI in January, 2021 to gain information about the City's GIS needs and produced an updated quote of \$75,420.00 for GIS hosting and managing services. This cost covers the implementation and first year of support. Currently, the Capital and Asset Management Team are working with I&T and KCI to find additional quotes for GIS hosting and management services equivalent to the services detailed in the ROK quote.

### **Funding:**

The Capital and Asset Management Team has budgeted \$300,000 from the General Fund FY21 Capital Budget to finance the DTS, KCI, and GIS managed services contracts. Water Resources will be amending the Step I Planning loans with both the Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) to provide a significant component of the total funding for this project. The CWSRF loan offers up to a 10 year repayment schedule and the DWSRF a 5 year repayment schedule, both at 0% financing. Additionally, repayment on both loans can be deferred for up to 5 years at the City's choosing. The CWSRF loan includes a 50% planning loan subsidy in the form of loan forgiveness at the end of the project, up to \$100,000. Based on the requirements of the SRF programs, and the opinion of bond counsel, this type of Step I Planning borrowing only requires approvals of Board of Finance and City Council and not the voters.<sup>1</sup>

The expected cost of the DTS contract is \$449,000 for the implementation and first year hosting and support costs. Task 3 of the KCI contract is not to exceed \$120,000. Year one costs of the GIS hosting and

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<sup>1</sup> Pursuant to 24 V.S.A. Section 4756(e), the City Council may authorize and incur debt on behalf of the City for preliminary engineering plans and studies without prior voter approval. In the event that the planning loans result in a construction project, such debt shall be included in any subsequent public authorization of indebtedness necessary to construct the project for which the planning loans are used.

management based on ROK costing totals \$75,420. Table 1 shows the cost breakdown across the different funding sources. The General Fund Capital Project expense for implementation is well below the budgeted \$300,000 at \$247,489.

**Table 1. Cost Breakdown for DTS, KCI, and ROK Contracts**

| Proposal                                   |                                   |                     | General Fund |                     | Drinking Water SRF Eligibility |                     | Clean Water SRF Eligibility |                     |
|--|-----------------------------------|---------------------|--------------|---------------------|--------------------------------|---------------------|-----------------------------|---------------------|
| Contract                                   | Task                              | Fee                 | %            | \$                  | %                              | \$                  | %                           | \$                  |
| DTS  | Project Management and Work Plan  | \$30,000.00         | 40%          | \$12,000.00         | 30%                            | \$9,000.00          | 30%                         | \$9,000.00          |
|  | Implementation Planning           | \$30,000.00         | 40%          | \$12,000.00         | 30%                            | \$9,000.00          | 30%                         | \$9,000.00          |
|  | Data Migration                    | \$30,000.00         | 30%          | \$9,000.00          | 35%                            | \$10,500.00         | 35%                         | \$10,500.00         |
|  | Implementation                    | \$60,000.00         | 30%          | \$18,000.00         | 35%                            | \$21,000.00         | 35%                         | \$21,000.00         |
|  | System Integration                |                     |              |                     |                                |                     |                             |                     |
|  | SeeClickFix                       | \$22,500.00         | 25%          | \$5,625.00          | 35%                            | \$7,875.00          | 40%                         | \$9,000.00          |
|  | New World (optional)              | \$18,000.00         | 60%          | \$10,800.00         | 20%                            | \$3,600.00          | 20%                         | \$3,600.00          |
|  | FlexiBill                         | \$18,000.00         | 0%           | \$-                 | 50%                            | \$9,000.00          | 50%                         | \$9,000.00          |
|  | ArcGIS                            | \$2,500.00          | 0%           | \$-                 | 50%                            | \$1,250.00          | 50%                         | \$1,250.00          |
|  | PAVER                             | \$6,000.00          | 100%         | \$6,000.00          | 0%                             | \$-                 | 0%                          | \$-                 |
|  | TreeWorks                         | \$6,000.00          | 100%         | \$6,000.00          | 0%                             | \$-                 | 0%                          | \$-                 |
|  | RTA                               | \$8,000.00          | 80%          | \$6,400.00          | 10%                            | \$800.00            | 10%                         | \$800.00            |
|  | CivicRec                          | \$6,000.00          | 100%         | \$6,000.00          | 0%                             | \$-                 | 0%                          | \$-                 |
|  | GraniteXP                         | \$12,000.00         | 0%           | \$-                 | 0%                             | \$-                 | 100%                        | \$12,000.00         |
|  | SCADA (optional)                  | \$18,000.00         | 0%           | \$-                 | 50%                            | \$9,000.00          | 50%                         | \$9,000.00          |
|  | DigSafe (new)                     | \$6,000.00          | 0%           | \$-                 | 100%                           | \$6,000.00          | 0%                          | \$-                 |
|  | User Acceptance Testing           | \$8,000.00          | 50%          | \$4,000.00          | 25%                            | \$2,000.00          | 25%                         | \$2,000.00          |
|  | Training                          | \$24,000.00         | 40%          | \$9,600.00          | 30%                            | \$7,200.00          | 30%                         | \$7,200.00          |
|  | Software                          | \$100,000.00        | 20%          | \$20,000.00         | 35%                            | \$35,000.00         | 45%                         | \$45,000.00         |
| Hosting                                    | \$24,000.00                       | 20%                 | \$4,800.00   | 35%                 | \$8,400.00                     | 45%                 | \$10,800.00                 |                     |
| Support and Maintenance                    | \$20,000.00                       | 20%                 | \$4,000.00   | 35%                 | \$7,000.00                     | 45%                 | \$9,000.00                  |                     |
| KCI  | Consulting Task 3                 | \$120,000.00        | 50%          | \$60,000.00         | 25%                            | \$30,000.00         | 25%                         | \$30,000.00         |
|  | Consulting Task 0-2               | \$124,750.00        | 25%          | \$30,638.00         | 36%                            | \$44,321.00         | 40%                         | \$49,791.00         |
| GIS Services Vendor (Based on ROK costing) | Activate Managed Cloud Services   | \$19,500.00         | 30%          | \$5,850.00          | 33%                            | \$6,435.00          | 37%                         | \$7,215.00          |
|  | GIS Managed Cloud Services (1 yr) | \$55,920.00         | 30%          | \$16,776.00         | 33%                            | \$18,453.60         | 37%                         | \$20,690.40         |
| <b>Total</b>                               |                                   | <b>\$769,170.00</b> | <b>32%</b>   | <b>\$247,489.00</b> | <b>32%</b>                     | <b>\$245,834.60</b> | <b>36%</b>                  | <b>\$275,846.40</b> |

This has been a collaborative effort across City departments. While General Fund departments and DPW Water Resources will launch the first phase of the City’s formalized Asset Management Program, Burlington International Airport, Burlington Electric Department and the Burlington School Department have all be engaged to date and have shown genuine interest in participating in a future phase.

If you have any questions, please contact Martha Keenan, Capital & Asset Management Program Manager ([mkeen@burlingtonvt.gov](mailto:mkeen@burlingtonvt.gov)); Gustave Sexauer, Asset Management Administrator ([gsexauer@burlingtonvt.gov](mailto:gsexauer@burlingtonvt.gov)); or Megan Moir, DPW Division Director – Water Resources ([mmoir@burlingtonvt.gov](mailto:mmoir@burlingtonvt.gov)).

**Attachments:**

- Attachment A: Revised Scope of Work for Task 3 of KCI Contract, \$120,000.00
- Attachment B: Scope of Work DTS VUEWorks
- Attachment C: April 13, 2020 Memo: “Asset Management Program - Awarding Asset Management Consultant Contract; Authorizing Clean Water and Drinking Water State Revolving Fund Loans”

### Motions:

The Department of Public Works respectfully requests that the Transportation, Energy and Utility Commission recommend the approval of these contracts to the Board of Finance and City Council as per the following motions:

### Board of Finance Actions:

1. “To approve and recommend that the City Council authorize the Director of Public Works to sign a contract Agreement with DTS VUEWorks for the hosting, implementation and management of the CMMS platform system for the City of Burlington for \$449,000.00, subject to approval by the Chief Administrative Officer and City Attorney.”
2. “To approve and recommend that the City Council authorize the Director of Public Works to amend the Engineering Services Agreement with KCI Technologies, Inc. for the Computerized Maintenance Management System and Enterprise Asset Management Application Assessment, Procurement, & Implementation Guidance project for an additional \$120,000.00 from \$124,750.00 to \$244,750.00, subject to approval by the Chief Administrative Officer and City Attorney.”
3. “To approve and recommend that the City Council authorize the Director of Public Works to sign a contract Agreement with a GIS services vendor for the hosting and management of the GIS system for the City of Burlington for a cost not to exceed \$75,420.00, subject to approval by the Chief Administrative Officer and City Attorney.”
4. “To approve and recommend that the City Council approve the attached resolution authorizing an amended planning loan from the Vermont **Clean Water** State Revolving Fund for up to \$275,846.40.”
5. “To approve and recommend that the City Council approve the attached resolution authorizing an amended planning loan from the Vermont **Drinking Water** State Revolving Fund for up to \$245,834.60.”

### City Council Actions:

1. “To approve and authorize the Director of Public Works to amend the Engineering Services Agreement with KCI Technologies, Inc. for the Computerized Maintenance Management System and Enterprise Asset Management Application Assessment, Procurement, & Implementation Guidance project for an additional \$120,000.00 from \$124,750.00 to \$244,750.00, subject to approval by the Chief Administrative Officer and City Attorney.”
2. “To approve and authorize the Director of Public Works to sign a contract Agreement with a GIS hosting and management vendor for the hosting and management of the GIS system for the City of Burlington for a cost not to exceed \$75,420.00, subject to approval by the Chief Administrative Officer and City Attorney.”
3. “To approve and authorize the Director of Public Works to sign a contract Agreement with DTS VUEWorks. for the hosting, implementation and management of the CMMS platform system for the City of Burlington for \$449,000.00, subject to approval by the Chief Administrative Officer and City Attorney.”
4. “To adopt and approve a resolution authorizing execution of a planning loan from the Vermont **Clean Water** State Revolving Fund for up to \$275,846.40 subject to final review and approval by the City’s bond counsel or the City Attorney.”
5. “To adopt and approve a resolution authorizing execution of a planning loan from the Vermont **Drinking Water** State Revolving Fund for up to \$245,834.60 subject to final review and approval by the City’s bond counsel or the City Attorney.”

Thank you for your consideration of these requests.