Enterprise Service Bus (ESB)
Use common enterprise-wide systems and share available information

1. Dept: *Multiple Departments*

2. Sponsor: *CIO Council*

3. Need Description:
An enterprise service bus (ESB) is an architecture model used for designing and implementing the interaction and communication between mutually interacting software applications in a service-oriented architecture (SOA). SOA is a software architecture model for distributed computing. It is a variant of the more general client-server software architecture model and promotes agility and flexibility concerning communication and interaction between city applications. Its primary use is in enterprise application integration (EAI) of heterogeneous and complex IT landscapes.

4. Legal/Regulatory Requirement:
☒ **No** ☐ **Yes**

5. Leveraging Essential IT Capabilities
Please check all that apply
☒ A. Engineering Management
☒ B. Financial Management
☒ C. Geospatial Information Management
☒ D. Human Capital Management
☒ E. IT Infrastructure Management
☒ F. Mobile Operations Management
☒ G. Asset Management
☒ H. Business Intelligence Management
☒ I. Case Management
☒ J. Citizen Engagement
☐ K. Communications Management
☒ L. Information Management
☐ M. Other

6. Support for Imagine Austin Plan:
Please check all that apply
☐ A. Grow as a compact and connected city
☐ B. Integrate nature into the city
☒ C. Provide paths to prosperity for all
☐ D. Develop an affordable and healthy community
☐ E. Sustainably manage water, energy and environment
☒ F. Think creatively and work together.

7. Solution Expectations:
- *Both Austin Energy (AE) and Austin Water Utility (AWU) have successfully employed an ESB. They are excited with the results and requested CTM to expand their future development activities to include SOA solutions. AWU volunteered the use of their ESB to reduce ownership cost and increase infrastructure managed integration citywide.*
- *Many of the city's IT point-to-point solutions have increased the scale of complexity to dangerous levels with growing future risks. Nearly all DDAC Essential Capabilities benefit from a well-deployed ESB service. With an ESB solution, we can monitor and control message exchanges between services, resolve contention between service components, better control system deployment and versioning, drastically reduce redundant services, perform data transformation for business intelligence, increase enterprise security controls, and enforce information quality.*

8. Financial Benefits:
- Revenue increase (annual) *N/A*
- One-time revenue increase *N/A*
- Ongoing cost avoidance (annual) *>$1,000,000*
- One-time cost avoidance *N/A*

9. Support for "Best Managed":
- *Today, CTM employs point-to-point solutions to integrate citywide applications. This leads to interface solutions that prohibit service reuse. As a result, integration is very expensive and hard to maintain. For example, many interfaces require rewrite after an application upgrade. One of the primary advantages of an ESB is that it gives you a standardized platform for integration. When everyone is using the same tools, we can develop enterprise-wide frameworks, patterns and best practices for building re-usable services. Without a unifying platform, we get a divergence of integration methods, which leads to inconsistency and higher cost of integration and change. Therefore, an ESB platform helps with design-time governance leading to best managed.*
- *The citywide IT Strategy FY2011 calls for adoption of a Service Oriented Architecture (SOA) to support reusability, simplify development and maintenance.*
- *AE and AWU have successful ESB solutions – these organizations are unable to tap into CTM services.*
- *ESB lays the foundation for both business intelligence and future mobility applications.*

10. Department Support:
- *Both AE and AWU have committed their support to assist CTM in an ESB rollout.*

11. Service Group Executive support:
This capability has full support of the city's CIO Council.