



Request for City Council Committee Action from the Department of City Coordinator

Date: April 25, 2011

To: Council Member Betsy Hodges,
Chair, Ways and Means Committee

Subject: IBM First-of-a-Kind (FOAK) Grant

Recommendation: Accept \$1.5 million grant from IBM and authorize \$150,000 City match

Previous Directives: Not applicable

Department Information

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Financial Impact *(delete all lines not applicable to your request)*

- Action provides increased revenue for appropriation increase

Dept Name: City Coordinator

Fund Name: 0600-8400100 (Grants / Other)

Amount: \$ 1,500,000

The gift originally requires a City match of 20%, but has been negotiated to a lower level of \$150,000 (10%). That match is proposed to be met by:

The Regulatory Services Department is proposing to cover the City's required match of \$150,000 for the first-of-a-kind grant opportunity. Since the cost of its summer intern program can appropriately be covered by the department's new revolving fund, the necessary grant match funds (one-time in nature) originally budgeted for interns are available from their general fund budget for 2011.

Ongoing costs of incorporating new technologies into the City systems will be negotiated and covered by the respective departments that benefit from the new products or systems changes.

Supporting Information

About IBM's First-of-a-Kind Program

The IBM First-of-a-Kind (FOAK) program brings together IBM researchers and clients to test new technologies on real business problems and growth opportunities. Since 1995, IBM has partnered with clients on more than 150 projects to help drive innovation into the marketplace, including finding ways of providing information for healthcare without compromising patient privacy, translating a real-time warning to troops in Iraq and driving down the cost of electricity by adding intelligence to power grids. Through a recent First-of-a-Kind engagement with the District of Columbia, IBM and the DC government's water department developed solutions that are now being implemented to more efficiently manage work crews, proactively maintain infrastructure, and optimize revenue and water usage. These efforts are expected to result in significant costs savings, more timely response to customer issues and greater reliability of services.

The Proposed Minneapolis Project

Coordinated Cross-Department Planning, Response and Resource-Sharing for City Operations

Large metropolitan cities are complex systems which are managed through the efforts of multiple agencies within the city government. These agencies perform several types of activities ranging from capital improvement planning and project execution through the management of day-to-day city operations and the support of special events. The complex nature of these problems requires city agencies to develop and deliver diverse technical skills, equipment and operational processes to support the smooth operation of the city. The very nature of challenges requires the coordination across agencies at multiple levels.

The City of Minneapolis is interested in participating in the IBM First-of-a-Kind Project to create solutions for cross department coordination leveraging analytics and optimization, business process modeling and asset management technologies. These advanced technology solutions will leverage the citywide wireless network, Strategic Information Center and camera infrastructure already in place at the City of Minneapolis. The FOAK project will explore cross-department coordination for improving service and reducing costs in the following innovation areas, and identify solutions which can be applied across all of these innovation areas.

- **Day-to-Day Operations:** This innovation area will consider multiple operations carried out by the city like police patrols, garbage pickup, inspections, infrastructure maintenance, etc. The key driver in this area will be to explore coordinated planning and resource sharing to enable better service at reduced costs.
- **Normal Planned Events:** This innovation area will include exploration of coordination around managing events like conventions, sporting events, major traffic events and parades.
- **Exceptional Planned Events:** This innovation area will include exploration of cross-agency work for managing exceptional events like Presidential visits, national political conventions, etc.
- **Predicted Events:** This innovation area will include enterprise coordination of predicted events like major weather events, demonstrations, etc.

- **Unexpected Events:** This innovation area will include exploration of cross-departmental coordination for managing unexpected events like bridge collapses or homeland security events.

Creating solutions in the above listed innovation areas is a multi-dimensional problem involving: 1) developing technologies which provide tools targeted towards cross-departmental coordination; 2) modifying business processes to leverage technology; 3) training City employees to use the new tools and processes to deliver value for the city. Given that any innovation can only be successful if it is used by the city employees during the right situation, the focus of the innovation will be to address more frequently occurring scenarios. The exercise of cross-agency tools in day-to-day scenarios will validate the solution, help address shortcomings and prepare the tool, the process and the users for leveraging the innovation in the "rare but significant scenarios."

Specific Areas of Investigation

Traffic Management Center

The City is upgrading its citywide traffic signal computer software/hardware and creating better communication links to its system of 800 traffic signals. The City and its partners designed a \$6 million system and had to recently reject bids as being too costly (\$7.8M).

The video wall, ATMS communication management software, space renovations or other changes are being considered for deletion to scale back the project. The City is considering whether a different design approach is best or finding additional resources to continue this federal, state, county and city funded project.

Traffic Monitoring and Traffic Control Management

The City desires to expand and test the use of video for traffic operations (vehicles, bicycles and pedestrians). Video use for traffic detection, counting, and real time monitoring is growing by leaps and bounds. Also both portable and permanent applications are of interest. Best practice research, product selection and testing are needed to ensure value based decisions for any further video use. In addition, today traffic control agents are assigned to predicted locations of traffic congestion. Using real-time information (and video) for traffic conditions could allow for more effective and timely dispatching of staff.

Efficiency in Vehicle Routing

The City has both routine (garbage, sweeping and snow plowing) and non-routine (assessments and inspections) vehicular routing events that happen on a regular basis. The current efficiency of these routing events is unknown, but it's believed opportunities exist to further optimize the current routes being run. The City believes software and technology solutions exist or could be created to improve these vehicle routing efforts.

Parking Security

The City operates 17 parking ramps where security is video monitoring, call buttons, security officers and other safety features. This security system has reached the end of its useful life, needs replacement and upgrading with newer technology. The City has recently opened its Emergency Operations and Training Facility (EOTF). Both systems should be integrated, compatible and seamlessly share information. In addition, co-locating security equipment and staffing should be examined.

Management of Planned and Unplanned Gatherings and Events

The expected or unexpected assembly of hundreds or thousands of people requires the awareness and possible on-site monitoring of the City's public safety and regulatory forces. Predicted gatherings such as concerts or bar closing downtown often trigger

unexpected and unlawful events. Real-time information would allow for more effective distribution of public safety and regulatory personnel, as well as for documentation of illegal or problematic behavior.

Safety Monitoring and Management

The City has a Strategic Information Center (SIC) which provides real time and near-time criminal intelligence information to patrol and investigations to enhance officer safety, protect the lives and property of the citizens of Minneapolis, and aid in the arrest and prosecution of offenders. In the event of an emergent situation requiring the activation of the City's Emergency Operations Center, the SIC will provide situational awareness for those managing and abating the emergency. SIC analysts work proactively to monitor active police incidents across the city, and will provide information in any instance where it might be helpful. In addition, patrol personnel and investigators may request specific services from the SIC as needed. The city owns several portable cameras that are compatible with the existing camera monitoring systems both internal and externally throughout the city.

Crime Prevention

Minneapolis has begun predictive analysis to support our efforts in crime prevention. We define predictive analysis as a policing strategy that uses information and advanced analysis to inform forward-thinking crime prevention. We based our analysis on data recorded by officers on the street, statistics that measure crimes and arrests, geographic trends and hotspots. The MPD methodology has transitioned to leveraging statistics, hot spots, repeat addresses and high risk offenders to advance efforts in identifying crime problems today to prevent crime tomorrow.

Grant Terms and Conditions

IBM's project scope of responsibilities reflects a nominal \$1.5 million IBM investment in this FOAK project based upon the project staffing by IBM – which if offered under commercial terms, would have a comparable IBM sell price to the customer of \$1.5 million. Accordingly, IBM will invest \$1.5 million to fund a team of IBM researchers – experts in analytics and optimization technologies, software and solution development, and consulting – to develop a work product (solution).

The City of Minneapolis is required to pay \$150,000 for IBM project management and information technology assessment and planning services.

IBM will retain ownership of the work product and of any intellectual property (IP) developed.

Upon completion of the project, the City will get a two-year free license to the work product on an "as is" basis. The work product will require use of IBM's Intelligent Operations Center (IOC) software product and hardware server and storage infrastructure. The City will have the option of procuring these on IBM's cloud platform through software-as-a-service, or the option of procuring the IOC and installing it and the work product in IBM's data center.

Upon completion of the two-year free license the City will, as the showcase customer, be considered by IBM for preferred terms (over and above IBM's then-standard offering) for either a commercialized software product or a service for ongoing production use of the work product (note that whether the work product is developed into an IBM software product will be decided by IBM).

While 100% of IBM's First-of-a-Kind projects have been completed in the past 10 years, and 85–90% have produced significant, measurable benefits, IBM does not represent that a viable product will be available at the end of the project.