Minneapolis
City of Lakes

Business Information Services
Business Development
Division

Minneapolis Police Department

Strategic Business Technology Plan

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I. Management Overview

Information technology will continue to play a critical role in achieving future crime reduction goals, improving first response, adding value through partnership efforts with the community and more effectively deploying resources. With the implementation of more sophisticated technologies each year, the City's Public Safety departments will need to more effectively coordinate the acquisition and implementation of new advanced technologies. To avoid redundant purchases of systems and software, these organizations must adhere to a unified enterprise technology plan. For example, MPD technology investments in 2007 through 2012 will focus on crime prevention, incident response and increased conviction rates to achieve their performance metrics and overall goal of reducing crime.

It is important to understand that Technology investments include not only the one time capital investment and implementation cost but also the on-going costs to maintain the systems throughout the life cycle of the technology. The on-going system support cost includes managed services, system/software engineering, and hardware/software maintenance. Complex integrated technology solutions must have adequate funding to sustain a level of performance that consistently meets expectations and produces a reasonable return on investment.

The Minneapolis Police Department (MPD) is working aggressively to incorporate technology into business processes that improve crime prevention, response to crime, and prosecution of crimes as part of the 2007-2012 overall department strategy. While the department will always have financial constraints that limit number of officers to patrol the streets and reduce crime, new technology can provide a means of increasing the department's ability to reduce crime without adding additional staff. The MPD/Public Safety strategic Technology Integration Plans will ensure that these goals are achieved.

II. Introduction to the Plan

A. Purpose

Ways and Means Committee Resolution 2006R-607 directs staff to "create a long term technology plan for the police department."

> *"Before new technology allocations are disbursed, the MPD must first create a long term technology plan for the police department, including assessment of proposed technologies, impact on performance measures as outlined in the MPD business plan. This plan will be presented to the Public Safety & Regulatory Services and Ways & Means committee for approval before the funds are spent, with a draft presented no later than February 2007. MPD04 Safe Streets Technology Improvements dollars are available for planning purposes."*

In response to this Council directive, a five year MPD Technology Plan will be developed that is tied directly to the MPD business plan. The MPD plan will then be incorporated into an Enterprise Public Safety Technology Integration Plan that will include Police, Fire, MECC and City Attorney.

B. Process

The MPD/Public Safety Strategic Technology Plans will be developed by a cross organizational team that will address the broader functional interdependencies that increase the effectiveness of first responders, reduce/eliminate inefficiency and get the most benefit from every dollar invested in Public Safety technology.

Police
Fire
MECC
City Attorney
Public Works
Regulatory Services
Business Information Services

C. Scope

The key drivers behind the MPD plan are: (1) Reduce Crime in Minneapolis and (2) Enhance public confidence and trust in the Minneapolis Police Department. The ultimate objective of this plan is to ensure that Technology decisions supporting the key drivers conform to the following criteria:

Life / Safety - Technology will assist the MPD in protecting the life and safety of citizens and their property, and will help to keep MPD personnel safe in their duties.

Crime Prevention - Good technology will help the MPD and other city departments prevent crime.

Criminal Investigation - Technology will assist patrol officers, investigators, and support personnel in gathering and documenting criminal evidence, processing and preserving that evidence, and presenting the evidence effectively for prosecution.

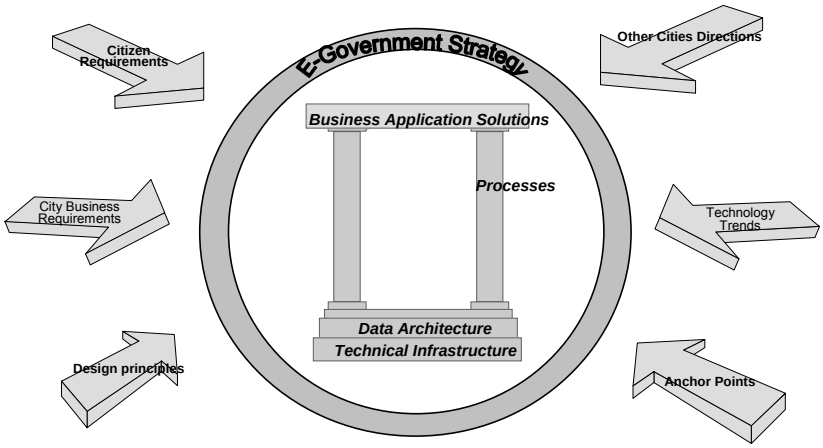
Accountability - Technology will increase accountability for MPD personnel by making it easier for the department to document and provide details on all aspects of police activity internally, for the courts, and for the public.

Efficiency - Technology will increase efficiency for MPD personnel by reducing the amount of time spent on report writing, waiting, administrative tasks, and by reducing response times to incidents.

Situational Awareness - Technology will increase situational awareness for MPD personnel allowing officers to better respond to the situation encountered, and permitting commanders to better manage complex and changing events.

Integration - New technology will integrate with existing technology wherever practical, and will be designed to permit easy integration with future technologies.

MPD Plan Components and Drivers



III. Strategic Imperatives

A. Mission

MPD Mission
Prevent crime and constantly strive to improve community satisfaction.

B. Key Initiatives

MPD Key Initiatives
1. Institutionalize community policing 2. Expand the roll of patrol officers (generalist approach) 3. Reexamine and retool CODEFOR 4. Enhance traffic safety 5. Review prioritization and response to calls for police service 6. Increase efficiency through technology enhancements 7. Review MPD procedures for special events & business supported off-duty deployment 8. Streamline investigations

C. Policy Maker Priorities

Performance Metrics
For 2007, the following list of performance measures will be used to evaluate effectiveness of departmental strategies, as well as promoting accountability and transparency: 1. Part 1 crime totals, with breakouts for juvenile violent crime and all violent crime 2. Part 2 crime totals 3. Gun seizures, both evidence and non-evidence 4. Part 1 and Part 2 arrest totals 5. Truancy and Curfew totals 6. Calls for service by priority level 7. Response times by priority and precinct 8. Internal Affairs complaints – nature and disposition 9. Litigation payments 10. Workers Compensation costs 11. % of positive responses to citizen survey 12. Investigations: # of cases reported, # assigned for investigation, # charged

D. Public Safety Directives and Trend

Trend: Ongoing legislative, technical developments / enhancements.

Challenge: Addressing new legislative demands through training, policy or other requirements. (Frequently cost is a factor.)

Challenge: Continually increasing the level of internal technology and communications capabilities in an ever-increasing technological age.

E. Situational Awareness

Improving Situational Awareness is an important part of many of the technology projects we are talking about. Situational Awareness is defined as "perceiving things in the environment, comprehending what these mean, and using that understanding to project future possibilities". Or, more popularly "knowing and understanding what is going on around you and predicting how things will change".

Providing information about the surroundings allows officers to respond better to situations encountered, and permit commanders to manage better complex and changing events. Some of the projects we have recently done have increased our ability to gather and communicate that information:

1. VisiCAD project increased our knowledge on location of incident, location of other squad cars and other vehicles via AVL, current

status of events, and other things. This information is easily and visually communicated to officers and commanders.

2. ShotSpotter and Safe Zone cameras increased our knowledge of exact gunshot locations and the specifics of the incident.

3. Mobile Command Vehicle implementation increased our ability to centralize Police information.

Future projects that would also contribute to Situational Awareness are:

1. Establishment of the Command Center will enable us to increase knowledge of video and other Police information, and Traffic information, allows us to centralize that knowledge, and communicate to officers in the field and commanders.

2. Digital Cameras in squads and other vehicles and the addition of wireless will enable us gather information in the vehicle and from the immediate surroundings, and transmit that information where it is needed.

3. Portable Safe Zone cameras will be similar, they would enable us to gather video information for a specific hot spot and transmit that for action.

4. Incident Area Networks

5. Metro CAD Interoperability

6. EOC

IV. TECHNOLOGY INVENTORY

A. COTS Systems and Software

Cameras (SafeZone Digital)
Cameras in vehicles (Analog)
Cameras in vehicles (Digital)
CFS (Calls for Service)
CML Phone System
CODEFOR
CopLink
Digital Recording
Graffiti Processing
Handheld Citations
Higher Ground Call Recording
i2 Analyst's Notebook
i2 iBase
IBIS (Integrated Biometric Identification System)
NetMotion
Packet Writer
Police eReports
Practice Manager
Property RFID/Video pilot
Radios
ShotSpotter

Stop on Red
TIGER
TriTech Mobile
TriTech VisiCAD
WorkForce Director
3-1-1

B. Custom/Process Specific Systems and Software

CAPRS C/S
CAPRS Web
CODEFOR
Graffiti Processing
Juvenile Detention Log
Juvenile History

C. Other technical Assets

24 Channel Recorder
Bomb Disposal Remote Control Vehicle
Bomb Response Vehicle
Bomb Response Vehicle
Bomb Suits & Helmets
Bomb Unit Andros Robot
Cameras (SAFE Zone)
Cameras 75 MM
Cameras in Vehicles (Analog)
Cameras in Vehicles (Digital)
Cell phones
Computers - MDCs (Mobile Data Computer/Radio)
Computers (Laptops Ruggedized)
Dialed Number Recording Equipment
Digital Citation Parking Handhelds
Digital Citation Police Handhelds
Digital Recorders
Document Examiner
Haz Mat Robot
Live Scan Fingerprint Machine
Microscopes
Night Vision Equipment
PDAs (Personal Digital Assistants)
Radios (in PW Radio shop)
    Portable Radios
    Mobile Radios
ShotSpotter Monitors, etc.
Vehicle - AVLs (Automated Vehicle Locators)
Vehicle - Mobile Command
Vehicle - Negotiations
Vehicle - Surveillance (pickup)
Vehicle - Surveillance (van)
Vehicles - Bait
Vehicles - Undercover

D. Public Safety Information Systems Flow

1) MPD Business Systems (See Appendix B Diagram #1)

a) At the heart of MPD Police systems are CAPRS and CAPRS Web. These systems record all police cases and report on the cases. Police officers in their squad cars have CAPRS and other City systems and (via PacketWriter Sprint connections) many other state and federal systems. All squad cars are equipped with AVL, Automated Vehicle Locator, equipment.

b) Officers on foot, motorcycle, horse, or bicycle have a radio and now a cell phone, but little other system functions. We are changing that with the Handheld devices that we are deploying into the field. These devices will be able to lookup offenses and issue printed citations for those offenses. We plan to expand those devices with City Wireless, so that these officers have similar functionality to those in squad cars.

c) CAPRS is used by outside jurisdictions -- the U of MN, and Park Police use it. Those and many outside jurisdictions use CAPRS Web on an inquiry basis.

d) CAPRS sends information on cases to:
   i) The County Attorney's LegalEdge system and receives disposition information from that system.
   ii) The City Attorney's Practice Manager system and receives dispositions from that system.
   iii) The Juvenile History system.
   iv) the new iBase databases that investigators use with their Analyst Notebook functionality.

e) CAPRS gets Roster information from the WorkForce Director (WFD) system, which does scheduling, timekeeping and payroll front-end functions. We will tie WFD into the HRIS Enterprise Learning Management (ELM) system.

f) One portion of CAPRS tracks Police Property. We are planning a pilot with IBM of the use of Radio Frequency ID tags (RFID) and video cameras. This would be perhaps the first and most innovative use of RFIDs in any Police department.

g) CAPRS sends case location information to the CODEFOR system, which produces crime maps and the UCR and NIBRS reporting required by the FBI. We make Crime maps available to citizens via the web and email.

h) When citizens call Police precincts (or 9-1-1 or 311) they are automatically recorded on a Call Recording system. In the past, these recordings were only available to Police or other departments via copies made on tape diskettes. However, this has recently changed to have the call recordings available remotely on the web to those that have sufficient authority.

i) We make another type of Digital Recordings of interrogations and other conversations. These were previous recorded to cassette tape, transcribed to text, and then used in Word format. We recently

changed this so that recordings are loaded in a dictation system that is available remotely to others.

j) Citizens can now enter simple Police cases (break-in to car, etc.) into CAPRS via Police eReports.

k) ShotSpotter and Safe Zone Cameras are police systems that are not connected to CAPRS, but to the 9-1-1 system. They will be integrated to work together and be in current facilities and eventually available in the future Command Center.

l) Bait Cars and the new ESP Bank GPS functionality used by a consortium of banks enable tracking of these things similar to the AVL on Police vehicles.

2) MPD Proposed Technology Improvement (See Appendix B Diagram #1)

a) The CODEFOR system that produced crimes maps is an older system that uses MapInfo data. It and CAPRS should be updated to use the enterprise ESRI GIS information and functionality.

b) There is not now any integration between Safe Zone cameras and the ShotSpotter system. These could be integrated so that cameras are controlled by the indications of gunshots fired.

c) The Command Center indicted on the diagram has been discussed, but no firm plans exist on the implementation of this concept of monitoring cameras with analyst tools.

d) Squad car video has been delayed even though the current analog cameras are becoming quite old and likely y to become unreliable. Digital squad cars are becoming more feature rich and becoming less expensive. At some time in the relatively near future, it will be time to replace the analog cameras with the improved digitals that are now available.

e) After the Police Handhelds are deployed and experience gained with them and the City Wireless is established -- it will be possible to make these devices web-enabled at a relatively low cost. This will enable field officers be more situationally-aware and capable.

f) The Radio Frequency (RFID) and Video camera pilot to be done in the Police Property room, if successful, could be expanded to be used by more than pilot properties. It is possible that grant funding could be received for some of this project.

g) ShotSpotter, Bait Vehicle, and ESP Bank GIS indications are not now integrated into the VisiCAD system. They are separately indicated on special screens that need to be monitored by 9-1-1 dispatcher. These could be better integrated -- to be recorded in VisiCAD and displayed on the dispatcher screens, bringing consistently, and efficiency to dispatchers.

3) MPD Inter-Jurisdictional Business Systems (See Appendix B Diagram #2)
The following MPD business systems mentioned tie into other jurisdictions, and the state & federal systems.

Hennepin County

(a) CAPRS produces:
   (i) records for the County JNet Juvenile system
   (ii) records that go into the FRED Full Repository of Electronic Documents system
   (iii) COPLINK records that go into the County investigative system.

(b) HCSO Incidents RMS is Hennepin County's equivalent of CAPRS.

(c) WFD WorkForce Director is the system that MPD developed for joint use, and is the same system

(d) HCSO HennRAP (Hennepin Repository of Arrest Photos) is used by MPD for those photos.

(e) Police Handheld citations go the ViBES Violations system for billing and prosecution. Police AFR Automated Field Reporting used in squad cars also produces citation records for ViBES.

(f) ViBES and MNCIS (the Minnesota Court Information System) are now State systems that were previously County functions. We are currently receiving information from them via the County, but will change to receive information from the state after the Hennepin County MNCIS implementation, which is planned for July 16, 2007.

Note: These county systems are also used (to a lesser extent than Minneapolis) by LOGIS, Local Government Info Systems (a consortium of 20+ Cities sharing a Police system) and by 9 separate City Police systems.

State of Minnesota:

Several of the State Police-related systems have web functionality that is available to officers in their squad cars, and richer functionality that is available by logging into the system directly. These business systems include:

(a) CIBRS – Comprehensive Incident Based Reporting System
(b) CriMNet – the state criminal justice integration repository
(c) DOC – Department Of Corrections
(d) DMV – Department of Motor Vehicles
(e) Gang Net – a state-wide system to share gang information
(f) MRAP – Minnesota Repository of Arrest Photos
(g) POR – Predatory Offenders Registry
(h) SSS – State Supervisory System
(i) LEMS is the Law Enforcement Message Switch used by Minneapolis for warrant information. (Hennepin was previously used)

(j) IBIS is the Integrated Biometric Identification System used for finger printing.
(k) SIF, Systems Integration Facility is the system that facilitates communication.
(l) APS is the Automated Pawn Secondhand system, developed by the City of Minneapolis, and now housed at the state for use by Minneapolis, and local jurisdictions in Minnesota and Wisconsin.

4) MPD Proposed Inter-Jurisdictional Technology Improvements (See Appendix B Diagram #2)

The City does not to participate in the State's CIBRS police data effort. Participating in this state effort (as we do in Hennepin Counties' COPLINK effort) would lasher our police cases and enables us to receive information from other jurisdictions. We have been told that there are state grant funds available for this effort.

5) High Level Public Safety Information Flow Systems (See Appendix B Diagram #3)

City of Minneapolis

a) Fire department systems
   i) FireHouse
   ii) FireWorks which receives information from CAD
   iii) Fire's WorkForce Director, which is the same as that used by Police, Sheriff, etc.

   Note: There are may other Fire department systems which are smaller and not shown on the diagram.

b) 9-1-1 systems:
   i) VisiCAD and Mobile, these have a browser of CAD information (that replace CFS and ECHO, which have been removed)
   ii) Fire's MUM Move Up Module which relocates Fire units for support of other Units and Mutual Aid
   iii) HCMS's Safety Pad system which is used in ambulances
   iv) GIS which provides the maps for CAD
   v) The Problem Property systems which CAD feeds
   vi) The Cry Wolf to keep track of false alarm 9-1-1 calls is not shown on the diagram.

c) 3-1-1 systems:
   i) Receive non-emergency calls from citizens
   ii) Enter Police cases into the Police eReports system, which then enters cases into CAPRS
   iii) Provide citizen information in the event of an emergency.

d) Attorney's systems:
   i) Practice Manager case management system receives cases from CAPRS, incidents from CAD and Handhelds, Court calendars and other information from Courts, etc. It sends dispositions to CAPRS, court appearances to WorkForce Director, etc.
   ii) CIS Community Impact Statements system, which will allow citizen, input into City course cases. This receives trail information from Practice Manager.

Hennepin County

a) The Hennepin Attorney's Legal Edge system, which receives cases from CAPRS.
b) The "Rockford" Public Defender's system
c) Hennepin County Geo911 CAD system
d) SILS Subject Identification :Locator System (the successor of SIP Subject Identification Processor)
e) JMS Jail Management System
f) AFS Adult Facilities System

State of Minnesota

a) MNCIS the Minnesota Court Integration System, which when implemented in July 2007 will be used by Hennepin County and Minneapolis.
b) CriMNet is an integration initiative that allows criminal justice professionals throughout the State of Minnesota to share information that was formerly isolated in standalone systems.

6) MPD Proposed Inter-Jurisdictional Technology Improvements (See Appendix B Diagram #3)
   a) Further expansion of Practice Manager's integration with City and County Attorneys efforts have been discussed but not planned out. Some of these would be to get information from other police jurisdictions, and change to use state connectivity and more state information that are not now available.

E. Technology Life Cycle Profiles

From a nonprofessional's perspective, the technology life cycle can be broken down into five distinct stages:

1. Cutting edge - any technology that shows high potential but has not demonstrated its value or settled down into any kind of consensus.

2. Leading edge - a technology that has proven itself in the marketplace but is still new enough that it may be difficult to find knowledgeable personnel to implement or support it.

3. State of the art - when everyone agrees that a particular technology is the right solution.

4. End of Life - still useful, still sometimes implemented, but a replacement leading edge technology is readily available.

5. Obsolete - has been superseded by state-of-the-art technology, maintained but no longer implemented.

At the City, we have tried to stay in the middle states of 2 and 3, but occasionally we will have some opportunities in stage 1, some situations in stage 4, and a few perhaps in stage 5.

It is difficult to state without further study, but it appears the some of our stage 4 systems are:

- CAPRS, but perhaps not CAPRS web
- CODEFOR
- Digital cameras in squad cars and interrogation rooms

- **Technology Refresh, Upgrades and Replacement**

Refreshing, Upgrading, and Replacing Technology are various terms for the degree to which the technology needs to be upgraded. A Refresh may just be adding some new equipment or functionality that is needed. An Upgrade would be a larger effort of moving it to the latest version. And, a Replacement is changing everything and going to a new solution.

Our old CAD system needed to be replaced because the equipment it was running on was obsolete and parts were hard to get, it was not location/map based as modern CAD systems are made, not as integrated as was desired, and not as portable since it was not web based, and not a flexible and upgradeable, etc. We reviewed the system and determined that nothing other than a replacement could be cost-effectively done.

Part of the decision as to what course of action to take depends upon the costs of the upgrade and the benefits that will result for those costs. The systems we mentioned above as in stage 4 above can be examined as to the various possibilities and appropriate course of action recommended.

V. Inter-jurisdictional Dependencies

A. Relationship to other departments, agencies, businesses

Mutual Aid – The Minneapolis Police Department is the largest law enforcement agency in Hennepin County and participates in the Hennepin County Mutual Aid agreement. Under mutual aid, each agency may request assistance from and/or send assistance to another jurisdiction.

Partners

- 911 – Receives emergency calls and dispatches personnel
- BIS (Business Information Systems) – Coordinates technology needs
- Minneapolis Parks & Recreation Board

- University of Minnesota
- Hennepin County Medical Center
- Metropolitan Emergency Services Board (MESB) (replaced Metro 911 Board and Metro Radio Board)
- Sets policies for PSAPs in metro area
- Sets policies for radio in metro area
- Metro Transit – patrols transit (bus, light rail) venues
- Traffic Control Agents – assistance with traffic issues
- Minnesota State Patrol – supports field patrols with police response; provide traffic –related investigative assistance
- Hennepin County Adult Detention Center (Jail) – provides intake of adult arrestees
- Hennepin County Juvenile Detention Center (Jail) – provides intake of juvenile offenders
- Vendors (Motorola, Teac, etc.) – equipment needs and services
- Qwest – provides and maintains 911 trunk lines; city phone system
- Regulatory Services – coordinates with MPD on problem properties
- Social Service Agencies – provide referrals; offer services

B. Federal, State and Local Agency Compliance

All law enforcement agencies operate under strict laws, regulations, and processes. Several of these are federal, but state, and local compliance is also required. Besides federal requirements like Miranda processes, reporting of crime statistics for UCR and NIBRS reporting to the Justice Department FBI, the use the technical format of the Justice XML schema, etc., there are also state and local processing procedures that affect how MPD work is done. A few examples of the many of these requirements are:

- the processing requirements of the State Court system (that was until a little over a year ago a County function) on required timelines for filing, having documents in PDF formats, etc.
- the County Corrections department intake procedures, and
- County Correction's specific systems requirement for JMS, their Jail Management System.

Since we try to maintain god relations with all jurisdictions and since we are the largest law enforcement agency in the state, we can often work together to improve processes or ask that our process become the standard that the other agencies use. However, many times the processes and systems we work with are just the way things are.

Oftentimes federal requirements become state requirements, and these then become local requirements. However, there is often a problem of lag during the process, and there are those agencies that are early adapters and those that are laggards. An example of this would be that NIBRS reporting has been a federal best practice requirement for some years now, but Minneapolis is still the only City in the state to report in this format. This situation often means that Minneapolis is required to do some thing at a time not of our choosing or conversely that we cannot make an improvement until others are ready.

C. County Attorney and Courts

The MPD works closely with the County Attorney since that is where all felony and juvenile cases are handled. We have worked on past County systems integration projects and are now working with them on their HJIP (Hennepin County Integration Project) for the change to implement integration of court systems at the State rather than at the County level.

We send the County Attorney electronic CAPRS case reports and other documents to help make both of our procedures more automated. We assist County Attorney personnel by making our WorkForce Director Scheduling/.Timekeeping system available for them to view MPD personnel schedules, so police officers can be better scheduled for court appearance. In this area, the relationship has gotten more complex because of the 4th district court becoming a state court, and thus we need to deal with 2 parties for the bulk of criminal cases.

The County Attorney and Courts relationship, both in manual processes and computer systems is like that mentioned above, in federal and State -- we try to work together, but sometimes have differences of opinion or timing.

VI. Inter-Departmental Dependencies

A. Fire

The MPD provides support at scenes and co-responds to selected calls for service with the Minneapolis Fire Department. Both departments share radio & CAD services, and work together in planning and implementing the National Incident Management System (NIMS) protocols.

B. 911/311 (MECC)

The Minneapolis Emergency Communications Center serves as the primary dispatcher of MPD officers to calls for service. As such the MPD uses technology linked to the MECC CAD system, including mobile data computers (MDCs) in squads. The MPD and works closely with the MECC and the Public Works Radio Shop to ensure that communications technologies are kept operational and up to date. The MECC also manages the 311 center. The E-reports system allows 311 agents to take police reports for selected offenses over the phone and enter them directly into the CAPRS RMS, thus avoiding a squad response for routine report calls.

The MPD ***911*** relationship is straightforward regarding the dispatching and monitoring of PD activity that 911 dispatchers do for police “911 responders”. There are also ancillary operational functions done by 911 personnel such as “Shotspotter” and auto-theft bait vehicle systems that are monitored and which result in a dispatch of police personnel if the systems reveal a gunshot or an attempted auto theft. Additionally, there are some administrative functions done by 911 personnel that are technology-reliant and not so obvious (e.g. links to the State’s drivers’ license database, the County’s warrant database and the National Crime Information Center databases). Finally, the computer aided dispatch system is populated with the whereabouts of off-duty police personnel when they are on a security related job (in case they press the “emergency” button on their radio, others can be dispatched to their location to assist them).

The ***311*** Center is also an aid to public safety in various ways. The Center's location serves as a back-up facility for the 911 Center. Non-emergency calls for such things as traffic and street light outages, abandoned vehicles, graffiti reports, and reports of minor "cold" crimes are all handled by the 311 Center, salvaging 911 and PD responder time for higher priorities. Treatment of these issues reduces the perception of "broken windows" and literally lights potential crime scenes up so as to reduce the opportunity for the commission of crimes and to reduce the chances of an accident. Data analysis from 311 and non-emergency crime reports might also aid in predicting patterns of activity that might lead the police department to preemptive or preventative actions in those areas. In the case of large-scale issues such as a major manhunt or a disaster, the 311 Center can function as a communications hub for a "tipline" and/or for triaging the residents' need for information on government services (again, freeing up 911 and police personnel to respond to higher priorities).

C. City Attorney

The MPD integrates its primary records management system (CAPRS) into the city attorney's case management system, so that attorneys have real time access to police reports, property and evidence information, and citation data. MPD officers are also able to electronically submit cases to the County Attorney's Office for felony prosecutions through data integration.

D. Public Works

The MPD uses services from the Public Works Radio Shop to keep two way radios, squad computers, squad video, and (coming this spring), Automatic Vehicle Location (AVL) working. All mobile technology improvements are evaluated in cooperation with the Radio Shop to ensure integration with existing equipment and to control costs.

E. Regulatory Services

In 2007 the MPD is introducing handheld citation writing devices for traffic enforcement. Regulatory Services is examining these devices to see if they could be used by inspectors for field citations as well. If these devices are found to serve the purpose, they will be cost effective because much of the back-end infrastructure will already be in place due to the MPD project.

VII. Five Year Technology Investment Strategy

Information technology will continue to play a critical role in achieving further crime reduction, adding value to our partnership efforts with the community and more effectively deploying our resources. With the implementation of more sophisticated technologies each year, the MPD will need to more finely coordinate the acquisition and implementation of new high tech equipment. To avoid redundant purchases of equipment and software, the MPD must adhere to a unified technology plan.

A. Mission Critical Technology Tracks

1. In-Flight Technology Investments

a. Computer Aided Dispatch (CAD)

Emergency Communications will be greatly enhanced with our new MECC CAD system. Given the demands of Homeland Security and the State's and federal government's initiatives, our new CAD system must have interoperability, strategic plan for emergency preparedness, Interoperability includes wireless information and, along with voice

communication includes CAD/Mobile data. Linked to CAD data sharing could lead to trend spotting regard not only criminal, but also terrorist activities. Investment in our new MECC CAD system will allow best dispatching capability with the automatic vehicle locator (AVL) capability to improve dispatch response to emergency issues. MFD will also have the mobile capability to improve emergency communications with the MECC operation that does not exist at this time.

b. ENTERPRISE SAFETY CAMERA SYSTEM

MPD is expanding the capability of the Safety Camera System that now has 30 cameras in the downtown 1st precinct area that has shown crime reduction over the life of the safety camera system that was installed in 2005. MPD will expand the system to the 3rd Precinct Bloomington Ave. area with 15 cameras, 4th Precinct Broadway Ave area and installation of 8 camera's in the Cedar Riverside area in the 3rd and 4th quarters of 2006. MPD will work closely with the elected officials on problem crime area's and expansion of the camera system. As noted above the 1st Precinct has had crime reduction, the conviction rate has been 100% when the crime was caught on video of this system.

c. SHOTSPOTTER SYSTEM

The ShotSpotter Detection System consists of acoustic sensors mounted on rooftops or poles that are connected via a wireless network to a central computer. The firing of a gun creates a sound that is detectable up to two miles away from the firing location. The ShotSpotter Detection System measures and automatically categorizes these acoustic sounds as being a single gunshot, multiple gunshots or fireworks determining shots fired location within +/-10 feet. The location detection technique called triangulation requires detecting the gunfire from three acoustic sensors. The ShotSpotter System makes use of several technologies to ensure background noises do not create false detections.

The gun fire incident information is then alarmed and presented to a police dispatcher who is provided with both a visual and audio presentation of the event to decide whether or not to dispatch squads. This information is available to the dispatcher within 10 seconds from the time of an incident. Dispatchers with proper training can easily decide whether or not to dispatch a police squad within 30 seconds.

The ShotSpotter system prevents gun incidents because of early alarming and by providing precise location of shots fired

d. AUTOMATED CITATIONS: (Handheld Electronic Ticket Writers)

In 2006, the Handheld Electric Ticket Writer project was initiated. After an RFP was issued a Windows device with flexibility for the future was selected rather than a hardware device that was specialized for only Ticket writing. The devices are initially being cradled to transmit information to the County, but after Minneapolis Wireless, they will be able to connect to wireless not only for ticketing , but also to give officers outside of squad cars wireless web capabilities. The cost of the project was $460,000 with $10,000 in annual support costs.

Allocation of personnel will be streamlined through the more efficient process of issuing automated citations. Officers will be able to handle calls more briefly and return to service more quickly. Collection of fines will be

more certain, given the reduction in errors of data-entry built into the automated citation software. This also gives the officer the capability of writing comments in plain language so that hearing officers will also have the officer information when a person appears at the violation bureau.

e. DIGITAL VOICE RECORDERS

In 2006, two Digital Recorders pilots were initiated in Homicide and Investigations. The winning Olympus device was selected due to better functionality and flexibility and is now being rolled out to all areas of MPD with a need for digital recordings. (Other areas of Minneapolis -- Fire, Attorney's and other areas have also selected this technology and are in the process of implementing it). The project had MPD costs of $60,000

PLANNED & PROPOSED TECHNOLOGY INVESTMENTS

2. SQUAD CAR CAMERAS

The MPD in 2002 received squad-mounted analog video cameras for 145 squads. The cameras were funded through a state sponsored data collection project that the MPD participated in. The squad cameras had a 1-year warranty with most of the warranties having expired as the cameras were installed in February 2003. The MPD has 5 spare complete camera units to be used as parts for the active squad video cameras. The current cameras started to be used in January 2004. The expected life of the cameras is 5 years. Technology solutions should be determined. Digital camera equipment that could be hooked up through the MDCs would make this project more efficient and changing of VHS tapes and storage would become non-issues.

Current Annual expenses

- 18,000 video taps @ 1.80 each = $32,400.00
- 80,000 Spine Labels @ .03 each = $2400.00
- 20,000 Face labels @ .03 each = $600.00
- Radio Shop labor (Estimate) = $25,000
- Total= $60,400

Anticipated expenses

If tapes are kept longer than 90 days, then tape expenses will increase. Example: 18,000 tapes used 4 times a year is a $32,400 yearly expense. From an evidentiary viewpoint and for traffic court, Tapes should be kept at least a year, however city attorney recommends saving tapes for 7 years. If this was done then tape expense would be 4 times as much or $129,600. Contract storage would be approximately $30,000 a year.

- Replacement of equipment, estimate of 10 % of video cameras and equipment will need replacement. Original contract at a discount with Mobil Vision was for a full unit $3706. Replacement would be near $4800. Yearly expense could be $72,000 (15 units x $4800).
- Bar code and net base inventory system. If tapes are kept longer than 90 days, a system such as this would be helpful in inventory and processing of tapes. One time expense of $30,000
- Upgrade equipment to digital....(estimate) 150 units with 2 cameras in each squad (one inside and one outside) X $5,000 =$1,500,000

3. MOBILE DATA COMPUTERS (MDC)

MDCs replaced MDTs (Mobile Display Terminals) in 2003. MDCs will change the way the MPD does business. Near-instant access to criminal histories, drivers and vehicle records, and information from other law enforcement agencies has expedited the handling of suspects, and reduced the costs associated with booking and otherwise manual procedures. As each officer explores the resources available using MDCs, patrol and initial investigations will become more productive. We anticipate at least one unintended consequence: Many offenders previously were prevented from re-offending, however briefly, when jailed for lack of identification. Our challenge therefore will be to hold our other criminal justice systems accountable for traditional cases, and maximize the use and effectiveness of the administrative adjudication process for minor offenses.

The current mobile data computers were initially installed the beginning of 2003. There were 100 units installed by Oct 2003 and the remaining squads will be installed by June 2004. Most computer equipment has an effective life of 3-4 years. MPD should begin to develop a replacement plan starting in year three or 2006. The plan should replace 1/3 of the squad computer fleet per year. If we stay with the same equipment manufacturer, Data911, we will most likely be able to replace only the CPU, which has a cost around $4500 each. This would assume the monitor is in good condition and that there have not been any major improvements in ruggedized monitor screens. Total computer replacement cost is currently estimated at $7000.

Replacement computers for 186 units would have an overall cost of $1,302,000
Suggested replacement schedule:
2007 1/3 fleet replacement $434,000
2008 1/3 fleet replacement $434,000
2009 1/3 fleet replacement $434,000

A further consideration for budgeting is the advancement of computer technology and wireless data communications. Currently, our department is testing a system called IBIS, which is a mobile fingerprint identification system that will identify criminals in MRAP. The technology, if successful, will most likely be installed in all district cars at the least.

The estimated cost of this technology in squads is $5000 per unit. This will most likely drop in price, as more units become available. In three years, handheld technology will also become more common place. Officers will be able to take a PDA-like device that is connected to the squad car computer and walk into buildings with it and have most of
the information available in the squad. Costs are unknown for this technology.

4. CITY WATCH COMMAND CENTER

The City Watch Command Center will centralize the monitoring, processing, routing, storage and retrieval of video imagery from the

city wide safe zone and gunshot detection networks. As the number of deployed surveillance devices (Cameras, ShotSpotter, Sensors….) increase the challenge of effectively extracting useful information for rapid decision making. The current localized monitoring of these devices at police precincts and the prospect of aggregating the massive amount of data streamed to the EOC to support real-time situational awareness, require the implementation of a centralized strategic information Center. The center would be staffed with specialized GIS/Data Analysts and equipped with sophisticated video analytics and digital telemetry management software. The SIC would potentially include the Traffic Management resources and advanced (Intelligent) video/data forensics capability. This capability would enable rapid search and analysis of collected video and telemetry data to identify patterns and trends that help agencies anticipate and mitigate future public safety threats. Integration with other systems and inter-jurisdictional data sharing are operational imperatives; the days of stand-alone public safety technology solutions are history.

5. MPD Wireless Projects

Currently, we are using AT&T's CDPD system for wireless data communications. This system has a relatively slow bandwidth. This system will be shut down in June 2004. We will be upgrading to one of the three major carrier's systems by March or April 2004. The bandwidth these new systems offer will increase our data rate by 5-10 times allowing information to be available faster.

The Minneapolis police department has several projects planned for the Wireless Minneapolis Initiative. The initial ones of these are:

- AVL (Automatic Vehicle Locator) Devices
- Digital Handheld Parking Citation Devices
- Digital Handheld Police Citation Devices
- Nomadic Cameras
- Police Vehicle (Squad Car and others) Communications
- Police Vehicle (Squad Car and others) Digital Video
- SafeZone Cameras / A+ Remote Control
- ShotSpotter
- ShotSpotter / Video Cameras Integration
- Stop On Red
- 3rd-Party Cameras in Super Americas, etc, locations

Some of these projects will be transitions for Cell phone and GPS wireless, while some of these will be new initiatives and functionality. There will be some costs for implementation, but for several of these projects, there will not be higher ongoing costs than currently (in fact there are likely reductions in ongoing costs).

2008 upgrade costs will be:
Modem Hardware $129 per unit $23,994 for 186 units
Monthly Cost for 186 units $11,160
Yearly Cost for 186 units $133,920
Virtual Private Network Software Yearly Maintenance Fees $5580 for 186 units

6. RECORDS MANAGEMENT SYSTEM (RMS)

The Department's CAPRS (Computer Aided Police Reporting System) has served well throughout the 1990's and early 2000's. The decision to move forward with a new CAD/Mobile solution is appropriate to think about replacing the RMS so that the integration of the system is complete. The talk of linking RMS's together from other agencies is not appropriate or recommended from a technical standpoint. You want to have a system where you have adapters that send information from the RMS to a broker and the broker is responsible for sharing the information. This is already being done with Minneapolis and Hennepin County. CAPRS will continue to expand on its flexible database platform and may be directly linked to, or even merged with the CAO's anticipated RMS. To the extent possible, we will explore a unified system whereby incident reporting, time and attendance, and equipment servicing can be managed

7. COMMUNICATION SYSTEM UPGRADES:

- **800 Megahertz Radio System Upgrade**

The 800 Megahertz radio system is the primary voice communications technology used by Police, Fire, Emergency Medical Services, and 911. The system was implemented in 2000 and will require a major technology upgrade in 2009.

8. INCIDENT AREA NETWORKS

"During an incident, it's essential that first responders on the scene be able to communicate when cellular networks and other public communications infrastructure become unavailable. The Incident Area Network provides first responders on the front lines with tactical communications capability and quickly expanded inter-jurisdictional incident-area wireless coverage. It will allow first responders to instantly extend the reach of the Wireless Minneapolis broadband canopy and provide broad universal access when an incident or event (RNC) demands a regional response. It is also important that, first responders have simultaneous access to the Internet to share real-time information with off-site commanders and specialists providing expert assistance at the scene of an incident.

The Incident Area Network enables first responders to establish instant, peer-to-peer networks, using police and fire command vehicles as mobile WiFi hot spots and securely operate voice/data communications with or without access points via a broadband internet mobile-mesh communication system. The Incident Area Network technology also includes server-less applications optimized for public safety use, including real-time multicast video, GPS positioning, instant messaging, and white boarding.

9. GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Using GIS to monitor and respond to crime patterns, CODEFOR has proven to be effective as a long-term crime reduction management philosophy. Yet mapping Part I crimes was only the beginning.

CODEFOR and selected units will have selected personnel trained in GIS to greatly expand on the use of GIS for resource planning, squad distribution, and ultimately to hold each unit and supervisor accountable for meeting community needs, monitoring directed patrol and responding to crime trends over longer periods of time. Expanded use of GIS will especially benefit ad hoc and pilot projects such as the 1st Precinct's administrative citations for livability crimes, securing much larger geographic restrictions on chronic offenders, and tracking the movements of violent offenders and registered sex offenders throughout the City. With "i-Site" being launched in 2003 (a partnership with the MPD, MFD, RSP Architects, and the Greater Minneapolis BOMA) the MPD will also need to coordinate with private property owners, managers, and security personnel.

Costs: Approx. $5,000 per employee trained in ArcGIS. *i-Site costs are borne by RSP Architects.*

10. REGIONAL INFORMATION SHARING HUB

The regional information sharing hub (RISH) would allow several Emergency Communications Centers (Computer Aided Dispatch Systems) to share data between jurisdictions and observe critical information during major events, such as the Republican National Convention. This RISH system will allow real-time access to multi-jurisdictional emergency response activations in progress, enable a higher level of inter-agency cooperation and expand the reach of mutual aid relationships to be more responsive through proactive decision making. The RISH technology provides integrated communications and data translation services for all subscribing systems. By centralizing these functions, the RISH decreases the administrative and maintenance overhead associated with real-time data sharing.

The proposed program would establish the City of Minneapolis Emergency Communications Center (ECC) as the Regional (CAD) Information Sharing Hub (RISH). The City of Minneapolis has reached agreement in principal with St. Paul-Ramsey County ECC, Hennepin County Sherriff ECC, LOGIS ECC and the Minnesota Highway Patrol ECC to implement an RISH .

11. COMMUNICATING WITH THE COMMUNITY

The MPD will increase its capacity to communicate with residents, businesses and others with a stake in the safety of Minneapolis. Using email for critical crime alerts and other notices, SAFE's Virtual Block Club participation has doubled in two years and is expected to more than double in the next five. The MPD web page will become more user-friendly and serve as a guide to those new to working with their neighborhood officers or precinct. On-line crime reporting for thefts and property damage is already a reality. This E-Reporting will be refined for investigators to more efficiently respond to patterns of low-level property crimes.

12. CONTINGENCY PLANS FOR BREAKDOWNS

New CAD/Mobile system has Disaster Recovery capability; add capability to CAPRS, CAPRS Web, Workforce Director, etc. All other contingency plans for technology breakdowns revert to the old way of radio transmissions, paper and pencil.

13. RESEARCH AND DEVELOPMENT

A plethora of new technology applications have begun to show more than promise when utilized by police agencies throughout the country. The MPD will look outside to agencies with successful strategies—Best Practices—in the use of these technologies. From Personal Data Assistants (PDA) with wireless connections to public safety cameras, to voice recognition software for writing reports and computer access security, we may
follow the lead of many departments that have successfully integrated these and other new technologies into effective, routine police work. We will seek input from all units, and integrate cost-effective plans were they serve a pressing need.

14. LINKAGE TO OTHER RESOURCE PLANS

To avoid redundancy and assure interoperability, other departments' resource plans must be closely considered when exploring new technologies or strategies involving underutilized current technologies. Emergency preparedness/Homeland Security planning will especially rely on integrating plans across several City and extra-municipal departments.

B. TECHNOLOGY INVESTMENT EVALUATION METHODOLOGY

1. Methodology Overview

The two primary goals of any public safety (police) technology program are:

1. To reduce crime in Minneapolis
2. To enhance public confidence and trust in the MPD

To that end, every technology or program initiative should be evaluated under the following technology benefits criteria: (listed in no particular order)

- **Efficiency:** Technology should increase efficiency for MPD personnel by reducing the amount of time spent on report writing, waiting, administrative tasks, and by reducing response times to incidents.
- **Accountability:** Technology should increase accountability for MPD personnel by making it easier for the department to document and provide details on all aspects of police activity internally, for the courts, and for the public.
- **Life / Safety:** Technology should assist the MPD in protecting the life and safety of citizens and their property, and should help to keep MPD personnel safe in their duties.
- **Crime Prevention:** Good technology should help the MPD and other city departments prevent crime.
- **Criminal Investigation:** Technology should assist patrol officers, investigators, and support personnel in gathering and documenting criminal evidence, processing and preserving

that evidence, and presenting the evidence effectively for prosecution.

- **Situational Awareness**: Technology should increase situational awareness for MPD personnel allowing officers to better respond to the situation encountered, and permitting commanders to better manage complex and changing events.
- **Integration:** New technology should integrate with existing technology wherever practical, and should be designed to permit easy integration with future technologies.

2. Evaluation Method

A careful examination of any proposed technology investment should enable policy makers to determine the degree of benefit expected in each of the above categories. Not every category will apply to every technology, and not every benefit will present itself to the same degree. Policy makers can "Score" proposed technology projects using these criteria, creating a priority list based on objective criteria.

A technology investment that scores higher in many categories including projected costs, should be considered as a higher priority than one that scores lower. Obviously any technology that is evaluated and projected to have a negative impact on any of these criteria should be viewed skeptically.

Projects should be evaluated before being adopted, then re-evaluated periodically to determine if the expected benefits have been realized. Under performing technologies should be re-configured or retired.

3. Investment Evaluation Example (New CAD System):

- **Efficiency:** HIGH The new CAD will permit MECC to dispatch the closest appropriate unit to calls, reducing response time and ensuring the resources are put to the best use. Mobile software in the vehicles will allow officers to see calls as they are created, and automated field reporting will allow officers to write citations and other reports very quickly with forms pre-filled by the CAD.

- **Accountability:** HIGH The new CAD records comprehensive audit logs of every activity an officer or dispatcher performs, and these logs are retrievable. Automatic Vehicle Location will show real time and after the fact exactly where officers are.

- **Life / Safety:** HIGH Closest car dispatch will allow faster response to emergency situations. The huge amount of data available to officers in the car will promote the best response based on the nature of the incident. (Example: Officers will be able to see calls at an address. In the case of a violent emotionally disturbed person, this will allow officer to call for trained personnel before even arriving on the scene, possibly preventing a violent confrontation)

- **Crime Prevention:** MEDIUM Because a dispatch system is primarily used in the response to calls for service, it is generally not intended to serve as a crime prevention tool. The mobile software in the squads and the ease or writing citations and other reports should encourage pro-active actions such as traffic enforcement by officers, and this can serve to reduce crime.

- **Crime Investigation:** LOW Again, a CAD system is designed to facilitate response to incidents, and is not primarily an investigative tool. The new CAD's comprehensive recording of events and it's ability to quickly feed back that information may assist somewhat in follow up investigations to reported crimes.

- **Situational Awareness:** HIGH Responding officers will have instant access to data they have never had before, including orthographic maps, information on prior incidents, and the ability to see real time depictions of other responding units. The data is presented by the CAD so that officers can quickly get the most important information, then dig deeper as time and circumstances allow.

- **Integration:** MEDIUM/HIGH The new CAD is designed to integrate with other technologies, but at this point the city is not fully able to utilize that capability. At go live the new CAD will integrate with a few other systems such as the state records switch and Hennepin County VIBES. Future enhancements may include a full integration to the police RMS and digital video systems.

4. Technology Investment Decision Making Process

- **Leveraged Investment Propositions**
  - Validate the effectiveness of proposed technology investments on reducing crime based on the documented experience and references from other cities.
  - Quantify the direct impact of proposed technology investments on crime reduction and crime prevention.
  - Verify links to business plans
  - Substantiate measurable benefit and ROI.
  - Investigate collaboration (Shared Benefit/Investment) with State, County and other cities.
  - Investigate joining planned public safety technology programs in other cities.
  - Investigate Joint Powers Agreements supporting shared IT infrastructure.
  - Document risks, challenges and required executive policy maker engagement.

- Document expected measurable impact on existing/new performance measures.
- Document the anticipated operating cost and enterprise infrastructure impact ***tails*** associated with proposed technology investments

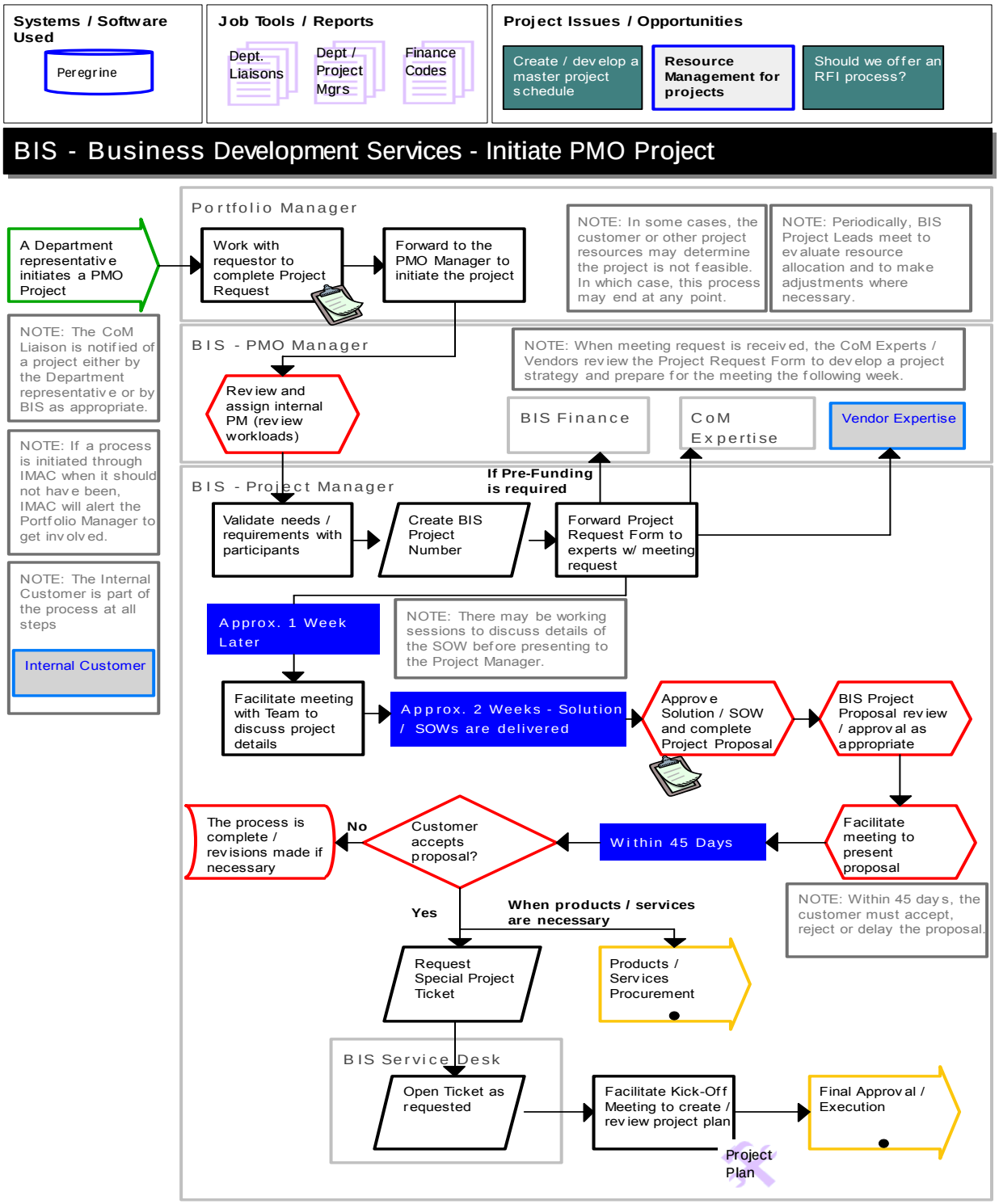
- **BIS Program Management Best Practice** *(Initiation Phase)*
  MPD will work directly with the BIS Program Management Office will to achieve enterprise project goals and realize the greatest value from every technology investment dollar. The BIS PMO becomes involved in projects before they are approved for funding. The BIS PMO performs a high level business and technical analysis before the project begins and does the best project cost and schedule estimate possible at that time. Once the project is approved, the Project Manager completes a Project Proposal and kicks off the project. This PM is responsible for managing all project initiatives and tasks throughout the life of the project and is expected to guide the efforts of the project team as well as other BIS resources that are assigned to their project(s).
  - **BIS Program Management Process** *(Initiation Phase)*
    During the initiation Phase, the Project Manager is responsible for submitting four pieces of documentation: the "Pre-engagement Expenditure form", the "PMO Checklist", the "Project Request", and the "Project Proposal", in this order.

  - Pre-Engagement Expenditure Approval
    The Pre-engagement Expenditure form is designed specifically to get funding for the Project Manager to work with the customer to create a Project Request and write the Project Proposal.

  - PMO Project Request
    The PMO Project Request is filled out by the customer after the pre-engagement form is signed. The purpose of this form is to obtain as much detail from the customer as possible; this detail is used as the basis for which we start writing the Project Proposal.

  - Project Proposal
    The Project Proposal is also written and signed during the Initiation phase of the project. The Proposal is the guiding principal for the project and signatures represent a basic agreement, between all parties involved, that the descriptions in the proposal accurately represent the customer or project goal. The proposal encompasses specific details about project scope, resources, budget, technical design, and business analysis, for which the Project Manager bases his/her decisions throughout the life of the project. The preliminary proposal will most likely will be revised during the Planning Phase of the project, resulting in a version 2 of the Project Proposal. The

second version must also be signed by all parties involved, namely the customer(s).



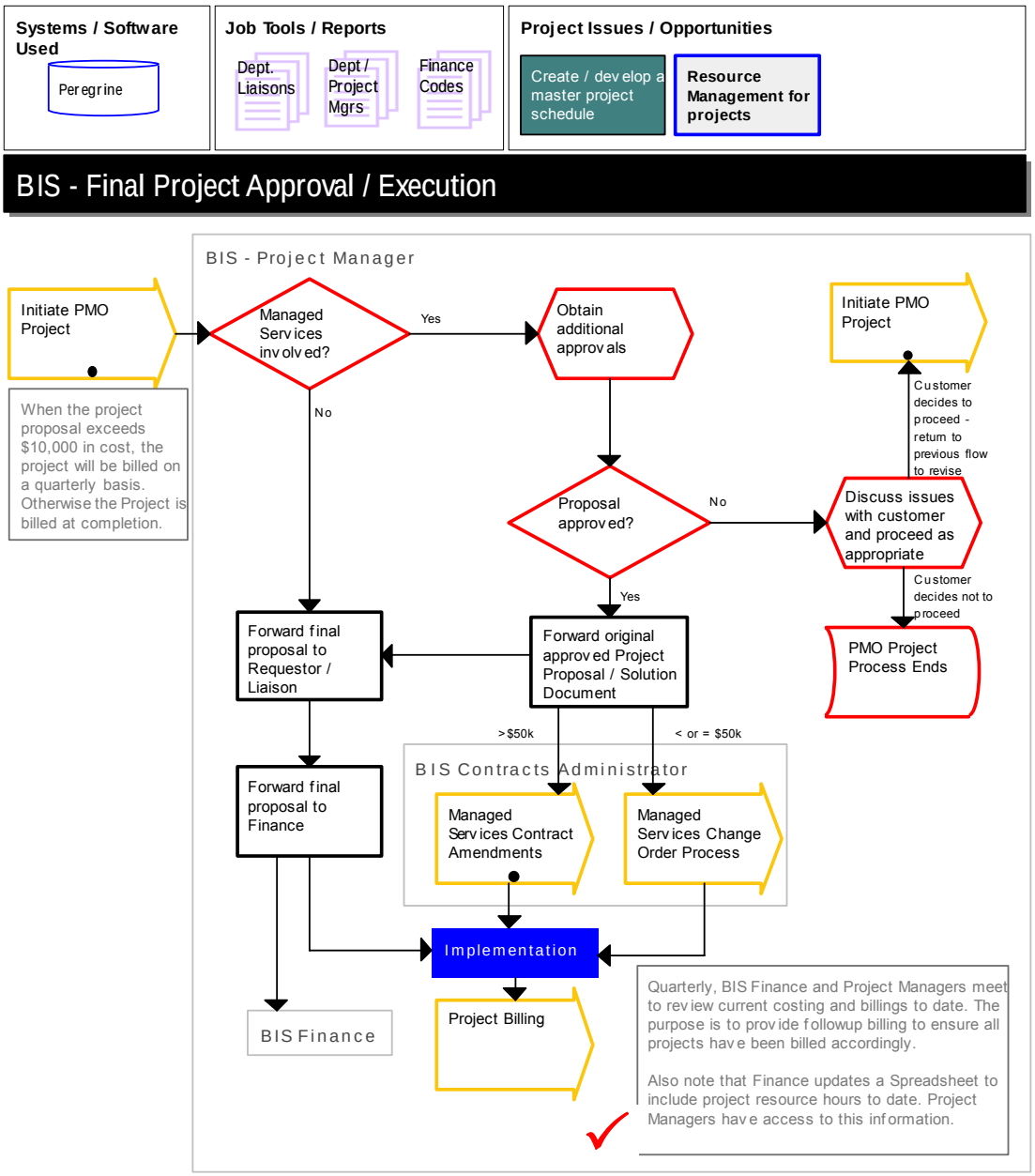
- **BIS Program Management Process** *(Planning Phase)*
  Most of the planning is left to the discretion of the Project Managers, who are experienced in this area. However, the PMO requires that the Project Manager create and submit a Project

Plan (in MS Project), as well as a revised Project Proposal, signed by all parties involved. The PMO understands that there may be times when the original Project Proposal does not need to be revised; however, in most cases, we have found that the proposal needs to be revised with new information at the end of the Planning Phase.

- Microsoft Project Plan
  The Project Manager is required to complete a project plan that includes project tasks, task estimates, start dates and finish dates, as well as project milestones. As this relates to status reporting, Project Managers should plan to report the % of work completed on their project(s), based on MS Project calculations and tasks completed.
    - MS Project Plan (includes WBS)

- Business Requirements
  Business Requirements must be documented during the Planning phase of the project. The following documents, or at least some variation of these documents, are required during the Planning phases of the project:
    - "As Is Process" (business flow as the customer knows it now)
    - "To Be Process" (business flow as it will be, once the new product/ system is implemented.
  - Technical Documentation
  The technical design, physical data model, GUI Design, Prototype, and all other technical documentation must be completed during the Planning Phase. The technical documents required during the Planning Phase of the project are as follows:
    - GUI Design (design and layout of new system interface, includes graphics, text, links, menus, command buttons, etc).
    - Physical Data Model
    - Technical Requirements Document
    - System Interface Diagram (shows departments and systems that are affected by new system)

  - Project Proposal
  The Project Proposal is typically revised during the Planning Phase of the project based on technical analysis and project planning. After reviewing the business requirements, technical design, and other technical documentation, the Project Manager identifies the areas in the original Project Proposal that need to change; budget, schedule, and scope are all areas that may change, due to information discovered during the Planning Phase. *Project milestones are added or revised in the second version of the proposal. The Project Sponsor and other parties involved must sign off on V.2 of the Project Proposal.



C. Enterprise Information Technology Alignment

1. Enterprise Information Management in Law Enforcement

Tools for managing digital, multimedia evidence (documents, audio, video, photographs) are becoming increasingly important to successful criminal investigation and prosecution. An enterprise content management system can capture, label and associate electronic evidence across cases, departments and jurisdictions from a single system of record, providing quick, accurate access to critical information. Single-source repository management of these assets also guarantees a “trustworthy” chain of custody so that digital evidence can withstand court challenges to its integrity and authenticity. Content can be safely stored in an auditable context in its original native format while copies are made easily available to analytical process and tools that may need to convert or otherwise manipulate them.

Currently a lot of information needed by officers on the street is disseminated by email. This includes arrest bulletins, officer safety information, and updates on gang violence trends. Emails can be difficult to manage over time, and information from emails can be hard to locate when it is needed on the street.

The MPD and the Web Services Group at BIS are working to put this information online on the secure MPD web site. Trained officers will be able to upload information into the city's digital information management system and make the information available to officers in a form that is searchable and archived. Officers in a squad or at roll call will be able to see the latest information, including maps and photos (and someday even video).

D. Public Safety Portfolio Management

The BIS Public Safety Portfolio Management function is responsible for the alignment of Business Technology investments with Public Safety departmental business objectives and strategic portfolio enterprise imperatives. This BIS business function includes Public Safety Technology Support. The Public Safety Portfolio consists of Police, Fire, Emergency Communications Center, City Attorney and Emergency Medical Services. The primary purpose of this function is to improve departmental business outcomes by addressing their specialized functional mandates, ensuring efficient and effective use of the City's information technology resources and developing interagency partnerships to implement responsive enterprise business solutions that get the most value out of every dollar invested in technology.

BIS Public Safety Portfolio Management is ultimately responsible for developing/supporting a Public Safety Strategic Technology Plan, business technology assessment, tactical Implementation of new information technology capability and life cycle management of information technology solutions fully supported by institutionalized business practice within the Public Safety Business Cluster. Specific responsibilities include:

- Translate individual departmental business plan imperatives into a five year Public Safety Strategic Technology direction and investment timeline.
- Develop executable project plans and budgets from the business objectives.
- Drive Public Safety IT solutions with Business Process Engineering.
- Research and propose Make-Buy-Outsource technology investment decisions.
- Negotiate departmental/inter-agency/Enterprise Business Process Reengineering decisions.
- Leverage the development and deployment of enterprise technology solutions through Public Safety initiatives.
- Deploy IT solutions fully integrated into the City's Enterprise infrastructure.
- Combine appropriate enabling technology, existing IT applications/infrastructure and commercial off-the-shelf

products in proposed IT solutions for all Public Safety stakeholders.
- Provides system/software vendor relationship management.

Prudent management of Public Safety information technology investments requires business centric leadership and working collaboratively across the Public Safety Portfolio departments to institute sound enterprise information management practice and ensure the City makes timely and efficient investments in technology.

E. Technology Investment Timeline

MPD technology investments in 2007 through 2012 will focus on crime prevention, incident response and increased conviction rates to achieve their performance metrics and overall goal of reducing crime. It is important to understand that Technology investments include not only the one time capital investment and implementation cost but also the on-going costs to maintain the systems throughout the life cycle of the technology. The on-going system support cost includes managed services, system/software engineering, and hardware/software maintenance. Complex integrated technology solutions must have adequate funding to sustain a level of performance that consistently meets expectations and produces a reasonable return on investment.

Performance Metrics
For 2007, the following list of performance measures will be used to evaluate effectiveness of departmental strategies, as well as promoting accountability and transparency: **A.** Part 1 crime totals, with breakouts for juvenile violent crime and all violent crime **B.** Part 2 crime totals **C.** Gun seizures, both evidence and non-evidence **D.** Part 1 and Part 2 arrest totals **E.** Truancy and Curfew totals **F.** Calls for service by priority level **G.** Response times by priority and precinct **H.** Internal Affairs complaints – nature and disposition **I.** Litigation payments **J.** Workers Compensation costs **K.** % of positive responses to citizen survey **L.** Investigations: # of cases reported, # assigned for investigation, # charged

Technology Investment Timeline

Business Technology Need	Priority	Functionality / Benefits	Timing	Investment	Annual Ongoing Costs	Estimated Refresh Costs	Yearly Replacement Reserve	MPD Key Initiatives	MPD Performance Metrics	Source of Funding
Enterprise Public Safety Camera System	1b	Increased ability to capture crime on video, deter crime through video, and increase law enforcement without adding staff	Throughout 2007	$ 1 M	$ 150 K	$13,000 per device after 5 to 7 years	$325,000 per year for 150 cameras	5, 6, 8	1/2, 4, 7, 9, 11	Department budget and neighborhood funding
ShotSpotter System	1c	Identify location of gunfire	Late 2006	$ 325 K	$ 49 K	$12,000 per sensor after 5 to 7 years	$160,000 per year for 80 sensors	3, 5, 6, 8	1/2, 3, 4, 6, 7, 11	Department funding and possible state allocation
Automated Citations (Handheld Electronic Ticket Writers)	1d	Ability for beat, motorcycle, and horse patrol officers to issue citations within electronic reporting system	Mar-07	$ 450 K (2006)	$ 10 K	$2,000 per device to add new units or replace after 3 to 4 years	$27,500 per year for 55 units	1, 2, 4, 6	4	Department budget
MDC (Mobile Data Computer) Upgrade or Replacement	2	Allow faster and increased functionality in squad cars	1/3 of fleet per year during 2007, 2008, and 2009	$ 837 K or $1,302 K ($ 279 K or $ 434 K for 3 years)	$ 65 K	$4,000 per device after 4 years	$200,000 per year for 200 MDCs	5, 6	4,6, 7	Grant and department budget funding

Replace squad cameras	3	Advanced digital technology providing low storage needs, enhanced feed capability	1/3 of fleet per year during 2007, 2008, and 2009	$ 500 K in 2007, 2008 and 2009	$ 65 K	$4,000 per camera system to add or replace after 7 years	$115,000 per year for 200 camera systems	2, 6, 8, 10	8, 9, 12	Department budget
MPD Records Management System (RMS)	4	Explore a unified system to upgrade or replace CAPRS and related systems,	2008-11	$ 3 – 8 M	$ 750 K	$5 M after 10 years	$500,000 per year	3, 6, 8	12	Grant and department budget funding
City Watch Command Center	5	Centralize monitoring, processing, routing, storage, & retrieval of video imagery, gunshot detection, etc.	2010 & 2011	$ 16 M	$ 500 K	Enterprise Costs	Enterprise Costs	4, 5, 6, 8	1/2, 3, 4, 5, 7, 11	Multiple department budgets (MPD, PW, etc.) & Hennepin County
MPD Wireless Projects	6	MPD participation in Wireless Minneapolis for multiple functionalities	Late 2007	Zero	$ 134 K	UNK	UNK	6	7	Department funding
Data Communications Upgrades	7	(a) 800 Megahertz Radio System Upgrade	2009 & 2010	$ 12 M	$ 6 K	$2000 per portable radio to add OR replace after 10 years	$50,000 per year for 250 portable radios	5, 6	7	Department funding
Incident Area Networks	8	Provide first responders with tactical communications capability and quickly expanded inter-jurisdictional incident-area wireless coverage	2009 & 2010	$ 800 K	$ 12 K	$480,000 after 5 to 7 years	$80,000 per year	6	4, 12	Department funding

Geographic Information Systems (GIS)	9	Use ESRI GIS to monitor and respond to crime patterns- CODEFOR, etc.	Late 2007-early 2008	$ 400 K	$ 65 K	$240,000 after 5 to 7 years	$40,000 per year	3, 4, 5, 6	4, 6, 7	Department funding
Regional Information Sharing HUB (RISH)	10	Allow Emergency Communications Centers (CAD Systems) to share data between jurisdictions and observe critical information during major events	2009 & 2010	$ 700 K	$ 13 K	MECC Costs	MECC Costs	5, 6	4, 6, 7	Department funding
Communicating with the Community	11	MPD increase capacity to communicate with email, SAFE's Virtual Block Club, MPD web, etc.	Starting in 2008	Zero	$ 250 K	N/A	N/A	1, 2, 6	1/2, 3, 4, 5, 9, 11	Department funding
Contingency Plans for Breakdowns (Disaster Recovery)	12	New CAD/Mobile system has Disaster Recovery capability; add capability to CAPRS, CAPRS Web, Workforce Director, etc.	2008	$ 1.7 M	$ 160 K	N/A	N/A	6	7, 12	Department funding
Research and Development	13	MPD will look outside to agencies with successful strategies - Best Practices - in the use of technologies	Continual, starting in 2007	$ 50 K	$ 150 K	N/A	N/A	1-8	1-12	Grant and department budget funding

Linkage to Other Resource Plans	14	Review other departments' resource plans when exploring new technologies or strategies involving underutilized current technologies	Continual stating in 2007	$ 50 K	$ 50 K	N/A	N/A	6	N/A	Department funding
311 Software		Maintain use of 311 reporting instead of officer response	Jan-06	$ 281K	$ 85 K	$85,000 after 5 to 7 years	$15,000 per year	5, 6	6,7, 11	Department funding

F. Technology Investment Funding Plan

The funding plan for these Police Technology investments will need to come from a combination of sources. The already allocated million dollars of funding for 2007 and one million dollars of funding for 2008 will be a start, but other sources will be needed. Federal and state grants would be an ideal source of funding for the initial costs of new implementation or upgrade projects.

However, these grants funds do not supply the ongoing costs that will be incurred whenever an initial investment is made. Police Operating budgets will need to be used for some ongoing costs.

One example that might be emulated is the way APS (Automated Pawn Secondhand) and WorkForce Director systems are funded by user fees. This model will also attempt to be followed by the Attorney's area in the ongoing costs of their Practice Manager system.

It is unlikely however, that many Police systems will be able to be self-supporting. We will therefore need to search for other sources of funding.

VIII. Appendices

Appendix A

Glossary of Terms

The terms defined here are meant to provide context for, and are specific to, the MPD Strategic Technology Roadmap.

CAD (Computer Aided Dispatch) see VisiCAD

CAPRS (Computer Assisted Police Records System) is the custom developed Police Records Management System (RMS) application used by the Minneapolis Police Department for tracking police incidents that generate a police report and case managing those incidents.
CAPRS has served the City and MPD well throughout the 1990's and early 2000's. The decision to move forward with a new CAD/Mobile solution makes it appropriate to think about replacing the RMS so that the integration of the system is complete. To the extent possible, we will explore a unified system whereby incident reporting, time and attendance, and equipment servicing can be managed

CAPRS Web is an application custom developed and used by the Minneapolis Police Department, and many other jurisdictions, for case report query and reporting on Minneapolis Police case information.

CFS (Calls For Service) is MPD's old database that stores data related to 9-1-1 calls and dispatches of a police officer to an event. A "call for service" may or may not generate a police report in CAPRS. The CFS database is being replaced by the new CAD system, and will soon be turned off.

CIBRS (Comprehensive Incident Based Reporting System) is the State of Minnesota Bureau of Criminal Apprehension records management system. The state has requested that MPD submit CAPRS incidents electronically to CIBRS

so that certain Minneapolis offender data is available statewide to criminal justice agencies.

CODEFOR (Computer Optimized Deployment – Focus On Results) is a strategy to reduce crime involving every unit of the Minneapolis Department, including patrol, investigations, administration, special units, and support services.

Command Center – a Command Center centralizing the monitoring, processing, routing, storage and retrieval of video imagery from the city wide safe zone and gunshot detection networks.

COPLINK - the County investigative system.

CriMNet is an integration initiative that allows criminal justice professionals throughout the State of Minnesota to share information that was formerly isolated in standalone systems. It is a secure intranet system that will link the state's 87 counties and up to 1,100 criminal justice jurisdictions, each served by local employees of criminal justice agencies and individual state agencies such as public safety and corrections, by using common business practices and a standard computer language. Once complete, the goal of the CriMNet Program is to provide complete and accurate criminal justice information to Minnesota prosecutors, judges, law enforcement officers, and probation and correction officials. A common misperception is that CriMNet is a centralized database that will be created by permanently appropriating data from current state agency systems. Another is that CriMNet will completely replace existing criminal justice systems. Neither is true. Like the Internet, efforts of the CriMNet Program are to connect systems, not to create a single database application or discrete development project. Just as the Web enables access to a vast range of independent sites via an Internet connection and standard browser (such as Mozilla Firefox or Microsoft Explorer), CriMNet applications will provide users with access to an ever-growing quantity of data and applications that have been created—and are still owned and maintained—by the individual state and local agencies.

DOC (Minnesota **Department of Corrections).**

DVS (Driver and Vehicle Services) Through the Department of Public Safety, the following data is available: Driver records, motor vehicle registration records, Driver's License Photos, and signatures. Users apply for access based on legal authority to access. DVS establishes the user access level based on the specific authority and intended use.

Enterprise Information Management (in Law Enforcement) -- tools for managing digital, multimedia evidence (documents, audio, video, photographs) which are becoming increasingly important to successful criminal investigation and prosecution. An enterprise content management system can capture, label and associate electronic evidence across cases, departments and jurisdictions from a single system of record, providing quick, accurate access to critical information. Single-source repository management of these assets also guarantees a "trustworthy" chain of custody so that digital evidence can withstand court challenges to its integrity and authenticity. Content can be safely

stored in an auditable context in its original native format while copies are made easily available to analytical process and tools that may need to convert or otherwise manipulate them.
Currently a lot of information needed by officers on the street is disseminated by email. This includes arrest bulletins, officer safety information, and updates on gang violence trends. Emails can be difficult to manage over time, and information from emails can be hard to locate when it is needed on the street. The MPD and the Web Services Group at BIS are working to put this information online on the secure MPD web site. Trained officers will be able to upload information into the city's digital information management system and make the information available to officers in a form that is searchable and archived. Officers in a squad or at roll call will be able to see the latest information, including maps, photos, and even video.

FormStream AFR (Automated Field Reporting) is software for automated field reporting.
Vendor is Patron Systems.

FRED (**Full Repository of Electronic Doc**uments) is a process for delivering images of case discovery documents electronically from the county's police departments to a document management system at the county. The County Attorney's office now intends to merge FRED into the ongoing Enterprise Application Integration (EAI) project. See TIGER.

HCSO (Hennepin County Sherriff's Organization).

JMS (**Jail Management System**) is a software application specifically designed to electronically record information critical to effectively operating a prison, jail, or holding facility. At Hennepin County, JMS is a server-based application, which manages the functions and activities of the Adult Detention Center. The system integrates with the SIP system and contains data relating to inmate demographics, charge and count detail, bail/bond information, conditions of release, and court information.

JNET (Juvenile NETwork) is a system sponsored by the County Attorney's Office. The system's primary purpose is to share data about children who are truant or otherwise break the law. Agencies participating in the system are the County Attorneys of Hennepin County, Minneapolis Police Departments, most Hennepin County suburban Police Departments, School Districts (most prominently the Minneapolis School District), Children Family and Adult Services, and Juvenile Probation. The system pulls in data from applications owned by the participating agencies. J-Net provides the secured environment for its database. It physically sits on a server in the Hennepin County IT computer room and is accessed via the Web browser. The system was developed for the County by the Macro Group, who continues to support the application

Legal Edge is the primary computer application used by the County Attorney's office to manage casework.

LEMS (**Law Enforcement Message Switch**) a Hennepin County service that makes available information to local government agencies on things like warrants that are outstanding.

Live MUM (Live Move-Up Module). Software for move-up algorithms and live coverage maps. Vendor is Deccan International.

LOGIS (LOcal Government Information Systems consortium) is a consortium of Minnesota local government units. The purpose of LOGIS is to provide a full range of locally supported highly reliable management information systems, data processing services, and related support services.

MARVLIS (Mobile Area Routing and Vehicle Location Information System). **I**ntegrates with TriTech VisiCAD Command to map, manage, and deploy resources for enhanced resource planning and data analysis. Vendor is

MNCIS (**Minnesota Court Information System)**. The objective of the MNCIS project is to improve the Courts' ability to manage case information and be accountable for Court-related legislative policy. It will provide a significantly improved means for collecting, storing, retrieving, tracking, reporting, and electronically sharing trial and appellate court case information with other agencies in the criminal justice community. Initiated in January 2000 to replace the existing statewide Total Court Information System (TCIS), it will also replace the existing automated systems in Hennepin and Scott counties. MNCIS has been deployed as a Proof of Concept (POS) to Carver County. MNCIS will be integrated onto the CriMNet backbone.

MRAP (Minnesota Repository of Arrest Photos) is a central database accepting digital photographs taken at booking/arrest and the corresponding descriptive and demographic data collected. This database also may include images of scars, marks, or tattoos, photographed at the time of arrest or booking. The MRAP provides criminal justice agencies an opportunity to search arrest and booking photos from a variety of law enforcement agencies, to create lineups and witness viewing sessions from those photos and to enroll unidentified persons into the facial recognition component in an attempt to obtain an identity. MRAP is available through the Integrated Search Services application.

NCIC (**National Crime Information Center)** is an office of the FBI that collects and disseminates national crime information.

NIBRS (National Incident-Based Reporting System) is the US Department of Justice's, FBI's, national crime reporting and analysis system. After a major upgrade in 2004-2005, CAPRS is now NIBRS-compliant.

POR (Predatory Offender Registry). The POR is the central repository for collecting and maintaining information for every registered offender in Minnesota. The new POR system has been fully implemented internally. In November of 2001, the BCA began the process of issuing user ids and passwords to enable state, federal, and local law enforcement and corrections officials to access POR information over a secure Internet web site. To date, 291 agencies have requested access to the POR web site and a 2,767 user ids have been issued. Currently, 77 of the 87 county sheriff's offices have applied for and received access to the POR database. The POR Unit is actively working to complete the access for the remaining agencies and anticipates this will be accomplished by

August 2003. POR is available through the Integrated Search Services application.

Safe Zone, Safety Camera Systems - the generic name for all camera systems similar to the capability of the Safety Camera System that now has 30 cameras in the downtown 1st precinct area. It has shown crime reduction over the life of the safety camera system that was installed in 2005. MPD will expand the system to the 3rd Precinct Bloomington Ave. area with 15 cameras, 4th Precinct Broadway Ave area, and installation of 8 camera's in the Cedar Riverside area in the 3rd and 4th quarters of 2006. The conviction rate has been 100% when the crime was caught on video of this system.

ShotSpotter System – a system consisting of acoustic sensors mounted on rooftops or poles that are connected via a wireless network to a central computer. The firing of a gun creates a sound that is detectable up to two miles away from the firing location. The ShotSpotter Detection System measures and automatically categorizes these acoustic sounds as being a single gunshot, multiple gunshots, or fireworks determining shots fired location within +/-10 feet. The location detection technique called triangulation requires detecting the gunfire from three acoustic sensors. The ShotSpotter System makes use of several technologies to ensure background noises do not create false detections. The gunfire incident information is then alarmed and presented to a police dispatcher who is provided with both a visual and audio presentation of the event to decide whether to dispatch squads. This information is available to the dispatcher within 10 seconds from the time of an incident. Dispatchers with proper training can easily decide whether to dispatch a police squad within 30 seconds.
The ShotSpotter system prevents gun incidents because of early alarming and by providing precise location of shots fired

SIP (**Subject in Process)** is an integrated computer system that provides for automated storage and retrieval of information collected, used, and tracked by Hennepin County criminal justice agencies as a defendant (alleged offender) moves through the justice process. As a defendant progresses through the county's criminal justice system, from point of entry until court jurisdiction expires, each county justice agency involved along the way may enter data into SIP or may access or add to the data already entered by another agency. Some SIP data is unique to each agency and cannot be accessed by other agencies; other data is common to all agencies.

SSS (Statewide Supervision System) (also referred to as S3 or S-cubed) The S3 project will provide access for criminal justice professionals to information on all offenders under supervision in Minnesota, automated Sentencing Guidelines Worksheets and a link to the Department of Corrections' Prison inmate data. The current status of the system includes adult probation data from all 87 counties, juvenile probation data from 86 counties, link to Department of Corrections' prison inmate information, jail data from 77 counties, booking information from 31 police departments, and automated felony sentencing worksheets from 100 percent of jurisdictions. S3 is available through the Integrated Search Services application.

TIGER (Total Integration Generation Enterprise Reform) is an automated method for Hennepin County local law enforcement agencies to submit individuals involved in police incidents to the Hennepin County Attorney for charging. The system has two primary interfaces:

1. An interface with local law enforcement (LLE) agencies' records management systems (such as CAPRS) to extract and submit police incident case reports (ICRs) and supplements stored in the RMS. The interface uses the Federal Department of Justice's (DOJ) Global Justice XML Data Model (GJXDM) to format data and submit it to the county.
2. An interface with LLE agencies to submit supplemental information such as crime scene photos, printed documents from other sources, etc.

The system accepts ICRs and other case data related to individual's involvement in the police incident so that the Hennepin County Attorney can make informed decisions about whether to charge these individuals with Gross Misdemeanor or Felony charges in the Hennepin County Court System.
When cases are submitted by LLE for prosecution at Hennepin County, the TIGER system accepts the data, and returns status information from Hennepin County at regular intervals during subsequent processing. Initial return data informs the LLE whether the case was accepted for charging or not; if not, a reason is returned. If the case is accepted for charging, the statute that is used is returned to the LLE agency for reverse-integration into the agency's RMS if desired. Court status is also returned to the LLE agency as the case progresses through the court system.

ViBES (**Violations Bureau Electronic System)** is a system developed by Hennepin County in collaboration with Ramsey County to process parking, moving, and criminal violations. The system interfaces with ACES (automated citation entry system used by U of M policy and City of Minneapolis Traffic Control officers), Minnesota and Wisconsin Department of Public Safety, SIP, and MCE (Minnesota Collection Enterprise), an application of the State Department of Revenue used to recover unpaid Violation Bureau collectibles).

VisiCAD - our new MECC CAD system. It has interoperability and strategic plans for emergency preparedness. Interoperability includes wireless information and, along with voice, communication includes CAD/Mobile data. CAD data sharing can lead to trend-spotting regarding not only criminal, but also terrorist activities. Investment in our new MECC CAD system will allow best dispatching capability with the automatic vehicle locator (AVL) capability to improve dispatch response to emergency issues. MFD also has the mobile capability to improve emergency communications with th***The terms defined here are meant to provide context for, and are specific to, the MPD Strategic Technology Roadmap.***

Appendix B

Public Safety Information Systems Flow

A. **MPD Business Systems (Diagram #1)**

B. **MPD Inter-Jurisdictional Business Systems (Diagram #2)**

C. **High Level Public Safety Information Flow Systems (Diagram #3)**

Appendix C

Technology Investment Timeline

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