

# Feasibility Study- Redmond Fire Communications Follow- up Report

Prepared by the Project Team for Chief Ron Gibson

Follow-up to Questions from the May 14 Council Session



# Feasibility Study- Redmond Fire Communications Follow- up Report

## *Project Team*

The project team is comprised of members of the Police Department, the Fire Department, and Information Services. The members are:

Erik Scairpon, Commander, Redmond Police

Ralph Ashmore, Battalion Chief, Redmond Fire

Steve Eastham, Information Services

Dan Werr, Information Services

Robert Clemmons, Communications Supervisor, Redmond Police

Jason Fisher, Communications Supervisor, Redmond Police

Joseph McGrath, Redmond Fire Finance

David Knight, Captain, Redmond Fire

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Malisa Files, Redmond Finance

This report supplements the original report submitted to a joint session of the Redmond City Council and District 34 Fire Commissioners on May 14, 2013. The report will attempt to answer questions and clarify specific points raised by the attendees.

Respectfully submitted on July 23, 2013



## Project Values

- **Integrity** -- *We demonstrate sound, honest, truthful and consistent values*

Integrity speaks to the safe and reliable public safety response that we have pledged to our community and trusted mutual aid partnerships through consistent application of values-based reasoning projected throughout this study.

- **Accountability** -- *We take ownership of our actions and responsibilities*

The team seeks efficiency with current operations in order to provide the best level of service for the budget provided by the taxpayers of Redmond and Fire District 34.

- **Commitment to Service** -- *We are dedicated to seeking solutions for our community*

Service levels are paramount to the team. We must maintain regional partnerships, build trust, and mutual understanding with the objective of improving the quality of service provided to the community and our partner agencies.

## Questions from City Council

In this supplement the team provides answers and clarifies and/or quantifies the questions raised by Council on May 14, 2013. The topics addressed in this report are as follows:

- An assessment of the ability of Spillman Technologies to meet the project requirements
- A CAD needs assessment for Fire and Police
- Interoperability risk assessment
- A project timeline with clearly defined off ramps
- Impacts on response times
- What are the benefits to the citizens
- A NORCOM CAD solution
- Operational improvements for Redmond Fire
- What are the potential revenue sources (partner agencies) for the project



## *Executive Summary*

The culture of “adapt and overcome” can mask risks. Police, fire, and emergency communication centers consistently compensate when circumstances are less than ideal, which is almost always the case. Because first responders work in environments where they cannot wait for everything to work “just right,” it is easy for them to accept as “normal” an ongoing deviance from acceptable practices. In their profession, this phenomenon, “normalcy of deviance,” is a known, documented, and pervasive danger that is a frequently cited component in the analysis of negative outcomes. The Redmond Fire Department would like to mitigate these risks by forming a partnership with the Redmond Police Communications Division.

The team spent a significant amount of time studying the additional questions that council had at the May 2013 presentation. To the best of our ability, as the communications situation has continued to develop over the past three months, additional information has been collected. The team feels that if this project moves forward, a CAD needs assessment and an attempt by Spillman to correct identified deficiencies for fire should be the first steps undertaken. Doing so, will provide the city with much needed information and facilitate a better understanding of our needs and options.

A condensed timeline has been included in this report. In it are two specific paths forward. Both options present risks and provide evaluation points where the longer term liability can be mitigated. Both timelines are dependent on a CAD decision from NORCOM and are longer than initial projections to allow for the potential of training for a new CAD (Redmond) and time for a final CAD deployment at NORCOM.

## *Spillman CAD Assessment—Project Requirements*

The team has identified a number of system components within the existing Spillman system that will not meet the requirements of this project. These components, if not corrected, will prevent Redmond Fire from functioning at their current service level. Additionally, the absence these components will have a negative impact across the Zone. Should Spillman not be able to address the issues outlined below with a workable solution, Spillman CAD is not a viable option for the project. The following items of concern have been identified by the team:

- **Cross-staffing.** This functionality allows fire personnel to maximize staffing levels by using the same members to operate multiple fire vehicles. However, once a team has been committed to one vehicle for a call for service (CFS), the other vehicle(s) must be taken out of service. Currently, Spillman CAD has no means of dynamically completing this task. This represents a major obstacle for automatic dispatching within both Redmond and Zone 1.



- **Geocoded station locations.** Fire/EMS units are dispatched across the zone according to what apparatus and equipment are needed at the scene and by the closest unit meeting those predetermined requirements. Currently, Spillman CAD has no means of assigning geocoded locations to local fire stations. Fire equipment and personnel are frequently in quarters, especially during the overnight hours, and the system must take into account their physical locations when computing a dispatch for a CFS.
- **Response time variables by Vehicle type.** Various fire apparatus have differing response times. An aid car and engine can respond quicker than a ladder truck or larger pumper. During the calculation of a response time, the system must take into consideration the driving speeds of each vehicle and determine that while a ladder truck may be the closest available unit, due to the drive time of the vehicle, an engine that is further away has a shorter response time. Additionally, the software will need to take infrastructure limitations (bridge weight requirements, etc.) into consideration when calculating response times. Currently, Spillman does not have a mechanism for dealing with such comparatives in the calculation of a response.
- **Response plan conditional determinations.** In comparison to the existing fire CAD (TriTech), Spillman has a rather simplified response plan configuration. It is not apparent that Spillman can manage *if then* conditionals which are used in existing response plans. The result of which could mean too many, too few, or the wrong type of apparatus is dispatched to a CFS.

The team has contacted Spillman regarding the items above. Spillman has expressed a willingness to make modifications to the existing system to address these issues. It could take Spillman up to 12 months to develop and test these components and cost between \$75,000 and \$150,000. Although Spillman has a good track record of response to the Redmond Police Department, there is no guarantee that the enhancements will meet the project's requirements.

### *Dual Discipline CAD Needs Assessment*

The cost of a CAD needs assessment is between \$60,000 and \$120,000 and between three and six months in duration. A consultant needs to be hired to assist the Fire and Police Departments to create a needs assessment document. The assessment would identify the core requirements of a CAD system for both police and fire operations. Once completed, the departments would have a solid understanding of the requirements necessary to complete an RFP. Industry averages from the completion of an RFP to installation of a new CAD are approximately eighteen months. Completing the needs assessment has the added benefit of providing useful information should other options be considered by the city in the next 12-24 months.

### *Zone 1 Interoperability Risk Assessment*

Although technologies exist to facilitate bidirectional communication between separate CAD systems, choosing this option is not without risks. Initial concerns will focus on NORCOM's choice of a CAD



system. Until such time as there is a clear choice of which CAD will be used long term (New World, TriTech, or possibly something else), the integrator will be required to create multiple interfaces. This solution will also require a great deal of coordination between the PSAPs to maintain the interoperability software generally and specifically to manage any CAD upgrades and/or any CAD down time at each of the agencies. Due to the nature and frequency of mutual aid and the dependency of response plans, there is a crucial need to have real time unit status available across the zone. Consequently, it will be critical for the data to be in sync across the system at all times. In addition to the initial expense of creating the interoperability connection (\$227,000 to \$1,200,000), there are longer term costs associated with maintenance of such a solution between \$100,000 and \$200,000 annually.

Exclusive of all Zone 1 fire agencies being dispatched by a single PSAP (the current configuration at NORCOM), the lowest risk option is to have each of the fire PSAPs using the same CAD platforms and versions to manage resources within Zone 1. If each PSAP is independently operating on the same CAD platform, the connection and integration between the two becomes simpler, more stable, and less expensive. This presents a number of challenges for the project; the largest being the uncertainty of a near and long term CAD selection for NORCOM.

Another hurdle is the adoption of a new CAD system by the Redmond Police Department and the potential of a degradation of the services currently in place. A new CAD will also require a substantial training component for exiting police staff. Should the Police Department pursue purchasing a new CAD system, this should be done only when NORCOM has settled on a long term solution and the police department has had an opportunity to study that system for feasibility of use for police services.

### *King County CAD Interoperability Project*

The King County E-9-1-1 Program Office is in the early stages of facilitating a county-wide CAD interoperability project. Recently a project manager was assigned and preliminary meetings have taken place--with additional meetings scheduled. Northrup Grumman is the primary vendor and the initial designs of the project provide a limited "view" only capability across the PSAPs. Recently a second vendor, Viewpointe, was contacted and the project may provide an enhanced common operating picture (eCOP) similar to that being used in Seattle. It is still unclear if this project will provide bi-direction data sharing that would be necessary for a Redmond interoperability solution.

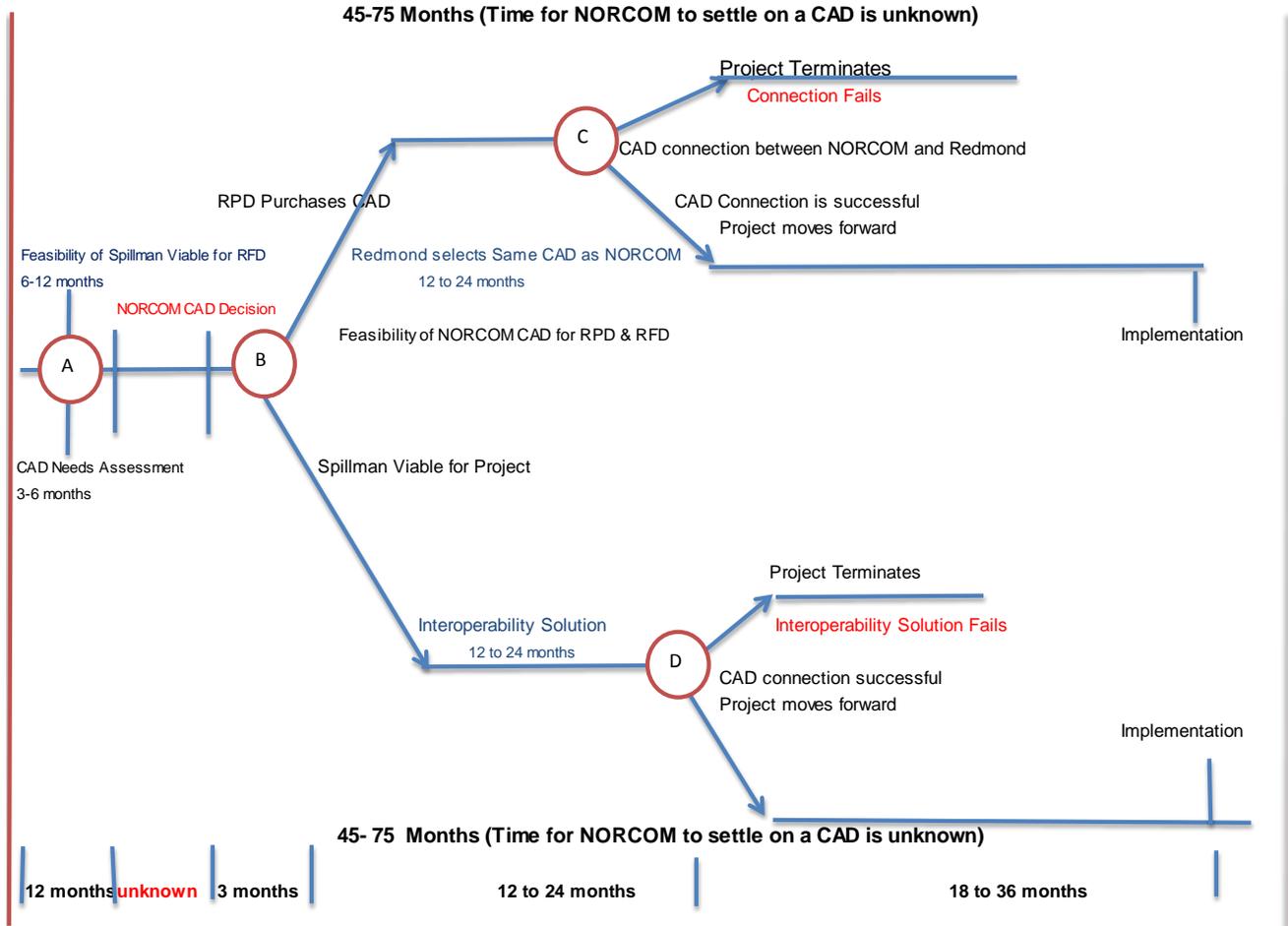
### *King County Consolidation Project*

The PSAP director's group is scheduled to review the final draft of the consolidation report submitted by GeoComm. At the recent Sound Cities Association (SCA) Pre- Public Issues Committee meeting workshop (July 10, 2013), the King County E-911 Program Office re-affirmed a commitment to have a final consolidation recommendation plan in place by August 2014. As meetings occur, the Public Safety Committee will be briefed on developments.



### Project Timeline—Off Ramps

The following is a condensed timeline representing two options: the first option assumes that a new CAD is purchased and option two represents the path of an interoperability solution. Each option has pivotal decision points where, if needed, the project can be terminated to limit the City’s long term financial exposure.

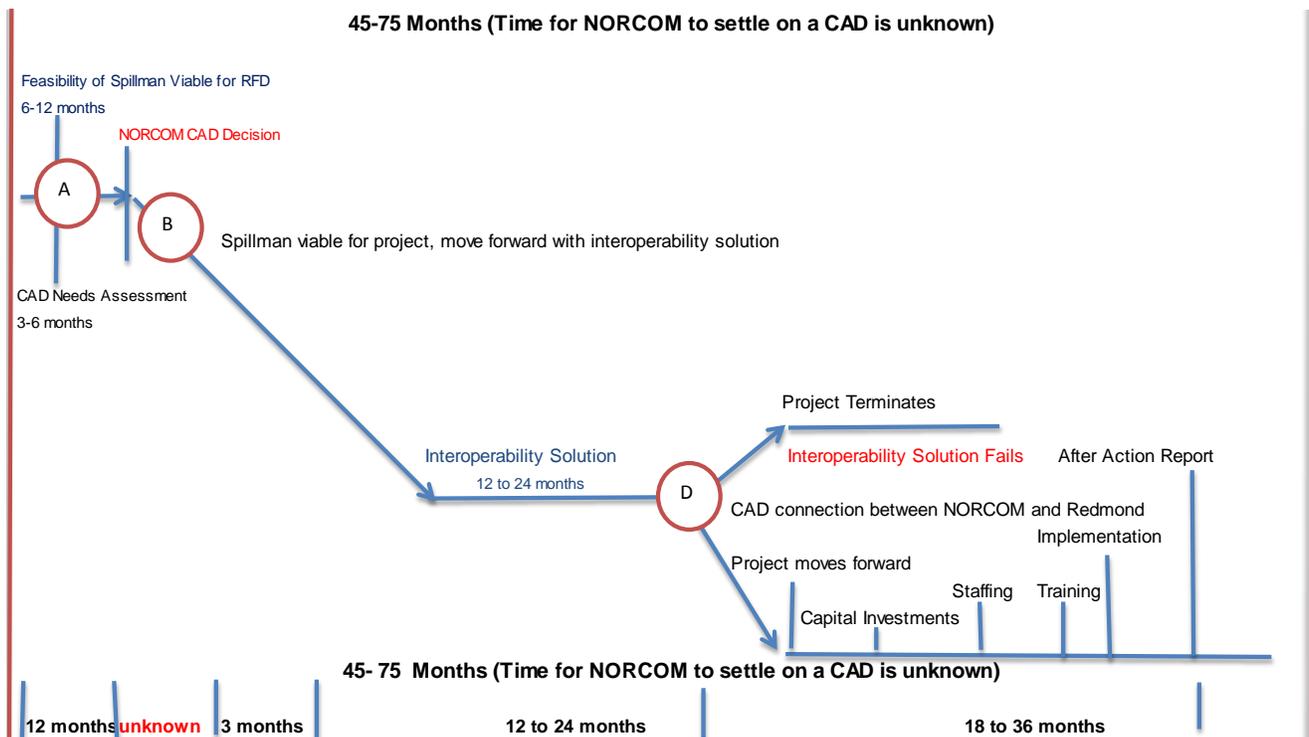


The project would begin with Spillman Technologies attempting to create a fix for the issues identified that prevent Redmond Fire’s use of Spillman. Concurrently, the process of a CAD needs assessment would begin. This initial phase would take approximately twelve months and cost between \$135,000 and \$270,000 and require no additional staffing. Should Spillman make the necessary enhancements to meet the project’s requirements, the City would have the option of moving forward with Spillman and the Interoperability solution. Should Spillman fail in their efforts, the CAD needs assessment will



provide the information necessary to explore the option of purchasing a dual purpose CAD. At this point, the project can be evaluated and a decision made to terminate or move forward, **point A**.

If Spillman is not an option, the possibility of purchasing both a new CAD and an interoperability solution are not financially feasible. Either Spillman CAD and an interoperability solution work together to provide the connection to NORCOM or a CAD is purchased (same make and model as NORCOM’s CAD) and is networked with NORCOM to provide for mutual aid.

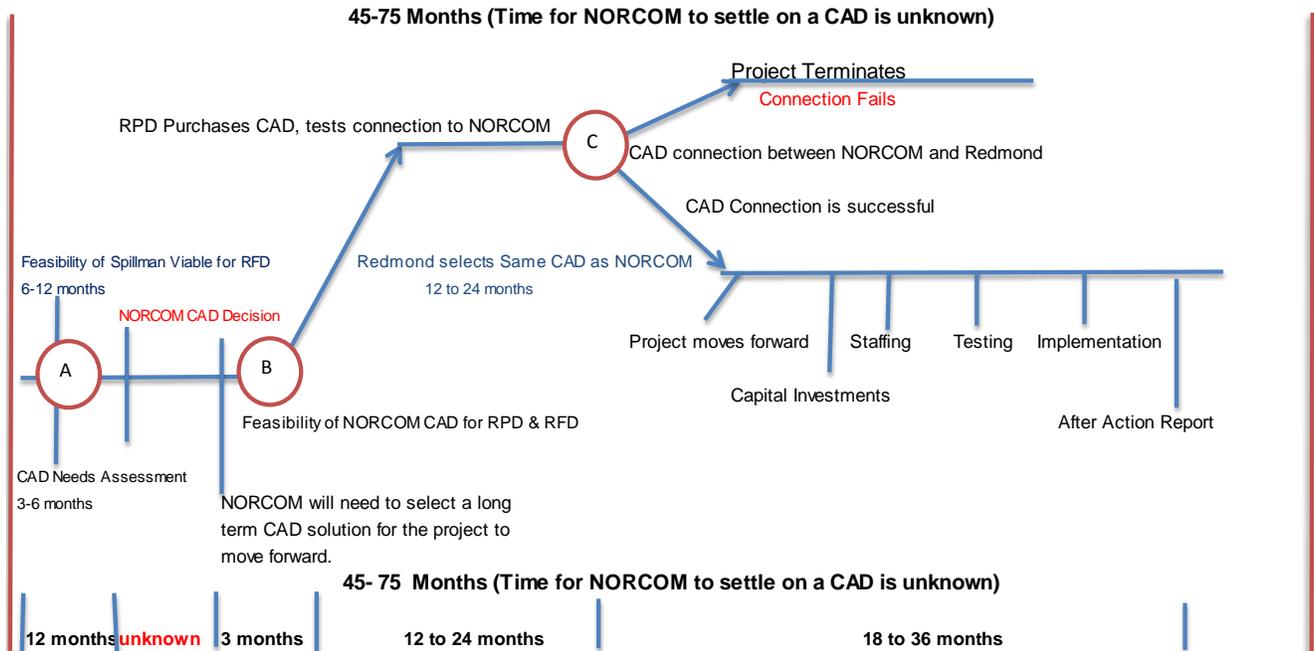


**Interoperability Option** – Four companies responded to the team’s RFI. Tentative quotes range from \$227,000 to \$1,200,000 for the project with ongoing maintenance costs ranging from \$100,000 - \$200,000 annually. Additional, each company expressed the ability to complete the project within twelve months depending on the level of cooperation with each CAD vendor that is connected.

This option assumes that Spillman CAD is viable for the project and NORCOM has chosen a long term CAD. Purchasing and installing and interoperability solution would take between twelve and twenty-four months and cost between \$2270,000 and \$1,200,000. Once installed and tested, the City has an option to continue forward or terminate the project, **point D**.



Should NORCOM not have selected a long term CAD at this point, the project should wait until such time as NORCOM has made a decision before moving forward. Once NORCOM has chosen a CAD, the City has the opportunity to study the feasibility of Redmond Police and Fire utilizing the same CAD system. Doing so will greatly increase the viability of a CAD-to-CAD connection. At this junction, the City has an opportunity to continue or terminate the project, **point B**.



**New CAD Option** – Purchasing and installing a new CAD (connection to NORCOM would be part of the installation) would take between twelve and twenty-four months and cost between \$2,500,000 and \$4,000,000. Once installed and tested, the City has an option to continue forward or terminate the project, **point C**.

Both the New CAD and Interoperability option assumes minimal staffing increases up to decision points C and D. If the project is moved forward from these points, staffing and additional facilities purchases would be made. Time will be required to create training materials, training existing staff, and hire and train additional employees.



## *Impacts on Response Times*

**Reduced response times** —A combined Redmond Police and Fire PSAP would eliminate the need to transfer Redmond fire or medical calls to NORCOM. It is estimated that by eliminating this transfer, a minimum of 10 to 20 seconds of call processing time (ring time, answer rate, initial question, and transfer) would be reduced per phone call. During peak call times or high visibility incidents resulting in 911 call clusters, the call processing times will only increase. During the period of May 1, 2012 through May 1, 2013, the Redmond Police Department transferred 3,138 calls to NORCOM—15% of the center’s 9-1-1 call volume for that period. NORCOM transferred between 3,000 and 4,000 9-1-1 calls to Redmond during this same time frame, representing a total of between 6,000 and 7,000 transfers that could be eliminated with a combined center.

**Reduced time to process requests for fire or police by units on scene**—In the current configuration, if a field unit makes a routine request for a fire or police response to the scene, the process is multi-stepped and can be time consuming. Each PSAP’s radio dispatcher records the request from the field unit; a call receiver picks up the request and makes a phone call to the other PSAP. An additional call for service is added and dispatched at each PSAP. If Redmond Communications is busy at the time of the request there can be a delay in making the request. If NORCOM is busy, the same type of delay can be seen on their end. These delays could add up to minutes. If Redmond is dispatching both Fire and Police Departments the request is processed in a much more efficient and timely manner.

**Knowledge of the local Geography**—Redmond emergency communications staff members are well versed in the local geography and are able to quickly assist callers in determining their location. ANI/ALI information along with the dispatcher’s knowledge of the area (landmarks, business names, schools, etc.) allows them to assist callers and get help where it is needed. While the project team is unaware of any issues or complications at NORCOM, it felt that local staff will be better equipped to serve the needs of local users of the 9-1-1 system.

## *Returns to the Citizens of Redmond*

With both Police and Fire Departments served by the Redmond Police Communications Division, the citizens of Redmond benefit from a more responsive and more agile Fire Department. The public safety response essentially becomes a partnership between the Redmond Police and Fire Departments serving the needs of the community more directly and more efficiently than the current situation. The layers of committee meetings, voting, negotiating, waiting, and bureaucracy are removed when Redmond Fire is dispatched locally. Operational decisions on how fire responds to local incidents will fall under the control of the local Fire Department and not a regional committee. The partnerships between communications, police and fire will facilitate a real time collaborative approach to solving problems and implementing solutions.



Recent incidents involving false reporting to 9-1-1 illustrates this point. A residential location became the target of malicious and false reporting of violent incidents to 9-1-1. The suspect used an internet based relay service (intended for the use of people with speaking and hearing difficulties to access public services) to report in-progress shootings, stabbings, and fires at a location within the city. The police department quickly identified these calls as a hoax and worked together as a group (including the local victim) to formulate future responses to this residence. A plan was quickly put into place that lessened the police response. Initial calls dispatched multiple police units to the residence for an active shooter type incident. The tailored response, by contrast involved a patrol supervisor and telephone communications to various family members to confirm the situation. By contrast, fire calls to this residence continued to receive a full first alarm response—9 units dispatched for a structure fire. The large responses put both first responders and the public at risk by the very nature of the response. Additionally, resources responding to the incident are no longer available for actual emergency calls.

This situation illustrates the advantages of local control and local coordination which in the end provides a better level of service to the citizens of Redmond. Even though information was shared with NORCOM and members of the Fire Department attended the situational meetings on the incidents, NORCOM's response to the situation was unchanged.

Larger events that have wide reaching impacts on the City and the region also provide an impetus for local control and coordination of first responders. In the event of an earthquake or other devastating incident, a coordinated response between fire and police will be crucial.

### *NORCOM—CAD Decision*

It is difficult to speculate with any certainty which direction NORCOM will pursue regarding a final determination on a CAD solution. At this time, NORCOM continues efforts and planning for the full implementation of New World. High-level milestones for the fire project are being continually re-assessed with new target dates for "Go Live" to be determined. The potential options facing NORCOM; stay with New World, migrate to TriTech, or purchase a new CAD all have implications on this project. Ideally, NORCOM will have settled on a CAD solution prior to this project moving forward and committing resources and capital. Additionally, should litigation become a reality, user agencies may have to support the financial impacts associated with such an action.



## *Operational Improvements for Redmond Fire*

Compared to the level of service delivered by NORCOM's predecessor, it is the position of Redmond Fire that NORCOM has provided and continues to provide a decreased level of service to the fire department.

It is further the position of Redmond Fire that the City of Redmond provides a high level of service delivery via the Redmond Fire Department. By contrast, NORCOM does not provide a comparable level of support. Ideally, the emergency communications center should provide a level of support that is commensurate with the level of service City of Redmond residents have come to expect.

There are a number of potential factors that have an impact to the level of service received by the Redmond Fire Department:

- Governance Structure
  - NORCOM's governance structure leads to a difficulty in making decisions.
  - Redmond Fire has little impact over operational issues
- Change Management
  - It is difficult and time consuming to initiate operational changes
  - Minor operational/procedural changes take unreasonable amounts of time to implement
- Technology
  - Two CAD systems at NORCOM
  - New World stability/reliability still a question for fire operations
  - Ongoing and continued technology costs could increase without input
- Staffing
  - Turnover rates at NORCOM
  - Staff are in constant training mode
  - Staffing shortages lead to increased overtime (increased fatigue and increase potential for errors)
  - Two CAD systems increases the potential for errors

Redmond Fire will benefit from a partnership with Redmond Communications. The level of direct involvement in daily operations will help to alleviate many of the issues mentioned above. Additionally, the Redmond Police Department's Communication Division will work closely with both police and fire to ensure service level meets the expectations of all parties. The benefits to Redmond Fire are outlined below:



<u>Redmond Fire Moves from</u>	<u>To</u>
Cumbersome governance	Effective/involved leadership
Cost uncertainties	Predictable cost estimates
Delays from call transfers	Reduced call transfers
Staff turnover	Staffing stability
Unpredictable product	Predictable high-quality product
Cumbersome change management	Streamlined change management
Minimal influence over decisions	Responsible for decisions

*Potential Revenue Sources for Redmond Police and Fire*

The following data is from NORCOM’s annual report and reflects the fees charged to each agency per call for service (CFS). Three agencies have expressed the possibility of leaving NORCOM; Eastside Fire and Rescue, Duvall Fire, and Snoqualmie Pass Fire. Potential revenue from each agency is included here; however, the feasibility team has no formal indication that these agencies would be interested in pursuing emergency communication services from the City of Redmond. Should this project move forward, formal executive level communications with these agencies are encouraged.

NORCOM’s Annual Report-2012

Redmond Fire	7,785 CFS	\$81.90/CFS full costs	\$67.97/CFS with smoothing
EF&R	7,171 CFS	\$81.90/CFS full costs	\$67.97/CFS with smoothing
Duvall	735 CFS	\$81.90/CFS full costs	\$67.97/CFS with smoothing
Snoqualmie Pass	228 CFS	\$81.88/CFS full costs	\$67.97/CFS with smoothing

\*Smoothing rebates expire at the end of 2016.

As a starting point, an average of the fees charged by NORCOM to fire agencies will be used here, \$86.86. This will provide rough estimates and guidelines for the purposes of the study. Calls for



service (CFS) were projected through 2031 using data from the previous ten years (Redmond Police and Fire 2003 – 3013). Two scenarios will be compared: one in which the interoperability solution (CAD-to-CAD) is utilized, and the second in which a new CAD is purchased (same as that being utilized at NORCOM). In both cases, revenues fall short of the total additional costs required for fire operations from \$981,446 to \$1,152,624. To simplify the comparison, Redmond Fire will be included in the revenue calculations.

<b>Potential Revenue and Costs 2017-2031</b>		
<b>Cost per Call for Service \$86.86</b>		
<b>Agency</b>	<b>Revenue</b>	<b>CFS*</b>
Redmond Fire	\$12,578,296	116,775
EF&R	\$11,584,762	107,565
Duvall Fire	\$1,187,394	11,025
Snoqualmie Pass	\$368,334	3,420
<b>Total Revenue</b>	<b>\$25,718,786</b>	
<b>Total Fire Operations Costs</b>	<b>Interoperability</b>	<b>New CAD</b>
	\$43,008,148	\$40,440,478
<b>Shortfall</b>	<b>\$17,289,362</b>	<b>\$14,721,692</b>
<b>Annual Shortfall</b>	<b>\$1,152,624</b>	<b>\$981,446</b>

\*Calls for Service projected through 2031

3 Additional agencies represent \$13,140,491 (2017 - 2031) or \$794,642 to \$957,423 Annually

### *Seattle Fire and Zone 1 Dispatching*

Recently the Seattle Fire Department provided information to some of the Zone 1 fire agencies on providing emergency dispatch services. The letter describes in brief the Seattle Fire Department’s ability to provide emergency dispatch services to Zone 1 for a projected cost of \$70 per CFS, assuming 36,000 CFS annually. While not exactly clear, the letter seems to imply that mutual aid would not be done automatically and that coordinating these events would occur at the dispatcher level for each of the PSAPs. Should this be the case, automatic mutual aid between Zone 1 agencies at NORCOM and Zone 1 agencies dispatched by Seattle Fire would no longer exist. This would essentially add delays to these requests. Routing of 9-1-1 to their primary PSAPs could prevent this from being an option.