

September 17, 1996

Introduced By:

RON SIMS

Proposed No.: 96-425

MOTION NO.

**9945**

1  
2 A SUBSTITUTE MOTION approving a workplan  
3 for development of a comprehensive radio  
4 plan for King County and authorizing the  
5 County Executive to expend \$180,000 in  
6 appropriated capital improvement funds  
7 for development of the comprehensive  
8 radio plan.

9 BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

10 SECTION 1. WHEREAS, King County now operates several  
11 major radio systems, including the 800 MHz system and the  
12 transit radio system, and

13 WHEREAS, critical functions within the county have  
14 pressing needs for data communications to support their  
15 operations, and

16 WHEREAS, King County radio systems require integration  
17 with other critical information systems, records management  
18 systems and communications dispatch systems, and

19 WHEREAS, wireless technologies are undergoing rapid  
20 changes and development, and

21 WHEREAS, the regulatory environment for radio frequency  
22 licensing is imposing new requirements with near and long  
23 term implications;

24 NOW, THEREFORE, BE IT MOVED by the Council of King  
25 County:

26 A. A workplan for development of a comprehensive radio  
27 plan that will enable King County to make the best use of

1 available resources and continue to provide high quality  
 2 radio communications services is hereby approved in  
 3 essentially the same form as attached.

4 B. The county executive is hereby authorized to expend  
 5 \$180,000 in appropriated capital improvement funds to develop  
 6 a comprehensive radio plan for King County in accordance with  
 7 the approved work plan.

8 PROVIDED THAT, the executive shall designate a lead  
 9 official to coordinate and implement the radio work plan and  
 10 shall identify this lead official to the Chair of the Law,  
 11 Justice and Human Services Committee within 60 days.

12 PASSED by a vote of 12 to 0 this 23<sup>rd</sup> day of

13 September, 1996.

14 KING COUNTY COUNCIL  
 15 KING COUNTY, WASHINGTON

16  
 17 Jane Hogue  
 Chair

18 ATTEST:

19 Gerald A. Peltier  
 20 Clerk of the Council

21  
 22  
 23  
 24 Attachments: Work Plan for the Development of a King County  
 25 Comprehensive Radio Plan (dated September 17,  
 26 1996)



**Work Plan  
for the Development of a  
*King County Comprehensive Radio Plan*  
September 17, 1996**

**Background**

The consolidation of King County and Metro combined two large organizations with a wide variety of wireless communication requirements. Key factors affecting the County in the area of wireless communications include:

- King County now has two major radio systems—the 800 MHz system and the transit radio system—in various stages of implementation and continued development;
- Critical functions within the county, such as King County Police, have pressing needs for data communications to support their operation;
- Data communications for King County Police involves integration with a computer aided dispatch (CAD) system and a police records management system;
- Transit's radio system is linked to several other information systems;
- Wireless technologies are undergoing rapid change and development;
- The regulatory environment for radio frequency licensing is imposing new requirements with near and long term implications;
- A relocation project for the King County E9-1-1 Center and the Emergency Operations Center (EOC) is underway;
- The transit communications center is located in a leased facility, and
- In response to their new mandates, county departments are making strategic decisions on capital and operating needs.

Given these considerations, King County Council adopted, in the fall of 1995, an ordinance requiring the development of a county-wide comprehensive radio plan. The ordinance suggests that a concerted effort to better use one or both of the radio systems could reduce the county's dependence on commercial communications systems (such as cellular phones), allowing increased communications capabilities and lower cost. The primary goal of the Comprehensive

Radio Plan is to establish a strategic direction that will ensure King County's ability to continue to provide high quality voice and data radio communications for public safety, transportation and general county administration. This document outlines the project objectives, organization and scope of work.

### **Objectives**

The Comprehensive Radio Plan has seven objectives:

1. To identify the radio system infrastructure necessary to support mobile data terminals, working in conjunction with the Department of Public Safety;
2. To identify and prioritize King County's other immediate and long range needs for wireless voice and data communications across all county departments, including integration requirements related to data systems;
3. To develop a radio spectrum management plan that addresses current and future radio spectra resources, including strategic planning for use of new 800 MHz and existing lower frequencies that will be available as functions move to the 800 MHz system. This plan should address legal or policy constraints, regulatory changes and new technological opportunities beyond the existing systems, including the utilization of PCD frequencies for the transmission of complex data;
4. To recommend a strategy for the effective use of existing, mid-range frequency radio handsets across all county departments;
5. To identify a range of options for work redesign, joint operation, coordination or possible consolidation between the existing transit and King County radio systems, radio maintenance groups, equipment and facilities, including the potential costs, advantages and disadvantages of each option and to present this information to the Department of Construction and Facility Management to assist that department in their assessment of technology infrastructure costs when county facilities for agencies are relocated, constructed or leased;;
6. To provide final recommendations on work redesign, reorganization, systems management, continued integration and permanent capital facilities requirements that offer the best and most effective use of King County's resources; and
7. To better integrate all radio operations to facilitate and coordinate communications during natural disaster emergency response and to ensure that all regionally important agencies such as the National Guard and the Washington State Patrol would be able to effectively communicate under such circumstances.

## **Project Organization**

The Comprehensive Radio Plan will be developed by a combination of internal and external resources, including a steering committee, a management team, a project manager, technical teams and, as needed, outside consultants. Staff support from the Departments of Transportation, Information and Administrative Services, Public Safety and other stakeholder groups will be used wherever possible. However, recognizing current workloads, it is possible that a significant portion of the overall work will be performed by a consultant or team of consultants.

The project manager will provide day to day coordination, manage the consultant's work effort, track work assignments and project timelines, manage the project budget, prepare and circulate draft documents for review and comment, facilitate meetings and provide progress reports to the management team and the steering committee. The project manager will report to the management team.

Project sponsorship and direct oversight will be provided by a management team including the manager of the Emergency Management Division, the manager of Transit Power and Facilities and a representative from the Department of Public Safety. These parties will provide management guidance, review and approve progress reports, and assist in project briefings and presentations. The management team will ensure that the needs of each department are being recognized and properly addressed.

The steering committee will consist of the directors of the departments of Information and Administrative Services, Transportation, Public Safety, the general manager of the Transit Division, a representative of the County Executive's office and a Council member or designee. The steering committee will provide oversight for policy development and conditional approval for completed products. Since the Comprehensive Radio Plan is being developed in response to a Council proviso, the final product will be forwarded to the Executive and County Council for final acceptance.

The number, nature and composition of technical teams participating in the development of the Plan is yet to be determined. However, the role of the technical teams will be to provide documentation on system designs, identify operational and maintenance issues, review draft materials and contribute options and recommendations to the Plan. Technical teams should include representatives from the various customer groups that use the existing radio systems; or from agencies which would most benefit by migrating from commercial systems to a county radio network ; or from agencies planning to install remote access computer systems, such as DDES, Public Safety and the Assessor. Some stakeholders may serve on multiple teams.

A partial list of stakeholder groups includes:

- Department of Public Safety
- Emergency Medical Services
- Office of Emergency Management
- Radio Communications Services

- E911 Program Office
- Transit Operations
- Transit Radio Maintenance
- Assessor
- Natural Resources
- Development and Environmental Services
- Airport
- King County Budget Office
- Transit Budget staff

The role of the consultant will be fully specified in the consultant RFP. Examples of possible duties include: defining information needs, interviewing stakeholders, participating in technical meetings and focus group discussions, synthesizing data and developing technical recommendations, technology assessment, feasibility studies, project reports and other documentation.

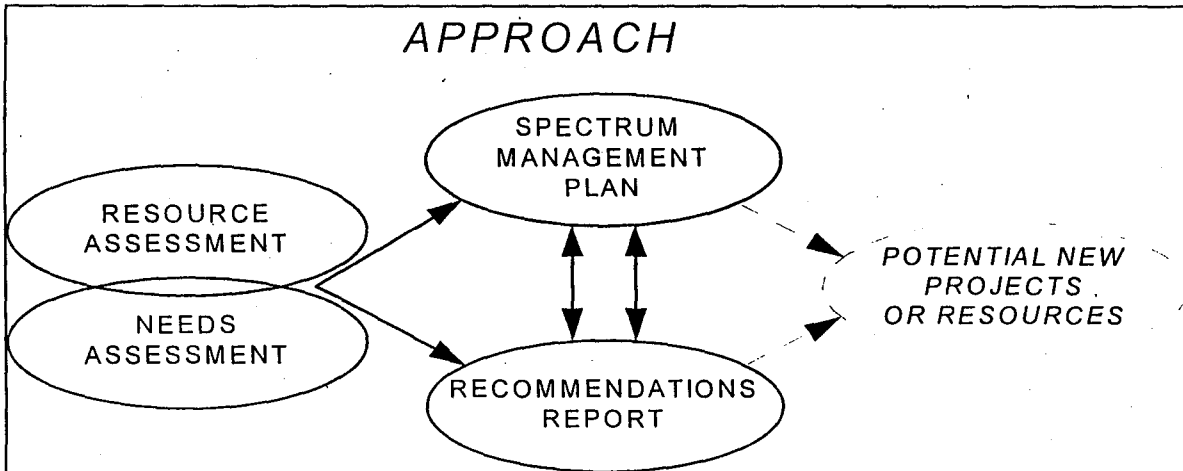
### **Scope of Work**

The development of the Comprehensive Radio Plan will be comprised of three phases, and produce three major deliverables:

- A Resource and Needs Assessment;
- A Spectrum Management Plan; and
- A Recommendations Report.

The Resource and Needs Assessment will identify the County's fundamental voice and data business requirements and wireless communications resources. This information must be gathered to establish the criteria and parameters for the Spectrum Management Plan and the Recommendations Report—two closely related documents that will be discrete products of the comprehensive radio planning effort.

The Spectrum Management Plan will establish County policy and priorities for the management of wireless spectra. It also will identify an organizational body responsible for this oversight or a process for the approval of new wireless projects. The Recommendations Report will be aimed at identifying a variety of technical, functional or organizational changes that may be appropriate, given the County's recently expanded scope of wireless communications. It is also possible that the need for new projects or other resources may be identified. This approach is illustrated below.



### Resource and Needs Assessment

The Resource and Needs Assessment will provide:

- A comprehensive inventory of current radio-related resources at King County's disposal, including frequencies, infrastructure, staffing, maintenance facilities and equipment and annual operating costs;
- A catalog of King County's voice and data communications requirements, including current operational needs and anticipated future opportunities;
- A summary of areas where current resources do not match current and anticipated needs, that might require work redesign, new resources or spin off new projects; and
- Statements of the policy constraints, management interests and strategic issues facing King County for the operations and management of wireless communications.

Since resources and business requirements are always closely related, it is anticipated that the assessments of both areas will be conducted simultaneously, or at times in parallel efforts. A substantial amount of resource information is available for synthesis. Close coordination with related projects that are already underway will be required.

Some unmet or anticipated business needs, such as that of King County Police for mobile data terminals, are already identified. Other needs may be discovered during the course of the assessment. In any case, the two discussions should not occur in isolation from each other. A thorough investigation of resources should identify how those resources currently are being applied, whether new resources are required or whether current systems or work processes should be redesigned. Some representative questions to be addressed in the Resource and Needs Assessment include:

- **Voice and data communications requirements.** What County business requirements are served by the current voice and data systems? Who are their current users? Are new user groups anticipated? How are their voice and data communications needs related? Are these needs expected to change? What are the functional and business relationships between various user groups? Are there any functional changes anticipated that will have an effect on voice or data radio usage?
- **Radio frequencies.** What are the current uses for all radio spectra at the County's disposal? Are any frequencies underutilized? Are current radio frequency resources adequate for future needs? Could or should any frequencies be converted to other uses? What are the associated costs and impacts?
- **Infrastructure.** What is the current infrastructure supporting King County's radio systems? What sites are employed and why? How are they linked? What are the similarities and differences between the two systems? What kinds of subsystems and technologies support the radio infrastructure?
- **Maintenance facilities and staffing.** What is the current maintenance workload for each system? How is maintenance related to the operational groups served? What maintenance facilities are currently provided? What test equipment is included? What other equipment is used? What level of maintenance staffing is currently provided for each system? What functions are performed by each position? How are current maintenance requirements expected to change in the near term or long term?
- **Technology opportunities.** Beyond current radio systems, what other wireless communications requirements currently exist within the County? What kinds of wireless technology resources will be available in the foreseeable future? How might King County staff apply these technologies? Is there a need for new systems or infrastructures to support those technologies? Is any impact anticipated on current systems?
- **Integration requirements.** Do current radio systems have interfaces to other information systems? How do they operate? What future integration requirements are anticipated? What are the potential integration issues that might be encountered with the adoption of other new wireless technologies?
- **Operational issues.** What are the primary functions of the operational groups served by each radio system? How are they different or similar? Are they anticipated to change? What is the status of their current location, and how is it changing? What geographical or other criteria are involved in their choice of a new location?
- **Regulatory environment.** What are the current regulatory processes or constraints that affect our system operations? What regulatory changes are expected in the near term or long term? How are they anticipated to affect each of the current systems? How will they impact future system designs and development?



- **Emergency communications.** How can all radio communications best be coordinated for emergency response in the event of a natural disaster? What investments will be needed to ensure maximum coordination?
- **Related projects.** What other projects are related to the current radio systems? What are their requirements and impacts?

#### Spectrum Management Plan

Although a common definition of "spectrum management" might simply include conventional radio, the rapid pace of technological and regulatory change suggests that perhaps the term should be more widely defined. The Spectrum Management Plan will establish King County policy and strategies for the management of current spectra and new wireless technologies.

Questions to be addressed in this phase of the Plan include:

- What is the proper scope of "spectrum management?"
- What is the current technology direction for wireless voice and data communications?
- What is the current regulatory direction for voice and data communications?
- Organizationally, how should spectrum management be directed?
- What steps should be taken immediately to avoid abandonment of King County frequencies for operations which have or will migrate to 800 Mhz systems? Which (if any) of these frequencies should be abandoned, or do they have other uses?
- Given the technology available, regulatory environment, frequencies available and outstanding voice and data communications needs, what is the best use of the frequencies at King County's disposal?

#### Recommendations Report

The Recommendations Report will provide decision makers with a range of options for the ongoing operation and management of wireless communications within King County. The report will focus on how to meet the County's changing communications needs, while maintaining high quality operation in the most cost-effective manner. Both near and long term operating and capital budget impacts will be evaluated in the context of the County's critical business requirements.

Options addressed in the report will include:

- Work redesign for operational groups or maintenance functions based on the Resource and Needs Assessment and recommendations from stakeholders;
- Opportunities for coordination, joint operation or consolidation of the two radio systems or maintenance groups, and their potential budget effects (including projected 6-year capital improvements);
- Opportunities for potential operational cost savings based on reduced use of cellular phones or other commercial systems, if county-owned alternatives are available;
- Options for system redesign or modification; and
- Potential needs for new projects or new resources to meet King County's changing wireless communications needs.

Copies of the project budget and project schedule are attached.



**Project Budget**  
*King County Comprehensive Radio Plan*

The Comprehensive Radio Plan is a Council-mandated effort to identify strategic capital and operating decisions and make a series of recommendations for the future deployment of wireless voice and data communications within King County. The project scope of work is described in the project work plan, that was submitted for Council approval on May 1, 1996.

The budget assumptions for this project are as follows:

- Project work will be divided between internal staff and an outside consultant or team of consultants, to be identified by an RFP process.
- The cost for the consultant contract is assumed not to exceed \$100,000. However, the actual total will be based on responses to the RFP and subsequent contract negotiations.
- An existing County employee will serve as project manager on a half-time basis, for the anticipated 18-month duration of the project.
- Many County departments will be represented on technical teams, and will contribute their support as part of their ongoing operating budget.
- Ten percent of the project budget will be used as a contingency or for additional staff support, depending on the final cost of the consultant contract.

Detailed budget information for the project is as follows:

<u>Item</u>	<u>Assumption</u>	<u>Amount</u>
Project manager salary	\$30/hr @ .5 FTE for 18 months	\$47,000
Project manager benefits	30%	\$14,100
Office supplies/printing	Incidentals & 80 copies/100 page report	\$700
Postage/courier charges	Incidental mail & 3-4 special deliveries	\$200
Consultant support	Staff work @ 22 hrs/wk, 52 wks, \$85/hr	\$100,000
Contingency/additional staff	10%	<u>\$18,000</u>
	<b>TOTAL</b>	<b>\$180,000</b>