BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF ENDORSING A TRI-MET GRANT APPLICATION FOR A RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROJECT	RESOLUTION NO. 90-1296 Introduced by George Van Bergen, Chair, JPACT

WHEREAS, The Urban Mass Transportation Administration (UMTA) is authorized to undertake research, development, and demonstration projects (Section 6) in all phases of urban mass transportation; and

WHEREAS, Tri-Met has been encouraged by UMTA to participate in such a project; and

WHEREAS, The project calls for an implementation analysis for a Flexible Operations Command and Control System (FOCCS) as detailed in Exhibit A; now, therefore,

BE IT RESOLVED:

That the Council of the Metropolitan Service District hereby declares:

1. That the grant application of Tri-Met for a Section 6 research, development, and demonstration project is hereby endorsed:

UMTA Funds	$54,000
Tri-Met Funds.	36,000
	$90,000

2. That the Transportation Improvement Program be amended to reflect these actions.

3. That the Council of the Metropolitan Service District finds the project in accordance with the Regional

Transportation Plan and hereby gives affirmative Intergovernmental Project Review approval.

ADOPTED by the Council of the Metropolitan Service District this 26th day of July, 1990.

Tanya Collier, Presiding Officer

RES. 90-1296
BP:lmk
6-28-90

EXHIBIT A

AN IMPLEMENTATION ANALYSIS FOR A FLEXIBLE OPERATIONS COMMAND AND CONTROL SYSTEM (FOCCS) IN PORTLAND, OREGON

SUMMARY

Tri-Met is seeking an UMTA-funded grant to (1) conduct a critical review of a West German automated command and control system that integrates fixed-route transit, dial-a-ride minibus, and contract taxi services, (2) evaluate the technical and economic feasibility of adding audiotex/videotex components, carpool matching capabilities, and Intelligent Vehicle Highway System (IVHS) components to the system, (3) evaluate the technical requirements to add a FOCCS component to Tri-Met's central control plans, (4) evaluate the cost-effectiveness of FOCCS in Portland's rapidly growing suburbs and other low density areas, and (5) design an operational test for those components which would be suitable for the Portland area.

BACKGROUND

The Americans with Disabilities Act and increasing demands for elderly and disabled services will require a greater integration of fixed-route and door-to-door services. Additionally, a Tri-Met survey found that less than one percent (1%) of commuters who live and work in Portland's suburbs use public transportation to get to work. This low transit ridership rate, combined with high population and employment growth rates and limited resources for new road construction means that traffic congestion will be a growing problem in Portland's suburbs during the next few years unless something is done now.

Although Tri-Met's bus and rail transit services are doing a good job in reducing the use of cars for commuter trips within Portland's city limits and for trips between the suburbs and downtown, these fixed-route transit modes alone are not well suited for many trips within the suburbs and to business parks. The costs of fixed- route bus and rail are too high unless smaller local and feeder services are available.

During the past decade, the Federal Republic of Germany (West Germany) developed the Flexible Operation Command and Control System (FOCCS) that integrates several fixed-route transit and flexible-route paratransit transportation services. FOCCS utilizes computer terminals at numbered checkpoints (e.g. bus stops, shopping centers, train stations, ferry terminals) to collect trip requests (e.g. origin checkpoint number, destination checkpoint number, size of party) from riders. Based on historical travel patterns, the FOCCS central computer assigns the most cost-effective transit or paratransit vehicle available to pick up the waiting passengers at the checkpoint. The vehicle's description, scheduled arrival time and other pertinent information are transmitted back to the waiting passengers via the computer terminal. FOCCS also uses "smart cards" for billing and/or security purposes.

Tri-Met cosponsored a seminar on FOCCS in Portland by a team of West German transportation experts in 1987. Although the ridership gains and the cost reduction benefits of FOCCS in West Germany are impressive, it is not clear that comparable gains could be achieved in the United States without some important modifications. West German cities have fewer automobiles per capita and higher gasoline costs and greater population densities than Portland and most other U.S. cities. Pending requirements to increase door to door service to the disabled along with recent developments in computers and telecommunications, however, may make it possible to modify FOCCS and develop a command and control system that is cost-effective for U.S. cities and counties.

One area of technology which may prove beneficial to transportation management is audiotex/videotex. During the past decade, newspapers, banks and other companies in the United States have established audiotex and videotex operations to provide business and residential users with a wide variety of new information services (e.g. home-banking, teleshopping, electronic mail, sports scores, weather forecasts, transit schedules) over ordinary telephone lines. Audiotex patrons use touchtone telephones to directly enter and receive information from remote computer systems. Videotex patrons use either computer terminals or personal computers (PC's) to directly enter and receive this information. **Prodigy**, a joint venture between IBM and Sears, has recently started offering videotex services in the Portland metropolitan area.

Also, during the past year, the U.S. Department of Transportation (USDOT) announced its support for a greatly expanded Intelligent Vehicle-Highway Systems (IVHS) program. IVHS is an umbrella term for a group of technologies that use computers, telecommunications and electronics to improve mobility and reduce congestion, air pollution, gasoline consumption and traffic accident rates. IVHS now includes the use of videotex and audiotex technologies in Advanced Traveller Information Systems (ATIS) that can provide the public with timely and accurate information about alternative transit, paratransit, taxi and ridesharing services. FOCCS is one example of an IVHS/ATIS application.

OBJECTIVES

The first objective of this project is to conduct a critical review of FOCCS and its applicability to Portland and other U.S. cities. This supports the National Transportation Policy (NTP) plan "to learn of and share information about innovative transportation technologies and operations being delivered around the world".

The second objective is to determine if FOCCS would be a good foundation on which to build a public transportation (including taxi and ridesharing) command and control system for Portland and/or the U.S. market. West Germany has invested years and many millions of dollars developing and testing the FOCCS software. Although FOCCS does not support rideshare matching features, audiotex/videotex inquiries, or IVHS components at present, the U.S. may be able to save considerable time and money by adding these features to FOCCS rather than starting the design and development of a public transportation command and control system from scratch.

Tri-Met is at an appropriate point to consider FOCCS application because Tri-Met is presently implementing a central dispatch operation for all elderly and disabled services in the three-county Portland metropolitan area. A study will commence soon to evaluate the creation of a centralized operations control for light rail, bus, paratransit and customer information. This centralized control study will include an assessment of state of the art dispatching and automatic vehicle locating (AVL) systems, key components to any operation command and control system.

A third objective will be to determine if a modified FOCCS could provide cost-effective alternatives to the single occupancy vehicle in Portland's suburbs, business parks, and low density areas. The Suburban Transit Study concluded that in Washington County, only 0.6% of home based, non- work trips and 0.9% of work trips within Washington County are made by transit. And as much as this demonstrates the failure of transit to serve the suburban market, it also demonstrates the opportunity for non-traditional modes to tap this large market. The question is whether FOCCS program could tap this market in a more cost effective way than present alternatives allow.

A fourth objective is to determine what hardware and software and operating requirements would be necessary to incorporate the West German command and control system, or similar system, into the paratransit central dispatch or the planned centralized operation and control for all of Tri-Met's service.

A final goal is to develop a plan for an operational test of a modified FOCCS system for a portion of the Portland area. There are numerous communities within the Portland metropolitan area which would be conducive to a test of a FOCCS type system. Some analysis must take place to determine if factors such as local services, localized commuting to employment, an active senior center and a cooperative telephone company are available. These and other factors would increase the liklyhood that a small scale test would be indicative of a larger example.

FINAL REPORT

A report addressing these issues will be written and specifically include:

1) An analysis of the present capabilities and cost-effectiveness of FOCCS.

2) An assessment of the cost, time and problems to add the following specific capabilities to FOCCS.

   a) rideshare matching
   b) audiotext/videotext inquiry
   c) other IVHS features

3) An evaluation of the cost-effectiveness of FOCCS in Portland with and without a, b and c above.

4) An assessment of how FOCCS could be integrated with the Paratransit Dispatching Operation and/or Tri-Met's planned Centralized Operations Control.

5) A plan for testing the FOCCS program.

PROPOSED FEDERAL/LOCAL MATCH

$ 54,000	UMTA Funds	60%
36,000	Tri-Met Funds	40%
$ 90,000	Total	100%

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 90-1296 FOR THE PURPOSE OF ENDORSING A TRI-MET GRANT APPLICATION FOR A RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROJECT

Date: June 28, 1990 Presented by: Andrew Cotugno

PROPOSED ACTION

This resolution would endorse Tri-Met's grant application for an Urban Mass Transportation Administration (UMTA) Section 6 research, development, and demonstration project:

UMTA Funds	$54,000
Tri-Met Funds.	36,000
	$90,000

TPAC has reviewed this project and recommends approval of Resolution No. 90-1296.

FACTUAL BACKGROUND AND ANALYSIS

UMTA is authorized to approve grants to undertake research, development, and demonstration projects (Section 6) in all phases of urban mass transportation including the development, testing and demonstration of new facilities, equipment, techniques and methods.

UMTA has encouraged Tri-Met to participate in a Section 6 project for the implementation analysis of a Flexible Operations and Command and Control System. The West German version to be studied integrates several fixed-route transit and flexible-route paratransit transportation services using highly innovative techniques.

A complete description of the proposed project is detailed in Exhibit A to the resolution.

INTERGOVERNMENTAL RELATIONS COMMITTEE REPORT

RESOLUTION NO. 90-1296, ENDORSING A TRI-MET GRANT APPLICATION FOR A RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROJECT

Date: July 11, 1990 Presented by: Councilor Devlin

COMMITTEE RECOMMENDATION: At the July 10, 1990 Intergovernmental Relations Committee meeting, Councilors Gardner, McFarland and myself voted unanimously to recommend Council adopt Resolution No. 90-1296. Councilor Bauer was excused.

COMMITTEE DISCUSSION/ISSUES: Transportation Department Director Andy Cotugno presented the resolution which allows Tri-Met to apply to the federal Urban Mass Transportation Administration (UMTA) for a $54,000 grant to evaluate a West German computer-controlled bus dispatching system. Tri-Met will contribute $36,000 for a total $90,000 project to analyze implementation of a "Flexible Operations and Command and Control System." UMTA supports Tri-Met's project which qualifies as an UMTA Section 6 research, development and demonstration project.

Responding to Committee questions about the evaluation process, Mr. Cotugno explained the grant will fund Tri-Met's investigation of the system's application for handicapped and lift services. This will not be a pilot project; additional funding would be required for that type of work.

The Committee raised no additional issues or questions about the resolution or Tri-Met's application.

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