RETURN TO → DIRICK

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S.W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

INTERSTATE BRIDGE CORRIDOR PROJECT

TASK FORCE MEETING

JULY 25, 1975, 10:00 a.m.

Commissioners' Conference Room
Court House
1200 Franklin Street
Vancouver

A-G-E-N-D-A

I. Call to Order

II. Approval of Minutes

III. Legislation Report

IV. Staff Notes on Final Report

V. Review and Adoption of Final Report

VI. Adjournment

COLUMBIA REGION ASSOCIATION OF GOVERNMENTS

Memorandum June 26, 1975

To: Reed Gibby

From: John Krawczyk

Subject: Minutes of Project Task Force Meeting June 20, 1975

Five people were in attendance in the meeting, one staff person plus committee members Bill Dirker, Bob Bothman, Bob Overhulser from Regional Planning and Pat Blackwell who chaired the meeting.

Reading of the minutes of the previous meeting was dispensed with. The minutes were then approved.

Staff discussed the progress of transit planning and transit legislation in Washington State. Bob Overhulser from Regional Planning noted that it was likely that the Governor would not veto the existing transit legislation. To lend their support to this legislation the Task Force adopted the following resolution:

WHEREAS transit service is not presently available to persons residing in the unincorporated urbanized portions of Clark County; WHEREAS transportation in the I-5 Corridor is presently seriously congested; WHEREAS public transit service in the I-5 Corridor represents the most feasible means of aleviating this congestion; WHEREAS the public transit bill as approved by the Washington State Legislature provides the most feasible means on financing transit service in Clark County and related service in the corridor; BE IT RESOLVED THAT the Governor of the State of Washington promptly approve this bill.

The direction for the writing of the final report was then discussed. Four recommendations were suggested to be included in the final report. These include: 1) Tri-Met shall aquire Vancouver-Portland Bus Company at the earliest possible date; 2) A transit district be forned in Clark County; 3) Tri-Met and the transit district coordinate to provide service in the Interstate 5 Corridor and 4) Priority lanes be developed within the I-5 Corridor. All of these recommendation would have sub-elements that would provide a fair degree of detail as to how all of these recommendations are to be accomplished. A fifth recommendation was also suggested that is that the activation of the corridor development planning should proceed.

A five chapter report was recommended by the Task Force. Chapter One would provide background on the study. This would include a discussion of the work program, a discussion of previous efforts in Phase I and a discussion of the need for transit in the corridor. Chapter Two would deal with legislation on the federal level in the State of Washington and in the State of Oregon relating to transit service in the I-5 Corridor. Chapter Three would present the planning efforts which have taken place of todate. This would primarily be a discussion of scenarios

one and two. Chapter Four would discuss the results of the priority lane analysis as conducted by the staff. Chapter Five would summarize the report presenting a series of conclusions and recommendations.

It was suggested that most of the report be written in layman's language. The report should be kept small and technical appendicies should be used to provide data that is technical and major.

Tri-Met acquisition of Vancouver-Portland Bus was also discussed. Several possibilities for rapid implementation of corridor service were discussed including financing the service out of the farebox and obtaining a demonstrate project grant to provide a service subsidy.

The Task Force recommended that a draft of the report be sent to them prior to the next meeting date. A meeting date of July 25th was suggested and it was recommended that the report reach committee members no later than the 21st of that month.

Having no further business the meeting was adjourned.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

TO: Project Task Force

FROM: Project Staff

SUBJECT: Staff Notes on Final Report

Enclosed herewith are staff notes which will form the basis of the final report. In addition there is a review and adoption schedule of the final report (figure A).

These notes are being transitted to you for review and comment. While the material is very rough, staff is particularly interested in the format of the notes and ideas expressed. You will receive a draft of the final report at the end of the month for detailed review.

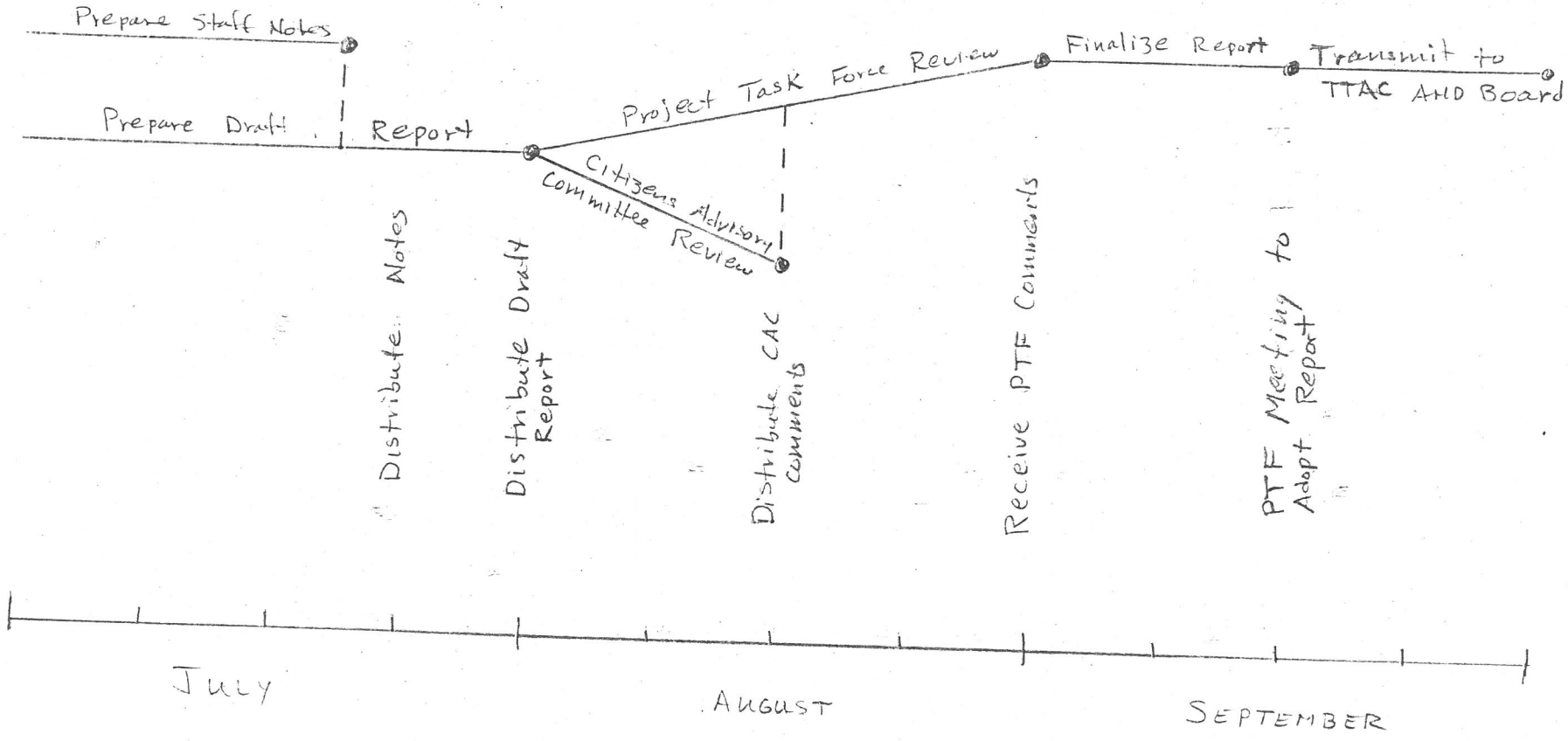


Figure A Review and Adoption of I-5 Corridor Project Final Report.

STAFF NOTES

INTERSTATE BRIDGE CORRIDOR PROJECT

FINAL REPORT

CONTENTS

I INTRODUCTION

General Comment - WRITE WITH THE UNFAMILIAR READER IN MIND. - AVOID BUZZWORDS, INITIALS, ETC ('HOV') THIS EVENTUALLY MUST CARRY MEANING AND IMPACT TO A VARIETY OF LOCAL, STATE AND FEDERAL PUBLIC & PRIVATE PERSONS.

A high degree of mobility is something that has come to be expected by most persons living in the Portland-Vanouver Metropolitan Area. Mobility in our society is necessary in most cases to obtain and keep a job, to obtain an education, for shopping, to procure professional services and to engage in recreational activities. Rare is the person who can walk to his place of employment and have all the necessary services within walking distance of his or her home. In fact, persons without means of travel, other than walking, find themselves socially and economically handicapped. UNDERSTATED

Presently, most of our transportation service is provided by the private automobile. The problems associated with a strong dependence upon the automobile are so well known that they need little restating at this point. Concerns over energy, and air pollution require that our society lessen its dependence on this mode of transportation.

Certain problems exist in the Portland-Vancouver Metropolitan Area which also require reduced dependence on the private auto. The Interstate Bridge Corridor, which contains the Interstate-5 Freeway between downtown Portland and Vancouver, represents one of the most severe traffic problems in the metropolitan area.

Interstate 5 is the major north-south interstate highway on the pacific coast, connecting nearly all the larger west coast cities. I-5 is thus a major national highway corridor of significant commercial importance. only?

The Portland-Vancouver Metropolitan area is compsoed of four counties, including three counties in Oregon and one county in Washington. Clark County the county in Washington, is separated from the remainder of the metropolitan area by the Columbia River. Approximately 13,000 Clark County residents work on the "Portland side" of the river. Over 4,000 Oregon residents are employed in Clark County. In addition, Clark County and the remainder of the metropolitan area have significant social, economic, and cultural ties. At this time Interstate 5 provides the only highway link across the Columbia River in the metropolitan area. No other river crossings exist either up or down river for about 50 miles. A second river crossing about 7 miles up stream from the present Interstate Bridges is committed, but completion of this facility is not anticipated until the early 1980's.

CLARK COUNTY HAS —— POPULATION OF —— % OF THE TOTAL BORDER AREA.

THE 4 COUNTIES, IN FACT, CONTAIN A UNIFIED URBAN SYSTEM.

The combination of high daily volumes of commuter traffic, Interstate 5's role as major national highway and the absence of any alternative river crossings within reasonable commuting distance, creates very congested conditions in the corridor, particularly during the peak periods. The problems is further complicated by the fact that the Interstate Bridges are draw bridges and must be raised several times daily to permit river traffic to pass underneath. Until the new Interstate 205 Bridge is completed, the traffic situation in the I-5 Corridor will continue to deteriorate pending measures to reduce the numbers of vehicles using the corridor. (A complete description of the traffic conditions in the corridor is contained in the Interstate Bridge Corridor Project Phase I Report.)

THE COLUMBIA RIVER IS ONE OF THE NATION'S LARGEST RIVERS AND IS THE MAJOR TRANSPORTATION ARTERY FOR A LARGE PART OF THE PACIFIC NORTHWEST.

To reduce auto traffic in the corridor, it has been suggested that

the people moving capacity of the I-5 facility be increased. Specifically this includes provision of priority treatment for high occupancy vehicles (buses and carpools) and creation of a unified public transit system in the corridor. Presently transit service in the corridor is fragmented as it involves two public and two private carriers. Transit service is therefore very costly and time consuming for the commuter which partically explains why the modal split in the corridor is less than 1%. (Phase I Report page 20)

A unified public transit system has been recommended to alleviate this service fragmentation. In addition, the SINGLE public system would be able to provide lower fares, better equipment, ~~and~~ more extensive marketing than the ~~private~~ SEPARATE carriers now operating in the corridor. AND BETTER QUALITY OF SERVICE

The private carrier is unable to significantly improve his service because he must operate only with fare box revenues. A publicly owned carrier on the other hand, receives tax subsidies enabling the public carrier to improve service where fare box revenues will not meet costs. PROVIDING INTERSTATE SERVICE

PERHAPS INSERT A 1 OR 2 SENTENCE DESCRIPTION OF THE 4 SERVICES IT MIGHT BE ILLUSTRATED BY A SCHEMATIC DRAWING.

Improved service within the corridor is only a partial answer. A feeder system that can serve the needs of commuters living in Clark County, is essential to a sucessful corridor service. Presently Clark County is served by three transit carriers, one public and two private. The public carrier (Vancouver Transit) is authorized to provide service only within the Vancouver city limits. Vancouver Transit operates on six routes, providing basic transportation service to the city's residents. While this system interfaces with the private carrier, which presently operates the bus lines in the

corridor, the relatively long headways, lack of a reduced cost transfer provision between the two lines, and the nature of the Vancouver Transit System routings make Vancouver Transit a relatively poor feeder service.

Vancouver-Portland Bus Company (a privately owned carrier) is the principle transit service operating in the corridor. Evergreen Stage Lines also operates in the corridor, but is not authorized to transport persons between downtown Vancouver and Portland. This carrier provides service between Camas, Washougal, Vancouver and Portland. SEEMS CONTRADICTORY TO PREVIOUS SENTENCE.

Interstate 5 Project Work Program

To address the significant transportation problems of the Interstate Bridge Corridor, the Interstate Bridge Corridor Project was developed in late 1973. Phase I of the report suggested low cost interim solutions to the traffic problems of this corridor. Phases II and III were to develop a longer range solution to the corridor transportation problems.

After the findings of the Phase I report were examined, it was decided to focuss the remainder of the project's attention on developing a plan for a unified transit system in the corridor and in Clark County, and analyzing the impacts of a high occupancy vehicle lane in the corridor. A third element, long range planning for the corridor will be part of the CRAG Transportation Department's 75-76 fiscal year work program. IS IT? IF IT IS NOT IN THE 7/22/75 "PROGRAM FOR TRANSPORTATION PROJECT DEVELOPMENT".

Element A (the transit element) addresses the designation of service area, identification of potential routes, system financing and

CONFUSING - IS THIS "ELEMENT A" OF PHASE I? OR OF THIS REPORT? IF THIS REPORT, RELATE

system administration. The work program for Element A was supervised by the consolidated transportation staff of Clark County (CTS).

Element B (Priority Treatment Analysis) examined the plausibility [FEASIBILITY?] of providing priority treatment for HOV (buses and carpools) on the ~~FAI~~-5 facility. A volume analysis was conducted to determine the usage of an HOV (SPILL OUT) lane on FAI-5 between Portland Blvd and Hayden Island. A survey of accident records of auto and buses was conducted to estimate possible safety consequences. An extensive quality study was made of non-traffic impacts. In addition, issues in law enforcement and carpooling was examined.

Element C (Medium Range Corridor Planning) was prepared by ODOT.

The remainder of this report describes the findings and recommendations of the Project Task Force in regards to the development of the Unified Transit System and the priority lane analysis.

ROUGH DRAFT

This should deal with both states - and How They MUST BE MESHED TO PRODUCE THE DESIRED "UNIFIED" SYSTEM.

~~Chapter 2~~

~~I-5 Project Final Report~~

II TRANSIT FUNDING IN THE STATE OF WASHINGTON

~~Legal Considerations for Operations and Funding of Transit Systems~~

The operation of publically owned transit systems in ~~the states of~~ Washington and Oregon is regulated by state law. In addition, certain federal ~~regulations~~ assistance programs make publically owned transit systems eligible for federal funds, therefore restrictions placed upon local transit operating agencies by federal and state regulations are extremely important in the operation of this system.

In the State of Washington, prior to 1974, only cities and King County (Seattle) had the authority to establish and provide public transit service.

Cities were authorized (under RCW ~) to levy a household utility tax for the support of transit. This tax is ~~authorized~~ to be levied on all households in the city and is limited to a maximum charge of $1 per household per month. Operations of ~~such~~ these transit systems are restricted to service within the city limits.

Household utility tax collections are matched with state receipts from the motor vehicle excise tax. The state had originally been authorized to match local collections on a dollar for dollar basis. However, a limit was placed on the dollar amount for ~~these tax receipts~~ which could be used to match local funds for transit service. Thus, the motor vehicle excise tax has to this point provided cities with somewhat less than a ~~dollar for dollar~~ full match.

In 1974, Washington State law was amended to permit counties to operate transit systems. The legislation stipulated that the system was to be financed through a county wide, 3/10 of one percent general sales and use tax. Policy for the system was to be made

by a board comprised of the county commissioners, the mayor of the largest city, a representative of cities with more than 5,000 population, and a mayor chosen by cities of less than 5,000 population. The transit authority could be formed by a majority vote of the county commissioners. However, funding through the 3/10 of one percent sales tax would be permitted only after its approval by a vote of the people.

In the 1975 legislative session, substantial modifications were made in this law. These changes modified the manner in which counties form transit agencies, create service areas, and provide financing for the transit service. The new legislation has given the cities and counties four means of funding transit systems. These include: 1) Imposition of a 1/10, 2/10 or 3/10 percent general sales and use tax; 2) Imposition of a business and occupation tax; 3) Imposition of a household utility tax of up to one dollar per household per month; 4) A combination of ~~two~~ 2 and ~~three~~ 3. While the business and occupation (B&O) tax and household utility tax (HUT) may be used in combination, the sales tax must be used alone. Imposition of any of these taxes is of course subject to a vote of the people.

The B&O ~~tax~~ and the HUT are eligible for a motor vehicle excise tax match. The sales tax is not. Previously, taxes for transit service had to be levied uniformly throughout an entire city or an entire county as noted above. Under the 1975 legislation, a public transit benefit area (PTBA) may be formed to provide transit service in areas larger than a city and smaller than a county. Each county is permitted to establish one PTBA. A single PTBA can be established in two or more counties. The boundaries of the benefit area must be contiguous and may not contain islands of teritory not included in the PTBA.

For purposes of representation, the PTBA must include or exclude entire cities. If only a portion of a city is included, the city may not be represented on the PTBA governing body.

The means of Representation on the governing body is to be determined by the jurisdictions involved in the PTBA. Single county benefit areas are limited to a nine member governing body. Multi-county areas may have up to a 15 member board. Cities not included in the transit benefit area may send a non-voting representative to the governing body to represent their interest.

Prior to the formation of a PTBA, a public transportation improvement conference is to be held. The conference shall be attended by representatives from the county and each of the cities in the county. The conference shall determine the desirability of establishing a public transportation benefit area.

After completion of the initial conference, a public hearing shall be held. Prior to the convening of the hearing, the local legislative body shall advise the county governing body of their desire to be included or excluded from transit benefit area.

Following the conclusion of the hearing, PTBA conference shall adopt a resolution fixing the boundaries of the PTBA. The decision of the conference may be reviewed by the county governing body which may modify the boundaries to include areas which will benefit from transit service and exclude areas that will not. If the county does not approve a resolution nulifying or modifying the decisions of the conference, the transit benefit area will stand ~~fixed~~ as approved by the conference.

Within 60 days of the establishment of the boundaries of the PTBA, the county commissioners and elected representatives of the

cities within the area shall provide for selection of the governing body of the PTBA. Governing bodies shall consist of elected officials selected by and serving at the pleasure of the governing bodies of component cities within the ~~area~~ PTBA and county commissioners of each county within the area.

Cities are given the option to withdraw from the PTBA if they act to do so by resolution within 60 days of the formation of the benefit area.

The PTBA is required to prepare a transportation plan. This plan shall include but is not limited to the following: 1) The levels of transit service that can be reasonably provided for various portions of the benefit areas; 2) The funding requirements including local tax sources, state and federal funds, necessary to provide the various levels of service within the area; 3) The impact of such a transportation program on other transit systems operating within that county or adjacent counties; 4) The future enlargement of the benefit area or the consolidation of such benefit area with other transit systems.

The transit plan as developed by the PTBA shall be subject to review by the planning and community affairs agency of the State of Washington. This agency may approve or reject the counties transit plan. If the plan is approved the county district shall become eligible to receive matching funds from the motor vehicle excise tax.

The PTBA shall have the normal corporation and governmental powers granted to ~~similar agencies~~ special purpose districts in the State of Washington.

Competition between the PTBA and privately operated transit system is forbidden by this legislation. The PTBA however is

authorized to make special arrangements with private carriers to continue operations even after the existance of the PTBA has been established. If such arrangements can not be made, PTBA shall purchase by condemnation the private transit operation. City systems which are operating prior to the formation of the PTBA may continue to operate after the PTBA has been formed. The PTBA may acquire such systems. However it ~~must~~ may do so only with the permission of ~~such cities~~. the governing body of the city which owns the system.

The PTBA is required to assume all existing labor contracts previously negotiated by systems acquired ~~by the PTBA~~. Employee tenure, No employees wages, pensions and working conditions are to be protected when ~~shall be in any whorse position under the PTBA than they were under~~ the PTBA acquires another system. ~~the previous system.~~

Teritory may be annexed to the PTBA by election of the persons involved in the ~~teritory to be annexed~~ affected territory. Annexation elections may be requested by: 1) Resolution of a PTBA; 2) By petition calling for such an election signed by at least 4% of the qualified voters residing within the area to be annexed; 3) By resolution of a PTBA authority upon request of any city for annexation.

Counties that have established a county transportation authority ~~and~~ or public transportation benefit area that have been established pursuant to this legislation are eligible to receive a one time advanced financial support payment from the state to assist in the development of the initial comprehensive transit plan. ~~Now that~~ The support payment is limited to one dollar per person residing within each county or $50,000, whichever is the least. Repayment of an advanced financial support payment shall be made to the public transportation account in the general fund. Such repayment shall be wavied within two years of the date that ~~such~~ the advanced payment was received if the voters in the appropriate counties or PTBA areas do not elect

to provided
levy and collect taxes ~~established~~ under this legislation.

In Oregon special purpose districts for transit service may be formed in those counties comprising 2 of standard metropolitan statistical area. Two such districts are presently operational in Oregon. These are the Lane Transit District in the Eugene-Springfield Metropolitan Area and the Tri-Met District in Portland. Oregon districts are permitted to contract with other jurisdictions to provide service outside of the transit district boundaries. (See ORS 267.560) deal more specifically with the interstate aspects - is federal approval required? Therefore Tri-Met ~~is permitted to~~ may enter into a contractual arrangement with the Washington agency for purposes of providing transit service.

Federal Law provides for assistance for both operations and capital expenditures for local transit systems. The Urban Mass Transit Administration is authorized to allocate funds to urban transit systems to pay operating costs for service improvements or expansions. A total of 1.8 million dollars is expected to be available to the Washington portion of the Portland urban area over a six year period ranging from 1975 through 1980. The city of Vancouver ~~has~~ and Tri-Met presently the designated recipients for this funding. The UMTA money must be matched by locally raised non fare box revenues. (SEE Federal Register January 13, 1975 page 2534) This is known as "Section 5" operating subsidy.

Assistance is also available from UMTA for purchase of capital equipment or for capital construction. UMTA will pay 80% of the cost of capital acquistion for eligible projects. These projects may include purchase of buses and other rolling stock, as well as construction of terminal facilities, shelters, exclusive rights-of-way, acquistion of private transit companies and construction of maintenance facilities.

III TRANSIT PLANNING IN CLARK COUNTY

~~CHAPTER III Planning Considerations~~

In planning for transit, a number of factors must be considered in selecting the service areas. Formost in these considerations is population distribution, density and location of activity centers.

Criteria has been developed which links population distribution and density to levels of service. The Tri-Met Transportation District has developed one such set of criteria. While Tri-Met's gradiations which link a given density to a level of service may not be completely applicable to Clark County, the concept has a good deal of validity and is therefore worth exploring.

The Tri-Met Criteria, divides the service area into 3 major categories. These include urban areas, suburban areas and rural communities. Urban areas are those areas with over 3,200 persons per square mile or 5 persons per acre. Suburban areas are desinged where the population is greater than 1,600 persons per square mile, but less than or equal to 3,200 persons per square mile. Rural communities are those population centers located in areas where the population does not exceed 1,600 persons per square mile.

In urban areas, a bus is to be provided within ¼ mile of every household. Lines operating in urban areas will provide service every 30 minutes during the midday period and at least every 10 minutes during the peak hours.

Suburban areas shall have service within ½ mile of every household. Lines will operated at leas t hourly during the midday period and at frequencies no greater than 15 minutes in the peak hours.

In rural areas, bus service will be provided to the various community centers. Access to these lines will be supplemented

by interim park and ride facilities.

Service will be provided on the basis of demand.

The routing of transit lines is deterimined not only by the location of households (trip origins) but also by the destinations (activity centers) which persons will be traveling to. These activity centers will include:

Employment Concentrations

- Central business districts
- Industrial Facilities
- Other labor intensive employers
- Major Medical facilities
- Shopping Centers
- Schools and Colleges
- Libraries
- Major Recreational Centers

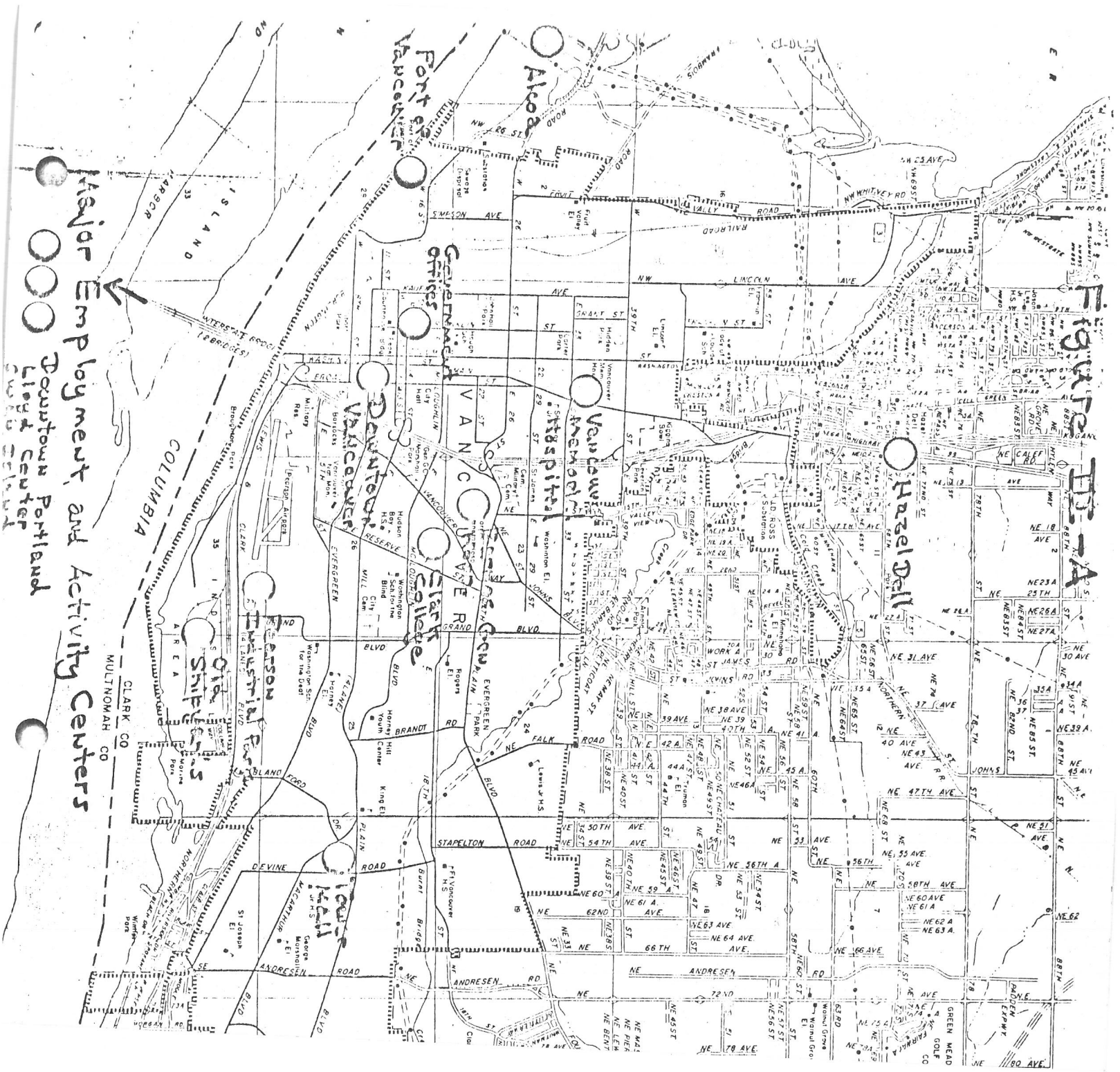
The major activity centers in the Vancouver Urban Area are shown in Figure III-A.

Demographic Characteristics of Clark Co.

Clark County is a portion of the Portland-Vancouver Standard Metropolitan Statistical Area. The county contains about 135,000 people. The 1970 employment was listed as . About 13,000 Clark County residents are employed in the Oregon portion of the metro area. 12000 in Introduction

The population centers in Clark County include:

Vancouver	Battleground
East Vancouver (uninc)	Ridgefield
Camas	Yacolt
Hazel Dell (uninc)	La Center
Orchards (uninc)	
Washougal	


Major Employment and Activity Centers
Downtown Portland
Light Center
Port of Vancouver
Airport
Government offices
Vancouver Downtown
Vancouver Waterfront
Hospital
Vancouver Mall
Clark College
Old Shipyards
Industrial Park
Hazel Dell
Fig. A-1
COLUMBIA
CLARK CO
MULTNOMAH CO
VANCOUVER
MAIN ST
MILL PLAIN BLVD
FOURTH PLAIN BLVD
EVERGREEN BLVD
BRANDT RD
FALK ROAD
STAPELTON ROAD
DEVINE ROAD
ANDRESEN ROAD
NE ANDRESEN RD
NE 72ND
NE 78 AVE
NE 80 AVE
NE 66 AVE
NE 63 AVE
NE 64 AVE
NE 62ND
NE 60 AVE
NE 58TH AVE
NE 56TH
NE 55 AVE
NE 54TH AVE
NE 50TH AVE
NE 47TH AVE
NE 40ST
NE 39 AVE
NE 37 AVE
NE 31 AVE
NE 30 AVE
NE 18 AVE
NE 68TH
NE 78TH
NE 88TH
NE 82ND ST
NE 85 ST
NE 65 ST
NE 63 ST
NE 49 ST
NE 45 ST
NE 39 ST
NE 33 ST
NE 29 ST
NE 22 ST
NE 20 ST
NE 18 ST
NE 16 ST
NW LINCOLN AVE
NW WHITNEY RD
NW 23 AVE
NW 10 ST
NW 6 ST
SWEIGEN AVE
GRAND BLVD
MAIN ST
WASHINGTON ST
JOHNS
HILLSBORO
HWY 99
I-5
I-205
I-84
Fruit Valley Rd
Fruit Valley El
Lincoln El
Hidden Hills
Vancouver Mall
Kaiser Sch
Kaiser Park
Lincoln Park
Central Park
Esther Short Park
Vancouver Lake Park
Columbia Park
Marshall Park
Hudson Bay H.S.
Washington Sch for the Deaf
Harney Hill Youth Center
Lewis Jr HS
Evergreen Park
Rogers El
Hough El
Minnehaha
Truman
Hazel Dell El
Walnut Grove
Walnut Grove El
Fl Vancouver H.S.
King El
Burnt Bridge Creek
Burnt Bridge
Green Mead Golf Co
Pioneer Airport
Vancouver Barracks
Military Res
Veterans Hosp
City Hall
Courthouse
Jefferson Apts
Washington Sch for the Blind
Mill Creek
Salmon Creek
Whipple Creek
Hazel Dell Creek
Cemetery
Mountain View Cem
St James Cem
Columbia River
Interstate Bridges (2 Bridges)
Port of Vancouver
Island
Harbor

Vancouver, East Vancouver, Hazel Dell and Orchards comprise the Vancouver Urban area which contains about 100,000 people, which is 3/4 of the county's population. The second major populated area is Camas-Washougal with 11,000 people.

Several major arterial highways serve these populated areas in Clark County. The major north-south route of course is I-5 which has already been described in Chapter 1. Other major streets in the Vancouver Urban area include Mill Plain Blvd, Fourth Plain Blvd. St. Johns - St. James streets, Main St - Hwy 99 and 78th Street. Two expressways (I-205 and SR 500) are under construction. A third expressway (The Lewis and Clark Highway, SR 14) links downtown Vancouver with the cities of Camas and Washougal. These major transportation corridors are shown in Figure III-B.

Densly populated neighborhoods in the Vancouver Urban Area tend to be located in the city center and adjacent to the major transportation corridors. Figure III-C shows population densities in the urban area based on 1970 traffic zone statistics.

Types ~~Kinds~~ of Service

Carful consideration was given to the transportation needs of Clark County as well as the transportation, social and population characteristics of the county. On the basis of these considerations six different kinds of transit service have been identified. These include Radial Service, Local Service, Corridor Service, Intercity Service, Shuttles and Special Transporation.

Raidal Service

Radial service is composed of those lines which operate along

Major Highways in the Vancouver Area

Figure III-B

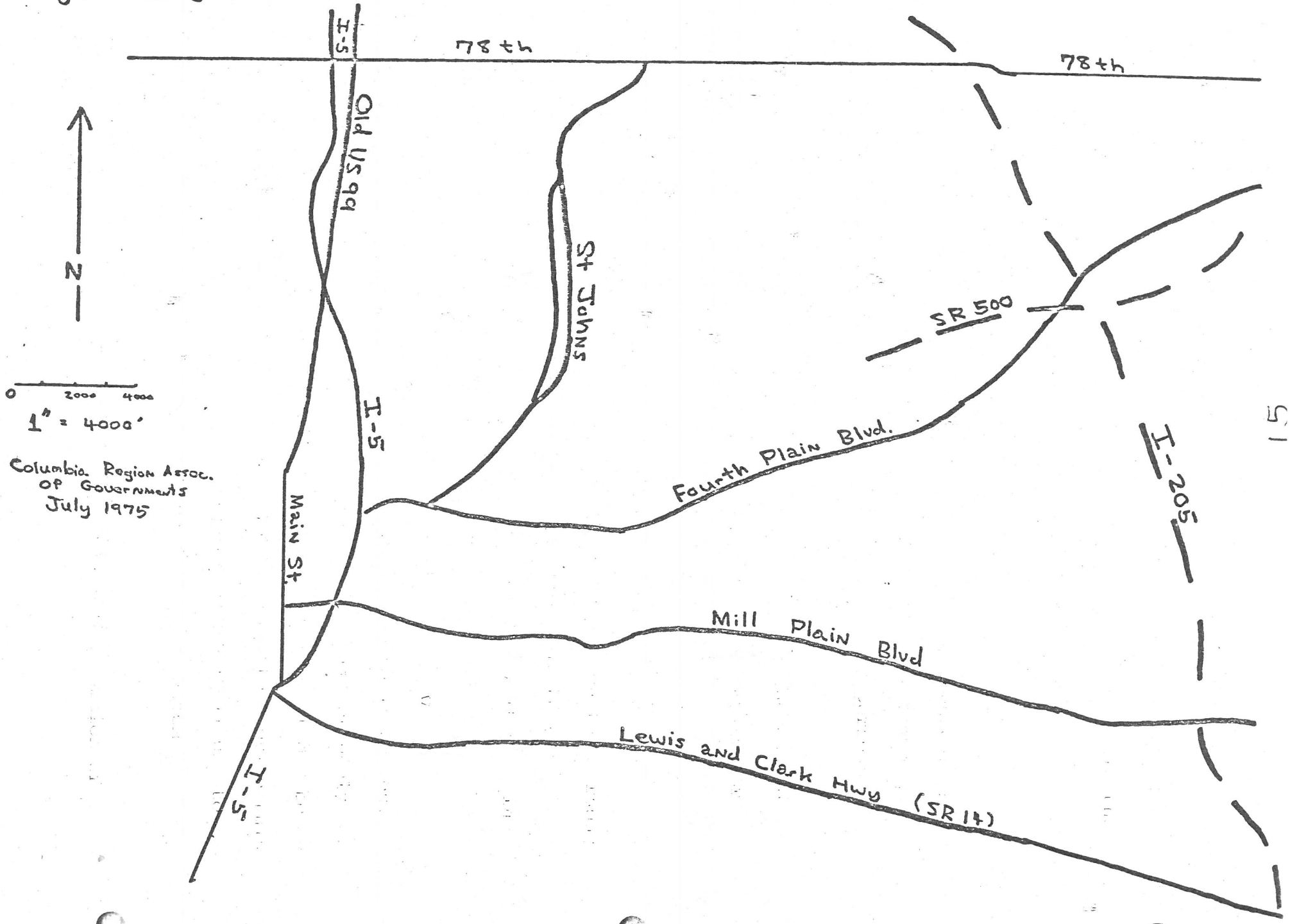
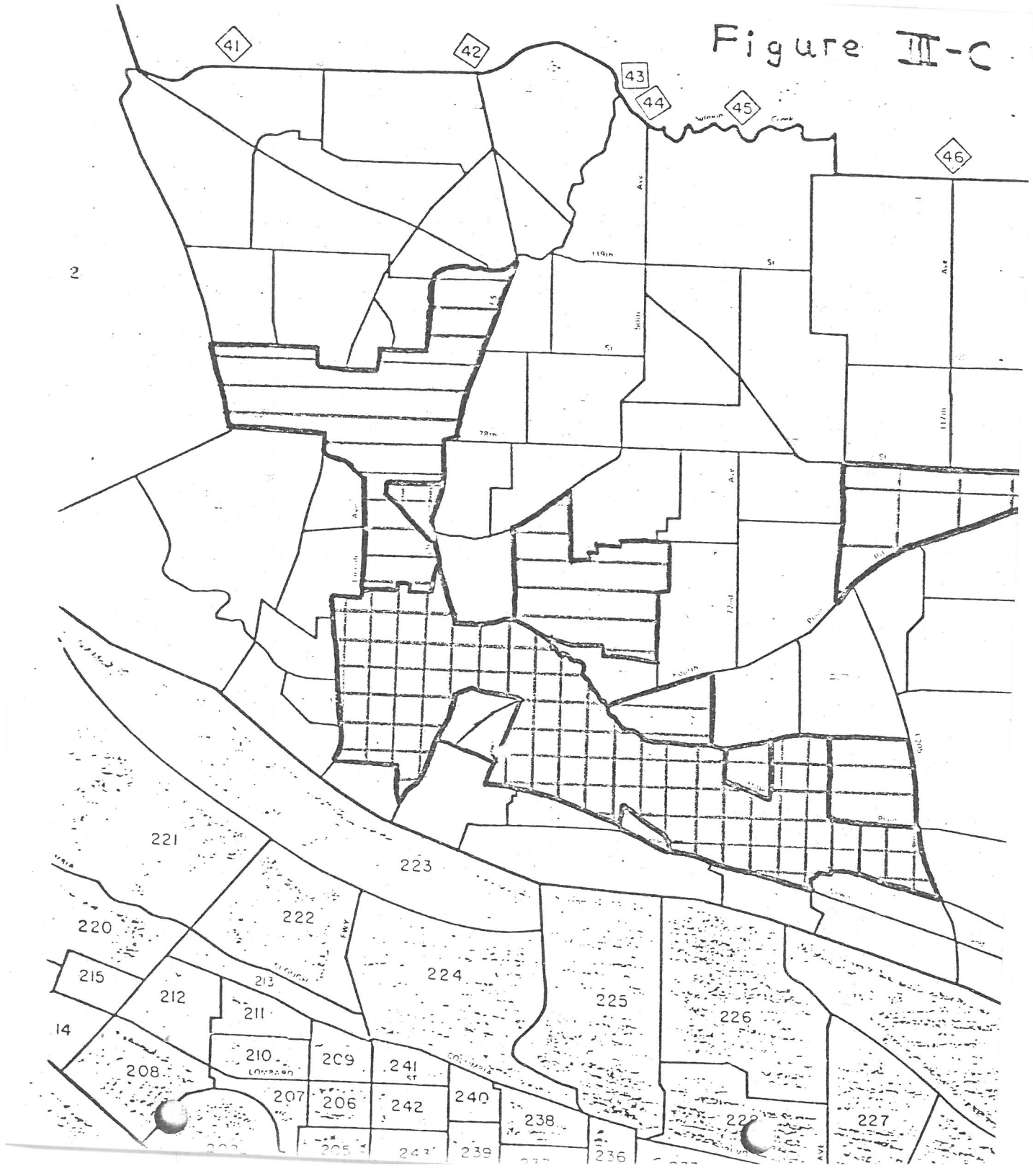


Figure III-C


41
42
43
44
45
46
2
14
221
223
220
222
215
212
213
211
224
225
226
208
210
209
241
207
206
242
240
238
239
236
227

major arterial highways. The service begins in an outlying residential developments or community centers and concludes in the central business district. (of Vancouver?)

The purpose of this service is to provide rapid movement of people between their places of residence and the central business district. Buses will operate at selected headways throughout the day. In addition, extra buses will be added during the morning and evening peak periods to fill the demand created by persons commuting to and from work.

Park and ride stations can be useful in improving access to these lines. In addition, radial service can be supplemented or fed by the local service described below.

Local Service

Local service is designed to provide transportation for persons having no access to private automobiles. In addition, if local service is provided at sufficiently frequent intervals, it can, in some families reduce the need for a second car.

To be effective, local service should be available within a relatively short walking distance of the people which it serves. Therefore, transit vehicles providing local service will probably operate a certain portion of the time on local streets. It may be desirable (or even necessary) to use smaller vehicles to provide this service. The presence of large buses on local streets is likely to be objectionable to persons living in areas where the system is operated.

Local service can be provided by any one or a combination of 3 routing systems including:

Fixed Routes

Variable Routes

Dial-a-bus

Fixed routing is the system presently used by Vancouver Transit. Buses operated only on designated routes and adhere to a schedule.

Route deviation and dial-a-bus represent the two forms of public transportation known as "demand responsive transit". The basic element of this system is communication between the patron and the transit vehicle prior to the time the patron boards the vehicle. The patron makes his travel desires known to the transit company which in turn responds by routing its vehicles according to the travel demands of its patrons.

Route deviation is a system where a bus is deviated from its regular route (within a given service area) to provide "doorstep" service to its patrons. The diviation are generally limited to a few blocks.

"Pure" demand responsive transportation or dial-a-bus, like the route deviaton system provide doorstep service. However, no route is adhered to. There are three variations of this type of service which include:

Many-to-one pattern-providing transport from several origins to a common destination such as a shopping center or bus terminal

Many-to-few-providing transport from multiple origins to a few destinations, such as major activity centers or points on a downtown loop.

Many-to-many providing transport between any origin-destination pair in the service area without limitation.

Note: These service patterns may be used, in reverse, or in combination throughout a service area or on a zonal basis depending on the characteristics of the service area. (see demand Responsive Transit page 3)

A schematic diagram of the service patterns is provided in figure

III- .

Demand-responsive transit is usually activiated by a patron calling the transit agency and requesting the service at a given place and time. A few demand-responsive systems are operated on a subscription basis. The patron subscribes to the service by requesting the service at a given time on a daily or otherwise basis.

Demand responsive transit has certain advantages or conventional transit. It provides more direct service, thus encouraging ridership. Demand responsive service is more flexable and can better serve the needs of persons unable to use the conventional bus service such as the elderly and the handicapped. Its main disadvantage is cost. A transit system operating both conventional and demand responsive service reported 14% higher cost for demand responsive service. This is due to the need for additional personel to handle requests for service and dispatch buses to meet these requests. In addition, little or no savings can be expected from the use of smaller vehicles. Small vehicles generally require more maintenance than their large counterpart and are fueled by gasoline which is more expensive than diesel fuel. LABOR COST

Corridor Service

Service in the major north-south regional transportation corridor (I-5) is the object of this service. The Interstate Bridge Corridor is presently served by a private carrier. However, the service is costly to patrons. Furthermore, passengers using this service are unable to make free, convenient transfers to other system. Finally, buses are subject to the same congested traffic conditions that plague auto travel in the corridor. How Costly? Compare Rates

A publicly operated corridor service, linking downtown Vancouver with Portland would aleviate these constraits to travel by reducing fares and providing for free transfers. This service would also

utilize the proposed priority lane for high occupancy vehicles. The priority lane would enable transit vehicles to bypass freeway congestion, therefore obtaining total travel times competitive with automobiles.

Provision of corridor service requires the purchase of the privatly owned Vancouver-Portland Bus Company. This action has been recommended in several previous reports. It is likely that Tri-Met would be the appropriate agency to accomplish this purchase, since most of the line's routes are located in Oregon.

Intercity Service

The presence of several smaller cities in Clark County, located outside of the major urban area, raises the question of service to those cities. Presently, the 4 small cities (Battleground, Ridgefield, Yacolt and La Center) are without any public transportation service. The cities of Camas and Washougal are served by a private carrier operating three round trips daily between these cities and Portland.

Intercity service would provide regular service to some or all of these cities. It is likely that the size of the Camas-Washougal area justifies reasonably frequent service intervals. The other small cities might be adequately served on a daily or even weekly basis.

The provision of intercity service should be tied to the levying of taxes in the county. Should the transit benefit area include the entire county it would probably be necessary to serve all cities.

Shuttles

Two kinds of shuttle service, having possible application in Vancouver have been identified. These include shuttles providing

transportation for industrial workers and shuttles operating in and between the city's major activity centers.

The industrial shuttle which would operate only during shift changes at Clark County's major industrial areas. Buses could be operated on a subscription basis. The bus would be routed according to the origin points of the workers.

The second shuttle service are those shuttles which would operate in the CBD area and between major activity centers. The downtown shuttle would provide a people moving service in the downtown and in some of the high density neighborhoods that surround this area. Another shuttle would connect major activity centers such as Clark Community College, Barnes General Hospital, The Public Library and the County Courthouse.

Since most industrial shift changes occur before the peak period, it may be possible to utilize the equipment that is used for radial commuter service to run the industrial shuttles. This would result in a very low operating cost for this service.

IS THIS TRUE? Employee Traffic causes the peak.

Special Transportation

Federal Transportation policies require that the needs of the elderly and handicapped be considered in the provision of public transportation services. (Section 16 UMTA Act 1964) Legislation provides that 1½% of the federal funding provided for transit shall be used to provide special transportation services.

Special transportation is needed because persons with physical, mental or age disabilities may be unable to board a conventional bus. Some minor improvements such as handles on the outside of the bus, reserved front row seating for the elderly and easy to ready bus schedules can make the transit system more accessable to a certain number of the transit disadvantaged. However, persons unable to

walk cannot board a conventional bus. Where a person is confined to a wheelchair, it becomes necessary for that person to be carried on or lifted up to the transit vehicle. A number of urban areas are presently using demand responsive buses equipped with wheelchair lifts to serve these persons.

Due to the previously mentioned federal policy and CRAG policy which require the provision of special transportation it is imparitive to consider provision of special transportation in the design of any transit system in this region.

Operations

The largest single aspect of a transit system is the day to day operations effort. This activity, comparable to the production function of the transit system, will result in the systems largest expenditures.

Operations can be broken down into four major subcatagories including:

Operations Administration
Supervision
Service and Maintenance
Vehicle Operation

The operations administrator performs the standard administrative tasks. These may include budgeting, planning, scheduling, contract administration, and supervision of subordinates. In smaller transit companies the operations administrator may be the general manager. In larger operations, the administrator will be a department head working under a general manager.

Supervisors are responsible for insuring that maintenance and servicing tasks are properly assigned and carried out. In addition, they may be responsible for developing and administering the maintenance

and service program of the transit company.* Supervisors will also be needed to insure that bus operators are adhering to designated routes and schedules. Like the administrative function, the number of supervisors will depend on the size of the operation. In very small companies, this function may be performed by the general manager. As the system gets larger, this function will be assigned to a greater number of individuals.

Service and maintenance will be performed by teams of specialized individuals in all but the smallest companies. Buses must be fueled, cleaned, and maintained at regular intervlas. In addition, mechanical assistance must be on hand to deal with those equipment breakdowns and accidents which invariably occur.

Vehicle operation is performed by the systems drivers. Usually the drivers wages will be the single most costly item in the system's expenditures. Since proper (or improper) operation will go a long way toward influencing system patronage and image, it is imparitive that drivers be well trained and adequately supervised.

Table III-A provides a listing of those materials, equipment and labor which are necessary to maintain transit operations. In addition, a list of related costs is also noted.

A transit system must perform other functions, in addition to operations. If the system is publicly owned, it will be necessary to work with a governing body or other public agencies to set system policy. A budget must also be prepared. Personnel polcies must be drafted and administered. It is also necessary to monitor and evaluate system performance.

* For a complete description of the elements involved in a maintenance and service program see Mass Transit Management: A Handbook for Smaller Cities Institute for Urban Transport February 1971

Most transit systems will maintain a planning function. This provides for eventual service improvement and expansion.

Finally a marketing program is essential to system development. Marketing has proven its effectiveness in attracting riders to transit systems. The system should anticipate spending about 5% of its renenues for this function.*

Planning and marketing costs are presented in Table III-B.

Capital Improvements

System capital improvements may be broken down into 3 general catagories including:

Rolling Stock
System Maintenance and Storage Facilities
System Anemities

It is important to keep in mind that the Urban Mass Transit Administration will fund 80% of the cost of most capital improvements. Cost estimates (where provided) are made on the basis of total cost and are not therefore necessarliy the costs that would be incurred by the local transit agency.

Rolling Stock includes all transit vehicles which are used in transporting passengers on the system. In this area, all public transit rolling stock is powered by internal combustion, engines (gas or deisel). It is likely that this trend will be continued with the Clark County transit system.

Presently, a full size deisel bus costs about $65,000. A modified bus, containing a good deal of special equipment will cost up to $75,000. (See Passenger Transport May 16, 1975 page 9)

* For a discussion of Marketing Effectiveness See Advertising and Promotion Demonstration Project Final Report UMTA

Smaller demand responsive vehicles cost somewhat less. A 15 passenger radio equipped van, modified for transit service can be purchased for about $15,000. A small radio equipped transit bus will cost up to $41,000. (Demand Responsive Transportation page 39)

The number of buses needed by the system will be determined by the number of routes, frequency of service and route length. In addition, it is generally considered necessary to have a number of spare buses on hand as a contingency against equipment breakdowns. Usually 1 spare for every 10 buses nee ded for operations is considered adequate.

Maintenance Facilities

Preventive maintenance is essential to the efficient, safe and economic operation of the transit system. To accomplish a high level of preventive and essential maintenance it is necessary to have an adequate maintenance service and storage facility.

Industry standards suggest that the transit system have facilities available for performing maintenance on about 8% of the fleet. Thus, a system having 25 buses should have 2 service bays. In addition room is needed for the following functions:

Fueling and Service
Cleaning
Greasing
Body Repair
Painting
Machine Shop
Stocking
Storage or Parts
Offices
Storage of Coaches
Storage of Fuel
Storage of Batteries

(Mass Transit Management page 155-156)

Facility costs will vary depending on the size of the system. It has been estimated however, that a maintenance facility for 25

buses will cost about $250,000.

Systems Amenities

System amenities are those features which improve access to the transit system or make use of the system or more pelasant for the patron. The most common amenities include park and ride sites, bus stations and bus shelters.

Park and ride facilities may range in design from simple parking lots to elaborate transit stations complete with waiting rooms, comfort stations and ticket offices. In some cases, agreements may be worked out between the transit agency and merchants, churchs or civic groups which have under utilized parking facilities. In other cases, the cost of the facilities will depend on size, elaboratness and location.

The unadopted 1990 transit plan for the Portland-Vancouver Area describes 8 transit stations for Clark County. These stations were to be constructed at a total cost of $3.6 million. A scaled down version of this plan has been adopted in the interim transportation plan (ITP). The ITP recommends two transit stations for Clark County. The first station would be located in downtown Vancouver. The design and precise siting of this station is under study. Another station would be constructed near I-205 in East Vancouver or in Orchards. Siting of this station is to be studies at a later date.

Bus shelter are also a useful addition to a transit system. Bus shelters not only protect passengers in incliment weather but also serve to call attention to the system and its routings. The cost of shelters averages about $1,500 per shelter installed.

9 Point of Information, Maps, Schedules, Fares

System Revenues

As noted in Chapter II, Washington State Law provides a number of options by which a county can fund transit service. Table III- lists these options and the amount of revenue which can be obtained through the various options in both a county wide, and urban area district. Figures are also listed for the amount of revenue which could be raised in the cities of Camas-Washougal.

Revenue would also be obtained through the farebox. Virtually all planning efforts in this area have assumed a 35 cents fare. With fare discounts offered for senior citizens and children. The average fare usually work out to be about 31 cents. Farebox revenues. therefore, will depend upon the system patronage.

Patronage, in turn, depends upon the level of service. Tri-Met has computed patron estimates based on existing conditions in the urban area. These estimates and the revenue that the various levels of patronage would be expected to generate are shown in Table III- .

Conclusion

This chapter has identified a number of service and funding options. Actual selection of which options are to be utilized in providing transit service in Clark County will be the perogitive of the County wide Transportation Conference and the implemention process which will be carried out under the direction the system's governing body.

IV PRIORITY TREATMENT ANALYSIS

~~HOV LANE ANALYSIS~~

This portion of the Interstate Bridge Corridor Project Revised Work Program is being conducted to assess the utilization of priority treatment for HOV in the form of an exclusive lane, ramp control or both. This section deals specifically with an exclusive lane for HOV. The existing conditions of I-5 during the peak periods were determined. An analysis of the HOV lane was made indicating the use of such a land and the remaining traffic on the balance of the roadway. This was followed by the development of the consequences of the HOV lane. Finally, recommendations were set forth for several improvements.

HOV ~~Analysis~~ Volumes

There are good records for traffic volumes on the I-5 facility at the permanent recorder count station locations of the Interstate Bridges and Ainsworth Street. To supplement this data additional portable recorder counters were set out and manual counts obtained. The manual counts included occupancy samples in the peak and off-peak intervals. Travel time-delay studies were accomplished in the peak periods as well as numerous field trips on the part of the project staff. The traffic volumes and field trips were utilized to identify the location and intensity of the congestion problems and the travel time-delay data determined the extend to the queueing caused by the congestion. When congestion occurs when the traffic flow is large and the backup propagates a considerable distance upstream. Congestion caused on Hayden Island has propagated as far south as the Fremont Interchange during the evening peak period. The existing conditions are illustrated on Figures 1 and 2. It is apparent that congestion problems occur at Portland Blvd and between Union Ave and Hayden Island (Columbia Slough Bridge).

Utilizing existing counts and occupancy rates, the existing level of service of the freeway, and ridership (passengers per hour) of each lane was estimated using methods of the 1965 Highway Capacity Manual at Portland Blvd. and Columbia Slough. These sites were selected since the congestion normally initiates from them and propagates to other areas. The analysis was repeated assuming the installation of a HOV lane at these sites. The results of these exercises appear on table I and figure 3 which indicates a considerable imporvement in the level of service in the non-priority traffic flow during the PM peak hour. There is also some improvement in the AM peak hour but not as much. The HOV lane was assumed to contain buses and carpools with three or more persons. It was also assumed that the number of carpools and transit ridership doubled with the installation of the HOV lane. This was based on the experience of the Oakland-Bay Bridge and Tri-Met fare reduction.

TRANSIT RIDERSHIP ASSUMPTION

There was an assumption that the transit ridership would double after the improvements recommended herein. This assumption is substantiated in the following ways:

1. The ridership on several Tri-Met lines (Forest Grove/Hillsboro/Beaverton, Sherwood/Tigard, and Somerset West) have increased about 1.56 times six months after the 35¢ flat fare structure went into effect.
2. There will be a city-county transit system in Washington with a free transfer for interstate passengers.
3. Fuel costs will continue to increase for the immediate present.

Table I HOV LANE ANALYSIS

I-5
Portland Blvd. to Vancouver

Objective: To evaluate the impact of a HOV on the lane volumes at Portland Blvd. and Columbia Slough

Results:

Lane	W/O HOV Lane vph	W/O HOV Lane pph	W/ HOV Lane vph	W/ HOV Lane pph
Portland Blvd				
AM				
3(HOV)	---	---	630	2250
2	2000	2990	1810	2520
1(42%)	1500	2220	1060	1480
Level of Service	E		D	
PM				
3(HOV)	---	---	370	1600
2	1940	2760	1790	2490
1(42%)	1410	2000	1190	1650
Level of Service	E		D	
Columbia Slough				
AM				
4(HOV)	---	---	865	3240
3(37%)	1920	2860	(40%)1590	2210
2(40%)	1780	2650	(39%)1550	2150
1(23%)	1110	650	(21%) 835	1160
Level of Service	E		C D	
PM				
4(HOV)	---	---	515	2010
3(37%)	1880	2670	(40%)1675	2320
2(40%)	1790	2540	(39%)1630	2260
1(23%)	1030	1440	(21%) 880	1220
Level of Service	E		D	

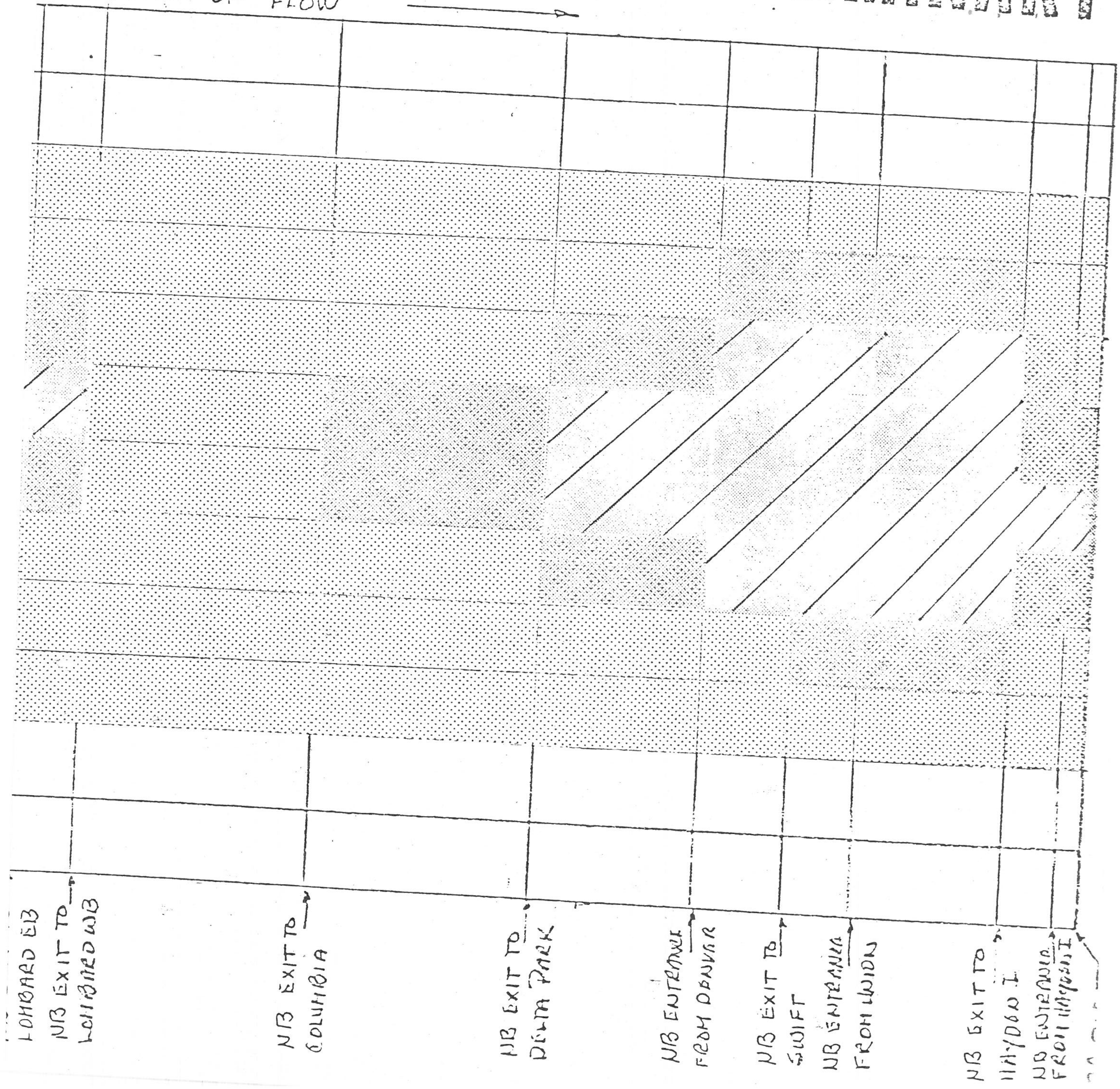
NOTE: vph - Vehicles per hour
pph - Passengers per hour
(xx) - Lane distribution

Assumptions:
1. The 3 to 5% trucks are treated as autos for occupancy computations.
2. The number of carpools and buses will soon double after the installation of the HOV lane (based on experience on the Oakland-Bay Bridge where carpools doubled after the installation of carpool lanes).
3. Traffic characteristics and modals of the 1965 HCM are valid for this analysis.
4. No appreciable change in transit ridership.
5. SVd = 1500 vph, SVc = 1350 vph

CAL ORIENTAL CONDITIONS
MARCH 1975
SOUTHBOUND MORNING PEAK PERIOD
- DIRECTION OF FLOW ____

PRELIMINARY

OPERATIONAL CONDITIONS
MARCH 1975
NB EVENING PEAK PERIOD
— DIRECTION OF FLOW →



REGIONAL CONDITIONS EXPECTED WITH HOV LANE

EN HAYDEN ISLAND AND PORTLAND BOULEVARD
I-5 NORTHBOUND EVENING PEAK PERIOD

ACCIDENT RECORDS

~~SAFETY~~

One of the measures of highway safety is that of traffic accidents. The accident rate on I-5 was found to be 1.2 A/MPM/ this was determined by converting the 1.8 A/MVM accident rate assuming a daily occupancy rate of 1.5 passengers per vehicle.

A similar accident rate for Tri-Met buses were found to be 2.82 A/MPM for all lines. ~~It was estimated that~~ The accident rate for buses operating on lines utilizing freeways and expressways was ~~.18~~ .14 A/MPM.

From this data it is apparent that any incentive to utilize transit - such as a HOV lane - would tend to improve the level of safety.

Care should be taken in the design of the termination of priority lanes to assure that there is adequate opportunity to merge. Since highway design standards encourages merging from the right in contrast to the left, perhaps, it would be advantageous to merge normal traffic into the HOV lane at the terminous on Hayden Island.

RAMP METERING

Text

LAW ENFORCEMENT

Text

CAR POOLING

CAR Pooling text

COST CONSIDERATIONS

Text

~~NON-TRAFFIC~~ SELECTED IMPACTS OF A PRIORITY LANE FOR HIGH OCCUPANCY VEHICLES IN THE I-5 CORRIDOR

FACTOR IMPACTED	CAUSE OF IMPACT	MEASUREMENT	AREA IMPACTED	ANTICIPATED RESULT
1) Air Quality	Reduce the number of auto's emitting pollutants by providing incentives to increase vehicle occupancy	Amount of gases, particles etc, in the air	Regional Airshed	Improvement in region's air*
2) Energy Conservation	Reduce consumption of fossil fuels (i.e. gasoline) by encouraging use of more efficient means of transportation	Gasoline Consumption	I-5 Corridor: Clark County	Reduction in per capita* energy consumption
3) Land Use: Downtown Portland	Encourage additional employment in the Portland CBD by improving transportation to the CBD	CBD Employment	Portland CBD	Increase employment in Portland CBD [1]
4) Land Use: Downtown Vancouver	Improved transportation to Vancouver CBD resulting in increased economic activity	Employment Retail Sales	Vancouver CBD	The economic viability of downtown Vancouver will increase [2]
5) Land Use: Vancouver Transit Station	Increased activity around transit station	Land Values	Vancouver CBD	Land values in areas surrounding the transit station will increase
6) Land Use: Clark County	Improved Transportation opportunities to employment centers	Increased Clark Co. Population and work force	Developable land in Clark County	Development in Clark County will increase until land costs are driven up [1]

* CRAG Objectives

	FACTOR IMPACTED	CAUSE OF IMPACT	MEASUREMENT	AREA IMPACTED	ANTICIPATED RESULT
7)	Safety	Reduction in the number of vehicles using the corridor due to encouragement of high occupancy vehicles	Accident Rate	I-5 Corridor	Reduction in region's* accident rate
8)	Noise Pollution	More buses will be using the corridor increasing noise levels	Decibles	Primary impact in Portland and Vancouver CBD	Increase in noise levels in Portland and Vancouver CBD's. Slight impact i remainder of corridor due to de-pressed freeway*
9)	Public Finance	Additional subsidy needed to operate transit buses in corridor	Public Expenditures	Clark County Tri County Metropolitan transit district	Increased taxes in Clark County and in Tri-Met District
10)	Employment (short term)	Construction of priority lane	Employment	SMSA Work Force	Slight increase in area employment*2
11)	Employment (long term)	Operation and maintenance of buses	Employment	SMSA Work Force	Slight increase in area employment*2
12)	Commerce	Slightly lower demand for gas-oline and related products	Retail Sales	Clark County	Slight decline in sales relating to motor fuel and related services and projects
13)	Parking	Lower demand for parking in Portland CBD: Increased demand in Vancouver CBD	Parking Rates	Vancouver and Portland CBD's	Slight decline in parking spaces in Portland CBD as land is converted to other uses. Increasing demand for parking in and around Vancouver CBD as park and ride increases

POSSIBLE ~~SECONDARY~~ Other EFFECTS

1. Increased employment in Portland CBD plus increased development in Clark County may encourage more downtown workers to live in Clark County, thus further complicating transportation in the I-5 Corridor until property values rise sufficiently to curb development.

2. Additional economic impacts (such as #4) likely to result in overall employment increases.

Items denoted by an asterik (*) relate to CRAG Objectives

References:

1. Measuring Impacts of Land Development (An Initial Approach) Philip S. Schaenman, Thomas Muller, Washington D.C. 1974

2. Draft II Goals and Objectives for The Columbia Willamette Region Columbia Region Association of Governments, Portland, Oregon June 1975

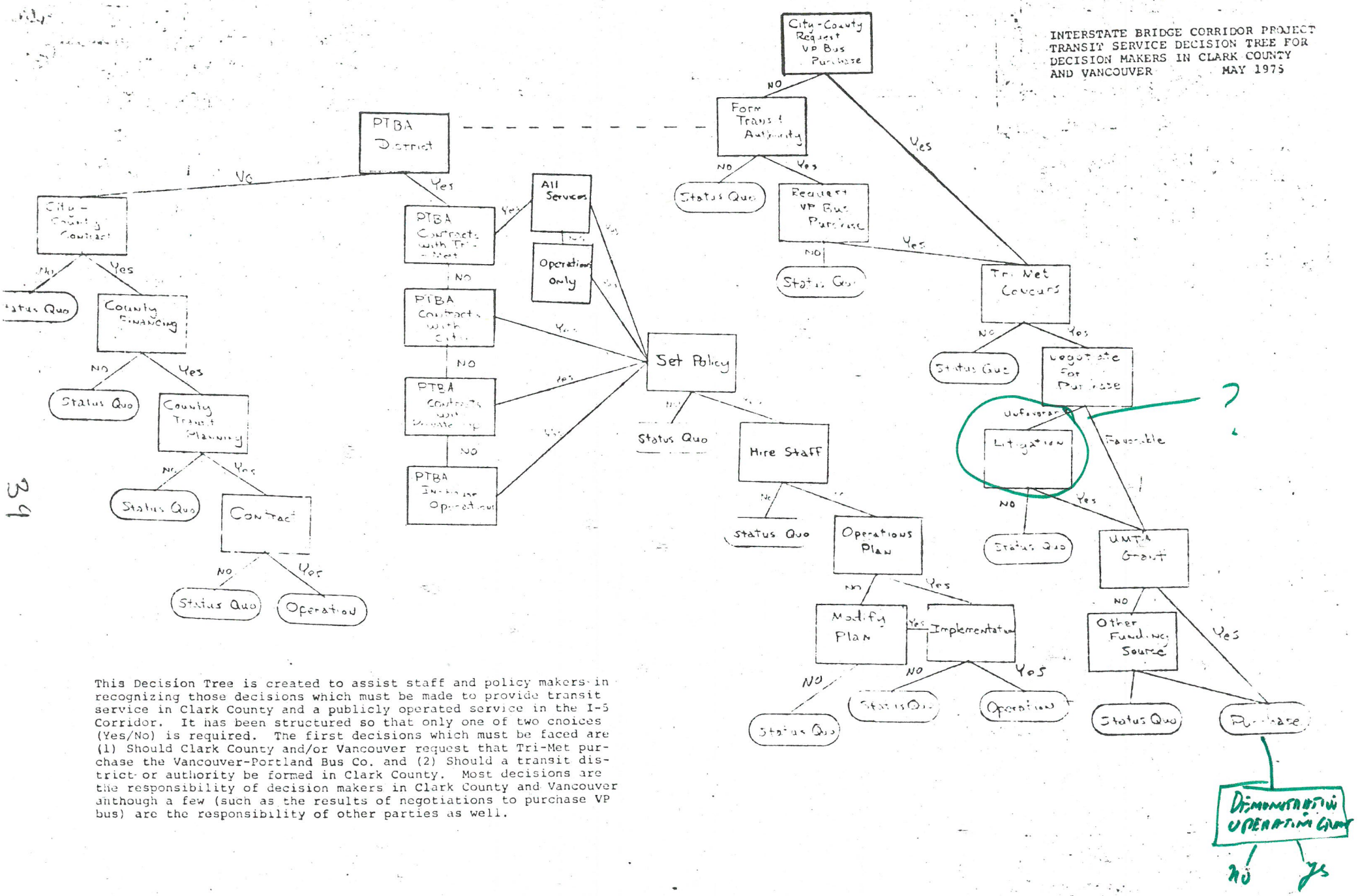
V RECOMMENDATIONS

1. Clark County elected officials immediately call a transit conference.
2. City-County elected officials immediately request Tri-Met to purchase V-P Bus Co. The decision +ree illustrates that the transit conference activities ~~are~~ can be independent of the purchase of V-P Bus Co.
3. ODOT utilize the southbound shoulder under the Portland Blvd. structure as a third southbound lane (see figure ___).
4. ODOT install and operate an additional lane for HOV northbound between Portland Blvd and Hayden Island (see figure ___).
5. ODOT install a traffic signal at the terminus of the northbound off ramp at Portland Blvd (see figure ___).

Why - How JUSTIFIED

6. Tri Met apply for demonstration grant for operating subsidy for 2 years pending activation of PTBA.

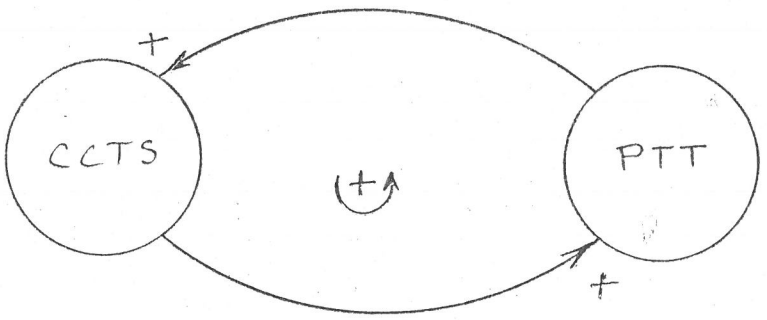
INTERSTATE BRIDGE CORRIDOR PROJECT
TRANSIT SERVICE DECISION TREE FOR DECISION MAKERS IN CLARK COUNTY AND VANCOUVER MAY 1975



This Decision Tree is created to assist staff and policy makers in recognizing those decisions which must be made to provide transit service in Clark County and a publicly operated service in the I-5 Corridor. It has been structured so that only one of two choices (Yes/No) is required. The first decisions which must be faced are (1) Should Clark County and/or Vancouver request that Tri-Met purchase the Vancouver-Portland Bus Co. and (2) Should a transit district or authority be formed in Clark County. Most decisions are the responsibility of decision makers in Clark County and Vancouver although a few (such as the results of negotiations to purchase VP bus) are the responsibility of other parties as well.

SYSTEM EFFECTS OF RECOMMENDATIONS

Because of the interactions that commonly occur in natural, technical and social systems, it is appropriate to consider this characteristic in the context of the recommendations of this document. To illustrate this point, two recommendations are utilized; namely, city-county transit system (CCTS) and priority treatment for transit (PTT), i.e., HOV lane. Increases in the CCTS ridership will tend to provide an increase in the transit ridership in the HOV lane. Increases in the PTT will tend to increase the transit ridership on the CCTS. This is illustrated in a causal loop diagram on figure ___. This type is a positive loop in which the components build on each other.



CCTS: City-County Transit System

PTT: Priority treatment for transit

Plus signs indicate that positive changes in one component encourages a positive change in the other.

Figure ___ City-County Transit System and Priority Treatment for Transit Causal Loop Diagram.

THE CITY OF
PORTLAND
OREGON

OFFICE OF
PLANNING AND DEVELOPMENT
GARY E. STOUT
ADMINISTRATOR

BUREAU OF
PLANNING
ERNEST R. BONNER
DIRECTOR

424 S.W. MAIN STREET
PORTLAND, OR. 97204

PLANNING
503 248-4253

ZONING
503 248-4250

24 July 1975

Dick Etherington
CRAG
527 SW Hall Street
Portland, Oregon 97201

SUBJECT: I-5 Corridor Report

Dear Mr. ~~Etherington~~ Dick:

My initial review of the I-5 Corridor Final Report suggests that it places too much emphasis on detailed development of the Clark County Transit System and not sufficient emphasis on the importance and key elements of immediate improvements to the regional I-5 Corridor.

The inception of this whole project was based on an effort to increase the capacity of this entire corridor, broadly interpreted, during the period before I-205 comes on line. A quick outline of how that report might look in part follows.

I. Reasons

a. I-5 is the second major corridor by volume in the metropolitan region.

b. It is approaching capacity.

c. It is a single link across the Columbia between Longview and the Bridge of the Gods.

d. It is the major access to Swan Island and a limiting factor on its development.

e. Rivergate was planned to be supported by two other freeways which are not now on the ITP. The area now must depend primarily on I-5 for its main access.

f. I-205 is at least 5 years away and immediate short-term relief is needed.

II. Available Solutions

These generally fall in the category of better use of the existing facilities without high capital expenditures involving long time periods. These are two inter-related components: High transit use; better highway use.

1. A unified transit system in Clark County meshed into the Tri-Met regional system.

   a. Vancouver-Portland and Tri-Met merger.

      (1) seek federal subsidy for transition period of one to two years. This could be a demonstration grant or a specific allocation of Section 5 operating subsidy money from the Tri-Met or Vancouver or both sources.

   b. Formation of the public transit benefit Area (PTBA).

   c. Integrate the systems with fares, schedules and information.

2. Express bus/carpool lane

   a. This will encourage the use of transit by giving it a competitive advantage.

   b. Market carpools, a Tri-Met function. The Washington marketing must come from Washington funds however. Experienced gained the Banfield lanes will be directly applicable here.

III. Recommendation

1. Strong recommendation to Tri-Met to initiate merger with Vancouver-Portland Bus Co.. This is in Tri-Met's Transit Improvement Program with a budget of $250,000 for FY 76 and $750,000 for FY 77.

2. Take the steps indicated in the draft report to create the PTBA.

3. Strong recommendation to ODOT to initiate the corridor development preliminary engineering study funded by regular interstate funds. This study was detailed in Table 9 of the Governor's Task

Force Report entitled "Supplement to CRAG Unified Work Program" dated November 26, 1974. Coordinate this with the Vancouver Terminal Feasibility Study. Incorporate this corridor study in the revised CRAG TIP. It appears that ODOT could conduct this study unilaterally and implement the plan. The justification for this is essentially provided by the analysis in this CRAG study of the capacity improvements resulting.

On organization of the final report I would prefer to see the recommendations up front followed by a short background chapter and then a fair amount of detail on the calculation of the corridor capacity improvements. A chapter on the creation of a unified transit service for Vancouver would not need to contain very much detail as a "how to do it" manual could be a technical report supplementing the major report. However, this major report should definitely include the major steps necessary and identify the responsibilities and coordination required.

My concept of the final report is a document that can be read, understood and used by a broad range of public and private parties so that all efforts in this corridor can be orchestrated to a unified, quick and effective capacity improvement. The main report should be written in simple nontechnical language, keeping in mind the variety of readers. The main report should make a specific reference to and give instructions on how to locate technical appendices or supporting reports giving details.

Sincerely,

Bill

William S. Dirker
Transportation Coordinator

WSD:bn

7/23

I-5 Corridor Notes

yes 1. Did Gov. Evans sign transit bill?

No 2. Consider development planning - is it in CRAG's Program? - see P. 4

X 3. Report - Chap 2 - also discuss applicable Fed Legislation - Interstate Highway; Interstate transfer (I-80N), Capital

4. Demonstration grant to subsidize interstate service?: States - Discuss

~~5. No representative from Tri-Met at 6/20 T.F. Meeting~~

6. Propose discussion w/ UMTA for this week.

7. Outline of Contents doesn't quite match minutes. - Also

^ Status of highway planning, development & operation and also related activities - I205, FWIS, R.G., Hayden Is., etc.

x 8. ~~A~~ Chaps II & III titles limited to "Washington" & "Clark Co.". A substantial component of the travel in this corridor has O ~~Eor~~ & D in Oregon. - - However on P. 10 it does discuss Oreg. transit districts

✓ 9. Re Decision Tree - is litigation possible re acquisition of V-P Bus Co. by Tri-Met?

10 See #4 ~~above~~ - Demonstration Federal Operating Subsidy grant circumvents problem of Oregon taxes subsidizing Washington service and gives impetus to PTBA & time to establish & finance. Tri-Met could then threaten to cancel interstate service at end of federal grant & this should give incentive to create PTBA. It also gives a live example of unified system.

DEPARTMENT OF TRANSPORTATION
Planning Section
Plan Analysis Unit

I-5 Corridor
Going Street-Interstate Bridge

Introduction

Pursuing the I-5 Study further, this report focuses more directly on specific improvements to I-5 north of Delta Park Interchange and at the Portland Boulevard Interchange. Several design changes are suggested to improve traffic operations on the subject sections of I-5. Southbound and northbound analyses were separated and the findings are summarized below:

I-5 Southbound

a) Widen the Oregon Slough Bridge section to four lanes.

b) Improve the curvature of the existing Swift Road off-ramp or combine the Union-Swift off ramps into a single two-lane off-ramp.

c) Improve I-5 to three lanes at the Portland Boulevard Interchange.

I-5 Northbound

a) Widen the Oregon Slough Bridge section to four lanes.

b) Close the Union-Swift off-ramp to eliminate the short weave section north of the Delta Park Interchange.

c) Improve I-5 between the Denver Avenue and Union-Swift entrance ramps by providing an extended acceleration lane for Denver Avenue on-ramp traffic.

d) Improve I-5 to three lanes at the Portland Boulevard Interchange.

Analysis

The emphasis of this analysis is to study today's traffic problems and determine appropriate solutions. The 1974 peak hour volumes were used for this study. Assuming traffic growth will be regulated by the Interstate Bridges, future traffic projections were not used in the analysis. Shortly, an updated version of future projections will be available reflecting I-205 traffic diversion, current land use plans, and higher transit estimates.

Figure I illustrates the peaking characteristics of traffic flow on the Interstate Bridges. The southbound bridge peaks from 7:00 to 8:00 AM while the northbound bridge peaks from 4:00 to 5:00 PM.* Solutions to relieve the peak hour delays and congestion existing today on the Minnesota Freeway will be discussed.

Summary

This analysis assumes the automobile will continue to be the predominant mode of travel in the subject I-5 corridor. With this assumption, emphasis was directed at the highway system's capability to satisfy the demands. Ramp metering systems or busway proposals to modify auto travel demand were not considered in this study.

The completion date of I-205 (1980-1981) is expected to provide considerable relief on I-5. In the meantime, traffic generated from new developments at Hayden Island and Rivergate Industrial Park are anticipated to further strain congested conditions.already existing in the study

* Manual counts by the Washington State Department of Highways in 1972 indicated that the evening peak hour on the Interstate Bridge was 4:30 to 5:30 PM.

corridor. Therefore, the "worst case" traffic condition would exist just prior to the completion of I-205.

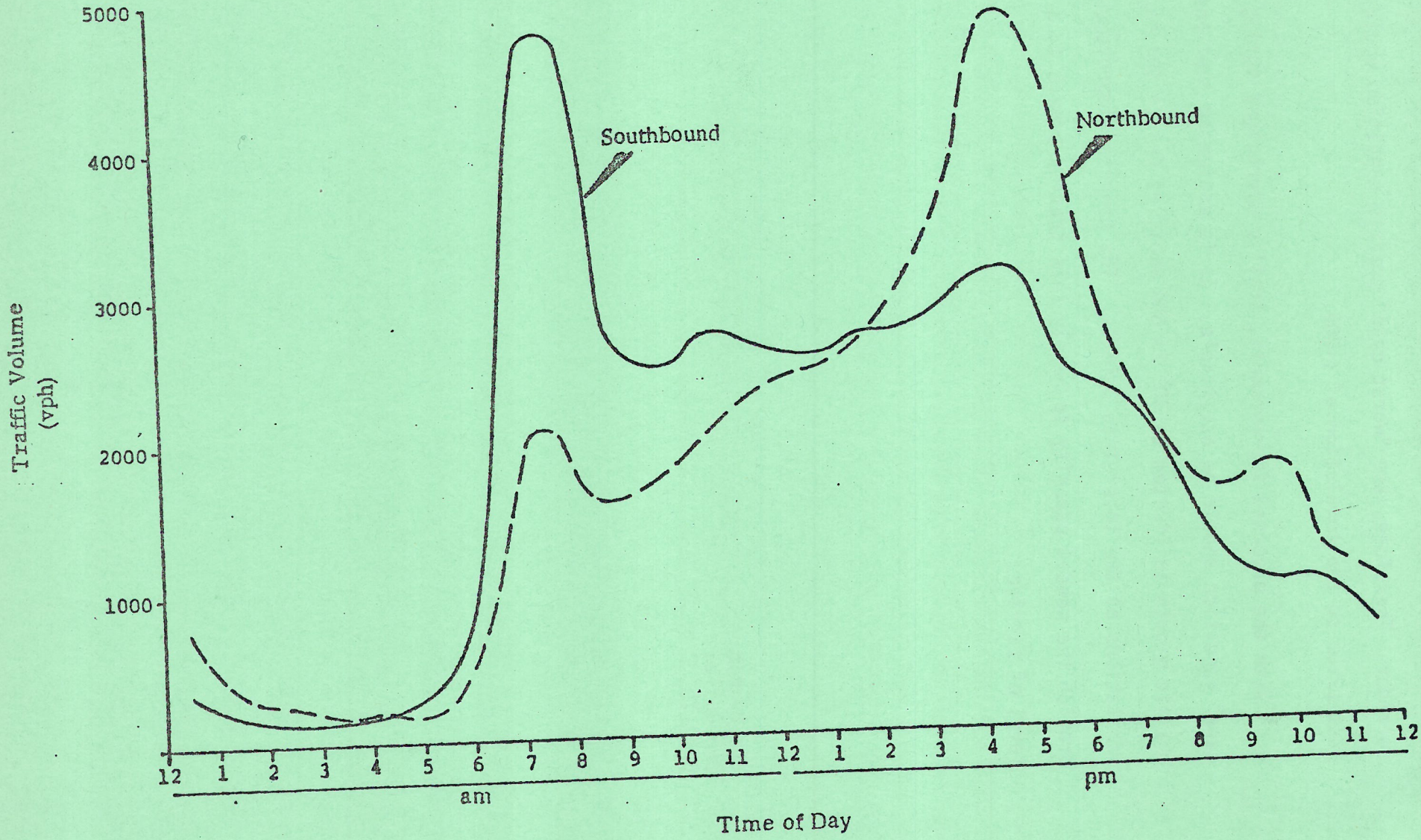
With the proposed improvements, traffic operations during the "worst case" condition should be acceptable. It is estimated that peak hour traffic growth is limited to 300 to 600 vehicles due to the capacity limitations of the Interstate Bridges. The proposed improvements would provide the needed capacity to handle this traffic growth at a tolerable level of service.

Jim Branch
Bob Jurica
6-30-75

Figure I

INTERSTATE BRIDGE

Weekday Traffic Distribution
(Nov. 26, 1974)



APPENDIX C

COSTS FOR CORRIDOR SERVICE

The following is a computation of the estimated costs for corridor service, as well as an estimate of the subsidy needed for Vancouver and Clark County. The service provides 34 daily trips, including extra peak period service, 27 Saturday trips and 12 Sunday trips. This is essentially a continuation of the present level of service provided by Vancouver-Portland Bus Co., with the addition of evening service. The lines operate at ½ hour headways 6:30am-6:00pm, 10 minute headways during the peak and hourly headways after 6pm. All Sunday service runs on hourly headways. Additional assumptions are made as follows:

- Tri-Met operates this service
- Tri-Met's current operating costs are used
- The fare is 35¢ with reduced fares for children and senior citizens. This produces an average fare of 31¢
- Patronage on this line will double over a period of a year as a result of reduced fares and free transfers
- Peak service operates on a self sustaining basis (no subsidy needed)
- Clark County and Vancouver will subsidize the service operated beyond Jantzen Beach

Tri-Met Cost per Bus Hour	$ 17.77
Tri-Met Cost per Bus Mile	1.21
Average Bus Speed	14.7 mph
Number of Daily Trips	34
Less peak trips	-13
Off peak daily trips	21
Saturday trips	27
Sunday trips	12
Estimated 2 Way Trip Length	15 miles
Estimated 2 Way running time	1 hour
Estimated 2 Way distance from Jantzen Beach to Downtown Vancouver	4 miles
Estimated running time from Jantzen Beach to Downtown Vancouver	16 minutes
Current average Vancouver-Portland off peak patronage (including weekends)	320

COSTS (off peak including weekends)

On hourly basis

Daily Service Hours	Cost/ Bus Hour	Weekdays in a Year		Weekend Service Hours	Cost/ Bus Hour	Weekends in a Year		
((21 x	$17.77)	225)	+	((39 x	$17.77)	52)	=	$131,000

On mileage basis

Daily Service Hours	Cost/ Bus Mile	Weekdays in a Year		Weekend Bus Hours	Cost/ Bus Mile	Weekends in a Year		
((315 x $1.21)		255	+	((585 x $1.21)		52	=	$134,000

Average

$$\frac{\$131,000 + 134,000}{2} = \$132,500$$

Revenues

Average weekday off peak patronage (at the beginning of Tri-Met service)	320
Average daily off peak revenues .31 x 320	$ 99.00
Annual revenue at initial patronage level	$ 36,000.00
Average weekday off peak patronage (after 1 year)	640
Average daily off peak revenues .31 x 640	$ 198.00
Annual revenue after 1 year	$ 71,000.00
Estimated first year revenue $\frac{71,000 + 36,000}{2}$	$ 53,000.00

Subsidy

Costs	$132,500.00
Less Revenues	$-53,000.00
Subsidy Needed	$ 79,500.00
Portion of route attributable to Clark County/ Vancouver	
4 ÷ 15 = 27%	
16 min ÷ 60 min = 27%	27%
Subsidy attributable to Clark County (.27 x $48,000)	$ 21,000.00
Subsidy attributable to Tri-Met ($79,500 - $21,000)	$ 58,000.00

* This includes 285 weekday passengers
600 Saturday passengers
200 Sunday passengers

Estimates provided by Vancouver-Portland Bus Company

APPENDIX D

Variable routing and dial-a-bus represent the two forms of public transportation known as "demand responsive transit". The basic element of this system is communication between the patron and the transit vehicle prior to the time the patron boards the bus. The patron makes his travel desires known to the transit company which in turn responds by routing its vehicles according to the travel demands of its riders.

Route deviation is a system where a bus is deviated from its regular route (within a given service area) to provide "doorstep" service to its patrons. The deviation is generally limited to a few blocks.

"Pure" demand responsive transportation or dial-a-bus, like the route deviation system provides doorstep service. However, no route is adhered to. There are three variations of this type of service which includes:

Many-to-one pattern - providing transport from several origins to a common destination such as a shopping center or bus terminal.

Many-to-few - providing transport from multiple origins to a few destinations, such as major activity centers or points on a downtown loop.

Many-to-many - providing transport between any origin-destination pair in the service area without limitation.

Note: These service patterns may be used, in reverse, or in combination throughout a service area or on a zonal basis depending on the characteristics of the service area. (See Demand Responsive Transit, p.3)

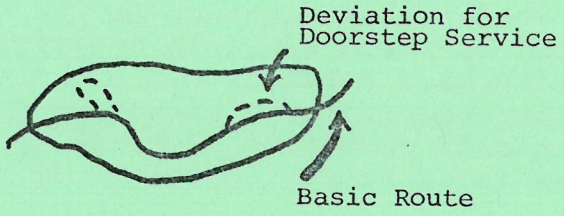
A schematic diagram of these service patterns is provided in figure D.

Demand-responsive transit is usually activated by a patron calling the transit agency and requesting the service at a given place and time. A few demand-responsive systems are operated on a subscription basis. The patron subscribes to the service by requesting the service at a given time on a daily or otherwise basis.

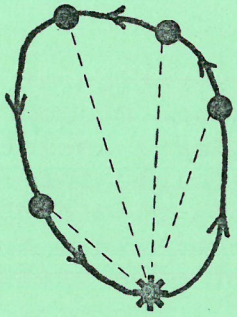
Demand responsive transit has certain advantages over conventional transit. It provides more direct service, thus encouraging ridership. Demand responsive service is more flexible and can better serve the needs of persons unable to use the conventional bus service such as the elderly and the handicapped. Its main disadvantage is cost. A transit system operating both conventional and demand responsive service reported costs 14% higher for its demand responsive service. This is due to additional labor costs. Personnel are needed to receive requests for

service and dispatching buses to meet these requests. In addition, little or no savings can be expected from the use of smaller vehicles. Small vehicles generally require more maintenance than their larger counterparts and are usually fueled by gasoline which is more expensive than diesel fuel.

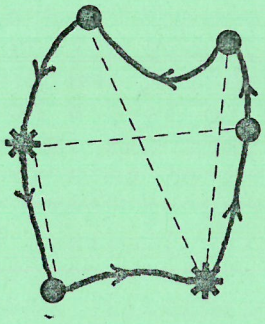
FIGURE D SERVICE PATTERN ALTERNATIVES FOR DEMAND RESPONSIVE TRANSIT



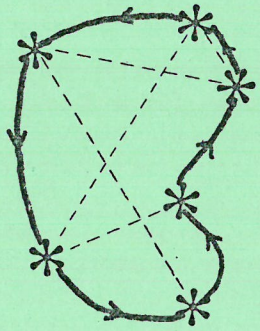
(1) Route Deviation



(2) Many-to-One



(3) Many-to-Few



(4) Many-to-Many

- Origin Point
- Main Terminal, Transfer Point, Activity Center
- --- Desire Line
- → One possible dynamic routing
- Origin and destination pairs

APPENDIX E

TRANSIT FUNDING IN THE STATE OF WASHINGTON

The operation of publicly owned transit systems in Washington and Oregon is regulated by state law. In addition, certain federal assistance programs make publicly owned transit systems eligible for federal funds; therefore, a knowledge of restrictions placed upon local transit operating agencies by federal regulations and state law is extremely important in the development of a transit system.

This chapter contains an analysis of the legal requirements governing the establishment of planning and funding transit systems in the State of Washington. In addition, a brief overview of Oregon law relating to contracts between systems and a description of federal regulations governing assistance to transit operators is provided.

In the State of Washington, prior to 1974, only cities and King County (Seattle) had the authority to establish and provide public transit service. Cities are authorized to levy a household utility tax for the support of transit. This tax is to be levied on all households in the city and is limited to a maximum charge of $1 per household per month. Operations of these transit systems are restricted to service within the city limits. Household utility tax collections are matched with state receipts from the motor vehicle excise tax. The state had originally been authorized to match local collections on a dollar for dollar basis. However, a total statewide limit was placed on the dollar amount which could be used to match local funds for transit service. Thus, the motor vehicle excise tax has, to this point, provided cities with somewhat less than a full possible match.

In 1974, Washington State law was amended to permit counties to operate transit systems which could be financed through a county-wide, 3/10 of one percent general sales and use tax. The activities of such a system were to be directed by a policy board comprised of the county commissioners, the mayor of the largest city, a representative of cities with more than 5,000 population, and a mayor chosen by cities of less than 5,000 population. The transit authority could be formed by a majority vote of the county commissioners. However, funding through the 3/10 of one percent sales tax would be permitted only after its approval by a vote of the people. This legislation was not attractive to the elected officials in Clark County because Oregon (just across the river) does not have a sales tax and increases in the sales tax in Clark County are not popular.

In the 1975 legislative session, substantial modifications were made in this law. These changes modified the manner in which counties form transit agencies, create service areas, and

provide financing for the transit service. The new legislation has given the cities and counties four means of funding transit systems. These include:

1. Imposition of a 1/10, 2/10 or 3/10 percent general sales and use tax;
2. Imposition of a business and occupation tax;
3. Imposition of a household utility tax of up to one dollar per household per month;
4. A combination of 2 and 3.

While the business and occupation (B&O) tax and household utility tax (HUT) may be used in combination, the sales tax must be used alone. Imposition of any of these taxes is, of course, subject to a vote of the people. The B&O tax and the HUT are eligible for a motor vehicle excise tax match; however, the sales tax is not.

Previously, taxes for transit service had to be levied uniformly throughout an entire city or an entire county as noted above. Under the 1975 legislation, a public transit benefit area (PTBA) may be formed to provide transit service in areas larger than a city and smaller than a county. Each county is permitted to establish one PTBA. A single PTBA can be established in two or more counties. The boundaries of the benefit area must be contiguous and may not contain islands of territory not included in the PTBA. For purposes of representation, the PTBA must include or exclude entire cities. Should only a portion of a city be included, the city may not be represented on the PTBA governing body. The means of representation on the governing body is to be determined by the jurisdictions involved in the PTBA. Single county benefit areas are limited to a nine member governing body. Multi-county areas may have up to a 15 member board. Cities not included in the transit benefit area may send a non-voting representative to the governing body to represent their interest.

Prior to the formation of a PTBA, a public transportation improvement conference is to be held. The conference shall be attended by representatives from the county and each of the cities in the county. The conference shall determine the desirability of establishing a public transportation benefit area. After completion of the initial conference, a public hearing shall be held. Prior to the convening of the hearing, the local legislative body shall advise the county governing body of their desire to be included or excluded from transit benefit area.

Following the conclusion of the hearing, PTBA conference shall adopt a resolution fixing the boundaries of the PTBA. The decision of the conference may be reviewed by the county governing body which may modify the boundaries to include areas which will benefit from transit service and exclude areas that will not. If the county does not approve a resolution nullifying or modifying the decision of the conference, the transit benefit area will stand as approved by the conference.

Within 60 days of the establishment of the boundaries of the PTBA, the county commissioners and elected representatives of the cities within the area shall provide for selection of the governing body of the PTBA. Governing bodies shall consist of elected officials selected by and serving at the pleasure of the governing bodies of component cities within the PTBA and county commissioners of each county within the area. Cities are given the option to withdraw from the PTBA if they act to do so by resolution within 60 days of the formation of the benefit area.

The PTBA is required to prepare a transportation plan. This plan shall include but is not limited to the following:

1. The levels of transit service that can be reasonably provided for various portions of the benefit areas;
2. The funding requirements including local tax sources, state and federal funds necessary to provide the various levels of service within the area;
3. The impact of such a transportation program on other transit systems operating within that county or adjacent counties;
4. The future enlargement of the benefit area of the consolidation of such benefit area with other transit systems.

The transit plan as developed by the PTBA shall be reviewed by the planning and community affairs agency of the State of Washington. This agency may approve the transit plan or request that the plan be modified. Plan approval is necessary for the PTBA to become eligible to receive matching funds from the state's motor vehicle excise tax.

The PTBA shall have the normal corporation and governmental powers granted to special purpose districts in the State of Washington. This includes the power to contract with other transit agencies, public or private for the purpose of providing service.

Competition between the PTBA and privately operated transit systems is forbidden by this legislation. The PTBA, however, is authorized to make special arrangements with private carriers to continue operations even after PTBA service has been established. If such arrangements can not be made, PTBA shall purchase by condemnation the private transit operation. City systems which are operating prior to the formation of the PTBA may continue to operate after the PTBA has been formed. The PTBA may acquire such systems. However it may do so only with the permission of the governing body of the city which owns the system.

Territory may be annexed to the PTBA by election of the persons involved in the affected territory. Annexation elections may be requested by: 1. Resolution of a PTBA; 2. By petition calling for such an election, signed by at least 4% of the qualified voters residing within the area to be annexed; 3. By resolution of PTBA authority upon request of any city for annexation.

Counties that have established a county transportation authority or public transportation benefit area that have been established pursuant to this legislation are eligible to receive a one time advanced financial support payment from the state to assist in the development of the initial comprehensive transit plan. The support payment is limited to one dollar per person residing within each county or $50,000, whichever is the least. Repayment of an advanced financial support payment shall be made to the public transportation account in the general fund. Such repayment shall be waived within two years of the date that the advanced payment was recieved if the voters in the appropriate counties of PTBA areas do not elect to levy and collect taxes provided under this legislation.

In Oregon, special purpose districts for transit service may be formed in those counties comprising a standard metropolitan statistical area. Two such districts are presently operational in Oregon. These are the Lane Transit District in the Eugene-Springfield Metropolitan Area and the Tri-Met District in Portland. Oregon districts are permitted to contract with other jurisdictions to provide service outside of the transit district boundaries. (See ORS 267.560) Therefore, Tri-Met may enter into a contractual arrangement with the Washington agency for purposes of providing transit service. If Tri-Met operates across state lines, however, it is necessary to obtain an operating permit from the Interstate Commerce Commission. In addition, the private carrier now providing service in the corridor must be purchased by Tri-Met. Federal regulations prohibit a public carrier, receiving federal assistance, from competing with a privately owned carrier.

Federal law provides for assistance for both operations and capital expenditures for local transit systems. The Urban Mass Transportation Administration is authorized to allocate funds to urban transit systems to pay operating costs for service improvements or expansions. A total of 1.8 million dollars is expected to be available to the Washington portion of the Portland urban area over a six year period ranging from 1975 through 1980. The City of Vancouver and Tri-Met are presently the designated recipients for this funding. The UMTA money must be matched by locally raised non-fare box revenues. This program is known as UMTA Section 5 Operating Funds. (See Federal Register, January 13, 1975, page 2534).

Assistance is also available from UMTA for purchase of capital equipment or for capital construction. UMTA will pay 80% of the cost of capital acquisition for eligible projects. These projects may include purchase of buses and other rolling stock, as well as construction of terminal facilities, shelters, exclusive rights-of-way, acquisition or private transit companies and construction of maintenance facilities.

APPENDIX F

RIDERSHIP ESTIMATES

For a given population and fare, ridership will be determined by:

1. Accessibility which is determined by the extent of feeder coverage, and availability of park and ride facilities;
2. Convenience which is determined by the length of headways, availability of shelters and various operating characteristics;
3. Speed which is measured by the ratio of auto to transit travel time.

These projections are based on a Clark County system whose convenience and speed characteristics are comparable to the Tri-Met system. Ridership will become a function of accessibility. A low, medium, and high level of accessibility will be compared to existing service.

During the early 1970's, Tri-Met averaged 31.5 annual rides per suburban household within ¼ mile of each route[1]. This ride generation figure will be used for the low accessibility scenario. In 1974, Washington County generated 44 rides per household.[2] Forty-four rides per household represents a mid-level of accessibility. In 1974, the tri-county metropolitan area averaged 72 originating rides per household[3]. Vancouver service is currently attracting 18 annual rides per household[4].

The following chart shows expected ridership for each level of accessibility, based on 1974 housing data[5]:

Annual Ridership

Service Area: / Access:	As Is	Low	Medium	High
Vancouver (18,911 units)	336,000	467,000	652,000	1,065,000
Vancouver & urbanized (32,804 units)	590,000	904,000	1,263,000	2,066,000

These figures are adjusted for interstate transit trips which do not interface with internal transit trips.[6]

[1] Information derived from DeLeuw, Cather, PVMATS Study, "Step I".

[2] 1970 Washington County population = 157,920
1974 Washington County population = 182,500; increase factor = 1.156
1970 housing units = 52,038
Derived 1974 housing units = 1.156 x 52,038 = 60,156
1974 Washington County ridership = 2,626,106
1974 rides per housing unit = 2,626,106/60,156 = 43.7 = 44

[3] 1970 Tri-County population = 878,676
1974 Tri-County population = 931,200; increase factor = 1.059
1970 housing units = 316,000
Derived 1974 housing units = 334,964
1974 Tri-County ridership = 24,000,000 originating riders
1974 rides per housing unit = 24,000,000/334,964 = 72

[4] 1970 Vancouver population = 42,493
1974 Vancouver population = 50,100; increase factor = 1.177
1970 housing units = 16.067
Derived 1974 housing units = 18,911
1974 Vancouver ridership = 335,793
1974 rides per housing unit = 335,793/18,911 = 18

[5] Vancouver, as is = 18,911 housing units x 18 rides/housing unit = 340,398 rides
Vancouver, low access = 18,911 housing units x 31.5 rides/h.u. = 595,697 - adjustment factor
Vancouver, medium access = 18,911 housing units x 44 rides/h.u. = 832,084 - adjustment factor
Vancouver, high access = 18,911 housing units x 72 rides/h.u. = 1,361,592 - adjustment factor
Vancouver and urbanized area, as is = 32,804 housing units x 18 rides/h.u.= 590,472 rides
Vancouver and urbanized area, low access = 32,804 housing units x 31.5 rides/h.u. = 1,033,326 - adjustment factor
Vancouver and urbanized area, medium access = 32,804 housing units x 44 rides/h.u. = 1,443,376 - adjustment factor
Vancouver and urbanized area, high access = 32,804 housing units x 72 rides/h.u. = 2,361,888 - adjustment factor

[6] Adjustment Factor

One-third of Clark County labor force works in Oregon. Assume 1/3 of Vancouver originating trips will have an Oregon destination.

Assume 65% of Vancouver-Oregon trips will not rely on internal Vancouver transit.

Therefore, the adjustment factor = $\frac{\text{Vancouver internal trips}}{3} \times .65$

Appreciation is expressed to members of the Tri-Met planning staff for assistance in compiling this information.

APPENDIX G

TRANSIT OPERATIONS

Operations

The largest single aspect of any transit system is the day to day operations effort. This activity is comparable to the production function of an industry with operations being the systems largest expenditure.

Operations can be broken down into four major subcatagories including:

Operations Administration
Supervision
Service and Maintenance
Vehicle Operation

The operations administrator performs the standard administrative tasks. These may include budgeting, planning, scheduling, contract administration, and supervision of subordinates. In smaller transit companies the operations administrator may be the general manager. In larger operations, the administrator will be a department head working under a general manager.

Supervisors are responsible for insuring that maintenance and servicing tasks are properly assigned and carried out. In addition, they may be responsible for developing and administering the maintenance and service program of the transit company.* Supervisors are also needed to insure that bus operators are adhering to designated routes and schedules. Like the administrative function, the number of supervisors will depend on the size of the operation. In very small companies, this function may be performed by the general manager. As the system gets larger, this function will be assigned to a greater number of persons.

Service and maintenance will be performed by teams of individuals with specialized skills in all but the smallest companies. Buses must be fueled, cleaned and maintained at regular intervals. In addition, mechanical assistance must be on hand to deal with those equipment breakdowns and accidents which invariably occur.

---

* For a complete description of the elements involved in a maintenance and service program see Mass Transit Management: A Handbook for Smaller Cities, Institute for Urban Transport, February, 1971.

Vehicle operation is performed by the system's drivers. Usually the drivers wages will be the single most costly item in the system's expenditures. Since proper (or improper) operation will go a long way toward influencing patronage and image, it is imperative that drivers be well trained and adequately supervised.

Table G provides a listing of those materials, equipment and labor which are necessary to maintain transit operations. In addition, a list of related costs is also noted.

A transit system must perform other functions, in addition to operations. If the system is publicly owned, it will be necessary to work with a governing body or other public agencies to set system policy. A budget must also be prepared. Personnel policies must be drafted and administered. It is also necessary to monitor and evaluate system performance.

Most transit systems will maintain a planning function which provides eventual service improvement and expansion.

Finally, a marketing program is essential to system development. Marketing has proven its effectiveness in attracting riders to transit systems. The system should anticipate spending about 5% of its revenues for this function.*

Planning and marketing costs are presented in Table III-B.

Capital Improvements

System capital improvements may be broken down into three general catagories including:

Rolling Stock
System Maintenance and Storage Facilities
System Anemities

It is important to keep in mind that the Urban Mass Transportation Administration will fund 80% of the cost of most capital improvements. Cost estimates (where provided) are made on the basis of total cost and are not necessarily the costs that would be incurred by the local transit agency.

Rolling stock includes all transit vehicles which are used in transporting passengers on the system. In this area, all public transit rolling stock is powered by internal combustion engines (gas or diesel). It is likely that this trend will be continued with the Clark County transit system.

* For a discussion of marketing effectiveness see Advertising and Promotion Demonstration Project Final Report, UMTA.

Currently, a full size diesel bus costs about $65,000. A modified bus, containing a good deal of special equipment will cost up to $75,000. (See Passenger Transport, May 16, 1975, p.9)

Smaller demand responsive vehicles cost somewhat less. A 15 passenger radio equipped van, modified for transit service can be purchased for about $15,000. A small radio equipped transit bus will cost up to $41,000. (Demand Responsive Transportation, p. 39)

The number of buses needed by the system will be determined by the number of routes, frequency of service and route length. In addition, it is generally considered necessary to have a number of spare buses on hand as a contingency against equipment breakdowns. Usually one spare for every 10 buses needed for operations is considered adequate.

Maintenance Facilities

Preventive maintenance is essential to the efficient, safe and economic operation of the transit system. To accomplish a high level of preventive and essential maintenance it is necessary to have an adequate maintenance service and storage facility.

Industry standards suggest that the transit system have facilities available for performing maintenance on about 8% of the fleet. Thus, a system having 25 buses should have two service bays. In addition, room is needed for the following functions:

* Fueling and Service
Cleaning
Greasing
Body Repair
Painting
Machine Shop
Stocking
Storage or Parts
Offices
Storage of Coaches
Storage of Fuel
Storage of Batteries

*Mass Transit Management, p. 155-156

Facility costs will vary depending on the size of the system. It has been estimated that a maintenance facility for 25 buses will cost about $250,000.

System Amenities

System amenities are those features which improve access to the transit system or make use of the system or make the system more pleasant for the patron. The most common amenities include park and ride sites, bus stations, and bus shelters.

Park and ride facilities may range in design from simple parking lots to elaborate transit stations complete with waiting rooms, comfort stations and ticket offices. In some cases, agreements may be worked out between the transit agency and merchants, churchs or civic groups which have under utilized parking facilities. In other cases, the cost of the facilities will depend on size, elaborateness and location.

The unadopted 1990 transit plan for the Portland-Vancouver area describes eight transit stations for Clark County. These stations were to be constructed at a total cost of $3.6 million. A scaled down version of this plan has been adopted in the Interim Transportation Plan (ITP). The ITP recommends two transit stations for Clark County. The first station would be located in downtown Vancouver. The design and precise siting of this station is under study. Another station would be constructed near I-205 in East Vancouver or in Orchards. Siting of this station is to be studied at a later date.

Bus shelters are also a useful addition to a transit system. Bus shelters not only protect passengers in inclement weather, but also serve to call attention to the system and its routings; system information such as routes, fares and schedules can be posted on the shelters. The cost of shelters averages about $1,500 per installation.

TABLE G SAMPLE OPERATING COSTS

(Dollars Pre Bus Operating Hour)

OPERATIONS	TRI-MET	VANCOUVER TRANSIT
Driver Labor	6.46	4.54
Maintenance Labor	1.53	1.59
Scheduling	.15	----
Operations Supervision & Administration	.69	1.11
Overtime	1.06	1.05
Fringe Benefits	1.49	1.42
Operations Materials & Supplies	2.19	3.43
TOTAL OPERATIONS	13.57	13.14
ADMINISTRATION, PLANNING & MARKETING		
Executive	.19	(1)
Personnel	.68	(1)
Finance	.20	(1)
Contract Administration	.25	(1)
Marketing	.93	(2)
Planning	.43	(2)
Insurance	.52	.60
Overhead	--	.64
	3.20	1.24
Depreciation	.43	NA
TOTAL COSTS	17.20	14.38(3)

(1) Personnel, finance, contract administration and executive functions are performed by the City of Vancouver and funded through overhead expenses

(2) Vancouver Transit has no marketing or planning program comparable to Tri-Met's

(3) Excludes depreciation

26 June 1975

MEMORANDUM

TO: Ernie Bonner

FROM: Bill Dirker

SUBJECT: I-5 Corridor Project

I attended the last Project Task Force meeting on June 20th, the following is the main outline of the major program to be pursued.

1. Acquisition of Vancouver/Portland Bus Company by Tri-Met.

2. Formation of a transit district in Clark County.

3. Agreement between the transit district and Tri-Met for inter-service connections.

4. Priority lane and treatment for buses and car pools.

I previously sent you a memo (another copy attached) suggesting that the City officially urge Tri-Met to proceed with this acquisition. Unresolved is the matter of Clark County subsidy to Tri-Met for this service. When a transit district is formed this may not be a difficult matter but until then it could be very complex. The four elements listed above are necessary if a major public transportation function is to take place in this sector of the region. The acquisition is an essential first step. However, we almost have a "catch 22" situation which the Washington subsidy is necessary before Tri-Met could operate in Clark County and, in turn, there is a substantial justification for the formation of a transit district and also for the priority lanes. Therefore, I suggest that a way out might be that Tri-Met apply for a 100% demonstration grant to subsidize this service for one or two years. This is not a tremendous amount of money and has the prospect of becoming locally self-sustaining in a short time but needs some kind of subsidy to get the process started. Furthermore, it has the unique feature of being an interstate system linking the efforts of two transit districts. Given the importance, the uniqueness, the small financial requirement I believe this has a good chance for being approved as a demonstration project. A rough estimate of $50,000 to $100,000 per year for two years should be in the ball park.

Washington legislature passed legislation authorizing "transit benefit districts" with the ability to levy, by vote of the people, a household utility tax of up to $1 per month or a three tenths percent sales tax. Procedural formation of this district is a very complex matter but it can be done. The project task force enacted their resolution urging the Governor to sign this legislation which he had not yet done. He had vetoed other legislation of this nature but Commissioner Granger felt he probably would sign this act. All of this may take considerable time which is why I suggest we consider a two year demonstration project to support Tri-Met's linkage to Clark County.

We have recommended that the project final report, and the special report justifying priority lanes be incorporated into one report with a technical appendix. We agreed to meet again on July 25th and ask that a draft of this report be made available one week in advance. Upon acceptance of the report dealing with the priority lane, we should initiate action by CRAG to activate I-5 corridor development project in CRAG's unified work program. This probably can be done by ODOT using interstate funds.

WSD:bn
cc Doug Wright

June 5, 1975

MEMORANDUM

TO: Ernie Bonner

FROM: Bill Dirker

SUBJECT: I-5 Corridor Task Force

Attached is a letter from Chairman Granger transmitting a resolution that was approved at the May 16 Task Force meeting. I have been representing you at these meetings. I introduced the resolution attached.

In essence, the intent is to keep the pressure on Tri-Met to proceed with the acquisition of the Portland-Vancouver Bus Company. The Task Force believes that unless continued pressure is kept on the Tri-Met Board that this action will be given a low priority and will drag on for years. The Task Force, as a component of CRAG, is the only institutional vehicle that has a direct interest in this action. By this resolution the Task Force is recommending that its constituent members and CRAG take actions reflecting this position. The Portland City Council could pass a similar resolution or the Mayor could express himself personally in a letter to the Tri-Met Board.

These things take a very long time to consumate and we will not be able to realize the benefits of a true regional transit system, including the benefits of the suburban transit station and corridor development projects, until this integration has been accomplished. The Washington parties, depending upon the outcome of certain state legislation, are on the verge of initiating formation of a public transportation district in Clark County. This would operate a regional transit system in Clark County. Its connection to the rest of the regional system operated by Tri-Met now must take place by a transfer to the private Portland-Vancouver Bus Company providing a substandard and expensive connection service. Furthermore, Vancouver is initiating a feasibility study of a downtown transit terminal. The extension of Tri-Met service into Vancouver connecting to the Clark County transit system must occur along with these developments and the Task Force is concerned that without continued pressure there will be excessive delays or inaction.

The Highway Division has suspended reconstruction of the Jantzen Beach Interchange pending a decision on I-5 HOV lanes. This, in turn, is dependent in part upon the justification to be provided by the CRAG staff report, due this month. Part of that justification is bus usage of the HOV lane. A significant part of that bus usage will be Vancouver service and so the level of bus service to be provided in this corridor becomes a key issue, probably out of proportion to its actual activity level. Many of these complex, interrelated steps have long lead times and are essential to the development of this major regional corridor.

Perhaps as a first step we could draft a letter from the Mayor to the Chairman of the Tri-Met Board expressing these views. Let me know what you'd like me to do.

cc: Dick Granger
Doug Wright

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

CRAG

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

May 28, 1975

Mr. Bill Dirker
Transportation Coordinator
City Hall Annex
1220 S.W. Fifth Avenue
Portland, Oregon 97204

MAY 2 ? 1975

Dear Mr. Dirker:

At the May 16 meeting of the I-5 Project Task Force, the following resolution was approved:

> Whereas, the Interstate Bridge Corridor Project has been established to address the transportation problems in the I-5 Corridor;
>
> Whereas, participating agencies are concerned with implementation of proposed improvements;
>
> Whereas, the consolidation of transportation services in the corridor has not occured;
>
> BE IT THEREFORE RESOLVED that the appropriate agencies are requested to expedite the consolidation of Transit Service in the I-5 Corridor.

If appropriate, you are requested to bring this resolution to the attention of your governing body for implementation.

Thank you for your cooperation in this matter.

Sincerely,

Dick Granger

Commissioner Dick Granger
Chairman, I-5 Project Task Force

DG/lw

See I5 TF data.

I5 Corridor 6/20

1. Mall Plan, Hazeldell service - 90 days now
14-15/bus - Needs demonstration extension or may
be considered regular service - problem to abandon.

2. Wash legis. - "Transit Benefit District" w/
household utility tax ($1/mo. max.) or 3 sales tax.
of vote
District formation complex but can be done.

3. Resolution urging Gov. to sign legis.

4. Master Program
   A. VP - Tri-Met Acquisition
   B. Transit Districts
   C. Tri-Met - Transit District Agreement
   D. Priority Lane

Consider Demonstration Grant for 2 yr. Program "A"
Use 100% Fed. subsidy because interstate
Pending Transit District

5. Activity Corridor Development

6. Project Report - incl. Priority Lanes + Techn.
Meet 7/25 - Draft 1 week before..

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

I-5 PROJECT TASK FORCE

FRIDAY, JUNE 20, 1975
~~1:30~~ 9:00 AM P.M.

COMMISSIONERS CONFERENCE ROOM
CLARK COUNTY COURTHOUSE
VANCOUVER, WASHINGTON

A G E N D A

I. CALL TO ORDER

II. APPROVAL OF MINUTES (ATTACHED)

III. STAFF REPORT

IV. STATUS OF TRANSIT PLANNING EFFORTS

- A. NEW LEGISLATION
- B. PUBLIC INFORMATION PROGRAM

V. DIRECTION FOR FINAL REPORT

VI. OTHER BUSINESS

VII. NEXT MEETING DATE

VIII. ADJOURNMENT

CRAG

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

LARRY RICE, EXECUTIVE DIRECTOR

TO: Project Task Force

FROM: Project Staff

SUBJECT: Minutes of May 16, 1975

DATE: May 22, 1975

Commissioner Granger called the meeting to order and the minutes of the previous meeting were approved.

Staff reported the progress of the priority analysis noting that some corrections have been made in data previously reported. A preliminary staff report was distributed for discussion and comment.

The outcome of the city-county meeting on transit plans was discussed. Commissioner Granger directed staff to present the Scenarios describing transit service to the city councils of Camas and Washougal.

Staff presented the Project Task Force with a marketing program containing 10 elements which could assist in publicizing the demonstration project service currently being operated by Vancouver Portland Bus Co. Commissioner Granger directed staff to contact local service groups to obtain their assistance in marketing efforts. Staff was also directed to present the marketing program to the CTS for their approval.

The progress of Tri-Met efforts to acquire VP Bus Company was discussed. It was noted that Tri-Met would not take further action to purchase VP Bus until a formal request to do so was received from Clark County, the City of Vancouver or a Transit Authority located in Clark County. Bill Dirker moved to "request the appropriate agencies to expidite the consolidation of transit service in the I-5 corridor". The motion was approved.

It was noted that an information program to publicize transit planning for Clark County was being prepared. The information program will include a slide show and possibly some form of informational brochure.

Commissioner Granger discussed the progress of transit legislation which is pending in the Washington State Legislature. The bill is part of a total transportation package and appears to have a good chance of passage.

Having no further business, the meeting was adjourned.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S.W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

May 28, 1975

Mr. Jerry Peck
President, Vancouver-Portland Bus Company
111 E. 5th St.
Vancouver, Washington

Dear Mr. Peck:

Last fall, the Vancouver-Portland Bus Company agreed to implement, on a ninty day trial basis, a demonstration commuter bus service to the community of Hazel Dell and on Mill Plain Blvd. in Vancouver. The service, which was recommended in the I-5 project Phase I Report, connects these two areas with downtown Portland and the Lloyd Center office complex. The 90 day trial period will expire on May 31.

Recognizing that the lines from Hazel Dell and Mill Plain Blvd. to downtown Portland show promise of increasing patronage, it is recommended that your firm continue these services for an additional ninty day trial period.

Thank you for your cooperation in this matter.

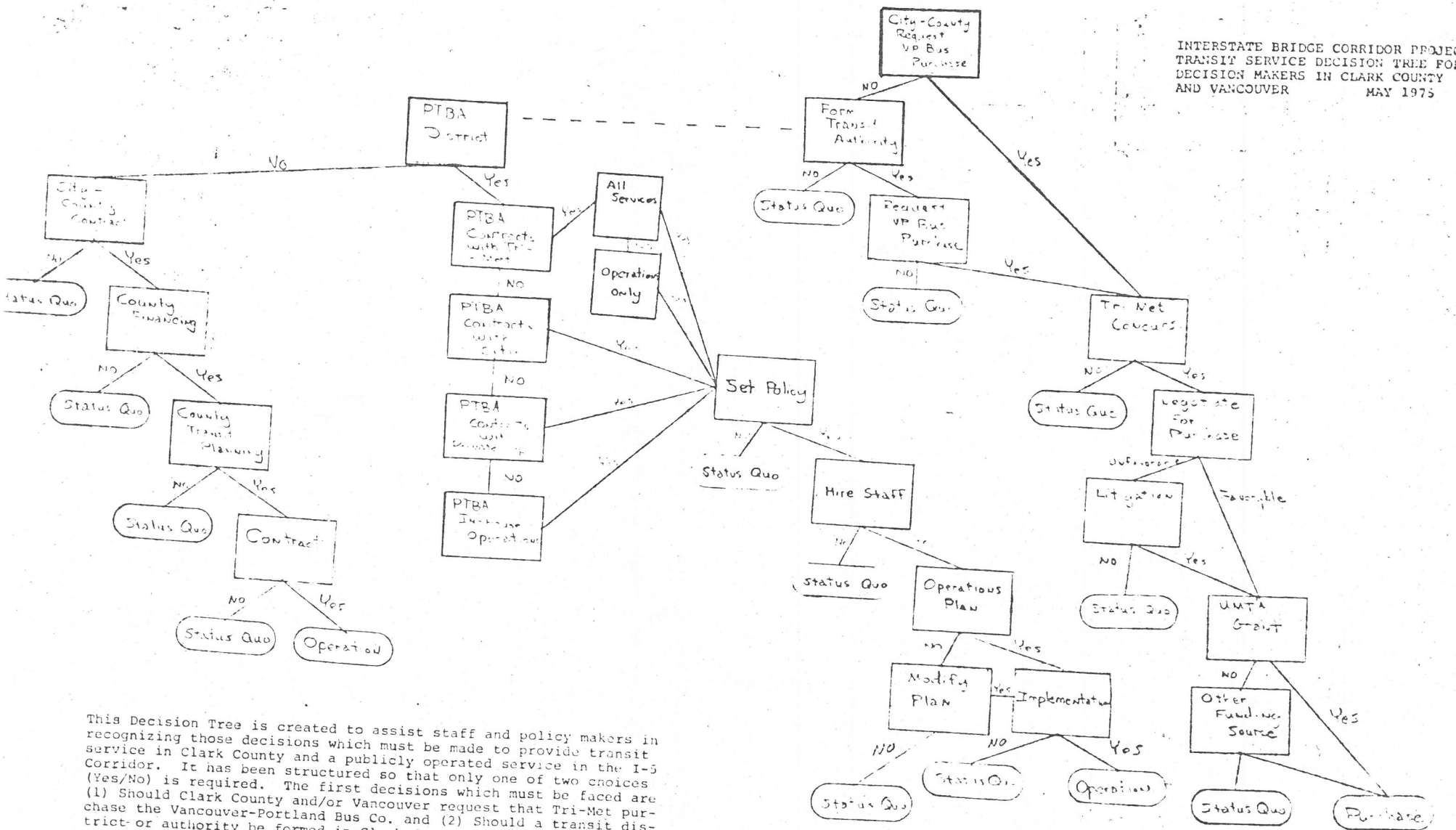
Sincerely,

Dick Granger

Commissioner Dick Granger
Chairman, I-5 Project Task Force

DG/lw

INTERSTATE BRIDGE CORRIDOR PROJECT
TRANSIT SERVICE DECISION TREE FOR
DECISION MAKERS IN CLARK COUNTY
AND VANCOUVER MAY 1975



This Decision Tree is created to assist staff and policy makers in recognizing those decisions which must be made to provide transit service in Clark County and a publicly operated service in the I-5 Corridor. It has been structured so that only one of two choices (Yes/No) is required. The first decisions which must be faced are (1) Should Clark County and/or Vancouver request that Tri-Met purchase the Vancouver-Portland Bus Co. and (2) Should a transit district or authority be formed in Clark County. Most decisions are the responsibility of decision makers in Clark County and Vancouver although a few (such as the results of negotiations to purchase VP bus) are the responsibility of other parties as well.

COLUMBIA REGION ASSOCIATION OF GOVERNMENTS

Memorandum June 17, 1975

To: Project Task Force Members

From: Staff

Subject: Change in Meeting Time

Please note: The time for the I-5 Project Task Force has been changed from 1:30 p.m. on June 20, to 9:00 a.m. on that same day. Meeting location is the same as indicated on your agenda.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S.W. HALL STREET
PORTLAND, OREGON 97201
(503) 221-1646

TO: Project Task Force

FROM: Project Staff

SUBJECT: Minutes of May 16, 1975

DATE: May 22, 1975

Commissioner Granger called the meeting to order and the minutes of the previous meeting were approved.

Staff reported the progress of the priority analysis noting that some corrections have been made in data previously reported. A preliminary staff report was distributed for discussion and comment.

The outcome of the city-county meeting on transit plans was discussed. Commissioner Granger directed staff to present the Scenarios describing transit service to the city councils of Camas and Washougal.

Staff presented the Project Task Force with a marketing program containing 10 elements which could assist in publicizing the demonstration project service currently being operated by Vancouver Portland Bus Co. Commissioner Granger directed staff to contact local service groups to obtain their assistance in marketing efforts. Staff was also directed to present the marketing program to the CTS for their approval.

The progress of Tri-Met efforts to acquire VP Bus Company was discussed. It was noted that Tri-Met would not take further action to purchase VP Bus until a formal request to do so was received from Clark County, the City of Vancouver or a Transit Authority located in Clark County. Bill Dirker moved to "request the appropriate agencies to expidite the consolidation of transit service in the I-5 corridor". The motion was approved.

It was noted that an information program to publicize transit planning for Clark County was being prepared. The information program will include a slide show and possibly some form of informational brochure.

Commissioner Granger discussed the progress of transit legislation which is pending in the Washington State Legislature. The bill is part of a total transportation package and appears to have a good chance of passage.

Having no further business, the meeting was adjourned.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

I-5 PROJECT TASK FORCE

FRIDAY, MAY 16
1:30 P.M.

COMMISSIONER'S HEARING
ROOM-CLARK COUNTY COURTHOUSE

A G E N D A

I. CALL TO ORDER

II. APPROVAL OF MINUTES

III. STAFF REPORTS

- A. PROGRESS OF PRIORITY ANALYSIS ON I-5
- B. REPORT OF CITY-COUNTY MEETING ON TRANSIT PLANS

IV. MARKETING PROGRAM FOR TRANSIT DEMONSTRATION PROJECTS

V. INFORMATIONAL ITEMS

- A. PROGRESS OF ACQUISITION OF VP BUS BY TRI-MET
- B. EFFORTS TO PUBLICIZE TRANSIT PLANNING IN CLARK COUNTY
- C. PROGRESS OF TRANSIT LEGISLATION IN WASHINGTON SB 2250

VI. OTHER BUSINESS - Transit Station in Vancouver?

VII. NEXT MEETING DATE

VIII. ADJOURNMENT

MINUTES OF THE PTF

APRIL 18, 1975

The joint meeting of the I-5 Citizen's Committee and the Project Task Force was called to order by Commissioner Granger.

The general status of the elements of the work program was given. The transit planning element is on schedule, however, the priority analysis is behind schedule because of the lack of manpower.

The project staff presented two transit scenarios for review by the Task Force and the Citizen's Committee. The Task Force and citizens indicated their support for the planning efforts and approved a motion to recommend the plans to a joint meeting of the Clark County Commissioners and Vancouver City Council.

Staff then presented information regarding the priority lane for high occupancy vehicles in the I-5 corridor. It was noted that such a lane would require restriping and narrowing of the freeway lanes to 11½ feet. The two outside lanes would be utilized by non-high occupancy vehicles while the inside lane would be reserved for vehicles more than three persons therein.

Jerry Peck of Vancouver-Portland Bus Company reported on efforts to separate the company's transit operating authority from its charter authority. He also reported on the progress of the demonstration projects being operated in the Hazel Dell and Mill Plain Corridors. It was noted that ridership on the Hazel Dell Corridor has improved little since the project inception and is running a significant deficient. In the Mill Plain Corridor, the ridership is continuing to increase though the line has still not reached the point of meeting expenses. It was indicated that public support would be needed to continue to operate the routes. After some discussion staff was instructed to identify ways that public support for publicity could be provided.

Having no further business, the meeting was adjourned.

COLUMBIA REGION ASSOCIATION OF GOVERNMENTS

Memorandum May 7, 1975

To: Project Task Force

From: Project Staff

Subject: Marketing Program for VP Bus Demonstration Project

In response to the request of the PTF, staff has prepared a description of ten low cost means of publicizing the Hazel Dell and Mill Plain Express Bus Service. The private operator presently providing the service has indicated that without additional support from public agencies, he will be forced to reduce or terminate the service. Most of the suggestions are contained in or are based on recommendations developed in the I-5 Project Phase I Report. With the possible exception of numbers 3,7 and 9 these marketing items can be quickly pursued. It would be desirable if all or most of these possibilities were utilized.

Staff recommends that the local agencies in Washington provide necessary support to assure the continuation of the express bus service and increase the ridership. Perhaps the public agencies could commit themselves to a 90 day support program as a demonstration.

COOPERATION NEEDED TO PUBLICIZE VP BUS DEMONSTRATION PROJECT

		COST EFFECTIVENESS
1.	Preparation of a Information Folder - The city of Vancouver and Clark County might assist in the preparation of an attractive information folder or card that would describe the demonstration project service, provide a fare schedule and service timetable. This information could be enclosed will billings for city water and sewer service. Such a distribution would probably require action of the Vancouver City Council. A few free tickets could be enclosed at random.	FAIR
2.	Participating agencies could sponser a free fare day. That is, for a day or longer period, free fares would be offered on either or both the demonstration routes. Drivers would count the number of passengers boarding the buses and the costs of the fares would be billed to the participating jurisidctions. This action must be well publicized to be effective.	EXCELLENT
3.	Interim park and ride lots could be obtained along the demonstration project routes. These lots could be signed to provide information concerning the bus lines. The lots could also be used for carpoolers and users of Vancouver Transit. Sign designs can be obtained from the Tri-Met Carpool program.	FAIR
4.	The low cost transfer program could be implemented. This program could be publicized by Tri-Met, and may increase ridership by providing lower fares to transferees.	EXCELLENT
5.	Public officials in the participating jurisdictions could issue press releases expressing support for the project and encouraging its use. Public service announcements could be prepared and distributed to local radio stations. In addition, information could be provided on existing service at the conclusion of federal and service agency public service spots encouraging transit useage.	GOOD
6.	Public agencies might encourage newspapers and advertising companies to cooperate in publicizing the the project as a public service. Local agencies could prepare the advertisements for publication in local papers or provide printing costs for billboard advertising space on donated billboards.	GOOD

		COST EFFECTIVENES
7.	Tri-Met could publish or assist in the distribution of VP demonstration project schedules. These could be distributed along with regular Tri-Met schedules in stands located throughout the downtown area.	POOR
8.	Participating agencies might contact prospective riders through employers. A letter describing the service and its benefits can be sent to employers in the downtown and Lloyd Center areas asking them to make their employees aware of the service and encourage them to use it and conserve energy.	GOOD
9.	If Tri-Met intends to reprint its route map, the demonstration routes and related information should be noted on the map.	POOR
10.	A "trade off" program could be worked out between VP bus and local radio stations or newspapers. VP buses would carry advertisements for the papers or radio stations and the media or press outlets would, in turn, publicize VP bus.	EXCELLENT

NOTE: These recommendations are based on the Interstate Bridge Corridor Project Phase I Report.

PRELIMINARY

DRAFT REPORT

HOV LANE ANALYSIS

IBCP - ELEMENT B
May 16, 1975

This portion of the Interstate Bridge Corridor Project Revised Work Program is being conducted to assess the utilization of priority treatment for HOV in the form of an exclusive lane, ramp control or both. This section deals specifically with an exclusive lane for HOV. The existing conditions of I-5 during the peak periods were determined. An analysis of the HOV lane was made indicating the use of such a land and the remaining traffic on the balance of the roadway. This was followed by the development of the consequences of the HOV lane. Finally, recommendations were set forth for several improvements.

EXISTING CONDITIONS

There are good records for traffic volumes on the I-5 facility at the permanent recorder count station locations of the Interstate Bridges and Ainsworth Street. To supplement this data additional portable recorder counters were set out and manual counts obtained. The manual counts included occupancy samples in the peak and off-peak intervals. Travel time-delay studies were accomplished in the peak periods as well as numerous field trips on the part of the project staff. The traffic volumes and field trips were utilized to identify the location and intensity of the congestion problems and the travel time-delay data determined the extend to the queueing caused by the congestion. When congestion occurs when the traffic flow is large and the backup propagates a considerable distance upstream. Congestion caused on Hayden Island has propagated as far south as the Fremont Interchange during the evening peak period. The existing conditions are illustrated on Figures 1 and 2. It is apparent that congestion problems occur at Portland Blvd and between Union Ave and Hayden Island (Columbia Slough Bridge).

HOV LANE ANALYSIS

Utilizing existing counts and occupancy rates, the existing level of service of the freeway, and ridership (passengers per hour) of each lane was estimated using methods of the 1965 Highway Capacity Manual at Portland Blvd. and Columbia Slough. These sites were selected since the congestion normally initiates from them. The analysis was repeated assuming the installation of an HOV lane at these sites. The results of these exercises appear on table 1 which indicates a consideralble improvement in the level of service in the non-priority traffic flow. The HOV lane was assumed to contain buses and carpools with three or more persons. It was also assumed that the number of carpools doubled with the installation of the HOV lane. This was based on the experience of the Oakland-Bay Bridge.

CONSEQUENCES OF THE HOV LANE

There are several positive consequences to the use of a HOV lane in each direction including:

1. Increase in level of service (table 1)
2. Reduction of congestion (figures 3 and 4)
3. Improvement of travel time for priority (5-8 minutes) and non-priority vehicles (3-5 minutes)
4. Conservation of some energy.
5. Reduction in air pollution.

While there are a number of advantages, it should be realized that some unfavorable impacts may be expected including:

1. Weaving problem in and out of HOV lane.
2. Law enforecment (Violations)

Table I HOV LANE ANALYSIS

PRELIMINARY

I-5
Portland Blvd. to Vancouver

Objective: To evaluate the impact of a HOV on the lane volumes at Portland Blvd. and Columbia Slough

Results:

Lane	W/O HOV Lane vph	W/O HOV Lane pph	W/ HOV Lane vph	W/ HOV Lane pph
Portland Blvd				
AM				
3(HOV)	---	---	630	2250
2	2000	2990	1810	2520
1(42%)	1500	2220	1060	1480
Level of Service	E		D	
PM				
3(HOV)	---	---	370	1600
2	1940	2760	1790	2490
1(42%)	1410	2000	1190	1650
Level of Service	E		D	
Columbia Slough				
AM				
4(HOV)	---	---	865	3240
3(37%)	1920	2860	(40%)1590	2210
2(40%)	1780	2650	(39%)1550	2150
1(23%)	1110	650	(21%) 835	1160
Level of Service	E		C	
PM				
4(HOV)	---	---	515	2010
3(37%)	1880	2670	(40%)1675	2320
2(40%)	1790	2540	(39%)1630	2260
1(23%)	1030	1440	(21%) 880	1220
Level of Service	E		D	

NOTE: vph - Vehicles per hour
pph - Passengers per hour
(xx) - Lane distribution

Assumptions:
1. The 3 to 5% trucks are treated as autos for occupancy computations.
2. The number of carpools and buses will soon double after the installation of the HOV lane (based on experience on the Oakland-Bay Bridge where carpools doubled after the installation of carpool lanes).
3. Traffic characteristics and modals of the 1965 HCM are valid for this analysis.
4. No appreciable change in transit ridership.
5. SVd = 1500 vph, SVc = 1350 vph

TYPICAL OPERATIONAL CONDITIONS
MARCH 1975
I 5 SOUTHBOUND MORNING PEAK PERIOD

PRELIMINARY

MPH 30 40

DIRECTION OF FLOW

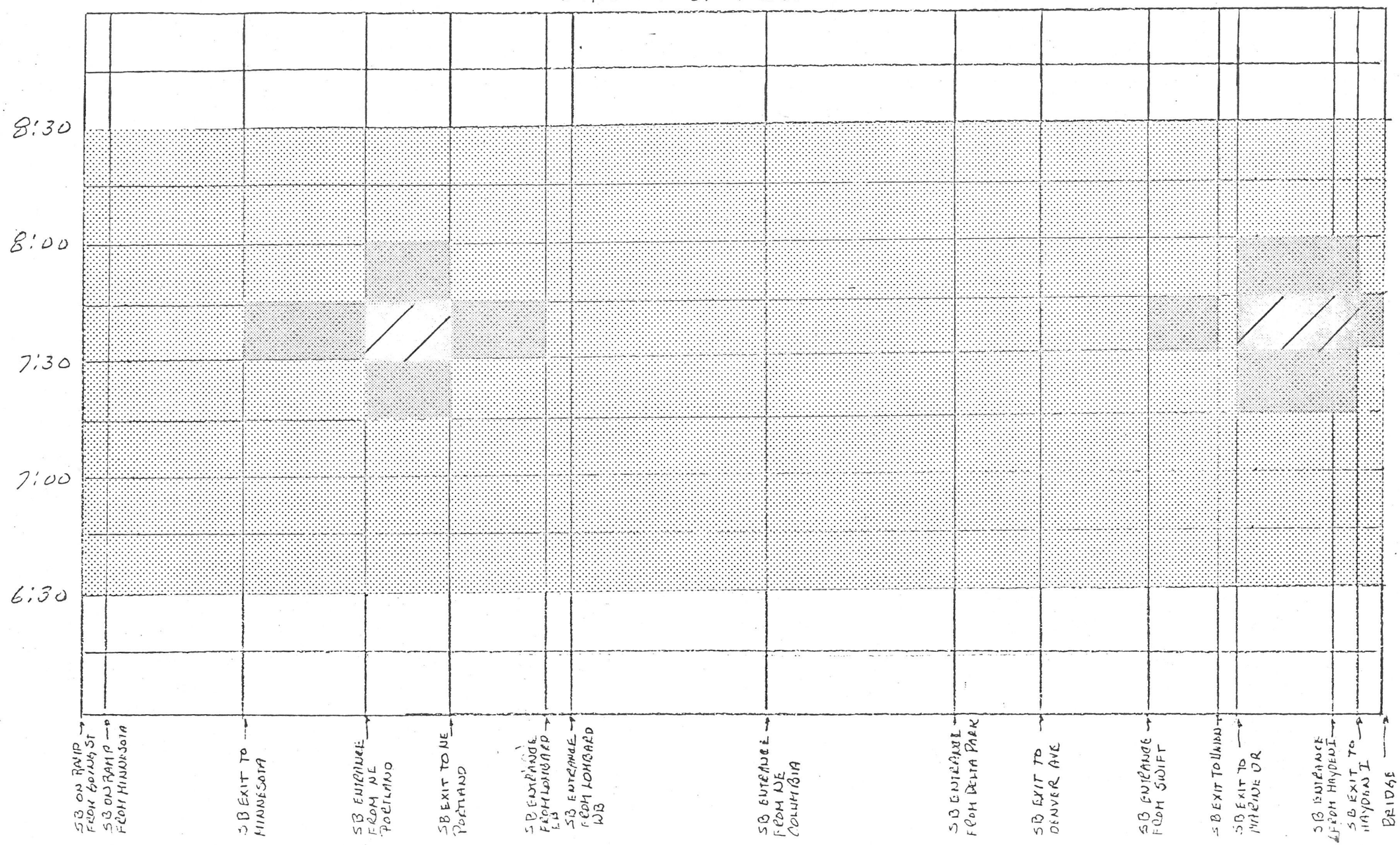


Figure 1

MPH

30 40

TYPICAL OPERATIONAL CONDITIONS
MARCH 1975
I5 NORTHBOUND EVENING PEAK PERIOD

PRELIMINARY

DIRECTION OF FLOW

6:00

5:30

5:00

4:30

4:00

NB EXIT TO GOING ST

NB ENTRANCE FROM GOING ST

NB ENTRANCE FROM MISSOURI

NB EXIT TO NE PORTLAND

NB ENTRANCE FROM NE PORTLAND

NB EXIT TO LOMBARD EB

NB EXIT TO LOMBARD WB

NB EXIT TO COLUMBIA

NB EXIT TO DENN PARK

NB ENTRANCE FROM DENVER

NB EXIT TO SWIFT

NB ENTRANCE FROM UNION

NB EXIT TO HWY/DBO I

NB ENTRANCE FROM HAYDEN I

BRIDGE

Figure 2

TYPICAL OPERATIONAL CONDITIONS EXPECTED WITH HOV LANE

BETWEEN HAYDEN ISLAND AND PORTLAND BOULEVARD

I-5 NORTHBOUND EVENING PEAK PERIOD

PRELIMINARY

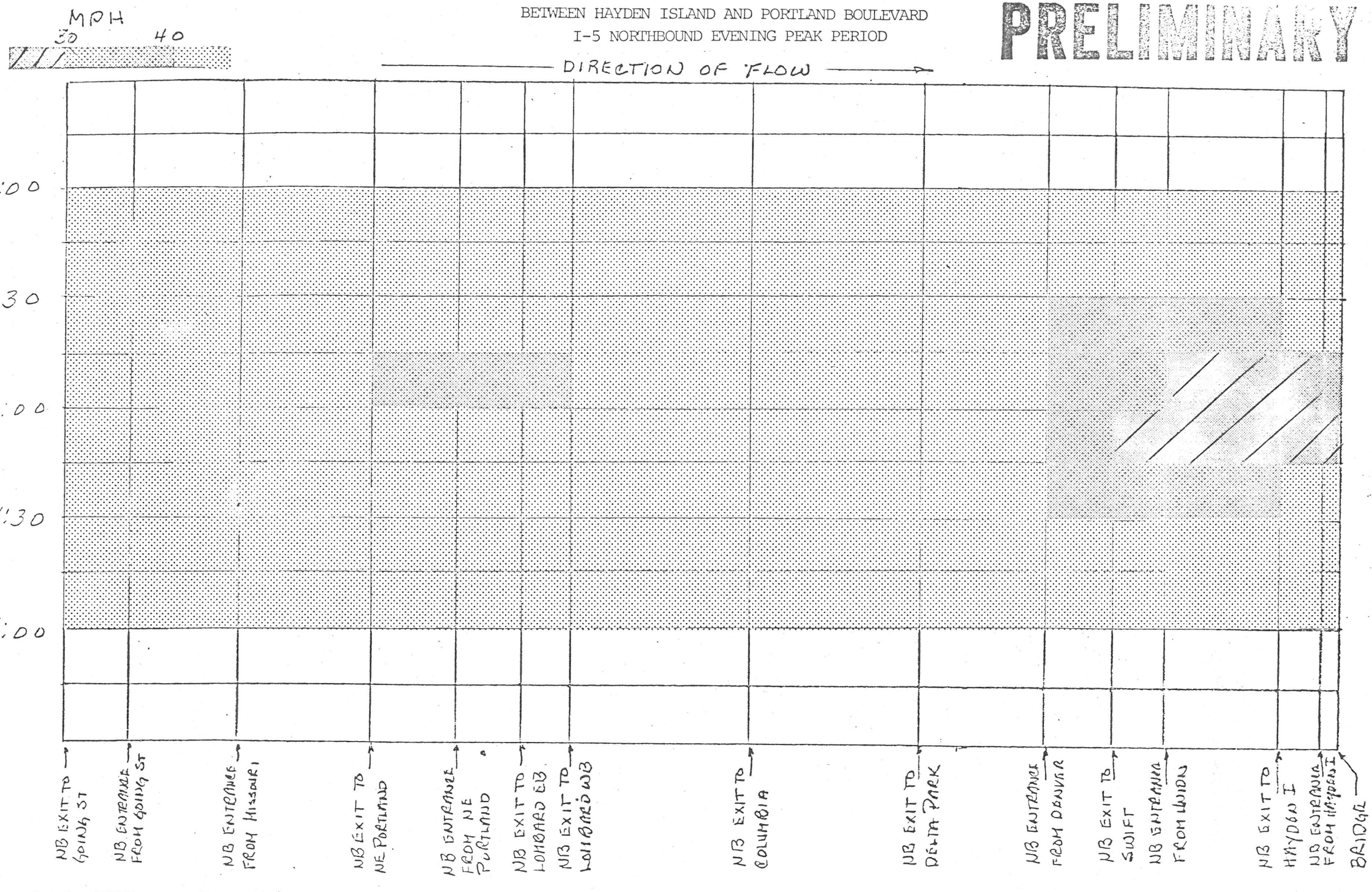


Figure 3

TYPICAL OPERATIONAL CONDITIONS EXPECTED WITH HOV LANE
BETWEEN HAYDEN ISLAND AND PORTLAND BOULEVARD

I-5 SOUTHBOUND MORNING PEAK PERIOD

PRELIMINARY

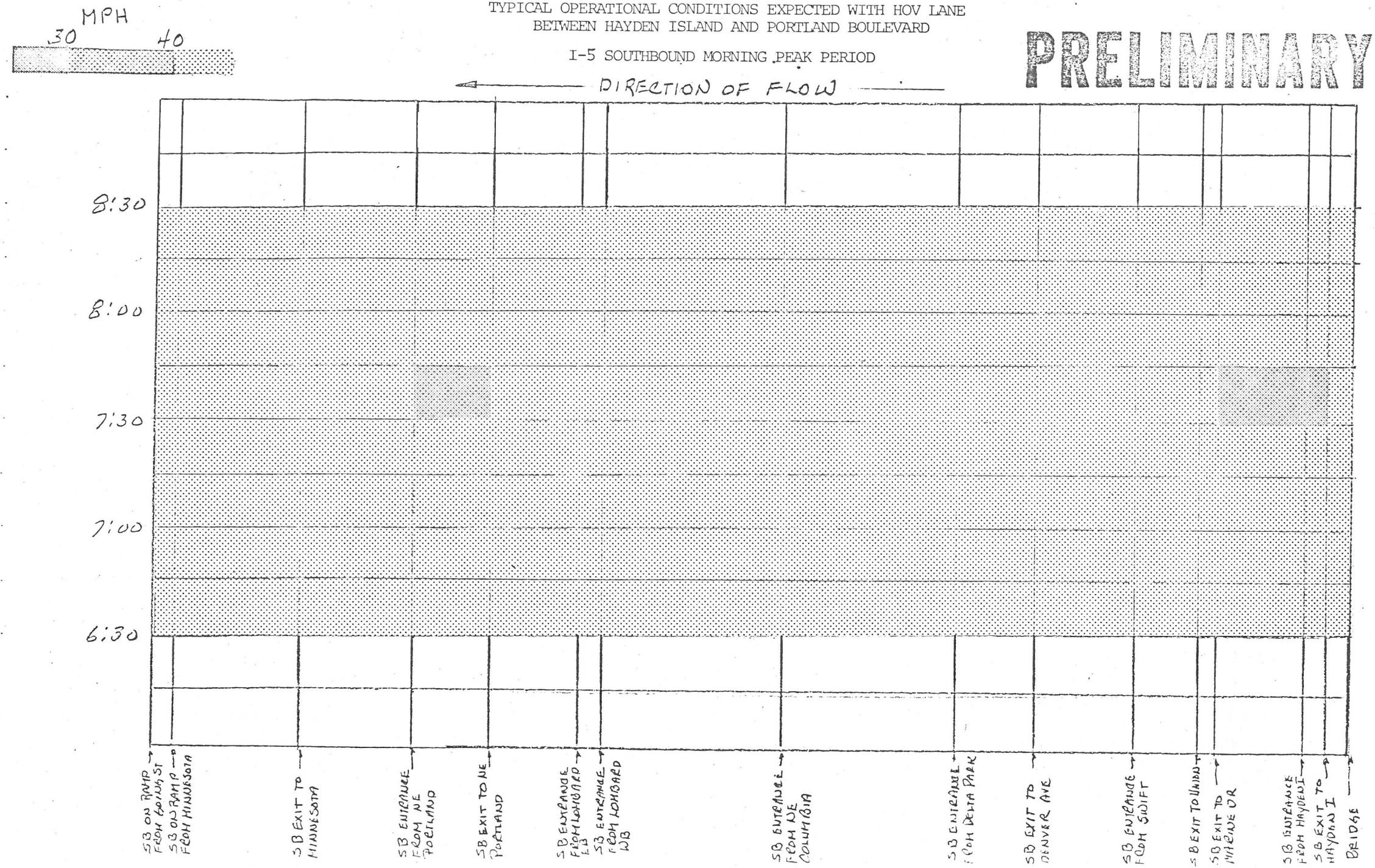


Figure 4

HOV LANE ANALYSIS

PRELIMINARY

I-5

PORTLAND BLVD AND COLUMBIA SLOUGH

OBJECTIVE: TO DETERMINE THE IMPACT OF A HOV ON TRAFFIC VOLUMES AT PORTLAND BLVD AND COLUMBIA SLOUGH

BASIC DATA:

	AM	PM	
Auto Occ (All) (ppa)	1.49	1.42	
" " (≥3) "	3.5	3.5	
" " (≤2) "	1.40	1.39	
One person/Auto	55%	64.5%	
Two " "	36%	30 %	
Carpool (≥3)	9 %	5.5%	w/o HOV
	18%	11 %	w/ HOV
Bus Volumes (Bph)	4	4	w/o HOV
	8	8	w/ HOV
Bus Occ (ppb)	52	52	

ASSUMPTIONS:

1. The 3 to 5% trucks are treated as autos.
2. The number of carpools and buses will double soon after the installation of the HOV lane (based on experience on the Oakland-Bay Bridge where carpools doubled).
3. Traffic characteristics and models of the 1965 HCM are valid for this analysis
4. No appreciable change in transit ridership.
5. SVd = 1500 vph, SVc = 1350 vph

PRELIMINARY

	Lane	W/O Lane		W/ HOV Lane	
PORTLAND BLVD		vph	pph	vph	pph
AM					
	3 (HOV)	–	–	630	2250
	2	2000(1.49) = 2990		1810	2520
	1 (42%)	1500	2220	(39%) 1060	1480
		$\Sigma_{1\&2} \frac{3500}{2} = 1750$		$\Sigma_{1\&2} \frac{2870}{2} = 1435$	
	LOS		E		D

$V_{(1+2)} = 3500 - 18\%(3500) = 3500 - 630 = 2870$

$PV_{(HOV)} = 630(3.5) + 4(52) = 1310$ pph

PM	3 (HOV)	–	–	374	1600
	2	1940	2760	1790	2490
	1 (42%)	1410	2000	(40%) 1190	1650
		$\Sigma_{1\&2} \frac{3350}{2} = 1675$		$\Sigma_{1\&2} \frac{2980}{2} = 1490$	
	LOS		E		D

$V_{(1+2)} = 3350 - 11\%(3350) = 3350 - 370 = 2980$

$PV_{(HOV)} = 370(3.5) + 4(52) = 1600$

COLUMBIA SLOUGH

AM	4 (HOV)	–	–	865	3240
	3 (37%)	1780 (1.42) = 2650		(40%) 1590 (1.39) = 2210	
	2 (40%)	1920	2860	(39%) 1550	2150
	1 (23%)	1110	1650	(21%) 835	1160
		$\Sigma_{1+2+3} \frac{4810}{3} = 1603$		$\Sigma_{1+2+3} \frac{3945}{3} = 1315$	
	LOS		E		C

$V_{(1+2+3)} = 4810 - 18\%(4810) = 3975$ (865)

$PV_{(HOV)} = 865(3.5) + 4(52) = 3240$ (865 → 3025; 208)

PM	4 (HOV)			515	2010
	3 (37%)	1790	2540	(40%) 1675	2320
	2 (40%)	1880	2670	(39%) 1630	2260
	1 (23%)	1030	1440	(21%) 880	1220
		$\Sigma_{1-3} \frac{4700}{3} = 1567$		$\frac{4185}{3} = 1395$	
	LOS		E		D

$V_{(1+2+3)} = 4700 - 11\%(4700) = 4700 - 515 = 4185$

$PV_{(HOV)} = 515(3.5) + 4(52) = 2010$ (515 → 1800; 208)

CITY OF VANCOUVER, WASHINGTON
City Hall, 210 East 13th St. Vancouver, Washington 98660

May 8, 1975

Dick Etherington
Transportation Director
CRAG
527 S.W. Hall Street
Portland, Oregon

Dick:

The purpose of this letter is to request concurrence by the Transportation Technical Advisory Committee of a change in the scope of work for a previously approved element of the Unified Work Program.

In the 1973 Unified Work Program, the City of Vancouver proposed a technical study grant for a feasibility study of a bus maintenance/park and ride facility for the Vancouver Transit System. This proposal was approved by CRAG and UMTA subsequently allocated the necessary funds ($11,100 in Federal funds) for the project.

Shortly after the project was approved, local circumstances changed to such an extent that the project timing was not proper and the project scope was no longer appropriate. This project is still being carried on the work program and UMTA is anxious for the City to use or release the funds.

The City of Vancouver would like to obtain approval to change the scope of the original project from a bus maintenance/ park and ride facility location study to the following:

"A preliminary engineering and feasibility study for a transit station in the City Center (CBD) of Vancouver."

UMTA has informally indicated that such a change in scope of work would be considered reasonable and that approval would likely be granted. They have, however, indicated that the City must proceed without further delay once approval is granted. The City is prepared to proceed immediately with this project for completion early in FY 76. It is further anticipated that a capital grant application would be filed in FY 76 for construction of the transit station if the preliminary engineering and feasibility analysis is favorable.

The City of Vancouver respectfully requests approval of the proposed change in scope of work.

Respectfully submitted,

J. GARTH ANDERSON, P.E.
Public Works Director

JGA:mh

APPENDIX - B

Prospectus For Proposed Vancouver Transit System Technical Study Grant for Feasibility Study of Bus Maintenance Facility.

A. Applicant

City of Vancouver Washington

Applicant's Representative:
J. Garth Anderson
Public Works Director
City Hall, 210 E. 13th Street
Vancouver, Washington 98660
(206) 696-8187

B. Project Identification

Bus Maintenance Facility Location Study

C. Project Description and Scope

1. To establish the location for the construction of a transit maintenance and storage facility.

2. To investigate the feasibility of incorporating this facility into an overall City Public Works Maintenance facility.

3. To investigate the feasibility of incorporating a "Park and Ride" station with the maintenance facility.

4. To investigate the feasibility of coordinating local Vancouver Transit service with the Inter-City (Portland-Vancouver) and Tri-Met (Portland local transit system) service to maximize the use of transit service for work and shopping trips.

5. To prepare preliminary design plans in sufficient detail to establish design criteria including such items as building size and shape and special features affecting the final design.

6. To estimate land and construction costs; recommend method of financing, and establish a proposed time schedule for the various phases of the improvement.

D. Project Necessity

1. The City of Vancouver does not own a transit maintenance facility. The offices and maintenance facilities are presently being provided by contract which includes management of the Vancouver Transit system.

2. The facility presently being provided through the management contract is scheduled to be taken by the Washington Highway Department in conjunction with the reconstruction of I-5 in Vancouver. Hearings on the proposed reconstruction of I-5 will commence this year.

3. The Portland-Vancouver Transit Study, now being conducted through CRAG by DeLeuw-Cather and Company contains recommendations that Vancouver consider establishing the location for a future "park and ride" station at the time I-5 is being reconstructed. The study further recommends coordination of Vancouver and Portland service to maximize the use of transit for intercity transportation.

E. Estimated Project Cost

1.	Research and data collection	$ 3,150
2.	Data analysis	$ 2,000
3.	Site investigations and appraisals	$ 4,500
4.	Preliminary site design criteria	$ 2,500
5.	Cost estimates	$ 1,500
6.	Report preparation and printing	$ 3,000
		$ 16,650

F. Project Implementation

1. Begin 90 days after approval of grant and completion within 120 days.

2. Basic study work by consultant with local staff support assistance.

3. Matching funds to be provided by contributed in-kind services with such local cash as may be necessary to match federal funds. Source of local cash would be the Vancouver Transit Fund.

4/15

I-5

2 Transit Scenarios - concepts incl Dealers option & Comm Work option.
  1 full County
  1 limited

Finance

Take to City & County Boards.

I-5 Occupancy - 1.48 / auto 3/75 Ainsworth Station AM PM South.
  1.24 " 12/73 PM Interstate Av.

Note: Banfield occupancy has dropped.

Proceeding - concern about single occupant delay. - a PR job.

Peck - still wants priority across Delta Park!
  Hazeldell Hill Plain demit - 45 days - 1 to 12 pass - 9 av.
  90 day trial - subsidized Stop in Tremont - 12-14 over anticipated
  Need 20 Workers 75¢ (60¢ in books) - Metro Advertising
  Separating Charter Service - good - Save authority - Need permission.
  60% of revenue - authority is derived from regular ICC permit
  × applying for separation of authority - needs support. - solicit thru CRAG staff.
  John problem due to public Competition. - also public
  Wages @ 3.62 vs. 5.90

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

TO: Project Task Force

FROM: Commissioner Granger

SUBJECT: Task Force Meeting Notice and Agenda

DATE: April 10, 1975

Enclosed is the Agenda for the next I-5 Project Task Force meeting. The project staff will be discussing the Alternative Transit Scenarios which are to be presented to elected officials of Clark County and the City of Vancouver on April 23.

The members of the Citizens Advisory Committee have been invited to provide additional comment on the transit alternatives.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

LARRY RICE, EXECUTIVE DIRECTOR

I-5 PROJECT TASK FORCE

Clark County Courthouse
Commissioners Hearing Room
Second Floor

Friday, April 18, 1975
1:30 p.m.

A G E N D A

I. CALL TO ORDER

II. APPROVAL OF MINUTES

III. PROJECT STAFF REPORT
- A. Alternative Transit Scenarios for Vancouver and Clark County
- B. Priority Analysis for I-5

IV. STATUS OF TRANSIT DEMONSTRATION PROJECTS

V. STATUS CHANGE IN OPERATING CHAPTER AUTHORITY FOR VANCOUVER-PORTLAND BUS COMPANY

VI. OTHER BUSINESS

VII. NEXT MEETING DATE

VIII. ADJOURNMENT

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

April 7, 1975

Mr. William Dirker
Transportation Coordinator
424 SW Main (Annex)
Portland, OR 97204

Dear Bill:

Re: Interstate Bridge Corridor Project Billing

Attached is a copy of the subject billing. We would appreciate any action you could encourage on this matter.

Sincerely,

Richard Etherington
Transportation Director

RE:RG/kt
enclosure

January 23, 1975

Mayor Neil Goldschmidt
City of Portland
City Hall
Pottland, Oregon 97204

Dear Mayor Goldschmidt:

As you know, CRAG has undertaken a study of transportation problems in the Interstate 5 Corridor between Vancouver, Washington, and Portland, Oregon. The first phase has been completed, and a report published on short-range improvements for early implementation. The work program for the second phase has been developed and begun, under its policy direction of the Project Management Board.

This study is separate from transportation systems planning in its funding and contractual agreements. On December 27, 1973, a contract was executed between the City of Portland and CRAG, under which the City would contribute $2,500 towards the cost of this study. Payment was requested in February, 1974, but has not yet been received.

In order for the work to be completed for this study, I would appreciate receiving your payment as soon as conveniently possible.

Sincerely,

Don Marty
Senior Accountant

DM:gb

enclosure

THE CITY OF
PORTLAND
OREGON

OFFICE OF
PLANNING AND DEVELOPMENT
GARY E. STOUT
ADMINISTRATOR

BUREAU OF
PLANNING
ERNEST R. BONNER
DIRECTOR

424 S.W. MAIN STREET
PORTLAND, OR. 97204

PLANNING
503 248-4253

ZONING
503 248-4250

April 4, 1975

MEMORANDUM

TO: City Auditor

FROM: William S. Dirker, Transportation Coordinator

SUBJECT: I-5 Corridor Project Payment

Attached is an authorization dated February 20, 1975 to pay an invoice from CRAG dated January 23, 1975 in the amount of $2,500 for the City's share of the subject project. As of this date, no payment has been received by CRAG. Would you please track this down and see that the payment is made.

WD/db

Encl.

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S.W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

January 23, 1975

SECOND REQUEST

City of Portland
City Hall
Portland, Oregon 97204

Invoice for your Agency's portion of:	AMOUNT DUE
Interstate Bridge Corridor Project Funding (per agreement dated December 27, 1974)	$2,500.00

DM:gb

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S. W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

January 23, 1975

Mayor Neil Goldschmidt
City of Portland
City Hall
Portland, Oregon 97204

Dear Mayor Goldschmidt:

As you know, CRAG has undertaken a study of transportation problems in the Interstate 5 Corridor between Vancouver, Washington, and Portland, Oregon. The first phase has been completed, and a report published on short-range improvements for early implementation. The work program for the second phase has been developed and begun, under its policy direction of the Project Management Board.

This study is separate from transportation systems planning in its funding and contractual agreements. On December 27, 1973, a contract was executed between the City of Portland and CRAG, under which the City would contribute $2,500 towards the cost of this study. Payment was requested in February, 1974, but has not yet been received.

In order for the work to be completed for this study, I would appreciate receiving your payment as soon as conveniently possible.

Sincerely,

Don Marty

Don Marty
Senior Accountant

DM:gb

enclosure

RECEIVED
JAN 27 1975
MAYOR'S OFFICE

THE CITY OF
PORTLAND
OREGON

OFFICE OF
PLANNING AND DEVELOPMENT
GARY E. STOUT
ADMINISTRATOR

1220 S.W. FIFTH AVE.
PORTLAND, OR. 97204

FILE COPY

20 February 1975

MEMORANDUM

TO: City Auditor

FROM: W. S. Dirker, W/D
Transportation Coordinator

SUBJECT: I-5 Corridor Project Payment

Attached is a request from CRAG dated January 23, 1975, for $2,500 due CRAG on the contract between the City and CRAG for the Interstate Bridge Corridor Project. Unless your records indicate this has previously been paid, this amount is due CRAG in accordance with the attached document.

Ordinance No. 137021 authorized the City's participation in an amount not to exceed $5,000 which was to be reduced in the event an UMPTA grant was received to the amount of $2,500. Subsequently this grant was received by CRAG and the agreement dated December 27, 1974, was executed in which the City agreed to pay $2,500. Therefore, unless paid previously, it should now be paid.

WSD:bn
cc Mayor Goldschmidt
Ernie Bonner

Senators ask study of Columbia bridge

OLYMPIA — A resolution adopted by the Washington Senate asks the state Highways Department to begin studies for a third bridge over the Columbia River between Portland and Vancouver.

The resolution also asks the department to seek completion of the proposed Interstate 205 Bridge "at the earliest possible date."

Population growth on both sides of the river resulting in increasingly heavier use of the Interstate 205 bridge; the numerous traffic jams as up to 100,000 vehicles try to cross the bridge designed for 75,000, and the fact the existing bridge is the only crossing within 30 miles either upstream or downstream were given as reasons.

The resolution was sponsored by State Senators Dan Marsh, D-Vancouver; Al Henry, D-White Salmon, and Don Talley, D-Kelso. Districts of all three senators include portions of Clark County.

Copies of the resolution will be presented to Gov. Dan Evans, the highway department and members of the state highway commission, said Henry.

M E M O R A N D U M

Date: March 25, 1975

To: Commissioner Dick Granger - Clark County
Councilman Dick Pokornowski, City of Vancouver
Bob Bothman - ODOT
Pierre Henrichsen - WSDH
George Palmer - Multnomah County
Bill Dirker - City of Portland
Ed Wagner - Tri-Met

From: Dick Etherington, Transportation Director

Subject: Interstate Bridge Corridor Project: Resolution of Issues & Problems on Revised Work Program

In response to the letter of February 27, 1975 from this office pertaining to the Revised Work Program, several questions and problems have been revealed by the participating agencies.

After some difficulty in establishing a date and time to discuss these matters, April 3rd (Thursday) at 1:30 P.M. in Conference Room D of the CRAG office has been set for such a meeting.

If for some reason you are unable to attend, please have someone attend in your place so that these matters can be resolved.

Dick Etherington

COLUMBIA REGION ASSOCIATION OF GOVERNMENTS

Memorandum March 20, 1975

To: Project Task Force

From: Reed Gibby, Project Staff

Subject: Status Report on the Interstate Bridge Corridor Project

The present nature of the work activities has been of the non-policy type and staff is able to rely on the Work Program for general direction and the CTS in Washington for direction in transit planning. Subsequently, after consulting with staff, Commissioner Granger cancelled the March meeting. To keep you informed of the progress, a status report has been attached for you. If you have any questions or comments, please contact the project staff.

4/3

Enc.

STATUS REPORT I-5 PROJECT

Element A

The transit planning element of the I-5 Project has revised the transit scenarios which were presented at the last Project Task Force meeting. At this time two scenarios are being proposed. Preparation of these scenarios was directed by the Clark County Consolidated Transportation Staff (CTS).

The first scenario calls for service in the Vancouver Urban area. Commuter service along major transportation corridors in the urban area is included as well as base transportation service through a demand responsive system and/or a conventional bus system in the densely populated neighborhoods. Interstate service on I-5 will be provided by Tri-Met . In addition, limited service to the Vancouver industrial area will be operated during shift changes at major industrial plants. The operating cost for this level of service will be approximately equal to the amount raised through a household utility tax in the urban area, federal subsidies and fare box revenues.

The second scenario is based on the formation of a county-wide transit authority which utilizes the amount which is approximately equal to the .3% general sales tax if it was imposed county wide. This scenario operates the same kinds of service in the urban area as described in the first scenario except that such service will be provided at more frequent intervals.

In addition, transit service will be extended to the smaller cities in Clark County operating between these cities and downtown Vancouver.

The revised scenarios will be returned to the CTS for discussion and further refinement. At a later date, city and county elected officials will be asked to choose a level of service for further detailing which could range from the first scenario to the second.

Element B

The I-5 priority analysis is progressing in several areas. The OSHD is conducting a travel time-delay study on I-5 from the Banfield to downtown Vancouver to help assess the existing conditions and problems. In addition, auto occupancy will be obtained and compared with figures collected a year ago for trend evaluation.

Ramp origin-destination tables for auto and bus travel have been developed using an approximation method and existing counts.

This has been done for three reasons. 1) The work load on the state highway agencies (SHA) is very heavy and the required man power is not available. 2) The project staff is short of manpower as well and would be unable to provide required assistance to support the SHA. 3) The type of exclusive lane proposed by ODOT has free access for HOV and the high degree of accuracy required for studying limited access exclusive lanes is not imperative. The compilation of the roadway inventory for the PRIFRE Model has been conducted and soon will be transmitted together with the O-D tables to ODOT. It is anticipated that some results will be available for the next Project Task Force meeting.

Element C

The CRAG research staff has been instructed to revise the projections developed for Phase II of the old Work Program to incorporate I-205.

THE CITY OF
PORTLAND
OREGON

OFFICE OF
PLANNING AND DEVELOPMENT
GARY E. STOUT
ADMINISTRATOR

1220 S.W. FIFTH AVE.
PORTLAND, OR. 97204

12 March 1975

Richard Etherington
Transportation Director, CRAG
527 SW Hall Street
Portland, Oregon 97201

RE: Interstate Bridge Corridor Revised Work Program

Dear Mr. Etherington:

Mayor Goldschmidt has asked me to reply to your letter of February 27, regarding the subject work program. I make the following recommendations.

I recommend that Element C, Medium Range Corridor Plan, not be initiated without specific instructions from the Project Task Force. Other transportation planning and project activities may alter or eliminate the need for this element. Furthermore, it is my understanding that the purpose of this project is to increase capacity by 1980 and therefore I feel our efforts and resources should be focused on immediate action elements.

The last paragraph of Element B, on Page 9, indicates the output of this effort will be a report on high occupancy vehicle lanes. The output of this element should not be a report or recommendations but should be agreements, contracts, official actions, and results on the ground. It is understood that other agencies must actually take these actions but the intent of this project is to stimulate and facilitate negotiations and activities that will produce the necessary results, not just make recommendations.

Very truly yours,

William S. Dirker
Transportation Coordinator

WSD:bn

INTERSTATE BRIDGE CORRIDOR PROJECT

Revised Work Program

Columbia Region Association of Governments

January 30, 1975

OBJECTIVE

The objective of the revised work program is to

1) Bring about the creation of a unified, publicly owned and operated mass transit system in the Interstate Bridge Corridor and Clark County,

2) Provide some means of priority movement on I-5 for transit service and other high occupancy vehicles (HOV) and

3) Initiate medium range planning for and evaluation of corridor transportation alternatives.

PREVIOUS WORK

The Interstate Bridge Corridor Project was initiated in late 1973 as a three-phase project designed to address the existing transportation problems in the Interstate 5 corridor between Vancouver and Portland. The objective of the project was to develop solutions which would move people through the corridor more efficiently with primary emphasis on public transportation including consideration of park and ride facilities.

Phase I of the project recommended a number of improvements that would provide relief in the corridor. The analysis indicated that in order to move people through the corridor more efficiently on existing facilities, a unified transit system would have to be established thereby eliminating the necessity for potential transit riders to use as many as three existing transit systems. Specifically, the purchase of the privately owned Vancouver-Portland Bus Company by the Tri-County Metropolitan Transportation District of Oregon (Tri-Met)

was recommended. This, together with recent legislation in the State of Washington (HB-670) to enable the establishment of a county transit system in Clark County, would provide for publicly operated and financed transit service throughout the corridor. It was further found that some method or providing priority movement in the corridor for high-occupancy vehicles (buses and carpools) would be necessary to move people more efficiently and serve as an incentive to increase vehicle occupancy.

From the Phase I analysis, five primary corridors in Clark County were identified as having potential for commuter transit service to five primary employment areas in Portland. Therefore, an extensive level of service would be required between these areas if public transit is to provide any significant improvement in traffic flow in the corridor. Presently, the city-owned Vancouver Transit System operates only within the city while the Vancouver-Portland Bus Company provides service between Vancouver/Hazel Dell and Portland. The Evergreen Stage Line provides limited service from Camas/Washougal and several other locations in Clark County to Portland. With the exception of Vancouver-Portland Bus Company's operation, only a limited amount of transit service is provided between downtown Vancouver and Portland. It is, therefore, apparent that an extensive unified transit system should be provided in the corridor.

From an assessment of the immediate transit needs in the

corridor and the recommendations of Phase I, it seems that if the Phase I recommendations are implemented, the initial objective of the project will be fulfilled. It has also been determined during Phase I that there are insufficient staff resources within the local agencies/jurisdictions to implement the recommendations pertaining to transit planning in Clark County. This revised work program has, therefore, been prepared to enable the CRAG staff to assist the local agencies/jurisidictions in implementing the Phase I recommendations, conduct a feasibility analysis of priority treatment for high occupany vehicles (HOV) on I-5, and initiate an evaluation of longer range improvements for a yet to be determined future year.

The work activities have been directed by a project management board. With the reorganization of the CRAG committee structure a task force will now direct the work activities. To illustrate the relationship of the task force with CRAG and agencies participating in the work task a table of organization has been prepared (table A, page 11 of the appendix).

METHODOLOGY

A joint effort of affected agency personnel and CRAG staff will be provided to carry out the implementation activities of the Phase I recommendations. CRAG staff will conduct the feasibility analysis of priority treatment in the corridor and provide assistance in determining the level and scope of transit service which will utilize the I-5 corridor. The staffs of the local agencies with the assistance of the CRAG staff will develop the necessary information, determine appropriate procedures and initiate proper applications and agreements which will result in the establishment of a county-wide transit entity and a unified transit system. Upon completion of these activities and determination of a forecast year, CRAG staff will work with the ODOT planning staff in determining longer range alternatives between Oregon and Washington including the imapct of opening I-205 on the I-5 Corridor.

Work Activities

The work activities have been segregated into three principal elements; namely, (A) Unified Transit System, (B) I-5 Priority Analysis for HOV and (C) Initiation of Medium Range Corridor Planning. The costs and funding of these activities may be found on ps. 12 &13 in the appendix of this material.

(a) Unified Transit System

The creation of a unified mass transit system in the Corridor and Clark County will be accomplished under the direction of the Consolidated Transportation Staff * (CTS) in three major work tasks. The acquisition of the private transit operations by Tri-Met is the first part and the formulation of a transit plan and creation of a transit district in Clark County consist of the other parts. The subsequent narrative provides some details of the work tasks.

A program for providing publicly-owned and operated transit service in the corridor as recommended in Phase I will be developed through a combined effort of CRAG, CTS, Tri-Met, and other affected jurisdictions. Additional detail pertaining to the unified transit system is contained in the appendix.

* The Consolidated Transportation Staff consists of two budget responsible staff members each from Washington State Department of Highways, Clark County, City of Vancouver and Regional Planning Council of Clark County.

This will include determining the type and extent of transit service needed in the corridor, the mechanism for providing the service including preparation of operating and financial agreements, federal applications for purchase of privately owned transit systems operating in the corridor, and a method for financing. The primary effort of CRAG staff activities will be to determine the level of service needed in the corridor and to assist in the preparation of an application(s) for federal funds for purchase of the privately-owned transit systems.

Possible approaches to addressing the transit service element would be for Tri-Met to acquire the Portland-Vancouver Bus Company either through purchase or condemnation. Tri-Met could then contract with the City of Vancouver to provide service between Portland and downtown Vancouver where Vancouver's system would connect. Another alternative would be for Clark County and the cities in the county to form a transit district, acquire the Vancouver system and expand it throughout the county and contract with Tri-Met to provide service to downtown Vancouver. Another possibility would be for Tri-Met to extend service into the county as well as to the city. If it is determined that a transit district should be created, service to such areas as

Camas, Washougal, Battle Ground, etc. will have to be addressed which may require acquisition of the rights of the Evergreen Stage Line which presently serves these areas. Each of these alternatives will be explored as required to ascertain the best mechanism for providing the desired level of service. The final mechanism for providing the service will, of course, be a function of the type and scope of service proposed. In addition to developing service levels, an operating mechanism and financing, it will also be necessary to address such items as equipment, staffing, maintenance and storage facilities, revenue collections and voter approval of the transit program. This will be done through a coordinated effort of CRAG and local agency staff with local agencies taking the lead on such items as voter approval and development of a revenue collection procedure.

B) I-5 Priority Analysis

The priority study on I-5 will include feasibility analyses of both a system of ramp control for traffic with priority being given to HOV (buses and car pools) and the feasibility of establishing special use lanes for HOV on I-5, parallel to the flow of traffic. The appendix contains further detail of this aspect of the work program.

The first task of the priority treatment feasibility analysis is to determine a strategy for providing an additional lane in each direction on I-5 between the Portland Blvd. and Union Ave. Interchanges. This might be accomplished by

utilizing the shoulder and/or some of the median clearance or possibly some minor structural widening. These improvements will be tested during the peak periods when one lane (southbound in the morning & northbound in the evening) will be reserved for HOV. In addition, a ramp metering system, with bypass provisions for HOV will be devised for testing against the priority lane alternative. This work activity will produce sufficient detail on the alternatives for effective testing.

The second task will consist of compiling data (traffic counts, roadway characteristics, speed, etc.) already available and determining any additional data which may be needed. The additional information may include such data as aerial photography, ramp origin-destination survey during the peak periods, spot speed studies and transit schedules and routes. Also, base maps will be made for all diagrams which will be produced in the work activities. The data will be analyzed to determine the "before" condition by fifteen minute time slices. Diagrams, tables, and graphs will be prepared to illustrate the location and intensity of the operational problems as they build and dissipate.

The next work item consists of testing the two alternatives so that observations may be made about their respective performances. A computer model (PRIFRE) developed at the Institute of Traffic and Transportation Engineering

in Berkeley, precisely for this type of analysis, will be utilized for this work item. The program will be loaded onto the State of Oregon IBM 370 in Salem with the assistance of ODOT personnel perhaps with a remote terminal available to CRAG staff so that the computer may be accessed directly. After completion of this study the computer program will be available for utilization on other corridors.

After testing the alternatives, the output will be reduced and organized into the same type of diagrams, tables and graphs to illustrate the system differences between the alternatives. In addition, operational and capital costs will be determined, funding sources identified, and other information obtained as required to conduct a feasibility evaluation on the two alternatives.

Finally, a report will be prepared identifying and discussing the procedures, findings and recommendations of the priority treatment analysis. Recommendations will be made available to the implementing agencies through appropriate procedures for early action.

C) Initiation of Medium Range Corridor Planning

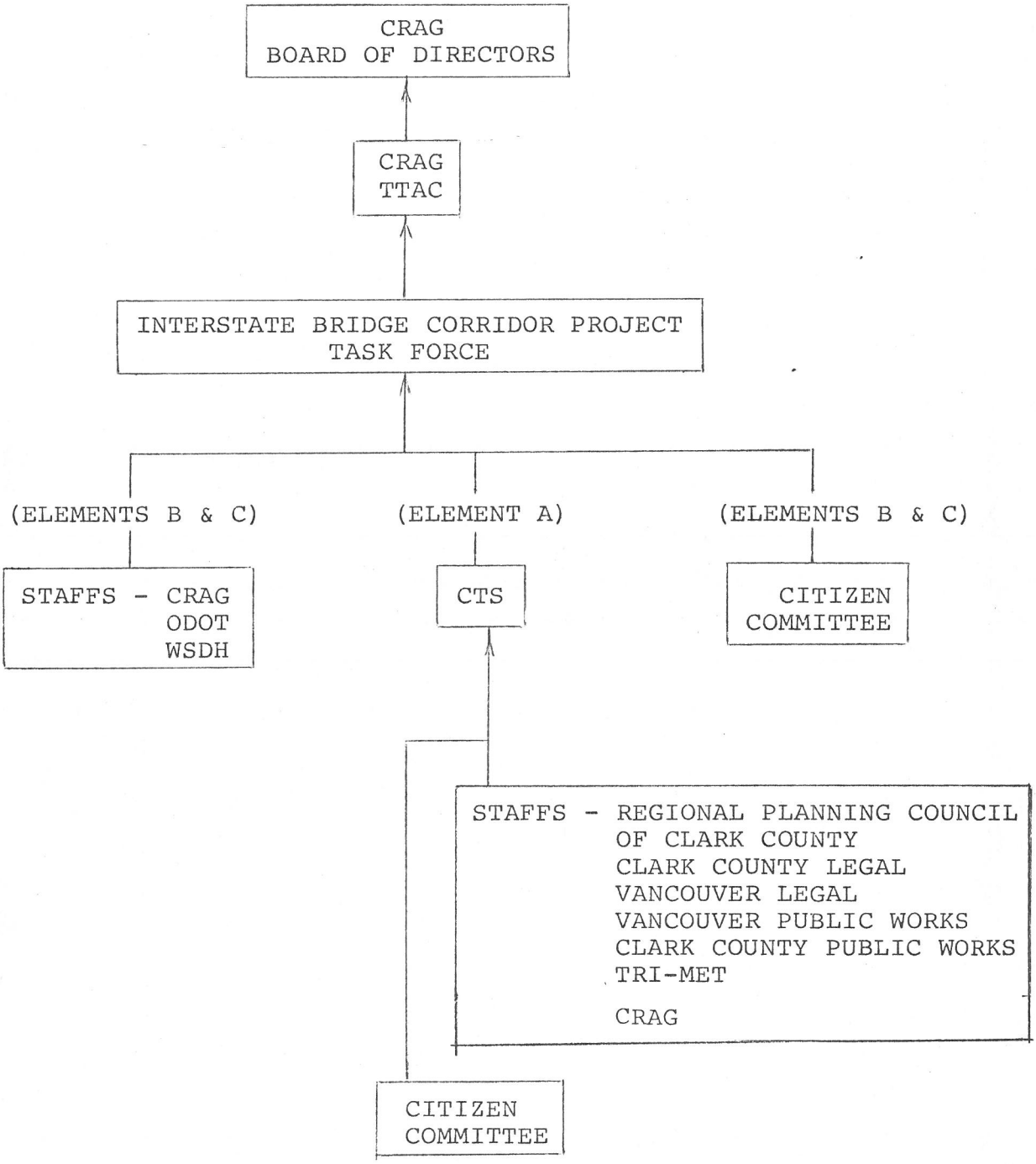
A final element in this work program will be to initiate an evaluation of major transportation alternatives for the I-5 corridor. This will include an assessment of the I-205 opening on the level of service provided by I-5. This assessment will be based on travel projections for a yet to be determined forecast year, perhaps somewhere between 1980-1985. The assessment will also consider the improvement in travel on

I-5 resulting from increased public transportation use and the establishment of priority treatment on I-5 for high-occupancy vehicles to be developed under this project's earlier effort. Using future year forecasts, an evaluation of a number of alternatives will be tested for the I-5 Corridor. This will include but not be limited to busway facilities on I-5 and Union Avenue, and widening of I-5 to six lanes in the present four lane section. It is anticipated that this will be a joint effort of CRAG and the ODOT planning staff and will involve network evaluation by computer analysis. Additional information may be found in the appendix on page 20.

Because of the scope of this final activity, it is not expected to be completed by the end of the current project period (June, 1975). Completion of this element of the revised work program can be completed under CRAG's continuing planning program and interfaced with other corridor planning activities.

A P P E N D I X

TABLE OF ORGANIZATION



CTS - Consolidated Transportation Staff of Clark County
TTAC - Transportation Technical Advisory Committee to the CRAG Board of Directors

TABLE A: ORGANIZATION OF THE INTERSTATE BRIDGE CORRIDOR PROJECT

INTERSTATE BRIDGE CORRIDOR PROJECT

REVISED WORK PROGRAM

WORK ACTIVITIES MANPOWER DISTRIBUTION

Elements	CRAG Manpower Manmonths	Estimated Cost
A. Unified Transit System		
Tri-Met Acquisition of V-P Bus Co. & Evergreen State Line	½	1,000
Transit District Plan	5½	11,000
Citizen Input & Activities	½	1,000
Element Total	6½*	13,000*
B. I-5 Priority Analysis		
In House Activities	8	16,000
Other Activities - CRAG	1	2,000
Others	-	16,000
Element Total	9	34,000
C. Initiation of Medium Range Corridor Planning - CRAG	2½	5,000
ODOT/WSDH	-	8,000
Element Total	2½	13,000
PROJECT TOTAL	18	$ 60,000

* This manpower and cost allocation will be supplemented by 8½ manmonths by the Consolidated Transportation Staffs of agencies in Clark County and Tri-Met. Tri-Met has already developed much useful information.

INTERSTATE BRIDGE CORRIDOR PROJECT

I-5 PRIORITY ANALYSIS

OTHER WORK ACTIVITIES

Activity	Source	Estimated Man Months	Cost Estimate
Traffic Counts	SHD's	.6	$1,000
Spot Speed Data & Reduction (Am & PM)	SHD's	.5	750
Ramp O-D Survey (Evening)	SHD's	.6	1,000
Computer	ODOT		4,500
Computer Programming	ODOT/CRAG	1.3 (1.0)*	2,000
Computer Terminal Access			1,000
Adm., Mgmt & Technical Assistance	ITTE		750
Photogrammetry	CONST.		2,500
Ramp O-D Data Processing	PSU/ODOT	1.0	1,500
Computer Key Punch / Terminal Typing	CRAG/ PSU/ODOT	.6	1,000
Total Estimate			$16,000

* CRAG manpower costs include this amount.

INTERSTATE BRIDGE CORRIDOR PROJECT

REVISED WORK PROGRAM

REVENUE FROM PARTICIPATING AGENCIES

AGENCY	AMOUNT
Washington State Department of Highway	$ 16,300
Oregon State Highway Division	10,900
U.S. Urban Mass Transit Administration	26,200
City of Vancouver	1,100
Clark County	1,100
City of Portland	550
Multnomah County	550
Tri-Met	3,300
Total Revenue	$ 60,000

Note: These funds are the balance of the original commitments to the project and, therefore, do not represent additional financial commitments.

ELEMENT A: UNIFIED TRANSIT SYSTEM

ACTIVITY	RESPONSIBLE AGENCY
1. Formulate transportation goals, objectives & policies	Vanc*/ Ck Co.*
2. Acquisition of the private operations	
a. Explore legal issues	Van L Ck. Co. L
b. V-P Bus appraisal	Tri-Met
c. Negotiations Acquisition of VP Bus	Tri-Met
d. UMTA Application for Acquisition of VP Bus	Tri-Met CRAG
e. Determine need to acquire ESL	Vanc L */ Ck. Co. L*/ Tri-Met L

(If positive determination results proceed with acquisition in a similar manner as VP Bus Co.)

3. Formulate Transit Plan	
a. Identify potential routes	CTS/CRAG/Tri-Met
b. Develop Organizational Structure & Costs	CTS/ Tri-Met
c. Develop Marketing Program & Cost	CTS/Tri-Met
d. Identify and resolve legal restraints & options for a Unified Transit System	CK Co. L/ Vanc. L/ Tri-Met L
e. Determine possible levels of of service & cost	CTS/ Tri-Met/ CRAG/ CAC
f. Estimate patronage and revenues	Tri-Met/ CRAG
g. Identify funding levels for various service possibilities	CTS/ Tri-Met
h. Select most feasible level of service	Vanc */ Ck Co.*/ CAC
l. Analyze effects of service on Corridor	CRAG

m.	Select revenue sources	Vanc */ Ck. Co. */ CAC
n.	Report Finding	CRAG

4. Formation of a Unified Transit Agency

a.	Form Citizens' Advisory Committee	PTF Vanc */ Ck Co *
b.	Refine transportation objectives and policies	Vanc. */ Ck. Co. */ CTS / CAC
c.	Research experiences of other jurisdictions on transit districts	Ck. Co.
d.	Input to transit plan	CAC
e.	Publicize Planning efforts	Vanc */ Ck Co. */ CAC
f.	Obtain public support	Vanc/ Ck. Co. / CAC

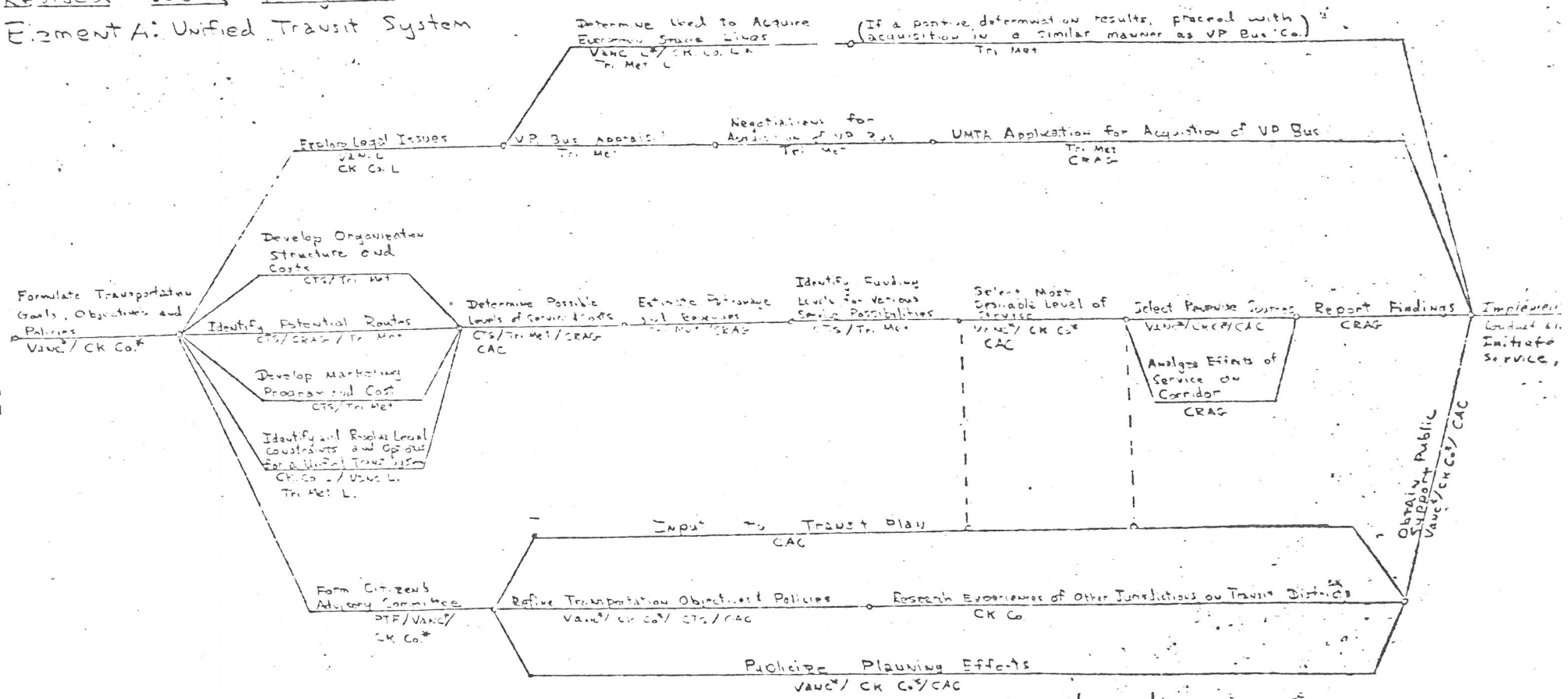
Legend

CTS	Consolidated Transportation Staffs of Clark County
CK Co	Clark County
Vanc	Vancouver
*	Elected officials
Vanc L	Vancouver Legal Staff
Ck. Co. L	Clark County legal staff
Tri-Met L	Tri-Met Legal Staff
CRAG	CRAG Project Staff
CAC	Citizens' Advisory Committee
PTF	Interstate Bridge Corridor Project Task Force
VP BUS	Vancouver-Portland Bus Company
ESL	Evergreen Stage Line

Interstate Bridge Corridor Project

Revised Work Program

Element A: Unified Transit System



Legend

CAC	Citizens Advisory Committee
PTF	Interstate Bridge Corridor Project Task Force
VP Bus	Vancouver Portland Bus Company
CTS	Consolidated Transportation Staff of Clark C
CK Co.	Clark County Public Works
Vanc	Vancouver Public Works
*	Elected Officials
Vanc L.	Vancouver Legal Staff
CK Co L.	Clark County Legal Staff
Tri Met L	Tri Met Legal staff
CRAG	CRAG Project Staff

Figure 1

ELEMENT B: I-5 PRIORITY ANALYSIS

	ACTIVITY	RESPONSIBLE AGENCY	ESTIMATED MANMONTHS
1.	Defining & determining system alternatives	CRAG	.4
2.	Data Collection Speed & Counts	ODOT/WSDH	1.1
	Ramp O-D Survey	ODOT/WSDH	.6
	Transit Data	CRAG	.3
	Aerial Photo	ODOT (CONSUL)	--
3.	Data Analysis	CRAG	2.8
	Ramp O-D Data Processing	ODOT/PSU	1.6
4.	Computer Modeling	CRAG	2.1
	Preparation of Data & Testing Systems	ODOT	1.0
5.	Analysis of Output	CRAG ODOT	.8 .3
6.	Feasibility Determination	CRAG	1.0
7.	Preparation of Report	CRAG	.7

INTERSTATE BRIDGE CORRIDOR PROJECT

I-5 PRIORITY ANALYSIS

PRIORITY LANE & RAMP METERING

"PERT DIAGRAM"

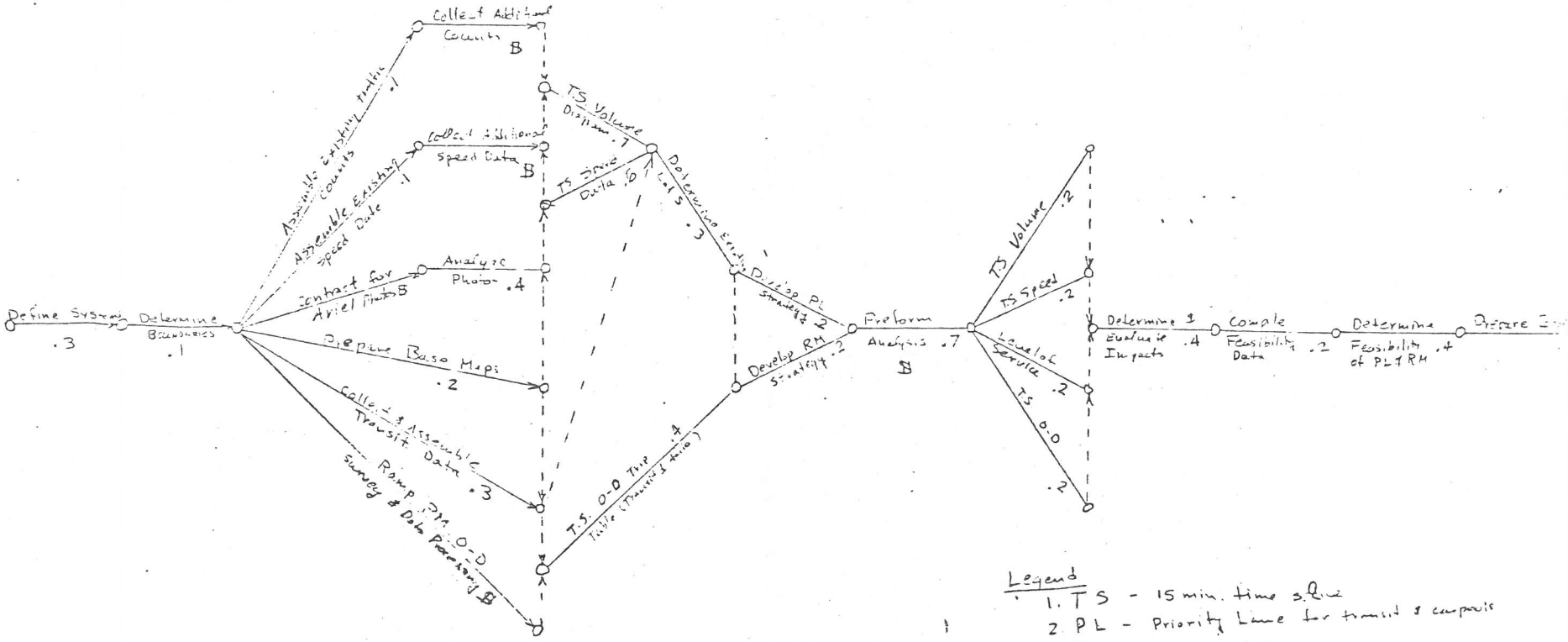


Figure 2

ELEMENT C: INITIATION OF MEDIUM RANGE CORRIDOR PLANNING

	ACTIVITY	RESPONSIBLE AGENCY	ESTIMATED MANMONTHS
1.	Determination of forecast year	PTF	
2.	Modify 1980 projection from Phase II work activities to the forecast year	CRAG/ODOT	1
3.	Assess the impact of I-205 on the I-5 Corridor during the forecast year	CRAG/ODOT/WSDH	1/2
4.	Evaluate possible improvements on I-5 (from Element B) with resp ct to I-205	CRAG/ODOT/WSDH	1/2
5.	Prepare basic data to test alternatives in the I-5 Corridor: I-5, Union Avenue, etc.	CRAG/ODOT/WSDH	1/2

* CRAG Staff time only ($8,000 will be used to reinburse the State Highway agencies for staff time to participate in these activities.)

403.09

COLUMBIA REGION ASSOCIATION of GOVERNMENTS

527 S.W. HALL STREET
PORTLAND, OREGON 97201

(503) 221-1646

January 21, 1975

Mr. Dirk Koopman
Vice President
Director of Planning & Construction
Hayden Island Incorporated
Interstate 5 at Jantzen Beach
Portland, Oregon 97217

Dear Mr. Koopman:

Re: Proposed Columbia River Yacht Club facility - Tomahawk Island

Reference is made to your letter to Mr. Bill Dirker of the I-5 Corridor Committee dated January 13, 1975 in which you requested a review and comments regarding this proposed facility.

The Interstate Bridge Corridor Project staff was requested by the Project Task Force (formerly the Project Management Board) to conduct an analysis of the impacts of a development which was proposed on Tomahawk Island. Near the conclusion of that analysis the staff was also requested to review a proposed development on the westerly portion of Hayden Island. Finally, you have requested a review and comments pertaining to a proposed development of the Columbia River Yacht Club on Tomahawk Island. The request for the project staff to devote time and effort on these studies has become of some concern to the Project Task Force.

The object of the Interstate Bridge Corridor Project, which is funded by the state highway agencies, Multnomah and Clark Counties, Portland and Vancouver Cities, Tri-Met and Urban Mass Transit Administration (UMTA) follows an approved work program, is to determine how the capacity of the I-5 Corridor between Vancouver and Portland can be increased. Present work activities include such items as Unified Transit System in the Interstate 5 Corridor and analysis for priority treatment for buses and carpools

on the freeway. If the project staff performs other work activities not specified in the Work Program it is apparent that the objectives of the Work Program can not be met.

While your invitation to comment on this development is appreciated, time would be required to research applicable generation rates and to determine the trip distribution. And, finally, the impact of the additional trips on the network must be determined. Any development which may provide additional trips on Interstate 5 is, of course, a concern of the Project Task Force. Subsequently, a course of action is recommended to you. It is suggested that you do retain a transportation or traffic consultant engineer to conduct a comprehensive analysis of the impacts of this development and others you may wish to consider together with recommendations for the improvement of the existing traffic facilities to accommodate additional trips which these developments may generate. Another possibility you may wish to consider is to request Multnomah County to determine the traffic impacts of the proposed developments.

It should be mentioned that while the Project Task Force reports to the CRAG Transportation Technical Advisory Committee, because of the time constraints the Project Task Force is replying directly to you with copies to appropriate staff members in CRAG and Multnomah County Land Use Planning Division. The Project Task Force meets monthly as does the CRAG Technical Advisory Committee. Therefore, short deadlines cause some procedural difficulties in providing appropriate and timely responses to requests such as yours.

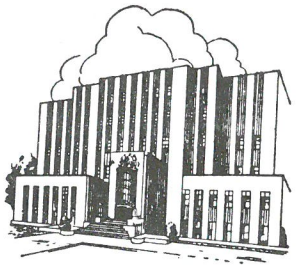
If you wish to pursue this matter further you may submit a request to CRAG directly or to Multnomah County. Although your request was not met, I hope that this response is helpful to you.

Sincerely,

Commissioner Dick Granger
Chairman of the Interstate
Bridge Corridor Project
Task Force

cc:
Dick Etherington
R.S. Baldwin
Plan. Dir. Mult. Co.
Bill Dirker
Project Staff

COUNTY OF CLARK - STATE OF WASHINGTON
BOARD OF COUNTY COMMISSIONERS
COURT HOUSE -1200 FRANKLIN STREET
TELEPHONE 699-2232
VANCOUVER, WASHINGTON 98660



January 3, 1975

Mr. Bill Dirker
City Transportation Coordinator
Office of Planning and Development
1220 S.W. Fifth Avenue
Portland, Oregon 97204

Dear Bill:

Thank you for your memorandum of December 13 regarding the planned expansion on Hayden Island and Tomahawk Island. I concur in your observation that a strong posture by CRAG at this time is in order. The further development that will generate traffic on a facility that is now overloaded does not make sense, and I think it is our responsibility within CRAG to point this out. I discussed your memorandum with the staff at CRAG and also a work session of the Project Management Board. It is the intent of the Board to present a clear picture of the impact of the proposed developments to the Transportation Committee and, eventually, to the Executive Board of CRAG so that its position is well known, not only to Multnomah County, but to the other regional jurisdictions as well.

These proposed developments have special impact to Clark County and could limit the ability of its citizens to use I-5. I cannot in all good conscience justify additional development at the expense of convenience, safety, and service to many thousands of people in Clark County who daily depend on the facility.

Sincerely,

Dick Granger

Dick Granger
Commissioner

DG/js

cc - Mr. Jim Guenther, County Administrator