ORDINANCE NO. 55
CITY OF LIBERTY LAKE
SPOKANE COUNTY, WASHINGTON

AN ORDINANCE OF THE CITY OF LIBERTY LAKE, WASHINGTON, ADOPTING BY REFERENCE THE SPOKANE COUNTY HARVARD ROAD MITIGATION PLAN AS THE HARVARD ROAD MITIGATION PLAN OF THE CITY.

WHEREAS, the City of Liberty Lake will incorporate on August 31, 2001; and

WHEREAS, the City of Liberty Lake intends to adopt a Harvard Road Mitigation Plan within the corporate limits of the City;

WHEREAS, Spokane County adopted a Harvard Road Mitigation Plan dated December 1995, which included the roads within the City of Liberty Lake;

WHEREAS, after the date of incorporation, the City of Liberty Lake intends to review and, as necessary, update the Harvard Road Mitigation Plan.

NOW, THEREFORE, the City Council of the City of Liberty Lake, Washington, do ordain as follows:

Section 1. Harvard Road Mitigation Plan. Pursuant to RCW 35.21.180, 35A.11.020 and 35A.21.160, the City adopts by reference the Spokane County Harvard Road Mitigation Plan dated December 1995, which is attached hereto as Exhibit "A" and incorporated herein by this reference as presently constituted or hereinafter amended as the interim Harvard Road Mitigation Plan of the City of Liberty Lake. Unless the context requires otherwise, references to Spokane County shall be construed to mean the City of Liberty Lake and references to County staff shall refer to the City Mayor or designee.

Section 2. Adoption of Other Laws. To the extent that any provision of the Spokane County Code, or any other law, rule or regulation referenced in the attached Harvard Road Mitigation Plan is necessary or convenient to establish the validity, enforceability or interpretation of the Harvard Road Mitigation Plan, then such provision of the Spokane County Code, or other law, rule or regulation is hereby adopted by reference.

Section 3. Reference to Hearing Bodies. When the attached Harvard Road Mitigation Plan refers to planning commissions, board of appeals, hearing examiner, or any other similar body, the City Council shall serve in all such roles, but retains the right to establish any one or more of such bodies, at any time and without regard to whether any quasi-judicial or other matter is then pending.

Section 4. Uniform Code - Copies on File. The City Clerk is to maintain one copy on file of the Harvard Road Mitigation Plan adopted by this ordinance.

Section 5. Liability. The express intent of the City of Liberty Lake is that the responsibility for compliance with the provisions of this ordinance shall rest with the permit applicant and their agents. This ordinance and its provisions are adopted with the express intent to protect the health, safety, and welfare of the general public and are not intended to protect any particular class of individuals or organizations.

Section 6. Severability. If any section, sentence, clause or phrase of this ordinance shall be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this ordinance.

Section 7. Effective Date. This Ordinance shall be in full force and effect five (5) days after publication of the Ordinance Summary, and on the date of incorporation.

PASSED by the City Council this 21 day of August 2001.

Mayor, Steve Peterson

ATTEST:

Interim City Clerk, Arlene Fisher

APPROVED AS TO FORM:

Interim City Attorney, Stanley M. Schwartz

Date of Publication: 8/23/01

Effective Date: Date of Incorporation

City of Liberty Lake
P.O. Box 370
Liberty Lake, WA 99019
(509) 755-6702

**NOTICE OF ORDINANCE PASSED
BY LIBERTY LAKE CITY COUNCIL**

The following is the title and summary of Ordinance No. 55 passed by the City of Liberty Lake City Council on the 21st day of August, 2001.

AN ORDINANCE OF THE CITY OF LIBERTY LAKE, WASHINGTON, ADOPTING BY REFERENCE THE SPOKANE COUNTY HARVARD ROAD MITIGATION PLAN AS THE HARVARD ROAD MITIGATION PLAN OF THE CITY.

The introductory paragraphs state the City adopts the Spokane County Harvard Road Mitigation Plan.

Section 1 adopts by reference Spokane County Harvard Road Mitigation Plan.
Section 2 adopts other laws, rules and regulations referenced in the Harvard Road Mitigation Plan.
Section 3 states the City Council shall serve in the role of planning commission and hearing examiner unless otherwise provided by ordinance.
Section 4 states the Harvard Road Mitigation Plan is on file with the City Clerk.
Section 5 states the Ordinance is to protect the public health, safety and welfare.
Section 6 establishes a severability clause in the event some portion of the Ordinance is held invalid.
Section 7 states this Ordinance shall be in full force and effect five (5) days after publication of the Ordinance Summary, and on the date of incorporation.

The full text of the Ordinance is available at the Interim City of Liberty Lake City offices as identified above. A copy will be mailed out upon request.

Arlene Fisher
Interim City Clerk

Published: 8/23/01

EXHIBIT A

HARVARD ROAD MITIGATION PLAN

for the

LIBERTY LAKE
TRANSPORTATION IMPACT AREA

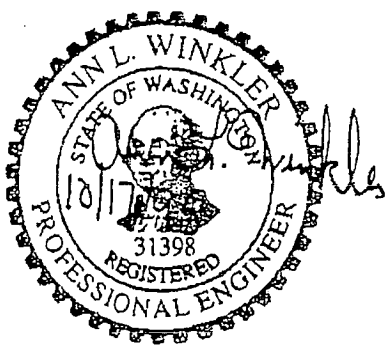
EASTERN SPOKANE COUNTY

OCTOBER 1995

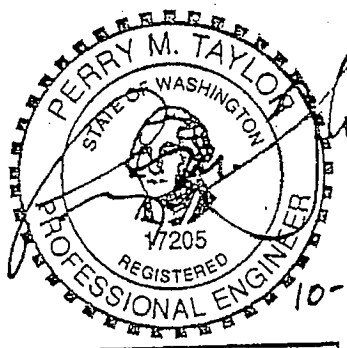
Inland Pacific Engineering, Inc.
707 West 7th Avenue, Suite 200
Spokane, WA 99204
(509) 458-6840

Taylor Engineering, Inc.
West 106 Mission Avenue
Spokane, WA 99201
(509) 328-3371

This report has been prepared by the staff of Inland Pacific Engineering, Inc. and Taylor Engineering under the direction of the undersigned professional engineers whose seals and signatures appear hereon.



EXPIRES 5/1/ 97
Ann L. Winkler, P.E.



10-17-95

EXPIRES 10-4-95
Perry M. Taylor, P.E.

James E. Borgan

TABLE OF CONTENTS

INTRODUCTION

Background

It has been long recognized that full development of the major projects which have been approved and/or proposed for the Harvard Road area at Liberty Lake would require the construction of additional roadway system capacity in order to avoid traffic congestion problems. The projects currently under development or proposed include the following:

1. Hewlett-Packard industrial complex
2. Olivetti North America industrial complex
3. Meadowwood Business Park (principal tenants include Telect, Medco, Egghead Computer, Altek Industries, and Northern Technology)
4. Meadowwood Retail Center (Albertson's)
5. Meadowwood residential developments
6. Highlands residential development
7. Highlands retail and business park
8. Sports World softball and soccer complex

As these project have developed significant roadway system infrastructure has been developed. These improvements include the widening and reconstruction of Appleway, Mission, Liberty Lake Drive and Country Vista Drive. Scheduled for completion this year are Molter and the connecting section of Country Vista.

As growth in this area has progressed attention has focused on the Harvard Road interchange with Interstate 90 and the need to move commuter traffic west to the developed portions of the valley. The Washington State Department of Transportation (WSDOT) has taken the position that further development in this area cannot proceed without interstate highway system improvements.

While the development and construction of the interstate highway system should be the responsibility of the State property owners in the area have demonstrated a willingness to contribute to the solution of this problem. For the past 12 months the property owners and developers in the Harvard Road and Liberty Lake area have worked together to identify future road system improvements necessary to support continued development in the area, including improvements to the interstate highway system.

Mitigation Group Participants

The Harvard Road Mitigation Group consists of the major property owners and developers in the Liberty Lake - Harvard Road area. The study group participants include the following:

1. Meadowwood Residential Development:
   Jim Frank
   Greenstone Corporation

2. Meadowwood Retail Center:

   Elmer Schneidmiller
   Schneidmiller Land Company

3. Meadowwood Business Park:

   Mike Teramoto
   Metropolitan Mortgage and Securities Co., Inc.

4. Highlands Residential and Business Project:

   Mr. Dave Fluke
   Mr. Jerry Neal
   Liberty Lake Investments, Inc.

5. Sports World:

   Mr. Rand Hatch

6. North Freeway Industrial

   Mr. Gibb Brumback

7. Consultants

   Inland Pacific Engineering
   Taylor Engineering
   CH2M Hill Engineering

Project Setting

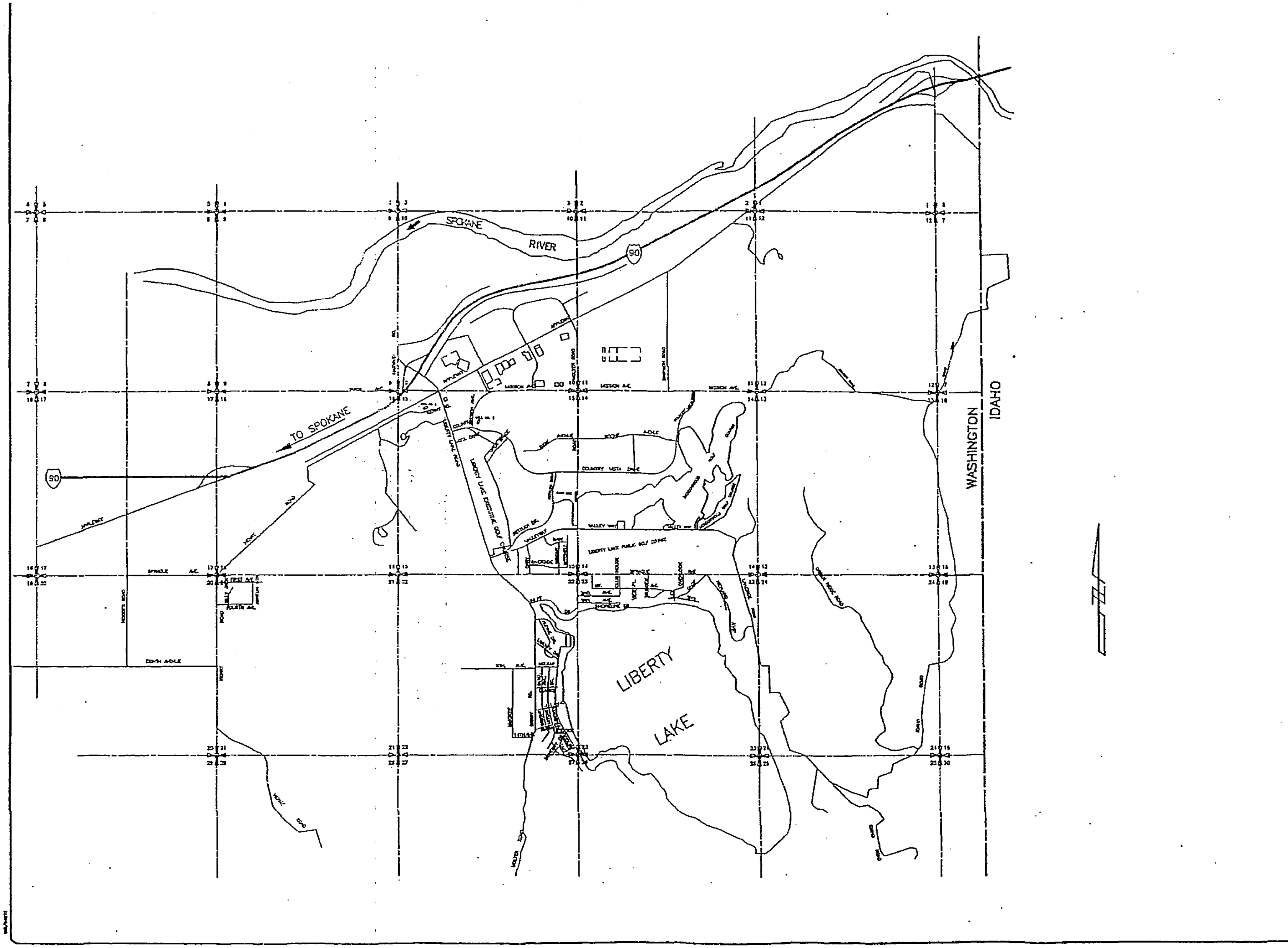
The Liberty Lake area of Spokane County lies on the eastern edge of Spokane County near the Idaho border. Most of the Liberty Lake traffic uses Exit 298, the Harvard Road / Liberty Lake Exit from I-90. Presently there are two other minor routes which connect the Liberty Lake area to the greater Spokane area. These routes are Kinney Road, south of I-90, which has several severe corners and poor connections to the Spokane Valley area; the other route being Mission Avenue north of I-90 which effectively connects only as far as Barker Road and is at present unpaved. Due to a lack of alternate routes in the area, traffic into and out of the Liberty Lake area reduce travel time and inconvenience by using I-90 almost exclusively.

The Liberty Lake area has been a resort area for the greater Spokane region for many years. In the early years, the train/trolley system was the popular mode of transportation. With the advent of the automobile and county road system, people began to move to Liberty Lake, first on a seasonal basis to enjoy the lake and it's recreational amenities, but later for use as primary residences.

Due to the large amount of undeveloped land, farmed for grass seed production, and proximity to the interstate, industrial land uses became evident north of the lake, close to the interstate. At the time that these land uses came into being, the existing infrastructure including water, sewer and transportation was able to take care of the additional demands placed on them. Figure 1 is a regional map of the Liberty Lake area.

As time has progressed, however, the quantity and density of development desired in this area has begun to outstrip the transportation resources available to serve them. At the present time, there are plans for several million square feet of industrial/warehouse uses, several large commercial sites, and nearly twenty five hundred residential dwelling units. Only a small portion of this is currently developed.

During the 1980's, all types of land uses, residential, commercial and industrial were all very slow. However, as the 1990's have progressed, development in the Liberty Lake area has increased as it has in much of Spokane County and is presently moving ahead at a rapid pace. As the development in the Liberty Lake area has picked up, so has the development in the greater Spokane and north Idaho region.



HARVARD ROAD MITIGATION PLAN
LIBERTY LAKE AREA MAP

INLAND PACIFIC ENGINEERING

SCALE: HORIZONTAL N.T.S. VERTICAL

DATE: 05/15/95

SHEET 1 of 5

JOB NUMBER 94273

Overview of Technical Analysis

A study group consisting of most of the major property owners and developers in the area was formed to jointly undertaken a detailed technical analysis of the future transportation needs of the area. This technical analysis included the following elements:

1. Establish Transportation Impact Boundary:

A study area boundary was established based upon a technical study of the area within which development would impact the Harvard Road interchange with I-90. A map of the plan study area border is attached as Figure 2.

2. Land Use Base:

A land use base was established based upon the current comprehensive plan designations and zoning within the study area boundary. Potential build out time frames were also identified. Traffic generation rates were established based upon this land use base.

3. Detailed Traffic Study:

A detailed traffic study was completed and potential transportation system problems and solutions were identified.

4. Traffic System improvements:

Based upon the traffic study the most feasible transportation system improvements were identified which would allow acceptable levels of service in the transportation system to be maintain upon scheduled development of the area. Engineering costs estimates were prepared for each project.

5. Mitigation Plan:

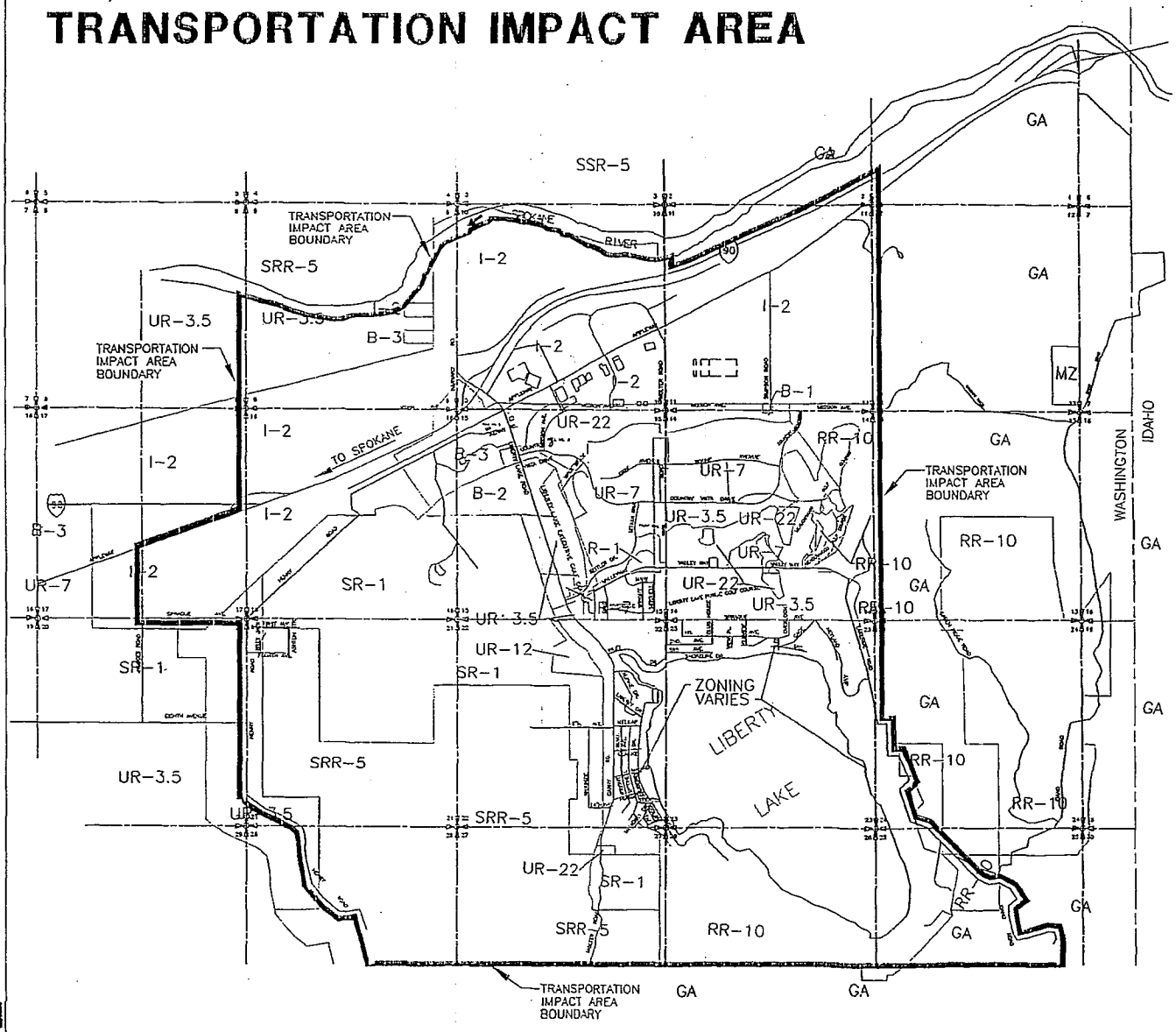
On the basis of the technical study a mitigation plan has been developed and agreed to by the study group. Ultimately this mitigation plan would involve a public-private partnership in which the private property owner and developers in the area would contribute approximately $5 million toward transportation system improvements in the study area.

Elements of Transportation System which need Mitigation

The Harvard Road / Liberty Lake I-90 interchange, because it serves the vast majority of the traffic from the growing Liberty Lake area, will eventually feel the most impact of the increase in traffic from this area.

HARVARD ROAD MITIGATION PLAN

TRANSPORTATION IMPACT AREA



HARVARD ROAD MITIGATION PLAN
ZONING IN LIBERTY LAKE
TRANSPORTATION IMPACT AREA

SHEET 3 OF 5

JOB NUMBER 94273

Several options are available, either working in tandem or individually, to maintain a satisfactory level of service for this interchange. For the purposes of this document, the transportation system was analyzed to determine anticipated system deficiencies and recommend a long term mitigation plan.

After reviewing a wide range of alternative system improvements, a list of recommended mitigation projects was prepared based upon benefits to the transportation system and cost effectiveness.

The list of transportation system improvements which have recommended include upgrades to both the Spokane County arterial system and the Harvard Road interchange with I-90. The recommended roadway projects are as follows:

1. Phase I Project A: Relocate West Bound Off-Ramp

This project provides for the relocation of the west bound off-ramp, it also realigns a local access road.

Cost $512,500

2. Phase I Project B & D: Interchange Signalization

This project includes two elements: 1) signalization of the north ramps to the Harvard Road interchange, and, 2) widening of Harvard road north of the bridge to facilitate left turn movements. This project will provide a temporary increase to interchange capacity prior to full reconstruction.

Cost: $ 219,037 (Note: Signals have already been bonded for).

3. Phase I Project C: Realign Mission North of I-90

This project would realign Mission at the intersection with Harvard Road and allow the relocation of the west bound on-ramp to I-90. This project will allow for the future extension of Mission west to Barker (an arterial extension that will divert traffic from I-90) and allow for the future reconstruction of the Harvard Road interchange.

Cost: $ 477,867

4. Phase II Project E: Construct 2-Lane Country Vista Extension

The project would provide the extension of Country Vista Drive from Liberty Lake Drive west to Appleway and reconstruction of the Appleway east bound on-ramp to I-90. The initial phase would be a 30 foot wide 2 lane facility. Future expansion to 5 lanes is proposed. This facility would act as the eastern extension of the proposed South Valley arterial. The purpose of this road is to provide a commuter arterial connection between the Liberty Lake area and the developed portion of the valley to the west, diverting traffic from I-90.

Cost: $1,425,956

5. Phase III Project F: Widen I-90 Overcrossing for Two Northbound Lanes

This improves the level of services to the intersection of Mission and Harvard by providing additional cueing for North Bound, West Bound movements

Cost: $825,605

6. Phase III Project G: West Bound Loop Ramp

The construction of a westbound loop on-ramp from Harvard Road to I-90. This project will substantially increase the capacity of the Harvard Road interchange and together with the other recommended projects will provide adequate roadway system capacity until the year 2020.

Cost: $ 495,000

7. Phase IV Project H: Widen Country Vista Dr. and Mission Ave to 4/5 Lanes

This project includes the upgrading of the Country Vista Drive extension to Appleway to a 5 lane facility and signalization of the intersection with Liberty Lake Drive. This project will eventually handle up to 18,000 vehicle trips per day which have been diverted from I-90. **Individual building site developers will be responsiple for revised '208' requirements, sidewalks, curbs, frontage landscaping and additional lanes at the time of issuance of building permits.** The Harvard Road Mitigation Plan (The Plan) will cover the upgrading of the intersections at Country Vista & Appleway, as well as the signalization of Country Vista and Liberty Lake Drive.

Total Cost: $ 2,889,313 **The Plan will cover $540,000** and site developers pay $2,349,313

8. Phase IV Project I: Improve Liberty Lake Drive/Appleway Intersection

Channelization and signalization for intersection of Liberty Lake Drive and Appleway.

Cost: $174,810

9. Phase IV Project J: Widen East Bound Exit Ramp from I-90 (Optional)

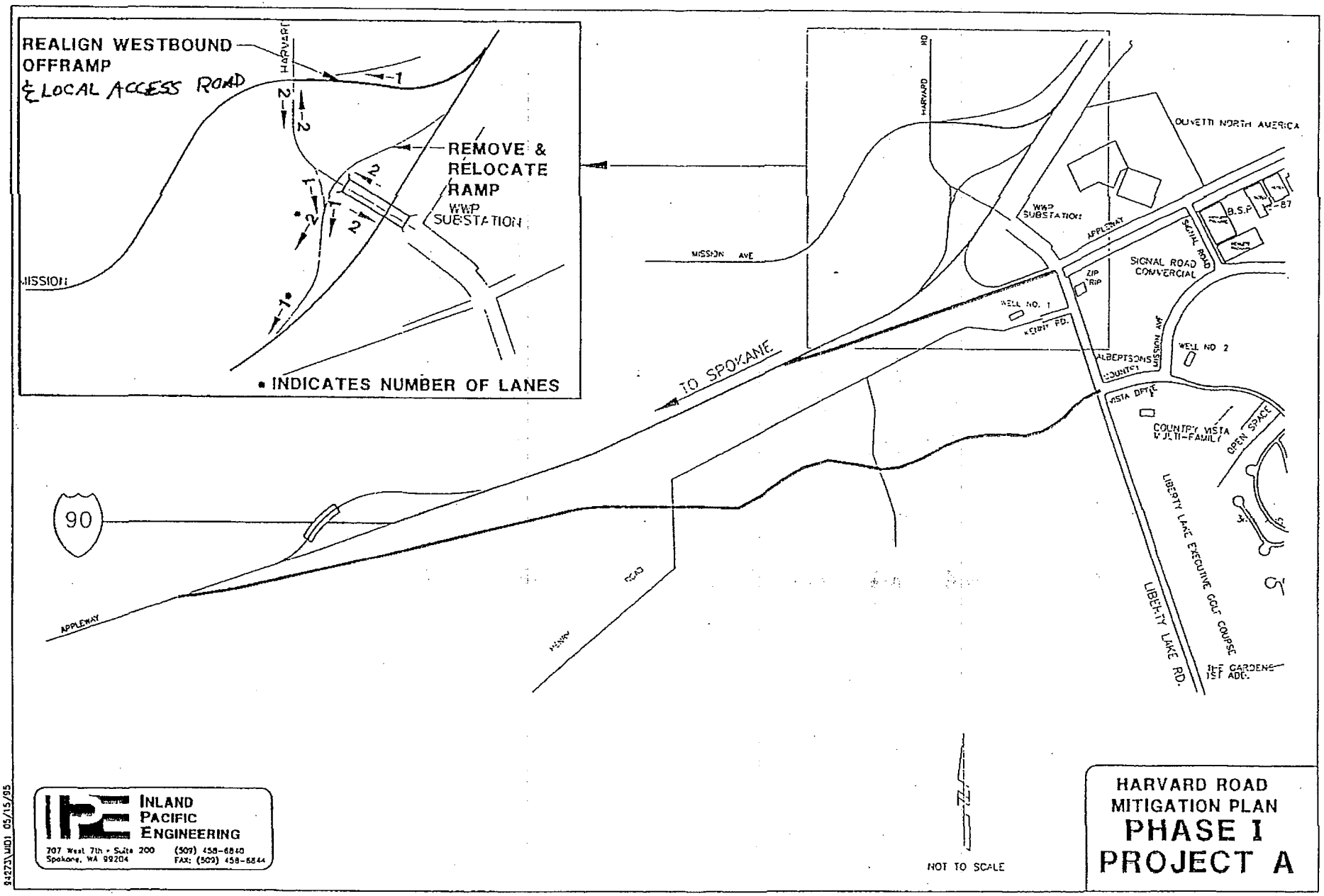
Provides 700 feet of additional lane of East Bound off-ramp.

Cost: $ 289,710

Traffic Mitigation Routes Available Under Washington State Law

Under existing Washington State Law, several avenues are available for mitigating traffic impacts, the formation of a Transportation Benefit District, Impact Fees under the Growth Management Act (GMA), impact fees under the 1989 Local Transportation Act and mitigation plans developed under the State Environmental Policy Act (SEPA). The avenues available in Spokane County are somewhat limited due to the fact that GMA impact fees are not available in Spokane County to date. Of the other options left, the Transportation Impact District has been proposed for other areas of Washington State, but has not been successfully implemented. The breadth and monetary commitment needed to mitigate the anticipated impacts to the Liberty Lake / Harvard Road interchange are substantial enough that no one property owner or developer in the Liberty Lake area is able to handle all of it. An overall plan is required.

After reviewing all of these available options, it is recommended that an overall transportation mitigation plan be implemented under the provisions of the State Environmental Policy Act (SEPA) and that mitigation alternative be allowed, including voluntary fees under the provisions of RCW 82.02. This plan is based upon, and will be implemented subject to, the policies set out in the following section. The mitigation plan, including these implementation policies, would be adopted by resolution of the Board of County Commissioners and be implemented and administered by the staff of Spokane County.



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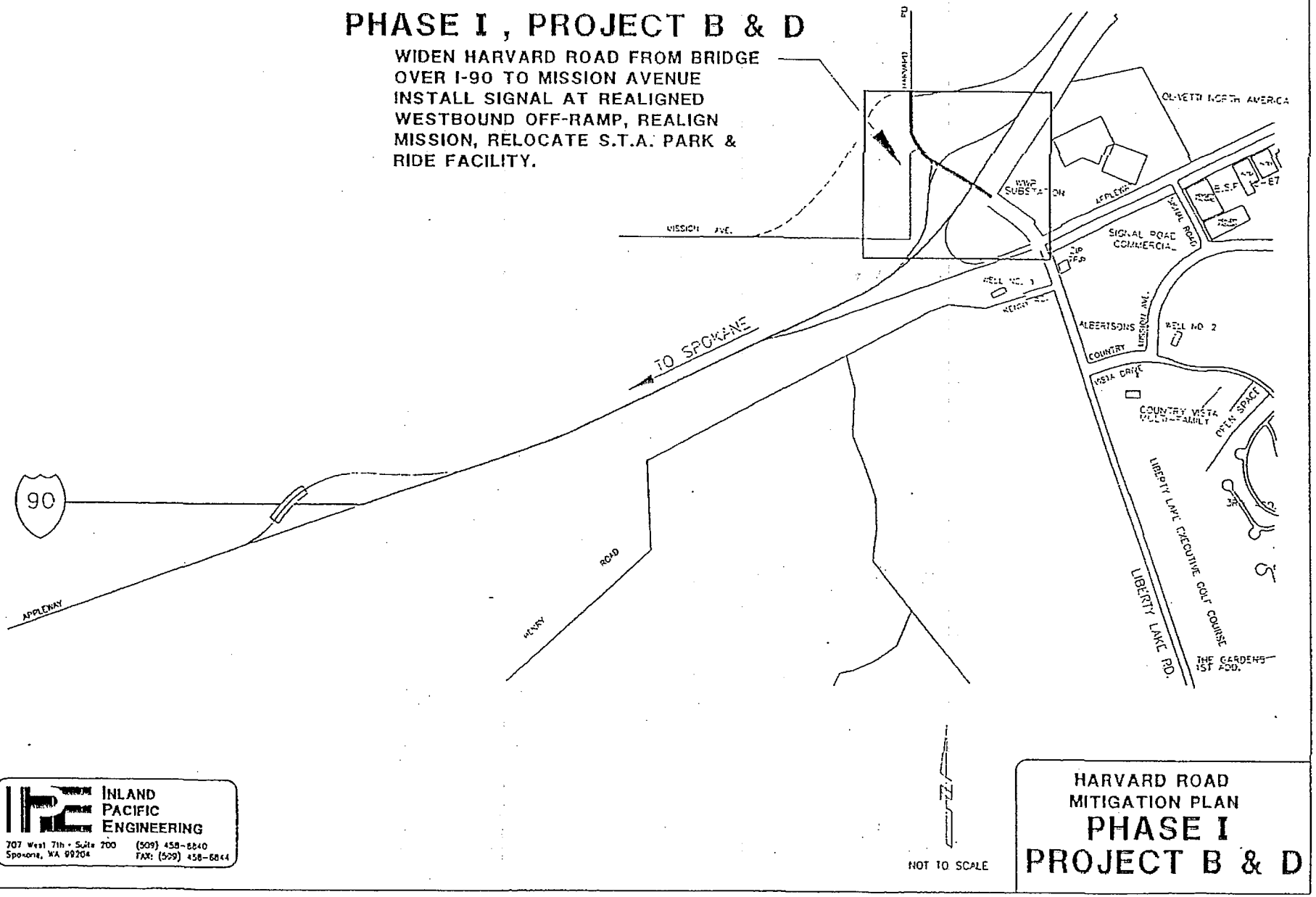
PHASE I , PROJECT B & D

WIDEN HARVARD ROAD FROM BRIDGE OVER I-90 TO MISSION AVENUE INSTALL SIGNAL AT REALIGNED WESTBOUND OFF-RAMP, REALIGN MISSION, RELOCATE S.T.A. PARK & RIDE FACILITY.



NOT TO SCALE

INLAND PACIFIC ENGINEERING
707 West 7th • Suite 200 (509) 458-6840
Spokane, WA 99204 FAX: (509) 458-6844

HARVARD ROAD
MITIGATION PLAN
PHASE I
PROJECT B & D

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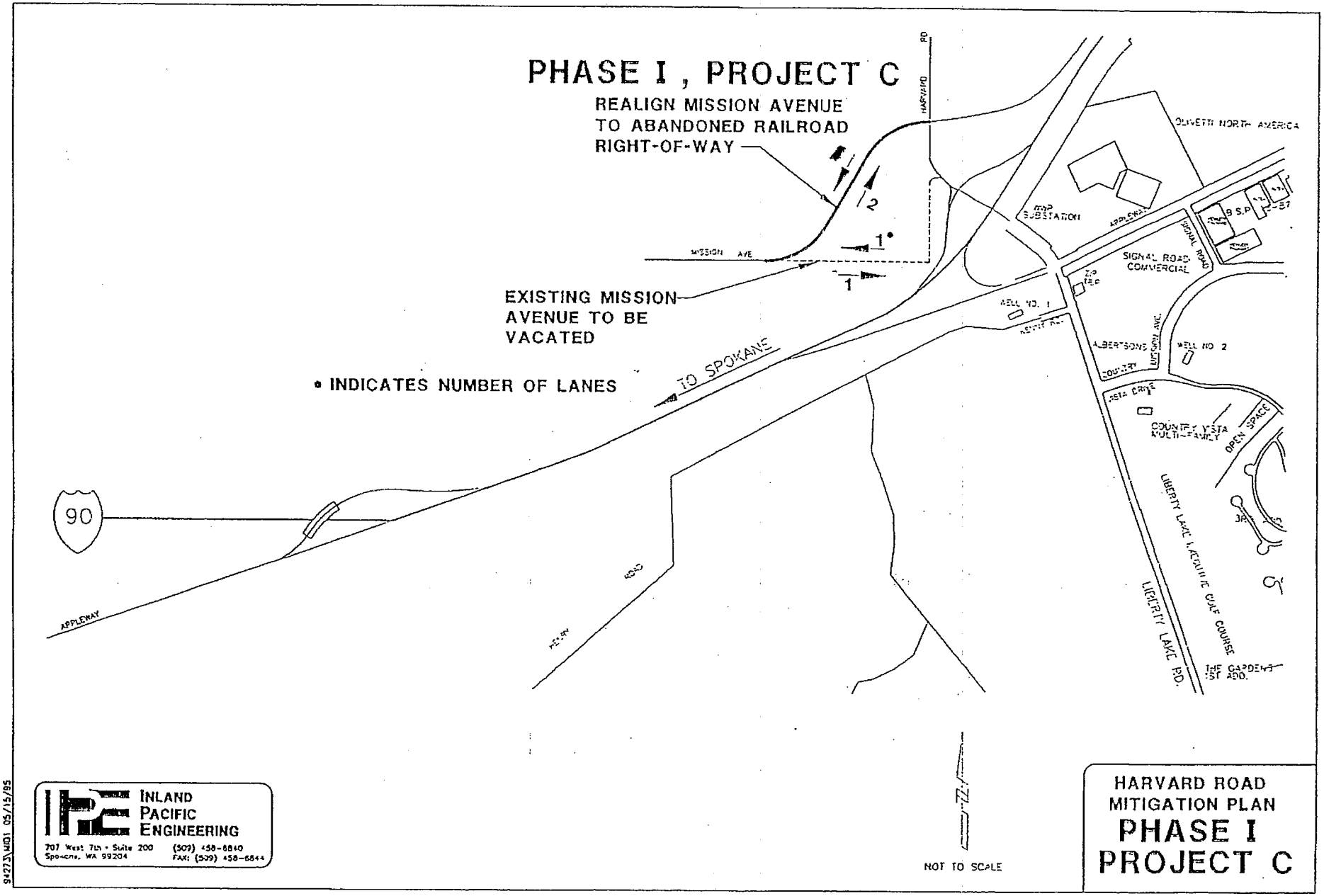

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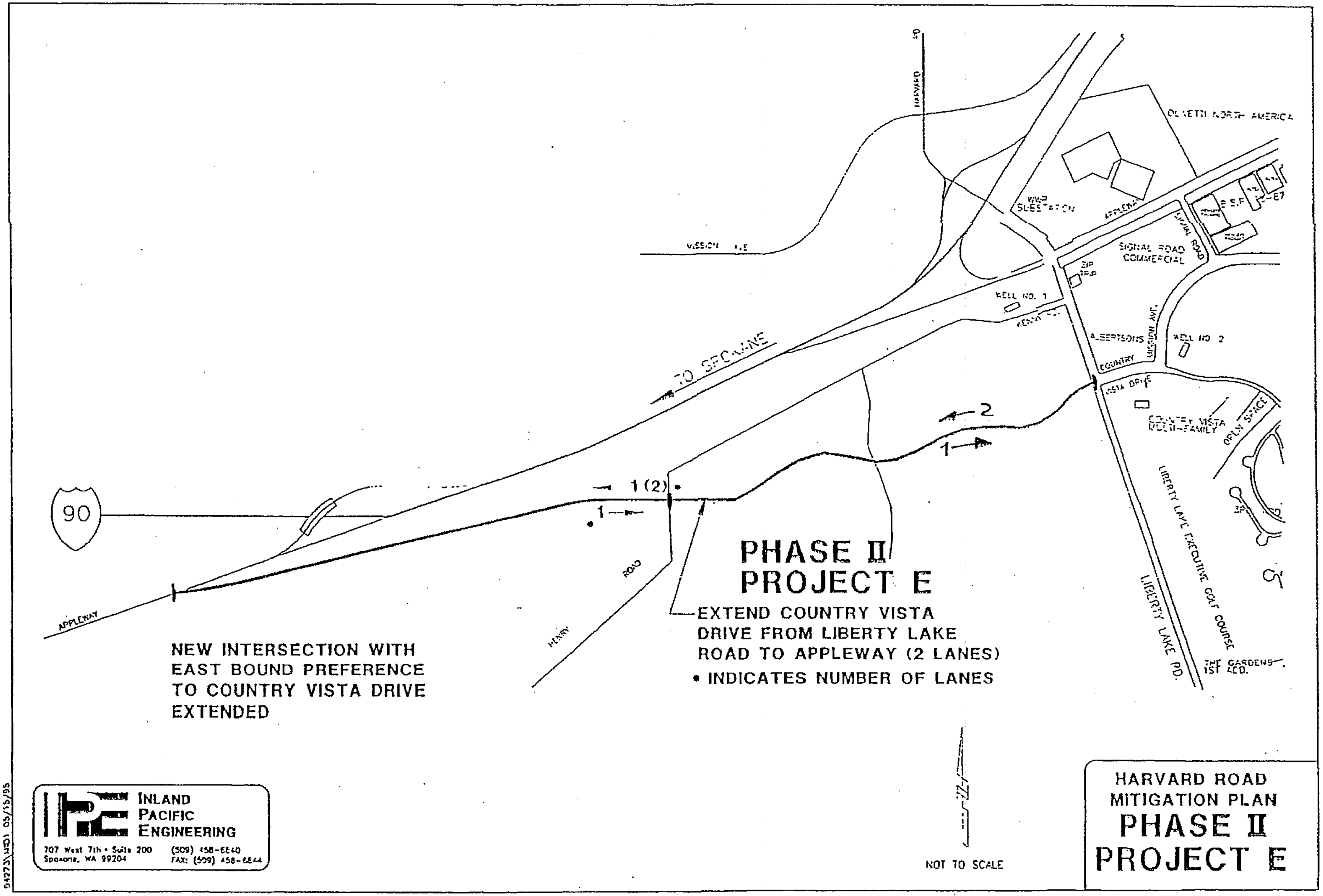
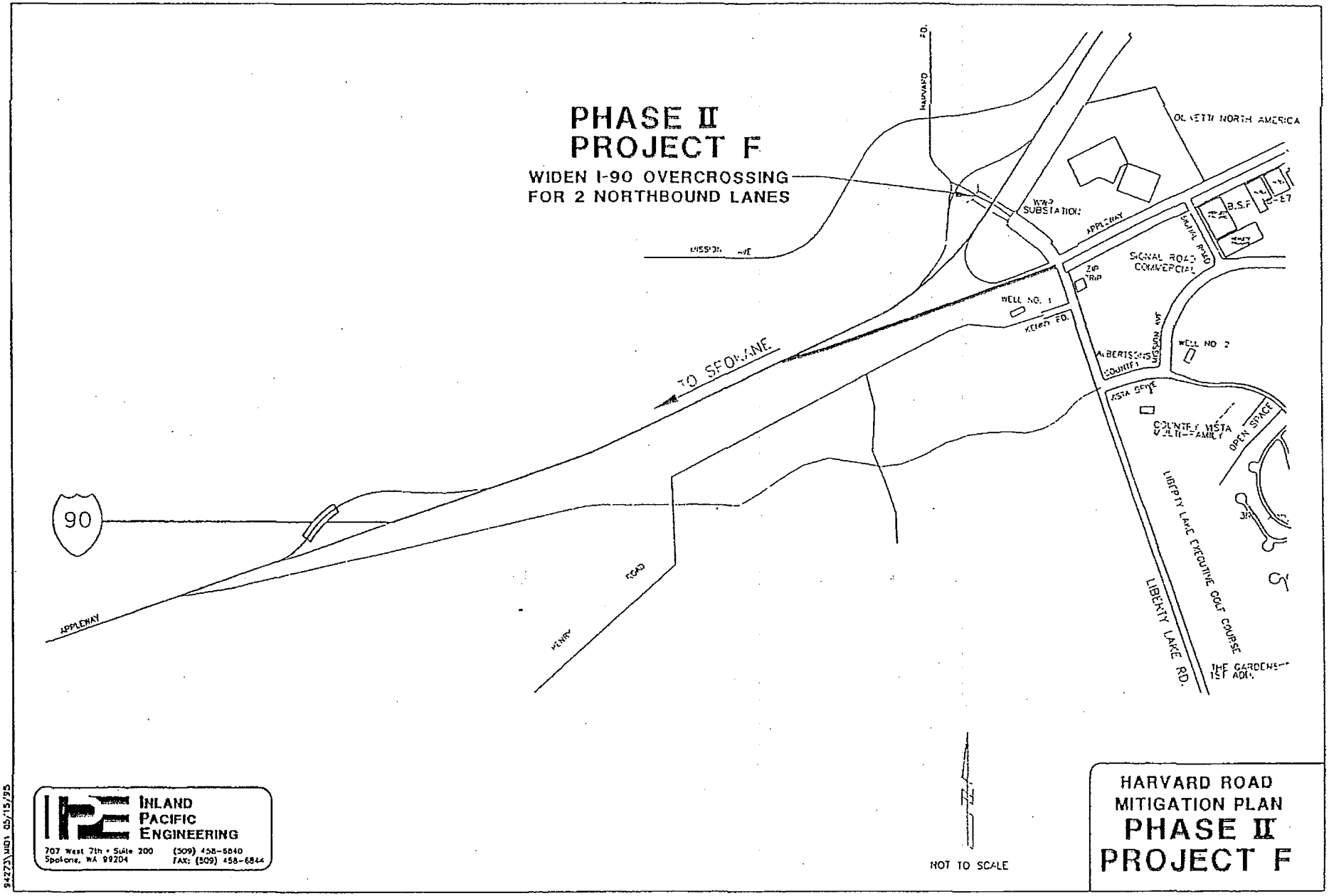

HARVARD
MISSION AVE
APPLEWAY
SIGNAL ROAD
SIGNAL ROAD COMMERCIAL
WELL NO. 1
ALBERTSONS
COUNTRY
VISTA DRIVE
WELL NO. 2
OPEN SPACE
LIBERTY LAKE EXECUTIVE GOLF COURSE
LIBERTY LAKE RD.
TO SPOKANE
90
HENRY
ROAD
2
1
1 (2)
PHASE II
PROJECT E
EXTEND COUNTRY VISTA DRIVE FROM LIBERTY LAKE ROAD TO APPLEWAY (2 LANES)
• INDICATES NUMBER OF LANES
NEW INTERSECTION WITH EAST BOUND PREFERENCE TO COUNTRY VISTA DRIVE EXTENDED
NOT TO SCALE
INLAND
PACIFIC
ENGINEERING
707 West 7th • Suite 200
Spokane, WA 99204
(509) 458-6840
FAX: (509) 458-6844
HARVARD ROAD
MITIGATION PLAN
PHASE II
PROJECT E



INLAND PACIFIC ENGINEERING
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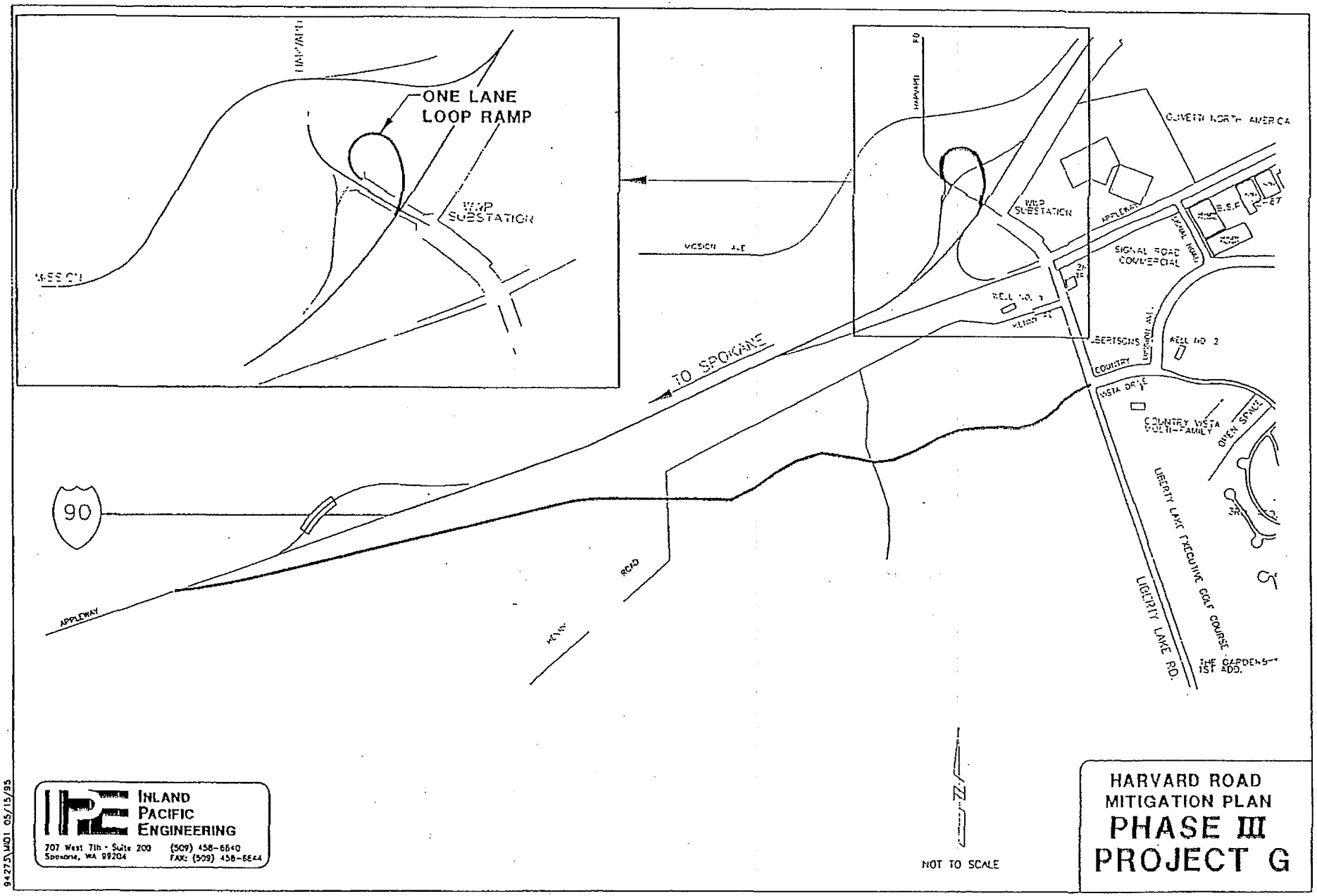

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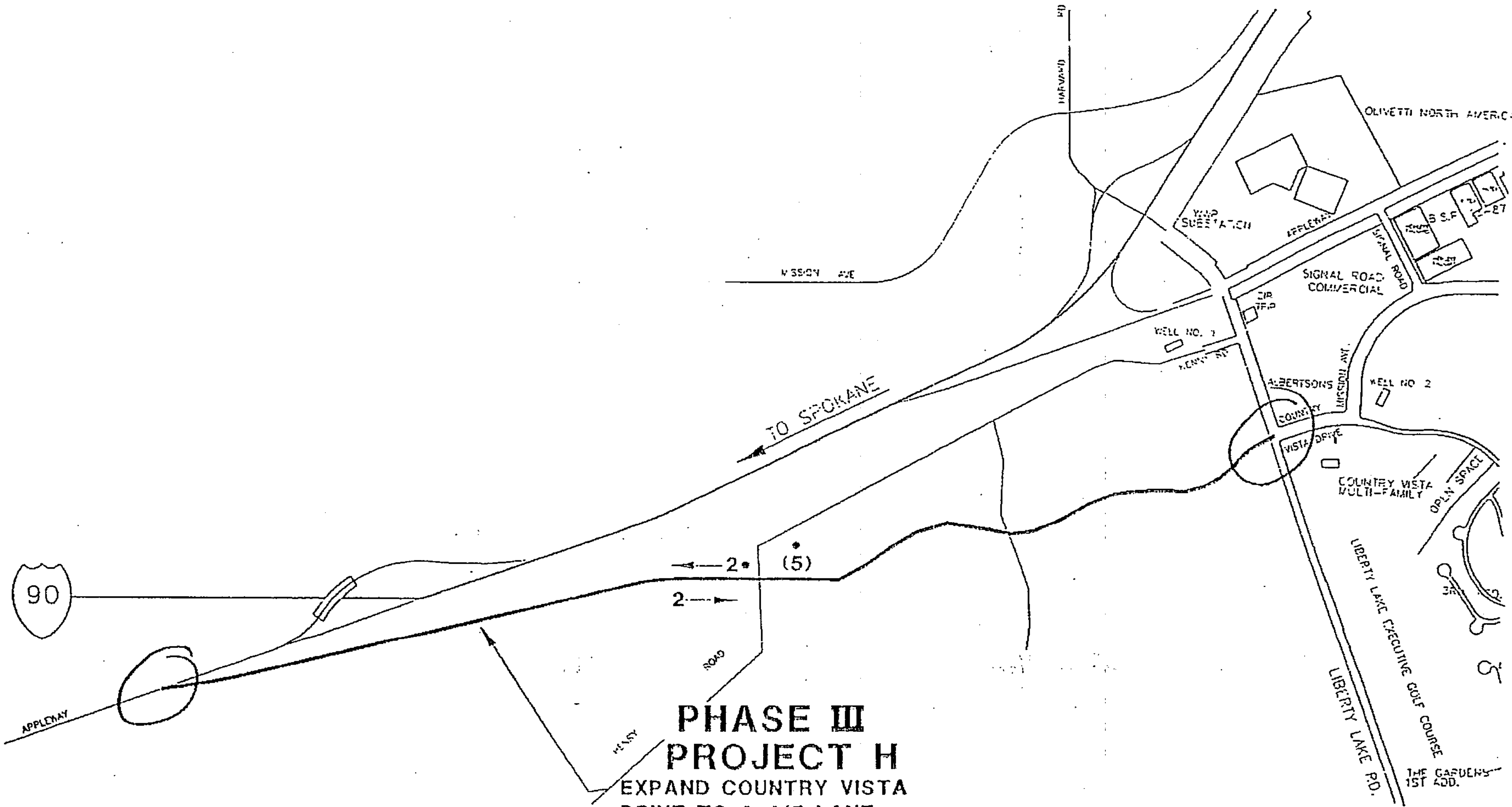
HARVARD ROAD
MITIGATION PLAN
PHASE III
PROJECT G

94273\WD1 05/15/95

15



PHASE III
PROJECT H

EXPAND COUNTRY VISTA DRIVE TO A 4/5 LANE FACILITY

* INDICATES NUMBER OF LANES

NOT TO SCALE

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Spokane, WA 99204
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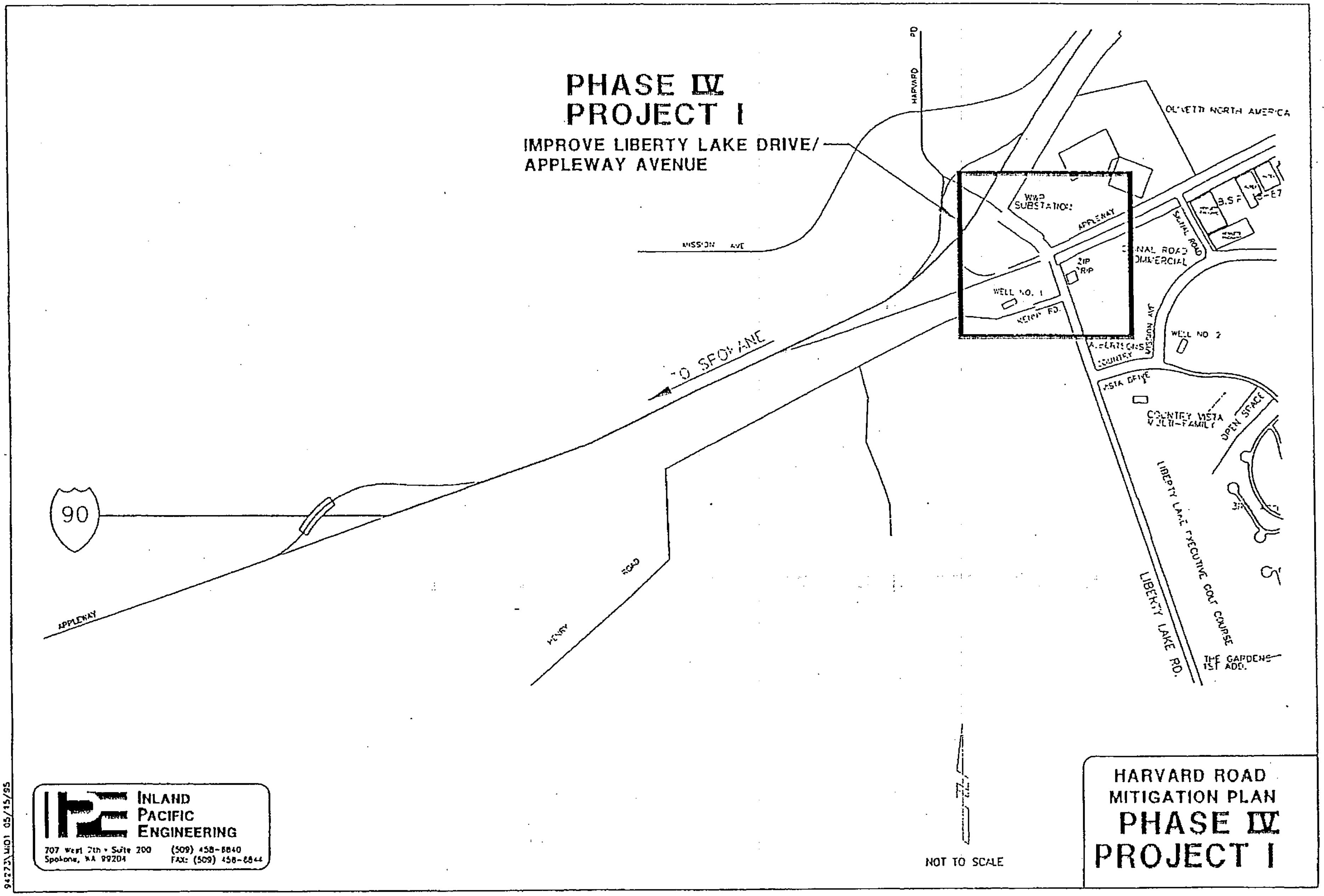
HARVARD ROAD MITIGATION PLAN

PHASE III
PROJECT H

16


PHASE IV
PROJECT I
IMPROVE LIBERTY LAKE DRIVE/
APPLEWAY AVENUE
HARVARD RD
OLIVETTI NORTH AMERICA
WWP SUBSTATION
APPLEWAY
MISSION AVE
WELL NO. 1
WELL NO. 2
TO SPOKANE
90
APPLEWAY
HENRY ROAD
VISTA DRIVE
COUNTRY VISTA MULTI-FAMILY
OPEN SPACE
LIBERTY LAKE EXECUTIVE GOLF COURSE
LIBERTY LAKE RD.
THE GARDENS 1ST ADD.
NOT TO SCALE
INLAND
PACIFIC
ENGINEERING
707 West 7th • Suite 200
Spokane, WA 99204
(509) 458-8840
FAX: (509) 458-8844
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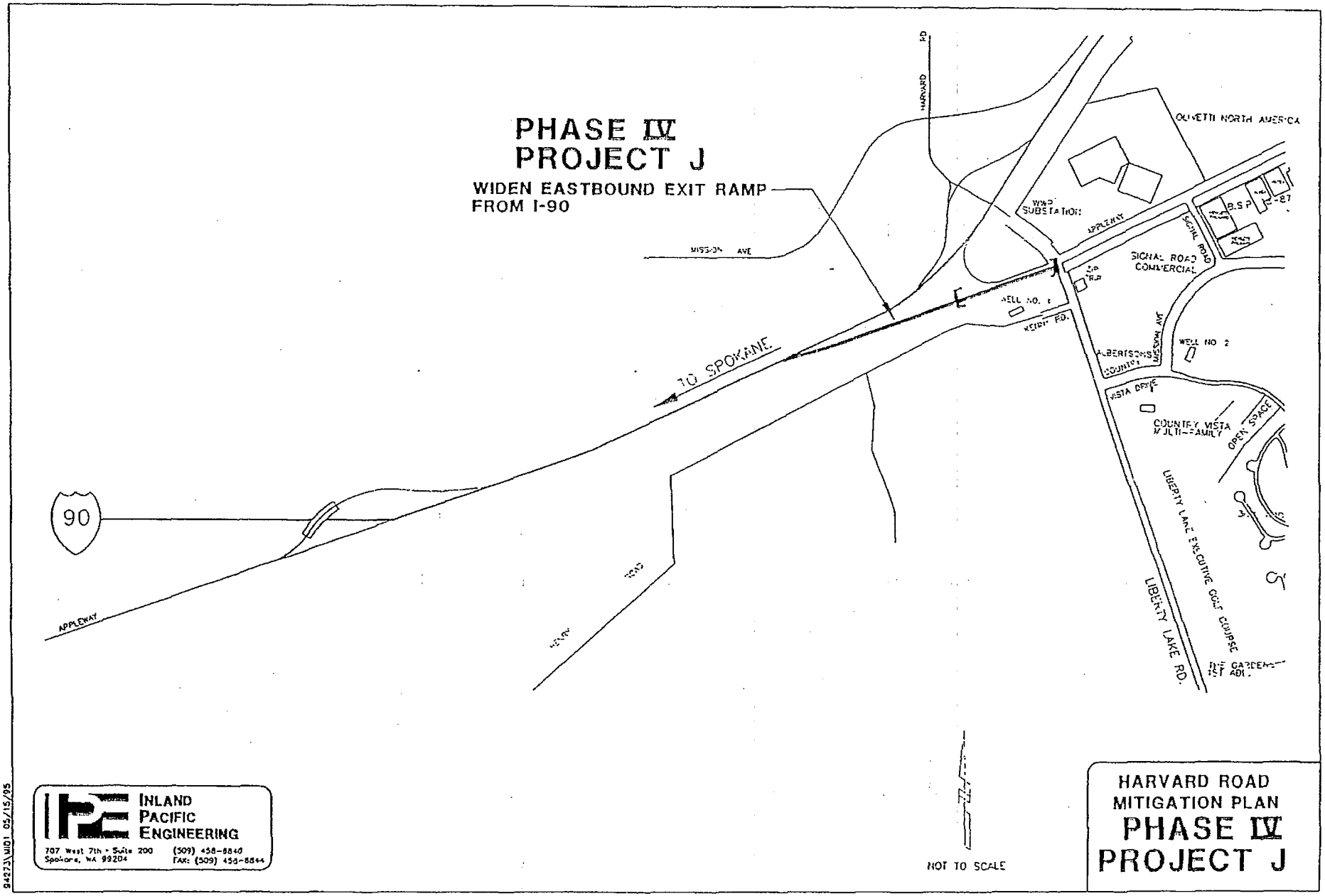
HARVARD ROAD
MITIGATION PLAN
PHASE IV
PROJECT I



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MITIGATION PLAN IMPLEMENTATION POLICIES

The proposed policies for implementation of the Harvard Road Mitigation Plan and the calculation of mitigation fees are important for the equitable and consistent administration of the mitigation program.

The following policies identify the types of development for which mitigation is applicable, the basis for calculating the fees and for alternate mitigation options.

Policy 1: Basin-based Modeling: Traffic impacts from a specific development affect both adjacent roadways as well as all traffic facilities within the Harvard Road area traffic basin. Both localized and traffic basin impacts result from any development in the traffic basin. Accordingly, the calculation of traffic impacts and mitigation fees should recognize both the direct and overall impact within the context of the designated traffic basin adopted as part of this plan.

Policy 2: Trip Generation Rates: Trip generation for any development will be calculated as follows in the following order of priority:

a. According to the fee schedule attached to this Mitigation Plan;
b. Using the Institute of Traffic Engineers (ITE) Trip Generation Manual, 5th Edition or as amended the owner/applicant providing a trip generation study; or
c. Other verifiable alternate documentation as to trip generation rates for similar used in the locality.

The Study shall be done in accordance with these policies and the traffic model adopted for this plan. Any such study and/or alternate documentation shall be subject to review and approval by the County prior to being accepted.

Policy 3: Traffic Basin: Only development projects located within the identified traffic basin will be subject to the SEPA/Mitigation Policies.

Policy 4: Excess Capacity: Many of the roads for which mitigation is planned currently have excess A.M./P.M. peak hour traffic capacity. All developments shall share pro-rata in any excess transportation system capacity that may exist.

Policy 5: Peak Demand Periods: Mitigation fees should be based upon the average of the A.M. and P.M. peak hour traffic generated by the proposed development. Transportation system capacity limits are related primarily to traffic generated during weekday morning and afternoon peak hour periods.

Policy 6: SEPA/Mitigation Policies: These SEPA/Mitigation Policies are based upon the application of the State Environmental Policy Act (SEPA) 43.21C RCW and constitutes specific policies pursuant to RCW 43.21C. 060. Any development activity located within the Harvard Road area, as identified, which is subject to a SEPA threshold determination shall be subject to these policies and project conditions. These SEPA/Mitigation Policies will act as the official regulatory control for the purposes of RCW 43.21C. 060.

Policy 7: Transit/HOV Credit: Participation in Special programs to promote transit and high occupancy vehicle (HOV) use can directly reduce the trip generation of a development site. When transit/HOV participation produces an actual or calculated reduction in A.M./P.M. peak hour trip generation a corresponding reduction in roadway system impacts will also occur. An allowance shall be allowed from standard trip generation rates where participation in trip reduction/HOV programs is documented.

Policy 8: Credit for Construction and Dedication: A developer shall be entitled to receive credit against mitigation fees as follows:

a. System improvements constructed by developer.
b. For real estate dedicated to the County or State of Washington for system improvements.

A developer shall not be entitled to right-of-way or system improvement credit for that portion of the right-of-way or system improvement which would be required for the development itself.

Policy 9: Frontage Road Requirements: The mitigation plan as adopted shall be the exclusive listing of system improvements in the traffic basin. A developer shall be responsible for normal frontage requirements not specified in the mitigation plan, including but not limited to such requirements as, curbs, sidewalks, additional lanes, etc.

Policy 10: Update of Plan: It is recognized that the mitigation plan is based upon current land use policy and zoning. In addition it is recognized that the basis and assumptions of the traffic study upon which the plan is founded may change with time. For these reasons the mitigation plan should be updated by Spokane County at 5 year intervals and shall provide for developer input and a public hearing process. This may result in modifications to the mitigation plan project list and the mitigation fee level.

Policy 11: Mitigation Plan Project List: The mitigation plan includes system improvements that will accommodate the demands of growth within the Harvard Road traffic basin over a twenty year period. It is recognized that projects located outside of the mitigation plan area will contribute to the traffic in the plan area and will impact the mitigation plan project

improvements. The mitigation plan project list shall only be modified as part of a mitigation plan update as specified in Policy 10.

Policy 12: Exclusion of Freeway: The mitigation plan project list includes widening of the Harvard Road bridge over Interstate 90 by one lane. However, it does not include any improvements to mainline I-90 capacity. It is recognized that traffic generators outside of the mitigation plan area contribute significantly to the need for these and related facilities. It is further recognized that these improvements are the primary responsibility of the State of Washington. The development projects located in the mitigation plan area have met their responsibility for freeway and related system improvements by including the I-90 ramp improvements and bridge widening as part of the system improvements.

Policy 13: Inter-jurisdictional Coordination: The project list includes improvements to both County and State roadways. The County shall actively seek the coordination of the SEPA/Mitigation Policies with the State of Washington Department of Transportation in such a manner as they deem appropriate.

Policy 14: Credit for Plan Development: The development of this mitigation plan and the underlying traffic studies upon which it has been based has been provided by certain project developers. These developers shall receive credit against future mitigation fees for the following documented costs incurred in the preparation of the mitigation plan.

a. Greenstone Corporation (Meadowwood residential development): $13,000.00
b. Liberty Lake Investments (Highlands project): $30,000.00
c. Metropolitan Mortgage (Meadowwood Business Park): $14,000.00

Policy 15: Fee Payment: The mitigation fees under this plan shall be calculated in accordance with the attached schedule and are payable at the time of building permit application. The shall be collected by Spokane County from the permit applicant.

Policy 16: Characterization as Voluntary Fees: Fees paid under the mitigation plan are authorized under the provisions of RCW 82.02, and any fees collected shall be subject to the provisions outlined therein, including the obligation to spend the fees collected on those system improvements listed in the Mitigation Plan Project List within 5 years of the date paid or refund the fees in accordance with the statute. A developed may opt to participate out of this mitigation plan in which case he may be required to perform a traffic study to identify and mitigate those transportation impacts generated by the proposed project.

Policy 17: Full Mitigation: Payment of the mitigation fees provided for under this plan, or exercising any mitigation options pursuant to policy 16, shall be considered full mitigation of all system improvements reasonably related to the development proposal. However, additional

SEPA traffic mitigation may be required only when a proposed development plan is inconsistent with the land use assumption in the basin plan.

Policy 18: Project Construction: Spokane County has the responsibility for insuring the timely construction and availability of necessary system improvements. The private developers responsibility which is for a portion of the costs of those system improvements is provided for by the imposition of appropriate and reasonable fees imposed pursuant to these policies.

Policy 19: Mitigation Plan Accounting and Tracking: Spokane County shall implement a tracking system to monitor projects developed within the mitigation plan area and mitigation fees paid. The County shall maintain the fees collected in a separate pooled account which can be transferred to separate mitigation plan project accounts or expended on projects included on the mitigation plan project list. The collection, tracking, accounting, expenditure and/or return of mitigation fees paid shall be subject to the requirements and controls of RCW 82-02.020. The mitigation fees collected pursuant to these policies may be used only for the system improvements listed herein.

Policy 20: Public Funding Off-Set: Any public funding which is provided for the construction of those system improvements which are included on the SEPA/Mitigation Policies Plan shall result in the adjustment of the mitigation fee level.

Policy 21: County Participation: It is recognized, that the mitigation fees calculated under the SEPA/Mitigation Policies may not be sufficient to cover the actual cost of the construction of the various system improvements. While the SEPA/Mitigation Policies are in effect, it shall be the obligation of either the County or the State in accordance with their respective jurisdictions to make up any short fall which may result therefrom. The system improvements are designed to not only benefit new development but existing development as well. Nothing in this plan or policies shall prohibit the County or State from using the mitigation fees collected as a developer commitment in order to obtain public funds which may be needed to cover any resultant short fall.

Policy 22: Title Notice: The County shall cause a notice of these policies and the obligations under the Mitigation Plan to be recorded against all properties within the Harvard Road Mitigation Area.

Policy 23: Construction: This Mitigation Plan, and the policies and system improvements listed herein do not create any additional obligation upon the County for traffic improvements. This Mitigation Plan does not alter change or relieve any person, entity or governmental authority from those obligations to traffic system improvements that already exist.

TRAFFIC ANALYSIS OF PROPOSED TRAFFIC ELEMENTS SELECTED

Basis of Traffic Study

In order to perform a traffic analysis of the breadth and scope needed to adequately address the needs, potential mitigation, trip generation sources, etc., it was decided that a computer model should be used in order to handle the complex interaction of trip generation, distribution and the affects from various mitigation options and scenarios. The model used for this study is based upon the traffic model used by SRTC, but modified to account for the conditions to be looked at in the Liberty Lake area, and several traffic elements which were not in the SRTC model.

A preliminary step which had to be completed before the traffic analysis could be started was the establishment of the transportation impact study area boundary. Figure 2 shows the overall boundary of the study area. The northern boundary of the Spokane River, and I-90 was chosen as the northern limit of what could be included in an urban growth area boundary, and therefore, additional traffic generators north of this boundary are expected to be minimal. The eastern boundary of the eastern section lines of sections 2, 12 and 13 of Range 45 East, Township 25 North; and the eastern boundary of Idaho Road was chosen due to the presence of a hill on the east side of Liberty Lake, and due to preliminary data output from the traffic model which indicated that only about 5% of traffic generated east of this line presently uses the Liberty Lake / Harvard Road interchange. A similar situation dictated the choosing of the western boundary of the Traffic Impact Area of the western section line of sections 8 and 17 of Range 45 East, Township 25 North, includes the entire ownership of Liberty Lake Investments, follows Henry Road to the southern boundary. The traffic model showed that only about 5% of traffic generated west of this boundary would use the Liberty Lake / Harvard Road interchange. The southern boundary, the southern section line of sections 25, 26, 27 and 28 of Range 45 East, Township 25 North were chosen as the outside limit of urban growth in this area.

Figure 3 shows the existing county zoning within this boundary of the study area.

The parameters of the traffic model used are based on and build upon the SRTC traffic model and on previous traffic studies of smaller scope performed by various engineering firms, including Kittleson, CH2M Hill, Inland Pacific Engineering and Taylor Engineering. Each of these studies have shown that at full build out of the study area there are deficiencies associated with the existing transportation system.

For modeling purposes, the study area has been broken into zones which follow ownerships, substantial land use changes or groups of ownerships with similar traffic characteristics. The traffic zones within the study area are shown on Figure 4.

For each traffic zone, the undeveloped land available for future development was calculated and characterized by current Spokane County Zone classification, current ownership and anticipated land use. The anticipated land use and project timing were based upon historic development patterns, input from property owners and approved development plans. This data is included in Tables 1 and 2. These tables form the basis for the anticipated trip generation rates. The detailed build out schedule by land use and traffic zone is included in Appendix A.

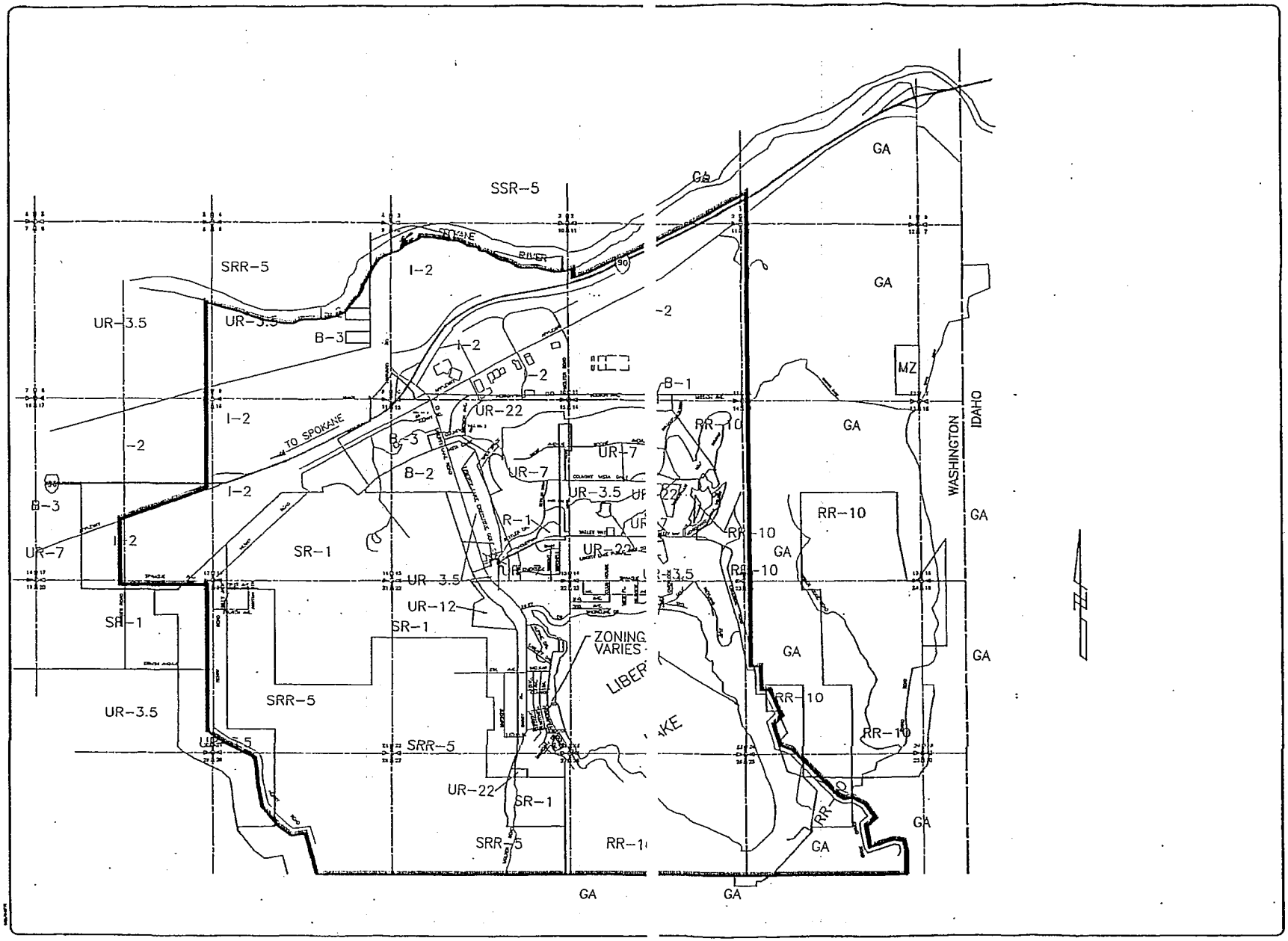
The ITE Trip Generation Manual, 5th Edition was used to generate the anticipated trip generation rates for the various land uses. Where actual projects had been defined, such as a hotel or convenience store, those land use categories were used from the Trip Generation Manual. Where no specific project had been designated, the underlying county zoning was used to anticipate the trip generation rates.

For land which is zoned I-2, the usage was projected to be three-fourths Light Industrial (Land Use Category 110) and one-fourth Warehousing (Land Use Category 150). Each site was assumed to be covered 25% by building square footage. This scenario is based on usages presently in the Liberty Lake industrial areas.

Single family housing and retirement community housing was modeled as Single Family Dwelling Units (Land Use Category 210). Apartment housing was modeled as Apartments (Land Use Category 220).

Traffic Zones 8 and 9, as shown on Figure 4, are in part the site of the proposed mall commonly known as the Cafarro Mall. The traffic impacts of that mall have been substantially studied in the EIS for that project. It has been assumed, based upon input from the property owner, that the Cafarro Mall will not be developed. For the purposes of this study in Zone 8, the underlying county zoning was assumed to be I-2. The I-2 zoning was assumed to be a reasonable alternative to the B-2 and B-3 zoning which is currently enjoyed by the site and reflects the current plans of the property owner. Therefore, the anticipated land use for this zone was modeled as elsewhere in the industrial land use categories; 3/4 light industrial and 1/4 warehousing. Traffic zone 9 was retained as B-2 zoning.

The proposed time lines for completion of the proposed land uses for each traffic zone are as shown in the tables which form Appendix A.


SSR-5
SRR-5
I-2
UR-3.5
B-3
UR-22
TO SPOKANE
B-2
UR-7
SR-1
UR-12
ZONING VARIES
GA
MZ
B-1
RR-10
WASHINGTON
IDAHO
HARVARD ROAD MITIGATION PLAN
ZONING IN LIBERTY LAKE
TRANSPORTATION IMPACT AREA
INLAND PACIFIC ENGINEERING
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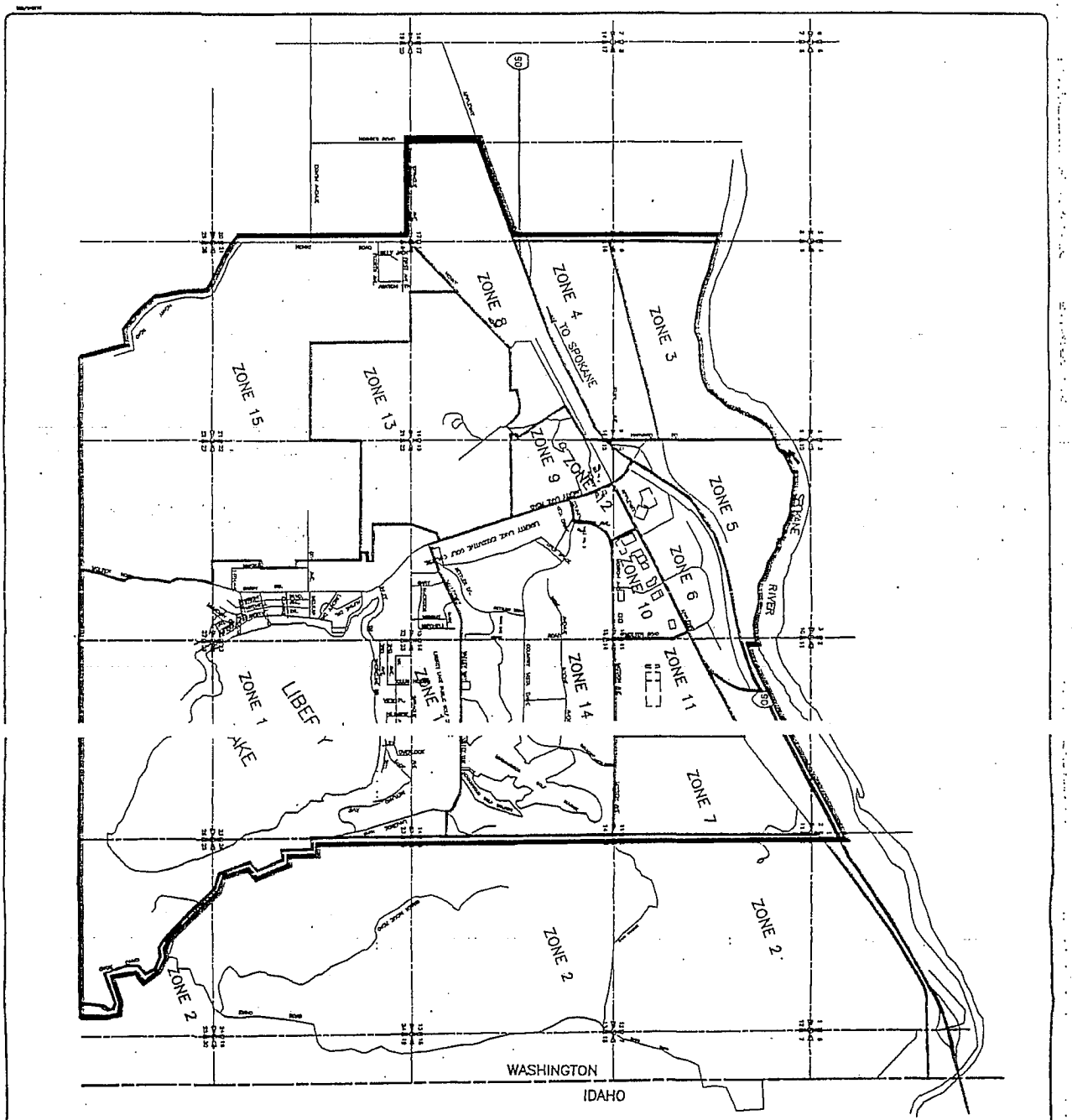


HARVARD ROAD MITIGATION PLAN
TRAFFIC ZONES IN LIBERTY LAKE
TRANSPORTATION IMPACT AREA

INLAND PACIFIC ENGINEERING
707 West 7th • Suite 300 (509) 466-8840
Spokane, WA 99204 FAX (509) 455-8844

SCALE: HORIZONTAL N.T.S. VERTICAL

DATE 05/15/95
DRAWN BY RLM2
DESIGNED BY RLM2
CHECKED BY ALM

NO.	DATE	BY	REVISIONS

Traffic Counts

Many traffic counts have been taken in the Liberty Lake area at the different elements of the transportation system. The main traffic counts which are of concern to this study are those which have been taken of the Harvard Road and westbound I-90 ramp terminal intersection and are as follows:

- Base traffic count taken in 1992 for the Kittleson report
- Traffic count taken in December, 1993 by WSDOT personnel
- Traffic count taken in July, 1994
- Delay Study done in April, 1995

The traffic counts taken in 1992 form a basis or measure against which all other traffic counts and data are measured. It was done before the Albertson's store was opened, and when compared with the traffic count taken in July, 1994 showed the impact the Albertson's store and other recent development had on the transportation system.

The count taken in December, 1993 by WSDOT gave an accurate picture of traffic conditions during the Christmas shopping season. The counts clearly show that the Christmas shopping season controls the highest annual hour of traffic, however, as with all traffic studies, we are gearing this traffic study to the 30th highest hour, and therefore, although the traffic count taken by WSDOT is by far the highest for the PM peak hour, we consider it well within the 30th highest hour and therefore outside of the realm of traffic conditions normally designed for.

Also to supplement the traffic analyses which had been completed prior to this study, traffic counts were taken at the intersection of Harvard Road & the westbound I-90 ramp terminals in July, 1994. It was also suspected that the existing level of service as calculated using the Highway Capacity Manual (either the 1985 or 1994 version) was too conservative and did not mirror field conditions. Therefore, a delay study was completed at the intersection of Harvard Road and the westbound I-90 ramp terminals which verified that the existing level of service at this intersection was considerably better than that predicted using the Highway Capacity Manual. Therefore, as a part of this study, the level of service calculated at this intersection by the Highway Capacity Manual was modified by the use of a regression equation to match field conditions. Also, since this delay study was done about nine months after the traffic counts, (April, 1995 versus the counts taken in July, 1994), total turning movement counts were compared with the previously taken counts and verify that the information gathered for the delay study represents an average day for this intersection.

TABLE 1: LAND USES -- NON-RESIDENTIAL

LAND USES--NON-RESIDENTIAL (in 1,000's of GFA) ZONE	ZONING	OWNERSHIP	ACREAGE	G.F.A.
1	B-2	VARIES	2.1	
	B-3	VARIES	3.2	
3	UR-3.5	VARIES	239.4	
	B-3	SPORTSWORLD	32.0	20
	I-2	UNKNOWN	5.0	55
4	I-2	VARIES	212.0	
	I-2	LELAND	42.0	334
5	I-2	LLSD	39.4	
	I-2	VARIES	100.0	
6	I-2	OLIVETTI	48.2	
	I-2	EDWARDS	11.7	129
	I-2	METRO	87.0	1,043
7	I-2	VALELLI	134.0	
	I-2	TOMLINSON	268.0	
8	I-2	HIGHLANDS	125.6	1,368
	I-2	I. E. PAPER	80.4	876
9	B-2	HIGHLANDS	34.4	375
	B-3	HIGHLANDS	89.0	969
10	I-2	VARIES	25.0	272
11	I-2	H-P	168.5	1,378
12	B-2	ALBERTSON	5.0	
	B-2	CANTLON	8.0	71
	B-2	SCHNIDMIL	20.0	350
14	B-2	POST OFFICE	1.1	
	B-3	GOLF COURSE	24.2	
TOTALS			1,805.2	7,240

TABLE 1: LAND USES -- NON-RESIDENTIAL -- continued

	Office	Warehouse	Lt. Ind.	Retail	Other
HRMP 1					
HRMP 2					
HRMP 3	3.00		52.00		20.00
HRMP 4	13.00		238.00	76.00	
HRMP 5					
HRMP 6	62.00		1,165.00		
HRMP 7					
HRMP 8	113.00		2,131.00		
HRMP 9	68.00		1,276.00		
HRMP 10	14.00		258.00		
HRMP 11			1,378.00		
HRMP 12				421.00	
HRMP 13					
HRMP 14					
HRMP 15					
HRMP	273.00		6,498.00	497.0	20.00

TABLE 2: LAND USES -- RESIDENTIAL

LAND USES--RESIDENTIAL (in Dwelling Units) ZONE	ZONING	OWNERSHIP	ACREAGE	D.U.'s
1	UR-3.5	VARIES	260.0	30
	UR-7	VARIES	291.0	20
	UR-12	VARIES	17.9	100
	SR-1	VARIES	218.7	20
	SRR-5	VARIES	47.2	5
	RR-10	VARIES	85.3	5
	GA	VARIES	266.6	
3	UR-3.5	VARIES	234.4	820
13	SR-1	HIGHLANDS	581.0	640
14	UR-3.5 &	MEADOW WOOD	500.0	799
	UR-22	MEADOW WOOD	126.2	416
	RR-10	MEADOW WOOD	9.0	1
15	UR-3.5	VARIES	243.6	100
	SRR-5	VARIES	1,055.9	50
TOTALS			3,936.9	3,006

	MFU's	Rtirmnt	SFU's
HRMP 1	100.00		80.00
HRMP 2			
HRMP 3			820.00
HRMP 4			
HRMP 5			
HRMP 6			
HRMP 7			
HRMP 8			
HRMP 9			
HRMP 10			
HRMP 11			
HRMP 12			
HRMP 13			640.00
HRMP 14	116.00	300.00	800.00
HRMP 15			150.00
HRMP	216.00	300.00	2,490.0

Based upon the difference in level of service calculated using the 1994 Highway Capacity Manual versus field conditions, a regression equation was used to provide a more accurate level of service analysis than the Highway Capacity Manual provides. Based upon the field conditions measured, the following regression equation was incorporated into the traffic model in order to adequately model the level of service.

$$\text{Westbound delay (sec)} = -15.76 + 0.070 * NB + 0.068 * WB^{1.732}$$

NB = total northbound approach volume
WB = total westbound approach volume

Based upon the increase in traffic volume anticipated and according to the build out scenario presented in Appendix A, the level of service at the Harvard Road and westbound I-90 ramp terminal intersection will not fall to unacceptable levels of service for several years. For our plan, this is an excellent situation to be in since it will allow several years for the mitigation plan to be in affect before major improvements become necessary.

Potential Elements for Inclusion in Mitigation Plan

There are many elements of the existing transportation system which could be included in the this transportation mitigation plan. A comprehensive list of these elements follows.

- Staged flex-time departures and arrivals (TSM option)
- Improvements to and realigning of the westbound I-90 off ramp
- Improvements to the westbound I-90 on ramp
- Realigning Mission Avenue north of I-90
- Creating an arterial connection between Liberty Lake Drive and Sprague/Appleway arterial south of I-90 (Country Vista Drive extended)
- Improvements to the eastbound off ramp
- Improvements or elimination of the eastbound on ramp
- Widening Harvard Road
- Widening Liberty Lake Drive
- Widening Liberty Lake Drive / Harvard Road bridge over I-90
- Signalizing the intersection of Harvard Road & westbound I-90 ramp terminal intersection
- Making channelization improvements to the Liberty Lake Drive and Appleway intersection

Selected Elements for Inclusion in Mitigation Plan

A list of the elements which were selected for further study follow. They are also shown in Figure 5.

- Creating an arterial connection between Liberty Lake Drive and Sprague / Appleway arterial south of I-90 (Country Vista Drive extended)
- Improvements to and realigning of the westbound I-90 off ramp
- Improvements to the westbound I-90 on ramp
- Realigning Mission Avenue north of I-90
- Widening Harvard Road north of I-90
- Signalizing the intersection of Harvard Road & westbound I-90 ramp terminal intersection
- Construction of a westbound loop ramp

A detailed project description and cost estimate for each element is included in Appendix B.

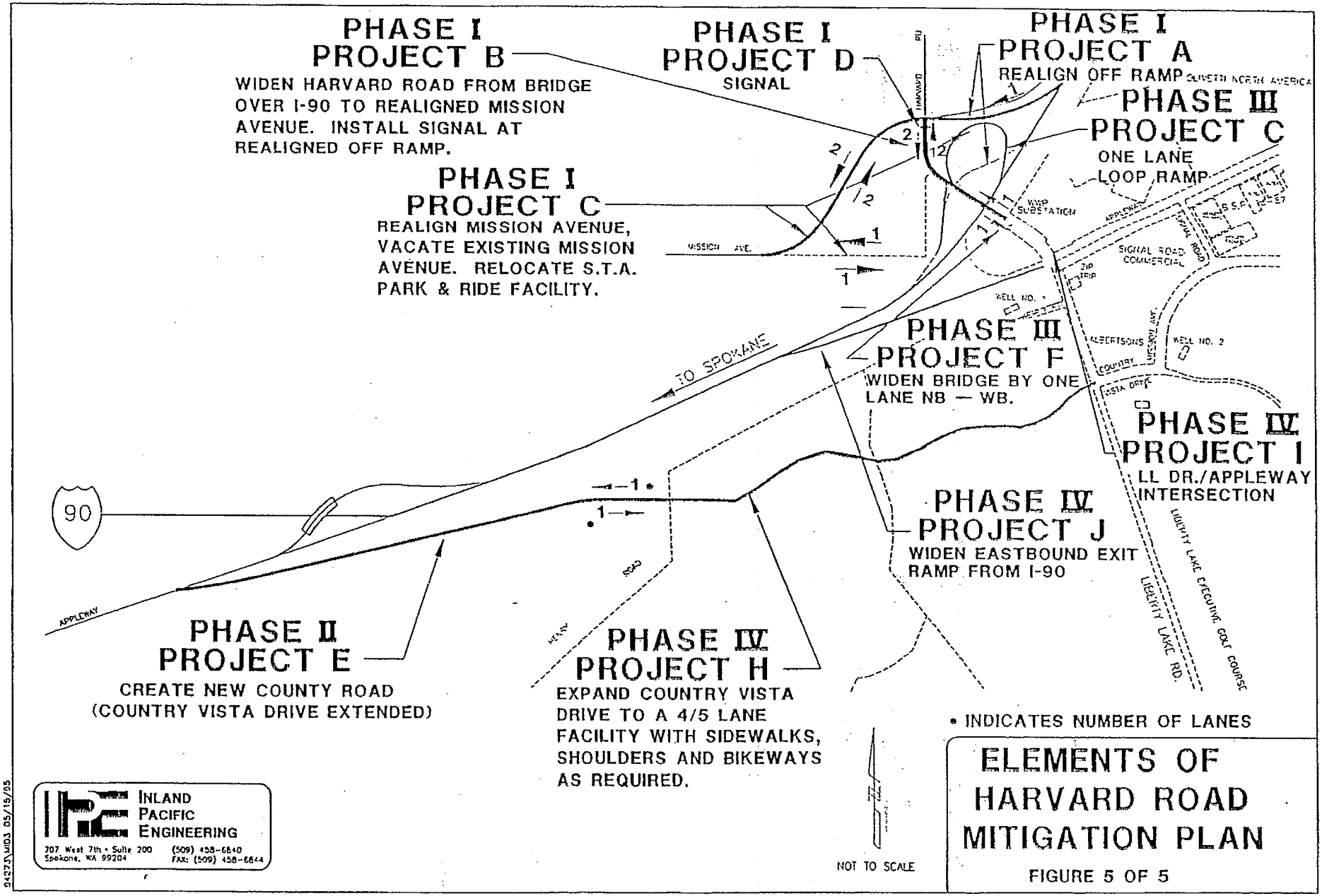
According to all of the traffic studies completed to date and re-examined in this study, the element of the transportation system which will fail first is the Harvard Road & westbound I-90 ramp terminal intersection. Therefore, improvements which benefit the ramps are very important to the continued viability of the transportation system in this area. The improvement which is proposed for the westbound off ramp is realigning it further north where it will line up with Mission Avenue realigned. This will accommodate the westbound on ramp as a loop ramp.

Country Vista Drive is proposed to replace the existing Kenney Road, but follow a more desirable alignment, function at a higher rate of speed and generally serve as a desirable alternate commuter route between the Spokane valley (the Sprague/Appleway arterial) and Liberty Lake area by intersecting with Liberty Lake Drive. As such it will divert substantial existing traffic from the Harvard Road I-90 interchange.

Mission Avenue is proposed to become a full arterial, meeting County standards along property frontage within the traffic study area.

Appendix C of this report has the detailed technical analysis done to support this study. Provided on the following tables are summaries of the PM peak hour levels of service of various elements of the transportation system. The PM peak hour controlled the level of service for the various elements and build out scenarios of the Liberty Lake area. Therefore, the PM peak hour levels of service are shown, while the AM peak hour is not. Note: Page 10 of Appendix C describes his levels of services for 1995 and each of the four phases of development.

The existing levels of service indicate that there is adequate capacity at the two intersections which will experience inadequate levels of service first.



ELEMENTS OF HARVARD ROAD MITIGATION PLAN

FIGURE 5 OF 5

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(509) 458-6840 FAX: (509) 458-6844

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IMPACT FEE SELECTION AND JUSTIFICATION

As noted above, this mitigation plan is based upon the provisions of SEPA. At the time of permit application, the project sponsor would have the following options:

- Pay a voluntary mitigation fee (as calculated under this plan and described below);
- Construct all or a portion of the improvements described in this mitigation plan (as a credit towards or in lieu of the mitigation fees); or
- Prepare a separate traffic study and mitigation plan for the proposed use.

The mitigation fee is intended to represent the pro rata contribution of each proposed land use to the cumulative cost of the traffic system improvements described in the plan.

The land uses proposed in the study area fall into three broad categories; residential, commercial and industrial. Each of these land use categories impact the transportation system differently and have their major impacts on the transportation system at different times of the day. Residential land uses impact the transportation system most on an average daily traffic (ADT) basis. Industrial traffic affects the transportation system most severely in the AM peak hour. Commercial affects it most during the PM peak hour. The affects of residential traffic on the surrounding transportation system are comparable to industrial and commercial during the AM and PM combined hours, however, they function as origins in the morning and destinations in the evening, whereas industrial land uses function as destinations in the morning and origins in the afternoon.

The basis for the impact fee could be one of the following:

- AM Peak Hour Trip Generation Rates
- PM Peak Hour Trip Generation Rates
- ADT Trip Generation Rates
- Combination of AM & PM Peak Hour Trip Generation Rates
- Combination of AM, PM and ADT Trip Generation Rates

As described in the first paragraph of this section, selecting one of the first three options listed above would unfairly penalize one or another land use category. The average of AM and PM peak hour trips was determined to be the most representative measure of average traffic impact and was therefore suggested as the basis for calculating mitigation fees.

Based upon the anticipated trips which will be on the transportation system at the completion of this build out scenario; total of 22,534 A.M./P.M. peak trips, less 1,694 pass by trips = 10,420 average A.M./P.M. peak trips.

The amount of money for the total build out of the elements proposed in the mitigation plan is based on 1995 numbers. An inflation factor will need to be applied to this number over the next five years, before the first review is made. We recommend that 2% be used for 1996 and 1997. After that time, we recommend that 4% be used for 1998, 1999 and 2000. Therefore, the fee increase for each year will be as shown on Table 6 which follows.

Table 6 - Fee Schedule for First Six Years of Plan

YEAR	AMOUNT OF FEE *
1995	$404.65
1996	$412.69
1997	$420.95
1998	$437.78
1999	$455.29
2000	$473.51

* - Fee per average AM/PM peak hour trip generated by the proposed use.

Care must be taken when using this averaging method. In the same way that the fee is for an average AM and PM peak hour trip, so the figuring of the fee must be based on the averaging of the anticipated AM and PM peak hour trip generation rates. As an example, a single family dwelling unit is anticipated to generated 0.74 trips during the AM peak hour and 1.01 trips during the PM peak hour. Therefore the average AM and PM peak hour rate for a single family dwelling unit is (0.74 + 1.01) / 2 or 0.88. Based on this method, the fee for a **single family dwelling unit** is $404.65 * 0.88 or **$356.09**.

TRANSPORTATION IMPACT FEE SCHEDULE

Land Use	ITE Category	Unit	Fee Per Unit
Residential			
Single-family	210	Dwelling Unit	$356.09
Multi-family	220	Dwelling Unit	$187.00
Condo/Townhouse	230	Dwelling Unit	$199.75
Retirement	250	Dwelling Unit	$ 89.25
PUD	270	Dwelling Unit	$229.50
Hotel	310	Room	$289.00
Motel	320	Room	$255.00

Commercial

Office	750	1000 gsf	$680.00
Medical/Dental	720	1000 gsf	$1,368.50
R & D Center	760	1000 gsf	$467.50
Light Industrial	110	1000 gsf	$382.50
Manufacturing	140	1000 gsf	$310.25
Warehouse	150	1000 gsf	$267.75
Mini-warehouse	151	1000 gsf	$ 85.00

Retail

Conven. Store	841, 852, 853	1000 gsf	$3,459.50
Bank	911, 912, 913, 914	1000 gsf	
Fast Food Rest.	833, 834	1000 gsf	
Supermarket	850, 854	1000 gsf	$2,558.50
Day Care	565	1000 gsf	
High Turnover Rest.	832	1000 gsf	
Shopping Center Under 30,000 s.f	820	1000 gsf	
Health/Racquet Club	492, 493	1000 gsf	$1,657.50
Shopping Center 30,000 to 150,000 gsf	820	1000 gsf	
Restaurant	831	1000 gsf	
Specialty Retail	814	1000 gsf	
Discount Store	815	1000 gsf	
Club, Warehouse Store	813	1000 gsf	
Shopping Center Over 150,000 gsf	820	1000 gsf	$1,215.50
Furniture Store	890	1000 gsf	
Auto Sales	841	1000 gsf	
Auto Repair	840	1000 gsf	
Hardware/Paint Store	816	1000 gsf	
Building Supplies	812	1000 gsf	
Nursery	817	1000 gsf	
Tire Store	848	1000 gsf	

PROJECT PHASING

Phase I

• Relocate west bound off ramp	$512,500
• Widen Harvard Rd north of I-90	$219,037
• Realign Mission Ave west of Harvard Rd	$477,867
• Signalize Mission Ave / Harvard Rd. Intersection	(1)

Phase II

• Construct 2 lane Country Vista extension Liberty Lake Drive to Appleway west of Greenacres fly over	$1,425,956

Phase III

• Widen I-90 bridge for additional north bound lane	$825,605
• Construct northbound Liberty lake drive to west Westbound I-90 loop ramp	$495,000

Phase IV

• Widen Country Vista Dr & Mission to 4/5 lanes	$540,000 (2)
• Improve Liberty Lake Drive / Appleway Intersection	$174,810
• Widen east bound off ramp, I-90 to Liberty Lake Dr.	$289,710

Total Costs, all Phases $4,960,485

(1) This improvement is already bonded for and has had trips issued against it.
(2) This improvement will be shared $540,000 by The Plan and $2,349,313 by individual building developers at the time of their building permits.

Note: It is true that there are a significant number of users who currently are using the existing I-90 / Harvard Road interchange, and/or who are not, and will not be, participants in the transportation mitigation plan. For example, users from Otis Orchards, East Valley, and generally other residences and businesses located north of the Spokane River. It is difficult to calculate the precise magnitude of these users, but it is our opinion that they easily constitute 15% or more of the aggregate usage. In order to account for them, it is proposed that the participants of the Harvard Road Mitigation Plan pay for $4,216,412 of the identified $4,960,485 in phased improvements. This is a commitment by the transportation benefit plan to pay for 85% of the total impacts including present background traffic, and future non-participant traffic. The county and WSDOT have a number of options available to them over the next 20 years to obtain the difference.

To derive the basic voluntary impact fee per trip:

Total AM/PM peak trips	22,534	
less bypass trips	-1,694 ==>	10,420 avg. AM/PM peak trips

Fee per trip:	$4,216,412 = 10,420 trips	$404.65 per avg AM/PM peak trip

CONCLUSIONS

Timing and Order of Proposed Elements within the Mitigation Plan

The order of these elements will depend partly on the development patterns which are anticipated to occur in the following years, the transportation mitigation cost associated with each, and the anticipated revenue generating ability of the mitigation plan.

Mission Avenue is presently being realigned as part of the approval for the projects within the study area north of I-90. Therefore, there are basically two transportation elements either of which could occur first.

Extending Country Vista Drive as a two/three lane facility between Liberty Lake Drive and Appleway could be done first or realigning the westbound I-90 off ramp could be done first. Either of these projects could be completed independent of any other element of the mitigation plan. We are recommending realigning the West bound off ramp first as most cost effective.

Country Vista Drive could be extended between Liberty Lake Drive and the Sprague / Appleway corridor without much interference. Expanding it to it's ultimate 4/5 lane configuration would come later in the mitigation plan, and may never be needed if the frontage property is not developed.

Moving the westbound I-90 off ramp will be a considerably more difficult construction project. As a part of this project Harvard Road would be widened, and a signal would be installed at a new Mission Ave and westbound off ramp terminal intersection. Improvements to the westbound on ramp would not be included as a part of this project.

As a later phase of this plan, the on ramp will be reconfigured to an interim loop ramp configuration.

Detailed project descriptions and engineering cost estimates for each element are included in Appendix B of this document.
Implementing the Country Vista Drive extension first provides benefit for the residential areas south of I-90 and some benefit to the industrial areas closer to I-90. Making this improvement will allow

for something over 3 1/2 years of continued development outlined in Appendix A before other improvements will be required.

Realigning the westbound I-90 off ramp as a second project will provide substantial benefit to the industrial and commercial areas both north and south of the freeway as well as added benefit to the residential area. This improvement is recommended as the next step in the implementation of the Harvard Road Mitigation Plan.

At the end of twenty years, all of the elements of this plan will be required to adequately handle the anticipated increases in traffic due to increase development in the Liberty Lake area.

RECOMMENDATIONS

Based on the traffic model, existing traffic volumes, anticipated future traffic growth and trip distribution; the elements of the mitigation plan, when taken together, are sufficient to mitigate the impacts caused by the additional traffic generated by the anticipated growth shown on Tables 1 and 2. With this plan in place, the overall transportation system goals will be met.

The recommended mitigation plan is a good avenue of approach to address the transportation needs of this area. It is an avenue which will collect the appropriate amount of money to perform the necessary mitigation to keep the transportation system in the Liberty Lake area functioning at adequate levels of service (LOS C/D) into the foreseeable future.

This plan should be adopted as it accomplishes the goals of substantially improving the overall transportation system in the Liberty Lake area through private initiative in a way which cannot be accomplished by any one separate land owner or the existing affected agencies.

We recommend that this plan be adopted and implemented, since it will serve to better the overall transportation system in a fair and equitable manner. This plan has the support of the various large property owners and developers in the Liberty Lake area.

We recommend, further, that the plan be reviewed every five years to verify the assumptions made in this initial plan and should adjustments or modifications be required, they be implemented by simply updating the base line growth versus what was projected and either increasing or decreasing the basic impact fee value appropriately.

We recommend that the review which will take place consist of taking traffic counts at spot intersections or road segments and that they be compared to what was anticipated for those segments. Any obvious discrepancies would then require modification of the plan.

Also at five years, the engineers estimates should be reviewed and updated.

APPENDIX A
Anticipated Build Out Schedules

APPENDIX "A": PERCENT of "BUILDOUT" by PHASE

The following data are provided according to the "traffic zones" depicted in Figure 4 of the "Harvard Road Mitigation Plan" (HRMP). It should be noted that in response to concerns expressed by Spokane County and the Washington State Department of Transportation (W.S.D.O.T.) the land use category "Warehouse" has been eliminated. In addition, the only "Other" land use was for Sportsworld in HRMP zone 3.

PHASE 1: 28%

	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's
HRMP 1						28.17		22.54
HRMP 2								
HRMP 3	.85		14.65		5.63			230.99
HRMP 4	3.66		67.04	21.41				
HRMP 5								
HRMP 6	17.47		328.18					
HRMP 7								
HRMP 8	31.83		600.30					
HRMP 9	19.16		359.45					
HRMP 10	3.94		72.68					
HRMP 11			388.18					
HRMP 12				118.60				
HRMP 13								180.29
HRMP 14						32.68	84.51	225.36
HRMP 15								42.26
HRMP	76.90		1,830.49	140.00	5.63	60.85	84.51	701.43

Trp Rate	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	
AWDT	11.42	4.88	6.97	70.67		6.28	5.42	9.55	
AM Pk	1.84	.57	.92	1.62		.44	.45	.74	
PM Pk	1.51	.74	.98	6.56		.49	.95	1.01	
Trips	**Office**	**Warehouse**	**Lt. Ind.**	**Retail**	**Other**	**MFU's**	**Rtirmnt**	**SFU's**	**Totals**
HRMP 1						177		215	392
						12		17	29
						14		23	37
HRMP 2									
HRMP 3	10		102		1,067 (from HRMP			2,206	3,385
	2		13		10			171	196
	1		14		213 worksheets)			233	461
HRMP 4	42		467	1,513					2,022
	7		62	35					104
	6		66	140					212
HRMP 5									
HRMP 6	199		2,287						2,486
	32		302						334
	26		322						348
HRMP 7									
HRMP 8	364		4,184						4,548
	59		552						611
	48		588						636
HRMP 9	219		2,505						2,724
	35		331						366
	29		352						381
HRMP 10	45		507						552
	7		67						74
	6		71						77
HRMP 11			2,706						2,706
			357						357
			380						380
HRMP 12				8,381					8,381
				193					193
				778					778
HRMP 13								1,722	1,722
								133	133
								182	182
HRMP 14						205	458	2,152	2,815
						14	38	167	219
						16	80	228	324
HRMP 15								404	404
								31	31
								43	43
HRMP	879		12,758	9,894	1,067	382	458	6,699	32,137
	142		1,684	228	10	26	38	519	2,647
	116		1,793	918	213	30	80	709	3,859

PHASE 2: 44%

	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's
HRMP 1						43.83		35.06
HRMP 2								
HRMP 3	1.31		22.79		8.77			359.41
HRMP 4	5.70		104.32	33.31				
HRMP 5								
HRMP 6	27.17		510.62					
HRMP 7								
HRMP 8	49.53		934.02					
HRMP 9	29.80		559.27					
HRMP 10	6.14		113.08					
HRMP 11			603.98					
HRMP 12				184.52				
HRMP 13								280.51
HRMP 14						50.84	131.49	350.64
HRMP 15								65.75
HRMP	119.66		2,848.07	217.84	8.77	94.67	131.49	

Trp Rate	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	
AWDT	11.42	4.88	6.97	70.67		6.28	5.42	9.55	
AM Pk	1.84	.57	.92	1.62		.44	.45	.74	
PM Pk	1.51	.74	.98	6.56		.49	.95	1.01	
Trips	**Office**	**Warehouse**	**Lt. Ind.**	**Retail**	**Other**	**MFU's**	**Rtirmnt**	**SFU's**	**Totals**
HRMP 1						275		335	610
						19		26	45
						21		35	56
HRMP 2									
HRMP 3	15		159		1,067 (from HRMP			3,432	4,673
	2		21		10			266	299
	2		22		213 worksheets)			363	600
HRMP 4	65		727	2,354					3,146
	10		96	54					160
	9		102	219					330
HRMP 5									
HRMP 6	310		3,559						3,869
	50		470						520
	41		500						541
HRMP 7									
HRMP 8	566		6,510						7,076
	91		859						950
	75		915						990
HRMP 9	340		3,898						4,238
	55		515						570
	45		548						593
HRMP 10	70		788						858
	11		104						115
	9		111						120
HRMP 11			4,210						4,210
			556						556
			592						592
HRMP 12				13,041					13,041
				300					300
				1,211					1,211
HRMP 13								2,679	2,679
								208	208
								283	283
HRMP 14						319	712	3,349	4,380
						22	59	259	340
						25	125	354	504
HRMP 15								628	628
								49	49
								66	66
HRMP	1,366		19,851	15,395	1,067	594	712	10,423	49,408
	219		2,621	354	10	41	59	808	4,112
	181		2,790	1,430	213	46	125	1,101	5,886

PHASE 3: 72%

	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's Rtirmnt		SFU's
HRMP 1						72.11		57.69
HRMP 2								
HRMP 3	2.16		37.50		14.42			591.30
HRMP 4	9.37		171.62	54.80				
HRMP 5								
HRMP 6	44.71		840.08					
HRMP 7								
HRMP 8	81.48		1,536.66					
HRMP 9	49.03		920.12					
HRMP 12				303.58				
HRMP 10	10.10		186.04					
HRMP 11			993.68					
HRMP 13								461.50
HRMP 14						83.65	216.33	576.88
HRMP 15								108.17
HRMP	196.86		4,685.71	358.39	14.42	155.76	216.33	

Trp Rate	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	
AWDT	11.42	4.88	6.97	70.67		6.28	5.42	9.55	
AM Pk	1.84	.57	.92	1.62		.44	.45	.74	
PM Pk	1.51	.74	.98	6.56		.49	.95	1.01	
Trips	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	Totals
HRMP 1						453		551	1,004
						32		43	75
						35		58	93
HRMP 2									
HRMP 3	25		261		1,067 (from HRMP			5,647	7,000
	4		34		10			438	486
	3		37		213 worksheets)			597	850
HRMP 4	107		1,196	3,873					5,176
	17		158	89					264
	14		168	360					542
HRMP 5									
HRMP 6	511		5,855						6,366
	82		773						855
	68		823						891
HRMP 7									
HRMP 8	931		10,711						11,642
	150		1,414						1,564
	123		1,506						1,629
HRMP 9	560		6,413						6,973
	90		847						937
	74		902						976
HRMP 10	115		1,297						1,412
	19		171						190
	15		182						197
HRMP 11			6,926						6,926
			914						914
			974						974
HRMP 12				21,455					21,455
				493					493
				1,992					1,992
HRMP 13								4,407	4,407
								342	342
								466	466
HRMP 14						525	1,171	5,509	7,205
						37	97	427	561
						41	206	583	830
HRMP 15								1,033	1,033
								80	80
								109	109
HRMP	2,249		32,659	25,328	1,067	978	1,171	17,147	80,599
	362		4,311	582	10	69	97	1,330	6,761
	297		4,592	2,352	213	76	206	1,813	9,549

PHASE 4: 100%

	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's Rtirmnt		SFU's
HRMP 1						100.00		80.00
HRMP 2								
HRMP 3	3.00		52.00		20.00			820.00
HRMP 4	13.00		238.00	76.00				
HRMP 5								
HRMP 6	62.00		1,165.00					
HRMP 7								
HRMP 8	113.00		2,131.00					
HRMP 9	68.00		1,276.00					
HRMP 10	14.00		258.00					
HRMP 11			1,378.00					
HRMP 12				421.00				
HRMP 13								640.00
HRMP 14						116.00	300.00	800.00
HRMP 15								150.00
HRMP	273.00		6,498.00	497.0	20.00	216.00	300.00	2,490.0

Trp Rate	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	
AWDT	11.42	4.88	6.97	70.67		6.28	5.42	9.55	
AM Pk	1.84	.57	.92	1.62		.44	.45	.74	
PM Pk	1.51	.74	.98	6.56		.49	.95	1.01	
Trips	Office	Warehouse	Lt. Ind.	Retail	Other	MFU's	Rtirmnt	SFU's	Totals
HRMP 1						628		764	1,392
						44		59	103
						49		81	130
HRMP 2									
HRMP 3	34		362		1,067 (from HRMP			7,831	9,294
	6		48		10			607	671
	5		51		213 worksheets)			828	1,097
HRMP 4	148		1,659	5,371					7,178
	24		219	123					366
	20		233	499					752
HRMP 5									
HRMP 6	708		8,120						8,828
	114		1,072						1,186
	94		1,142						1,236
HRMP 7									
HRMP 8	1,290		14,853						16,143
	208		1,961						2,169
	171		2,088						2,259
HRMP 9	777		8,894						9,671
	125		1,174						1,299
	103		1,250						1,353
HRMP 10	160		1,798						1,958
	26		237						263
	21		253						274
HRMP 11			9,605						9,605
			1,268						1,268
			1,350						1,350
HRMP 12				29,753					29,753
				684					684
				2,763					2,763
HRMP 13								6,112	6,112
								474	474
								646	646
HRMP 14						728	1,625	7,640	9,993
						51	135	592	778
						57	285	808	1,150
HRMP 15								1,433	1,433
								111	111
								152	152
HRMP	3,117		45,291	35,124	1,067	1,356	1,625	23,780	111,360
	503		5,979	807	10	95	135	1,843	9,372
	414		6,367	3,262	213	106	285	2,515	13,162

APPENDIX B
Detailed Project Description & Engineer's Estimate

PHASE I PROJECT A - Reconstruct Harvard Road Interchange (Realign WB off ramp)

Engineer's Estimate - $512,500

ELEMENTS OF THIS PHASE

Realign westbound off ramp
Move traffic signs from Phase A1 to new westbound off ramps and Mission Avenue
Realign local access road west of Harvard, south of Spokane River

Roadway Constr. Components	Quantity/Unit	Unit Price	Total
Realign off ramp	1 L.S	$100,000	$100,000
Realign access road	1 L.S	$100,000	$100,000
Signal Modification	1 L.S	$50,000	$50,000
SUBTOTAL			$250.000
Other Costs			
Difficulty	.3		$ 75,000
Right of Way	ls		$100,000
Engineering	15%		$37,500
Construction Management	10%		$25,000
Contingencies	10%		$25,000
SUBTOTAL			$262.500
TOTAL			$512.500

PHASE I PROJECT B - Widen Harvard Road north of bridge over I-90

Engineer's Estimate - $219,037

ELEMENTS OF THIS PHASE

400' of widening for through lane

Roadway Constr. Components	Quantity/Unit	Unit Price	TOTAL
Rough Grade, LF	950	$7.50	$7125
Finish Grade, LF	950	$7.50	$7125
Paving (8 on 10)SY	5,500	$24.00	$132,000
DitchLF	1,200	$5.00	$6,000
Drainage	LS	$5,000	$5,000
Signing/Channelization25	LS	$5,000	$5,000
SUBTOTAL			$162,250
Other Costs			
Difficulty	.1		$16,225
Right of Way	LS		
Engineering	15%		$24,337
Construction Management	10%		$16,225
Contingencies	10%		$16,225
SUBTOTAL			$56,787
TOTAL			$219,037

PHASE I PROJECT C - Realign Mission Avenue north of I-90, construct 3 lane facility (dependent on development to the north of I-90)

Engineer's Estimate - $477,867

ELEMENTS OF THIS PHASE

2,400' of Right of Way (80') get credit for 20' of excess right of way dedication
38' paved three lane road meeting new County standards

Roadway Constr. Components	Quantity/Unit	Unit Price	TOTAL
Rough Grade, LF	2,400	$10.00	$24,000.00
Finish Grade, LF	2,400	$10.00	$24,000.00
Paving (3 on 8), SY	10,150	$12.50	$126,875.00
Ditch, LF	2,400	$5.00	$12,000
Drywells, EA	6	$1,800	$10,800
208 swales, SF	8,800	$1	$8,800
SUBTOTAL			$206,475
Other Costs			a
Difficulty	.1		$20,647
ExcessRight of Way, AC	1.1	$125,000	$137,500.00
Engineering (note: for 4-5 lane roadway)	LS		$71,951
Construction Management	10%		$20,647
Contingencies	10%		$20,647
SUBTOTAL			$271,392
TOTAL			$477,867

PHASE I PROJECT D - Traffic signal at westbound I-90 Ramps re-aligned Mission Ave. and Harvard Rd.

Engineer's Estimate - $101 K *(already bonded for)*(OUT OF PLAN)

ELEMENTS OF THIS PHASE

Traffic Signal

Roadway Constr. Components	Quantity/Unit	Unit Price	Total	
Install Traffic Signal Sys.	1 L.S.	$75,000	$75,000	
SUBTOTAL				$75,000

Utilities

N/A

Other Costs

	Quantity/Unit	Total	
Difficulty	0	$0	
Right of Way	0 ACRES	$0	
Engineering	15%	$11,250	
Constructions Management	10%	$ 7,500	
Contingencies	10%	$7,500	
SUBTOTAL			$26,250
TOTAL			$101,250

PHASE II PROJECT E - Country Vista Drive extended to Appleway (two to three lanes)

Engineer's Estimate - $1,425,956

ELEMENTS OF THIS PHASE

8,800' of Right of Way (100'+)
30' paved two lane road and ditch section, 4,400 ft Henry Rd to Appleway
38' paved three lane road and ditch section, 4,400 ft Liberty Lake Dr to Henry Rd
Ultimate Classification will be a Major Arterial

Roadway Constr. Components	Quantity/Unit	Unit Price	TOTAL
Rough Grade, LF	8,800	$7.50	$66,000.00
Finish Grade, 2 lane LF	4,400	$7.50	$33,000.00
Finish Grade, 3 lane LF	4,400	$10.00	$44,000.00
Paving (3 on 8), SY	33,219	$12.50	$415,237.50
Ditch, LF	17,600	$5.00	$88,000
Drywells, EA	22	$1,800	$39,600
208 swales, SF	58,000	$1	$58,000
Channelization and Misc.	LS	$25,000	$25,000
SUBTOTAL			$768,838
Other Costs			
Difficulty	.0		0
Right of Way, IE Paper, AC	6.89	$15,000	$103,350.00
ExcessRight of Way, AC *	2	$125,000	$250,000
Engineering (note: for 4-5 lane roadway)	LS	$150,000	$150,000
Construction Management	10%		$76,884
Contingencies	10%		$76,884
SUBTOTAL			$657,118.00
TOTAL			$1,425,956

* - Excess Right of way from Liberty Lake Investment property to be provided at negotiated cost.

PHASE III PROJECT F - Widen I-90 overcrossing for 2 Northbound Lanes

Engineer's Estimate $825,605

ELEMENTS OF THIS PHASE

215 feet of widening existing bridge

Bridge Construction	Quantity/Unit	Unit Price	TOTAL
215 ft by 12 feet of deck, SF	2,580	$120	$309,600.00
Roadway Constr. Components			
Rough Grade, LF	350	$7.50	$2625.00
Finish Grade, LF	350	$7.50	$2625.00
Paving (6 on 10), SY	3,450	$24.00	$82,800.00
Ditch, LF	400	$5.00	$2,000
Drainage	LS	$43,000	$43,000
Signage/Channelization	LS	$43,000	$43,000
SUBTOTAL			$485,650
Other Costs			a
Difficulty	.35		$169,977
Engineering (note: for 4-5 lane roadway)	.15		$72,847.50
Construction Management	10%		$48,565.00
Contingencies	10%		$48,565.00
SUBTOTAL			$339,954.50
TOTAL			$825,605

PHASE III PROJECT G - Reconstruct Harvard Road Interchange (Westbound Loop Ramp)

Engineer's Estimate - $ 495,000

ELEMENTS OF THIS PHASE

Construct one lane north bound to westbound loop ramp
Widen bridge over I-90

Roadway Constr. Components	Quantity/Unit	Unit Price	Total	
Loop Ramp	1 L.S.	$200,000.00	$200,000	
Supplemental retaining wall	1 L.S.	$100,000.00	$100,000	
SUBTOTAL				$300,000

Utilities

N/A

Other Costs

	Quantity/Unit	Total	
Difficulty	0.3	$ 90,000	
Engineering	15%	$ 45,000	
Construction Management	10%	$ 30,000	
Contingencies	10%	$ 30,000	
SUBTOTAL			$195,000
TOTAL			$495,000

PHASE IV PROJECT H - Expand Country Vista Drive and Mission Avenue to a 4/5 lane facility (NOT IN PLAN) and Modify Signals plus intersection of Country Vista and Liberty Lake Drive (IN THE PLAN)

Engineer's Estimate total cost - $2,889,313

$540,000 in the Plan, $2,349,313 by frontage developers.

ELEMENTS OF THIS PHASE

11,400 of widening
Pave to four to five lane road and curb and gutter
Revise drainage, as required
Classification will be a Major Arterial

Roadway Constr. Components	Quantity/Unit	Unit Price	TOTAL
Rough Grade, LF	11,400	$7.50	$85,500.00
Finish Grade, LF	11,400	$7.50	$85,500.00
Paving (3 on 8), SY	29,333	$12.50	$366,662.50
Paving, 1" overlay, SY	58,666	$5.00	$293,330.00
Curb, (type B), LF	22,800	$7.50	$171,000
Sidewalk	22,800	$9.00	$205,200
Drainage "208 Ponds", SF	57,500	$1.00	$57,500
Landscaping	LS	$100,000	$100,000
SUBTOTAL			$1,450,193
Other Costs			a
Difficulty	.2		*$290,038.60*
Signal, Lib Lake Dr & Country Vista	LS	*$150,000*	*$150,000*
Intx Mod at Country Vista & Appleway	LS	*$250,000*	*$250,000*
Engineering	.15		$321,034.74
Construction Management	10%		$214,023.16
Contingencies	10%		$214,023.16
SUBTOTAL			$1,439,119.66
TOTAL			$2,889,313

Note: *Italicized* items ate in the plan, together with their pro rata share of engineering and construction management.

* - Right of way credit for Liberty Lake investment property to be provided at negotiated cost.

PHASE IV PROJECT I. - Improve Liberty Lake Drive/Appleway Intersection

Engineer's Estimate - $ 174,810

ELEMENTS OF THIS PHASE

Revise intersection channelization, including right turn lanes

Roadway Constr. Components	Quantity/Unit	Unit Price	Total	
Removal	1 L.S.	$5,000.00	$5,000	
Earthwork (fill)	600 C.Y.	$3.00	$1,800	
Surfacing	2,060 S.Y.	$24.00	$49,440	
Ditch	1,650 L.F.	$5.00	$8,260	
Drainage	1 L.S.	$5,000.00	$5,000	
Signal Modification	1 L.S.	$55,000.00	$55,000	
Signing/Channelization	1 L.S.	$5,000.00	$5,000	
SUBTOTAL				$129,490

Utilities

N/A

Other Costs

	Quantity/Unit	Total	
Difficulty	0	$0	
Right of Way	0 Acres	$0	
Engineering	15 %	$19,420	
Constr. Mgmt.	10 %	$12,960	
Contingencies	10 %	$12,960	
SUBTOTAL			**$45,320**
TOTAL			**$174,810**

PHASE IV PROJECT J. - Widen Eastbound Exit Ramp from I-90

Engineer's Estimate $289,710

ELEMENTS OF THIS PHASE

Modify eastbound exit ramp to provide two-lane exit with storage capacity of 19 vehicles per lane.

Roadway Constr. Components	Quantity/Unit	Unit Price	Total	
Freeway Auxiliary Lane				
Earthwork (fill)	2500 C.Y.	$3.00	$7,500	
Surfacing	4920 S.Y.	$24.00	$82,800	
Illumination	2590 L.F.	$10.00	$25,900	
Drainage	2590 L.F.	$38.00	$98,400	
SUBTOTAL				$214,600
Utilities				
N/A				
Other Costs				
	Quantity/Unit		Total	
Difficulty	0		$0	
Right-of-way	0 Acres		$0	
Engineering	15%		$32,190	
Constr. Mgmt.	10%		$21,460	
Contingencies	10%		$21,460	
SUBTOTAL				$75,110
TOTAL				$289,710

APPENDIX C
Results of Technical Traffic Analysis

APPENDIX "C": TRAFFIC ANALYSES
October, 1995

The purpose of this report is to summarize the results of the traffic analyses for the revised land uses as contained in Appendix "A" in accordance with the revised "Phases". It has been updated for traffic counts taken by the Washington State Department of Transportation in May, 1995, and for a delay study taken at the intersection of the eastbound ramps and Harvard Road. The following are summary descriptions of the links selected for analysis:

NETWORK LINKS

14 Harvard Road, North of BNRR R-O-W
15 Harvard Road, BNRR R-O-W to "old" Mission
17 Harvard Road, "Old" Mission to Wb Ramps
18 Harvard Road, Wb Ramps to Appleway
19 Eb Off-Ramp
20 Eb On-Ramp, 1st Segment
21 Eb On-Ramp, 2nd Segment
22 Wb Off-Ramp
23 Wb On-Ramp
24 Liberty Lake Drive, Appleway to Kenney Road
25 Liberty Lake Drive, Kenney Road to Centroid Connector
26 Liberty Lake Drive, Centroid Connect to Country Vista
27 Liberty Lake Drive, South of Country Vista
28 "Old" Mission, West to Corner
30 "Old" Mission, Corner to Harvard
32 Realigned Mission, Centroid Connector to Harvard
33 Country Vista in Meadow Wood, Liberty Lake Drive to Mission
34 Kenney Road, Henry Road to 1st Curve
35 Kenney Road, 1st Curve to 2nd Curve
36 Kenney Road, 2nd Curve to Liberty Lake Drive
39 Country Vista Extended, East of Highlands to Liberty Lake Driv

40 Appleway, Liberty Lake Drive to Signal Drive
43 NEW Nb to Wb On-Ramp (loop), 1st Segment
44 NEW Nb to Wb On-Ramp (loop), 2nd Segment

W.S.D.O.T.'s 1995 UPDATED TRAFFIC COUNTS

The following is a summary listing of W.S.D.O.T.'s peak hour turning movements taken in May, 1995:

INTERSECTION: Harvard & Wb Ramps — W.S.D.O.T.'s 1995 Design Hour Volumes

NORTH LEG
- Total Approaching: 265
  - Left Turns: 145
  - Throughs: 120
  - Right Turns
- Total Exiting: 288

WEST LEG
- Total Approaching: 0
  - Left Turns
  - Throughs
  - Right Turns
- Total Exiting: 784

EAST LEG
- Total Approaching: 40
  - Left Turns: 25
  - Throughs
  - Right Turns: 15
- Total Exiting: 0

SOUTH LEG
- Total Approaching: 937
  - Left Turns: 664
  - Throughs: 273
  - Right Turns
- Total Exiting: 170

TOTAL APPROACH VOLUMES = 1,242
TOTAL EXITING VOLUMES = 1,242

RESULTS of AUGUST, 1995, DELAY STUDY
Nb Lefts & Sb Rights

			Nb Lefts	Thrus	Totals	Nb Lefts	Thrus	Totals
North/South Street:	Harvard Road							
East/West Street:	Wb Ramps	A.M. Count	132	13	145	4.50	4.00	4.50
Survey Date:	Aug 24, '95	P.M. Count	297	35	6	5.83	6.17	5.83

Start Time	End Time	COUNTS by 15-MIN Nb Lefts	Thrus	Totals	DELAYS by 15-MIN Nb Lefts	Thrus	Totals	DELAYS by HOUR Nb Lefts	Thrus	Totals
06:30	06:45	1	0	1	1.00	.00	1.00			
06:45	07:00	18	4	22	3.94	4.00	3.59			
07:00	07:15	20	2	22	3.20	2.50	3.11			
07:15	07:30	22	3	25	2.41	1.67	2.31	3.10	2.89	3.07
07:30	07:45	19	0	19	3.00	.00	3.00	3.10	2.89	3.08
07:45	08:00	11	1	12	2.00	1.00	2.00	2.72	1.83	2.65
08:00	08:15	12	1	13	2.67	1.00	2.62	2.56	1.40	2.48
08:15	08:30	10	1	11	3.00	3.00	3.09	2.71	1.67	2.65
08:30	08:45	10	1	11	3.00	2.00	3.00	2.65	1.75	2.57
08:45	09:00	2	0	2	3.00	.00	3.00	2.88	2.00	2.81
09:00	09:15	3	0	3	2.33	.00	2.33	2.92	2.50	2.89
09:15	09:30	4	0	4	4.50	.00	4.50	3.21	2.00	3.15
15:30	15:45	14	1	15	3.21	3.00	3.27			
15:45	16:00	12	2	14	3.00	2.50	2.89			
16:00	16:15	53	3	56	3.81	5.33	3.76			
16:15	16:30	32	3	35	3.91	2.00	3.71	3.68	3.33	3.65
16:30	16:45	36	0	36	5.83	.00	5.83	4.31	3.38	4.26
16:45	17:00	27	4	31	3.52	2.00	3.26	4.27	3.00	4.19
17:00	17:15	44	4	48	3.18	3.00	3.06	4.10	2.36	3.97
17:15	17:30	15	1	16	3.00	2.00	3.00	4.02	2.44	3.91
17:30	17:45	27	6	33	3.37	6.17	3.13	3.28	3.93	3.36
17:45	18:00	11	5	16	3.45	6.00	3.06	3.24	5.06	3.50
18:00	18:15	16	2	18	2.88	2.50	2.81	3.19	5.29	3.54
18:15	18:30	10	4	14	3.50	3.00	3.00	3.28	4.94	3.63

			Sb Rights		Totals	Sb Rights		Totals
North/South Street:	Harvard Road							
East/West Street:	Wb Ramps	A.M. Count	53	0	53	5.50	N/A	5.50
Survey Date:	Aug 24, '95	P.M. Count	38	0	6	6.00	N/A	6.00

Start Time	End Time	COUNTS by 15-MIN Sb Rights	Totals	DELAYS by 15-MIN Sb Rights	Totals	DELAYS by HOUR Sb Rights	Totals
06:30	06:45	4	4	3.00	3.00		
06:45	07:00	1	1	2.00	2.00		
07:00	07:15	6	6	2.17	2.17		
07:15	07:30	10	10	4.00	4.00	3.19	3.19
07:30	07:45	14	14	2.71	2.71	3.00	3.00
07:45	08:00	5	5	3.40	3.40	3.09	3.09
08:00	08:15	1	1	2.00	2.00	3.23	3.23
08:15	08:30	1	1	5.00	5.00	2.95	2.95
08:30	08:45	2	2	5.50	5.50	3.89	3.89
08:45	09:00	4	4	2.75	2.75	3.63	3.63
09:00	09:15	3	3	2.33	2.33	3.40	3.40
09:15	09:30	2	2	2.50	2.50	3.09	3.09
15:30	15:45	2	2	3.50	3.50		
15:45	16:00	0	0	.00	.00		
16:00	16:15	9	9	5.22	5.22		
16:15	16:30	2	2	4.50	4.50	4.85	4.85
16:30	16:45	3	3	6.00	6.00	5.29	5.29
16:45	17:00	3	3	4.00	4.00	5.06	5.06
17:00	17:15	6	6	4.67	4.67	4.79	4.79
17:15	17:30	4	4	4.75	4.75	4.81	4.81
17:30	17:45	3	3	3.33	3.33	4.31	4.31
17:45	18:00	2	2	2.00	2.00	4.07	4.07
18:00	18:15	2	2	2.50	2.50	3.45	3.45
18:15	18:30	2	2	3.50	3.50	2.89	2.89

Wb Lefts & Rights

North/South Street: Harvard Road		Wb Lts	Wb Rts	Totals	Wb Lts	Wb Rts	Totals
East/West Street: Wb Ramps	A.M. Count	99	52	151	10.63	17.00	9.43
Survey Date:	P.M. Count	126	65	191	64.14	9.00	41.41

Start Time	End Time	COUNTS by 15-MIN Wb Lts	Wb Rts	Totals	DELAYS by 15-MIN Wb Lts	Wb Rts	Totals	DELAYS by HOUR Wb Lts	Wb Rts	Totals
06:30	06:45	9	6	15	9.33	3.00	6.20			
06:45	07:00	8	9	17	8.00	2.56	4.44			
07:00	07:15	10	7	17	4.30	2.43	3.08			
07:15	07:30	9	6	15	7.67	2.17	5.14	7.22	2.54	5.17
07:30	07:45	11	4	15	9.91	5.50	7.90	7.50	2.88	5.63
07:45	08:00	9	3	12	8.44	17.00	8.00	7.62	5.15	6.78
08:00	08:15	8	4	12	10.63	3.50	7.71	9.16	5.88	8.13
08:15	08:30	6	1	7	10.50	2.00	9.43	9.79	7.42	9.17
08:30	08:45	6	7	13	6.33	5.57	3.89	9.03	7.07	8.36
08:45	09:00	6	3	9	5.00	4.00	4.11	8.31	4.47	6.90
09:00	09:15	8	1	9	7.75	3.00	7.33	7.42	4.67	6.55
09:15	09:30	9	1	10	6.89	1.00	6.40	6.62	4.58	6.02
15:30	15:45	11	5	16	15.91	5.80	11.61			
15:45	16:00	8	4	12	12.38	4.00	8.92			
16:00	16:15	14	5	19	27.00	5.00	20.42			
16:15	16:30	8	13	21	36.50	7.62	14.89	23.02	6.26	16.37
16:30	16:45	4	2	6	31.75	3.50	22.08	26.35	6.13	17.98
16:45	17:00	9	2	11	29.00	9.00	24.73	30.23	6.77	21.18
17:00	17:15	14	8	22	64.14	5.00	41.41	45.09	6.56	29.03
17:15	17:30	18	7	25	13.61	5.00	10.28	34.02	5.26	25.48
17:30	17:45	13	5	18	31.54	4.00	23.28	33.59	5.14	25.36
17:45	18:00	6	5	11	19.00	1.40	10.95	32.69	4.08	23.28
18:00	18:15	9	5	14	8.33	3.80	5.99	18.35	3.68	13.60
18:15	18:30	12	4	16	6.75	2.00	5.44	17.00	2.84	12.44

North/South Street: Harvard Road
East/West Street: Wb Ramps
Survey Date:

Start Time	End Time	COUNTS by 15-MIN Wb Lts	Wb Rts	Totals
06:30	07:30	36	28	64
06:45	07:45	38	26	64
07:00	08:00	39	20	59
07:15	08:15	37	17	54
07:30	08:30	34	12	46
07:45	08:45	29	15	44
08:00	09:00	26	15	41
08:15	09:15	26	12	38
08:30	09:30	29	12	41
15:30	16:30	41	27	68
15:45	16:45	34	24	58
16:00	17:00	35	22	57
16:15	17:15	35	25	60
16:30	17:30	45	19	64
16:45	17:45	54	22	76
17:00	18:00	51	25	76
17:15	18:15	46	22	68
17:30	18:30	40	19	59

As indicated in the foregoing tables, northbound lefts and southbound rights have minimal delays, but westbound lefts and rights have delays approaching LOS "E". The following page contains the results of capacity analyses using the latest "Highway Capacity Software".

1995 HIGHWAY CAPACITY ANALYSES BASED on W.S.D.O.T.'s COUNTS

Center For Microcomputers In Transportation
HCS: Unsignalized Intersection Release 2.1

File Name ..... HR&WB95.HC0
Streets: (N-S) Harvard Road (E-W) Wb Ramps from I-90
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... TEI
Other Information..... 1995 P.M. Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	1	0	0	1	1	0	0	0	0>	0<	0
Stop/Yield			N			Y						
Volumes	664	273			145	120				25		15
PHF	.95	.95			.95	.95				.95		.95
Grade		0			0			0			0	
MC's (%)	0	0			0	0				0		0
SU/RV's (%)	0	0			0	0				0		0
CV's (%)	0	0			0	0				0		0
PCE's	1.1	1.1			1.1	1.1				1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Intersection Performance Summary

Movement		FlowRate v(pcph)	MoveCap Cm(pcph)		SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB	L	29	88	>	135	40.7	E	40.7
WB	R	18	1007	>				
NB	L	769	1462			5.2	B	3.7

Intersection Delay = 4.1
Intersection LOS = A

Comparing the results of the delay study by fifteen minutes and the results of the capacity analysis indicate a high degree of correlation.

ASSIGNMENTS by PHASE

The following four revised phases have been defined for analysis:

Phase I

(1) Realignment of Mission;

(2) Relocation of westbound off-ramp

(3) Signalization of realigned Mission/Wb off-ramp and Harvard Road; and,

(4) Widen Harvard Road north of I-90.

Phase II

(1) Construction of 2/3 lane Country Vista extension from Liberty Lake Drive to Appleway.

Phase III

(1) Widening of I-90 bridge for additional northbound lane; and,

(2) Construction of northbound to westbound loop ramp (on-ramp).

Phase IV

(1) Widening of Country Vista extension from Liberty Lake Drive to Appleway to 4/5 lane section;

(2) Improvements to Liberty Lake Drive/Appleway intersection.

To simplify analysis, it was assumed that development of the proposed projects takes place uniformly (i.e., the same percentage of each occurs with each phase). Those percentages were determined based on maintaining acceptable levels-of-service. As shown in Appendix "A", the revised "Project Phasing" increases the percentage of "buildout" as follows:

- Phase I: 28 percent;
- Phase II: 44 percent;
- Phase III: 72 percent; and,
- Phase IV: 100 percent.

The remainder of this report contains the assignments and analyses. The assignments by phase are provided on pages 6 through 9, and the results of the capacity analyses are provided on page 10.

Phase I Assignments

INTERSECTION: Harvard & Wb Ramps — 28% Buildout

NORTH LEG
- Total Approaching: 490
  - Left Turns: 198
  - Throughs: 220
  - Right Turns: 72
- Total Exiting: 216

WEST LEG
- Total Approaching: 326
  - Left Turns: 59
  - Throughs: 0
  - Right Turns: 267
- Total Exiting: 314

EAST LEG
- Total Approaching: 102
  - Left Turns: 36
  - Throughs: 44
  - Right Turns: 22
- Total Exiting: 654

SOUTH LEG
- Total Approaching: 789
  - Left Turns: 198
  - Throughs: 135
  - Right Turns: 456
- Total Exiting: 523

TOTAL APPROACH VOLUMES = 1,707
TOTAL EXITING VOLUMES = 1,707

INTERSECTION: Liberty Lake Drive & Appleway — 28% Buildout

NORTH LEG
- Total Approaching: 523
  - Left Turns: 63
  - Throughs: 445
  - Right Turns: 15
- Total Exiting: 789

WEST LEG
- Total Approaching: 715
  - Left Turns: 87
  - Throughs: 313
  - Right Turns: 315
- Total Exiting: 77

EAST LEG
- Total Approaching: 384
  - Left Turns: 14
  - Throughs: 31
  - Right Turns: 339
- Total Exiting: 457

SOUTH LEG
- Total Approaching: 475
  - Left Turns: 31
  - Throughs: 363
  - Right Turns: 81
- Total Exiting: 774

TOTAL APPROACH VOLUMES = 2,097
TOTAL EXITING VOLUMES = 2,097

INTERSECTION: Liberty Lake & Kenney Road — 28% Buildout

NORTH LEG
- Total Approaching: 774
  - Left Turns: 95
  - Throughs: 509
  - Right Turns: 170
- Total Exiting: 475

WEST LEG
- Total Approaching: 333
  - Left Turns: 128
  - Throughs: 85
  - Right Turns: 120
- Total Exiting: 261

EAST LEG
- Total Approaching: 63
  - Left Turns: 9
  - Throughs: 31
  - Right Turns: 23
- Total Exiting: 196

SOUTH LEG
- Total Approaching: 400
  - Left Turns: 60
  - Throughs: 324
  - Right Turns: 16
- Total Exiting: 638

TOTAL APPROACH VOLUMES = 1,570
TOTAL EXITING VOLUMES = 1,570

Phase II Assignments

INTERSECTION: Harvard & Wb Ramps — 44% Buildout

NORTH LEG — Total Approaching: 752
- Left Turns: 304
- Throughs: 338
- Right Turns: 110

Total Exiting: 331

WEST LEG — Total Approaching: 501
- Left Turns: 90
- Throughs: 0
- Right Turns: 411

Total Exiting: 481

EAST LEG — Total Approaching: 156
- Left Turns: 55
- Throughs: 67
- Right Turns: 34

Total Exiting: 1,005

SOUTH LEG — Total Approaching: 1,212
- Left Turns: 304
- Throughs: 207
- Right Turns: 701

Total Exiting: 804

TOTAL APPROACH VOLUMES = 2,621
TOTAL EXITING VOLUMES = 2,621

INTERSECTION: Liberty Lake Drive & Appleway — 44% Buildout

NORTH LEG — Total Approaching: 804
- Left Turns: 97
- Throughs: 684
- Right Turns: 23

Total Exiting: 1,212

WEST LEG — Total Approaching: 1,101
- Left Turns: 134
- Throughs: 482
- Right Turns: 485

Total Exiting: 119

EAST LEG — Total Approaching: 591
- Left Turns: 21
- Throughs: 48
- Right Turns: 522

Total Exiting: 703

SOUTH LEG — Total Approaching: 728
- Left Turns: 48
- Throughs: 556
- Right Turns: 124

Total Exiting: 1,190

TOTAL APPROACH VOLUMES = 3,224
TOTAL EXITING VOLUMES = 3,224

INTERSECTION: Liberty Lake & Kenney Road — 44% Buildout

NORTH LEG — Total Approaching: 1,190
- Left Turns: 146
- Throughs: 782
- Right Turns: 262

Total Exiting: 728

WEST LEG — Total Approaching: 511
- Left Turns: 197
- Throughs: 130
- Right Turns: 184

Total Exiting: 402

EAST LEG — Total Approaching: 98
- Left Turns: 14
- Throughs: 48
- Right Turns: 36

Total Exiting: 301

SOUTH LEG — Total Approaching: 612
- Left Turns: 92
- Throughs: 495
- Right Turns: 25

Total Exiting: 980

TOTAL APPROACH VOLUMES = 2,411
TOTAL EXITING VOLUMES = 2,411

Phase III Assignments

INTERSECTION: Harvard & Wb Ramps — 72% Buildout

NORTH LEG
- Total Approaching: 1,089
  - Left Turns: 440
  - Throughs: 490
  - Right Turns: 159
- Total Exiting: 480

WEST LEG
- Total Approaching: 726
  - Left Turns: 131
  - Throughs: 0
  - Right Turns: 595
- Total Exiting: 696

EAST LEG
- Total Approaching: 226
  - Left Turns: 80
  - Throughs: 97
  - Right Turns: 49
- Total Exiting: 1,456

SOUTH LEG
- Total Approaching: 1,756
  - Left Turns: 440
  - Throughs: 300
  - Right Turns: 1,016
- Total Exiting: 1,165

TOTAL APPROACH VOLUMES = 3,797
TOTAL EXITING VOLUMES = 3,797

INTERSECTION: Liberty Lake Drive & Appleway — 72% Buildout

NORTH LEG
- Total Approaching: 1,165
  - Left Turns: 141
  - Throughs: 990
  - Right Turns: 34
- Total Exiting: 1,756

WEST LEG
- Total Approaching: 1,595
  - Left Turns: 194
  - Throughs: 698
  - Right Turns: 703
- Total Exiting: 173

EAST LEG
- Total Approaching: 857
  - Left Turns: 30
  - Throughs: 70
  - Right Turns: 757
- Total Exiting: 1,019

SOUTH LEG
- Total Approaching: 1,054
  - Left Turns: 69
  - Throughs: 805
  - Right Turns: 180
- Total Exiting: 1,723

TOTAL APPROACH VOLUMES = 4,671
TOTAL EXITING VOLUMES = 4,671

INTERSECTION: Liberty Lake & Kenney Road — 72% Buildout

NORTH LEG
- Total Approaching: 1,723
  - Left Turns: 211
  - Throughs: 1,132
  - Right Turns: 380
- Total Exiting: 1,054

WEST LEG
- Total Approaching: 741
  - Left Turns: 286
  - Throughs: 188
  - Right Turns: 267
- Total Exiting: 584

EAST LEG
- Total Approaching: 143
  - Left Turns: 21
  - Throughs: 70
  - Right Turns: 52
- Total Exiting: 435

SOUTH LEG
- Total Approaching: 886
  - Left Turns: 134
  - Throughs: 716
  - Right Turns: 36
- Total Exiting: 1,420

TOTAL APPROACH VOLUMES = 3,493
TOTAL EXITING VOLUMES = 3,493

Phase IV (Buildout) Assignments

INTERSECTION: Harvard & Wb Ramps — Buildout P.M. Peak

NORTH LEG
- Total Approaching: 1,328
  - Left Turns: 537
  - Throughs: 597
  - Right Turns: 194
- Total Exiting: 586

WEST LEG
- Total Approaching: 885
  - Left Turns: 160
  - Throughs: 0
  - Right Turns: 725
- Total Exiting: 849

EAST LEG
- Total Approaching: 276
  - Left Turns: 98
  - Throughs: 118
  - Right Turns: 60
- Total Exiting: 1,776

SOUTH LEG
- Total Approaching: 2,142
  - Left Turns: 537
  - Throughs: 366
  - Right Turns: 1,239
- Total Exiting: 1,420

TOTAL APPROACH VOLUMES = 4,631
TOTAL EXITING VOLUMES = 4,631

INTERSECTION: Liberty Lake Drive & Appleway — Buildout P.M. Peak

NORTH LEG
- Total Approaching: 1,420
  - Left Turns: 172
  - Throughs: 1,207
  - Right Turns: 41
- Total Exiting: 2,142

WEST LEG
- Total Approaching: 1,944
  - Left Turns: 236
  - Throughs: 851
  - Right Turns: 857
- Total Exiting: 210

EAST LEG
- Total Approaching: 1,045
  - Left Turns: 37
  - Throughs: 85
  - Right Turns: 923
- Total Exiting: 1,242

SOUTH LEG
- Total Approaching: 1,286
  - Left Turns: 84
  - Throughs: 983
  - Right Turns: 219
- Total Exiting: 2,101

TOTAL APPROACH VOLUMES = 5,695
TOTAL EXITING VOLUMES = 5,695

INTERSECTION: Liberty Lake & Kenney Road — Buildout P.M. Peak

NORTH LEG
- Total Approaching: 2,101
  - Left Turns: 257
  - Throughs: 1,381
  - Right Turns: 463
- Total Exiting: 1,286

WEST LEG
- Total Approaching: 904
  - Left Turns: 349
  - Throughs: 229
  - Right Turns: 326
- Total Exiting: 711

EAST LEG
- Total Approaching: 175
  - Left Turns: 26
  - Throughs: 85
  - Right Turns: 64
- Total Exiting: 530

SOUTH LEG
- Total Approaching: 1,080
  - Left Turns: 163
  - Throughs: 873
  - Right Turns: 44
- Total Exiting: 1,733

TOTAL APPROACH VOLUMES = 4,260
TOTAL EXITING VOLUMES = 4,260

TABLE 3

1995 LEVELS-of-SERVICE

1995 Levels-of-Service	Delay	LOS
Harvard Road & Wb Ramps unsignalized	40.7	E
Liberty Lake Drive & Eb Ramps	8.6	B

TABLE 4

LEVELS-of-SERVICE with 28% BUILDOUT

28% Buildout Levels-of-Service	Delay	LOS
Harvard Road & Mission signalized	18.7	C
Liberty Lake Drive & Eb Ramps	43.7	E
Liberty Lake Drive & Country Vista	14.2	B

LEVELS-of-SERVICE with 44% BUILDOUT

44% Buildout Levels-of-Service	Delay	LOS
Harvard Road & Mission signalized	28.1	D
Liberty Lake Drive & Eb Ramps	51.2	E
Liberty Lake Drive & Country Vista	26.3	D

TABLE 5

LEVELS-of-SERVICE with 72% BUILDOUT

72% Buildout Levels-of-Service	Delay	LOS
Harvard Road & Mission signalized	33.6	D
Liberty Lake Drive & Eb Ramps	58.4	E
Liberty Lake Drive & Country Vista	37.3	D

LEVELS-of-SERVICE with 100% BUILDOUT

100% Buildout Levels-of-Service	Delay	LOS
Harvard Road & Mission signalized	38.6	D
Liberty Lake Drive & Eb Ramps	54.4	E
Liberty Lake Drive & Country Vista	14.3	B