

BORDER INFRASTRUCTURE PROGRAM

Fall 2003



Border Infrastructure Program



Introduction

- Overview of program
- Project parameters
- Implementation team
- Program/project goals



- Design considerations
- Preliminary schedule
- Current activities

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Overview

Trucks, Borders & the BC Economy

- Over 1.3 million trucks cross B.C.-U.S. border each year
- 4,000 trucks daily at Highway 15 crossing in Surrey – double 1991 levels
- Congestion at – and on highways leading to – border crossings costs operators \$60 million annually
- Improvements needed for competitiveness
 - secure B.C. & regional economy
 - support Greater Vancouver shipping/distribution role



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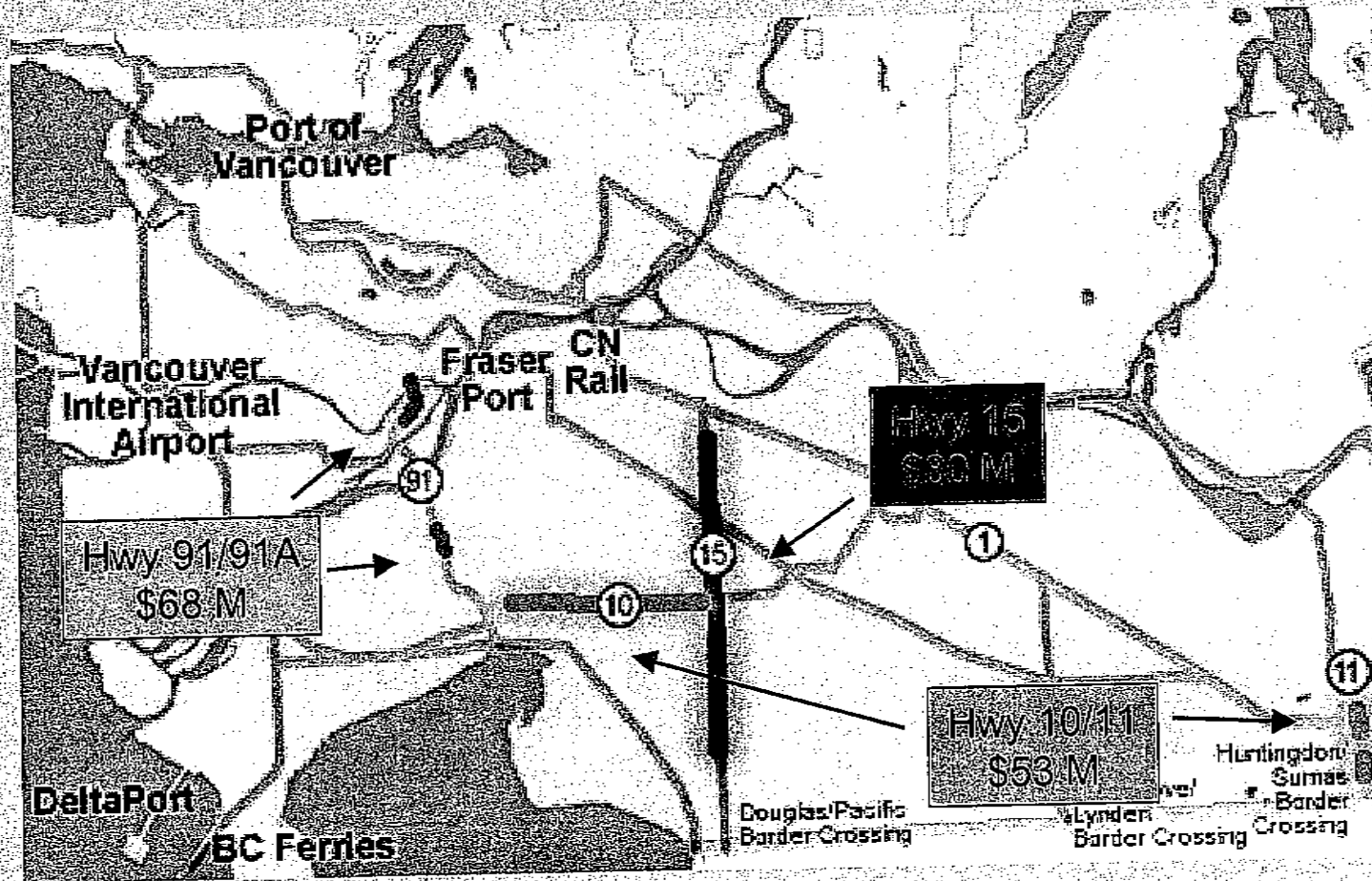
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Overview

Border Infrastructure Program

- Jointly funded federal-provincial initiative
 - \$211 million over 5 years
- Rationale and condition of funding is to *improve cross-border goods movement*
- Occurs in regional context:
complementary to current and future programs

Project Parameters



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Project Parameters

Continued

Highway 15 - \$80 million

- 4-lane Hwy 15 (176 St) from 96 Ave to 32 Ave
- Twin existing rail overpass south of Hwy 10
- 4-lane intersection at Hwy 15 and Hwy 10



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Project Parameters

Continued

Highway 10/11 - \$53 million

- 4-lane Hwy 10 from 122 St to Hwy 15
- Improve Hwy 1-Hwy 11 interchange and Highway 11-Vye Rd intersection in Abbotsford



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Project Parameters

Continued

Highway 91/91A - \$68 million

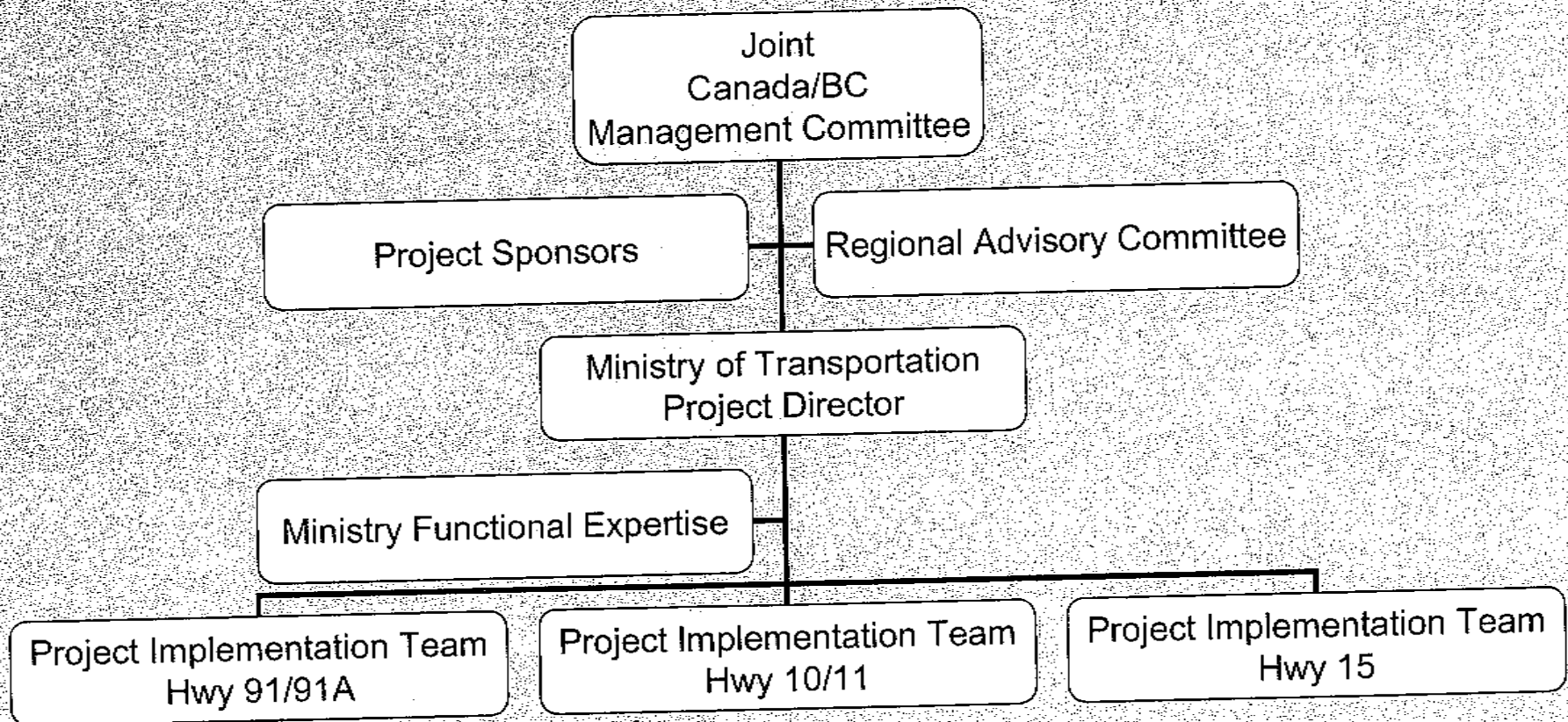
- New interchange on Hwy 91A at Howes St
- Improve Hwy 91A interchange at the north end of Queensborough Bridge
- New interchange at Hwy 91 and 72 Ave in Delta



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BIP Team Structure



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BIP Goals & Objectives

Goal:

- Improve safety & efficiency of highway system to/from border crossings

Objectives:

- Increase capacity
- Manage access
- Reduce delay
- Design to function



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BIP Goals & Objectives

Goals:

- Facilitate goods movement to/from regional industrial areas & distribution terminals
- Be consistent & complementary with future transportation improvements in region

Objectives:

- Involve municipal staff in design process
- Establish consultation process with local transportation authorities & associations (e.g. TransLink, BC Trucking Association)



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BIP Goals & Objectives

Goal:

- Implement improvements in an environmentally sensitive manner

Objectives:

- Protect fish-bearing streams & ditches
- Identify environmental enhancement opportunities
- Reduce emissions resulting from congestion



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BIP Goals & Objectives

Goal:

- Implement improvements with least disruption and impact to surrounding communities

Objectives:

- Minimize right-of-way purchase requirements
- Minimize construction delays
- Maintain accessibility to communities
- Maintain links between communities (from/across highway)
- Involve municipal liaison groups
- Involve community through Open Houses



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Design Considerations

Highway 10

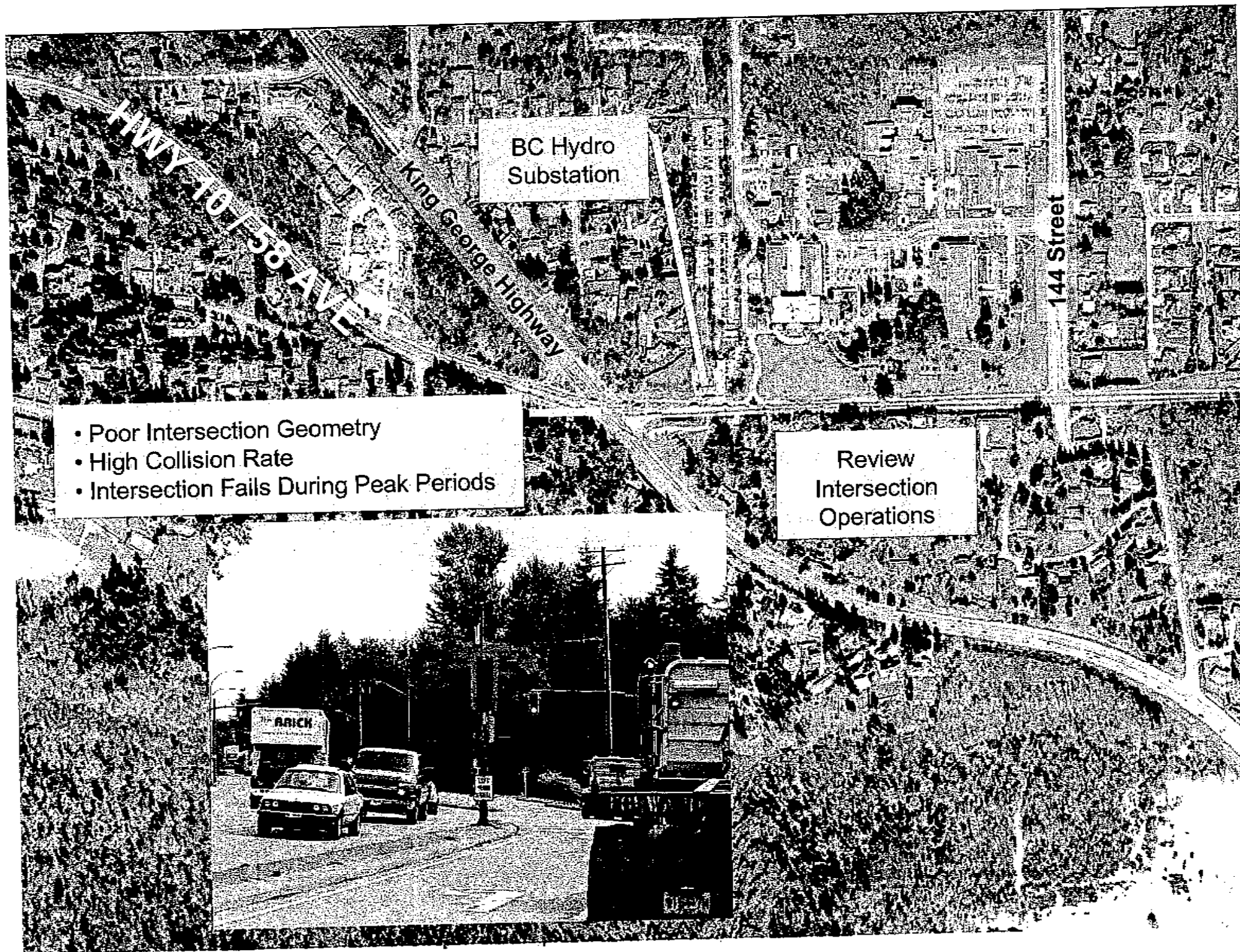


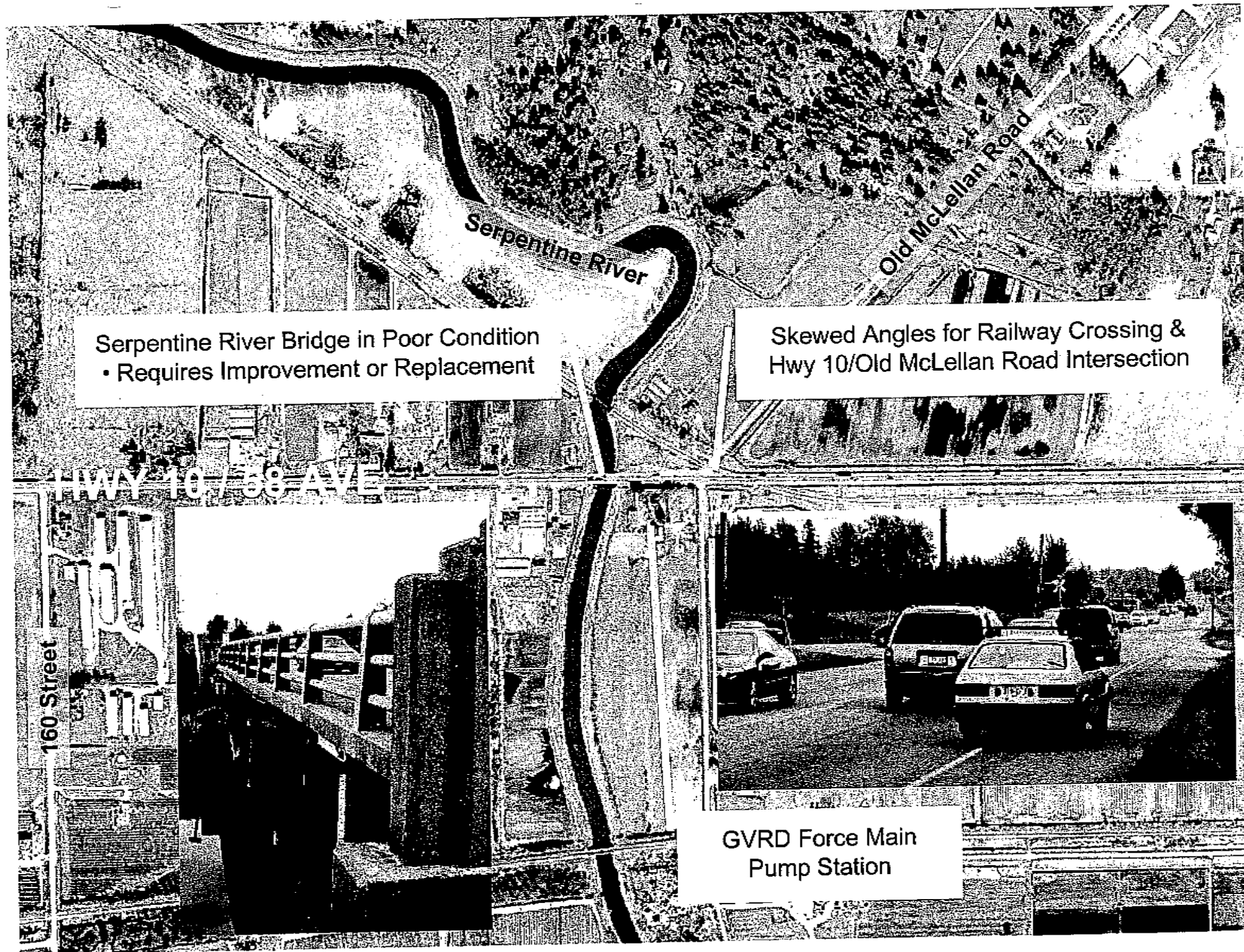
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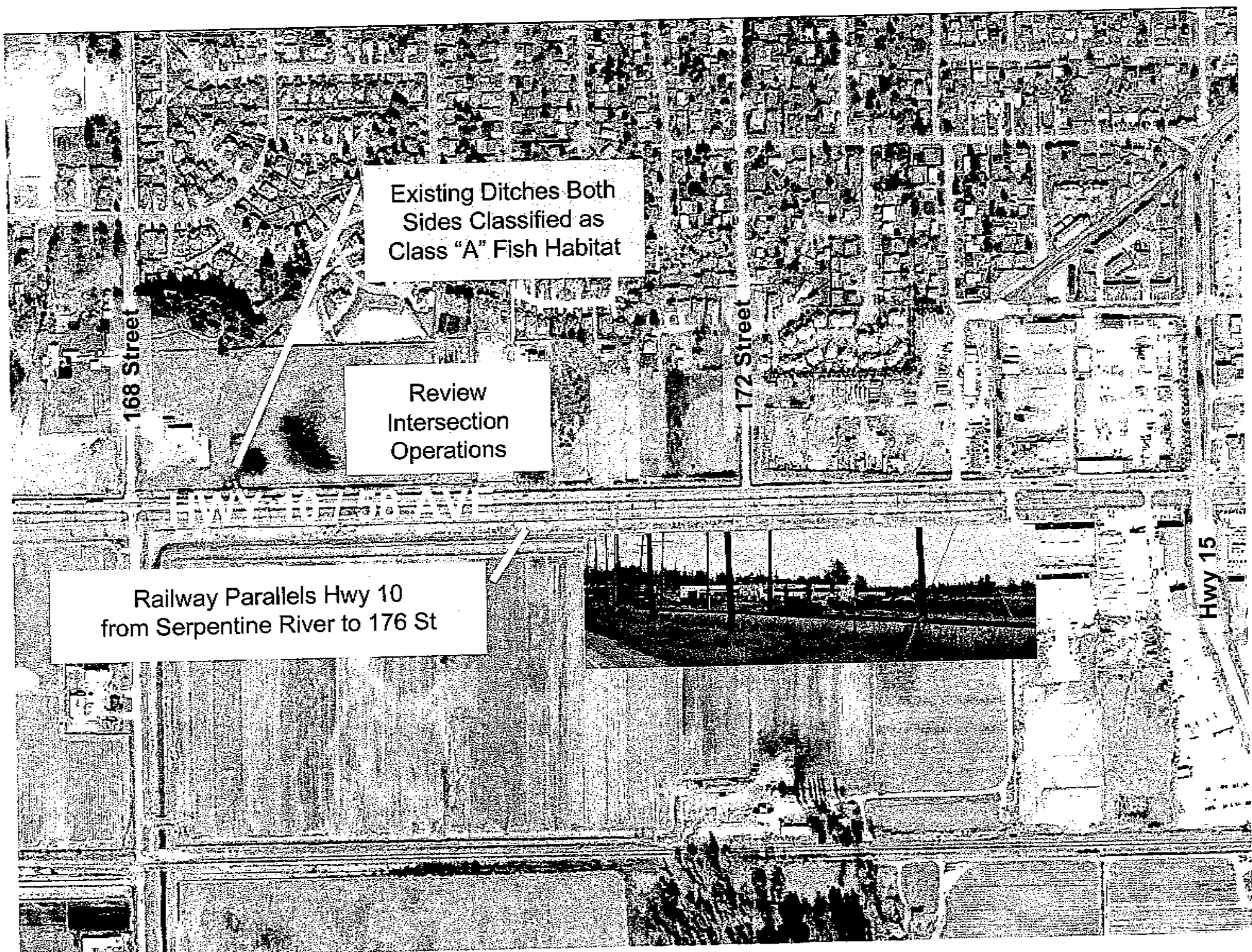




Serpentine River Bridge in Poor Condition
• Requires Improvement or Replacement

Skewed Angles for Railway Crossing &
Hwy 10/Old McLellan Road Intersection

GVRD Force Main
Pump Station



Existing Ditches Both
Sides Classified as
Class "A" Fish Habitat

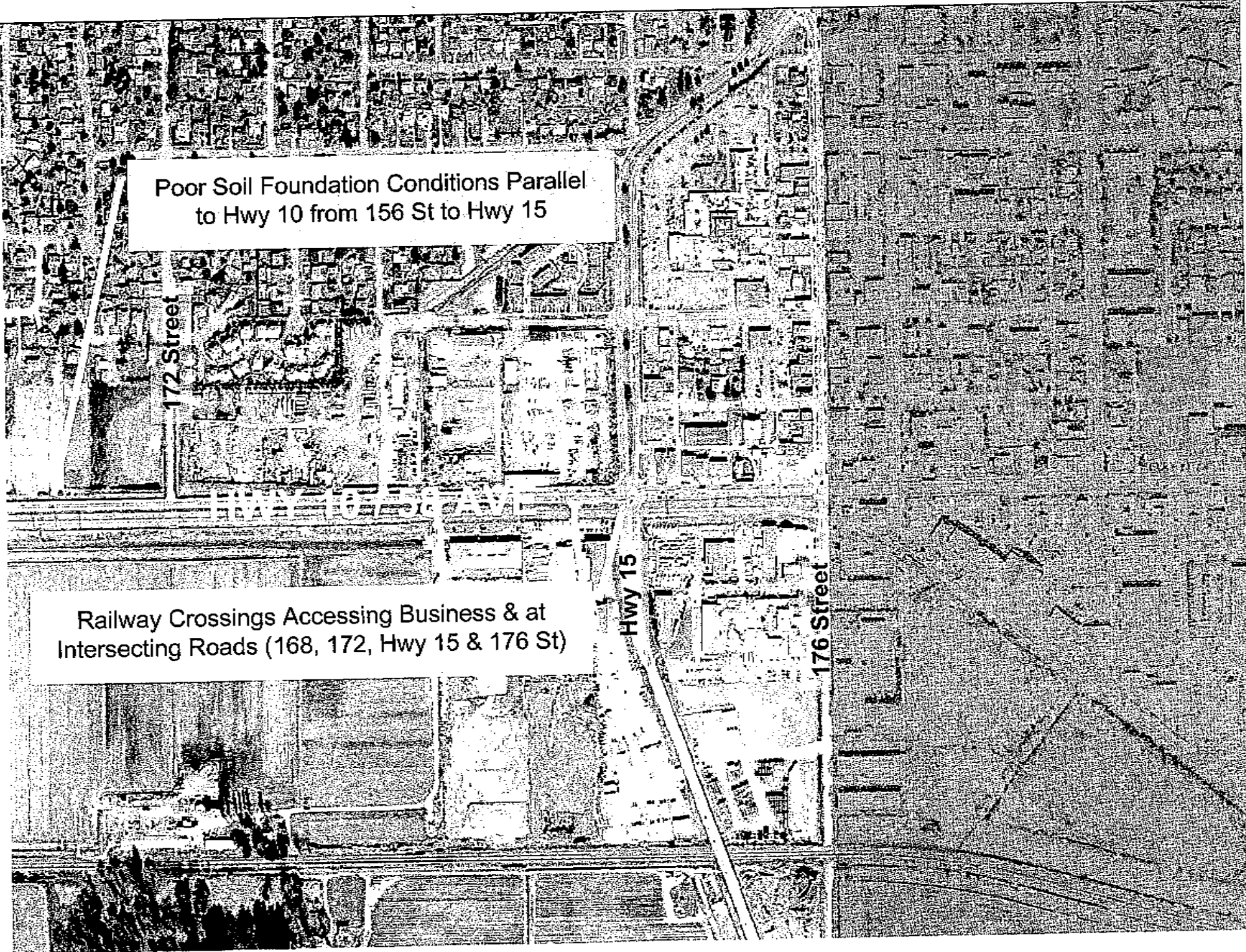
Review
Intersection
Operations

Railway Parallels Hwy 10
from Serpentine River to 176 St

168 Street

172 Street

Hwy 15

An aerial photograph of an urban area, likely in a city with a grid street pattern. The image shows a dense arrangement of buildings and streets. Two white text boxes are overlaid on the image. The first box, located in the upper left, contains the text "Poor Soil Foundation Conditions Parallel to Hwy 10 from 156 St to Hwy 15". The second box, located in the lower left, contains the text "Railway Crossings Accessing Business & at Intersecting Roads (168, 172, Hwy 15 & 176 St)". Several street names are labeled vertically: "172 Street" on the left, "Hwy 15" in the center, and "176 Street" on the right. The image is in black and white, with a grainy texture typical of aerial photography.

Poor Soil Foundation Conditions Parallel
to Hwy 10 from 156 St to Hwy 15

Railway Crossings Accessing Business & at
Intersecting Roads (168, 172, Hwy 15 & 176 St)

Design Considerations

Highway 15

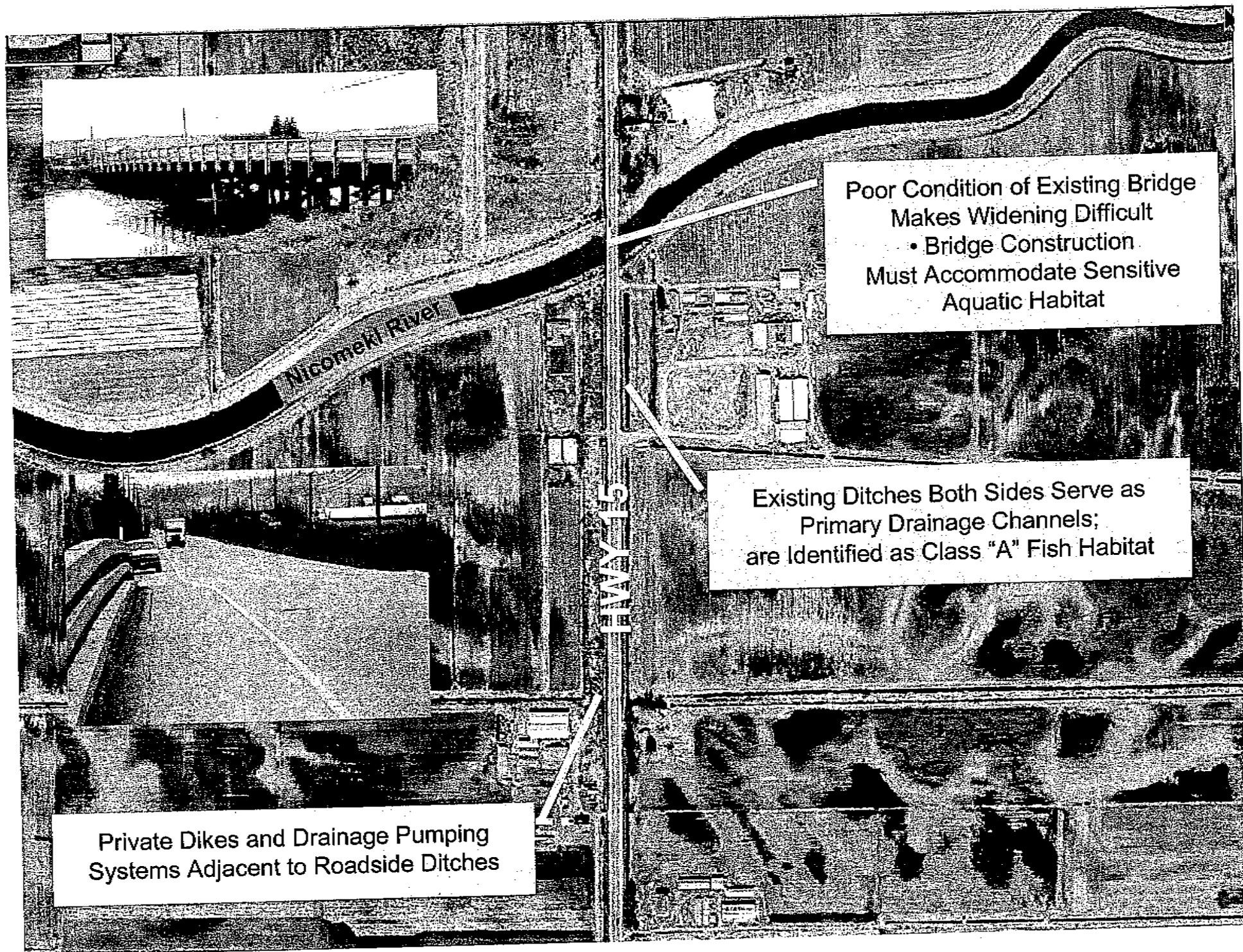


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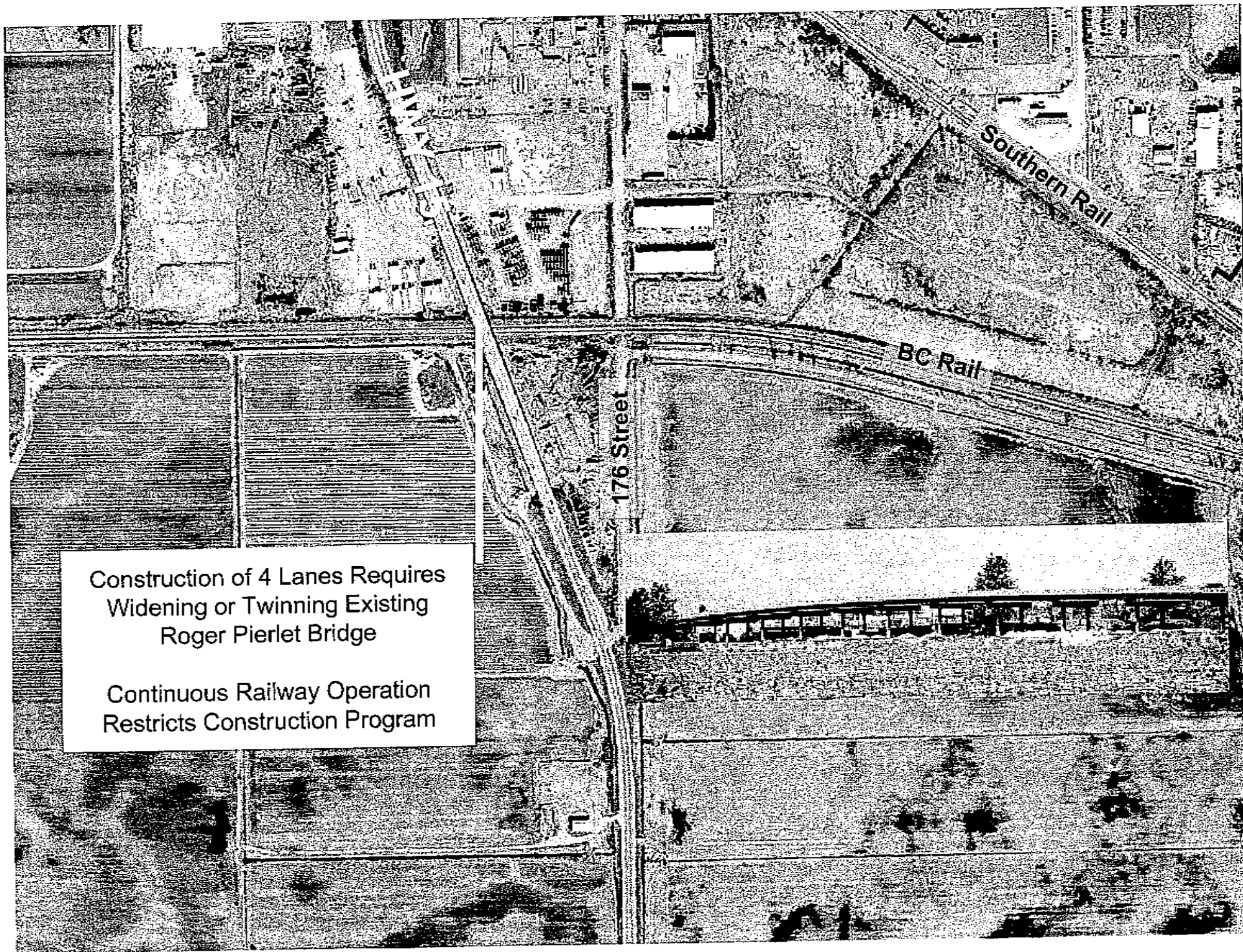


Poor Condition of Existing Bridge
Makes Widening Difficult

- Bridge Construction
Must Accommodate Sensitive
Aquatic Habitat

Existing Ditches Both Sides Serve as
Primary Drainage Channels;
are Identified as Class "A" Fish Habitat

Private Dikes and Drainage Pumping
Systems Adjacent to Roadside Ditches



Construction of 4 Lanes Requires
Widening or Twinning Existing
Roger Pierlet Bridge

Continuous Railway Operation
Restricts Construction Program

59 Avenue

58 Avenue

176 Street

Hwy 10

Confusing Lane Arrangements

Intersection Safety Issues

- Existing Right Turn Encroachments by Truck Traffic
- At Grade Rail Crossing Adjacent & Parallel to Hwy 10
- Poor Level of Service During Peak Periods
- Limited Right-of-Way Width

62A Avenue

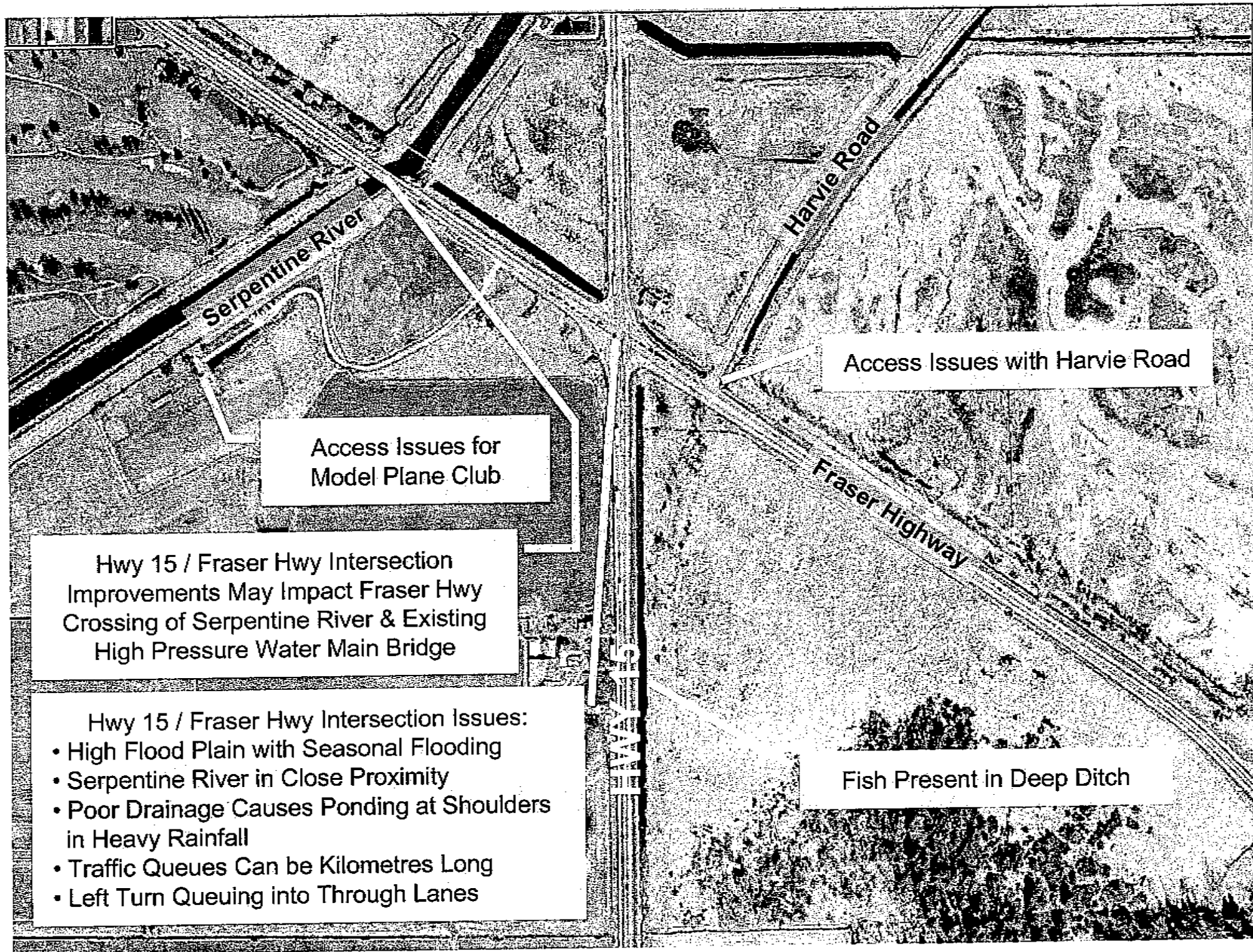
- Event Traffic Creates Heavy Congestion
- Overhead Utilities Close to Highway



High Volume
Pedestrian Crossing

60 Avenue

HWY 15



Serpentine River

Harvie Road

Fraser Highway

Access Issues for
Model Plane Club

Access Issues with Harvie Road

Hwy 15 / Fraser Hwy Intersection
Improvements May Impact Fraser Hwy
Crossing of Serpentine River & Existing
High Pressure Water Main Bridge

Hwy 15 / Fraser Hwy Intersection Issues:

- High Flood Plain with Seasonal Flooding
- Serpentine River in Close Proximity
- Poor Drainage Causes Ponding at Shoulders in Heavy Rainfall
- Traffic Queues Can be Kilometres Long
- Left Turn Queuing into Through Lanes

Fish Present in Deep Ditch

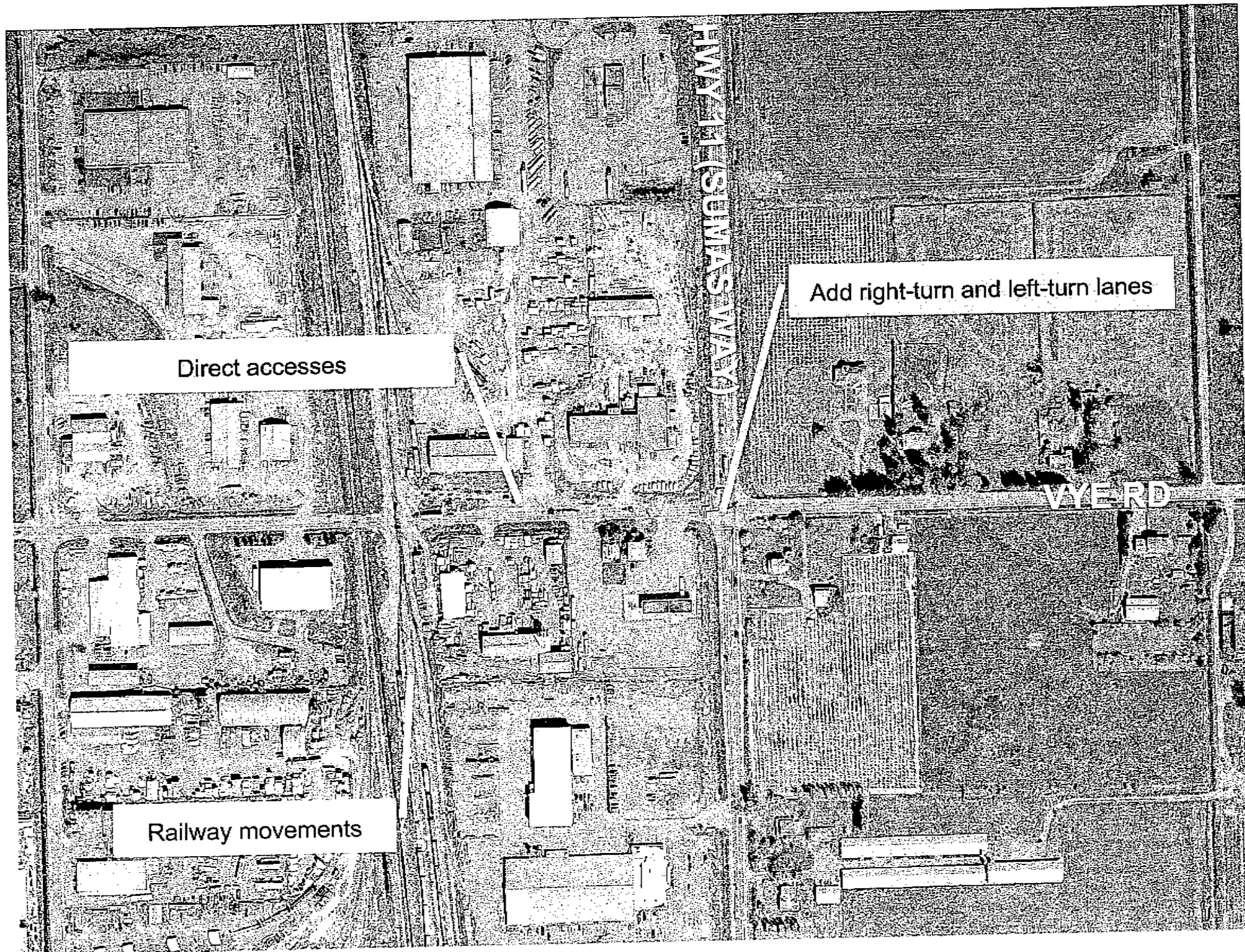
Design Considerations

Highway 11



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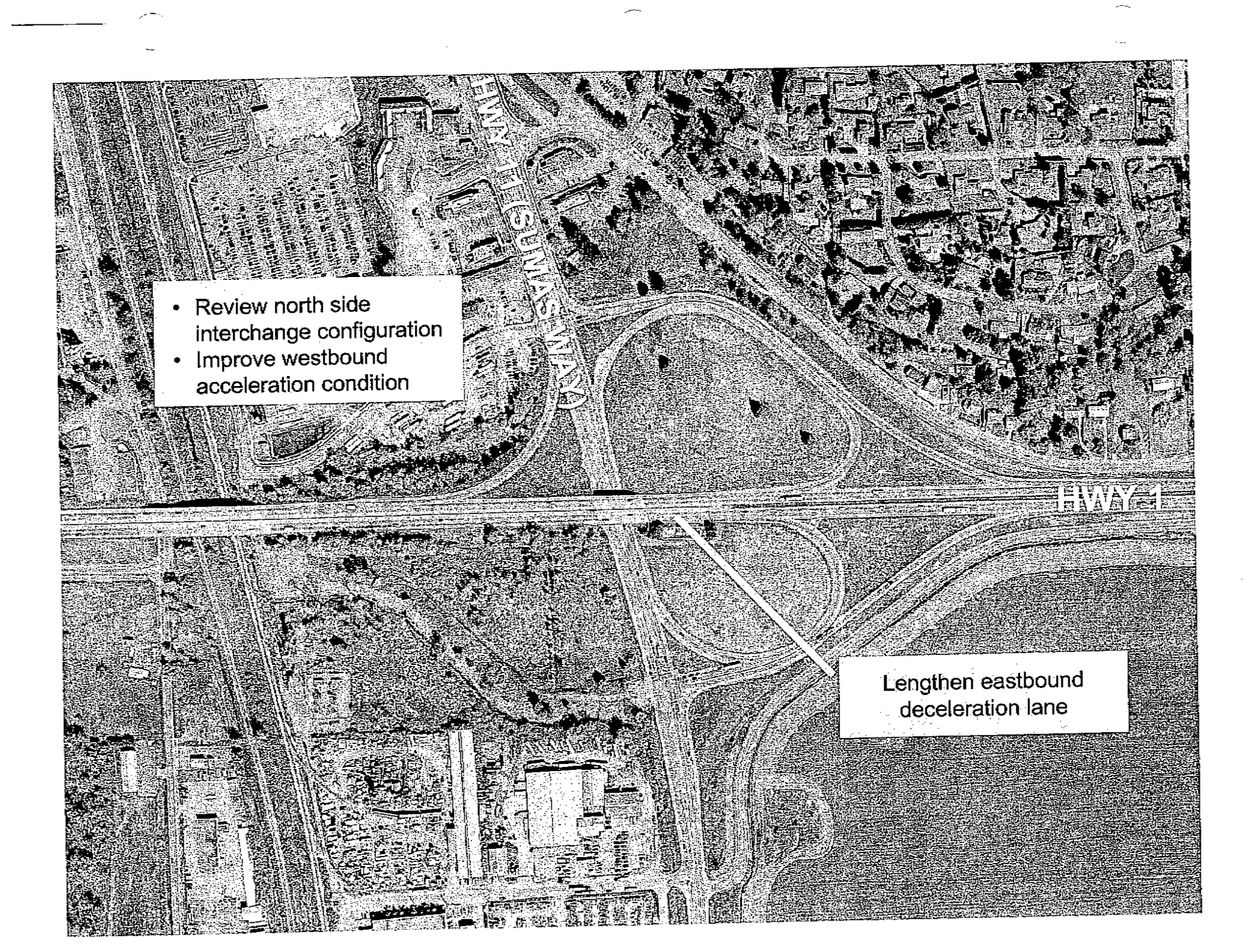
Direct accesses

Railway movements

Add right-turn and left-turn lanes

HWY 11 (SUMAS WAY)

VYE RD

- 
- An aerial photograph of a highway interchange. A horizontal highway, labeled 'HWY 1' on the right, runs across the middle. A vertical road, labeled 'Hwy 113/State Max' vertically, runs through the center. The interchange features several curved ramps and lanes. Two white rectangular boxes with black text are overlaid on the image. The first box, in the upper left, contains two bullet points. The second box, in the lower right, contains a single line of text with a white arrow pointing to a specific lane on the interchange. The surrounding area includes some vegetation and buildings.
- Review north side interchange configuration
 - Improve westbound acceleration condition

Lengthen eastbound deceleration lane

Hwy 91/91A - 72 Avenue

Project Component Goals:

- Create free flow for highway traffic
- Integration with local & regional road network
- Avoid impacts to Burns Bog
- Minimize delays during construction



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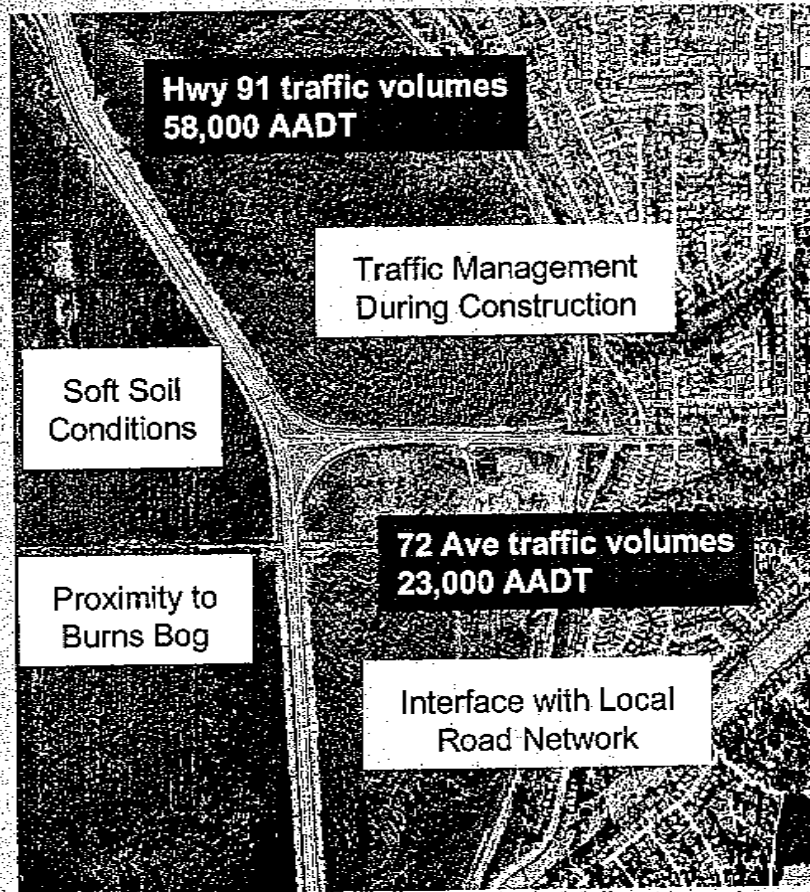
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Hwy 91/91A - 72 Avenue

Design Considerations



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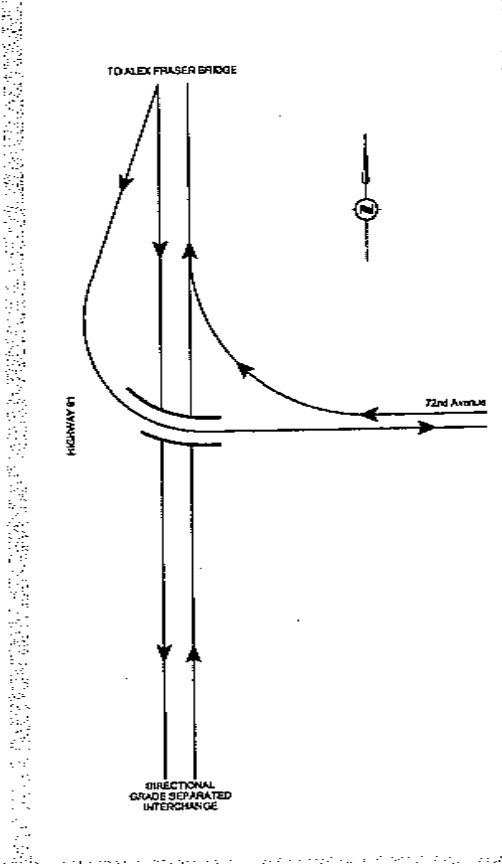
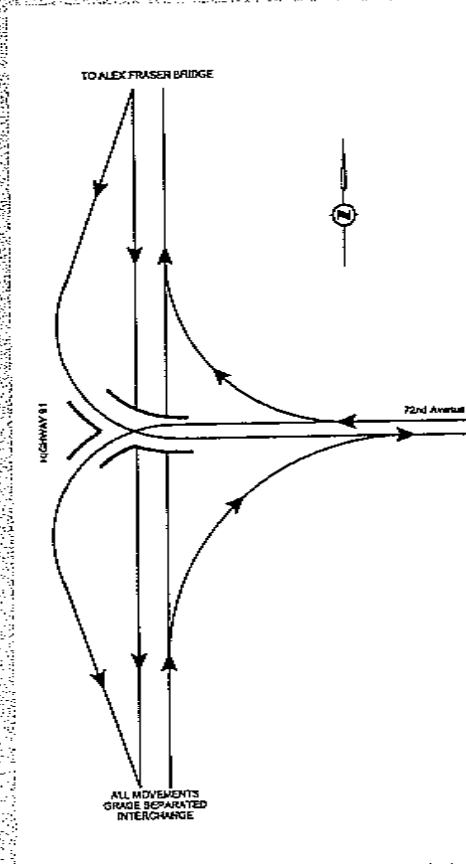
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Hwy 91/91A - 72 Avenue

Primary Options

Choice:

- Provide all movements
- Provide major movements
- Implications to be identified and discussed with Delta and TransLink during concept development



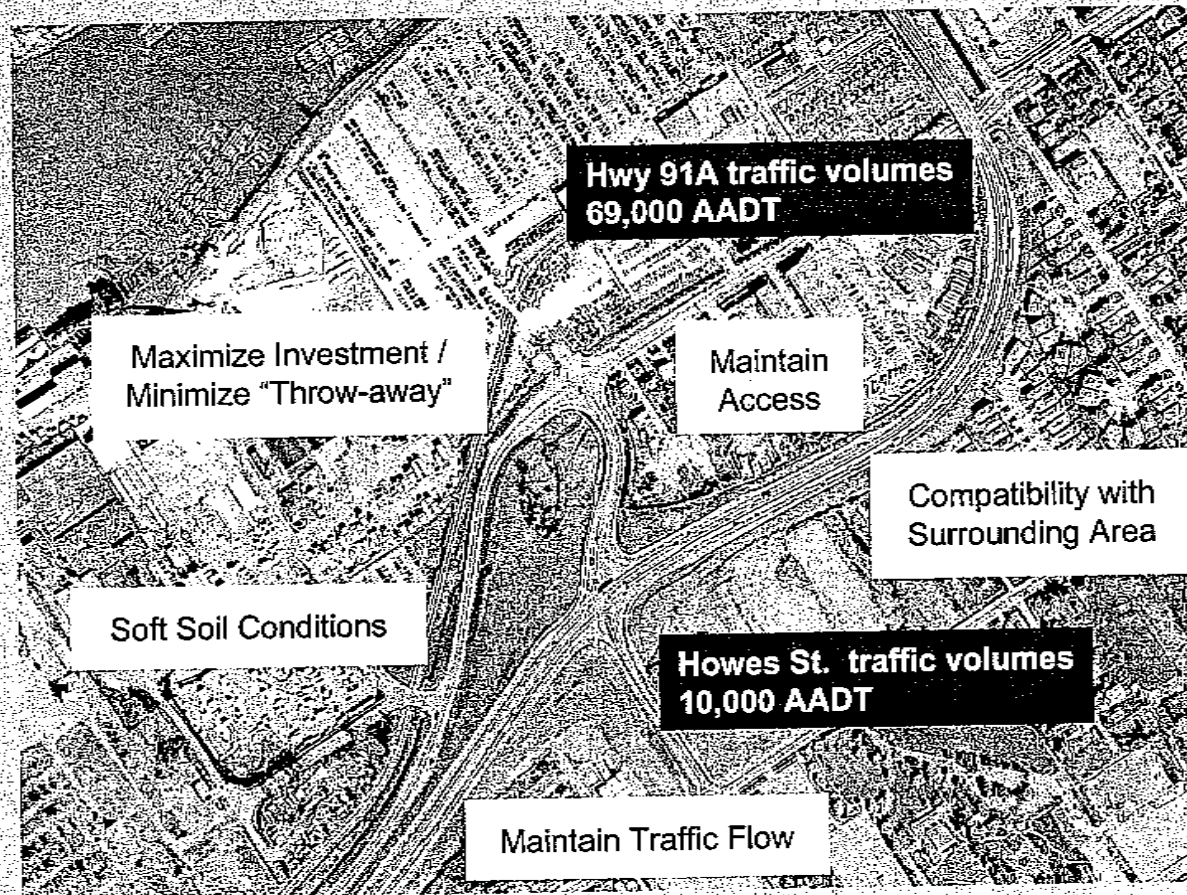
91/91A - Howes Street Interchange

Project Component Goals:

- Keep through traffic on the highway
 - Reduce shortcutting through residential neighbourhoods
- Maximize third party investment in road improvements
- Support relationship between New Westminster & commercial developer
 - Maximize investment value
 - Respect development time constraints
 - Provide best & most cost-effective traffic solution
- Minimize delays during construction
- Minimize intrusion into surrounding area

Howes Street Interchange

Design Considerations



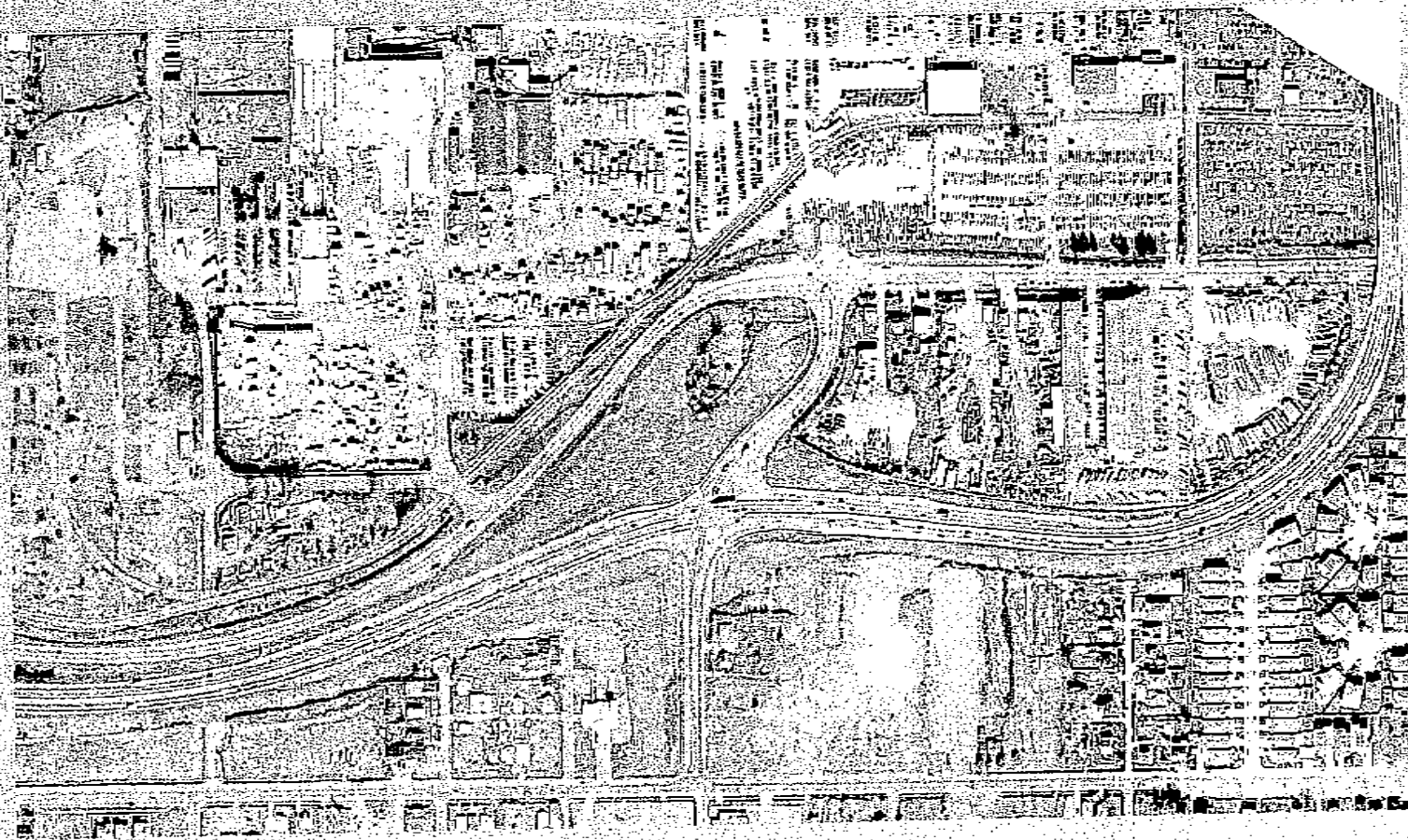
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Howes St. Interchange

Current Intersection Footprint



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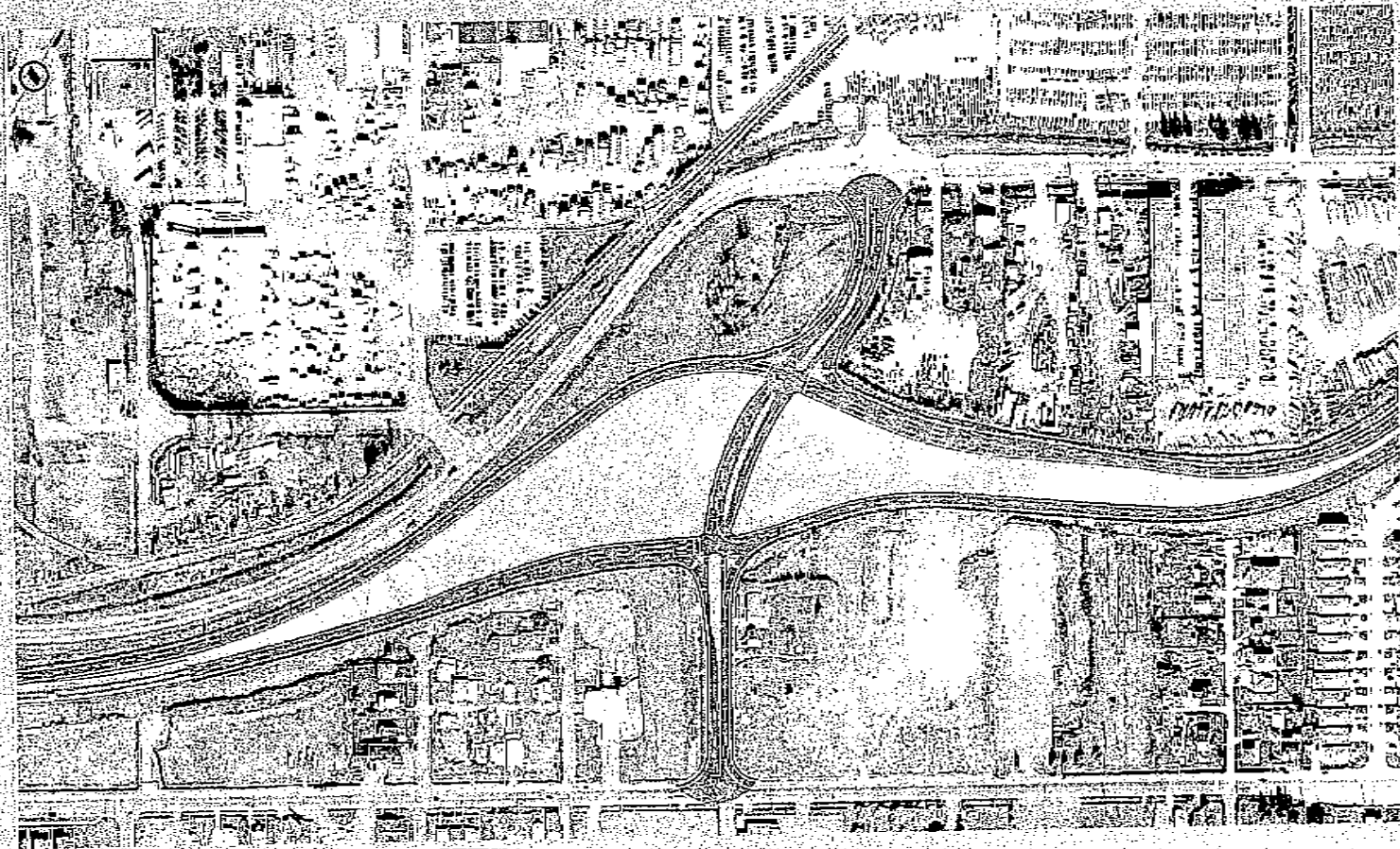
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Howes St. Interchange

Interim Intersection Footprint



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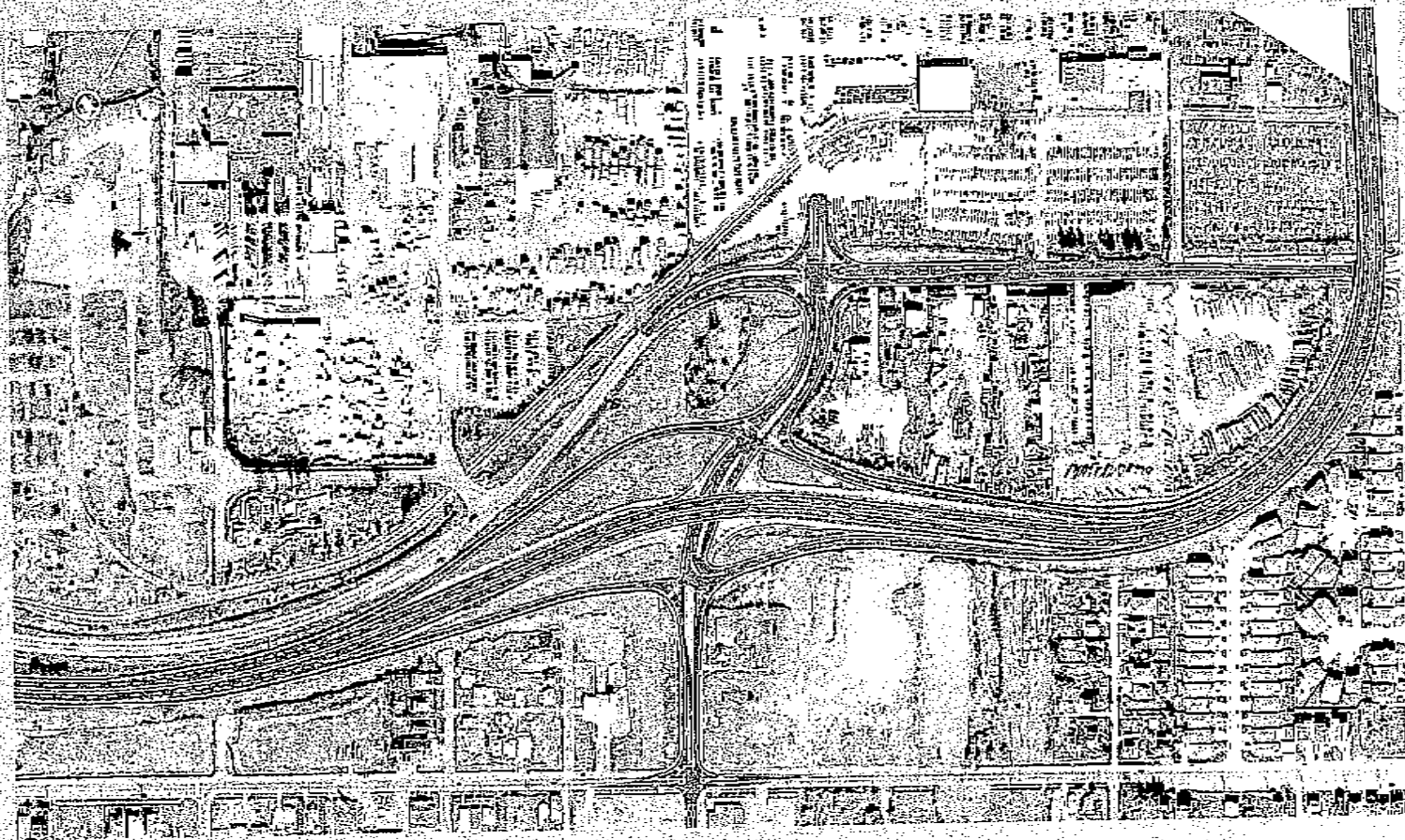
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Howes St. Interchange

Final Interchange Arrangement



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91/91A - Queensborough Bridge North Interchange

Project Component Goals:

- Improve Annacis highway system
- Improve east-west flow (Stewardson Way/Marine Way)
- Improve pedestrian, cyclist & motorist safety on bridge
- Maintain consistency with future transportation infrastructure
- Where feasible, address related system issues
- Minimize delays during construction

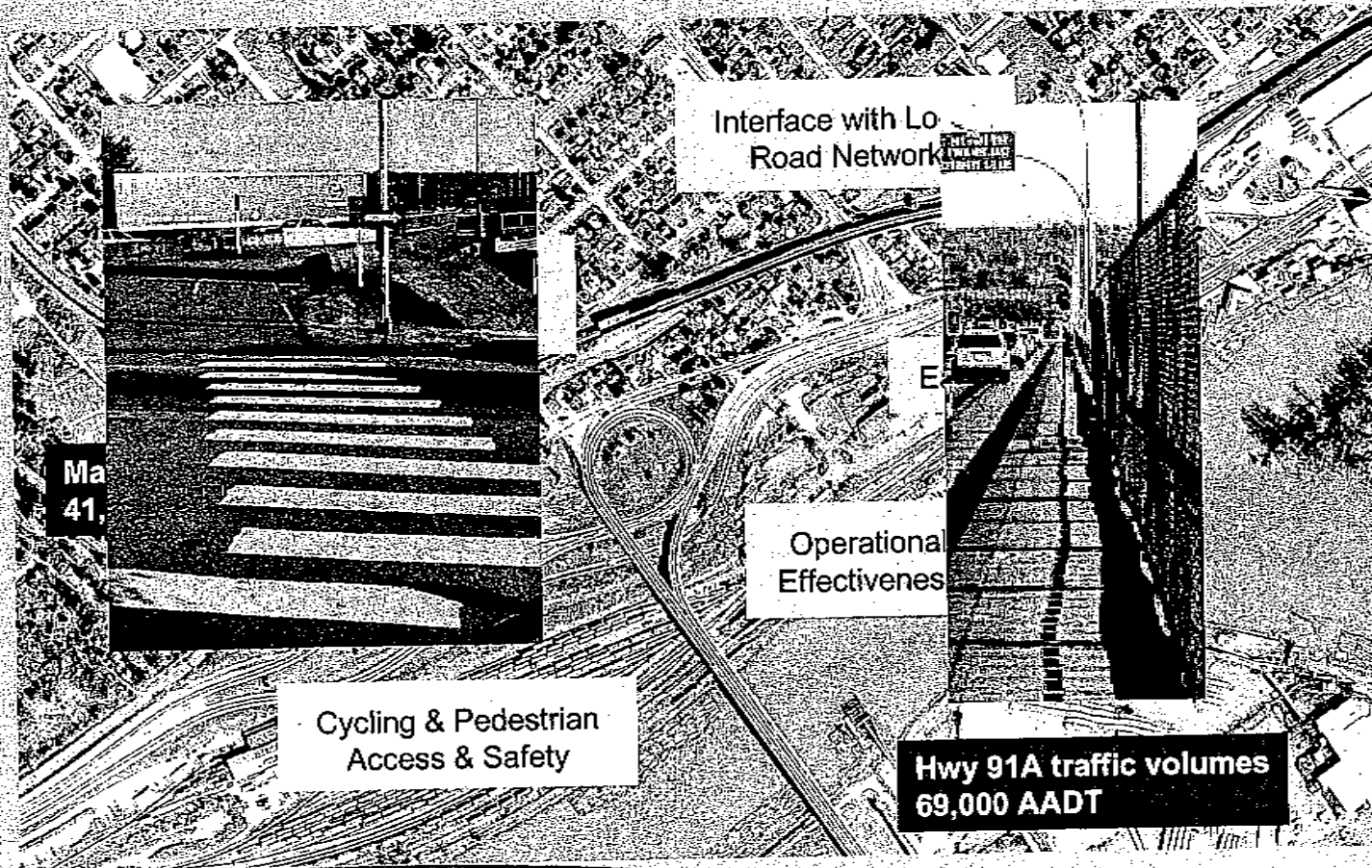


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Queensborough Bridge North Interchange

Design Considerations



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Hwy 10 Preliminary Time-Line

Key Activities	2003	2004	2005	2006	2007	2008
Project Initiation Resource & Concept Development	■					
Stakeholder Consultations & Dialogue (*denotes open house)	●	● ● ●				
Environmental Permitting Process	■					
Preliminary Design	■					
Detailed Design		■				
Construction						
122 St. – 144 St			■			
144 St – 152 St			■			
152 St – Hwy 15		≡		■		

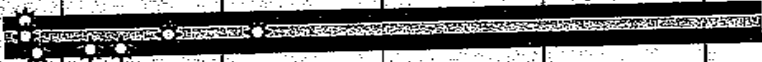
Hwy 15 Preliminary Time-Line

Key Activities	2003	2004	2005	2006	2007	2008
Project Initiation	■					
Resource & Concept Development						
Stakeholder Consultations & Dialogue (*denotes open house)	●	● ● ●				
Environmental Permitting Process	■					
Preliminary Design	■	■				
Detailed Design		■	■			
Construction						
Cloverdale		■	■			
64 Ave – 88 Ave		≡	■	■	■	
32 Ave – Hwy 10		≡	■	■	■	
Roger Pierlet Bridge			■	■	■	■

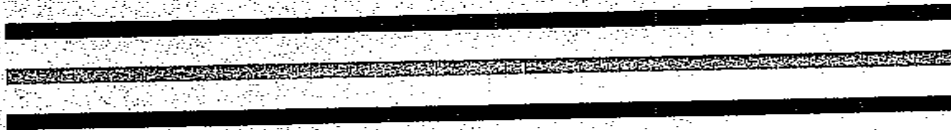
Hwy 11 Preliminary Time-Line

Key Activities	2003	2004	2005	2006	2007	2008
Project Initiation Resource & Concept Development	■					
Stakeholder Consultations & Dialogue (*denotes open house)		●●●●●				
Environmental Permitting Process	■					
Preliminary Design	■					
Detailed Design		■				
Construction						
Hwy 11/Hwy 1 Interchange			■			
Hwy 11/Vye Rd Intersection			■			

Hwy 91/91A Preliminary Time-Line

Key Activities	2003	2004	2005	2006	2007	2008
Select Project Teams						
Planning & Concept Development						
Stakeholder Consultations & Dialogue (*denotes open house)						
Environmental Permitting Process						
Preliminary Design						
Detailed Design						
Construction						

Howes St.
Queensborough Br. North I/C
72 Ave.



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Current Activities

- Preparing Project Implementation Plan
- Data collection
- Developing improvement concepts & preliminary designs
- Initiating dialogue with stakeholders
 - Discussions with municipalities & key interest groups
 - Open houses have begun

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Additional Design Considerations

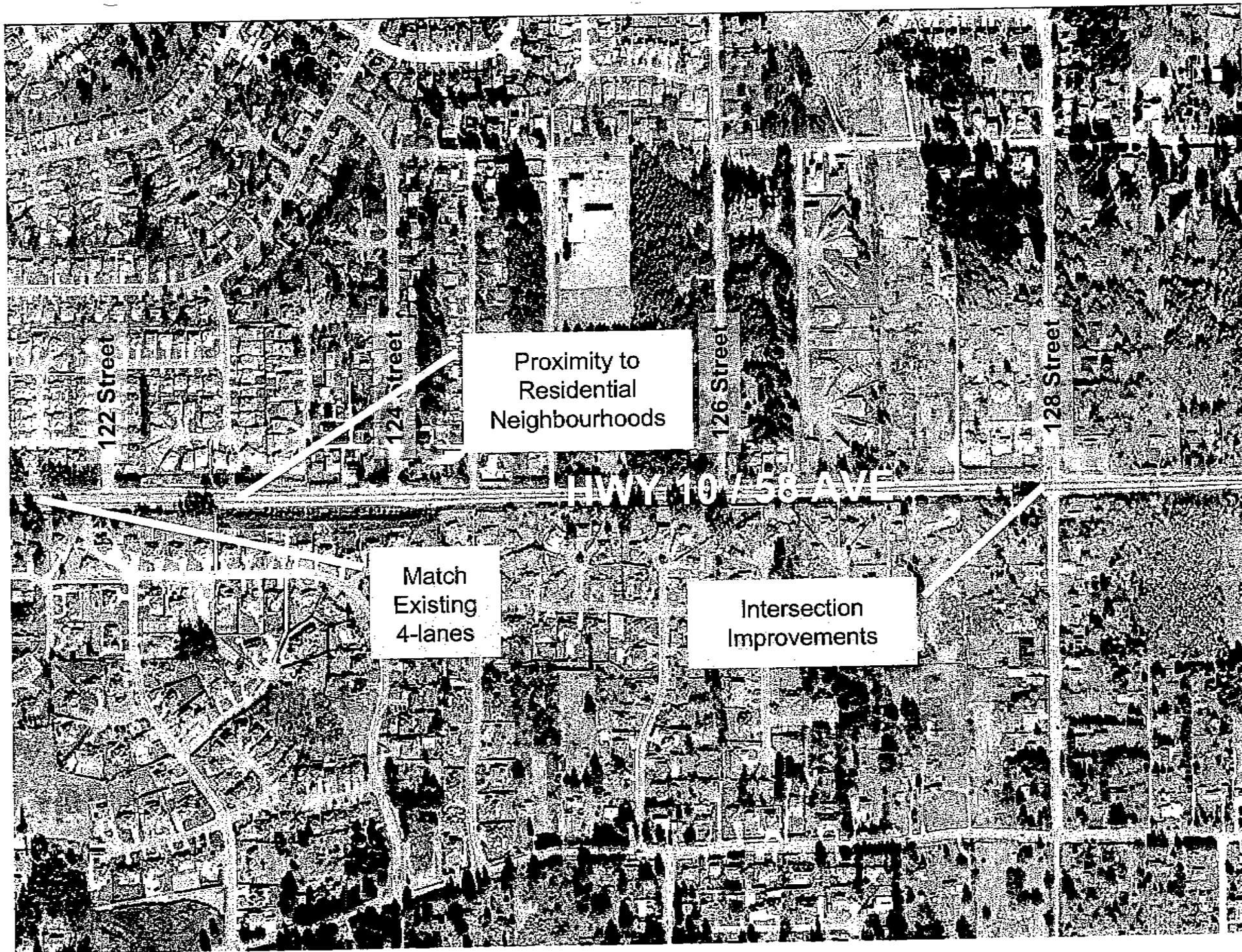
Highway 10



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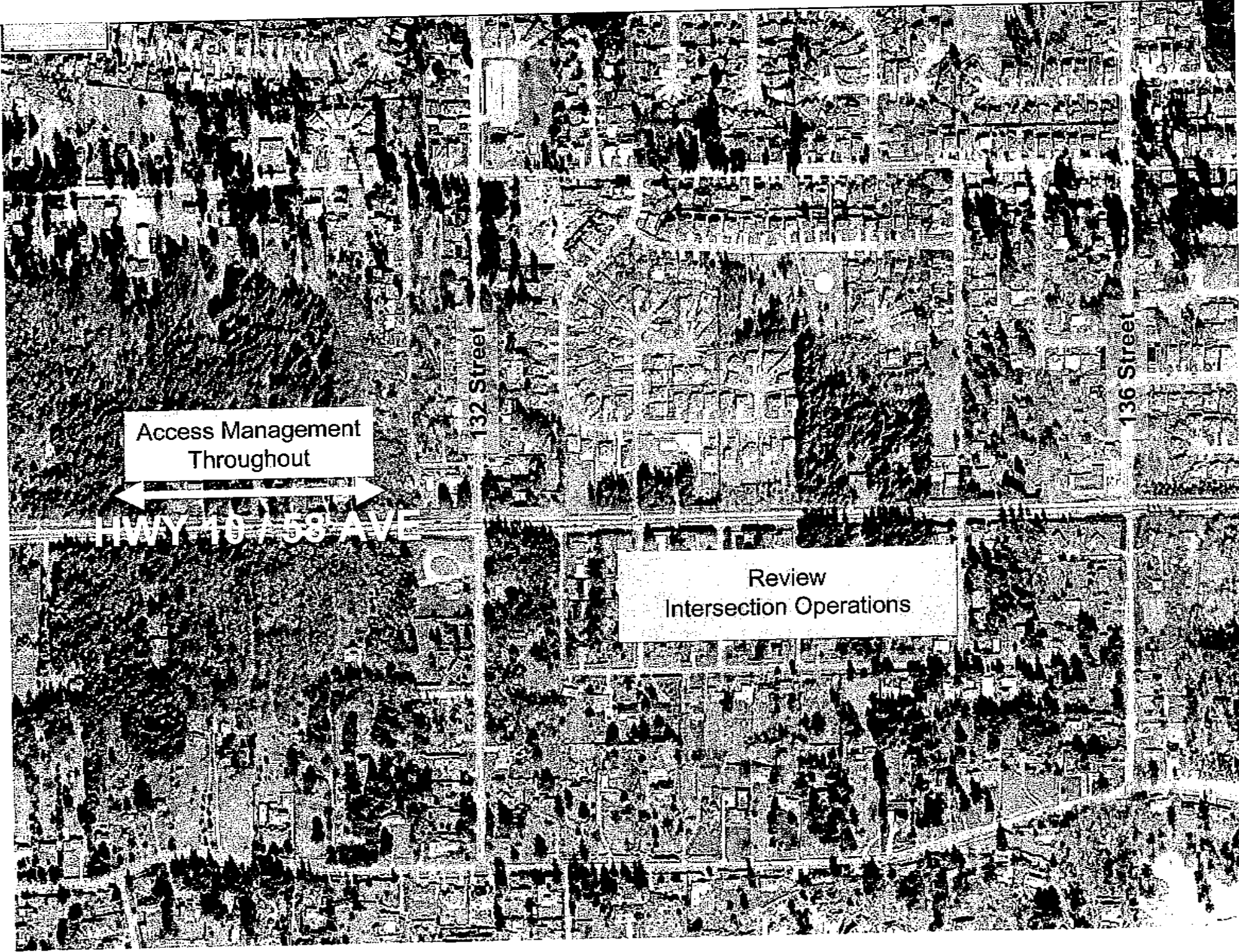


Proximity to
Residential
Neighbourhoods

HWY 10 / 58 AVE

Match
Existing
4-lanes

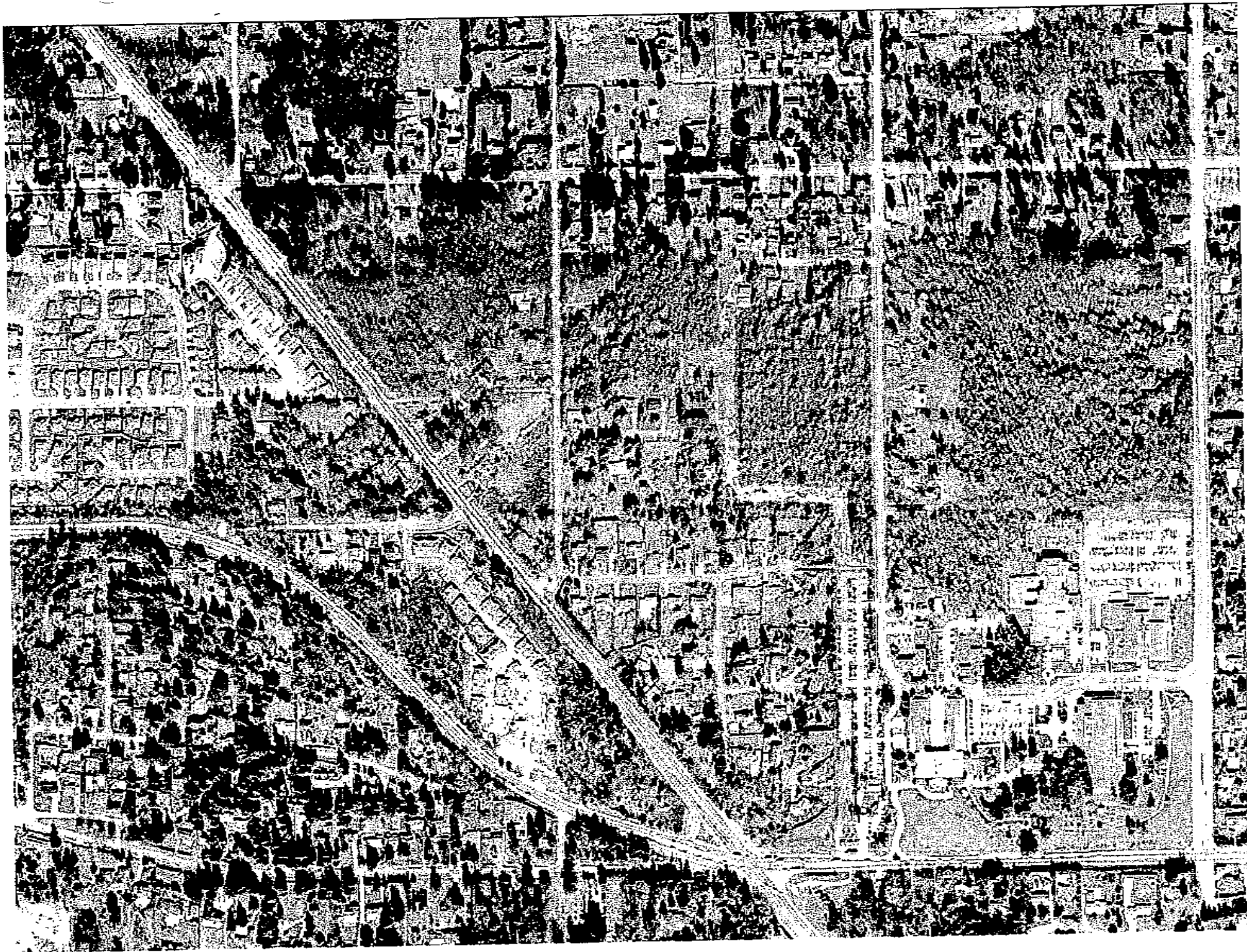
Intersection
Improvements

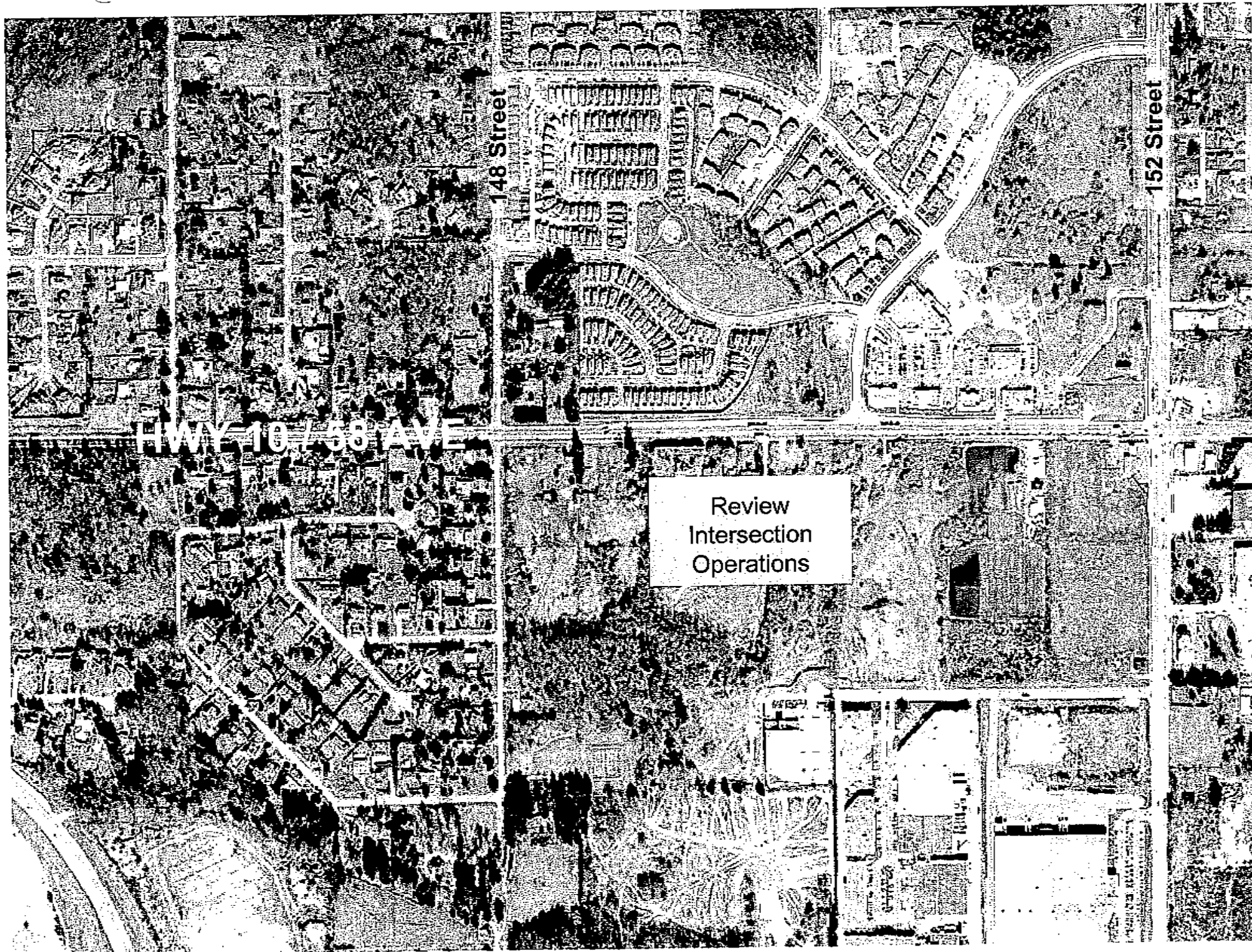


Access Management
Throughout

HWY 10 / 58 AVE

Review
Intersection Operations



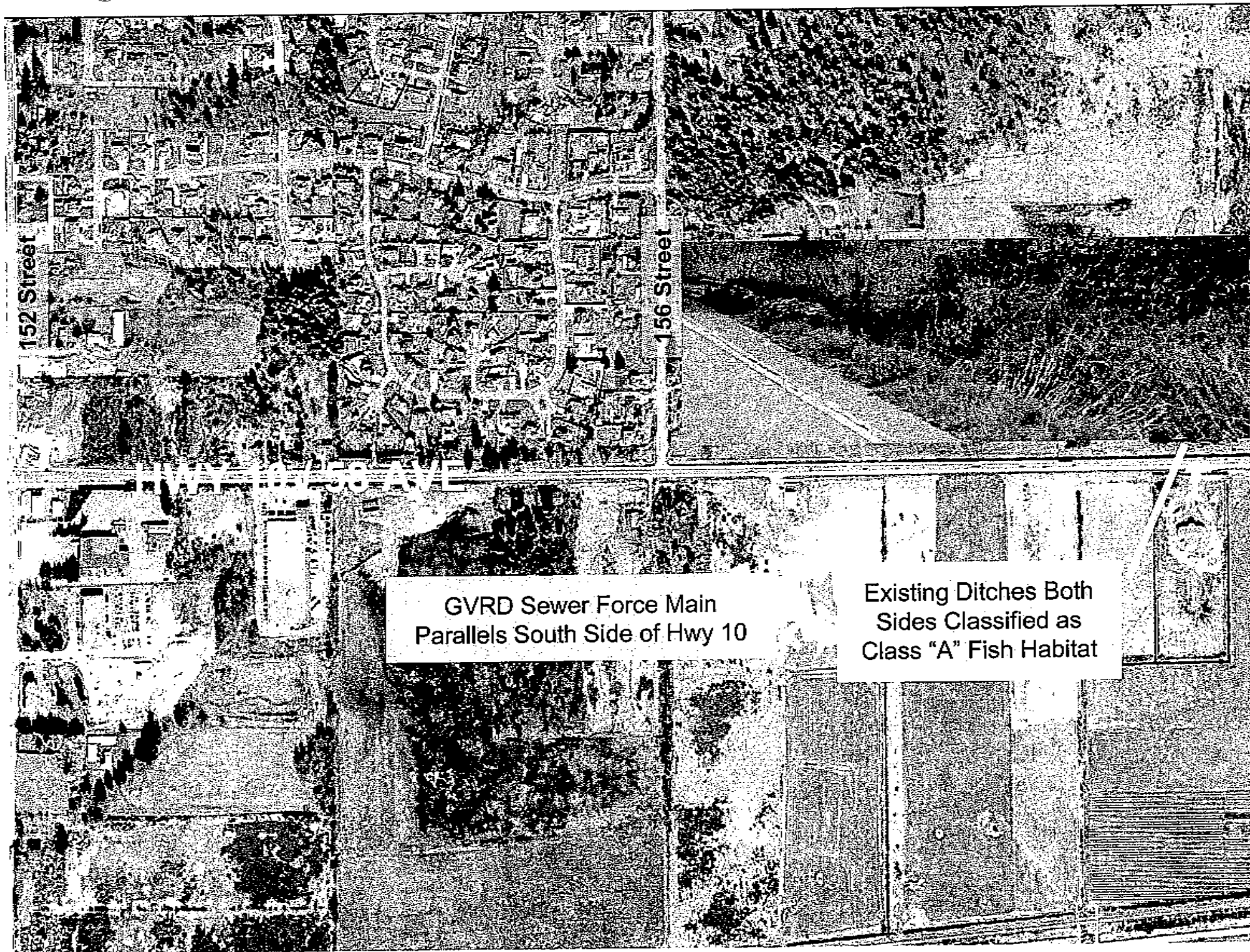


HWY 10 / 58 AVE

148 Street

152 Street

Review
Intersection
Operations



GVRD Sewer Force Main
Parallels South Side of Hwy 10

Existing Ditches Both
Sides Classified as
Class "A" Fish Habitat

Additional Design Considerations

Highway 15

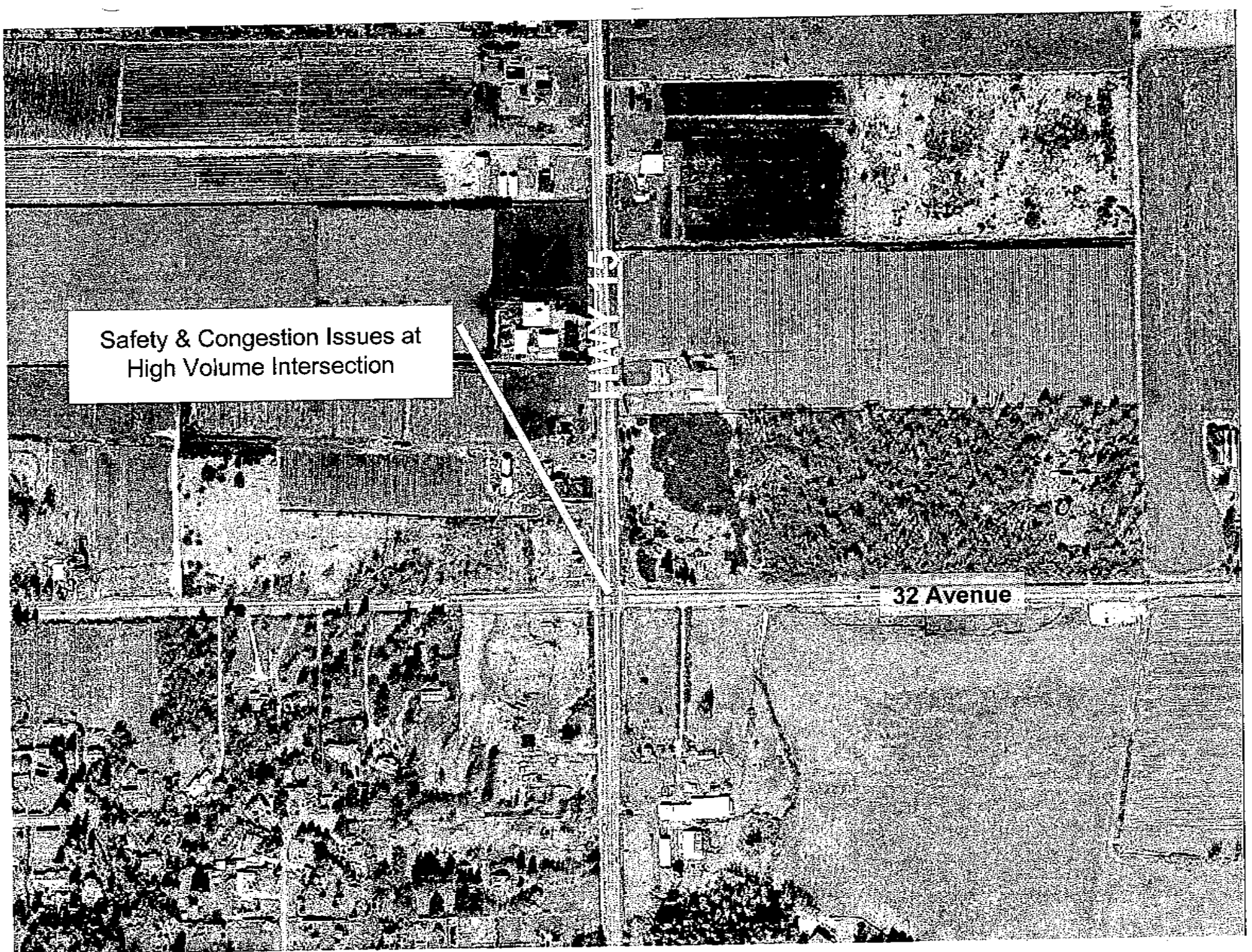


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An aerial photograph showing a road intersection. A vertical road runs through the center of the image. A horizontal road crosses it from the left. A text box on the left side of the vertical road contains the text "Safety & Congestion Issues at High Volume Intersection". A line points from this box to the intersection. The horizontal road is labeled "32 Avenue" on the right side. The surrounding area includes fields, some buildings, and trees.

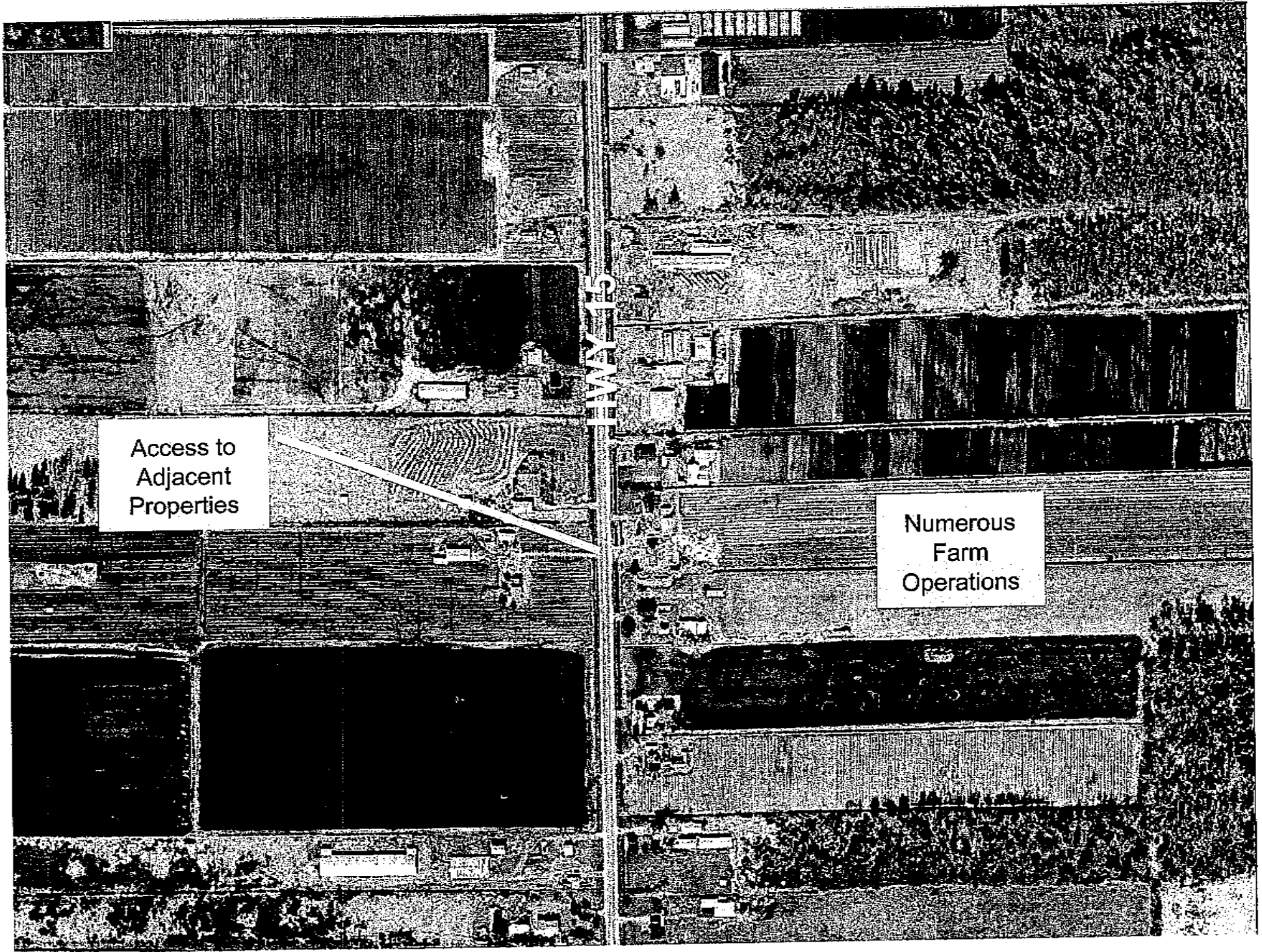
Safety & Congestion Issues at
High Volume Intersection

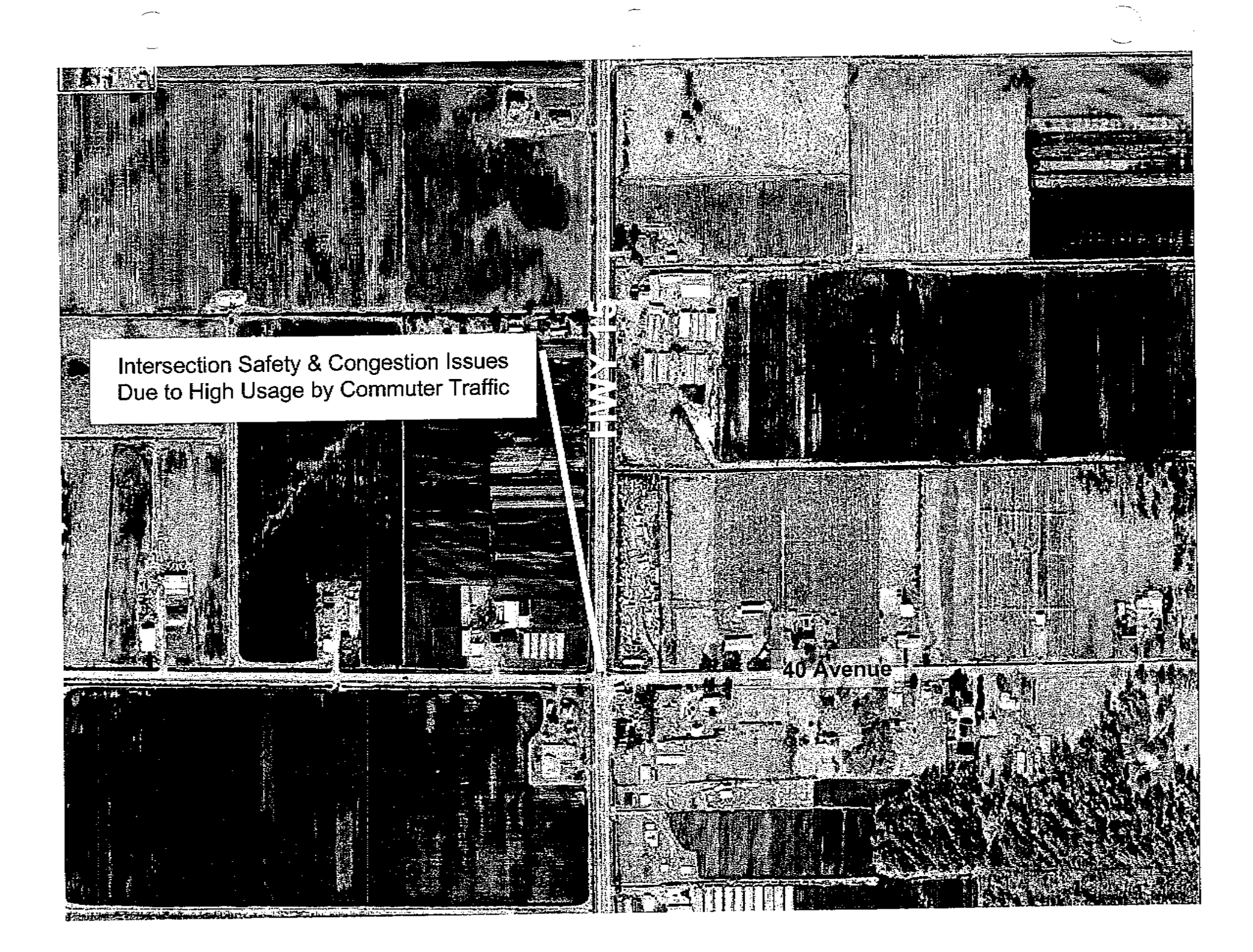
32 Avenue

HWY 15

Access to
Adjacent
Properties

Numerous
Farm
Operations



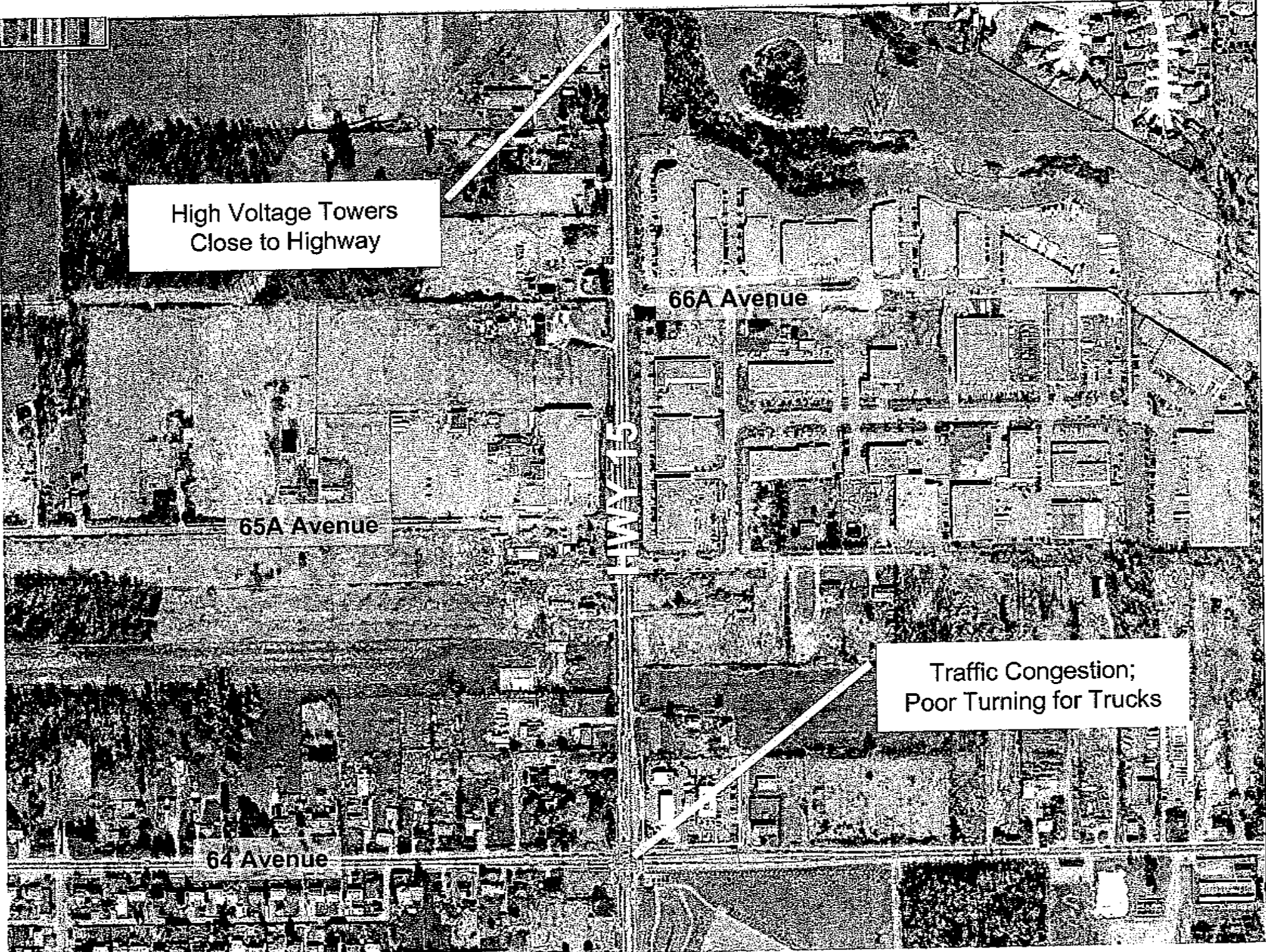
An aerial photograph showing a road intersection. A vertical road, labeled 'HWY 10' vertically, runs through the center. A horizontal road, labeled '40 Avenue', crosses it. The surrounding area is a mix of fields and some buildings. A white text box is overlaid on the left side of the image, with a line pointing to the intersection.

Intersection Safety & Congestion Issues
Due to High Usage by Commuter Traffic

HWY 10

40 Avenue





High Voltage Towers
Close to Highway

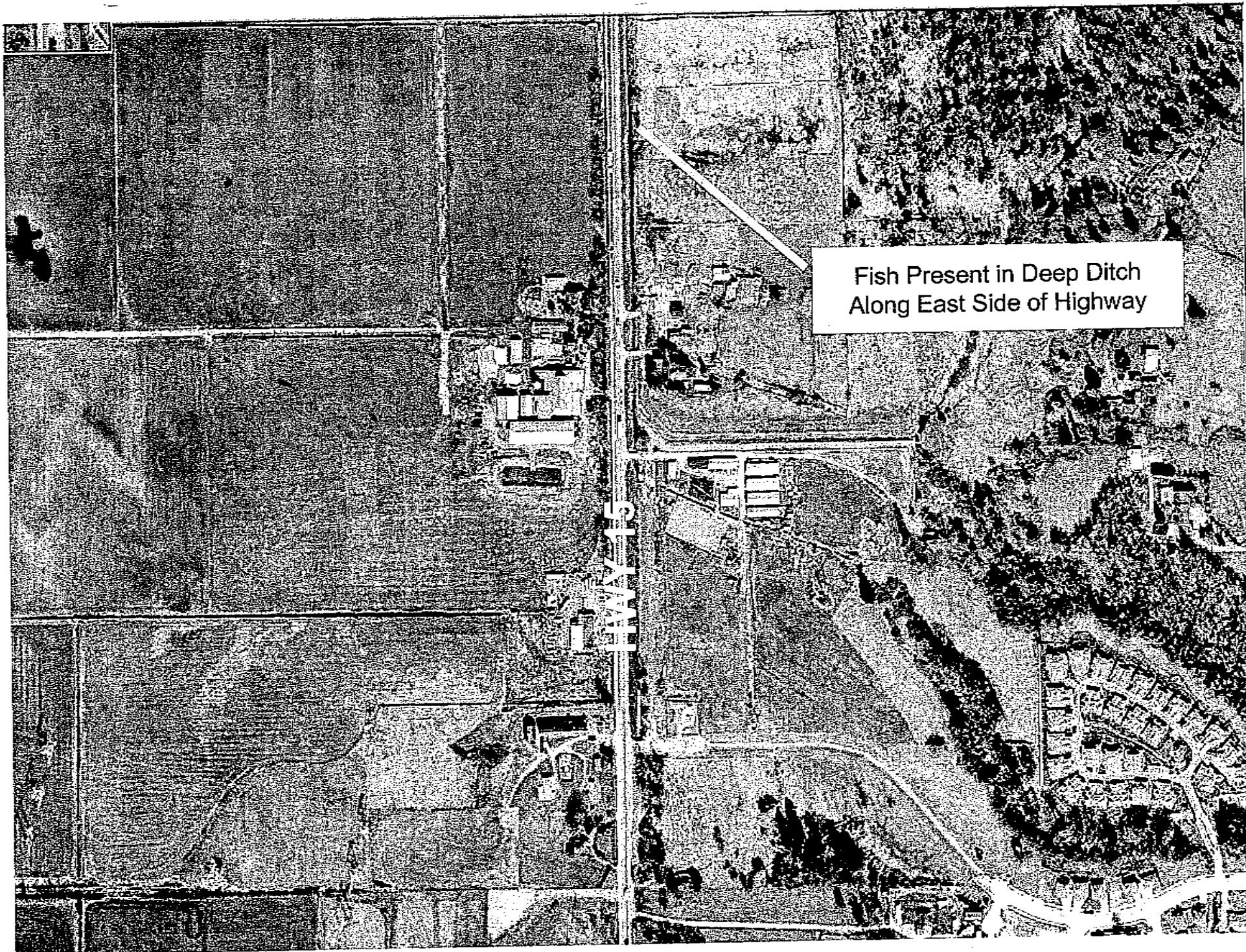
66A Avenue

65A Avenue

HWY 15

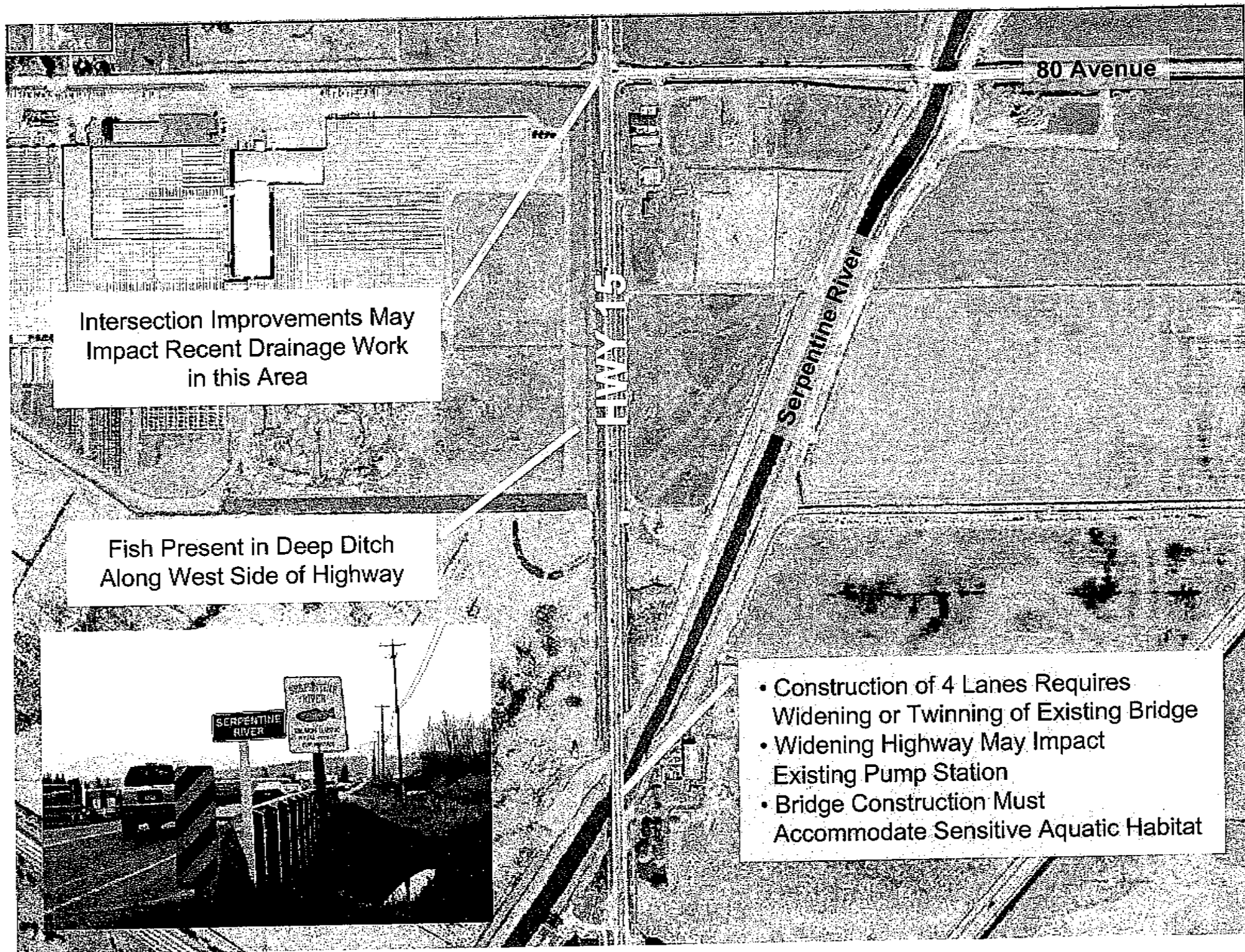
Traffic Congestion;
Poor Turning for Trucks

64 Avenue



Fish Present in Deep Ditch
Along East Side of Highway

Highway 15

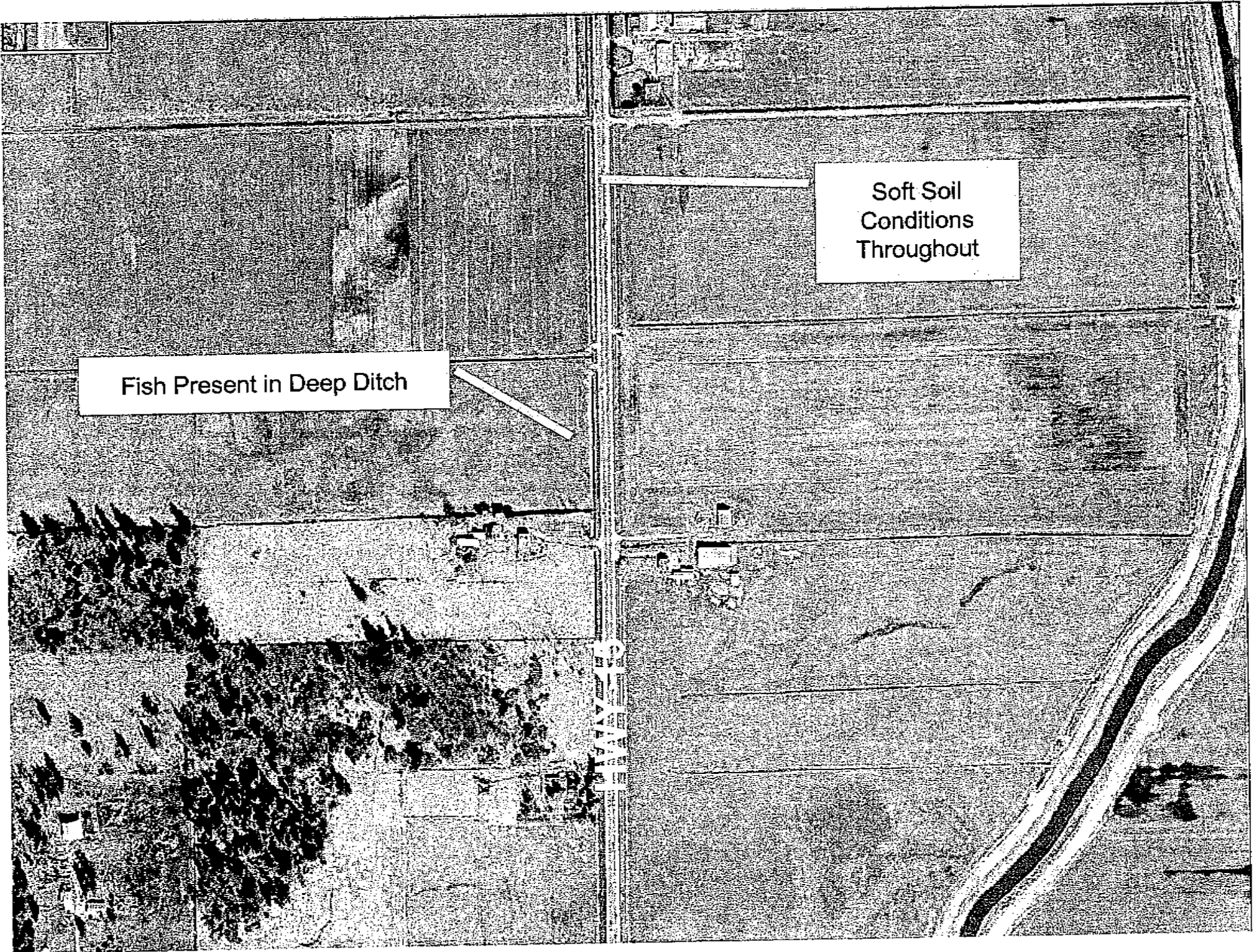


80 Avenue

Intersection Improvements May
Impact Recent Drainage Work
in this Area

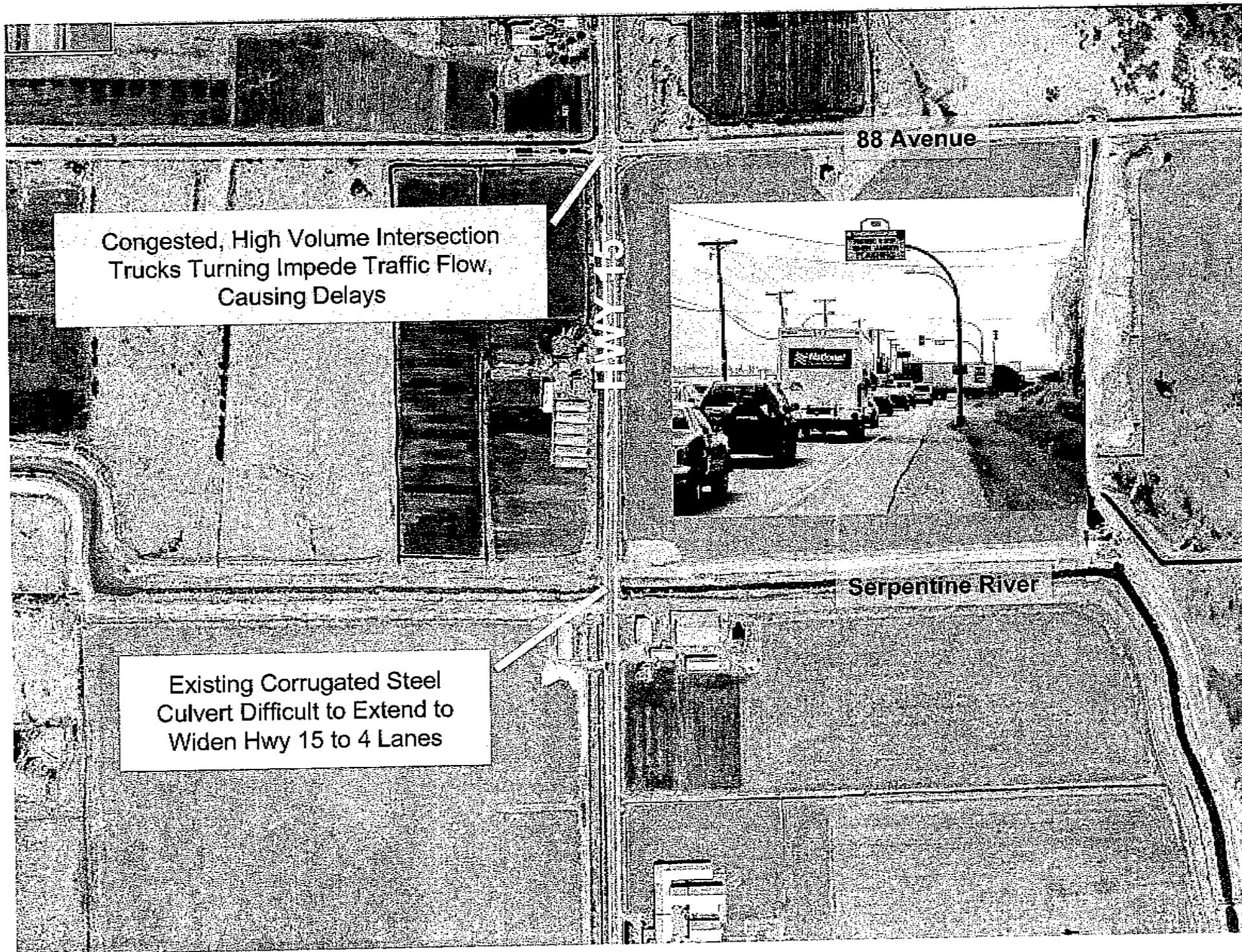
Fish Present in Deep Ditch
Along West Side of Highway

- Construction of 4 Lanes Requires
Widening or Twinning of Existing Bridge
- Widening Highway May Impact
Existing Pump Station
- Bridge Construction Must
Accommodate Sensitive Aquatic Habitat



Fish Present in Deep Ditch

Soft Soil
Conditions
Throughout



88 Avenue

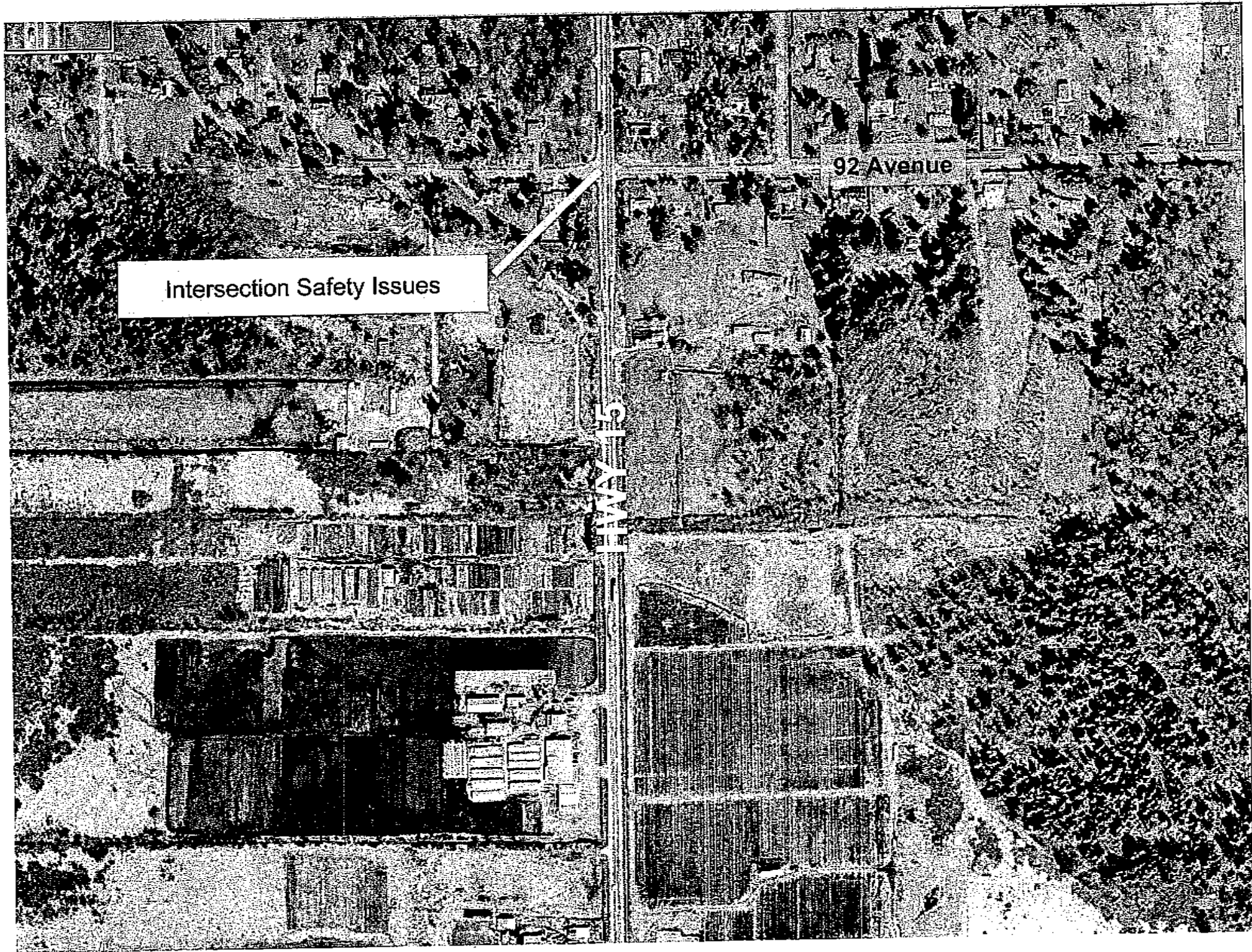
Congested, High Volume Intersection
Trucks Turning Impede Traffic Flow,
Causing Delays

HWY 15



Serpentine River

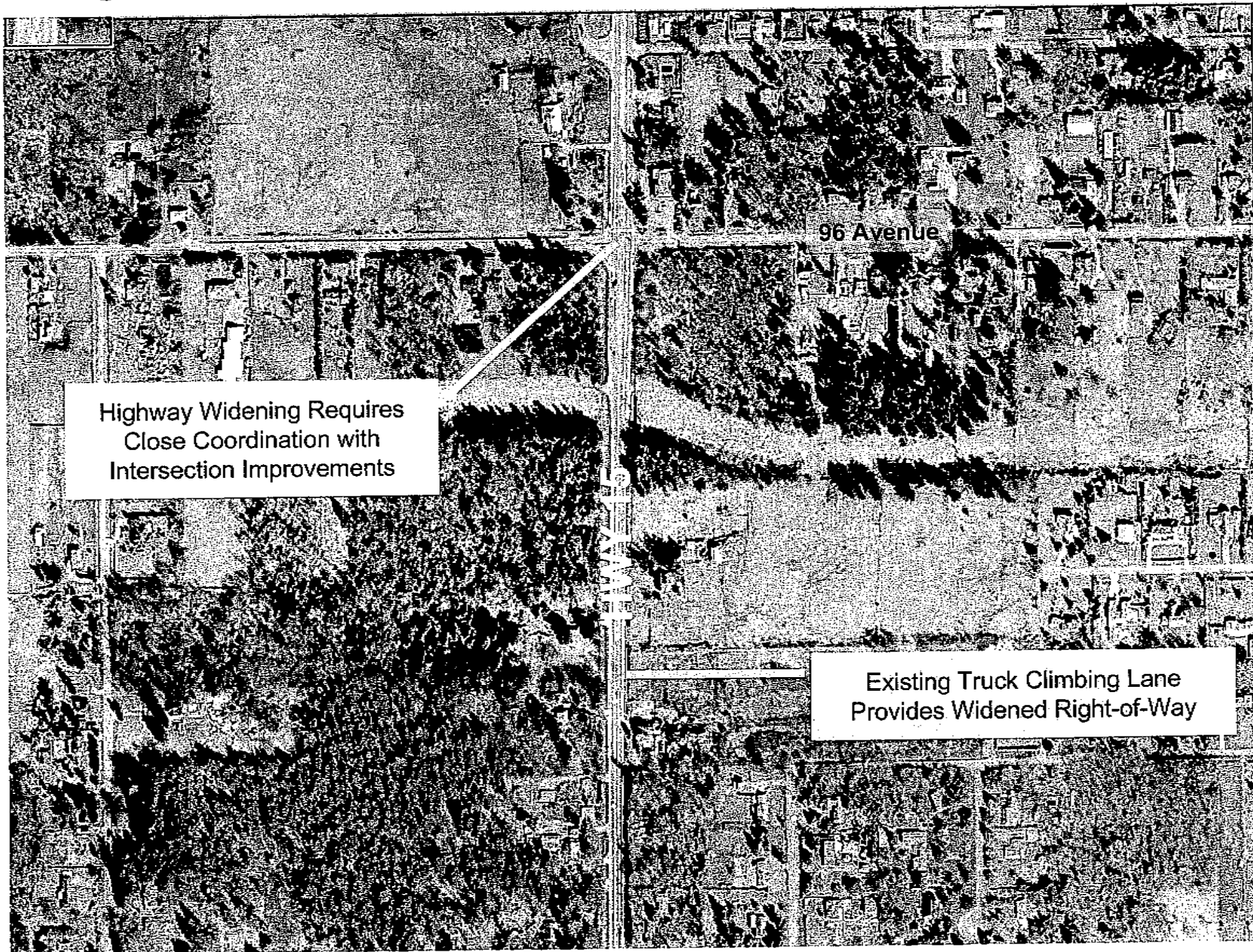
Existing Corrugated Steel
Culvert Difficult to Extend to
Widen Hwy 15 to 4 Lanes



Intersection Safety Issues

92 Avenue

HWY 15



Highway Widening Requires
Close Coordination with
Intersection Improvements

96 Avenue

Existing Truck Climbing Lane
Provides Widened Right-of-Way

