

Access Control in Commercial Districts

ITE Conference

06/29/2026



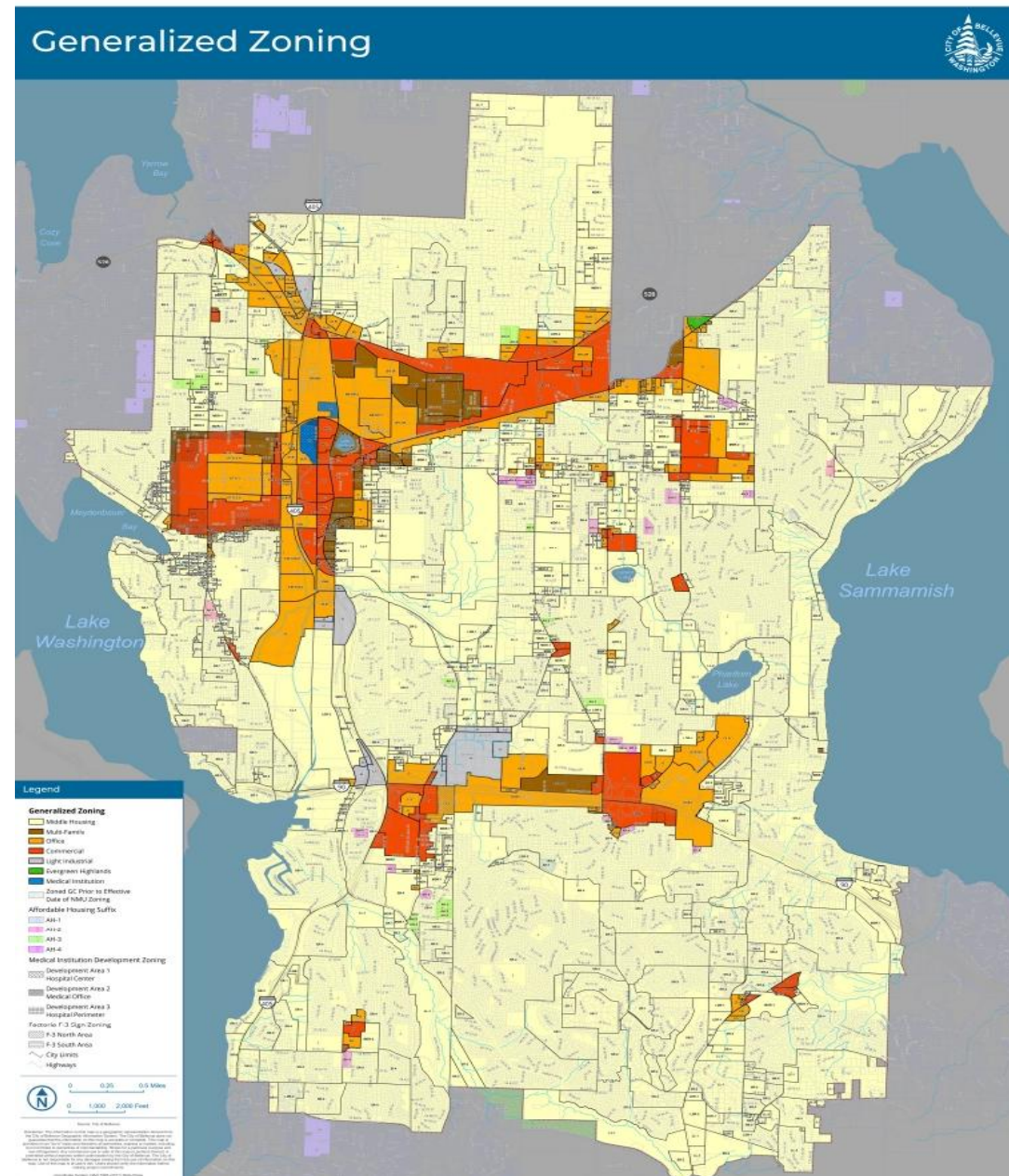
City of Bellevue - History

- Incorporated in 1953 (Residential Community- 50s/60s/70s)
- Strong Neighborhood Footprint
- Amazing Parks Systems - “City in a Park”
- Arterial Roads 20,000 to 50,000 ADT
- Population Growth 155,000 to 240,000 by 2044
- Job growth from 149,000 to 220,000 by 2044

City 5 Major Commercial Zones

1. Downtown (Daily Population near 100,000)
2. Bel-Red/Wilburton (Office/Residential/Light Rail)
3. Eastgate
4. Factoria (Retail/Office)
5. Crossroads (Retail/Residential)

Access Control in Commercial Districts



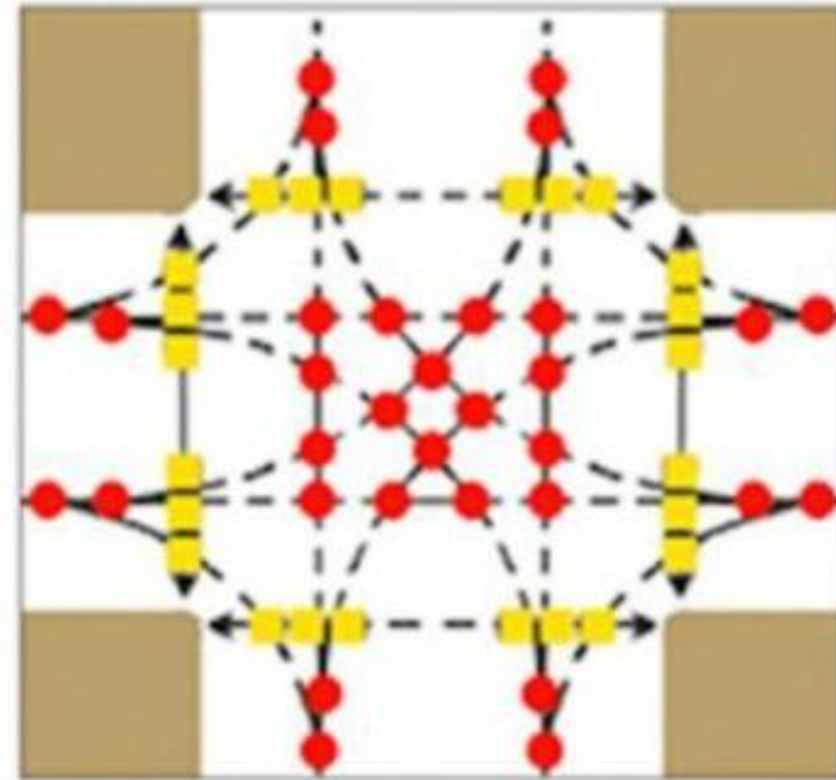
Arterial Street Design Accessibility and Mobility

Typical City Arterial Streets Contain:

- Large **Number of Driveway** to allow easy Access to Businesses
- Multiple **Conflict Points** a at Uncontrolled Driveways
- Need for Additional **Roadway Capacity** (Poor Level-of-service)

Intersection Conflict Points – Increases Collision Potential

“Conventional” Intersection



● 32 Vehicle conflicts

■ 24 Pedestrian conflicts

Goal: Limit Access – Decrease Collision Potential



Project Objectives

- Improve Safety
- Improve Capacity
- Manage Mobility – Accessibility - Convenience
- Limit Cost
- Limit Business Impacts

Access Management

- Focus of our Planning Process:
 - Eliminate Several Conflict Points
 - Consolidate and Limit Access to Signalized Intersections
 - Use of U-turns to Replace Mid-block Left turns
 - Limit Driveway to Right-in Right-out when possible

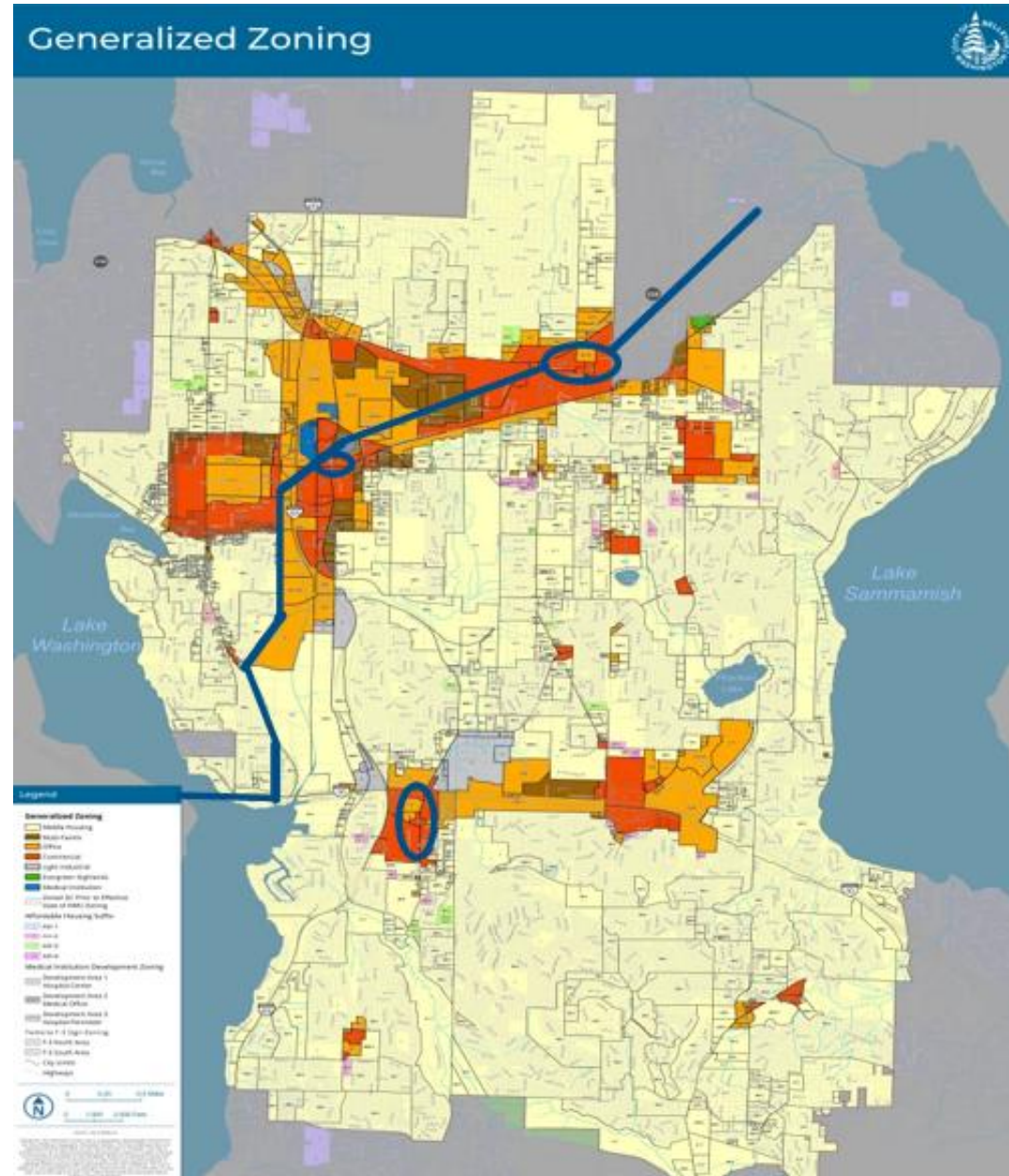
Investigate High Crash Rate Arterial Corridors?

- NE 8th Street
- Northup Way
- Factoria Boulevard

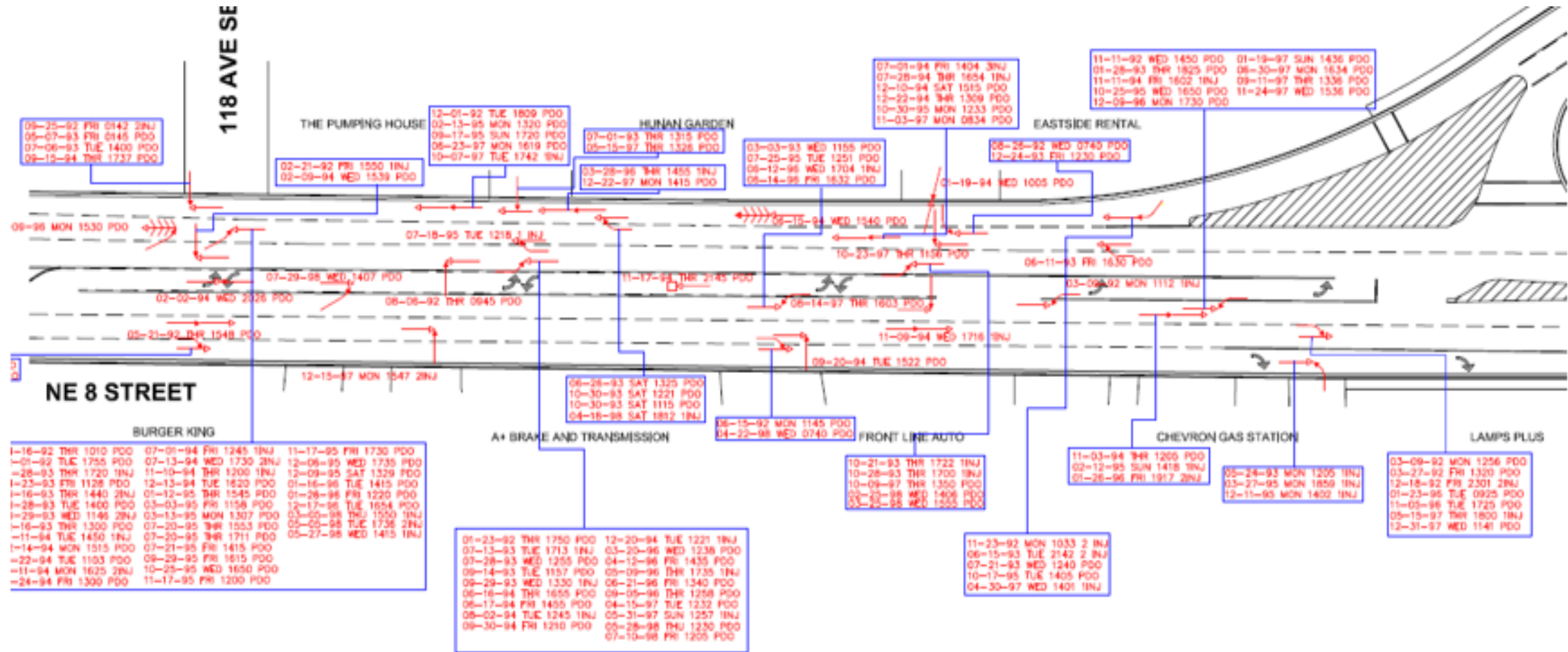
Bellevue Zoning Map with Arterial Projects

Location of Study Intersections:

- NE 8th Street
- Northup Way
- Factoria Boulevard



NE 8th St (118th to 120th Ave NE) 1991-1998 138 Crashes



BEFORE PICTURE NE 8th Street



BEFORE PICTURE NE 8th Street -50s



BEFORE PICTURE NE 8th Street -50s



Typical Two-Way Left Turn Lanes



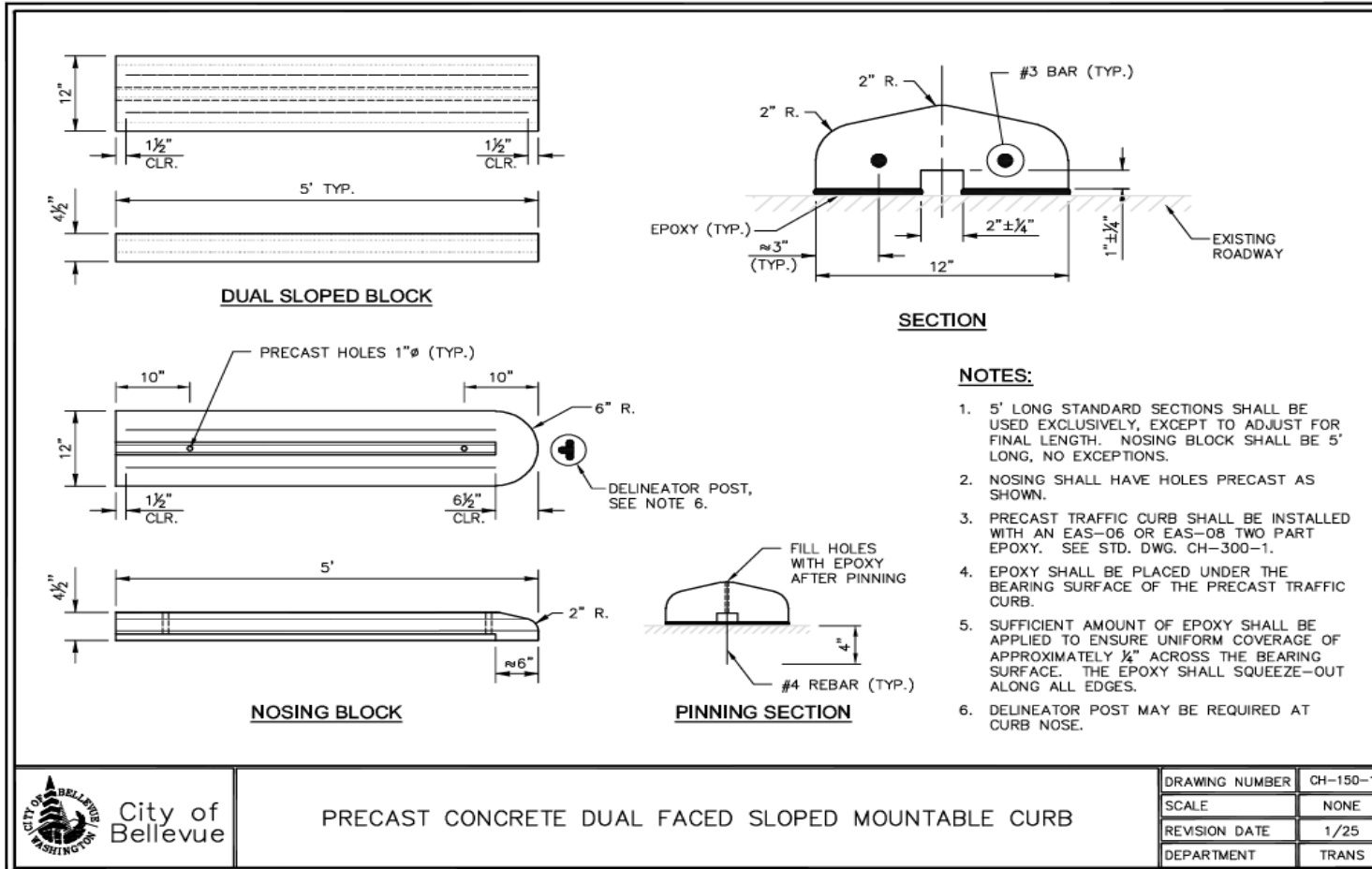
Reasons for Crashes

- Multiple Conflict Points – Left turns at Uncontrolled Driveways
- Two-Way Left Turn Lanes
- Confusion
- Travel Speeds
- High Traffic Volumes and Limited Clearance Time

NE 8th Design Criteria Objective

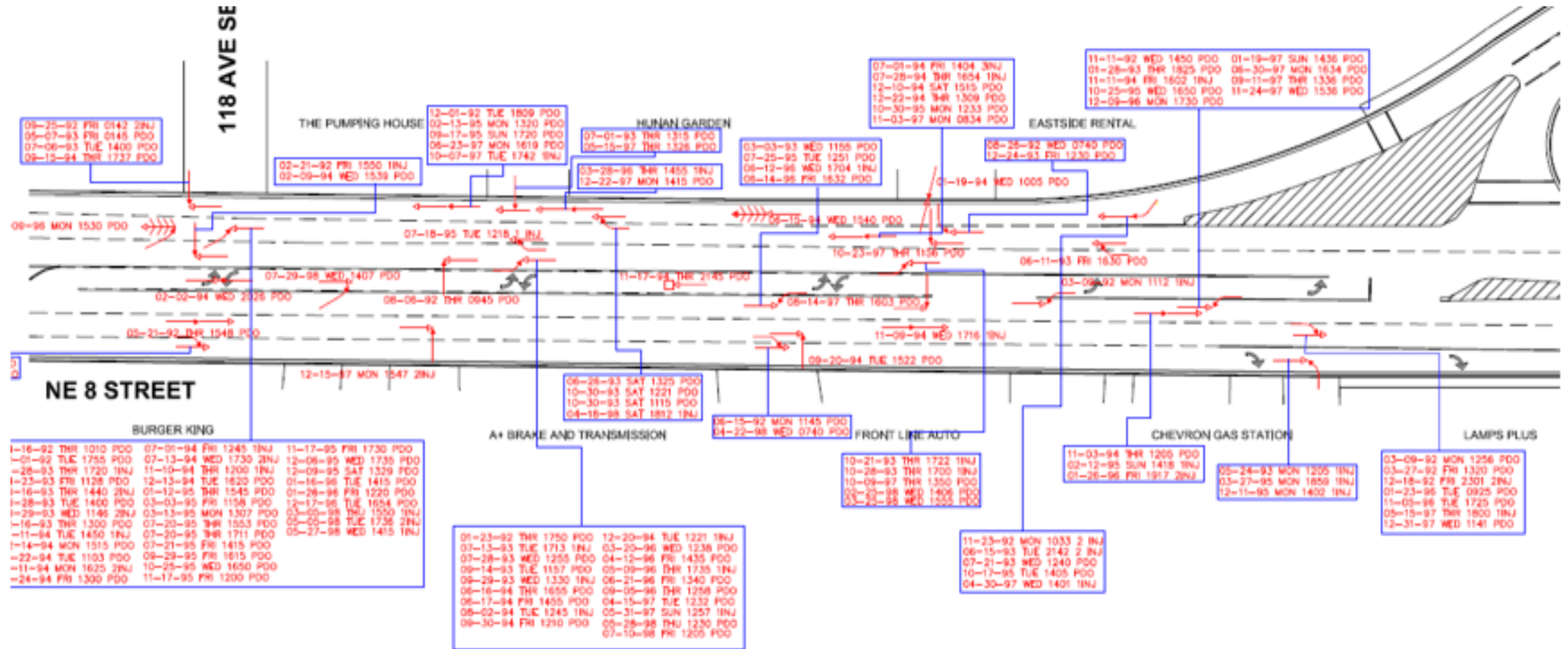
- Eliminate Two Way Left Turn Lanes and Installing C-Curb
- Relatively Inexpensive-Mostly **C-curb** Installation
- Added **One U-Turn** with roadway re-channelization
- Right-in and Right-Out Only Access

C-curb Detail



NE 8th St (118th to 120th Ave NE)

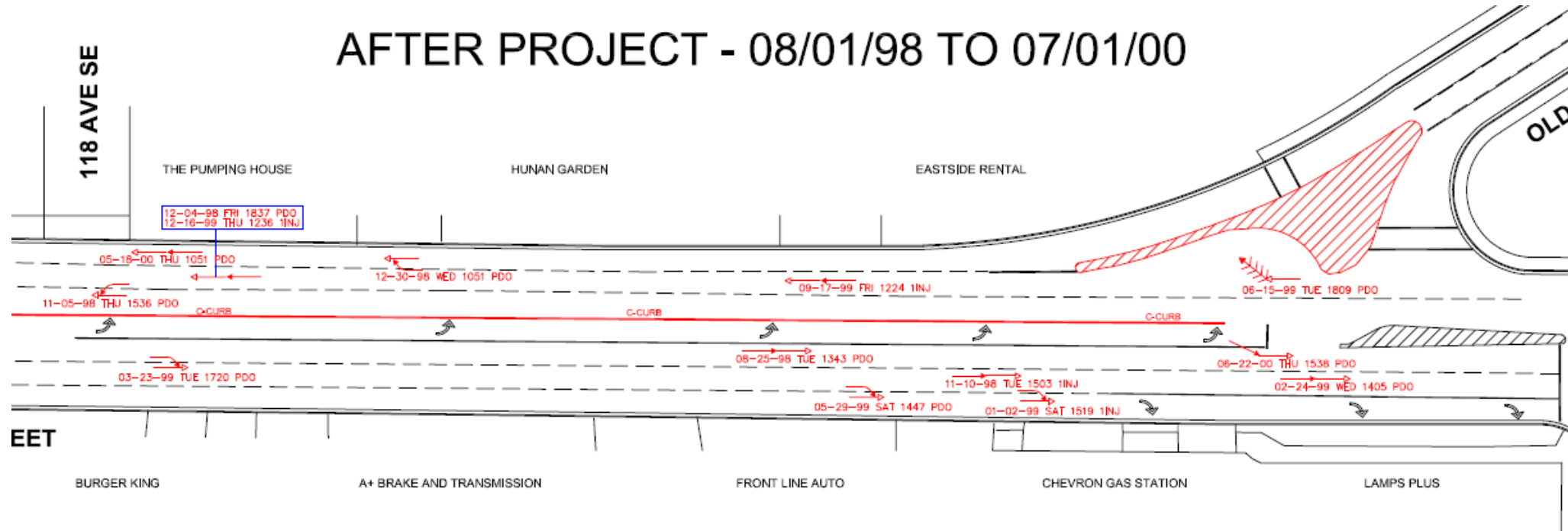
1991-1998 138 Crashes



AFTER PICTURE



After Project– 1998-2000 14 Accidents over 2 Years



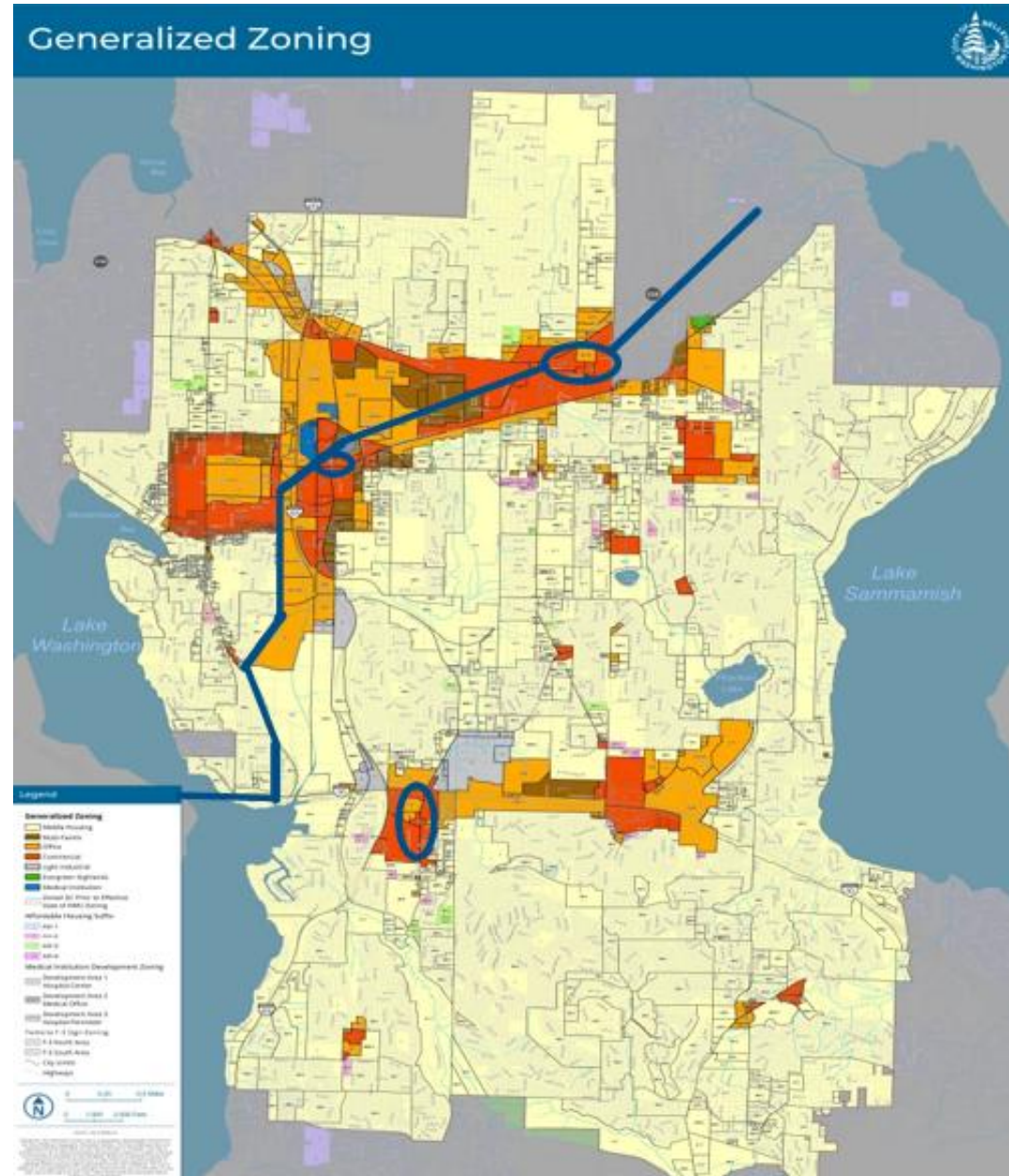
Comparing Crash Rate Before and After

- Before (1991 to 1998) 22.3 Crashes/Year
- After (1998 to 2000) 7 Crashes/Year
- Average Annual Collision Rate Reduced over 60%
- Improved Roadway Traffic Operations and Capacity

Bellevue Zoning Map with Arterial Projects

Location of Study Intersections:

- NE 8th Street
- **Northup Way**
- Factoria Boulevard

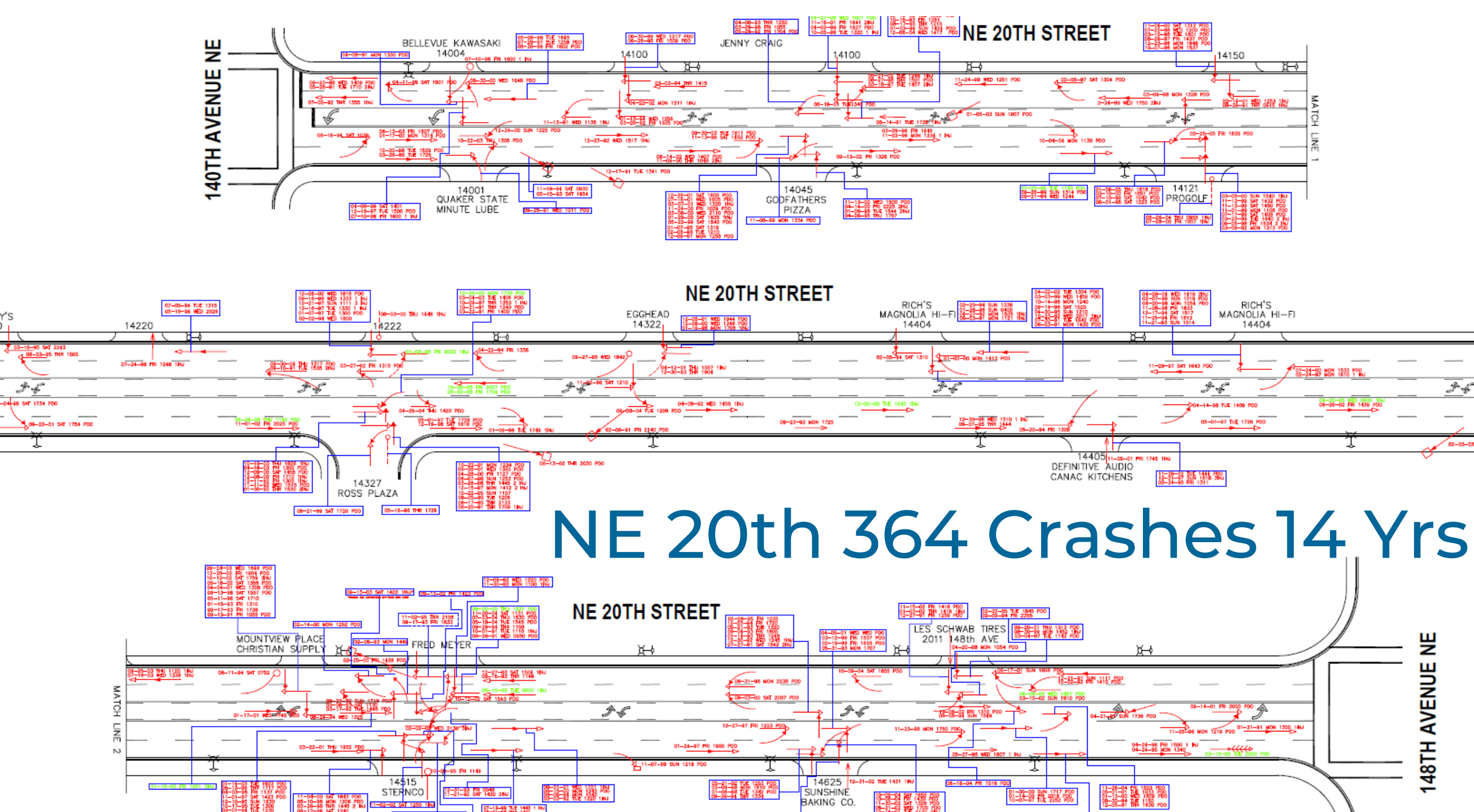


NE 20th Street - 140th to 148th



Before Project NE 20th St.





NE 20th 364 Crashes 14 Yrs

Crash Summary

January 1991 to March 2005

26 Crashes per Year

After With C-curb and Left-turn Pockets



U-Turn on NE 20th



NE 20th Design Criteria Objective

- Eliminate Two Way Left Turn Lanes -Install C-Curb
- Install One U-Turn to Improve Access to Both Sides of the Street
- Right-in and Right-Out Driveways
- Install Left-Turn Pockets at Driveways (Direct Business Access)

Comparing Crash Rate Before and After

- Before 26 Crashes/Year
- After 8 Crashes/Year
- Average Annual Collision Rate Reduced over 60%
- Relatively Inexpensive – U-turn and C-curb
- Limited Impact to Local Businesses
- Improved Roadway Traffic Operations

[illegible]

- NE 8th Street
- Northup Way
- **Factoria Boulevard**

Before Factoria Blvd



Factoria Blvd - Year 2000

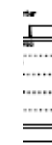


Factoria Blvd Improvements

- Eliminate Two Way Left Turn Lanes- Raise Median Islands
- Right-in and Right Out Only Access at Driveways
- Installed 5-U-Turns with 2-U-turns at Mall Entrance
- Restricted Left-Turn Access To 5-Signalized Intersections
 - SE 36th/Loehmann's Plaza/SE 38th/Factoria Mall Driveway/SE 41st

Scale 1" = 40'

Scale 1" = 40'



	Rear-End Collision		Moving Vehicle/Fixed Object
	Right Angle		Vehicle/Pedestrian
	Left Turn Collision		Bicycle
	Right Turn Collision		Back-up Collision
	Side Swipe Collision		Head-on Collision
	Out of Control		

% REDUCTION WITH PROJECT - 51

Factoria Blvd. Correctable Crashes



After Construction



Comparing Crash Rate Before and After

- Before 49 Crashes/Year
- After 15 Crashes/Year
- Average Annual Collision Rate Reduced almost 50%
- Improved Roadway Traffic Operations and Capacity
- Most Importantly Sever Crashes Reduced – T-Bone

Key Elements of Arterial Access

- Safety- Less severe collisions and eliminated T-bone type
- Capacity Increased (Factoria Blvd increased from 32K ADT to 39K ADT)
- Maintained Mobility – Accessibility - Convenience
- Minimized Cost (Scalable with new C-Curb, U-turns, or Medians)
- Minimized Business Impacts

Lessons Learned

- Access Control can address Multiple Objectives
 - Reducing Crashes
 - Increasing Roadway Capacity
 - Address Business Access Needs
 - Compatible with Future Transportation Modes
- Access Control is Scalable by Size and Cost
- Access Control Can Save Insurance and Accident Costs
- Access Control Improve Safety While Approving Mobility

Questions and Acknowledgements

SPECIAL THANKS:

Brittany Quan, PE City of
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Associates



Factoria Blvd. U-turns

All Properties treated Equally

Bulb-out at intersection for shorter pedestrian crossings

Lead Pedestrian crossing signal





