

NW SALTZMAN ROAD

(NW Cornell Road to NW Thompson Road)

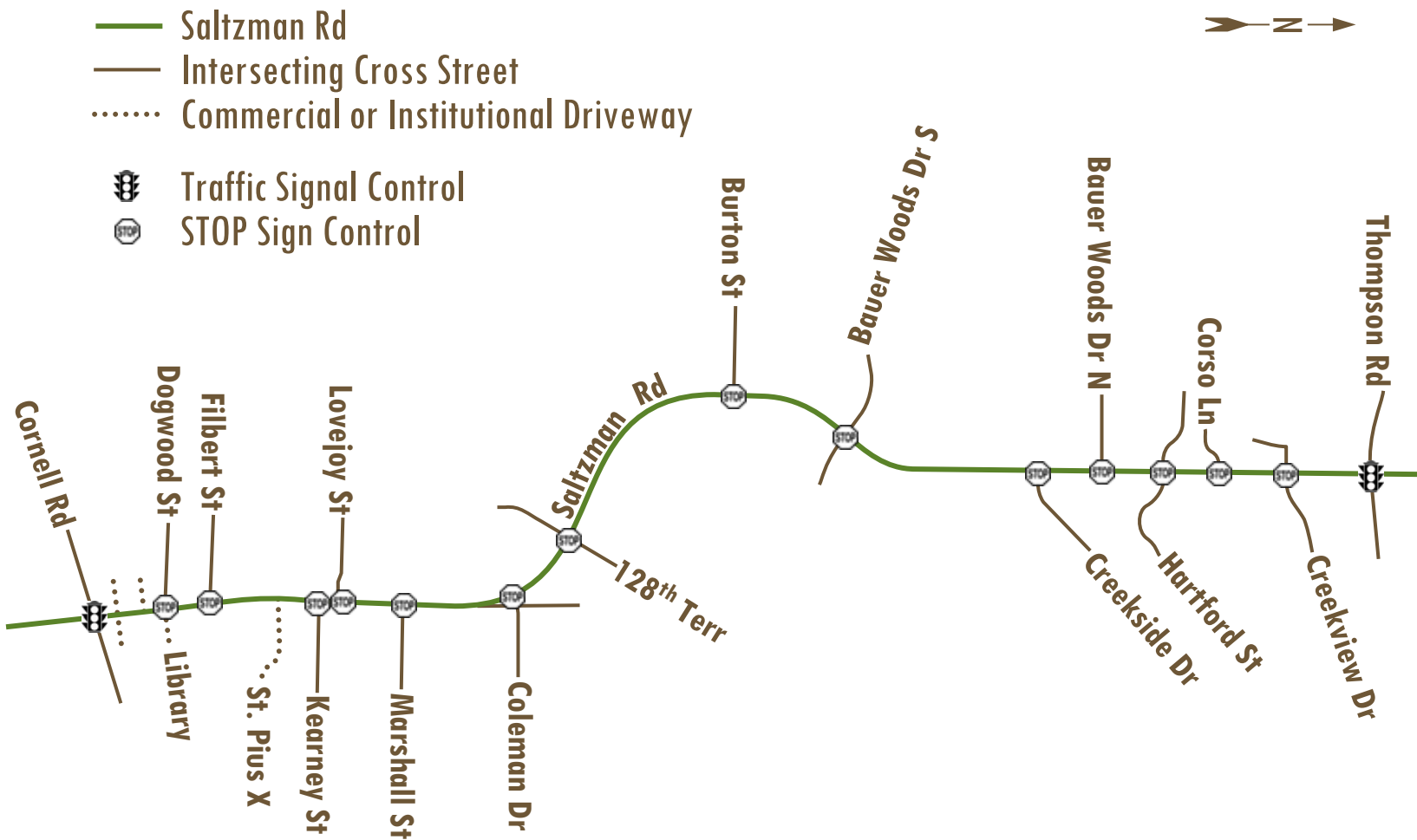
TRAFFIC ANALYSIS

Project Focus Group Meetings
November 14 and December 13, 2007

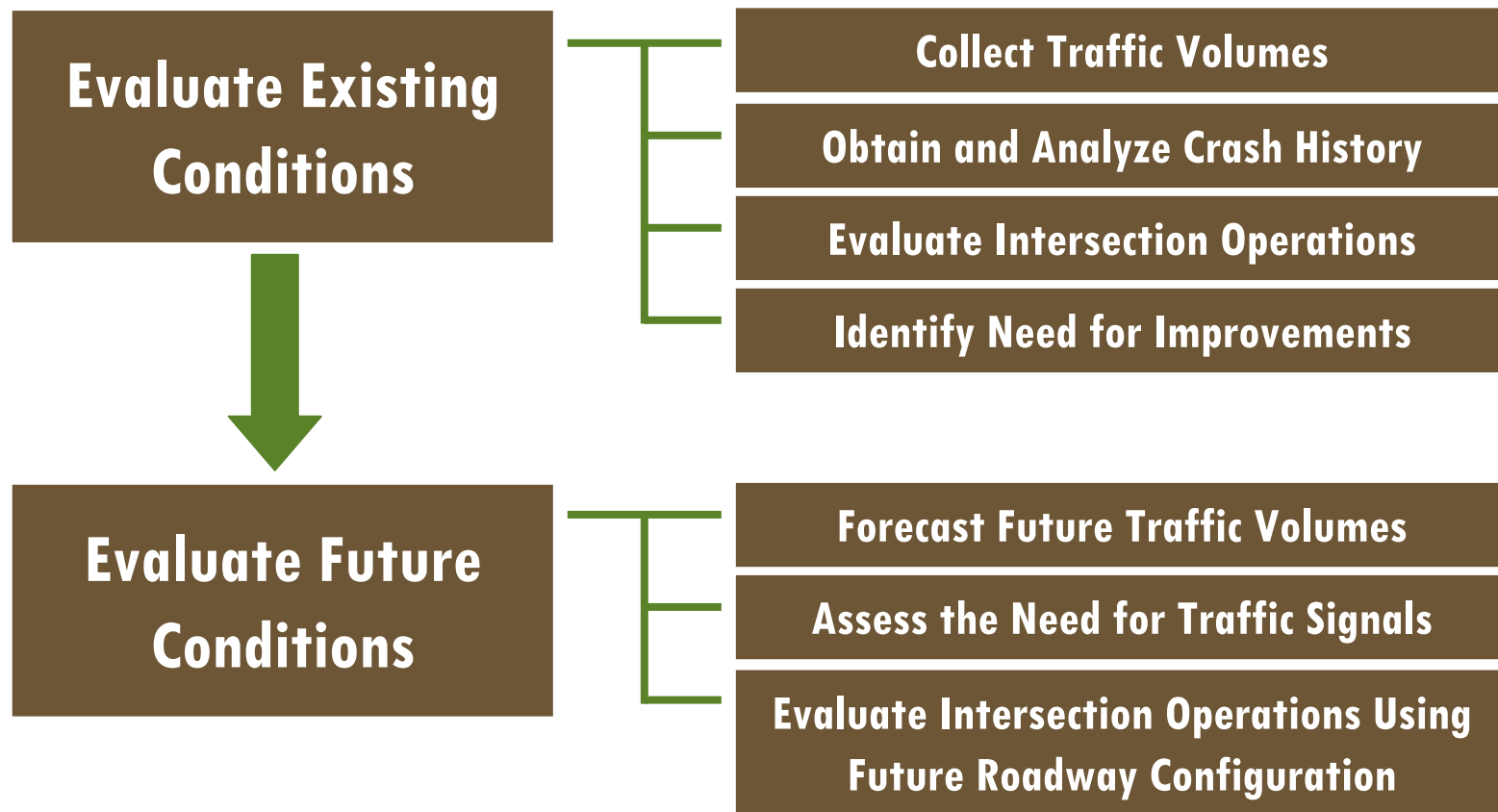
Presentation Topics

- **Overview of Transportation Analysis**
 - Study Area
 - Existing Conditions
 - Future Conditions
- **Summary of Operations**
 - Existing and Future Conditions
 - Lane Configurations and Traffic Control
 - Traffic Volumes and Operations

Study Area



Overview of Analysis Process



Existing Data Collection

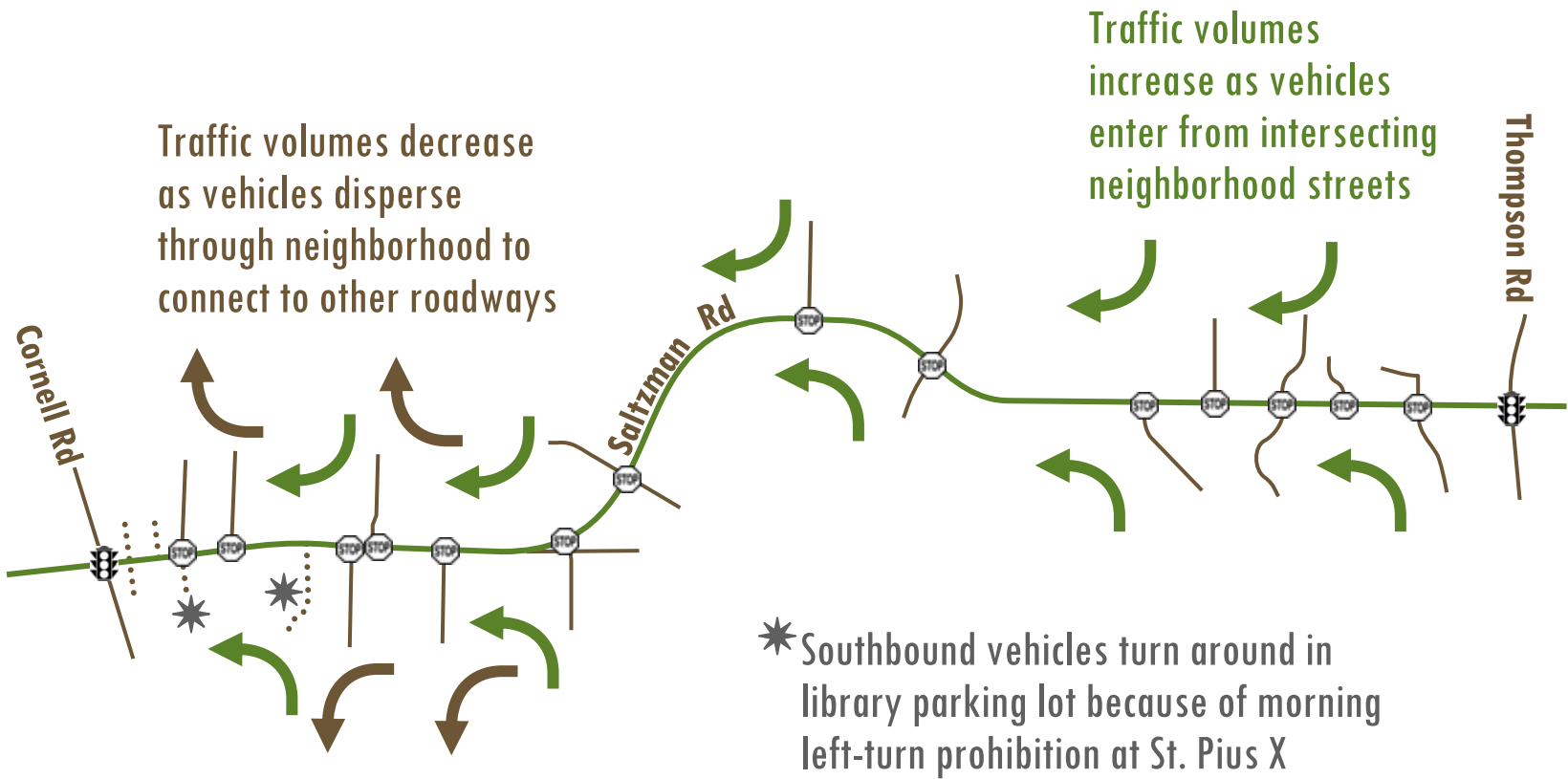
- **Traffic Counts conducted in March 2007**
 - AM and PM peak period turning movements at all intersections
 - 24-hour vehicle classification counts
 - Saltzman Road north of Cornell Road
 - Saltzman Road north of Burton Road
 - Saltzman Road south of Thompson Road
- **Crash Data from 2004 through 2006**

General Traffic Characteristics

- **Average Daily Traffic (Year 2007)**
 - Saltzman Road north of Cornell Road = 13,200 vehicles
 - Saltzman Road north of Burton Road = 10,800 vehicles
 - Saltzman Road south of Thompson Road = 8,600 vehicles
- **Peak Hours**
 - AM Peak from 7:30 to 8:30 a.m.
 - PM Peak from 5:00 to 6:00 p.m.

Travel Patterns – AM Peak Hour

← **Peak Travel Direction - Southbound**



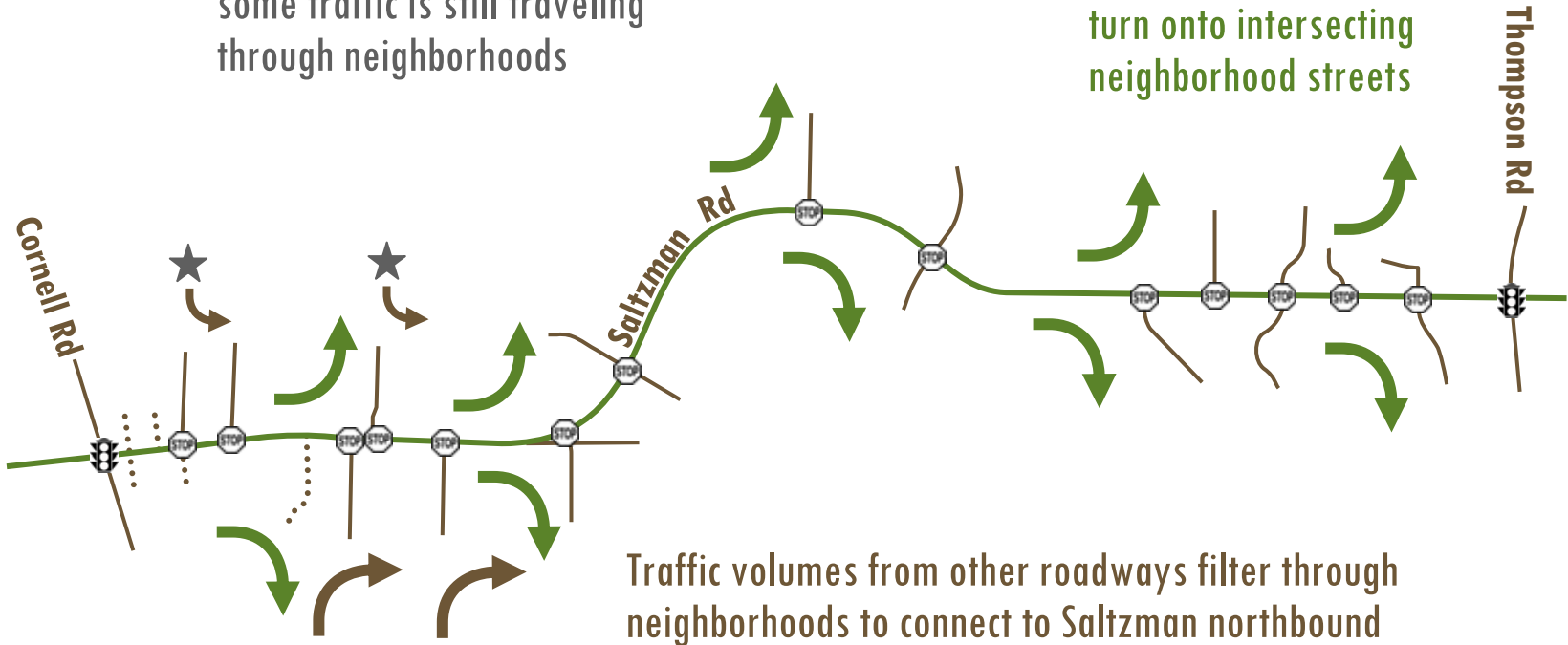
Travel Patterns – PM Peak Hour

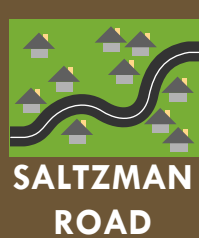
Peak Travel Direction - Northbound 



★ Despite turn prohibitions, some traffic is still traveling through neighborhoods

Traffic volumes decrease as vehicles turn onto intersecting neighborhood streets



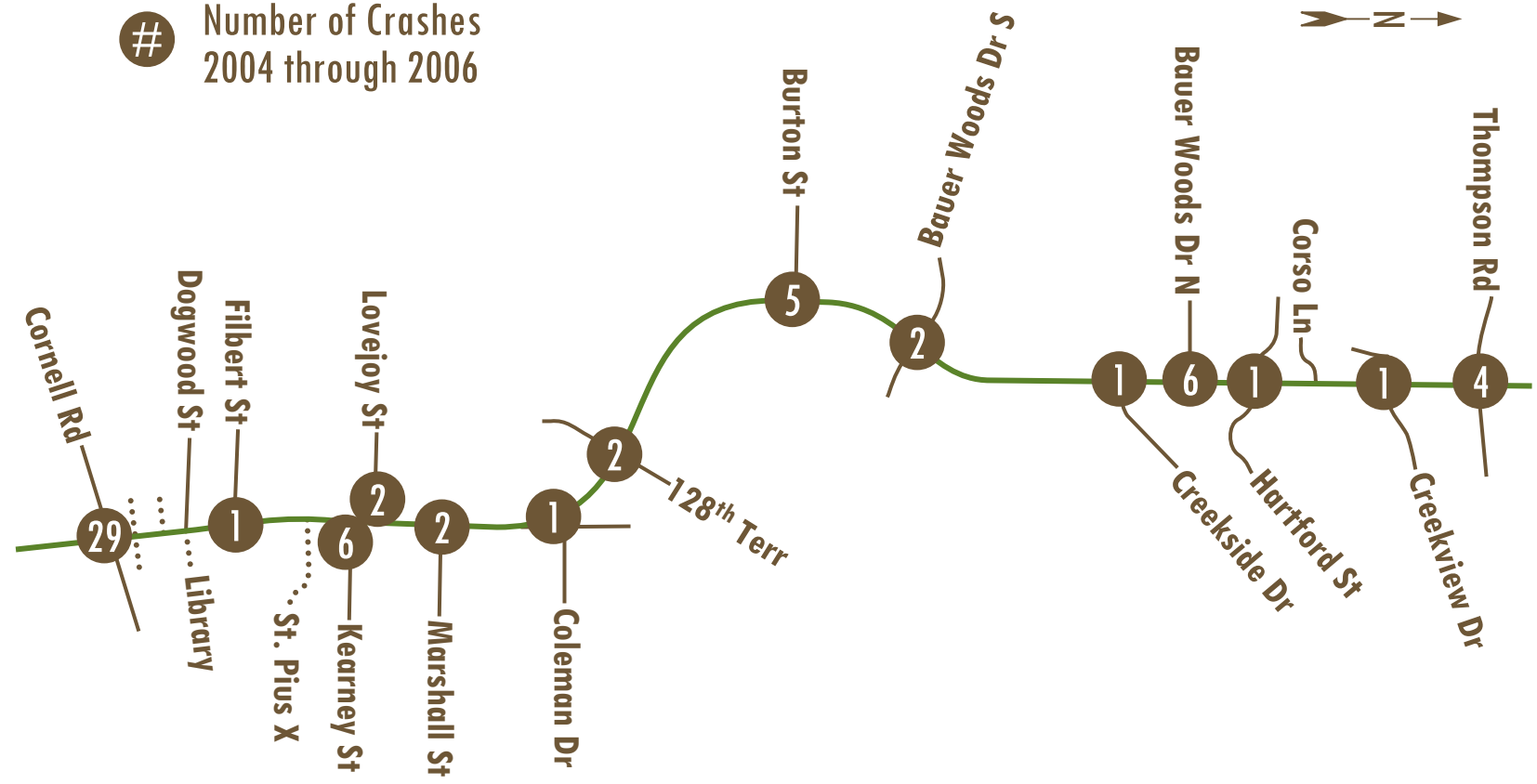


Crash Data Summary

- 3-year analysis period (2004 - 2006)
- 66 crashes in study area corridor (down from 78 in 2002-2004)
 - 0 fatalities
 - 26 crashes resulting in injuries
 - 40 property damage only crashes
 - 0 bicycle/pedestrian crashes
- 1 priority location based on County evaluation
 - Saltzman Road at Cornell Road (2004-2006 Ranking 146)
 - 29 total crashes with 9 crashes resulting in injuries
 - Crash types included Angle (15), Rear End (11), Sideswipe (2), Fixed Object (1)

Intersection Crash Locations

Number of Crashes
2004 through 2006



Future Traffic Forecasts

- Year 2030 Traffic Forecasts
- Based on
 - Existing Traffic Counts (2007)
 - Base Year (2005) Calibrated Traffic Model
 - Future Year (2030) Traffic Model
 - Includes North Bethany Development
- Washington County model is subarea of regional model

How does the regional model work?



- Land Use — Type (housing, employment), how much, when and where
- Person Trips — Number and purpose of trips generated by land uses
- Begin & End — Trip beginning (origin) and ending (destination)
- Travel Mode — How the trip will be made
- Route Choice — Which facilities the trip will use

Forecast Traffic Growth

AM Peak Hour

Location	North of Cornell Rd	North of Marshall St	North of Burton St	South of Thompson Rd
2007				
Northbound	360	345	265	225
Southbound	645	925	640	395
Total	1005	1270	905	620
2030				
Northbound	550	515	390	345
Southbound	915	1350	1010	775
Total	1465	1865	1400	1120
% Growth (2007 – 2030)				
Northbound	53%	49%	47%	53%
Southbound	42%	46%	58%	96%
Total	46%	47%	55%	81%

Forecast Traffic Growth

PM Peak Hour

Location	North of Cornell Rd	North of Marshall St	North of Burton St	South of Thompson Rd
2007				
Northbound	810	810	600	430
Southbound	510	500	375	315
Total	1320	1310	975	745
2030				
Northbound	1130	1205	975	765
Southbound	750	745	540	490
Total	1880	1950	1515	1255
% Growth (2007 – 2030)				
Northbound	40%	49%	63%	78%
Southbound	47%	49%	44%	56%
Total	42%	49%	55%	68%

Evaluating Need for Future Traffic Signals

- **8 Warrants for Evaluating Need**
(from the Manual on Uniform Traffic Control Devices)
- **3 Warrants Based Solely on Traffic Volumes**
 - Warrant 1 — 8-Hour Traffic Volumes
 - Warrant 2 — 4-Hour Traffic Volumes
 - Warrant 3 — Peak Hour Traffic Volumes
- **Washington County Requirements**
 - Must meet at least 4-hour and preferably 8-hour warrants
 - Must exclude right turns from calculation if a right-turn lane can be provided and left-turn queues do not interfere with its function

Signal Warrant Evaluation

- All intersections checked and three identified for more detailed warrant evaluation
- Pedestrian volumes are too low to trigger signal warrants

Saltzman Road and 128th Terrace – **WARRANTS MET**

Warrant	Year 2007	Year 2030
8-Hour	No	Yes
4-Hour	No	Yes
Peak Hour	No	Yes

Note: Right turns have been included in the calculations because left-turn lane is very short and queues interfere with right-turn movemtn.

Signal Warrant Evaluation

Saltzman Road and Burton Street – **WARRANTS NOT MET**

Warrant	Year 2007	Year 2030
8-Hour	No	No
4-Hour	No	No
Peak Hour	No	Yes

Note: Right turns have been excluded from the calculations because a separate lane can be provided for left turns.

Saltzman Road and Dogwood/Combined Driveways – **WARRANTS NOT MET**

Warrant	Year 2007	Year 2030
8-Hour	No	No
4-Hour	No	No
Peak Hour	No	Yes

Note: Right turns have been excluded from the calculations because a separate lane can be provided for left turns.

Proposed Future Improvements

- **Saltzman Road**
 - Minimum 3-Lane cross-section with separate left-turn lane provided at all intersections
 - 5-lane cross-section from Cornell through Dogwood
- **Cross Streets**
 - Some turn lanes provided to improve operations
 - Signal installed at 128th Terrace as part of project
 - Driveway from Walgreens to Saltzman closed

Intersection Evaluation

- **Signalized Intersections**
 - Based on Volume-to-Capacity (V/C) Ratios
 - Based on Level of Service (LOS)
 - Washington County Standards
 - V/C Ratio less than 1.0
- **Unsignalized Intersections**
 - Also Based on LOS and V/C Ratios
 - Washington County Standards
 - V/C Ratio less than 1.0
 - LOS E or better desirable

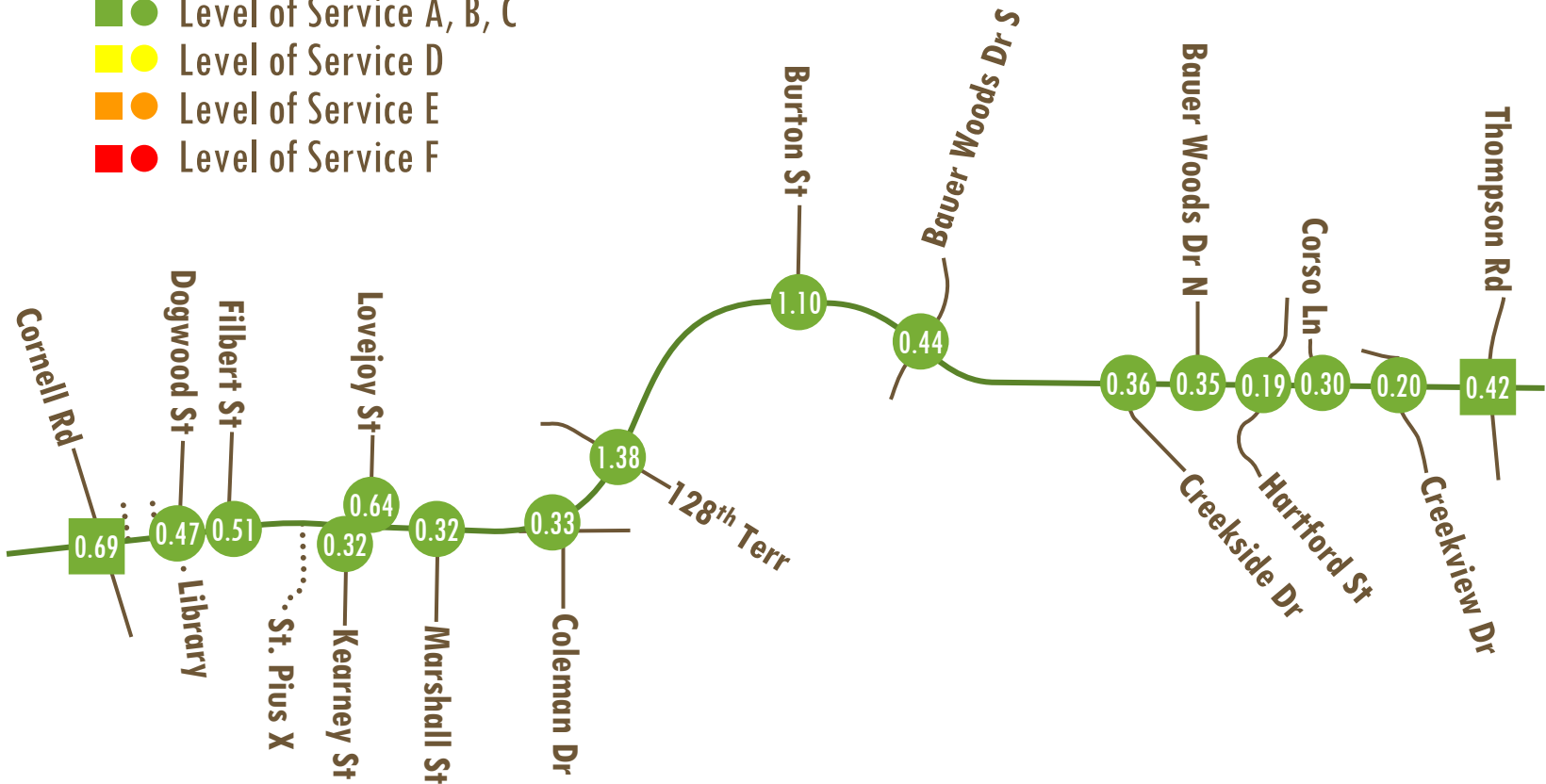
Definitions:

A volume-to-capacity (V/C) ratio compares traffic volume demand to intersection capacity. A V/C ratio between 0.0 and 1.0 indicates that volume is less than capacity. When the V/C ratio is low, nearer to 0.0, traffic conditions are generally free flowing with little congestion and low delays for most intersection movements. As the V/C ratio approaches 1.0, traffic becomes more congested and unstable with longer delays.

Level of Service (LOS) reflects the delays experienced by vehicles traveling through an intersection. Six standards have been established ranging from LOS A, where traffic is relatively free flowing, to LOS F, where the street system is totally saturated and traffic movement is very difficult to negotiate.

2007 Intersection Operations – AM Peak Hour

- 0.00 Signalized V/C Ratio (Overall Intersection)
- 0.00 Unsignalized V/C Ratio (Worst Movement)
- Level of Service A, B, C
- Level of Service D
- Level of Service E
- Level of Service F



2007 Intersection Operations – PM Peak Hour

0.00 Signalized V/C Ratio (Overall Intersection)

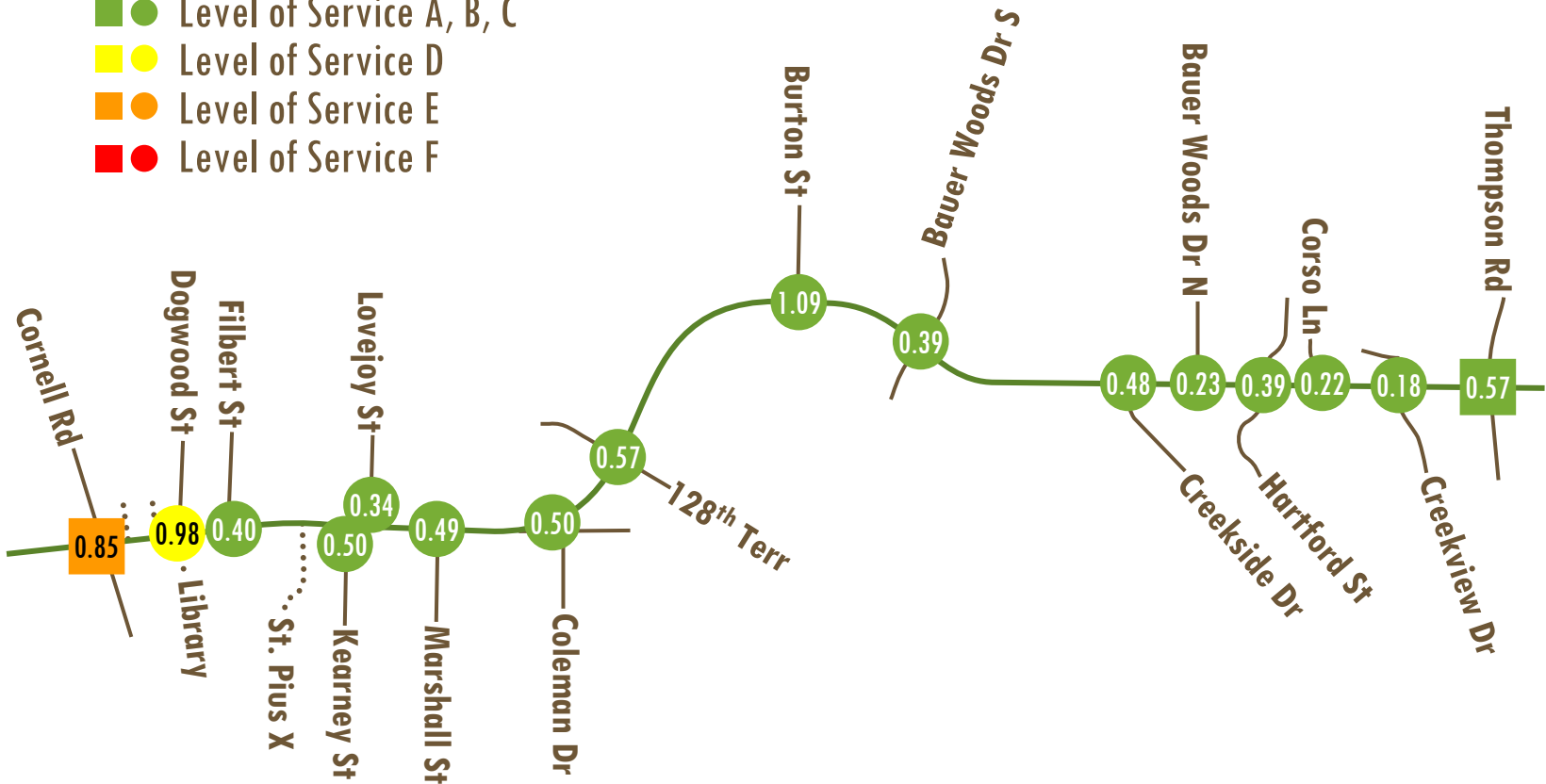
0.00 Unsignalized V/C Ratio (Worst Movement)

Level of Service A, B, C

Level of Service D

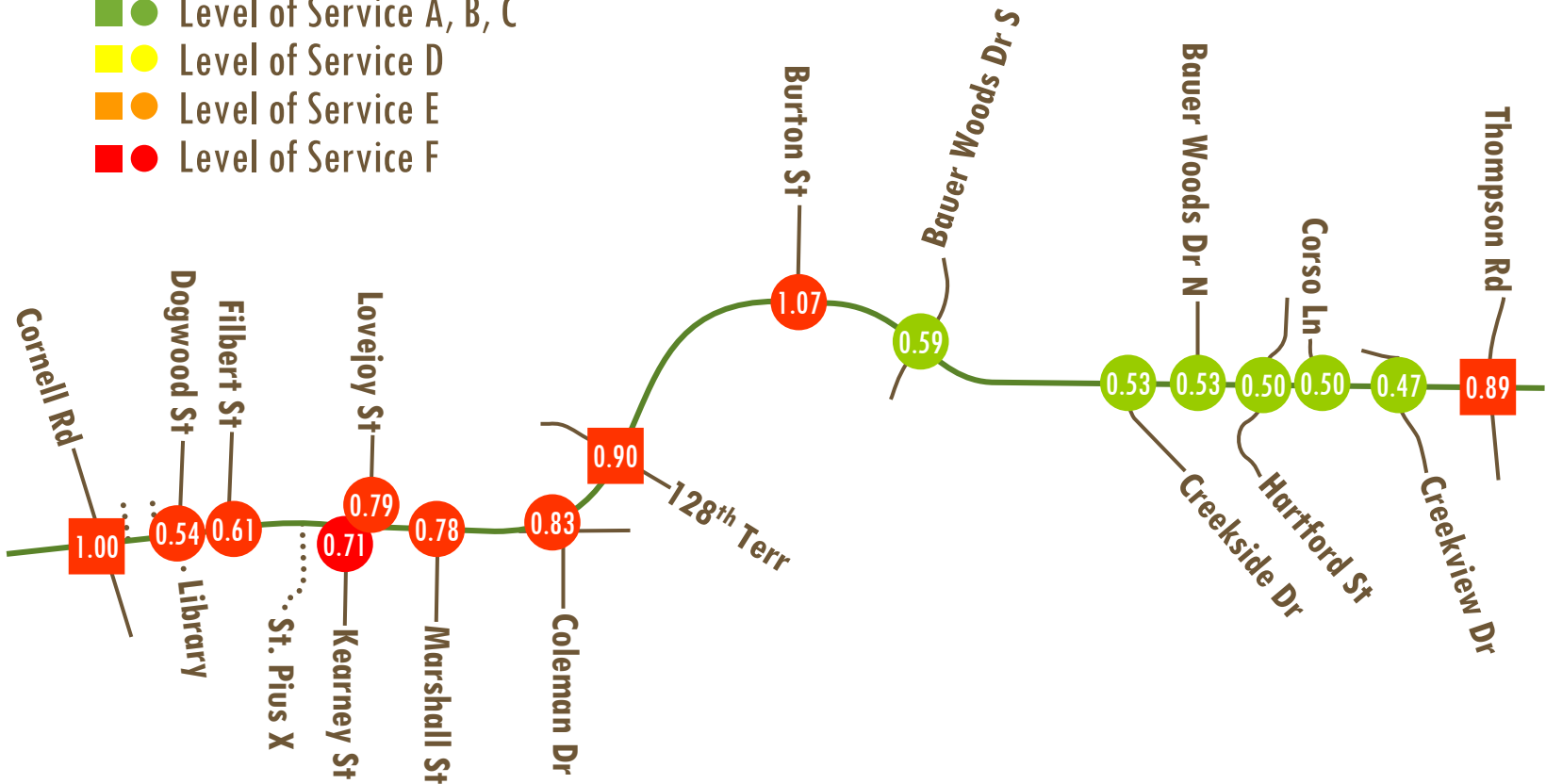
Level of Service E

Level of Service F



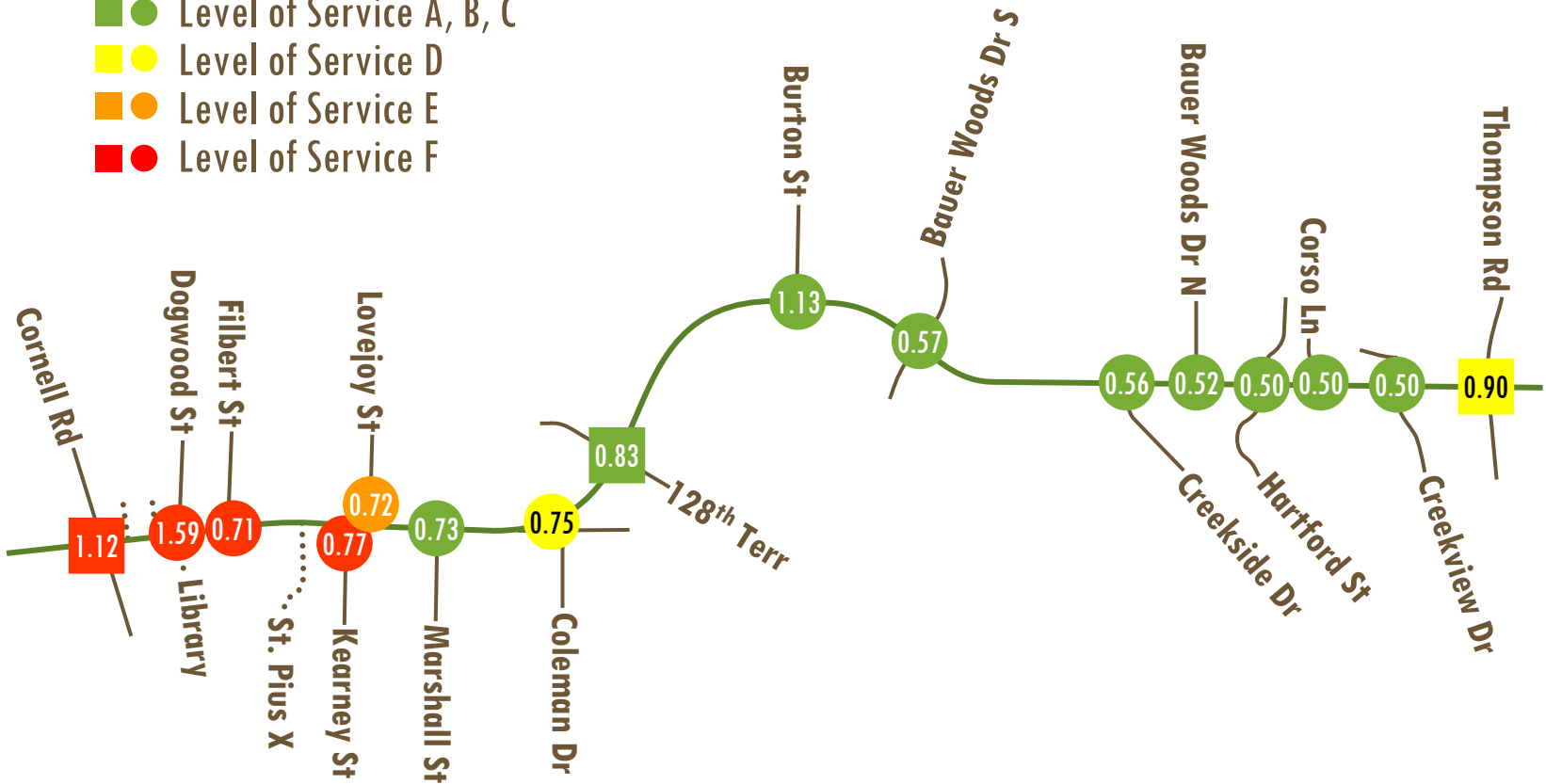
2030 Intersection Operations – AM Peak Hour

- 0.00 Signalized V/C Ratio (Overall Intersection)
- 0.00 Unsignalized V/C Ratio (Worst Movement)
- Level of Service A, B, C
- Level of Service D
- Level of Service E
- Level of Service F



2030 Intersection Operations – PM Peak Hour

- 0.00 Signalized V/C Ratio (Overall Intersection)
- 0.00 Unsignalized V/C Ratio (Worst Movement)
- Level of Service A, B, C
- Level of Service D
- Level of Service E
- Level of Service F



Summary

- **Saltzman Road**
 - Minimum 3-Lane cross-section with separate left-turn lane provided at all intersections
 - 5-lane cross-section from Cornell through Dogwood
 - These improvements will have capacity issues by the year 2030 and further improvements could be needed
- **Cross Streets**
 - Some turn lanes provided to improve operations
 - Signal installed at 128th Terrace as part of project
 - Driveway from Walgreens to Saltzman closed