



# Road Safety Audit

## Blair Road/Cedar Road/4<sup>th</sup> Street Intersection



DDOT Transportation Safety Team

# Background

## Purpose & Need

- ❑ Formal safety performance examination of roadway or intersection by an independent, multidisciplinary road safety audit (RSA) team
- ❑ It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users
- ❑ Blair Rd/Cedar St/4<sup>th</sup> St intersection identified by District as a safety problem location
- ❑ RSA team would identify safety issues at this location and suggest countermeasures for improvements in safety

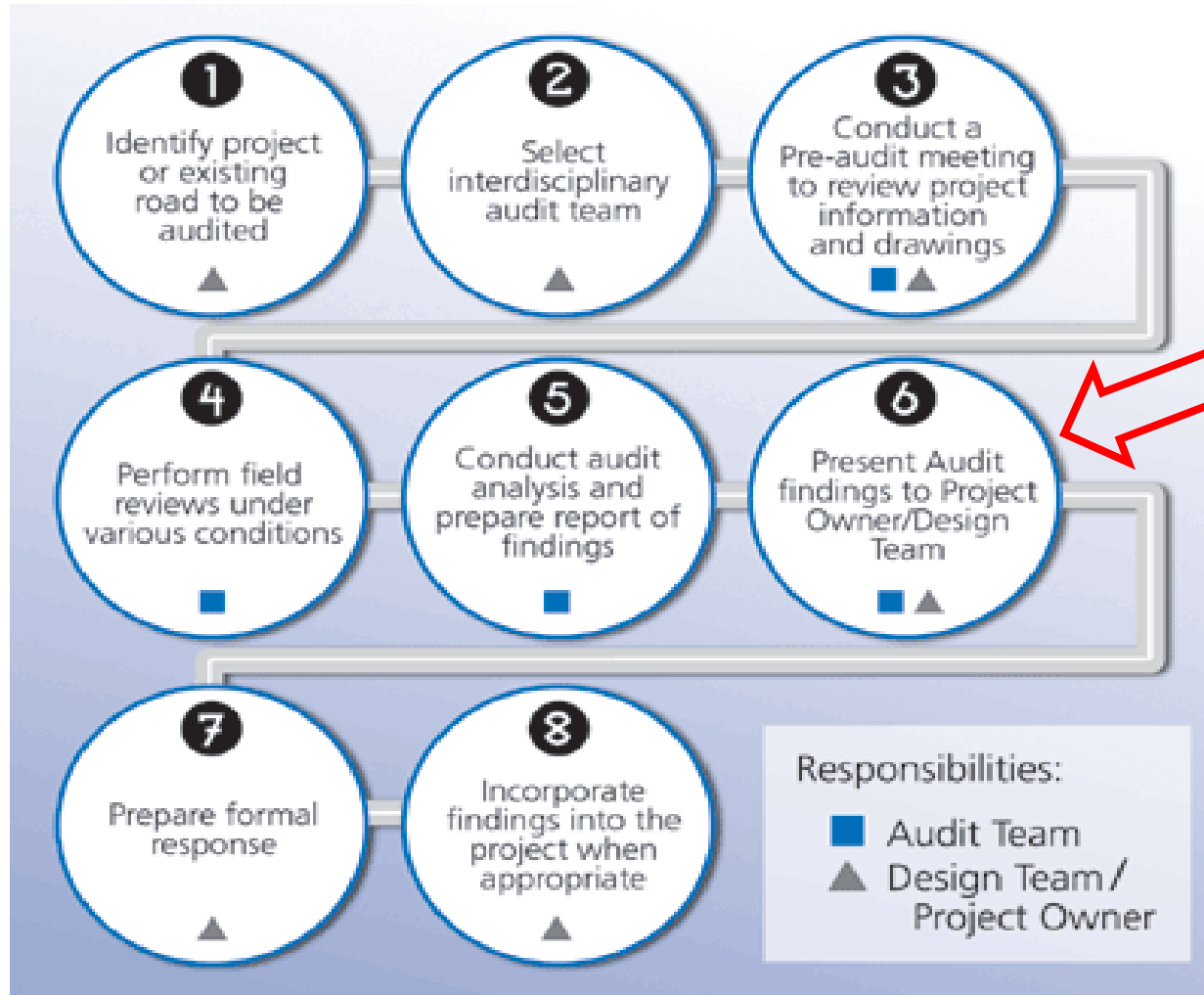
## Road Safety Audity (RSA) Team

- ❖ DDOT - Safety, Signals, IPMA, PPSA, PTSA, Bike & Peds, Parking, Street lighting, NHTSA and UFA
- ❖ USDOT - FHWA
- ❖ MPD
- ❖ WMATA
- ❖ FEMA



**RSA Team**

# Road Safety Audit Procedure



We are here

# Accident Analysis

## 3-year accident analysis

Total 24 accidents from 2008-2010

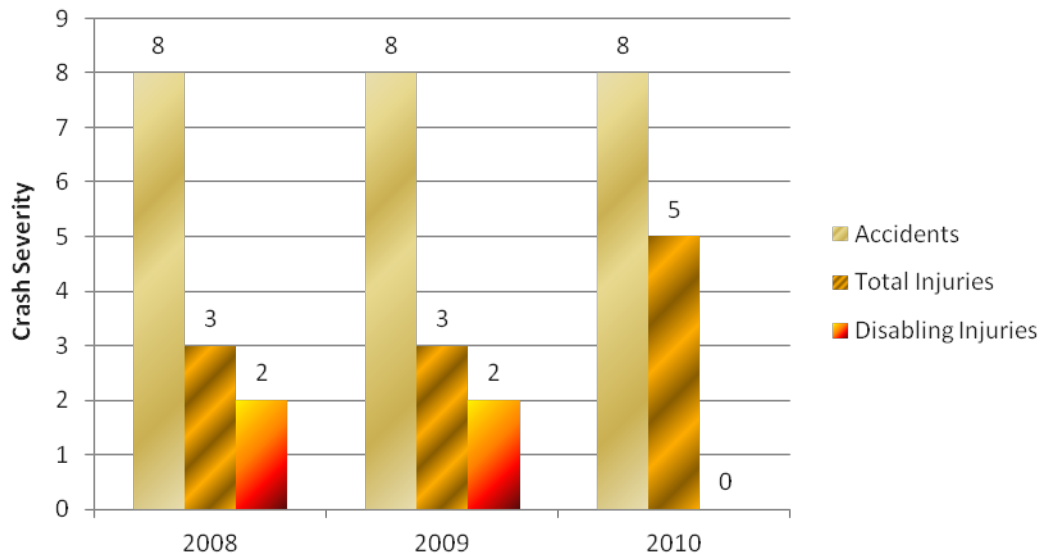
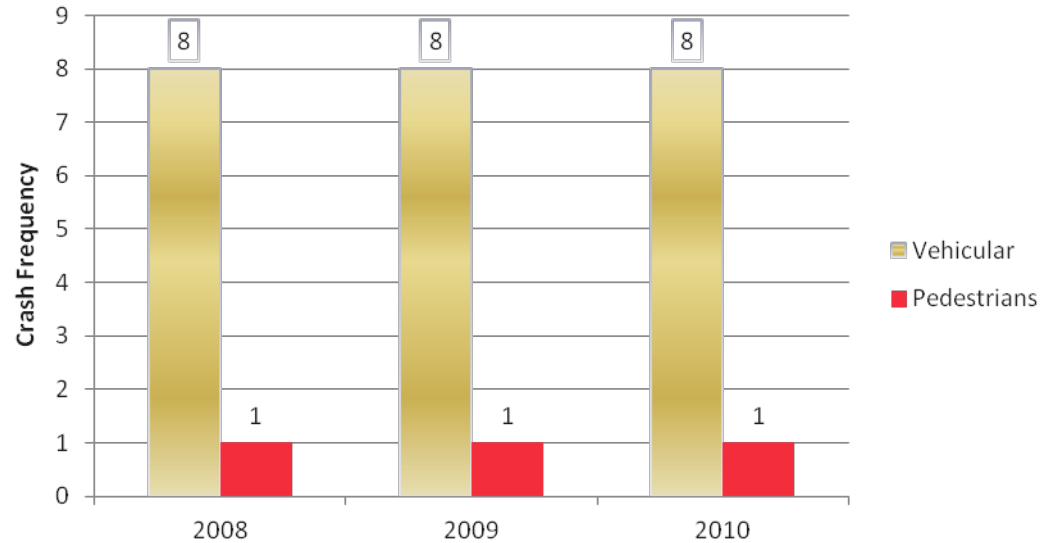
11 out of 24 accidents (50%)  
resulted in injuries

4 out of 24 accidents (20%)  
resulted in disabling injuries

Blair/Cedar – 15 accidents (60%)

4<sup>th</sup>/Cedar – 7 accidents (30%)

Blair/4<sup>th</sup> – 2 accidents (10%)



# Observations

Following issues affect traffic and pedestrian safety at intersection

1. **Complex intersection geometry and traffic control;**
2. **Significant pedestrian-vehicle conflicts;**
3. **High accident frequency;**
4. **Insufficient traffic signage;**
5. **Faded pavement markings**

# Traffic Analysis – Existing Conditions

- ❖ **Estimated 2010 Average Daily Traffic Volumes**
  - i. **Blair Rd – 15000 vehicles**
  - ii. **Cedar St – 5300 vehicles**
  - iii. **4<sup>th</sup> St – 1600 vehicles**
  
- ❖ **Speed study shows 32 mph speed on Blair Rd which is significantly higher than posted 25 mph speed limit**
  
- ❖ **Existing level of service (LOS) analysis at 21 intersections along Blair Rd, Piney Branch Rd, Aspen St, Butternut St and Cedar St**
  
- ❖ **Blair Rd/4<sup>th</sup> St/Cedar St intersection operates at:**
  - i. **LOS E during AM peak-hour**
  - ii. **LOS F during PM peak-hour**

# Traffic Analysis – Existing Conditions

- ❖ Blair Rd intersection at Piney Branch Rd operates at LOS E during AM peak-hour
- ❖ Remaining study intersections operate at LOS D or better during both AM and PM peak-hour

# Proposed Alternatives

Alternative #1	Alternative #2	Alternative #3
Only roadway geometric improvements	Both roadway geometric & traffic signal improvements	Only roadway geometric improvements
4 <sup>th</sup> St – One Way, SB Blair Rd to Butternut St	4 <sup>th</sup> St – One Way, SB Blair Rd to Butternut St	Permanently close 4 <sup>th</sup> St Blair Rd to Butternut St
Butternut St – One Way, EB 4 <sup>th</sup> St to Blair Rd	Butternut St – One Way, EB 4 <sup>th</sup> St to Blair Rd	Butternut St – One Way, EB 4 <sup>th</sup> St to Blair Rd
Blair Rd – One Way, NB Cedar St to Butternut St	Relocate crosswalks on Cedar St and Blair Rd	Blair Rd – One Way, NB Cedar St to Butternut St
Blair Rd – One Way, SB Dahlia Rd to Cedar St	Split phase on Blair Rd + overlap for WB right-turns (WBRT)	Blair Rd – One Way, SB Dahlia Rd to Cedar St
Eliminate Right-Turn Lane WB Approach of Cedar St	No EB & NB left-turns; Leading left for WB left-turns	Cedar St – One Way, WB 5 <sup>th</sup> St to 4 <sup>th</sup> St
	No Turn on Red for WBRT on Cedar; <b>WBRT only on Overlap</b>	Eliminate Right-Turn Lane on WB Approach of Cedar St



# Signal Phasing Improvements in Alternative #2

## Primary Advantages

- ❖ No conflicts for pedestrians in North X-walk
  - i. WB right-turns only allowed on overlap phase
  - ii. “No Turn on Red” prohibition for WB right-turns
  - iii. EB left-turns not allowed
  
- ❖ Eliminates SB left-turn conflicts with pedestrians in East X-walk
  - i. Exclusive ROW for NB and SB vehicles on Blair Rd
  - ii. Concurrent walk interval with NB traffic only

# Conceptual Design for Alternative #2

