

EXISTING AND FUTURE CONDITIONS

Existing Road Geometry and Access Locations

The US 68/US 40/SR 4 interchange is a cloverleaf design characterized by low-speed loop ramps and close proximity to the adjacent US 40/SR 4/Upper Valley Pike intersection which is an at-grade, signalized design. Access to the Ohio Masonic Home from a southbound on-ramp is a nonstandard feature of the interchange. Additional access to the Home is located on US 40/SR 4 approximately 800 feet west of the Upper Valley Pike intersection. This is a full movement access that is stop controlled on the side street approaches.

US 40/SR 4 carries two lanes of traffic in each direction separated by a grass median in the Study Area. The Sugar Grove neighborhood is located in the northwest quadrant of the US 40/SR 4/Upper Valley Pike intersection and accesses US 40/SR 4 in five locations, one of which (Dartmouth Road) is opposite the western access to the Ohio Masonic Home. Driveway access to individual property from US 40/SR 4 exists along the north side of the corridor west of Upper Valley Pike. There is no access to US 40/SR 4 east of US 68 for 2,000 feet.

Upper Valley Pike is a rolling two-lane roadway south of Shrine Road and has been widened to three or more lanes north of Shrine Road to SR 41. The Upper Valley Pike/Shrine Road intersection is controlled by a traffic signal. On the southbound approach to US 40/SR 4, Upper Valley Pike has been widened to four lanes including three southbound lanes approaching US 40/SR 4 and one northbound lane.

A southbound off-ramp from US 68 intersects Upper Valley Pike approximately 550 feet north of US 40/SR 4. Columbia Street intersects Upper Valley Pike from the west and provides access to the Sugar Grove neighborhood. The intersection is offset to the south of the US 68 off-ramp by approximately 150 feet. Both the off-ramp and Columbia Street intersections are stop sign controlled for side street traffic.

There are no access driveways to Upper Valley Pike between US 40/SR 4 and Columbia Street/US 68 Southbound Off-Ramp. North of the off-ramp Upper Valley Pike provides access to local property via at-grade driveway intersections.

Existing Physical Conditions

The Westco/I&O Railroad traverses the study area passing over Upper Valley Pike and under US 68 north of US 40/SR 4. The existing railroad bridge over Upper Valley Pike was in deteriorated condition until recently and has been replaced. The Norfolk and Southern Railroad passes northeast near the study area south of US 40/SR 4. The railroad passes over US 68. An adjacent overpass connects a power substation to the local street system via the Ohio Masonic Home access at a southbound on-ramp to US 68.

The Mad River is located along the eastern edge of the study area and passes under the northbound to eastbound ramp from US 68 to US 40/SR 4. It also passes under US 40/SR 4 just east of US 68 and under US 68 north of the interchange. Buck Creek has a confluence with Mad River in the southeast quadrant of the interchange.

Crash Data

The section of US 40 proximate to the US 68 interchange has been ranked high on the Non-Freeway Crash Location list by the Ohio Department of Transportation. Past studies by ODOT have cited the weave areas in the interchange and operation of the US 40/Upper Valley Pike intersection as contributing factors to overall poor performance. Traffic crash data was obtained from the Ohio Department of Public Safety and collision diagrams were prepared to investigate the types of crashes that predominate in the study area.

Collision diagrams were prepared for the years 2000 through 2003 documenting 15 to 16 intersection related crashes annually in the US 40/SR 4/Upper Valley Pike intersection area. Rear end collisions overwhelmingly predominated. Capacity deficiencies in the intersection result in long vehicle queues and congested operations that are the likely cause of the majority of crashes. The close proximity of weaving areas on US 40 at the loop ramps serving the US 68/US 40 interchange add conflict points to an otherwise congested area again contributing to frequent rear end collisions. Collision diagrams have been included as Appendix B. Figure 3 provides a spot map summary of collisions occurring in the study area.

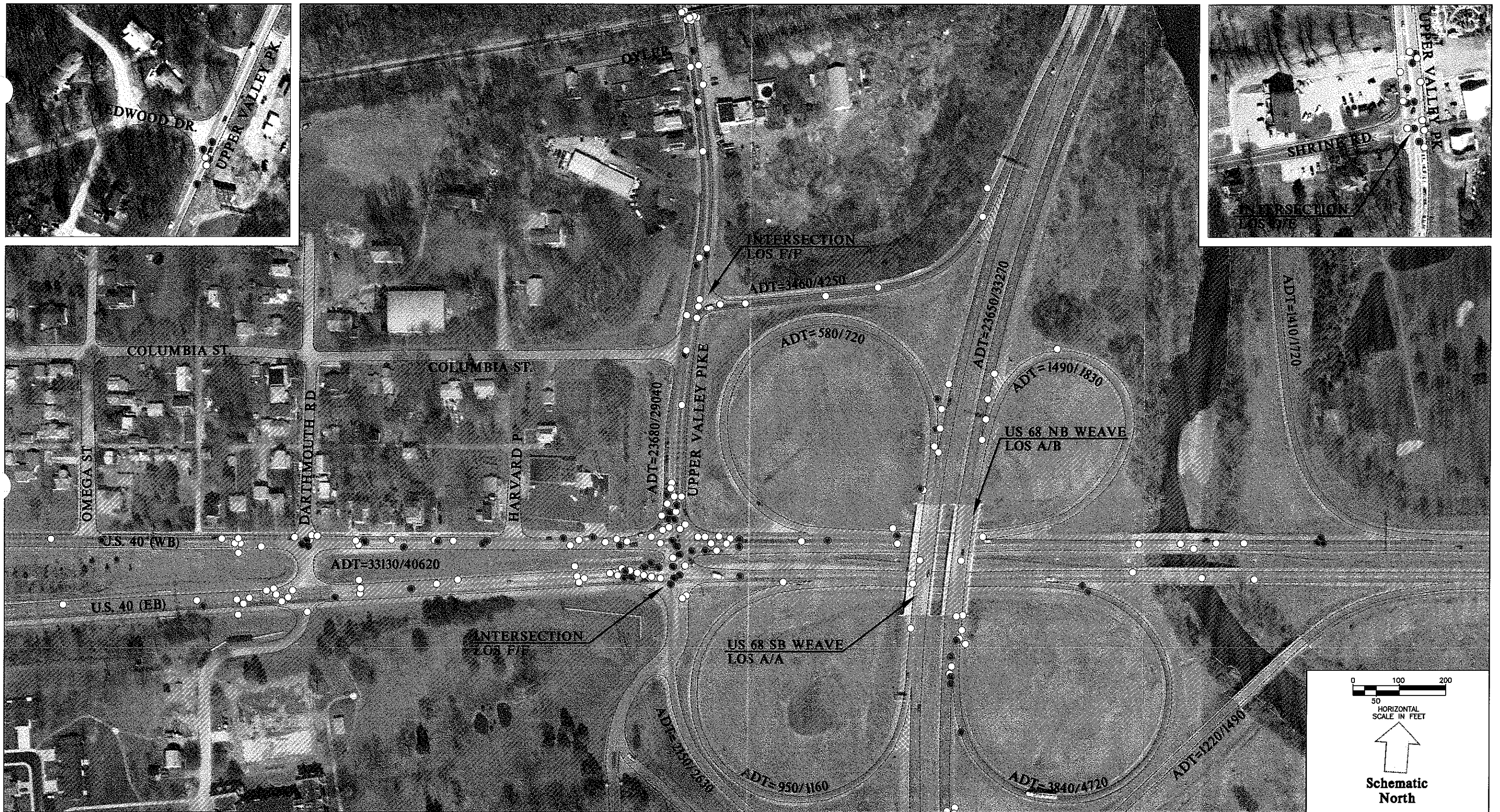


Figure 3
US40/SR4 COLLISION SPOT MAP
 Years 2000-2003
 CLA-/US 68/US 40/SR 4/
 Upper Valley Pike
 Clark County, Ohio

Existing Demographics and Land Use

The City of Springfield is primarily situated east of the study area although land along the south side of US 40/SR 4 and east of Lower Valley Pike, including the Ohio Masonic Home site, is within City limits. Within one-half mile east of US 68, the City of Springfield is a highly urbanized environment with a street grid totaling 270 miles. Population within Springfield is 65,358 living in 26,254 households (2.38 persons per household). City emergency services respond to the Ohio Masonic Home site from the east via US 40/SR 4.

Springfield Township includes the US 68/US 40/SR 4 interchange and adjacent areas not within the City of Springfield. Land uses in the northeast and southeast quadrants of the interchange are limited due to floodways associated with Mad River and limitations on access to US 40/SR 4. The Ohio Masonic Home occupies all of the land in the southwest quadrant of the interchange. Springfield Township in the northwest quadrant of the interchange is primarily developed with single-family residential uses but some commercial property exists along US 40/SR 4 and along Upper Valley Pike.

The Upper Valley Mall is located north of the Study Area at the SR 41/Upper Valley Pike intersection. Significant commercial uses have been developed along SR 41 on both sides of its interchange with US 68. The US 40/SR 4 corridor west of the study area is more rural in character and is basically undeveloped.

Existing Environmental Conditions

Environmental mapping has been provided in Appendix C that details potentially sensitive sites in and near the study area. An archaeological site exists south of the Norfolk Southern Railroad and Ohio Masonic Home and west of US 68. Potential hazardous materials sites are located in the northwest quadrant of the US 68/US 40/SR 4 interchange, near the SR 41/Upper Valley Pike intersection, and in a small number of locations just east of the study area. A floodplain is associated with the Mad River throughout the study area and there are several National Wetlands Areas in the Mad River corridor north of US 40/SR 4.

Existing and Future Traffic Volumes

Certified design volumes dated October 10, 2003 were provided for the project by the Ohio Department of Transportation, Office of Technical Services. Opening year (2005) and design year (2030) volumes were provided as shown on plates 3 through 6 in Appendix A. As improvement alternatives were developed volumes were modified to reflect appropriate conditions. For example, if an alternative involved eliminating a ramp movement, the traffic volume on that ramp was assigned with the same origin and destination to an available route.