



## **Chad A. Baird**

### **Principal**

Mr. Baird has fostered a strong foundation in a large variety of traffic engineering disciplines. His experience includes the preparation of traffic operation plans, site access and planning design, traffic forecasting and modeling, traffic impact studies, capacity analysis, traffic signal design, traffic signal systems coordination, loading area analysis, vehicular maneuverability analysis, parking layout assessment, queuing analysis, and pedestrian management plans. He specializes in the design and analysis of traffic signal systems using simulation software to enhance the flow of traffic through complex roadway networks. Mr. Baird has worked in the following geographic areas: The District of Columbia, Virginia, Maryland, Pennsylvania, New York, Ohio, Maine, Connecticut, Nevada, and New Jersey.

### **Education**

B.S., Civil Engineering

Roger Williams University; Bristol, Rhode Island

### **Professional Associations**

Institute of Transportation Engineers

American Planning Association

### **MIXED-USE DEVELOPMENT PROJECTS**

Mr. Baird has managed a number of mixed-used developments throughout the United States including million square foot factory outlet developments with on-site uses including restaurants, hotels, banks, gas stations, grocery stores, residential, office, and recreational facilities. The analysis addresses the existing traffic conditions, future traffic conditions without development, future traffic conditions with development, and future traffic conditions plus ten and twenty years conditions.

Mr. Baird has also managed a number of mixed-use developments which include a variety of components to create a multi-trip sharing between the restaurant, hotel, bank, residential, office, and retail center uses. Principal tasks of these projects included the trip and parking generation on an hourly basis, the development of a parking demand profiles, the design of the entrances to allow for large vehicle circulation access, and the identification of general street traffic conditions around the site.

### **GEOMETRIC DESIGN**

Mr. Baird has managed various geometric design projects throughout the DC Metropolitan area, most notably the internal circulation roadway network at Georgetown University. The on-campus design analysis was to lay out the locations for minimum radii requirements utilizing a variety of vehicle types to successfully maneuver at different locations around the campus. In addition, Mr. Baird has extensive experience with development pavement markings plans for many intersections throughout the Northern Virginia area; designed curb radii to accommodate truck movements, and design of the site access points for proposed developments.

### **TRAFFIC SIMULATION AND CIRCULATION STUDIES**

Mr. Baird has completed various traffic simulation studies throughout the United States utilizing Netsim, CORSIM, Synchro, and SimTraff. Each study addresses traffic and transportation improvements affiliated with existing and proposed developments. The analysis incorporates the existing roadway network based on field



observations to develop a base line of existing conditions. The proposed traffic and roadway conditions were then added to the existing roadway network to develop a more comprehensive progression and offsets program for the network. Mr. Baird has worked on simulation and circulations studies within the following geographic areas: Northern Virginia; Metropolitan Area of Maryland; Atlantic City, New Jersey; Albany, New York; and Washington, DC.

### **LOADING AREA ANALYSIS**

Mr. Baird has extensive experience in loading area analysis using the software program AutoTurn. He has the ability to assess the operational effectiveness of a loading area as well as make additional recommendations to improve upon a design in such areas as column location, vertical and horizontal clearance, minimum radii for maneuvers, drive aisle width, the angle of the loading docks, and access to and from the surface street network. Mr. Baird has completed analysis of loading areas for the Pennsylvania Station redevelopment in New York City, with 67 loading berths on two floors.

### **URBAN PLANNING PROJECTS**

Mr. Baird has managed a number of projects within the downtown Washington, DC area including transportation management and traffic operations planning for the MCI Center Sports Arena, the new Washington Convention Center, the Waterside Mall, and the Newseum.

### **PARKING GARAGE DESIGN AND ANALYSIS**

Mr. Baird brings special expertise to the garage design team. His focus has been on the functional and operational characteristics of garages. In addition, he has worked with architects, structural engineers, garage operators, and client's on financial analysis to optimize the design of the garage to meet all critical objectives of the development.

### **SIGNAL DESIGN**

Mr. Baird has completed traffic signal design plans for numerous intersections throughout the Virginia, Maryland, and Washington, DC areas. He has managed the development of traffic signal plans and modifications for existing and proposed traffic signals for intersections to show the traffic signal support system, location of signal heads, lane geometry, phasing diagram, crosswalks, handicap ramps, sidewalks, ground mounted and overhead mounted traffic control signs, right-of-way limits/property lines, all above and below ground utilities, and existing and proposed roadway geometrics. Designs also include pavement markings design and signing plan.

### **TRAFFIC CONTROL PLANS & MAINTENANCE OF TRAFFIC PLANS**

Mr. Baird has prepared a number of traffic control and maintenance of traffic plans for various private developments throughout the Washington, DC metropolitan area. The design of the traffic control plans are based on a Work Area Protection Manual and directs traffic around the effected area of travel located adjacent to the construction site.



## **RECENT/RELEVANT PROJECT EXPERIENCE**

### **Traffic Impact Studies (Mixed Use Developments)**

- Waterside Mall (2003 & 2007), Washington, DC
- 4500 Wisconsin Avenue, Washington, DC
- Arcola, Loudoun County, Virginia
- Crosstrail, Loudoun County, Virginia
- Barber and Ross, Leesburg, Virginia
- New Gettysburg, Adams County, Pennsylvania

### **Traffic Impact Studies**

- The Arena Stage, Washington, DC
- Washington Convention Center, Washington, DC
- Investment Building, Washington, DC
- Field School, Washington, DC
- Georgetown University, Washington, DC
- St. Elizabeth's, Washington, DC
- Burke School, Washington, DC
- 101 Constitution, Washington, DC
- Washington Capitals / Arlington Ice Skating Facility, Arlington, Virginia
- Ballston Centre, Arlington, Virginia
- Clarendon Phase II & 2900 Wilson Boulevard, Arlington, Virginia
- Broadlands & Broadlands South, Loudoun County, Virginia
- Towers Crescent, Fairfax County, Virginia
- Jaguar Homes, City of Fairfax, Virginia
- New Vista School, City of Fairfax Virginia

### **Loading Area Analysis**

- Newseum, Washington, DC
- National Cathedral, Washington, DC
- Waterside Mall, Washington, DC
- 4500 Wisconsin Avenue, Washington, DC
- Investment Building, Washington, DC
- World War II Memorial, Washington, DC
- Penn Station, New York, NY

### **Traffic Control Plans**

- 901 K Street, Washington, DC
- 900 F Street, Washington, DC
- 1000 Connecticut Avenue, Washington, DC
- 1331 L Street, Washington, DC



- 2020 12<sup>th</sup> Street, Washington, DC
- St. Patrick's Church, Washington, DC

#### **Parking Garage Design and Layout**

- Newseum, Washington, DC
- 4500 Wisconsin Avenue, Washington DC
- 1199 F Street, Washington, DC
- 10<sup>th</sup> and F Street, Washington, DC
- Comstock Development (Glebe Road), Arlington, Virginia
- Skyline Towers, Fairfax County, Virginia
- Reston Town Center, Reston, Virginia

#### **Traffic Simulation and Circulation**

- Route 50 Courthouse Road, Arlington, Virginia
- Downtown Netsim (Convention Center), Washington, DC
- Georgetown M Street, Washington, DC
- Factory Outlets at Gettysburg, Adams County, Pennsylvania
- Crystal City Parking – 23<sup>rd</sup> Street access, Arlington County, Virginia
- Cameron Chase, Loudoun County, Virginia

#### **Traffic Signal Design**

- Connecticut Avenue with Kennedy Warren, Washington, DC
- Georgetown University Canal Road Entrance, Washington, DC
- E/W Highway and Newell Street, Montgomery County, Maryland
- River Road and Congressional Country Club, Montgomery County, Maryland
- Crystal City Signals, Crystal City, Arlington, Virginia
- Route 50 with Fair Ridge, Fairfax County, Virginia
- Chesapeake Drive with Route 1, Prince William County, Virginia

#### **COMPUTER & ANALYTICAL SKILLS**

CORSIM, Netsim, Synchro, SimTraff, GIS (ArcView, ArcInfo, etc.), Autoturn, HCS, Wintass, TransCAD, AutoCAD 2007, Microstation, & Visim