



We know the people. We know the process.
Get the results you expect.

Company Profile

Bayside Engineering, Inc. is a Boston area engineering design firm with **half a century** of experience. We have a staff of 20 professional engineers, architects, technicians, construction supervisors, and support personnel that have a demonstrated history of providing quality results.

Bayside offers a full range of transportation, infrastructure, architectural, engineering, design and construction services in-house, including studies, concept planning, identifying project funding, alternatives, new design, renovation, repair, demolition, site development, civil engineering, structural engineering, and comprehensive construction administration services.

We employ these services on a variety of projects that include transportation infrastructure (e.g., bridges, roadways and intersections), offices, schools, manufacturing, sports facilities, municipal buildings, partial and full demolition raze and rebuild, historic building preservation and restoration, roof repairs/replacements, elevator renovations and new installations, window replacements, handicap accessibility upgrades, historic lighting, new brick and concrete facades, waterproofing, masonry restoration and repointing. Bayside has in-house architectural and structural engineering staff to provide design support and we have successfully designed numerous buildings and building rehabilitation projects.

With an emphasis on servicing Federal, State agencies and local municipalities, Bayside has an impressive history of **completing** public projects often ahead of schedule and on budget. This experience working with public agencies is also a key advantage in completing projects for our private sector clients. We are especially effective in advancing projects through the regulatory process – **we know the process and we know the people.**

Bayside is available to assist with any or all phases of almost any project from conception to construction. We have a staff of construction personnel experienced at providing all levels of construction services from shop drawing review to full-time construction management and clerk of the works responsibilities.

Learn more at www.baysideengineering.com



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Bayside Engineering

About Us

Founded in 1967, Bayside Engineering is a design firm based in Massachusetts. Services include concept planning, civil engineering, drainage and pavement design, structural engineering, bridge design, boundary and detail surveys, environmental permitting, rating and inspection, traffic studies and intersection design, right-of-way and construction services.

Recognized for an impressive history of advancing projects through the regulatory process, Bayside brings knowledge and experience to servicing private clients as well as Federal and State agencies and local municipalities.



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Maintaining Traffic Flow and Safety with the Design of Modern Intersections

As the Commonwealth's road and highway system becomes more congested and municipalities continue to evaluate their traffic flow problems, the role of the traffic engineer takes on increasing significance. Bayside is continuously involved in traffic engineering, providing a variety of services such as traffic impact studies, design and planning of traffic signals, controls, site access and rail crossings. Our engineers are systems oriented and employ a multi-discipline approach to our client's problems. Technical aspects are studied and careful consideration given to both traffic needs and governmental requirements. We are particularly attuned to the safety aspects of traffic problem solving.

Bayside Engineering has solved hundreds of traffic flow and control problems, throughout New England. Our traffic engineers are available during all phases of development to apply their expertise and experience to your traffic problems.

Structural Engineering

The Bayside team provides structural engineering services successfully, efficiently and economically. These services include the science and art of planning, design, construction, operation, monitoring and inspection, maintenance, rehabilitation and preservation, demolition and dismantling of structures, taking into consideration technical, economic, environmental, aesthetic and social aspects.

Bridge Engineering

Bayside inspects, rates and designs bridges of all types for state agencies (MHD, MBTA, Massport, Mass Turnpike, USFW), local municipalities and private land owners. We have evaluated and reported on over 5,000 structures since 1975. Many reports with repair recommendations required reconstruction including rehabilitation and complete replacement. Increases in vehicle traffic and recent failures of major structures have prompted growing public concern about bridge safety. Bayside is being called upon to play an increasingly active role in the rehabilitation and replacement of the Commonwealth's bridge and culvert structures.



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Site Planning

Bayside performs a substantial amount of site planning, engineering design and permitting services for many longstanding clients throughout New England. These services include: survey, planning, alternatives analysis, cost-benefit analysis, environmental site assessment, underground storage tank (UST) systems, sanitary systems, zoning and environmental analysis, permitting, community coordination, traffic studies, traffic mitigation, signalization, site layout, grading, drainage and stormwater management, landscaping, roads/access, ADA, parking, new building designs, renovations and additions to existing buildings, complete design of new stations/sites and construction management.

Surveying Services

- Property Line Surveys
- GPS Services
- Topographical Surveys
- Subdivisions
- Land Use Planning
- Zoning and Use Permitting
- Site Access and Curb Cuts Permits
- Waterway and Waterfront Structures
- Storm Water Management, Treatment and Controls

Environmental Permitting

- Environmental Permit Applications and Submittals
- Environmental Notification Forms and Impact Reports
- Wetlands and Storm Water Permits

Construction Services

- Cost Estimates and Specifications
- Construction Administration, Supervision and Inspection
- Full Time Clerk-of-the-Works Construction Oversight



Clients

City and Town Agencies

City of Beverly
City of Boston
Town of Boxford
Town of Danvers
Town of Georgetown
City of Gloucester
Town of Groveland
City of Haverhill
City of Lawrence
Town of Lunenburg
Town of Merrimac
City of Newburyport
Town of North Reading
Town of Shirley

City of Somerville

Town of Stoughton
Town of Topsfield
City of Waltham
Town of Watertown
Town of Winchester
Town of Winthrop
And many more.....

State Agencies

MassDOT
Massachusetts Port Authority
Massachusetts Turnpike Authority
Massachusetts Water Resource Association

Private clients

CHI Engineering
Finard Properties
Infinity Constructors, Inc.
NELCO Worldwide
Omni Properties, LLC
SPS New England
Total Energy



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Services

Bayside Engineering, Inc. is a Massachusetts based engineering design firm with 50 years of experience providing architectural, civil, environmental, structural, highway, bridge and traffic management engineering and design services to both public and private sector clients. In addition to engineering design services, our staffing includes registered architects who have completed numerous building projects.

Our long record of successful civil/site development, building, highway, bridge and traffic projects are due to the experienced key staff of professionals available to direct the various projects. Bayside offers an experienced staff that has a proven record of delivering quality designs within the required schedules and budget.

Structural Engineering

- Structural Analysis and Design
- Foundation Designs
- Single and Multi-Story Building Designs
- Parking Structures
- Inspections for Conditions
- Evaluations, Studies and Repair
- Recommendations
- Bridge Type Studies
- Bridge Ratings/Inspections
- Bridge Design

Bridge Design and Repair

- Simple and Complex Bridge Types
- Substructure Concrete Repairs
- Rapid Set Deck Repairs
- Structural Steel Repair and Heat Straightening
- Bridge Expansion Joint Repairs
- Movable Bridge Repairs

Building and Architectural Services

- Single and Multi-Story Building Designs
- Inspections and Repair Recommendations
- Roof Repairs and Replacement
- Window Replacements
- Renovations and Expansions
- ADA/MAAB Accessibility Evaluation and Design

Transportation

- Transportation Planning
- Traffic Impact and Access Studies
- Traffic Studies
- Traffic Engineering
- Traffic Controls and Signalization
- Roadway Design (Federal Highways, State Routes & Local Roads)

Civil Engineering

- Site Design and Engineering
- Drainage Design and Paving Restoration
- Land Taking and Right of Way Plans
- Park and Recreational Facilities Design
- Parking Layout and Design
- Utilities and Infrastructure Design

Site Development

- Land Use Planning
- Alternatives Analysis
- Master Planning
- Zoning and Use Permitting
- Site Access and Curb Cuts Permits
- Site Development Plans and Layout
- Site Improvements
- Waterway and Waterfront Structures
- Storm Water Management, Treatment and Controls
- Landscape Design
- Environmental Permitting
- Environmental Permit Applications and Submittals
- Environmental Notification Forms and Impact Reports
- Wetlands and Storm Water Permits

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Traffic Engineering

Traffic engineering deals with the planning, geometric design and traffic operations of roads, streets and highways and their networks, terminals, abutting lands and relationships with other modes of transportation in order to provide the safe, efficient and convenient movement of people and goods. **With the Commonwealth's roadways and intersections becoming more congested, the study of roadways and intersections for both public and private developments becomes very important.**

Bayside provides a full complement of traffic engineering services for the public and private sector clients. These services include the preparation of traffic impact studies, feasibility studies, environmental impact reports; peer review services, parking supply and demand studies and pedestrian safety studies.

A Traffic Impact and Access Study (TIAS) assesses the potential impact of traffic generated by a proposed development or redevelopment and identifies the roadway improvements required to ensure that the road network will operate safely and efficiently upon completion of the development. A TIAS includes the following tasks:

1. Conduct traffic counts for roadways and intersections to determine the volume of traffic, where the traffic is going to and from, and the type of traffic on the roadway.
2. Conducts capacity analyses to determine how much traffic can logically fit on a roadway in a safe and efficient manner.
3. Assesses the safety features of the roadway or intersection.
4. Investigates accidents and determines if changes can be made to roadways or intersections to make it safer for all who use those roads
5. Determines appropriate mitigation (roadway widening, signalization, signing and pavement markings, etc.) along a new or existing road to mitigate or offset the impact of that new development.

Key to addressing community concerns, as they relate to a project's traffic impacts, is understanding existing traffic flow, safety and congestion, for both vehicular and non-vehicular modes of travel. Bayside is known for its professional reputation with developers, land use attorneys, communities and State agencies. Our Traffic Engineering Department consists of individuals with over 30 years of experience in all phases of traffic engineering. And our staff has assisted in permitting over 500 projects in addition to assisting in the design and permitting of the off-site mitigation. Bayside has been preparing traffic studies for MassDOT, municipalities and private developers since the inception of the firm in 1967. We have distinguished ourselves as a competent firm in the field of traffic engineering.

Bayside also provides extensive design for public entities. These services include every phase of traffic planning and design development including but not limited to, traffic counts, abutter and resident interviews, functional design reports/studies, alternatives analysis, public design review hearings, design coordination meetings, design development and preparing plans, specifications and estimates (PS&E) for public bidding purposes. Our primary objective is to improve safety and efficiency at intersection locations throughout the state.

We provide field investigations as well as data collection in order to perform a complete analysis at each intersection. The analysis and subsequent recommendations resulted in designs of simple as well as very complex intersections. Some of the more complex designs include multiple phase systems at one intersection.

Bayside is responsible for shop drawing review, advice during construction, evaluation of subsurface conditions and selection of appropriate foundations, inspection of the traffic control system after construction and preparation of traffic signal layout for permits.

Highway Engineering

As the Commonwealth's road and highway system becomes more congested and municipalities continue to evaluate their traffic flow problems, the role of the highway engineer takes on increasing significance. Equally important is the design of the Traffic Management Plan (TMP) during construction to minimize operational impacts while reducing the time of construction as much as possible.

Since its founding, Bayside has been continuously involved in traffic engineering, providing a variety of services in such areas as traffic impact studies, design and planning of traffic signals, controls, highway-rail crossings and TMPs for construction. Our engineers are systems oriented and employ a multi-discipline approach to our client's problems. Technical aspects are studied and careful consideration given to both traffic needs, and governmental requirements. Most projects are subject to public scrutiny at their onset so that affected parties may express their views that impact the development of the project.

We are particularly attuned to the safety and construction aspects of traffic problem solving. Under several continuous open-ended traffic and safety improvement contracts with the Massachusetts Department of Transportation (MassDOT) Traffic Section, spanning continuously from 1988 to present, Bayside has been selected to redesign more than 150 hazardous intersections for MassDOT at various locations statewide. A separate but currently important responsibility has been preparation of traffic controls during construction operations, which include temporary signals, lighting, detouring, and special signing.

Our design work on these intersections included: Comprehensive traffic management plans (TMPs) Interconnected signal systems, special pre-empted systems at fire stations, railroad crossing systems with automatic gates and train coordination controls.

Among the hundreds of traffic flow and control problems Bayside has solved, there is quite likely to be one or more very similar to that which you are facing. Bayside's experience will allow us to quickly identify and solve your traffic problems. Our traffic engineers are available during all phases of development to apply their expertise and experience to your traffic problems.

Bayside has distinguished itself as a competent firm in the field of traffic and safety engineering. In addition to the projects described below, Bayside was chosen for the redesign of more than 150 high hazard intersections for the MassDOT in addition to the design of hundreds of miles of new highway with intersections and signalization. Our knowledge of all aspects of safety engineering is solid and is well recognized by the Massachusetts Department of Transportation. Bayside has provided engineering solutions to hazardous intersections in all MassDOT Highway Districts.

All of these Designs included geometric revisions, signalization, channelization, signage, and handicap accessibility. In addition to design responsibilities, Bayside has been responsible for varying degrees of construction inspection through and including final signal inspection and acceptance.

Bayside's Transportation and Traffic Engineering Departments consists of individuals with over 30 years each of experience in all phases of traffic engineering and highway design, including drainage, landscaping, horizontal and vertical alignments, signing, traffic signalization, environmental permitting, wetlands flagging, as well as the design of bridges and highway structures. Bayside Engineering has been designing roadway traffic projects for MassDOT, municipalities and private developers since the inception of the firm in 1967.



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KENNETH CRAM, P.E.

DIRECTOR TRAFFIC ENGINEER

PROFESSIONAL EXPERIENCE:

Mr. Ken Cram, Director of Traffic Engineering, is skilled in the areas of traffic engineering, transportation planning, civil engineering design, and transportation systems management. His responsibilities include the supervision of the design and analysis of roadways, intersections, and interchange systems, along with the preparation and review of traffic impact studies, environmental impact reports, site feasibility studies, corridor studies, peer reviews, traffic signal warrant studies and parking studies. Mr. Cram works with a team of engineers in the preparation of these reports to obtain state and local permits for a wide range of development proposals. In addition to managing the technical aspects of study preparation, he is the project manager for each job and prepares presentations for public hearings.

Mr. Cram is a licensed Professional Traffic Engineer in the Commonwealth of Massachusetts and testifies before Planning Boards and Zoning Boards of Appeal. He prepares testimony for land use, eminent domain and accident cases and testifies in Land Court. Mr. Cram's wide variety of development projects include office buildings, industrial/warehouse facilities, retail centers and residential developments in urban and suburban communities.

Education

Northeastern University, B.S. in Civil Engineering, 1982

Professional Affiliations

- ASCE
- BSCE
- ITE - President Massachusetts Chapter (2015-2017)
- NEITE - Secretary (2019)

Registration

- Professional Traffic Engineer
Massachusetts #36663

PROJECT EXPERIENCE:

Traffic Impact and Access Studies, various New England locations

Projects included residential, industrial, commercial, and retail uses. Residential projects ranged in size from 60 townhouses up to 1,600 apartment units. Commercial projects ranged in size from 15,000 sf to 1,100,000 sf. Studies for solid waste management facilities have been performed for facilities ranging from daily capacities of 250 to 1,000 tons per day.

Residential Developments, Statewide, MA

Traffic Impact and Access Studies for numerous Comprehensive Permit (40B) residential projects:

- 364-unit apartment development in Tewksbury
- 200-unit apartment complex in Andover
- 200-unit apartment complex in Littleton
- 176-unit apartment complex in Billerica

Each study assessed the project's traffic impacts at key intersections in the site vicinity, identified appropriate mitigation, and designed appropriate site access/egress.

Essex Landing, Saugus, MA

Prepared the Traffic Components of the Draft and Final Environmental Impact Reports for Essex Landing, a mixed use development that includes hotel, residential and commercial retail uses. Essex Landing will consist of two hotels, 255 apartment units and approximately 12,500 square feet (sf) of retail/restaurant space. A total of 597 parking spaces will be provided, spread among structures, below-grade, and surface spaces. The



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PROJECT EXPERIENCE con't

traffic study reviewed the projects impacts at three interchanges along Route 1. The key issue in the MassDOT permitting was developing appropriate access to Route 1.

Islington Village Redevelopment, Westwood, MA

Project Manager for the assessment of the traffic impact and to evaluate the access requirements of the proposed Islington Village redevelopment, located at the intersection of East Street, School Street and Washington Street in Westwood, MA. The property consisted of eight (8) existing parcels of land: four (4) of which are owned and/or controlled by the Project Proponent and four (4) of which are owned by the Town of Westwood (the Town) on either side of Washington Street, north of School Street. The Project includes razing the existing Community Center (a new center to be constructed across Washington Street), relocating the historic Wentworth Hall (Town Library), the construction of a new mixed-use building containing approximately 13,000 sf of commercial space on the first floor and eighteen (18) 2-bedroom condominium units on the upper floors. The Project Proponent will renovate the existing CVS building (and convert 5,000 sf of basement space for the relocated day care facility). The renovated space will include 7,641 sf of retail space and 1,109 sf of office space. The Project Proponent will also construct a new 13,072 sf CVS pharmacy building (with a 1,712 sf mezzanine). In addition, the Project Proponent will reconstruct/replace the existing municipal parking lot with a new lot with the same number of spaces. The Town will relocate Wentworth Hall/Library (2,035 sf footprint) across the street and will construct an addition (2,000 sf footprint) to be utilized as community space. The traffic study assessed the project's impacts on the key intersection in the Village, Washington Street, East Street and School Street, as well as the site access points and worked with the Town of Westwood to develop an appropriate traffic plan for the Village.

New England Sports Village, Attleboro, MA

Prepared the required Traffic Impact and Access Study for New England Sports Village (NESV). NESV will include two full NHL ice surfaces and one half ice rink with locker rooms and full amenities, 60,000 square feet of top-of-the-line synthetic turf, The Field House, and an Aquatic Center with an Olympic sized pool. The traffic study assessed the project's impacts on key intersections in the site vicinity. Key issues included access and truck routing.

Lowell Street, Andover, MA

Project Manager for the design of signalization at the Lowell Street intersection with the IRS driveway and Hamilton Green Driveway in Andover, MA. The project was coordinated with MassDOT and the Town of Andover.

The Point, Littleton, MA

Prepared the Traffic component of the required MEPA Notice of Project Change for the development of the former 90 acre Cisco site on Great Road (Route 119) at Interstate 495 (I-495). When completed, the project, The Point, will consist of a mix of retail, office and commercial uses. The development will consist of 380,000 sf of space with a 100 room hotel. The studies determined expected traffic generation and assessed the project's impacts at key intersections along Great Road and at the I-495 interchange. Key issues included access and interchange improvements to support the project.

Peer Review – Seacoast Healthcare Oncology Center, Fairhaven, MA

Reviewed the Traffic Impact and Access Studies (Phase I and Phase II) prepared for the Seacoast Healthcare Oncology Center located on Mill Road. The center will comprise 116,000+ sf of doctor office and treatment space. Key issues addressed included trip generation, sight distances and access.

1265 Main Street, Waltham, MA

Traffic component of the Expanded Environmental Impact Report for Phase 1 of the redevelopment of the former 107 acre Polaroid site on Main Street at Route 128. Phase 1 consists of the development of 280,000 sf of mixed-use space (office and retail shopping center) and included a new Market Basket supermarket. The studies determined expected traffic generation and assessed the project's impacts at key intersections along Main Street, Route 20 and Interstate 95/Route 128. Key issues included access and interchange improvements to support the project.

Franklin Downtown Improvement Project, Franklin, MA

Prepared Functional Design Report and supervised the design of Signal Plans for the redesign of the downtown area of Franklin. The report determined expected traffic flow resulting from the re-orientation of traffic in the downtown triangle of Main, West

PROJECT EXPERIENCE con't

Central and Emmons streets (one-way circulation to two-way flow) and assessed the project's impacts at key intersections.

Peer Review – Taylor Cove Condominiums, Andover, MA

Reviewed the Traffic Impact and Access Study prepared for the Taylor Cove Condominiums to be located on River Street. The development is expected to consist of 32 condominium units. Key issues addressed included trip generation, access, sight distance assessment and pedestrian safety.

Land Court, Peabody, MA

Prepared for and testified in Land Court in Peabody relative to Omni Development vs. City of Newburyport Zoning Board of Appeals
Testified relative to traffic and parking impacts.

Route 56 Corridor, Oxford, MA

Traffic Impact and Access Study for the Oxford Transfer Station, a C&D transfer station, with a permitted capacity of 650 tons per day (tpd). The study determined expected trip generation and assessed the project's impacts at key intersection along the Route 56 corridor.

Route 44, Taunton, MA

Traffic Impact and Access Study for the expansion for 320 tpd to 550 tpd of the existing New England Recycling C&D facility on Route 44. The report identified existing traffic operating parameters and traffic generation and assessed future conditions on Route 44 with the 230 tpd expansion.

Land Court, Gloucester, MA

Prepared for and testified in Land Court in Gloucester relative to Griffoni vs. City of Gloucester Zoning Board of Appeals on denial of a 40B residential application. Testified relative to traffic impacts and site access.

Traffic Impact and Access Study Village Green / Wild Flower Meadow Littleton, MA



Bayside Engineering prepared a Traffic Impact and Access Study for the proposed residential development in Littleton, Massachusetts. The development is located on approximately 23 acres of land on the north side of Great Road, east of Grist Mill Road. The site previously was a vacant, wooded parcel of land.

The project consisted of 142 residential townhouse units and 48 residential apartment units. Parking for 411 vehicles is provided. Access to the project is provided by way of a full-movement driveway, Boxwood Drive, to Great Road and an emergency access only driveway to Grist Mill Road.

Bayside's services included, existing site condition evaluation, data collection, traffic analysis, and an impact report summarizing work performed with results.

Bayside assisted in securing the Massachusetts 40B Comprehensive Permit, encouraging the production of affordable housing in all communities throughout the Commonwealth. The necessary Highway Access Permit from MassDOT was also acquired by Bayside.

Key to the access design was the widening of Route 119 to provide an exclusive left-turn lane. The grade of Great Road was adjusted and the profile was designed to meet MassDOT requirements for sight distances.



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MEPA Review Essex Landing Saugus, MA



Design and renderings by BMA Architectural Group

Bayside Engineering prepared Traffic components of the Environmental Impact Reports for the proposed mixed-use development in Saugus, Massachusetts. The development is located on approximately 10 acres of land on the west side of Route 1, north of Route 99. The site previously was a miniature golf course with batting cages and an ice cream stand.

Essex Landing is a mixed use development that includes hotel, residential and commercial retail uses. Two 6-story hotels are proposed. One will be a full-service hotel and will have 150 rooms and the second hotel will be an extended-stay hotel and will have 130 rooms. Three stand-alone, 6-story apartment buildings are proposed, having a total of 216 one bedroom apartment units. A 6-story mixed use-building will house approximately 9,000 square feet (sf) of restaurant space on the first floor with thirty-nine (39) one-bedroom apartments above. Adjacent to the mixed-use building will be a free-standing 3,500 sf restaurant. 200 total restaurant seats are proposed. The initial building, comprising 39 apartment units and approximately 9,000 sf of commercial space is nearly complete.

Bayside's services included, performing the necessary traffic analysis for the project, and completing the MEPA review. Upon securing MEPA compliance, we secured the Section 61 Finding from the MassDOT Public/Private Development Unit, and secured the Highway Access Permit for the project. Bayside also prepared the highway plans for the off-site improvements, which included designing Improvements to Collins Avenue at Route 1.



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Traffic Impact and Access Study

Alexan 3 North

Billerica, MA



Bayside Engineering prepared the traffic studies for the proposed residential development in Billerica, Massachusetts. The development is located on the west side of Boston Road (Route 3A), north of Alpine Street. The site previously was a vacant, wooded parcel of land.

The project consists of 178 residential apartment units in three residential buildings. Twenty-five percent of these units (45) will be designated as affordable. Parking for 323 vehicles is provided. Access to the site is provided by way of two full-movement driveways to Boston Road.

Bayside's services included, existing site condition evaluation, data collection, traffic analysis, and a traffic memorandum summarizing work performed with results.

Bayside assisted in securing the Massachusetts 40B Comprehensive Permit, encouraging the production of affordable housing in all communities throughout the Commonwealth. The necessary Highway Access Permit from MassDOT was also acquired by Bayside.



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