

Proposal for
Route 66 Corridor Study

Transportation Planning, Traffic Engineering, and Land Use Planning Service

Submitted to:
Lower Connecticut River Valley Council of Governments



March 10, 2017

Tighe&Bond

L5001P001
March 10, 2017

Mr. Robert Haramut
Senior Transportation Planner
Lower Connecticut River Valley Council of Governments (RiverCOG)
145 Dennison Road
Essex, CT 06426

**Re: Route 66 Corridor Plan
East Hampton and Portland, CT**

Dear Mr. Haramut:

RiverCOG is seeking an update to previous planning efforts along Route 66 in the Towns of East Hampton and Portland with a focus on safety, integration of alternative travel modes, and land use planning to improve the transportation system for all users. Tighe & Bond has assembled a team of "project stakeholders" that live, shop and commute this corridor on a daily basis to develop the Route 66 Transportation Improvement Plan. Tighe & Bond's Middletown Office will manage and deliver this project with support from our transportation engineers in Shelton, CT.

We have assembled a highly experienced team of professionals that bring a broad, unique skill set to this project. The Project Director will be **Christopher O. Granatini, P.E.** Chris is a resident of Marlborough and travels the corridor daily to work and shop. Chris brings 21 years of transportation engineering and planning expertise to this assignment. Chris is a seasoned project manager, with recent transportation planning experience for CRCOG and METROCOG. Chris is an effective and experienced public presenter. As the Project Manager, Chris blends experience in both traffic engineering and roadway design to ensure that feasible improvement solutions will be recommended.

Tighe & Bond is a multi-disciplinary engineering and environmental services consulting firm serving clients in New England for over 100 years. Our business is founded on our client-driven approach while serving State and municipal clients as well as private institutions. We focus on delivering cost effective solutions to complex engineering assignments for each client and we support the design, permitting, and implementation phases of our projects to provide one stop shopping providing value and continuity. Tighe & Bond is recognized as experts in the fields of transportation engineering with Professional Traffic Operations Engineers (PTOE) on staff. We demonstrate in our Technical Response that we have the requisite expertise to successfully conduct this project.

Project Organization and Roles

Tighe & Bond will serve as the prime consultant leading a team of experts of both in-house staff along with sub-consultants that bring additional expertise to the team. The firm, along with our sub-consultants, will deliver all the transportation planning and engineering services, both in analysis and design.

The Tighe & Bond Team includes subconsultants **CDM Smith, Freeman Companies**, a CTDOT Certified DBE, and **RKG Associates, Inc.** For our data collection needs, we will utilize another CTDOT DBE certified firm **Connecticut Counts**.



In assembling this team, we have focused the strengths of each team member on aspects of the project where their expertise will most benefit RiverCOG and the Towns. More specifically, the team member's primary areas of focus include the following:

Tighe & Bond, Inc.:

- Traffic & Transportation Engineering
- Operational Analysis and Simulations
- Concept Development and Alternative Analysis
- Land Development Review
- Public Involvement
- Cost Estimating

CDM Smith:

- Transportation Planning
- Traffic Engineering
- Public Involvement Support

**Freeman Companies:
(DBE)**

- Landscape Architecture
- Streetscape Design

RKG Associates, Inc.

- Land Use Planning
- Economic Analyses
- Market Studies and Development Opportunities

**Connecticut Counts:
(DBE)**

- Traffic Data Collection

Public Participation

We recognize that community involvement and consensus building as the foundation for successful transportation planning activities. Interfacing with RiverCOG, the Towns, CTDOT, and other important stakeholders will ensure that the planning effort is vetted throughout development and that solutions are focused on both analytical and empirical data. Tighe & Bond successfully conducted Technical and Community advisory committee meetings with key stakeholders on previous similar planning studies. During the public involvement process for the Route 3 study in Rocky Hill we presented at Public Information Meetings, Town Council, and appeared on public television to ensure that the Town of Rocky Hill and its residents were kept abreast of the study's findings and recommendations. These outreach initiatives all but guaranteed that the Study recommendations would be supported by the stakeholders and sensitive to all the issues facing the Town.

The focus of the public participation and outreach will be to identify goals and objectives, educate technical staff, town officials, and area stakeholders of the deficiencies and needs, and present realistic solutions that address current and future transportation system needs. We utilize various outreach techniques to ensure that we can obtain the necessary input from the public to advise the decision-making process throughout the development of the study. Techniques including information meetings, design workshops, and attending community and business organization meetings are some of the methods that we utilize to reach project stakeholders. Implementation of this process should facilitate the success and endorsement of the final study area plan.

The Tighe & Bond Team Advantage

The selection of the Tighe & Bond Team for this project provides many benefits to the Towns of East Hampton and Portland, RiverCOG, and CTDOT, including:

- Client focused progressive solutions; “outside-the-box” thinking that address current and future transportation system needs and deficiencies to mitigate congestion; analyses to support land use expansion; and accommodation of multi-modal users
- Effective, experienced Public Involvement execution with a track record of success on the Route 110, Route 3, and other active studies
- Understanding of the issues and familiarity with the study area; we conducted a detailed review in the field, observing traffic flows and congestion during peak traffic in the morning and afternoon to confirm our experience driving the area, plus our staff live in the area and routinely experience the issues first hand
- Technical resources strategically located and easily accessible to RiverCOG and the Towns
- Project Team that has worked together and understand how to execute transportation planning projects efficiently with proven successful results
- Project Team that lives, shops and commutes this corridor on a daily basis, over 70 years of combined corridor experience

We are excited about the opportunity to provide transportation planning and engineering services to RiverCOG, the Town of East Hampton, and the Town of Portland. We have endeavored to assemble a team that has all the expertise to efficiently complete this assignment in a timely manner. If you have any questions about the enclosed information, please contact Chris Granatini. We thank you for this opportunity to provide our transportation engineering and planning services, and look forward to further discussing our capabilities and approach with you and the Selection Committee.

Very truly yours,

TIGHE & BOND, INC.



Christopher O. Granatini, P.E.
Project Manager



Dana C. Huff, P.E.
Vice President

Enclosures

Document3



Tighe&Bond

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SECTION 1

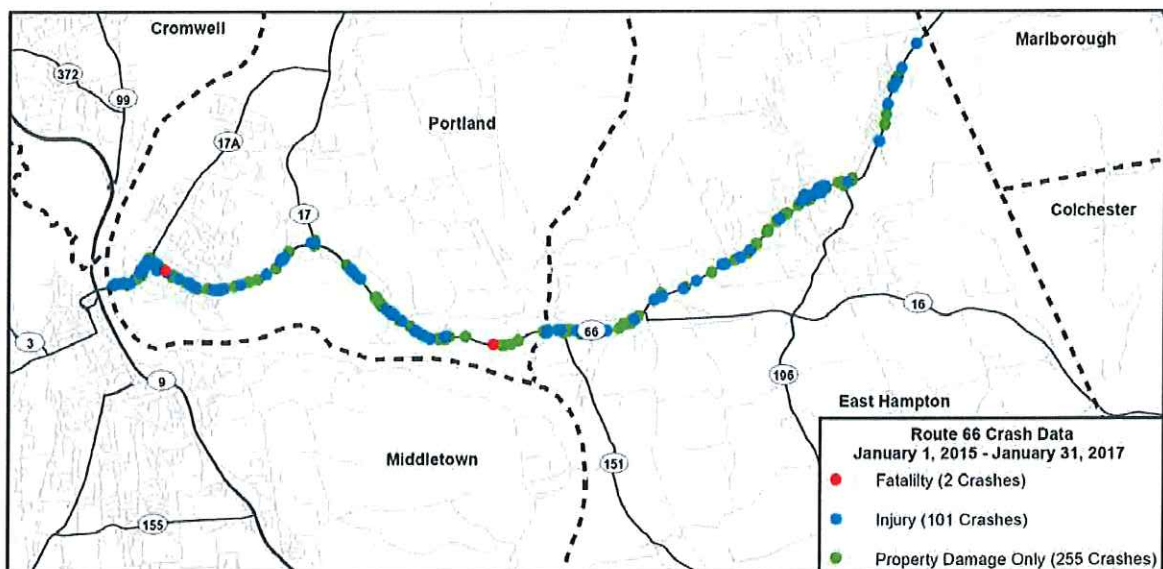
INTRODUCTION

Section 1 Introduction

The **Lower Connecticut River Valley Council of Governments** (RiverCOG) is seeking to obtain the services of a consulting firm to conduct a transportation planning corridor study on Route 66 in Portland and East Hampton, Connecticut. The goal of the study is to expand upon a prior Corridor Improvement Plan, prepared in 1998, by providing current data/assessment of traffic, safety, intersection, and infrastructure conditions. Based on the findings, the study will recommend strategies for improved safety, traffic calming, and accident reduction, while assessing the impacts of current and future land use demands and plans. Additional goals include incorporating safe bike and pedestrian routes, and creating a cohesive street aesthetic. The Tighe & Bond team of engineers, planners, landscape architects, and economic advisors provides the necessary mix of skills and expertise to exceed the Town's and Regions project goals and objectives.

In support of this project, Tighe & Bond has assembled a team of "**Project Stakeholders**" to serve the Towns and RiverCOG. Our stakeholders include staff members like **Becca Ruitto Hall, P.E., PTOE**, who grew up in the Town of Portland and whose family still resides there. **Dan Valentine, P.E.**, who is a resident in the Town of East Hampton and serves on the WPCA Commission. Our Project Director, **Chris Granatini, P.E.**, lives in Marlborough and commutes the Route 66 corridor to Middletown on a daily basis. From CDM Smith, **Joe Balskus, P.E., PTOE**, is also a Portland resident and active in the community. These team members will be engaged and committed to the success of the study.

Safety is the number one initiative when it comes to improving our existing transportation systems. Beginning with the Federal Highway Administration and their "Toward Zero Deaths" initiative, which is implemented through the State and regions, improving safety on our roadways is paramount. Tighe & Bond is currently one of two On-Call Consulting Firms under the Connecticut Department of Transportation's (CTDOT) Traffic and Safety On-Call Contract. We have a broad understanding of measuring safety on a roadway system and one of the key focal areas of this study will be to review the recent crash experience along the corridor, identify key areas of concern and identify mitigation to improve corridor safety.



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The **Airline Trail corridor** intersects the Route 66 corridor just to the east of the intersection of Route 66 and Route 16 in East Hampton. Portions of the rail corridor to the south and east of Route 66, beginning in the Town of East Hampton and extending to the east have been transformed into a multi-use trail for recreation. Tighe & Bond staff live very close, in Marlborough, to the Airline Trail adjacent to River Road and have observed the extensive use the trail sees from recreational users. Recently, the Town of Portland has initiated a process



to transform segments of the Airline Rail corridor to the west of the existing trail limits to extend this recreational asset into the Town. Tighe & Bond staff have been supporting efforts by the Town of Portland to identify potential parking areas along the trail route to provide convenient access for residents. One focus of the Route 66 Study will be to identify measures that can build upon current initiatives to link the transportation corridor with the trail route to enhance pedestrian and bicycle recreational opportunities in both Towns. These opportunities may include the development of a multi-use trail alongside the Route 66 roadway to support the vision of providing "complete streets" for both Towns.

In addition to the operations along the roadway, the Towns of Portland and East Hampton have extensive land available along sections of the corridor that may provide opportunities for future development. We understand that determining how the marriage of land use and the transportation system will provide critical guiding information when it comes to making long-range plans to improve the corridor. We have brought in expert subconsultants in the field of economic analysis, land use and development, and planning to support the study initiatives to determine how future changes in land use may affect the Route 66 corridor. This look ahead will also provide information that can be used right now to support opportunities to improve the local economy by leveraging the corridor opportunities for transportation with land use opportunities for development.



INTRODUCTION

1.1 Team Overview

1.1.1 Tighe & Bond

Tighe & Bond is a multi-disciplinary engineering and environmental services consulting firm serving clients in New England for over 100 years. Our business is founded on our client-driven approach. We focus on providing cost effective solutions to complex engineering assignments for each client. With our broad staff of professionals, we support the design, permitting, and implementation phases of our projects to provide one stop shopping, providing value and continuity for clients.

The technical staff of Tighe & Bond has been involved in all facets of traffic engineering, transportation planning and design, and traffic operations modeling and simulations, roadway design, and other transportation services. Staff based in the **Middletown Office**, located at 213 Court Street in downtown Middletown along with support staff in our **Shelton, Connecticut Office**, located at 1000 Bridgeport Avenue, will provide the management and technical services for this assignment. Our Connecticut offices essentially function as one cohesive unit as we share staff between the two locations to support project-staffing needs.

In support of this assignment Tighe & Bond's **Senior Project Manager, Christopher O. Granatini, P.E.**, will serve as Project Director and the primary contact for the Route 66 project. He has over 20 years of experience in transportation engineering, transportation planning, traffic engineering and public outreach. He will oversee the execution of the assignment, play a central role in the Public Outreach activities, lead the interaction with the advisory committees, and liaison between the RiverCOG, CTDOT, the Towns of Portland and East Hampton, and the Tighe & Bond team members. Chris is a local resident, located in Marlborough, and drives the Route 66 corridor to commute to work in Middletown and shop in East Hampton and Portland. He is invested in the success of the corridor and this study as both a commuter and customer of the businesses in both Towns.

Christopher O. Granatini, P.E.
Senior Project Manager/Associate
Office: (860) 704-4771
Cell: (860) 262-3143
COGranatini@tighebond.com

1.1.2 Subconsultant Team Members

In addition to Tighe & Bond's deep bench of professional engineers (highlighted in Section 3) we have also enlisted the services of **CDM Smith**, a firm offering professional services in studies, design and implementation in traffic operations. CDM Smith's efforts will be led by **Joseph C. Balskus, P.E., PTOE**, a Principal at the firm. Joe is a long-time **Portland resident**, has been active within the community through many different engagements, and has conducted projects along Route 66 during his 30-year career. Landscape and streetscape enhancements are the elements of a roadway that change the character from a vehicle-centric corridor focused on carrying cars from point A to point B to a complete transportation system. We recognize the importance of studying the opportunities to improve the streetscape to enhance pedestrian, bicycle, and transit opportunities and to convey to motorists that they are on a complete street and not just a road. We have teamed with **Freeman Companies**, a State of Connecticut certified DBE, and specifically **Heidi Berg Hajna, PLA, ASLA**. Heidi has worked in the Route 66 corridor throughout her career, including the development of



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the Streetscape Improvements along Route 66 in East Hampton. Heidi understands the balance that needs to be struck between roadway operations and streetscape enhancements and will play a critical role in the identification of complete street enhancements. Heidi is currently working on a team with CDM Smith and Tighe & Bond to provide landscape/streetscape design improvement along Hebron Avenue in Glastonbury for the roundabout projects that we are designing. Finally, supporting the economic development and land use tasks of the study will be **RKG Associates**, led by **Craig Seymour, Managing Principal**. RKG Associates is a firm focused on economics, market research, and real estate development and planning. Their expertise in these areas will greatly compliment the engineering and transportation planning expert that make up the balance of the team.



1.1.3 Team Expertise

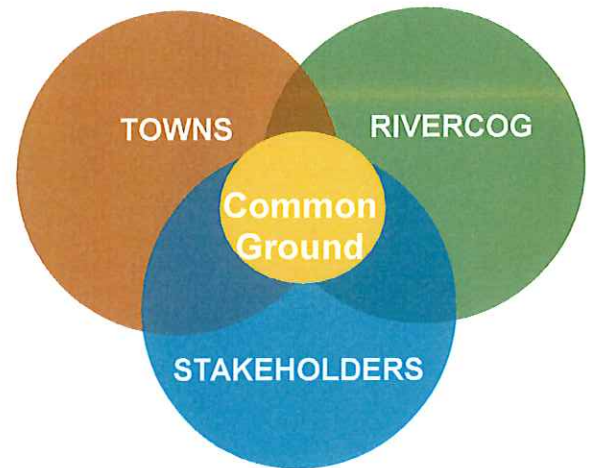
The Tighe & Bond team is highly qualified for this project in that we have:

- Extensive knowledge of the project area and unparalleled understanding of the local issues. Many of our team members live locally to this area and drive Route 66 daily.
- Our Team Staff experience the Route 66 corridor issues first hand every day
- Recent relevant experience conducting similar assignments for other Council of Governments, municipalities in Connecticut, and CTDOT
- Experience in facilitation and execution of public involvement for a multitude of planning projects from corridor studies, to municipal development plans, to land use expansion and development projects
- Extensive experience in conducting traffic analyses and modelling of complex transportation systems
- Track record of developing progressive multi-modal transportation solutions that consider accommodation of all travel modes to provide complete transportation systems
- Traffic engineering and transportation planning experience combined with roadway design expertise to enable us to blend traffic operations with physical design to identify implementable solutions that work for everyone

"Especially encouraging was their willingness to work with CRCOG to adjust and swap scoped tasks as necessary to address unexpected study events. Tighe & Bond was responsive to initial public meeting input which led to the integration of additional complete street tasks, ultimately resulting in significant study support from the bicycle/pedestrian community."
- Robert Aloise, P.E., Principal Engineer, CRCOG

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- Facilitating a robust public outreach program that includes:
 - Organizing a technical advisory committee, (TAC), composed of officials from both Towns, RiverCOG and CT DOT
 - Organizing a Community Advisory Committee with stakeholders from both communities,
 - Facilitating interactive public information meetings in both communities,
 - Reaching out to Town Councils/Town Boards in each community
 - Conducting mobile interviews with the public on the streets
- Utilizing state-of-the-art traffic modeling techniques such as:
 - Synchro Analysis
 - Volumes, timing, geometry, signal operations (input)
 - Capacity, queues, optimized signal operations (results)
 - SimTraffic Simulation
 - Animation of traffic operations
 - Useful public outreach tool
 - VISSIM Modeling
 - High-level modeling software
 - Powerful for many transportation systems
- Complimentary and comprehensive services that address all the requisite services requested by RiverCOG and the Towns:
 - Transportation Engineering
 - Transportation Planning
 - Alternative Travel Mode Planning
 - Traffic Engineering
 - Safety Analysis and Mitigation Design
 - Landscape Architecture and Streetscape Design
 - Land Use Planning
 - Economic Studies, Market Studies, Development Opportunities
 - Public Involvement
 - Conceptual Design



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1.1.4 Tighe & Bond's History

In business for more than a century, Tighe & Bond is one of the most experienced, continuously operating engineering firms in the northeastern United States. Our employee owned firm has provided consulting services to a wide variety of municipal, government and private clients across the region.

Our full service firm has built a solid reputation upon the technical knowledge, experience and capabilities we bring to each project we undertake, as well as the service we provide. Seasoned project managers, supported by project directors and experienced engineers and scientists on each and every project assure continuity, accountability, and a high quality service.

Tighe & Bond is staffed by more than 290 dedicated professionals, including professional engineers, environmental scientists and hydrogeologists. Working in teams, our professional staff share diverse expertise to benefit our clients. Professional registrations cover a wide range of disciplines; personnel specialize in the following areas:

- Civil Engineering
- Coastal & Dam Engineering
- Demolition Engineering & Hazardous Building Material Assessment
- Electrical Engineering
- Energy Generation and Conservation
- Environmental Permitting
- Geographic Information Systems (GIS)
- Geotechnical Engineering
- Health & Safety
- Instrumentation & Control
- Landscape Architecture
- Mechanical/HVAC Engineering
- Parking Consultancy
- Regulatory Compliance & Permitting
- Remediation
- Site Assessment & Development
- Solid Waste Management
- Structural Engineering
- Sustainable Design
- Traffic Engineering
- Transportation Planning
- Wastewater Management
- Water Resources Engineering
- Wetlands and Ecological Services



INTRODUCTION

1.1.5 Transportation Expertise

Tighe & Bond provides comprehensive transportation engineering services providing clients "one-stop shopping". We are recognized as progressive leaders in the industry and provide a broad spectrum of related services. Our expertise includes in-house capabilities to provide comprehensive corridor studies/evaluations, roadway design services, hydraulics and drainage design, maintenance and protection of traffic design, structural engineering, wetlands delineation and permitting, and traffic engineering. Our staff are licensed as Professional Engineers and hold the Professional Traffic Operations Engineer (PTOE) certifications, and they bring recent relevant project experience serving municipalities. Tighe & Bond's seasoned and veteran engineers have studied and prepared construction documents for diverse transportation projects, including roadway reconstruction, complete streets projects, streetscape improvements, traffic control signal design, and signal system upgrades, transportation master planning and utility design projects.



We deliver innovative yet practical and cost-effective solutions that meet the multi-modal needs of diverse stakeholders. We have a proven track record of identifying progressive and sustainable solutions to the most challenging issues and carrying our designs through approvals and construction. Our services, from concept to construction, include:

Roadway Improvements and Streetscapes

- Roadway Improvement Design
- Sidewalks and Crosswalks
- Bicycle Lanes
- Roadway and Intersection Safety
- Modern Roundabout Design
- Bridge / Structures Design
- Curbing and Drainage Improvements
- Greening Roadside Areas (Raingardens and other Low Impact Design Features)
- Streetlights and Roadway Signs
- On-Street Parking
- Truck Loading / Unloading Areas
- Bus Stops / Pull-Out Areas
- Pavement Management
- Asset Management

Smart Growth and Sustainability

- Transportation Planning and Corridor Studies
- Complete Streets
- Traffic Calming
- Bicycle and Pedestrian-Friendly Designs
- Access Management
- LEED / Green Design
- Transit Oriented Development
- Transportation Demand Management

Traffic and Parking

- Traffic Impact Studies
- Traffic Signals and Systems
- Downtown Traffic and Circulation Studies
- Parking Studies and Demand Analysis
- Parking Lots and Garages
- Truck Routes and Circulation Studies
- Spot Speed Studies
- Travel-Time and Delay Studies
- Traffic Collision Analysis
- Vehicle Queuing Studies
- Simulation Modeling

Other Support Services

- Site Engineering and Master Planning
- Geotechnical Engineering
- Wetlands Services and Permitting
- Field Data Collection
- Landscape Architecture
- Public Presentations
- Court Testimony
- Permitting and Regulatory Assistance
- Construction Administration
- Peer Review Services

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1.1.6 CTDOT Prequalification & Experience

Tighe & Bond has been prequalified in 2017 by the Connecticut Department of Transportation (CTDOT) in all the requisite categories required to conduct this assignment. We identify below Tighe & Bond's 2017 CTDOT Prequalified Project categories, followed by the in-house staff with Connecticut specific expertise in each category:

- Bridge and Structure Design (7 Staff)
- Construction Engineering & Inspection (Road, Bridge) (12 Staff)
- Environmental Planning Studies & Regulatory Permitting (8 Staff)
- Highway Design (16 Staff)
- Modal Transportation Planning Studies (7 Staff)
- Traffic and Safety Engineering (10 Staff)

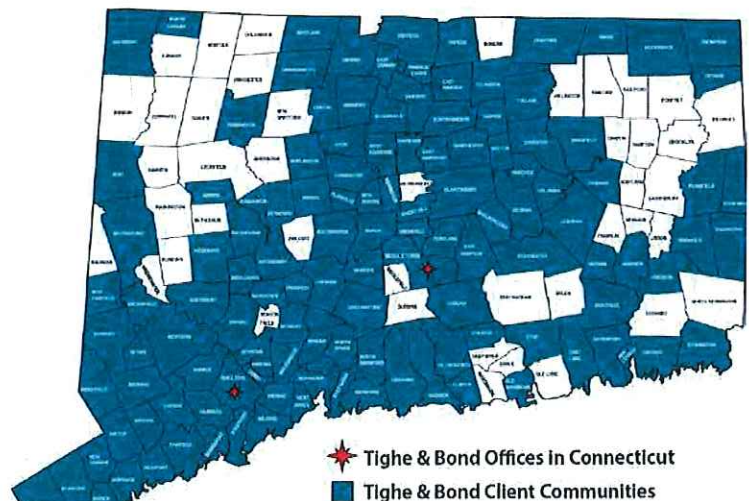
The study will plan future improvements along an important State route and coordination with CTDOT staff will be critical to obtain input on both the study findings, analyses, future traffic projections, and ultimately endorsement of the recommended improvements. Tighe & Bond and CDM Smith have extensive experience interfacing with CTDOT staff through previous planning efforts in addition to normal project work that we conduct for our private and municipal clients.

Additionally, Tighe & Bond currently has an on-call traffic and safety engineering contract with CTDOT. contract with the CTDOT for task-based traffic and safety engineering services throughout CT. Tighe & Bond is calculating yellow and all-red clearance timings for 794 state-owned and maintained traffic control signals in District 1. Additional assignments include evaluation and design of warning and safety signage and pavement markings for approximately 1,500 dangerous non-state owned roadway curves in Districts 2 and 4.

1.1.7 Focus on Municipalities

Tighe & Bond has been providing services to municipal clients since our founding in 1911. We have provided project specific and on-call services to dozens of communities and water/wastewater utilities and have served many of them for over 40 years.

Our firm is well known for providing provide responsive, comprehensive planning, permitting, design and construction-phase services to a wide range of local, state and regional governmental entities. Our public clients include assessors, legal departments, town administrators, engineering departments, departments of public works, housing authorities, boards of health, departments of planning and economic development, redevelopment authorities, conservation commissions, water and sewer departments/districts/authorities, as well as fire, police and school departments.



INTRODUCTION

1.2 CDM Smith – Firm Overview

With services dating back to 1952, CDM Smith offers innovative, integrated approaches to the study and implementation of safer traffic operations. Our traffic engineering services address the full array of congestion and access management, signal improvements, traffic calming and safety programs, and all types of ITS applications to enhance transportation system performance.

CDM Smith maintains a full, geographically-diverse traffic engineering staff, many of whom are Professional Traffic Operations Engineers, with significant experience using the industry's standard simulation software. In addition, several hold safety and inspection certifications; have authored multiple papers, articles and presentations; are involved in policy and research projects through national organizations such as the Transportation Research Board and the Institute of Transportation Engineers, and/or teach at renowned engineering schools.

CDM Smith's Traffic Engineering Services include:

- Traffic Design
- Context-Sensitive Design
- Traffic Operations and Capacity Analysis
- Traffic Calming (Roundabouts)
- Access Management
- Safety Analysis
- Parking Studies
- Signage and Wayfinding
- Traffic Impact and Circulation Studies
- Microsimulation
- Freeway Operations
- Heavy Haul Move
- Traffic Support
- Bicycle and Pedestrian Studies and Design
- Traffic Signal Design, Inventory, and Optimization
- Complete Streets Planning

1.3 Freeman Companies – Firm Overview

The Freeman Companies specialize in owner's representation, landscape architecture, permitting, land surveying, bridge and structural engineering, geotechnical engineering, transportation and traffic engineering, hydraulic/hydrologic engineering, environmental sciences, hazardous building materials services, construction engineering and inspection, and contractor support services for projects in the governmental, educational, commercial, industrial, institutional and infrastructure markets. The firm is a certified Disadvantaged Business Enterprise (DBE), Minority Business Enterprise (MBE), Small Business Enterprise (SBE) and SAM-Active, Federal US SBA 8(a) professional consulting enterprise.

Freeman Companies' Services include:

- Land Surveying
- Civil Engineering
- Landscape Architecture
- Traffic Engineering
- Transportation and Planning
- Geotechnical Engineering
- Structural Engineering
- Hazardous Building Materials Services
- Construction Engineering and Inspection

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1.4 RKG Associates – Firm Overview

Founded in 1981, RKG Associates, Inc. provides private, public and institutional clients, nationwide, a comprehensive range of advisory, planning, and strategic consulting services related to real estate, land use and economic development. We are proud that most of the assignments for which we have been engaged are projects that are built... projects that happen... projects that work... projects with tangible results measured in terms of new jobs, new investments, expanded tax bases or new master plans based on strong community consensus.

Our firm has successfully blended the in-house expertise of professionals who have backgrounds in market research, economics, finance, real estate development and planning. We also call upon an extensive network of other professionals to provide complementary technical expertise in such areas as architecture, engineering, land use planning, legal services and environmental science. Whether it is a large-scale project or a smaller undertaking, we make our full range of skills and disciplines available to every client.

RKG Associates services include:

ECONOMIC CONSULTING SERVICES

Local & Regional Economic Development

- Economic Development Strategies
- Tax Base Management Strategies
- Property Disposition and Repositioning
- Target Industry Analysis & Promotional Strategies

Economic & Fiscal Impact Analysis

- Commercial, Industrial and Residential
- Development Impact Studies

Economic and Fiscal Analysis of Transportation Projects

- Highway, Airport, Transit, Intermodal and Port Related Project

PLANNING SERVICES

- Project Management/Public Process
- Open Space and Sprawl Management Strategies
- Regional Land Use Plans and Studies
- Rezoning Strategies
- Municipal Land Use and Master Plans
- Military Base Redevelopment Planning and Implementation

REAL ESTATE ADVISORY SERVICES

- Real Estate Consulting
- Market Research
- Highest and Best Use Studies
- Project Marketing/Developer Solicitation
- Real Estate Repositioning Strategies
- Development Feasibility
- Public-Private Partnerships
- Site Selection/Location Analysis
- New Construction, Land Development and Adaptive Reuse
- Brownfields Redevelopment

Tighe&Bond

SECTION 2

FIRM EXPERIENCE

Section 2 Firm Experience



2.1 Tighe & Bond Experience

The Tighe & Bond Team of transportation engineers and planners brings an extensive resume of relevant project experience that sets us apart from our competition. We endeavored to assemble a project team for RiverCOG and the Towns that is diverse, with extensive planning and design experience; that has recent similar project experience; and that provides expertise in the specialized skills necessary to address the technical requirements of the project.

The Tighe & Bond Team features extensive expertise in the following disciplines providing RiverCOG and the Towns of Portland and East Hampton with a highly skilled consultant team to execute this assignment with limited oversight, while still guaranteeing top notch deliverables and seamless execution of the scope of work. We provide:

- **Data Collection and Data Review**
- **Traffic Engineering and Analysis; Traffic Projections and Trip Generation Estimating**
- **Traffic Simulation, Modeling and Model Calibration**
- **Traffic Signal and Signal System Design**
- **Safety Reviews and Assessments**
- **Transportation Engineering and Roadway Design**
- **Environmental Resource Screening and Assessment of Impacts**
- **CEPA/NEPA Process Execution**
- **Cost Estimating**
- **Public Outreach Initiatives Development and Plan Execution**

The Tighe & Bond Team provides unique and highly talented professionals with extensive expertise across the planning and engineering spectrum of projects in southern New England. Tighe & Bond's staff are well known for our expertise in traffic engineering, transportation planning, and roadway design capabilities. We marry our skills with the widely recognized transportation expertise provided by CDM Smith, the landscape and streetscape design expertise of Freeman Companies, and the economic analysis and land use planning

Tighe & Bond staff have been involved in typical corridor planning studies including the Route 110 Engineering Planning Study for METROCOG, the Route 3 Traffic and Development Study, Routes 175, US 5/15, and 69 studies conducted for CRCOG, SCRCOG and COGCNV, respectively, along with their member municipalities. We have supported the development of Municipal Development Plans in Norwalk and Hartford. Tighe & Bond provided diverse engineering and planning services to prepare the unique Master Plan for the 500-acre Reserve development in Danbury, involving interchange improvements.

Tighe & Bond professionals will provide the RiverCOG, CTDOT, and the Towns of Portland and East Hampton with the most diverse talent for this project. With this diversity of talent and experience, comes a team with "outside the box" thinking and progressive transportation and traffic engineering planning to provide recommendations for the study area future.

FIRM EXPERIENCE

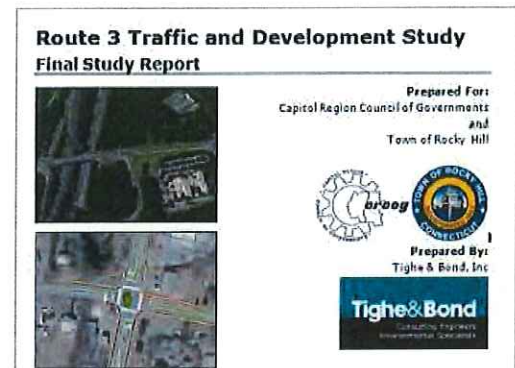
2.1.1 Transportation Planning & Studies

The Tighe & Bond team provides comprehensive expertise in complex transportation system analysis and modeling. Our traffic studies include data collection, traffic projections, traffic generation estimates and distribution, site access/egress analysis and traffic operations simulations. We study the need for traffic signals through preparation of traffic signal warrant analyses to determine if traffic signals are required under the Manual of Uniform Traffic Control Devices (MUTCD) and where signals are required we prepare traffic signal designs and specifications.

Tighe & Bond is an industry leader in the new transportation paradigm in New England, with a concentration on the movement of people instead of vehicles. Our transportation engineers are leading the charge, with involvement on industry organizations including the Institute of Transportation of Engineers (ITE), Women's Transportation Seminar (WTS), and the Intelligent Transportation Society of CT (ITS). We have utilized this industry visibility to participate in the new standards for transportation that are being applied in the urban settings, using NACTO guidelines (National Association of City Transportation Officials), otherwise known as the urban AASHTO. Furthermore, our staff understands Complete Streets with our design work on the Prospect Street Complete Street project for Yale University in New Haven and planning efforts for Route 110 in Stratford.

Recently, we have been involved in the transportation projects and studies which have similar facets of this project. These studies include:

- **The Route 3 Traffic and Development Study in Rocky Hill, CT.** This study with CROCOG and the Town of Rocky Hill is a representative example of the high quality, results based transportation engineering work for which Tighe & Bond is known.
- **The Route 110 Transportation Engineering and Planning Study in Stratford, CT.** This study with Greater Bridgeport Regional Council and the Town of Stratford is another representative example of the high quality, results based transportation engineering work for which Tighe & Bond is known.
- **The Route 25/111 Corridors Comprehensive Transportation Planning Study in Trumbull and Monroe, CT.** This goal of this study commissioned with Connecticut Metropolitan Council of Government (METROCOG) is to develop roadway and traffic operation improvement recommendations that will mitigate existing congestion and safety issues, accommodate future regional growth, enhance opportunities for alternate travel modes, and support future land use development in the area, including accommodating the anticipate future traffic flows on the roadway system. A very similar project as the Route 66 corridor study.



FIRM EXPERIENCE

- **Mobility Study, Downtown New Haven.** This study has involved an extensive review of all modes of transportation in New Haven, as well as parking, and developed recommendations for future transportation modes and parking systems. With significant public outreach efforts including a bus tour.
- **Prospect Street Complete Street project.** This involves the reconstruction of Prospect Street in Yale University's central campus associated with the construction of two new residential colleges that will bring 800 students to the Prospect Street corridor. The improvements include an enhanced mid-block pedestrian crossing with active pedestrian warning signs with flashing warning beacons.

We are experts in the development of traffic engineering and transportation studies for municipalities, universities, and regional planning agencies. We also understand the processes required to secure approvals by the Office of State Traffic Administration (OSTA) and CTDOT Division of Traffic Engineering.

In addition to the projects listed above, Tighe & Bond has considerable traffic study planning experience with the following projects:

- U.S. Route 5 Study
- Route 175
- Route 5/15
- Rentschler Field Study
- Route 9 Interchange Study
- Route 8 Operational and Safety Study
- Bradley Airport Area Transportation Planning Study

2.1.2 Traffic Safety

Tighe & Bond's Traffic Operations Engineers are experienced in providing traffic safety analysis and design. During the data collection phase, our team obtains accident reports from the most recent three-year period for the areas they are reviewing. We find that three years of data provides a statistical representative sample of the frequency and type of accidents that occur. A detailed review of the data seeks out patterns, types, and numbers of accidents. The collision data is analyzed and our team can identify the safety issues that warrant further investigation or remedial action to correct deficiencies. The goal of the safety analysis is to use the data to identify the key contributing factors and physical conditions that are the root cause for any patterns of crashes that are occurring. With this knowledge, the team can identify measures to mitigate the deficiencies or operating conditions through the implementation of tested improvements that have been deployed nationally under similar operating conditions. Ultimately the goal is to eliminate fatalities and reduce all other types of crashed throughout the corridor.



FIRM EXPERIENCE

Tighe and Bond has provided these services for the following projects:

- **CTDOT Horizontal Curve Safety of Local Roads – District 2 & District 4:** Tighe & Bond evaluated and designed horizontal curve signing and delineation to reduce the number of fatal and serious injury crashes on curves located on locally-owned and maintained rural roads for approximately 1,400 curves in 45 towns in Districts 2 and 4.
- **CRCOG Transportation Safety and Improvements Study- Route 4, Farmington, CT:** Tighe & Bond completed detailed analysis of existing and future traffic conditions and existing safety deficiencies and identification of alternatives to improve the safety, mobility and access deficiencies within the study area. The study area is comprised of Route 4 and the state and local roadways surrounding the UCONN Health Campus.
- **CTDOT Clearance Interval Retiming Project – District 1:** To support the Traffic Safety Unit completed the retiming calculations for yellow and red vehicle traffic control signal clearance intervals, pedestrian clearance intervals, and pre-emption settings at 794 state-owned and maintained traffic control signals in District 1. The project included redrafting signal plans and maintenance timing data forms to allow state personnel to incorporate timing changes to increase intersection safety.
- **Bridgeport Hospital Parkway Campus – Exit 47, Merritt Parkway:** Conducted a safety and operational analysis for roadway improvement alternatives at the Merritt Parkway Exit 47 Ramp and site driveway intersections with Park Avenue to support the development of the Bridgeport Hospital Park Avenue Campus. For the selected alternative, completed the traffic control signal design for the new clustered traffic control signal located at the intersection of Park Avenue with Merritt Parkway northbound ramps and the site driveway.
- **Safety & Operational Improvements – Route 9, Middletown, CT:** Tighe & Bond provided comprehensive transportation system planning and engineering study of the Route 9 expressway in Middletown, CT. Conducted data collection and traffic operations analysis in support of the planning study. The public outreach program included the creation of a corridor advisory committee of critical stakeholders to provide public input into the process.
- **Interchange Safety Improvements - Route 8, Seymour, Derby, Shelton, and Ansonia, CT:** Prepared improvement alternatives to Route 8 in for the Valley Regional Planning Agency. The project focused on interchange safety improvements and mainline geometric improvements to address identified safety deficiencies.
- **NVCOGCT Corridor Study - Route 69, Prospect, Waterbury, and Wolcott, CT:** Tighe & Bond completed a study focused on improvement measures to enhance safety and mobility of Route 69 corridor. Developed access management plans throughout the corridor to define opportunities to control roadway access to improve safety and efficiency.

FIRM EXPERIENCE

2.1.3 Traffic Calming

Tighe & Bond provides experienced traffic engineering services to corporate, institutional and municipal clients as well as commercial developers. Our traffic impact studies include estimates of traffic generation, approach distribution and street assignment, selection of entrance and exit locations and traffic operations requirements. We deliver traffic signal designs with plans and specifications. We serve as public agency liaisons, and are frequently called upon to provide expert testimony.



For Yale University and the city of New Haven, CT, the firm provided functional design for Broadway, including lane arrangements and signal system phasing and timing. This traffic, pedestrian, parking and street beautification project won an AIA award for Architecture in the Community.

2.1.4 Pedestrian & Bicycle Planning

The Tighe & Bond Team has experience assessing existing and planned bicycle and pedestrian facilities in the study area. These assessments will include identifying existing sidewalks, on-road bicycle facilities, and off-road facilities, as well as missing links and gaps in the network. These assessments will also include an ADA compliance review of pedestrian facilities in the study area. The Tighe & Bond team typically conducts an ADA survey of the project area. The primary focus of the ADA review will be an assessment of curb ramps, pedestrian facilities and signal controls at signalized intersections, and identification of major ADA deficiencies within the study area. During a corridor visit while preparing this Statement of Qualifications, our staff observed that the pedestrian push button adjacent to Cumberland Farms in Portland is not ADA compliant and is not functioning on a regular basis. Improving non-compliant infrastructure should be one of the short-term goals of the study to ensure that alternative mode travelers have then means to safely navigate Route 66.



In addition, the Team needs to coordinate with the Advisory Committees and public meeting attendees and follow up with additional members of the public for interviews. After identifying these deficiencies, we will highlight opportunities for improvement in the project area. Improvements can include various sidewalk improvements, bicycle facilities, markings, and signage, intersection treatments, as well as streetscape or landscape treatments. The study team may also consider trail linkages and consider regional connectivity for alternate travel modes.

FIRM EXPERIENCE

2.1.5 Community Involvement/Visioning, Goals and Objectives

In order to effectively guide the direction of the study with input from key stakeholders, Tighe & Bond will assist in the development of two advisory committees. The **Technical Advisory Committee** will be comprised of technical staff from both state and local governments to provide technical input and guidance to the study findings and recommendations. The Technical Advisory Committee should have representation from the following agencies and local boards and commissions:

- Staff members of RiverCOG
- Municipal staff from the Town of Portland
- Municipal staff from the Town of East Hampton
- CTTransit & Middletown Area Transit
- CTDOT Staff

The role of the **Community Advisory Committee** is to both represent the interests and perspectives of project area stakeholders but also to provide the Study Team with different perspectives on transportation issues. Building a diverse Community Advisory Committee that includes business owners/operators, residents, and advocacy group representatives typically brings different and unique viewpoints on the function of the transportation system and results in thoughtful development of improvements that consider all study area issues, not just the movement of cars. A Community Advisory Committee should be comprised of the following mix of members to best represent the local stakeholder interests:

- Staff members of RiverCOG and towns
- Town of Portland and East Hampton Town Council and Commission Members
- Key Project Stakeholders
- Area residents and businesses
- Bicycle and pedestrian advocacy groups



FIRM EXPERIENCE

A Public Involvement process will be followed to conduct outreach with constituents. The work plan includes engaging public stakeholders in the design development process by conducting workshops, public information meetings and interviews during the study, as well as a final public presentation to advise the public on the final study recommendations. The Tighe & Bond team will plan, conduct the following public outreach events:

1. Public Design Workshop with Technical Advisory and Community Advisory Committees – centralized evaluation of improvement alternatives, break-out sessions for up to 5 focus areas, on-site analysis as necessary and on the fly sketches
2. Public Informational Meeting – An open house format held at town halls, Tighe & Bond will present draft corridor plans and engage with attendees to receive input from each community on its content and priorities.
3. Stakeholder interviews – Tighe & Bond will hold up to three one-on-one or small group information exchanges
4. Board Presentations – RiverCOG Board Meetings to present status and findings of the study
5. Throughout the Study process the Tighe & Bond team will provide RiverCOG with electronic materials that can be distributed to the public via websites.



FIRM EXPERIENCE

2.1.6 Context Sensitive Design

Assessment of land use expansion opportunities that may contribute additional traffic to the study area will be an important task when determining the appropriate land use growth estimates and resultant traffic generation. This process needs to be a cooperative endeavor between the Study Team, the Towns of Portland and East Hampton Planning and Engineering Departments, RiverCOG, CTDOT, and corridor stakeholders. An open discussion about realistic business expansion from large employers and input from area businesses about potential plans for expansion will be two critical components that will advise the development of economic development scenarios. However, as we have stated, the Route 66 corridor is a regional roadway serving traffic to the north, east, south and west of the study area. These areas will also generate additional traffic that will traverse the study area and needs to be factored into the traffic growth that is estimated for the corridor.

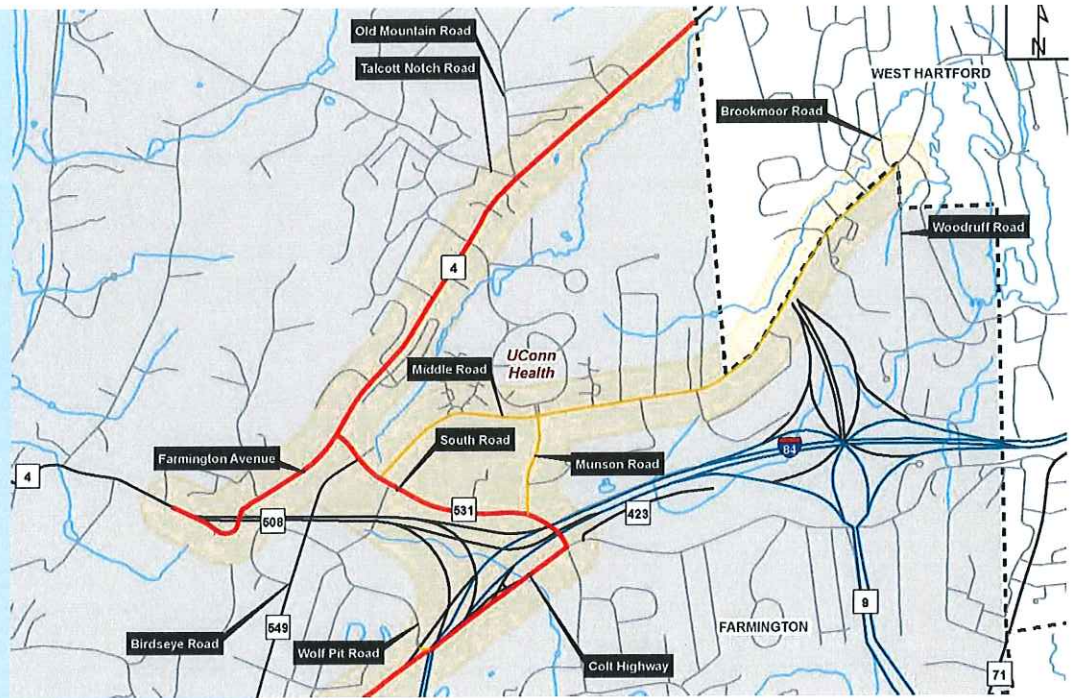
Tighe & Bond's experience on other transportation planning projects advises us that regional traffic growth models maintained by CTDOT and in some areas, the local RPA, can be used to estimate the anticipated regional growth. Tighe & Bond has worked with CTDOT's Office of Strategic Planning and Projects to develop future traffic volumes to analyze future conditions. The CTDOT Regional Model can generate local intersection turning movement flows for the project, if we determine that utilizing CTDOT trip data is necessary to support the study goals and objectives. The CTDOT model utilizes several inputs on a statewide and regional basis to forecast traffic for the area. The benefit of utilizing this approach to the forecast is that CTDOT can readily endorse the implementation of improvements that are founded on their trip forecasts.



In addition to the background growth, this task will consider area development opportunities and will review realistic land use changes that each of the Towns expect could occur within the study time horizon. This review will consider current projects that are in the planning stages in addition to undeveloped areas that the towns have identified as preferred development areas.

In addition, parcel data will be reviewed to determine the most likely locations for new development in the study area and based on the zoning, types of potential developments will be determined. Finally, the team will meet with the planning departments for both Towns to obtain an understanding of the Town's development goals and objectives.

Through this assessment, a development matrix will be identified that provides the likely development build-out scenario and new traffic can be estimated and applied to the transportation system. This new development traffic volume will be analysed under the Future Development No-Build and Full-Build scenarios and facilitate the development of improvements that address the study area needs.



PROJECT HIGHLIGHTS

- Data Collection and Analysis
- Multi-Modal Planning
- Public Involvement Program
- Safety Analysis
- Traffic Modeling and Simulation
- Transportation Planning Study

Client

Capitol Region Council of Governments

Description

Tighe & Bond is conducting a comprehensive transportation planning study around the UConn Medical Center in Farmington, CT and an Alternative Travel Mode Access and Mobility Assessment for the new UConn Hartford Campus. The study is reviewing both existing and future needs and identifying implementable improvements to improve the transportation system for all travel modes.

Recent investments by the State, private sector and UConn within the area surrounding UConn Health Farmington established the need to study and review the surrounding transportation network to support the growth in a sustainable manner while identifying both current and future needs and deficiencies that may warrant mitigation.

The study tasks include extensive data collection, traffic safety analysis for all travel modes and natural, environmental and historical resource identification. The development of implementable context sensitive improvement alternatives utilizing the results from the operational analysis and simulations for the existing and future conditions, forecasted to 2040.

Community involvement and public outreach is an important part of this study. A variety of techniques and methods will be used to inform the public of study findings and to obtain feedback from project stakeholders throughout the study process including advisory committee meetings, focus groups, public information meetings, newsletters, a study website and an electronic and hardcopy public survey.



PROJECT HIGHLIGHTS

Comprehensive Transportation
Planning Study

Data Collection and Analysis

Safety Analysis

Traffic Modeling and Simulation

Land Use Analysis

Multi-Modal Planning

Public Involvement Program

Client

Connecticut Metropolitan Council of Governments

Description

Tighe & Bond is working with the Connecticut Metropolitan Council of Governments (METROCOG) and the Towns of Monroe and Trumbull to develop a comprehensive transportation improvement plan for Routes 25 and 111 and provide a planning document for the Towns, Region, and State to guide the implementation of transportation system improvements to meet expected future development, local and regional transportation needs and economic development goals.

The plan includes cost effective physical transportation system solutions that improve operations to mitigate congestion, address safety concerns, and provide guidance on access control issues while improving the transportation system for all users. Improvements to sidewalk and bicycle infrastructure, exclusive pedestrian signalization at intersections, connectivity to the Pequonnock River Trail system, and improved transit amenities to provide a complete transportation system for all travelers is a critical element to this study.

The public outreach initiatives are facilitated through a Technical Advisory Committee and a Community Advisory Committee to provide their perspectives on the study goals and objectives and help vet study findings and recommendations. The public outreach program also includes public information meetings and a project website.

The study tasks also included permit identification through wetland assessment, development of floodway and floodplain mapping, Natural Diversity Data Base request, and the identification of relevant local, state and federal environmental permits required for the recommended improvements.



PROJECT HIGHLIGHTS

Comprehensive Transportation
Planning Study

Data Collection and Analysis

Safety Analysis

Traffic Modeling and Simulation

Land Use Analysis

Multi-Modal Planning

Public Involvement Program

Client

Greater Bridgeport Regional Council & Town of Stratford

Description

Tighe & Bond worked with the Greater Bridgeport Regional Council (GBRC) and the Town of Stratford to provide a transportation planning study for the Town that solves the recurring congestion, safety and mobility issues along Main Street (Route 110).

We used our transportation planning and traffic engineering expertise to develop a comprehensive plan aimed at improving traffic operations along the corridor. This included operational analysis and simulations, safety analysis, multi-modal concept development and alternative analysis, land development review, and cost estimating.

The study tasks also included permit identification through wetland assessment, development of floodway and floodplain mapping, Natural Diversity Data Base request, and the identification of relevant local, state and federal environmental permits required for the recommended improvements.

The study tasks included coordination with the Study Advisory Committee and the Community Advisory Committee, conducting public information meetings, and working with GBRC and the Town to disseminate study information through GBRC and the Town's websites.

The study considers all modes of travel, including pedestrian facilities, bicycle accommodations, and transit enhancements. The study deliverable includes a report documenting the results of the analyses, recommendations for improvements, and an implementation plan to help the Town and GBRC fund the improvements to meet the transportation system needs.



PROJECT HIGHLIGHTS

Evaluating benefits of two modern roundabouts

Creating of VISSIM model

Client

Town of Glastonbury

Description

Tighe & Bond provided traffic engineering services evaluating the potential benefits of two modern roundabouts along Hebron Avenue at the New London Turnpike and House Street intersections in the Town of Glastonbury.

The traffic engineering efforts included completing a microsimulation VISSIM model for the corridor and verifying the results utilizing SIDRA which is a micro-analytical evaluation analysis. These results were compared to the Synchro results at the Hebron Avenue and New London Turnpike intersection which is traffic signal controlled. Once the traffic analysis results showed that roundabouts were a feasible alternative, the intersection layouts, pedestrian, bicyclist and safety evaluations were completed.

Concept plans were developed which depict roundabouts with an inscribed diameter of 100 feet at the New London Turnpike intersection and 116 feet at the House Street intersection to accommodate an additional right turn lane. Pedestrian features such as sidewalks, greenbelts, sidewalk ramps and splitter islands with a pedestrian refuge area were all included as part of the design. Additional features such as raised crosswalks and pedestrian signals were also considered.

Tighe & Bond presented the findings at multiple Town Council meetings and it was ultimately decided that the Town of Glastonbury would move forward with the design and construction of the two roundabouts along Hebron Avenue which will help serve as a gateway to the Town.



PROJECT HIGHLIGHTS

Traffic Control Signal &
Traffic Signal System Design

Upgrade Six Signalized
Intersections

Funded under Federal Highway
Administration's CMAQ Program

Coordination with Town &
Connecticut DOT

Full-Time Construction Inspection
and Administration

2015 Transportation Achievement
in Civil Engineering Award of Merit

Client

Town of Glastonbury

Description

Tighe & Bond provided comprehensive traffic control signal and traffic signal system design services to the Town of Glastonbury for the Main Street traffic control signal upgrade. The project included the complete replacement of traffic signal equipment at six signalized intersections and the development of a new closed loop traffic signal system. The project addressed safety concerns, uncoordinated traffic progression, and improved operations and efficiency along the corridor utilizing sophisticated traffic controllers connected to centralized signal system technologies for operations, communication, and vehicle detection.

The project included the implementation of a fiber optic communications backbone to support the deployment of the centralized traffic control signal system. This communication backbone provides the Town with the ability to manage the signals from a central remote location. In addition, the project included the installation of video detection cameras along each approach, emergency vehicle pre-emption, system-wide uninterruptible power systems (UPS) at each signal, and pedestrian facility upgrades. The UPS is unique in Connecticut with provisions for generator hookups on the outside of the controller cabinets for use during major storm events. The Town selected painted black mast arms to match the existing black street lights and street name signs along Main Street. The decorative black mast arms are aesthetically pleasing, decrease the potential utility conflicts with overhead facilities and provide a stable support for video detection cameras.

The interconnected traffic control signal system is integrated in the Town's Local Area Network (LAN) where it can be monitored 24-hours a day by authorized personnel including Police and Engineering staff. This allows the Town to observe and modify the system in real-time and helps the Town ensure proper response to incidents along Main Street.

MAIN STREET TRAFFIC SIGNAL MODERNIZATION | *Glastonbury, CT*

Description

During preliminary design, Tighe & Bond conducted an analysis of signal layout alternatives (mast arms vs. span wire) to determine the most appropriate intersection configuration, while considering the aesthetics of the corridor. As part of the preliminary engineering work for the Main Street corridor, a detailed analysis of the existing traffic progression and delays in the corridor was conducted. This included field reconnaissance and measurements of the travel times through the corridor during the six planned timing plan peaks, including weekday morning, midday, afternoon and off-peak peak hours and Saturday midday peak and off-peak hours. These measurements and observations were used to calibrate the capacity analyses and help identify appropriate traffic signal timing patterns for the proposed system design.

During construction, Tighe & Bond partnered with the Town to provide full-time construction observation services utilizing the Connecticut Department of Transportation (CTDOT) IV Book System to meet Federal requirements for the project. The Main Street signals were accepted by the Town in July 2014 and the signal system is fully operational.

The project was funded under the Federal Highway Administration's Congestion Mitigation and Air Quality (CMAQ) program and selected for funding by the Capitol Region Council of Governments following a competitive process. The project received \$3 million in funding to implement the new traffic signals and signal system. The design and construction phases of the project were coordinated through the Town and CTDOT.

The Connecticut Society of Civil Engineers (CSCE) presented Tighe & Bond and The Town of Glastonbury with a 2015 Transportation Achievement in Civil Engineering (ACE) Award of Merit for the design and construction of this project.





PROJECT HIGHLIGHTS

Data Collection & Analyses

Traffic Engineering

Multi-Modal Planning

Land Use Analysis

Public Outreach

Client

Capitol Region Council of Governments and Town of Rocky Hill

Description

Tighe & Bond prepared the Route 3 Traffic and Development Study for the Capitol Region Council of Governments (CRCOG) and the Town of Rocky Hill. The study provided a multi-modal planning document to forecast the Town's future development potential and identify infrastructure improvements to support the land use expansion and mitigate the growth of traffic. The Route 3 Traffic and Development Study includes Route 3 commercial area, West Street (SR 411) and Brook Street.

The scope of services included extensive data collection and analyses of existing and future conditions, looking at a 20-year study horizon. Based on the results of the engineering analyses and environmental reviews, improvement concepts will be developed and analyzed to identify a series of recommended improvements to help the Town manage growth and plan infrastructure improvements to accommodate 20-years of forecast growth.

The study included an extensive public outreach program. One key element of the outreach initiative was regular meetings with the project Steering Committee, comprised of Rocky Hill staff and appointees from the Town Council and Planning and Zoning Commission, CRCOG staff, and CTDOT staff. The outreach initiatives included public meetings, broadcast on public television, appearance on the Mayor's monthly television broadcast, and public input surveys.



Client

City of Stamford

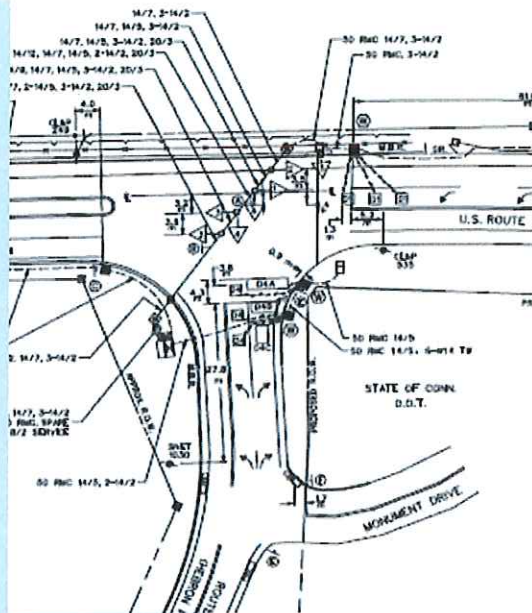
Description

Tighe & Bond is working with the City of Stamford to reconstruct Oaklawn Avenue to improve traffic safety, address drainage issues, and improve the corridor to best accommodate cars, bicycles and pedestrians. Our design is in accordance with the Connecticut Department of Transportation requirements, and is funded through the STP-Urban program.

The project includes roadway realignment to improve safety and correct poor horizontal geometry, new sidewalks along both sides of the roadway, widening the roadway for bikes, and improving roadway drainage. It also involves 15 right of way actions to accommodate the improvements, public outreach to advise area residents, and coordination with the city and state.

Oaklawn Avenue is located in the Bull's Head neighborhood of Stamford in a residential area, and serves as an east-west connector between High Ridge Road and Newfield Avenue. The roadway reconstruction includes a 1,200 foot segment between Halpin Avenue and Stanwick Place. To improve traffic safety and flow, the roadway will incorporate 11-foot lanes with five-foot shoulders on each side for bikes. A five-foot sidewalk, and three-foot utility strip on either side of the roadway, is also planned.

This reconstruction also offers the City an opportunity to upgrade the existing storm drainage system, and implement traffic calming measures.



PROJECT HIGHLIGHTS

Traffic Signal Retiming

Client

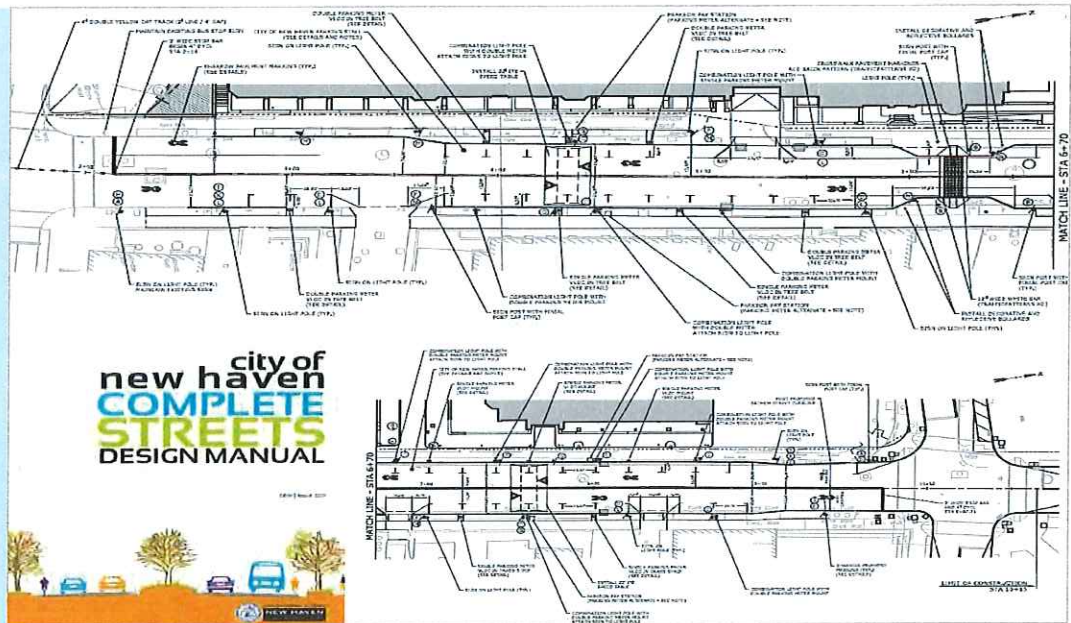
Connecticut Department of Transportation

Description

As part of a contract with the Connecticut Department of Transportation (CTDOT) for Task-based Traffic and Safety Engineering Services, Tighe & Bond is calculating yellow and all-red clearance timings for 794 state-owned and maintained traffic control signals in District 1. This project is part of a larger CTDOT initiative to improve safety at signalized intersections and includes all the state-owned and maintained traffic signals across the state.

The project involves utilizing engineering formulas to calculate yellow and all-red traffic control signal clearance intervals, pedestrian clearance intervals (exclusive pedestrian phase or side-street green). As part of the project scope of services, Tighe & Bond is also updating all 794 intersections to current CTDOT Microstation CADD standards. The design will be accomplished according to Federal and State standards and/or guidelines including but not limited to the MUTCD, Division of Traffic Engineering Traffic Control Signal Design Manual, and OSTA Regulations. The design will be accomplished in three phases consisting of preliminary design, semi-final design, and final design. Following completion of the final design, CTDOT will implement the new signal timings with CTDOT District 1 traffic signal maintenance staff.

PROSPECT STREET: A COMPLETE STREET DESIGN PROJECT | *New Haven, CT*



PROJECT HIGHLIGHTS

First New Haven Complete Street Project

Extensive Traffic Study

State and Local Approvals

On-Street Parking Design

Curb Bumpouts & Mid-Block Crosswalks

Pedestrian Actuated Flashing Crossing

Speed Table

Shared Bike Lanes and Signage

Streetscape/Landscaping

KEY STAFF

Christopher O. Granatini, P.E.

Andrew P. White, P.E.

Client

Yale University / City of New Haven

Description

Tighe & Bond prepared the City of New Haven's first Complete Street project along Prospect Street. The project reduced a four lane arterial roadway to a two-lane roadway with on-street parking, curb bumpouts, a mid-block crosswalks and speed tables. The roadway upgrades are associated with the development of Yale University's two new Residential Colleges. The influx of 850 new students into the residential colleges will significantly increase bike and pedestrian traffic along Prospect Street, providing the impetus to implement the Complete Street elements into the design.

Our scope of services included extensive data collection and analyses of existing and future conditions, including the opening of Yale's new Residential Colleges. The design of Prospect Street incorporated roadway traffic calming elements defined in the City of New Haven's Complete Streets Manual.

The roadway design included modifying the roadway profile to eliminate a deep sag curve in the roadway to better align the roadway with the adjacent buildings. The improvement include new electronic pedestrian-actuated signage, new street lighting, and enhanced pavement markings to define the proposed mid-block crosswalk. The project also includes shared bike lanes and pertinent signage.



PROJECT HIGHLIGHTS

Construction Engineering Services
for Major Redevelopment Project

Abandonment/Relocation of Water,
Gas, Electric, Cable, Sewer and
Storm Drains

Coordinate with City Departments
and Utility Companies

Client

Harbor Point Infrastructure Improvement District

Description

Tighe & Bond is providing construction engineering services for major infrastructure, roadway and traffic improvements integral to the Harbor Point Development Project.

The Harbor Point Development Project is a mixed use TOD project on 80 acres in the South End peninsula of Stamford. The multi-phase project including Harbor Point, the Yale & Towne site and the Gateway site will include 4,000 housing units, 400,000 SF of retail space, office, two hotels and 12 acres of new parkland and waterfront trails.

Under the funding agreement between the Harbor Point Infrastructure Improvement District (the District), the City of Stamford and the Developer, Tighe & Bond was selected by the District as the Consulting Engineer for the oversight of the construction of the District Improvements and approval of Requisitions.

Infrastructure improvements include roadway widening and reconstruction, drainage design, traffic signals, utility relocation, streetscape and lighting. Our tasks included planning and design for the abandonment and relocation of redundant water mains, gas mains, underground electric and cable lines, and city sewers and storm drains. We were responsible for coordination with the City Public Works Department, WPCA and the public utility companies.

FIRM EXPERIENCE

2.2 CDM Smith Experience

CDM Smith provides lasting and integrated solutions in transportation, environment, water, energy and facilities to public and private clients worldwide. As a full-service consulting, engineering, construction and operations firm, we deliver exceptional client service, quality results and enduring value across the entire project life cycle. Our philosophy for success is simple: listen carefully, think about the best approach from the big picture to the smallest detail, and deliver a complete sustainable solution to meet each client's unique needs.

2.2.1 Transportation Planning

CDM Smith's highly-experienced staff has assisted clients in addressing critical planning and design needs for decades and our award-winning expertise provides the ideal context for any transportation planning project. With extensive and far-reaching resources, our firm is equipped to provide the right combination of project management and technical expertise to help clients achieve success.

Our team's performance is based on basic industry research, application of state-of-the-art planning tools, as well as creative planning with community stakeholders. CDM Smith has worked with local, state, regional and national clients on some of the nation's most highly-recognized projects.

2.2.2 Transit Oriented Development

CDM Smith includes the leading planners and designers of Transit Oriented Design in Connecticut. Through previous work in New Haven, Meriden, Stamford, and South Norwalk, we understand the numerous factors and interrelated principals that blend to create TOD. We also understand and value the benefits of TOD to people, community and economy, including:

- Reduced traffic congestion
- Improved transit ridership
- Reduced transit costs per passenger
- Pedestrian-friendly districts
- Reduced energy and land consumption
- Optimization of infrastructure
- Improved housing and transportation choice
- Enhanced private reinvestment

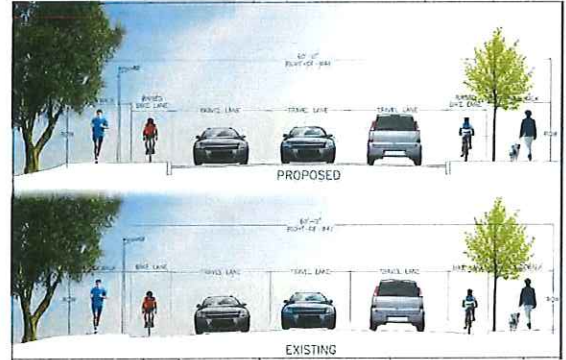


FIRM EXPERIENCE

2.2.3 Integrated Planning and Complete Streets

In recent years, there have been increasing trends in retrofitting and designing new roads to accommodate the growing interest in walking, cycling, and transit use. Accommodating all modes of travel in a corridor is often referred to as "Complete Streets." Born out of a desire to promote sustainability and improved health, complete streets concepts have been part of CDM Smith's philosophy for many years.

Increasingly, we recognize the need to balance improvements to our communities and infrastructure systems by protecting and enhancing critical environmental resources. CDM Smith addresses this delicate balance by bringing together many disciplines to achieve specific goals. In integrated planning, we evaluate the functional relationships between land use, environment, infrastructure, community, transport, and housing and suggest more sustainable management approaches.



Regardless of a project's focus, we apply a process of evaluating whole systems and look beyond one objective to maximize project benefits and best meet the needs of the client and the community.

2.2.4 Travel Demand and Traffic Simulation Modeling

CDM Smith's highly-qualified, geographically diverse team provides forecasting for all transportation modes, as well as traffic simulation. Widely-recognized for innovative approaches, CDM Smith is particularly well known for model development, calibration, and application expertise. The modeling group uses a variety of software packages including:

- EMME
- Trans CAD
- TP+/Viper
- QRSII
- CUBE/Voyager
- VISUM
- Transmodeler
- MOVES
- VISSIM
- CORSIM

Our travel demand modeling services include:

- Statewide travel demand models
- Regional travel demand models
- Small urban area and county level models
- Corridor model applications
- Transmit modeling
- MPO model development and application
- Traffic forecasting

Our traffic simulation modeling services include:

- Freeway and interchange operations
- Arterial corridor applications
- Transit operations
- Visualization

FIRM EXPERIENCE

2.2.5 Bike and Pedestrian Planning

Our team understands the need to integrate bicycle and pedestrian planning into all aspects of design. We have worked on projects with small towns, larger cities, state DOTs, MPOs, universities, and transit authorities successfully developing plans, working with communities and finally implementing and constructing. Project experience includes: The Hill to Downtown TOD Planning Initiative, New Haven, Connecticut and the Longmeadow/Webster Road Bicycle and Pedestrian Path Planning and Feasibility Study in Vermont.



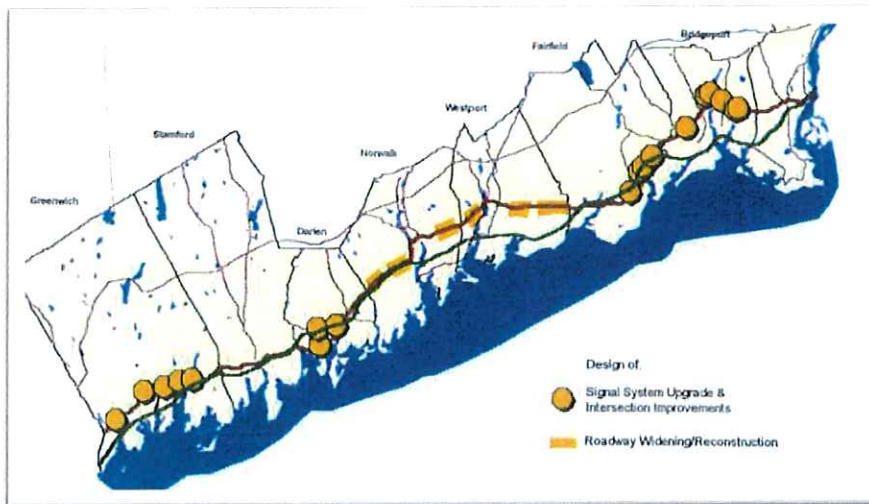
U.S. Route 1 Operational Lanes Greenwich to Bridgeport, Connecticut

The Connecticut Department of Transportation retained CDM Smith to provide engineering services for improvements to U.S. Route 1 from Greenwich through Bridgeport. The project has now involved transportation planning, and roadway and intersection design at approximately 35 signalized intersections. The purpose of these improvements was to provide a wider roadway and additional operational lanes, where feasible. The project involved extensive public outreach, including public meetings and progress reports.

To provide accurate measurement of existing and future traffic demand, the traffic data collection component included: turning movement counts, review of accident records, queuing analysis and capacity analysis.

Preliminary and final roadway design services were provided through the implementation phase. Right-of-way plans were prepared for property acquisitions and easements at selected locations. Where possible, improvements were designed within the existing alignment.

CDM Smith has been awarded with Phase 4 of this project, which involves intersection design work at four intersections in the town of Greenwich, five intersections in Norwalk and five intersections in Westport. Work involves traffic signal design to upgrade existing signals to current manual or uniform traffic control device standards. Roadways are being widened to create opposing left turn lanes that will address safety and operational issue. At selected locations of adjacent project intersections, the connecting roadway segments will be included in the improvement package. Construction will also address drainage, utility relocations, landscaping, and related improvements.



Client:
Connecticut
Department of
Transportation

Thomas Maziarz
860-594-2002

Project Dates:

Professional Services
1994-2013

Construction

2018 (Est.)

Hill-to-Downtown Planning Initiative

New Haven, Connecticut

The Hill-to-Downtown district might be called the empty quarter of the City of New Haven. It lies between Union Station, Downtown, the Hill neighborhood and the City's medical district -- which includes Yale-New Haven Hospital, Yale School of Medicine, and Connecticut Mental Health Center. It is not literally empty but it is comprised of low density land uses that result in its underutilization; the overall image of the district suggests inactivity and disinvestment. The district can be much more populated and vibrant, it should be an extension of downtown.

In fact, its adjacency to some of the region's most vital and diverse centers of commerce and research and one of New England's busiest commuter train stations, and the city's plans to reconstruct Route 34 to reduce the barrier effect it creates between the Hill and Downtown provides opportunities to regenerate the district using transit oriented development (TOD).

The City of New Haven retained CDM Smith along with a team of renowned urban planning and economic consultants to prepare plans that will guide the City towards the creation of a dense, mixed-use, mixed-income and walkable community in the Hill-to-Downtown District. CDM Smith is responsible for the assessment of the existing deficiencies relative to traffic, transit, pedestrian, and bicycle transportation and utilities and for identifying alternatives that will enhance mobility in the district. Using innovative, multimodal transportation demand modeling techniques, proven Complete Streets and TOD strategies and advanced computer simulation techniques, CDM Smith is helping the City of New Haven expand its tax base, create new jobs, and provide a safer, more livable quarter of the City -- a new and vibrant gateway to Downtown.



Client:

City of New Haven

Michael Piscitelli

203-946-2867

Project Dates:

2012-2014

Fee \$(000):

\$493

Glenbrook-Springdale Transit-Oriented Development Feasibility Study Stamford, Connecticut

Maintaining traffic flow, increasing pedestrian and bicycle safety and improving access to transit are key to creating more viable and livable districts - not only to improve safety and overall mobility but also to enhance commerce. As part of a specialized, interdisciplinary team selected by the City of Stamford, CDM Smith prepared Complete Streets solutions and station area plans for Glenbrook and Springdale. Each of these urban villages has a distinct, mixed-use, urban core and each has a commuter rail station on the New Canaan Branch Line of the Northeast Corridor.

CDM Smith's analysis of Glenbrook and Springdale village districts included a determination of existing deficiencies and needs relative to traffic safety, bicycle travel, walkability, bus transit, commuter rail parking and downtown parking. Our recommendations to improve the vitality of the villages focused on building on the existing strengths of the neighborhoods as "walkable" village districts including Complete Streets improvements, bicycle connectivity, parking management and access improvements, streetscaping and station improvements that would facilitate intermodal travel. These enhancements will improve the economic competitiveness of Glenbrook and Springdale commercial centers by creating an environment that brings in new customers and encourages local residents to support their neighborhood businesses.

Client:

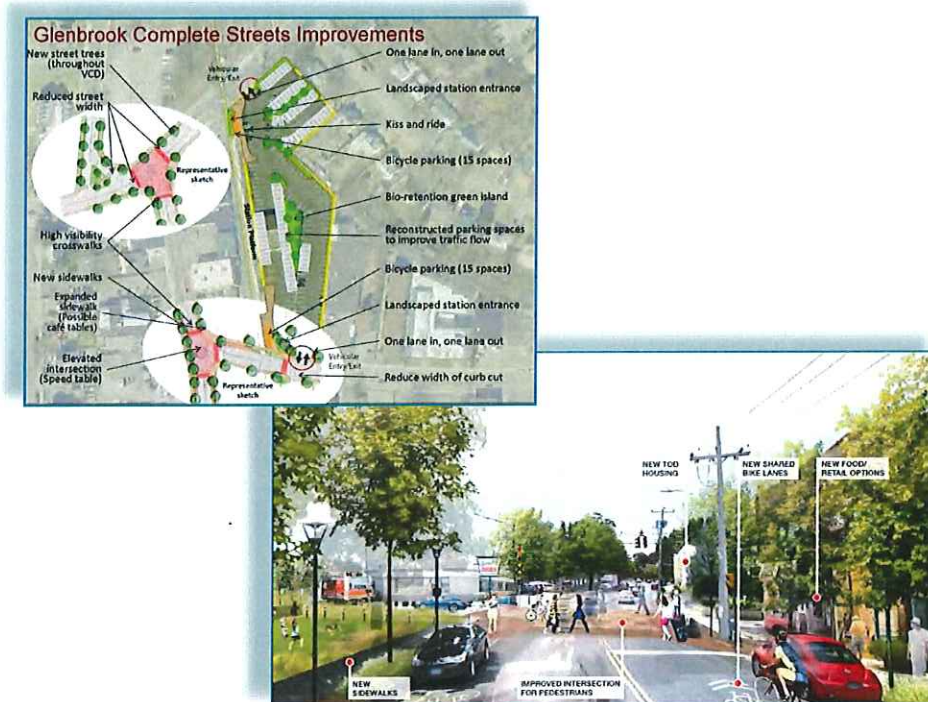
City of Stamford,
Connecticut and the
Connecticut Main
Street Center

Robin Stein

203-977-4716

Project Dates:

2013



Rendering by Goody Clancy

**Glenbrook-Springdale Transit-Oriented Development Feasibility Study
Stamford, Connecticut**

Additional Information:

Client Address: 60 North Main Street, 3rd Floor, Waterbury, CT 06702

Project Fee: \$112,000

Project Manager: Sharat K. Kalluri, P.E., P.T.O.E.

South Central Regional Council Of Governments Kimberly Avenue/Forbes Pl/Route 1 Corridor Study East Haven, Connecticut

CDM Smith was retained by SCRCOG to conduct an extensive corridor study for the disjointed connections between arterial roadways in East Haven, CT. US Route 1 is a critical east/west arterial running south of and parallel to Interstate 84, with the Shore Line East and Amtrak railroad Right Of Way in between. North High Street runs north/south in East Haven, one of only two roadways within the Town, providing critical connectivity within the Town.

With two important roadway systems in the Town, the connection between them are disjointed, with no direction traffic flow except through local and unposted State routes. The lack of direction connections of these routes hampers traffic flow and mobility, resulting in significant congestion during the peak hours and unusual traffic flows through the awkward intersection operations of Forbes Place and Kimberly Avenue and US Route 1.

This corridor study is reviewing all of these existing operations using an extensive data collection program encompassing over 14 intersections in the corridors to fully understand capacity and traffic patterns.

CDM Smith has prepared a sophisticated traffic model for the corridor intersections and simulated the peak hour conditions for the first public information meeting.

CDM Smith is preparing several short term and long term improvement scenarios for consideration by the stakeholders and public involvement efforts. These will include a design work shop with the stakeholders to ponder potential improvements to address the deficiencies in the existing conditions.

Client:

SCRCOG and Town of East Haven

Stephen Dudley

203-466-8624

Project Dates:

2015-2016



Proposed concepts include a precedent setting multi-lane roundabout on US Route 1 as well as a SPUI or Single Point Urban Interchange. These are amongst the out of the box ideas being considered to address long standing problem corridor intersections in East Haven.

**Kimberly Avenue/Forbes Pl/Route 1 Corridor Study Corridor
East Haven, Connecticut**

Additional Information:

Client Address: 127 WASHINGTON AVENUE, 4th FL WEST | NORTH HAVEN, CT 06473

Project Fee: \$100,000

Project Manager: Joseph Balskus, P.E., P.T.O.E.

FIRM EXPERIENCE

2.3 Freeman Companies Experience

Amidst the economic turmoil of one of the worst recessions ever experienced by the building industry – and shortly after his successful summit of Mount Everest – Rohan A. Freeman, PE, LS founded Freeman Companies, LLC in 2009. In the years since, this multi-disciplinary, Connecticut-based land development, engineering design and construction services firm has thrived.

33 professionals comprise the Freeman Companies' team and specialize in owner's representation, landscape architecture, permitting, land surveying, bridge and structural engineering, geotechnical engineering, transportation and traffic engineering, hydraulic/hydrologic engineering, environmental sciences, hazardous building materials services, construction engineering and inspection, and contractor support services for projects in the governmental, educational, commercial, industrial, institutional and infrastructure markets. The firm is a certified Disadvantaged Business Enterprise (DBE), Minority Business Enterprise (MBE), Small Business Enterprise (SBE) and SAM-Active, Federal US SBA 8(a) professional consulting enterprise.

Freeman Companies is a growing, Black American owned small business, driven by our promise to clients and owners to Elevate Your Expectations. This promise has led the company to retain nearly all their clients through repeat business and to grow a robust roster of new clientele. An innovative "integrated design approach" offers multiple complementary and coordinated land development services through a single provider, enabling sustainable, high quality land development in the most cost-effective and time-responsive manner possible. This approach has resulted in the firm's steady growth in new revenue, markets, employees, and professional services over the past eight years of practice.

Our Landscape Architecture services include:

- Placemaking
- Green Infrastructure
- Streetscapes
- Site Planning and Landscape Design
- Campus /Facilities Master Planning
- Site Development Feasibility Studies
- Sustainable Design
- Roof Deck Design / Green Roof Design
- Historic Landscapes
- Athletic and Recreational Facilities Design
- Singly and Multifamily Residential Design
- Greenways and Trails
- Urban Design
- Brownfields
- Bioremediation
- Healing Gardens
- Landscape Maintenance Specifications and Guidelines

FREEMAN
C O M P A N I E S



City of Bristol: Bristol Development Authority Downtown Revitalization Plan and North Main Street Streetscape Bristol, Connecticut



Freeman Companies' Project Manager Heidi Berg Hajna, PLA, ASLA acted as Lead Consultant for this Project when employed by TPA Design Group. Also involved on the project team was Freeman Companies' Senior Landscape Architect Sue Watts, PLA, ASLA.

Work involved the preparation of a Downtown Revitalization Plan which addressed four major components: public improvements, traffic/parking, commercial revitalization and redevelopment. After facilitating a series of meetings, a list of priority actions were identified of which a human-scale pedestrian oriented downtown was ranked first. Subsequently a Master Plan was developed for a section of North Main Street. Several planning and traffic studies were conducted to evaluate on-street parking configurations and effective traffic calming mechanisms. Once the City decided on a suitable approach construction documents were then prepared. Improvements included: decorative crosswalks and sidewalks, bump-outs, organized parallel parking, street trees, ornamental lights, pocket parks and landscaping to screen off-street parking areas.



An allied assignment for the City involved the development of graphic **Business Signage and Architectural Guidelines** for a commercial revitalization program. Graphic signage and facade sketches prepared for the Development Authority to illustrate typical problems and desired design solutions that applicants are encouraged to consider prior to rehabilitation.

The \$2,000,000 project was completed in 2008.

Project Reference
Mr. Jonathan Rosenthal
Executive Director
Bristol Development Authority
(860) 584-6185

City of West Haven: Sawmill Road / Wagner Place Streetscape West Haven, Connecticut

SAWMILL ROAD / WAGNER PLACE STREETSCAPE IMPROVEMENTS



RAILROAD OVERPASS - AFTER



RAILROAD OVERPASS - BEFORE



Freeman Companies' Director of Landscape Architecture Heidi Berg Hajna, PLA, ASLA and Senior Landscape Architect Sue Watts, PLA, ASLA were responsible for the planning and design of this project while employed by TPA Design.

Ms. Hajna managed surveying, engineering and landscape design for this important new streetscape.

The overall plan was to link the proposed train station on Sawmill Road to the adjacent Transit Oriented Development (TOD). This connection required the improvements of both pedestrian safety and the strict management of cars entering and exiting the existing businesses. Plantings, pavement accents, crosswalks and decorative lighting are used to heighten the separation of pedestrians and cars.

The design details were coordinated with the Connecticut DOT so that the proposed train station would blend with the design of the proposed streetscape.

The \$ 500,000 project was funded by STEAP Grant. Construction was completed in 2010.

Years Services Provided by Ms. Hajna: 2008-2010

Project Owner/Client: City of West Haven

Services: Landscape Architecture

Project Cost: \$ 500,000

Prime or Sub: Prime

Project Reference

Mr. Abdul Quadir

City Engineer

City of West Haven

203-937-3575, ext. 3021

quadir@westhaven-ct.gov



Main Street Corridor East Hartford, Connecticut

Freeman Companies' Director of the Landscape Architecture Studio Heidi Berg Hajna, PLA, ASLA and Senior Landscape Architect Sue Watts, PLA, ASLA prepared a detailed site analysis for the Main Street Corridor between Silver Lane and Prospect Street. Efforts included data collection, inventory and assessment of existing conditions. Met with Town representatives and interested parties to review existing conditions, linkages, land uses and cultural/historical assets. Conceptual designs focused on providing aesthetic improvements including decorative pavement, street trees, landscaping and site furniture as well as new or enhanced handicapped accessible walkways.



Higganum Center Streetscape Improvements Higganum, Connecticut



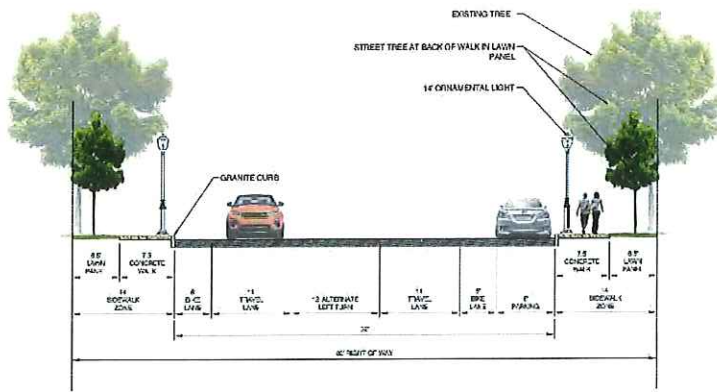
Freeman Companies' Director of the Landscape Architecture Studio Heidi Berg Hajna, PLA, ASLA was retained by Haddam's Economic Development Commission to prepare a Concept Plan for their rural commercial center. The plan was submitted to the State of Connecticut Department of Economic and Community Development to secure implementation funds. The stakeholders' vision of a human scale village center was achieved by eliminating wide driveways and hazardous front yard parking and by providing decorative crosswalks, curbs, sidewalks, ornamental lights, on-street parallel parking and street trees. Pedestrian linkages were provided from the Higganum Reservoir State Park, Town Green and Higganum Elementary School to the Village Center.

Williston Avenue Streetscape Improvements Bridgeport, Connecticut

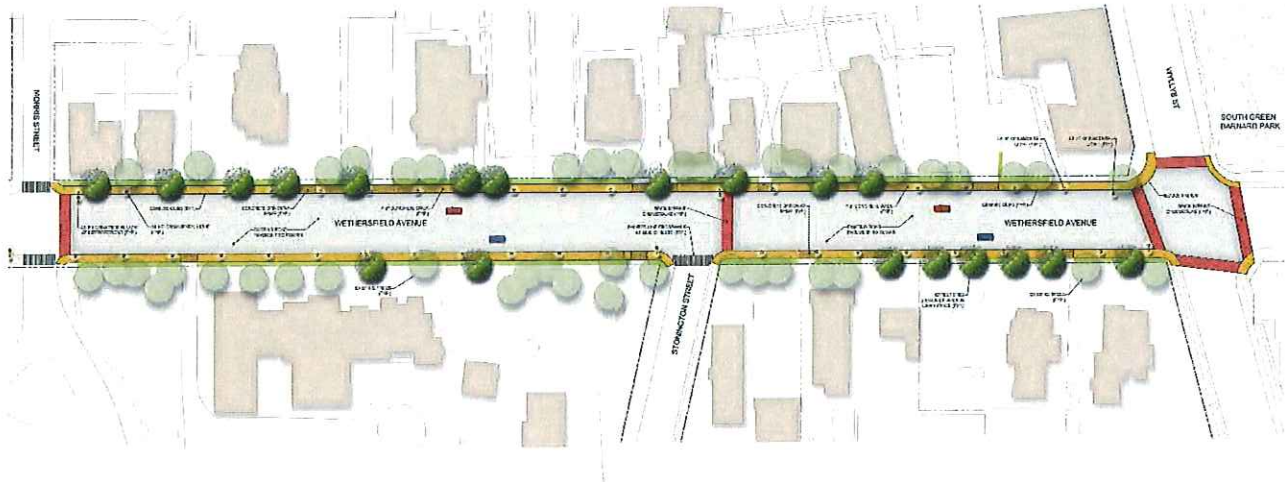


Freeman Companies' Director of the Landscape Architecture Studio Heidi Berg Hajna, PLA, ASLA and Senior Landscape Architect Sue Watts, PLA, ASLA guided revitalization of an existing brownfield area. Efforts included business retention and expansion, demolition and cleanup, infrastructure upgrades and streetscape improvements. Construction documents and specifications for the first phase of enhancements were prepared and bid.

City of Hartford Streetscape Feasibility Conceptual Design Hartford, Connecticut



WETHERSFIELD AVENUE SECTION
SCALE 1/4" = 1'-0"



Freeman Companies was recently selected by the City to provide design and engineering advisory services for streetscape improvements within various locations, including Maple Avenue, Franklin Avenue and Wethersfield Avenue. City streetscapes typically total \$ 2,000 per linear foot. Due to limited funds, however, this feasibility assessment will explore the opportunity to decrease this usual expense per linear foot to about half or less while also trying to maximize the benefits of using the best practices in streetscape design and to educate residents and businesses to ensure a general acceptance.

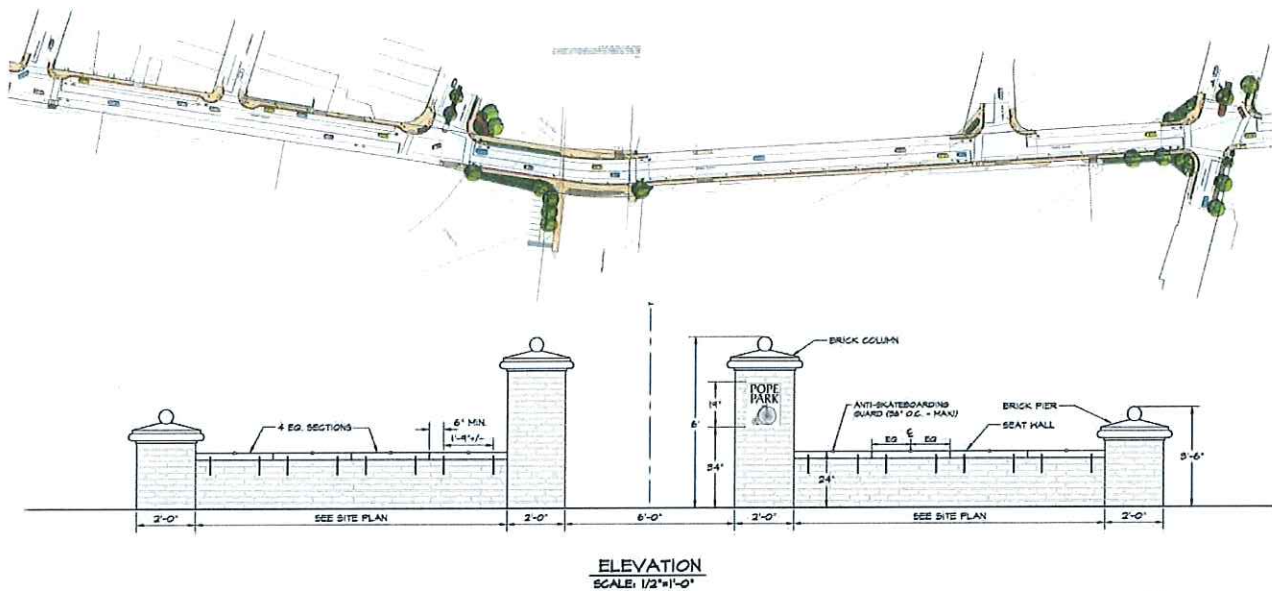
Preliminary streetscape concepts and cost estimates for the named streets have been developed, presented and approved by stakeholders. The City is currently seeking additional funding to increase the linear foot of project area along each avenue.

Years Services Provided: 2015-2016
Project Owner/Client: City of Hartford
Services: Landscape Architecture and Civil Engineering
Project Cost: Confidential
Prime or Sub: Prime

Project Reference

Mr. Keith Rapoza, Civil Engineer, City of Hartford Department of Public Works
(860) 757-9984 rapok001@hartford.gov

City of Hartford
Capitol Avenue Streetscape Improvement Project
Hartford, Connecticut



Freeman Companies' Director of Landscape Architecture Heidi Berg Hajna, PLA, ASLA and Senior Landscape Architect Sue Watts, PLA, ASLA were responsible for the planning and design of this project while employed by TPA Design.

The Capitol Avenue Streetscape Improvement and Traffic Calming Project resulted from a planning process undertaken as part of the City of Hartford's 2010 application to the U.S. EPA for its "Greening America's Capitals" Program. It is located in the immediate vicinity of the Sigourney Street Station Streetscape/Bus Livability Improvements Project.

The City of Hartford requested assistance to reimagine a mile-long portion of Capitol Avenue, home to many important historical and cultural assets and focal point of the City that includes the Connecticut State Capitol and Legislative Building, the State Library, the Supreme Court, State Armory, three churches, Bushnell Park, Bushnell Center for the Performing Arts, as well as residential and retail areas. The Greening America's Capitals workshop helped Hartford staff and stakeholders create a redevelopment plan for the Capitol Avenue corridor and connections to nearby locations, such as the Frog Hollow neighborhood and CTfastrak bus rapid transit station at Sigourney Street. Redesigns focused on public spaces, such as parks and state building grounds, and green street improvements that better manage stormwater, improve the pedestrian environment and aesthetics, and encourage future redevelopment.

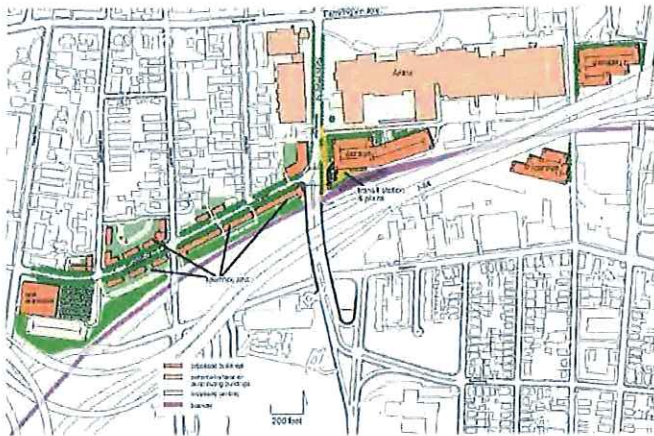
Preliminary design of pedestrian, bicycle, and streetscape improvements along Capitol Avenue between Park Terrace and Trinity Street. Planning include traffic calming devices, reduction of travel lanes, addition of bike lanes, and redesign of a major intersection at the entrance to the state capitol, including feasibility of modern roundabout design.

The project is funded and administered through the City of Hartford. Final construction design plans are expected to be complete December 2015 and the construction cost is estimated at \$ 8,000,000.

Project Reference

Mr. Jeffrey P. Cormier (formerly Chief Staff Planner, City of Hartford Dept. of Development Services)
Currently - Town Planner, Town of East Hartford
860-291-7301
jcormier@easthartfordct.gov

City of Hartford and the Greater Hartford Transit District FTA Bus Livability Program: Sigourney Street Station Streetscape Improvements Hartford, Connecticut



Aerial view of station area facing east. Red dot indicates station location.



Freeman Companies, LLC is providing Construction Inspection Support in the 4-Book System to the Prime Engineer for this series of pedestrian, bicycle, safety and streetscape improvements of several streets (Sigourney, Hawthorn, Laurel Streets and Capitol Avenue) in the vicinity of the Sigourney Street Station of the New Britain-Hartford Bus Rapid Transit Project (CTfastrak). When construction is complete, most CTfastrak riders will walk to this station or come by transit as parking will be limited. These pedestrian improvements will greatly improve access to the station for nearby employers and neighborhoods (especially Frog Hollow to the south and Asylum Hill to the north) by making routes safer, more convenient, more attractive, thereby increasing ridership potential and improving the livability and sustainability of the surrounding neighborhoods. Improvements included are beyond those provided as part of the CTfastrak construction and focus on improving pedestrian connections to the station and creating safe, convenient, accessible and attractive pedestrian routes to the station from surrounding residential and employment districts.

Project components include wayfinding signage, new and/or enhanced sidewalks, new crosswalks at desired crossing locations, traffic calming including curb bump outs, reduction of travel lanes, addition of bike lanes, and roadway milling and paving along with streetscape amenities such as pedestrian scale lighting, gateway seating areas, landscaping, period style site furnishings, and aesthetic improvements such as planting street trees and landscaping. All improvements meet compliance with the Americans with Disabilities Act (ADA) requirements.

The project is funded by the FTA's Section 5309 Discretionary Bus Livability program administered through the Greater Hartford Transit District. The design has been completed and construction is expected to commence in Summer 2015. Construction Cost is \$ 1,800,000.

Freeman Companies' Director of Landscape Architecture Heidi Berg Hajna, PLA, ASLA and Senior Landscape Architect Sue Watts, PLA, ASLA were responsible for the planning and design of this project while employed by TPA Design.

Years Services Provided: 2016

Project Owner/Client: City of Hartford and the Greater Hartford Transit District

Client for Inspection: Alfred Benesch & Company (in collaboration with TPA Design Group)

Services: Construction Inspection

Project Cost: \$ 1.8 Million

Project Reference

Mr. Jeffrey P. Cormier (formerly Chief Staff Planner, City of Hartford Dept. of Development Services)

Currently - Town Planner, Town of East Hartford

860-291-7301

jcormier@easthartfordct.gov

FIRM EXPERIENCE

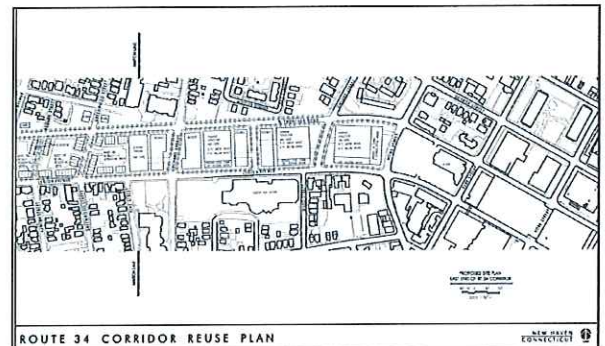
2.4 RKG Associates, Inc. Experience

2.4.1 Planning

RKG Associates, Inc. provides planning services to a wide variety of governmental organizations ranging from small towns, to cities, to regional authorities as well as state and federal agencies. Our range of planning services includes:

- Project Management/Public Process
- Open Space and Sprawl Management Strategies
- Regional Land Use Plans and Studies
- Rezoning Strategies
- Municipal Land Use and Master Plans
- Military Base Redevelopment Planning and Implementation

RKG has worked with multiple governmental organizations to prepare local, downtown and regional land use plans, with an emphasis on zoning and other regulatory controls. In many instances, this work involved the preparation of community wide land use plans, which are used by local officials to justify changes in zoning ordinances and other types of land use regulations, as well as provide a vision for guiding future development proposals. In other instances, this work has involved the preparation of land use plans that focus on specific issues such as the identification of locations for future economic development activities. Finally, RKG works with various state and local governmental agencies to examine regional land use issues such as sprawl, the protection of land from future development, and the revitalization of property adjacent to regional highway corridors and growth due to the expansion of military facilities.



2.4.2 Economic Consulting

The focus behind much of our economic consulting practice is job generation and/or expansion of the tax base. Using a variety of analytical techniques, including economic modeling, RKG can identify business and industry trends and realistic strategies to attract these opportunities to a city, a region, or a state. Analysis of historic trends and computer simulation of future scenarios comprise an integral part of the technical expertise we provide. RKG can develop statistics on economic conditions as well as a demographic profile of a region, city or state. RKG also develops and implements primary research through in-person interview, mail out questionnaires, Internet and telephone surveys. RKG, working in conjunction with engineering firms, has also provided a broad range of economic consulting services to highway, airport, port and rail transportation projects throughout the United States. Our firm typically serves in the role of a subcontractor to engineering firms hired to prepare environmental impact statements, major investment studies, or feasibility studies for various types of proposed transportation projects. RKG Associates, Inc. provides a broad range of economic consulting services to their clients, including:



FIRM EXPERIENCE

Local and regional Economic Development

- Local/Regional Economic Development Strategies
- Tax Base Management Strategies
- Target Industry Analysis and Promotional Strategies

Economic and Fiscal Impact Analysis

- Commercial, Industrial and Residential Development Impacts
- Military Base Closings, Redevelopment, and Expansion
- Economic and Fiscal Analysis of Transportation Projects
- Highway Projects
- Port Related Projects
- Airport Projects
- Transit Projects
- Intermodal Projects

2.4.3 Real Estate Consulting

RKG Associates provides real estate consulting services to both the public and private sectors. Our real estate consultants, planners, financial analysts and economists work together to bring our clients realistic solutions in such areas as:

- Market Research
- Highest and Best Use Studies
- Project Marketing/Developer Solicitation
- Real Estate Repositioning Strategies
- Development Feasibility
- Public-Private Partnerships
- Site Selection/Location Analysis
- New Construction, Land Development and Adaptive Reuse
- Brownfields Redevelopment



RKG has developed a national reputation in urban revitalization and redevelopment projects. We have extensive experience in analyzing the market and financial aspects of complex real estate investments in downtown, waterfront, and other urban settings. Our urban redevelopment work includes municipal parking and intermodal facilities, medical and office complexes, mixed-use projects, residential developments and reuse of former military bases, school and hospital business. We have also applied our expertise to the development of regional shopping centers, large-scale residential developments and office/industrial parks.

TOWN CENTER REDEVELOPMENT ANALYSIS

PROJECT NAME AND LOCATION

Town Center Redevelopment
Bloomfield, Connecticut

CLIENT

Town of Bloomfield, Connecticut

RKG SERVICES

Real Estate Analysis for Town Center Redevelopment

SITUATION

The core Town Center, at the crossroads of Routes 178 (Park Avenue) and Route 189 (Tunxis Avenue) includes a mix of municipal, tax-exempt, retail, office and other commercial uses—some suffering high vacancies and/or a lack of investment activity. Working as a sub-consultant to a land use and urban planning firm, RKG was retained to provide the Town of Bloomfield with an analysis of prevailing market conditions, along with selected real estate supply/demand indicators, as part of their Town Center Plan with a focus on repositioning the core Town Center.

RKG APPROACH/SOLUTION

RKG conducted primary and secondary research in Bloomfield, including a review of development activity, population and housing dynamics and other employment and economic indicators, as well as interviews with stakeholders, business and property owners throughout the community. RKG's findings include a limited opportunity for residential, noting that such development could detract from potentially more viable non-residential uses, including 46,100 SF to 123,000 SF of office space over a ten-year period; and, 34,000 SF to 57,000 SF of retail with a focus to restaurant and other food related uses, emphasizing an international cuisine.

RESULTS

RKG's findings reflect development opportunities in response to supply/demand indicators. The overall desire and financial capacity of land/property owners to react to these opportunities is less defined, reflecting an uncertainty about the economy and some need for a public-sector partnership in any eventual action. This partnership could include the adoption of zoning and other regulatory guidelines that might stimulate private-sector investment. The findings of the RKG analysis are currently under Town review for inclusion as part of the Town Center Plan update.



Aerial View of Core Town Center—Bloomfield, CT



Potential Repositioning Site in Core Town Center



New Restaurant in Core Town Center



Potential Development Site in Core Town Center

CORRIDOR REVITALIZATION ANALYSIS

PROJECT NAME AND LOCATION

Route 20 Corridor
Marlborough, Massachusetts

CLIENT

Marlborough Economic Development Corporation

RKG SERVICES

Real Estate Market Analysis and Corridor Revitalization

SITUATION

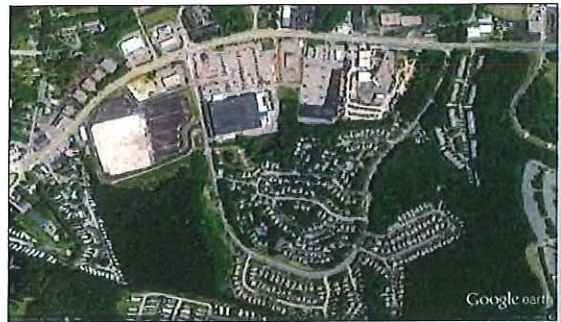
The Route 20 Corridor Study Area (about a 1.3 mile section of Route 20) is located on the eastern edge of the City, extending from Farm Road to the Town of Sudbury. The City is seeking to continue the economic activity represented by recent large scale retail development in this Corridor, and to be consistent with recommendations of the Economic Development Plan. RKG was retained to provide an assessment of residential and non-residential market conditions to inform a corridor plan.

RKG APPROACH/SOLUTION

RKG conducted primary and secondary research in Marlborough, the surrounding region and the Route 20 Corridor. This included a review recent and planned building activity, population and housing dynamics and other employment and economic indicators. RKG's findings included a five-year opportunity for development of up to 30 owner units and 50 rental units per year along the Corridor, with rental housing a more favorable candidate. There are limited opportunities for industrial uses due primarily to poor highway accessibility. Commercial office uses may add 38,000 SF to 115,000 SF over a ten-year period, comprised mostly smaller, entrepreneurial businesses and medical uses. Finally, RKG considered there to be a limited demand for retail, other than neighborhood and convenience retail, totaling perhaps 15,000 SF to 25,000 SF.

RESULTS

The Marlborough Economic Development Corporation is reviewing RKG's findings and conclusions in co-ordination with land use and planning/design studies completed by other consultants. As part of an ongoing economic planning process for the Corridor, these analyses will provide a foundation for initiating project action plans and potential site specific recommendations.



Aerial View of Route 20 Corridor—Marlborough, MA



Potential Development Site in the Corridor



Residential Development in the Corridor



Potential Development Site in the Corridor

SURPLUS PROPERTY REDEVELOPMENT PLAN

PROJECT NAME AND LOCATION

Mile Lane Army Reserve Center
Middletown, CT

CLIENT

City of Middletown
Local Redevelopment Authority
645 DeKoven Drive
Middletown, CT 06457

RKG SERVICES

RKG Associates, with its extensive experience in reuse planning for surplus military properties that are closing due to the Base Realignment and Closure Act (BRAC), developed a comprehensive Reuse Plan and HUD Submission for this 50+ acre property.

SITUATION

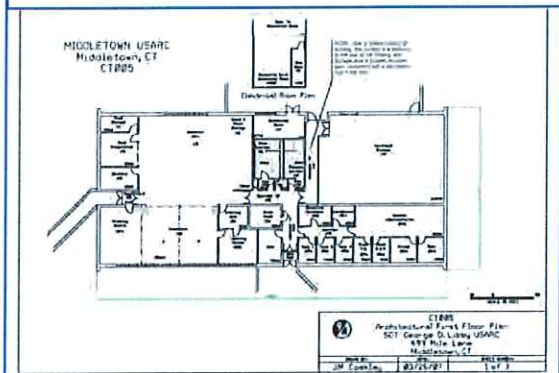
The Center, which served as a regional mustering and administrative facility for the Army Reserves, was built in the 1980s on the site of a former Nike missile base. The property includes a 15,800 square foot building, a large fenced vehicle and equipment storage yard, and over 23 acres of easements surrounding the fee land owned by the government. The site is located approximately 2 miles from the center of Middletown in a semi-rural residential neighborhood and adjacent to the new high school complex.

RKG APPROACH/SOLUTION

Reuse plans must follow a detailed format specified in the BRAC regulations, including a comprehensive public input process. Various conveyance mechanisms must be evaluated, along with alternatives for the ultimate reuse of the properties. RKG analyzed the local and regional market, undertook a rigorous review of the homeless population and their needs, as required by law, completed a facilities assessment of the building and worked with a planning firm to develop conceptual alternative plans for the site.

RESULTS

In this case, the City desired the facility for public safety training and administrative uses, and the reuse plan called for transfer by means of a public benefit conveyance supported by the U.S. Department of Justice and the Department of Homeland Security. The government is currently reviewing the City's application with transfer anticipated in 2010.



URBAN CORRIDOR REVITALIZATION

PROJECT NAME AND LOCATION

Rt. 34 Corridor Revitalization Project
Metropolitan Development Plan
New Haven, Connecticut

CLIENT

CityPlan Department
New Haven, Connecticut

RKG SERVICES

Overall Project Management/Lead Consultant
Development Feasibility, Public Process

SITUATION

During the 1960s, the State of Connecticut's Department of Transportation took (by eminent domain) a major swath of land right through the center of downtown New Haven for a proposed Rt. 34 corridor. This highway extension through the center of downtown was never built, however, all the buildings were razed and the land cleared. Since the initial takings, the 26 acres of land have remained fallow, but recently the City of New Haven was able to receive title to the land and has now begun the process of planning for its reuse.

Naturally, over the last forty years this empty corridor has divided an established neighborhood and altered land uses within these neighborhoods. Today it represents a major development opportunity because the downtown portion of the City is undergoing a revitalization and some of the major employees, particularly the Yale Medical Center, are seeking land for expansion. Likewise the various neighborhood and business interests also have particular ideas about how to develop the site.

RKG APPROACH/SOLUTION

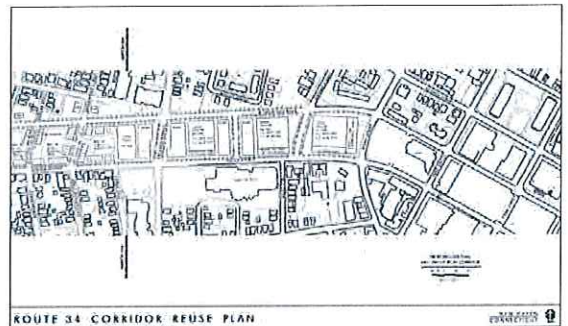
RKG Associates, Inc. assembled a team of consultants with expertise in urban design, architecture, civil engineering and traffic engineering to respond to an RFP issued by the City. The project team evaluated the market opportunities for the site, as well as the zoning and the physical constraints of the property. The project team has also evaluated the development feasibility of each alternative and used the results of this analysis to help the various interested organizations formulate a consensus plan, published in late 2006..



Aerial View of Project Area



Renderings of Potential Reuses



Proposed Reuse Plan

RKG was subsequently engaged in 2009 as part of a team to assemble the Metropolitan Development Plan for the Route 34 corridor. RKG's role included updating key market and economic data pertaining to the redevelopment as well as participate in extensive neighborhood outreach efforts.

HIGHWAY CORRIDOR ANALYSIS

PROJECT NAME AND LOCATION

Silas Deane Highway Corridor Analysis
Wethersfield & Rocky Hill, Connecticut

CLIENT

Towns of Wethersfield & Rocky Hill, CT

RKG SERVICES

Market Research and Analysis of commercial/retail, industrial, residential and office development opportunities for a major mixed-use arterial connecting Wethersfield and Rocky Hill Connecticut in order to provide strategic input to the physical planning process.

SITUATION

Update the Master Plan for the Silas Deane Corridor, a major mixed-use arterial connecting Wethersfield and Rocky Hill, which also serves as a primary transportation corridor into downtown Hartford. Identify market opportunities for redevelopment and re-investment, along with analysis of traffic patterns, landscaping and other factors to enhance the economic diversity and contributory value of land uses

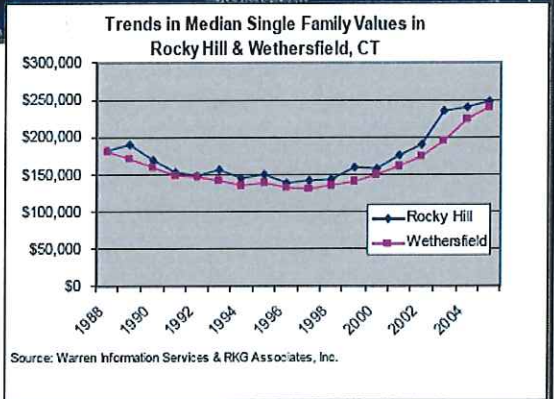
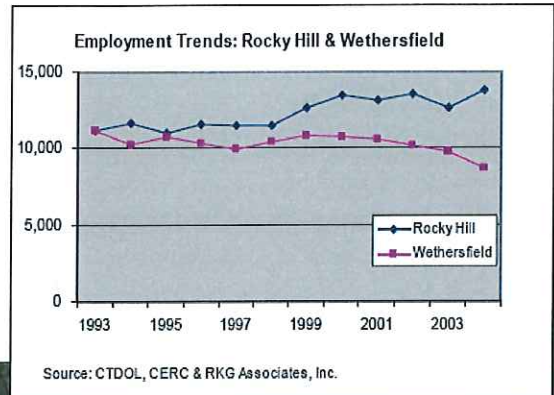
RKG APPROACH/SOLUTION

RKG, as part of a team of engineers and other consultants, completed an assessment of the opportunities for economic development within this corridor, considering existing land uses, prevailing market demand indicators, a need for residential development and input from the two impacted communities. Specifically, the opportunities for new or re-positioned development were identified throughout the corridor, and in some instances site-specific recommendations were made. In addition to inventorying land uses within the corridor and identifying emerging demand for other uses, RKG assisted in developing an implementation strategy, noting the likely need for land assemblage, pricing impacts, possible zoning changes and public investments that may be required

In conjunction with recommended traffic enhancements, landscaping and other issues, several sites along the corridor were identified as potential redevelopment sites, focusing on improving under-performing parcels, maintaining a sustainable balance of uses with a goal of stimulating additional private sector development and investment.

RESULTS

Following the completion of the report and analysis, the communities successfully petitioned the State of Connecticut for a \$500,000 grant to assist in funding capital improvement projects.



Tighe&Bond

SECTION 3

PROJECT TEAM QUALIFICATIONS

Section 3 Project Team Qualifications



Lower Connecticut River Valley Council of Governments

Tighe & Bond
PROJECT MANAGEMENT

Christopher O. Granatini, P.E.
Project Manager/Project Director

TECHNICAL ADVISORS

Dana C. Huff, P.E.
Principal-In-Charge/Advisor

Daniel F. Valentine, P.E.
Local Liason/Advisor

Richard W. Canavan, PhD, PWS
Wetlands Advisor

KEY STAFF

Craig D. Yannes, P.E., PTOE
Project Engineer-Traffic Engineering

Rebecca R. Hall, P.E., PTOE
Project Engineer-Signal Design

SUBCONSULTANTS

CDM Smith
Transportation Planning
Public Involvement

Joseph C. Balskus, P.E., PTOE
Principal

Sharat Kalluri, P.E., PTOE
Traffic/Transportation Engineer

David Souza, ASLA, AICP
Senior Planner

Freeman Companies, LLC (DBE)
Landscape/Streetscape Design

Heidi B. Hadja, PLA, ASLA
Director, Landscape Architecture

RKG Associates
Land Use/Economic Planners

Lawrence E. Cranor, Jr.
Senior Project Manager

Jahangir Akbar
Senior Project Planner/Analyst

PROJECT TEAM QUALIFICATIONS

3.1 Tighe & Bond Project Team

3.1.1 Key Project Staff



Christopher O. Granatini, P.E., PTOE will serve as the Project Director and Manager for the Route 66 Corridor Planning Project. Chris will act as the project liaison between the design team, sub-consultants, the towns of Portland and East Hampton, and RiverCOG's staff. Chris brings an extensive resume of over 20 years of transportation engineering experience to this assignment. He possesses broad skills in traffic engineering, highway design, and transportation planning, which are directly aligned with the project. These skills provide the breadth of knowledge that will serve the municipalities with an experienced leader for their projects. Chris is currently managing assignments for several municipalities including Stamford, New Milford, Glastonbury, and the New Haven Parking Authority. Current projects include a STP-Urban roadway in Stamford, two modern roundabout projects in New Milford and Glastonbury, and several diverse projects for the NHPA. On the Transportation planning front, Chris is overseeing projects with METROCOG, CRCOG, and a Transportation Planning engagement with UCONN. Chris also brings a wealth of expertise in developing projects with the Connecticut Department of Transportation, including work on the Pearl Harbor Memorial Bridge project in New Haven, CT and a major transportation planning study for the Route 9 corridor through Middletown, CT.



Rebecca R. Hall, P.E., PTOE will serve as a key Project Traffic Engineer for the Route 66 Corridor Study. Becca has been heavily involved in much of Tighe & Bond's traffic engineering work in the State of Connecticut since joining the firm. She brings recent transportation planning experience through her work on major planning studies for CRCOG in Farmington and Hard Rock Casino in West Springfield, MA. Becca is current engaged in the development of a traffic mitigation study for UCONN. Her design experience includes serving as the lead traffic signal designer for the Town of Glastonbury Main Street Traffic Signal System project. In addition to her signal work, Becca has conducted numerous traffic engineering studies, modeling complex traffic operations to meet both local and Office of the State Traffic Administration (OSTA) requirements for studies.



Craig D. Yannes, P.E., PTOE will serve as a key Project Transportation Engineer for the Route 66 Corridor Study. Craig has a strong background in transportation and traffic engineering, as well as transportation and transit planning. His technical specialties include traffic signal design, traffic impact studies, traffic feasibility and planning studies, transit planning studies, parking studies, traffic calming planning and design, as well as roadway design. Craig has experience providing transportation planning and engineering design for both local municipalities and the State, including on-call transportation engineering and safety projects for the Connecticut Department of Transportation and the South Central Regional Council of Governments. Craig's recent assignments include similar transportation planning studies for METROCOG where he prepared the plans for Route 110 in Stratford and Routes 25 and 111 in the Towns of Trumbull and Monroe

PROJECT TEAM QUALIFICATIONS

3.1.2 Project Advisors



Dana C. Huff, P.E., will serve as Principal-in-Charge and a technical Advisor to the team. He is a Vice President of the firm with 35 years of broad civil and environmental engineering experience. As the firm's market leader for the Municipal projects in Connecticut, Dana is responsible for ensuring the quality responsiveness of the firm's services provided to municipalities across Connecticut. Dana has served as principal on assignments covering a variety of disciplines, with a primary focus on site/civil engineering projects. Utilizing technical, analytical, and engineering expertise, he has developed innovative and resourceful solutions to complex engineering challenges for municipal, state, commercial, private, and international clients.



Daniel F. Valentine, P.E., will serve as Local Liaison/Advisor for the Route 66 Corridor Project. Dan brings a broad resume of 9 years of engineering experience to this assignment. Dan has civil engineering experience in roadway design, traffic signal design, parking demand assessment, work zone traffic management, and underground utility design. He has experience in managing construction document preparation, construction cost estimating and construction observation for a wide variety of projects, and extensive AutoCAD and hydrologic and hydraulic analysis software skills. Dan has lived in East Hampton and has driven the Route 66 corridor daily for 8 years. He is also the Vice-Chairman of the East Hampton Water Pollution Control Authority and routinely interfaces with East Hampton town staff.



Richard W. Canavan, PHD, PWS will serve as a Technical Advisor to Wetlands Science for the Route 66 Corridor Project. Richard is a Senior Environmental Scientist with over 20 years of experience in environmental research, teaching and consulting. Dr. Canavan's research projects have examined nutrient and pollutant chemistry in lakes, agricultural soil and coastal sediment. As a consultant, he has directed environmental permitting for a range of clients including private developers, municipalities, public utilities and state agencies. This work has included wetland delineation and field analysis, coordination with engineering design, meeting with regulatory staff, local commissions and stakeholders for the development of permit applications. He also provided environmental planning services including assistance to volunteer watershed organizations for the development of monitoring programs, data analysis and watershed planning.

PROJECT TEAM QUALIFICATIONS

3.2 Subconsultants

3.2.1 CDM Smith



Joseph C. Balskus, PE, PTOE, Principal, will serve as Senior Civil Engineer for the Route 66 Corridor Project. Mr. Balskus has a diverse background in the technical design and management of progressive transportation and parking projects for various clients. He has worked extensively with education, institutional, local, municipal planning organizations/regional planning associations, and state governments, as well as private sector clients and casino developments. Mr. Balskus has been involved in the preparation of traffic and environmental impact studies, corridor studies, access management plans, traffic engineering, traffic calming, traffic signal design, intersection and roadway design, intelligent transportation systems, parking studies, parking garage layout, PARCS, parking guidance systems, and construction services. He has worked on numerous transportation projects for regional planning agencies, including recent and ongoing corridor studies. He has also led the design and managed numerous transportation projects for CTDOT, RIDOT, and VTrans.



Sharat K. Kalluri, PE, PTOE will serve as Senior Transportation Engineer for the Route 66 Corridor Project. Mr. Kalluri has 20 years of experience in traffic engineering and transportation planning. He has completed assignments for both public and private clients that include conducting traffic impact studies, corridor studies, developing context sensitive solutions, pedestrian and school related studies, traffic calming, access management, and traffic simulation modeling. Mr. Kalluri has taught courses in traffic engineering and traffic/simulation modeling at the University of Connecticut. Mr. Kalluri also serves as an on-call traffic consultant to the towns of Westport and Canton, Connecticut.

3.2.2 Freeman Companies, LLC



Heidi Berg Hajna, PLA, ASLA will serve as Landscape Architect for the Route 66 Corridor Project. **Ms. Hajna** is an award-winning Professional Landscape Architect and active member of the American Society of Landscape Architects. She joined Freeman Companies to lead the firm's planning and landscape architecture division. Ms. Hajna offers 30 years of professional experience in Connecticut and has been associated with the Kasper Group of Bridgeport; Richter, Cegan & Webb of Avon; The S/L/A/M Collaborative of Glastonbury; and, most recently, was a Project

Manager and Senior Landscape Architect at planning firm TPA Design Group of New Haven. Heidi's experience involves large scale master planning for public improvements, small private site development plans, economic development, streetscape/public spaces, education, historic properties, parks/recreation/trails, public housing and private residential. Her Project Management responsibilities have involved leading teams of design professionals to meet project deadlines by effectively delegating and prioritizing project workload from initial analysis and design through construction; maintaining daily client contact, interfacing with various state and local agencies and presentation of projects at public hearings and stakeholder informational meetings. Additional responsibilities have included detailed existing conditions analyses, master planning, alternative land use concepts, preliminary design concepts, final design plans technical analysis and design, specifications, and cost estimates. She is a graduate of the State University of New York's College of Environmental Science and Forestry in Syracuse.

PROJECT TEAM QUALIFICATIONS

3.2.3 RKG Associates, Inc.

Lawrence E. Cranor Jr. will serve as Senior Project Manager providing Land Use Design and Planning for the Route 66 Corridor Project. Mr. Cranor joined RKG Associates, Inc. in 1992, with 15 years experience in applied demography, market research, site selection and competition studies for other firms, including national retail chains. Mr. Cranor has applied this background to managing a wide range of assignments with RKG Associates, Inc. These assignments have included a broad variety of retail projects, consumer surveys and spending research, site location research; urban revitalization/marketing strategies; and general economic development.

Jahangir Akbar will serve as Senior Planner and Real Estate Market Analyst for the Route 66 Corridor Project. Mr. Akbar's primary areas of expertise include economic development strategy, affordable housing, neighborhood indicators, energy efficiency pro-gram evaluation, and small business development. His responsibilities include conducting real estate market analysis, project impact analysis and evaluation, and community planning and development strategies.



YEARS OF EXPERIENCE

20

SPECIALTIES

Transportation Planning
Traffic Studies
Roadway Design
Complete Streets Design
Traffic Control Signal Design
Temporary Traffic Control
Parking Consultancy
Public Outreach

LICENSES/REGISTRATIONS

Professional Engineer - CT (#22299)

EDUCATION

Bachelor of Science
Civil Engineering
University of Connecticut

PROFESSIONAL AFFILIATIONS

Institute of Transportation Engineers
American Society of Civil Engineers
Urban Land Institute

Christopher Granatini uses his broad background in civil, transportation, and traffic engineering to design and manage transportation assignments for clients with a focus on context sensitive solutions. His diverse technical experience includes roadway design, parking lot design, transportation planning studies, traffic control signal design, maintenance and protection of traffic engineering, signing and pavement marking design, ITS planning, and preparation of traffic studies. His knowledge of the latest roadway design applications, including 3-D design software tools, provides him with the expertise to contribute his design experience while managing assignments. He is a skilled public liaison, providing clients with a trusted representative to interface with project stakeholders and the public to execute public outreach initiatives.

Professional Experience

Transportation Planning and Engineering Studies

- **Routes 25 and 111 Transportation Engineering and Planning Study:** Managing a transportation engineering and planning study for the Towns of Monroe and Trumbull. The study includes a land use study to determine future development potential on these regional corridors. The project includes a broad public involvement program to obtain public input on the corridor needs, deficiencies, and recommendations.
- **Route 110 Traffic Study – Stratford, CT:** Project Manager that worked with the Greater Bridgeport Regional Council (GBRC) and the Town of Stratford to develop a transportation engineering planning study that solves the recurring congestions, safety and mobility issues along Main Street (Route 110). The Study included a public outreach initiative to advise affected agencies, local stakeholders, and the public.
- **Route 3 Traffic and Development Study:** Managed the Route 3 traffic and development study in the Town of Rocky Hill, CT. The study focuses on the potential development in the Town of Rocky Hill seeking to identify transportation infrastructure improvements that can be programmed over the study horizon. The study includes a detailed analysis of existing and future conditions, identification of alternatives, and development of an improvement plan for the area.
- **Hartford and Farmington Transportation Planning Studies:** Managed a comprehensive transportation planning study around the UCONN Medical Center in Farmington, CT and an Alternative Travel Mode Access and Mobility Assessment for the new UCONN Hartford Campus. The study is reviewing both existing and future needs and identifying implementable improvements to improve the transportation system for all travel modes.
- **Prospect Street - Complete Street Improvements:** Engineered the design of roadway improvements and streetscape enhancements along Prospect Street in New Haven, CT adjacent to the Yale University New Residential Colleges. Coordinated the design of pedestrian, landscaping, and transit enhancements to Prospect Street in conformance with the New Haven Complete Streets Design Manual. The design included a mid-block pedestrian crossing, and includes signing and pavement marking and lighting enhancements to define the pedestrian crossing location.



YEARS OF EXPERIENCE

8

SPECIALTIES

Transportation Planning
Traffic & Transportation Safety
Traffic Impact Studies
Traffic Signal Design
Traffic Management Plans
Parking Demand Studies

LICENSES/REGISTRATIONS

Professional Engineer - CT (#29741)
Professional Traffic Operations
Engineer – (#4099)

EDUCATION

Bachelor of Science
Civil Engineering
University of Connecticut

PROFESSIONAL AFFILIATIONS

Institute of Transportation
Engineers
Women's Transportation Seminar –
CT Chapter Treasurer,
2015 Member of the Year

Rebecca Ruitto Hall is a professional engineer and professional traffic operations engineer with eight years of experience. Her technical experience includes the preparation of transportation safety and improvement studies, traffic impact studies and parking demand studies. The design of signing and pavement marking plans, traffic management plans for construction work zones and traffic signal systems. She also has prepared traffic models using traffic modeling software and presented at public information meetings for state projects.

Professional Experience

Traffic & Transportation

- **Hartford and Farmington Transportation Planning Studies:** Lead Traffic and Transportation Engineer for the Capitol Region Council of Governments Route 4 Transportation and Safety Improvements Study in Farmington, CT. Tasks include detailed analysis of existing and future traffic conditions, traffic safety analysis and identification of implementable alternatives to improve the safety, mobility and access deficiencies for all users within the study area. The study includes an extensive public involvement process to obtain feedback from project stakeholders throughout the study process.
- **Park Avenue Campus Off-Site Roadway Improvements:** Conducted a safety and operational analysis for roadway improvement alternatives at the Merritt Parkway Exit 47 Ramp and site driveway intersections with Park Avenue to support the development of the Bridgeport Hospital Park Avenue Campus. Completed the traffic control signal design for the new clustered traffic control signal located at the intersection of Park Avenue with Merritt Parkway northbound ramps and the site driveway.
- **Washington Village:** Prepared a Traffic Impact Study for the redevelopment of the Washington Village housing development in Norwalk, CT. Washington Village was the oldest public housing development in Connecticut. Presented the Traffic Study at a City of Norwalk Planning Commission meeting and coordinated with OSTA for the Major Traffic Generator approval.
- **Main Street Traffic Control Signal Modernization (SPN 53-181):** Improved vehicular and pedestrian traffic operations by designing the replacement of all traffic signal equipment at six intersections along Main Street with coordinated operation and far side mast arms. The design also included accessible pedestrian equipment and new sidewalk ramps. Provided support for construction inspection services.
- **Ludlow Mills Traffic Impact Assessment:** Conducted the analysis and completed a Traffic Impact Study for Ludlow Mills, a 1.45 million square foot mixed use development in Ludlow, MA. Recommended and developed concept drawings for proposed improvements, coordinating with Pioneer Valley Planning Commission, Massachusetts Department of Transportation, and Pioneer Valley Transit Authority.
- **Hard Rock New England Traffic Impact Assessment:** Completed the Traffic Impact and Access Study (TIAS) analysis for the proposed Hard Rock New England Casino and Entertainment Destination in West Springfield, MA. Included capacity analysis of the roadway network with two rotaries during the existing, no-build and build condition. Determined casino trip generation and origin and destination trip distribution. Recommended necessary improvements and assisted in the development of conceptual improvement plans.



YEARS OF EXPERIENCE

8

SPECIALTIES

Transportation Planning
Traffic Impact & Parking Studies
Traffic Signal Design
Roadway Design
Traffic Calming Planning and Design
Construction Administration & Observation

LICENSES/REGISTRATIONS

Professional Engineer - CT (#29075)
Professional Traffic Operations Engineer (PTOE) (#3567)

EDUCATION

Master of Science
Civil Engineering
University of Connecticut

Bachelor of Science
Civil Engineering
University of Connecticut

PROFESSIONAL AFFILIATIONS

Institute of Transportation Engineers
American Society of Civil Engineers

Craig Yannes is a professional engineer in the State of Connecticut, and is also certified by the Transportation Professional Certification Board as a Professional Traffic Operations Engineer. Craig holds his M.S. in civil engineering with a strong background in transportation and traffic engineering, as well as planning. His technical specialties include traffic signal design, traffic impact studies, traffic feasibility and planning studies, transit planning studies, parking studies, traffic calming planning and design, as well as roadway design.

Professional Experience

Transportation Planning

- **Route 110 Engineering Planning Study:** Lead Transportation Engineer for the Engineering Planning Study of Route 110 (Main Street) in Stratford, CT. Tasks include detailed analysis of existing and future traffic conditions, a traffic safety review and identification of improvement alternatives to develop a transportation plan solving recurring congestion, safety, and mobility issues along the corridor. The study includes coordination with the Greater Bridgeport Regional Council (GBRC), the Town of Stratford, and corridor stakeholders including Sikorsky Aircraft.
- **The Reserve Master Plan:** Conducted an evaluation of projected development traffic volumes, and performed traffic analyses, as part of a master planning effort for the Reserve Development in Danbury, CT. The Reserve includes more than 1.8 Million square feet of mixed use development and over 2,000 residential units. The Master Plan included an extensive traffic planning and roadway improvement program to the surrounding local and interstate roadway network.
- **Hebron Avenue Corridor Roundabout Planning:** Served as Project Engineer for the transportation improvement and roundabout planning study for the Hebron Avenue Corridor in Glastonbury. The project included traffic capacity analyses, microsimulation, and conceptual layouts to evaluate the operation and feasibility of roundabout installations at the New London Turnpike and House Street intersections with Hebron Avenue. The results of the study were presented to the Town Council resulting in funding for the design of the roundabouts.

Traffic Impact & Parking Studies

- **Saint Vincent Parking Study:** Served as project engineer for the parking study that was part of the St. Vincent Master Plan in Bridgeport, CT. The project included an extensive parking study for the expansive on-campus and off-campus parking areas to determine existing parking demand. The study concluded with concept plans for additional parking areas, which could be used to accommodate expected parking demand growth at the campus.
- **Yale & Towne Traffic Impact and Parking Studies:** Prepared several traffic impact and parking studies for the development of the 20-acre Yale & Towne site in Stamford's South End. The project included traffic impact analysis and parking analysis for the development of 1,139 apartment units, and 164,000 square feet of retail and office space. Parking analysis included shared parking analysis, balancing parking demand for adjacent uses, and providing sufficient parking while maximizing the potential development space. A thorough knowledge of the OSTA and City review processes, and working relationship with CTDOT OSTA and city staff, resulted in the completion of a number of successful permit approvals for the projects.



YEARS OF EXPERIENCE

39

SPECIALTIES

Site/Civil Design

Roadway & Traffic Improvements

Roadway Reconstruction

Community Revitalization

Brownfields Redevelopment

Solid Waste

Renewable Energy

LICENSES/REGISTRATIONS

Professional Engineer - CT (#28159)

Professional Engineer – MA (#34729)

Professional Engineer – NH (#13245)

Professional Engineer – NY (#96898)

Professional Engineer – VT (#18-0006285)

EDUCATION

Bachelor of Science

Civil Engineering

Rensselaer Polytechnic Institute

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Solid Waste Association of North
America, Southern New England
Chapter

American Public Works
Association

Institute of Transportation
Engineers

Dana Huff is vice president and principal on assignments covering a variety of disciplines, with a primary focus on civil engineering projects. Utilizing technical, analytical, and engineering expertise, he has developed innovative and resourceful solutions to complex engineering challenges for municipal, state, commercial, private and international clients. Dana has assisted a number of clients negotiate contracts with more beneficial terms and conditions.

Professional Experience

Municipal/Public Work

- **Town of Trumbull On-Call:** Served as principal-in-charge for several environmental projects under an on-call engineering contract in Trumbull, CT; some of which include updating Trumbull's new MS4 Stormwater Management Plan, assisting Economic Development on several community revitalization projects, and assisting the Town with grant applications. Prepared two major grant applications for roadway and intersection improvements (including pedestrian access/sidewalks).
- **UConn Farmington/Hartford Campus Traffic Study:** Principal on a traffic circulation/connectivity project for both the Farmington Medical Campus and the new Hartford Campus. The project was awarded to Tighe & Bond through the Capital Region Council of Government (CRCOG)
- **Route 110 Traffic Study:** Served as principal-in-charge for Tighe & Bond's work with the CT METRO Council of Government (METRO COG) and the Town of Stratford, CT to develop a transportation engineering planning study that solves the recurring congestions, safety and mobility issues along Main Street (Route 110). The study included a public outreach initiative to advise affected agencies, local stakeholders, and the public.
- **CTDOT Traffic and Safety On-Call:** Serving as principal-in-charge for a contract with the CTDOT for task-based traffic and safety engineering services throughout CT. Tighe & Bond is calculating yellow and all-red clearance timings for 794 state-owned and maintained traffic control signals in District 1. Additional assignments include evaluation and design of warning and safety signage and pavement markings for approximately 1,500 dangerous non-state owned roadway curves in Districts 2 and 4.
- **Norwalk Street and Streetscape Improvements:** Served as principal-in-charge and worked with the Norwalk Redevelopment Agency to design roadway and streetscape improvements to enhance the "walkability" of the area of North Water Street adjacent to the Aquarium and improve patron access to businesses on North Main Street, Dana is also principal on the Smith Street improvements project in support of the Head of the Harbor development in Norwalk, CT.
- **Thomaston Roadway Improvements:** Served as principal-in-charge to investigate the parking needs for the Reeves Field athletic complex and the drainage and pavement improvements to 12,000 linear feet of roadway in Thomaston, CT.
- **Farmington MS4 Program:** Served as principal for Tighe & Bond's development of an updated MS4 stormwater management plan to comply with Connecticut's newly implemented MS4 General Permit.



YEARS OF EXPERIENCE

9

SPECIALTIES

Site/Civil

Drainage & Hydraulics

Roadway Design

Traffic & Parking

Water

Geotechnical/Dams

LICENSES/REGISTRATIONS

Professional Engineer – CT (#29068)

EDUCATION

Bachelor of Science

Civil Engineering

Rensselaer Polytechnic Institute

Graduate coursework, Civil Engineering, University of Illinois

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Connecticut Society of Civil Engineers (CSCE)

Chairman, Younger Members Committee CSCE

Member of East Hampton, CT WPCA

Member of East Hampton and Colchester Water Pollution Control Joint Facilities Committee

Association of State Dam Safety Officials (ASDSO)

Daniel Valentine has civil engineering experience in land development, underground utility design, roadway design, water distribution design, hydrologic and hydraulic calculations, traffic signal design, parking demand assessment, work zone traffic management, geotechnical evaluations, dam inspections and industrial spill management. He has experience in construction document preparation, construction cost estimating and construction observation for a wide variety of projects, and extensive AutoCAD and hydrologic and hydraulic analysis software skills.

Professional Experience

Traffic/Parking

- **Still River Drive Roundabout:** Designed intersection improvements at Still River Drive and Pickett District Road in New Milford, CT. Design included a single lane roundabout with landscaped center and splitter islands to create an entrance to the downtown area. Construction phase of the project is funded under the LOTCIP program through the Regional Planning Organization and CTDOT.
- **Park Avenue Campus Off-Site Roadway Improvements:** Designed intersection improvements at Merritt Parkway interchange and project site drive in Trumbull, CT. Design included a single lane roundabout and two signalized intersections, guiderail connections to bridge parapet, and high friction pavement.
- **Locust Avenue Intersection Improvements:** Designed roadway widening to accommodate the addition of a left turn lane at a signalized intersection in Danbury, CT. Design included challenging grades and limiting right-of-way widths.
- **Naugatuck Valley Community College Campus Site Improvements:** Designed re-alignment of campus access road to accommodate a left turn lane and improve drainage for NVCC in Waterbury, CT. Access road improvements were part of a campus wide site improvements to parking facilities, site circulation, and drainage.
- **Prospect Street – Complete Street Improvements:** Designed roadway realignment, grading, and storm drainage for an intersection improvement project in New Haven, CT. Project included shared bike lanes, mid-block pedestrian crossing and speed humps to mitigate travel speeds. Minor street widening was proposed to accommodate on-street parking and a transit stop.
- **Air Rights Garage Entrance Ramp:** Designed and managed construction for a new entrance ramp from the garage underspace to first floor in the Air Rights Garage in New Haven. Design included modifying access control, storm drainage, and underspace parking to accommodate the new ramp.
- **Route 34 Traffic Control Signal Modernization:** Aided in the design for the reconstruction of 13 signalized intersections within the downtown area of New Haven, CT. Prepared traffic signal plan layouts along North Frontage Road, South Frontage Road, and Legion Avenue as part of the Yale New Haven Hospital Cancer Center project. The project involved coordination with the New Haven Department of Traffic and Parking.



YEARS OF EXPERIENCE

23

SPECIALTIES

Wetland Delineation,
Restoration and Permitting

National Environmental Policy Act
Compliance

Water Quality

LICENSES/REGISTRATIONS

Professional Wetlands Scientist
PWS # 2147
SWS

Registered Professional Soil Scientist
SSSSNE

40 hr. HAZWOPER

Municipal Inland Wetland Agency Training
Connecticut Department of
Energy and Environmental Protection

EDUCATION

Doctor of Philosophy
Biogeochemistry
Utrecht University

Master of Science
Soil Science
Cornell University

Bachelor of Arts
Botany
Connecticut College

PROFESSIONAL AFFILIATIONS

Connecticut Federation of Lakes
President, Board of Directors

Connecticut Association of
Wetlands Scientists

Association of Massachusetts
Wetlands Scientists

Richard Canavan is a Senior Environmental Scientist with over 20 years of experience in environmental research, teaching and consulting. Dr. Canavan's research projects have examined nutrient and pollutant chemistry in lakes, agricultural soil and coastal sediment. As a consultant he has directed environmental permitting for a range of clients including private developers, municipalities, public utilities and state agencies. This work has included wetland delineation and field analysis, coordination with engineering design, meeting with regulatory staff, local commissions and stakeholders for the development of permit applications. He also provided environmental planning services including assistance to volunteer watershed organizations for the development of monitoring programs, data analysis and watershed planning.

Professional Experience

Wetland Delineation, Restoration and Permitting

- **Lyman Viaduct, Colchester, CT:** Obtained DEEP Inland Wetlands and Cat. II USACE approvals for a culvert repair. Work included coordination with DEEP inland fisheries for channel stabilization design.
- **Town of Webster MA, Conservation Commission:** On-call wetlands reviewing agent for Wetland Protection Act applications including site meetings, written comments and supporting the Commission at public hearings.
- **US EPA Superfund Remediation Action, Willington CT:** Conducted a wetland delineation, designed a wetland restoration to meet regional USACE guidance, prepared bid specifications, directed mitigation construction on site.
- **Xtra Mart, Guilford CT:** Directed a wetland restoration planting and conducted post-construction vegetation monitoring. Design included hydrology and vegetation elements to minimize the colonization of the non-native invasive plant *Phragmites australis*.
- **Residential Dock, Ledyard, CT:** Conducted coastal wetland delineation and obtained a CTDEEP OLISP dredging, structures and fill permit for a residential dock on the Thames River.
- **Woodstock Academy Athletic Fields, Woodstock, CT:** Prepared a successful permit application to USACE and CTDEEP, including state and federal wetland delineation, functions and values assessment, and mitigation plans. Directed mitigation work in the field, conducted post-construction monitoring and reporting.

Transportation Environmental Permitting

- **ConnDOT Consultant Liaison Bridge Program:** Led the field investigation and permit application development for over twenty bridge repair and replacement projects. Coordination with DOT staff, state and federal regulators, hydraulic and structural engineers, design consultant staff. Projects ranged from large coastal interstate bridges to culvert rehabilitation.
- **Bridge Replacement Project, Wilmington, Tewksbury, & Billerica, MA:** Delineated Bank and BVW under the Wetlands Protection Act, prepared Notice of Intent applications and obtained approvals for the replacement of a flood damaged bridge over the Shawsheen River.

Joseph C. Balskus, PE, PTOE

Principal, Senior Civil Engineer

Mr. Balskus has a diverse background in the technical design and management of progressive transportation and parking projects for various clients. He has worked extensively with education, institutional, local, municipal planning organizations/regional planning associations, and state governments, as well as private sector clients and casino developments. Mr. Balskus has been involved in the preparation of traffic and environmental impact studies, corridor studies, access management plans, traffic engineering, traffic calming, traffic signal design, intersection and roadway design, intelligent transportation systems, parking studies, parking garage layout, PARCS, parking guidance systems, and construction services. He has worked on numerous transportation projects for regional planning agencies, including recent and ongoing corridor studies. He has also led the design and managed numerous transportation projects for CTDOT, RIDOT, and VTrans.

Kimberly Avenue/Forbes Place/Route 1 Corridor Study, South Central Regional Council of Governments, East Haven, Connecticut. This corridor study is the review of the existing operations using an extensive data collection program encompassing over 14 intersections to fully understand capacity and traffic patterns. CDM Smith has prepared a sophisticated traffic model for the corridor intersections and simulated the peak-hour conditions for the first public information meeting. CDM Smith is preparing several short-term and long-term improvement scenarios for consideration by the stakeholders and public involvement efforts. These will include a design work shop with the stakeholders to consider potential improvements to address the deficiencies in the existing conditions.

Alumni Road Improvements Study, Route 175, Newington, Connecticut. Mr. Balskus managed the extensive analysis of Route 175 Cedar Street operations at the Maplewood Avenue and Alumni Road intersections in this heavily congested corridor. He provided development of significant long-term options for improving traffic flow and using the Route 9 interchange.

Bethel Transit Oriented Development, A Plan for Bethel, Connecticut. Mr. Balskus provided innovative transportation, traffic and infrastructure planning services for a transit-oriented development (TOD) feasibility study for the Town of Bethel as part of a multidisciplinary team effort. The vision of the project is to build on Downtown Bethel's historic heritage, village charm, and distinctive character to re-energize the village center as a healthy, vibrant, dynamic, pedestrian friendly community.

Route 3 Development and Transportation Study, Rocky Hill, Connecticut (CRCOG). Mr. Balskus participated in the initial management and eventual technical support of this transportation corridor study along Route 3 and West Avenue in Rocky Hill. Provided overall technical assistance on capacity analyses, short and long term improvements and participated in public outreach.

Route 175/New Britain Busway Station Area Planning Study, Capitol Region Council of Governments, Connecticut. Mr. Balskus led the transportation planning and engineering analyses efforts for improvements to Route 175 and State Route 505 at the Route 9 interchange in New Britain.

Education

BS – Engineering Technology, Central Connecticut State University, 1988

Registration

Professional Engineer:

Connecticut, Massachusetts (pending)

Professional Traffic Operations Engineer, Institute of Transportation Engineers, No. 586

Honors/Awards

2014 CSCE Achievement in Civil Engineering (ACE) Award, Trumbull Roundabout

2013 ITE Annual Meeting Award, Northeastern District

2012 William MacNamara Distinguished Service Award, New England Section of ITE

Years of Experience

CDM Smith: 2

Total: 28

Sharat K. Kalluri, PE, PTOE

Senior Transportation Engineer

Mr. Kalluri has 20 years of experience in traffic engineering and transportation planning. He has completed assignments for both public and private clients that include conducting traffic impact studies, corridor studies, developing context sensitive solutions, pedestrian and school related studies, traffic calming, access management, and traffic simulation modeling. Mr. Kalluri has taught courses in traffic engineering and traffic/simulation modeling at the University of Connecticut. Mr. Kalluri also serves as an on-call traffic consultant to the towns of Westport and Canton, Connecticut.

Project Manager, Preliminary Design of Traffic Improvements, City of Meriden, Connecticut. Mr. Kalluri served as the project manager to design traffic improvements for the City of Meriden's Transit Oriented Development (TOD) District. The project utilized Smart Growth and Complete Streets principles to facilitate access to the Meriden Intermodal Center Station, create a more attractive, vibrant and walkable downtown and attract transit-oriented development. The project also incorporated state-of-the-art green or sustainable strategies to provide for a better quality of life and cleaner environment for city residents and workers.

Senior Traffic Engineer, New Haven Hill to Downtown TOD project, City of New Haven, Connecticut. Mr. Kalluri served as the senior traffic engineer for the transportation planning, civil engineering, and survey services in support of the development of a plan for the area of the City located between Union Station, Downtown, the Hill, and Yale-New Haven Hospital (District). The plan will guide the City toward the creation of a dense, mixed-use, mixed-income, and walkable community in the District. The primary intent of the project was to create a development framework to guide future growth in the District in a manner consistent with the community's vision.

Senior Traffic Engineer, South Norwalk TOD Pilot Program, City of Norwalk, Connecticut. Mr. Kalluri served as the senior traffic engineer to design improvements for the City of Norwalk's TOD District, utilizing Smart Growth and Complete Streets principles to facilitate intermodal access to the South Norwalk Train Center Station, create a more attractive, vibrant, and walkable district, and attract mixed-use, transit-oriented development. The project also incorporated Crime Prevention through Environmental Design strategies and state-of-the-art green or sustainable strategies to provide safer and more secure streets and a better quality of life and cleaner environment for city residents and workers.

Project Manager, Shartenberg Redevelopment Project, New Haven, Connecticut. Mr. Kalluri served as project manager on this assessment of the traffic impact associated with the planned mixed-use development on the Shartenberg site in downtown New Haven. The site is in close proximity to the New Haven State Street Station and is well served by Connecticut Transit. Access to the site is proposed on State Street via the existing Pitkin Tunnel Drive. Effort included estimation of site generated traffic based on the proposed land use. Considerations were given to the proximity of transit facilities and the pedestrian use in the downtown. Level-of-service analyses were conducted during the AM and PM peak hour periods. Traffic operational improvements were suggested at the State Street/Chapel Street, State Street/Court Street, and State Street Pitkin Tunnel drive intersections. In addition to the traffic impact study, a shared parking analysis was conducted to determine the anticipated parking demand associated with the planned development.

Education

M.S. - Transportation Engineering, University of Connecticut, 1996

B.S. - Civil Engineering, Regional Engineering College, Tiruchirapalli, India, 1992

Registration

Professional Engineer: Connecticut (2001)
#0021415

Certifications

Professional Traffic Operations Engineer, 2007

Years of Experience

CDM Smith: 18

Total: 21

Heidi Berg Hajna, PLA, ASLA

Freeman Companies, LLC – Director, Landscape Architecture Studio



Ms. Hajna is an award-winning Professional Landscape Architect and active member of the American Society of Landscape Architects. She joined Freeman Companies to lead the firm's planning and landscape architecture division. Ms. Hajna offers 30 years of professional experience in Connecticut and has been associated with the Kasper Group of Bridgeport; Richter, Cegan & Webb of Avon; The S/L/A/M Collaborative of Glastonbury; and, most recently, was a Project Manager and Senior Landscape Architect at planning firm TPA Design Group of New Haven. Heidi's experience involves large scale master planning for public improvements, small private site development plans, economic development, streetscape/public spaces, education, historic properties, parks/recreation/trails, public housing and private residential. Her Project Management responsibilities have involved leading teams of design professionals to meet project deadlines by effectively delegating and prioritizing project workload from initial analysis and design through construction; maintaining daily client contact, interfacing with various state and local agencies and also

presentation of projects at public hearings and stakeholder informational meetings. Additional responsibilities have included detailed existing conditions analyses, master planning, alternative land use concepts, preliminary design concepts, final design plans technical analysis and design, specifications, and cost estimates. She is a graduate of the State University of New York's College of Environmental Science and Forestry in Syracuse.

Years Professional Experience:
31

Relevant Experience and Qualifications (Corridor Plan/Streetscape/Public Space/Urban Design):

Professional Landscape Architect
Connecticut # LAR.0000621

Education:

State University of New York
(in association with Syracuse University) College of Environmental Science and Forestry: Bachelor of Arts in Landscape Architecture, Magna Cum Laude, 1985

American Society of Landscape Architects:
Certificate of Honor

Employment Prior to Joining Freeman Companies:

TPA Design Group, New Haven, Connecticut: Project Manager – Senior Landscape Architect

The S/L/A/M Collaborative, Glastonbury, Connecticut: Project Manager – Landscape Architect

Richter, Cegan & Webb, Inc., Avon, Connecticut

Kasper Group, Inc., Bridgeport, Connecticut

Awards:

Connecticut Chapter, American Society of Landscape Architects

Merit Award – East Rock Residence, New Haven
Honor Award - Sachem Head Residence

* - Past Project Collaborations with Tighe and Bond

* Route 66 Gateway - East Hampton Assisted with securing STEAP funding, prepared master plan and design for gateway improvements, aesthetic treatments, traffic calming and pedestrian safety. Represented the Town in negotiating context-sensitive CTDOT improvements at eastern and western gateways. Fast-tracked the sidewalk pavement detail to incorporate into CTDOT bid set.

* Higginum Center Improvements – Haddam Prepared master plan to secure STEAP funds then completed construction drawings for traffic calming, pedestrian improvements and aesthetic treatments, reconfiguration of parking and vehicular circulation along Routes 81 and 154 involving the Village Green and Veterans' Memorial.

Spencer Plains Gateway – Old Saybrook Prepared a concept plan for gateway and streetscape improvements. Designs included a public space at the visible intersection of Spencer Plain Road and the Boston Post Road. The project was part of the Town's on-going efforts aimed at establishing a pedestrian-oriented environment and improves the physical image of the western gateway. Guidelines provided include the selection of streetscape furnishings.

Mariner's Way – Brownfield Areawide Revitalization (BAR) Planning Project – Old Saybrook Revitalization and redevelopment of an area approximately 1 square mile in size running along the eastern most section of Route 1. Scope involves definition of concepts, public engagement, development of guidelines and implementation steps.

South End Neighborhood Improvements Plan – Bridgeport Implementation action plan which included four primary targets: sustain community leadership, restore livability, commit to physical improvements, and insure compatible development.

* North Main Street Pedestrian Improvements and Streetscape – Bristol Improvements to restore the human scale of downtown enhance pedestrian connections and provide traffic calming.

* City of Hartford: Streetscape Feasibility Conceptual Design – Hartford Feasibility assessment explores the opportunity to decrease the usual expense per linear foot (of \$ 2,000 LF) to about half or less while also trying to maximize the benefits of using the best practices in streetscape design and to educate residents and businesses to ensure a general acceptance. Preliminary streetscape concepts for the named streets have also been developed.

* City of Hartford and the Greater Hartford Transit District: FTA Bus Livability Program: Sigourney Street Station Streetscape Improvements – Hartford FTA grant funded design of pedestrian, bicycle, and streetscape improvements of several streets in the vicinity of the proposed Sigourney Street Station on the CTfastrak busway line. Plans include traffic calming devices, reduction of travel lanes, addition of bike lanes, and roadway milling and paving along with streetscape amenities such as gateway seating areas, landscaping, and period style site furnishings.

Neighborhood Revitalization Plans – Hartford Completed seven neighborhood-level plans intended to address a range of physical, economic and social issues.

Broad Street Neighborhood Revitalization Zone – New Britain Master plan concepts within the existing public right-of-way for the Broad Street NRZ Committee, including pedestrian linkages, safe passage for school children, green space, aesthetic improvements and maintenance.

East Main Street Corridor Neighborhood Plan – Stamford Strategic revitalization plan for a segment of Route 1 that is a neighborhood commercial area and the City's eastern gateway, including consideration of transit oriented development.

LAWRENCE E. CRANOR JR, SENIOR PROJECT MANAGER

PROFESSIONAL PROFILE

Mr. Cranor joined RKG Associates, Inc. in 1992, with 15 years experience in applied demography, market research, site selection and competition studies for other firms, including national retail chains. Mr. Cranor has applied this background to managing a wide range of assignments with RKG Associates, Inc. These assignments have included a broad variety of retail projects, consumer surveys and spending research, site location research; urban revitalization/marketing strategies; and general economic development.

EDUCATION

- B.A. Sociology, University of Cincinnati, Ohio, 1976
- MBA Marketing/Management, University of Cincinnati, Ohio, 1980

PROFESSIONAL AFFILIATIONS

- Population Association of America
- New Hampshire Main Street

PROJECT EXPERIENCE

Downtown Redevelopment

Project Manager responsible for developing economic strategies and implementation plans instrumental in revitalizing the downtown "urban core" of such communities as diverse as Gulfport, Mississippi (post Katrina); Lewiston, Maine; Watkins Glen, New York; Norwalk, Connecticut; and Hyanis, Massachusetts.

Economic Reuse and Development Strategies

Project Manager responsible for analyzing the economic/market potential for the reuse and redevelopment of the Hunts Point Food Distribution Center, Bronx, New York; retail/market strategies associated with potential expansion of Gillette Stadium and Patriot Place in Foxborough, Massachusetts; repositioning of the Pyramid (now a Bass Pro) and Sears Crosstown (now multi-mixed use development) in downtown Memphis, Tennessee; as well as the Memphis Fairgrounds (home of the Liberty Bowl), and repositioning of the Heartbreak Hotel and other related "Elvis Presley" development around Graceland.

Financial Analyses and Economic Development

Project Manager on numerous projects throughout Massachusetts whereby private sector developers were seeking public infrastructure investment in order to bring projects to completion, including:

Chestnut Hill Square — an approximate 240,000 SF retail and medical mixed-use development in greater Boston metro (Newton). The financial analysis helped to procure \$10 million in state funding assistance.

University Station — development of approximately 560,000 SF of retail (phase 1) and 350 residential units (phase 2) in greater Boston metro (Westwood). Phase 1 is completed and financial analyses assisted in acquiring state financial assistance.

Boston Landing — repositioning of New Balance headquarters in greater Boston, along with development of additional office, hospitality and sports related facilities (nearly 2 million SF). Project underway and also includes public transit component. Financial analysis, requesting \$50 million, under review by state.

Fenway Triangle — private redevelopment of urban location near Fenway park to include offices, residential and other uses—including Boston's first "city" Target store (now open). Financial analysis and requested state assistance under review.

Wynn's Everett Casino — completed impact analysis instrumental in state's assessment of a proposed casino in Everett, near downtown Boston. Construction on the estimated \$2 billion project currently underway.

Corridor Revitalization

Project Manager for a comprehensive plan to revitalize a blighted urban corridor in DeKalb County, Georgia; sections of the Silas Deane Highway corridor in Rocky Hill and Wethersfield, Connecticut; Irondequoit, New York; and more focused corridor studies for site specific development opportunities in New Jersey.

JAHANGIR AKBAR, REAL ESTATE MARKET ANALYST/SENIOR PLANNER

PROFESSIONAL PROFILE

Mr. Akbar's primary areas of expertise include economic development strategy, affordable housing, neighborhood indicators, energy efficiency program evaluation, and small business development. His responsibilities include conducting real estate market analysis, project impact analysis and evaluation, and community planning and development strategies.

EDUCATION

- Bachelor of Science in Accounting, Towson University, Towson, MD
- Master in City Planning, Massachusetts Institute of Technology, Cambridge, MA

PROJECT EXPERIENCE

Real Estate Analysis & Evaluation

Green Technology Retrofit Analysis

Conducted a socio-economic impact analysis for the Boston Redevelopment Authority on a hypothetical green technology retrofit of residential and commercial building stock. Evaluated feasibility of investment, job creation, and energy savings.

Neighborhood Planning

Consulted as part of a team with the City of Lawrence to develop a neighborhood revitalization plan for a low-income community, focused on creating pocket parks, trash removal, and access to healthy nutrition. Facilitated community discussions, conducted a field survey, mapped developable sites, and presented a report to the Department of Planning.

Economic Development and Urban Revitalization Projects

Affordable Housing

Provided audit, transaction, and consulting services to builders of low-income housing in New York City. Audit services included a review of business operations and examination of financial statements. Consulting services included providing compliance testing and tax planning. Transactional services included financial analysis, due diligence, and investment testing.

Economic Development and Workforce Strategy

Provided consulting as part of a team on a major redevelopment initiative aimed at transforming Atlanta. Conducted existing demographic conditions analysis, industry employment projections, business cluster analysis, and policy tools gap analysis. Compiled case studies on transformative development projects focused on urban manufacturing, adaptive-reuse, and innovation business parks. Provided recommendations on job creation and real estate typology strategy.

Small Business Development

Consulted rural micro-enterprises in India on business strategy and provided technical assistance on matters of production, quality control, marketing, and distribution. Implemented policies and procedures to ensure high standards of quality, and formulated growth strategy.

Economic & Fiscal Impact Analysis

Energy Efficiency Impact Studies

Spearheaded an independent evaluation of a Baltimore City energy efficiency program focused on weatherization, building upgrades, energy assistance, and education for low-income residents. Worked closely with municipal departments and community groups to identify program gaps and opportunities. Calculated energy cost savings. Compiled a report for the state of Maryland Public Service Commission.

Neighborhood Indicator Data Analysis

Helped compile and publish neighborhood level indicator data for Baltimore City which was used by policy makers and community groups. Utilized Census, employment, crime, and City school data to compile report.

Tighe&Bond

APPENDIX A

ARCHITECT - ENGINEER QUALIFICATIONS

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION *(City and State)*

Route 66 Corridor Study, Portland and East Hampton, CT

2. PUBLIC NOTICE DATE

02/02/2017

3. SOLICITATION OR PROJECT NUMBER

RiverCOG 17-4

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

Dana C. Huff, P.E., Vice President

5. NAME OF FIRM

Tighe & Bond, Inc.

6. TELEPHONE NUMBER

203-712-1100

7. FAX NUMBER

8. E-MAIL ADDRESS

DCHuff@tighebond.com

C. PROPOSED TEAM

(Complete this section for the prime contractor and all key subcontractors.)

	(Check)				9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
	PRIME	JV	PARTNER	SUBCONTRACTOR			
a.	<input checked="" type="checkbox"/>				Tighe & Bond, Inc. <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	213 Court Street, Suite 900 Middletown, Ct 06457	Traffic Engineering, Transportation Planning
b.	<input checked="" type="checkbox"/>				Tighe & Bond, Inc. <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	1000 Bridgeport Ave., Suite 320 Shelton, CT 06457	Traffic Engineering, Transportation Planning
c.			<input checked="" type="checkbox"/>		CDM Smith <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	111 Founders Plaza, Suite 1600, East Hartford, CT 06108	Traffic Engineering, Transportation Planning
d.			<input checked="" type="checkbox"/>		Freeman Companies <input type="checkbox"/> CHECK IF BRANCH OFFICE	36 John Street, Hartford, CT 06106	Landscape Architecture
e.			<input checked="" type="checkbox"/>		RKG Associates <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	76 Canal Street, Suite 401 Boston, MA 02114	Land Use Planning
f.					 <input type="checkbox"/> CHECK IF BRANCH OFFICE		

D. ORGANIZATIONAL CHART OF PROPOSED TEAM

(Attached)

E. RÉSUMÉS OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME		13. ROLE IN THIS CONTRACT		14. YEARS OF EXPERIENCE	
Chris O. Granatini, P.E.		Project Manager		A. TOTAL	b. WITH THIS FIRM
				20	10
15. FIRM NAME AND LOCATION (City and State)					
Tighe & Bond Inc., Middletown, CT					
16. EDUCATION (DEGREE AND SPECIALIZATION)			17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)		
B.S., Civil Engineering			P.E. – CT (#22299)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)					
Christopher Granatini uses his broad background in civil, transportation, and traffic engineering to design and manage transportation assignments for clients with a focus on context sensitive solutions. His diverse technical experience includes roadway design, parking lot design, transportation planning studies, traffic control signal design, maintenance and protection of traffic engineering, signing and pavement marking design, ITS planning, and preparation of traffic studies. His knowledge of the latest roadway design applications, including 3-D design software tools, provides him with the expertise to contribute his design experience while managing assignments. He is a skilled public liaison, providing clients with a trusted representative to interface with project stakeholders and the public to execute public outreach initiatives.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (CITY AND STATE)			(2) YEAR COMPLETED	
	Routes 25 and 111 Transportation Engineering and Planning Study, Monroe and Trumbull, CT			PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
				ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> Check if project performed with current firm	
Managing a transportation engineering and planning study for the Towns of Monroe and Trumbull. The study includes a land use study to determine future development potential on these regional corridors. The project includes a broad public involvement program to obtain public input on the corridor needs, deficiencies, and recommendations					
b.	(1) TITLE AND LOCATION (CITY AND STATE)			(2) YEAR COMPLETED	
	Route 110 Traffic Study, Stratford, CT			PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
				ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> Check if project performed with current firm	
Managed the development of Temporary Traffic Control Plans for several Yale University Residential College renovation projects. Assignments included the preparation of detailed Traffic Control Plans and coordination with Yale University construction managers and the City of New Haven to secure street obstruction permits.					
c.	(1) TITLE AND LOCATION (CITY AND STATE)			(2) YEAR COMPLETED	
	Route 3 Traffic and Development Study, Rocky Hill, CT			PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
				2012	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> Check if project performed with current firm	
Managed the Route 3 traffic and development study in the Town of Rocky Hill, CT. The study focuses on the potential development in the Town of Rocky Hill seeking to identify transportation infrastructure improvements that can be programmed over the study horizon. The study includes a detailed analysis of existing and future conditions, identification of alternatives, and development of an improvement plan for the area.					
d.	(1) TITLE AND LOCATION (CITY AND STATE)			(2) YEAR COMPLETED	
	Hartford and Farmington Transportation Planning Studies, Farmington, CT			PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
				ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> Check if project performed with current firm	
Managed a comprehensive transportation planning study around the UCONN Medical Center in Farmington, CT and an Alternative Travel Mode Access and Mobility Assessment for the new UCONN Hartford Campus. The study is reviewing both existing and future needs and identifying implementable improvements to improve the transportation system for all travel modes.					
e.	(1) TITLE AND LOCATION (CITY AND STATE)			(2) YEAR COMPLETED	
	Prospect Street - Complete Street Improvements, New Haven, CT			PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
				ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> Check if project performed with current firm	
Engineered the design of roadway improvements and streetscape enhancements along Prospect Street in New Haven, CT adjacent to the Yale University New Residential Colleges. Coordinated the design of pedestrian, landscaping, and transit enhancements to Prospect Street in conformance with the New Haven Complete Streets Design Manual. The design included a mid-block pedestrian crossing, and includes signing and pavement marking and lighting enhancements to define the pedestrian crossing location.					

E. RÉSUMÉS OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME		13. ROLE IN THIS CONTRACT		14. YEARS OF EXPERIENCE	
Rebecca R. Hall, P.E., PTOE		Project Engineer		a. TOTAL	b. WITH THIS FIRM
				7	5
15. FIRM NAME AND LOCATION (City and State)					
Tighe & Bond, Inc.					
16. EDUCATION (DEGREE AND SPECIALIZATION)			17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)		
B.S. Civil Engineering			Professional Engineer, Civil: CT (#29741) Professional Traffic Operations Engineer (#4099)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)					
Institute of Transportation Engineers Women's Transportation Seminar, WTS CT Member of the Year 2015, WTS CT Treasurer 2015-Present					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (CITY AND STATE)		(2) YEAR COMPLETED		
	Hartford and Farmington Transportation Planning Studies		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)	
			ON-GOING		
(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> Check if project performed with current firm		
Lead Traffic and Transportation Engineer for the Capitol Region Council of Governments Route 4 Transportation and Safety Improvements Study in Farmington, CT. Tasks include detailed analysis of existing and future traffic conditions, traffic safety analysis and identification of implementable alternatives to improve the safety, mobility and access deficiencies for all users within the study area. The study includes an extensive public involvement process to obtain feedback from project stakeholders throughout the study process.					
b.	(1) TITLE AND LOCATION (CITY AND STATE)		(2) YEAR COMPLETED		
	Park Avenue Campus Off-Site Roadway Improvements		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)	
			2013		
(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> Check if project performed with current firm		
Conducted a safety and operational analysis for roadway improvement alternatives at the Merritt Parkway Exit 47 Ramp and site driveway intersections with Park Avenue to support the development of the Bridgeport Hospital Park Avenue Campus. Completed the traffic control signal design for the new clustered traffic control signal located at the intersection of Park Avenue with Merritt Parkway northbound ramps and the site driveway					
c.	(1) TITLE AND LOCATION (CITY AND STATE)		(2) YEAR COMPLETED		
	Washington Village, Norwalk, CT		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)	
			2011		
(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> Check if project performed with current firm		
Prepared a Traffic Impact Study for the redevelopment of the Washington Village housing development in Norwalk, CT. Washington Village was the oldest public housing development in Connecticut. Presented the Traffic Study at a City of Norwalk Planning Commission meeting and coordinated with OSTA for the Major Traffic Generator approval.					
d.	(1) TITLE AND LOCATION (CITY AND STATE)		(2) YEAR COMPLETED		
	Hard Rock New England Traffic Impact Assessment, West Springfield, MA		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)	
			2013		
(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> Check if project performed with current firm		
Completed the Traffic Impact and Access Study (TIAS) analysis for the proposed Hard Rock New England Casino and Entertainment Destination in West Springfield, MA. Included capacity analysis of the roadway network with two rotaries during the existing, no-build and build condition. Determined casino trip generation and origin and destination trip distribution. Recommended necessary improvements and assisted in the development of conceptual improvement plans.					
e.	(1) TITLE AND LOCATION (CITY AND STATE)		(2) YEAR COMPLETED		
	Ludlow Mills Traffic Impact Assessment, Ludlow, MA		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)	
			2012		
(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> Check if project performed with current firm		
Conducted the analysis and completed a Traffic Impact Study for Ludlow Mills, a 1.45 million square foot mixed use development in Ludlow, MA. Recommended and developed concept drawings for proposed improvements, coordinating with Pioneer Valley Planning Commission, Massachusetts Department of Transportation, and Pioneer Valley Transit Authority.					

E. RÉSUMÉS OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME Craig D. Yannes, P.E., P.T.O.E.	13. ROLE IN THIS CONTRACT Transportation Engineer	14. YEARS OF EXPERIENCE	
		A. TOTAL 7	b. WITH THIS FIRM 3

15. FIRM NAME AND LOCATION (City and State)
Tighe & Bond Inc., Shelton, CT

16. EDUCATION (DEGREE AND SPECIALIZATION) M.S., Civil Engineering; B.S., Civil Engineering	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) P.E. – CT (#29075); P.T.O.E. (#3567)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
 Craig Yannes is a professional engineer in the State of Connecticut, and is also certified by the Transportation Professional Certification Board as a Professional Traffic Operations Engineer. Craig holds his M.S. in civil engineering with a strong background in transportation and traffic engineering, as well as planning. His technical specialties include traffic signal design, traffic impact studies, traffic feasibility and planning studies, transit planning studies, parking studies, traffic calming planning and design, as well as roadway design.

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (CITY AND STATE)	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
a.	Route 110 Engineering Planning Study, Stratford, CT	ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Lead Transportation Engineer for the Engineering Planning Study of Route 110 (Main Street) in Stratford, CT. Tasks include detailed analysis of existing and future traffic conditions, a traffic safety review and identification of improvement alternatives to develop a transportation plan solving recurring congestion, safety, and mobility issues along the corridor. The study includes coordination with the Greater Bridgeport Regional Council (GBRC), the Town of Stratford, and corridor stakeholders including Sikorsky Aircraft.		
b.	Hebron Avenue Corridor Roundabout Planning	2014	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Served as Project Engineer for the transportation improvement and roundabout planning study for the Hebron Avenue Corridor in Glastonbury. The project included traffic capacity analyses, microsimulation, and conceptual layouts to evaluate the operation and feasibility of roundabout installations at the New London Turnpike and House Street intersections with Hebron Avenue. The results of the study were presented to the Town Council resulting in funding for the design of the roundabouts.		
c.	Routes 25 and 111 Transportation Engineering and Planning Study:	ON-GOING	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Prepared several traffic impact and parking studies for the development of the 20-acre Yale & Towne site in Stamford's South End. The project included traffic impact analysis and parking analysis for the development of 1,139 apartment units, and 164,000 square feet of retail and office space. Parking analysis included shared parking analysis, balancing parking demand for adjacent uses, and providing sufficient parking while maximizing the potential development space. A thorough knowledge of the OSTA and City review processes, and working relationship with CTDOT OSTA and city staff, resulted in the completion of a number of successful permit approvals for the projects.		
d.	The Reserve Master Plan, Danbury, CT	2015	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Conducted an evaluation of projected development traffic volumes, and performed traffic analyses, as part of a master planning effort for the Reserve Development in Danbury, CT. The Reserve includes more than 1.8 Million square feet of mixed use development and over 2,000 residential units. The Master Plan included an extensive traffic planning and roadway improvement program to the surrounding local and interstate roadway network.		
e.	Saint Vincent Parking Study	2013	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Served as project engineer for the parking study that was part of the St. Vincent Master Plan in Bridgeport, CT. The project included an extensive parking study for the expansive on-campus and off-campus parking areas to determine existing parking demand. The study concluded with concept plans for additional parking areas, which will be used to accommodate expected parking demand growth at the campus.		

E. RÉSUMÉS OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH THIS FIRM
Dana C. Huff, P.E.	Principal-In-Charge	37	37

15. FIRM NAME AND LOCATION (City and State)

Tighe & Bond, Inc.

16. EDUCATION (DEGREE AND SPECIALIZATION)

B.S. Civil Engineering

17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)

Professional Engineer, Civil: CT (#28159), MA (#34729), NH (#13245), NY (#96898), VT (#6285)

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

American Society of Civil Engineers, Solid Waste Association of North America -Southern New England Chapter, American Public Works Association, Institute of Transportation Engineers, CASHO

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (CITY AND STATE)	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
a.	Route 110 Traffic Study, Stratford, CT	ON-GOING	
		<input type="checkbox"/> Check if project performed with current firm	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE		
	Served as principal-in-charge for Tighe & Bond's work with the CT METRO Council of Government (METRO COG) and the Town of Stratford, CT to develop a transportation engineering planning study that solves the recurring congestions, safety and mobility issues along Main Street (Route 110). The study included a public outreach initiative to advise affected agencies, local stakeholders, and the public.		
b.	UConn Farmington/Hartford Campus Traffic Study, Farmington and New Hartford, CT	ON-GOING	
		<input type="checkbox"/> Check if project performed with current firm	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE		
	Principal on a traffic circulation/connectivity project for both the Farmington Medical Campus and the new Hartford Campus. The project was awarded to Tighe & Bond through the Capital Region Council of Government (CRCOG)		
c.	CTDOT Traffic and Safety On-Call, Various Locations, CT	ON-GOING	
		<input type="checkbox"/> Check if project performed with current firm	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE		
	Serving as principal-in-charge for a contract with the CTDOT for task-based traffic and safety engineering services throughout CT. Tighe & Bond is calculating yellow and all-red clearance timings for 794 state-owned and maintained traffic control signals in District 1. Additional assignments include evaluation and design of warning and safety signage and pavement markings for approximately 1,500 dangerous non-state owned roadway curves in Districts 2 and 4.		
d.	Town of Trumbull On-Call	ON-GOING	
		<input type="checkbox"/> Check if project performed with current firm	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE		
	Served as principal-in-charge for several environmental projects under an on-call engineering contract in Trumbull, CT; some of which include updating Trumbull's new MS4 Stormwater Management Plan, assisting Economic Development on several community revitalization projects, and assisting the Town with grant applications. Prepared two major grant applications for roadway and intersection improvements (including pedestrian access/sidewalks).		
e.	Norwalk Street and Streetscape Improvements	2014	
		<input type="checkbox"/> Check if project performed with current firm	
	(3) BRIEF DESCRIPTION (Brief Scope, size, cost, etc.) AND SPECIFIC ROLE		
	Served as principal-in-charge and worked with the Norwalk Redevelopment Agency to design roadway and streetscape improvements to enhance the "walkability" of the area of North Water Street adjacent to the Aquarium and improve patron access to businesses on North Main Street, Dana is also principal on the Smith Street improvements project in support of the Head of the Harbor development in Norwalk, CT		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME Daniel Valentine, P.E.	13. ROLE IN THIS CONTRACT Project Engineer	14. YEARS EXPERIENCE	
		a. TOTAL 7	b. WITH CURRENT FIRM 7
15. FIRM NAME AND LOCATION <i>(City and State)</i> Tighe & Bond, Middletown, CT			
16. EDUCATION <i>(Degree and Specialization)</i> B.S., Civil Engineering		17. CURRENT PROFESSIONAL REGISTRATION <i>(State and Discipline)</i> CT/Professional Engineer/#29068	

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Daniel Valentine has experience with hydrologic and hydraulic calculations, dam inspections, land development, underground utility design, roadway design, water distribution design, traffic signal design, parking demand assessment, work zone traffic management, geotechnical evaluations, and industrial spill management.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
Still River Drive Roundabout, New Milford, CT	ON-GOING	
a. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☑ Check if project performed with current firm Designed intersection improvements at Still River Drive and Pickett District Road in New Milford, CT. Design included a single lane roundabout with landscaped center and splitter islands to create an entrance to the downtown area. Construction phase of the project is funded under the LOTCIP program through the Regional Planning Organization and CTDOT.		
Park Avenue Campus Off-Site Roadway Improvements, Trumbull, CT	2015	
b. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ✓ Check if project performed with current firm Designed intersection improvements at Merritt Parkway interchange and project site drive in Trumbull, CT. Design included a single lane roundabout and two signalized intersections, guiderail connections to bridge parapet, and high friction pavement.		
Depot Square Parking Study, Bristol, CT	2010	
c. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ✓ Check if project performed with current firm Conducted parking study of downtown Bristol, CT to assess potential impacts from a large proposed mixed-use development and recommended improvements to the existing and proposed parking infrastructure to maximize efficiency for the study area.		
Washington Boulevard Roadway Improvements, Stamford, CT	2008	2010
d. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ✓ Check if project performed with current firm Aided in the design efforts for the complete design and construction of 4 traffic control signals for Washington Boulevard in support of RBS project in Stamford, CT. Project involved the use of video detection, vehicle preemption and countdown pedestrian signals. Design efforts included extensive construction administration through to operating system this summer. Project included the use of PEEK traffic controllers and fiber optic communications to City Government Center.		
Prospect Street – Complete Street Improvements, New Haven, CT	ON-GOING	
e. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ✓ Check if project performed with current firm Designed roadway realignment, grading, and storm drainage for an intersection improvement project in New Haven, CT. Project included shared bike lanes, mid-block pedestrian crossing and speed humps to mitigate travel speeds. Minor street widening was proposed to accommodate on-street parking and a transit stop.		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME Richard Canavan, PhD, PWS	13. ROLE IN THIS CONTRACT Project Environmental Scientist	14. YEARS EXPERIENCE	
		a. TOTAL 23	b. WITH CURRENT FIRM 1
15. FIRM NAME AND LOCATION <i>(City and State)</i> Tighe & Bond, Inc., Worcester, MA			
18. EDUCATION <i>(Degree and Specialization)</i> PhD, Biogeochemistry M.S., Soil Science B.A., Botany	17. CURRENT PROFESSIONAL REGISTRATION <i>(State and Discipline)</i> Professional Wetlands Scientist/PWS # 2147 Registered Professional Soil Scientist - SSSSNE		

OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Richard Canavan is a Senior Environmental Scientist with over 20 years of experience in environmental research, teaching and consulting. Dr. Canavan's is currently the President of the Connecticut Federation of Lakes.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
ConnDOT Consultant Liaison Bridge Program, Various Locations, CT	ON-GOING	
a. (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Led the field investigation and permit application development for over twenty bridge repair and replacement projects. Coordination with DOT staff, state and federal regulators, hydraulic and structural engineers, design consultant staff. Projects ranged from large coastal interstate bridges to culvert rehabilitation.	✓ Check if project performed with current firm	
1779 Line Rebuild, East Hartford and South Windsor, CT	ON-GOING	ON-GOING
b. (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Serving as Environmental Scientist for an overhead electric transmission line project, which requires work in at a Flood Control Levee. Preparation o NEPA documentation, state and federal wetlands permitting, Section 408 Army Corps approval, CTDEEP Dam Construction and 401 Water Quality Certification. Field meetings and coordination with local, state, and federal agencies for work near the flood control levee.	✓ Check if project performed with current firm	
Lyman Viaduct, Colchester, CT	2010-2012	2012
c. (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Obtained DEEP Inland Wetlands, 401 Water Quality Certification and Cat. II USACE approvals for structural repairs and fisheries improvements at a culvert with significant scour damage. Work included coordination with hydraulic and structural engineers and DEEP inland fisheries staff for the design of fisheries modifications to the culvert and channel stabilization in Dickinson Creek.	Check if project performed with current firm	
RIDOT, Laurel Avenue Bridge Replacement, Coventry, RI	2010-2012	2012
d. (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Obtained approval under the Fresh Water Wetlands Act for a design-build bridge replacement project including reconstruction of flood damaged structures in a river channel. Rapid response to meet design-build schedule. A key component of this project was working closely with hydraulic engineers to create a phased water handling plan for the at the project site which was integral to an impoundment of the South Branch of the Pawtuxet River.	Check if project performed with current firm	
Surface Water Diversion, Putnam WPCA, Putnam, CT	2008-2014	N/A
e. (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Developed surface water diversion management based on the results of an Instream Flow Study of fisheries habitat. Prepared mitigation plans for filter backwash water reuse and bypass flow at a water plant. Provided wetland delineation, local permitting, and CTDEEP documentation for improved management of drinking water filter backwash at surface water division.	Check if project performed with current firm	

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

1

21. TITLE AND LOCATION (City and State)

Prospect Street Complete Street Design, New Haven, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES 2010 - 2013	CONSTRUCTION (If applicable)
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23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Yale University	Jon Olsen	203-436-4080

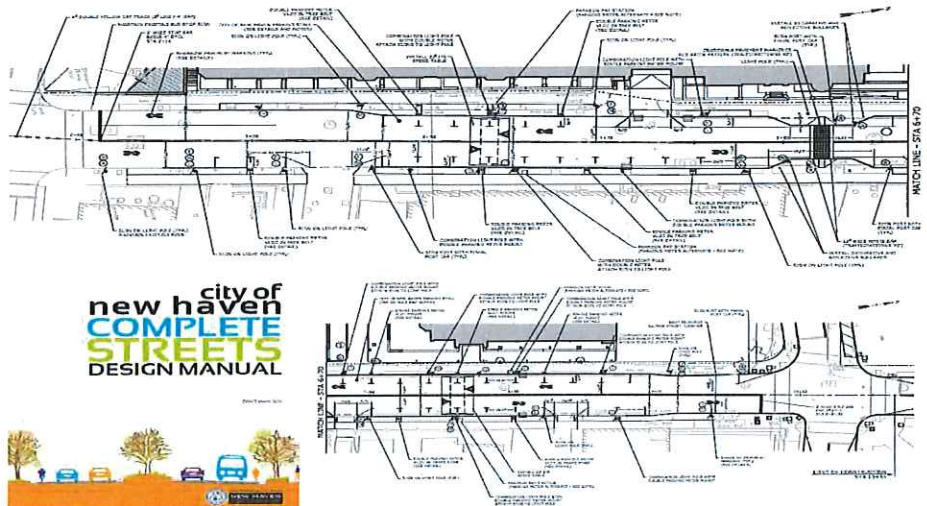
24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond prepared the City of New Haven's first Complete Street project along Prospect Street. The project reduced a four lane arterial roadway to a two-lane roadway with on-street parking, curb bumpouts, a mid-block crosswalks and speed tables. The roadway upgrades are associated with the development of Yale University's two new Residential Colleges. The influx of 850 new students into the residential colleges will significantly increase bike and pedestrian traffic along Prospect Street, providing the impetus to implement the Complete Street elements into the design.

Our scope of services included extensive data collection and analyses of existing and future conditions, including the opening of Yale's new Residential Colleges. The design of Prospect Street incorporated roadway traffic calming elements defined in the City of New Haven's Complete Streets Manual.

The roadway design included modifying the roadway profile to eliminate a deep sag curve in the roadway to better align the roadway with the adjacent buildings. The improvement include new electronic pedestrian-actuated signage, new street lighting, and enhanced pavement markings to define the proposed mid-block crosswalk. The project also includes shared bike lanes and pertinent signage.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

20. EXAMPLE PROJECT KEY NUMBER

2

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

21. TITLE AND LOCATION (City and State)

Route 3 Traffic and Development Study, Rocky Hill, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2010 - 2012

CONSTRUCTION (If applicable)

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Capitol Region Council of Governments

b. POINT OF CONTACT NAME

Robert Aloise

c. POINT OF CONTACT TELEPHONE NUMBER

860-522-2217

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond prepared the Route 3 Traffic and Development Study for the Capitol Region Council of Governments (CRCOG) and the Town of Rocky Hill. The study provided a multi-modal planning document to forecast the Town's future development potential and identify infrastructure improvements to support the land use expansion and mitigate the growth of traffic. The Route 3 Traffic and Development Study includes Route 3 commercial area, West Street (SR 411) and Brook Street.

The scope of services included extensive data collection and analyses of existing and future conditions, looking at a 20-year study horizon. Based on the results of the engineering analyses and environmental reviews, improvement concepts will be developed and analyzed to identify a series of recommended improvements to help the Town manage growth and plan infrastructure improvements to accommodate 20-years of forecast growth.

The study included an extensive public outreach program. One key element of the outreach initiative was regular meetings with the project Steering Committee, comprised of Rocky Hill staff and appointees from the Town Council and Planning and Zoning Commission, CRCOG staff, and CTDOT staff. The outreach initiatives included public meetings, broadcast on public television, appearance on the Mayor's monthly television broadcast, and public input surveys.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
a.	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.</i>		20. EXAMPLE PROJECT KEY NUMBER	
		3	
21. TITLE AND LOCATION (City and State)		22. YEAR COMPLETED	
Route 110 Traffic Study, Stratford, CT		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
		On-going	
23. PROJECT OWNER'S INFORMATION			
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER	
Metropolitan Council of Governments	Matthew Fulda	203-366-5405	
24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)			

PROJECT OVERVIEW

Tighe & Bond worked with the Greater Bridgeport Regional Council (GBRC) and the Town of Stratford to provide a transportation planning study for the Town that solves the recurring congestion, safety and mobility issues along Main Street (Route 110).

We used our transportation planning and traffic engineering expertise to develop a comprehensive plan aimed at improving traffic operations along the corridor. This included operational analysis and simulations, safety analysis, multi-modal concept development and alternative analysis, land development review, and cost estimating.

The study tasks also included permit identification through wetland assessment, development of floodway and floodplain mapping, Natural Diversity Data Base request, and the identification of relevant local, state and federal environmental permits required for the recommended improvements.

The study tasks included coordination with the Study Advisory Committee and the Community Advisory Committee, conducting public information meetings, and working with GBRC and the Town to disseminate study information through GBRC and the Town's websites.

The study considers all modes of travel, including pedestrian facilities, bicycle accommodations, and transit enhancements. The study deliverable includes a report documenting the results of the analyses, recommendations for improvements, and an implementation plan to help the Town and GBRC fund the improvements to meet the transportation system needs.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT			
a.	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.</i>		20. EXAMPLE PROJECT KEY NUMBER	
		4	
21. TITLE AND LOCATION (City and State)		22. YEAR COMPLETED	
Main Street Traffic Signals – Glastonbury, CT		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
		2012	2013
23. PROJECT OWNER'S INFORMATION			
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER	
Town of Glastonbury	Daniel Pennington	860-652-7744	
24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)			

PROJECT OVERVIEW

This CMAQ funded project, State Project No. 53-181, involves the complete replacement and upgrade of all traffic control signal equipment along Main Street in the Town of Glastonbury. Tighe & Bond is providing complete design services for the project including a detailed preliminary engineering phase involving before and after traffic studies of travel time delays along the critical corridor.

The services included an extensive traffic model development to understand the existing operations of the traffic signals which are mostly uncoordinated in operation during the peak hours. The design efforts included a review of existing ADA and MUTCD compliance for existing equipment to better understand the future design considerations in addressing the Town traffic signal system needs.

The signal design efforts involved a comprehensive data collection effort to document existing operations, equipment and traffic signal operating characteristics such as pedestrian operations in the highly traveled corridor.

The design efforts also included a sophisticated telecommunications system to remotely operate the traffic signals from the new town traffic operations center more than 1 mile from the project area.

In addition, the preliminary engineering phase included a detailed examination of the traffic signal support structure options, span wire versus mast arm and involved renderings to determine the best structure method as shown above.

The signal systems design resulted in a state of the art traffic signal system including advanced transportation controllers utilizing NEMA controllers, with CCTV video detection, emergency vehicle preemption, countdown pedestrian signals with LED's. The project is expected to commence construction in the Fall of 2012, with construction completion in 2013.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT			
a.	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design
c.	Tighe & Bond, Inc.	Westfield, MA	Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

5

21. TITLE AND LOCATION (City and State)

CTDOT Traffic Signal Retiming, Various CT Locations in District 1

22. YEAR COMPLETED

PROFESSIONAL SERVICES

CONSTRUCTION (If applicable)

On-going

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

b. POINT OF CONTACT NAME

c. POINT OF CONTACT TELEPHONE NUMBER

Connecticut Department of Transportation

Joseph Ouellette

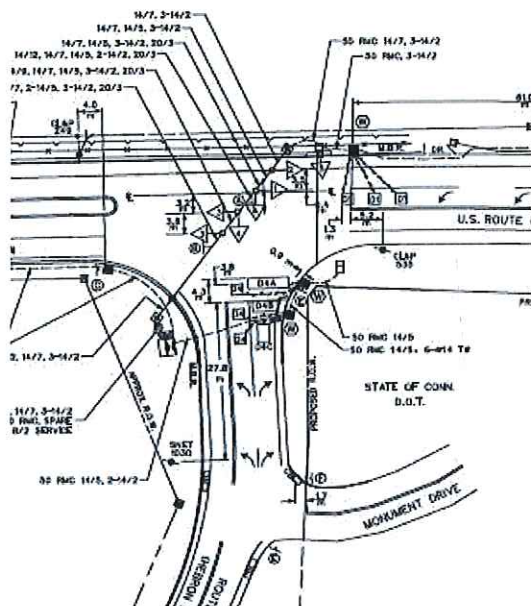
860-594-2721

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

As part of a contract with the Connecticut Department of Transportation (CTDOT) for Task-based Traffic and Safety Engineering Services, Tighe & Bond is calculating yellow and all-red clearance timings for 794 state-owned and maintained traffic control signals in District 1. This project is part of a larger CTDOT initiative to improve safety at signalized intersections and includes all the state-owned and maintained traffic signals across the state.

The project involves utilizing engineering formulas to calculate yellow and all-red traffic control signal clearance intervals, pedestrian clearance intervals (exclusive pedestrian phase or side-street green). As part of the project scope of services, Tighe & Bond is also updating all 794 intersections to current CTDOT Microstation CADD standards. The design will be accomplished according to Federal and State standards and/or guidelines including but not limited to the MUTCD, Division of Traffic Engineering Traffic Control Signal Design Manual, and OSTA Regulations. The design will be accomplished in three phases consisting of preliminary design, semi-final design, and final design. Following completion of the final design, CTDOT will implement the new signal timings with CTDOT District 1 traffic signal maintenance staff.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
a.	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

6

21. TITLE AND LOCATION (City and State)

Hebron Avenue/New London Turnpike/House Street – Glastonbury, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2015

CONSTRUCTION (If applicable)

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Town of Glastonbury

b. POINT OF CONTACT NAME

Daniel Pennington

c. POINT OF CONTACT TELEPHONE NUMBER

860-652-7735

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond provided traffic engineering services evaluating the potential benefits of two modern roundabouts along Hebron Avenue at the New London Turnpike and House Street intersections in the Town of Glastonbury. The traffic engineering efforts included completing a microsimulation VISSIM model for the corridor and verifying the results utilizing SIDRA which is a micro-analytical evaluation analysis. These results were compared to the Synchro results at the Hebron Avenue and New London Turnpike intersection which is traffic signal controlled. Once the traffic analysis results showed that roundabouts were a feasible alternative, the intersection layouts, pedestrian, bicyclist and safety evaluations were completed.

Concept plans were developed which depict roundabouts with an inscribed diameter of 100 feet at the New London Turnpike intersection and 116 feet at the House Street intersection to accommodate an additional right turn lane. Pedestrian features such as sidewalks, greenbelts, sidewalk ramps and splitter islands with a pedestrian refuge area were all included as part of the design. Additional features such as raised crosswalks and pedestrian signals were also considered.

Tighe & Bond presented the findings at multiple Town Council meetings and it was ultimately decided that the Town of Glastonbury would move forward with the design and construction of the two roundabouts along Hebron Avenue which will help serve as a gateway to the Town.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
a.	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

7

21. TITLE AND LOCATION (City and State)

Farmington/Hartford Transportation Planning Study, Farmington and Hartford, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES

On-going

CONSTRUCTION (If applicable)

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Capital Region Council of Governments

b. POINT OF CONTACT NAME

Robert Aloise

c. POINT OF CONTACT TELEPHONE NUMBER

860-522-2217

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

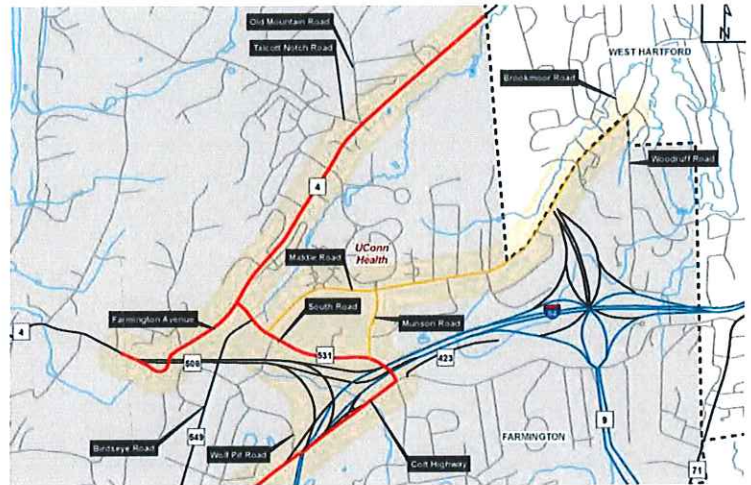
PROJECT OVERVIEW

Tighe & Bond is conducting a comprehensive transportation planning study around the UConn Medical Center in Farmington, CT and an Alternative Travel Mode Access and Mobility Assessment for the new UConn Hartford Campus. The study is reviewing both existing and future needs and identifying implementable improvements to improve the transportation system for all travel modes.

Recent investments by the State, private sector and UConn within the area surrounding UConn Health Farmington established the need to study and review the surrounding transportation network to support the growth in a sustainable manner while identifying both current and future needs and deficiencies that may warrant mitigation.

The study tasks include extensive data collection, traffic safety analysis for all travel modes and natural, environmental and historical resource identification. The development of implementable context sensitive improvement alternatives utilizing the results from the operational analysis and simulations for the existing and future conditions, forecasted to 2040.

Community involvement and public outreach is an important part of this study. A variety of techniques and methods will be used to inform the public of study findings and to obtain feedback from project stakeholders throughout the study process including advisory committee meetings, focus groups, public information meetings, newsletters, a study website and an electronic and hardcopy public survey.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

8

21. TITLE AND LOCATION (City and State)

Routes 25 and 111 Transportation Engineering and Planning Study

22. YEAR COMPLETED

PROFESSIONAL SERVICES

CONSTRUCTION (If applicable)

On-going

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

b. POINT OF CONTACT NAME

c. POINT OF CONTACT TELEPHONE NUMBER

Metropolitan Council of Governments

Matthew Fulda

203-366-5405

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond is working with the Connecticut Metropolitan Council of Governments (METROCOG) and the Towns of Monroe and Trumbull to develop a comprehensive transportation improvement plan for Routes 25 and 111 and provide a planning document for the Towns, Region, and State to guide the implementation of transportation system improvements to meet expected future development, local and regional transportation needs and economic development goals.

The plan includes cost effective physical transportation system solutions that improve operations to mitigate congestion, address safety concerns, and provide guidance on access control issues while improving the transportation system for all users. Improvements to sidewalk and bicycle infrastructure, exclusive pedestrian signalization at intersections, connectivity to the Pequonnock River Trail system, and improved transit amenities to provide a complete transportation system for all travelers is a critical element to this study.

The public outreach initiatives are facilitated through a Technical Advisory Committee and a Community Advisory Committee to provide their perspectives on the study goals and objectives and help vet study findings and recommendations. The public outreach program also includes public information meetings and a project website.

The study tasks also included permit identification through wetland assessment, development of floodway and floodplain mapping, Natural Diversity Data Base request, and the identification of relevant local, state and federal environmental permits required for the recommended improvements.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
a.	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

9

21. TITLE AND LOCATION (City and State)

Harbor Point Development, Stamford, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2010

CONSTRUCTION (If applicable)

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Harbor Point Infrastructure Improvement District

b. POINT OF CONTACT NAME

William Buckley

c. POINT OF CONTACT TELEPHONE NUMBER

203-948-4958

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond is providing construction engineering services for major infrastructure, roadway and traffic improvements integral to the Harbor Point Development Project.

The Harbor Point Development Project is a mixed use TOD project on 80 acres in the South End peninsula of Stamford. The multi-phase project including Harbor Point, the Yale & Towne site and the Gateway site will include 4,000 housing units, 400,000 SF of retail space, office, two hotels and 12 acres of new parkland and waterfront trails.

Under the funding agreement between the Harbor Point Infrastructure Improvement District (the District), the City of Stamford and the Developer, Tighe & Bond was selected by the District as the Consulting Engineer for the oversight of the construction of the District Improvements and approval of Requisitions.

Infrastructure improvements include roadway widening and reconstruction, drainage design, traffic signals, utility relocation, streetscape and lighting. Our tasks included planning and design for the abandonment and relocation of redundant water mains, gas mains, underground electric and cable lines, and city sewers and storm drains. We were responsible for coordination with the City Public Works Department, WPCA and the public utility companies.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.

20. EXAMPLE PROJECT KEY NUMBER

10

21. TITLE AND LOCATION (City and State)

Reconstruction of Oaklawn Ave, Stamford, CT

22. YEAR COMPLETED

PROFESSIONAL SERVICES

CONSTRUCTION (If applicable)

On-going

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

b. POINT OF CONTACT NAME

c. POINT OF CONTACT TELEPHONE NUMBER

City of Stamford

Mani Poola

203-977-4237

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

PROJECT OVERVIEW

Tighe & Bond is working with the City of Stamford to reconstruct Oaklawn Avenue to improve traffic safety, address drainage issues, and improve the corridor to best accommodate cars, bicycles and pedestrians. Our design is in accordance with the Connecticut Department of Transportation requirements, and is funded through the STP-Urban program.

The project includes roadway realignment to improve safety and correct poor horizontal geometry, new sidewalks along both sides of the roadway, widening the roadway for bikes, and improving roadway drainage. It also involves 15 right of way actions to accommodate the improvements, public outreach to advise area residents, and coordination with the city and state.

Oaklawn Avenue is located in the Bull's Head neighborhood of Stamford in a residential area, and serves as an east-west connector between High Ridge Road and Newfield Avenue. The roadway reconstruction includes a 1,200 foot segment between Halpin Avenue and Stanwick Place. To improve traffic safety and flow, the roadway will incorporate 11-foot lanes with five-foot shoulders on each side for bikes. A five-foot sidewalk, and three-foot utility strip on either side of the roadway, is also planned.

This reconstruction also offers the City an opportunity to upgrade the existing storm drainage system, and implement traffic calming measures.



25. FIRMS FROM SECTION C INVOLVED IN THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION	(3) ROLE
a.	Tighe & Bond, Inc.	Middletown, CT	Traffic Engineering/Signal Design
b.	Tighe & Bond, Inc.	Shelton, CT	Traffic Engineering and Signal Design

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL (From Section E, Block 12)	27. ROLE IN THIS CONTRACT (From Section E, Block 13)	28. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)									
		1	2	3	4	5	6	7	8	9	10
Dana Huff, P.E. <i>Tighe & Bond, Inc.</i>	Principal-In-Charge			X		X	X	X	X		
Chris Granatini, P.E. <i>Tighe & Bond, Inc.</i>	Project Manager	X	X	X	X	X	X	X	X		X
Rebecca Hall, P.E., PTOE <i>Tighe & Bond, Inc.</i>	Transportation Engineer		X	X	X	X	X	X	X		X
Craig Yannes, P.E., PTOE <i>Tighe & Bond, Inc.</i>	Transportation Engineer			X	X	X	X		X		
Daniel Valentine, P.E. <i>Tighe & Bond, Inc.</i>	Project Engineer	X			X		X			X	X
Richard Canavan, PhD, PWS <i>Tighe & Bond, Inc.</i>	Project Environmental Scientist										

29. EXAMPLE PROJECTS KEY

NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Prospect Street Complete Street Design, New Haven, CT	6	Hebron Avenue/New London Turnpike/House Street, Glastonbury, CT
2	Route 3 Traffic and Development Study, Rocky Hill, CT	7	Farmington/Hartford Transportation Planning Study, Hartford and Farmington, CT
3	Route 110 Traffic Study, Stratford, CT	8	Route 25/111 Transportation Engineering and Planning Study, Monroe and Trumbull, CT
4	Main Street Traffic Signals, Glastonbury, CT	9	Harbor Point, Stamford, CT
5	District 1 Traffic Signal Retiming, CTDOT	10	Reconstruction of Oaklawn Ave, Stamford, CT

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)

RiverCOG 17-4

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

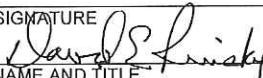
2a. FIRM (OR BRANCH OFFICE) NAME Tighe & Bond, Inc			3. YEAR ESTABLISHED 2001	4. DUNS NUMBER 60-253-2074
2b. STREET 213 Court Street, Suite 1100			5. OWNERSHIP	
			a. TYPE Corporation	
2c. CITY Middletown	2d. State CT	2e. ZIP CODE 06457	b. SMALL BUSINESS STATUS NA	
6a. POINT OF CONTACT NAME AND TITLE James T. Olsen, LEP, Vice President			7. NAME OF FIRM (if block 2a is a branch office)	
6b. TELEPHONE NUMBER 860-704-4760		6c. E-MAIL ADDRESS jtolsen@tighebond.com		
8a. FORMER FIRM NAME(S) (if any)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	31	1	A04	Air Pollution Control	1
08	Chemical Engineer	6	0	A10	Asbestos Abatement	1
10	Civil Engineer	76	3	D02	Dams (Earth; Rock); Dikes; Levees	1
12	CADD Technician	9	0	E02	Educational Facilities; Classrooms	2
15	Electrical Engineer	6	0	E09	Env. Impact Study, Assessments/Statements	1
21	Technician/Analyst	5	0	E11	Environmental Planning	2
23	Environmental Scientists	57	16	E12	Environmental Remediation	4
24	Environmental Engineer	36	3	F05	Forensic Engineering	1
27	Foundation/Geotechnical Eng.	3	0	H07	Highways; Strs.; Airfield Paving; Parking Lots	1
29	Geographic Information System	8	2	H09	Hospital and Medical Facilities	1
30	Geologists	2	0	H11	Housing (Res., Multi-Family; Apts.; Condos)	1
36	Industrial Hygienist	1	0	I03	Industrial Waste Treatment	1
38	Construction Inspectors	3	0	O01	Office Buildings; Industrial Parks	1
42	Mechanical Engineer	4	0	P06	Planning (Site, Installation and Project)	1
47	Planner: Urban/Regional	5	0	R06	Rehabilitation (Bldgs., Structures; Facilities)	1
52	Sanitary Engineer	3	0	S01	Safety Eng.; Accident Studies; OSHA Studies	1
57	Structural Engineer	7	0	S04	Sewage Collection Treatment & Disp.	2
58	Land Surveyors	1	0	S05	Soils & Geologic Studies; Foundations	1
60	Transportation Engineer	6	3	S09	Structural Design; Special Structures	1
62	Water Resources Engineer	11	2	S13	Storm Water Handling & Facilities	1
				T03	Traffic & Transportation Engineering	3
	Total	280	30	W03	Water Supply; Treatment and Distribution	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. Federal Work	1	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. Non-Federal Work	4	2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million	9. \$25 million to less than \$50 million
c. Total Work	5	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million	9. \$25 million to less than \$50 million	10. \$50 million or greater
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million	10. \$50 million or greater	
		5. \$1 million to less than \$2 million	10. \$50 million or greater		

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE 03/10/2017
c. NAME AND TITLE David E. Pinsky, P.E., President	

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)

RiverCOG 17-4

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)


2a. FIRM (OR BRANCH OFFICE) NAME Tighe & Bond, Inc			3. YEAR ESTABLISHED 2000	4. DUNS NUMBER 17-607-9973
2b. STREET 1000 Bridgeport Avenue, Suite 320			5. OWNERSHIP	
			a. TYPE Corporation	
2c. CITY Shelton	2d. State CT	2e. ZIP CODE 06484	b. SMALL BUSINESS STATUS NA	
6a. POINT OF CONTACT NAME AND TITLE Dana C. Huff, P.E., Vice President			7. NAME OF FIRM (if block 2a is a branch office)	
6b. TELEPHONE NUMBER 203-712-1100		6c. E-MAIL ADDRESS jwblock@tighebond.com		
8a. FORMER FIRM NAME(S) (if any) Allan Davis Associates			8b. YR. ESTABLISHED 1977	8c. DUNS NUMBER NA

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	31	1	C10	Commercial Bldg (low rise); shopping centers	1
08	Chemical Engineer	6	0	D02	Dams(Earth, Rock); Dikes; Levees	1
10	Civil Engineer	76	15	E02	Educational Facilities; Classrooms	2
12	CADD Technician	9	2	E09	Env. Impact Studies, Assess. or Statements	1
15	Electrical Engineer	6	0	E11	Environmental Planning	1
21	Technician/Analyst	5	1	E12	Environmental Remediation	1
23	Environmental Scientists	57	0	H07	Highways; Sts.; Airfield Paving; Parking Lots	4
24	Environmental Engineer	36	0	H09	Hospital & Medical Facilities	2
27	Foundation/Geotechnical Eng.	3	0	H11	Housing (Res., Multi-Family; Apts.; Condos)	4
29	Geographic Information System	8	0	O01	Office Buildings; Industrial Parks	3
30	Geologists	2	0	P06	Planning (Site, Installation and Project)	1
36	Industrial Hygienist	1	0	R06	Rehabilitation (Bldgs., Structures; Facilities)	1
38	Construction Inspectors	3	0	S04	Sewage Collection Treatment & Disposal	3
42	Mechanical Engineer	4	0	S07	Solid Waste; Incineration, Landfill	1
47	Planner: Urban/Regional	5	1	S13	Storm Water Handling & Facilities	4
52	Sanitary Engineer	3	0	T03	Traffic & Transportation Engineering	4
57	Structural Engineer	7	0	W03	Water Supply; Treatment and Distribution	2
58	Land Surveyors	1	0			
60	Transportation Engineer	6	1			
62	Water Resources Engineer	11	1			
Total		280	22			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER	
a. Federal Work	0	1. Less than \$100,000	6. \$2 million to less than \$5 million
b. Non-Federal Work	4	2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million
c. Total Work	6	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million
		5. \$1 million to less than \$2 million	10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

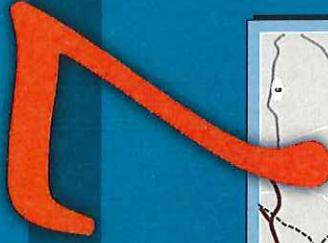
a. SIGNATURE 	b. DATE 03/10/2017
c. NAME AND TITLE David E. Pinsky, P.E., President	

Tighe&Bond

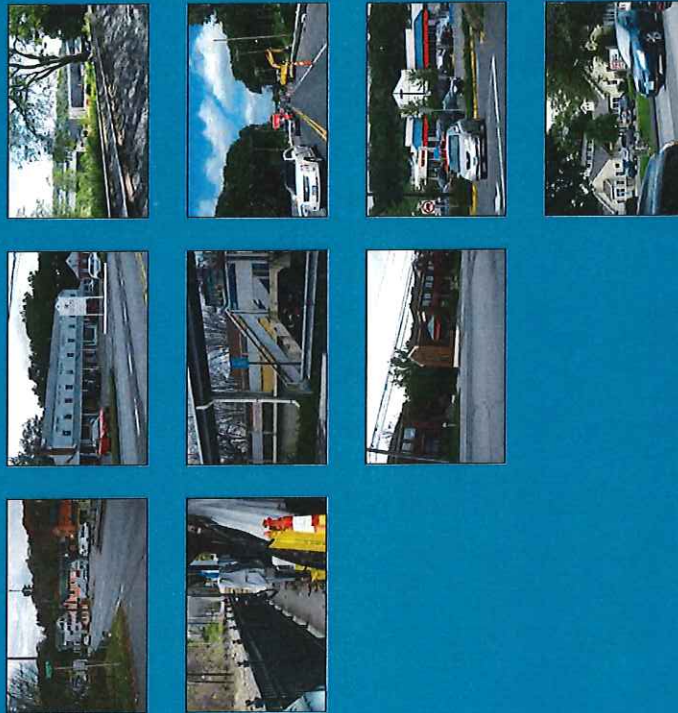
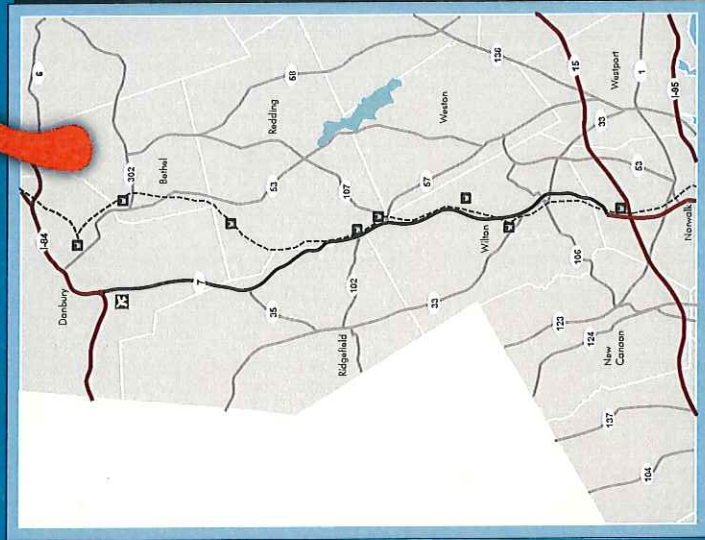
APPENDIX B

Transportation and
Land Use Study

ROUTE



Access Management Study - WILTON, CT



Prepared for SWRPA and HVCEO



SWRPA
South Western Regional Planning Agency



Fitzgerald & Halliday, Inc.
January 2011



INTRODUCTION

Overview

An access management plan for Route 7 from Danbury to Wilton has been developed to offer access management tools that can help preserve and enhance the character, capacity, and safety of travel along this major travel corridor. This Route 7-Wilton Curb-Cut and Access Management Plan provides recommendations specific to the portion of Route 7 falling within the Town of Wilton. A map of the overall study area addressed in this plan is shown below.

The study process that led to this plan was comprised of four general components including:

- Evaluation and analysis of existing and potential future access, roadway operations, and land use conditions along the study corridor
- Analysis of existing zoning regulations in each of the four communities along the corridor
- Recommendations for access design criteria and zoning modifications to strengthen access management in each municipality
- Curb-cut improvement recommendations
- Public involvement including work with a Technical Advisory Committee, and presentations at a community workshop

The outcome of this study process, this access management plan, has two basic components:

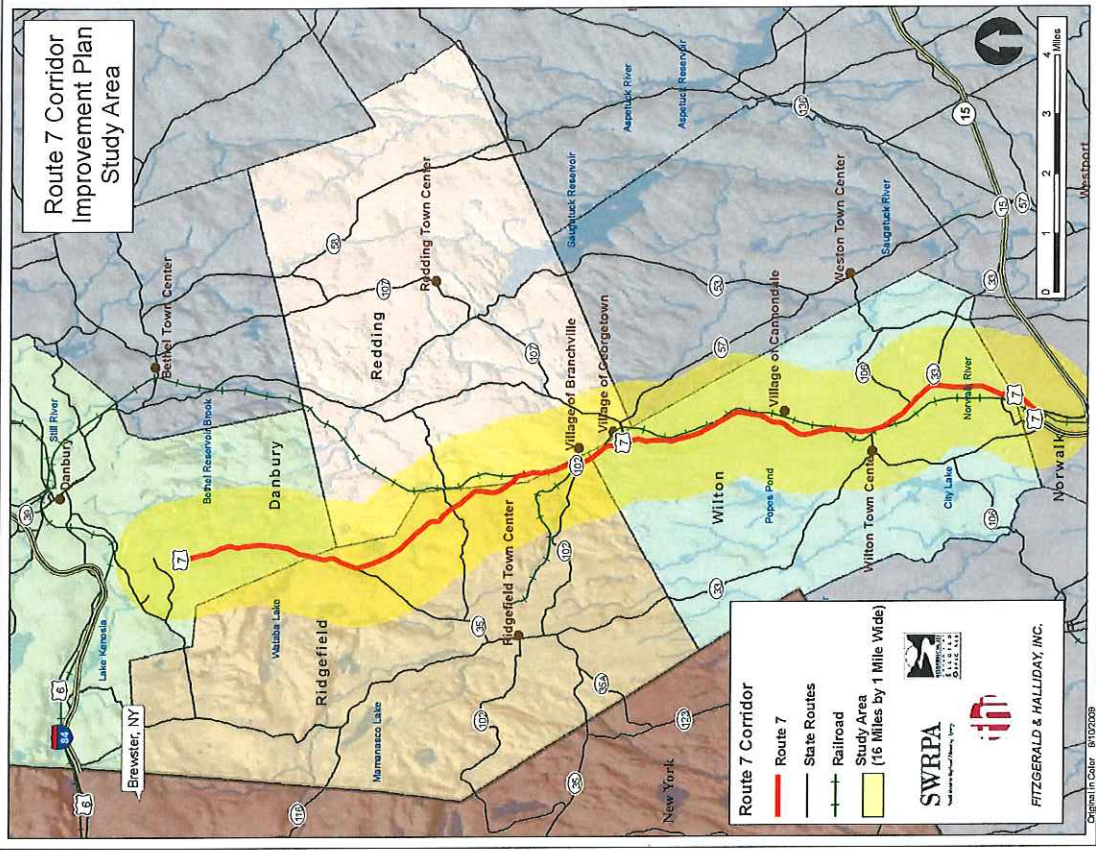
A set of recommended modifications to local zoning to enhance access on Route 7

A Curb-Cut Plan with recommendations for enhancements to access locations and design when land use change takes place

What is Access Management?

Access management is the process of overseeing access to land development while simultaneously preserving the flow of traffic on the surrounding roadway system in terms of safety and capacity. Its focus is on safety of travel and minimizing conflict points (locations where vehicles can cross paths) which in turn helps to maintain the smooth flow of traffic along a roadway. Maintaining smooth traffic flow can, in turn, reduce the need for roadway widening induced by growing congestion. Access design characteristics of a roadway that directly impact traffic flow and safety include the location, spacing, and design of access drives entering the roadway as well as location of signals, medians, and turn lanes. Planning and regulatory tools that can manage access to local roads include the plan of conservation and development, any transportation plans, zoning regulations, subdivision regulations, and specific local ordinances adopted to control driveway construction.

The benefits of utilizing access management in preserving and enhancing a roadway system are threefold. First, access management supports a safe and effective relationship between the local transportation system and land use. It can ensure that traffic can reach local development smoothly and safely and that traffic generated by local development will not create congestion or induce accidents. Along with this, access management can, by limiting the number and location of curb cuts, help ensure that potential conflicts between vehicles and pedestrians can be minimized. The fewer driveway openings with cars that a pedestrian needs to navigate along the sidewalk, the safer and more inviting the walking experience will be. Second, access management promotes the goals and objectives of a local plan of development for the future of a community. For example, if the plan of development calls for economic development in the form of more retail business in specific locations, access management can help to ensure that access to local roads is maintained or improved to serve that economic growth. Third, access management can maintain the safety and capacity of roadways relative to the functions they are expected to serve. Most communities include in their plans of development a future roadway circulation plan in-



dictating which roads should remain as quiet residential streets, which should be used to convey large volumes of traffic to businesses within the community, and which roadways should serve to convey traffic through the town on its way to other destinations. This future roadway circulation plan can be supported and promoted by effective access management.

Access management objectives can be achieved by the application of a comprehensive package of tools which include both physical design plans for improving a roadway and local planning programs and development regulations to control access to future development along a roadway system. The combination of physical design for access management (in the form of a curb-cut plan as defined below) coupled with planning programs and regulatory approaches for controlling access constitutes a local access management plan.

What is Good Access Design?

The general guiding principles of good access design are to:

- Minimize conflict points or opportunities for vehicles to cross paths
- Provide safe, adequate spacing between driveways, between intersections, and between driveways and intersections;
- Maintain good sight-lines for all drivers

Performance Criteria

Performance criteria used to develop the curb-cut recommendations for Wilton in the Route 7 Corridor study area are listed below. Unless otherwise noted, source is "Zoning Regulations of the Town of Wilton, Connecticut" (Revised December 7, 2009).

- Driveways shall intersect public streets at an angle greater than or equal to 60 degrees
- For corner lots, driveways shall be located as far from the intersection of the street lines of the lot

as is practical, but a driveway shall not be located within 60 feet of such intersection.

- Driveways serving the same lot shall be at least 150 feet apart (measured centerline to centerline), unless they are one-way driveways.
- Sight Distance – Apply CTDOT Highway Design Manual criteria based on speed.
- Maximum Driveway Widths:
 - 30 feet is the maximum driveway width, measured at and parallel to the street line, except for non-residential drives with a raised median divider.
 - 44 feet is the maximum width of a non-residential driveway with a median divider, measured at and parallel to the street line.
- Minimum Driveway Widths:
 - 20 feet is the minimum width for two-way non-residential driveways.
 - 12 feet is the minimum width for one-way non-residential driveways.
- Maximum grade for single-family dwelling driveways is 18% (but not >5% within either 35 ft of traveled way center line, or 10 ft of the street ROW line)
- Maximum grade for all non-single-family dwelling driveways is 7% (but not >2% within either 50 ft of traveled way center line, or 25 ft of the street ROW line)
- Access drives should not be located within the functional area of an intersection.^B
- All curb cuts and/or roadway intersections on opposite sides of the roadway should be aligned directly opposite one another.^A

What is a Curb-Cut Plan?

A Curb-Cut Plan is a specific concept for a roadway or roadway segment indicating the community's idea of the ideal layout for access points along that roadway. It is presented in a similar fashion to a site plan for future development. Generally, a Curb-Cut Plan is created for a roadway segment that has need for improved access design and/or is in an area where future development pressures are likely to increase. However, a Curb-Cut Plan also recognizes that opportunities to improve existing hazardous access arrangements will only occur at the time that a

change in use or change in intensity of use is proposed for a currently developed parcel or parcels.

By specifying the preferred access locations and design for a roadway segment, a Curb-Cut Plan can help:

- Ensure that access remains safe and efficient as land uses change
- Prevent future unsafe access arrangements to and from land that is not yet developed.
- Ensure future opportunities to improve hazardous access arrangements are considered and implemented as land use proposals are brought before the Planning and Zoning Commission.
- Serve as a guide that can be shared with development applicants for use in site plan development.

^A *Access Management Manual*, Transportation Research Board, 2003
^B *Highway Design Manual*, CT Department of Transportation, 2003

RECOMMENDATIONS – LOCAL ZONING REGULATIONS

Access Management Framework

Regulatory approaches to access management can include language in the zoning regulations, subdivision regulations, and in driveway related ordinances. Such regulations should be linked to clear statements of policy for managing the character of development in a town as articulated in the municipal Plan of Conservation and Development.

Zoning approaches to access management can be grouped in two categories. The zoning regulations can establish a specific Access Management Overlay Zone or they can include additional language for access management applicable to all proposed development on all roads in the community and integrated throughout the regulations. Each of the Route 7 corridor communities' zoning and subdivision regulations currently contain some language that addresses access management.

An Access Management Overlay Zone is generally established as an amendment to the zoning regulations to cover a specific geographic area of the community within which specific access design criteria would apply. Such an overlay zone is beneficial where land use controls are desired just for the area covered by the zone and nowhere else in the community. The access design within such an Access Management Overlay Zone would be guided by the curb cut plan designed particularly for the zone as well as by specific access design standards such as are described below. Overlay zones generally require more complex administrative procedures to successfully implement them than single zones with associated development design criteria.

Zoning provisions can be either prescriptive (required) or recommended (guidelines). One approach to guidelines for access design as part of the regulatory process could be the development of an access design manual with a comprehensive listing of standards for access design based upon roadway function and the character of proposed development. Applicants for land use permits would not be required to meet the design standards in the manual, yet would be encouraged to do so. This approach is most successful when there is a comprehensive pre-application

review process wherein all projects that will come before the Planning and Zoning Commission are reviewed for completeness and soundness of design prior to formal submittal.

An access management overlay zone is recommended for Route 7 in Wilton. Nonetheless, some enhancements to the general language in the Wilton zoning regulations for access management, in particular to adopt the criteria as outlined above, would benefit the Town during the zoning application process by more directly guiding applicants in access design planning on other important community roadways.

An overlay zone is most appropriate for Wilton, as this community has mostly residential or local streets with a limited number of arterial and collector roads. An access management overlay zone can stringently address access issues on Route 7 as the most heavily traveled street in Wilton while not imposing unnecessary regulatory requirements along quieter streets mostly populated with single-family homes. The value of access management along predominantly residential streets tends to be more limited.

General Recommendations

- Adopt the Curb-Cut Plan as an amendment to the Zoning Regulations in Wilton and use as a guidance/reference tool
- Update the current language for access management in the zoning and subdivision regulations to include a comprehensive set of access design guidelines and consistent with the criteria listed above. As part of this process, reconcile any inconsistency with other design criteria in the regulations.
- Continue to employ or establish a comprehensive pre-application review process to specifically assess proposed access designs for new development as well as redevelopment
- Consider adopting some incentives for developers to provide the most beneficial access design, from a community perspective. Such incentives can include

things like added flexibility in the parking or signage requirements, or a reduction in fees, or an expedited application process.

Detailed Recommendations

Relevant sections of the zoning regulations for Wilton are summarized below followed by recommendations for amendments to provide for enhanced access management. The intent of the recommendations is to ensure that the Planning and Zoning Commission, town planning professionals, and/or Town Engineer (and/or Traffic Engineer) each has an opportunity to review and comment on all proposed new or substantially altered access drives onto Route 7. In addition, it is the intent of these recommendations, to suggest ways to strengthen the ability of the Planning and Zoning Commission to control the design and location of new or substantially altered access drives that provide direct access onto Route 7. Sample language to facilitate implementation of some of these recommendations is provided in the following section of this plan.

Wilton - Route 7 Access Management & Curb Cut Study

Zoning Regulations of the Town of Wilton, March 13, 2008 Section.....	RELEVANT TEXT (paraphrased)	COMMENTS
29-3-B.29 Definitions	Curb Cut: The opening along the curb line of a street at which point vehicles may enter or leave the roadway	Beneficial definition
29-4 A.6 Application of the Regulations	Use of Land for Access: Access to any use in a nonresidential zoning district other than by a public street shall be prohibited on or across land in a residential zoning district	This language may conflict with that for access management where joint access or access from a street with lesser traffic may be desirable.
29-4-D-1.f	Driveways: No additional driveways shall be created for the purpose of serving an accessory unit	Beneficial policy language. This minimizes the number of curb-cuts on residential properties
29-6-D	In addition to the traffic study required under Section 29-10.A.4 of the Regulations, the applicant shall provide a traffic study for any retail business that exceeds 20,000 square feet that shall include an analysis of the traffic impact on all local residential streets within a half mile radius of the site and general traffic circulation within a two (2) mile radius of the site.	A traffic study or the option to require a traffic study should also be required where there is a question of safety of driveway design, location or number. This language implies the need for information on driveway design, location and spacing, but does not specify such.....leaves room for interpretation. Expand this specify that information the traffic analysis should include functionality of access points; NOTE: The traffic engineering analysis may be 'tiered' in terms of level of detail to include some, or all, of the typical elements for a full traffic impact report depending on the complexity of the development proposal; the analysis can be limited, for example, to the access point(s) in question and may not need to take into account the surrounding roadway network.
29-8-B.8 Driveways and Curb Cuts	Curb Cuts: Combination of curb cuts and access drives to parking for more than one use shall be encouraged and may be specified by the Commission	Beneficial policy language. Authority to require shared access is questionable.
	Any driveway entering onto a street shall be located and aligned in such a way as to create the minimum possible traffic hazard	Beneficial policy language. A list of design guidelines such as access management criteria listed above would be a beneficial addition.
	The Commission may require that only one driveway serve a lot regardless of the amount of street frontage.	Beneficial policy language. A policy of no more than one driveway per lot fronting on a major arterial route, unless authorized by the Commission is preferable.
Zoning Regulations of the Town of Wilton, March 13, 2008 Section.....	RELEVANT TEXT (paraphrased)	COMMENTS
	Driveways serving the same lot shall be at least 150 feet apart	Beneficial policy language. Language on the recommended distance between driveways on adjacent lots should be added.
	For corner lots, driveways shall be located as far from the intersection of the street lines of the lot as is practical, but a driveway shall not be located within 60 feet of such intersection	This language is beneficial but does not indicate what happens when a 60 foot distance of a driveway from an intersection is not possible on an otherwise conforming lot of record.
	Joint use of driveways by adjacent lots shall be encouraged	Beneficial policy language.
	Sight distance: Clear visibility shall be provided in both directions at all exit points so that the driver of a vehicle stopped on the platform portion of any new driveway shall have an unobstructed view of the highway for a reasonable distance, and so that the driver of a vehicle traveling on the highway shall have a similar view of the vehicle in the driveway.	Beneficial policy language.
Design Guidelines - Wilton Center Design District	The overall design of the site should provide a safe, logical approach and entry to all buildings and site use areas for vehicles. Guidelines include: a. Minimize curb cuts (both number and width) and encourage shared driveways, rear driveway connections, and alley access to off-street parking areas. b. Minimize conflicts between pedestrians (sidewalks) and vehicles (curb cuts).	Beneficial policy language. Could be more specific - and refer to the access management criteria listed above.
29-10.A Special Permits -Site Plans	Pre-Application Conference: Prior to submission of a formal Site Plan application, the applicant may meet with Town staff to discuss the application requirements and review preapplication plans	Beneficial policy language allows preview of proposed driveway configurations. Could include referral to town professional staff or town consulting staff for review if applicable.
	Show location of Parking, Loading and Circulation (1) Location, arrangement, and dimensions of automobile parking spaces, aisles, vehicular drives, fire lanes, entrances, exits, and ramps	Beneficial language. Site plan would be more informative if it showed adjacent driveways to the same street within 300 feet of the site.
	At any time during its consideration of an application for Site Plan approval, the Commission may require the submission by the applicant of such additional information as the Commission deems necessary	Beneficial policy language. Allows room for the Commission to ask for added information on access plans and functionality.

PLAN IMPLEMENTATION

Implementation of the actions recommended as part of this access management plan should be accomplished through a cooperative effort among Wilton local officials and ConnDOT. The following steps are recommended for each component of this plan. To complement this, samples of regulatory language that may be useful for drafting some of the recommended zoning amendments are included.

Regulatory Modifications

- The Town Planner should draft specific zoning language in accordance with the recommendations of this plan
- The draft language should be checked for legal soundness by the Town Attorney
- The proposed draft language should be discussed and further refined by the Planning and Zoning Commission through established procedures for such amendments.
- A public hearing should be held to approve/disapprove of the draft proposed language and adopt such language as a regulatory amendment

Curb-Cut Plan

- The Planning and Zoning Commission in Wilton should review the proposed Curb-Cut Plan and consider adopting it as guideline document with formal amendment to the zoning regulations
- The Curb-Cut Plan should be adopted through the established formal procedure for amending the regulations
- Once formally adopted, copies of the Curb-Cut Plan should be placed on file and made available in the Town Clerk's office, the Zoning Office and/or Community Development Office, and Town Engineer's Office
- A checklist for procedures for applicants to the Town for zoning approval and/or subdivision site plan approval should be developed to include a reference to the Curb-Cut Plan and the need to refer to the Plan for any development proposal along Route 7.
- The Town of Wilton has adopted a long-term vision and concept plan for the future of the area in the vicinity of Wilton Station. For driveway design in those areas, refer to those concept plans as the preferred curb-cut arrangement. The driveway designs shown in those concept plans supersede this curb-cut plan and should be adhered to, to the extent feasible and practical. When adherence to the special area driveway design scheme is not feasible or practical, the driveway design and location shown in this curb-cut plan serves as the alternate guide to design. Copies of the concept plans are available at the Town Planning Office.

Zoning Regulations of the Town of Wilton, March 13, 2008 Section.....	RELEVANT TEXT (paraphrased)	COMMENTS
29-10.4 Special Permit Uses Involving High Traffic Generators	All applications for a Special Permit involving the construction or expansion of a development of more than 50 dwelling units, 100 parking spaces, or 20,000 square feet of gross floor area, or any development which, in the Commission's judgment, would generate high levels of traffic, shall be accompanied by a traffic study. At a minimum, the study shall include information on..... the location of existing roads within 300 feet of the development site, traffic lights and intersections.....Where applicable, the applicants shall include the written recommendations of the Connecticut Department of Transportation	Driveway design for high traffic generators is equally important information but is not noted in this language. This language implies the need for information on driveway design, location and spacing, but does not specify such...leaves room for interpretation
29-10.5 Environmental Impact Statement	All applications for Special Permits shall include information for the purpose of compiling a complete impact assessment. The statement shall address at least the following: Analysis of vehicular and pedestrian traffic impact on the street system and proposed methods of handling situations where the street system is found to be inadequate	This language implies the need for information on driveway design, location and spacing, but does not specify such...leaves room for interpretation.
29-10.9 Standards for Approval:	The impact of the proposed use on traffic safety and circulation on neighborhood streets; the ability of such streets to adequately accommodate the traffic to be generated by the proposed use.	This language implies the need for information on driveway design, location and spacing, but does not specify such...leaves room for interpretation
29-11 Site Plans	Prior to submission of a formal Site Plan application, the applicant may meet with Town staff to discuss the application requirements and review preapplication plans.	Beneficial policy language allows preview of proposed driveway configurations. Could include referral to town professional staff or town consulting staff for review if applicable.
29-11.6 Site Plan Information Required	Parking, Loading and Circulation - Location, arrangement, and dimensions of automobile parking spaces, aisles, vehicular drives, fire lanes, entrances, exits, and ramps	This language implies the need for information on driveway design, location and spacing....but does not include requirement for information on relationship of proposed access to street, other access points, and intersections.
	Additional Information: At any time during its consideration of an application for Site Plan approval, the Commission may require the submission by the applicant of such additional information as the Commission deems necessary	Beneficial policy language. Allows room for the Commission to ask for added information on access plans and functionality.
29-11.9 Standards for Site Plan Approval	The adequacy of design of the interior vehicular circulation system, to provide safe and convenient access to all structures, uses, parking spaces and loading spaces	This language focuses on interior circulation. Similar language for design of safe access and egress not included.

EXAMPLES - ACCESS MANAGEMENT REGULATORY LANGUAGE

Note: The following samples were derived from model or draft access management regulation language developed by Fitzgerald & Halliday, Inc; 2000-2009

EXAMPLE - Traffic Impact Analysis Language

A Traffic Impact Analysis (TIA) may be required by the Commission

- When the access point is on a State road or major arterial,
- When the access point could create traffic impacts that affect intersecting state roads or major arterials or their intersections, or
- Where the access point results in traffic impacts that, based on P&Z review, are considered to be potentially significant enough to warrant a detailed engineering evaluation.

A TIA should conform to standard accepted traffic engineering practices and generally include the site driveway(s) and all reasonably impacted roads and intersections within 1,000 feet of the subject site. Standard elements of the TIA should include:

- Existing and future traffic estimation
- Trip generation and distribution analysis
- Capacity analysis (for both site access and adjacent roadway network)
- Engineering design review
- Internal site circulation review
- Identification of improvements necessary to accommodate the development
- Coordination preview with Town Engineer and Town Planner

Tiered Engineering Analysis

In cases where a full TIA is not warranted, but some questions arise during the preliminary application review relating to safety and operations potentially resulting from a proposed new driveway or system of access design, the P&Z Commission may elect

to require the applicant to prepare an engineering analysis of the proposed access point(s).

The engineering analysis may be 'tiered' to include some, or all, of the elements listed above for the TIA; however, the analysis may be limited to the access point(s) in question and may not take into account the surrounding roadway network. The tiered analysis approach is intended to answer only those questions regarding site access design that require further investigation and to streamline the approval process. The determination of which components of a TIA analysis will be required to be completed will be based on:

- Aspects of site access in question
- Professional judgment of the Town Engineer in consultation with the Town Planner
- Professionally accepted engineering practices

Regardless, the Commission and/or Town Engineer may still require a trip generation and distribution analysis that demonstrates the turn movements into and out of the proposed driveway(s) so that appropriate mitigation strategies can be developed.

EXAMPLE - Nonconforming Accessways/Driveways Language

Nonconforming access features are those access points or driveways in existence and lawful at the time of adoption of this section of the zoning regulations but which would be prohibited, regulated or restricted under the provisions of this section. Such nonconforming access features are considered incompatible with the intent and purposes of this section. It is the intent of these regulations to permit these nonconforming access features to continue until they are removed or until any **substantial change to an existing use** is approved on the lot where the nonconforming access feature exists. After the effective date of adoption of this section of the zoning regulations, no nonconforming access feature may be moved, extended, or enlarged unless the result will be to bring the access into closer compliance with these Access Management Regulations.

Substantial Change to an Existing Use: The provisions of this section shall apply to any Substantial Change to an Existing Use.

The provisions of this section shall also apply to any Change to an Existing Use requiring site plan approval or modification of an existing approved site plan, as defined in Section ___ of these regulations. A substantial change" is one which involves (1) a change in use from residential to any commercial or industrial use, (2) a 25% or greater increase in gross floor area or required parking spaces of any non-residential land use, (3) a ___ square foot or greater increase in gross floor area, (4) a ___ space or greater increase in the required or provided parking spaces. Notwithstanding the above, the Commission may determine that the character of a Change to an Existing Use will not have an impact on adjacent properties and/or surrounding neighborhood such that this requirement does not apply.

To avoid undue hardship, nothing in this section shall be deemed to require a change to any nonconforming access feature for which an application has been submitted to the Commission or for which construction was lawfully begun prior to the effective date of this section of the zoning regulations.

EXAMPLE - Inability to Meet Access Requirements

Inability to Meet Access Design Standards: For any property which cannot, by virtue of its configuration, or location meet the Access Design Standards shall comply with the following requirements:

- A. **Inability to Comply with Access Spacing:** If the applicant is unable to comply with the access spacing requirements, then:

The applicant first must attempt to obtain an access or mutual driveway easement from adjacent property owners so as to allow for one access to serve two properties. Such easement may be located on the applicant's property or the adjacent property (ies) and shall be in a location acceptable to the Commission. At the time of application, the applicant must submit to the Commission evidence of its attempt to obtain such easement

and any response from the adjacent property owners. If an adjacent property owner has previously provided an access or mutual driveway easement pursuant to the provisions of this Section, then the access to the applicant's property shall be through the access or mutual driveway easement area.

If the applicant is unable to obtain an access or mutual driveway easement from an adjacent property owner, then the access to the applicant's property shall be located on its property in an area acceptable to the Commission.

In addition, the applicant shall provide to the adjacent property owner(s) easements so as to allow for the establishment of a mutual drive or access at such time as the adjacent property (ies) are developed or redeveloped. Such access easement shall be located in an area acceptable to the Commission, which may differ from the location of the applicant's access. The applicant may either provide such easement directly to the adjacent property owner(s) or, if such property owner(s) refuse to accept such easement, then to the Town acting through the Commission. Any easement provided to the Town shall be on such terms and conditions as are commercially reasonable and are acceptable to the Commission and its attorney and shall specifically provide that the easement is transferable to the owner of the property ultimately intended to benefit from the easement. In addition, the easement may provide that, at the time the adjacent property owner(s) utilize the easement, the adjacent property owner(s) shall pay to the applicant the fair market value of the easement at the time originally granted to the Commission and shall contribute towards maintenance and insurance, assume a portion of liability and/or assume certain construction costs with respect to the easement area.

In order to encourage cooperation between property owners in the negotiation, granting and acceptance of access and mutual driveway easements, that area of

property which is subject to the access or mutual driveway easement shall not be included in calculating in-pervious coverage or in calculating required landscap-ing for parking lots or site development.

B. Inability to Comply with Corner Clearance: If the applicant is unable to comply with the corner clearance requirements, then the access to the proposed devel-opment shall be located in an area acceptable to the Commission and which is as far as possible from the intersection as allowed by the topography and other physical conditions of the site (e.g. wetlands) and tak-ing into consideration traffic safety and impact factors. If the applicant is unable to locate the access to the de-velopment which, in the opinion of the Commission provides for safe access in terms of corner clearances, and in furtherance of the goals of this Access Manage-ment Regulation, then the requirements of 7.A above apply.

C. Inability to Comply with Signal Spacing: If the applicant is unable to comply with the signal spacing requirements, then the access to the proposed develop-ment shall be arranged in a design acceptable to the Commission and which meets the requirements for signal spacing as closely as is feasible taking into con-sideration traffic safety and impact factors.

D. Inability to Comply with More than One of the Re-quirements: In certain circumstances, a site may not be able to comply with more than one of the access man-agement requirements by virtue of its configuration, location or implementation of one of the measures set forth above. In such cases, the access shall be located on the site in an area that most closely complies with the requirements of this Section and, in the opinion of the Commission provides for safe access in furtherance of the goals of this Access Management Regulation and shall be subject to such conditions or restrictions as the Commission deems necessary to ensure safe access.

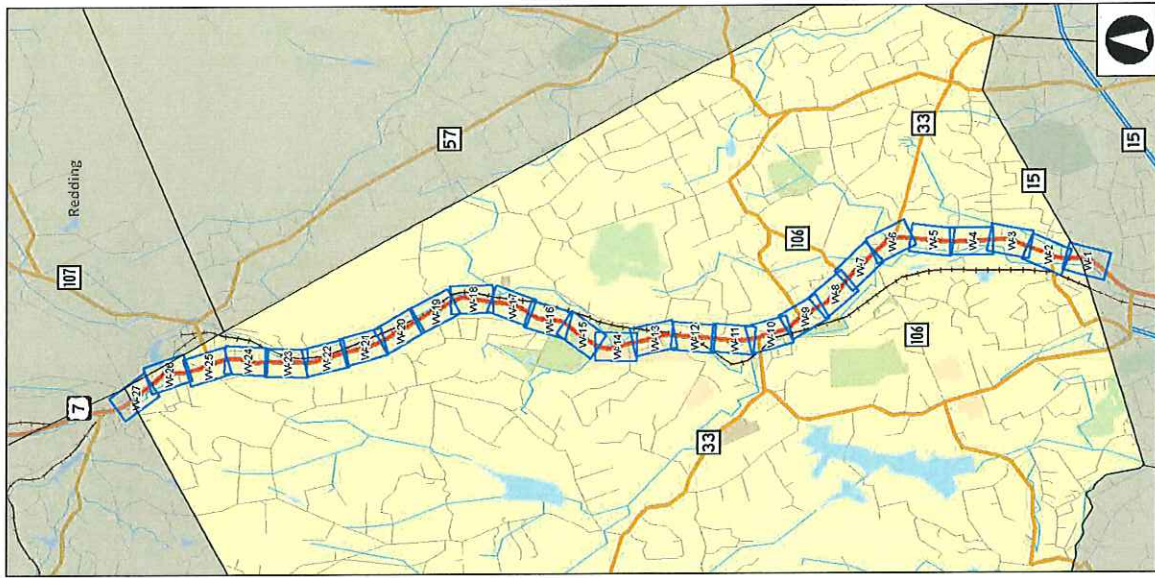
EXAMPLE – Incentives Language

Bonuses: The Commission may grant an increase in the inten-sity of a proposed development, at an applicant's request, where the development plan complies with all of the provisions of this section and will result in one or more of the following benefits to the community:

- Will improve the Level of Service on existing road-ways in the vicinity of the proposed project;
- Will reduce the number of existing access points onto a public street, or would result in fewer access points than would otherwise be permitted;
- Will reduce the number of accidents on existing road-ways in the vicinity of the proposed development;
- Will provide access connections between adjoining uses so as to reduce the demand for turning move-ments onto or from a public street to those properties;
- Will provide shared access in the form of access ease-ments for adjoining properties which are not other-wise required by these Regulations or obtains access through an easement across adjoining property which is not otherwise required by these Regulations. Such easements shall be filed on the land records of the town in a form as shall be acceptable to the Commis-sion and the Town Attorney;
- Will provide pedestrian and transit circulation im-provements which enhance the movement of travelers within the site and/or the community;
- Such density bonuses may include a reduction in parking space requirements, a modification of signage requirements, a reduction in open space or landscap-ing requirements, an increase in floor area ratios, and/or an increase in allowable building coverage of up to ____%. Any applicant intending to request a bonus is encouraged to meet with the Town Planner to dis-cuss such requests prior to formal submission of the application.

Bonuses/Change To An Existing Use: The Commission may grant an increase in the intensity of a proposed development for a Change To An Existing Use, at an applicant's request, where one or more of the benefits to the community as listed above would be realized and/or where the use is brought into compli-ance with all of the provisions of this section. Such density bo-nuses may include a reduction in parking space requirements, a modification of signage requirements, a reduction in open space or landscaping requirements, or an increase in floor area.

INDEX PLAN



RECOMMENDATIONS KEY

Symbol	Recommendation
	Improve Sight Lines: Maximize the distance that exiting motorists can see down the road to better perceive and enter oncoming traffic. If sight line improvements are impossible or impractical due to roadway geometry at the existing location, consider relocating driveway within parcel or creating shared access with adjacent parcel.
	Narrow Existing Driveway: Narrow the existing driveway to standard width through installation of curbing or removal of existing pavement. Clarify for all drivers where to anticipate turns to and from a property.
	Convert Two-Way to One-Way Entrance: Convert existing two-way driveway to one-way entrance through installation of signing and pavement markings.
	Convert Two-Way to One-Way Exit: Convert existing two-way driveway to one-way exit through installation of signing and pavement markings.
	Close Existing Driveway: Close existing driveway to reduce the number of driveways for a single parcel or for two or more interconnected parcels, particularly where there are redundant driveways or a high concentration of driveways in an area.
	Create or Improve Interconnection: Provide a vehicular connection between parcels to facilitate the sharing of a single driveway by multiple locations, allowing for the closure of redundant driveways, particularly where there is a high concentration of driveways close to one another.
	Convert to Right-Turn Entrance-Only: Convert existing driveway to right-turn entrance only through signing, pavement markings, and driveway geometry changes. These geometry changes should realign the driveway to make it intuitive to the user: what the function of the driveway is.
	Convert to Right-Turn Exit-Only: Convert existing driveway to right-turn exit only through signing, pavement markings, and driveway geometry changes. These geometry changes should realign the driveway to make it intuitive to the user: what the function of the driveway is.
	Create Shared Driveway: Create a single shared driveway at or near the property line to serve two (or more) abutting properties, especially where lots have narrow frontages or adjacent parking areas to minimize the number of driveways in close proximity to one another.
	Improve Signing and Pavement Markings for Existing One-Way Driveway: Install signing and pavement markings to clarify directionality and function of existing one-way driveway.
	Define Driveway: Define driveway location, replacing a generally undefined, excessively large access by installing curbing or removing pavement and replacing with a grassed or landscaped area. Clarify for all drivers where to anticipate turns to and from a property.
	Potential New Driveway Location: Provide new driveway at suggested location as future development needs dictate.

NOTES

1. Curb-cut Plan Use: The driveway recommendations included herein are conceptual in nature only and are intended to be a guide for the design, spacing, and location of access. Engineering design which reflects these recommendations, is consistent with all of the requirements contained in the zoning regulations, and is specific to each site will be needed at the time of proposed development, redevelopment, change in use, or intensification of use.
2. The Town of Wilton has adopted a long-term vision and concept plan for the future of the area surrounding the Wilton Train Station. For driveway design in that area, refer to the concept plan as the preferred curb-cut arrangement. The driveway designs shown there supersede this curb-cut plan and should be adhered to, when feasible and practical. Copies of the concept plan are available at the Town Planning Office.
3. New driveway locations are shown for vacant parcels that are considered developable. It is assumed that vacant parcels noted as constrained are not developable.

DRAFT: January 26, 2011

Route 7 Access Management
and Curb-Cut Plan

Index Plan and Key
Wilton, CT



SWRPA
South Wilton Roadway Planning Authority



LEGEND	
	Approximate Property Line
	Approximate Existing Curb Line or Edge of Pavement
	Existing Driveway Directionality
	Existing Turn Lanes
	Approximate Town Line
	Existing Traffic Signal
RECOMMENDATIONS	
	Improve Sight Lines
	Narrow Existing Driveway
	Convert Two-Way to One-Way Entrance
	Convert Two-Way to One-Way Exit
	Close Existing Driveway
	Create or Improve Interconnection
	Create Shared Driveway
	Convert to Right-Turn Entrance-Only
	Convert to Right-Turn Exit-Only
	Improve Signing and Pavement Markings for Existing One-Way Driveway
	Define Driveway
	Potential New Driveway Location
	Potential Driveway Modification
	Existing Driveway - No Proposed Change



DRAFT: January 26, 2011
 Route 7 Access Management and Curb Cut Plan
 Map W-1
 Sheet 3 of 29
 Wilton, CT

LEGEND		RECOMMENDATIONS	
	Approximate Property Line		Improve Sight Lines
	Approximate Existing Curb Line or Edge of Pavement		Narrow Existing Driveway
	Existing Driveway Directionality		Convert Two-Way to One-Way Entrance
	Existing Turn Lanes		Convert Two-Way to One-Way Exit
	Approximate Town Line		Close Existing Driveway
	Existing Traffic Signal		Create or Improve Interconnection
			Create Shared Driveway
			Convert to Right-Turn Entrance-Only
			Convert to Right-Turn Exit-Only
			Improve Signaling and Pavement Markings for Existing One-Way Driveway
			Define Driveway
			Potential New Driveway Location
			Potential Driveway Modification
			Existing Driveway - No Proposed Change



DRAFT: January 26, 2011
 Route 7 Access Management and Curb Cut Plan
 Map W-2
 Sheet 4 of 29
 Wilton, CT





DRAFT: January 26, 2011
 Route 7 Access Management and Curb Cut Plan
 Map W-3
 Sheet 5 of 29
 Wilton, CT

- RECOMMENDATIONS**
- 66 Improve Sight Lines
 - 67 Narrow Existing Driveway
 - 68 Convert Two-Way to One-Way Entrance
 - 69 Convert Two-Way to One-Way Exit
 - 70 Close Existing Driveway
 - 71 Create or Improve Interconnection
 - 72 Convert to Right-Turn Entrance-Only
 - 73 Convert to Right-Turn Exit-Only
 - 74 Create Shared Driveway
 - 75 Improve Signaling and Pavement Markings for Existing One-Way Driveway
 - 76 Define Driveway
 - 77 Potential New Driveway Location
 - 78 Potential Driveway Modification
 - 79 Existing Driveway - No Proposed Change

- LEGEND**
- Approximate Property Line
 - Approximate Existing Curb Line or Edge of Pavement
 - Existing Driveway Directionality
 - ↔ Existing Turn Lanes
 - Approximate Town Line
 - Ⓜ Existing Traffic Signal

RT. 714 TO RT. 110
 AM: 254 OF 981 VEHICLES (25.9%)
 PM: 658 OF 3,499 VEHICLES (18.8%)

RT. 8 SB EXIT 12³ TO RT. 110
 AM: 184 OF 483 VEHICLES (38.1%)
 PM: 103 OF 247 VEHICLES (41.7%)

OLD STRATFORD RD. SOUTH OF RT. 8 TO RT. 110 (BLUE AND GREEN LINES)
 AM: 536 OF 717 VEHICLES (74.8%)
 PM: 973 OF 1,548 VEHICLES (62.9%)

RT. 714 TO RT. 110
 AM: 177 OF 364 VEHICLES (48.6%)
 PM: 501 OF 1,146 VEHICLES (43.7%)

RT. 714 TO RT. 15 NB VIA OLD STRATFORD RD.
 AM: 145 OF 981 VEHICLES (14.8%)
 PM: 514 OF 3,499 VEHICLES (14.7%)

RT. 714 TO RT. 15 NB VIA ARMSTRONG RD.
 AM: 115 OF 364 VEHICLES (31.6%)
 PM: 384 OF 1,146 VEHICLES (33.5%)

RT. 15 NB ON-RAMP FROM RT. 110 SB COUNTS
 AM: 1,191 VEHICLES
 PM: 3,428 VEHICLES

RT. 8 SB EXIT 12³ TO RT. 15 NB
 AM: 70 OF 483 VEHICLES (14.5%)
 PM: 47 OF 247 VEHICLES (19.0%)

RT. 8 SB EXIT 8 TO RT. 15 NB
 AM: 99 OF 848 VEHICLES (11.7%)
 PM: 345 OF 1,445 VEHICLES (23.9%)

**ROUTE 110 ENGINEERING STUDY
 STRATFORD, CONNECTICUT**

**ORIGIN-DESTINATION STUDY
 RESULTS SUMMARY
 SOUTHBOUND ROUTES**

NOTES:

1. MORNING PEAK PERIOD COUNTED BETWEEN 7:00 AND 9:00 AM.
2. AFTERNOON PEAK PERIOD COUNTED BETWEEN 3:00 AND 6:00 PM.
3. OBSERVATIONS AT ROUTE 8 SOUTHBOUND EXIT 12 INCLUDES LEFT TURNING TRAFFIC ONLY.

DATE: 8/6/2015

SCALE: NO SCALE

FIGURE 2-15





ROUTE 110 ENGINEERING STUDY
STRATFORD, CONNECTICUT

ORIGIN-DESTINATION STUDY
RESULTS SUMMARY
NORTHBOUND ROUTES

NOTES:

1. MORNING PEAK PERIOD COUNTED BETWEEN 7:00 AND 9:00 AM.
2. AFTERNOON PEAK PERIOD COUNTED BETWEEN 3:00 AND 6:00 PM.

DATE: 8/6/2015

SCALE: NO SCALE

FIGURE 2-16

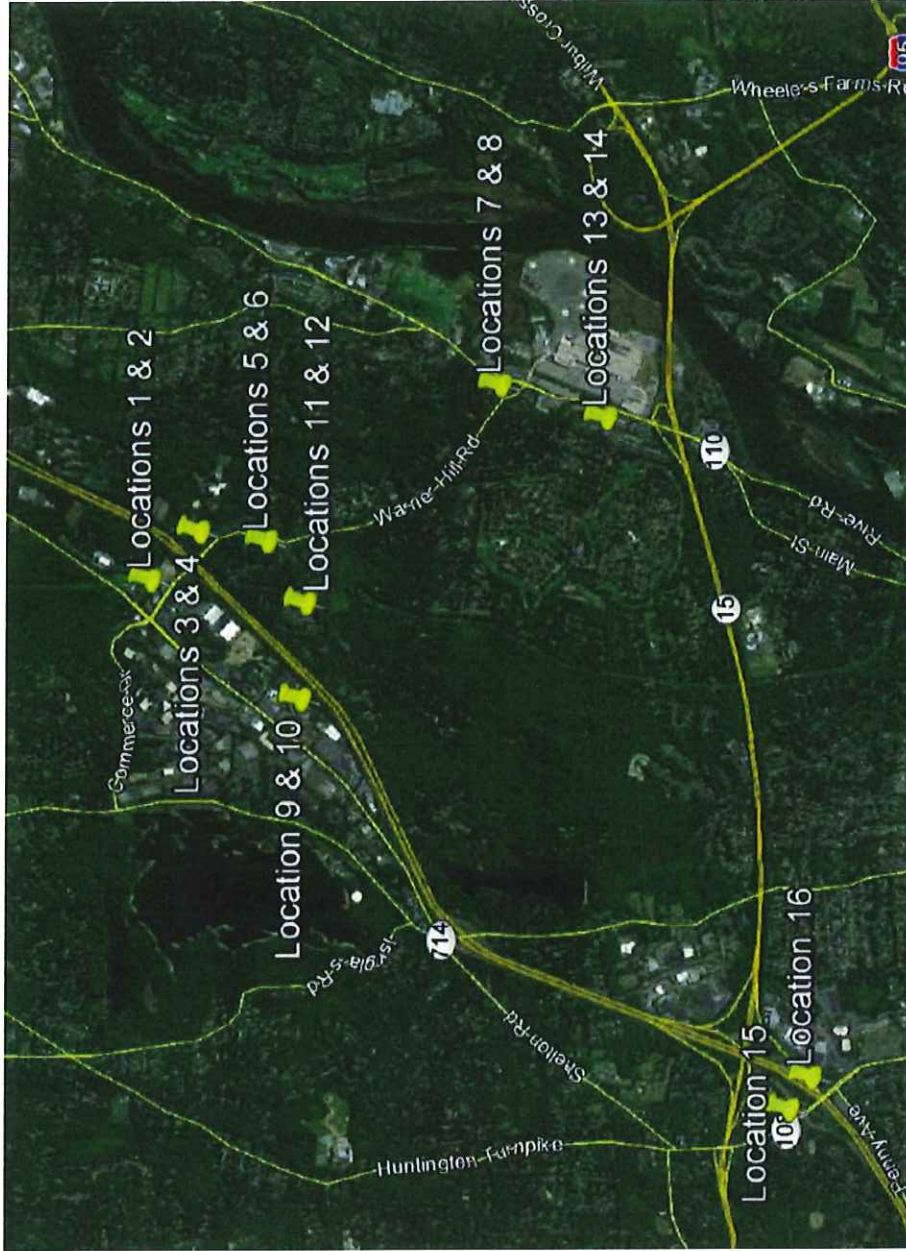




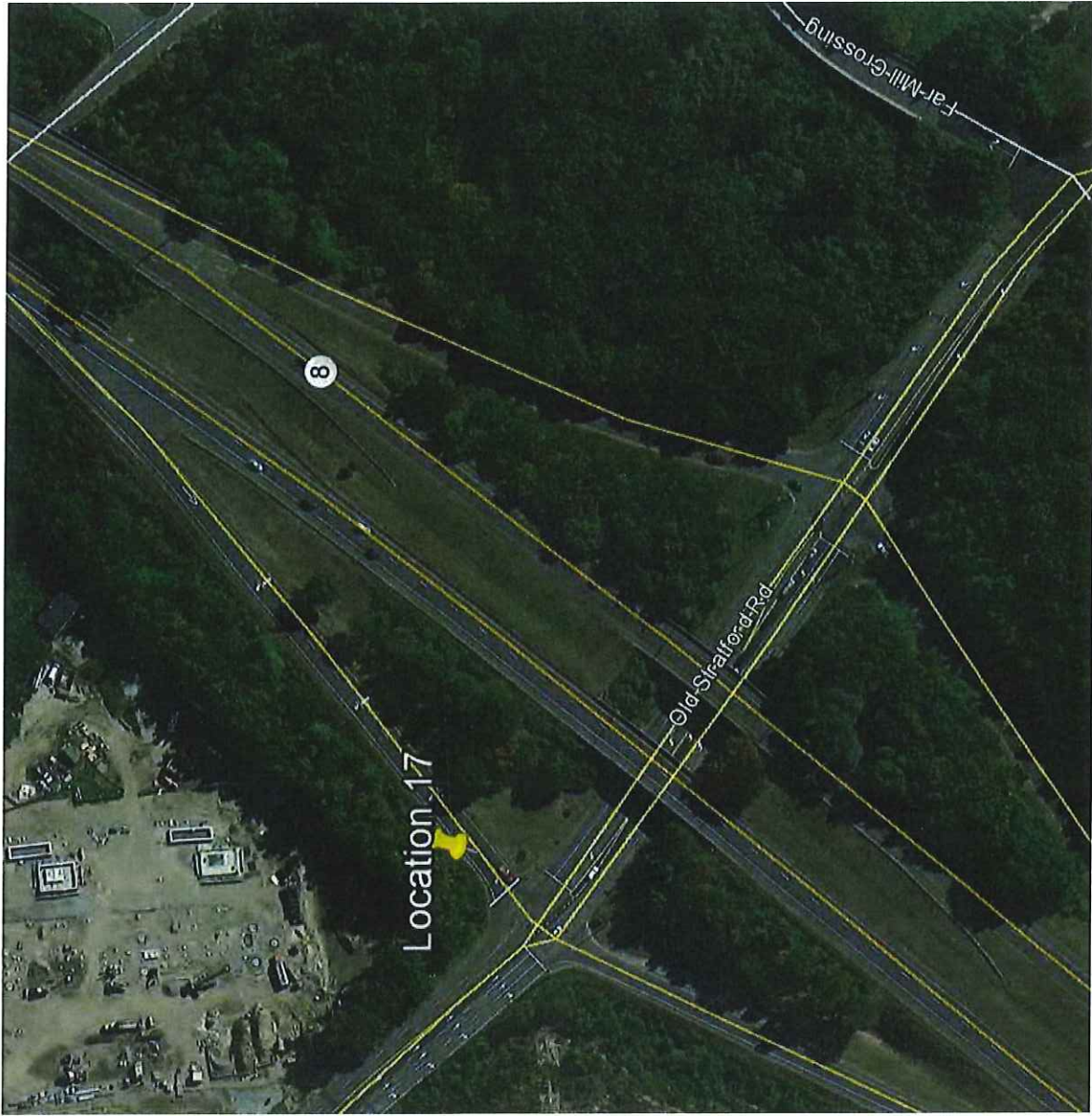
INNOVATIVE DATA, LLC.
PO Box 468
BELCHERTOWN, MA 01007
1.413.668.5094

Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
AM Peak: 7:00 to 9:00 AM
PM Peak : 3:00 to 6:00 PM



Map of locations provide by Tighe & Bond: Not shown in the above map are locations 17 and 18







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BELCHERTOWN, MA 01007
1.413.668.5094

Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
 AM Peak: 7:00 to 9:00 AM
 PM Peak : 3:00 to 6:00 PM

Summary of Matched Plates: AM Peak Southbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>						
			Loc 4	Loc 6	Loc 8	Loc 12	Loc 14	Loc 18	Loc 5
	Veh	Plates	761	284	728	272	571	1191	219
	Veh	Plates	717	279	708	271	562	1162	218
Loc 2	1156	981	222	32	192	29	62	145	
Loc 4	761	717		118	442	83	94	248	
Loc 6	284	279				60	21	31	
Loc 8	728	708						263	
Loc 10	367	364			67	169	110	115	110
Loc 12	272	271					130	114	
Loc 14	571	562						278	
Loc 17	483	483	269	67	163	28	21	70	

Percent Matched by OD Pair: AM Peak Southbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>						
			Loc 4	Loc 6	Loc 8	Loc 12	Loc 14	Loc 18	Loc 5
	Veh	Plates	761	284	728	272	571	1191	219
	Veh	Plates	717	279	708	271	562	1162	218
Loc 2	1156	981	23	3	20	3	6	15	
Loc 4	761	717		16	62	12	13	35	
Loc 6	284	279				22	8	11	
Loc 8	728	708						37	
Loc 10	367	364			18	46	30	32	30
Loc 12	272	271					48	42	
Loc 14	571	562						49	
Loc 17	483	483	56	14	34	6	4	14	



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Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
 AM Peak: 7:00 to 9:00 AM
 PM Peak : 3:00 to 6:00 PM

Summary of Matched Plates: PM Peak Southbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>						
			Loc 4	Loc 6	Loc 8	Loc 12	Loc 14	Loc 18	Loc 5
		Veh Plates	1631	451	1127	968	1424	3428	571
		Veh	1548	443	1097	964	1417	3352	567
Loc 2	3683	3499	484	120	424	220	234	514	
Loc 4	1631	1548		244	707	212	266	662	
Loc 6	451	443				181	44	56	
Loc 8	1127	1097						513	
Loc 10	1172	1146			165	623	336	384	366
Loc 12	968	964					420	412	
Loc 14	1424	1417						806	
Loc 17	242	242	184	55	81	47	22	47	

Percent Matched by OD Pair: PM Peak Southbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>						
			Loc 4	Loc 6	Loc 8	Loc 12	Loc 14	Loc 18	Loc 5
		Veh Plates	1631	451	1127	968	1424	3428	571
		Veh	1548	443	1097	964	1417	3352	567
Loc 2	3683	3499	14	3	12	6	7	15	
Loc 4	1631	1548		16	46	14	17	43	
Loc 6	451	443				41	10	13	
Loc 8	1127	1097						47	
Loc 10	1172	1146			14	54	29	34	32
Loc 12	968	964					44	43	
Loc 14	1424	1417						57	
Loc 17	242	242	76	23	33	19	9	19	



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Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
 AM Peak: 7:00 to 9:00 AM
 PM Peak : 3:00 to 6:00 PM

Summary of Matched Plates: AM Peak Northbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>					
			Loc 1	Loc 3	Loc 5	Loc 9	Loc 11	Loc 13
	Veh	Veh	1852	1090	219	614	500	754
	Veh	Plates	1749	1086	218	605	500	736
Loc 3	1090	1086	387					
Loc 5	219	218	43	123				
Loc 7	811	780	290	574		112		
Loc 9	614	605						162
Loc 11	500	500	59	89	77	352		
Loc 13	754	736	99	129	25	240	256	

Percent Matched by OD Pair: AM Peak Northbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>					
			Loc 1	Loc 3	Loc 5	Loc 9	Loc 11	Loc 6
	Veh	Veh	1852	1090	219	614	500	284
	Veh	Plates	1749	1086	218	605	500	279
Loc 3	1090	1086	36					
Loc 5	219	218	20	56				
Loc 7	811	780	37	74		14		
Loc 9	614	605						27
Loc 11	500	500	12	18	15	70		
Loc 13	754	736	13	18	3	33	35	



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Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
 AM Peak: 7:00 to 9:00 AM
 PM Peak : 3:00 to 6:00 PM

Summary of Matched Plates: PM Peak Northbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>					
			Loc 1	Loc 3	Loc 5	Loc 9	Loc 11	Loc 13
		Veh	1739	1279	571	777	459	451
		Plates	1652	1269	567	764	459	443
Loc 3	1279	1269	554					
Loc 5	571	567	91	284				
Loc 7	1098	1047	412	691		193		
Loc 9	777	764						231
Loc 11	459	459	66	120	129	294		
Loc 13	817	801	71	87	42	168	174	

Percent Matched by OD Pair: PM Peak Northbound Path

<u>Entry Node</u>			<u>Matched Exit Node</u>					
			Loc 1	Loc 3	Loc 5	Loc 9	Loc 11	Loc 6
		Veh	1739	1279	571	777	459	451
		Plates	1652	1269	567	764	459	443
Loc 3	1279	1269	44					
Loc 5	571	567	16	50				
Loc 7	1098	1047	39	66		18		
Loc 9	777	764						30
Loc 11	459	459	14	26	28	64		
Loc 13	817	801	9	11	5	21	22	0



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Summary of Stratford, Connecticut O/D Study

Date: June 9th, 2015
 AM Peak: 7:00 to 9:00 AM
 PM Peak : 3:00 to 6:00 PM

Summary of Matched Plates: AM Peak Loop Path

<u>Entry Node</u>			<u>Matched Exit Node</u>
			Loc 16
	Veh	Veh	319
	Plates	Plates	301
Loc 15	866	848	99

Percent Matched by OD Pair: AM Peak Loop Path

<u>Entry Node</u>			<u>Matched Exit Node</u>
			Loc 16
	Veh	Veh	319
	Plates	Plates	301
Loc 15	866	848	12

Summary of Matched Plates: PM Peak Loop Path

<u>Entry Node</u>			<u>Matched Exit Node</u>
			Loc 16
	Veh	Veh	664
	Plates	Plates	644
Loc 15	1493	1445	345

Percent Matched by OD Pair: PM Peak Loop Path

<u>Entry Node</u>			<u>Matched Exit Node</u>
			Loc 16
	Veh	Veh	664
	Plates	Plates	644
Loc 15	1493	1445	24

Route 3 Traffic and Development Study

Final Study Report – Executive Summary



Prepared For:
Capitol Region Council of Governments
and
Town of Rocky Hill



Prepared By:
Tighe & Bond, Inc



In Association with:
Susan Jones Moses & Associates
Fitzgerald & Halliday, Inc
Weston Solutions

May 31, 2012

Prepared in cooperation with the Connecticut Department of Transportation. The opinions, findings, and conclusions expressed in this publication are those of the Capitol Region Council of Governments and do not necessarily reflect the official views or policies of the Connecticut Department of Transportation, and/or the U. S. Department of Transportation.

Executive Summary

The Route 3 Traffic and Development Study was conducted in cooperation with the Town of Rocky Hill, the Capitol Region Council of Governments (CRCOG), and the Connecticut Department of Transportation (ConnDOT). The purpose was to develop a comprehensive transportation plan for the study area to guide the Town and State on future transportation system improvements. The main study roadways include Cromwell Avenue (Route 3), West Street (SR 411), Brook Street, New Britain Avenue (Route 160), Elm Street (Route 160), and Main Street (Route 99). Local roads that play an important role in traffic circulation within this network were reviewed as well.



The study was conducted under the guidance of the Technical Review/Steering Committee (TR/SC) comprised of elected officials, town staff, a member of the town Planning and Zoning Commission, ConnDOT, and CRCOG. The TR/SC developed the following Mission Statement to serve as a foundation for the study:

Mission Statement

- *Develop sustainable strategies and recommendations to provide a measured approach, identifying both short-term and long range study area transportation system improvement scenarios that accommodate projected growth of the Town of Rocky Hill*
- *Identify improvement strategies that recognize and accommodate all modes of transportation within the study area, including transit, pedestrians, and bicycles, providing a complete transportation network*
- *Seek improvements to the study area transportation system that enhance and preserve the character and setting of residential neighborhoods*
- *Formalize a transportation system management and improvement plan that effectively correlates growth in development with enhancements to the study area transportation system and presents them in a manner that will assist the town in assessing development proposals.*

Engaging members of the public throughout this transportation planning process was a priority. Meetings with the public, Town Council, Chamber of Commerce, and the Economic Development Commission were held throughout the study at critical milestones to gain input and feedback on findings and concepts in the developmental stages. Appearances on the Mayor's Report television program and updates to the study website kept interested parties informed on the study progress. Additional outreach efforts included a survey and comment forms.

Needs and Deficiencies

Data analysis, field visits, and a review of both existing and future conditions were supplemented by discussions with stakeholders, town staff and officials, and members of the public to develop a set of needs and deficiencies for the study to address. The following summarizes issues that were identified, grouped by location.

Cromwell Avenue – Between New Britain Avenue and the Cromwell town line

- Statewide data indicates that the section of Cromwell Avenue from New Britain Avenue to Elm Street and from West Street to Cold Spring Road should be evaluated for safety improvements.
- Long vehicle queues develop during the afternoon peak hour on the northbound approach at New Britain Avenue, caused by the heavy left turning volume at this intersection.
- Reports that queues during the afternoon peak hour on New Britain Avenue's eastbound approach to Cromwell Avenue block emergency vehicles exiting Rocky Hill Fire Department Station 2 and nearby driveways.
- Public comments indicate that the installation of a traffic signal at Rhodes Road should be considered to facilitate safe egress from the street.
- The long cycle length at the cluster intersections at West Street and France Street results in long queues on both West Street and France Street.
- Field observations identified a queuing issue at the Dunkin Donuts near the West Street intersection.
- Prior to the installation of the traffic control signal at the Westside Market driveway, this intersection exhibited a high rate of collisions. The installation of the traffic control signal appears to have mitigated the safety issues at this intersection.
- During higher traffic periods, the left lane on the southbound approach at Brook Street becomes a defacto left turn lane, forcing all through traffic into the right lane. Just south of this intersection, the right lane becomes a right turn only lane, forcing through traffic into the left lane. It is undesirable to require multiple lane changes for through vehicles along this road segment.
- In the future, several intersections with Cromwell Avenue are expected to operate poorly during the morning and/or afternoon peak hours. These intersections include New Britain Avenue, Elm Street, France Street, and West Street.
- Existing lane configurations in some areas do not provide the necessary capacity for the expected future traffic volumes. Traffic movements of concern include Cromwell Avenue northbound left turns to New Britain Avenue and southbound left turns to West Street.

West Street

- Statewide data indicates that the intersection with the I-91 southbound ramps should be evaluated for safety improvements.
- At the I-91 southbound exit ramp, poor intersection sight lines are provided for right turning vehicles due to the bridge parapet and intersection geometry.
- Long vehicular queues for traffic turning left onto I-91, particularly during the afternoon peak hour.

West Street (cont'd)

- During peak traffic hours, eastbound queue lengths at the signalized intersection with the I-91 north ramps block access to the right turn lane due to its short length.
- Long vehicular queues on Capitol Boulevard for the left turn movement heading towards the I-91 interchange during the afternoon peak hour.
- Poor intersection sight distance provided from the stop bar looking east from Gilbert Avenue.
- Steep downhill gradient on West Street on the eastbound approach to the Main Street intersection encourages higher travel speeds.
- Currently, the offset intersection alignment at the intersection with Main Street, West Street, and Forest Street requires a split signal phase, resulting in poor afternoon peak hour traffic operations.
- In the future, the West Street intersections with the I-91 access ramps (southbound and northbound), Capital Boulevard, and Main Street are expected to operate poorly during the morning and/or afternoon peak hours.
- Long queue lengths are anticipated in the I-91 interchange area in the future.
- Existing lane configurations in some areas do not provide the necessary capacities for the expected future traffic volumes. Traffic movements of concern include the westbound movements at Cromwell Avenue, right turning movements to Capital Boulevard, and left turning movements from Capital Boulevard onto West Street.

Brook Street

- The existing truck restriction sign located at the intersection with Henkel Way is difficult to see and read. A similar observation was made at the intersection of Brook Street and Main Street.
- In the future, the intersection at Henkel Way is expected to operate poorly during the afternoon peak hour.
- High travel speeds and lack of delineation between the commercial and residential sections of the street.

Study Wide

- Lack of continuously adequate bicycle and pedestrian accommodations and along many of the study area roadways.
- Lack of adequate Transit rider accommodations within the study area. Need for bus shelters at stops on Capital Avenue near West Street and on Elm Street near Rose Hill Cemetery.

Recommendations

In line with the Mission Statement, the recommendations include improvements that address the existing and future needs of motor vehicles and alternative modes of transportation. The set of recommendations range from improvements at particular intersections and along roadway segments to a new local road providing improved circulation throughout the study area.

The following briefly summarizes each of the recommended improvements by location.

Cromwell Avenue at Inwood Road

- Widen Cromwell Avenue along the west side of the road south of the intersection with Inwood Road to facilitate the extension of two southbound travel lanes through the intersection.
- Provide an exclusive left turn lane into Inwood Road for northbound traffic along with a through lane. Conduct minor widening along the east side of Cromwell Avenue.
- Provide sidewalks to enhance connectivity in this area.



Cromwell Avenue at Brook Street

- Widen Cromwell Avenue to provide a short exclusive southbound exclusive left turn lane to Brook Street, removing left turning vehicles from the through traffic stream.
- Install new sidewalk along both sides of Cromwell Avenue to connect with existing sidewalk. Crosswalks are recommended on the south approach of Cromwell Avenue and on Brook Street.



Cromwell Avenue at France Street/West Street

- Phase 1: Widen the France Street eastbound approach to Cromwell Avenue to a two lane approach, with an exclusive right turn lane and a through/left turn lane. This improvement is intended to mitigate the long queues on France Street during the peak traffic hours.
- Phase 2: Widen Cromwell Avenue to provide an additional southbound left turn lane at the intersection of West Street to improve future traffic operations.



Cromwell Avenue, Elm Street, and New Britain Avenue

- Widen New Britain Avenue to two lanes in the westbound direction from the intersection at Cromwell Avenue to the existing two westbound lanes leading to Hayes Road.
- Extend the length of the existing exclusive right turn on New Britain Avenue approaching Cromwell Avenue to provide additional vehicle storage.
- Coordinate with Rocky Hill Fire Department regarding the potential for hardwired fire pre-emption from Station 2 to nearby signalized intersections
- Widen Cromwell Avenue to provide double left turns at both New Britain Avenue in the northbound direction and at Elm Street in the southbound direction.
- Widen the segment between the intersections with New Britain Avenue and Elm Street to provide additional storage for vehicle queuing and reduce travel lane and shoulder widths in the segment to minimize the impacts to adjacent commercial properties and parking areas.
- Encourage access management and inter-parcel connections between commercial parcels to improve Cromwell Avenue safety and traffic operations.



Cromwell Avenue, Elm Street, and New Britain Avenue (cont'd)

- Widen Elm Street between Cromwell Avenue and the Big Y signalized driveway to provide two eastbound lanes. The additional eastbound lane is needed to accept a proposed double southbound left turn from Cromwell Avenue.
- Provide in-fill sidewalk, provide additional crosswalks and pedestrian ramps at Cromwell Avenue intersections.



Interstate 91 Interchange Area Recommendations

- Modify the lane use on the westbound approach along West Street at the I-91 southbound ramps to provide a double left turn onto the ramp. Widen the southbound entrance ramp to accept a double left turn movement.
- Widen West Street to provide a double left turn and two through lanes on the westbound approach to the northbound ramps. Install the widening along the south side of West Street.
- Modify the existing channelized free flow right turn lane into Capital Boulevard to provide a larger turning radius to provide increased lane capacity.



West Street at Main Street Recommendation

- Realign West Street and Forest Street to eliminate the offset alignment of the side streets and provide a conventional intersection configuration. Modify the signal operations to eliminate the split phasing.
- Provide exclusive left turn lanes on the eastbound and northbound intersection approaches. Provide an exclusive right turn lane on the southbound approach.
- Provide five-foot wide shoulders along Main Street to accommodate bicycle traffic. Install sidewalks along Main Street, and crosswalks on each intersection leg.



Brook Street at Henkel Way Recommendation

- Reconstruct the existing stop sign controlled intersection with a modern roundabout to improve traffic conditions, provide a traffic calming element on Brook Street, and provide the capability for errant trucks to turn around in the intersection and avoid travelling in the residential neighborhood to the east.
- Install sidewalks that connect to existing sidewalk to the west and the proposed sidewalks to the east.
- Provide aesthetic treatments along the intersection approaches and in the center island.



Brook Street Streetscape Enhancements

- Widen Brook Street to provide a 32' wide paved cross section, including 11' travel lanes and 5' shoulders, to accommodate bicycle traffic on either side of the street.
- Install sidewalks along both sides of Brook Street to accommodate pedestrians. Review the opportunity to include pedestrian level aesthetic lights along the street. Plant street trees along both sides of the street to enhance the character and aesthetics of the roadway.



Elm Street Connector – New Local Road

- Provide an extension from Corporate Place to Elm Street to enhance the transportation network and improve circulation.
- Include measures for pedestrians and bicycles including either a sidewalk and 5 foot shoulders or a multi-use path alongside the new local road.



Transit Improvements

- Provide concrete pads and bus stop shelters, conforming to aesthetics of other recently installed Town shelters, on Capitol Boulevard near West Street and on the south side of Elm Street at Rose Hill Cemetery



Typical Rocky Hill Bus Shelter

- Provide ADAAG compliant access

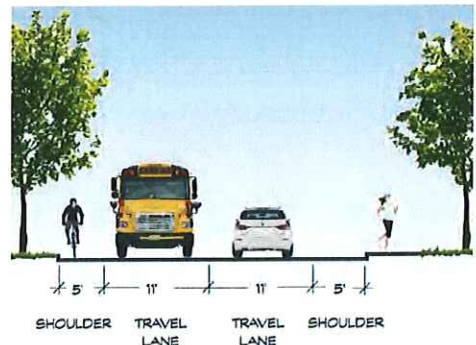
Study Area Pedestrian Improvements

- In-fill and extend sidewalk infrastructure to provide continuous facilities for pedestrians on Elm Street, West Street, Brook Street, and Cromwell Avenue within the study area.
- Upgrade intersections to accommodate pedestrians via marked crosswalks, pedestrian signals, and ADA accessible curb ramps.
- Provide a multi-use path along the east side of Cromwell Avenue from Cold Spring Road north, ending at a connection to the proposed multi-use path at the Town Center West development. The path will connect the residential areas west of the study area to West Street and Elm Streets via proposed pedestrian facilities. Continue efforts for developer construction of a multi-use path through the Town Center West development from Cromwell Avenue to West Street opposite Corporate Place.



Study Area Bicycle Improvements

- Widen shoulders along Elm Street and Main Street to provide a 5' wide minimum shoulder for cyclists.
- Construct multi-use pathway on Cromwell Avenue between Cold Springs Road and the Town Center West development. Connect to Town Center West pathways connecting to West Street and the Elm Street Connector pedestrian and cycling amenities.



Implementation Plan

The Transportation Improvement Program includes 13 potential projects that address the roadway network, transit system, and accommodations for pedestrian and bicycle traffic in the study area. Specifically, as shown in Table E-1, the study recommends physical roadway improvements, one roadway/streetscape enhancement, and several spot improvements to transportation facilities.

The Transportation Improvement Program classifies projects by size and priority for implementation. A project's size is determined by its complexity, estimated impacts, and anticipated permitting requirements and is categorized as small, medium, or large. Whether a project addresses an existing or future need establishes a project's priority: short, mid, or long term. Estimated project costs are provided based on 2012 dollars.

Table E-1: Summary of Projects in Implementation Plan

Project Description	Project Type	Project Priority	Project Cost
1. Intersection Improvements at Cromwell Avenue and West Street / France Street - (Phase 1)	Small	Short-Term	\$250,000
2. Intersection Improvements at Cromwell Avenue and West Street / France Street - (Phase 2)	Medium	Short-Term	\$1,300,000
3. Intersection Improvements at Brook Street and Henkel Way	Small	Short-Term	\$800,000
4. West Street and Interstate 91 Interchange Improvements	Large	Short-Term	\$2,300,000
5. Cromwell Avenue Improvements from Elm Street to New Britain Avenue	Large	Short-Term ¹	\$5,300,000
6. Study Area Transit Facility Improvements	Small	Short-Term	\$50,000
7. Study Area Sidewalk and Pedestrian Facility Improvements	N/A ²	Short-Term	\$4,400,000 ³
8. Study Area Bicycle Facility Enhancements	N/A ²	Short-Term	\$2,500,000 ³
9. Intersection Improvements at West Street and Main Street	Medium	Mid-Term	\$1,100,000
10. Brook Street Neighborhood Streetscape and Multimodal Improvements	Large	Mid-Term	\$2,300,000
11. Intersection Improvements at Cromwell Avenue and Inwood Road	Small	Long-Term	\$500,000
12. Intersection Improvements at Cromwell Avenue and Brook Street	Medium	Long-Term	\$1,300,000
13. Elm Street Connector Roadway	Large	Long-Term	\$3,200,000

¹ Short-term priority only for recommendations addressing New Britain Avenue queues and Fire Station 2 access concerns

² For summary purposes, Bicycle and Pedestrian Improvements are grouped as a combined project for each mode, however implementation will likely occur as many separate projects as funding from various sources becomes available

³ Not including costs of bicycle and pedestrian improvements identified as components of other recommended projects

Section 5

Implementation Plan

The implementation plan seeks to identify and prioritize recommended improvements that can be planned, programmed, and built within the 20 year study horizon. The basis of this implementation plan includes the overall project costs, complexity, and benefit. This section of the report seeks to provide ConnDOT, CROCOG, and the Town of Rocky Hill a menu of projects with guidance for implementation over time based on a series of qualitative and quantitative metrics.

5.1 Transportation Improvement Program

The Transportation Improvement Program includes 13 potential projects that address the roadway network, transit system, and pedestrian and bicycle needs in the study area. Specifically, the study recommends physical roadway improvements, one roadway/streetscape enhancement, and identifies numerous improvements to enhance transit, pedestrian and bicycle facilities. For summary purposes, these alternative transportation mode recommendations are grouped as one combined project for each mode, however the study recognizes that implementation of the improvements will likely occur as the result of many separate projects as funding from various sources becomes available.

The Transportation Improvement Program classifies projects as small, medium, and large based on project size, complexity, and project cost. The projects are also prioritized as short-term, mid-term, and long-term representing when implementation of the project is anticipated to be necessary. A short-term project priority indicates an immediate need for the project to address an existing deficiency or operational concern. Conversely, a project priority of long-term would indicate a project that intended to address an anticipated future issue or need such as operational issues that are expected to occur due to future traffic growth.

5.1.1 Project Categorization

Project types are categorized into small projects, medium projects, and large projects, based on several metrics as described in Table 5-1.

TABLE 5-1
Project Type Characteristics

Project Type	Implementation Time	Complexity	Approximate Project Cost
Small	Less than 3 years	Low	Less than \$1 million
Medium	Between 3-6 years	Moderate	\$1 million - \$2 million
Large	More than 6 years	High	More than \$2 million

Implementation time refers to the time frame required to initiate a project, conduct the remaining planning and engineering design work required to prepare the project for construction and to complete construction the improvement, assuming that funding for all phases of the project is available. A subsequent section of the report identifies possible funding sources that may be available to support the implementation of each project. Implementation time is not intended to indicate the priority or relative time

frame with respect to the completion of this study, but rather intended to provide planners and decision makers with a measurement of the potential total time to implement the improvement from initiation.

The complexity of each project has been established based on the overall complexity to plan, design, and construct the improvement. Several metrics were considered in the establishment of each project's relative complexity. Projects are categorized into Low, Moderate, and High complexity based on the qualitative metrics described in Table 5-2.

TABLE 5-2

Summary of Project Complexity Characteristics

Complexity Level	Project Characteristics
Low Complexity	<ul style="list-style-type: none"> • Little to no additional planning needed, concept planning sufficient to proceed into design • Design effort is limited and typical. • None to minor right of way action • Environmental impacts and permitting requirements are very low • Utility impacts are considered minor or not anticipated
Moderate Complexity	<ul style="list-style-type: none"> • Additional Planning required to define project • Detailed design effort needed to define construction and impacts • Some right of way impacts anticipated • Environmental impacts and permitting are expected. • Potential for utility impacts and relocations
High Complexity	<ul style="list-style-type: none"> • Significant planning still required to define project • Detailed design effort following planning is required • Significant right of way actions needed. Private ownership coordination • Major environmental impacts, significant permitting process and agency involvement at all levels of government • Major utility relocations and design efforts to coordinate

Project costs have been estimated following the guidelines published by the Connecticut Department of Transportation and are presented in 2012 dollars. Costs may need to be expanded to account for inflationary pressures on construction costs looking out into the future. The "Preliminary Cost Estimating Guidelines" provide unit costs and percentage based lump sum costs to facilitate the estimation of project costs at the Preliminary Engineering level of project development. The approximate project costs presented in this study are limited to the construction item costs and exclude costs related to rights of way actions, utility relocations, environmental remediation, and engineering. The estimates include contingency (10%) and incidentals (25%-30%) in the total opinion of probable costs for each project.

5.1.2 Project Prioritization

The priority for each of the recommended improvement projects has been established based on two primary criteria: project need and local interest to implement the recommended improvements. Project need is based on the urgency to mitigate an existing deficiency within the overall transportation system. Projects are deemed to have a higher priority when they address an identified safety deficiency, address accessibility, or mitigate a current mobility or operational issue. The project priority categories are defined at Short-Term, Mid-Term, and Long-Term based on the criteria described in Table 5-3.

TABLE 5-3


Summary of Project Need Priority Metrics

Project Priority	Project Characteristics
Long-Term	<ul style="list-style-type: none"> • Project does not address an identified safety concern • Project scope intended to address future travel demand and traffic operations • Project may have some mobility, accessibility, or multi-modal benefits
Mid-Term	<ul style="list-style-type: none"> • Project scope provides operational and mobility benefits that are currently an issue, but traffic operations are not poor or failing • Local stakeholders have expressed interest in implementing improvement to enhance transportation system.
Short-Term	<ul style="list-style-type: none"> • Project addresses an urgent safety issue • Project intended to address existing operational deficiency • Project addressed a deficiency in accessibility that has been identified as a local concern

In addition to the priority assigned to the project based on project need, input from the Town of Rocky Hill and CRCOG was obtained for each of the projects to determine the relative importance of each project from a local and regional planning and political perspective. The overall priority presented for each of the projects is predominately based on transportation need, however, in cases where the Town or CRCOG has indicated that a project is a higher priority to address local interests, adjustments have been made address local input.


5.1.3 Recommended Projects Summary

The following section outlines each of the proposed improvements recommended by the Study and describes the project in terms of the scope of the improvements and the priority for implementation. It should be noted that some priorities described in this report are subjective and founded in the policies and goals of the Town of Rocky Hill and CRCOG at the time of development. The local and regional priorities should continue to be reviewed and evaluated to determine if changes to the priorities for the improvement plans are needed to remain current with local and state trends, policies, priorities, and conditions with the study area.

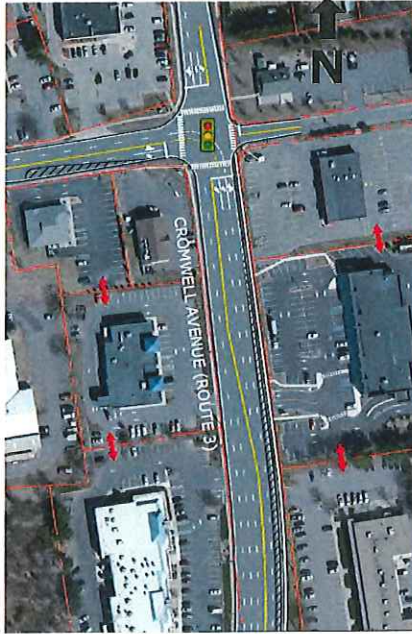
1. Intersection Improvements at Cromwell Avenue and West Street/France Street (Phase 1)		
Project Goals:	Mitigate morning peak hour delays and queuing along France Street.	Project Type: Small
		Project Priority: Short-Term
		Project Cost: \$250,000
Project Elements:	<ul style="list-style-type: none"> Widen France Street to accommodate two lane approach (left turn & right turn lanes). Modify traffic signal operations to accommodate new lane geometry. 	
	See Figure 4-4	

2. Intersection Improvements at Cromwell Avenue and West Street/France Street (Phase 2)		
Project Goals:	Mitigate the effect of future travel demand on the cluster intersection of West Street and France Street through geometric improvements.	Project Type: Medium
		Project Priority: Short-Term
		Project Cost: \$1,300,000
Project Elements:	<ul style="list-style-type: none"> Widen Cromwell Avenue between France Street and West Street to provide a second southbound left turn lane to address future travel demand. Modify intersection traffic operations to accommodate southbound double left turn movement. 	
	See Figure 4-5	


3. Intersection Improvements at Brook Street and Henkel Way

<p>Project Goals: Improve future traffic operations and facilitate the redirection of truck traffic away from neighborhood area. Create a gateway between the industrial and residential uses along Brook Street and calm traffic entering and traveling through the neighborhood.</p>	Project Type:	Small
	Project Priority:	Short-Term
	Project Cost:	\$800,000
<p>Project Elements:</p> <ul style="list-style-type: none"> • Replace the existing two-way stop sign controlled intersection with a modern roundabout. The roundabout should be designed to accommodate a 180 degree turn by semi-trailers. • Install sidewalks and in-fill sidewalk along both sides of Brook Street in the intersection area. • Provide an aesthetic center island area with landscaping or other treatments at the direction of the Town of Rocky Hill <p>See Figure 4-9</p>		

4. Operational Improvements Along Cromwell Avenue, Elm Street, and New Britain Avenue

<p>Project Goals: Mitigate the effects of future travel demand along Cromwell Avenue, New Britain Avenue, and Elm Street through roadway widening and intersection improvements. Encourage access management and improve pedestrian facilities.</p>	Project Type:	Large
	Project Priority:	Short-Term
	Project Cost:	\$5,300,000
<p>Project Elements:</p> <ul style="list-style-type: none"> • Widen Elm Street to provide two eastbound travel lanes between Cromwell Avenue and the Big Y shopping plaza. Extend two lanes to future connector roadway. • Widen Cromwell Avenue from Elm Street to New Britain Avenue to provide double left turn lanes southbound at Elm Street and northbound at New Britain Avenue. • Widen New Britain Avenue to provide two westbound lanes to accept the double left turn from Cromwell Avenue and extend two westbound lanes to Haynes Road. • Extend length of the exclusive right turn lane on eastbound New Britain Avenue. • Provide additional crosswalks and pedestrian ramps at Cromwell Avenue intersections. • In-fill sidewalk to provide cohesive sidewalk network within the project area. • Encourage inter-parcel connections between commercial parcels along both sides of Cromwell Avenue. • Coordinate with Rocky Hill Fire Department regarding hardwired fire pre-emption from Station 2 to nearby signalized intersections <p>See Figure 4-6A and 4-6B</p>		

5. West Street and Interstate 91 Interchange Improvements			
Project Goals:	Modify I-91 interchange area to mitigate the effects of future travel demand and to mitigate existing safety deficiencies at the southbound ramps.	Project Type: Large	
		Project Priority: Short-Term	
Project Elements:	<ul style="list-style-type: none"> Modify lane use at southbound ramps to provide a double left turn movement from westbound West Street. Widen ramp to accept two lanes and modify alignment of turning roadway. Improvements at southbound ramp address existing safety deficiency and should be a higher priority improvement. Widen West Street and modify lane use at northbound ramps to provide a double left turn movement from westbound West Street. Widen ramp to accept two lanes modify alignment of turning roadway. Widen West Street along south side of street between northbound ramps and Capital Boulevard. Modify alignment of free flow right turning roadway into Corporate Ridge site. 	Project Cost: \$2,300,000	
			
	See Figure 4-7		

6. Study Area Transit Facility Enhancements		
Project Goals:	Provide improvements to transit facilities in Town to provide higher level of customer service at key stops.	Project Type: Small
		Project Priority: Short-Term
		Project Cost: \$50,000
Project Elements:	<ul style="list-style-type: none"> Install a bus shelter and concrete pad at the southeast corner of the West Street and Capitol Boulevard intersection and on the south side of Elm Street west of Rose Hill. New shelters should conform to current aesthetics of other recently installed shelters in Town. 	


7. Study Area Sidewalk and Pedestrian Facility Improvements

<p>Project Goals: Improve pedestrian accessibility at study area intersections and along study area roadways</p>	<p>Project Type: N/A</p>
	<p>Project Priority: Short-Term</p>
	<p>Project Cost: \$4,400,000</p>
<p>Project Elements:</p> <ul style="list-style-type: none"> In-fill and extend sidewalk infrastructure so as to provide continuous east/west and north/south facilities for pedestrians on Elm Street, West Street, Brook Street, and Cromwell Avenue within the study area. Upgrade intersections to accommodate pedestrians via marked crosswalks, pedestrian signals, and ADA accessible curb ramps. Provide a multi-use path along Cromwell Avenue to connect the residential areas to the west of the study area with the existing and proposed pedestrian facilities. 	
<p>See Figure 4-13</p>	


8. Study Area Bicycle Facility Enhancements

<p>Project Goals: Improve existing roadway infrastructure to better accommodate bicycle traffic, improve and expand connections between residential and recreational land uses, and improve regional bike routes within the Study Area and Town of Rocky Hill.</p>	<p>Project Type: N/A</p>
	<p>Project Priority: Short-Term</p>
	<p>Project Cost: \$2,500,000</p>
<p>Project Elements:</p> <ul style="list-style-type: none"> Widen shoulders along Elm Street and Main Street to provide a 5' wide minimum shoulder for cyclists. Construct multi-use pathway on Cromwell Avenue between Cold Springs Road and proposed Town Center West Development 	
<p>See Figure 4-14</p>	


9. Intersection Improvements at West Street and Main Street

Project Goals:	Realign West Street and Forrest Street to improve traffic operations and provide wide shoulders along Main Street to facilitate bicycle usage of the road.	Project Type:	Medium
		Project Priority:	Mid-Term
		Project Cost:	\$1,100,000
Project Elements:	<ul style="list-style-type: none"> Shift alignment of West Street to the south and shift alignment of Forest Street to the north to align the offset roadway geometry into a conventional four way intersection. Provide exclusive left turn lanes on the northbound and eastbound approaches. Provide an exclusive right turn lane on the southbound approach. Provide a minimum 5' wide shoulders along Main Street to accommodate bicycle traffic. Install sidewalks and crosswalks on each leg of the intersection and incorporate pedestrian phasing within the traffic control signal operations. 		
See Figure 4-8			


10. Brook Street Neighborhood Streetscape and Multimodal Improvements

Project Goals:	Improve transportation facilities and provide traffic calming and aesthetics enhancements in the residential section of Brook Street between Main Street and Henkel Way.	Project Type:	Large
		Project Priority:	Mid-Term
		Project Cost:	\$2,300,000
Project Elements:	<ul style="list-style-type: none"> Widen Brook Street to provide a uniform 32' wide roadway cross section (5' bike shoulders and 11' travel lanes). Install in-fill sidewalk along both sides of Brook Street between Henkel Way and Main Street. Consider the installation of pedestrian level lighting and/or street lights within the neighborhood area along Brook Street. Install street trees along both sides of Brook Street to enhance the aesthetics of the corridor and to advise roadway users of the neighborhood setting. 		
See Figure 4-10			

11. Intersection Improvements at Cromwell Avenue and Inwood Road

Project Goals:	Improve intersection operations and mitigate geometric deficiency by widening Cromwell Avenue.	Project Type:	Small
		Project Priority:	Long-Term
		Project Cost:	\$500,000
Project Elements:	<ul style="list-style-type: none"> Widen Cromwell Avenue south of the intersection to provide additional southbound travel lane. Merge two lanes back to one lane south of the intersection. Eliminate existing southbound right lane drop at Inwood Road. Implement minor widening along east side of Cromwell Avenue and install northbound exclusive left turn lane into Inwood Road. Modify traffic signal operations to provide an exclusive northbound protected left turn phase. Construct in-fill sidewalk along east side of Cromwell Avenue. 		
See Figure 4-2			

12. Intersection Improvements at Cromwell Avenue and Brook Street

Project Goals:	Improve intersection traffic operations and capacity through geometric modifications and provide additional pedestrian facilities.	Project Type:	Medium
		Project Priority:	Long-Term
		Project Cost:	\$1,300,000
Project Elements:	<ul style="list-style-type: none"> Widen Cromwell Avenue along the west side of the road to accommodate an exclusive southbound left turn lane. Modify traffic signal operations to provide exclusive southbound protected left turn phase. Install sidewalk along both sides of Cromwell Avenue and portions along Brook Street and connect to the existing sidewalk crossing the Cromwell Avenue bridge over I-91. Provide crosswalks at the intersection. 		
See Figure 4-3			

13. Elm Street Connector Roadway	
<p>Project Goals: Improve local roadway network connectivity and access to developable land and facilitate mobility of alternative travel modes.</p>	<p>Project Type: Large</p> <p>Project Priority: Long-Term</p> <p>Project Cost: \$3,200,000</p>
<p>Project Elements:</p> <ul style="list-style-type: none"> • Extend existing town roadway (Corporate Place) to the north to provide a parallel roadway connection between West Street and Elm Street. • Include measures to facilitate use of the roadway by bicycle traffic (wide shoulders or a multi-use pathway). • Install a new traffic control signal at the intersection of Elm Street and the new connector roadway and modify Elm Street to accommodate the new signalized intersection. 	
<p>See Figure 4-11</p>	

5.1.4 Implementation Plan Summary

Table 5-4 summarizes the recommendations on a project-level basis. A review of the implementation plan indicates that there are seven projects that have been identified as Short-Term priorities, two projects that have been identified as Mid-Term priorities, and four projects that have been identified as Long-Term priorities. The projects prioritized as Short-Term indicate that funding sources could be sought in the Short-Term to address the existing concerns.

Table 5-4: Summary of Projects in Implementation Plan

Project Description	Project Type	Project Priority	Project Cost
1. Intersection Improvements at Cromwell Avenue and West Street / France Street - (Phase 1)	Small	Short-Term	\$250,000
2. Intersection Improvements at Cromwell Avenue and West Street / France Street - (Phase 2)	Medium	Short-Term	\$1,300,000
3. Intersection Improvements at Brook Street and Henkel Way	Small	Short-Term	\$800,000
4. West Street and Interstate 91 Interchange Improvements	Large	Short-Term	\$2,300,000
5. Cromwell Avenue Improvements from Elm Street to New Britain Avenue	Large	Short-Term ¹	\$5,300,000
6. Study Area Transit Facility Improvements	Small	Short-Term	\$50,000
7. Study Area Sidewalk and Pedestrian Facility Improvements	N/A ²	Short-Term	\$4,400,000 ³
8. Study Area Bicycle Facility Enhancements	N/A ²	Short-Term	\$2,500,000 ³
9. Intersection Improvements at West Street and Main Street	Medium	Mid-Term	\$1,100,000
10. Brook Street Neighborhood Streetscape and Multimodal Improvements	Large	Mid-Term	\$2,300,000
11. Intersection Improvements at Cromwell Avenue and Inwood Road	Small	Long-Term	\$500,000
12. Intersection Improvements at Cromwell Avenue and Brook Street	Medium	Long-Term	\$1,300,000
13. Elm Street Connector Roadway	Large	Long-Term	\$3,200,000

1 Short-term priority only for recommendations addressing New Britain Avenue queues and Fire Station 2 access concerns.

2 For summary purposes, Bicycle and Pedestrian Improvements are grouped as a combined project for each mode, however implementation will likely occur as many separate projects as funding from various sources becomes available.

3 Not including costs of bicycle and pedestrian improvements identified as components of other recommended projects.

5.2 Project Implementation

The transition from the planning process to project implementation is the critical step forward in the project development process. Utilizing the ideas and plans developed under this Study, and with the help from CRCOG and support from the State of Connecticut Department of Transportation, the Town of Rocky Hill's responsibility lies in the identification of projects for implementation to address the needs and future concerns in the Study Area. Once a project has been identified by the Town, the actual implementation will follow a well defined process. The most critical hurdle for the projects is identification of a funding source to support the engineering, rights of way acquisition, utility modifications, and ultimately construction of the improvements. The Town, working independently or with CRCOG and/or ConnDOT will determine the purpose and need of a project and develop a scope for the work. Utilizing the concept plans and costs defined in this Study, funding through an appropriate funding vehicle can be sought.

5.2.1 Project Initiation and Funding

Generally speaking, it is expected that the majority of the recommendations and improvements identified in this Study will be publically funded through State and/or Federal Transportation Funding Programs as provided for in the Federal Transportation Legislation or through State funding made available in the State of Connecticut transportation budget or through the State Bond Commission. However, there are other improvements that could be constructed by private entities as mitigation for proposed development in the study area.

There are many current funding vehicles that are available to the Town, Region, and State to support the recommendations presented in the Study. Current funding programs include:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- National Safety Improvement Program (HSIP)
- Congestion Mitigation and Air Quality Program (CMAQ)
- Transportation Alternatives (TA)
- Local Capital Improvement Program (LoCIP)
- Small Town Economic Assistance Program (STEAP)
- Recreational Trails Program
- Special Tax Obligation Bonds

It is worth noting that with any program reliant on public funding, either by the Federal Government or State of Connecticut, that priorities may change in the future along with available funding vehicles for transportation system improvements. In addition, there are several large construction projects currently underway in the State of Connecticut that have constrained transportation spending looking forward as available funds are channeled to complete these project. The State of Connecticut Department of Transportation published the Transportation Capital Plan: 2012 – 2016 describing the state of available funds and programmed spend over the next four years. However, the current fiscal constraints should not limit the identification and pursuit of projects and

funding for the priority projects identified by the Study, so that as funding becomes available, projects are ready.

5.2.2 Design and Construction

5.2.2.1 Engineering Design

Following the initiation of a project and identification of a funding source, the remaining steps to implement an improvement will involve design and construction. Based on the complexity of a project, an initial Preliminary Engineering phase may be required to conduct a more detailed engineering study and refine the concept plans and project scope. A Preliminary Engineering study can help establish the potential impacts to environmental and natural resources, identify potential property and utility impacts, and help refine the expected costs in current dollars, rather than forecasting based on estimates reported in this Study, which are provided in current 2012 dollars.

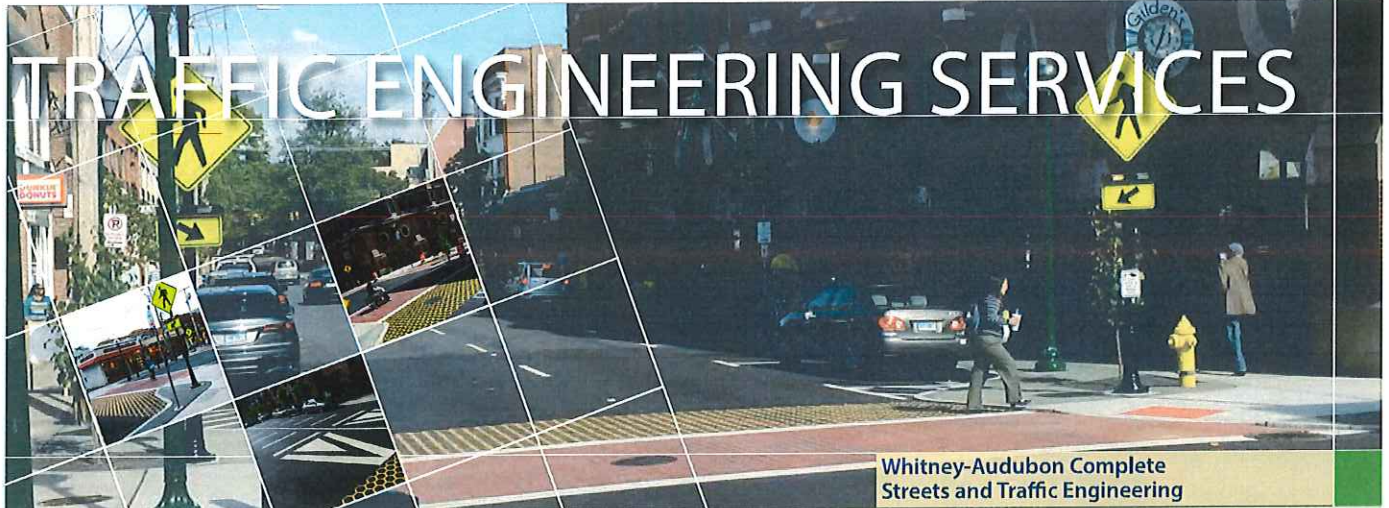
Once Preliminary Engineering is complete and the decision is made to move forward with the project, Final Design will take place to add detail to the plan, conduct a right of way acquisition process, address utility conflicts and possible relocations, and develop construction documentation to facilitate bidding and construction of the improvements. Generally, projects that are identified as having a low level of complexity can be designed within 12-18 months from initiation of the project by the Town. As complexity grows, so does the timeframe required to design improvements, with design phases potentially lasting three years or more.

5.2.2.2 Construction

Following the completion of the design phase, the project will begin the construction phase. The steps involved in a publically funded project include advertisement for bids to contractors, collecting bid on the work and awarding the contract, and finally conducting the construction to build the improvement. Utility relocations typically take place during construction, but in some instances a utility company may relocate facilities in advance of a project taking place once a utility agreement is in place. Generally, smaller projects are completed within one construction season, generally March through November. Larger projects can span several construction seasons depending on the complexity of the work, the construction staging and phasing needed to facilitate the maintenance and protection of traffic operations during construction, and possibly the availability of funding. Projects identified as having Moderate Complexity can be expected to take up to two construction seasons, and highly complex projects could take more than two construction seasons to build.

Tighe&Bond

APPENDIX C



Innovative, Integrated Traffic Solutions for Optimal Roadway System Operations

With services dating back to 1952, CDM Smith's founders saw the intrinsic value of innovative, integrated approaches to the study and implementation of safer traffic operations. Today, our traffic engineering services address the full array of congestion and access management, signal improvements, traffic calming and safety programs, and all types of ITS applications to enhance transportation system performance.

Sustainability - Our traffic engineers focus heavily on smart planning and design, working to optimize the existing roadway system and vehicle and pedestrian operation, which are key elements in sustainable transportation. Efficiency is achieved by converting intersections to roundabouts, applying emerging new interchange designs like the diverging diamond, utilizing managed lane techniques, and through optimized signal timing. Examples of our sustainable projects are seen throughout Connecticut, Massachusetts, Rhode Island, New York, Virginia, Michigan, California, Texas, Tennessee, North Carolina, Illinois, and Indiana - to name a few.

Staff Qualifications - CDM Smith maintains a full, geographically-diverse traffic engineering staff, many of whom are Professional Traffic Operations Engineers, with significant experience using the industry's standard simulation software. In addition, several hold safety and inspection certifications; have authored multiple papers, articles and presentations; are involved in policy and research projects through national organizations such as the Transportation Research Board and the Institute of Transportation Engineers, and/or teach at renowned engineering schools.

Traffic Systems and Intelligent Transportation Systems (ITS)

Traffic Signal Design, Inventory and Optimization

ITS is becoming increasingly sophisticated using dynamic elements such as sensors to measure traffic flows and guided, automated systems for better interconnectivity. ITS reduce delays, increase safety, and improve the overall modal network, while at the same time, reducing operational costs. CDM Smith's ITS services address aspects of the entire traffic network system, including financial, communications, specifications, equipment, procurement, installation, electrical, and operational components. CDM Smith's traffic operation services are complemented by a specialized staff of technology and all electronic communication experts, offering a unique benefit to clients who seek to take traffic operations to the next level.



In order to address the unsafe conditions caused by the previous design of Whitney Avenue and Audubon Streets in New Haven, CT, city officials hired CDM Smith to improve the area, and create a true complete streets project. This full-ADA compliant design encompassed a raised intersection and bump-outs on either side to narrow the roadway, thereby improving the drainage system.

Other improvements included: rectangular flashing beacons to warn oncoming traffic of high volume pedestrian crossing; Traffic Print XD and pavement markings to highlight the crosswalk and the ramp entering the raised intersection; speed reduction markings to force slow-down of approaching vehicles; and streetscape elements such as LED lighting and sidewalk treatments. This project was completed in October of 2014.

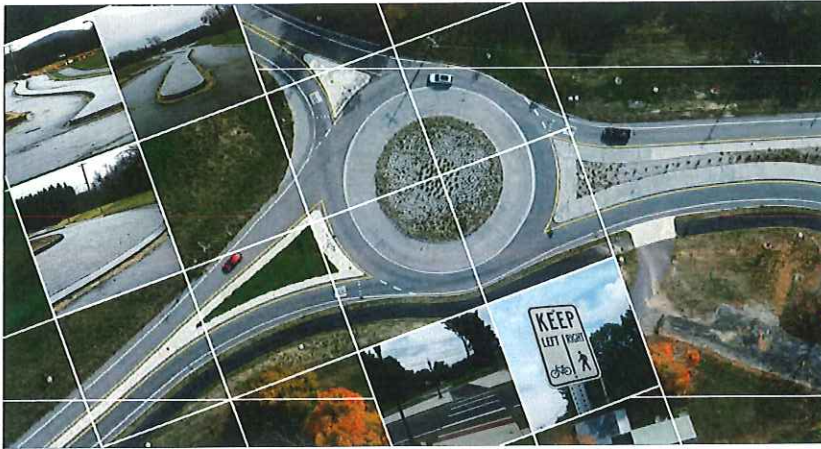
Traffic Engineering Services - multiple projects, CT

With full-service traffic engineering capabilities in New England, CDM Smith has completed many such projects for several Connecticut municipalities. These projects typically include traffic simulation, access management, peer reviews, context sensitive design, traffic calming, feasibility studies, alternatives analysis, signal optimization, and parking analysis. Some of our ongoing clients include the Connecticut DOT, New Haven, Greenwich, Westport, Meriden, Norwalk, and Bridgeport.



CDM Smith Traffic Engineering Services

- Traffic Design
- Context-Sensitive Design
- Traffic Operations and Capacity Analysis
- Traffic Calming (Roundabouts)
- Access Management
- Safety Analysis
- Parking Studies
- Signage and Wayfinding
- Traffic Impact and Circulation Studies
- Microsimulation
- Freeway Operations
- Heavy Haul Move
- Traffic Support
- Bicycle and Pedestrian Studies and Design
- Traffic Signal Design, Inventory and Optimization
- Complete Streets Planning



Traffic Engineering Services for West Street (Route 116) Reconstruction, Amherst, MA

With an average daily traffic flow of approximately 13,000 vehicles per day and appreciable pedestrian and bicycle traffic, the Town envisioned an integrated transportation system. The traffic engineering components of this concept through design and construction project involved extensive safety and capacity improvements at the two primary intersections (West Bay Road and Bay Road). Ultimately, the alternatives analysis led to the design of two twin roundabouts.

Traffic Calming Neighborhood and School Safety Programs, Access Management and Context-Sensitive Design

To address safety concerns, and provide service to all users (pedestrians, motorists, cyclists, and transit riders), traffic calming is vital. Techniques like those used in the *Route 116 and Bay Road Roundabout* project in Amherst, MA (shown above), have been used in several of our transportation, roadway, and traffic engineering projects. These techniques ultimately enhance the street environment and overall quality of life by increasing access and safety, reducing cut-through motor vehicle traffic, encouraging water infiltration into the ground, reducing collision frequency, and decreasing the need for police enforcement. City leaders are always seeking inventive and out-of-the-box solutions to improve school and neighborhood safety, provide better access, and increase the quality of traffic operations. CDM Smith's collaborative, context-sensitive solutions include better signal coordination, sidewalks, trails, enhanced pavement markings, and even raised vegetative medians to change the character of the road and narrower travel lanes.

Traffic Study and Peer Review

Having performed traffic studies for the simplest to the most complex project, our experts offer experience in GIS-based diversion plan development, corridor management, policy, capacity evaluation, signal warrant analysis, speed measurements, sight distance measurements, capacity analyses, trip generation, level of service and queue analyses, and the full suite of traffic simulation and operations software. Recognized as an industry leader in this area, CDM Smith provides both internal and external peer reviews and evaluations where crucial or potentially devastating errors have been discovered and corrected.

Road Safety Audits

Road Safety Audits, sponsored by the FHWA, are formal safety performance examinations of an existing or future road or intersection that qualitatively estimates and reports on potential road safety issues and identifies safety improvement opportunities. RSAs can be used in any phase of project development and used on any sized project. Having performed hundreds of these audits all over the country, CDM Smith's New England traffic engineering team is adept at conducting these specialized audits - ultimately saving time and money on potential future issues.



CDM Smith recently updated the TRB traffic forecasting guidelines in NCHRP 255 to evaluate advanced techniques such as multi-resolution modeling platforms and model data and information exchanges.



Innovative, Out-of-the Box, Holistic Solutions

Recognizing the needs of all users, our services consider ADA compliance and accommodations, the safety of motorists and non-motorists, greenhouse gas emissions and other environmental concerns. Our techniques include specialized parking for electric cars, road diets, roundabouts, enhanced pavement markings, Accessible Pedestrian Signals (APS), and traffic gardens.

Traffic Garden - New Haven, CT (shown above, right):

A first of its kind in New England, this innovative, modern traffic-calming "garden" will be implemented in a miniature "safety village" to teach children the rules of the road. This state-of-the-art concept features a roundabout, bike lanes, bike boxes, a railroad crossing, and signalized intersections and other scenarios.



Rhode Island DOT Traffic Engineering On-Call Services

This three-year \$1 million assignment involves inventory of over 60 traffic signals, pedestrian and bicycle evaluations, safety and capacity analyses, ADA compliance analyses, state traffic commission studies, and innovative research.

Rhode Island DOT Safe Route To Schools Program

Under this contract, we are working with RIDOT to enhance student safety and mobility. As part of the Safe Route to School Program, the project focuses on ADA compliance, and pedestrian safety issues and improvements.



TRANSPORTATION SERVICES



Lasting, Integrated Solutions for Today's Communities

CDM Smith provides lasting and integrated solutions in transportation to public and private clients worldwide. We assist all levels of federal, public, private and international organizations by offering planning, design, and construction services for transportation systems that reflect community needs. Our value-added program management, construction and disaster management, best-in-class design-build expertise, and unparalleled sustainability and economic solutions build partnerships and create solutions for current and future environmental and infrastructure challenges.



Transportation Engineering, Design and Construction Services

CDM Smith offers full resources in feasibility and conceptual project development, in-service inspections, rehabilitation recommendations, final design and conceptual design document preparation, value engineering, and construction and inspection assistance. Our portfolio includes design for all types of projects from urban roadways to major interstates and toll facilities throughout the U.S. and abroad, over 40 years of successful bridge design and inspection projects, LEED-certified transit facilities, as well as non-motorist and ADA-compliant design. Our core transportation engineering services are supported by solid experience in geotechnical services, including paving management and tunneling, stormwater and utility management, deicing services, and electrical engineering.

Transportation Planning

CDM Smith's planning staff is active at all levels - policy, state, MPO, and local - serving the communities in which they live and work. CDM Smith promotes sustainable urban and rural growth by developing innovative plans, policies, and models that use performance measures to identify safe, efficient, and feasible multimodal transportation system investments. We understand that access and mobility options for people and goods as well as integrated and linked land use are vital to economic prosperity and quality of life. Our planning services address all modes and include freight and economics; corridor, statewide and MPO planning; inter- and multi-modal; urban and regional planning; master planning; travel demand modeling; and traffic services.

Offering Comprehensive Transportation Services in:

- Surface Transportation
- Aviation
- Public Transportation
- Intermodal
- Toll Finance & Technology

Services include:

- Roadway, highway, and complete streets planning and design
- Bridge and structural planning, design, and inspection
- Construction engineering and inspection
- Transit planning and design
- Innovative project delivery (public-private partnerships, design-build, program management, risk analysis)
- Toll finance and technology planning and design, including traffic and revenue studies and managed lanes
- Corridor/statewide MPO planning
- NEPA, EIA, and permitting
- Cultural resources and natural resource assessments
- Freight, economics, and rail planning
- Multimodal/intermodal transportation facilities
- Aviation planning and design
- Geotechnical services
- Performance and asset management
- Sustainability
- Traffic engineering and intelligent transportation systems
- Urban and environmental planning

Producing Positive Results Around The World

CDM Smith's final design plans were innovative, well-thought out and overcame many of the perceived obstacles in converting a former industrial building into a modern public transit operations, vehicle maintenance, and vehicle storage facility. We highly recommend CDM Smith as a design firm for other public transit facilities." - Gary Ziegler, Retired Transit Director, McDonough County Public Transportation, IL

"I'm very pleased with the work performed by CDM Smith on our Pavement Management Program. It is a valuable asset for budgeting and prioritizing capital improvements for our roadway improvements." - Michael Thoreson, Department of Public Works, City of Brockton, MA





With a full transportation portfolio and cross-disciplinary, global resources, CDM Smith is equipped to provide for all of your transportation needs.

Many of our projects include developing performance measures, conducting scenario planning, preparing asset management plans, and state of good repair guidelines. In addition, our experience includes outlining and conducting award-winning public outreach programs - all of which has helped our clients prepare for the new regulations set forth in the 2012 MAP-21 federal surface transportation legislation.

Toll Finance and Technology Services (TFT)

Complementing our engineering and planning services, we provide a full range of TFT services, including traffic and revenue, all-electronic and managed lanes, and alternative delivery options such as public private partnerships. CDM Smith has performed toll services in 46 of the 50 states and has supported more than \$100 billion in toll financing. We are dedicated to the tolling industry, our clients, and to determining right-value tolling facilities that work in an established or growing corridor.

Environmental Planning and Sciences

A renowned environmental leader, CDM Smith maintains a staff of highly-specialized and trained scientists, historians, and archeologists to ensure sustainable development. We provide services in greenhouse gas, climate change, noise and air quality, biology and ecology, wetlands, and cultural resources. Our multidisciplinary approach encompasses context-sensitive solutions and creativity to streamline processes and showcase new ideas and technologies. We also address the full range of federal and state-level National Environmental Policy Act (NEPA) requirements for all transportation modes, and perform thorough natural resource assessments.

Sustainable, Innovative Solutions

Our firm is committed to sustainable development through innovative and integrative planning and infrastructure design. Whether it is through unique planning tools, sustainable materials, or the recommendation of a specific design, CDM Smith aims to preserve, conserve, and streamline for the benefit of clients and communities around the world.

Award-Winning, Solutions-Driven Experience

Design and Construction

All-Electronic Tolling Design-Build Project for Massachusetts DOT; MA

Key Elements: As part of the DB team with Raytheon, Inc. CDM Smith is implementing an AET system, which calls for removed cash toll plazas for the Tobin Memorial Bridge and other roads. Services include extensive design, engineering, and traffic services.

Benefits: Will greatly enhance safety and air quality and improve congestion and traffic flow.



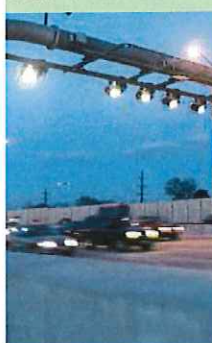
Transportation Planning

Statewide Transportation Planning in the Northeast: CT, ME, RI, NJ

Regional, MPO and Municipality Planning: CT, RI, MA, PA, NJ, NY

CDM Smith is an industry leader in developing innovative statewide transportation plans for aviation, freight, travel demand modeling, and rail. In addition, we have long-standing relationships with several regional agencies, municipalities, and metropolitan planning organizations throughout the Northeast, providing a variety of planning services. Moving beyond traditional policy development, we devise strategic-level, corridor-based, modal-based, and project level plans. These plans often consider multimodal needs, revenue and funding options, and performance measures that are linked to national and state goals, all of which guide and direct long-term multimodal investment decisions.

Toll Facilities



Illinois State Toll Highway Authority

Key Elements: Traffic and revenue; investment grade studies and reports; corridor studies; valuation; and economic research; traffic engineering and planning; toll rate studies; toll plaza operations; toll collection system design and implementation oversight; ITS and GIS; electronic tolling support; monthly and annual reports.

Innovations/Benefits: Bring down letters and investment studies for over \$7 billion in toll revenue bonds and 286 miles of operational toll roads; various feasibility studies supporting a \$12 billion capital improvement program starting in 2012; as well as safety reports and analysis.

Environmental

Massachusetts Port Authority Sustainable Design

Key Elements: Assisted in the development and implementation of MassPort's Sustainable Design Standards; served as a member of the technical group, conducting the training for MassPort staff; and facilitated the Executive Leadership Training

Innovations/Benefits: Modeled after CDM Smith's award-winning, renowned work for the development of the Los Angeles World Airport Planning, Design, and Construction Guidelines.



ENVIRONMENTAL DOCUMENTATION AND PERMITTING SERVICES

With services spanning all markets, CDM Smith's environmental documentation work is a cornerstone of our business.

As environmental regulations change and needs evolve, compliance is crucial to funding and implementation. Our knowledgeable, highly-trained, and experienced specialists work across all modes and are available at every project stage.

National Environmental Policy Act (NEPA)

NEPA is one of the most notable and far-reaching federal environmental laws, which requires federal agencies to consider the full range of environmental effects of any proposed action during the project lifecycle. With limited exceptions, NEPA compliance is mandatory not only for federal funding, but also for permitting of non-federal projects. In addition to the federal requirements, several states and territories have enacted separate environmental policy laws, which are sometimes referred to as "Little NEPAs" or state environmental policy acts (SEPA). However, in many cases, federal, state, and local/regional requirements are addressed concurrently, so that joint environmental documentation can be prepared. CDM Smith has prepared numerous joint environmental documents involving extensive coordination with stakeholders at all levels.



Public and Stakeholder Involvement: Early and Often

The public and stakeholder agencies play a major role in the environmental and NEPA process. The fundamental objective of public involvement programs is to ensure that the concerns and issues of businesses and

communities are identified and addressed in the development of the policies, programs, and projects being proposed in their communities. The key to building consensus during the environmental process is to engage the public early and often, even before formal scoping of an environmental document. While many public outreach methods should be customized to meet project requirements and community needs, communication approaches might vary from traditional to more creative and community-specific. For example, some may involve school education programs, websites, public information kiosks, or employ social media tools, such as Facebook and Twitter.

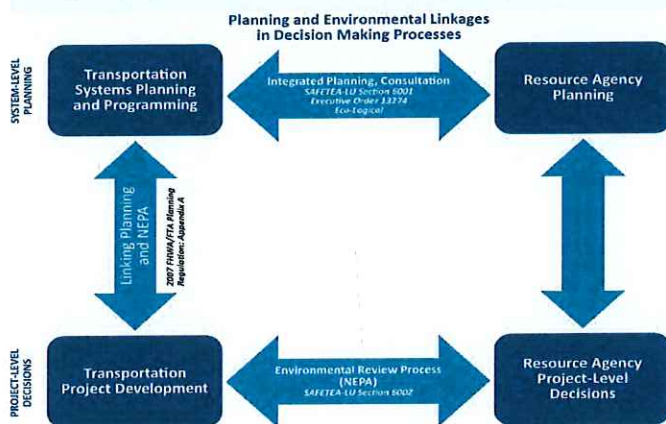
The NEPA Dichotomy: Complete and Concise Documents

CDM Smith offers seasoned specialists to lead the production of an analytically-sound, legally-sufficient, procedurally-correct, complete and concise NEPA document that is also cost-effective and schedule-conscious.

Planning and Environmental Linkages (PEL)

Planning and Environment Linkages (PEL) represent a collaborative and integrated approach to transportation decision-making that 1) considers environmental, community, and economic goals early in the transportation planning process, and 2) uses the information, analysis, and products developed during planning to inform the environmental review process. Current transportation funding law encourages the use of programmatic approaches and PEL to accelerate project delivery, increase process efficiency and encourage innovation.

Realizing that projects are likely to receive priority funding consideration if they include these components, states are increasingly weaving this into the scopes of important projects. CDM Smith's work with the *Interstate Highway 35 Planning and Environmental Linkage Study in Texas* as well as Michigan DOT's award-winning *I-275 at Ford Road Project* and the *Preliminary Engineering Design of I-94 at Sprinkle Road in Michigan*, are just a few examples of our PEL projects.



I-275 and Ford Road, Michigan

CDM Smith's award-winning *I-275 and Ford Road Traffic and Environmental Feasibility Study and Preliminary Design Project* was the first study in Michigan to follow the PEL process and helped to upgrade the roadway's safety, capacity, and pedestrian mobility. CDM Smith won the 2015 ACEC Partnership Award for the exceptional effort that went into coordinating and collaborating with key stakeholders.





Environmental Services

- Air Quality and GHG Emissions
- Biological Resources (including Threatened and Endangered Species)
- Cultural Resources
- Cumulative Impacts
- Environmental Justice
- Hazardous Materials
- Land Use
- Visual Assessments
- Community Impact Assessments
- Social and Economic Environment
- Transportation, Traffic and Infrastructure
- Water Resources and Drainage
- Wetlands and Floodplains

Examples of our work include:

- Developing the first-ever reader friendly EIS for the largest effort ever undertaken by a DOT
- Leading a multi-agency 404 Merger Pilot Project in order to streamline processes, speed completion and save costs
- Condensing the NEPA process from 4 years to a record 19 months for a high-profile, historic bridge project
- Developing several GIS-based tools used specifically for the NEPA process, including models to assist in identifying and analyzing alternatives, to quantify and analyze socioeconomic, land use, and environmental justice issues, and to enhance and strengthen secondary and cumulative impact analysis

Through these examples and more, CDM Smith demonstrates understanding of the full suite of NEPA document types and appropriate applications to specific projects. Our track record of NEPA-compliant documents includes: Categorical Exclusions, Environmental Assessments and Findings of No Significant Impact (FONSI), and Environmental Impact Statements and Records of Decision (RODs).

QA/QC Process for Environmental Documents

CDM Smith maintains a formal quality assurance and control process for all of our projects. This includes: a principal author review for completeness, accuracy and readability; technical review for technical accuracy and compliance; an independent (outside of the project team) review; and a project management review for parallel completion of the scope of work.



CDM Smith NEPA and Permitting Tools

Alternative Alignment Research Tool (AART): AART helps to identify, quantify, and compare alternative corridors/alignments for linear projects such as roads, rails, pipelines, and transmission lines, using readily available GIS information.

Agency Coordination Process (ACP): This process helps to facilitate communication between the project owner, and the resource and regulatory agencies. The ACP works to establish methodologies for better project understanding and consensus building consensus, as well as reduce review time.

Community Impact Assessment (CIA): Specialized survey techniques help reach community residents and provide them with an avenue for project development input. Survey results are then incorporated into a geodatabase and GIS models are created providing scenarios and visual representations of the data for easy teaching tools. This innovative process gives residents the capability to define their community boundaries, including how they view themselves on local and regional scales, leading to greater community involvement.

Milton-Madison Bridge Environmental Assessment and Preliminary Design, KY/IN

This award-winning historic bridge between Milton, Kentucky and Madison, Indiana included a purpose and need statement, alternative analysis, and environmental impact assessment. It also involved socioeconomic, historic structures, archaeological sites, noise, air quality, ecological resources, and river navigation, as well as several other extensive transportation planning, public involvement, and traffic services. The project incorporated innovative measures for construction acceleration, grant funding, and reduction of negative community impacts.



Chicago Transit Agency Red Line Extension Environmental Services and Documentation, IL

For this 5.3 mile rail extension CDM Smith is providing contract and project management services, including environmental and NEPA scoping for the EIS development and preliminary engineering. Our services included a Notice of Intent, a scoping booklet, conceptual engineering, Draft EIS preparation, New Starts coordination, financial analysis, a project management plan (PMP), and traffic forecasting. CDM Smith also designed a tailored outreach program, conducted a Section 106 analysis, and performed extensive GIS and mapping services.

I-70 Tiered EIS, MO

CDM Smith prepared a First Tier EIS for I-70 on the Missouri side of the Kansas City Metropolitan Area. The project included 18 miles of I-70, as well as all segments of the Kansas City downtown central business loop. This key part of I-70 is more than 40 years old and passes through heavily urbanized areas with very limited right-of-way available for improvements. CDM Smith developed a number of strategy packages for addressing transportation needs in the corridor and wrote a draft First Tier EIS seeking environmental clearance for a preferred strategy for corridor improvements.





FREEMAN

COMPANIES

LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

Amidst the economic turmoil of one of the worst recessions ever experienced by the building industry – and shortly after his successful summit of Mount Everest - Rohan A. Freeman, PE, LS founded Freeman Companies, LLC in 2009. In the years since, this multi-disciplinary, Connecticut-based land development, engineering design and construction services firm has thrived.

33 professionals comprise the Freeman Companies' team and specialize in **owner's representation, landscape architecture, permitting, land surveying, bridge and structural engineering, geotechnical engineering, transportation and traffic engineering, hydraulic/hydrologic engineering, environmental sciences, hazardous building materials services, construction engineering and inspection, and contractor support services** for projects in the governmental, educational, commercial, industrial, institutional and infrastructure markets. The firm is a certified Disadvantaged Business Enterprise (DBE), Minority Business Enterprise (MBE), Small Business Enterprise (SBE) and SAM-Active, Federal US SBA 8(a) professional consulting enterprise.

Freeman Companies is a growing, Black American owned small business, driven by our promise to clients and owners to **Elevate Your Expectations**. This promise has led the company to retain nearly all of their clients through repeat business and to grow a robust roster of new clientele. An innovative "integrated design approach" offers multiple complementary and coordinated land development services through a single provider, enabling sustainable, high quality land development in the most cost-effective and time-responsive manner possible. This approach has resulted in the firm's steady growth in new revenue, markets, employees, and professional services over the past eight years of practice.

It has also enabled the firm to advance its social responsibility goals, including support of several community-based educational and human-service organizations and the establishment of the firm-endowed "Freeman Companies BRIDGE Endowed Engineering Scholarship" through the University of Connecticut Foundation. Rohan Freeman, President and UCONN Alumnus says "Establishing this scholarship for deserving minority students from the cities of Hartford, Bridgeport, New Haven or Waterbury who have overcome socioeconomic and educational obstacles is a way of 'paying it forward' and sharing our success in communities that have always supported us. We look forward to help shaping Connecticut's next generations of engineers for many years to come."

Freeman Companies' Public Agency On-Call Experience includes:

- New Haven Water Pollution Control Authority – (3) Geotechnical, Environmental-Remediation-Permitting, and Land Survey
- Connecticut Department of Transportation – (4) Pre-Qualified in Highway Design; Construction Engineering & Inspection (Road and Bridge); Bridge and Structure Design; Traffic and Safety Engineering
- Connecticut Department of Administrative Services / Division of Construction Services – (2) Civil Engineer/Land Surveyor and MBE Civil Engineer
- Connecticut Housing Finance Authority – (2) Environmental Services and Landscape Architecture/Site Planning
- University of Connecticut – Civil and Structural Engineering
- City of Hartford – (2) Engineer and Owner's Representative
- City of Bridgeport – Environmental Engineering
- City of Bridgeport Housing Authority/Park City Communities – (2) Engineering and Environmental Services
- Metropolitan District Commission – (2) Engineering for Water Distribution and Wastewater Collection, and General Facilities/Surveying

Integrated Engineering and Environmental Services

Markets Served

- Municipal
- State
- Federal
- Regional Authorities
- Industrial
- Commercial
- Corporate
- Health Care
- PreK-12 Education
- College & University
- Housing
- Mixed Use
- Transportation
- Utilities
- Water/Wastewater
- Community Reinvestment
- Mixed Use
- Community Reinvestment

Land Surveying

- ALTA / ACSM Title Surveys
- Boundary Surveys
- Topographic Surveys
- As-Built Record Surveys
- Construction Stakeout
- Field Engineering
- Utility & Infrastructure Surveys
- Right-of-Way Mapping
- Digital Terrain Modeling
- Photogrammetric Control Surveys
- Acquisition Surveys
- GIS Mapping
- Land Records Research

Civil Engineering

- Due Diligence & Feasibility Studies
- Permitting
- Site Engineering
- Municipal Engineering
- Roadway Design

- Stormwater Management Design
- Hydro-logic / Hydraulic Analysis
- Water / Wastewater Engineering
- Construction Estimating
- Construction Permitting

Landscape Architecture

- Placemaking
- Green Infrastructure
- Streetscapes
- Site Planning and Landscape Design
- Campus /Facilities Master Planning
- Site Development Feasibility Studies
- Sustainable Design
- Roof Deck Design / Green Roof Design
- Historic Landscapes
- Athletic and Recreational Facilities Design
- Singly and Multifamily Residential Design
- Greenways and Trails
- Urban Design
- Brownfields
- Bioremediation
- Healing Gardens
- Landscape Maintenance Specifications and Guidelines

Traffic Engineering

- Traffic Signal Analyses and Design
- Traffic Impact Feasibility Studies
- State and Local Permitting
- Traffic Calming
- Parking and Traffic Circulation
- Site Access
- Bike & Pedestrian accommodation
- Safety Improvement
- Traffic Simulation
- Maintenance and Protection of Traffic
- Pavement Marking and Signing

Transportation and Planning

- Funding Application
- Roadway Design
- Hydrologic and Hydraulic Analyses and Design
- State and Local Permitting
- Complete Street
- Context-Sensitive Design
- Streetscape
- Environmental Permitting

- Value Engineering
- Bid Analysis
- Cost estimate
- Public Outreach
- Construction Inspection
- Utility Coordination

Geotechnical Engineering

- Evaluation of Site Conditions
- Evaluation of Subsurface Soil, Rock and Groundwater Conditions
- Site Feasibility for Construction
- Foundation Support Evaluation (Shallow or Deep Foundation Systems)
- Slope Stability
- Ground Improvement
- Evaluation and Design of Retaining Wall Systems
- Pavement Design
- Drainage Design
- Trenchless Technology Evaluation
- Forensic Engineering and Litigation Support
- Seismic and Vibration Engineering and Monitoring
- Blasting Design Support
- Failure Investigation
- Expert Witness Support
- Construction Claim Support

Structural Engineering

- Bridge Design & Engineering
- Bridge Structural Rehabilitation
- Bridge Inspection & Rating
- Structural Design of Culverts and Retaining Walls
- Design and Analysis of Steel, Concrete, Masonry and Wood-Framed Buildings
- Threshold Peer Reviews
- Structural Renovations
- Special Inspections
- Due Diligence Reports
- Wind Analysis
- Snow Load Analysis
- Seismic Analysis and Retrofit
- Building Envelope Studies
- Concrete and Masonry Repair and Rehabilitation
- Foundations
- Value Engineering
- Utility Relocations

Environmental Sciences

- Land Use Planning Permitting

- Environmental Site Assessments
- Environmental Transaction Screens
- Quantification of Environmental Liabilities
- Environmental Risk Allocation
- Regulatory Compliance and Permitting
- Technical Support for Environmental Litigation
- Brownfield Redevelopment
- Soil Characterization and Management Services
- Remedial Design
- Hazardous and Solid Waste Management
- Vapor Intrusion Assessments

Hazardous Building Materials Services

- Asbestos Inspections / Abatement Monitoring
- Lead Inspections / Abatement Monitoring
- Lead Risk Assessments
- PCB, VOC and Metals Testing and Evaluation
- Airborne Radon Sampling and Evaluation
- Abatement Project Design
- Mold Inspection and Evaluation
- Indoor Air Quality Assessments

Construction Engineering & Inspection

- Bidding Assistance
- Daily/Weekly Inspection
- Resource Coordination
- Materials Testing
- Administrative Services
- Community Relations
- Record Keeping, Log Books and Digital Photography
- Auditing and Budget Oversight
- Scheduling and Schedule Maintenance
- OSHA Compliance and Safety Review
- Regulatory Compliance
- Labor (DBE/MBE Participation), Wage Certification, and Other Human Resource Compliance
- Contractor Reference Checks
- Final Punchlist and Close Out
- State & Federal Funding

**STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION**
165 Capitol Avenue ♦ Hartford Connecticut 06106

Attached is your license certificate. Such license shall be shown to any properly interested person on request. Questions can be emailed to the Department of Consumer Protection, Occupational & Professional Licensing Division at dep.occupationalprofessional@ct.gov.

Visit our web site to download applications and verify licensure at www.ct.gov/dcp.

FREEMAN COMPANIES LLC
36 JOHN ST
HARTFORD, CT 06106-1822



STATE OF CONNECTICUT ♦ DEPARTMENT OF CONSUMER PROTECTION
Be it Known That

FREEMAN COMPANIES LLC
36 JOHN ST
HARTFORD, CT 06106-1822

has been certified by the Department of Consumer Protection as a licensed

JOINT PRACTICE
for

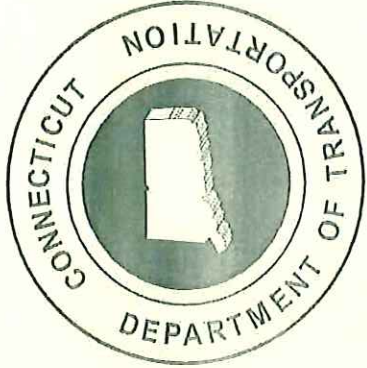
Architecture No Landscape Architecture Yes Land Surveying Yes Professional Engineering Yes

License # JPC.0000109

<p>Effective Date: 05/01/2016 Expiration Date: 04/30/2017</p>


 Jonathan A. Harris, Commissioner

Disadvantaged Business Enterprise Certification



This acknowledges and recognizes that Freeman Companies LLC
Is certified by the Connecticut Department of Transportation
as a Disadvantaged Business Enterprise

Manager: [Signature]

Contract Compliance

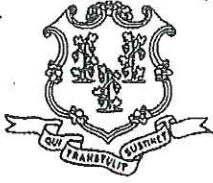
Director: [Signature]
Equal Opportunity & Diversity

Date Certified: February 8, 2010

Recertification Date: March 31, 2017

Annual Updates Required

NAIGS: 541330-541370



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Phone: (860) 594-2177

October 18, 2016

Mr. Rohan Freeman
Freeman Companies, LLC
36 John Street
Hartford, CT 06106

Dear Mr. Freeman:

Re: DBE CERTIFICATION ANNUAL REVIEW NOTICE

The Connecticut Department of Transportation (CTDOT) has completed its review of the Affidavit of No Change submitted on behalf of your firm Freeman Companies, LLC in fulfillment of its annual submission requirement. We are pleased to advise you that your firm continues to meet the eligibility criteria established by the U.S. Department of Transportation Disadvantaged Business Enterprise regulation, codified at 49 CFR, Part 26, and remain CERTIFIED as a Disadvantaged Business Enterprise (DBE) with CTDOT.

Your firm's certification with CTDOT will remain effective for as long as your firm continues to meet all DBE certification eligibility requirements and the ownership and control of the firm, upon which DBE certification was granted, has not changed. However, your firm's compliance with DBE certification eligibility criteria will be reviewed on an annual basis.

You are required to submit, annually, a sworn affidavit affirming that there have been no changes in your firm's economic disadvantaged status, ownership or control. In the event that there are changes, please be advised that you are required to notify CTDOT, within 30 days, of any changes in your business' ownership, control and/or operations including address, telephone number, business services, capabilities, and, for out-of-state firms, any changes that occur with your home-state certification. Failure to adhere to these requirements may result in the removal of DBE certification status. Your firm's next annual submission will be due on or before October 18, 2017.

We are pleased to have you as a participant in the DBE program and wish you much success.

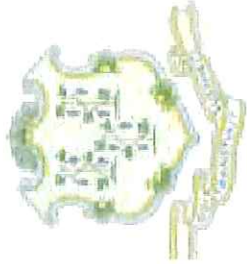
Sincerely,

Constance Miano
Secretary 2
Office of Contract Compliance
Bureau of Finance and Administration

CM/

State of Connecticut

Department of Administrative Services
Supplier Diversity Program



This Certifies

Freeman Companies, LLC

36 John Street Hartford CT 06106

*African-American
Small/Minority Business Enterprise
May 22, 2016 through May 22, 2018*

As a

Owner(s): Rohan A. Freeman, PE, LS

Contact: Rohan A. Freeman

E-Mail: RFreeman@freemancos.com

**** Affiliate Companies:**

Telephone: (860) 251-9550 Ext:

Web Address: www.freemancos.com

FAX:

Supplier Diversity

Carl A. Wilson

DAS Procurement Director

Congratulations

This document acknowledges that

FREEMAN COMPANIES, LLC

has been certified by the U.S. Small Business Administration
to participate in the 8(a) Business Development program



Tom Johnson

Tom Johnson, Publisher
Set-Aside Alert

Set-Aside Alert – Business Intelligence for the small business federal contractor

THIS CERTIFIES THAT

Freeman Companies, LLC



* Nationally certified by the: **GREATER NEW ENGLAND MINORITY SUPPLIER DEVELOPMENT COUNCIL**

*NAICS Code(s): 541330; 541370; 541620; 541320

* Description of their product/services as defined by the North American Industry Classification System (NAICS)

06/30/2016

Issued Date

GN02048

Certificate Number

Joset Wright-Lacy

Joset B. Wright-Lacy

Peter F. Hurst, Jr.

Expiration Date

03/02/2017

Peter F. Hurst, Jr., President and CEO

By using your password (NMSDC issued only), authorized users may log into NMSDC Central to view the entire profile: <http://nmsdc.org>

[Certify, Develop, Connect, Advocate.](#)

* MBEs certified by an Affiliate of the National Minority Supplier Development Council, Inc.®



Economic Consulting

RKG Associates, Inc. provides a broad range of economic consulting services to our clients, including:

Local and Regional Economic Development

- Local/Regional Economic Development Strategies
- Tax Base Management Strategies
- Target Industry Analysis and Promotional Strategies

Economic and Fiscal Impact Analysis

- Commercial, Industrial and Residential Development Impacts
- Military Base Closings, Redevelopment, and Expansion

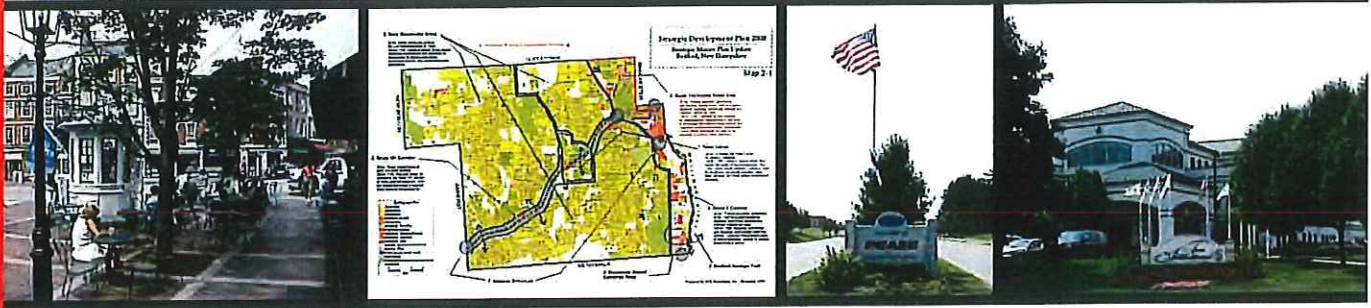
Economic and Fiscal Analysis of Transportation Projects

- Highway Projects
- Port Related Projects
- Airport Projects
- Transit Project
- Intermodal Projects

The focus behind much of our economic consulting practice is job generation and/or expansion of the tax base. Using a variety of analytical techniques, including economic modeling, RKG can identify business and industry trends and realistic strategies to attract these opportunities to a city, a region or a state. Analysis of historic trends and computer simulation of future scenarios comprise an integral part of the technical expertise we provide. The firm can develop statistics on economic conditions as well as a demographic profile of a region, city or state. RKG also develops and implements primary research through in-person interviews, mail out questionnaires, Internet and telephone surveys. RKG, working in conjunction with engineering firms, has also provided a broad range of economic consulting services to highway, airport, port and rail transportation projects throughout the United States. Our firm typically serves in the role of a subcontractor to engineering firms hired to prepare environmental impact statements (EIS), major investment studies (MIS) or feasibility studies for various types of proposed transportation projects.

Photos - left to right:

1. Economic and Fiscal Impact Analysis, Capital One, Richmond, Virginia
2. Financial Forecasting, Quincy, Massachusetts
3. Public/Private Investment Strategy, Worcester, Massachusetts



Planning

RKG Associates, Inc. provides planning services to a wide variety of governmental organizations ranging from small towns, to cities, to regional authorities as well as state and federal agencies. Our range of planning services includes:

- Military Base Redevelopment Planning and Implementation
- Project Management/Public Process
- Open Space and Sprawl Management Strategies
- Regional Land Use Plans and Studies
- Rezoning Strategies
- Municipal Land Use and Master Plans

RKG is one of the leading firms in the United States in preparing redevelopment plans and implementation strategies for closed and realigned military bases. The firm has worked at more than 30 former military facilities throughout the nation. This work has drawn upon RKG's expertise in real estate development and financial analysis, overall project planning and management, economic and fiscal impact studies, and strategic consultation. Our unique expertise, that combines real-world land use planning with practical economic and financial analysis, has also made RKG a leader in the preparation of business plans and Economic Development Conveyance (EDC) applications for communities attempting to successfully redevelop closed or realigned military bases.

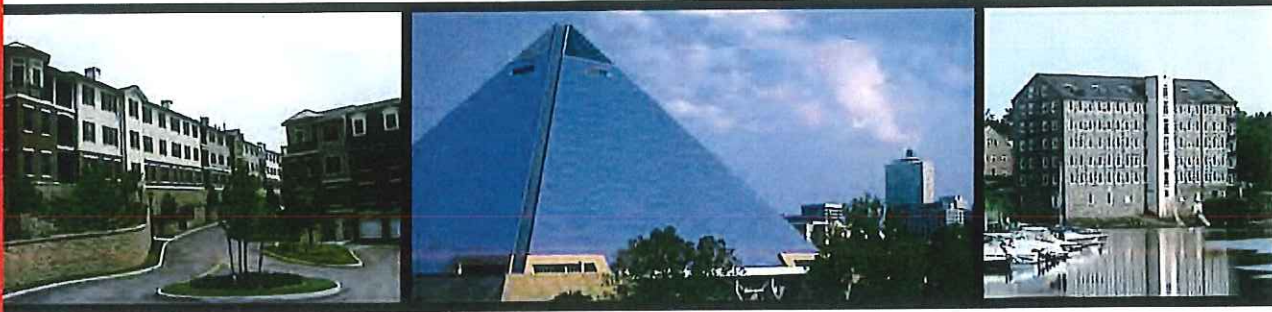
RKG has also worked with various governmental organizations to prepare local, downtown and regional land use plans, with an emphasis on zoning and other regulatory controls. In a number of instances, this work involves the preparation of community-wide land use plans, often referred to as a master or comprehensive plan, which are used by local officials to justify changes in zoning ordinances and other types of land use regulations, as well as provide a vision for guiding future development proposals. In other instances, this work has involved the preparation of land use plans that focus on specific issues such as the identification of locations for future economic development activities. Finally, RKG works with various state and local governmental agencies to examine regional land use issues such as sprawl, the protection of land from future development, and the revitalization of property adjacent to regional highway corridors and growth due to the expansion of military facilities.

Photos - left to right:

1. *Downtown Revitalization*

2. *Strategic Master Plan Update, Bedford, New Hampshire*

3 & 4. *Military Base Redevelopment, Pease International Tradeport, Portsmouth, New Hampshire*



Real Estate Consulting

RKG Associates, Inc. provides real estate consulting services to both the public and private sectors. Our real estate consultants, planners, financial analysts and economists work together to bring our clients realistic solutions in such areas as:

- Market Research
- Highest and Best Use Studies
- Project Marketing/Developer Solicitation
- Real Estate Repositioning Strategies
- Development Feasibility
- Public-Private Partnerships
- Site Selection/Location Analysis
- New Construction, Land Development and Adaptive Reuse
- Brownfields Redevelopment

RKG has developed a national reputation in urban revitalization and redevelopment projects. We have extensive experience in analyzing the market and financial aspects of complex real estate investments in downtown, waterfront, and other urban settings. Our urban redevelopment work includes municipal parking and intermodal facilities, medical and office complexes, mixed-use projects, residential developments and reuse of former military bases, school and hospital buildings. We have also applied our expertise to the development of regional shopping centers, large-scale residential developments and office/industrial parks.

Photos - left to right:

1. Housing Market Analysis, Eastside Commons, Providence, Rhode Island
2. Adaptive Reuse, The Pyramid, Memphis, Tennessee
3. Adaptive Reuse, Newmarket, New Hampshire

STATEMENT OF QUALIFICATIONS

THE COMPANY

Founded in 1981, RKG Associates, Inc. provides private, public and institutional clients, nationwide, a comprehensive range of advisory, planning, and strategic consulting services related to real estate, land use and economic development. We are proud that most of the assignments for which we have been engaged are projects that are built... projects that happen... projects that work... projects with tangible results measured in terms of new jobs, new investments, expanded tax bases or new master plans based on strong community consensus.

Our firm has successfully blended the in-house expertise of professionals who have backgrounds in market research, economics, finance, real estate development and planning. We also call upon an extensive network of other professionals to provide complementary technical expertise in such areas as architecture, engineering, land use planning, legal services and environmental science. Whether it is a large-scale project or a smaller undertaking, we make our full range of skills and disciplines available to every client.

THE SERVICES

ECONOMIC CONSULTING SERVICES

Local & Regional Economic Development

- Economic Development Strategies
- Tax Base Management Strategies
- Property Disposition and Repositioning
- Target Industry Analysis & Promotional Strategies

Economic & Fiscal Impact Analysis

- Commercial, Industrial and Residential
- Development Impact Studies

Economic and Fiscal Analysis of Transportation Projects

- Highway, Airport, Transit, Intermodal and Port Related Project

PLANNING SERVICES

- Project Management/Public Process
- Open Space and Sprawl Management Strategies
- Regional Land Use Plans and Studies
- Rezoning Strategies
- Municipal Land Use and Master Plans
- Military Base Redevelopment Planning and Implementation

REAL ESTATE ADVISORY SERVICES

- Real Estate Consulting
- Market Research
- Highest and Best Use Studies
- Project Marketing/Developer Solicitation
- Real Estate Repositioning Strategies
- Development Feasibility
- Public-Private Partnerships
- Site Selection/Location Analysis
- New Construction, Land Development and Adaptive Reuse
- Brownfields Redevelopment

LOCATIONS

Massachusetts Office ■
76 Canal Street, Suite 401
Boston, MA 02114
Tel: 617-847-8912

Virginia Office
300 Montgomery Street, Suite 203
Alexandria, Virginia 22314-1590
Tel: 703-739-0965

Other offices in Atlanta GA, Dallas TX & Durham NH

E-Mail: mail@rkgassociates.com

Web site: www.rkgassociates.com