
Final

Traffic Impact & Access Study

*Falmouth Technology Park
Full Build Update Study
Falmouth, Massachusetts*

Prepared For:

*Falmouth Economic Development Industrial Corporation
Town of Falmouth*

MS Transportation Systems, Inc.

October 2006

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Town of Falmouth
Cape Cod Commission**

Prepared By

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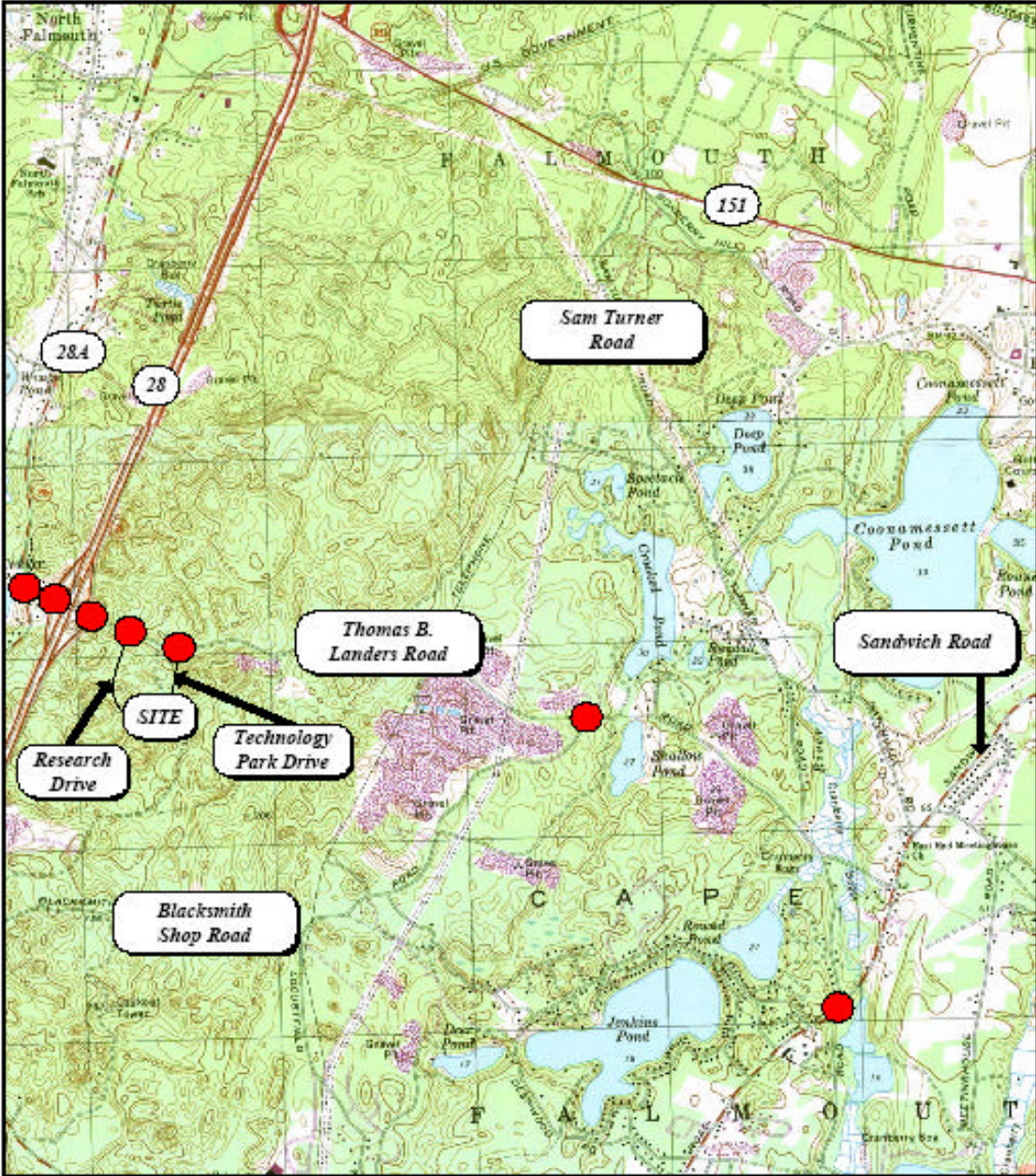
Introduction

This traffic impact and access study provides an analysis of the traffic impacts, traffic circulation, access/egress characteristics and traffic mitigation aspects associated with the full build development of Falmouth Technology Park. Currently, Phase I and Phase II development stages of Falmouth Technology Park of 300,000 square feet (sf) area are approved and constructed. Approximately 259,000 sf area is occupied. Phase III or the future build out development is expected to result in another 300,000 (sf) of development. It is anticipated that the Phase III development will include a mix of manufacturing, service and warehouse facilities. Access to the Park is currently provided through Technology Park Drive and Research Road, which intersect Thomas B. Landers Road at the south. This will continue under Phase III. The site location, with respect to the area roadway system and features, is shown on Figure 1.

The Cape Cod Commission (CCC) Regional Policy Plan¹ (RPP) and the Technical Bulletin 96-003² (dated January 9, 2003), established guidelines for the assessment of traffic impacts for projects that are Developments of Regional Impact (DRI). While following the guidelines in general, the study scope for the project was developed in consultation with CCC staff as it represents an update or monitoring type study being conducted as part of the Park's initial approval procedures. The project also generally follows the guidelines for traffic analysis issued by the Executive Office of Environmental Affairs (EOEA); the Executive Office of Transportation (EOT); and the Institute of Transportation Engineer (ITE).

¹ Cape Cod Commission, Regional Policy Plan, 2002

² Cape Cod Commission, CCC Guidelines for Traffic Impact Assessment. Technical Bulletin 96-003, January 9, 2003



Source: USGS Tag Image Graphic (TIFF) from MassGIS.

● - Study Intersections

Project Location

*Falmouth Technology Park Development
Falmouth, Massachusetts*

MS Transportation Systems, Inc.

Frammingham, Massachusetts



FIGURE 1

Executive Summary

This traffic impact and access study was completed as part of the Development of Regional Impact (DRI) process associated with the full build development of Falmouth Technology Park in Falmouth, MA. The development has consisted of three phases- Phase I, Phase II and Phase III. The development under Phase I and Phase II of 300,000 sf gross floor area is completed. Of the 300,000 sf, however, approximately 259,000 sf is currently occupied by several industrial or related facilities with full operational activities. It is expected that the remaining 41,000 sf will be occupied in near future. The Phase III development will consist of 300,000 sf of new building space for similar uses. Access to the current facilities is provided through two roadways, Technology Park Drive and Research Road, that intersect with Thomas B. Landers Road. It is proposed that the future development will also be accessed by these roadways. The scope of the traffic and access study process followed the scope of work outlined by the CCC (dated November 2005) and was generally consistent with the Cape Cod Commission (CCC) Regional Policy Plan³ (RPP) and the Technical Bulletin 96-003 (dated January 9, 2003) guidelines for the assessment of traffic impacts for projects that are Developments of Regional Impact (DRI). The project also generally follows the guidelines for traffic analysis issued by the Executive Office of Environmental Affairs (EOEA); the Executive Office of Transportation (EOT); and the Institute of Transportation Engineer (ITE).

Existing Conditions

The project site consists of occupied building space and vacant land parcels known as Technology Park. Currently, approximately 259,000 square feet (sf) is occupied. Technology Park Drive and Research Road which intersect Thomas B. Landers Road are two major roadways that provide direct access to the project site. Thomas B. Landers Road extends to the Route 28 ramps and terminates at Route 28A in the west. It extends to Sandwich Road in the east.

Average Daily Traffic (ADT) volumes obtained during this study in February 2006 showed that Thomas B. Landers Road in the vicinity of the project carries approximately 3,675 vehicles per day. Summer 2005 data was available for the Park's roadways. Peak hour flows represent approximately 8.2% of the daily flow on the abutting roadways. In general, the roadway adjacent to the site is rolling terrain with several horizontal curves. The analysis of existing conditions that reflected peak summer conditions has indicated that motorists exiting the unsignalized minor streets or driveways in the study area during the peak hours incur moderate delays.

In addition to volume studies, a review of the accident history was completed. The accident data from the Massachusetts Highway Department (MHD) for the years 2002 through 2004 showed no significant crash related deficiencies.

³ Cape Cod Commission, Regional Policy Plan.

Future Conditions

Traffic was forecasted for the proposed development including the complete occupancy of Phase I/II and the full build-out (Phase III) of the industrial development of 600,000 sf of floor space. Based on the Institute of Transportation Engineer (ITE) trip generation database, it was estimated that the unoccupied area of approximately 41,000 sf of Phases I and II would generate an additional 204 vehicle trips over existing conditions on a daily basis and 25 and 31 during the morning and evening peak hours, respectively. Similarly, it was estimated that the Phase III development with an additional 300,000 sf would generate 2,236 new vehicle trips on a daily basis and 240 and 273 vehicle trips during the morning and evening peak hours, respectively. The majority of morning traffic is expected to enter the site while during the evening; the majority of site traffic is expected to exit the site. In addition, these estimates do not reflect any trip reduction as a general requirement of the RPP. Existing traffic patterns in the area and census data were used to estimate a trip distribution for the project.

Currently, there are no ongoing major developments in the close proximity which could potentially impact traffic flow the project area. The future No-Build and Build networks were developed by applying a background growth of 1.16% per year for a ten (10) year period. While developing the No-Build networks, the existing site related trips at Technology Park Drive and Research Road were removed from the network. The future Phase I/Phase II Build networks reflect No-Build plus the estimated site trips for the initial 300,000 sf. By adding the Phase III development site traffic to the future Phase I and Phase II Build networks based on the estimated distribution patterns, the future Full Build networks were developed. Peak hour traffic expected to be generated by the project will result in traffic volume increases along Sandwich Road, Blacksmith Shop Road, Route 28 and Route 28A.

The analysis showed that the operating conditions of the study area intersections would not change significantly from the No-Build condition to the Full Build condition. However, some approaches at the study intersections including the intersection of Thomas B. Landers Road at Technology Park Drive will experience long delays under the Full Build out (Phase III) condition. Mitigation measures outlined below will reduce vehicle delays at certain locations if implemented.

Proposed Transportation Mitigation Actions

The analysis has shown that there are a number of locations that do or will experience operational difficulties in the project's study area. While not all of the issues are created by the added build-out of the Park, potential mitigating actions and improvements have been identified as part of this study. The Park may be responsible for certain actions while the Town in general will need to be responsible for others. Table 1 outlines the mitigation proposed for implementation by the Park. These actions are summarized below.

**TABLE 1
FALMOUTH TECHNOLOGY PARK
2006 PHASE III BUILDOUT MITIGATION PROGRAM**

Category	Action	Estimated Cost	Anticipated Schedule
TDM	TMA Feasibility Study	\$7,500	2007
	Install Bicycle Storage Facilities in Park	<\$10,000	2007
	Investigate Potential Commercial Center Plan for Park in conjunction with Falmouth Tech Park Associates	--	2007 - 2008
Roadway	Install "Intersection Ahead" sign on Thomas B. Landers in EB direction 300 west of Technology Park Drive	\$1,000	2007
	Ensure 2 lane approach on Thomas B. Landers at Route 28A (markings, minor widening)	\$20,000	2008
	Provide 2 lane approach on Technology Park Drive approach to Thomas B. Landers	\$50,000	At Full Build
	Design and construct westbound left turn Lane on Thomas B. Landers at Technology Park Drive	\$70,000	Post 420,000 sf (with verification)
	Install one speed monitoring device with posted speed on Thomas B. Landers between Research Drive and Technology Park Drive	\$6,000	2007

Transportation Demand Management (TDM)

Consistent with the Town's transportation goals and policies (see 2006 LCP), the Park and Town should be working to encourage alternative methods of transport relative to the Park. The Park does have a CCC approved Trip Reduction Program in place. While achieving a 20% to 25% vehicle trip reduction may not be realistic, the following actions can result in some reduction and consequently, reduce the Park's traffic impact and vehicle delays projected at study locations. The proposed actions are also intended to compliment the components presently part of the Park's Trip Reduction Program.

These actions are:

- Conduct a joint feasibility study for creating a Transportation Management Association (TMA) that could serve the Park and possibly the Woods Hole Institution and the Falmouth Hospital.

- As the Park increases in size, the Town should work with the CCRTA to extend the Blue Line route to serve the Technology Park. As an alternative, the feasibility of instituting a separate, new fixed route service in the Town similar to the Hyannis “Villager” service. The Park would need to be serviced by any new or extended route.
- The FEDIC should work with the existing and new business to encourage ridesharing and have bicycle storage facilities located at the various business locations.
- The Town and FEDIC together with the Falmouth Tech Park Association should explore the possibility of allowing a small commercial center within the Park designed to just serve the Park. Typical tenants to be sought would be those that could be considered ancillary to the businesses such as Fed Ex/Kinkos, postal center, food service geared to morning/lunch only. The goal would be to reduce midday, discretionary or business related external trips.
- As the Town explores the feasibility of extending the Shining Sea Bikeway into North Falmouth and/or roadway rehabilitation projects along Thomas B. Landers, consideration should be given to improving the bicycle connections/compatibility in relation to the Technology Park.

Roadway System

- In the vicinity of the project site, restore pavement markings on Thomas B. Landers Road, including double yellow centerlines and edgelines to define the travel lanes.
- Provide double yellow centerlines on Research Road, Technology Park Drive and Blacksmith Shop Road approaches to Thomas B. Landers Road to separate the entering and exiting traffic.
- Restore “STOP” bar on the pavement at Research Road, Technology Park and Blacksmith Shop Road.
- Increase the periodic enforcement of posted speed limits on Thomas B. Landers Road. One method to consider is to install speed monitoring devices. A suggested location would be in the eastbound direction between Research Road and Technology Park Drive.
- An advance “Intersection Ahead” warning sign (W2-2) should be installed approximately 300 feet west of the intersection of Thomas B. Landers Road in the eastbound direction with Technology Park Drive.
- Any new landscaping and signing proposed at the intersections of Thomas B. Landers

Road with Technology Park Drive and Research Road should be designed and maintained in such a manner so as to not to inhibit or constrain sight distances relative to Technology Park Drive and Research Road.

- Modify pavement markings on Thomas B. Landers Road approach to Route 28A to indicate separate left and right turn lanes. This may require some minor pavement edge work. Each lane should be a minimum of 11 feet in width though an outside lane width of 12 to 13 feet would be desirable. This reduces vehicle delay and improves level of service. (See Figure 7)
- The Town should evaluate the feasibility of providing separate left and right turn lanes on the Blacksmith Shop Road approach to Thomas B. Landers Road. This reduces vehicle delay and improves level of service and could make vehicle turning safer and more controlled.
- At Full Build-out, the Technology Park Drive approach to Thomas B. Landers should be modified to allow for separate left and right turn lanes. This will require minor widening of the site drive. This action will reduce vehicle delays and improve levels of service. (See Figure 8)
- Based on the projected flows at Full Buildout, the minimum volume warrants for a westbound left turn lane on Thomas B. Landers Road at Technology Park Drive are satisfied. However, given that current Park activity is generating approximately 25% lower volumes than the ITE guidelines, it is recommended that actual flows at Full Buildout be observed by the CCC and FEDIC to verify the necessity of providing that turn lane.

In conclusion, the proposed project, as currently planned is expected to have a moderate impact on traffic operations on the roadways and intersections within the study area. However, the impact can be reduced by implementing the recommended mitigation program.

