

**Task #3: Transportation Analysis for established Expedited Permitting Sites**

Note: It is anticipated that approximately \$50,000 will be available for this component of the project, to be paid by a Technical Assistance Grant.

*Timeline:* All sub-tasks under Task #3 will begin upon receipt of the state funding and shall be substantially completed within 3 months, to be followed by a final presentation of results and a final report to be completed within 120 days of the start of the project. Consultant shall, in their response to the RFR, provide an outline of how they plan to accomplish this task within the 120 day timeline.

The town of Littleton’s objective with this scope of work is to hire a consultant to estimate the transportation impacts and design appropriate mitigation packages for up to 4 different development scenarios on the Cisco site.

The mitigation packages will be based on a set of transportation goals adopted by the town. These goals will be established through discussions with local officials, but are expected to include some of the following:

- Minimize new traffic and additions to roadway capacity in Littleton Center (Routes 2A/119/110). Signal improvements that increase vehicle flow without reducing safe pedestrian crossing opportunities will be permitted.
- Reduce vehicle trips to the site by operating a shuttle, if feasible, for employees between the site, other nearby sites with potential demand, and the Littleton MBTA commuter rail station. This shuttle can also be used to transport workers to shared, off-site parking spaces if shared parking is allowed in the mitigation package.
- The primary vehicular access to the site will be via I-495 at the Great Road (Route 119) interchange. Roadway improvements necessary to insure safe access at both Great Road/I-495 intersections will be identified.

**Tasks**

**1. Assist Planning Board in developing alternative development scenarios for the Cisco property.**

Based on existing zoning, the Planning Board will prepare several (up to 4) alternative development scenarios (type of use, size of buildings, lot coverage, parking spaces). Using standard trip generation methodologies (e.g. ITE’s Trip Generation manual), the consultant may be required to provide estimates of vehicle trips generated to aid in the development of the preferred alternatives. Note that the consultant’s response to the RFR should also clearly note how many scenarios can be analyzed for the Estimate of Future Development Impact, and the mitigation analyses, outlined in Section B below.

**2. Develop transportation goals for the site**

The consultant will hold up to two meetings with the Board of Selectmen, Planning Board and other interested parties to determine transportation goals. Goals will cover

primary means of access to the site, the need for transit services, and a vision for travel conditions in Littleton Village. The consultant will facilitate this discussion and suggest options. These meetings may be held after existing travel conditions have been determined in Task 3.

### **3. Estimate the traffic impacts of the development scenarios**

#### **A. Existing Conditions**

Estimates of 2007 traffic conditions will be developed for locations along Route 119 (Great Road) between the site driveway/Russell Street and Robinson Road. Level of Service (LOS) calculations will be made for the local AM and PM peak hours at the following signalized and unsignalized intersections on Great Road:

- Site driveway/Russell Street
- I-495 Southbound ramps
- I-495 northbound ramps
- White Street
- IBM driveway (Cooper Street)
- King Street
- Adams Street/Littleton Commons
- Robinson Road

Traffic conditions must also be estimated for the following locations along King Street:

- Goldsmith Street/Littleton Common
- Jennifer Street
- White Street
- Littleton Common north
- IBM driveway
- Farmstead Way
- Shea Street

Level-of-service must be calculated for all these locations, using traffic count data that is no more than three years old. If the IBM site has been reconfigured and reopened by the time this contract begins then new traffic data is must be collected that reflects additional trips to the IBM facility. If IBM is not reconfigured, estimated additional traffic to that site must be added to the existing traffic counts.

A report listing inputs and assumptions to the LOS calculations, and showing LOS by movement, must be provided. Methods used must be compatible with MEPA/EOT requirements.

Crash information for these same intersections from the most recent three year period must also be obtained, and an analysis of crash patterns must be prepared.

Information on pedestrian/bicycle crashes, and on injury versus property-damage only crashes should be presented separately. A summary of existing safety problems should be prepared.

#### **B. Estimate Future Development Impacts**

The consultant will estimate likely vehicle trips using Institute of Transportation Engineers' Trip Generation manual for the series of potential future development

alternatives. These rates represent average national, mostly suburban locations, and should be adjusted if necessary to reflect the particular trip making characteristics of eastern Massachusetts and travelers to this site. The resulting numbers of trips generated and adjustment methods used should be documented in a memo to the town.

Trip distribution patterns to/from the site should also be estimated for each of the development scenarios. Methods for deriving these patterns and differing assumptions for each scenario should also be documented.

For each of the future development scenarios, Level of Service (LOS) calculations should be repeated for all intersections, with the new trips generated added to the traffic volumes found under existing conditions. Since this analysis is identifying mitigation necessitated by development at this site only, background traffic growth and traffic from any future nearby developments should not be considered (although the potential for joint mitigation should be explored in Task 4).

A qualitative assessment of the likely impact of additional vehicle trips on any identified safety problems should be prepared. Estimates of additional emissions generated for all MEPA standard pollutants (CO, NO<sub>x</sub>, HC), now including CO<sub>2</sub> as well, should be prepared for all scenarios.

#### **4. Develop mitigation requirements for each scenario**

A package of required mitigation projects and programs will be developed for each development scenario. These mitigation packages should reflect the previously identified transportation goals.

Mitigation development should consider the following options:

- Shuttle services/transit options - the Littleton commuter rail station is located near the intersection of I-495 and Route 2. For any large development at the site there could be enough potential rail riders to support a shuttle between the site and the station. If the planning board allows shared parking with an existing, off-site location the shuttle could also serve this site.
- TDM options – in addition to shuttle services, traditional TDM programs include carpool/vanpool matching, preferred parking spaces, off-peak work hours, and reduced work weeks should be considered.
- A local Transportation Management Association (TMA) – to develop opportunities to share trip reduction strategies with the new IBM site should be explored. Opportunities for a local TMA, and options for funding the TMA through District Improvement Financing for example should be investigated.
- Pedestrian/bicycle connections – On site, all building should be connected by sidewalks and paths. Since the site is isolated from other nearby uses and the town center, sidewalk connections along Route 119 will probably not increase walking. However, bike lanes along Route 119 to Littleton Center and beyond could be helpful in reducing traffic if connected to the regional bicycle network. In Littleton Center, additional vehicle traffic could potentially be mitigated by improved sidewalks, crosswalks, and pedestrian amenities

- Site design – the design of the site should minimize the need for vehicle trips between buildings. If some type of transit service is a mitigation requirement, the site design should allow for a convenient, sheltered central pick-up/drop off point.
- Parking requirements – allowing shared parking of existing, unused, off-site spaces can reduce the number of vehicle trips to the site as well as reduce the on-site permeable surface. If shuttle/TDM options are part of the mitigation package, reducing parking requirements to match expected vehicle trips can provide further encouragement to a successful program.
- Signal improvements – new signal equipment and changes to signal timings can be used to increase the capacity of an intersection without adding lanes. These improvements should balance the needs of thru travelers to the site with the needs of local residents to make local trips. Only improvements which allow pedestrians and bicyclists to safely use the intersections should be considered.
- Additional lanes – after all the above mitigation options have been considered, at the site driveway and the intersections with I-495, additional turning and thru lanes can be considered if necessary to move additional vehicles safely through signalized intersections.

A draft package of mitigation options will be developed for each of the 4 development scenarios. General estimates of cost should be prepared. For each package, LOS will be calculated, the potential impact on safety will be evaluated, and the air quality impacts will be estimated. These results should be presented to the Selectmen/planning board as input to a discussion about whether additional mitigation might be required to make a scenario's impact acceptable. The consultant should be prepared to develop at least one additional mitigation package and set of estimates for each scenario.

**5. Develop evaluation criteria for alternative mitigation proposals**

Developers of the site will be encouraged to think creatively about ways to travel to and from the site that will minimize the number of vehicle trips to the site and the number of vehicle trips that go through Littleton Center. At a minimum, the developer will be required to demonstrate that any new mitigation proposal does not exceed the traffic, safety, and air quality impact of the required mitigation package. The consultant will propose criteria that will allow the town boards to judge the likely reduction in vehicle trips for any proposals developed for the final review process.

***Requested Funds for This Task: \$50,000***