

Mr. Ronald Mastrogiacomo, Chair
Manchester-by-the-Sea Planning Board
10 Central Street
Manchester-by-the-Sea, Massachusetts 01944

May 8, 2024

Ref. T1199.01

Re. Cell Signaling Technologies at the Old Quarry – Manchester-by-the-Sea, Massachusetts
Traffic Management Component

Dear Mr. Mastrogiacomo:

Pursuant to §6.3.8.5(d) of the Manchester-by-the-Sea *Zoning By-Law*, as amended September 29, 2023, Cell Signaling Technologies (the “Applicant”) shall submit a *Traffic Management Component* (TMC) as part of the Transportation Plan for the proposed Cell Signaling Technologies at the Old Quarry development (the “Project”) to be located at #8 Atwater Avenue in Manchester-by-the-Sea, Massachusetts. The Applicant is subject to this bylaw provision as the proposed development consists of more than 25,000 square feet (SF) in gross floor area. As part of the TMC, the Applicant is required to provide the following information as noted in §6.3.8.5(d) of the By-Law:

- *Provide information on the number of expected person trips to and from the site, broken down by various travel modes (e.g., single occupancy vehicle, carpool, walk, bicycle, commuter rail, shuttle bus, etc.).*
- *Provide commitment to incorporate one or more of the following techniques to reduce the number of single occupancy vehicle trips by employees coming to and departing from the proposed use:*
 1. *Establishment of or contribution to a Traffic Management Association (TMA) within the region, which provides shuttle services for employees and other services as may be appropriate.*
 2. *Employee carpools or vanpools sponsored by the employer or the TMA.*
 3. *Subsidized commuter rail passes, provided by the employer, and sold on the site or offered through payroll deduction.*
 4. *Monetary incentives to employees who do not use a parking space.*
 5. *On-site shower facilities and bicycle racks for employees who do not drive to work.*
 6. *Other techniques as may be deemed appropriate by the Special Permit Granting Authority (SPGA) or Planning Board or its traffic consultant.*

Whereas much of this information has previously been provided in the Applicant’s *Traffic Impact, Access, and Parking Study* (TIAPS)¹, this document separates the requested TMC information as the request of the Town’s peer review consultant, Weston & Sampson.

¹ *Traffic Impact, Access, and Parking Study (TIAPS) – Cell Signaling Technologies at the Old Quarry – Manchester-by-the-Sea, Massachusetts*; prepared by TEC, Inc., Lawrence, MA; revised May 8, 2024.

Development Summary

The existing site currently consists of an active earth removal quarry. The Applicant proposes to remove the earth removal operation and construct a 263,000 square foot (SF) research & development (R&D) facility with 550 employees and 535 off-street parking spaces (56 surface parking spaces and 479 garage spaces). The above numbers reference the building program associated with the TIAPS as submitted to the Massachusetts Environmental Policy Act (MEPA) office and may have been reduced upon submittal to the Town of Manchester-by-the-Sea for town review. The life science and research laboratory, as well as both the surface and garage parking, will be constructed over two sequentially constructed phases. Phase 1 will include the construction of 127,000 SF of R&D space with 40 surface parking spaces and 227 garage parking spaces. Phase 2 will consist of the remaining 136,000 SF of R&D space with 16 surface parking spaces and 252 garage parking spaces.

Access/egress to the site will be provided via two (2) full access/egress driveways, one at the end of Atwater Avenue adjacent to the Manchester Athletic Club and one along Beaver Dam Road approximately 175-feet east of Atwater Avenue. Both driveways are located at the existing driveway locations for the earth removal operation. Atwater Avenue provides the only public inlet/outlet location to the greater transportation network and therefore all traffic generated by the site will access/egress along the 2,000-foot Atwater Avenue to its terminus at its intersection with School Street, approximately 1,250 feet north of the Route 128 SB Ramps for Interchange 50.

Site Trip Generation

TEC, Inc. (TEC) estimated the site-generated traffic based on industry standard trip rates published in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11th Edition* for Land Use Code (LUC) 760 – Research and Development Center. This land use does not provide specific information regarding the break-out of trips to/from the site other than automobile / vehicle trips. Additionally, the most comparable land use within the publication for trip type is LUC 710 – General Office Building, which similarly has little to no data regarding the break-out of trips to/from the site other than automobile / vehicle trips (e.g. Person Trips).

There is substantially limited non-vehicle infrastructure connectivity in the vicinity of the site. In addition, there is no significant amount of potential origins / destination for trips to/from the site as conservation land and the Sawmill Brook resource area limits opportunities for other development. It is assumed for the purposes of the TIAPS and site permitting that all site related traffic is projected as motor vehicle trips with very little exception. The Applicant recognized that very minimal traffic to/from the site will be generated as pedestrian, bicycle, and/or public transportation (MBTA Commuter Rail) traffic, based on the project's location. The Applicant is however providing Transportation Demand Management (TDM) measures noted in the subsequent section to encourage the use of non-motor vehicle transportation options.

Other than these mode share options, carpooling generally represents 7.9% of personal vehicle travel as a means of transportation to work in Essex County, Massachusetts² (specific Manchester-by-the-Sea workplace values unobtainable for this variable). Other US Census parameters for walking, bicycling, and public transportation are not valid for this development based on the project's location to the required infrastructure.

² Based on US Census Bureau – 2022 American Community Survey (ACS) data for Means of Transportation to Work by Vehicle available, Essex County, Massachusetts

Table 1 provides a summary of the resulting person trip generation estimate under the Full Build-Out condition with the assumption that the only measurable trips, in the absence of real-time data following occupancy, are related to the vehicle driver and carpool passenger trips.

Table 1 –Trip Generation Summary for Full Build-Out

Time Period	Vehicle Driver Trips ³	Carpool Passenger Trips	Total Person Trips
<i>Weekday Daily</i>			
IN	1,400	111	1,511
OUT	<u>1,400</u>	<u>111</u>	<u>1,511</u>
TOTAL	2,800	222	3,022
<i>Weekday Morning</i>			
IN	212	17	229
OUT	<u>47</u>	<u>4</u>	<u>51</u>
TOTAL	259	21	280
<i>Weekday Evening</i>			
IN	39	3	42
OUT	<u>207</u>	<u>16</u>	<u>223</u>
TOTAL	246	19	265

For the full build-out and as shown in Table 1, the proposed development is anticipated to generate 3,022 new person trips during the average weekday, with 280 new vehicle trips (229 entering and 51 exiting) during the weekday morning peak hour and 265 new vehicle trips (42 entering and 223 exiting) during the weekday evening peak hour.

Transportation Demand Management (TDM) Measures

The Applicant has a commitment to research and provide a dynamic TDM program in order to reduce single-occupancy vehicles (SOV) trips to/from the site. At this time, the Applicant is committed to provide the following TDM measures:

Membership in the North Shore Transportation Management Association

- The North Shore Transportation Management Association (TMA) currently does not operate within Manchester-by-the-Sea; however, the adjacent community of Beverly does participate. In addition, the Applicant (Cell Signaling Technologies) is a participating member in the North Shore TMA for its Danvers and Beverly locations. The Applicant will continue to work with North Shore TMA to export its services to the new Manchester-by-the-Sea location as part of the project.

Parking Measures

- Preferential Parking - Provide preferential parking for rideshare, carpool, and hybrid vehicles at locations throughout the site’s parking areas in close proximity

³ Equivalent to Vehicle Trip Generation as reported in TIAPS – Table 6

to major entranceways. The designated spaces will be monitored to ensure that the license plates of those employees parking in the spots each day match the registrations of participants. Employees will only be allowed to use these spaces on the days that they are carpooling. Information about these services will be posted in a central location or otherwise made available to employees.

- Electric Vehicle Stations – Provide electric vehicle (EV) charging stations at locations throughout the site's parking areas in close proximity to the building entrances.

Reduced Parking Supply – The Applicant is committed to reducing the parking supply by providing minimal number of parking spaces below Town of Manchester-by-the-Sea Zoning requirements to a level of the demand need only. The current parking layout provides a parking supply that is both below Town of Manchester-by-the-Sea Zoning and comparable to ITE parking demand estimates.

Bicycle and Pedestrian Measures

- Pedestrian Signal Equipment – Install new pedestrian signal equipment at the intersection of School Street / Route 128 NB Ramps / Mill Street as part of a modification to traffic control as specified in this TIAPS if constructed within Phase 2 at the direction of the Massachusetts Department of Transportation (MassDOT).
- On-Site Pedestrian Accommodations – Sidewalk and accessible curb ramps will be provided on-site providing connection to various site structures and components.
- Bicycle Accommodations - Provide striping improvements for buffered bicycle lanes along School Street with complementary bike signs.
- Bicycle Racks - Provide secure, weather protected, long-term bicycle parking for employees at designated locations within the proposed parking structure.
- Employee Shower Facilities - Coordinate with tenants to provide showers for employees who commute by walking or biking.
- Walking Trails – The site will include trailhead connection locations for several walking trails as part of the 146-acre Monoliths recreation area as part of the Trustees of Reservations. Surface parking for these trailheads will be provided on-site.

Public Transportation Measures

- Maps / Schedules - Public transportation schedules with transit maps for the MBTA Commuter Rail, as well as for all nearby routes will be provided to each employee on their start date. Schedules and maps will also be provided in the lobby and lunchroom in each on-site building.
- Transit and Rideshare Subsidies - The Proponent commits to no less than a 25% subsidy for employee Commuter Rail passes and rideshare fees between the Manchester Massachusetts Bay Transportation Authority (MBTA) Station and the project site.

Other Measures

- Employee Transportation Coordinator (ETC) – An Employee Transportation Coordinator (ETC) will be provided on-site to oversee, implement, monitor, and evaluate TDM measures, employed or funded by the Applicant. The ETC will be responsible for managing rideshare and carpool programs, as well as distributing information to employees to encourage alternative means of transportation. The ETC will be responsible for posting and distributing announcements, holding promotional events to encourage rideshare, bicycling, and walking.
- Marketing of Transportation Options and Benefits - A welcome packet for all employees will be distributed which includes information for all transportation related benefits, promotions, and local transportation options; including location of MBTA stops, transit schedules, EV and carpool parking locations, and any other emerging new mobility locations.
- Rideshare - The ETC, in consultation with the North Shore TMA, will develop an employee rideshare program to encourage employees to seek alternatives to driving to work alone.
- Vanpool and Carpool – The Applicant, and the ETC, will encourage vanpooling participation through marketing, events, and vanpool formation meetings. The ETC will implement a ride-matching program to assist employees in finding appropriate carpool matches. The ETC will contact employees to determine if they receive their match-lists, review the lists with them and see if they have contacted anyone on the list or would like assistance in contacting people.
- Guaranteed Ride Home Program – The ETC will be responsible for providing all employees who carpool, bicycle, or walk to work with an emergency ride home. This program eliminates the fear of being stranded on days that the employees are ridesharing or having to walk or bicycle in inclement weather conditions.
- Flex Hours - Provide flexible hours to employees.
- Direct Deposit for Employees - Encourage employees to adopt direct deposit to reduce employee trips to/from the site.
- Promotional Events and Activities – The ETC will be responsible for organizing promotional events and activities to encourage rideshare and alternative transportation means. In addition, the ETC will distribute brochures to all new employees and post posters and bulletins on various subjects from carpooling to the Guaranteed Ride Home program throughout the site.
- Transportation Monitoring Program – The Applicant is committed to implement a TMP, which is intended to monitor traffic operations and parking occupancy throughout the construction and for a period following completion of the Project. The scope of the TMP will be developed in coordination with MassDOT, and will include providing traffic and speed counts, TDM compliance, and parking information to the MassDOT District 4 office and the Town of Manchester-by-the-Sea.

Transportation Monitoring Program

The Applicant is committed to implementing a TMP, which is intended to monitor traffic operations, parking occupancy, public transportation utilization, and pedestrian / bicycle use for a period following completion of the Project. The TMP will include providing traffic count information to the MassDOT District 4 office and the Town of Manchester-by-the-Sea for use of tracking site-generated trips. The intent of the monitoring program is to ensure that the Project impacts are consistent with those predicted in the Project's permitting process, evaluate the effectiveness of the TDM measures in meeting the mode share targets, and assess the need for additional off-site improvements or TDM measures.

The MassDOT / Manchester-by-the-Sea monitoring program will include evaluation of the following:

- Traffic operations at the intersections of:
 - School Street / Atwater Avenue
 - School Street / Route 128 SB Ramps
 - School Street / Route 128 NB Ramps / Mill Street
 - School Street / Pleasant Street
 - School Street Lincoln Street
- Adequacy of the constructed parking supply.
- Safety evaluations based on available crash data, and
- Effectiveness of TDM measures

As part of the monitoring program, the Applicant will complete the following tasks annually for five years following occupancy of the proposed mixed-use development:

- Collect manual Turning Movement Counts (TMCs) during the weekday morning (7:00 AM to 9:00 AM) and weekday evening (4:00 to 6:00 PM), peak periods at the following intersections.
- Traffic operations at the intersections of:
 - School Street / Atwater Avenue
 - School Street / Route 128 SB Ramps
 - School Street / Route 128 NB Ramps / Mill Street
 - School Street / Pleasant Street
 - School Street / Lincoln Street
- Collect ATR data for a continuous 7-day week-long period along Atwater Avenue, School Street, and at the end of each site driveway.
- Collect parking demand counts for the specific land use from 5:00 AM to 9:00 PM.

- Collect motor vehicle crash reports from the Town of Manchester-by-the-Sea Police Department for the most recent one-year period to ascertain changes in crash frequency, crash trends, and severity at the monitored locations.
- Complete an employee travel survey to gauge employee travel patterns and mode share. This includes transit ridership for those who utilize the MBTA Commuter Rail. This will be administered by the ETC.
- Compare the TMCs collected above with those projected within the TIAPS for the Project to determine whether the total vehicles entering each intersection exceeds the volumes projected.
- Perform a capacity and queuing analysis using Synchro analysis software to evaluate the traffic operations at each of the intersections listed above and compare to the operations projected in the TIAPS prepared for the Project.
- Assess whether additional mitigation is necessary at any of the study intersections and identify measures to improve operations and/or reduce vehicular traffic volumes. The need or evaluation for further mitigation will be conditioned upon:
 - The measured site generated traffic volumes for the Project exceed the projected site generated traffic volumes established in this TIAPS, or subsequent revisions as presented to the Town of Manchester-by-the-Sea, by more than 10 percent (i.e., 110 percent of the projected site generated traffic volumes).
 - There is a pronounced increase in the frequency of occurrence of motor vehicle crashes at a monitored location and the calculated motor vehicle crash rate exceeds the MassDOT average crash rate for similar locations.

Corrective actions to reduce the unmitigated impact of the Project should be proposed and implemented based on the thresholds listed above. The corrective actions should be documented in the TMP, approved and coordinated with the Town and/or MassDOT if desired by the agencies, and be undertaken by the Applicant subject to receipt of all necessary rights, permits, and approvals.

- Assess whether the constructed parking supply is adequate for the parking demand as observed.
- Prepare a memorandum summarizing the results of the TMCs, ATRs, parking demand counts, traffic impact analysis for submission to MassDOT District 4 and the Town of Manchester-by-the-Sea.

The monitoring program will occur on an annual basis beginning six months after issuance of the first occupancy permit and continuing for five years following full occupancy of the project. The monitoring program may be suspended at any time upon agreement with MassDOT and the Town of Manchester-by-the-Sea that the Project has sufficiently provided evidence that the upper limits of vehicle delay and trip projection would not be feasibly satisfied. The annual nature of the monitoring program may be postponed in consultation with the Town and MassDOT based on lack of need circumstances if no new development has occurred during full build-out. The monitoring program may also be suspended if five years have passed since the issuance of an occupancy permit for the project and will recommence should an additional occupancy permit be issued.

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Please do not hesitate to contact me directly if you have any questions concerning the Applicant's *Traffic Management Component* at 978-794-1792. Thank you for your consideration.

Sincerely,
TEC, Inc.
"The **E**ngineering **C**orporation"

A handwritten signature in blue ink that reads "Samuel W. Gregorio". The signature is written in a cursive style and is enclosed within a large, blue, oval-shaped scribble.

Samuel W. Gregorio, PE, PTOE, RSP₁
Senior Design Engineer – Transportation Planning & ITS