

December 12, 2016

Dracut Planning Board  
62 Arlington Street  
Dracut, MA 01826

Attn: Ms. Elizabeth Ware, Director of Community Development

Subject: Transportation Peer Review Comments – Applicant’s Responses  
Murphy’s Farm Residential Development  
Dracut, MA

Dear Betsy:

MDM Transportation Consultants, Inc. (MDM) is pleased to provide you with the following supplemental transportation review comments for the above-referenced project. These supplemental comments address correspondence by VAI dated November 14, 2016, public comments at the October 26, 2016 Planning Board hearing and revised/updated Site Layout plans prepared by Andover Consultants, Inc. as noted below.

In summary, MDM finds that Applicant’s responses to our initial review adequately address remaining cited issues that include intersection sight triangles, recommended advance warning signs and Site circulation. Upon further review of existing travel patterns on area roadways, MDM also confirms its opinion that the subdivision roadways are not likely to encourage or facilitate extensive cut-through (a stated concern of residents of adjoining neighborhoods). MDM further notes that the Applicant is willing to implement certain traffic-calming devices within the subdivision roadways that would serve to control travel speeds and discourage through traffic on localized streets, with specific design features that are subject to endorsement of the Fire Department.

### **Documents Reviewed**

MDM has reviewed the following documents in its consideration of remaining traffic concerns for the proposed residential development:

- *Response to Transportation Review Comments, Murphy’s Farm Open Space Development, Dracut, Massachusetts, prepared by Vanasse & Associates, dated November 14, 2016.*

- *Preliminary Subdivision Plan, Open Space Development Murphy's Farm, Dracut, Massachusetts, prepared by Andover Consultants Inc., dated June 22, 2016.*
- *Preliminary Subdivision Plan, Open Space Development Murphy's Farm, Dracut, Massachusetts (Gated Cul-De-Sac Option) prepared by Andover Consultants Inc., dated October 31, 2016.*
- *Preliminary Subdivision Plan, Open Space Development Murphy's Farm, Dracut, Massachusetts (Speed Table Option), prepared by Andover Consultants Inc., dated November 14, 2016.*
- Fire Department correspondence of November 7, 2016 responding to proposed gated cul-de-sac design option.

#### **VAI Response Memorandum**

Applicant's transportation consultant VAI provides responses to several identified recommendations cited in the MDM review letter of October 25, 2016 as follows:

**Issue No. 10, Site Access:** Access to the Site is provided via two existing intersections along Wheeler Road at Wilshire Circle and one existing intersection along Wheeler Street at Rinzee Road. MDM has identified recommended actions to ensure that intersection sight line sight line criteria are met including clearing of vegetation and trimming of branches on trees to a height of 7-feet above ground level. MDM also recommends installation of advance warning signs and accompanying speed advisory sign on Wheeler Road.

VAI has provided sight line exhibits that confirm applicable minimum stopping sight line criteria are met at study locations, further acknowledges Applicant's commitment to trimming/removal of vegetation within intersection sight triangles in accordance with the Dracut By Laws Chapter 8, Section 2 and to placement of recommended "Intersection Ahead" and 35 mph speed advisory plaque in accordance with MUTCD along Wheeler Road.

*MDM concurs with the Applicant's commitments above, acknowledging that implementation thereof is subject to receipt of all necessary rights, permits and approvals of the Town of Dracut and Town of Methuen as relates to sign placements within roadway under Methuen jurisdiction. No further response required.*

**MDM**

**Issue No. 11, Site Circulation:** MDM requested that Applicant confirm that the Site Layout Plan provides sufficient maneuvering area to accommodate the Town's largest responding fire apparatus (ladder truck) and service vehicles (SU-30 type design vehicles or equivalent) by conducting AutoTurn® vehicle turn analysis/exhibits.

*VAI has produced requested AutoTurn® exhibits that confirm ample maneuvering area is available to accommodate the Town's emergency response apparatus and service vehicles. No further response required.*

### Subdivision Plan Alternatives

Two alternative subdivision plans were advanced by the Applicant that (a) preclude through access between Wheeler Road and Wheeler Street (i.e., "cut-through" traffic), referred to as the "Gated Cul-De-Sac option", and (b) aim to reduce travel speeds and discourage (but not prohibit) through traffic between Wheeler Road and Wheeler Street, referred to as the "Speed Table option". Comments on each of these alternative plans is as follows:

- **Gated Cul-De-Sac Option.** The Fire Department expresses concern that adoption of this alternative plan, which requires active management/maintenance of a locked gate system, will effectively complicate public safety response to area residents. The Department also acknowledges that such a design would worsen currently non-compliant roadways based on extensive cul-de-sac length.

*MDM understands that prior approvals for Elizabeth Drive and Poppy Lane were approved and built in the late 1980's as part of the Rolling Meadows subdivision and Asadoorian Heights subdivision with provision of "temporary cul-de-sacs", anticipating the possibility of a future roadway connecting these roadways to comply with local By Law requirements. As safety response is a first priority consistent with the intent of the Town By Law regarding cul-de-sac roadways and NFPA guidance documents, MDM concurs with the Fire Department concerns. Unlike similar application of a locked gate system serving a single subdivision, use of a Knox Box or equivalent gate system connecting two public roadways is not customary or recommended and would stand to materially impede emergency response capability to multiple residential neighborhoods. Such a system would also require undue attention by the Town DPW and others to ensure unimpeded access throughout the year including snow removal/potential snow banking near the gate and potential for prohibited parking activity in the cul-de-sac areas.*

MDM

- **Speed Table Option.** This alternative includes raised tables at several locations within the subdivision roadways that would serve to reduce travel speeds while also discouraging the use of subdivision roadways for general through traffic. Unlike the gated option, general through traffic is not prohibited but these raised design features provide a level of inconvenience to motorists that often reduces the likelihood of use by the general travelling public.

*This plan option should be vetted with the Fire Department and DPW as the use of raised tables requires use of additional roadway drainage structures to avoid ponding, must be designed to ensure proper undercarriage clearance for emergency apparatus and have the potential to impede response times unless modified to incorporate wheel tracking features (to include wheel cutouts, aka "Speed Cushions") for emergency vehicles. Consideration should also be given to winter snow operations as these features often require manual snow removal to ensure proper drainage and wheel cutouts (if so equipped). If such features are deemed appropriate by the Town (with DPW and Fire Department input), consideration should be given to a trial period using temporary "speed cushions" to determine their effectiveness. More information on the use of speed tables/speed cushions and their implementation can be found in the National Association of City Transportation Officials Urban Street Design Guide.*

*Alternatively, MDM notes that traffic calming may also be achieved in lieu of speed humps by retention of the existing circular cul-de-sac elements which would function as "roundabouts" that reduce the efficiency of through travel (and associated speeds) while also accommodating the Town's fire apparatus without unduly compromising response times.*

### **Neighborhood Cut Through**

Resident neighbors have expressed a concern that the proposed Subdivision Plan will result in undue cut-through traffic between Wheeler Street and Wheeler Road. In response, the Applicant has advanced the two alternative plans described above to either preclude the through traffic (gated cul-de-sac) or the discourage it (speed tables).

*It is the opinion of MDM that there is not likely to be substantial "cut-through" between Wheeler Road and Wheeler Street given the modest volume of these roadways and the relatively low travel time benefit that the subdivision roadway affords for this purpose. While*

**MDM**

*some motorists may opt to use the subdivision roadway connection for travel between these streets, the design ensures that the path is not direct, may (at the Towns election) include some traffic calming features and there are no land use destinations along either roadway that would justify its use as a substantial cut through route. Existing trip activity on Wheeler Road and Wheeler Street is only 30 to 40 trips per direction on each roadway during peak hours and lower during off-peak hours. The subdivision roadway implements the original intent of the Rolling Meadows subdivision and Asadoorian Heights subdivision approvals under which approved (temporary) cul-de-sacs would be eliminated to comply with By Law requirements and consistent with best practices provides the improved ability for municipal vehicles and emergency vehicles to serve area residences more directly from multiple access points.*

MDM appreciates the opportunity to provide Transportation Planning & Engineering Services to the Town of Dracut. If you have any questions or concerns, please feel free to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Michaud". The signature is fluid and cursive, with a large, stylized initial "R" and "M".

Robert J. Michaud, P.E.  
Managing Principal

MDM