



August 5, 2021

Mr. Charles Comeau, Chair
Town of Avon Planning Board
65 East Main Street
Avon, MA 02322

Subject: Special Permit & Site Plan Review
Waste Management Recycling Facility – Building Expansion
20 Ledin Avenue, Avon, MA 02322
CEC Project Number 311-399

Dear Mr. Comeau and Members of the Planning Board,

On behalf of the Waste Management (the “Applicant”) for the proposed Waste Management Recycling Facility-Building Expansion located in the Town of Avon, Massachusetts, Civil & Environmental Consultants, Inc. (“CEC”) has prepared this memorandum in response to the following materials provided by the Town of Avon Conservation Commission:

- Comments provided via email from the Jacobs Driscoll Engineering (JDE), dated June 23, 2021.

Comments are summarized below in italics, followed by CEC’s response in **bold**. Supporting materials and revised Site Plans incorporating revisions in response to the provided comments are provided as an appendix to this memorandum.

ARTICLE VII SPECIAL PERMITS

- 1. § 255-7.3 C. Methods for drainage of water (see comments presented under § 255-12.2.D.(4)(c): Drawing C300: Please adjust the grading and catch basin CB-4 rim elevation have the runoff directed to the catch basin.*

Response: CEC has maintained the rim elevation of CB-4 but has adjusted the spot shot on the southwest most corner of the proposed retaining wall to maintain a 1% minimum slope on the pavement.

2. § 255-7.3 D. & § 255-8.6 Drawing C200: Off-street parking: Zoning Variance requested to reduce parking to 29 spaces.

Response: CEC reviewed the project with the Zoning Enforcement Officer, and requested and obtained the relief required from the Zoning Board of Appeals.

3. § 255-7.3 F. Drawing C000: Lighting plan was not included. Please submit for compliance review.

Response: A Lighting Plan has been included in the set of drawings. Please see the revised Site Plans included in Appendix B.

ARTICLE VIII OFF-STREET PARKING

4. § 255-8.5. Location of Parking Spaces: Drawing C200: Parking spaces are to be located on the lot they serve. Seven (7) proposed parking spaces are located partially over the property line to 12 Ledin Ave. Is there an existing or proposed easement for the encroachment?

Response: Under existing conditions, there are eight parking spaces, which are located partially over the property line to 12 Ledin Avenue. There is an existing easement in which the easement area shall be used for repairing, maintaining and replacing an existing retaining wall, and for parking of motor vehicles on existing paved areas. The easement is recorded at Norfolk County Registry of Deeds book 33095 page 147.

5. § 255-8.9. G Drawing C200: Existing site has parking in the front yard area. A finding from the Board of Appeals was requested.

Response: CEC reviewed the project with the Zoning Enforcement Officer, and requested and obtained the relief required from the Zoning Board of Appeals.

6. § 255-8.9. L Drawing C200: Existing site has parking within 5 feet of the street line.

Response: CEC reviewed the project with the Zoning Enforcement Officer, and requested and obtained the relief required from the Zoning Board of Appeals.

ARTICLE X SIGNS

7. *§ 255-10.3. Industrial District Signs: Drawing C200: The plan makes no representations of existing/proposed signs. Reminder: all signs must conform with the latest Zoning requirements.*

Response: No additional signage is proposed at this time.

ARTICLE XII ADMINISTRATION AND ENFORCEMENT

§ 255-12.2. Permits; site plans

8. *§ 255-12.2.D.(3)(b) Existing Conditions Plan: Provide soils types (from NRCS) and show existing septic system leaching system with approved reserve area.*

Response: The septic system was initially designed and installed in 1974 and prior to Title V; therefore, a reserve area was not required. In 2003, a repair of the septic system was completed and, in accordance with the regulations, a reserve area was not shown on the design or as built drawings as it is not required for repairs.

The majority of the Site is located within Urban Land with a small portion of the Site located within Canton Fine Sandy Loam. Canton Fine Sandy Loam has a HSG classification of type B soils. Accordingly, the soil types were modeled as hydrologic soil group (HSG) B. The NRCS Soil report is included in the original stormwater report. Geotechnical investigations completed previously show Sandy Loam consistently throughout the site. Urban Land soils do not have a HSG rating and therefore type B soils were also used in an attempt to be conservative with a Rawls rate of 1.02 in/hr.

9. *§ 255-12.2.D.(3)(d)[1][i] Sheet C300: Provide a drainage calculation summary note indicating zero increase in runoff for a twenty-five year storm.*

Response: A summary note has been added to Sheet C300, which indicates there will be zero-increase in runoff for a twenty-five year storm.

10. § 255-12.2.D.(3)(d)[1][j] Sheet C200: Please address trees to be retained and specific new plantings in addition to the grassed areas. (See comments under § 255-12.2.D.(4)(h)).

Response: There will be a new dogwood tree planted along the front of the site intended to provide improved landscaping along the industrial roadway. Individual trees to remain will be delineated in the field to the maximum extent practical.

11. § 255-12.2.D.(3)(d)[1][k] Sheet C100: Please expand the sediment and erosion control measures. Shift the stabilized Construction Entrance toward the driveway entrance and provide a means of limiting sediment transport onto the street. Label all features and include in the Legend. Since this plan is for site demolition, preparation for construction needs to be included by showing sediment and erosion control features to be installed prior to new construction activities. Show the proposed protection of the wetlands. A supplemental erosion and sediment control plan should be provided showing control features for the new construction, including concrete washout areas and groundwater dewatering discharge areas with sediment control. Show proposed locations of perimeter erosion controls on the plans.

Response: The stabilized construction entrance has been shifted to be located at the property line by the driveway. Groundwater dewatering is not anticipated as test pits have consistently shown the seasonal high groundwater table to be approximately 7 feet below existing grade. The limits of the proposed filter sock have been expanded to include all areas located down gradient of the proposed work. Silt sacks will be installed on the catch basins down gradient of 20 Ledin Ave.

12. § 255-12.2.D.(3)(d)[1][k] Stormwater Report Page 17: Please coordinate the content of the Construction Period Pollution Prevention and Sedimentation and Erosion Control Plan with the measures presented on Sheet C100 and supplemental sheets.

Response: CEC has revised Sheet C100 to reflect the content of the Construction Period Pollution Prevention and Sedimentation and Erosion Control Plan.

13. § 255-12.2.D.(3)(d)[1][l] Sheet C200: Show site appurtenances, such as lighting and signs.

Response: A lighting plan has been added as Sheet C600.

14. § 255-12.2.D.(3)(d)[1][m] Sheet C200: *There appears to be an encroachment onto the 12 Ledin Ave property. Please reference and show existing and proposed easements.*

Response: There is an existing easement on the 12 Ledin Avenue property for the benefit of the owner of 20 Ledin Avenue property, which allows for repairing, maintaining and replacing an existing retaining wall, and for parking of motor vehicles on existing paved areas. The easement is recorded at Norfolk County Registry of Deeds book 33095 page 147. A proposed easement for the maintenance of the stormwater runoff from the 40 Ledin Avenue Property will follow the drainage infrastructure and will be recorded at the Registry of Deeds following the purchase of the 20 Ledin Avenue property.

15. *General Comment, Stormwater Report, Sheet C300: At a minimum a stormwater easement should be granted from this property, 20 Ledin Ave. to the abutting property, 40 Ledin Ave. for the purposes of the stormwater that flows from the #40 property onto the #20 property. Then the rights for the stormwater to flow from #40 to #20 will be protected should either of the properties be sold to a third party in the future.*

Response: See Response to Comment 15 above.

16. § 255-12.2.D.(4)(c) Adequacy for controlling runoff up to twenty-five year storm:

A. Stormwater Report Page 3: The Report indicates that the proposed improvements are “designed in accordance with MassDEP Stormwater Management Standards for redevelopment.” However, the project is not all redevelopment. Chapter 3 clearly states, “*Components of redevelopment projects that include development of previously undeveloped sites do not meet this definition. The portion of the project located in a previously developed area must meet Standard 7, but project components within undeveloped areas must meet all the Standards.*” Please address the requirements for the undeveloped rear portion that will be mostly converted to impervious surfaces.

Response: Although the stormwater management report states the design has been prepared in accordance with MassDEP redevelopment standards, the new pavement areas in the rear of the property have been designed to comply with the new development standards. The 10 stormwater control standards have been addressed in Section 4 of the stormwater report and supporting materials are provided in the appendices identifying how the project meets each one of these standards.

- B. *Stormwater Report Page 4: Please clarify the narrative. It is unclear as to the drainage areas being proposed for treatment by the infiltration facility and what areas are to bypass this facility. (See comments presented on the Drainage Area Map HYD-PR).*

Response: The stormwater runoff from the proposed building roof expansion will be routed to the stormwater infiltration chambers through a roof drain system. The stormwater runoff from the adjacent 40 Ledin Avenue Property will be collected through a trench drain (TD-1) and a grassed swale and deep sump catch basin that will be routed through Water Quality Unit (WQU-3) to OCS-5 downstream of the infiltration chambers, conveying the runoff to the municipal system in Ledin Avenue.

- C. Stormwater Report Page 5; Sheet C300; Sheet C801: The use of a StormTech MC-3500 chamber Isolator Row is presented as part of the pretreatment process prior to infiltration. The proposed system needs to have the collected runoff (isolated roof runoff can bypass) directed to a manhole with a water quality flow diversion weir per the detail on Sheet C801. Please address the following:

- 1) *Provide a detail for the manhole with the water quality flow diversion weir.*

Response: Refer to the outlet control structure detail on Sheet C801. Additional information has been provided to clarify the configuration of this structure.

- 2) *Clarify which row is the Isolator Row (hatched row?)*

Response: The plans have been revised to identify the isolator row identified with the angular hatch on the Site Plans.

- 3) *Show and label the Water Quality Diversion Manhole.*

Response: The water quality volume and flow will be routed through the infiltration chambers and a diversion manhole is not required. See Sheet C300 & C801 for additional detail.

- 4) *The drainage pipes from WQU-3 and WQU-5 should connect to the Water Quality Diversion Manhole.*

Response: CEC and JDE discussed the proposed layout of the drainage system and clarified the flow that bypasses the infiltration chambers and the flow that will be

routed through the infiltration chambers. See Sheet C300 & C801 for additional detail.

5) *Adjust the Legend to have the symbols for the Catch Basin and Drainage Manhole on the correct line.*

Response: The legend has been adjusted accordingly and the symbols match the text in the legend.

6) *The pipe header from the chamber rows to the Outlet Control Structure does not connect to the Isolator Row.*

Response: The header system has been revised so that the flow enters the isolator row from the drain basin at the bottom of the chambers. The header pipe that connects to the drain basin and the remainder of the chambers will enter at the top of the chambers. This will allow the first flush to go through the isolator row. Similarly, the roof drain will enter the top of the chambers and into the isolator row even though this is considered “clean runoff”.

7) *Provide a detail for the roof drain piping system connection to the outlet pipe header (consider connecting to the chamber row adjacent to the Isolator Row and not to the outlet header system).*

Response: The roof drain piping will be attached to the isolator row and a detail has been provided on Sheet C802.

D. *Stormwater Report Page 8 and HydroCAD Drainage Analysis: Rainfall Depth: Use the latest NOAA Atlas-14 rainfall data for the Town of Avon: 2yr: 3.41", 10yr: 5.22", 25 yr: 6.35", 100 yr: 8.10".*

Response: Although not required under the Town of Avon stormwater regulations or MassDEP stormwater management standards, CEC has revised the hydrologic calculations to reflect NOAA Atlas-14 rainfall intensities listed above and provided a significant amount of additional stormwater detention to meet the requested rainfall intensity.

- E. *Drainage Area Maps HYD-Ex and HYD-PR: Please define the segments for the Time of Concentration flow lines with associated descriptions, slopes, etc. (to confirm the data used in the HydroCAD analysis).*

Response: Drainage area maps for HYD-EX and HYD-PR have been revised and descriptions, slopes, lengths and additional information can be found in the HydroCAD reports under each sub-catchment summary.

- F. *Drainage Area Map HYD-PR HydroCAD Model: The boundary for area 1B-PR needs to be adjusted by the contours to catch basin DCB-2. The proposed connecting driveway has a proposed catch basin (CB-1), which will take only a small portion of the driveway (the rest will bypass into area 1D-PR) and portion of area 1OFF-EX (area 1OFF-EX will need to be split into three areas: to CB-1, to area 1D-PR and the remaining to the swale/catch basin DCB-2).*

Response: A trench drain has been added along the access drive connecting the 40 Ledin Avenue and 20 Ledin Avenue properties in an effort to capture all of the stormwater runoff in this paved area from 40 Ledin Avenue property. Additionally the HYD-PR and HydroCAD model has been adjust to account for these areas.

- G. *Stormwater Report Page 12: Please update Table 3.3 based on the changes in rainfall depth.*

Response: Table 3.3 has been updated based on the changes in rainfall depth due to the NOAA Atlas 14 storms.

- H. *Stormwater Report Page 14: Standard 3: Please include a paragraph for the recharge requirement associated with the total impervious area on the property to show that recharge being provided will treat the entire property's requirements.*

Response: The recharge calculations have been revised. The net recharge required is 947 cubic feet (cf) which accounts for the net increase in impervious area of 32,478 square feet. Through the proposed subsurface infiltration chambers, the project provides 2,668 cf of recharge volume, which is significantly more than the requirement. Furthermore, this is greater than the requirement for the total impervious area for the overall Site, which includes 86,580 sf, requiring 2,525 cf of recharge.

- I. *Stormwater Report Page 15 and Checklist Page 6: Standard 6: Since this site is located within the Water Supply Protection District, Standard 6 will apply (discharges into the ground).*

Response: The stormwater checklist and stormwater report have been revised to account for the Site location within the Avon Reservoir surface watershed area, which is identified as an outstanding resource water. The development of the Site will comply fully with table CA 2: Standard 6 of the Massachusetts Stormwater Handbook. In accordance with the regulations, the Project provides the required 1-inch times the impervious area and more than 44% TSS is removed prior to discharge to the infiltration BMP. The backup calculations can be found in the attached stormwater report in appendix A. Additionally, off-site area from 40 Ledin Ave will be routed through BMP's that will help treat the currently untreated stormwater runoff from this Site.

- J. *Stormwater Report Page 15: Standard 7: Please revise page 3 to match this page.*

Response: Although the project is mix of redevelopment and new development as defined by MassDEP, this project complies entirely with the development criteria and page 3 have been reworded to indicate that the proposed improvements have been designed in accordance with the MassDEP Stormwater Management Standards for new development.

- K. *Stormwater Report Page 15: Standard 10: Please include the illicit discharge statement signed by the property owner.*

Response: The illicit discharge statement has been included in the revised stormwater report. The statement will be signed by the owner following the completion of the construction.

- L. *Stormwater Report Checklist Page 5 and Sheet C801: Please check the box indicating that the infiltration BMP is being used to attenuate peak flows and that the separation to groundwater is less than 4 feet (only 2 feet shown on plan). Provide a mounding calculation. Also provide documentation that the infiltration BMP will not adversely impact the adjacent wetland.*

Response: The stormwater report checklist has been revised and the appropriate section of the checklist has been checked. Please see attached mounding analysis in

the revised stormwater report demonstrating that the mound will not negatively impact the performance of the infiltration system.

M. Stormwater Report Soil Data and Sheet C300 and Sheet C801: The soil testing previously performed for the system is not located in the proposed location of the infiltration system. The closest test is BSC-5 which showed refusal and groundwater at 82" below the ground surface (based on the new topography, this would be elevation 234.2; however, the table on Sheet C801 lists groundwater at 233.5). The current site, in the area of the proposed infiltration system varies from elevation 241 to elevation 230 and therefore, the testing data presented for BSC-5 does not provide an accurate representation of the infiltration area. Please perform soil testing in the area (MA soil evaluator) and coordinate with the Planning Board to have the testing observed by a representative of the Board.

Response: Additional test pits were completed and are shown on Sheet C300. The results of these test pits can be found in the test pit logs provided in the revised stormwater report. These test pits show the groundwater table is greater than 2 feet below the bottom of the stone for the infiltration chambers.

N. Stormwater Report HydroCAD Model post development: Update the model based on the drainage area adjustments and the resolution of what drainage areas are contributing to the infiltration facility.

Response: The HydroCAD model has been updated as well as the drainage exhibits to represent the drainage areas that will be routed to each infiltration facility.

O. Stormwater Report HydroCAD Model Pond 5P and Sheet C801:

1) At elevation 235.5 (bottom of stone) there is no storage available.

Response: CEC and JDE discussed the comment on 8/3/2021 and clarified the stage storage calculations included in the HydroCAD. No revisions required.

2) At elevation 236.25 (bottom of chambers) the storage would be the stone footprint area times the depth time the 40% void ratio.

Response: CEC and JDE discussed the comment on 8/3/2021 and clarified the stage storage calculations included in the HydroCAD. No revisions required.

- 3) *The ADS chamber system starts at elevation 236.25 and has a height of 3.75 ft (45"). This system is embedded in the stone in the same elevation range.*

Response: CEC and JDE discussed the comment on 8/3/2021 and clarified the stage storage calculations included in the HydroCAD. No revisions required.

- 4) *From elevation 240.00 to elevation 241.00, storage from the stone cap would be available.*

Response: CEC and JDE discussed the comment on 8/3/2021 and clarified the stage storage calculations included in the HydroCAD. No revisions required.

- 5) *The exfiltration rate will need to be confirmed by soil testing in the area of the system.*

Response: During an onsite geotechnical investigation, the underlying soil conditions were confirmed, and the previously identified Rawls rate for the soils was identified as appropriate based on the additional testing.

- 6) *Sheet C500 shows the invert to DMH-5 from the Outlet Control Structure OCS-4 at elevation 235.0 but the table for OCS-4 on Sheet C801 lists the elevation as 236.25 (item H). Please confirm the correct elevation.*

Response: The configuration has been revised and DMH-5 has been removed. The HydroCAD model, Sheet C801, and Sheet C500 have been revised and identify the appropriate elevations.

- 7) *The overflow weir is not located in the center of the manhole and therefore the length is less than 4 feet. Please adjust the length and dimension the detail on Sheet C801.*

Response: The detail has been revised and shows the proposed weir in the center of the manhole.

P. Stormwater Report – TSS Removal Calculations

- 1) *The 25% TSS removal rate for deep sump catch basins is for pretreatment and “only if off-line”. The catch basins presented are not off-line.*

Response: CEC and JDE discussed the comment on 8/3/2021 and clarified that the catch basins are off-line and no revisions are needed.

- 2) *The TSS Removal Rate for the Proprietary Water Quality Units is discussed in Massachusetts Stormwater Handbook Chapter 4 and for Stormceptor, in the Stormwater Fact Sheet #4 by the Massachusetts Strategic Envirotechnology Partnership (STEP). The STEP document clearly notes that the Stormceptor unit, when is to be used in combination with other BMP's to remove 80% TSS. Based on the Unit number and the impervious area within the drainage area, the TSS removal rate will vary. On the worksheets, please specify the Unit Number with the impervious area being treated and use the associated TSS removal rate (either 77% or 52%, not 80%).*

Response: The TSS removal worksheets have been revised and the pre-treatment included prior to infiltration has been modified to reflect a minimum of 50% TSS removal, despite documentation from the manufacturer that demonstrates that the structures provide 80% TSS removal per the MassDEP requirements.

- 3) *The subsurface infiltration structure does not have an 80% TSS removal rate. The 80% is provided when it is combined with one or more pretreatment BMP's prior to Infiltration.*

Response: The TSS removal worksheets have been revised and although pre-treatment is provided exceeding the requirements, the overall TSS removal has been limited at 80%, as requested.

- 4) *The TSS removal worksheets need to be revised to show the adjusted total TSS Removal of only 80%.*

Response: The TSS removal worksheets have been revised and although pre-treatment is provided exceeding the requirements, the overall TSS removal has been limited at 80%, as requested.

- Q. *Stormwater Report – TSS Removal Calculations: Please correct the Water Quality Volume Flow Rate Calculation pages to reflect the structure names, as presented on the plan (WQU-3 is the STC 2400 unit; WQU-5 is the STC900 unit).*

Response: The TSS Removal Calculations have been revised and include the name of the proprietary treatment facilities.

R. *Stormwater Report – Groundwater Recharge Calculations: Please confirm the drainage areas that are contributing to the infiltration system.*

Response: The drainage areas have been revised and reflect the areas that are contributing to the infiltration chambers.

S. *Stormwater Report – Groundwater Recharge Calculations: Please revise the Stage-Area-Storage sheet for Pond 5P based on the review comments.*

Response: The stage-area storage sheet for pond 5P has been updated due to the increase of two (2) additional rows of chambers. The HydroCAD stage storage summary has been included as an attachment.

T. *Stormwater Report – Groundwater Recharge Calculations: Please provide the Pond 5P hydrograph for the 1-year event to show compliance with the time to empty. (Note: in conjunction with the mounding study).*

Response: The proposed drawdown calculations have been included demonstrating that the system draws down the recharge volume within 72-hours.

17. § 255-12.2.D.(4)(h) Sheet C000: *Provide a landscaping plan to enhance the “aesthetic qualities” of the site.*

Response: Additional landscaping has been included as depicted on Sheet C200, including the addition of a dogwood tree along the frontage of the lot along the industrial roadway.

PLAN AND REPORT REVIEW:

18. *Sheet C200 and Stormwater Report Page 25: Please indicate the proposed snow stockpile areas on the plan.*

Response: Proposed snow stockpile locations have been added to the plans.

19. *Sheet C300, Sheet C500 and Sheet C801: Please provide the dimensions of the infiltration facility (stone footprint that is 12” beyond the edge of the chambers).*

Response: Dimensions of the infiltration facility have been added to the plans.

20. *Sheet C300: Provide a detailed plan and section for the construction of the infiltration system, including location of observation ports and specific notations on the removal limits of unsuitable soils (based on the testing to be performed) as well as the placement of backfill materials (the system is proposed to be constructed within a fill area).*

Response: Observation ports and a section of the proposed system have been added to the Plans.

21. *Sheet C300: Is there enough room to install the drainage structure and drainage pipe along the 12 Ledin Ave. property line without the work encroaching onto the 12 Ledin Ave. property? Is there a construction or other easement to allow the work?*

Response: The drainage improvements are proposed only on the 20 Ledin Ave site and the work is proposed to be contained within the 20 Ledin Ave property. Appropriate space is provided to allow for the proposed work.

22. *Sheet C800: Please provide a section showing the Redirock wall, reinforced zone, the infiltration facility and the impervious barrier to prevent the horizontal flow from the infiltration system through the wall instead of recharging.*

Response: A section has been added to the Redirock wall detail showing the infiltration system and the impervious barrier.

23. *Sheet C801: Please provide a construction detail showing the heavy-duty pavement above the infiltration chambers. Provide documentation from ADS that the chamber system is suitable in a paved area being used for large trucks.*

Response: A detail has been added to Sheet C800, which includes the pavement section on top of the chambers. The Stormtech systems are designed to provide support for H20 loading, which is sufficient for the proposed project.

Mr. Charles Comeau, Chair - Town of Avon Planning Board

CEC Project 311-399

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We hope that you find these responses helpful in your evaluation of the Site Plan Review Application before the Planning Board. Please feel free to contact the undersigned with any questions.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



Karlis P. Skulte, P.E.

Principal



Daniel Petrovic

Staff Consultant

Attachments: Appendix A – Revised Stormwater Report
Appendix B – Revised Site Plans (under separate cover)