

Ice Pond Drive Subdivision  
Response to Comments  
Stormwater Management Review:

The following are responses to comments provided by Woodard & Curran for their review of the Stormwater management design for the Ice Pond Drive subdivisions off of Ledgewood Drive.

*1)a)ii): The Stormwater Management Report Includes an Inspection and Maintenance Plan for the project. The Inspection and Maintenance Plan should include a section specific to inspection and maintenance of the proposed forested buffers and dripline filters, and these features should be included in the "Sample Inspection Report" worksheet that is appended to the Plan. Also, the plan should identify the inspection and reporting requirements outlined in Chapter 32 of the City of Portland Code of Ordinances.*

Response: Sections have been added to the Inspection and Maintenance Plan and Sample Inspection Report for the dripline filters and vegetated buffers. The post-construction Stormwater management plan inspection and maintenance requirements as outlined in Chapter 32 of the City's Zoning Ordinance has been added to the Inspection and Maintenance Plan.

*1)b)i)(1): No test pit or soil exploration information has been provided with the submittal. One test pit should be excavated in the area of each filter bed to identify the depth to groundwater and bedrock.*

Response: Test pit information is provided in Appendix C of the updated stormwater report. Please note that due to shallow ledge conditions, pond T2 has been shifted towards Ice Pond Drive where ledge is deeper. Based on groundwater elevations and depth to ledge, we have added liners to both ponds.

*1)b)i)(2): The area of the filter must be no less than the sum of 5% of the impervious area and 2% of the landscaped area draining to the filter. Filter T1 appears to have an insufficient filter area to meet this requirement.*

Response: Table T-1 has been adjusted to show that treatment credit is only being taken for the amount of impervious and landscaped area allowable for the given filter area based on the 5% impervious area and 2% landscaped area criteria. As shown on Table T-1, the overall impervious and developed area treatment requirements for the site are still being met.

Also, please note that because Filter T2 is oversized for the watershed draining to it for detention purposes, the filter media area has been reduced to an area equal to 5% of the impervious area and 2% of the landscaped area draining to the filter.

*1)b)i)(3): The Grassed Underdrained Soil Filter detail on C-302 should include a geotextile fabric between natural soils and constructed media.*

Response: Based on test pit information, a liner is now required for these filters. Because the liner is now proposed, we have not included a geotextile fabric.

*1)b)i)(4): The Applicant has proposed maintenance easements for the proposed soil filter systems. A copy of the easement language associated with the access and maintenance of these systems should be forwarded for review.*

Response: The maintenance easement language has been included with this submission.

*1)b)ii)(1): Use of buffers may be limited by location of suitable septic areas, building sites, roads, and driveways. Lots 3, 4, 5 and 11 appear to show a proposed location for a septic system leach field within the limits of the proposed buffers. The septic system leach fields must be located outside of the buffer areas.*

Response: As discussed in our meeting with Mr. Senus, the leach field locations on each lot have been carefully selected based on ledge and soil restrictions. We have adjusted the locations of the septic systems as much as possible so that the distribution system portions are out of the buffer. However, the shoulder and fill slope on the downgradient side of the leach field will encroach slightly into the buffer on some lots. The portions of the buffers that will be cleared for construction of the leach fields will be re-established as forested buffers following construction by spreading bark mulch on the ground and planting new trees.

*1)b)ii)(2): Areas designated as buffers must be protected from disturbance by deed restrictions and covenants. Deed restrictions and conservation easements for the proposed buffers should be forwarded for review. In addition, we recommend requiring that permanent posts or markers be set along the edge of each buffer to ensure that future homeowners are aware of the buffer locations. We also recommend that basic language associated with any restricted activities in these buffer areas be included as a note on the Subdivision Plan.*

Response: Deed restrictions and covenants will be created for all buffers and will be provided for review. Permanent markers will be installed to delineate the buffer areas. Language associated with restricted activities has been added to the Subdivision Plan.

*1)b)iii): Dripline Filters: To meet the requirements of the General Standards, the Applicant has proposed the use of Dripline Filters for the future house structures on Lots 7, 8 & 9. We recommend noting the requirement for Dripline Filters on these lots on the Subdivision Recording Plan and the Grading, Drainage, and Erosion Control Plan, and including a detail on the Site Detail Sheets with a note referencing the applicable house lots.*

Response: A general note requiring dripline filters for houses on lots 7, 8, and 9 has been added to sheets S-101 and C-201 and to the dripline filter detail. Similar leader notes have been added to sheet C-201 for each lot.

*1)c): Flooding Standard: The City of Portland requires conformance with the MaineDEP Chapter 500 Flooding Standard, which requires the applicant to evaluate pre-development and post development flow from the 2, 10 and 25 year., 24-hour storm events. The Applicant has included this information in the package, in addition to providing data on the 50 year storm event. It should be noted that the Town of Falmouth also requires an evaluation of the 100-year storm event, and therefore the Applicant may be asked by the Town of Falmouth to evaluate this storm event.*

Response: Evaluation of the 100-year storm is included with this submission and will be provided to the Town of Falmouth. The culvert passing under the Lot 2 driveway has been increased to a 36-inch diameter pipe to pass the flow from the 100-year storm. Flooding standards are met during the 100-year storm.

*1)c)i): It appears that the post-development HydroCAD model is approximately 20,000 SF smaller than the pre-development model. The area evaluated in the post-development condition should match the area evaluated in the pre-development condition.*

Response: The pre and post development hydroCAD models have been corrected so that the evaluated areas are equal in both conditions. The updated HydroCAD model is included with this submission.

*1)c)ii): The Applicant has demonstrated that flows from the post-development site for the 2-, 10-, and 25-year storm events do not exceed those in the pre-development condition at two out of the three study points, and are only fractionally higher at the 60" culvert crossing on Ledgewood Drive (Study Point API). The projected increase in flow at API is minor (0.1 CFS), and as such, the project would be considered in general conformance with the Flooding Standard; however, we request further review of the projected flow information once the post development area is adjusted to match the pre development area.*

Response: Following correction of the pre and post development evaluation areas, there is an increase of 0.2 cfs during each storm event at the analysis point in the post-development condition. However, this fractional increase is still considered negligible based on the size of the contributing watershed and the size of the receiving wetland. No impact on downgradient drainage systems are anticipated as a result of the proposed development.

*2) It appears the proposed project is adjacent to several natural resources (i.e., wetlands, stream). As noted, one on-site freshwater wetland will require a 75-foot setback. It appears that the septic system leach fields for lots 3 & 4 encroach into the 75-foot setback area. The Applicant has noted that MaineDEP NRPA Permit-by-Rule Applications will be filed for a proposed stream crossing, and for activity within 75-feet of wetlands on Lot #9 for the construction of a proposed underdrained soil filter. The Applicant should verify with MaineDEP that the septic system leach field locations are acceptable as proposed. Once filed, the permit notifications should be forwarded to the City for the project record.*

Response: Noted.

*3) On Sheet C-201, the Applicant proposes a 12" HDPE pipe with shallow cover (approx. 1.5') and two 45 degree bends between CB 1 and an outfall on the south side of the roadway. HDPE is not an acceptable pipe material within the City of Portland Right-of-Way (refer to Technical Manual Section 2.5.2 for a list of acceptable pipe materials; applies to all proposed underdrain/stormdrain pipe greater than 6" within ROW}. In addition, a manhole is required at any change in direction, and the amount of cover over the pipe should be increased to ensure the pipe is a least below the roadway subbase elevation.*

Response: Per request of the Town of Falmouth, an additional catch basin was added to the north side of Ice Pond Drive at station 1+20± to prevent runoff from entering Ledgewood Drive when plowed snow prevents water from flowing into the ditch. The drainage configuration has been modified such that CB#1 drains to CB#2, which then outlets to the ditch with a straight length of 12" solid wall SDR 35 PVC pipe. In order to achieve as much subgrade drainage as possible, a 6" underdrain from CB 1 extends along the curb line of Ice Pond Drive to station 0+67. As there is no practical outlet for the underdrain on the north side of the road, it turns to the south with two 45° bends and outlets to the ditch on the south side of the road. Installation of a structure at the underdrain is not proposed because the pipe is accessible at both ends and installation of a structure at that location is impractical based on the elevation of the underdrain. All pipe elevations have been adjusted to maintain at least 2 feet of cover. All proposed pipe materials are now SDR 35 PVC.

*4) Sheet C-201 should depict a more defined swale from the outlet of the storm drain pipe to underdrained soil filter T2.*

Response: The swale/berm from the outlet of the storm drain pipe to the underdrained soil filter has been

more defined by showing 1' contours. Please also reference the diversion berm detail.

*5) Sheet C-201 includes a call-out for an "interception swale" on the north side of Lot 8. It appears that this features is a berm, not a swale; please clarify.*

Response: For clarification, the "interception swale" has been renamed "diversion berm" on both the plan and detail.