

401 Water Quality Certification

For



THE HERMITAGE

Club

AT HAYSTACK MOUNTAIN

Prepared for:

Vermont Wetlands Division
Agency of Natural Resources

August 2015

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401 Application Appendix Table
Hermitage Club at Haystack Mountain
Wilmington & Dover, Vermont

| Appendix # | Document Title | Preparing agent | Date of Last Revision | # of Pages |
|------------------------------|--|--|------------------------------|-------------------|
| Appendix IA | 401 Cover Letter | Harrington Engineering Inc | 08/19/2015 | 1 page |
| Appendix IB | Wetland Delineation Data Tables | Arrowwood Environmental | 08/19/2015 | 11 pages |
| Appendix IC | Soil Map, K Factor and Hydrologic Soil Group | Harrington Engineering Inc | 06/25/2015 | 6 pages |
| Appendix ID | Appendix 1D- Phasing of Construction | Harrington Engineering Inc | 08/19/2015 | 1 pages |
| Appendix IE | 24x36 Plans | Harrington Engineering Inc & Arrowwood Environmental | 08/14/2015 | 36 pages |
| Appendix II | Appendix 2 401 | Arrowwood Environmental | 06/26/2015 | 3 pages |
| Appendix III | Appendix 3 401 | Arrowwood Environmental | 06/26/2015 | 3 pages |
| Appendix IV | Appendix 4 401 | Arrowwood Environmental | 06/26/2015 | 1 pages |
| Appendix V – 404 Application | 404 Hermitage Club AT Haystack Mountain | See below for more information | 08/19/2015 | 409 pages |

Appendix V
Hermitage Club – Haystack Mountain
Wilmington & Dover, Vermont

| No. | Date Admitted | By | Subject |
|-----|---------------|----------------|--|
| 1 | 8-5-2015 | HEI | Cover Letter – Dated: 8-5-2015 From Harrington Engineering, Inc. |
| 1a | 8-5-2015 | HEI | Additional Information Hermitage Club |
| 2 | 8-5-2015 | HEI | Application |
| 3 | 8-5-2015 | HEI | Abutters List |
| 4 | 8-5-2015 | HEI | Project Purpose, Avoidance, Minimization and Compensations 8-05-2015 |
| 5a | 7-15-2015 | Matthew Trokel | Letter from Matthew Trokel - 07-15-2015 |
| 5b | 6-23-2015 | Ben Joyce | Cold Brook Properties Map |
| 5c | 6-23-2015 | Ben Joyce | Brook bound EC Map 06-23-15 |
| 6 | 8-18-2015 | Arrowwood | Wetland Field Data Forms |
| 7 | 5-7-2014 | Arrowwood | Vernal Pool Protocol Haystack (5-7-14) |
| 8 | 9-22-2014 | Arrowwood | Wetland and Vernal Pool Inventory Report (9-22-14) |
| 9 | 10-12-2014 | Arrowwood | Haystack Fish Sample Memo (10-12-14) |
| 9a | 7-1-2015 | Arrowwood | Biomonitoring Site Visit Memo 07-01-15 |
| 9b | 7-2-2015 | Arrowwood | Hermitage WQ Locations Map 07-02-2015 |
| 10 | 5-8-2015 | Arrowwood | Stream Buffer Analysis (05-08-15) |
| 11 | 6-9-2015 | Arrowwood | RTE Plant Species Report (06-09-15) |
| 12 | 5-7-2015 | HEI | Stormwater Treatment & Detention Table |
| 12a | 8-14-2015 | - | Stormwater Correspondence 08-14-2015 |
| 13 | 12-5-2014 | VHB | NAA Analysis (12-5-2014) |

Appendix V
Hermitage Club – Haystack Mountain
Wilmington & Dover, Vermont

| No. | Date Admitted | By | Subject |
|-----|---------------|-------------------|---|
| 14 | 08-2014 | Hartgen | Archeological Resource Assessment-August 2014 |
| 15 | 10-16-2014 | Hartgen | Email from Hartgen re Sensitive Areas (10-16-14) |
| 15a | 8-7-2015 | Hartgen | High Country Homes IB EOF |
| 15b | 8-7-2015 | Hartgen | Siegel Pond IB EOF |
| 16 | 4-6-2015 | Conley Associates | Transportation Executive Summary (4-6-15) |
| 17 | 9-2014 | Conley Associates | Transportation Master Plan-9-2014 |
| 18 | 12-15-2014 | Conley Associates | Addendum to Traffic Study-prop roadway and TDM (12-15-14) |
| 19 | 8-19-2015 | HEI | Wetlands ACOE Plans |
| 19a | 7-13-2015 | TECHNICON | Withdrawal Plans |
| 20 | 7-20-2015 | Arrowwood | Ski Tunnel - Riparian Mgmt Plan 07-20-15 |
| 21 | 8-19-2015 | HEI/ Arrowwood | 401 Application |

HARRINGTON ENGINEERING, INC.

CIVIL•ENVIRONMENTAL•DEVELOPMENT•PERMITS

P.O. Box 248, North Pomfret, VT 05053

Phone (802) 457-3151 Email: HEINET@aol.com

Celebrating 33 Years

August 14, 2015

Vermont Department of Environmental Conservation

Attn.: Ms. Megan McIntyre

1 National Life Drive, Main 2

Montpelier VT 05620-3522

Re: The Hermitage Club – Haystack Mountain; Draft 401 Application

Dear Ms. McIntyre:

Enclosed is the 401 Water Quality Certification Application for the Hermitage Club Development at Haystack Mountain. During the past two years we have come a long way with the review and design of this development. The project includes a year-round recreational resort in Southern Vermont including a ski-in/out residential development, a club house, restaurants and commercial facilities, as well as snowmaking facilities. We have developed a design that allows the establishment of a one-of-a-kind resort, enhances the tourism in Dover and Wilmington VT, and minimally impacts the natural resources of the State of Vermont. I believe that you will find that the enclosed plans and materials complete and you can approve the proposed development.

We are submitting the 404 Application to the Army Corp of Engineers (please see Appendix 5) for this project concurrently with this submittal.

We are looking forward to hearing back from you.

Sincerely,

Desislava Pomeroy

Desislava Pomeroy, EIT

Robert S. Harrington

Robert S. Harrington, PE

Cc: James Barnes
Robert Rubin
Robert Fisher
Jay Kenlan

Hermitage Club at Haystack Mountain
Mountain Master Plan Project
Wetland Summary Tables

Table 1: Functions and Values Summary

| Wetland ID | Floodflow Alteration | Sediment/Toxicant Retention | Groundwater Recharge | Nutrient Removal Retention | Fish and Shellfish Habitat | Wildlife Habitat | Production Export | Unique/Heritage | RTE Species | Educational/Scientific Value | Recreation | Visual Aesthetics | Erosion Control |
|------------|----------------------|-----------------------------|----------------------|----------------------------|----------------------------|------------------|-------------------|-----------------|-------------|------------------------------|------------|-------------------|-----------------|
| 118 | x | x | | x | | x | | | | | | | x |
| 119 | | x | | | | | | | | | | | |
| 120 | x | x | | | | | | | | | | | |
| 121 | x | x | | | | | | | | | | | |
| 124 | | x | | | | | | | | | | | |
| 216 | | x | | | | | | | | | | | |
| 305 | | x | | | | | | | | | | | |
| 332 | | x | | | | | | | x | | | | |
| 334 | | x | | | | | | | | | | | |
| 335 | | x | x | x | | | | | | | | | x |
| 336 | | x | | | | | | | | | | | |
| 346 | | x | | x | | x | | | | | | | x |
| 356 | | x | | | | | | | | | | | |
| 417 | | x | x | x | | | | | | | | | x |
| 510 | | x | x | | | | | | | | | | |
| 514 | | x | x | | | | | | | | | | |
| 531 | | x | x | | | | | | | | | | |
| 535 | | x | x | | | | | | | | | | |
| 536 | | x | | | | | | | | | | | |
| 706 | | x | x | | | | | | x | | | | |
| 707 | | x | | x | | | | | | | | | x |
| 708 | | x | | | | | | | | | | | |
| A14 | x | x | x | | | | | | | | | | |

Hermitage Club at Haystack Mountain
Mountain Master Plan Project
Wetland Summary Tables
Table 2. Locational Data

| Wetland ID | Wetland Classification | Latitude | Longitude | Site Visit w/ State District Ecologist |
|------------|------------------------|-----------|------------|--|
| 118 | 2 | 42.922209 | -72.893538 | 9/12/2013 |
| 119 | 3 | 42.922178 | -72.891967 | 9/12/2013 |
| 120 | 3 | 42.921944 | -72.885925 | NA |
| 121 | 3 | 42.922884 | -72.886353 | NA |
| 124 | 3 | 42.921664 | -72.885283 | 10/29/2013 |
| 216 | 3 | 42.920918 | -72.891972 | 10/29/2013 |
| 305 | 3 | 42.922624 | -72.88691 | 10/29/2013 |
| 332 | 2 | 42.924307 | -72.887712 | 10/29/2013 |
| 334 | 3 | 42.923432 | -72.890076 | 10/29/2013 |
| 335 | 3 | 42.92322 | -72.891385 | 10/29/2013 |
| 336 | 3 | 42.92302 | -72.891739 | NA |
| 346 | 3 | 42.927061 | -72.891611 | 9/12/2013 |
| 356 | 3 | 42.924948 | -72.896686 | 10/29/2013 |
| 417 | 2 | 42.918581 | -72.885594 | 8/21/2013 |
| 510 | 3 | 42.927265 | -72.890528 | 9/25/2013 |
| 514 | 3 | 42.925536 | -72.891864 | 9/12/2013 |
| 531 | 3 | 42.920164 | -72.883929 | 9/12/2013 |
| 535 | 2 | 42.920406 | -72.885434 | 8/21/2013 |
| 536 | 2 | 42.919741 | -72.885403 | 8/21/2013 |
| 706 | 2 | 42.922535 | -72.897747 | NA |
| 707 | 2 | 42.924656 | -72.896737 | NA |
| A14 | 3 | 42.922307 | -72.885315 | 10/29/2013 |

Hermitage Club at Haystack Mountain
Mountain Master Plan Project
Wetland Summary Tables
Table 3. Wetland Hydrologic Summary Data

| Wetland ID | Size of Wetland Complex (sf) | Natural Community Types Present | Landscape Position | Wetland Hydroperiod | Direction of Flow | Influence of Hydrology on Wetland Complex | Surrounding Landuse | Pre-Project Cumulative Impacts to Wetland |
|------------|------------------------------|------------------------------------|--------------------|--|-------------------|--|---------------------|---|
| 118 | 12512.3922 | Shallow emergent marsh | Terrace | Seasonal ponding | North to south | Surface water runoff is primary hydrologic input | Ski area | Clearing for lift line |
| 119 | 2714.83344 | Shallow emergent marsh | Terrace | Seasonal ponding | No streams | Surface water runoff is primary hydrologic input | Road/Forest | Roadside maintenance |
| 120 | 48015.92664 | Alder swamp | Terrace | Saturation, Seasonal ponding | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 121 | 25964.67852 | Alder swamp/Shallow Emergent Marsh | Terrace | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 124 | 2229.05232 | Shallow emergent marsh | Terrace | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 216 | 1108.42776 | Shallow emergent marsh | Terrace | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Forest | NA |
| 305 | 1756.29564 | Wet Meadow | Terrace | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 332 | 9925.62516 | Wet Meadow | Terrace | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 334 | 10549.92708 | Wet Meadow | Terrace | Seasonal ponding | No streams | Surface water runoff is primary hydrologic input | Ski trails | Ski trail maintenance |
| 335 | 11500.929 | Seep | Headwaters | Saturation, Seasonal ponding | south to north | Groundwater discharge/surface water runoff | Road/Forest | Roadside maintenance |
| 336 | 3331.55592 | Shallow emergent marsh | Terrace | Seasonal ponding | No streams | Surface water runoff is primary hydrologic input | road/forest | Roadside maintenance |
| 346 | 4406.70384 | Seep | Hillslope | Saturation, Seasonal ponding | south to north | Groundwater discharge/surface water runoff | forest | NA |
| 356 | 448.75512 | Shallow emergent marsh | Terrace | Seasonal ponding | No streams | Surface water runoff is primary hydrologic input | Forest | Clearing |
| 417 | 7329.44916 | Seep | Hillslope | Saturation, Seasonal ponding | west to east | Groundwater discharge/surface water runoff | Forest/Mirror Lake | NA |
| 510 | 1795.19472 | Seep | Hillslope | Saturation | No streams | Groundwater discharge/surface water runoff | Forest | NA |
| 514 | 3570.30828 | Seep | Hillslope | Seasonal saturation | No streams | Groundwater discharge/surface water runoff | Forest/Residential | Residential clearing |
| 531 | 924.25608 | Seep | Hillslope | Seasonal saturation | No streams | Groundwater discharge/surface water runoff | Forest/Road | NA |
| 535 | 6217.84152 | Seep | Hillslope | Seasonal saturation | No streams | Groundwater discharge/surface water runoff | Forest/Mirror Lake | Clearing on shores of Mirror Lake |
| 536 | 21354.4188 | Alder swamp | Hillslope | Seasonal saturation | No streams | Surface water runoff is primary hydrologic input | Forest/Mirror Lake | Clearing on shores of Mirror Lake |
| 706 | 27744.06096 | Seep | Hillslope | Seasonal saturation | No streams | Groundwater discharge/surface water runoff | Ski trails | Ski trail maintenance |
| 707 | 2318.9166 | Wet Meadow | Hillslope | seasonal saturation;drain age patterns | North to south | Surface water runoff is primary hydrologic input | ski trails/forest | Ski trail maintenance |

| | | | | | | | | |
|-----|-------------|------------|-----------|-----------------------|----------------|--|-------------------|-----------------------|
| 708 | 2248.04448 | Wet Meadow | Hillslope | seasonal saturation | North to south | Surface water runoff is primary hydrologic input | ski trails/forest | Ski trail maintenance |
| A14 | 11415.50784 | Seep | Terrace | Permanently saturated | No streams | Groundwater discharge/surface water runoff | Road/Forest | Roadside maintenance |

Hermitage Club at Haystack Mountain
Mountain Master Plan
Wetland Summary Tables
Table 4. Wetland Characterization Summary Data

| Wetland ID | Description of Subject Wetland | | | | | Description of Surrounding Upland | | |
|------------|--------------------------------|---------------------|---|--|---|-----------------------------------|---|---------------------------|
| | Context of Wetland | General Landuse | Wetland Vegetation | Wetland Soils | Wetland Hydrology | General Landuse | Upland Vegetation | Upland Soils |
| 118 | Northern boundary | Naturally vegetated | <i>Doellingeria umbellata</i> , <i>Onoclea sensibilis</i> | Sandy redox | Oxidized rhizospheres, water stained leaves | Forest/Road | <i>Fagus grandifolia</i> , <i>Acer pensylvanicum</i> , <i>Dryopteris marginalis</i> | Worden |
| 119 | Overall wetland | Cleared roadside | <i>Onoclea sensibilis</i> , <i>Aster umbellatus</i> , <i>Solidago rugosa</i> , <i>Willow sp.</i> | Redox dark surface | Oxidized rhizospheres | Road | NA | Worden |
| 120 | Northern boundary | Ski trails | <i>Onoclea sensibilis</i> , <i>Carex sp.</i> , <i>Salix sp.</i> , <i>Betula alleghaniensis</i> | Depleted matrix, depleted below dark surface | Saturation | Ski trail | <i>Mown ski trail</i> | Worden |
| 121 | Western Boundary | Ski trails | <i>Carex crinita</i> | Redox dark surface | Oxidized rhizospheres | Ski trail | <i>Mown ski trail</i> | Sheepscot |
| 124 | Northern boundary | Forest/ski trails | <i>Onoclea sensibilis</i> , <i>Carex sp.</i> , <i>Salix sp.</i> , <i>Spiraea sp.</i> | Sandy redox | Oxidized rhizospheres | Ski trail | <i>Mown ski trail</i> | Sheepscot |
| 216 | Overall wetland | Naturally vegetated | <i>Onoclea sensibilis</i> | LoamGley | Oxidized rhizospheres, saturation | naturally vegetated | <i>Red spruce northern hardwood forest</i> | Worden |
| 305 | Southern boundary | Ski trails | <i>Carex gynandra</i> , <i>Onoclea sensibilis</i> | Redox dark surface | Oxidized rhizospheres | Ski trail | <i>Mown ski trail</i> | Worden |
| 332 | Overall wetland | Ski trails | <i>Onoclea sensibilis</i> , <i>Phalaris arundinacea</i> | Redox dark surface | oxidized rhizospheres | Ski trail | <i>Mown ski trail</i> | Houghtonville-Rawsonville |
| 334 | Overall wetland | Ski trails | <i>Onoclea sensibilis</i> | depleted matrix | Oxidized rhizospheres | Ski trail | <i>Hemlock Northern Hardwood Forest</i> | Houghtonville-Rawsonville |
| 335 | Western Boundary | Forest | <i>Betula alleghaniensis</i> , <i>Onoclea sensibilis</i> | Redox dark surface | Oxidized rhizospheres, Drainage patterns | Road/forest | <i>Fagus grandifolia</i> , <i>Acer pensylvanicum</i> , <i>Mitchella repens</i> | Houghtonville-Rawsonville |
| 336 | Overall wetland | Cleared roadside | <i>Onoclea sensibilis</i> , <i>Thyphasp.</i> | Depleted matrix | Oxidized rhizospheres | Road/forest | <i>Red spruce northern hardwood forest</i> | Houghtonville-Rawsonville |
| 346 | Western Boundary | Forest | <i>Osmundastrum cinnamomeum</i> | Depleted dark surface | Saturation | Forest | <i>Hemlock Northern Hardwood Forest</i> | Mundal |
| 356 | Northern boundary | Cleared/disturbed | <i>Carex gynandra</i> , <i>Spiraea alba</i> | Redox dark surface | Oxidized rhizospheres | Forest/clearing | <i>Northern Hardwood Forest</i> | Houghtonville-Rawsonville |

| | | | | | | | | |
|-----|-------------------|---------------------|--|--|---|-------------------------|---|---------------------------|
| 417 | Overall wetland | Forest | <i>Onoclea sensibilis</i> , <i>Carex crinita</i> | Histosol | Surface water, high water table, saturation | Forest/Mirror Lake | <i>Betula alleghaniensis</i> , <i>Acer saccharum</i> , <i>Fraxinus americana</i> , <i>Parathelypteris noveboracensis</i> , <i>Dryopteris intermedia</i> | Houghtonville-Rawsonville |
| 510 | Overall wetland | Forest | <i>Impatiens capensis</i> , <i>Onoclea sensibilis</i> , <i>Osmunda claytonia</i> | Redox dark surface | Saturation | Forest | <i>Hemlock Northern Hardwood Forest</i> | Mundal |
| 514 | Overall wetland | Forest/cleared | <i>Osmundastrum cinnamomeum</i> , <i>Onoclea sensibilis</i> , <i>Carex scabrata</i> , <i>Glyceria sp.</i> , <i>Impatiens capensis</i> , <i>Carex gynandra</i> | Depleted matrix | Saturation | Forest/Residential | <i>Hemlock Northern Hardwood Forest</i> | Rawsonville-hogback |
| 531 | Overall wetland | Forest | <i>Carex torta</i> , <i>Parathelypteris noveboracensis</i> , <i>Solidago rugosa</i> , <i>Carex scabrata</i> , <i>Glyceria striata</i> , <i>Onoclea sensibilis</i> | Sandy redox | Oxidized rhizospheres | Forest/Road/Mirror Lake | <i>Hemlock Northern Hardwood Forest</i> | Worden |
| 535 | Overall wetland | Forest/cleared | <i>Spiraea alba</i> , <i>Salix sp.</i> , <i>Carex pallenscens</i> , <i>Solidago gigantea</i> , <i>Zizia aurea</i> , <i>Onoclea sensibilis</i> , | Depleted Matrix | Saturation | Forest/Road/Mirror Lake | <i>Hemlock Northern Hardwood Forest</i> | Sheepscot |
| 536 | Overall wetland | Forest/cleared | <i>Salix sp.</i> , <i>Onoclea sensibilis</i> , <i>Juncus canadensis</i> | Depleted matrix, depleted below dark surface | Saturation | Forest/Mirror Lake | <i>Betula populifolia</i> , <i>Populus tremuloides</i> , <i>Acer saccharum</i> , <i>Solidago canadensis</i> | Sheepscot |
| 706 | Overall wetland | Ski trails | <i>Onoclea sensibilis</i> , <i>Carex crinita</i> | Sandy redox | Oxidized rhizospheres | Ski trail | <i>Fagus grandifolia</i> , <i>Acer pensylvanicum</i> , <i>Dryopteris marginalis</i> | Rawsonville-hogback |
| 707 | Overall wetland | ski trails/forest | <i>Carex sp.</i> | Very shallow dark surface | Oxidized rhizospheres | ski trail/forest | <i>Northern Hardwood Forest</i> | Houghtonville-Rawsonville |
| 708 | Overall wetland | Ski trails | <i>Carex sp.</i> | Very shallow dark surface | Oxidized rhizospheres | ski trail/forest | <i>Northern Hardwood Forest</i> | Houghtonville-Rawsonville |
| A14 | Southern boundary | Naturally vegetated | <i>Scrub shrub</i> | NA | NA | Road/forest | <i>Northern Hardwood Forest</i> | Sheepscot |

**Hermitage Club at Haystack Mountain
Mountain Master Plan Project
Wetland Summary Tables
Table 5. Wetlands Impact Summary Table**

| Wetland ID | PRIMARY-Grading (sf) | SECONDAR Y- Clearing (sf) | INDIRECT (sf) | IMPACT DESCRIPTION |
|-------------------|-----------------------------|----------------------------------|----------------------|--|
| 118 | | 2,521 | 9,984 | Tree Clearing for Lower MTN Lift |
| 119 | 364 | | 2,353 | Roadway & Parking construction, grading |
| 120 | 11,272 | | 30,935 | Roadway construction, Snowmaking Line |
| 121 | 2,225 | | 25,965 | Snowmaking Line |
| 122 | | | 1,561 | Indirect only |
| 124 | 493 | | 1,736 | Roadway construction |
| 125 | | | 2,881 | Indirect only |
| 213 | | | 7,201 | Indirect only |
| 215 | | | 3,338 | Indirect only |
| 216 | 1,108 | | | Maintenance Building construction, grading |
| 217 | | | 1,096 | Indirect only |
| 218 | | | 728 | Indirect only |
| 302 | | | 4,219 | Indirect only |
| 304 | | | 2,825 | Indirect only |
| 305 | 125 | | 1,632 | Future Utilities |
| 306 | | | 351 | Indirect only |
| 307 | | | 2,301 | Indirect only |
| 312 | | | 362 | Indirect only |
| 316 | | | 9,845 | Indirect only |
| 330 | | | 3,954 | Indirect only |
| 331 | | | 1,449 | Indirect only |
| 332 | 1,341 | | 8,591 | Snowmaking Line |
| 334 | | 2,174 | 8,376 | Roadway construction, Future Trail - Tree Clearing |
| 335 | 57 | | 11,445 | Roadway construction, retaining wall |
| 336 | 3,332 | | | Building #7 construction, grading |
| 337 | | | 10,158 | Indirect only |
| 338 | | | 3,596 | Indirect only |
| 339 | | | 1,263 | Indirect only |
| 340 | | | 14,328 | Indirect only |
| 341 | | | 541 | Indirect only |
| 342 | | | 2,215 | Indirect only |
| 343 | | | 3,552 | Indirect only |
| 344 | | | 2,015 | Indirect only |
| 345 | | | 2,042 | Indirect only |
| 346 | | 859 | 3,547 | Future Trail - Tree Clearing |
| 347 | | | 1,561 | Indirect only |

| | | | | |
|-----|--------|-----|--------|-----------------------|
| 348 | | | 678 | Indirect only |
| 350 | | | 2,016 | Indirect only |
| 351 | | | 1,277 | Indirect only |
| 352 | | | 1,073 | Indirect only |
| 356 | 449 | | | Grading - Fill |
| 357 | | | 5,327 | Indirect only |
| 358 | | | 1,686 | Indirect only |
| 359 | | | 11,140 | Indirect only |
| 361 | | | 4,902 | Indirect only |
| 362 | | | 114 | Indirect only |
| 365 | | | 499 | Indirect only |
| 374 | | | 1,177 | Indirect only |
| 415 | | | 2,710 | Indirect only |
| 416 | | | 697 | Indirect only |
| 417 | 7,330 | | | Mirror Lake Expansion |
| 419 | | | 891 | Indirect only |
| 420 | | | 2,459 | Indirect only |
| 507 | | | 3,215 | Indirect only |
| 508 | | | 499 | Indirect only |
| 509 | | | 1,534 | Indirect only |
| 510 | | 446 | 1,346 | Indirect only |
| 514 | 3,571 | | | Roadway construction |
| 515 | | | 4,476 | Indirect only |
| 530 | | | 262 | Indirect only |
| 531 | 925 | | | Mirror Lake Expansion |
| 532 | | | 4,360 | Indirect only |
| 533 | | | 30,777 | Indirect only |
| 534 | | | 718 | Indirect only |
| 535 | 6,218 | | | Mirror Lake Expansion |
| 536 | 21,355 | | | Mirror Lake Expansion |
| 700 | | | 19,314 | Indirect only |

| | | | | |
|------|-------|------|--------|------------------------------------|
| 701 | | | 898 | Indirect only |
| 705 | | | 20,649 | Indirect only |
| 706 | | 1835 | 27,743 | Tree Clearing for Mountain Coaster |
| 707 | 2,319 | | | Grading - Fill |
| 708 | 2,248 | | | Grading - Fill |
| 781 | | | 582 | Indirect only |
| 782 | | | 1,245 | Indirect only |
| 783 | | | 2,001 | Indirect only |
| 784 | | | 667 | Indirect only |
| 785 | | | 2,204 | Indirect only |
| 786 | | | 1,683 | Indirect only |
| 312b | | | 624 | Indirect only |
| 418a | | | 889 | Indirect only |
| 800a | | | 2,235 | Indirect only |
| 800b | | | 1,912 | Indirect only |

| | | | | |
|-----|-----|--|--------|-------------------------|
| A14 | 320 | | 10,530 | Roadway Fill, Utilities |
| A1 | | | 2,425 | Indirect only |
| A2 | | | 6,075 | Indirect only |
| A23 | | | 15,766 | Indirect only |
| A24 | | | 1,534 | Indirect only |
| A3 | | | 276 | Indirect only |
| A5 | | | 6,116 | Indirect only |
| A8 | | | 7,218 | Indirect only |
| A9 | | | 1,826 | Indirect only |

Hermitage Club at Haystack Mountain
Mountain Master Plan Project
Stream Summary Table

| STREAM ID (or LOCATION) | | SHEET # | OHW (ft) | PRIMARY STREAM Grading LF | PRIMARY STREAM Grading SF | INDIRECT IMPACTS 100' DS | IMPACT NOTES | Stream | Structure Size | Project Description |
|----------------------------|--|----------|----------|---------------------------------|---------------------------------|--------------------------------|--|----------------|---|--|
| SC#1 | New Concrete Bridge w/ Open Bottom for roadway | CW-101B | 8 | 120 | 1,800 | 1,500 | New Open Bottom Arch Culvert for Roadway | OB-T7 | 6'x100'x4' Precast Concrete Bridge | Upper Mtn Trailside Road |
| SC#2 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway, Trails | CW-102A1 | 15 | 220 | 2,702 | 2,000 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway, Trails | Oak Brook | 15' x 40' and 15' x 80' open bottom culverts | Upper Mtn Trailside Trail/Road Culvert Replacement |
| SC#3 | Replace Ex. Culvert with Open Bottom Arch Culvert for Hotel fill & Trail | CW-102A1 | 15 | 75 | 901 | 2,000 | Replace Ex. Culvert with Open Bottom Arch Culvert for Hotel fill & Trail | Oak Brook | 15' x 50' open bottom culvert | Work Road Culvert Replacement |
| SC#4 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway | CW-102A1 | 30 | 105 | 1,279 | 4,000 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway | Oak Brook | 30' x 60' open bottom culvert | Oak Brook/Fannie Hill Culvert Replacement |
| SC#5 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway | CW-102B | 3 | 60 | 180 | 300 | Replace Ex. Culvert with Open Bottom Arch Culvert for Roadway | CB-T6-S9 | 3'x40' Open Bottom Arch Culvert to Replace Culvert | High Country Road |
| SC#6 | New Open Bottom Arch Culvert for Roadway | CW-102D | 2 | 50 | 100 | 200 | New Open Bottom Arch Culvert for Roadway | OB-T2 | 6'x40' Open Bottom Arch Culvert | Chamonix Village Road |
| SC#7 | New Bridge Crossing for Hermitage Inn Lots | CW-102F | 13 | 0 | 0 | 0 | New Bridge Crossing for Hermitage Inn Lots | CB-T6 | 24'x40' Bridge | Hermitage Lots Road |
| SC#8 | New Open Bottom Arch Culvert for Roadway | CW-102F | 4 | 70 | 700 | 1,000 | New Open Bottom Arch Culvert for Roadway | CB-T6 | 6'x50' Open Bottom Arch Culvert | Hermitage Lots Road |
| SC#9 | New Open Bottom Arch Culvert for Proposed Ski Trail | CW-102F | 4 | 50 | 300 | 600 | New Open Bottom Arch Culvert for Proposed Ski Trail | CB-T6-S7-S1 | 4'x40' Open Bottom Arch Culvert | Inn Chute Ski Trail |
| SC#10 | New Open Bottom Arch Culvert for Proposed Ski Trail | CW-102F | 3 | 90 | 810 | 900 | New Open Bottom Arch Culvert for Proposed Ski Trail | CB-T6 | 6'x60' Open Bottom Arch Culvert | Inn Chute Ski Trail |
| SC#11 | New Bridge Crossing for the Ratheau Lot | CW-102G | 30 | 0 | 0 | 0 | New Bridge Crossing for the Ratheau Lot | Cold Brook | 1-Span Bridge to replace snowmobile bridge | Kingsley Bridge |
| SC#12 | Cold Brook Withdrawal upgrades | CW-102K | 70 | 15 | 1,050 | 7,000 | Cold Brook Withdrawal upgrades | Cold Brook | Upgrades to Cold Brook Withdrawal | Cold Brook Withdrawal |
| SC#13 | Mirror Lake Expansion | CW-102M | 6 | 70 | 420 | 600 | Mirror Lake Expansion | CB-T3 | Mirror Lake Outlet Structure | Mirror Lake Expansion |
| SC#14 | Mirror Lake Expansion | CW-102M | 6 | 365 | 2,190 | 600 | Mirror Lake Expansion | Isolated- 1 | 4'x40' Open Bottom Arch Culvert (remove culvert DS) | Haystack Brook Withdrawal |
| SC#15 | Proposed Haystack Brook Withdrawal | CW-102L | 30 | 20 | 600 | 3,000 | Proposed Haystack Brook Withdrawal | Haystack Brook | Haystack Brook Withdrawal | Mirror Lake Expansion |
| Lower MTN Lift | Tree Clearing for Lower MTN Lift | CW-102D | 4 | 0 | 0 | 0 | Tree Clearing for Lower MTN Lift | HB-T3 | Lower Mountain Lift Clearing | Lower Mountain Lift |
| MTN Coaster | Mountain coaster clearing | CW-101C | 4 | 0 | 0 | 0 | Mountain coaster clearing | OB-T4-S2 | Mountain Coaster Clearing | Mountain Coaster |
| Siegel Pond | Siegel pond construction | CW-102L | 2 | 70 | 281 | 392 | Proposed Siegel Pond | HB-T1 | Siegel pond construction | Seigel Pond |

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P.O. Box 248, North Pomfret, VT 05053

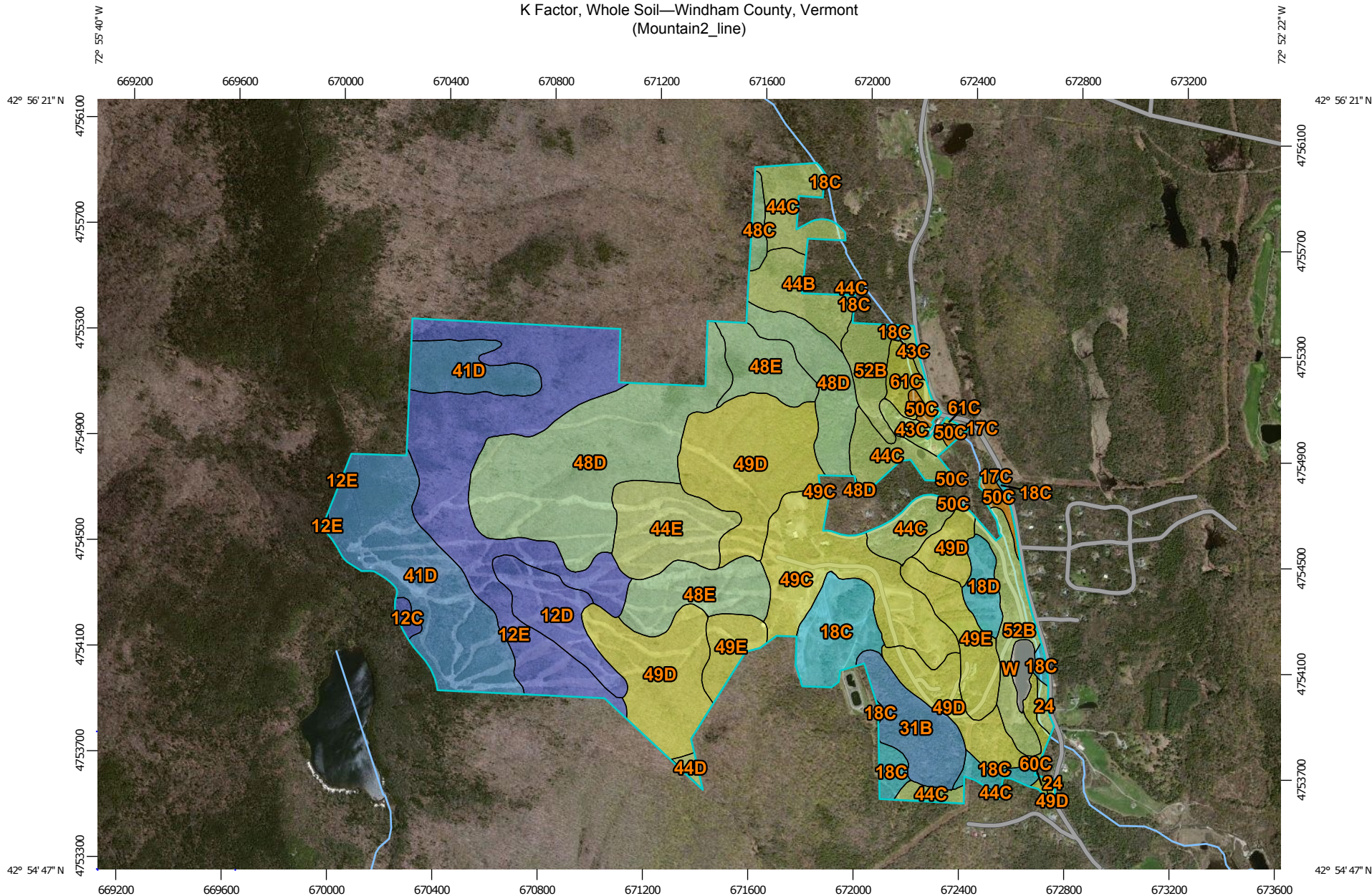
Phone (802) 457-3151 Email: HEINET@aol.com

Hydrologic Soil Group Table

| Map unit symbol | Map unit name | Acres in AOI | HSG |
|-----------------|--|--------------|-----|
| 12C | Stratton-Glebe complex | 2.2 | D |
| 12D | Stratton-Glebe complex | 23.0 | D |
| 12E | Stratton-Glebe complex | 119.9 | D |
| 17C | Worden loam | 0.2 | C |
| 18C | Worden loam | 37.2 | C |
| 18D | Worden loam | 9.5 | C |
| 24 | Podunk fine sandy loam | 2.2 | B |
| 31B | Wilmington very fine sandy loam | 24.6 | D |
| 41D | Londonderry-Stratton silt loam | 92.7 | C |
| 43C | Mundal fine sandy loam | 7.0 | C |
| 44B | Mundal fine sandy loam | 17.5 | C |
| 44C | Mundal fine sandy loam | 44.9 | C |
| 44D | Mundal fine sandy loam | 1.7 | C |
| 44E | Mundal fine sandy loam | 32.0 | C |
| 48C | Houghtonville-Hogback fine sandy loams | 4.2 | B |
| 48D | Houghtonville-Hogback fine sandy loams | 120.2 | B |
| 48E | Houghtonville-Hogback fine sandy loams | 45.6 | B |
| 49C | Houghtonville-Rawsonville fine sandy loams | 52.0 | B |
| 49D | Houghtonville-Rawsonville fine sandy loams | 130.7 | B |
| 49E | Houghtonville-Rawsonville fine sandy loams | 32.1 | B |
| 50C | Colton loamy fine sand | 7.1 | A |
| 52B | Sheepscot fine sandy loam | 33.9 | B |
| 60C | Houghtonville fine sandy loam | 0.7 | B |
| 61C | Houghtonville fine sandy loam | 8.1 | B |
| W | Water | 4.1 | - |
| Total | | 853.3 | |

| HSG | Acres in AOI | % of AOI |
|-----|--------------|----------|
| A | 7.1 | 0.8% |
| B | 429.7 | 50.4% |
| C | 242.7 | 28.4% |
| D | 169.7 | 19.9% |

K Factor, Whole Soil—Windham County, Vermont
(Mountain2_line)



Map Scale: 1:20,500 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84


















MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)










Soils

Soil Rating Polygons
















-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Soil Rating Lines








-  .02
-  .05
-  .10
-  .15
-  .17
-  .20

-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Soil Rating Points

-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Water Features

-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Windham County, Vermont
Survey Area Data: Version 18, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 9, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

K Factor, Whole Soil

| K Factor, Whole Soil— Summary by Map Unit — Windham County, Vermont (VT025) | | | | |
|---|---|--------|--------------|----------------|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| 12C | Stratton-Glebe complex, 8 to 15 percent slopes, very rocky | .49 | 2.2 | 0.3% |
| 12D | Stratton-Glebe complex, 15 to 25 percent slopes, very rocky | .49 | 23.0 | 2.7% |
| 12E | Stratton-Glebe complex, 25 to 50 percent slopes, very rocky | .49 | 119.9 | 14.0% |
| 17C | Worden loam, 8 to 15 percent slopes | .37 | 0.2 | 0.0% |
| 18C | Worden loam, 8 to 15 percent slopes, very bouldery | .37 | 37.2 | 4.4% |
| 18D | Worden loam, 15 to 25 percent slopes, very bouldery | .37 | 9.5 | 1.1% |
| 24 | Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded | .24 | 2.2 | 0.3% |
| 31B | Wilmington very fine sandy loam, 2 to 8 percent slopes, very stony | .43 | 24.6 | 2.9% |
| 41D | Londonderry-Stratton silt loams, 8 to 25 percent slopes, very rocky | .43 | 92.7 | 10.9% |
| 43C | Mundal fine sandy loam, 8 to 15 percent slopes | .24 | 7.0 | 0.8% |
| 44B | Mundal fine sandy loam, 3 to 8 percent slopes, very stony | .24 | 17.5 | 2.1% |
| 44C | Mundal fine sandy loam, 8 to 15 percent slopes, very stony | .24 | 44.9 | 5.3% |
| 44D | Mundal fine sandy loam, 15 to 25 percent slopes, very stony | .24 | 1.7 | 0.2% |
| 44E | Mundal fine sandy loam, 25 to 50 percent slopes, very stony | .24 | 32.0 | 3.8% |
| 48C | Rawsonville-Hogback fine sandy loams, 8 to 15 percent slopes, rocky | .28 | 4.2 | 0.5% |

| K Factor, Whole Soil— Summary by Map Unit — Windham County, Vermont (VT025) | | | | |
|--|---|---------------|---------------------|-----------------------|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| 48D | Rawsonville-Hogback fine sandy loams, 15 to 25 percent slopes, rocky | .28 | 120.2 | 14.1% |
| 48E | Rawsonville-Hogback fine sandy loams, 25 to 50 percent slopes, rocky | .28 | 45.6 | 5.3% |
| 49C | Houghtonville- Rawsonville fine sandy loams, 8 to 15 percent slopes, very bouldery | .20 | 52.0 | 6.1% |
| 49D | Houghtonville- Rawsonville fine sandy loams, 15 to 25 percent slopes, very bouldery | .20 | 130.7 | 15.3% |
| 49E | Houghtonville- Rawsonville fine sandy loams, 25 to 50 percent slopes, very bouldery | .20 | 32.1 | 3.8% |
| 50C | Colton loamy fine sand, 8 to 15 percent slopes | .10 | 7.1 | 0.8% |
| 52B | Sheepscot fine sandy loam, 3 to 8 percent slopes | .24 | 33.9 | 4.0% |
| 60C | Houghtonville fine sandy loam, 8 to 15 percent slopes | .20 | 0.7 | 0.1% |
| 61C | Houghtonville fine sandy loam, 8 to 15 percent slopes, very stony | .20 | 8.1 | 1.0% |
| W | Water | | 4.1 | 0.5% |
| Totals for Area of Interest | | | 853.4 | 100.0% |

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

| The Hermitage Club Master Plan 2014 – 2024 Improvements & Development Projects | | | |
|---|------------------------|--------------------|----------|
| Project | Approx. Acres | (Estimated) | |
| | | Year Start | Year End |
| Base Lodge / Club House w/ parking | 5 | 2012 | 2014 |
| CBFD Water System Upgrade | 2 | 2014 | 2016 |
| CBFD Phase I Wastewater Upgrade | 2 | 2014 | 2014 |
| CBFD Phase II Wastewater Upgrade | 2 | 2015 | 2016 |
| GMP Substation | 2 | 2015 | 2015 |
| Airport Expansion | 35 | 2015 | 2016 |
| Stag's Leap Phase I (18) | 16 | 2014 | 2016 |
| Rushing Creek Homes (7) | 15 | 2012 | 2014 |
| Windmill Power Generator @ Summit | 1 | 2016 | 2016 |
| Tage Ski Lift | 3 | 2013 | 2013 |
| Tage Ski Trail | 6 | 2013 | 2013 |
| Upper Parking Lot & Road | 4 | 2013 | 2014 |
| Chamonix Trail Bridge & Chamonix Trail - Fenny Hill Rd Loop | | 2015 | 2017 |
| Snowmaking Withdrawals & Mirror Lake | 8 | 2015 | 2020 |
| Snowmobile / Cross-Country / Hiking Trails | 4 | 2013 | 2015 |
| Ski Trails | Jennifer's Run | 2013 | 2020 |
| | Outcast | | |
| | Inn Chute Trail | | |
| Skating Rink | - | 2015 | 2016 |
| Mountain Cabins (4) | 1 | 2017 | 2020 |
| New 6 Passenger Bubble Chair Lift top/bottom | - | 2015 | 2015 |
| New Maintenance / Snowmaking Building | 2 | 2016 | 2017 |
| Condo Hotels | Condo Hotel North (96) | 2 | 2013 |
| | Condo Hotel (90) | | |
| | Condo Hotel (136) | | |
| Chamonix Village Townhomes (60) | 22 | 2011 | 2018 |
| Stag's Leap Phase II (24) | 17 | 2016 | 2020 |
| Mountain Coaster | 10 | 2016 | 2018 |
| Upper Mountain Trailside Homes (32) | 20 | 2015 | 2024 |
| High Country SFD (16) | 16 | 2015 | 2024 |
| Tage Tubing Chute | 1 | 2013 | 2013 |
| Future Inn Units (10) | 1 | 2016 | 2017 |
| Inn Homes SFD (4) | 5 | 2016 | 2017 |
| Total Impacted Area | | 202 | |