Memorandum

To: The City of Burlington Planning Director
   The City of South Burlington Planning Director
   The Town of Colchester Planning Director
   The Chittenden County Regional Planning Commission
   The Vermont Department of Housing and Community Development

From: Eric Vorwald, AICP
       Planning and Zoning Manager

RE: Report on Proposed Amendments to the City’s Unified Land Use and Development Regulations including Articles III and X; and Sections 4.9 and 6.6

DATE: March 12, 2021

Enclosed with this memo, please find proposed amendments to the City of Winooski’s Unified Land Use and Development Regulations. The amendments relate specifically to:

- Article III - Specific Use Standards – Downtown Core Zoning District
- Article X - Maps
- Section 4.9 - Nonconforming Lots, Structures Right of Way (ROW) or Drive, and Uses
- Section 6.6 - Site Plan Review
- All Sections - Referential Changes to replace “Appendix C” with “Article III’
- Appendix C - Deleted in its entirety

The City of Winooski Planning Commission will hold a public hearing on Thursday, April 08, 2021 at 6:30pm to take public comments on the proposed amendments. This hearing will be held by electronic means only via Zoom Webinar. Use https://zoom.us/j/97701613338 to join by computer or 646.558.8656 to join by telephone (toll charges may apply). If prompted, the webinar ID for this meeting is 977 0161 3338.

Please ensure this information is provided to the chair of your Planning Commission. Comments related to these amendments should be submitted in writing to me by the close of business on Monday, April 05, 2021.
In accordance with 24 V.S.A §4441 and §4444, the City of Winooski Planning Commission will hold a public hearing on Thursday, April 08, 2021 beginning at 6:30 p.m. This hearing will be held by electronic means only using Zoom Webinar. Use https://zoom.us/j/97701613338 to join by computer or 646.558.8656 to join by telephone (toll charges may apply). If prompted, the webinar ID for this meeting is 977 0161 3338.

Amendments to the Unified Land Use and Development Regulations

- Article III - Specific Use Standards – Downtown Core Zoning District
- Article X - Maps
- Section 4.9 - Nonconforming Lots, Structures Right of Way (ROW) or Drive, and Uses
- Section 6.6 - Site Plan Review
- All Sections - Referential Changes to replace “Appendix C” with “Article III’
- Appendix C - Deleted in its entirety

Statement of Purpose: The purpose of these amendments are as follows:

**Article III** – Incorporate the specific regulations for the Downtown Core Zoning District currently included in Appendix C into the Unified Land Use and Subdivision Regulations including interim zoning related to the Downtown Core Zoning District boundaries.

**Article X** – Add the “Building Height and Location Map” currently included in Appendix C

**Section 4.9** – Incorporate language from Appendix C related to non-conformities in the Downtown Core

**Section 6.6** – Clarify site plan review requirements for all zoning districts

**All Sections** – Replace references to “Appendix C” with “Article III” to reflect the change of location for the specific use standards of the Downtown Core Zoning District

**Appendix C** – Delete in its entirety as language is incorporated into relevant sections of the Unified Land Use and Development Regulations for clarity and consistency

**Geographic Area Affected**: the proposed amendments will apply to the entirety of the City of Winooski.
Section Headings Impacted:

**Article III** – Incorporates the specific use regulations for the Downtown Core Zoning District thereby eliminating Appendix C. This includes clarification on the district boundaries to incorporate an interim zoning change, updates to cross references throughout the Unified Land Use and Development Regulations, and adds language related to the process of review for projects in the Downtown Core Zoning District including the City Council review for design consideration in the Act 250 permitting process including references to the master sign plans that have been adopted for the Downtown Core Zoning District. Article III is currently reserved.

**Article X** – Adds the “Building Height and Location Map” currently included in Appendix C. Minor map changes update road names and incorporate the entirety of Cascade Way, but do not change any of the specific regulatory requirements associated with the building heights, locations, or development areas.

**Section 4.9** – Adds a new subsection H to include language previously contained in Appendix C regarding non-conforming uses in the Downtown Core Zoning District. This also includes editorial changes for clarification.

**Section 6.6** – Adds new language for clarification on site plan review requirements for specific zoning districts and uses. Also includes editorial changes for clarification related to change of use standards.

**All Sections** – Replace references to “Appendix C” with “Article III” to reflect the change of location for the specific standards of the Downtown Core Zoning District and the elimination of Appendix C.

**Appendix C** – To be deleted in its entirety. The regulations in Appendix C will be codified into Article III and other relevant sections throughout the Unified Land Use and Development Regulations for clarity and consistency.

The full text of these amendments is available at the Winooski City Hall, 27 West Allen Street, during normal business hours or by contacting Eric Vorwald, AICP, City of Winooski Planning & Zoning Manager by calling 802.655.6410 or evorwald@winooskivt.gov.
This memo provides information related to proposed amendments to the City of Winooski Unified Land Use and Development Regulations. These amendments specifically impact the following articles and sections:

- Article III - Reserved
- Article X - Maps
- Section 4.9 - Nonconforming Lots, Structures Right of Way (ROW) or Drive, and Uses
- Section 6.6 - Site Plan Review

These amendments also replace references to “Appendix C” with “Article III”, move the “Building Height and Location Map” from Appendix C to Article X, and delete Appendix C in its entirety.

**Background**

In 2016, the City undertook a comprehensive update to the Unified Land Use and Development Regulations (ULUDR). This was the first update in over 20 years. A major component of this update included a new Appendix B, which provides regulations for the Gateway Zoning Districts through the form-based code. While these changes modernized the regulations, staff has identified additional amendments to provide clarity and improve the interpretation of the regulations. Additionally, several conflicts exist that need to be rectified. With this in mind, staff has been reviewing each section of the ULUDR and proposing amendments to the Planning Commission for their consideration.

**Purpose of Amendments**

These amendments are being proposed to provide clarity for interpretation of the regulations, and to update and incorporate specific regulations related to the Downtown Core Zoning District, including regulatory references contained within the standards. The City developed and adopted regulations related to the Downtown Core Zoning District over several years including multiple interim zoning
changes. With the complete update and codification of the regulations, the standards for development in the Downtown Core Zoning District were included as Appendix C, but did not include referential updates.

The proposed amendments will incorporate the specific use standards for the Downtown Core Zoning District into Article III (which is currently reserved) and adds language related to the process of review for projects in the Downtown Core Zoning District including the City Council review for design consideration in the Act 250 permitting process including references to the master sign plans that have been adopted for the Downtown Core Zoning District. These amendments also add clarification related to site plan review, including properties in the Downtown Core, as well as clarification for non-conformities including properties in the Downtown Core.

Finally, the amendments would replace references to “Appendix C” with “Article III” to recognize the relocation of these regulations. These amendments also add the “Building Height and Location Map” currently included in Appendix C to Article X, which includes other zoning maps. Minor map changes update road names and incorporate the entirety of Cascades Way, but do not change any of the specific regulatory requirements associated with the building heights, locations, or development areas. If approved, these changes will result in the elimination of Appendix C as all information will be relocated to other sections of the Unified Land Use and Development Regulations.

**Proposed Amendments**

The following pages include the text of Articles III and X; and Sections 4.9 and 6.6 including proposed changes. Proposed additional text is shown in red and underlined. Text that appears with a strikeout is proposed to be deleted. If specific sections are not included, no changes are being proposed in these sections. For the purposes of this amendment, language contained in Article III has been transposed from Appendix C. While all of this text is new to Article III, the construction of the amendments are intended to reflect existing regulatory language that will remain in the context of changes that are being proposed.
ARTICLE III - SPECIFIC USE STANDARDS - DOWNTOWN CORE ZONING DISTRICT *

SECTION 3.1 - DESCRIPTION OF THE DISTRICT

A. Applicability. The Downtown Core Zoning District is depicted on the zoning map (Article X, Map 1) and is generally described as:

1. The properties south of the center line of East Allen Street; west of the 2019 wetland delineation as approved by the State of Vermont (located in the Casavant Natural Area); north of the Winooski River; and east of the centerline of Main Street (on the west side of Rotary Park).

2. Any questions regarding the specific boundary of this zoning district will be determined based on Section 2.1.

3. “Except as set forth in Section 5.402 (Maximum Height), 5.500 Green Space Limitation, 5.600 (High Density Requirements) and Section 5.700 (Building Locations), there shall be no dimensional requirements in the Downtown Core District, including but not limited to lot size, lot frontage, lot depth, setbacks, or floor area ratios.”

B. Amendments. Any amendments to the Downtown Core Zoning District boundaries shall follow the process outlined in Section 1.4.

11.600 Downtown Core District.

11.601 The boundaries of Downtown Core District are as follows:

(a) Northerly Line: the centerline of East Allen Street

(b) Easterly Line: a lined created by the following:
    - from the center line of the Winooski River follow the line marked “Green Space Boundary” as shown on the Building Height and Location Map generally northerly to the point where the line turns almost ninety degrees easterly, then
    - turn westerly and connect the point to the most easterly point of Parcel “G” as shown on the Building Height and Location Map;
    - then turn northerly and follow the easterly edge of Parcel “G” and then an extension of such line to the center line of East Allen Street;

(c) Westerly Line: the centerline of Main Street between the centerline of East Allen Street and the Centerline of the Winooski River.

* It is understood that all text herein is new to Article III, however the construction of this amendment is done to identify changes to the standards of the Downtown Core Zoning District that exist in Appendix C and are being transposed to Article III. New text for regulating the Downtown Core Zoning District not currently included in as part of the existing regulations is shown in red and underlined, while existing text to be deleted is shown with strikeouts.
Southerly Line: The centerline of the Winooski River between the District’s easterly and westerly lines above described.

The Downtown Core District is generally shown on the Building Height and Location Map which is attached as Downtown Core District Appendix 1.

11.602 The Downtown Core District boundaries shall supersede any inconsistent boundaries of districts shown in the Section 11.000 Official Zoning Map, Section 11.100 Official PUD Overlay Zoning Map and Section 11.200 Official DRD Overlay Zoning Map.

11.603 Section 11.400 Table of Dimensional Requirements is amended to add at the end:

11.604 Section 11.500 Design Review District Signs, Dimensional Requirements shall be inapplicable to the Downtown Core District.

11.605 Minimum Off-Street Parking Requirements

The required quantity of parking for a proposed use shall be provided in accordance with the Minimum Off-Street Parking Schedule, Downtown Core District Appendix II.

The locations of the areas designated on the Building Height and Location Map shall be determined by the distances designated on the Map; these shall be construed as distances measured from the edges of highway rights-of-way. If the designated distances are not applicable due to curving right-of-way lines or otherwise, or if the location of the Green Space Boundary shown on the Map is in question, the locations of the areas or location of the Green Space Boundary shall be determined from the scale of the official Building Height and Location Map in the Zoning Administrator’s office.

2.054 Master Plan

The Master Plan for the Winooski Falls Riverfront Downtown Project which the City created with an intent to recreate a transitional urban environment in the downtown core and riverfront of the City, with a high-density mix of uses, including offices, basic retail and services, and a range of housing options. The Master Plan was approved by the State of Vermont District Environmental Commission in Land Use Permit 4C1065 (revised) July 6, 2001 and Land Use Permit 4C1065-1 (Corrected) dated November 1, 2002, and which may be further revised by the City.

SECTION 3.2 - USES

5.300 Downtown Core District (DCD).

5.301 Intent

The Downtown Core District is composed of the core of the City’s downtown and has been the subject of a Master Plan which has been developed by the City over many years after extensive public input and hearings. The Master Plan was approved by the Development Review Board and the City Council I and by the State of Vermont District Environmental Commission under “Act 250”. The Master Plan permits a range of uses within
pre-approved vertical and horizontal building envelopes as shown on the Building Height and Location P-Map. Approval of the exterior design details must be submitted by the applicant, with the City as a co-applicant, and must be approved by the District Environmental Commission under Act 250 as complying with the approved Master Plan. The regulations associated with the district are intended to protect the public health, safety and welfare and to provide for orderly physical and economic growth by allowing and encouraging high density, mixed use land development within the downtown core, while recognizing the previously approved Master Plan and the requirement that further submissions to the District Environmental Commission under Act 250 must include the City as a co-applicant.

5.302 A. Permitted Uses

In addition to the uses listed in Section 2.4, the following uses are permitted in the Downtown Core Zoning District

The following uses are permitted in the Downtown Core District, upon issuance of a Zoning Permit by the Zoning Administrator:

1. Accessory Uses
2. Banks without drive-in thru windows.
5. Dwellings, multi-unit.
6. Fitness centers.
7. Governmental offices.
8. Grocery stores, supermarkets, and pharmacies.
9. Hotels, motels, inns, and bed and breakfasts.
10. Job training centers.
11. Libraries, museums, art galleries, art centers.
12. Offices.
13. Outdoor parks.
15. Parking garages and outdoor parking.
17½. Post offices.

18½. Restaurants without drive-in thru windows, whose aggregate annual gross receipts from Alcoholic Beverages do not exceed forty percent (40%) of total annual restaurant, gross receipts.

19½. Retail sales of goods and services, but excluding motor vehicle sales, repair, service, and washing, sales of gasoline, diesel fuel, and other petroleum products, auto body painting and repair, and building materials.

20½. Schools and educational facilities.

21½. Theaters and cinemas.

5.303 B. Outdoor Use. All permitted sales and servicing activities in the Downtown Core District shall be conducted inside building, except for customary accessory uses involving sidewalk sales of retail goods for periods of time not exceeding five (5) days per event; seasonal sales of retail good within wholly open sided rooftop structures identified as Area "D" on the "Building Height and Location Map"; and seasonal outdoor restaurant uses.

SECTION 3.3 – DIMENSIONAL STANDARDS

A. Intent. The Master Plan approved for Downtown Winooski through State Act 250 Permit C4-1065 (as amended) provides prescribed dimensional standards for all developments in the Downtown Core. This section provides additional detail as to how building heights and locations are calculated and determined.

B. Applicability. Except as set forth herein, there shall be no dimensional requirements in the Downtown Core District, including but not limited to lot size, lot frontage, lot depth, setbacks, or floor area ratios.

5.400 Dimensional, High Density and Building Location Requirements.

5.401 Dimensional Requirements Only as Stated in 5.402 – 5.700.

Except as set forth in Section 5.402 (Maximum Height), 5.500 Green Space Limitation, 5.600 (High Density Requirements) and Section 5.700 (Building Location), there shall be no dimensional requirements in the Downtown Core District, including but not limited to lot size, lot frontage, lot depth, setbacks, or floor area ratios.

C. 5.402 Maximum Height. Within the Downtown Core District, a person shall not commence any land development which would result in a building or structure exceeding the elevation or height above street grade level, as the case may be, designated on the "Building Height and Location Map" for the area where such building or structure is or will be located.

5.403 Determination of Elevation. Where elevation controls maximum height, the point shown on the "Building Height and Location Map" at the intersections of the centerlines of Main Street and East Allen Street, having an elevation 190 feet, shall be used as the control point and the following standards shall apply:
a. If maximum elevation shown on the Map for an area exceeds the elevation at the control point, the difference shall be added to the 190-foot elevation at the control point, and a horizontal plane extended from the point so calculated shall establish maximum building or structure height for the area.

b. If a maximum elevation shown on the Map for an area is less than the 190-foot elevation at the control point, the difference shall be subtracted from the 190-foot elevation at the control point, and a horizontal plane extended from the point so calculated shall establish maximum building or structure height for the area.

5.404 Determination of Street Grade Level. Where street grade level controls maximum building or structure height, and the street grade levels fronting a building slopes, the highest grade level along the entirety of the building or structure frontage shall be used to determine the maximum building or structure height of the building.

5.405 Measurement of Maximum Height. Maximum building or structure height shall be determined by vertical measurement to the highest point of the building or structure, exclusive of the building components which are not to be included in measuring height, as listed on the Building Height and Location Map.

D. 5.600 High Density Requirements. In order to maximize development density in the Downtown Core Zoning District, the following high density requirements will apply.

1. 5.601 Minimum Floor Requirements. Within the Downtown Core District, except as provided in 5.602 Section 3.3. D. 2 (Parking Garages and Public Spaces), and 5.809 Section 3.6. F. (Non-complying Structures) no building shall be constructed, enlarged, or used unless the construction or enlargement results in a building which contain at least three floors used for one or more uses permitted in Section 5.302 A., excluding of cellars, basements, attics, and floors used for below street grade parking garages.

2. 5.602 Parking Garages and Public Spaces. The requirements of 5.601 Section 3.3. D.1. shall not apply to buildings in the areas designated on the Building Height and Location map as "Public Spaces", or to parking garages, but such requirements shall apply to any building area constructed over and/or connected to a parking garage.

SECTION 3.4 – BUILDING LOCATIONS

A. 5.701 Building Locations. All buildings within the Downtown Core District shall be located only in Areas “A” through “H” inclusive and in the Champlain Mill Building Area as shown on the Maximum Building Height and Location Map. Building and improvements may be located in, on or over the streets or other public areas and parks as shown on the Maximum Building Height and Location Map, provided they do not interfere with the passage of traffic.

B. 5.500 Green Space Limitation. The “Green Space Boundary” as depicted on the Building Height and Location Map is intended to provide a 50 foot buffer against a Class II wetland complex in the Casavant Natural Area.
1. This 50 foot buffer shall be measured from the 2019 wetland delineation, as approved by the State of Vermont and may be updated through an amendment to these regulations as outlined in Section 1.4 to recognize any future delineations to this wetland boundary.

2. No building shall be constructed easterly of the line designated as the “Green Space Boundary” on the Building Height and Location Map, except to the extent the Master Plan is amended and such structures are consistent with such plans or as the boundary and wetland area is updated to depict a revised delineation as approved by the State of Vermont and adopted as an amendment to this bylaw.

5.700 Building Locations.

SECTION 3.5 – SIGNS

A. Intent. The Downtown Core is intended to have a consistent look, feel, and design for signs to create consistency, uniformity, and a sense of place in Downtown Winooski.

B. Applicability. This section shall apply to all properties within the Downtown Core Zoning District.

C. All signs within the Downtown Core Zoning District shall be subject to the following documents incorporated into Act 250 Permit Amendment 4C1065-08:

1. Master Sign Plan
2. Sign Design Guidelines
3. Sign Code

“The requirements imposed by the Planned Unit Development Districts, Overlay and the Design Review District, DRD, shall not apply to the Downtown Core District.”

“The requirements for Site Plan review shall not apply to the Downtown Core Area District.”

8.408 Non-Complying Structures, Non-Conforming Uses in the Downtown Core District

Within the Downtown Core District, a non-complying structure or a non-conforming use shall not be enlarged or extended nor all or any part of a non-complying structure replaced if voluntarily demolished, unless the resulting building complies with the minimum floor requirements of 5.601.

“c. When a sign is to be located in the Downtown Core District, it shall be subject to the master sign policy established under the Master Plan and the requirements of Section 8.100 shall not apply.”

9.304 Downtown Core District.

In the Downtown Core District, Sections 9.301, 9.303 b, f and g shall not be applicable provided the following conditions are met:
"The requirements of this Section 9.400 shall not apply to the Downtown Core rea District."

SECTION 3.6 – PARKING

A. **Intent.** Development in and around Downtown Winooski is intended to create a vibrant mixed-use pattern that promotes walkability and pedestrian oriented activities. The diversity of uses will promote centralized parking locations that accommodate multiple uses based on the time of day and the day of week.

B. **Applicability.** These regulations will apply to any new development or redevelopment in the Downtown Core Zoning District.

C. **Minimum Off-Street Parking Requirements.** The required quantity of parking for a proposed use shall be provided in accordance with the Minimum Off-Street Parking Schedule, Downtown Core District Appendix II to these regulations following:

<table>
<thead>
<tr>
<th>Use</th>
<th>Minimum Parking Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential – General</td>
<td>1.0 spaces per bedroom</td>
</tr>
<tr>
<td>Elderly</td>
<td>1.0 spaces per unit</td>
</tr>
<tr>
<td>Student¹</td>
<td>0.3 spaces per bedroom</td>
</tr>
<tr>
<td>Commercial, Retail, or Restaurant</td>
<td>3.2 spaces per 1,000 gross square feet</td>
</tr>
<tr>
<td>Office</td>
<td>3.2 spaces per 1,000 gross square feet</td>
</tr>
<tr>
<td>Hotel/Bed &amp; Breakfast</td>
<td>1.0 spaces per room</td>
</tr>
<tr>
<td>Theatre</td>
<td>100 spaces per screen/stage</td>
</tr>
<tr>
<td>Municipal Uses</td>
<td>3.2 spaces per 1,000 gross square feet</td>
</tr>
</tbody>
</table>

¹ Student residents in buildings attached to municipal parking garages only. Otherwise, student housing is calculated the same as general residential.
ADJUSTMENTS FOR SHARED PARKING
IN MUNICIPALLY CONTROLLED OR RELATED PARKING GARAGES²

<table>
<thead>
<tr>
<th>Use</th>
<th>Minimum Parking Requirements</th>
<th>X Daytime/Weekday</th>
<th>X Week Night</th>
<th>X Weekend/Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential - General Elderly Student¹</td>
<td>1.0 spaces per bedroom&lt;br&gt;1.0 spaces per unit&lt;br&gt;0.3 spaces per bedroom</td>
<td>X 0.60 =</td>
<td>X 1.00 =</td>
<td>X 1.00 =</td>
</tr>
<tr>
<td>Commercial, Retail, or Restaurant</td>
<td>3.2 spaces per 1,000 gross square feet</td>
<td>X 0.75 =</td>
<td>X 0.50 =</td>
<td>X 1.00 =</td>
</tr>
<tr>
<td>Office</td>
<td>3.2 spaces per 1,000 gross square feet</td>
<td>X 0.90 =</td>
<td>X 0.30 =</td>
<td>X 0.20 =</td>
</tr>
<tr>
<td>Hotel/Bed &amp; Breakfast</td>
<td>1.0 spaces per room</td>
<td>X 0.25 =</td>
<td>X 1.00 =</td>
<td>X 0.50 =</td>
</tr>
<tr>
<td>Theatre</td>
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</tr>
<tr>
<td>Municipal Uses</td>
<td>3.2 spaces per 1,000 gross square feet</td>
<td>X 0.90 =</td>
<td>X 0.30 =</td>
<td>X 0.20 =</td>
</tr>
</tbody>
</table>

D. **Location of Parking.** All parking spaces for uses in the Downtown Core District shall be located within the Downtown Core District, and shall either be located on the land where the use is occurring or the parking spaces shall be in a municipally owned or controlled parking facility, in which event, the applicant shall provide a written contract with the municipality which guarantees the continuous use of the required parking spaces for the identified use(s) for the reasonable expected duration of the use(s).

E. **Changes or Expansions of Use.** In the Downtown Core District, whenever there is an alteration or conversion of a building or a change or expansion of a use of a building, which increases the parking requirements, the total additional parking requirements for the alteration, conversion, change, or expansion shall be provided in accordance with the Minimum Off-Street Parking Schedule. Downtown Core District Appendix II to these regulations.

F. **Non-Complying Structures.** Any building in the Downtown Core District which is a non-complying structure as to off-street parking requirements shall not be subject to the requirements of this section.

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² The minimum parking requirements for uses which are utilizing parking spaces in a municipally controlled or related parking garage may be adjusted for shared parking using the following adjustments. Prior to issuance of a zoning permit the applicant shall provide a calculation of the parking spaces allocated in the garage for each use and time period to demonstrate sufficient parking is available in the garage for the proposed use during the requisite time periods and that the applicant has a contract with the municipality for such parking.
9.304 Section 3.6 so long as the kind or extent of use is not changed, and provided further that the number of parking spaces legally required to serve at the time such uses were approved shall not in the future be reduced.

“The requirements of this Section 9.1600 shall not apply to the Downton Core Area District.”

SECTION 3.7 – ZONING PERMITS IN THE DOWNTOWN CORE

A. Intent. Projects in the Downtown Core Zoning District are subject to both a local zoning permit and a State Act 250 Land Use Permit.

B. Applicability. The standards set forth under this section apply only to projects in the Downtown Core Zoning District.

C. An application for a zoning permit for land development in the Downtown Core District shall contain the following:

1. Plans and specifications for any proposed improvements to be made;
2. A narrative description of the proposed uses;
3. A certification of a registered architect or surveyor that the proposed improvements comply with the requirement of the Building Height and Location Map;
4. A narrative description of how the proposed uses and improved comply with the Master Plan and with the applicable provisions of these regulations;
5. A copy of the approval by the State of Vermont District Environmental Commission of the improvements or a Jurisdictional Opinion from the District Environmental Commission indicating that an amendment to the Act 250 permit is or is not required for the project;
6. A certification, along with any required contracts, showing compliance with the parking requirements of Section 9.304.3.6;

D. Upon a determination that the proposed land development within the Downton Core District meet the requirements of these regulations, the Zoning Administrator shall issue a zoning permit.

E. No other permit, except a building permit, shall be required for land development in the Downtown Core District.

1. Specifically, a proposed improvement, building or use in the Downton Core District shall not require site plan, design review, or planned unit development approval under these regulations.
2. No approval shall be required under the City of Winooski Subdivision Ordinance Section 6.2 of these regulations.
F. An application for an amendment to the State Act 250 Land Use permit shall include the following:

1. Review and approval of all design details by the City Council.
   a. At their discretion, the City Council may refer the development proposal to the Development Review Board for comments and input.
      i. Comments from the Development Review Board would be advisory only and not require a public hearing.
      ii. The City Council may establish a timeline for comments to be returned from the Development Review Board.
   b. Based on comments from the Development Review Board or any other entity, the City Council may request additional information or alterations to the designs of a proposal.

2. Authorization of the City Council as co-applicant to any Act 250 Land Use Permit amendment prior to submission to the District Environmental Commission.

12. Add to Article X, Administration and Enforcement, a new section:

Section 11.201—Zoning Permits in the Downton Core District Involving Alcoholic Beverages.

Any zoning permit issued and any certificate of occupancy issued under this Article X, for a use which includes the sale of “alcoholic beverages” in the Downtown Core District, shall contain a condition requiring the certifications set forth below. In the event such condition is not so included or otherwise not a part of the permit or certificate of occupancy, such certification requirement shall apply in any event.

Annually, not later than April, the owner of a restaurant business authorized under 5.302(18) shall file with the Zoning Administrator a certification by an independent certified public accounting firm that the aggregate gross receipts at the restaurant from Alcoholic Beverages did not exceed forty percent (40%) of total annual gross receipts at such restaurant during such person’s period of ownership in the calendar year just ended. For purposes of this section:

“Alcoholic Beverages” means malt and vinous beverages and spirituous liquors sold pursuant to first and third class licenses issued under 7 V.S.A. Ch. 9.

12. Add to Article XI, Appendix, a new section:

* * * * * * * * * *
Map to be Added to Article X.
SECTION 4.9 - NONCONFORMING LOTS, STRUCTURES, RIGHT OF WAY (ROW) OR DRIVE, AND USES

A. **Purpose.** Any lot, structure, part of a structure or use that is not in compliance with the provisions of these regulations, but was lawfully established prior to the effective date of these regulations, shall be deemed a nonconformity. It is the goal of the City of Winooski that nonconformities shall over time cease to exist, become conforming or at a minimum continue to be used in a manner that does not increase their degree of nonconformity. Nonconformities shall be regulated and only allowed to continue indefinitely as outlined in this section.

B. **Development of Preexisting Nonconforming Lots.** An undeveloped preexisting nonconforming lot may be developed in accordance with the standards of the district in which it is located if the lot:
   1. Was in existence on or before the effective date of these regulations; and
   2. Is at least 1/8 acre in area; and
   3. Is at least 40 feet wide and deep.

C. **Use of Nonconforming Lots.** A lawfully developed nonconforming lot:
   1. May continue in its current use and configuration.
   2. May, after receiving all applicable approvals and permits, be further developed and used in accordance with the standards of the district in which it is located.

D. **Nonconforming Right of Way or Drive.** Pre-existing, lawfully established, nonconforming Right of Way or drive that was in existence on or before the effective date of these regulations:
   2. May be used, expanded or improved in accordance with fire department, police department, and public works approval.
   3. May, after receiving all applicable approvals and permits, be further development and used in accordance with the standards of the district in which it is located.

H. **Nonconforming Uses and Noncomplying Structures in the Downtown Core Zoning District.** Within the Downtown Core Zoning District, a noncomplying structure or a nonconforming use shall not be enlarged or extended nor all or any part of a noncomplying structure replaced if voluntarily demolished, unless the resulting building complies with the minimum floor requirements of Section 3.3. D.
SECTION 6.6 - SITE PLAN REVIEW

A. **Intent.** Site plan review is intended to ensure that site layout and development design are functional, safe, attractive, and consistent with the purpose and character of the district(s) in which the development is located. Standards specifically relate to the internal layout of the site, its physical design, and the functional and visual integration of the site with adjoining properties, uses and infrastructure.

B. **Applicability.** Unless otherwise noted in these regulations, site plan review is required for all “permitted uses” listed by zoning district under Article II, except for property located in the Downtown Core Zoning District and the Gateway Zoning District; single (one) and two family unit dwellings; associated accessory structures and accessory dwellings as specified under Section 5.1; home occupations and home child care facilities as specified under Sections 5.2 and 5.7; signs if not associated with a development proposal; and other uses specifically exempted from these regulations under Section 6.13. Unless otherwise specified, site plan review is required for changes of use as regulated under Section 4.3 when site modifications are proposed that result in changes to curb cuts or access drives; additions to existing structures; new structures; or similar changes that will alter the overall layout or function of the existing site. Uses listed as “conditional uses” under Article II do not require separate site plan review and approval, but must meet applicable site plan review standards under Section 6.6.

************

**Consistency with the Winooski Master Plan**

The following information is provided to address the requirements of 24 V.S.A. §4441 regarding consistency of the proposed amendments to the City of Winooski Master Plan, adopted March 2019. Specifically, statute requires municipalities to consider three parts when reviewing proposals for new or amended bylaws. These considerations include:

1. **Conforms with or furthers the goals and policies contained in the municipal plan, including the effect of the proposal on the availability of safe and affordable housing.**

The City updated their Master Plan in 2019. The master plan includes multiple components that discuss housing options and affordability, and protection of existing stable neighborhoods. The proposed changes are primarily administrative in nature and would not adversely impact the availability of safe and affordable housing. Additionally, these changes would all be consistent with the goals and polices in the Master Plan.
2. **Is compatible with the proposed future land uses and densities of the municipal plan.**

   The future land use map included in the Master Plan identifies development density along the corridors and in the downtown core. The proposed amendments would further clarify the development options and processes for projects located in the Downtown Core Zoning District, consistent with the future land uses included in the City’s 2019 Master Plan.

3. **Carries out, as applicable, any specific proposals for any planned community facilities.**

   No adverse impacts to planned community facilities have been identified as a result of the proposed amendments.
ACT 250 NOTICE
MINOR APPLICATION #4C1043-1A
10 V.S.A. §§ 6001 - 6093

On March 19, 2021, University of Vermont and State Agricultural College, 16 Colchester Avenue, Burlington, VT 05405 filed application number 4C1043-1A for a project generally described as the temporary suspension of a 200 space off-campus parking lot as required in item 4(b) of UVM's Local Parking Management Plan (Exhibit #018 of LUP #4C1043-1). The project is associated with the Health Science Research Facility located at 149 Beaumont Avenue in Burlington, Vermont.

The District 4 Environmental Commission is reviewing this application under Act 250 Rule 51—Minor Applications. A copy of the application and proposed permit are available for review at the office listed below. The application and a draft permit may also be viewed on the Natural Resources Board's web site (http://nrb.vermont.gov) by clicking on "Act 250 Database" and entering the project number “4C1043-1A.”

No hearing will be held and a permit may be issued unless, on or before April 23, 2021, a person notifies the Commission of an issue or issues requiring the presentation of evidence at a hearing, or the Commission sets the matter for a hearing on its own motion. Any person as defined in 10 V.S.A. § 6085(c)(1) may request a hearing. Any hearing request must be in writing to the address below, must state the criteria or sub-criteria at issue, why a hearing is required and what additional evidence will be presented at the hearing. Any hearing request by an adjoining property owner or other person eligible for party status under 10 V.S.A. § 6085(c)(1)(E) must include a petition for party status under the Act 250 Rules. Prior to submitting a request for a hearing, please contact the district coordinator at the telephone number listed below for more information. Prior to convening a hearing, the Commission must determine that substantive issues requiring a hearing have been raised. Findings of Fact and Conclusions of Law may not be prepared unless the Commission holds a public hearing.

If you feel that any of the District Commission members listed on the attached Certificate of Service under “For Your Information” may have a conflict of interest, or if there is any other reason a member should be disqualified from sitting on this case, please contact the District Coordinator as soon as possible, and by no later than April 23, 2021.

The Applicant has requested a partial waiver of notice to adjoining landowners, pursuant to Act 250 Rule 10(F). The District Commission has granted the waiver request based on the determination that the adjoining landowners whose notice has been waived, reasonably could not be affected by the proposed project and that serving notice on all the adjoining landowners constitutes a significant administrative burden without corresponding public benefit.

If you have a disability for which you need accommodation in order to participate in this process (including participating in a public hearing, if one is held), please notify us as soon as possible, in order to allow us as much time as possible to accommodate your needs.

Parties entitled to participate are the Municipality, the Municipal Planning Commission, the Regional Planning Commission, affected state agencies, and adjoining property owners and other persons to the extent that they have a particularized interest that may be affected by the proposed project under the Act 250 criteria. Non-party participants may also be allowed under 10 V.S.A. Section 6085(c)(5).

Dated at Essex Junction, Vermont this 30th day of March, 2021.

By: /s/Rachel Lomonaco
Rachel Lomonaco, District Coordinator
111 West Street
Essex Junction, VT 05452
802-879-5658
Rachel.Lomonaco@vermont.gov
This is a PROPOSED permit; please submit any written comments to Rachel Lomonaco, District Coordinator, 111 West Street, Essex Junction, VT 05452 by April 23, 2021.

CASE NO: 4C1043-1A
University of Vermont and State Agricultural College
16 Colchester Avenue
Burlington, VT 05405

LAWS/REGULATIONS INVOLVED
10 V.S.A. §§ 6001 - 6111 (Act 250)

The District 4 Environmental Commission hereby issues Land Use Permit Amendment #4C1043-1A, pursuant to the authority vested in it by 10 V.S.A. §§ 6001-6111. This permit amendment applies to the lands identified in Book 979, Page 409; Book 154, Page 681; Book 54, Page 67; Book 31, Page 168; and Book 5, Page 365, of the land records of the City of Burlington, Vermont, as the subject of deeds to University of Vermont and State Agricultural College.

This permit specifically authorizes the temporary suspension of a 200 space off-campus parking lot as required in item 4(b) of UVM’s Local Parking Management Plan (Exhibit #018 of LUP #4C1043-1). The parking lot is located at 351 Pine Street in Burlington and is associated with UVM’s Health Science Research Facility located at 149 Beaumont Avenue in Burlington, Vermont.

Jurisdiction attaches because the Project constitutes a material change to a permitted development or subdivision, and thus requires a permit amendment pursuant to Act 250 Rule 34.
1. The Permittee, and its assigns and successors in interest, is obligated by this permit to complete, operate and maintain the project as approved by the District 4 Environmental Commission (the “Commission”) in accordance with the following conditions.

2. The project shall be completed, operated and maintained in accordance with the conditions of this permit, and the permit application, plans, and exhibits on file with the Commission and other material representations.

3. All conditions of Land Use Permit #4C1043, Land Use Permit #4C0852, and amendments are in full force and effect except as further amended herein.

4. Representatives of the State of Vermont shall have access to the property covered by this permit, at reasonable times, for the purpose of ascertaining compliance with Vermont environmental and health statutes and regulations and with this permit.

5. No change shall be made to the design, operation or use of this project without a permit amendment issued by the Commission or a jurisdictional opinion from the District Coordinator that a permit is not required.

6. No further subdivision, alteration, and/or development on the tracts of land approved herein shall be permitted without a permit amendment issued by the Commission or a jurisdictional opinion from the District Coordinator that a permit is not required.

7. Pursuant to 10 V.S.A. § 8005(c), the Commission or the Natural Resources Board may at any time require that the permit holder file an affidavit certifying that the project is in compliance with the terms of this permit.

8. The conditions of this permit and the land uses permitted herein shall run with the land and are binding upon and enforceable against the Permittee and their successors and assigns.

9. The Permittee shall provide each prospective purchaser of any interest in this Project a copy of the Land Use Permit Amendment before any written contract of sale is entered into.

10. The Permittee shall reference the requirements and conditions imposed by Land Use Permit #4C1043-1A in all deeds of conveyance and leases.

11. The Permitee is authorized for a temporary suspension of item 4(b) of UVM’s Local Parking Management Plan (Exhibit #018 of LUP #4C1043-1) until either: (1) UVM’s parking utilization rate reaches 83%, or (2) the Health Science Research Facility opens for use, whichever comes first. The Permittee will evaluate the parking utilization rate monthly and provide this data to the District Commission as it becomes available.

12. The Project shall be completed in accordance with the approved plans by **October 1, 2023**, unless an extension of this date is approved in writing by the Commission. Such
requests to extend must be filed prior to the deadline and approval may be granted without a public hearing.

13. The Permittee shall file a Certificate of Actual Construction Costs, on forms available from the Natural Resources Board, pursuant to 10 V.S.A. § 6083a(g) within one month after construction has been substantially completed. If actual construction costs exceed the original estimate, a supplemental fee based on actual construction costs must be paid at the time of certification in accordance with the fee schedule in effect at the time of application. Upon request, the Permittee shall provide all documents or other information necessary to substantiate the certification. Pursuant to existing law, failure to file the certification or pay any supplemental fee due constitutes grounds for permit revocation. The certificate of actual construction costs and any supplemental fee (by check payable to the "State of Vermont") shall be mailed to: Natural Resources Board, 10 Baldwin Street, Montpelier, VT 05633-3201; Attention: Certification.

14. Failure to comply with any condition herein may be grounds for permit revocation pursuant to 10 V.S.A. sec. 6027(g).

Dated this _____ day of April, 2021.

By __________________________

Parker Riehle, Vice Chair
District 4 Commission

Members participating in this decision:
Monique Gilbert
Kate Purcell

Any party may file a motion to alter with the District Commission within 15 days from the date of this decision, pursuant to Act 250 Rule 31(A).

Any appeal of this decision must be filed with the Superior Court, Environmental Division within 30 days of the date the decision was issued, pursuant to 10 V.S.A. Chapter 220. The Notice of Appeal must comply with the Vermont Rules for Environmental Court Proceedings. The appellant must file with the Notice of Appeal the relevant entry fee required by 32 V.S.A. § 1431.

The appellant must also serve a copy of the Notice of Appeal on the Natural Resources Board, 10 Baldwin Street, Montpelier, VT 05633-3201, and on other parties in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.
Decisions on minor applications may be appealed only if a hearing was held by the district commission. Please note that there are certain limitations on the right to appeal, including appeals from Administrative Amendments and interlocutory appeals. See 10 V.S.A. § 8504(k), 3 V.S.A. § 815, and Vermont Rule of Appellate Procedure 5.

For additional information on filing appeals, see the Court’s website at: http://www.vermontjudiciary.org/GTC/environmental/default.aspx or call (802) 951-1740. The Court’s mailing address is: Vermont Superior Court, Environmental Division, 32 Cherry Street, 2nd Floor, Suite 303, Burlington, VT 05401.
CERTIFICATE OF SERVICE

I hereby certify on this 30th day of March, 2021, a copy of the foregoing ACT 250 MINOR NOTICE #4C1043-1A, was sent by U.S. mail, postage prepaid to the following individuals without email addresses and by email to the individuals with email addresses listed.

Note: any recipient may change its preferred method of receiving notices and other documents by contacting the District Office staff at the mailing address or email below. If you have elected to receive notices and other documents by email, it is your responsibility to notify our office of any email address changes. All email replies should be sent to NRB.Act250Essex@vermont.gov.

University of Vermont
c/o Lani Ravin
16 Colchester Avenue
Burlington, VT 05405
Lani.ravin@uvm.edu; lisa.kingsbury@uvm.edu

Katherine Schad, City Clerk
Chair, Selectboard/Chair, Planning Commission
City of Burlington
149 Church Street
Burlington, VT 05401
burlingtontownclerk@burlingtonvt.gov; lolberg@burlingtonvt.gov

Chittenden County Regional Planning Commission
110 West Canal Street, Suite 202
Winooski, VT 05404
permitting@ccrpcvt.org

Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, VT 05602-3901
ANR.Act250@vermont.gov

Dept. of Public Service
112 State Street, Drawer 20
Montpelier, VT 05620-2601
barry.murphy@vermont.gov; PSD.VTDPS@vermont.gov

VTrans Policy, Planning & Research Bureau
Barre City Place
219 N. Main Street
Barre, VT 05641
AOT.Act250@vermont.gov

Agency of Agriculture, Food & Markets
116 State Street, Drawer 20
Montpelier, VT 05620-2901
AGR.Act250@vermont.gov

Division for Historic Preservation
National Life Building, Drawer 20
Montpelier, VT 05620
scott.dillon@vermont.gov; james.duggan@vermont.gov
ACCD.ProjectReview@vermont.gov

FOR YOUR INFORMATION

District #4 Environmental Commission
Parker Riehle, Vice Chair
Monique Gilbert/Kate Purcell
111 West Street
Essex Junction, VT 05452

Natural Resources Conservation Service
68 Catamount Park, Ste. B
Middlebury, VT 05753
marybeth.whitten@vt.usda.gov

Winooski NRCD Office
617 Comstock Road, Suite 1
Berlin, VT 05602
info@winooskinrcd.org

Ethan Tapper, County Forester/FPR
John Gobeille/Toni Mikula, ANR/Dept. of Fish & Wildlife
111 West Street
Essex Junction, VT 05452
ethan.tapper@vermont.gov
john.gobeille@vermont.gov; toni.mikula@vermont.gov

Seven Days Classified Ad Section
255 South Champlain Street, PO Box 1164
Burlington, VT 05402
classifieds@sevendaysvt.com

Green Mountain Power Corporation
163 Acorn Lane
Colchester, VT 05446
kim.jones@greenmountainpower.com

Vermont Gas Systems
PO Box 467
Burlington, VT 05402
efficiency@vermontgas.com

Efficiency Vermont
128 Lakeside Ave., Suite 401
Burlington, VT 05401
pics@veic.org

Champlain Water District
403 Queen City Park Road
South Burlington, VT 05403
mike.barsott@champlainwater.org

Vermont Railway, Inc.
1 Railway Lane
Burlington, VT 05401

State of Vermont
Rail Unit
1 National Life Drive
Montpelier, VT 05633
mark.fitzgerald@vermont.gov

City DPW
645 Pine Street
Burlington, VT 05401

Parkview at Ticonderoga, LLC
885 Route 67
Ballston Spa, NY 12020

Dennis Harvey
295 Brook Drive
Bristol, VT 05443

ADJOINING LANDOWNERS

Available via:
https://anrweb.vt.gov/PubDocs/ANR/Planning/4C1043-1A/Application%20Documents/004%20UVM%20Main%20Campus%20List%20of%20Adjoiners.pdf and
https://anrweb.vt.gov/PubDocs/ANR/Planning/4C1043-1A/Application%20Documents/005%20UVM%20List%20of%20Courtesy%20Notifications.pdf

Dated at Essex Junction, Vermont, this 30th day of March, 2021.

Jessica Mason
Natural Resources Board Technician
802-879-5614
Jessica.Mason@vermont.gov

Y:\NRB\Essex\DISTRICTS\DIST4\PROJECTS\UVM\4C1043\4C1043-1A\Published Documents\District Commission Documents\4C1043-1A COS minor notice.docx
CERTIFICATE OF SERVICE

I hereby certify on this 6th day of April, 2021, a copy of the foregoing Request for Downtown Development Findings Document and Schedule G was sent by U.S. mail, postage prepaid to the following individuals without email addresses and by email to the individuals with email addresses listed.

Burlington School District
mspauldi@bsdvt.org

Brian Dunkiel, Esq.
Dunkiel Saunders Elliott
Raubvogel & Hand PLLC
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Joseph McNeil, Esq.
McNeil Leddy & Sheahan, P.C.
JMcNeil@mceiivt.com

Civil Engineering Associates, Inc.
dmarshall@cea-vt.com

Max Tracy, City Council President
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Andy Montroll, Planning
Commission Chair
andym@montrolllaw.com

Chittenden County Regional
Planning Commission
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cbaker@ccrpcvt.org

Amy Bovee, Assistant Clerk
abovee@burlingtonvt.gov

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Elizabeth.lord@vermont.gov

Jennifer Fitch, P.E.
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Department of Buildings &
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Jennifer.fitch@vermont.gov

Judy Bruneau, Executive Assistant
Department of Buildings &
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Vt. Dept. of Public Service 112
barry.murphy@vermont.gov

VTrans Policy, Planning and
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AOT.Act250@vermont.gov
craig.keller@vermont.gov
jeff.ramsey@vermont.gov
christopher.clow@vermont.gov

Vt. Agency of Agriculture, Food &
Markets
Ari-rockland.miller@vermont.gov
AGR.Act250@vermont.gov

Division for Historic Preservation
Aced.projectreview@vermont.gov
scott.dillon@vermont.gov

ANR, Dept. of Fish & Wildlife
john.gobeille@vermont.gov
toni.mikula@vermont.gov
shawn.good@vermont.gov

District #4 Environmental
Commission
Thomas Little, Chair
James McNamara/Kate Purcell
111 West Street
Essex Junction, VT 05452

Stephanie Monaghan, District
Coordinator
Nrb.act250essex@vermont.gov
Stephanie.Monaghan@vermont.gov

by:

Amy Marks
Civil Engineering Associates, Inc.
amy@cea-vt.com
HEARING RECESS ORDER

State of Vermont
Natural Resources Board
District 4 Environmental Commission
111 West Street
Essex Junction, VT 05452
https://nrb.vermont.gov/

CASE NO: 4C0174-6,4C0368-3

LAW/REGULATIONS INVOLVED
10 V.S.A. §§ 6001 – 6111 (Act 250)

The Burton Corporation
180 Queen City Park Road
Burlington, VT 05401

c/o John Caulo
LandPlan
61 Central Avenue
Burlington, VT 05401

I. Introduction

On March 10, 2021, the District 4 Commission held a public hearing for the above-referenced application located at 180 and 266 Queen City Park Road in Burlington, Vermont. Pursuant to Act 92 of the 2020 Vermont General Assembly and Executive Order 01-20 and associated Addenda and Directives issued by Governor Scott based upon the coronavirus (COVID-19) emergency, this hearing was conducted remotely via Microsoft Teams video conferencing software. Pursuant to Act 250 Rule 13(B), the Commission recessed the hearing pending submittal of additional information by the Parties as set forth below.

II. Party Status

A. The following persons who attended the hearing have party status pursuant to 10 V.S.A. § 6085(c)(1):

1. The Applicant, by John Caulo of LandPlan; Justin Worthley, Mike Fialko-Casey, and Eric Bergstrom of The Burton Corporation (“Burton”); Alex Crothers, Alan Newman, and Mark Balderston of Higher Ground; Kurt Muller, PE and Jennifer Conley, PE, PTOE of VHB; Eddie Duncan of RSG; Brian Dunkiel, Jonathan Rose, and Malachi Brennan of Dunkiel Saunders Elliott Raubvogel & Hand PLLC; and Tyler Barnard, EI, and Paul Boisvert, PE of Engineering Ventures.
2. The **City of Burlington** by Kimberlee J. Sturtevant, Esq., Assistant City Attorney, and Susan Molzon, Senior Public Works Engineer.

3. The **City of South Burlington** by Meaghan Emery, Vice-Chair of the South Burlington City Council, and the Council’s attorney, Andrew Bolduc, Esq. of McNeil Leddy & Sheahan, P.C.


5. The **Chittenden County Regional Planning Commission** did not attend the hearing, but Executive Director Charlie Baker submitted comments (Exhibit #068).

6. The **Vermont Agency of Transportation**, by Christopher Clow, PE.

7. The **Vermont Agency of Natural Resources** by Jennifer Mojo, Senior Planner.

B. At the January 13, 2021 Prehearing Conference, the Chair preliminarily granted or denied party status to the following Parties under the listed criteria:

8. **Lawrence (Laurie) Smith and Laura Waters** (50 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

9. **Michael Turner** (110 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

10. **Luc Logan** (39 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).
11. **Diane de Terra** (39 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

12. **Doug Goodman** (66 Central Avenue, South Burlington, VT 05403; 364 Queen City Park Road, Burlington, VT 05401), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

13. **Almy Landauer** (161 Austin Drive, Unit 139, Burlington, VT 05401), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas), 8(A) (Necessary Wildlife Habitat & Endangered Species), and 1(A) Headwaters.

14. **Wendy Bratt** (52 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), and 9(K) (Public Investments); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas), 8(A) (Necessary Wildlife Habitat & Endangered Species), and 10 (Local & Regional Plans).

15. **Sharon O’Neill** (20 Arthur Court, Burlington, VT 05401), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

16. **Dana Walrath** (42 Central Avenue, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status
under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 5(B) (Alternative Transportation), 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

17. **Stephanie Herrick** (161 Austin Drive, Unit 151, Burlington, VT 05401), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 5(A) (Traffic), and 8 (Aesthetics); preliminarily denied party status under Criteria 1(A) Headwaters, 1(B) (Waste Disposal), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 5(B) (Alternative Transportation), 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas), 8(A) (Necessary Wildlife Habitat & Endangered Species), 9(K) (Public Investments), and 10 (Local & Regional Plans).

18. **Janice Ellis** (161 Austin Drive, #83, Burlington, VT 05401), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas), 8(A) (Necessary Wildlife Habitat & Endangered Species), and 1(A) Headwaters.

19. **Wendy Copp** (11 Maple Ave, South Burlington, VT 05403), by James A. Dumont, Esq. and Michael Santos, PE, PTOE: Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

20. **Kerry Anderson** (3 Maple Ave, South Burlington, VT 05403): Preliminarily granted party status under Criteria 1 (Air Pollution), 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare & Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

21. **Sabrinajoy Milbury** (8 Maple Ave, South Burlington, VT 05403): Preliminarily granted party status under Criteria 1(B) (Waste Disposal), 5(A) (Traffic), 5(B) (Alternative Transportation), 7 (Cost of Local Government Services), 8 (Aesthetics), 9(K) (Public Investments), and 10 (Local & Regional Plans); preliminarily denied party status under Criteria 8 (Scenic or Natural Beauty, Historic Sites and Rare &
Irreplaceable Natural Areas) and 8(A) (Necessary Wildlife Habitat & Endangered Species).

Pursuant to 10 V.S.A. § 6085(c)(6), the Commission will re-examine its party status decisions prior to the close of the hearing and will state its final party status decisions either in the decision it issues on the case or in a separate memorandum.

III. Supplemental Evidence

Pursuant to Act 250 Rule 20(A), and with regard to the testimony provided, the Commission requires that the Applicants submit the following information:

1. A site plan that depicts where soil pre-characterization testing will occur.

2. A narrative that explains the pre-characterization testing process and how you will identify and respond to any potential contamination on the site, including the possible etching waste trench about which the opponents have testified.

3. A narrative that explains the anticipated timeframes for: a) completing work on the DEC-approved workplan; and b) completing soil characterization work.

4. The Commission has noted that the RSG report mentions adding sheetrock to a ceiling and a portion of the southern exterior wall, as well as insulation to that southern exterior wall, as potential measures to mitigate noise impacts from the Project. Please explain in greater detail how you propose to modify the building’s construction to mitigate noise impacts and the level of mitigation that each modification is expected to achieve.

5. Your conditional use approval from the Burlington Development Review Board requires you to perform, within the first 6 months of operation, a traffic assessment of how the Operational Management Plan is addressing traffic impacts. Please describe the types of additional traffic congestion and traffic safety mitigation measures that you could implement if the traffic mitigation measures proposed in the application require modification.

In addition, the Commission requests that the Vermont Agency of Natural Resources submit the following information:

6. A comment letter containing any draft land use permit conditions that the Agency might propose for preventing the release of any hazardous materials that might be present on the site into the air or groundwater.

In addition, the Commission requests that the City of Burlington submit the following information:
7. Please advise the Commission as to your anticipated timeframe for installing sidewalks along the length of Queen City Park Road, and describe the planned design thereof.

8. Please also advise the Commission as to whether the City’s pedestrian infrastructure improvement plans would include a bike path and/or a crosswalk near the intersection of Queen City Park Road and Central Avenue.

Finally, the Commission invites all parties to submit the following information:

9. In accordance with 3 V.S.A. § 812 and Act 250 Rule 12, the parties are invited to submit proposed findings of fact and conclusions of law under any or all Act 250 Criteria. Proposed findings should cite to the Exhibit(s) and testimony that support them, and should not be argumentative.

IV. Order

1. The above documentation shall be provided to all Parties listed on the attached certificate of service and one (1) digital version of the documentation shall be submitted to the District Commission Office on or before April 26, 2021. The Commission requests that the Commission’s digital version be attached as an email to the NRB public folder (NRB.Act250Essex@vermont.gov) or, if larger than 3 MB in size, uploaded to the NRB ftp site (see http://nrb.vermont.gov/documents/application-guide-act-250). Any upload to the NRB ftp site should be followed up with an email to the NRB public folder and to the District Coordinator informing them that the files have been uploaded.

After the above information has been received, the Commission will reconvene the hearing only if there are outstanding questions or if the Commission determines that a party or the Commission has reasonable questions about the additional information. If the information has not been received within 30 days from the date of this notice, or if the hearing is not reconvened, the Commission will set a date for adjournment and issue a final decision based on the existing record following a full deliberation of the issues. If the Applicant wishes to continue the recess beyond 30 days from the date of this notice, it must notify the District Commission in writing on or before the 30th day.

An appeal from this order may be filed with the Environmental Court in accordance with 10 V.S.A. Chapter 220 and the Rules for Environmental Court Proceedings.

If any party has any questions or wishes to request the hearing be reconvened, please call State Coordinator Aaron Brondyke at 802-595-2735.
Dated this 26th day of March, 2021.

By: /s/Thomas A. Little
Thomas A. Little, Chair
District 4 Environmental Commission
CERTIFICATE OF SERVICE

I hereby certify on this 26th day of March, 2021, a copy of the foregoing ACT 250 HEARING RECESS ORDER #4C0174-6,4C0368-3, was sent by U.S. mail, postage prepaid to the following individuals without email addresses and by email to the individuals with email addresses listed.

Note: any recipient may change its preferred method of receiving notices and other documents by contacting the District Office staff at the mailing address or email below. If you have elected to receive notices and other documents by email, it is your responsibility to notify our office of any email address changes. All email replies should be sent to NRB.Act250Essex@vermont.gov

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FOR YOUR INFORMATION

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Act 250 Application #4C0174-6,4C0368-3
COS Page 2

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Dated at Essex Junction, Vermont, this 26th day of March, 2021.

Jessica Mason
Natural Resources Board Technician
802-879-5614
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Y:\NRB\Essex\DISTRICTS\DIST4\PROJECTS\300001-4C0250\4C0174\4C0174-6,4C0368-3\Published Documents\District Commission Documents\4C0174-6,4C0368-3 COS hro.docx
I, Grace Grundhauser, certify that on March 11, 2021, I served copies of the following documents on behalf of the Burton Corporation in the above-referenced proceeding to the service list below by the delivery method noted:

- Burton Merits Hearing Presentation 3-10-2021
- Red Rocks Park Management Plan 2014
- Red Rocks Park Management Study 5-01-2013

**By Email:**

- Thomas A. Little, Chair
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**By Email and First Class Mail:**

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Dated at Burlington, Vermont, this 11th day of March, 2021.

By: /s/ Grace Grundhauser
Grace Grundhauser
Paralegal
Act 250 Permit Hearing

The Burton Corporation
4C0174-6,4C0368-3

March 10, 2021
Agenda

01 Intro & Orientation

02 Act 250 Application
   Scope

03 Act 250 Criteria
   Compliance

04 Performing Arts
   Center Operations

Justin Worthley, Burton
John Caulo, LandPlan
Alex Crothers & Mark Balderston, Higher Ground
01 Intro & Orientation

Justin Worthley, Burton
01 Intro & Orientation

The Burton Corporation headquartered at 180 and 266 Queen City Park Road (QCPR) lies within the Burlington Enterprise – Light Manufacturing (E-LM) zone (see Exhibit 006).

The Project Site is bounded by established urban development patterns on all sides:

- East – Active Vermont Rail Systems and Champlain Parkway Corridor
- North – Home Avenue
- West – Queen City Park Road
- South – Queen City Park Road

Existing improvements at the Project Site include:

- Two (2) commercial structures containing approximately 151,000 square feet of building area
- Several surface parking lots with parking capacity and circulation for 416 vehicles. See Exhibit 032a - Existing Site Plan
01 Intro & Orientation – Land Use Evolution, Planning & Zoning

The South End E-LM district has been a focal point for City of Burlington planning and economic development efforts over the past 20 years as hundreds of thousands of square feet of historic industrial and manufacturing uses have been repurposed for a variety of mixed uses including arts, entertainment, retail, café, office space, with some limited light manufacturing still interspersed.

Based on market pressure, the City has relaxed requirements to protect and preserve industrial/manufacturing uses in all parts of the E-LM, except for the area ‘south of home avenue’, where there is a requirement that 50% of all building be sustained for industrial/manufacturing uses, including:
- Manufacturing
- Transportation Hub facilities
- Warehousing/Distribution facilities
- Lumber Yards, etc.

Those uses, including 24-hour operations, do not require Conditional Use or Major Impact approval by the City of Burlington, nor do they require Act 250 approval. Our project requires both, and through these permitting processes, including today’s hearing, the impacts have been heavily analyzed and scrutinized, and the project as presented for approval in front of this Commission meets or exceeds the extensive City and State requirements. This is a testament to an outstanding team of dedicated professionals who have collectively been working for decades to make Burlington and Vermont a better place to live, work and play. This Hub project will create an exciting and vibrant location for our community to experience the best Burton and our project partners have to offer, and it will revitalize an aging and underutilized industrial facility, including implementing modern stormwater practices that will help Vermont protect Lake Champlain.
02 Act 250
Application Scope
Scope of this Act 250 Application

This Act 250 amendment application incorporates two locally-issued permits:
1. Stormwater upgrade and parking lot reconstruction at 180 and 266 Queen City Park Road (QCPR)
2. Re-purposing an existing 83,000 SF aging industrial building at 266 QCPR into a Mixed-Use “Hub”

City of Burlington zoning permits issued:
• Skatepark - Conditional Use approval issued by the DRB on May 10, 2019
• Parking Lot Reconstruction – Administrative approval issued Nov 19, 2019, and permit decision upheld on appeal by full DRB on Jan 22, 2020
• Performing Arts Center – Conditional Use approval issued by unanimous DRB on Sept 1, 2020

All conditions applied through local approvals are incorporated into this Act 250 application.

The property and project remain subject to other regulatory and permitting requirements.
02 Project Scope

Stormwater and Parking Lot improvements to 266 QCPR and the southern portion of 180 QCPR

Benefits Upon Completion Include:

- **Site stormwater runoff will no longer flow directly into Lake Champlain with essentially no treatment**

- Compliance with water quality and stormwater management regulations enacted under State Act 64

- Improved internal circulation within existing parking area via relocation of existing access points onto Queen City Park Road

- Significantly upgraded lighting and landscaping that complies with City shade tree / photometric requirements

- **NO increase in impervious, with shared parking to accommodate all anticipated uses**
02  Project Scope

Independent of the proposed parking lot improvements, Burton will re-purpose an aging and underutilized space in its 83,000SF manufacturing building located at 266 QCPR into a mixed-use “Hub”

- Plan includes cosmetic improvements at front and side facades of 266 QCPR, as well as energy efficient, rooftop-mounted HVAC equipment.
- The scale and massing of 266 QCPR structure will remain the same.
- No modifications to the Burton building located at 180 QCPR property are included in this amendment application.
02  Project Scope

Current Burton uses planned for the 266 Hub:

- Flagship Retail Store
- Craig’s Prototype R&D / Manufacturing and Factory Tour Facility
- Product Testing and Research Labs
- Warranty and Repair
- Storage

Non-Profit Hub Partners:

- Chill Foundation Global Headquarters
- Talent Skatepark

Other Hub Partners:

- Food Court (multiple indoor cafes) operated by local restaurant collaborative
- Performing Arts Center (PAC) operated by Higher Ground
03 Act 250 Criteria Compliance

John Caulo, LandPlan
03 Act 250 Criteria Compliance

The amendment application is comprehensive, and provides evidence supporting Burton's compliance with the 10 criteria of Act 250 as required by the Act.

Specifically, the 10 Criterion Addressed in the amendment application include:

1. Air and Water Pollution – *Compliance with noise impact criteria to be addressed separately through expert testimony to follow*
2. Water Supply
3. Impact on Water Supply
4. Soil Erosion
5. Transportation – *Compliance with transportation/traffic impact criteria to be addressed separately through expert testimony to follow*
6. Educational Services
7. Municipal Services
8. Scenic Beauty, Historic Sites and Natural Areas
9. Impact of Growth
10. Local and Regional Plans
### 03 Act 250 Criteria – Criteria 1 – Air and Water Pollution

<table>
<thead>
<tr>
<th>Criteria sub-section</th>
<th>Application and Compliance Notes</th>
<th>Relevant Exhibits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noise Pollution</strong></td>
<td>This criteria will be addressed in detail through expert testimony later in our presentation.</td>
<td></td>
</tr>
</tbody>
</table>
| **Criteria 1 – Air Pollution** | - The existing buildings at the Project Site are conditioned with a combination of natural gas-fired and electric HVAC equipment. Proposed project will utilize the same type of equipment.  
  - No woodburning fireplaces, wood stoves or wood boilers exist or proposed for the Project.  
  - The Project will not result in any process emissions, dust, smoke, or odors. |                                                                                                        |
| **Criteria 1A - Headwaters** | The project site is not located in a headwaters area.                                                                                                                                                                               |                                                                                                        |
| **Criteria 1B - Waste Disposal** | See sub-sections below:                                                                                                                                                                                                             |                                                                                                        |
| **Wastewater**             | Wastewater System and Potable Water Supply Permit has been issued by VANR.                                                                                                                                                           | Exhibits 132 and 133, Wastewater System and Potable Water Supply Permit  
  Exhibit 025, "Ability to Serve" letter from DPW Water Resources Division                                                                                       |
| **Stormwater**             | Application is compliant.                                                                                                                                                                                                             | Exhibit 011, Stormwater Discharge Permit                                                                                           |
| **Hazardous Materials**    | - This application does not involve any manufacturing or industrial processes that could affect wastewater or create a discharge.  
  - There is no evidence that work proposed under this application will cause a release of contaminants.  
  - Disturbed soils will be pre-characterized and handled according to the DEC I-Rule, as required by State rules and regulations. | Exhibit 107, VHB 266QCPR Site Investigation Work Plan 12/15/20  
  Exhibit 38a, Grading Plan                                                                                                                                 |
| **Construction Debris**    | Application is compliant.                                                                                                                                                                                                             | Exhibit 013a, Waste Management Plan                                                                 |
| **Criteria 1C - Water Conservation** | Current and proposed water usage is for bathrooms, drinking fountains and cleaning. Low-flow fixtures are proposed throughout, and the state issued a wastewater permit for the Project. | Exhibits 132 and 133, Wastewater System and Potable Water Supply Permits |
| **Criteria 1D - Floodways** | The Project Site is not located on or near any floodways.                                                                                                                                                                            |                                                                                                        |
| **Criteria 1E - Streams**  | The Project Site is not located on or near any streams.                                                                                                                                                                              |                                                                                                        |
| **Criteria 1F - Shorelines** | The Project Site is not located on or near any shorelines.                                                                                                                                                                            |                                                                                                        |
| **Criteria 1F - Wetlands** | No construction activities are planned within 500 of any wetland.                                                                                                                                                                    | Exhibit 032a, Existing Conditions Plan revised 11/25/20                                                                                      |
### Criteria sub-section

<table>
<thead>
<tr>
<th>Criteria 2 – Water Supply</th>
<th>Application and Compliance Notes</th>
<th>Relevant Exhibits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The City of Burlington currently supplies the Project Site with water which will continue for the proposed Project.</td>
<td>Exhibit 25, Ability to Serve Letter from BTV Public Works - Water Resources Division Exhibits 132 and 133, VANR Wastewater System and Potable Water Supply Permits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria 3 – Impact on Water Supply</th>
<th>Application and Compliance Notes</th>
<th>Relevant Exhibits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is no evidence indicating any water supply will be restricted or negatively affected by this amendment application.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria 4 – Soil Erosion</th>
<th>Application and Compliance Notes</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Project Site is an existing 15.6-acre commercial development in continuous operation since the 1950s, with terrain that can be characterized as open and flat. The existing parking lot is physically and functionally obsolete, including inadequate stormwater collection and treatment which has accelerated its deterioration. In response, this Project proposes the creation of two, gravel wetland, stormwater treatment features as part of the parking lot reconstruction. When completed, will result in the following benefits for Burton and the community:</td>
<td>Exhibit 011, VANR Stormwater Discharge Permit Exhibits 27 to 48, assorted site/utility/lighting/landscape plans and details</td>
</tr>
<tr>
<td></td>
<td>• Compliance with recently enacted water quality/stormwater regulations, Vermont Act 64.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduction in the amount of impervious surface at the Property by approximately .1 acre, a reduction of approximately 1 percent.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reconfiguration of driveway entrances to accommodate stormwater treatment and provide for adequate circulation of cars and delivery/service vehicles.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Installation of new site lighting and landscaping resulting in compliance with City shade tree / photometric requirements.</td>
<td></td>
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</table>
### Act 250 Criteria – Criterion 6 – Education, 7 – Municipal Services, 8 – Scenic Beauty, 8A Wildlife

<table>
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<tbody>
<tr>
<td>Criteria 5 – Transportation</td>
<td>This criteria will be addressed by expert testimony provided by the Applicant.</td>
<td></td>
</tr>
<tr>
<td>Criteria 6 – Education</td>
<td>The Project will not result in any impact on BTV's ability to provide educational services.</td>
<td></td>
</tr>
<tr>
<td>Criteria 7 – Municipal Services</td>
<td>Application is compliant.</td>
<td>Exhibit 025, “Ability to Serve” letters from various City of Burlington municipal departments as required.</td>
</tr>
</tbody>
</table>
| Criteria 8 – Scenic Beauty / Historic Sites / Natural Areas | The Project Site is located on an existing 15.6-acre Industrial Park parcel zoned Enterprise-Light Manufacturing (E-LM) within the City of Burlington. The physical character (scale, mass, functionality) of the Project Site and surrounding environments will be unchanged as a result of this Project. The various components of this amendment application will re-purpose and modernize an underutilized industrial site into a visually pleasing example of adaptive reuse, including:  
  - Architecturally designed retrofit of the building façade  
  - Reconstruction of existing parking areas; installation of stormwater improvements as required by Act 64  
  - Enhanced pedestrian connections  
  - Energy-efficient lighting and upgraded landscaping  
  - Exterior Signage - While no specifics are available at this time with regards to size, illumination, or colors of the proposed signage, the applicant's local approval requires a separate submission of a detailed sign application to the City of Burlington once the design details of the signage program are finalized. | Exhibit 006, Zoning Map showing E-LM zone district along Queen City Park Road.  
Exhibit 032a, Existing Conditions Plan  
Exhibits 036 & 037a, Proposed Site Plan-Sheets C1.5 and C1.6  
Exhibit 026, Architectural Renderings  
Exhibits 032a to 048, assorted site / utility / lighting / landscape plans and details  
Exhibit 027, Site Layout Plan  
Exhibits 028 to 031, Site Lighting and Landscaping Plans  
Exhibit 027 for general location of proposed site signage |
| Criteria 8A – Wildlife and Endangered Species | There are no identified necessary wildlife habitat or endangered species at the existing site.                                                                                                                                       |                                                                                                                                                                                                              |
## 03 Act 250 Criteria – Criteria 9

<table>
<thead>
<tr>
<th>Criteria sub-section</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Criteria 9A – Impact of Growth</td>
<td>The Project repurposes a pre-existing development and will not significantly affect the ability of the City or region to accommodate growth.</td>
<td></td>
</tr>
<tr>
<td>Criteria 9B – Prime Agricultural Soils</td>
<td>Application's impact on prime agricultural soils is &quot;de minimis.&quot;</td>
<td>Exhibit 050, VT Dept of Agriculture communication</td>
</tr>
<tr>
<td>Criteria 9C – Productive Forest Soils</td>
<td>There are no productive forest soils on the site.</td>
<td></td>
</tr>
<tr>
<td>Criteria 9D, 9E – Earth Resources</td>
<td>There are no extraction of earth resources proposed on the site.</td>
<td></td>
</tr>
<tr>
<td>Criteria 9G – Private Utilities</td>
<td>No private utilities are proposed for this Project.</td>
<td></td>
</tr>
<tr>
<td>Criteria 9H – Scattered Development</td>
<td>The Project Site and surrounding area are &quot;urban&quot; in terms of the availability and diversity of municipal services (utilities / Telecom / transportation) and cannot be considered &quot;scattered development&quot;.</td>
<td></td>
</tr>
<tr>
<td>Criteria 9J – Public Utilities</td>
<td>Application is compliant.</td>
<td>Exhibit 025, &quot;Ability to Serve&quot; letters from various City of Burlington municipal departments as required.</td>
</tr>
</tbody>
</table>
| Criteria 9K – Public Investments   | • The Project will not have an adverse impact on adjacent governmental and public utility facilities, services.  
• SBFD properties are not adjacent to the Project. Even if they are viewed as adjacent, there is no material impact on these facilities caused by the Project. | Exhibit 130, ANR Water Supply Map (SBFD#1)  
Exhibit 010a, Operational and Management Plan                                      |
| Criteria 9L – Settlement Patterns  | The Project is a renovation of a pre-existing development and will not contribute to any strip development along public highways.                                                                                                   |                                                                                  |
## 03 Act 250 Criteria – Criteria 10 – Local and Regional Plans

<table>
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<th>Application and Compliance Notes</th>
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<tr>
<td>Criteria 10 – Local Plans</td>
<td>The proposed project is consistent with the stated planning policies and Zoning Ordinance of the City of Burlington.</td>
<td>Exhibit 001b Schedule B Revised 12-02-20, pp. 27-28, Exhibit 024, a memorandum dated 5/22/19 from BTV Planning Staff member Meagan Tuttle to the City Council, Exhibit 113 Opponent Exh C, planBTVUpdateFINAL, Exhibit 127, Letter from BTV Planning Director David White to Aaron Brondyke</td>
</tr>
<tr>
<td>Criteria 10 – Regional Plans</td>
<td>The proposed project is consistent with the 2018 Chittenden County ECOS Regional Plan.</td>
<td>Exhibit 068, a letter from the Chittenden County Regional Planning Commission to Aaron Brondyke dated 1/15/21</td>
</tr>
</tbody>
</table>
04 Performing Arts Center Operations

Alex Crothers & Mark Balderston, Higher Ground
Thank you
Appendix
Exhibit 130
RED ROCKS PARK

2014 Management Plan
Prepared by the Red Rocks Master Plan Subcommittee
for the City of South Burlington
This document was prepared by the Red Rocks Master Plan Subcommittee, as charged by the Red Rocks Advisory Committee, from January to September 2014.

The initiative arose following the completion of a year-long management study of Red Rocks by Sophie Mazowita, MS student in the University of Vermont Field Naturalist program.

This management plan was written by Sophie Mazowita, Subcommittee Chair, with the support of South Burlington Recreation & Parks and the following subcommittee members:

Katherine Cooper
Karen Freeman
Jed Lowy
Fran Moravscik
Michelle Mraz
Paul O’Brien
Melissa Sands
Weston Testo
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FOREWORD: A call to action

This document presents a list of best management practices, seasonal maintenance needs, and short-term and long-term management actions (summarized on page 40) for maintaining and improving the ecological and recreational features of Red Rocks Park. While this management plan is reflective of the particular time of its writing, it is intended to be an evolving document that will require updates as new strategies are trialled and new information comes to light. However, as this initial writing process comes to a close, two big questions have surfaced:

Who will oversee the implementation of this plan and with what funding?

There is presently no member—or members—of the City staff equipped to handle questions of natural resource management for Red Rocks Park and other natural areas in South Burlington. There is equally a lack of staff time and expertise to build the many possible community partnerships between South Burlington’s parks and open spaces and their stakeholders. Up until now, the City has turned to consultants and student group partnerships for expertise in park management questions, along with volunteer citizens’ advisory committees. This has been a low-cost solution but has led to a lack of continuity in management due to the short-term nature of many student projects and consulting contracts.

Park management and decision-making falls between South Burlington Recreation & Parks and the Department of Public Works, both of which have minimal staff capacity dedicated to management of natural area parks; these same departments oversee the time-intensive maintenance of recreational fields in the City, plus over 15 miles of recreation paths. There have also been instances of uncertain division of duties and decision-making power between the Recreation department and Department of Public Works.

As this management planning process comes to a close, the Recreation & Parks department will be left with a list of actions and projects to undertake, with no staff and minimal capital available to implement them. The subcommittee that informed the writing of this document is also due to dissolve at this same time.

These patterns point to the need for new staff and capital investment, plus a more clear assignment of responsibilities in the departments responsible for the City's natural area management.

If just three recommendations can be implemented from the management plan, let it be these:

1. South Burlington should have a dedicated staff position to (a) inform and coordinate management of the city’s open spaces and (b) build community partnerships and stewardship capacity for South Burlington’s parks.

2. The maintenance and improvement of South Burlington’s parks requires more capital. The City should establish a sustainable funding stream, which would include (a) contributions from the existing Open Space Fund or a similar taxpayer contribution towards park upkeep, and (b) targeted grant applications and fundraising for specific park projects as needed.

3. Existing park regulations must be enforced to ensure compliance.
SECTION 1: INTRODUCING RED ROCKS

Red Rocks Park is a 100-acre community park and natural area in the City of South Burlington, Vermont. It was purchased by the City in 1970, having formerly served as the Hatch Family Estate since the late 1800s. The roads and lookouts created by the Hatch family now provide walking trails through maple-ash-hickory-oak forest and cedars perched atop red Monkton Quartzite cliffs. A city beach at the southeastern edge of the park provides 200 yards of waterfront access (the only public lake access in the city), and the Champlain Water District operates a pumping station at the western limit of the beach, along with two easements for their transmission lines.

Red Rocks is one of four large natural areas in the South Burlington Parks network (the others are Wheeler Nature Park on Dorset Street, the Scott Property on Autumn Hill Road, and the recently acquired Underwood property south of Nowland Farm Road). Red Rocks occupies the westernmost corner of South Burlington (see Map 1). It is bordered by Lake Champlain to the south and west, Burlington to the north, and the Queen City Park neighborhood to the east. The park is accessed from Central Avenue.

The park is currently operated by the South Burlington Recreation & Parks Department and maintained by the Department of Public Works. Guidance and recommendations are provided by a seven-member committee of appointed city residents, many of whom reside in the Queen City Park neighborhood.

Key management issues and objectives
Red Rocks faces challenges posed by heavy recreational use by the public. Aquatic and terrestrial invasive species, off-leash dog impacts, unofficial trail use, forest health, and park signage are among the concerns of the park’s management. The City seeks to provide a variety of recreational opportunities in Red Rocks Park while maintaining ecological integrity, minimizing usage impacts, and addressing threats and hazards.

Purpose of this document
This management plan was prepared as a guiding document for City staff and other Red Rocks Park stakeholders. It includes recommendations for park maintenance and natural resource conservation to meet both short-term and long-term goals. The document was prepared by the Red Rocks Master Plan Subcommittee, overseen by the Red Rocks Park Advisory Committee.
Map 2. Red Rocks Park can be divided into two major management zones:

(1) The eastern, “developed” zone, from the Central Ave entrance to the north-south boundary where the hiking trails begin. This section includes the parking lots, picnic area, beach, and CWD easement. It also borders the Queen City park neighborhood. Recreation access is of primary importance in this zone.

(2) The western, “natural” zone, stretching from the north-south parking road/hiking trail boundary out to the far western tip of the park. Ecosystem health and wildlife values are a higher priority in this zone.
SECTION 2: PARK VALUES, ORDINANCES & OPPORTUNITIES

2.1 EVALUATIVE CRITERIA FOR RED ROCKS PARK MANAGEMENT ACTIONS

Management actions should be weighed against the following criteria. “Management action” could refer to a specific policy decision, park maintenance plan, or design of park facilities and grounds.

**Ecosystem Health & Wildlife**
- Does the management action maintain, restore, or at least minimize impact on ecosystems and ecological processes, including natural communities, wildlife habitat, water, and soils?

**Recreation**
- Does the management action provide for community members’ physical and spiritual connection to the natural world through public access and recreation?

**Community & Neighboring Landowners**
- Does the management action respect and build partnerships with neighboring landowners, both public and private?

**Education**
- Does the management action maintain or enhance opportunities for educational use of the park?

**Resource Efficiency**
- Does the management action minimize use of energy and other natural resources and the creation of waste?
- Does the management action minimize financial costs?

**Aesthetics**
- Does the management action maximize the aesthetic quality of the site?

2.2 UNIQUE VALUES OF RED ROCKS

The following features are notable and in many cases unique to Red Rocks, comparing it to other areas within South Burlington and the larger area.

**Recreational and Cultural Values**
- South Burlington’s only public lake access
- The longest-standing natural area park in the City, providing public access to park land in a “natural” or “wild” state relative to other recreational parks managed for organized sports and playing fields
- Park within walking, biking, and public transit access for a large population
Ecological Values

- Large forested area within a relatively dense urban area
- Significant bird nesting area
- Contains an ecological community of state-level conservation priority: limestone bluff cedar-pine forest
- Important habitat elements for wildlife (e.g., vernal pools, cliff ledges, and mature forest)
- Large populations of spring wildflowers
- A natural buffer helping to protect the source of much of Chittenden County’s freshwater
- Part of the shoreline wildlife corridor along Lake Champlain

2.3 MANAGEMENT REGULATIONS AND ORDINANCES

The following management regulations, rights, and ordinances are applicable to Red Rocks and must be kept in mind when considering management actions in the Park. Some could be changed more easily through City process (e.g., the dog leash law), while others fall outside of City control (e.g., changes to the CWD easement).

US Army Corps of Engineers (USACE) regulations
Work, structures or fill that take place beyond (lakeward of) the 98’ elevation are regulated by USACE.

Champlain Water District (CWD) rights
The CWD owns the land immediately surrounding the pumping station at the west end of the beach. They also have access and management rights to two easement that run from this pumping station:
- a 40’ easement that runs diagonally from the pumping station towards the park entrance
- a 50’ easement that runs along the park entry road, through the northernmost parking area, then southward along the western side of the parking loop road, to the pumping station

Development Review Board regulations
- All land within 150 ft (horizontal distance) of the high water elevation of Lake Champlain (defined as 102 ft above sea level) is subject to surface water buffer standards, which states that “all lands within [the] required stream buffer... shall be left in an undisturbed, naturally vegetated condition.” The main concern is maintaining a vegetated buffer for erosion control.
- Wetlands and the 50 ft of land adjacent must also be left undisturbed and naturally vegetated.

South Burlington Dog Ordinance
Dog owners must have their dogs on a leash (max. 6 feet) at all times within Red Rocks Park boundaries. Dogs are entirely prohibited at the public beach and in the water at Red Rocks. Safety is listed as the primary reason for the law, along with protection of “ecologically sensitive areas, including wildlife, rare wildflowers, wetlands, nesting, and other plants, flora, and fauna.” Failure to comply can result in a civil penalty charge, up to $100 per day. Overseen by the Animal Control Officer. Dog owners looking to let their dog off-leash can visit Farrell Park, Overlook Park, Jaycee Park, Szymanski Park, and the Community Dog Park.
South Burlington Park Conduct Ordinance

Park rules include:

- No picking of trees, shrubs, flowers, ferns or other plants within park boundaries.
- No stones, rocks, birds, or animals shall be removed.
- No removal of bark from trees or cutting and removal of firewood.
- Axes, hatchets, shovels, chain saws, picks, handsaws, and all other tools used to dig, cut or build are prohibited.
- No glass containers are permitted within Park boundaries.
- No person shall disturb the peace, endanger the public safety, use obscene or profane language or prevent the use of City parks by others.
- Refuse, rubbish, garbage or other trash of any nature shall not be left in City parks except in receptacles where provided.
- Drinking of alcoholic beverages in City parks is strictly forbidden, except by special permit.
- It is unlawful to post bills, cut, deface, write upon, remove or destroy any tree, shrub, rock, signs, buildings, tables, benches, fireplaces, grills or other structures or equipment, facilities or park property, or appurtenances whatsoever.

(see the City of South Burlington website for the complete document).

2.4 MANAGERS, COMMUNITY PARTNERSHIPS & OPPORTUNITIES

Park managers and recent community partnerships—as well as opportunities for new connections—are summarized below. This list is reflective of the 2012-2014 period of preparation of this management document and is by no means exhaustive.

Current park management

- South Burlington Recreation & Parks (year-round staff of four) oversees park operations.
- The Red Rocks Advisory Committee (seven appointed City residents) provides recommendations and communicates park needs to City Council.
- The Department of Public Works is responsible for park maintenance, responding on an as-needed basis.

Recent project partnerships

- UVM undergraduate classes have researched educational opportunities, hosted a community trail stewardship day, and made landscape design recommendations (NR 206 and PSS 238 classes) during the 2013-2014 academic years.
- UVM Field Naturalist Program collaborated in preparation of the Red Rocks management study in 2012-2013.
- The Nature Conservancy provided support for invasive species management during preparation of the 2012-2013 management study.
- Champlain College ‘Foundations of Ecology’ class participated in invasive species management in Fall 2013.
Opportunities for partnership and community stewardship

- K-12 and college students; partnerships with specific class groups and teachers; graduate student or senior undergraduate studies
- Local neighborhood stewards (from Queen City Park and the Red Rocks condos along the northern park boundary)
- Individual volunteers from the larger South Burlington & Burlington community who come out to publicly-advertized work days and outreach events
- Corporate groups from South Burlington & Burlington (team-building activities and opportunities to give back to the community)
- Local businesses/companies: Burton, Edlund, Rhino Foods, Dealer.com for trail work days and other stewardship events
- Vermont Youth Conservation Corps to hire for targeted, technical trail work projects
- Local Motion for collaboration on bike and pedestrian accessibility
- Master Gardeners as possible volunteers for landscaping and invasive species
- South Burlington Land Trust
- Yestermorrow Design/Build for Public Interest for a park infrastructure project
- Americorps funding support to hire a stewardship coordinator or other staff position dedicated to park maintenance and/or programming

2.5 PARK MANAGEMENT AND PLANNING AS AN ONGOING PROCESS

A park management plan may be a static document, but the park management process is ever-evolving and a constant learning experience for all stakeholders involved.

Management strategies should be adjusted in step with changes in our scientific understanding and with changes in our community values and priorities for the park.

Management in the face of uncertainty

Red Rocks Park faces a host of management questions and concerns that do not have simple answers or solutions. Our knowledge of the natural world and how a natural area like Red Rocks functions will always be incomplete. The best that we can do as park managers and stewards is to implement solutions based on our current understanding of best practices, shaped by our goals for the park. It is important to monitor the results of these management actions, evaluate their success, and continually adjust as our scientific understanding and our own experience at Red rocks indicates. This is an “adaptive management” approach.
Some principles to keep in mind in managing an area like Red Rocks:

- Think of management actions in terms of “small experiments” to test or evaluate possible management strategies.
- Monitor these experiments to assess how they meet goals.
- Consider new information as it emerges and adjust strategies (and goals) accordingly.

### 2.6 MANAGING PEOPLE & ENCOURAGING COMPLIANCE

#### Options for restricting use (or encouraging desired use)

There are various means to choose from for limiting park user behavior:

- Time restrictions/seasonal limitations, e.g. off-leash dogs only permitted outside of bird breeding season
- Area/zoning limitations, e.g. no off-leash dogs in sensitive wildlife areas, walk only on designated trails
- Behavior allowances and prohibited activities (e.g. campfires, littering, etc.)
- Group size restrictions
- Suggestions vs. city ordinances

#### Best Management Practices

- **Explain reasons for regulations** to improve visitor compliance: clearly state the problem, what aggravates it, and how a change in behavior will improve it. Make the suggestion reasonable.
- Be sure visitors understand how they are expected to behave.
- **Enforce regulations.** Regulations are there for a reason, and furthermore, it’s not fair to law-abiders if they are not enforced. If enforcement is impossible, better to just ask visitors to behave in a certain way rather than have strict but unenforced “empty” regulations; **regulate at the minimum level possible.**
- Punishment-oriented strategies are the most effective in controlling behavior, especially if there’s an enforcement presence, but positive wording of regulations is favored by the majority (e.g. “Please keep your dog on a leash” vs. “No off-leash dogs”)
- Use **positive wording** and messages (and indicate reasons for restrictions) to encourage good behavior, rather than just listing limitations (e.g., “Habitat restoration area” vs. simply “No trespassing” or “Trail closed”)
- **Personal (verbal) contact often facilitates initial receptiveness** to regulations, information, and enforcement, but written/read guidelines aid retention
- Simplify messages: having 2 messages vs. 8 on a bulletin board results in the same knowledge gain
- Focus the message: make it personal, tailor it to the audience. It will vary between user groups.
2.7 RECOMMENDED TIMELINE FOR REVISITING THE MANAGEMENT PLAN

An adaptive management approach requires ongoing adjustments and updates to management strategies. At the same time, this management plan would benefit from a formal written update every 5 years as new partnerships, outcomes, and issues come to light.

2.8 ISSUES NOT ADDRESSED IN THE MANAGEMENT PLAN

Should any issues arise that are not addressed by this management plan, park operations and maintenance staff should consult with a committee of knowledgable natural resource specialists or their designated representatives. This would presently be the Red Rocks Park Advisory Committee and its subcommittees; however, the issues are also pertinent to the Natural Resources and Open Space Committee and the Recreation & Leisure Arts Committee.

2.9 IMPLEMENTATION AND OVERSIGHT OF THE MANAGEMENT PLAN

As described in the “Call to Action” in the foreword of this document, the City presently lacks both the staff capacity and funding to implement most of the recommendations outlined in this management plan. Two key, overarching recommendations have thus emerged from this 2014 management planning process:

1. South Burlington should have a dedicated staff position to (a) inform and coordinate management of the city’s open spaces and (b) build community partnerships and stewardship capacity for South Burlington’s parks.

2. The maintenance and improvement of South Burlington’s parks requires more capital. The City should establish a sustainable funding stream, which would include (a) contributions from the existing Open Space Fund or a similar taxpayer contribution towards park upkeep, and (b) targeted grant applications and fundraising for specific park projects as needed.

3. Existing park regulations must be enforced to ensure compliance.
SECTION 3: MANAGEMENT CONCERNS & ACTION PLAN

This section presents some of the central management issues of concern in Red Rocks Park. Each subsection presents the issue, outlines goals, and then outlines management directives divided into several categories:

- **Seasonal maintenance**: regular and ongoing maintenance needs
- **Best management practices**: general guidelines for addressing the management concern
- **Short-term management actions**: priority actions or projects for the next year
- **Long-term management actions**: priority actions or projects requiring a longer time frame

Some management sections also contain directives targeted to the particular issue (e.g., guidelines for management of invasive species by type). Each subsection also lists possible resources and partnerships.

### 3.1 INVASIVE PLANTS

#### A) PRESENT CONDITION & PROBLEMS

Much of Red Rocks is occupied by non-native invasive plant species (see Table 1, below), and their management should be a priority for park directors. Many conservation professionals sense a strong threat from invasive species and recommend complete removal as a best practice; however, a growing body of research is pointing to possible negative impacts from such heavy-handed invasive species control. Sound invasive species management should weigh the potential risks and benefits of such management actions on a case-by-case (or species-by-species) basis. First priority should be on preventing establishment of new invasive plants and containing their spread.

**Impacts of Invasives**
- Non-native species can quickly replace native vegetation in disturbed areas, leading to dominance of a few species throughout the ecosystem.
- This can lead to loss of a food source for local insects; many moths and butterflies, for example, rely exclusively on a particular species of native plant on which they lay their eggs and their...
caterpillars feed. Studies show that non-native species support a lower diversity of insects. This impact can be felt up the food chain, as these insects are a main food source for many birds.

- Other studies show more direct impacts to birds because some fruits of invasive plants have a lower nutritional value compared to native ones, but more research is required to confirm this.
- Some invasive plants cause changes in soil chemistry that can inhibit the growth of other plant species, with long-lasting effects. Garlic mustard is an example of this allelopathic behavior.

<table>
<thead>
<tr>
<th>Table 1. Invasive species inventory</th>
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<tbody>
<tr>
<td><strong>TYPE 1 – Widespread Species Requiring Long-Term Removal Efforts</strong></td>
</tr>
<tr>
<td>Common and Glossy Buckthorn <em>Rhamnus cathartica</em> and <em>Frangula alnus</em></td>
</tr>
<tr>
<td>Shrub Honeysuckles <em>Lonicera sp.</em></td>
</tr>
<tr>
<td>Japanese Barberry <em>Berberis thunbergii</em></td>
</tr>
</tbody>
</table>

| **TYPE 2 – Isolated Occurrences and Early Detections** | **Location and Abundance** |
| Burning Bush or Winged Euonymus *Euonymus alatus* | Isolated plants along the entrance road and lakeside trail, with several plants concentrated along the far western (“turnabout”) overlook trail. |
| Norway Maple *Acer platanoides* | Scattered trees near the park entrance, along both sides of entry road, and near the high point of the E loop trail. Other scattered undetected infestations likely. |
| Periwinkle *Vinca minor* | Isolated dense patches at the top end of the western loop trail, encroaching in from nearby houses. Growing in thick mats. |
| Asiatic or Oriental Bittersweet *Celastrus orbiculatus* | Isolated patches and individual plants throughout park, at low density. |
| Garlic Mustard *Alliaria petiolata* | Expanding patch near the southeast corner of the parking loop road, towards the beach and Queen City Park (QCP); removed in 2013 but found even more widespread in 2014. There was a robust population found just beyond the eastern border of the park, along the road in QCP, which could be the source. A second, isolated patch growing near the park entrance, to the north of the road just beyond the entry kiosk, was removed in 2013. There was no sign of return in 2014. |
**Purple Loosestrife**  
*Lythrum salicaria*  
Several isolated plants and patches along the shoreline, including the beach area by CWD and shallows to the west, plus around the point and north of the western loop trails.

**Multiflora Rose**  
*Rosa multiflora*  
Isolated occurrences near western loop trail and around parking area.

**Goutweed**  
*Aegopodium podagraria*  
Isolated occurrence along northern boundary of park.

**Japanese Knotweed**  
*Fallopia japonica*  
One isolated occurrence just beyond the park boundary, near a condo development and adjacent network of side trails leading into the park.

### B) DESIRED CONDITION & MANAGEMENT GOALS

*Risks of invasives control: proceed with caution*

Invasive species do alter the structure and function of ecosystems, but the exact mechanisms and causes are not entirely understood (Didham et al. 2005). Managers should proceed with caution in proceeding with invasives management, as misguided removal efforts can easily lead to further spread. Complete removal often requires an intensive effort, including either repeated physical pulling or chemical treatment. The chemical herbicides are typically applied directly to cut stumps and reportedly break down quickly in the environment, but there are still risks of toxicity inherent in the use of any herbicide. Special care should be taken given Red Rocks’ waterfront location and proximity to drinking water sources.

It is also important to keep in mind that invasive plants are a symptom of habitat disturbance rather than the root cause in and of themselves. These plants dominate in openings and areas of bare soil, such as along trails. They were originally introduced and are continually transported by people. The most dense growth of invasive buckthorn in Red Rocks, for example, occurs atop the cliffs where people have created side trails to access lookouts and cliff-jumping locations. Removal of these plants could simply open up the bare soil for regrowth of buckthorn from the seedbank that persists in the soil. Full removal would require a continued effort that could be both expensive and time-intensive.

---

Most of the green in this picture belongs to the leaves of non-native buckthorn trees which have invaded the cedar forest at the top of the Red Rocks cliffs. What would be the consequence of removing these plants from this sensitive environment?
Even though invasive species have a lower food value for native wildlife, they do still provide some cover and habitat value. Removing all non-native plants would mean removing much of the shrubby growth in Red Rocks, taking away cover from small and medium-sized birds and mammals. Removal efforts should consider what will replace the invasive plants. Such efforts may best be coupled with restoration plantings of native species.

**Desired Condition**
Given all the uncertainty and risks outlined above, is it wise to pursue any invasive removal in Red Rocks? The City does have the opportunity to limit the spread of certain invasive species that are only present in a small extent at one or two locations right now. This could be done at low risk and low cost and would prevent further loss of native biodiversity.

Management for more widespread and dominant invasives such as buckthorn and honeysuckle would require a much more time- and cost-intensive operation. The pros and cons of this approach should be considered further in consultation with park management and city residents. How important is it to maintain native forest in Red Rocks, in the face of continued introductions of non-native species and disturbance from human use? This is not an easily answered question.

**Goals**
Park management should, at a minimum, aim to maintain the present level of ecosystem function by:

1) Curbing the spread of invasive plant species by containing current populations and
2) Preventing further infestations through an early detection-rapid response system

**C) INVASIVE PLANT MANAGEMENT**

**Seasonal Maintenance**
- Conduct two annual surveys, one in spring and one in fall, to monitor for new occurrences of invasive plants and to assess success of removal efforts
- Ensure that all park staff—including seasonal staff and Public Works—are familiar with the invasive species present in the park, their native look-alikes, and removal methods
- Continue with management efforts as outlined below in response to occurrences of non-native invasive plants

**Best Management Practices**
- Use a species-by-species management approach in addressing non-native invasive plant species
- Offer one or more methods for the public to report occurrences of new invasive plants in the park (e.g., a poster with contact information or a log book)
- Produce an educational guide to the non-native invasive plants of Red Rocks to inform the public
- Minimize soil disturbance and stabilize disturbed soil as soon as possible; invasive plants readily colonize these areas
- Monitor recent work sites for the emergence of invasive plants for a minimum of two years
• Invasive plants that have the ability to sprout from stem and root fragments (e.g., purple loosestrife and Japanese knotweed) should never be mowed
• Mechanical removal of invasives should aim to remove all underground parts, to prevent regrowth from the roots; even small root fragments left behind can give rise to many new plants
• Most invasive plants should be removed in late spring and early summer, prior to seed maturation
• Invasives in Red Rocks should be removed by mechanical means only (the alternative, to apply an herbicide, is considered too risky given the proximity to the lake and unknown long-term effects)
  o This decision should be revisited within 3 years time based on the success of mechanical removal methods and the assessed priority of invasive species removal, with the following provisions:
    ▪ Any herbicide applications must be done by trained, certified staff (Department of Public Works)
    ▪ No herbicide spraying is permitted within 150 feet of the Queen City water source, which covers a substantial portion of Red Rocks Park
    ▪ Chemical treatment of woody species such as buckthorn should be carried out in the fall, when plants are transporting resources to their root systems
• Plant debris removal options include:
  o Burning
  o Brush piling: Make sure that no cut surfaces or roots are in contact with the soil
  o Bagging and removal: Bag plants in heavy-duty garbage bags and sent to landfill after ensuring that the material is nonviable (wait at least one month, until it is partially decomposed, slimy or brittle)

Management Plan for Widespread Woody Species (Type A)
• Begin targeted removal of all woody invasives from small focus areas (requires trained staff, chainsaw use)
  o Main south-facing lookout designated as a first priority focus area
  o Other areas along the interior of the loop trails (designated “natural areas”) can be targeted next
• Close off focus areas to public, indicating “restoration area” and explaining why
• Replant these areas with native shade-tolerant shrubs and understory species
• Maintain designated “natural areas” as invasive-free
• Target removal of buckthorn and honeysuckle:
  o Release the seedlings of mast trees (oak, hickory, beech) that are important for wildlife
  o Remove larger seed-bearing female buckthorn trees
• All cut woody stumps must be wrapped in a few layers of burlap or thick plastic to prevent re-growth by stump sprouting
• Continue monitoring for new occurrences and move quickly to prevent establishment and spread
Management Plan for Isolated Occurrences and Early Detections (Type B)

- Hold work days to remove isolated populations the less widespread herbaceous invasive species
  - Volunteer and/or Park staff involvement during the early summer
  - Organize training sessions/workshops for regular users and park neighbors
- Mount an “early detection rapid response” to these plants, aiming to remove the populations in their entirety before they can spread aggressively throughout the park
  - Oriental bittersweet sits on this threshold now and could be targeted by repeated hand cuttings throughout the spring and summer:
    - Hand-pull entire plants, including all roots and runners
    - For larger plants, cut climbing or trailing vines close to root collar and repeat every 2 weeks.

D) RESOURCES & PARTNERSHIPS

For more information about invasive plants and their removal:

- The Nature Conservancy has an online identification guide and removal guidelines for Vermont’s invasive plants, available at [www.vtinvasives.org](http://www.vtinvasives.org)

Partnership Opportunities:

- The Nature Conservancy – staff support, mapping, planning
- UVM and Champlain College students, other student groups
- Grants may be available to support removal efforts
- Friends of Red Rocks (community volunteers)
- Corporate volunteer groups
- Master gardeners
- AmeriCorps position
3.2 TRAILS

A) PRESENT CONDITION & PROBLEMS

The Red Rocks trail network includes 3.3 miles of official trails and access roads, based on the original carriage trail network constructed in 1891. These trails have been generally well maintained over the years. Areas in need of maintenance are outlined in Map 3, below. Some volunteers have assisted in maintaining drainage ditches along the areas prone to flooding in 2011-2013.

Map 3. Trail locations with issues of erosion or periodic flooding, requiring management attention.

Unofficial trails account for a further 4.3 miles of pathways through Red Rocks. There is a particularly dense network along the cliffs, especially west of the main southern lookout point and concentrated along the cliff-jumping area (cliff-jumping is not condoned by the City, and the jumping cliffs are considered an attractive nuisance). The creation and use of these ad hoc trails threatens the ecological integrity of Red Rocks.

Map 4 shows the distance from any point in the park to the nearest trail (official or unofficial). It illustrates that the farthest point in Red Rocks from any trail is just over 90 meters (approximately 300 feet), which has a strong implication for park wildlife. Every species has a “flushing distance” at which it will flee when approached by people (or other threats), causing stress and a disruption from regular activities of feeding, breeding, etc. For species like white-tailed deer, this flushing distance may exceed 300 feet, meaning there is no place in Red Rocks where that animal can feel safe from the presence of people.
Map 4. Only a small area of land in Red Rocks Park exceeds 60 m (200 ft) from a trail and one location exceeds 90 m (300 ft), which indicates that the potential disturbance to wildlife is far-reaching.

**Trail Impacts**

- More trails mean more wildlife disturbance, human-assisted spread of invasive species, vegetation trampling, and erosion.
- For soils, a little use causes most of the impact (trail compaction occurs rapidly with light use). Soil erosion is the most permanent and therefore most serious effect of trail expansion. Soil compaction recovery may take 6-18 years; erosion recovery may take centuries due to the long time it takes for new soil to form.
- Trail erosion risk exists wherever slopes exceed 9 degrees; especially severe above 18 degrees.
- For vegetation, it may take only 20 tramples to lose 50% of the vegetation on a given piece of land.
- Wildlife disturbance is related to the frequency of people passing by, and side trails may bring people closer to critical wildlife areas more often. Negative impacts on some breeding birds occur with forest trails as narrow as 1 to 3 meters; some birds stop nesting near trails and others avoid the trail areas altogether.
B) DESIRED CONDITION & MANAGEMENT GOALS

Trail management should aim to:

1) Minimize disturbance to soils, vegetation, and wildlife.
2) Provide an enjoyable and safe recreational trail network to suit a variety of park users and purposes, including both active and passive uses of the park.
3) Make it clear to park users which trails are open for “official” use and which trails/areas are off-limits for restoration and natural resource protection.

Trail Closures and Openings

Table 2. Guidelines for opening and closing recreational trails

<table>
<thead>
<tr>
<th>Which trails are recommended for opening?</th>
<th>Which trails are recommended for closure?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Heavily trafficked trails that connect to the local community and serve as an alternate park entry</td>
<td>➢ Trails going down steep slopes greater than 9 degrees (for erosion issues)</td>
</tr>
<tr>
<td>➢ Heavily trafficked trails that lead to particular destinations (e.g., the wolf tree, the 76er lookout)</td>
<td>➢ Dense sidetrail networks (close the network with the possibility of centralizing traffic on one path)</td>
</tr>
<tr>
<td>➢ Trails that are already as wide, well-used and maintained as the “official” ones—indicating popularity and frequency of use</td>
<td>➢ Trails going through sensitive habitat</td>
</tr>
<tr>
<td>➢ Key shortcut trails between loops</td>
<td>➢ Trails that are minimally used or impacted, with good potential for revegetation and masking of the walked path</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why?</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Concentrate use on these official trails to draw use away from other ad hoc trails</td>
<td>➢ Steep slopes are subject to erosion (soil loss, siltation and pollution of water)</td>
</tr>
<tr>
<td>➢ The heavily used spur trails are already impacted</td>
<td>➢ Seldom-used trails stand a good chance of successful closure and restoration</td>
</tr>
<tr>
<td>➢ Trail closure not a viable option due to heavy use</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How to open trails</th>
<th>How to close trails/discourage use</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Mark edges of trail</td>
<td>➢ Place logs and other debris across trail</td>
</tr>
<tr>
<td>➢ Reroute or reorient the trail as needed to give it a low grade and decrease erosion risk</td>
<td>➢ Use tools to scuff up the trail, break up earth to make it look unused</td>
</tr>
<tr>
<td>➢ Add trail signage</td>
<td>➢ Place notices of “Restoration area. Please stay on trail.” (shown to deter 90% of visitors)</td>
</tr>
<tr>
<td>➢ Indicate the trail on official park maps</td>
<td></td>
</tr>
</tbody>
</table>
Map 5. Unofficial side trails in Red Rocks created by repeat unauthorized off-trail use. This impacts park wildlife and ecological health.
C) TRAIL MANAGEMENT

(note: please see Section 3.4 for recommendations for trail directional signage)

Seasonal Maintenance
- Conduct an annual walk-through in the spring to identify trail hazards and assess extent of off-trail use.
- Clear waterbars in the fall, prior to snowfall, and ensure that they remain clear during spring runoff.
- Collect reports of trail maintenance needs (including but not limited to downed trees, washouts, flooding, etc.) from the park users and staff. Respond as needed.
- Host a spring and fall community work trail day.

Short-Term Management Actions – 1 year
- Repair major areas of erosion (Map 3).
- Make modifications to official trail network as outlined in Table 2; reassess yearly
- Prioritize restoration and ad hoc trail closure in the limestone bluff cedar-pine natural community (the cliff-jumping area)
  - Consider designating one or two official access points to these highly-trafficked areas
  - Post signage and install barriers to discourage use of all other side trails
  - Rather than making this the first restoration area closed off to the public, use this designation in another nearby area first, to make park users accustomed to the idea of trail closures and restoration areas
- Designate other restoration areas where natural resource conservation and wildlife use is a priority; in other areas, off-trail exploration for environmental education use would be permitted.
- Establish photographic reference points where seasonal photographs can be taken to document any changes in trail condition, good or bad.

Long-Term Management Actions – 3+ years
- Monitor trail closures to measure success of different techniques
- Complete major trail repairs, installation of new waterbars
  - Possibility of VYCC partnership
- Find solutions to concentrate public access to cliff-jumping areas and minimize creation of further sidetrails along the cliff ledges

Best Management Practices
- Post signs to notify park users of trail closures for rehabilitation purposes.
  - Use positive signage (e.g., with wording about restoration areas and sensitive vegetation) to encourage compliance and raise awareness
• Emphasize the contrast between trail and off-trail zones to avoid expansion of the impact zone (e.g. line the sides of the trail with stones, keep the trail very smooth-surfaced relative to the adjacent land).
• Install barriers to control movement of people—thorny shrubs can be particularly effective. Shrubs and trees are the best options for near houses.
• Plant grass-like plants (grasses and sedges) to revegetate areas where continued trampling is likely, as they are most resistant.
• When closing trails, cover exposed soil with organic mulch.
• Aim for a maximum 9 degree slope on all trails.
  o Where trails exceed this slope, ensure that adequate waterbars are installed

D) RESOURCES & PARTNERSHIPS

• Community volunteers to assist with trail projects
• Corporate volunteer groups
• Vermont Youth Conservation Corps

3.3 OFF-LEASH DOGS

A) PRESENT CONDITION & PROBLEMS

Red Rocks is a popular destination for dog walkers. A “Leash Law” (City Dog Ordinance) is in effect within park boundaries, requiring that all dog owners must keep their pet on a leash (max. 6 ft length) at all times. Dogs are also entirely prohibited at the public beach and in the water at Red Rocks. Failure to comply with the ordinance can result in a civil penalty charge of up to $100 per day.

Many park users ignore these laws; one survey showed a 12% compliance rate. Some park users abide by an “unofficial understanding” that dogs can be let off-leash during certain times of day, outside of peak hours. Enforcement presence is minimal, so there is little deterrent to anyone breaking the law. The South Burlington Animal Control Officer (ACO) began patrols in 2014 but works only 14 hrs/week across the City. The ACO is working to encourage compliance and educate dog walkers on the reasons for the leash law but has no jurisdiction over fines.

Off-leash dogs create the potential for negative dog-dog and human-dog interactions as well as impacts to wildlife, vegetation, and water quality.
Impacts on People
- Some park visitors are frightened or threatened when approached by off-leash dogs. These interactions detract from these users’ experience and in some cases prevent them from visiting.
- People and pets risk injury from aggressive dogs.

Impacts on Wildlife
- Dogs trample vegetation and disturb wildlife off-trail, including ground-nesting birds and animal dens.

One study showed that the presence of off-leash dogs affects animals like deer, rabbits, and small mammals (chipmunks, squirrels, and mice); deer activity was lower within 100 m of trails and small mammal activity declined within at least 50 m of trails used by dogs (Lenth et al. 2008). Only a small area of Red Rocks is more than 50 m from a trail, and no place in the park is 100 m away from a trail. Even after dogs have left the park, certain carnivores may avoid areas that have been scent-marked by dogs, while others may increase surveillance along dog-marked trails.

Impacts on Environmental Quality
- Owners may fail to pick up dog poop deposited off-trail; this fecal matter eventually makes its way into Lake Champlain.

Dog-walkers are among the primary and most regular users of Red Rocks; they have been visiting the park as a popular dog-walking destination for over 40 years. It is a high priority to listen to the needs of this user group while exploring solutions that maintain ecosystem health and allow for safe and enjoyable visits for all park users.

B) DESIRED CONDITION & MANAGEMENT GOALS

Different stakeholders express widely varying preferences regarding dog policy in the park, ranging between designating Red Rocks a dog-free zone and allowing off-leash dogs at all times. The City’s dog ordinance is in effect in Red Rocks, so any changes to dog regulations would require a modification to this ordinance. As is, the ordinance requires much stronger enforcement.

Desired outcomes surrounding the management of dogs in Red Rocks include:
1) Proper enforcement of the City ordinance, to ensure a high compliance rate and minimize any dissatisfaction about rule-breakers vs. followers.
2) Safety and satisfaction of all park users, dog-owners and otherwise.
3) Minimized disturbance of wildlife, particularly ground-nesting birds; this means keeping dogs on the trails.
4) No dog feces left on the ground (either on or off-trail, with or without doggy bags), to ensure clean water and soil and to maintain/improve the park aesthetic.
C) OFF-LEASH DOG MANAGEMENT

**Best Management Practices:**

- Ensure a high compliance rate with the leash law, through a combination of:
  - Public education including a pamphlet, online materials, and on-the-ground messaging from park staff and the ACO
  - Enforcement of the dog ordinance, including patrols and citations for owners of off-leash dogs
  - Signage, including a detailed sign at the park entry and reminder signs throughout the park
- Educate dog owners so that they are aware of the reasoning for leash restrictions
  - Many pet owners are familiar with the usual complaints of dogs being aggressive to people and other dogs, but relatively few may consider the impacts of off-leash dogs to denning mammals and ground-nesting birds
  - Provide an educational pamphlet or other written and online materials to explain the impacts of off-leash dogs that leave the trails.
  - Maintain clear signage at all park entrance points.
- Provide an incident report form for park users to report negative interactions with dogs in Red Rocks
  - Use this information to assess the need for increased enforcement or other management interventions

D) RESOURCES & PARTNERSHIPS

Red Rocks Park managers could look to examples from similar parks and communities facing this debate about off-leash dogs. The Montpelier Parks Commission ([http://www.montpelier-vt.org/group/66/Parks-Commission.html](http://www.montpelier-vt.org/group/66/Parks-Commission.html)) faced similar questions in 2013, though coming from a different direction; Hubbard Park had been an off-leash dog area but faced the question of whether it should remain so.

The Humane Society has collaborated on creation of a pamphlet to encourage keeping dogs on leash in Red Rocks. They have stopped walking their dogs in the park due to negative interactions with off-leash dogs.
3.4 SIGNAGE, WAYFINDING & PARK INFORMATION

A) PRESENT CONDITION & PROBLEMS

A separate 2010 report funded by the Lake Champlain Byway outlined recommendations for installation of directional and interpretive signage in Red Rocks Park, and in 2012 a signage subcommittee of the Red Rocks Committee initiated a discussion of future needs. There are currently 25 signs installed in the park: 3 of these indicate no biking, 6 indicate the dog leash law, and 3 warn about cliff jumping. The only publicly visible park map is part of an interpretive panel installed near the park entrance by the Byway. Another interpretive panel is present at the beach house. A new park entrance sign was installed in 2013.

Park signage can be divided into the following categories:

- **Regulatory**: lists regulations, ordinances, and fines
- **Informational**: delivers other park information
- **Directional**: wayfinding signage, including maps, arrows, and trail blazes for orienting oneself in the park
- **Interpretive**: provides educational information about the natural and cultural features of the park

The current amount and type of signage presents several issues:

- Many park users—especially but not limited to first-time users—get disoriented in the park
- Lack of signage may lead to noncompliance with park regulations (including dog leash laws, no bikes, staying on official trails, etc.)
- There is no central notice board (outside of the summer operating season when the gate house attendants hand out maps and takes fees) to deliver park announcements and list policies

City emergency staff have also proposed 29 emergency signs (small reflective markers for emergency vehicle directions) to install along all major park trails. These and other signs can detract from the wilderness experience of users, which is why a thoughtful and consistent policy about the type, frequency, and placement of signage is needed.

B) DESIRED CONDITION & MANAGEMENT GOALS

Park signage policy aims to:

1) Strike a balance between enough signs to ensure safety and orientation of park users, while still maintaining elements of a wilderness/nature experience
2) Ensure effective delivery of park messaging (including city ordinances, park events, park interpretation)

3) Establish a coordinated and consistent design in keeping with the natural aesthetic of the park

C) SIGNAGE AND WAYFINDING RECOMMENDATIONS

Map 6. Recommended locations for directional/wayfinding signage (square markers) and a bulletin board at the park entry (star).

**Best Management Practices**

- Provide easy access to a park map for all users
  - Printed and QR codes
- Employ positive messaging on park signs rather than simply listing restrictions (e.g. “restoration area” rather than “do not enter”)
- Consistent with existing interpretive panels, future panels should be manufactured from digital high pressure laminate and be designed consistent with the template used by the Lake Champlain Byway
- Install the minimum signage necessary to educate and deliver park information without compromising the wilderness feel of Red Rocks Park

**Short-Term Management Actions – 1 year**

- Install trail markers on the “main” trail that leads from the park entrance to the turnaround overlook at the far western point of the park, following the lakeside trail. “In” and “out” directions on this trail will provide simple wayfinding to the main overlook points in the park and identify the quickest exit from the park.
- Install posts with simple directional signs at key park intersections (see Map 6, above).
- Provide access to a digital park map via QR code at the park entrance.
- Install or establish a park bulletin board at the main entrance.
**Long-Term Management Actions – 3+ years**

- Install additional park interpretive panels and include an inset directional map in each

**D) RESOURCES & PARTNERSHIPS**

- Lake Champlain Byway – as part of the Byway, Red Rocks interpretive signage follows the standard format used all along this scenic route along Lake Champlain

**3.5 FOREST HEALTH & WILDLIFE MANAGEMENT**

**A) PRESENT CONDITION & PROBLEMS**

The Red Rocks forest is primarily a mesic maple-ash-hickory-oak forest, including a mixture of northern woods species with more southerly elements that take advantage of the dry, warm cliffs in these lowlands of the Champlain Valley. Eastern hemlocks occupy some of the wetter, darker, and older growth areas of the forest, and along the cliffs the forest transitions towards a cedar-dominated limestone bluff community.

Red Rocks is largely (if not all) secondary forest; it was managed as a woodlot in the 1800s, and has since been used for pasture and more recent logging operations. There were also several fires of unknown extent and intensity in Red Rocks’ past, the largest of which is currently labeled as “The Burn” on park maps. A few stretches of forest may, however, have escaped the axe of European settlers. One hemlock—of only 12” diameter—fell across a trail and was sawed open to reveal over 210 years of growth rings! The tree had been slowly growing on the shallow soils along a rocky ridge, between two sections of trail. There is reason to suspect that other nearby hemlocks could be of similar age, left for their low-quality lumber and because they weren’t in the way of pasture land, perched as they were on the steep and rocky terrain.

The Red Rocks forest is presently managed passively; trees are felled if they pose a threat to park users (e.g. snags hanging over a trail), but otherwise the forest is left “as-is.” Practices should be taken into consideration to ensure the healthy regeneration of the forest and the optimization of recreation and conservation opportunities.

Recognizing that Red Rocks is a well-loved and well-used public park, the forest management options below do not consider any harvesting or felling of trees beyond the ones that come down on the trails. With public consultation and buy-in, however, park managers might choose to release certain trees that provide valuable wildlife habitat or seed tree values by an individual tree selection. This would mean cutting other trees around the selected valuable trees, with the goal of improving the growth of the selected trees. The County Forester or other natural resource professional should be consulted before proceeding with any such work, which is not recommended as an immediate priority.
Wildlife
Red Rocks includes the following notable wildlife habitat features:
- Rocky and sandy shoreline
- Intact mature forest
- Shrubby undergrowth
- Forest clearings
- Hemlock stands
- Rock crevices and ledges
- Vernal pools
- Woody debris (fallen trees and branches) on the forest floor
- Standing snags with nesting cavities and loose bark
- Large mast-producing trees (oaks and hickories)
- Cliffs

The intact forest of Red Rocks is particularly suited to a variety of birds; it serves as both a nesting location for summer residents and an important staging area for migrating species. The 135 species in the current Red Rocks bird list include 11 of the Vermont “Birder’s Dozen,” a set of species identified by Audubon Vermont as being high priorities for protection in northeastern US forests. It is suspected that Peregrine Falcons (a once-endangered and still threatened species) attempted to nest on the cliffs at Red Rocks in summer 2013 and 2014, but they may have been deterred by the high foot traffic along the cliff edge. No nest sites have been confirmed.

B) DESIRED CONDITION & MANAGEMENT GOALS

1) A healthy natural environment that supports a diversity of wildlife species
2) Preservation of Red Rocks’ rare flora and fauna and their habitats

C) FOREST MANAGEMENT

Best Management Practices
- Leave both large and small woody debris for provision of wildlife habitat and recycling of forest nutrients.
  - Small mammals rely on the cover provided by coarse and fine woody debris.
  - Fallen trees serve as germination sites for many plants, including tree seedlings.
    - Felled trees cleared off trails could be piled off-trail rather than immediately alongside it.
    - Smaller branches and brush can be piled for wildlife habitat use
- Leave snags and cavity trees standing; these provide habitat for many animals, such as woodpeckers, owls, squirrels, raccoons, and bats.
  - Aim for 4 to 6 large snag or cavity trees per acre; one should exceed 21” diameter at breast height (DBH) and the rest should exceed 15” DBH.
- Maintain important mast trees, such as oaks and hickories, for wildlife.
• Monitor forest for signs of natural regeneration.
  o Manage for non-native invasive species to release native species.
• Maintain forested buffers around sensitive habitats, especially wetlands and vernal pools (a 50-foot buffer is currently regulated around all designated wetlands).

Short-Term Management Actions- 1 year
• Establish a monitoring program for signs of non-native insect pests including Emerald Ash Borer, Asian Longhorned Beetle, and Hemlock Woolly Adelgid.
• Conduct breeding bird surveys in early spring and mammal surveys in winter to determine wildlife occurrences and designate protected areas as needed

D) RESOURCES & PARTNERSHIPS

• The Chittenden County Forester has consulted on park management and is available to meet for forest assessments and recommendations.
• Audubon Vermont monitors nesting of threatened and endangered bird species, including a Peregrine Falcon nest monitoring program.
• New England Wild Flower Society conducts rare plant surveys and has collected seed from populations of native spring wildflowers at Red Rocks. Their nursery could in turn offer a supply of seeds to areas of Red Rocks in need of restoration.
• TREEage conducts forest pest visual surveys and operates a community nursery in South Burlington.

3.6 RECREATION & EDUCATION OPPORTUNITIES

A) PRESENT CONDITION & PROBLEMS

Recreation
Red Rocks attracts both local South Burlington and Burlington residents, plus tourists from farther afield, with its diversity of recreational options. The South Burlington Recreation & Parks Department strives to provide fulfilling leisure time activities for all residents. Increasing recreational use and activities is a laudable goal, but several of these uses can conflict with one another and also with provision of wildlife habitat. The City should consider how to prioritize these conflicting uses in finding the balance between quantity of quantity of recreational use (maximizing the number of citizens served) and preserving the quality of the recreational experience.
Some of the most popular uses of the park are also illegal or considered nuisances due to the destructive behavior that often accompanies them (e.g., the rocky cliffs popular for cliff-jumping suffer from severe erosion, devegetation, and littering). The City does not condone cliff-jumping in Red Rocks but also realizes that access to the cliffs cannot be controlled.

Current Recreational Uses
- Walking, hiking, running, jogging, dog-walking
- Winter cross-country skiing and snowshoeing
- Swimming from beach, rocks, and cliffs
  - Beach house (and bathrooms) open from last weekend in June until mid-August
- Boating
- Bird-watching and nature appreciation
- Nature connection
- Outdoor sketching and painting
- Picnicking
- Relaxation and restorative uses
- Enjoying scenic views
- Special events including festivals and track meets
- Illegal and nuisance uses: camping, campfires, cliff-jumping

Education
Red Rocks has great potential as an outdoor classroom destination for local school groups, and it also offers all visitors a chance to explore and learn about nature in an urban setting. Envisioning Red Rocks as an outdoor classroom and for various education uses has implications for park visitation numbers, sense of crowdedness, trail impacts, and more.

Current & Past Educational Uses
- College class field trips
- College class service learning projects
  - UVM NR 206 senior capstone project-based class in the Rubenstein School of Natural Resources
  - PSS 238 Ecological Landscape Design
- K-12 use as a nature center is limited/nonexistent; some use for gym classes, cross-country meets
- Week-long “Governor’s Institute” for high school students (based out of UVM) focused on Red Rocks several years ago
- Public guided walks
- Summer nature camps since 2013
- Visits from the City’s summer recreational camps
- Red Rocks Nature Club monthly nature walk in 2012-2013
B) DESIRED CONDITION & MANAGEMENT GOALS

1) Offer a variety of recreation and education options in Red Rocks for different user groups but prevent overuse and adverse impacts on park infrastructure, vegetation, water, and wildlife.

C) RECREATION MANAGEMENT

Recreational Opportunities
- Nature play area
- Use of retired parking areas in eastern section
- Moorings and/or boating access
- Improvements to beach and picnic area

Educational Opportunities
- Nature education center for public and for institutions
- Place-based education for school groups: benefit of students accessing a forest within their own city boundaries (learning in their own backyard)
- Stewardship opportunities
- Modeling Red Rocks as a community forest
- More connections with local schools and colleges

Short-Term Management Actions
- Enhance the aesthetics of the park entry
- Restore scenic views from main overlooks across Lake Champlain and through the picnic grove, with the following considerations:
  - The old-growth cedars of the limestone bluff community should be left as-is.
  - Trees should be pruned rather than removed to open views; exposed soil would be an easy target for colonization by invasive species (which could impact native vegetation and very quickly impede the views again).
  - South Burlington’s Development Review Board regulates all land within 150 feet of the lakeshore. Land is to be left in an “undisturbed, naturally vegetated condition” unless otherwise approved.
  - Park users should be notified before any such work takes place, especially in such a public location.

Long-Term Management Actions
1) Create infrastructure that could facilitate use of the park as an outdoor classroom.
2) Improve opportunities for park users to access the water through boat rentals and use.
3) Investigate the possibility of public moorings.

One of the abandoned parking pods that provides open, grassy habitat and could serve as a nature play area or picnic area.
4) Create more shaded sitting areas on/near the beach.
5) Extend the open season of the beach house for visitors looking to access the beach with bathrooms and change rooms.
6) Consider improvements to beach infrastructure such as a boat launch or pier and a beach pavilion.

D) RESOURCES & PARTNERSHIPS

Current/past:
- UVM and Champlain College service learning
- Green Mountain Audubon Center guided walks

Potential partnerships:
- Boat/paddleboard rental service through a private partner such as at Oakledge Park and North Beach. This opportunity has been considered in the past but was not considered a viable business option at the time.

3.7 CHAMPLAIN WATER DISTRICT (CWD) EASEMENT

A) PRESENT CONDITION & PROBLEMS

The intake for the Champlain Water District was sited at Red Rocks in 1970, and the system came online in 1971. The CWD is Vermont’s largest regional public water supplier, serving 12 municipal systems in Chittenden County, and this is their only intake location. A second intake line was recently added in response to increasing demand; it was located offshore of the far western point of Red Rocks.

The CWD holds a 40-ft wide easement through the eastern (developed) section of Red Rocks, starting just south of the main park entry and running in a diagonal towards their pump station at the west end of the Red Rocks beach. Another easement lies below the upper parking area and then follows the road down to the pump station. The CWD also owns the land immediately surrounding the pump house.

There have been past conflicts and expressions of concern from park neighbors in response to CWD management actions, such as tree cutting within the easement and installation of signage. CWD staff
walk the easement line and brush-hog/mow every summer. Repairs are mainly done manhole to manhole; mowing is done to maintain access to these. Projects and repairs have increased in frequency in recent years; they used to be more sporadic. The slope down to the water, east of the pumping station, was cleared for machinery access 10 to 15 years ago. It was rip-rapped to hold the soil back, but is currently experiencing erosion (likely compounded by frequent passage of people and dogs).

CWD managers have expressed a willingness to manage their infrastructure with minimal impact to the park. They also must invest a certain portion of their upgrade costs into landscaping, and they are willing to target some of this funding at the discretion of City management. Some of these funds went towards construction of a viewing deck, guardrail and plantings (visible in the picture above) in recent years.

In Spring 2014, a UVM Ecological Landscape Design class studied the pump house area and made several detailed suggestions for plantings and rain gardens to improve the aesthetics of that area.

B) DESIRED CONDITION & MANAGEMENT GOALS

The CWD has full jurisdiction within their property and easements but is open to suggestions, so long as their needs for their transmission lines can be met. Collaboration with the CWD should strive for:

1) Maintenance of the CWD right-of-way that maximizes wildlife habitat, aesthetic, and ecological values without compromising the access requirements of the CWD.
2) Transparency and understanding between park users and the CWD about work done in the park.

C) RIGHT-OF-WAY MANAGEMENT

Best Management Practices

- Maintain an open and collaborative relationship with the CWD regarding management of their transmission lines and pump station within Red Rocks Park.
- Communicate with a CWD representative at minimum annually about any management concerns.
- Communicate ideas for use of CWD landscaping funds as they are available:
  - Erosion prevention
  - Beach management
  - Improving the aesthetic of the pumphouse and surroundings
- Make recommendations to the CWD:
  - Maintain vegetation to the greatest extent possible, i.e. remove larger trees and shrubs growing into the easement (ones that would delay emergency manhole access) but retain all herbaceous growth for wildlife and aesthetic benefits. Remove only what’s directly around manholes for access as needed.
  - Notify local residents and park users (via signage on park notice boards) of any changes—with advance notice—and explain the reasons for any changes (e.g. placement of new pipes and outlets, widening of roads, removal of vegetation, etc.)
  - Manage erosion of the slope next to the pump house with plantings. Install barriers or signs to prevent people from walking on the area as needed.
D) RESOURCES & PARTNERSHIPS

- UVM Ecological Landscape Design Students (PSS 238) re-envisioned the pump station area and made recommendations for erosion control, educational opportunities, and rain gardens. Opportunity for an ongoing partnership.

3.8 BEACH MANAGEMENT

A) PRESENT CONDITION & PROBLEMS

Red Rocks contains South Burlington’s only public beach access, a 200-yard stretch of waterfront at the southeastern corner of the park. The beach at Red Rocks has been closed on several occasions due to high levels of blue-green algae and bacteria from the outlet of Potash Brook, which drains into Lake Champlain just south of Red Rocks beach. Zebra mussels and Eurasian milfoil (both aquatic invasives) also pose problems for beachgoers, and the beach sands are frequently washed away by high water levels, rain events, and wave action.

Many of these factors act from far beyond the boundaries of Red Rocks, including:
- pollution across the Potash Brook watershed
- wind and wave action
- large rain events resulting in stormwater runoff
- spring flooding

Zebra mussels growing in the shallows on the Red Rocks shore (left) and a blue-green algae bloom (right).
B) DESIRED CONDITION & MANAGEMENT GOALS

Management of the beach area aims to:
   1) Maintain a safe and appealing location for residents and park users to access South Burlington’s only public lakeshore.

C) BEACH MANAGEMENT

Seasonal Maintenance
   • Rake algae and other material that washes onto swimming area at beach during swim season, daily or as-needed
   • Close beach and post signage informing of *E. coli* and blue-green algae blooms

Long-term Management Actions
   • Consider extending the open season of the beach and access to the beach house
   • Improve shaded seating areas and aesthetics at the beach with plantings

D) RESOURCES & PARTNERSHIPS

   • The Lake Champlain Committee monitors blue-green algae across Lake Champlain and trains volunteers to make weekly reports, one of whom monitors the Red Rocks beach weekly during the spring and summer
   • The Vermont Department of Health advises on and posts beach closures.

3.9 PARKING & TRAFFIC MANAGEMENT

A) PRESENT CONDITION & PROBLEMS

Red Rocks is officially open for a seven-week period from the end of June through mid-August. At this time, visitors are asked to drive into the park and pay an entrance fee (either a day use fee or season pass) for access during daytime hours. Outside of this seven-week period, visitors can park in the area outside the park gate, free of charge.

Many visitors ignore the ‘No Parking’ signs installed during the seven-week operating season and enter the park without payment. While some may be confused about the seven-week switch of parking areas, many appear to ignore the “no parking” signage on Central Ave because they do not want to pay a parking fee. Others are frustrated by the need to park within the park gate during daytime hours but then move their vehicle before park staff locks the gate and leaves for the day.
The present parking system poses several challenges:

- There is little incentive to park within park boundaries when a free option exists just outside, with inconsistent enforcement.
- The City loses a potential revenue stream from illegally parked vehicles.
- The present system requires a full-time gate attendant to take park entry fees, which costs more than the revenue from parking permit sales.
- Park users are inconvenienced by the switch to Central Ave parking at the end of the work day.
- A substantial amount of park acreage is dedicated to parking, which could otherwise provide wildlife habitat and recreational benefits.
- Vehicle traffic and noise impacts neighbors adjoining the park.

B) DESIRED CONDITION & MANAGEMENT GOALS

The parking system at Red Rocks should strive to:

1) Provide a straightforward and fair parking option for park users that encourages compliance
2) Minimize the park acreage devoted to cars, as well as the visual, neighborhood, and ecological impact of the parking system
3) Encourage the use of alternative forms of transportation to Red Rocks (including but not limited to bike and bus)

C) PARKING MANAGEMENT

Options

- Increase parking enforcement to ensure compliance during summer season
- Remove parking from within park boundaries
- Re-design parking area along Central Ave, to extend it into the Park and accommodate a larger number of vehicles
- Share use of privately-owned company parking lots on Industrial Parkway
- Accept that some users will continue to park without paying. Pursue other sources of revenue
- Install donation boxes or another parking fee collection system in outer lot asking visitors to pay
- Require payment year-round for consistency

Best Management Practices

- Use positive messaging asking people to contribute towards park upkeep or restoration when they are spending money to access Red Rocks, rather than letting them simply view it as a fee to park their car
- Minimize the within-park parking area, which will in turn minimize soil compaction, decrease plant and animal disturbance, and increase the area available for park recreation
- Provide accessible parking according to ADA standards

Short-Term Management Actions

- Encourage biking, walking, and public transit to Red Rocks
  - Consider connections to bike and walking paths
  - Increase bicycle parking
**Long-Term Management Actions**

1) Assess alternatives, then re-design the parking system with the goal of minimizing the park area devoted to vehicle parking as well as minimizing visual, neighborhood, and ecological impacts

2) Restore and/or repurpose retired parking areas

**D) RESOURCES & PARTNERSHIPS**

- City Planning & Zoning Office for parking redesign
- Burton & Edlund Co. – opportunities to use their company lots on weekends

**3.10 FUNDING**

**A) PRESENT CONDITION & PROBLEMS**

Currently the only revenue stream for the park comes from summer operating season parking permits, which is supplemented with funding from the City’s operating budget. Several park users have expressed a willingness to donate funds towards park upkeep and programming. The City should explore different options for fundraising and developing a sustainable funding stream for park projects.

In 2014, park users fees were:

- **Season pass** $10 for residents, $25 for non-residents
- **Daily pass** $5 for residents, $8 for non-residents

**B) DESIRED CONDITION & MANAGEMENT GOALS**

1) Sustainable revenue stream for the park
2) Funds for park improvements

**C) FUNDRAISING**

**Best Management Practices**

- Appeal to park users’ love for and connection to Red Rocks in soliciting donations
- Fund regular park maintenance with a reliable and sustainable municipal funding stream

**Short-Term Management Actions – 1 year**

- Establish a “Friends of Red Rocks” account for donations that could fund park projects, upkeep, and staffing
- Solicit donations from park users at the entrance gate by means of a physical and/or virtual (mobile text) donation box
- Investigate grant opportunities for park projects
Long-Term Management Actions

- Allocate capital for park improvements from the Open Space Fund or a similar taxpayer contribution

D) RESOURCES & PARTNERSHIPS

- Community volunteers
SECTION 4: PARK MAINTENANCE ACTIVITY TIMELINE

Spring:
- Invasive plant monitoring walk-through
- Remove garlic mustard by mid-May (generally, target herbaceous invasives before they go to seed)
- Trail flooding assessment and minor repairs
- Community trail stewardship day(s)
  - May Green-Up Day
  - June National Trails Day

Early Summer:
- Train seasonal staff on identification of invasive species
- Remove herbaceous invasive species, before they go to seed
- Beach opening (ahead of June park “open” season)
- Breeding bird surveys at this time of year indicate species nesting in the park

Summer:
- Major trail repair/construction/rerouting projects
- Regular park walk-throughs
- Rake beach daily
- Monitor water quality for swim safety

Fall:
- Clear waterbars
- Remove woody invasive species, as they go dormant
- Prune/clear view corridors
- Invasive plant monitoring walk-through
- Community trail stewardship day

Winter:
- Tracking surveys allow for assessment of wildlife habitat
SECTION 5: SUMMARY OF MANAGEMENT ACTIONS

INVASIVE PLANT MANAGEMENT
1) Begin targeted removal of all woody invasives from small focus areas (requires trained staff, chainsaw use)
   - Main south-facing lookout designated as a first priority focus area
   - Other areas along the interior of the loop trails (designated “natural areas”) can be targeted next
   - Close off focus areas to public, indicating “restoration area” and explaining why
   - Replant these areas with native shade-tolerant shrubs and understory species
2) Hold work days to remove isolated populations the less widespread herbaceous invasive species (e.g., Garlic Mustard)
   - Volunteer and/or Park staff involvement during the early summer
   - Organize training sessions/workshops for regular users and park neighbors
3) Mount an “early detection rapid response” to these plants, aiming to remove the populations in their entirety before they can spread aggressively throughout the park
   - Oriental bittersweet sits on this threshold now and could be targeted by repeated hand cuttings throughout the spring and summer

TRAIL MANAGEMENT
4) Repair major areas of erosion
   - Possibility of VYCC partnership
5) Restoration and ad hoc trail closure in the limestone bluff cedar-pine natural community (the cliff-jumping area)
   - Consider designating one or two official access points to these highly-trafficked areas
   - Post signage and install barriers to discourage use of all other side trails
   - Rather than making this the first restoration area closed off to the public, use this designation in another nearby area first, to make park users accustomed to the idea of trail closures and restoration areas
6) Close other ad hoc trails
   - Post signs
   - Install natural barriers
   - Cover exposed soil with mulch and revegetate with resistant sedges
7) Establish photographic reference points where seasonal photographs can be taken to document any changes in trail condition, good or bad.

OFF-LEASH DOG MANAGEMENT
8) Install new informational signage about dog regulations and fines, including a detailed sign at the park entry and reminder signs throughout the park
9) Provide an educational pamphlet or other written and online materials to explain the impacts of off-leash dogs that leave the trails.
   - Maintain clear signage at all park entrance points.
10) Enforce the dog ordinance, including patrols and citations for owners of off-leash dogs
11) Create an easily accessible incident report form for park users to report negative interactions with dogs in Red Rocks
   o Use this information to assess the need for increased enforcement or other management interventions

SIGNAGE & WAYFINDING
12) Install trail markers on the “main” trail that leads from the park entrance to the turnabout overlook at the far western point of the park, following the lakeside trail. “In” and “out” directions on this trail will provide simple wayfinding to the main overlook points in the park and identify the quickest exit from the park.
13) Install posts with simple directional signs at key park intersections.
14) Provide access to a digital park map via QR code at the park entrance.
15) Install or establish a park bulletin board at the main entrance.
16) Install additional park interpretive panels and include an inset directional map in each

FOREST HEALTH & WILDLIFE
17) Establish a monitoring program for signs of non-native insect pests including Emerald Ash Borer, Asian Longhorned Beetle, and Hemlock Woolly Adelgid.
18) Conduct breeding bird surveys in early spring and mammal surveys in winter to determine wildlife occurrences and designate protected areas as needed

RECREATION & EDUCATION
19) Restore scenic views from main overlooks across Lake Champlain and through the picnic grove, with the following considerations:
   o The old-growth cedars of the limestone bluff community should be left as-is.
   o Trees should be pruned rather than removed to open views; exposed soil would be an easy target for colonization by invasive species.
   o South Burlington’s Development Review Board regulates all land within 150 feet of the lakeshore. Land is to be left in an “undisturbed, naturally vegetated condition” unless otherwise approved.
   o Park users should be notified before any such work takes place.
20) Create infrastructure to facilitate use of the park as an outdoor classroom
21) Improve opportunities for park users to access the water through boat rentals and use
22) Investigate the possibility of public moorings
23) Create more shaded sitting areas on/near the beach
24) Extend the open season of the beach house for visitors looking to access the beach with bathrooms and change rooms
25) Consider improvements to beach infrastructure such as a boat launch or pier and a beach pavilion
CHAMPLAIN WATER DISTRICT RIGHT-OF-WAY

26) Make recommendations to the CWD:
   o Maintain vegetation to the greatest extent possible, i.e. remove larger trees and shrubs growing into the easement (ones that would delay emergency manhole access) but retain all herbaceous growth for wildlife and aesthetic benefits. Remove only what’s directly around manholes for access as needed.
   o Notify local residents and park users (via signage on park notice boards) of any changes—with advance notice—and explain the reasons for any changes (e.g. placement of new pipes and outlets, widening of roads, removal of vegetation, etc.)
   o Manage erosion of the slope next to the pump house with plantings. Install barriers or signs to prevent people from walking on the area as needed.

BEACH MANAGEMENT

27) Consider extending the open season of the beach and access to the beach house
28) Improve shaded seating areas and aesthetics at the beach with plantings

PARKING MANAGEMENT

29) Assess alternatives, then re-design the parking system with the goal of minimizing the park area devoted to vehicle parking as well as minimizing visual, neighborhood, and ecological impacts
30) Restore and/or repurpose retired parking areas
31) Encourage biking, walking, and public transit to Red Rocks
   o Consider connections to bike and walking paths
   o Increase bicycle parking

FUNDRAISING

32) Establish a “Friends of Red Rocks” account for donations that could fund park projects, upkeep, and staffing
33) Solicit donations from park users at the entrance gate by means of a physical and/or virtual (mobile text) donation box
34) Allocate capital for park improvements from the Open Space Fund or a similar taxpayer contribution
35) Investigate grant opportunities for park projects

STAFFING

36) Create a dedicated staff position to (a) inform and coordinate management of the city’s open spaces and (b) build community partnerships and stewardship capacity for South Burlington’s parks.
APPENDIX 1: Red Rocks from the air
APPENDIX 2: Current Park Trail Map

RED ROCKS PARK

BURLINGTON CITY LINE

SOUTH BURLINGTON

QUEEN CITY PARK

SHELBURNE BAY

Trails

Distance between letters is approximate walking time.
RED ROCKS PARK
Working towards a community-based management plan

Prepared by Sophie Mazowita
UVM Field Naturalist Program
for the City of South Burlington
April 2013
Dedicated to Fred Sargent and the members of the city’s original Natural Resources Committee, who had the vision and drive to secure Red Rocks as a park for the residents of South Burlington.

With thanks to the current members of the Red Rocks Committee, Tom Hubbard of South Burlington Recreation & Parks, the UVM advisory committee (Matt Kolan, Jeff Hughes & Walt Poleman), and the Field Naturalist/Ecological Planning Team AC.
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SECTION 1: INTRODUCING RED ROCKS

Red Rocks Park is a 100-acre community park and natural area in the city of South Burlington, Vermont. It was purchased by the City in 1970, having formerly served as the Hatch Family Estate since the late 1800s. The roads and lookouts created by the Hatch family now provide walking trails through maple-ash-hickory-oak forest and cedars perched atop red Monkton Quartzite cliffs. A city beach at the southeastern edge of the park provides 200 yards of waterfront access (the only public lake access in the city), and the Champlain Water District operates a pumping station with an adjacent 40-ft access easement at the western limit of the beach.

Red Rocks is one of four large natural areas in the South Burlington Parks network (the others are Wheeler Nature Park on Dorset Sreet, the Scott Property on Autumn Hill Road, and a recently acquired property south of Nowland Farm Road). Red Rocks occupies the westernmost corner of South Burlington (see Map 1). It is bordered by Lake Champlain to the south and west, Burlington to the north, and the Queen City Park neighborhood to the east. The park is accessed from Central Avenue.

The park is currently operated by the South Burlington Recreation & Parks Department and maintained by the Department of Public Works. Guidance and recommendations are provided by a seven-member committee of appointed city residents, many of whom reside in the Queen City Park neighborhood.

**Key management issues and objectives**
Red Rocks faces challenges posed by heavy recreational use by the public. Aquatic and terrestrial invasive species, off-leash dog impacts, unofficial trail use, forest health, and park signage are among the concerns of the park’s management. The City seeks to provide a variety of recreational opportunities in Red Rocks Park while maintaining ecological integrity, minimizing usage impacts, and addressing threats and hazards.

**Purpose of this document**
Despite ongoing management questions and concerns, this is the first synthesized natural resource assessment and management study for Red Rocks. Landscape architects made only an initial site assessment and recommendations in 1971.

This document is intended to serve as both a guide to the human and natural history of Red Rocks and as a guiding framework for making informed management decisions. It is written for park managers, park users, and the present and future stewards of Red Rocks Park.
Map 1
SECTION 2: PARK HISTORY

SUMMARY:
- Edward Hatch purchased Red Rocks and maintained it as a private estate starting in 1866
- Parts of the park were formerly used as pasture and woodlot
- The City of South Burlington purchased Red Rocks from the Hatch family in 1970

The first owners
When Red Rocks—the Hatch Estate—was purchased by the City of South Burlington, it came as a single large tract of land. Through the 19th century, however, it was divided up in various parcels between different landowners. In retracing the history of the land, it helps to divide the park into two large sections:

1. The eastern, “developed” section, from the Central Ave entrance to the north-south boundary where the hiking trails begin (this section includes the parking lots, picnic area, beach, CWD easement, and the northeastern loop walking trail).
2. The western, “natural” section, stretching from the north-south parking road/hiking trail boundary out to the far western tip of the park.

Map 2. Aerial view of Red Rocks showing the division between East and West sections of the park.
The western, now fully-wooded section of Red Rocks is first described in the Old Town of Burlington records as lot no. 163. The lot was drawn by Thomas Udell at a meeting of town proprietors in June 1798, when the first settlers of Burlington were dividing up their shares of the land in the form of 103-acre lots. The original lot was described based on its trees: “beginning at a pine standing on the lake shore,” thence 3 chains (a chain is 66 feet) east to an ash, then 25 chains north to a beech, and from there 46 chains west “to a cedar on the lake shore, thence southerly along the lake shore to the first bound.”

Between 1798 and the early 1800s, the ownership and land use history of the property is unknown. This was a time when much of Vermont was cleared for agriculture and timber, and Red Rocks was probably no exception. An 1836 article in the Burlington Free Press describes a 60-acre parcel called Red Rocks as “the Wood Lot of Ozias Buell.” Soon after this it was purchased by Joseph Harrington, who conveyed it to his son, Hiram Harrington, in 1844.

Edward Hatch bought this western section (or at least part of it) from Harrington in 1866; one portion was sold to his brother-in-law, Lucius Chittenden, that same year. Chittenden rose to fame as Register of the Treasury during the Lincoln administration. He owned a piece of Red Rocks for 25 years, but by 1891 the entirety of the western 70-acre parcel was in Edward Hatch’s possession.

**The Hatch Estate**

This acquisition coincided with a flurry of activity on the property. In August 1891, the Free Press announced that Hatch was finally making “improvements” to Red Rocks. Hatch enlisted Charles A. Murray to oversee the construction of a quarter-mile drive “forming a continuation of the road to Queen City Park.” Another road that “runs up a ledge” (most likely the eastern loop road towards the highest spot in the park) was also started at this time. These carriage roads were largely constructed from a bed of broken stone on the point, and they exist to this day as two and a half miles of hiking trails.

The carriage roads led to a Lookout House at the far western point of Red Rocks. This gazebo-like structure of white and red cedar, with a hemlock bark roof, was built in part by Hatch himself. He considered building a residential cottage, but this never came about. Pre-existing buildings on the property reportedly burned down and were never rebuilt.
## The Life of Edward Hatch (1832-1909)

Edward Hatch was born in Norwich, Vermont on July 11, 1832. He moved to Burlington when he was 5 years old. After amassing a fortune at the helm of the Wilcox & Gibbs sewing machine company, he took on management of the Lord & Taylor Department Store in New York.

Hatch spent his summers in Burlington, and he acquired Red Rocks between 1866 and 1907. He never lived on the property, instead taking up residence in the Hotel Vermont adjacent to City Hall Park. In the early 1890s he installed the Red Rocks carriage road system that persists to this day as a hiking trail network. He died in Burlington on September 9, 1909.

Hatch acquired the eastern section of Red Rocks just two years before his death. This parcel underwent many changes of ownership in the mid- to late 1800s: from Levi Underwood to John Kelly in 1860, to C. Cushman in 1864, to John Dickson in 1866, and then to Frank Converse in 1880. Frank and Abbie Converse leased summer cottages along the beach before they sold the land to Hatch in 1907. This different ownership history explains the difference in character between these two pieces of land—a difference that can still be felt and that likely influenced the layout of today’s park. To the west lies the land set aside as Hatch’s private woodland and carriage road system since 1866; to the east is a smaller parcel with a patchy ownership history and more recent evidence of forest clearing and agricultural use.

### Tracing the ongoing history through air photos

Local lore tells that Edward Hatch used Red Rocks as a summer resort from 1888 until his death in 1909. What happened after that?

The park stayed in the Hatch family, but it was relatively untended from 1910 until it became a public park in 1971. Untended did not mean unvisited—during this time, the park still served as a backyard for the residents of Queen City Park (a thriving summer spiritualist camp until 1930, before becoming a residential neighborhood). There is also evidence of both logging and farming during this time period.

Part of this evidence comes from historical air photos of the park, beginning in 1942:

![1942 Image](image-url)
The eastern section of the park is almost totally cleared—perhaps as pasture—in 1942, though trees are growing in to the north following agricultural abandonment. The opening in the forest to the west also stands out. It is being maintained as a clearing, the exact use unknown. This land sits adjacent to the western loop of the carriage road network, in an area of very fine-grained clay soils that retain a lot of moisture. Today it is filled in with dense growth of young trees suited to the area’s wetter soils.

Also very noticeable in the 1942 image are several large trees growing in the open near the park entry. One of these is the “wolf pine” that many visitors notice to the right of the road as they head into Red Rocks today. This old white pine is now surrounded by other growth, but its wide-spreadening branches stand as evidence that the tree grew in open, sunny conditions. The term “wolf tree” could refer to the fact that the tree once stood like a lone wolf on the landscape.

The convoluted branches of the wolf tree provide another clue to this pine’s past. The multiple trunks and upturned branches are evidence of infestation by a tiny beetle called the white pine weevil. This insect lays its eggs only in the tips of white pine trees growing in full sun. Normally the top shoot of the tree would grow straight skyward, producing a single whorl of branches each year. When the weevil eggs hatch, however, the larvae kill this top shoot, and the side branches end up curving upwards to take over the role as the growing tip of the tree.

The next image from 1962 (see next page) shows several important changes:

- New trees have already grown up all around the wolf pine; the park entry area and the western clearing are closing in.
- Rows of pine trees have been planted in what was the southernmost bit of the clearing in the eastern side of the park. Today these trees tower over the grassy picnic area between the parking lots and beach.
• There is the first hint of residential development at the top left corner of the image, just across the park boundary: South Cove Road is under construction.
• The open fields at the top right of the 1942 image have been filled in with industrial development, along the newly build Industrial Parkway.

By the time of the next image, from 1974, the City had purchased the park and constructed parking lots in the eastern side. The cottages once present along the beach are razed, the bathhouse is under construction, and further housing development abuts the northwest edge of the park.
This last image is from 1988 (see Appendix 1 for a 2012 color air photo of Red Rocks). Parts of the park may look denuded of trees here, but that is mainly because many of the trees are missing their leaves; this photo was taken in April, before leaf-out. This reveals the pattern of deciduous vs. evergreen trees across the park. The northeastern corner where the wolf tree stands, for example, is now full of red maples (Acer rubrum) and other hardwoods; these show a paler gray color compared to the evergreen cedar and hemlock trees, for example, on the western shore of the park. Note the difference between the pale gray of the deciduous growth compared to the even paler areas of rock outcrop and bare soil.

The construction trend continues in 1988, with more houses showing up just across the northern limit of the park, which also happens to be the dividing line between Burlington and South Burlington. Could the development have continued southward into present-day Red Rocks, had it not been for this municipal boundary? Or for the Hatch Family keeping their estate intact?

**Acquisition by South Burlington**

The aerial photos above show a quick transition from field to forest to the parking pods of Red Rocks Park, but the transfer of ownership was not a quick process.

The industrial development first apparent in the 1962 image is an important part of the story; there was an interest in extending this development southwards, into the northeastern corner of Red Rocks.
Rocks, in the mid-1960s. The Hatch family petitioned the City to rezone the land as light industry (which would have raised the property value above its standing $450,000 estimate).

Some City officials and local conservationists, on the other hand, were keen to keep Red Rocks as a park. In 1967, a technical team under the direction of UVM Professor Fred Sargent inventoried 16 South Burlington sites with natural resource potential. Red Rocks made the top of the list: “it is felt that no nature center in the county if not in the state can compare with Red Rocks.” The report recommended the land for a nature center and picnic area and suggested that The Nature Conservancy could be interested, should the City not choose to acquire it as a public park.

Fred Sargent led the effort to purchase Red Rocks from the Hatch Family, with support from South Burlington residents who formed the city’s original Natural Resources Committee. In May 1970 the property became available to the town at a cost of $450,000. Thanks to a $200,000 grant from the federal Land and Water Conservation Fund and $152,000 from the state, the purchase was expected to cost the town only $100,000 (or $1000/acre). In June 1970, residents voted 1094 to 98 in favor of a bond to purchase the park at this price. They ended up paying even less because the Hatch family made a gift of $50,000.

South Burlington officially took ownership of Red Rocks on October 5, 1970.

Robert Hatch (standing) turning over the deed to Red Rocks to (from left to right) Selectman C. Harry Behney, town treasurer Helen Paquin, and Natural Resources Committee chairperson Barbara Bull (Burlington Free Press 10/6/1970).
SECTION 3: NATURAL RESOURCES

SUMMARY:

- Red Rocks gets its name from the iron-rich Monkton quartzite rocks that underlie the park. These rocks are formed of sand that formed the shoreline of a shallow sea 500 million years ago, then was transformed by heat and pressure during the formation of the Green Mountains.
- The soils of Red Rocks are mostly loams (a mix of particle sizes) with a shallow depth to bedrock (under 2 ft in most locations, with many bedrock exposures).
- The park has several wetland areas, where either very fine soils or the shallow bedrock cause water to stay perched at or near the ground surface. These wetland areas are the site of vernal pools that are important to breeding frogs and salamanders in the spring.
- The Red Rocks forest houses a diversity of plant communities, including a state-significant limestone bluff cedar-pine forest at the southwestern cliff edge.
- The Red Rocks forest is a mix of northern hardwood tree species including maples and beech, along with oaks and hickories that favor more warm and dry conditions.
- The park hosts a diversity of wildlife, most notably 135 species of birds. Special habitat features include mature forest, fallen woody debris, standing snags, mast-producing acorn and hickory trees, and cliff ledges.
- The Lake Champlain shoreline is a key feature of Red Rocks and an important corridor for wildlife in South Burlington.

Geology

Bedrock geology

You need to reach much further back in time—long before Thomas Udell drew ownership rights to Red Rocks in 1798—to uncover the geological story that gives Red Rocks Park its name.

The park’s namesake rocks are part of the Monkton Quartzite formation, which stretches in a band from Colchester down to Addison County. Many buildings around Burlington are made from this rock, and some of the most notable are on UVM’s redstone campus. Their material came from the redstone quarry just east of Shelburne Road.
These rocks formed from sediments laid down 500 million years ago, in the early Cambrian period, on the floor of a warm, shallow tropical sea called the Iapetus Ocean. Due to the movement of tectonic plates, Vermont was situated near the equator at the time, and South Burlington was near the sandy beach and shallows at the edge of the continent. Over many millions of years, the sandy sediments deposited in the water there solidified into sandstone.

450 million years ago, more tectonic plate movements brought an island arc on a (very slow) collision course with Vermont. The resulting thrusting and folding of land produced the Green Mountains, but more importantly here, it also made the Monkton quartzite: the heat and pressure of the mountain-building event (an orogeny) turned the sandstone into quartzite. This included reorienting of the quartz crystals and migration of some minerals into bands now seen as distinct layers in the rock. The red bands (and red rocks) have a higher amount of iron oxide.

**And then came the glaciers**
Red Rocks continues to be shaped by the erosive forces of water and ice. The most dramatic of these forces were the glaciers that covered the park in a mile-high sheet of ice as recently as 13,000 years ago. This occurred when the climate was cooler and snow accumulated faster than it could melt.

When temperatures warmed and the glaciers receded, the area was covered by glacial Lake Vermont and then the Champlain Sea; Red Rocks sat below as much as 500 ft of water. Sediments deposited in these waters are the source of the delta sand and lake-bottom muds and clays that overlay the bedrock through much of Red Rocks (see Map 3, next page). In other parts of the park, erosive forces have exposed the underlying bedrock and glacial till (soils of mixed sediment sizes deposited by the retreating glaciers).
Soils of Red Rocks Park

Soil Type, % slope

- AdA Adams and Windsor loamy sand, 0 to 5%
- BIA Belgrade and Eldridge soils, 0 to 3%
- Cv Covington silty clay
- EwA Enosburg and Whately soils, 0 to 3%
- EwB Enosburg and Whately soils, 3 to 8%
- FaC Farmington extremely rocky loam, 5 to 20%
- FaE Farmington extremely rocky loam, 20 to 60%
- GeC Georgia stony loam, 8 to 15%
- HnE Hinesburg fine sandy loam, 25 to 60%
- MyB Munson and Raynham silt loam, 2 to 6%
- Rk Rockland
- ScB Scantic silt loam, 2 to 6%

Map 4
Soils

The soils of Red Rocks are the product of its bedrock, surficial deposits, the forces of weathering, and modifications by plants and animals—humans included. The park generally has nutrient-rich soils derived from the limestone in its rocks. The high calcium content and shallow depth of the soil have a strong influence on the park’s vegetation.

The soils are generally characterized by a high windthrow potential, particularly wherever there is a shallow depth to bedrock or shallow depth to saturation. Soils are only slightly susceptible to erosion as a whole, but the areas of 20% or more slope are severely erodible. Devegetation greatly increases erosion risk.

The main soils in Red Rocks are pictured on Map 4 (previous page) and described below, in order of prevalence:

- **Farmington extremely rocky loam**: Loamy soils (a mix of sand, silt and clay) of only 10 to 20” depth. Somewhat excessively drained, low available water capacity, slight erosion hazard increases to severe where steeply sloped (FaE) or where vegetation is cleared. The shallow and steep soils pose many limitations to use besides forest. High windthrow potential due to low depth to bedrock.
- **Covington clay**: Poorly drained (hydric), highly fertile, fine-textured soils. High water table keeps the soils wet from fall through spring; water table is less than 12” below surface during wettest part of the year.
- **Enosburg and Whately soils**: Similar to Covington soil but with coarser, loamy texture. Poorly drained (hydric), water table within 12” of surface or ponded on surface.
- **Rockland**: 50 to 90% bare bedrock or less than 10” of soil over bedrock.
- **Georgia stony loam**: Deep, stony, moderately well drained soils. Perched water table 1.5 to 3 ft below surface from fall to spring.
- **Adams and Windsor loamy sand**: Deep, loose, excessively drained, sandy.
- **Belgrade and Eldridge soils**: Deep to bedrock, moderately well drained. Water table 1.5 to 3.5 ft below surface from late fall to spring.
- **Scantic silt loam**: Deep, poorly drained with hydric areas, level to gently sloping. Low depth to water table; remain wet for significant periods after rains. In Red Rocks, modified by construction of parking area.
- **Hinesburg fine sandy loam**: Well drained, deep soils. The areas with this soil type at Red Rocks include high slopes (25 to 60%) and are thus highly susceptible to water erosion.
- **Munson and Raynham silt loam**: Deep to bedrock, somewhat poorly drained. Perched water table 0.5 to 2 ft below surface.

**Hydrology**

Red Rocks is situated on the shore of Lake Champlain, and the land drains into the lake by means of direct runoff and some channelling into first-order streams. There are no permanent surface waters within the park itself, but there are vernal pools and wetland areas at the locations on the map below. Boundaries should be confirmed by a full wetland delineation, which was beyond the scope of this report.

There is also a seep area alongside one section of trail, where the rock impedes the downward movement of water and it discharges at the ground surface. It crosses the path at this location and continues on the other side as a small stream which drains into a manmade fountain.

![Map 5. Water features of Red Rocks Park. Note the shoreline of Lake Champlain that marks the southern and western boundaries of the park, wetlands indicated in pale blue, a seep shown in dark blue, and ephemeral streams.](image)
Natural Communities
A natural community is “an interacting assemblage of organisms, their physical environment, and the natural processes that affect them.” These communities are usually identified by their dominant vegetation, as groups of plants tend to grow in recognizable associations and patterns across the landscape. These groupings can vary, but they generally reflect the similar environmental needs of the plants of each community. There are 80 different natural community types recognized in Vermont.

In Vermont, natural communities are also specifically defined as those having minimal human alteration, able to develop under natural processes. When an area is significantly altered or only just beginning to regrow, the natural community identity of that location does not match what is visible on the ground, but rather indicates what that area could be. This takes an understanding of the underlying soils and how climate interacts with the physical environment to create specific conditions for plant growth. One must ask, what could or would have been here?

The present-day vegetation (or lack thereof) can be classified under a different scheme: land cover type or forest cover type. The natural communities map for Red Rocks (Map 6, previous page) actually shows a combination of natural communities and present-day land cover, especially where substantial alterations have taken the land far from its “natural state” (the developed area around the parking lots is an example).

Natural community types and variants represented in Red Rocks:

**Mesic maple-ash-hickory-oak forest:** This is the most common plant community represented in Red Rocks. The forest canopy is a mixture of northern hardwood species including maples and beech alongside oaks and hickories that are more typical of the central hardwood forests south of Vermont. It is found here in Red Rocks because of the warm climate and somewhat dry conditions on this rocky piece of the Champlain Valley.

**Transition hardwood limestone forest:** This is a variant of the mesic maple-ash-hickory-oak forest, and it occurs nearer to the cliff edges of Red Rocks where bedrock is closer to the soil surface. The nutrient-laden rocks provide for a rich community of spring wildflowers here: large-flowered trillium, Dutchman’s breeches, blunt-lobed hepatica, and white baneberry are examples.
Limestone bluff cedar-pine forest: This community occupies a band along the top of the rocky bluffs at the south and west edges of Red Rocks, facing the lake. It is dominated by cedar trees that cling to the rocks. These trees may be centuries old, slowly growing on little to no soil. White pine, shagbark hickory, and hophornbeam are other common tree species here. This part of Red Rocks is also host to several state-listed rare plants (see Appendix 2). This is the typical plant community found on calcium-rich rocks on the headlands of Lake Champlain, but many of these areas in Vermont have been lost to clearing and development. There are now only 21 quality examples of this natural community remaining in Vermont, totalling only 360 acres (Sorenson & Popp 2006). This low overall extent gives the community an S2 ranking, making the limestone bluffs of Red Rocks a state-significant natural community and a priority area for conservation. Unfortunately, the limestone bluff community in Red Rocks is one of the areas in the park that receives the most concentrated use and foot traffic, in large part from cliff jumpers looking to access the rocky bluffs. The result is a large concentration of ad hoc trails, vegetation trampling, littering, and colonization by invasive species in areas of disturbed soil.

Temperate calcareous cliff: This is not shown on the map, but this community occurs on the cliffs adjacent to the limestone bluffs and transition hardwood forest, wherever slopes exceed 60 degrees. These areas are sparsely vegetated, but small trees may grow on ledges or from cracks in the rock and the cliffs may support a rich diversity of herbs. Transition hardwood talus woodland may be present at the base of the cliffs, where pieces of rock have moved or fallen downslope from the cliffs above.

Dry oak-hickory-hophornbeam forest: Open, park-like forest with sparse shrubs. The ground layer is dominated by sedges. In Red Rocks, this natural community occurs upslope of the cliffside limestone bluffs and transition hardwood forest. It is limited in extent.
Temperate calcareous outcrop: Sparsely vegetated openings dominated by grasses, sedges, and moss. Occur towards the northern edge of Red Rocks, where bedrock is exposed. The rocky openings are ringed by pine and eastern redcedar trees.

Hemlock forest: Hemlocks are long-lived, shade-tolerant evergreen trees. This species is scattered throughout some of the other Red Rocks forest types, but it dominates the vegetation in two areas of the park that feature shallow soils and a steep cliff. In one of these areas, the hemlock forest grades into white pine-northern hardwood forest that is dominated by maple and pine trees. The hemlocks are very efficient at capturing light, making for very dark forest with few flowering plants at ground level.

Red maple-black ash swamp: This plant community occupies the northeastern corner of Red Rocks, where seasonal inundation favors red maple trees, which can tolerate saturated soil conditions. This land was cleared for agriculture through the 1940’s and is now occupied by a young forest that includes early successional aspen and birch trees and white pine that regrew in the old fields. It is also highly impacted by non-native buckthorn and honeysuckle. The understory is rich in moisture-loving fern species including sensitive fern, cinnamon fern, and royal fern.
Vernal pools: The red maple swamp area is also the site of one or more vernal pools. Vernal pools form in forest depressions that fill with water during spring and fall, given sufficient rainfall and snowmelt. The temporary pools provide important breeding habitat for frogs and salamanders. The area mapped as **wet clayplain forest** on the natural communities map is another wetland area that likely holds vernal pools, though these require further mapping during a wet season. Prior to clearing and agricultural use, this area was likely the site of a clayplain forest of pine and oak trees on fine clay soils.

Seeps: There is one known seep area in Red Rocks, where bedrock impedes downward water movement and instead causes horizontal flow at the ground surface. Park visitors may recognize this area from the frequently flooded adjacent trail. The seep is dominated by spotted touch-me-not plants and clear of trees and shrubs in the immediate area. This seep forms the headwaters of a stream that drains to the lakeshore.

Lake sand beach and lake cobble beach: This is the shoreline community along the southern edge of the park. The public beach area features a sand beach that has been maintained by a supply of sediment from the mouth of nearby Potash Brook (south of Red Rocks on Shelburne Bay) and also human additions of sand. The sand beach grades into a cobble beach of larger rock fragments to the west, and this beach continues intermittently at the base of the cliffs to the far western point of the park.
Wildlife
The bird, mammal, reptile and amphibian species of Red Rocks are listed in Appendix 5. These lists include confirmed sightings as well as suspected presence in the case of some mammals, reptiles, and amphibians. Suspected presence is based on there being suitable habitat but no confirmed sightings to date.

Red Rocks includes the following notable wildlife habitat features:
- Rocky and sandy shoreline
- Intact mature forest
- Shrubby undergrowth
- Forest clearings
- Hemlock stands
- Rock crevices and ledges
- Vernal pools
- Woody debris (fallen trees and branches) on the forest floor
- Standing snags with nesting cavities and loose bark
- Large mast-producing trees (oaks and hickories)
- Cliffs

The intact forest of Red Rocks is particularly suited to a variety of birds; it serves as both a nesting location for summer residents and an important staging area for migrating species. The 135 species in the current Red Rocks bird list include 11 of the Vermont “Birder’s Dozen,” a set of species identified by Audubon Vermont as being high priorities for protection in northeastern US forests.

While the physical and biological habitat is suitable for a variety of species in Red Rocks, the fauna—particularly ground-nesting species—are strongly impacted by the presence of both people and dogs in the park. While off-leash dogs traveling off-trail may compound the problem, the mere presence of pets and people is enough to deter many species of mammals and birds.

See the separate document, “Wildlife of Red Rocks Park,” for more information about the inhabitants of the park and their habitat requirements.
SECTION 4: MANAGEMENT CONCERNS

Management in the face of uncertainty
Red Rocks Park faces a host of management questions and concerns that do not have simple answers or solutions. Our knowledge of the natural world and how a natural area like Red Rocks functions will always be incomplete. The best that we can do as park managers and stewards is to implement solutions based on our current understanding of best practices, shaped by our goals for the park. It is important to monitor the results of these management actions, evaluate their success, and continually adjust as our scientific understanding and our own experience at Red rocks indicates. This is an “adaptive management” approach.

Some principles to keep in mind in managing an area like Red Rocks:
- Think of management actions in terms of “small experiments” to test or evaluate possible management strategies.
- Monitor these experiments to assess how they meet goals.
- Consider new information as it emerges and adjust strategies (and goals) accordingly.

This section outlines some of the key management issues and questions at Red Rocks, some possible solutions, and recommended steps.

Section 6 provides additional management guidelines for decision-makers, and Section 7 summarizes recommendations into a list of management actions.
INVASIVE PLANTS

Overview
Much of Red Rocks is occupied by non-native invasive plant species (see Table 1, below), and their management should be a priority for park directors. Many conservation professionals sense a strong threat from invasive species and recommend complete removal as a best practice; however, a growing body of research is pointing to possible negative impacts from such heavy-handed invasive species control. Sound invasive species management should weigh the potential risks and benefits of such management actions on a case-by-case (or species-by-species) basis. First priority should be on preventing establishment of new invasive plants and containing their spread.

Impacts of Invasives
- Non-native species can quickly replace native vegetation in disturbed areas, leading to dominance of a few species throughout the ecosystem.
- This can lead to loss of a food source for local insects; many moths and butterflies, for example, rely exclusively on a particular species of native plant on which they lay their eggs and their caterpillars feed. Studies show that non-native species support a lower diversity of insects. This impact can be felt up the food chain, as these insects are a main food source for many birds.
- Other studies show more direct impacts to birds because some fruits of invasive plants have a lower nutritional value compared to native ones, but more research is required to confirm this.
- Some invasive plants cause changes in soil chemistry that can inhibit the growth of other plant species, with long-lasting effects. Garlic mustard is an example of this allelopathic behavior.

Present condition
Table 1. Invasive species inventory

<table>
<thead>
<tr>
<th>Species</th>
<th>Location and Abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common and Glossy Buckthorn</td>
<td>Dominant understory shrub in parts of the limestone bluff cedar-pine community (particularly the cliff jumping area), the parking areas, the northeast corner of the park, and recently disturbed areas (e.g. windthrow gaps). Scattered patches and trees throughout the rest of the forest; absent only from heavily shaded areas, e.g. dense hemlock and cedar growth.</td>
</tr>
<tr>
<td><em>Rhamnus cathartica</em> and <em>Frangula alnus</em></td>
<td></td>
</tr>
</tbody>
</table>
### Shrub Honeysuckles – *Lonicera sp.*
Small to large patches of variable density found throughout park, often alongside buckthorns (though less common). Particularly concentrated toward the east side of the park and along the southern lakeside trail to the main overlook points.

### Japanese Barberry – *Berberis thunbergii*
Individual plants and small patches found at low density throughout park.

### Burning Bush or Winged Euonymus – *Eunoymus alatus* – PRIORITY SPECIES
Isolated plants along the entrance road and lakeside trail, with several plants concentrated along the far western (“turnabout”) overlook trail.

### Norway Maple – *Acer platanoides*
Scattered trees near the park entrance, along both sides of entry road, and near the high point of the E loop trail. Other scattered undetected infestations likely.

### Periwinkle – *Vinca minor*
Isolated dense patches at the top end of the western loop trail, encroaching in from nearby houses. Growing in thick mats.

### Asiatic or Oriental Bittersweet – *Celastrus orbiculatus* – PRIORITY SPECIES
Isolated patches and individual plants throughout park, at low density.

### Garlic Mustard – *Alliaria petiolata* – PRIORITY SPECIES
Growing in isolated patches, at the southeast corner of the parking loop road (near backyards of houses) and near the park entrance, to the north of the road just beyond the entry kiosk.

### Purple Loosestrife – *Lythrum salicaria* – PRIORITY SPECIES
Several isolated plants and patches along the shoreline, including the beach area by CWD and shallows to the west, plus around the point and north of the western loop trails.

### Multiflora Rose – *Rosa multiflora* – PRIORITY SPECIES
Isolated occurrences near western loop trail and around parking area.

### Goutweed – *Aegopodium podagraria* – PRIORITY SPECIES
Isolated occurrence along northern boundary of park.

### Japanese Knotweed – *Fallopia japonica* – PRIORITY SPECIES
One isolated occurrence just beyond the park boundary, near a condo development and adjacent network of side trails leading into the park.

An identification guide and removal guidelines for Vermont’s invasive plants are available from The Nature Conservancy at www.vtinvasives.org

#### Invasive management history
The Nature Conservancy and student volunteers from UVM partnered for an invasive plant mapping day on October 15, 2012. This was followed by a removal day with students from Champlain College’s ‘Foundations of Ecology’ class on October 31, 2012. These students targeted buckthorn <4” diameter along the western loop trail. No other organized invasive plant removal has occurred to date.

#### Risks of invasives control: proceed with caution
Invasive species do alter the structure and function of ecosystems, but the exact mechanisms and causes are not entirely understood (Didham et al. 2005). Managers should proceed with caution in...
proceeding with invasives management, as misguided removal efforts can easily lead to further spread. Complete removal often requires an intensive effort, including either repeated physical pulling or chemical treatment. The chemical herbicides are typically applied directly to cut stumps and reportedly break down quickly in the environment, but there are still risks of toxicity inherent in the use of any herbicide. Special care should be taken given Red Rocks’ waterfront location and proximity to drinking water sources.

It is also important to keep in mind that invasive plants are a symptom of habitat disturbance rather than the root cause in and of themselves. These plants dominate in openings and areas of bare soil, such as along trails. They were originally introduced and are continually transported by people. The most dense growth of invasive buckthorn in Red Rocks, for example, occurs atop the cliffs where people have created side trails to access lookouts and cliff-jumping locations. Removal of these plants could simply open up the bare soil for regrowth of buckthorn from the seedbank that persists in the soil. Full removal would require a continued effort that could be both expensive and time-intensive.

Even though invasive species have a lower food value for native wildlife, they do still provide some cover and habitat value. Removing all non-native plants would mean removing much of the shrubby growth in Red Rocks, taking away cover from small and medium-sized birds and mammals. Removal efforts should consider what will replace the invasive plants. Such efforts may best be coupled with restoration plantings of native species.

**Desired Condition**

Given all the uncertainty and risks outlined above, is it wise to pursue any invasive removal in Red Rocks? The City does have the opportunity to limit the spread of certain invasive species that are only present in a small extent at one or two locations right now. This could be done at low risk and low cost and would prevent further loss of native biodiversity.

Management for more widespread and dominant invasives such as buckthorn and honeysuckle would require a much more time- and cost-intensive operation. The pros and cons of this approach should be considered further in consultation with park management and city residents. How important is it to...
maintain native forest in Red Rocks, in the face of continued introductions of non-native species and disturbance from human use? This is not an easily answered question.

Park management should, at a minimum, aim to maintain the present level of ecosystem function by:

1. curbing the spread of invasive plant species by containing current populations and
2. preventing further infestations through an early detection-rapid response system

**Management Options**

- Early detection of invasive species
  - Fall and spring survey by park staff or volunteers.
- Control of small, isolated populations
  - Early detection and rapid response to isolated populations. Initial targets include garlic mustard, purple loosestrife, burning bush, Japanese knotweed, and goutweed.
- Protection of high-quality areas with few invasive species
  - No area of Red Rocks is completely untouched, but the interior of the loop trails (the areas furthest from side trails and human disturbance) could be prioritized for maintaining intact, native forest.
- Restoration of rare natural habitat types heavily impacted by invasive species
  - The limestone bluff cedar-pine forest is a state-significant rare natural community that could benefit from restoration, but it will require an intensive effort with uncertain results.
- Management of high-use areas that may be a source of further infestations.
  - Monitor the eastern, developed section and the park boundary for signs of new invasive species.

Park managers should monitor the effectiveness of any treatment methods pursued and adjust as appropriate.

**Resources**

- Partnership and support from The Nature Conservancy, UVM, Champlain College
- Department of Public Works certified herbicide applicators and chainsaw operators
  - **Note: no herbicide spraying within 150 feet of Queen City Park water source**
- Seasonal park gate staff could assist in management efforts and public outreach
- Grants may be available to support removal efforts

**Public outreach and education**

Public outreach and education will be central to any invasive species management effort.

- Articles, signs, letters to the editor and Front Porch Forum could notify the public of any invasive removal strategies and the reasoning behind such efforts—especially around sensitive issues such as herbicide use.
- A park pamphlet or signs could educate visitors about invasive plant issues and identification.
TRAILS

Overview
The Red Rocks trail network includes 3.3 miles of official trails and access roads, based on the original carriage trail network constructed in 1891. These trails have been generally well maintained over the years. Areas in need of maintenance are outlined in Map 7, below. Some volunteers have been assisting in maintaining drainage ditches along the areas prone to flooding. Park staff should monitor trail condition and provide support where needed.

Map 7. Trail locations with issues of erosion or periodic flooding, requiring management attention.

Unofficial trails account for a further 4.3 miles of pathways through Red Rocks. There is a particularly dense network along the cliffs, especially west of the main southern lookout point and concentrated along the cliff-jumping area (cliff-jumping is not condoned by the City, and the jumping cliffs are considered an attractive nuisance). The creation and use of these ad hoc trails threatens the ecological integrity of Red Rocks.

Map 8 shows the distance from any point in the park to the nearest trail (official or unofficial). It illustrates that the farthest point in Red Rocks from any trail is just over 90 meters (approximately 300 feet), which has a strong implication for park wildlife. Every species has a “flushing distance” at which it will flee when approached by people (or other threats), causing stress and a disruption from regular activities of feeding, breeding, etc. For species like white-tailed deer, this flushing distance may exceed 300 feet, meaning there is no place in Red Rocks where that animal can feel safe from the presence of people.
The Issue

- More trails mean more wildlife disturbance, human-assisted spread of invasive species, vegetation trampling, and erosion.
- For soils, a little use causes most of the impact (trail compaction occurs rapidly with light use). Soil erosion is the most permanent and therefore most serious effect of trail expansion. Soil compaction recovery may take 6-18 years; erosion recovery may take centuries due to the long time it takes for new soil to form.
- Trail erosion risk exists wherever slopes exceed 9 degrees; especially severe above 18 degrees.
- For vegetation, it may take only 20 tramples to lose 50% of the vegetation on a given piece of land.
- Wildlife disturbance is related to the frequency of people passing by, and side trails may bring people closer to critical wildlife areas more often. Negative impacts on some breeding birds occur with forest trails as narrow as 1 to 3 meters; some birds stop nesting near trails and others avoid the trail areas altogether (Jordan 2000).

Trail Best Management Practices (BMPs)

- Conduct a seasonal walk-through to identify trail hazards and assess extent of off-trail use
- Respond to downed trees as needed
- Post signs to notify park users of trail closures for rehabilitation purposes
- Consider establishing select informal trails as “official” in order to concentrate impact and avoid excessive proliferation.
- Emphasize the contrast between trail and off-trail zones to avoid expansion of the impact zone (e.g. line the sides of the trail with stones, keep the trail very smooth-surfaced relative to the adjacent land).
- Install barriers to control movement of people—thorny shrubs can be particularly effective. Shrubs and trees are the best options for near houses.
- Plant grass-like plants (grasses and sedges) to revegetate areas where continued trampling is likely, as they are most resistant.

Examples of Red Rocks ad hoc trails
Map 8
### Trail Closures and Openings
Table 2. Recommendations for opening and closing recreational trails

<table>
<thead>
<tr>
<th>Which trails are recommended for opening?</th>
<th>Which trails are recommended for closure?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Heavily trafficked trails that connect to the local community and serve as an alternate park entry</td>
<td>➢ Trails going down steep slopes (erosion issues)</td>
</tr>
<tr>
<td>➢ Heavily trafficked trails that lead to particular destinations (e.g., the wolf tree, the 76er lookout)</td>
<td>➢ Dense sidetrail networks (close the network with the possibility of centralizing traffic on one path)</td>
</tr>
<tr>
<td>➢ Trails that are already as wide, well-used and maintained as the “official” ones but have not been marked on the map as such</td>
<td>➢ Trails going through sensitive habitat</td>
</tr>
<tr>
<td>➢ Key shortcut trails between loops</td>
<td>➢ Trails that are minimally used or impacted, with good potential for revegetation and masking of the walked path</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why?</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Concentrate use on these official trails to draw use away from other ad hoc trails</td>
<td>➢ Steep slopes are subject to erosion (soil loss, siltation and pollution of water)</td>
</tr>
<tr>
<td>➢ The heavily used spur trails are already impacted</td>
<td>➢ Seldom-used trails stand a good chance of successful closure and restoration</td>
</tr>
<tr>
<td>➢ Trail closure not a viable option due to heavy use</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How to open trails</th>
<th>How to close trails/discourage use</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Mark edges of trail</td>
<td>➢ Place logs and other debris across trail</td>
</tr>
<tr>
<td>➢ Reroute or reorient the trail as needed to give it a low grade and decrease erosion risk</td>
<td>➢ Use tools to scuff up the trail, break up earth to make it look unused</td>
</tr>
<tr>
<td>➢ Add trail signage</td>
<td>➢ Place notices of “area closed for restoration” (shown to deter 90% of visitors)</td>
</tr>
<tr>
<td>➢ Indicate the trail on official park maps</td>
<td></td>
</tr>
</tbody>
</table>

Notes on the selected trails:

- The cliff-jumping area would be a prime area for closure given the intense disturbance and the presence of the sensitive limestone bluff cedar-pine forest there, but this would be very difficult to enforce given the high traffic.
  - Managers could consider closing off certain sections with signage indicating a restoration area (“Please help the plants - restoration area - stay on designated trails”).
  - They might also consider designating an official trail along the length of the cliff, from the main south-facing lookout towards the turnabout loop at the far western lookout point. The goal here would be to concentrate use along the official trail and prevent further spreading of this trail network. This could pose liability issues, however.

- There is also a well-travelled network leading from the eastern loop, up towards the Austin Dr neighborhood; this area is also densely populated with invasive species, e.g. the only Japanese knotweed occurrence in the area is right here on the park doorstep. This trail is recommended for official opening so as to concentrate use and acknowledge this alternative entryway into the park.
### PROBLEMS
- Ad hoc trails increase wildlife disturbance, human-assisted spread of invasive species, vegetation trampling, and erosion.
- Red Rocks has 4.3 miles of unofficial side trails.

### OBJECTIVES
- Minimize disturbance to soils, vegetation, and wildlife
- Provide an enjoyable recreational trail network to suit a variety of park users and purposes.

### OPTIONS
- Close all ad hoc trails and maintain a strict policy of staying on designated official trails only by means of signage, fines, etc.
- Rotate trail closures through sensitive areas to allow for recovery
- Where there are many ad hoc trails, concentrate use onto a single “official” one
- Do not enforce any trail restrictions and allow dispersed use across whole park

### RECOMMENDATIONS
- Protect key wildlife areas from roads and trails
- Use positive signage (e.g., with wording about restoration areas and sensitive vegetation) to indicate trail closures
- Maintain the carriage road network as the central, official trail network
- Continue annual maintenance and inspection of the trail network
- Revegetate closed trails with resistant vegetation
- Consider modifications to official trail network as outlined in Table 2, above; reassess yearly

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Left: Grass is the most resistant vegetation to trampling; it helps to secure soil against erosion. Above: One of the main, wide trails forming part of the original carriage trail network in Red Rocks. These trails reach up to 4 m width.
OFF-LEASH DOG IMPACTS

Overview
Red Rocks is a popular destination for dog walkers. A “Leash Law” is in effect within park boundaries, requiring that all dog owners must keep their pet on a leash (max. 6 ft length) at all times. Dogs are also entirely prohibited at the public beach and in the water at Red Rocks. Failure to comply with the “Leash Law” can result in a civil penalty charge of up to $100 per day.

Many park users ignore these laws; one survey showed a 12% compliance rate. Some park users abide by an “unofficial understanding” that dogs can be let off-leash during certain times of day, outside of peak hours. Enforcement presence is limited to nonexistent, so there is little deterrent to anyone breaking the law.

Off-leash dogs create the potential for negative dog-dog and human-dog interactions as well as impacts to wildlife, vegetation, and water quality. One study showed that the presence of off-leash dogs affects animals like deer, rabbits, and small mammals (chipmunks, squirrels, and mice); deer activity was lower within 100 m of trails and small mammal activity declined within at least 50 m of trails used by dogs (Lenth et al. 2008). Only a small area of Red Rocks is more than 50 m from a trail, and no place in the park is 100 m away from a trail. Even after dogs have left the park, certain carnivores may avoid areas that have been scent-marked by dogs, while others may may increase surveillance along dog-marked trails.

As dog-walkers are among the primary and most regular users of Red Rocks, it is of high priority to explore solutions that fulfill the needs of dog owners, maintain ecosystem health, and allow for safe and enjoyable visits for all park users.

Summary: Off-Leash Dog Impacts

| PROBLEMS                                                                                                                                 |
|---|---|
| ➢ Park visitors may be frightened or threatened if approached by off-leash dogs, which detracts from their park experience                      |
| ➢ People and pets risk injury from aggressive dogs                                                                                         |
| ➢ Dogs may trample vegetation and disturb wildlife off-trail, including ground-nesting birds and animal dens                                    |
| ➢ Owners may fail to pick up dog poop deposited off-trail; this fecal matter may contaminate Lake Champlain                                  |

| OBJECTIVES                                                                 |
|---|---|
| ➢ Safety and satisfaction of all park users, dog-owners and otherwise                                                                 |
| ➢ Minimized disturbance of wildlife                                                                                                 |
| ➢ Clean water                                                                                                                    |
OPTIONS

- Designate certain areas of the park where off-leash dogs are allowed
- Designate certain times of day when off-leash dogs are permitted (or, conversely, designate hours when leashes are required and allow off-leash dogs otherwise)
- Modify leash laws according to the seasons, in consideration of critical dates for nesting/breeding wildlife (see example below)
- Enforce leash laws and issue fines to encourage compliance
- Create separate, enclosed areas for off-leash dogs
- Institute a no-dog (nature reserve) policy for Red Rocks and enforce this
- Fence environmentally sensitive areas to reduce impacts from roaming dogs

RECOMMENDATIONS

- Educate dog owners so that they are aware of the reasoning for leash restrictions
- Explore options for designating off-leash and on-leash times and trial this approach during the 2013 operating season
- Cite only irresponsible dog owners

Considering the seasons:
March through July are critical months for breeding wildlife; many young mammals are born in late March, and most birds nest from late April to July. These are months when it would be most critical to keep dogs on leash so as to minimize wildlife disturbance, particularly to ground-nesting birds. Another suggested on-leash period would be during times of significant snow pack, when mammals are on a tight energy budget. Other times could be designated off-leash times of the year, from a wildlife perspective.

FOREST HEALTH & MANAGEMENT

Overview
The Red Rocks forest is primarily a mesic maple-ash-hickory-oak forest, including a mixture of northern woods species with more southerly elements that take advantage of the dry, warm cliffs in these lowlands of the Champlain Valley. Eastern hemlocks occupy some of the wetter, darker, and older growth areas of the forest, and along the cliffs the forest transitions towards a cedar-dominated limestone bluff community.

Red Rocks is largely (if not all) secondary forest; it was managed as a woodlot in the 1800s, and has since been used for pasture and more recent logging operations. There were also several fires of unknown extent and intensity in Red Rocks’ past, the largest of which is currently labeled as “The Burn” on park maps. A few stretches of forest may, however, have escaped the axe of European settlers. One hemlock—of only 12” diameter—fell across a trail and was sawed open to reveal over 210 years of growth rings! The tree had been slowly growing on the shallow soils along a rocky ridge, between two sections of trail. There is reason to suspect that other nearby hemlocks could be of similar age, left for their low-quality lumber and because they weren’t in the way of pasture land, perched as they were on the steep and rocky terrain.

The Red Rocks forest is presently managed passively; trees are felled if they pose a threat to park users (e.g. snags hanging over a trail), but otherwise the forest is left “as-is.”
Certain practices should be taken into consideration to ensure the healthy regeneration of the forest and the optimization of recreation and conservation opportunities.

Recognizing that Red Rocks is a well-loved and well-used public park, the forest management options below do not consider any harvesting or felling of trees beyond the ones that come down on the trails. With public consultation and buy-in, however, park managers might choose to release certain trees that provide valuable wildlife habitat or seed tree values by an individual tree selection. This would mean cutting other trees around the selected valuable trees, with the goal of improving the growth of the selected trees. The County Forester or other natural resource professional should be consulted before proceeding with any such work, which is not recommended at this time.

**Forest Best Management Practices (BMPs)**

- Leave both large and small woody debris for provision of wildlife habitat and recycling of forest nutrients.
  - Small mammals rely on the cover provided by coarse and fine woody debris.
  - Fallen trees serve as germination sites for many plants, including tree seedlings.
    - Felled trees cleared off trails could be piled off-trail rather than immediately alongside it.
- Leave snags and cavity trees standing; these provide habitat for many animals, such as woodpeckers, owls, squirrels, raccoons, and bats.
  - Aim for 4 to 6 large snag or cavity trees per acre; one should exceed 21” diameter at breast height (DBH) and the rest should exceed 15” DBH.
- Maintain important mast trees, such as oaks and hickories, for wildlife.
- Monitor forest for signs of natural regeneration.
  - Manage for non-native invasive species to release native species.
- Maintain forested buffers around sensitive habitats, especially wetlands and vernal pools (a 50-foot buffer is currently regulated around all designated wetlands).

![Image](image.png)

Woody debris left at the side of the trail provides important habitat for small mammals including rabbits, chipmunks, squirrels, voles, and mice.
Pruning and View Corridors
Red Rocks has several lookout spots across Lake Champlain and Shelburne Bay. These were once much more open, and the trees present could be pruned to restore historical viewpoints, with the following considerations:

- The old-growth cedars of the limestone bluff community should be left as-is.
- Trees should be pruned rather than removed to open views; exposed soil would be an easy target for colonization by invasive species (which could impact native vegetation and very quickly impede the views again).
- South Burlington’s Development Review Board regulates all land within 150 feet of the lakeshore. Land is to be left in an “undisturbed, naturally vegetated condition” unless otherwise approved.
- Park users should be notified before any such work takes place, especially in such a public location.

Present-day views impeded by tree growth.

BEACH MANAGEMENT

Overview
Red Rocks contains South Burlington’s only public beach access, a 200-yard stretch of waterfront at the southeastern corner of the park. The beach at Red Rocks has been closed on several occasions due to high levels of blue-green algae or bacteria from the outlet of Potash Brook, which drains into Lake Champlain just south of Red Rocks beach. Zebra mussels and Eurasian milfoil (both aquatic invasives) also pose problems for beachgoers, and the beach sands are frequently washed away by high water levels, rain events, and wave action.

A full assessment of aquatic management strategies is beyond the scope of this report, but further research should look to solutions and case studies for managing for these invasive species and maintaining beach quality. There is potential for these management efforts to be very time and labor-intensive. It would be useful to examine the public perceptions of the beach area and gauge the interest in investing time and resources in its management relative to other areas of Red Rocks Park.
Zebra mussels growing in the shallows on the Red Rocks shore (left) and a blue-green algae bloom (right).

CHAMPLAIN WATER DISTRICT (CWD) EASEMENT

The intake for the Champlain Water District was sited at Red Rocks in 1970, and the system came online in 1971. The CWD is Vermont’s largest regional public water supplier, serving 12 municipal systems in Chittenden County, and this is their only intake location. A second intake line was recently added in response to increasing demand; it was located offshore of the far western point of Red Rocks.

The CWD holds a 40-ft wide easement through the eastern (developed) section of Red Rocks, starting just south of the main park entry and running in a diagonal towards their pump station at the west end of the Red Rocks beach. They also own the land immediately surrounding the pump house.

Some park users have expressed concern at the management of the CWD easement and the lack of communication about changes to park infrastructure, yet CWD managers have expressed a willingness to manage their infrastructure with minimal impact to the park. They also must invest a certain portion of their upgrade costs into landscaping, and they are willing to target some of this funding at the discretion of City management. Some of these funds went towards construction of a viewing deck, guardrail and plantings (visible in the picture above) in recent years.

CWD staff walk the easement line and brush-hog/mow every summer. Repairs are mainly done manhole to manhole; mowing is done to maintain access to these. Projects and repairs have increased
in frequency in recent years; they used to be more sporadic. The slope down to the water, east of the pumping station, was cleared for machinery access 10 to 15 years ago. It was rip-rapped to hold the soil back, but is currently experiencing erosion (likely compounded by frequent passage of people and dogs).

**Summary: CWD Easement**

<table>
<thead>
<tr>
<th>PROBLEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Conflict between what city residents perceive as best for the park and the needs of CWD to maintain their water supply line</td>
</tr>
<tr>
<td>➢ Erosion</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Recognizing that resiting of the CWD intake is currently unrealistic, continued operation of the CWD water supply with minimal impact to the ecological and aesthetic values of the park</td>
</tr>
<tr>
<td>➢ Understanding between park users and the CWD about the reasons for any work they do in the park</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Suggest easement management options to the CWD that will maximize wildlife habitat value and minimize aesthetic impact</td>
</tr>
<tr>
<td>➢ Recommend use for the CWD landscaping funds that will align with other park management goals and projects</td>
</tr>
<tr>
<td>➢ Accept that the CWD owns the pump house land and rights to the easement and leave them to manage it</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECOMMENDATIONS</th>
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</thead>
<tbody>
<tr>
<td>• Communicate a suggested policy to the CWD:</td>
</tr>
<tr>
<td>o Maintain vegetation to the greatest extent possible, i.e. remove larger trees and shrubs growing into the easement (ones that would delay emergency manhole access) but retain all herbaceous growth for wildlife and aesthetic benefits. Remove only what’s directly around manholes for access as needed.</td>
</tr>
<tr>
<td>o Notify local residents and park users (via signage on park notice boards) of any changes—with advance notice—and explain the reasons for any changes (e.g. placement of new pipes and outlets, widening of roads, removal of vegetation, etc.)</td>
</tr>
<tr>
<td>o Manage erosion of the slope next to the pump house with plantings. Install barriers or signs to prevent people from walking on the area as needed.</td>
</tr>
<tr>
<td>• Communicate ideas for use of landscaping funds</td>
</tr>
<tr>
<td>o Erosion prevention</td>
</tr>
<tr>
<td>o Beach management</td>
</tr>
<tr>
<td>o Trail maintenance</td>
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</table>
PARKING AREA

Red Rocks is officially open for a seven-week period from the end of June through mid-August. At this time, visitors are asked to drive into the park and pay an entrance fee (either a day use fee or season pass) for access. Outside of this seven-week period, visitors can park in the area outside the park gate, free of charge.

Many visitors ignore the ‘No Parking’ signs installed during the seven-week operating season and enter the park without payment. While an assessment of the full range of parking options is beyond the scope of this report, the City should place this assessment and implementation of long-term solutions at the top of its priority list. This will require an interdepartmental effort and should incorporate public input.

Summary: Parking Area

<table>
<thead>
<tr>
<th>PROBLEMS</th>
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</thead>
<tbody>
<tr>
<td>Ø Park users are confused about where to park/disregard parking regulations</td>
</tr>
<tr>
<td>Ø Little incentive to park within park boundaries when a free option exists just outside, with inconsistent enforcement (ticketing)</td>
</tr>
<tr>
<td>Ø City loses revenue stream from illegally parked vehicles</td>
</tr>
<tr>
<td>Ø A substantial amount of park acreage is dedicated to parking, which could otherwise provide wildlife habitat and recreational benefits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Revenue stream for city to fund park operations</td>
</tr>
<tr>
<td>Ø Straightforward parking option for park users; no confusion about where/when to park</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Increase parking enforcement to ensure compliance during summer season</td>
</tr>
<tr>
<td>Ø Reorganize parking area</td>
</tr>
<tr>
<td>Ø Shared use of privately-owned company parking lots on Industrial Parkway</td>
</tr>
<tr>
<td>Ø Accept that some users will continue to park without paying and pursue other sources of revenue</td>
</tr>
<tr>
<td>Ø Install donation boxes or another parking fee collection system in outer lot to remind people to pay</td>
</tr>
<tr>
<td>Ø Require payment year-round for consistency</td>
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</tbody>
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<table>
<thead>
<tr>
<th>RECOMMENDATIONS</th>
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</thead>
<tbody>
<tr>
<td>Ø Consult with key stakeholders and residents during a public forum for ideas to restructure parking</td>
</tr>
<tr>
<td>Ø Use positive messaging asking people to contribute towards park upkeep or restoration when they are spending money to access Red Rocks, rather than letting them simply view it as a fee to park their car</td>
</tr>
</tbody>
</table>
FUNDING

Currently the only revenue stream for the park comes from summer operating season parking permits, which is supplemented with funding from the City’s operating budget. Several park users have expressed a willingness to donate funds towards park upkeep and programming. The City should explore different options for fundraising and developing a sustainable funding stream for park projects. Several of the recommendations outlined in this report will require a substantial financial commitment.

SIGNAGE

A separate 2010 report outlined recommendations for installation of directional and interpretive signage in Red Rocks Park, and in 2012 a signage subcommittee of the Red Rocks Committee was discussing future needs. There are currently 25 signs installed in the park: 3 of these indicate no biking, 6 indicate the dog leash law, and 3 warn about cliff jumping. The only publicly visible park map is part of the single interpretive panel installed at the park entrance. A new park entrance sign will be installed in 2013.

City emergency staff have also proposed 29 emergency signs (small reflective markers for emergency vehicle directions) to install along all major park trails. A decision about acceptable level of signance, considering both upfront and maintenance costs, should be a top priority.

Summary: Signage

<table>
<thead>
<tr>
<th>PROBLEMS</th>
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<tbody>
<tr>
<td>Many park users—especially but not limited to first-time users—get disoriented in the park</td>
<td></td>
</tr>
<tr>
<td>There is no central notice board (outside of the summer operating season when the gate house attendants hand out maps and takes fees) to deliver park announcements and list policies</td>
<td></td>
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<tr>
<td>Signs can detract from the wilderness experience of park users</td>
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<table>
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<tr>
<th>OBJECTIVES</th>
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</thead>
<tbody>
<tr>
<td>Striking a balance between enough signs to ensure safety and orientation of park users, while still maintaining elements of a wilderness/nature experience</td>
<td></td>
</tr>
<tr>
<td>Effective delivery of park messaging (including city ordinances, park events, park interpretation)</td>
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</table>

<table>
<thead>
<tr>
<th>OPTIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Install all possible signs as outlined</td>
<td></td>
</tr>
<tr>
<td>Explore alternatives to sign boards and the 29 proposed emergency signs</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>RECOMMENDATIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin experimenting with handing out different maps or posting ...(next page)</td>
<td></td>
</tr>
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</table>
different temporary signs for the 2014 operating season

- Proceed with long-term funding for installation of directional signs at key park intersections, as outlined in the separate consultant report
- Employ positive messaging on park signs
- Install a park bulletin board at the main entrance
- Consider interpretive pamphlets as an alternative to interpretive signs

Map 9. Recommended locations for directional/wayfinding signage (square markers) and a bulletin board at the park entry (star).

**LONG-TERM CONSERVATION**

Since Red Rocks was purchased in part with federal funding, the park cannot be sold or converted from park use without appropriate equivalent replacement. Several regulations at the federal and city level grant additional protection to wetlands and the 50 feet of adjacent land and the 150 feet nearest the Lake Champlain shoreline (see Management Limitations, page 44, for a list). Operations within 98 feet of the shoreline also must meet US Army Corps of Engineers (USACE) approval.

This means Red Rocks is unlikely to be converted from its current use, and water features have additional protection. However, there is still potential for park use and management activities that could damage the ecological integrity of the park. The City should look to formalize forest management policies that ensure long-term protection of Red Rocks' natural resources.
SECTION 5: RECREATION & EDUCATION

Recreation

Red Rocks attracts both local South Burlington and Burlington residents, plus tourists from farther afield, with its diversity of recreational options. The South Burlington Recreation & Parks Department strives to provide fulfilling leisure time activities for all residents, and while increasing recreational use and activities is a laudable goal, several of these uses can conflict with one another and also with provision of wildlife habitat. The City should consider how to prioritize these conflicting uses. Where is the balance between quantity of recreational use (maximizing the number of citizens served) and preserving the quality of the recreational experience?

Some of the most popular uses of the park are also illegal and pose issues for liability. The City does not condone cliff-jumping in Red Rocks but also realizes that access to the cliffs cannot be controlled.

Current uses

- Walking, hiking, running, jogging, dog-walking
- Winter cross-country skiing and snowshoeing
- Swimming from beach, rocks, and cliffs
- Kayaking (boats available through kayak club)
- Bird-watching and nature appreciation
- Nature connection
- Outdoor sketching and painting
- Picnicking
- Relaxation and restorative uses
- Illegal uses: camping, bonfires, cliff-jumping

Opportunities

- Nature play area
- Use of retired parking areas in eastern section
- Moorings

One of the abandoned parking pods that provides open, grassy habitat and could serve as a nature play area or picnic area.
Education

Red Rocks has great potential as an outdoor classroom destination for local school groups, and it also offers all visitors a chance to explore and learn about nature in an urban setting. Envisioning Red Rocks as an outdoor classroom and for various education uses has implications for park visitation numbers, sense of crowdedness, trail impacts, and more. These issues could be discussed within a broader dialogue about long-term visions for the park and who could be using it.

A UVM undergraduate study in Spring 2013 investigated educational opportunities in the park. These students surveyed teachers at Orchard School and found that the majority of educators would consider using Red Rocks as a field trip destination. The UVM team prepared lesson plans on park wildlife, geology, and orienteering which will be made available online.

Current uses
- College classes
- K-12 use as a nature center is limited/nonexistent; some use for gym classes, cross-country meets
- Week-long “Governor’s Institute” for high school students (based out of UVM) focused on Red Rocks several years ago
- Public guided walks
- Summer nature camps scheduled for 2013
- Red Rocks Nature Club monthly gathering and stewardship group

Opportunities
- Nature education center for public and for institutions
- Place-based education for school groups: benefit of students accessing a forest within their own city boundaries (learning in their own backyard)
- Stewardship opportunities
- Modeling Red Rocks as a community forest
- More connections with local schools and colleges

Considerations
- Staffing
- Building/physical location
- Equipment
- Funding
- Materials to encourage educational use
- Implications for visitor traffic, types of visitors
SECTION 6: A DECISION-MAKER’S GUIDELINE

Consider the following in proceeding with park management decisions:

- Park values, priorities, and goal-setting through an inclusive planning process
- Constraints to management options
- Opportunities for community involvement and the community players
- Means for encouraging public buy-in and park compliance
- Park management and planning as an ongoing process

VALUES AND GOAL-SETTING

To the best extent possible, park managers should consider the ideas and values of the residents of South Burlington, and the larger population of Red Rocks Park users, in moving forward with management actions for Red Rocks Park. Community values of Red Rocks will be explored in greater detail through an inclusive community consultation and outreach process.

For example:
What’s a bigger priority at Red Rocks:

1. Beach access
2. “Natural”-state forest (maintaining native vegetation)
3. Educational use (school groups)
4. Maintaining and/or promoting wildlife habitat
5. Dog park
6. Promoting a solitude experience

In ranking these priorities, it would be wise to consider the role of Red Rocks within the larger parks network. Are there other places for people to exercise dogs or have an outdoor classroom? What can Red Rocks provide that other parks cannot?
MANAGEMENT LIMITATIONS

Keep the following management limitations and current park regulations should be kept in mind when considering actions in Red Rocks. Some could be changed more easily through City process (e.g., the dog leash law), while others fall outside of City control (e.g., the CWD easement).

- USACE regulates any work, structures or fill that take place beyond (lakeward of) the 98’ elevation
- The Champlain Water District owns the land immediately surrounding the pumping station at the west end of the beach. They also have access and management rights to the 30-foot wide easement that runs diagonally from the park entrance area to the pumping station.

Development Review Board regulations that apply to Red Rocks:
- All land within 150 ft horizontal distance of the high water elevation of Lake Champlain (defined as 102 ft above sea level) is subject to surface water buffer standards, which states that “all lands within [the] required stream buffer... shall be left in an undisturbed, naturally vegetated condition.” The main concern is maintenance of a vegetated buffer for erosion control.
- Wetlands and the 50 ft of land adjacent are also regulated.

City ordinances that apply to Red Rocks:
- Dogs: all dog owners must have their dogs on a leash (max. 6 feet) at all times within Red Rocks Park boundaries. Dogs are entirely prohibited at the public beach and in the water at Red Rocks. Safety is listed as the primary reason for the law, along with protection of “ecologically sensitive areas, including wildlife, rare wildflowers, wetlands, nesting, and other plants, flora, and fauna.” Failure to comply can result in a civil penalty charge, up to $100 per day. Overseen by the Animal Control Officer. Dog owners looking to let their dog off-leash can visit Farrell Park, Overlook Park, Jaycee Park, Szymanski Park, and the Community Dog Park.
- Park Conduct Ordinance (see the City of South Burlington website for the complete document). Park rules include:
  - No picking of trees, shrubs, flowers, ferns or other plants within park boundaries.
  - No removal of stones, rocks, birds, or animals shall be removed.
  - No removal of bark from trees or cutting and removal of firewood.
  - Axes, hatchets, shovels, chain saws, picks, handsaws, and all other tools used to dig, cut or build are prohibited.
  - No glass containers are permitted within Park boundaries.
  - No person shall disturb the peace, endanger the public safety, use obscene or profane language or prevent the use of City parks by others.
  - Drinking of alcoholic beverages in City parks is strictly forbidden, except by special permit.
  - It is unlawful to post bills, cut, deface, write upon, remove or destroy any tree, shrub, rock, signs, buildings, tables, benches, fireplaces, grills or other structures or equipment, facilities or park property, or appurtenances whatsoever.
OPPORTUNITIES AND KEY PLAYERS

Current park management
- South Burlington Recreation & Parks oversees park operations
- The Red Rocks Committee of seven appointed city residents provides recommendations and communicates park needs to City Council
- The Department of Public Works is responsible for park maintenance

Current community connections
- UVM NR 206 class is researching educational opportunities in Red Rocks and preparing lesson plans and interpretive materials
- UVM Field Naturalist Program collaborated in preparation of this management study
- The Nature Conservancy provides support for invasive species management
- Champlain College ‘Foundations of Ecology’ class participated in invasive species management
- The Red Rocks Nature Club (volunteer-driven) meets monthly for a nature hike and stewardship activities

Opportunities for community participation and volunteer recruitment
The following user groups and stakeholders should be considered for volunteer recruitment and community engagement:
- K-12 and college students; partnerships with specific class groups and teachers; graduate student or senior undergraduate studies
- Ongoing partnership with Champlain College Foundations of Ecology and UVM NR 206
- Local neighborhood stewards (from Queen City Park and the condos along the northern park boundary)
- Individual volunteers from the larger South Burlington & Burlington community who come out to publicly-advertized work days and outreach events
- Corporate groups from South Burlington & Burlington (team-building activities and opportunities to give back to the community)
- Local businesses/companies: Burton, Edlund, Rhino Foods, etc.
- Vermont Youth Conservation Corps

Other opportunities and considerations
- External grants and funding
- Funding and stewardship oversight will require coordination and direction from a paid employee, intern, or very dedicated community volunteer
MANAGING PEOPLE AND ENCOURAGING COMPLIANCE

Options for restricting use (or encouraging desired use)
There are various means of limiting park user behavior:

- Time restrictions/seasonal limitations, e.g. off-leash dogs only permitted outside of bird breeding season
- Area/zoning limitations, e.g. no off-leash dogs in sensitive wildlife areas, walk only on designated trails
- Behavior allowances and prohibited activities (e.g. campfires, littering, etc.)
- Group size restrictions
- Suggestions vs. city ordinances

There are also various means for communicating park regulations to visitors: park signage, direct messages from staff, flyers, online information, etc. Presence of a uniformed ranger is often most effective at ensuring compliance with park rules (Swearingen & Johnson 1995). However, this comes at a higher cost to the visitor, both in terms of taxpayer dollars and the impact of this uniformed presence on the visitor experience.

Best Management Practices

- **Explain reasons for regulations** to improve visitor compliance: Clearly state the problem, what aggravates it, how a change in behavior will improve it. Make the suggestion reasonable.
- Be sure visitors understand how they are expected to behave.
- **Enforce regulations**- regulations are there for a reason, and furthermore, it’s not fair to law-abiders if regulations are not enforced. If enforcement is impossible, better to just ask visitors to behave in a certain way; regulate at the minimum level possible.
- Written strategies often least effective but may help retention for those who are receptive to it
- Punishment-oriented strategies the most effective (if there’s an enforcement presence), yet positive wording of regulations is favored by the majority (Winter et al. 2000)
- Personal (verbal) contact often facilitates initial receptiveness, but written guidelines may help retention
- Simplify messages: having 2 messages vs. 8 on a bulletin board results in the same knowledge gain (Cole, Hammond & McCool 1997)
- Focus the message: make it personal, tailor it to the audience. It will vary between user groups.
- Use positive wording and messages (and indicate reasons for restrictions) to encourage good behavior, rather than just listing limitations (e.g., “Habitat restoration area” vs. simply “No trespassing” or “Trail closed”)

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PARK MANAGEMENT AND PLANNING AS AN ONGOING PROCESS

A park management plan may be a static document, but the park management process is ever-evolving and a constant learning experience for all stakeholders involved (see back to page 22 for an introduction to the adaptive management process).

Management strategies should be adjusted in step with changes in our scientific understanding and with changes in our community values and priorities for the park. Now is the perfect time to join in this planning process.
### SECTION 7: SUMMARY OF MANAGEMENT ACTIONS

<table>
<thead>
<tr>
<th>Management Action</th>
<th>Who/How?</th>
<th>Priority</th>
<th>Cost/Risk</th>
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<tbody>
<tr>
<td><strong>Nonnative invasive plant management</strong></td>
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</tr>
<tr>
<td>1. Hold work days to remove isolated populations of garlic mustard, purple loosestrife, burning bush, Japanese knotweed, and goutweed</td>
<td>Community or school volunteers. Led by trained staff or lead volunteer.</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>2. Survey in fall and spring to monitor for new occurrences</td>
<td>Community or school volunteers. Led by trained staff or lead volunteer.</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>3. Restore the limestone bluff cedar-pine forest</td>
<td>Intensive removal effort and restoration plantings with trained staff and volunteers.</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>4. Remove buckthorn, honeysuckle, and all other invasives from interior of western loop trail and monitor for regrowth</td>
<td>Community volunteers, monitored by staff or lead volunteer.</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>5. Inform park users about invasive plants to control further introductions and spread.</td>
<td>Online and print materials prepared by staff/students/volunteers.</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Trails</strong></td>
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<tr>
<td>6. Seasonal walk-through to identify trail hazards and assess extent of off-trail use.</td>
<td>Red Rocks Committee and/or community volunteers (ongoing).</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>7. Close unofficial trails and post signs for rehabilitation, starting with high-impact side trails.</td>
<td>Park staff and/or community volunteers.</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>8. Restore ad hoc trails to discourage further use</td>
<td>Staff and/or volunteers. Some equipment required to resurface trails.</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>9. Open select side trails for official use to concentrate current ad hoc trail network</td>
<td>Staff and/or volunteers</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Off-leash dogs</strong></td>
<td></td>
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</tr>
<tr>
<td>10. Trial on-leash/off-leash days or times for dog-walkers</td>
<td>Community discussion of options. Post signs, announce in local media.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Management Action</td>
<td>Who/How?</td>
<td>Priority</td>
<td>Cost/Risk</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
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<tr>
<td>11. Educate park users on reasons for leash laws</td>
<td>Online and print materials, signage at park</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>12. Leave woody debris for provision of wildlife habitat</td>
<td>No action required.</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>13. Seek community input regarding opening of view corridors.</td>
<td>Community discussion of options.</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Forest Health</strong></td>
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<tr>
<td>14. Ask that the CWD retain all herbaceous growth for wildlife and aesthetic benefits within their easement. Remove only what’s directly around manholes for access as needed.</td>
<td>Park managers and CWD staff</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>15. Encourage CWD to notify local residents and park users with advance notice of any changes</td>
<td>Park managers and CWD staff</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>16. Communicate with CWD on an annual basis (and more regularly as needed) to check in about easement management.</td>
<td>Park managers and CWD staff</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>17. Restore eroding area next to pump house</td>
<td>DPW and/or CWD</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>18. Request that CWD landscaping funds towards beach maintenance</td>
<td>Park managers and CWD staff</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Parking &amp; Funding</strong></td>
<td></td>
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<tr>
<td>19. Seek input for restructuring of parking system</td>
<td>Community discussion of options.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>20. Explore new funding strategies</td>
<td>Community discussion of options.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>a. Donations</td>
<td></td>
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</tr>
<tr>
<td>b. Grants</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>c. Friends organization</td>
<td></td>
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</tr>
<tr>
<td>21. Post temporary park maps (directional signage) for 2013 operating season.</td>
<td>Park staff or volunteers to print, post. Small material costs for temporary signs.</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>22. Proceed with long-term funding for installation of directional signs at key park intersections, as outlined in the separate consultant report.</td>
<td>Park managers and city budget.</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>23. Install a park bulletin board at the main entrance.</td>
<td>Installation by staff or construction by a community group.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>24. Discuss alternatives to current emergency signage proposal with city staff.</td>
<td>Park managers and/or open community forum.</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>25. Develop interpretive materials and make them available online and in print.</td>
<td>Student groups, local naturalists.</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Management Action</td>
<td>Who/How?</td>
<td>Priority</td>
<td>Cost/Risk</td>
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<tr>
<td><strong>Easement</strong></td>
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<tr>
<td>26. Discuss opportunities with LCLT and VLT</td>
<td>City staff (already initiated by City Planning department).</td>
<td>Moderate</td>
<td>Low</td>
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<tr>
<td><strong>Recreation</strong></td>
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<tr>
<td>27. Seek public input for new recreational opportunities and values</td>
<td>Community discussion of options.</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td><strong>Education</strong></td>
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<tr>
<td>28. Provide educational and interpretive resources to school and public groups. Make them available online and in print.</td>
<td>Park staff, college groups/class projects, local naturalists. Ongoing work with UVM NR206 class. Requires oversight from a city contact.</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>a. Lesson plans</td>
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<tr>
<td>b. Expanded park website/online interpretive material</td>
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<td>c. Pamphlets</td>
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<tr>
<td>29. Increase opportunities for public engagement in park stewardship</td>
<td>Leadership from staff or a dedicated community volunteer. Red Rocks Nature Club (ongoing). School groups, local workplaces, neighbors.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>a. Trail maintenance</td>
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<tr>
<td>b. Invasive species monitoring</td>
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<td>c. Vernal pool surveys and delineation</td>
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<tr>
<td>d. Amphibian surveys</td>
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<tr>
<td>e. Park wildlife census/“Bioblitz”</td>
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<td>f. Community wildlife sightings portal</td>
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<td>g. Park clean-up</td>
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<tr>
<td>h. Forest health monitoring</td>
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<tr>
<td><strong>General</strong></td>
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<tr>
<td>30. Hold a community visioning process to set park values and goals.</td>
<td>Scheduled for April 2013 in conjunction with this study.</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>
REFERENCES

History
- Burlington Free Press, 12/30/1836
- Burlington Weekly Free Press, 8/14/1891, “Red Rocks: Improvements now being made there by Edward P. Hatch”
- City of South Burlington and Town of Burlington land records
- County Forester Files at Vermont ANR (personal correspondence of Bill Hall)

Natural Resources
- Written in Stone by Chet Raymo & Maureen E. Raymo
- “Glacial Geology of the Burlington and Colchester 7.5’ Quadrangles, Northern Vermont” by Stephen F. Wright
- NRCS Web Soil Survey
- Soil Survey of Chittenden County Vermont.

Management Concerns
• Forest Bird Habitat Assessment: A Guide to Integrating Bird Habitat Data into a Vermont Forest Inventory (2011) from Audubon Vermont.
• VTInvasives.org (The Nature Conservancy website)
• Wildland Recreation

FURTHER READING
• Reading the Forested Landscape by Tom Wessels
• Nature of Vermont by Charles W. Johnson
APPENDIX 1: Red Rocks from the air
APPENDIX 2: Current Park Trail Map

RED ROCKS PARK

BURLINGTON CITY LINE
SOUTH BURLINGTON

LANG CHAMPLAIN

Natural Area

Park High Point Overlook

Rock Ledges

Lichen Ledges

6 min.

The Burn

6 min.

Natural Area

SHELDBURNE BAY

Pike Rock

Turnabout Overlook

Overlook

Wolf Pine

Queen City Park

Queen City Park

Beach

Shelter Overlook

Picnic Area

Parking

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APPENDIX 3: Timeline
The development of Red Rocks Park

1798: Red Rocks (lot no. 163 in the Old Town of Burlington) drawn by Thomas Udell.
1866: Edward Hatch acquires western portion of Red Rocks Park.
1891: Carriage roads constructed.
1907: Hatch purchases final, eastern piece of Red Rocks.
1909: Edward Hatch dies.
1960: South Burlington Master Plan shows Red Rocks as open space, recognizes need for community park.
1967: Red Rocks cited in town reports as exceptional natural and scenic lakefront property, greatly desired for city park system. A technical team led by UVM Professor Fred Sargent lists Red Rocks as one of 16 sites with natural resource potential.
1968: Sargent submits a proposed Conservation/Recreation Plan for South Burlington, endorsed by the South Burlington Natural Resources Committee. The committee lists reasons to acquire Red Rocks and attributes of the area. They draw up a rough plan for development of Red Rocks Park.
1969: The Conservation/Recreation Plan is accepted by the Planning Commission, and the Natural Resources Committee is charged with its implementation. The committee decides that lakefront property should have top priority. The updated South Burlington Master Plan again shows Red Rocks as open space.
1970: Red Rocks purchased by South Burlington after suddenly becoming available in early May for $450,000. Residents vote 1094 to 98 in favor of purchase, and the city takes official ownership on October 5. Most of the purchase price comes from federal and state funds.
1974: $25,000 bond issue passed to help fund park development.
1975: Bathhouse built, ordinance and fee system for park use written, entrance secured against motorized vehicles.
2013: Red Rocks management plan drafted.

1960s sketch outlining a proposed park at Red Rocks
APPENDIX 4: Plant Species List

**Trees**

- Acer negundo, Boxelder
- Acer pennsylvanicum, Striped maple
- Acer platanoides, Norway maple
- Acer rubrum, Red maple
- Acer saccharum, Sugar maple
- Betula allegheniensis, Yellow birch
- Betula papyrifera, Paper birch
- Betula populifolia, Gray birch
- Carya cordiformis, Bitternut hickory
- Carya ovata, Shagbark hickory
- Carpinus caroliniana, Musclewood
- Fagus grandifolia, American beech
- Fraxinus americana, White ash
- Hamamelis virginiana, Witch hazel
- Juniperus virginiana, Eastern red cedar
- Malus sp., Apple
- Ostrya virginiana, Hophornbeam (Ironwood)
- Pinus resinosa, Red pine
- Pinus strobus, White pine
- Populus deltoides, Cottonwood
- Populus grandidentata, Large-toothed aspen
- Populus tremuloides, Trembling aspen
- Prunus serotina, Black cherry
- Quercus alba, White oak
- Quercus rubra, Red oak
- Rhus typhina, Staghorn sumac
- Robinia pseudoacacia, Black locust
- Sambucus racemosa, Red elderberry
- Taxus canadensis, Canada yew
- Thuja occidentalis, Northern white cedar
- Tilia americana, Basswood (Linden)
- Tsuga canadensis, Eastern hemlock
- Ulmus americana, American elm

**State-listed rare plants**

- Water Hemp, *Amaranthus tuberculatus*, S1
- Canada Milk-vetch, *Astragalus canadensis*, S2
- Tall Cinquefoil, *Drymocallis arguta*, S3
- Houghton’s Cyperus, *Cyperus houghtonii*, S2
- Ram’s-Head Lady’s-slipper, *Cypripedium arietinum*, S2
- Needle-spine Rose, *Rosa acicularis*, S1
- Small Skullcap, *Scutellaria parvula var. parvula*, S2
- Marsh Vetchling, *Lathyrus palustris*, S2
- Snowberry, *Symphoricarpos albus var. albus*, S3
- Rock Spikemoss, *Selaginella rupestris*, S3
- Four-leaved Milkweed, *Asclepias quadrifolia*, S3
- Blunt-leaved Woodsia, *Woodsia obtusa*, S3
- Four-leaved milkweed, an uncommon Vermont plant, in flower at Red Rocks.
State rank significance:
S1 = Very rare (Critically imperiled): At very high risk of extinction or extirpation due to extreme rarity (often 5 or fewer populations or occurrences), very steep declines, or other factors.
S2 = Rare (Imperiled): At high risk of extinction or extirpation due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
S3 = Uncommon (Vulnerable): Moderate risk of extinction/extirpation due to restricted range, relatively few populations or occurrences (often 80 or fewer), recent and widespread declines, or other factors.
APPENDIX 5: Animal Species List

The lists here are based on a combination of confirmed sightings and suspected presence based on the variety of habitats in Red Rocks.

Birds
This list includes all bird species sighted at or from Red Rocks, based on records from Vermont eBird. Birds are listed in taxonomic order.

Breeding season records (eBird) are in bold
*Species confirmed during this study italicized
Vermont birder’s dozen birds underlined

- Canada Goose
- Wood Duck
- American Black Duck
- Mallard
- Bufflehead
- Common Goldeneye
- Common Merganser
- Red-breasted Merganser
- Red-throated Loon
- Common Loon

**Double-crested Cormorant**
- Great Blue Heron
- *Turkey Vulture
- Osprey
- Bald Eagle
- Northern Harrier
- Sharp-shinned Hawk
- *Cooper’s Hawk
- Accipiter sp.
- Broad-winged Hawk
- Red-tailed Hawk

**Merlin**
- Killdeer
- Spotted Sandpiper
- Bonaparte’s Gull
- *Ring-billed Gull
- *Herring Gull
- Great Black-backed Gull
- Caspian Tern

**Common Tern**
- Sterna sp.

**Rock Pigeon**
- Mourning Dove
- Great Horned Owl
- Chimney Swift
- Ruby-throated Hummingbird
- Belted Kingfisher
- Red-bellied Woodpecker
- Yellow-bellied Sapsucker
- Downy Woodpecker
- *Hairy Woodpecker
- *Northern Flicker
- *Pileated Woodpecker
- *Eastern Wood-Pewee
- Least Flycatcher
- Empidonax sp.
- *Eastern Phoebe

**Great Crested Flycatcher**
- Eastern Kingbird
- Northern Shrike
- Yellow-throated Vireo
- Cassin’s Vireo
- Blue-headed Vireo
- Warbling Vireo
- Philadelphia Vireo
- *Red-eyed Vireo
- *Blue Jay
- *American Crow

*Fish Crow
*Common Raven
Northern Rough-winged Swallow
Tree Swallow
Barn Swallow
*Black-capped Chickadee
Tufted Titmouse
Red-breasted Nuthatch
*White-breasted Nuthatch
Brown Creeper
Carolina Wren
House Wren
*Winter Wren
Blue-gray Gnatcatcher
Golden-crowned Kinglet
Ruby-crowned Kinglet
Veery
Gray-cheeked Thrush
Swainson’s Thrush
Hermit Thrush
Wood Thrush
*American Robin
Gray Catbird
European Starling
Bohemian Waxwing
*Cedar Waxwing
Snow Bunting
*Ovenbird
<table>
<thead>
<tr>
<th>Birds</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Northern Waterthrush</td>
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<tr>
<td>Golden-winged Warbler</td>
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<td>Black-and-white Warbler</td>
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<tr>
<td>Tennessee Warbler</td>
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<tr>
<td>Orange-crowned Warbler</td>
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<td>Nashville Warbler</td>
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<tr>
<td>Mourning Warbler</td>
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<td>Common Yellowthroat</td>
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<tr>
<td>American Redstart</td>
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<tr>
<td>Cape May Warbler</td>
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<td>Cerulean Warbler</td>
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<td>Northern Parula</td>
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<td>Magnolia Warbler</td>
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<td>Bay-breasted Warbler</td>
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<td>Blackburnian Warbler</td>
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<td>Yellow Warbler</td>
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<td>Chestnut-sided Warbler</td>
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<td>Blackpoll Warbler</td>
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<td>Black-throated Blue Warbler</td>
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<td>Palm Warbler</td>
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<td>*Pine Warbler</td>
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<td>*Yellow-rumped Warbler</td>
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<td>Yellow-throated Warbler</td>
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<td>Black-throated Green Warbler</td>
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<tr>
<td>Canada Warbler</td>
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<td>Wilson's Warbler</td>
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<tr>
<td>Eastern Towhee</td>
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<td>*Chipping Sparrow</td>
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<td>*Common Grackle</td>
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<td>Purple Finch</td>
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<td>Pine Siskin</td>
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<td>*American Goldfinch</td>
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<td>House Sparrow</td>
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</tbody>
</table>

| Reptiles & Amphibians                     |          |          |
| **Confirmed**                             |          |          |
| Milk snake                                |          |          |
| Garter snake                              |          |          |
| Gray treefrog                             |          |          |
| Spring peeper                             |          |          |
| **Suspected**                             |          |          |
| Red-backed salamander                     |          |          |
| Wood frog                                 |          |          |
| American toad                             |          |          |
| Spotted salamander                        |          |          |

| Mammals                                   |          |          |
| **Confirmed**                             |          |          |
| Virginia opossum                          |          |          |
| Mink                                      |          |          |
| White-tailed deer                         |          |          |
| Eastern cottontail                        |          |          |
| Gray squirrel                             |          |          |
| Red squirrel                              |          |          |
| Eastern chipmunk                          |          |          |
| Moose                                     |          |          |
| Raccoon                                   |          |          |
| Red fox                                   |          |          |
| Gray fox                                  |          |          |
| Striped skunk                             |          |          |
| Ermine (short-tailed weasel)              |          |          |
| *Myotis* bats                             |          |          |
| **Suspected**                             |          |          |
| Big brown bat                             |          |          |
| Southern red-backed vole                  |          |          |
| Northern flying squirrel                  |          |          |
| Southern flying squirrel                  |          |          |
| Short-tailed shrew                        |          |          |
| Long-tailed weasel                        |          |          |
| Woodland jumping mouse                    |          |          |
| Deer mouse                                |          |          |
March 11, 2021

Via First Class Mail & Email

Aaron Brondyke, State Coordinator
District 4 Environmental Commission
111 West Street
Essex Junction, VT 05452
NRB.Act250Essex@vermont.gov

Re: Act 250 Land Use Permit Application Nos. 4C0174-6, 4C0368-3 – The Burton Corporation, Burlington

Dear Aaron:

Applicant Burton Corporation (“Burton”) of the above-referenced permit applications writes to follow up to the March 10, 2021 merits hearing and request the District 4 Environmental Commission take notice of the attached documents obtained from Counsel for the City of Burlington. These documents are submitted to ensure that there is an accurate record concerning Criterion 10 in this proceeding and the communications between the City of Burlington and the City of South Burlington. The two records include:

- Email correspondence between Paul Connor, City of South Burlington, and Shaleigh Draper, City of Burlington, Dec. 17, 2018.

Counsel for Burton conferred with Counsel for the City of South Burlington alerting him of Burton’s intention to submit the attached for the record. Counsel for the City of South Burlington did not object, although reserved its rights do so after the filing.

Burton intends to address other issues with regard to Counselor Emory’s testimony concerning Criterion 10 in its post-hearing briefs.

Please let me know if you or the Commission have any questions about this updated information.

Sincerely,

Brian Dunkiel
On behalf of the Burton Corporation

cc: Service List (via Email)
Enclosed, please find proposed amendments to the *City of Burlington Comprehensive Development Ordinance*:

- ZA-19-07: Commercial Uses in ELM

The Planning Commission will hold a public hearing on the proposed amendments on Wednesday, January 9, 2019 at 6:45 pm in Conference Room 12, City Hall, 149 Church Street, Burlington.

Please ensure this communication is forwarded to the chairs of your respective Planning Commissions. Submit any communications for the Planning Commission's consideration at the hearing to me by close of business on January 7, 2019.

Thank you.

CC: Andy Montroll, Burlington Planning Commission Chair  
Kimberly Sturtevant, Assistant City Attorney  
David White, FAICP, Planning Director  
Scott Gustin, AICP, Principal Planner
PUBLIC HEARING NOTICE

Burlington Comprehensive Development Ordinance
ZA-19-07 Commercial Uses in E-LM

Pursuant to 24 V.S.A. §4441 and §4444, notice is hereby given of a public hearing by the Burlington Planning Commission to hear comments on the following proposed amendments to the City of Burlington’s Comprehensive Development Ordinance (CDO). The public hearing will take place on Wednesday, January 9, 2019 beginning at 6:45pm in Conference Room 12, City Hall, 149 Church Street, Burlington, VT.

Pursuant to the requirements of 24 V.S.A. §4444(b):

Statement of purpose: This amendment is proposed to the Burlington CDO as follows:
- **ZA-19-07**: The purpose of the proposed amendment is to permit additional commercial uses in certain parts of the E-LM zoning district consistent with the vision for the South End articulated in the draft planBTV: South End Master plan. This includes permitting banks, removing the limitations on performing arts centers, and establishing a requirement that a majority of the gross floor area on a lot south of Home Avenue be an industrial/manufacturing/warehouse use.

Geographic areas affected: the proposed amendments are applicable to the following areas in the City of Burlington:
- **ZA-19-07**: The amendment applies to properties located within the Enterprise-Light Manufacturing zoning district located within the South End of Burlington.

List of section headings affected:
- **ZA-19-07**: The proposed amendment modifies Sec. 4.4.3 (c) and (d); modifies Table 8.1.8-1 Minimum Off-Street Parking Requirements; modifies Article 13 Definitions; modifies Appendix A-Use Table; and modifies Sec. 14.3.4-H and Sec. 14.3.5-H.

The full text of the Burlington Comprehensive Development Ordinance and the proposed amendment is available for review at the Department of Planning and Zoning, City Hall, 149 Church Street, Burlington Monday through Friday 8:00 a.m. to 4:30 p.m. or on the department’s website at www.burlingtonvt.gov/pz.
Overview & Background

The proposed amendment emerged from a number of separate requests during the past several months to reconsider certain allowable commercial uses in the Enterprise-Light Manufacturing (E-LM) district:

- A series of prospective tenants for the Maltex building on Pine Street, all intending to establish a bank in the building. This use is not presently permitted in the E-LM.
- An inquiry about expanding the size limit for performing arts centers in order to allow Arts Riot to expand into an adjacent space for its office/storage needs. A performing arts center is presently limited to 5,000 sq.ft. on properties along Pine Street.
- Burton’s interest in repurposing one of their buildings on Industrial Parkway, to include a range of R&D, warehouse, and other commercial uses, including a performing arts center.

These requests, as well as a number of previous zoning amendment requests that have been approved in the last several years, relate to the long-standing concern that the E-LM standards are somewhat outdated, and utilize a one-size-fits-all approach despite the evolving nature of the South End. This concern is one of the underlying factors that prompted the creation of the draft planBTV: South End Master Plan, and a comprehensive update to the E-LM standards is one of the key recommendations of the draft plan. A comprehensive review of the district is likely in 2019, following the re-adoption of planBTV: Comprehensive Plan, which is anticipated to include planBTV: South End Master Plan.

Recent amendments to E-LM have begun to incorporate the approach discussed in planBTV: South End to consider the appropriateness of various art, commercial, and industrial uses within certain parts of the Enterprise Zone. A recent example is the provision of small grocery stores between Flynn & Home Avenues only. This amendment uses a similar approach to balance the timely consideration of the above requests brought before the Planning Commission, with the big picture guidance of planBTV: South End.

Details related to the proposed amendment can be found on the following pages.
Proposed Amendment

Amendment Type

<table>
<thead>
<tr>
<th>Text Amendment</th>
<th>Map Amendment</th>
<th>Text &amp; Map Amendment</th>
</tr>
</thead>
</table>

Purpose Statement
The purpose of the proposed amendment is to permit additional commercial uses in certain parts of the E-LM zoning district consistent with the vision for the South End articulated in the draft planBTV: South End Master plan. This includes permitting banks, removing the limitations on performing arts centers, and establishing a requirement that a majority of the gross floor area on a lot south of Home Avenue be an industrial/manufacturing/warehouse use.

1. **Allow banks as a permitted use north of Flynn Avenue**
   Add banks to the list of permitted uses within the E-LM, but prohibit drive-thrus.

2. **Prioritize manufacturing, industry, R&D, and warehousing south of Home Avenue**
   planBTV: South End identifies the area south of Home Avenue as an important area to preserve for more traditional industrial uses. However, today the following commercial uses are also permitted or conditional uses in the E-LM zone, including south of Home Avenue. The proposed amendment limits these uses to a supporting role within the southernmost portion of the district in order to preserve space for industrial/manufacturing uses:
   - General Retail, specific retail types, General Office, Open Air Markets
   - Variety of auto, marine, bike, rail related sales and services
   - Health Clubs & Studios
   - Cafes & Bakeries
   - Community Center
   - Daycare & Preschools
   - Medical/Dental Offices
   - Animal care services
   - Variety of uses related to the arts

3. **Leverage market-rate commercial uses to support industry/manufacturing**
   planBTV: South End recognizes the challenge of preserving industrial and manufacturing uses given the market realities of the South End, and identifies the need to come up with creative solutions to support and protect these uses. Therefore, this amendment is intended to leverage more traditional commercial uses that are compatible with and can help subsidize space for industrial/manufacturing uses. This is accomplished by allowing the uses identified above south of Home Avenue only when they are on the same lot as an industrial/manufacturing use, and by limiting the collective area of those uses to no more than 49% of the gross floor area on lot. This establishes two groups of uses:

<table>
<thead>
<tr>
<th>Group A Use Types</th>
<th>Group B Use Types</th>
</tr>
</thead>
</table>
| Currently permitted or conditional uses in E-LM, including south of Home Ave, for which no change is recommended. | Currently permitted or conditional uses in E-LM. This proposal allows these uses south of Home Ave only when:
  - on a lot with one or more Group A uses
  - collective GFA of Group B uses is <49% of total GFA on the lot |
| Food & Beverage Processing | Animal Boarding & Kennel/Shelter, Vet/Animal Hospital |
| Medical/Dental Lab | Auto Repair/Body Shop, Auto/Marine Parts, Bicycle Repair, Boat Rental/Sales; Auto Sales, Car Wash, Rail Equip/Storage, RV Sales |
| Taxi/Bus Operations & Trucking Operations, Public Transit Terminal, Public Works Yard/Garage | General Office, Bank/Credit Union |
| Machine/Woodworking, Manufacturing & Tour-Oriented Manufacturing, Warehouse | Appliance Sales/Service, Dry-cleaning service, Laundromat, Auction House, Garden Supply |
| Hazardous Waste Disposal, Solid Waste Facility, Recycling Center, Dry Cleaning Plant | Wholesale Sales General Retail (Large or Small) Open Air Markets |
| Retail Warehouse/Self Storage, Printing Plant, Distribution Center, Lumber Yard, Contractor Yard | Art Gallery Studio, Film Studio, Performing Arts Studio, Photo Studio & Photography, Radio/TV/Recording Studio, Performing Arts Center (currently limited to Pine St). Printing Studio Community Center, Park, Community Garden |
| Fire Station, Police Station, Post Office Distribution Center | Café/Bakery |
| Parking Lot/Garage | Medical/Dental Office |
| Health Club/Studio, Indoor Recreation Facility | Trade School, Daycare & Preschool (Large or Small) |

**Proposed Amendments**

To achieve the goals identified above, the proposed amendment affects the following sections of the *Burlington Comprehensive Development Ordinance*:

- Amend Sec. 4.4.3 to establish the limitation on ‘Group B’ uses:

**Sec. 4.4.3 Enterprise Districts**

(a) – (b) As written.

(c) **Permitted and Conditional Uses:**

1. The principal land uses that may be permitted, or conditionally permitted pursuant to the requirements of Article 3, within the Enterprise districts shall be defined in Appendix A– Use Table.

2. Within the E- LM district, permitted or conditionally permitted retail, commercial, arts, education, and service uses not associated with industrial, manufacturing, R&D, and warehouse purposes are not permitted on lots south of Home Avenue except when:

   a. one or more industrial, manufacturing, R&D, and/or warehouse use(s) exist on the lot; and

   b. the combined gross floor area (GFA) of any general retail, commercial, arts, education, and/or service use(s) does not exceed 49% of the gross floor area on the lot.

Uses restricted by this provision are identified in Appendix A– Use Table.
(d) District Specific Regulations

1. Convenience Stores  As written

2. Drive thurs are not permitted.

- Amend Article 13 to modify manufacturing definitions:

**Article 13: Definitions**

**Machine/Woodworking Shop:** Shops less than 10,000 square feet where lathes, presses, grinders, shapers, and other wood- and metal-working machines are used such as blacksmith, tinsmith, welding, and sheet metal shops; plumbing, heating, and electrical repair shops; and overhaul shops. Includes stone cutting but excludes drop forge.

**Manufacturing:** The mechanical or chemical transformation of materials or substances into new products, including but not limited to the assembling of component parts, the creation of products, and the blending of materials including but not limited to oils, plastics, resins, metal, wood, stone, etc. including—Includes drop forge. Manufacturing establishments are greater than or equal to 10,000 square feet, and incidental storage and distribution of products. A manufacturing use may include a show room and/or offer public tours that are incorporated into the facility’s ordinary operations.

**Manufacturing- Light:** The manufacturing of finished products or parts from previously prepared materials using hand tools, mechanical tools, and electronic tools, including processing, fabrication, assembly, treatment, and packaging of products, as well as incidental storage, sales, and distribution of such products; as well as shops for overhaul and repair including for plumbing, HVAC, and electrical. A light manufacturing use may include a show room and/or offer public tours that are incorporated into the facility’s ordinary operations.

**Manufacturing-tour Oriented:** A manufacturing and/or processing establishment in which public tours are accommodated and incorporated into the facility’s ordinary operations and may include the accessory retail sale of products or goods produced on the premises.

- Amend Appendix A - Use Table (See Attached)

Reference new Sec. 4.4.3 (c) 2 for ‘Group B’ uses, add new ‘Manufacturing-Light’ use, and delete ‘Machine/Woodworking Shop’ and ‘Manufacturing-tour Oriented’. Further, add footnotes to limit the size of ‘Manufacturing-Light’ uses in neighborhood mixed-use districts, to require uses that offer public tours to be permitted by conditional use provisions, and to delete the footnote limiting Performing Arts Centers to Pine Street.

- Amend Article 14 planBTV Downtown Code (See Attached)

Amend Sec. 14.3.4-H and Sec. 14.3.5-H to reflect the updated use types for manufacturing consistent with the above two modifications.
### ZA-19-07: Appendix A-Use Table – All Zoning Districts

<table>
<thead>
<tr>
<th>USES</th>
<th>Urban Reserve</th>
<th>Recreational, Conservation &amp; Open Space</th>
<th>Institutional</th>
<th>Residential</th>
<th>Downtown Mixed Use</th>
<th>Neighborhood Mixed Use</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RCO-A</td>
<td>RCO-RG</td>
<td>RCO-C</td>
<td>I</td>
<td>RL/W</td>
<td>RM/W</td>
<td>RH</td>
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<td>Accessory Dwelling Unit (See Art.5, Sec.5.4.5)</td>
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<td><strong>NON-RESIDENTIAL USES</strong></td>
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<td>RCO-A</td>
<td>RCO-RG</td>
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<td>RL/W</td>
<td>RM</td>
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*Proposed changes to Appendix A- Use Table for ZA-19-07*
<table>
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<tr>
<th>USES</th>
<th>Urban Reserve</th>
<th>Recreation, Conservation &amp; Open Space</th>
<th>Institutional</th>
<th>Residential</th>
<th>Downtown Mixed Use</th>
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[^1]: See Sec.4.4.1(d) 2
[^2]: Use Table
[^3]: Reserve Urban - N
[^4]: Reserve Urban - Y

Proposed changes to Appendix A- Use Table for ZA-19-07
## ZA-19-07: Appendix A-Use Table – All Zoning Districts

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<th>Residential</th>
<th>Downtown Mixed Use</th>
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Proposed changes to Appendix A-Use Table for ZA-19-07
### ZA-19-07: Appendix A-Use Table – All Zoning Districts

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<th>Residential</th>
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**ZA-19-07: Appendix A-Use Table – All Zoning Districts**

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<th>Recreation, Conservation &amp; Open Space</th>
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<td>(See Sec. 4.4.1(d) 2)</td>
</tr>
<tr>
<td>Warehouse</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>(See Sec. 4.4.1(d) 2)</td>
</tr>
</tbody>
</table>

*Proposed changes to Appendix A- Use Table for ZA-19-07*
### ZA-19-07: Appendix A-Use Table – All Zoning Districts

<table>
<thead>
<tr>
<th>USES</th>
<th>Urban Reserve</th>
<th>Recreation, Conservation &amp; Open Space</th>
<th>Institutional</th>
<th>Residential</th>
<th>Downtown Mixed Use</th>
<th>Neighborhood Mixed Use</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehouse, Retail*</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Warehouse, Self-Storage*</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Wholesale Sales*</td>
<td>N</td>
<td>C</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Worship, Place of</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Legend:
- **Y**: Permitted Use in this district
- **A**: Conditional Use in this district
- **N**: Use not permitted in this district

**Abbreviation Zoning District**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Zoning District</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD-RA</td>
<td>RCD - Agriculture</td>
</tr>
<tr>
<td>RCD-RG</td>
<td>RCD - Recreation/Open Space</td>
</tr>
<tr>
<td>RCD-C</td>
<td>RCD - Conservation</td>
</tr>
<tr>
<td>I</td>
<td>Institutional</td>
</tr>
<tr>
<td>RLW</td>
<td>Residential Low Density, Waterfront Residential Low Density</td>
</tr>
<tr>
<td>RMW</td>
<td>Residential Medium Density, Waterfront Residential Medium Density</td>
</tr>
<tr>
<td>RH</td>
<td>Residential High Density</td>
</tr>
<tr>
<td>DW-PT</td>
<td>Downtown Waterfront-Public Trust</td>
</tr>
<tr>
<td>NMU</td>
<td>Neighborhood Mixed Use</td>
</tr>
<tr>
<td>NAC</td>
<td>Neighborhood Activity Center</td>
</tr>
<tr>
<td>NAC-NR</td>
<td>NAC – Riverside Corridor</td>
</tr>
<tr>
<td>NAC-CR</td>
<td>NAC – Cambrian Rise</td>
</tr>
<tr>
<td>E-AE</td>
<td>Enterprise – Agricultural Processing and Energy</td>
</tr>
<tr>
<td>E-LM</td>
<td>Enterprise – Light Manufacturing</td>
</tr>
</tbody>
</table>

1. Residential uses are not permitted except only as an accessory use to an agricultural use.
2. Duplexes may be constructed on lots which meet the minimum lot size specified in Table 4.4.5-1.
3. Duplexes shall only be allowed as a result of a conversion of an existing single family home. New duplexes are prohibited.
4. No more than 5 rooms permitted to be let in any district where bed and breakfast is a conditional use. No more than 3 rooms permitted to be let in the RL district.
5. An existing fraternity, sorority, or other institutional use may be converted to dormitory use subject to conditional use approval by the DRB.
6. Must be owner-occupied.
7. Must be located on a major street.
8. Small daycare centers and small preschools in the RCO zones shall only be allowed as part of small museums and shall constitute less than 50% of the gross floor area of the museum.
9. Automobile sales not permitted other than as a separate principal use subject to obtaining a separate zoning permit.
10. Exterior storage and display not permitted.
11. All repairs must be contained within an enclosed structure.
12. No fuel pumps shall be allowed other than as a separate principal use subject to obtaining a separate zoning permit.
13. Permitted hours of operation 5:30 a.m. to 11:00 p.m.
14. Such uses not to exceed ten thousand (10,000) square feet per establishment.
15. Excludes storage of uncured hides, explosives, and oil and gas products.
16. See Sec.4.4.1(d) 2 for more explicit language regarding permitted and conditional uses in the Downtown Waterfront – Public Trust District.
17. Allowed only as an accessory use.
18. A permitted use in the Shelburne Rd Plaza and Ethan Allen Shopping Center.
19. [Reserved].
20. Accepted agricultural and silvicultural practices, including the construction of farm structures, as those practices are defined by the secretary of agriculture, food and markets or the commissioner of forests, parks and recreation, respectively, under 10 VSA §1021(f) and 1 6 VSA §4810.
21. Permitted and conditional uses within the Downtown and Waterfront Form Districts, refer to Article 14.
### 14.3.4-H - Use Type

<table>
<thead>
<tr>
<th>MANUFACTURING/PRODUCTION/STORAGE</th>
<th>FD6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Lab</td>
<td>P</td>
</tr>
<tr>
<td>Food Processing</td>
<td>P</td>
</tr>
<tr>
<td>Machine/Woodworking Shop, Manufacturing - Light³</td>
<td>P</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>P</td>
</tr>
<tr>
<td>Manufacturing - Tour Oriented³</td>
<td>P</td>
</tr>
<tr>
<td>Medical Lab</td>
<td>P</td>
</tr>
<tr>
<td>Production Studio</td>
<td>P</td>
</tr>
<tr>
<td>Photography Lab</td>
<td>P</td>
</tr>
<tr>
<td>Printing Plant</td>
<td>P</td>
</tr>
<tr>
<td>Research Lab</td>
<td>P</td>
</tr>
<tr>
<td>Warehouse/Storage³</td>
<td>P</td>
</tr>
<tr>
<td>Warehouse, Self-Storage³</td>
<td>P</td>
</tr>
</tbody>
</table>

#### EDUCATION & DAY CARE

| Day Care - Adult                                                     | P   |
| Daycare - All (Sec. 14.6.6.b)                                        | P   |
| School - Post-Secondary & Community College                          | P   |
| School - Primary                                                     | P   |
| School - Secondary                                                   | P   |
| School, -Trade, or Professional                                      | P   |

### 14.3.4-H - Use Type

<table>
<thead>
<tr>
<th>TRANSPORTATION &amp; UTILITIES</th>
<th>FD6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic</td>
<td></td>
</tr>
<tr>
<td>Courthouse</td>
<td>P</td>
</tr>
<tr>
<td>Fire Station</td>
<td>P</td>
</tr>
<tr>
<td>Library</td>
<td>P</td>
</tr>
<tr>
<td>Park</td>
<td>P</td>
</tr>
<tr>
<td>Police Station</td>
<td>P</td>
</tr>
<tr>
<td>Post Office</td>
<td>P</td>
</tr>
<tr>
<td>Worship, Place of</td>
<td>P</td>
</tr>
</tbody>
</table>

#### Key

- **Permitted Use**: P
- **Conditional Use**: CU

### END NOTES

³ Exterior storage and display not permitted.
### 14.3.5-H Use Types

<table>
<thead>
<tr>
<th><strong>HOSPITALITY/ENTERTAINMENT/RECREATION</strong></th>
<th><strong>FD5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquarium</td>
<td>P</td>
</tr>
<tr>
<td>Art Gallery/Studio</td>
<td>P</td>
</tr>
<tr>
<td>Bar, Tavern</td>
<td>P</td>
</tr>
<tr>
<td>Billiards, Bowling &amp; Arcade</td>
<td>P</td>
</tr>
<tr>
<td>Cafe</td>
<td>P</td>
</tr>
<tr>
<td>Cinema</td>
<td>P</td>
</tr>
<tr>
<td>Club, Membership</td>
<td>P</td>
</tr>
<tr>
<td>Community Center</td>
<td>P</td>
</tr>
<tr>
<td>Conference/Convention Center</td>
<td>P</td>
</tr>
<tr>
<td>Museum</td>
<td>P</td>
</tr>
<tr>
<td>Performing Arts Center</td>
<td>P</td>
</tr>
<tr>
<td>Performing Arts Studio</td>
<td>P</td>
</tr>
<tr>
<td>Recreational Facility - Indoor</td>
<td>P</td>
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<tr>
<td>Restaurant</td>
<td>P</td>
</tr>
<tr>
<td>Restaurant – Take Out</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MANUFACTURING/PRODUCTION/STORAGE</strong></th>
<th><strong>FD5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Storage 2</td>
<td>P</td>
</tr>
<tr>
<td>Dental Lab</td>
<td>P</td>
</tr>
<tr>
<td>Food Processing</td>
<td>P</td>
</tr>
<tr>
<td>Machine/Woodworking Shop</td>
<td>P</td>
</tr>
<tr>
<td>Manufacturing - Light 2</td>
<td>P</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>P</td>
</tr>
<tr>
<td>Manufacturing – Tour Oriented</td>
<td>P</td>
</tr>
<tr>
<td>Medical Lab</td>
<td>P</td>
</tr>
<tr>
<td>Production Studio</td>
<td>P</td>
</tr>
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<td>Photography Lab</td>
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</tr>
<tr>
<td>Printing Plant</td>
<td>P</td>
</tr>
<tr>
<td>Research Lab</td>
<td>P</td>
</tr>
<tr>
<td>Warehouse/Storage 2</td>
<td>P</td>
</tr>
<tr>
<td>Warehouse, Self-Storage 2</td>
<td>P</td>
</tr>
</tbody>
</table>

### EDUCATION & DAY CARE

<table>
<thead>
<tr>
<th><strong>FD5</strong></th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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</tr>
<tr>
<td>School - Post-Secondary &amp; Community College</td>
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</tr>
<tr>
<td>School - Secondary</td>
</tr>
<tr>
<td>School - Trade, or Professional</td>
</tr>
</tbody>
</table>

### CIVIC

<table>
<thead>
<tr>
<th><strong>FD5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Courthouse</td>
</tr>
<tr>
<td>Fire Station</td>
</tr>
<tr>
<td>Library</td>
</tr>
<tr>
<td>Park</td>
</tr>
<tr>
<td>Police Station</td>
</tr>
<tr>
<td>Post Office</td>
</tr>
<tr>
<td>Worship, Place of</td>
</tr>
</tbody>
</table>

### TRANSPORTATION & UTILITIES

<table>
<thead>
<tr>
<th><strong>FD5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling Center - Small 2 (2,000 sf or less)</td>
</tr>
<tr>
<td>Public Transit Terminal</td>
</tr>
<tr>
<td>Operations Center – Taxi/Bus 2</td>
</tr>
<tr>
<td>Parking Structure</td>
</tr>
</tbody>
</table>

**Key**

- Permitted Use: P
- Conditional Use: CU

**END NOTES**

1 Must be owner-occupied.

2 Exterior storage and display not permitted.
Amend Table 8.1.8-1 Minimum Off-Street Parking Requirements to account for the change to definitions above as follows:

<table>
<thead>
<tr>
<th>Table 8.1.8-1 Minimum Off-Street Parking Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Districts</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>NON-RESIDENTIAL USES</td>
</tr>
<tr>
<td>Machine Shop/ Woodworking shop</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td>Manufacturing-Tour Oriented</td>
</tr>
</tbody>
</table>

Relationship to planBTV

This following discussion of conformance with the goals and policies of planBTV is prepared in accordance with the provisions of 24 V.S.A. §4441(c).

Proposed Future Land Use & Density

The 2014 Municipal Development Plan (planBTV) identifies the E-LM zone for encouraging light industry, creative arts and industry, manufacturing, and incubator space for new and emerging businesses in appropriate locations. The plan further calls for an evaluation of the district’s future—as one that is commercial-industrial in nature, or one that is more mixed-use. The draft planBTV: South End Master Plan provides this evaluation, with the recommendation that the future land use for the southernmost potion of the E-LM is focused on supporting the needs of light industrial, R&D, and industrial arts/maker businesses. As such, the proposed changes place an emphasis on these uses, and creates a mechanism by which more traditional commercial uses are permitted only when on a lot with an industrial use. Therefore, the proposed amendment is consistent with the 2014 plan and the draft South End Master Plan. The proposed amendment does not impact the permitted density or intensity of land uses.

Impact on Safe & Affordable Housing

The proposed amendment has no impact on the availability of safe and affordable housing. Housing is not presently permitted in the E-LM, and the proposed amendment does not change this.

Planned Community Facilities

The proposed amendment has no impact on planned community facilities.
**Process Overview**
The following chart summarizes the current stage in the zoning amendment process, and identifies any recommended actions:

<table>
<thead>
<tr>
<th>Planning Commission Process</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft Amendment prepared by: Staff, by request</td>
<td>Presentation to &amp; discussion by Commission 11/27/2018</td>
</tr>
<tr>
<td></td>
<td>Approved for Public Hearing 11/27/2018</td>
</tr>
<tr>
<td></td>
<td><strong>Public Hearing 1/9/2019</strong></td>
</tr>
<tr>
<td></td>
<td>Approve &amp; forward to Council</td>
</tr>
<tr>
<td></td>
<td>Continue discussion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City Council Process</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Read &amp; Referral to Ordinance Cmte</td>
<td>Ordinance Committee discussion</td>
</tr>
<tr>
<td></td>
<td>Ordinance Cmte recommends to Council [as is / with changes]</td>
</tr>
<tr>
<td></td>
<td>Second Read &amp; Public Hearing</td>
</tr>
<tr>
<td></td>
<td>Approval &amp; Adoption</td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>
On behalf of the Planning Department, I am sending this notice of an amendment to the Burlington Comprehensive Development Ordinance and a public hearing on January 9, 2019. If you have any questions, please contact Meagan Tuttle.

Please reply to confirm receipt.

Shaleigh Draper  
Planning & Zoning Clerk  
City of Burlington, VT  
149 Church Street  
Burlington, VT 05401  
802.865.7188

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.
STATE OF VERMONT
NATURAL RESOURCES BOARD
DISTRICT 4 ENVIRONMENTAL COMMISSION

Act 250 Land Use Permit Application
#4C0174-6 & 4C0368-3
The Burton Corporation, Burlington

NOTICE OF APPEARANCE

NOW COMES Andrew M. Bolduc, Esq., City Attorney for the City of South Burlington, and hereby enters his appearance on behalf of the City of South Burlington, Party By Right in the above referenced matter. The previously appeared Colin McNeil at McNeil, Leddy & Sheahan will continue to serve as co-counsel for the City in this matter.

DATED at South Burlington, Vermont this 9th day of March 2021.

By: ____________________________
    Andrew M. Bolduc, Esq.
    City of South Burlington
    575 Dorset Street
    South Burlington, VT 05403
    (802) 846-4117
    abolduc@sbur.com
CERTIFICATE OF SERVICE

I hereby certify on this 9th day of March, 2021, a copy of the foregoing Notice of Appearance concerning Act 250 Land Use Permit Application 4C0174-6, 4C0368-3, was sent via email to the individuals at their email addresses listed below.

The Burton Corporation
c/o Justin Worthley, Mike Fialko-Casey, Eric Bergstrom
180 Queen City Park Road
Burlington, VT 05401
justinw@burton.com; MikeF@burton.com; erich@burton.com

John Caulo
LandPlan Development Services, LLC
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Burlington, VT 05401
John.caulo@gmail.com

Tyler Barnard
Engineering Ventures
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tylerb@engineeringventures.com

Brian Dunkiel, Jonathan Rose, Malachi Brennan
Dunkiel Saunders Elliott Rauhvoogel & Hand, PLLC
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bdunkiel@dunkielsaunders.com; jrose@dunkielsaunders.com;
mibrennan@dunkielsaunders.com

Katherine Schad, Town Clerk
Chair, Selectboard/Chair, Planning Commission
City of Burlington
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burlingtontownclerk@burlingtonvt.gov; lolberg@burlingtonvt.gov;
jshannox@burlingtonvt.gov

Susan Molzon, Senior Engineer
Burlington Department of Public Works
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Burlington, VT 05401
smolzon@burlingtonvt.gov

Colin McNeil
McNeil, Ledy & Sheahan, P.C.
271 South Union Street
Burlington, VT 05401
cmcneil@mcneilvt.com

Donna Kinville, Town Clerk
Chair, Selectboard/Chair, Planning Commission
City of South Burlington
575 Dorset Street
South Burlington, VT 05403
dkinville@sburl.com; abolduc@sburl.com; pconner@sburl.com;
memory@sburl.com

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steve.crowley1@gmail.com

Taylor Newton
Chittenden County Regional Planning Commission
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WendyCopp@msn.com

Sabrinajoy Milbury
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Sharon O’Neill
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Kerry Anderson
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Lori Hayes
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lorihayes151515@gmail.com

Harris Roen
46 Scarff Avenue
Burlington, VT 05401
harris@roen.net

Mark Furnari
mark.furnari@gmail.com

DATED at South Burlington, Vermont this 9th day of March, 2021.

Andrew M. Bolduc, Esq.
City of South Burlington
575 Dorset Street
South Burlington, VT 05403
(802) 846-4117
abolduc@sburl.com