



1. TITLE OF RULE FILING:

**VERMONT PASSENGER TRAMWAY RULES**

2. PROPOSED NUMBER ASSIGNED BY THE SECRETARY OF STATE

23P 031

3. ADOPTING AGENCY:

Vermont Department of Labor

4. PRIMARY CONTACT PERSON:

*(A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE).*

Name: Dirk Anderson

Agency: Department of Labor

Mailing Address: P.O. Box 488, Montpelier, VT 05601

Telephone: 802-828-4391 Fax: 802-828-4046

E-Mail: dirk.anderson@vermont.gov

Web URL *(WHERE THE RULE WILL BE POSTED)*:

<https://labor.vermont.gov/>

5. SECONDARY CONTACT PERSON:

*(A SPECIFIC PERSON FROM WHOM COPIES OF FILINGS MAY BE REQUESTED OR WHO MAY ANSWER QUESTIONS ABOUT FORMS SUBMITTED FOR FILING IF DIFFERENT FROM THE PRIMARY CONTACT PERSON).*

Name: Mike Nellis

Agency: Department of Labor

Mailing Address: P.O. Box 488, Montpelier, VT 05601

Telephone: 802-777-2242 Fax: 802-828-4046

E-Mail: mike.nellis@vermont.gov

6. RECORDS EXEMPTION INCLUDED WITHIN RULE:

*(DOES THE RULE CONTAIN ANY PROVISION DESIGNATING INFORMATION AS CONFIDENTIAL; LIMITING ITS PUBLIC RELEASE; OR OTHERWISE, EXEMPTING IT FROM INSPECTION AND COPYING?)* No

IF YES, CITE THE STATUTORY AUTHORITY FOR THE EXEMPTION:

PLEASE SUMMARIZE THE REASON FOR THE EXEMPTION:

7. LEGAL AUTHORITY / ENABLING LEGISLATION:

*(THE SPECIFIC STATUTORY OR LEGAL CITATION FROM SESSION LAW INDICATING WHO THE ADOPTING ENTITY IS AND THUS WHO THE SIGNATORY SHOULD BE. THIS SHOULD BE A SPECIFIC CITATION NOT A CHAPTER CITATION).*

31 V.S.A. § 704

8. EXPLANATION OF HOW THE RULE IS WITHIN THE AUTHORITY OF THE AGENCY:

31 V.S.A. § 703 places the Passenger Tramway Board within the Department of Labor, and appoints the Commissioner of Labor chair of the Board, ex officio. 31 V.S.A. § 704 then authorizes the Board to adopt rules ensuring the safe construction, maintenance and operation of passenger tramways.

9. THE FILING HAS CHANGED SINCE THE FILING OF THE PROPOSED RULE.

10. THE AGENCY HAS INCLUDED WITH THIS FILING A LETTER EXPLAINING IN DETAIL WHAT CHANGES WERE MADE, CITING CHAPTER AND SECTION WHERE APPLICABLE.

11. SUBSTANTIAL ARGUMENTS AND CONSIDERATIONS WERE RAISED FOR OR AGAINST THE ORIGINAL PROPOSAL.

12. THE AGENCY HAS INCLUDED COPIES OF ALL WRITTEN SUBMISSIONS AND SYNOPSES OF ORAL COMMENTS RECEIVED.

13. THE AGENCY HAS INCLUDED A LETTER EXPLAINING IN DETAIL THE REASONS FOR THE AGENCY'S DECISION TO REJECT OR ADOPT THEM.

14. CONCISE SUMMARY (150 WORDS OR LESS):

This is an amendment of an existing rule, which is being revisited primarily for the purpose of adopting by reference the most recent industry standard. This is the 2022 edition of the American National Standards Institute (ANSI) B77.1, the American National Standard for Passenger Ropeways - Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors Safety Requirements. The rule also includes a Vermont-specific Addendum, further supplementing the national standard.

15. EXPLANATION OF WHY THE RULE IS NECESSARY:

Nationwide, ski lifts are designed, engineered and manufactured in accordance with the most recent ANSI B77.1 standard. Adopting the newest standard is in furtherance of the policy set forth in 31 V.S.A. § 703, which is "making safe the operation of ski tows, ski lifts, and passenger tramways."

16. EXPLANATION OF HOW THE RULE IS NOT ARBITRARY:

The rule adopts a nationally recognized standard specific to the construction, maintenance and operation of passenger tramways, in accordance with the requirements of Vermont's Ski Tramways Act, 31 V.S.A.701 et seq.(1961).

**17. LIST OF PEOPLE, ENTERPRISES AND GOVERNMENT ENTITIES AFFECTED BY THIS RULE:**

Ski areas, the Vermont tourist industry more broadly, and the members of the general public who ride on ski lifts.

**18. BRIEF SUMMARY OF ECONOMIC IMPACT (150 WORDS OR LESS):**

There should be little economic impact to ski areas when it comes to new lift construction, since new lifts are designed and built to the 2022 ANSI standard whether Vermont adopts it or not. One area of potential economic impact has been identified in Annex F.1.4, which may require additional fireproofing in some older lift machine rooms located in wooden structures.

**19. A HEARING WAS HELD.**

**20. HEARING INFORMATION**

(THE FIRST HEARING SHALL BE NO SOONER THAN 30 DAYS FOLLOWING THE POSTING OF NOTICES ONLINE).

IF THIS FORM IS INSUFFICIENT TO LIST THE INFORMATION FOR EACH HEARING, PLEASE ATTACH A SEPARATE SHEET TO COMPLETE THE HEARING INFORMATION.

Date: 10/24/2023

Time: 01:00 PM

Street Address: 5 Green Mountain Drive, Montpelier VT

Zip Code: 05601

URL for Virtual: <https://labor.vermont.gov/>

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Date:

Time: AM

Street Address:

Zip Code:

URL for Virtual:

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Date:

Time: AM

Street Address:

Zip Code:

URL for Virtual:

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Date:

Time: AM

Street Address:

Zip Code:

URL for Virtual:

21. DEADLINE FOR COMMENT (NO EARLIER THAN 7 DAYS FOLLOWING LAST HEARING):

12/31/2023

**KEYWORDS** (PLEASE PROVIDE AT LEAST 3 KEYWORDS OR PHRASES TO AID IN THE SEARCHABILITY OF THE RULE NOTICE ONLINE).

passenger tramway

ski lift

ski tow

chairlift

ski area



**State of Vermont**  
**Department of Labor**  
**Office of the Commissioner**  
5 Green Mountain Drive  
P.O. Box 488  
Montpelier, VT 05601  
[labor.vermont.gov](http://labor.vermont.gov)

[phone] 802-828-4000  
[fax] 802-828-2195  
[tdd] 800-650-4152

January 24, 2024

Legislative Committee on Administrative Rules  
Vermont State House  
115 State Street  
Montpelier, VT 05633-5301

Re: Vermont Passenger Tramway Safety Rules 2024

Members of LCAR:

This letter is submitted to inform the committee of both the changes that were made to the proposed 2024 rule from its last amendment in 2013, and the changes that were subsequently made to the proposed rule following public comment, and the reasons therefor.

The Passenger Tramway Safety Rules were last amended in 2013. The Department was unable to retrieve an editable version of that document, so we were unable to file the current proposed rule in conventional strike-through and underline format. In addition, the rule was significantly reorganized and reformatted. In the current rule submission packet filed with LCAR you will find both the 2013 rule in its entirety and the final proposed rule in strike-through/underline format, but the strike-through/underlining represents changes made to the proposed rule in response to public comment, as further explained below.

The initial proposed rule contained several substantive changes from the 2013 rule. They are summarized here:

1. The reference standard for passenger tramway construction, operation and maintenance is updated from the ANSI B77.1, 2011 edition and the ANSI B77.1A, 2012 supplement, to the ANSI B77.1 2022 edition. (Section 1.04)
2. Declaration of Policy added. (Section 1.01)
3. Penalties articulated. (Section 1.03)
4. Personnel and Safety (Section 3.05) expanded.



5. Special Provisions for Chairlifts (Section 1007) renamed Summer Operations (Section 3.10).
6. Use of drones addressed. (Section 3.01(c))
7. Rope Evacuation (Section 1006.2) rewritten as Lift Evacuation Plan. (Section 3.03)
8. Work carrier evacuation subsection added. (Section 3.08(m))
9. Conveyor subsection added. (Section 3.07)

Subsequent to the filing of the proposed rule, a public hearing was held on October 24, 2023. The only public comment received was from Thomas Buchanan, a member of the Passenger Tramway Board. Mr. Buchanan recommended numerous changes of both a substantive and a grammatical/typographical nature. They were submitted in writing and are attached to this filing. The Department held the public comment period open through December 31, 2023, but no additional public comment was received.

Both the Director of Passenger Tramway Safety and the Passenger Tramway Supervisor reviewed Mr. Buchanan's suggestions with him, and agreed to the grammatical and typographical changes. The substantive changes were discussed with the Passenger Tramway Safety Board at its meetings on November 2, 2023, and December 12, 2023. Following lengthy discussion, the Board agreed to adopt the majority of Mr. Buchanan's suggested changes, with the following exceptions.

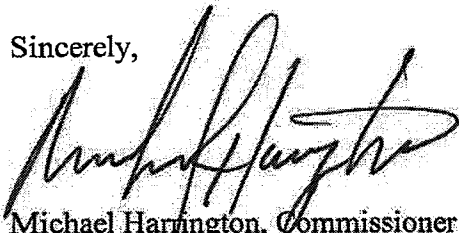
1. It was recommended that Section 1.04(c)(i) be added to require the owner/authorized operator of an aerial passenger tramway open to the public to maintain a copy of the ANSI B77.1 standard on the premises and make it available to the public for review. The Board agreed that the ANSI standard should be maintained on the premises, but felt it was sufficient to direct the public to the Department of Labor for review of the standard, as provided for in Section 1.04(c)(ii).
2. It was recommended that the definition of "Limits of Tramway" in Section 1.05 be amended to include a reference to conveyor lifts (path of the conveyor) and associated structures, and loading and unloading ramps. The Board agreed to include the reference to conveyor lifts, but declined to include associated structures and loading and unloading ramps, as being outside the scope of the definition of "line" in the ANSI B77.1 standard.
3. It was recommended that a subsection be added to Section 2.04(b) (definition of "incident") to include a reference to incidents involving injured employees. The Board declined to add that subsection, finding it to be redundant. An employee is a "person" and thus already included in Section 2.04(b)(i).



4. It was recommended that Section 3.01(a)(ii) be amended to require written authorization from the Department of Labor to transport “devices” on a passenger ropeway. The Board agreed to adopt the recommendation, but changed the term of authorization from one to three years to be consistent with the variances referenced in Section 2.05.
5. It was recommended that the new subsection regarding drone use, Section 3.01(c), be generally amended to reflect FAA regulations. This was agreed to, but a clause was added to the subsection in 3.01(c)(i) to allow owners/authorized operators to impose more restrictive standards.
6. It was recommended that Article III, Operation and Maintenance for Passenger Ropeways, contain a requirement that all tramways be compliant with the Americans with Disabilities Act (ADA). The Board felt this was unnecessary, as ski areas are businesses open to the public, and thus already subject to the provisions of the ADA.
7. It was recommended that Section 3.05, Personnel and Safety, be amended to require that tramway attendants be provided with a copy of these Rules at their work station. The Board disagreed, since attendants at their work stations are supposed to be observing lift operations and passenger loading and unloading, not reading. It was agreed that Section 3.05(a)(v) be amended to require that the Rules be made available to lift attendants in a common area.
8. It was recommended that Section 3.07(f) (Night Operation), be amended to include the entire text of the ANSI B77.1 rule for Night Operation. This was disagreed to by the Board, who did not see the need to incorporate language from the ANSI B77.1 into the Vermont rules, as the standard is already referenced and adopted in the rules.
9. It was recommended that Section 3.07 (Conveyors) be amended to require that decking alongside conveyors be kept reasonably clear of snow and ice accumulation during operation. This was agreed to, but the clause “at the beginning of each operating day” was changed to “prior to operation.”

At the conclusion of its December 12, 2023 meeting, the Passenger Tramway Board voted unanimously to forward the final proposed rule to LCAR with the amendments as agreed to and as set forth above.

Sincerely,



Michael Harrington, Commissioner of Labor and Chair of the Passenger Tramway Board





## Adopting Page

### **Instructions:**

This form must accompany each filing made during the rulemaking process:

Note: To satisfy the requirement for an annotated text, an agency must submit the entire rule in annotated form with proposed and final proposed filings. Filing an annotated paragraph or page of a larger rule is not sufficient. Annotation must clearly show the changes to the rule.

When possible, the agency shall file the annotated text, using the appropriate page or pages from the Code of Vermont Rules as a basis for the annotated version. New rules need not be accompanied by an annotated text.

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1. TITLE OF RULE FILING:  
**VERMONT PASSENGER TRAMWAY RULES**
  2. ADOPTING AGENCY:  
Vermont Department of Labor
  3. TYPE OF FILING (*PLEASE CHOOSE THE TYPE OF FILING FROM THE DROPDOWN MENU BASED ON THE DEFINITIONS PROVIDED BELOW*):
    - **AMENDMENT** - Any change to an already existing rule, even if it is a complete rewrite of the rule, it is considered an amendment if the rule is replaced with other text.
    - **NEW RULE** - A rule that did not previously exist even under a different name.
    - **REPEAL** - The removal of a rule in its entirety, without replacing it with other text.

This filing is **AN AMENDMENT OF AN EXISTING RULE** .

4. LAST ADOPTED (*PLEASE PROVIDE THE SOS LOG#, TITLE AND EFFECTIVE DATE OF THE LAST ADOPTION FOR THE EXISTING RULE*):  
SOS Log #13-022 August 13, 2013



## INTERAGENCY COMMITTEE ON ADMINISTRATIVE RULES (ICAR) MINUTES

**Meeting Date/Location:** August 14, 2023, virtually via Microsoft Teams

**Members Present:** Chair Sean Brown, Jared Adler, Jennifer Mojo, John Kessler, Michael Obuchowski, and Nicole Dubuque

**Members Absent:** Diane Sherman and Brendan Atwood

**Minutes By:** Melissa Mazza-Paquette

- 2:00 p.m. meeting called to order, welcome and introductions.
- Review and approval of minutes from the June 12, 2023 meeting.
- No additions/deletions to agenda. Agenda approved as drafted.
- Note: The following emergency rules were supported:
  - 1) On 06/30/23: 'Pandemic-Era General Assistance Emergency Housing Transition' from the Agency of Human Services, Department for Children and Families
    - a) The Department for Children and Families must establish eligibility criteria to continue providing temporary housing assistance to the populations identified in Act 81 and the Executive Order dated June 30, 2023.
  - 2) On 07/28/23: 'Rules Governing Medication-Assisted Treatment for Opioid Use Disorder', Agency of Human Services
    - a) This emergency rule eliminates the X Waiver requirements, which can no longer be met due to federal changes. This update will ensure Vermont's MAT regulations do not inhibit access to MAT providers by those in need.
  - 3) On 08/03/23: 'Reportable and Communicable Diseases Rule', Agency of Human Services, Department of Health
    - a) This rule adds Mpox to the list of reportable diseases, due to the virus' increased public health threat. This also reduces the administrative burden for reporters by eliminating the need to report negative COVID results.
  - 4) On 08/07/23: Amyotrophic Lateral Sclerosis (ALS) Registry Rule, Agency of Human Services, Department of Health
    - a) 18 V.S.A. § 176 requires the Department to establish this registry by 7/1/23. The regular ALS Registry rule will not be adopted for several months. Without this e-rule, some incidence data may not be reported as required.
- Public comments made by Jay Greene, Office of Racial Equity, on the Health Benefits Eligibility and Enrollment Rules
- Presentation of Proposed Rules on pages 3-11 to follow.
  - 1) Vermont Passenger Tramway Rules, Vermont Department of Labor/page 3
  - 2) Health Benefits Eligibility and Enrollment Rule, General Provisions and Definitions (Part 1), Agency of Human Services, page 4
  - 3) Health Benefits Eligibility and Enrollment Rule, Eligibility Standards (Part 2), Agency of Human Services, page 5
  - 4) Health Benefits Eligibility and Enrollment Rule, Nonfinancial Eligibility Requirements (Part 3), Agency of Human Services, page 6

- 5) Health Benefits Eligibility and Enrollment Rule, Special Rules for Medicaid Coverage of Long-Term Services and Supports - Eligibility and Post-Eligibility (Part 4), Agency of Human Services, page 7
  - 6) Health Benefits Eligibility and Enrollment Rule, Financial Methodologies (Part 5), Agency of Human Services, page 8
  - 7) Health Benefits Eligibility and Enrollment Rule, Eligibility-and-Enrollment Procedures (Part 7), Agency of Human Services, page 9
  - 8) Health Benefits Eligibility and Enrollment Rule, State Fair Hearings and Expedited Eligibility Appeals (Part 8), Agency of Human Services, page 10
  - 9) Water Supply Rule, Agency of Natural Resources, page 11
- No Other Business
  - Upcoming Scheduled Meetings:
    - Wednesday, August 30, 2023 at 2:00 p.m. – Special Meeting for Committee Discussion only
    - Monday, September 11, 2023 at 2:00 p.m. – Regular monthly meeting
  - 3:15 PM Meeting Adjourned

**Proposed Rule:** Vermont Passenger Tramway Rules, Vermont Department of Labor

**Presented By:** Jared Adler and Mike Nellis

Motion made to accept the rule by John Kessler, seconded by Nicole Dubuque, and passed unanimously except for Jared Adler who abstained, with the following recommendations:

1. Proposed Filing – Coversheet:
  - a. #8: Define 'ANSI' and reference parenthetical.
  - b. #10: Include statutory reference number and date.
2. Economic Impact Analysis, #9: Include information as to what they were consulted about.
3. Environmental Impact Analysis:
  - a. #5 and #7: Describe reasoning on why the rule does not directly address the impact.
  - b. #9: Include information as to what they were consulted about.
4. Public Input Maximization Plan, #3: Clarify/define 'consensus body'.
5. Incorporation by Reference, #5: Include less expensive/free ways to view the information, and a phone number.
6. Proposed Rule: Work with the Agency of Transportation on Section 3.01 (c) to ensure it conforms to FAA regulations.

## Economic Impact Analysis

### **Instructions:**

In completing the economic impact analysis, an agency analyzes and evaluates the anticipated costs and benefits to be expected from adoption of the rule; estimates the costs and benefits for each category of people enterprises and government entities affected by the rule; compares alternatives to adopting the rule; and explains their analysis concluding that rulemaking is the most appropriate method of achieving the regulatory purpose. If no impacts are anticipated, please specify “No impact anticipated” in the field.

Rules affecting or regulating schools or school districts must include cost implications to local school districts and taxpayers in the impact statement, a clear statement of associated costs, and consideration of alternatives to the rule to reduce or ameliorate costs to local school districts while still achieving the objectives of the rule (see 3 V.S.A. § 832b for details).

Rules affecting small businesses (excluding impacts incidental to the purchase and payment of goods and services by the State or an agency thereof), must include ways that a business can reduce the cost or burden of compliance or an explanation of why the agency determines that such evaluation isn’t appropriate, and an evaluation of creative, innovative or flexible methods of compliance that would not significantly impair the effectiveness of the rule or increase the risk to the health, safety, or welfare of the public or those affected by the rule.

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1. TITLE OF RULE FILING:

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2. ADOPTING AGENCY:

Vermont Department of Labor

3. CATEGORY OF AFFECTED PARTIES:

*LIST CATEGORIES OF PEOPLE, ENTERPRISES, AND GOVERNMENTAL ENTITIES POTENTIALLY AFFECTED BY THE ADOPTION OF THIS RULE AND THE ESTIMATED COSTS AND BENEFITS ANTICIPATED:*

Ski lift owners, primarily ski area owners. There should be little economic impact to ski areas when it comes to new lift construction, since new lifts are designed and built to the 2022 ANSI standard whether Vermont adopts it or not, since lift manufacturers design and build lifts for a national market. One area of potential economic impact has been identified in

Annex F.1.4, which may require additional fireproofing in some older lift machine rooms located in wooden structures. Another category of affected parties are rope tow owners and operators, since the Vermont-specific addendum requires approval by a qualified engineer prior to public use of a new rope tow, whereas the ANSI standard does not.

4. **IMPACT ON SCHOOLS:**

*INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON PUBLIC EDUCATION, PUBLIC SCHOOLS, LOCAL SCHOOL DISTRICTS AND/OR TAXPAYERS CLEARLY STATING ANY ASSOCIATED COSTS:*

None. The few ski lifts owned and operated by educational institutions are either private schools or colleges.

5. **ALTERNATIVES: CONSIDERATION OF ALTERNATIVES TO THE RULE TO REDUCE OR AMELIORATE COSTS TO LOCAL SCHOOL DISTRICTS WHILE STILL ACHIEVING THE OBJECTIVE OF THE RULE.**

No impact.

6. **IMPACT ON SMALL BUSINESSES:**

*INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON SMALL BUSINESSES (EXCLUDING IMPACTS INCIDENTAL TO THE PURCHASE AND PAYMENT OF GOODS AND SERVICES BY THE STATE OR AN AGENCY THEREOF):*

The only small business impact identified was for a retail snowboard business that wished to install a small portable rope tow for its customers, but was unable to secure approval from a qualified engineer.

7. **SMALL BUSINESS COMPLIANCE: EXPLAIN WAYS A BUSINESS CAN REDUCE THE COST/BURDEN OF COMPLIANCE OR AN EXPLANATION OF WHY THE AGENCY DETERMINES THAT SUCH EVALUATION ISN'T APPROPRIATE.**

It would be inconsistent with the Board's mission to loosen safety requirements based on the size of the business.

8. **COMPARISON:**

*COMPARE THE IMPACT OF THE RULE WITH THE ECONOMIC IMPACT OF OTHER ALTERNATIVES TO THE RULE, INCLUDING NO RULE ON THE SUBJECT OR A RULE HAVING SEPARATE REQUIREMENTS FOR SMALL BUSINESS:*

As noted above, it would be inconsistent with the

Board's mission to loosen safety requirements based on the size of the business.

9. **SUFFICIENCY:** *DESCRIBE HOW THE ANALYSIS WAS CONDUCTED, IDENTIFYING RELEVANT INTERNAL AND/OR EXTERNAL SOURCES OF INFORMATION USED.*

Lift inspectors, engineers and ski industry officials familiar with the new ANSI standard were consulted on the relative economic impact of the rule.

## Environmental Impact Analysis

### **Instructions:**

In completing the environmental impact analysis, an agency analyzes and evaluates the anticipated environmental impacts (positive or negative) to be expected from adoption of the rule; compares alternatives to adopting the rule; explains the sufficiency of the environmental impact analysis. If no impacts are anticipated, please specify “No impact anticipated” in the field.

Examples of Environmental Impacts include but are not limited to:

- Impacts on the emission of greenhouse gases
- Impacts on the discharge of pollutants to water
- Impacts on the arability of land
- Impacts on the climate
- Impacts on the flow of water
- Impacts on recreation
- Or other environmental impacts

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2. ADOPTING AGENCY:

Vermont Department of Labor

3. GREENHOUSE GAS: *EXPLAIN HOW THE RULE IMPACTS THE EMISSION OF GREENHOUSE GASES (E.G. TRANSPORTATION OF PEOPLE OR GOODS; BUILDING INFRASTRUCTURE; LAND USE AND DEVELOPMENT, WASTE GENERATION, ETC.):*

The ANSI code adopted by the rule does not directly address the emission of greenhouse gases.

4. WATER: *EXPLAIN HOW THE RULE IMPACTS WATER (E.G. DISCHARGE / ELIMINATION OF POLLUTION INTO VERMONT WATERS, THE FLOW OF WATER IN THE STATE, WATER QUALITY ETC.):*

Annex F, (Fire hazard reduction, Combustion engine(s), and Fuel supply handling) contains various provisions designed to minimize and contain the leakage or spillage of fossil fuels.



5. **LAND:** *EXPLAIN HOW THE RULE IMPACTS LAND (E.G. IMPACTS ON FORESTRY, AGRICULTURE ETC.):*

The ANSI code adopted by the rule does not directly address the impact on land, as the scope of the code is limited to passenger safety. However, new lift construction requires Act 250 approval.

6. **RECREATION:** *EXPLAIN HOW THE RULE IMPACTS RECREATION IN THE STATE:*

The ANSI standard, Vermont addendum, and the enforcement thereof by the Department of Labor has a net positive effect on tourism by ensuring the general public that Vermont ski lifts are safe to use.

7. **CLIMATE:** *EXPLAIN HOW THE RULE IMPACTS THE CLIMATE IN THE STATE:*

The ANSI code adopted by the rule does not directly address the impact on climate, as the scope of the code is limited to passenger safety.

8. **OTHER:** *EXPLAIN HOW THE RULE IMPACT OTHER ASPECTS OF VERMONT'S ENVIRONMENT:*

The ANSI code adopted by the rule does not directly address the impact on other environmental factors.

9. **SUFFICIENCY:** *DESCRIBE HOW THE ANALYSIS WAS CONDUCTED, IDENTIFYING RELEVANT INTERNAL AND/OR EXTERNAL SOURCES OF INFORMATION USED.*

Lift inspectors, engineers and ski industry officials familiar with the new ANSI standard were consulted about the environmental impact of the code.

## Public Input Maximization Plan

### **Instructions:**

Agencies are encouraged to hold hearings as part of their strategy to maximize the involvement of the public in the development of rules. Please complete the form below by describing the agency's strategy for maximizing public input (what it did do, or will do to maximize the involvement of the public).

This form must accompany each filing made during the rulemaking process:

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1. TITLE OF RULE FILING:

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2. ADOPTING AGENCY:

Vermont Department of Labor

3. PLEASE DESCRIBE THE AGENCY'S STRATEGY TO MAXIMIZE PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THE PROPOSED RULE, LISTING THE STEPS THAT HAVE BEEN OR WILL BE TAKEN TO COMPLY WITH THAT STRATEGY:

The development and approval of the new ANSI B77.1 standard was done by a consensus body of both government and private sector entities, along with observer members, representing over 90 different lift manufacturers, ski resorts, engineering firms, and jurisdictional state and federal governing bodies across the country.

4. BEYOND GENERAL ADVERTISEMENTS, PLEASE LIST THE PEOPLE AND ORGANIZATIONS THAT HAVE BEEN OR WILL BE INVOLVED IN THE DEVELOPMENT OF THE PROPOSED RULE:

See 3. above.

## Incorporation by Reference

**THIS FORM IS ONLY REQUIRED WHEN INCORPORATING MATERIALS BY REFERENCE. PLEASE REMOVE PRIOR TO DELIVERY IF IT DOES NOT APPLY TO THIS RULE FILING:**

### **Instructions:**

In completing the incorporation by reference statement, an agency describes any materials that are incorporated into the rule by reference and how to obtain copies.

This form is only required when a rule incorporates materials by referencing another source without reproducing the text within the rule itself (e.g., federal or national standards, or regulations).

Incorporated materials will be maintained and available for inspection by the Agency.

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#### 1. TITLE OF RULE FILING:

**VERMONT PASSENGER TRAMWAY RULES**

#### 2. ADOPTING AGENCY:

Vermont Department of Labor

#### 3. DESCRIPTION (*DESCRIBE THE MATERIALS INCORPORATED BY REFERENCE*):

ANSI B77.1, 2022 Revision

Vermont Standard Specifications for Construction, Division 500, Section 501, "Structural Concrete" and Section 507 "Reinforcing Steel".

American Concrete Institute ACI-318 (current edition)

National Fire Protection Association (NFPA): Life Safety Code - NFPA #101

American Society for Nondestructive Testing ASNT TC-1A (current edition) and ASNT CP-189 (current edition)

American Welding Society (AWS) Standard Welding Procedure Specifications (SWPS) (current edition)

National Electrical Code NFPA 70 (current edition)

Vermont Fire and Building Safety Code (current edition)

The Fall Protection Code as defined by the American National Standards Institute-American Society of Safety Professionals ANSI/ASSP Z359.1(current edition)

4. FORMAL CITATION OF MATERIALS INCORPORATED BY REFERENCE:  
ANSI B77.1, 2022 Revision: American National Standard for Passenger Ropeways - Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors Safety Requirements
5. OBTAINING COPIES: *(EXPLAIN WHERE THE PUBLIC MAY OBTAIN THE MATERIAL(S) IN WRITTEN OR ELECTRONIC FORM, AND AT WHAT COST):*

The ANSI B77.1 may be purchased from the National Ski Areas Association at <https://nsaa.org/>. The cost is \$400. The B77.1 standard can be reviewed at no cost by appointment at the Vermont Department of Labor's central office in Montpelier. Interested parties should contact the office of the Director at 802-828-4391.

Upon reasonable request, assistance with accessing all other referenced standards will be provided by the Director at 802-828-4391.

6. MODIFICATIONS *(PLEASE EXPLAIN ANY MODIFICATION TO THE INCORPORATED MATERIALS E.G., WHETHER ONLY PART OF THE MATERIAL IS ADOPTED AND IF SO, WHICH PART(S) ARE MODIFIED):*

Modifications are contained in the Vermont Addendum, which is the subject of this rule filing.

Run Spell Check

October 17, 2023

To Members of the Vermont Passenger Tramway Board;

I have attached proposed changes to the version of the Tramway Rules filed with the Secretary of State on September 11, 2023. I am the newest member of the Tramway Board, which has given me the advantage of looking at the existing and proposed rules with fresh eyes. I have based my recommended changes on more than 20 years as a fulltime snowboard and ski instructor who uses tramways and interacts with riders every day of the ski season. Due to time and administrative constraints, the Board was unable to consider my proposed changes to the Draft Rules until the document was released for public comment.

The attached compilation of proposed changes is listed chronologically using the numbering system in the proposed rules. There are both policy changes and administrative/technical changes. Each section includes an overview of the proposed changes in italic. The proposed changes are then listed in a conventional strikeout/underscore style. Proposed substantial policy changes are highlighted in yellow. Administrative/technical changes are highlighted in gray so staff can review each and provide the Board with their own recommendations for action.

The proposed changes have the following objectives:

1. Improve public access to the ANSI B77.1 standard.
2. Improve ski area employee awareness of, and access to, Vermont Passenger Tramway Rules.
3. Improve the definition of Tramway Board authority by explicitly including associated structures and load/unload ramps.
4. Improve guest and staff safety by explicitly listing snow removal standards on decking alongside conveyors.
5. Improve work carrier safety by requiring a formal work carrier evacuation plan.
6. Improve injury reporting to provide better metrics and accountability.
7. Establish a sunset date for standard variances, while still allowing the Board to issue variances without a sunset.
8. Clarify the need for a variance by allowing devices other than skis to be transported on tramways if approved by Vermont Tramway Technicians, rather than through a variance issued by the Board or with simple notification of intent by the operator.
9. Clarify a proposed restriction on drone use so that it is easier for the public and pilots to understand, and so that it better aligns with FAA control of public airspace.
10. Generally clarify language, standardize text, clarify adopted third party standards, and correct typos throughout the document.

-Tom Buchanan, Member of the Vermont Passenger Tramway Board

3  
4 October 17, 2023  
5

6 **Section 1.04 Adoption of Standards Applicable to Passenger Tramways**

7 *The initial filing of the draft rules with ICAR listed the cost of the ANSI B77.1-2022 standard as*  
8 *\$400. The ICAR review instructed the Department to “include less expensive/free ways to view*  
9 *the information, and a phone number.” Vermont law already requires that an agency*  
10 *incorporating a rule by reference must, at the very least, make that standard available for public*  
11 *inspection at its principal office (3 V.S.A. § 838(d).*

12 *The ANSI B77.1 is a proprietary standard that is maintained and sold by the National Ski Areas*  
13 *Association (NSAA), a ski industry trade organization. The NSAA offers the B77.1 standard for*  
14 *sale to the public as a paper only document for \$200 (member price \$55), or as a combined*  
15 *paper document and single license pdf for \$400 (member price \$90). Vermont libraries do not*  
16 *have recent versions of this standard, and it is not available as a publicly accessible document to*  
17 *view on line.*

18 *Employees of ski areas and the general public should have easy access to this 200 page*  
19 *standard, which forms the bedrock of the Vermont Tramway rules and is directly referenced*  
20 *more than 25 times. Every ski area with an aerial lift open to the public should already have the*  
21 *B77.1, and should make it available for inspection by the public upon reasonable request, and*  
22 *the Tramway Department should make it available at the state office in Montpelier. Limiting*  
23 *public availability to ski areas that have aerial lifts will minimize the financial burden on small*  
24 *surface-lift-only ski businesses, while still providing the public with distributed access. This*  
25 *serves the public interest and is consistent with Vermont’s approach to open and accessible*  
26 *government. It is rare for members of the public to request a ski area show them a copy of the*  
27 *B77.1 standard, and since that is unlikely to change, requiring ski areas to provide access will*  
28 *not add a significant burden.*

29 *Section 1.04(b)(ii) should also describe what the ACI-318 standard is (spell it out), and identify*  
30 *which version/date is applicable (probably use “current edition”).*

31 *Section 1.04 should include all other standards that are required or referenced in these rules.*

32 **Add:**

33 **(c)(i) The Owner/Authorized Operator of an aerial passenger tramway open to the public shall**  
34 **maintain on the premises a physical or electronic copy of each ANSI B77.1 standard applicable**  
35 **to their licensed tramways. The standard(s) shall be made available for review by the public upon**  
36 **reasonable request.**

37 (c)(ii) The Department shall maintain a physical or electronic copy of each ANSI B77.1 standard  
38 applicable to tramways operating within the State of Vermont, and shall make the standard(s)  
39 available for review by the public upon request.

40 (c)(iv) The Department shall maintain a physical copy of all other applicable standards  
41 referenced in these rules, or shall maintain electronic access to those standards. The standards  
42 shall be made available for review by the public upon request.

43 Modify:

44 (b)(ii) ACI-318 The American Concrete Institute ACI-318 (current edition) may be used as a  
45 reference for structural concrete design.

46 (b)(iv) Nondestructive testing as defined by American Society for Nondestructive Testing  
47 (ASNT), current edition ASNT TC-1A (current edition) and ASNTCP 189 (current edition).

48 *[Editing Note: Section 3.02(a)(i) references the ASNT TC-1A and also includes ASNTCP 189-*  
49 *2001. It is not clear if one or both of these standards are being adopted under Section*  
50 *1.04(b)(iv). The listed version of ASNTCP189 appears to be dated 2001, but the current version*  
51 *of the ASNTCP 189 appears to be 2020, with a 2024 version soon to be released. The listings for*  
52 *these documents under both 1.04(b)(iv) and 3.02(a)(i) should be checked for consistency and*  
53 *then clarified.*

54 *All references to “nondestructive” testing throughout the rules should be checked for*  
55 *consistency regarding hyphenation and capitalization. ASNT appears to treat it as one word with*  
56 *no hyphenation or special capitalization.]*

57 (b)(v) The Fall Protection Code as defined by the American National Standards Institute-  
58 American Society of Safety Professionals ANSI/ASSP Z359.1 (current edition).

59 *[Editing note: Section 3.03(a)(i) identifies this standard as ANSI/ASSE Z359. It is my*  
60 *understanding the American Society of Safety Engineers (ASSE) changed its name to the*  
61 *American Society of Safety Professionals (ASSP) and recent editions of this standard reflect that*  
62 *name change. If that is the case, the text in this section and Section 3.03 should be reviewed and*  
63 *adjusted.]*

## 64 **Section 1.05 Definitions**

65 *Loading and unloading ramps are integrally related to the operation of all lifts (B77.1 Section*  
66 *4.1.1.9), and when not properly designed and maintained can cause serious injuries. The Board*  
67 *already requires reports of injuries from “falling on ramps” as described in the Tramway*  
68 *Forms Manual, and should maintain clear jurisdiction over this component of tramways.*

69 *Some lifts have control buildings and other structures such as counter weights and storage*  
70 *structures that extend outside the ANSI B77.1 defined “line” or beyond the bull wheels. These*

71 rules already assert control over structures within 100 feet of a tramway and connected  
72 buildings by requiring fire notification to the lift operator (3.05(d)(ii) and 3.05(d)(v)), but the  
73 Board does not assert original jurisdiction over this area. These structures and spaces should be  
74 explicitly under the jurisdiction of the Department. Additionally, the current limits of tramways  
75 are based on a bull wheels, but conveyor lifts do not have bull wheels, so an alternative  
76 jurisdictional limit should be established for conveyors.

77 The existing definition of "Limits of Tramway" is cited to simply "ANSI," but that should be  
78 listed here so readers of the rules do not need to obtain a copy of the B77.1 to learn what the  
79 jurisdiction of the Tramway Board is.

80 **Modify:**

81 "Limits of tramway" An area defined by the outward swing clearance of the carriers or tow  
82 handles as they move around the bull wheel and along the "line" as defined by ANSI B77.1 as  
83 "the path of the wire rope on the up-going or return side of a ropeway," and all associated  
84 structures. The limits of a conveyor lift shall be defined by the path of the conveyer, and all  
85 associated structures. The limits of each tramway shall include load and unload ramps extending  
86 20 feet outward. This defines the jurisdiction of the Passenger Tramway Board.

#### 87 **Section 2.02(c)(iii) Tramway Inspections**

88 The inspection criteria assume a tramway has two terminals with operating buttons at each.  
89 Some tramways may have a mid-station with associated controls. Inspection criteria should  
90 cover all stations and terminals.

91 **Modify:**

92 (iii) Proper function of all stop and slow buttons at ~~both~~ all terminals.

#### 93 **Section 2.04 Incident Reporting Requirements**

94 Oftentimes a person who is injured getting on or off a lift or while riding a lift will make their  
95 way to the ski area first aid station under their own power. The current regulation may not  
96 require reporting of these injuries because the injured person reached rescue staff, and staff was  
97 not "called to assess." The language should be modified to be inclusive of injured riders who  
98 are seen by the ski areas rescue or medical team at any location, and then referred to higher  
99 levels of care.

100 Injury reporting to the Department should also explicitly include employees who are injured  
101 while working or riding on a lift regardless of the cause or operating status of the lift.

102 **Modify**



103 2.04(b)(i) Tramway-related serious injury or death (a serious injury is defined as one where  
104 rescue staff is called to assess assesses the injured person and that person is referred to a higher  
105 level of care.

106 2.04(b)(iv) An employee has been assessed by rescue staff and referred to a higher level of care  
107 following an injury that occurred while using, operating, or maintaining a tramway.

108 2.04(c)(iii) The web address listed for the “Vermont Tramway Incident Form” only links to the  
109 main DOL webpage and has a typo (http://www.labor.verm,ont.gov). The typo should be  
110 corrected, or preferably a more specific/complete link should be used if possible.

### 111 **Section 2.05 Variances**

112 *A variance should be valid for a specific default period and then sunset, with reconsideration by*  
113 *the Board if the Owner/Authorized Operator wishes the variance to continue. Establishing a*  
114 *sunset for future variances will allow the Board to reconsider each variance based on an*  
115 *updated risk analysis, practical experience, and changing industry standards. The Board should*  
116 *be authorized to issue a variance valid for non-standard lengths of time or without a sunset, but*  
117 *should specify the non-standard time period when the variance is issued.*

118 Add:

119 (c) A variance issued after [DATE] shall be valid for three years, unless the Board specifies  
120 otherwise when the variance is issued.

### 121 **Section 3.01 General**

122 *It is my understanding that the Board currently issues variances for transport of devices other*  
123 *than those used by skiers, such as ski-bikes and snow skates, and is contemplating shifting this*  
124 *approval process to Tramway Technicians. Authorization to transport devices generally requires*  
125 *an application, review, and then written approval. The proposed rule (3.01(a)) would ease the*  
126 *process through “notification” alone, and appears to all but eliminate the review and approval*  
127 *components. The way the proposed rule is written an Owner/Authorized Operator will be able to*  
128 *simply notify the Department, and is then by default authorized to carry whatever devices it has*  
129 *specified in the notification without any other limitation or time limit. The rule should clarify the*  
130 *roles of Tramway Technicians and the Board, and at least require review and written*  
131 *authorization by a Tramway Technician. Written authorization assures the proposal has been*  
132 *properly reviewed, and will assist the Department with tracking approvals.*

133 *The rule should not cite to the definition of a “skier” in the ANSI B77.1 when a more accessible*  
134 *definition is available. The definition of “skier” listed in Section 1.05 of these rules is copied*  
135 *from the ANSI B77.1. Citing to the definition of a “skier” in section 1.05 of these rules, rather*  
136 *than to the ANSI B77.1, will make it easier for users to find the definition.*

137 *Skiers and snowboarders use standard skies and snowboards that do not require additional*  
138 *approval. This should be more clearly defined with regard to the requirement for a “safety*  
139 *leash,” which is new language that has been added to this revision of the Vermont Passenger*  
140 *Tramway Rules. Until recently so-called “leashes” for snowboards and similar equipment had*  
141 *been required under the nationally recognized “Your Responsibility Code,” which stated*  
142 *“Always use devices to prevent runaway equipment.” The current “Your Responsibility Code”*  
143 *adopted in 2022 does not require leashes or devices, but instead states “You must prevent*  
144 *runaway equipment.” The Vermont Tramway rules should avoid using the word “leash” which*  
145 *has a negative connotation and has long been associated with snowboarding equipment, and*  
146 *should clarify that a safety tether is only required for devices other than those used by “skiers”*  
147 *as defined in Section 1.05.*

148 **Modify:**

149 (a)(i) Owner/Authorized Operator may permit the use of hang-gliders, ski bobs, tubes, sleds,  
150 bicycles or other devices to be transported on their passenger ropeway by providing safeguards  
151 for public and lift equipment, if the Department is notified and provides written authorization.

152 (a)(ii) The Department shall be notified in writing of devices to be transported on passenger  
153 ropeways beyond what is described in ANSI B77.4 Section 1.05 of these rules as meeting the  
154 definition of “skier.” Notification shall include passenger ropeways permitting additional  
155 devices, operating procedures, staff training, and evacuation plan for guests/devices.  
156 Additionally, Owner/Authorized Operator shall be prepared to perform a demonstration of  
157 evacuation during inspection of the passenger ropeway. Devices shall not be transported without  
158 written authorization from the Department. Authorization will be valid for up to one year and  
159 may be renewed, or a longer term variance may be requested from the Board.

160 (a)(iv) Devices to be transported on passenger ropeways, other than those used by a “skier” as  
161 defined in Section 1.05 of these rules, must have an adequate safety leash tether.

162 **Section 3.01 General**

163 *The initial proposed drone rule was not workable, and ICAR requested that it be modified with*  
164 *the assistance of the Vermont Agency of Transportation (AOT). AOT has in turn requested the*  
165 *Department contact FAA. The intent of the rule is apparently to protect lifts from drone*  
166 *collisions, but drone flight is regulated by the FAA and the draft rule may be preempted as*  
167 *written. I have proposed modified language to limit preemption, based on my experience as a*  
168 *commercial pilot and my understanding of Federal Aviation Regulations.*

169 *The description of drones as “Unmanned Aerial Aircraft” should be changed to “Unmanned*  
170 *Aircraft Systems (UAS)” to be consistent with Vermont AOT and the FAA.*

171 The term “directly over” should be deleted because it is ambiguous and would likely cover all  
172 the regulated airspace from the surface to 60,000 feet, and is superseded by the specific distance  
173 in the B77.1, Section 2.1.1.4.

174 The “clearing envelope” should be described within the rule so a drone pilot does not need to  
175 access the B77.1.

176 Modify:

177 ~~(c) Drones (Unmanned Aerial Aircraft)(Unmanned Aircraft Systems)~~

178 ~~(c)(i) Drones may not be operated directly over any tramway, or within the clearing envelope of~~  
179 ~~a tramway, defined as “within five feet (1.53 meters) of ropes, track cables, and carriers under~~  
180 ~~design operating conditions,” during public operation of the tramway (reference ANSI B77.1~~  
181 ~~Section 2-2.1.1.4)~~

182 **Section 3.01 General**

183 There is a new rule listed for “Summer Operations under Section 3.10(d) that requires tramway  
184 “Loading and unloading areas shall be constructed in compliance with American Disability Act  
185 (ADA) guidelines” [sic]. If we choose to add that provision to the rules, it should apply to all  
186 seasons, all lifts, all equipment, and all loading and unloading areas. If that is our intent, new  
187 broader language should be added to Section 3.01, which would make listing the ADA  
188 requirement under 3.10(d) unnecessary/redundant. If there is a relevant publication or standard  
189 for tramways under the ADA it should be added here too.

190 Add:

191 ~~(c)(i) All Tramways, including loading and unloading areas, shall be constructed and operated in~~  
192 ~~compliance with the Americans with Disabilities Act.~~

193 **Section 3.02(a)(i) Certification, Calibration and Testing**

194 The standard for nondestructive testing is listed as “Reference document ASNTCP 189-2001”  
195 which appears to reference a 2001 version of this standard. The current version appears to be  
196 dated 2020, with a 2024 version soon to be released. The nondestructive testing standard listed  
197 under Section 1.04(b)(iv) is identified as the “(ASNT), current edition” but the specific document  
198 is not listed. The listings for these documents under both 1.04(b)(iv) and 3.02(a)(i) should be  
199 checked for consistency and clarified.

200 All references to “nondestructive” testing throughout the rules should be checked for  
201 consistency regarding hyphenation and capitalization. ASNT appears to treat it as one word with  
202 no hyphenation or special capitalization.

203 Review/Modify:

204 Two references should be made compatible, probably by removing the 2001 reference in  
205 3.02(a)(i) and being more specific about the standard in 1.04(b)(iv). Specific language should be  
206 developed.

207 The term “nondestructive testing” should be reviewed for consistency throughout the rules. In  
208 3.02(a)(i) and (b)(i) it is hyphenated and randomly single or double capitalized, but the standards  
209 agency we cite to is the American Society for Nondestructive Testing, which apparently does not  
210 hyphenate or capitalize the term in general use. Also see 3.06(a)(ix) and 3.10(e).

### 211 **Section 3.03(a)(i) Lift Evacuation Plan**

212 *The ANSI-ASSE Z359 standard is referenced here but not defined, nor is it listed as an adopted*  
213 *standard under Section 1.04 of these rules.*

214 Review/Modify:

215 The ANSI-ASSE Z359 should probably be added to Section 1.04 and ANSI-ASSE should be  
216 spelled out. If this document is available in multiple editions, then the adopted standard should  
217 probably be identified as “current edition.” It is my understanding the American Society of  
218 Safety Engineers (ASSE) changed its name to the American Society of Safety Professionals  
219 (ASSP) and recent editions of this standard reflect that name change as ANSI/ASSP Z359.1.  
220 Check for consistency.

### 221 **Section 3.05 Personnel and Safety**

222 *A requirement should be added that all lift attendants be provided with Vermont Tramway Rules*  
223 *through display or posting/availability at each work station or in shared workspace. It is*  
224 *troubling that the people who operate this equipment are not even required to know the*  
225 *Tramway Department exists or regulates their operation.*

226 *Many lift attendants are young seasonal workers, often visiting from abroad on H-2B or J-1*  
227 *visas, and are not aware of how regulations work in Vermont, or how to access regulations. We*  
228 *should make that easier for them. Additionally, many lift attendants are entry level workers who*  
229 *would gain a sense of professionalism if they were introduced to the oversight process early in*  
230 *their careers, which could enhance staff retention and career development.*

231 *Most lift attendants have down time during a work shift when they sit in their booth/shack. The*  
232 *public would be better served if during down time the attendants had easy access to the rules*  
233 *that govern operations. Most lift facilities already include printed material such as operating*  
234 *instructions, checklists, logbooks, emergency procedures, guest service guidelines, and phone*  
235 *lists. Most ski areas already post required legal notices from the Department of Labor in*  
236 *employee locker rooms, break spaces or time clock areas, along with other company and*  
237 *employee provided informational postings. Tramway rules could be easily added to these areas.*

238 *Managing the distribution of printed Tramway Rules would occur alongside existing document*  
239 *distribution and would not add a significant cost burden.*

240 *The location and use of stop buttons should be reviewed to require stop buttons at all load and*  
241 *unload stations in all operating seasons, which seems to be the overall intent and consistent with*  
242 *the B77.1 (example 3.1.5 and 4.1.5). Section 3.10(c) of these rules covering only summer*  
243 *operations requires “All loading and unloading areas shall be equipped with a means of*  
244 *stopping the lift,” while stop button requirements in Section 3.05(f)(ii) covering all seasons*  
245 *pertain only to foot passengers as follows: “The load and unload stations shall be equipped with*  
246 *a means of stopping the lift at any point along the load/unload platform when operating*  
247 *primarily for foot passengers.”*

248 *The text describing where a stop line is to be placed for downhill loading (Section 3.05(f)(iii)) is*  
249 *confusing and should be reviewed.*

250 **Add:**

251 (a)(v) Attendants assigned to operate a tramway shall be provided with a printed copy of  
252 Vermont Passenger Tramway Safety Rules at their work station; alternatively a printed copy of  
253 the rules may be prominently posted in employee common area(s) where they are available to all  
254 lift attendants each work day.”

255 **Review:**

256 Section 3.05(a)(iv) covers age requirements for lift attendants and maintenance personal, and  
257 references an apprenticeship program administered by the “Vermont Ski Areas Association.”  
258 Should this reference be to “Ski Vermont” instead?

259 3.05(f)(iii) It is required that a permanent red “stop line” be provided on the ramp where  
260 downhill loading occurs. The location of the stop line is to be determined taking into account the  
261 length of the ramp and the speed of the lift, making certain the chair stops on the ramp line once  
262 the stop occurs.

263 **Modify:**

264 3.05(f)(ii) The load and unload stations shall be equipped with a means of stopping the lift at any  
265 point along the load/unload platform when operating primarily for foot passengers.

266 *[Edit note: consider moving number ii and v to the top of the stack and renumbering such that*  
267 *the first two elements under “Loading and Unloading” pertain to all lift operations, and*  
268 *subsequent elements under this heading pertain to foot passengers. If all load and unload*  
269 *stations are required to have a means of stopping the lift for all riders, and that is specified here,*  
270 *then 3.10(c) becomes redundant and could be removed.]*

271 **Section 3.06 Surface Lift & Tows**

272 *The requirement for rollback devices on surface lifts is written to cover only tubing operations,*  
273 *but might better cover all “recreational devices” as described in Section 1.05 (Definitions). I*  
274 *have suggested additional language below to be used if that is the original intent, plus identified*  
275 *a small typo.*

276 *There appears to be a misdirect to the ANSI B77.1 covering stop gates.*

277 *There is a requirement for NDT that refers back to “Article 3 Section 3.02,” which should*  
278 *probably be listed simply as Section 3.02 for document consistency. Take note that this*  
279 *requirement for NDT is listed under Section 3.06(a)(ix) Surface Lifts & Tows, but not listed*  
280 *under Section 3.08 Chair Lifts. That raises the question whether a reference in 3.06 and/or 3.08*  
281 *is necessary given that it is spelled out in 3.02.*

282 **Review:**

283 3.06(a)(ii) All tows used for “recreational devices” as described in Section 1.05, including those  
284 used for tubing operations, must have a rollback device installed that acts directly on the drive  
285 train sheave assembly.

286 3.06(a)(iv) The correct reference appears to be Section 6.2.3.2.

287 3.06(a)(ix) NDT (~~non-destructive testing~~) (nondestructive testing) is required on all grips, and  
288 hangers as spelled out in ~~Article 3 Section 3.02~~ Section 3.02.

### 289 **Section 3.07 Conveyors**

290 *Snow removal issues should be clarified to explicitly require clearing snow from integrated*  
291 *decking/walkways adjacent to conveyors. The single rule covering snow removal (Section*  
292 *3.07(d)) appears to refer to clearing snow from the pit (lockout procedures,) and otherwise*  
293 *refers to manufacturer’s recommendations which are not readily available to lift attendants.*

294 *The requirements for nighttime operations should be specifically listed so Owner/Authorized*  
295 *Operators and the public do not need to reference the B77.1.*

296 **Modify:**

297 (f) COPY THE VERY LIMITED NIGHT OPERATIONS TEXT FROM THE ANSI B77.1  
298 SECTION 7.2.12 AND LIST THEM HERE, RATHER THAN BY REFERENCE ALONE.

299 **Add:**

300 ( ) The Owner/Authorized Operator shall assure required decking alongside conveyors is clear of  
301 snow and ice at the beginning of each operating day, and that decking remains reasonably clear  
302 of snow and ice accumulation while the conveyor is open to the public.

### 303 **Section 3.08(m) Work Carriers**



304 *The B77.1 Work Carrier standard is new, as is the Vermont rule for annual demonstration of*  
305 *work carrier evacuation. There have been several trial demonstrations of work carrier*  
306 *evacuations in Vermont since the proposed rules were first drafted. If there are any lessons*  
307 *learned I'd like to see them incorporated into the rules.*

308 *General lift evacuation rules proposed under Vermont Tramway Rule Section 3.03 require a*  
309 *"comprehensive plan" which must include a list of required equipment along with its storage*  
310 *location, and considerations for night or other special conditions. A similar written plan should*  
311 *be required specifically for work carrier evacuations, and should include the minimum number*  
312 *of rescuers needed based on where an evacuation occurs. For example, a simple evacuation of a*  
313 *work carrier located over flat ground near a base station during regular operating hours would*  
314 *be different than for a nighttime high angle evacuation involving an injury or medical*  
315 *emergency, and the number of needed rescue/responders would likely be different. If work*  
316 *carriers are used in the off-season, overnight, or during other non-business hours, traditional Ski*  
317 *Patrol resources might not be available. The plan should identify a local staffing level required*  
318 *to meet anticipated work carrier evacuation scenarios, and procedures for activating additional*  
319 *off site emergency services if needed, and then transporting responders to the evacuation site.*  
320 *For efficiency it might be easier for an Owner/Authorized Operator to incorporate the specifics*  
321 *of work carrier evacuation planning within the general Lift Evacuation Plan required by Section*  
322 *3.03.*

323 *There are several places where the terms "work carrier" and "lift carrier" appear to be used*  
324 *interchangeably. If there is no intended difference, the language should be standardized within*  
325 *the rules. If there is an intended difference both terms should be listed in Section 1.05*  
326 *(Definitions).*

327 *Section 1.05 (Definitions) lists only "Carrier, work." The B77.1 has definition listings for*  
328 *"Carrier," and "Carrier, work." If we intend to have only one carrier listing in our definitions it*  
329 *might be clearer to list it as "Work carrier."*

330 **(m) Lift-Work Carrier Evacuation Demonstration**

331 (i) A Work Carrier Evacuation Plan shall be filed with the Department each operating season.  
332 The plan shall include the number of trained personal required to evacuate a work carrier, a list  
333 of available equipment and its storage location(s), and consideration for special circumstances  
334 including night evacuations. The plan shall also include procedures for activating off site  
335 emergency services, as well as procedures for transporting arriving responders to the evacuation  
336 site. The Work Carrier Evacuation Plan may be incorporated into the Lift Evacuation Plan  
337 required by Section 3.03, or into an alternative workplace emergency plan maintained by the  
338 Owner/Authorized Operator. Reference ANSI B77.1 Section 2: 2.3.2.5.7 and ANSI/ASSP  
339 Z359.1.

340 (ii) Annually a work carrier evacuation demonstration to shall be performed by area maintenance  
341 personnel.

342 (iii) ~~Lift~~ Work carrier to be installed on the line and moved to an area designated by Vermont  
343 Tramway Technician.

### 344 **Section 3.10 Summer Operations**

345 *I assume the lift speed of 250 fpm referenced in 3.10(a) refers to chairlifts, and not conveyors,*  
346 *which have a maximum speed under 3.07(b) of 160 fpm. This should be clarified.*

347 *Typos should be corrected. If a relevant ADA standard is available it should be referenced. This*  
348 *provision could be moved elsewhere in the rules to have greater applicability and effectiveness.*

349 *Requirements for stop buttons in Section 3.10(c) should be reconciled with Section 3.05(f)(ii).*

350 Modify:

351 (a) Aerial Lift loading and unloading speed not to exceed 250 feet/minute.

352 (d) Loading and unloading areas shall be constructed in compliance with Americans with  
353 Disability ~~Disabilities~~ Act (ADA) guidelines.

354 [Editing note: Is there a specific ADA guideline for tramways, or a specific reference to point to?  
355 Is there a reason this rule is listed under Summer Operations, and not more broadly applicable,  
356 for example by inclusion in Section 3.01 (General)? Perhaps a new rule could be added as  
357 3.01(e) All Tramways, including loading and unloading areas, shall be constructed and operated  
358 in compliance with the Americans with Disabilities Act.]

359 (e) Mountain bike racks are to be non-destructive ~~testing~~ tested (NDT) annually.

### 361 **All Sections, General Edit**

362 *There are four places where we refer to a tramway Owner/Authorized Operator as a “resort*  
363 *owner/operator.” These references strike me as limiting and should be reviewed. There is one*  
364 *place where we refer to the Owner/Authorized Operator as “the area.”*

365 *“Owner/Authorized Operator” is defined in Section 1.05 as a fully capitalized proper noun.*  
366 *There are multiple variations of that term throughout these rules, including “owner/authorized*  
367 *representative,” which appear to be treated interchangeable. We should settle on a single*  
368 *treatment for consistency. My preference is “Owner/Authorized Operator,” although the most*  
369 *common usage in these rules is “owner/authorized operator.” Any standard is better than no*  
370 *standard.*



371 Review the use of the word “resort” in Section 3.05(a)(i), 3.05(a)(iii), 3.05(f)(i), and 3.07(c).  
372 Review use of the word “area” to denote a ski area, rather than Owner/Authorized Operator in  
373 Section 3.02(b)(iv) and elsewhere. Review all uses of owner, operator, area, and resort for  
374 consistency.

375 *Review all references to the ANSI standard for consistency. Formatting of numbers/punctuation*  
376 *is inconsistent. Examples:*

377 A.N.S.I B77.1 Section 1-1.4

378 ANSI B77, section 2-2.3.2.5.9

379 ANSI B77.1 Section 2-2.1.1.4

380 ANSI B77.1 Section 2: 2.3.2.5.7

381 ANSI B77.1 Section 7 7.2.9

382 ANSI. B77.1 Section 7 7.2.12



Vermont Passenger Tramway Safety Rules  
And Addendum to ANSI B77.1-2022

ANNOTATED VERSION

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Article I. General Provisions

Section 1.01 Declaration of Policy

- (a) It shall be the policy of the State of Vermont to prevent unnecessary hazards in the operation of ski tows, lifts, and tramways (collectively referred to as passenger tramways), to ensure that reasonable design and construction are used, that accepted safety devices are provide for and that periodic inspections and adjustments are made, all for the purpose of making safe the operation of passenger tramways (31 V.S.A. §701). The board shall have no jurisdiction over the construction, modification, or periodic inspection of a passenger tramway at a private residence when such passenger tramway is not used, or intended to be used, by the general public.

Section 1.02 Authority

- (a) These rules are adopted under the provisions of 31 VSA § 704 authorizing the Passenger Tramway Board to adopt reasonable rules relating to public safety in the construction, operation, maintenance, and inspection of passenger tramways.

Section 1.03 Penalties

- (a) Operating without passing inspection: Any owner/authorized operator who operates a passenger tramway without first passing the annual inspection by the Department shall be fined not more than \$1000.00 for each day of operation.
- (b) Operating without paying fee-due-State: Any owner/authorized operator who operate a passenger tramway without paying the fee-due-State as provided in 31 V.S.A. § 707 of this title shall be fined not more than \$50.00 for each day of operation.
- (c) Operating after an order to cease: Any owner/authorized operator who operates a passenger tramway after being ordered to cease operations shall be fined not more than \$5000.00 for each day of illegal operation. (31 V.S.A. §712).

Section 1.04 Adoption of Standards Applicable to Passenger Tramways

- (a) The American National Standard for Passenger Ropeways – Aerial tramways and lifts, surface lifts tows and conveyors- Safety Requirement, ANSI B77.1-2022, except as amended, altered or added to in this rule, shall apply to all construction, operation, and maintenance of passenger tramways.
- (b) In addition to the standards and codes cited in ANSI B77.1-2022 as supplemented the following standards shall apply:
  - (i) Vermont Standard Specifications for Construction, Division 500, Section 501, “Structural Concrete” and Section 507 “Reinforcing Steel”.
  - (ii) ~~ACI-318~~ The American Concrete Institute ACI-318 (current edition) may be used as a reference for structural concrete design.
  - (iii) National Fire Protection Association (NFPA): “Life Safety Code”- NFPA #101 (editions adopted by the Department of Public Safety).
  - (iv) Nondestructive testing as defined by American Society for Nondestructive Testing (~~ASNT~~), ~~current edition~~ ASNT TC-1A (current edition) and ASNT CP-189 (current edition).

- (v) American Welding Society (AWS) Standard Welding Procedure Specifications (SWPS), current editions
  - (vi) National Electrical Code NFPA 70, current edition.
  - (vii) Vermont Fire and Building Safety Code, current edition.
  - (viii) The Fall Protection Code as defined by the American National Standards Institute- American Society of Safety Professionals ANSI/ASSP Z359.1 (current edition).
- (c) (i) The owner/authorized operator of an aerial passenger tramway open to the public shall maintain on the premises a physical or electronic copy of the current ANSI B77.1 standard(s) applicable to their licensed tramways.
- (ii) The Department of Labor shall maintain a physical or electronic copy of each ANSI B77.1 standard applicable to tramways operating within the State of Vermont, and shall make the standard(s) available for review by the public upon reasonable request.
- (iii) The Department of Labor shall maintain a physical copy of all other applicable standards referenced in these rules, or shall maintain electronic access to those standards. Such standards shall be made available for review by the public upon reasonable request to the Department.

Section 1.05 Definitions

All definitions found in A.N.S.I B77.1 Section 1-1.4 apply.

All definitions found in 31 V.S.A. §702 apply.

**“ANSI B77.1”** refers to the current version of ANSI B77.1

**“Attendant”** The individual assigned to particular duties or functions in the operation of a passenger ropeway.

**“Carrier, work”** Structural and mechanical assemblage in or on which authorized personnel and equipment are transported on a limited basis to perform line maintenance. Unless qualified, the work carrier includes, for example, the carriage, grip or clip, hanger, and work platform.

**“Certified Welder”** A person who has met the requirements of the American Welding Society for the type of welding to be performed.

**“Circuit (s), bypass”** A circuit (s) that partially or entirely circumvents monitoring devices and remote signal inputs of a malfunctioning device to allow operation of the system, under the specific conditions set forth for each ropeway type.

**“Commissioner”** Commissioner of the Department of Labor

**“Department”** the Passenger Tramway Division of the Department of Labor.

**“Limits of tramway”** An area defined by the outward swing clearance of the carriers or tow handles as they move around the bull wheel and along the line as defined by ANSI B77.1 as “the path of the wire rope on the up-going or return side of a ropeway.” The limits of a conveyor lift shall be defined by the path of the conveyor. This defines the jurisdiction of the Passenger Tramway Board.

**“Other classifications”** Tramway configurations that do not conform to any of the classifications specifically provided for in these rules shall be evaluated by the Department on the basis of relevant codes and standards subject to wide enough use to justify a separate category and addition to this code.

**“Owner/Authorized Operator”** A person, who owns, manages or directs the operations and maintenance of a passenger ropeway, or the authorized operator by such owner.

**“Passenger Ropeway/Passenger Tramways”** Includes all devices that carry, pull, or push passengers along a level or inclined path (excluding elevators) by means of a haul rope or other flexible element that is driven by a power unit remaining essentially at a single location. This includes aerial tramways, detachable grip aerial lifts, fixed grip aerial lifts, surface lifts, tows, and conveyors.

**“Qualified personnel”** Individuals who, as a result of training and experience, understand and demonstrate competence with the design, construction, operation or maintenance of a passenger ropeway and associated hazards.

**“Recreational Device”** Tube, sled, luge, cart, etc., except a skier, which is pulled uphill on the surface with a passenger riding on the device.

**“Passenger Ropeway modifications”** as described by ANSI B77.1, Section 1.2.4.4 with the following additions:

A change in the lift’s electrical drive unit from AC or DC.

All modifications to be reviewed by a Qualified Engineer.

**“Tramway”** See passenger Ropeway

**“Safeguarding”** Protection of personnel from hazards by the use of guards, devices, or methods.

**“Skier”** A skier is any person utilizing a device that attaches to at least one foot or the lower torso for the purpose of sliding on a slope. The device slides on the snow or other surface of a slope and is capable of being maneuvered and controlled by the person using the device.

**“SMB”** (Sit-Ski, Mono-Ski, Bi-Ski) Common Adaptive Ski Equipment. Includes (Sit-Ski) structures in which the skier sits with metal edges attached underneath for control and maneuverability, skiing equipment consisting of a body support structure mounted over one ski (Mono-Ski) or tow skis (Bi-Ski) that articulate when the device leans side-to-side (\*ANSI B77.1, Section 1.4).



**“Vermont Passenger Tramway Technician”** person hired by the State of Vermont to inspect passenger ropeways for public safety and monitor construction, operations, and maintenance of passenger ropeways with the State.

**“Unseated Passenger”** A passenger who is unable to get seated in a chair on an aerial ropeway during the loading process, or who fails to stay seated between the loading point and unloading point, resulting in being suspended or falling from the chair.

Article II. Vermont Tramway Rules

Section 2.01 Registration and Fees

- (a) Registration and Fees shall be determined and submitted in accordance with 31 V.S.A. §707.
- (b) The registration plate shall be posted in public view at the lift to which it pertains.

Section 2.02 Tramway Inspections

- (a) An annual inspection for the entire installation shall be made by a Vermont Passenger Tramway Technician and a copy of the inspection report shall be filed promptly with the Department and with the owner/authorized operator.
- (b) An additional inspection is required prior to operating outside the scope of the current inspection (i.e., summer, special events, modifications, and night operation). Other demonstrations, tests, or inspections may be required as they pertain to the safe operation of the passenger ropeway.
- (c) During the annual inspection, the area owner/authorized operator shall be prepared to demonstrate the following, as applicable:
  - (i) Operation of the auxiliary power unit (APU) motor and related emergency evacuations procedure during a total loss of control power. AUP shall operate the lift at a minimum of 100 feet per minute.
  - (ii) Operation of the evacuation power unit and related emergency evacuation procedures, evacuation power unit shall operate the lift at a minimum of 100 feet per minute.
  - (iii) Proper function of all stop and slow buttons at ~~both~~ all terminals.
  - (iv) Brake Testing, Service Brake, Bull Wheel Brake, Rollback Device(s) High-speed backstop.
  - (v) Tension System: Demonstrate low pressure will stop the lift, demonstrate high pressure will stop the lift. Lock all check valves.
  - (vi) All required signs in place
  - (vii) Lift houses and terminals. Appropriate fire extinguishers in place as required with current inspection tags. Smoke and carbon monoxide detectors in place as required.
  - (viii) Documentation. Pertinent NDT records (grips, hangers, bull wheels, carriers, and similar as required.
  - (ix) Wire rope annual inspection report.
- (d) RPD (Rope Position Detection) Switch check records (Detachable lifts)

- (e) MRT (Magnetic Rope Testing) testing records
  - (i) Electrical Testing, Over-speed at 110%, Over-speed at 115%, Phase loss, Field loss, Tach loss, Overcurrent
- (f) Reference ANSI B77.1, Section 4-Table 4-4 for minimum and maximum stopping times and distance.

#### Section 2.03 Department Notification Requirements

- (a) Prior to construction, modification, or relocations of a tramway ~~this~~ the owner/authorized operator shall submit a complete set of design specifications to the Department in English, at least 15 business days in advance.
- (b) Construction
  - (i) Blasting with high explosives within 100 feet of any tramway location shall require verbal permission from the Department. (Section 4.03 for Blasting Requirements)
  - (ii) Excavation deeper than 12 inches within 15 feet of any tramway structure shall require verbal permission from the Department.
  - (iii) As pertaining to rock anchors, a verbal notification to the Departments required at least 24 hours prior to performing any of the following: drilling holes, setting of anchors, proof testing of anchors or grouting.
  - (iv) Placement of concrete tower or terminal foundations require a verbal notification to the Department at least 24- hours prior.
  - (v) Any special events involving a passenger ropeway require a verbal notification to the Department at least 24 hours prior. (May require section 2.02 Tramway inspection)
- (c) Maintenance/Repair
  - (i) Communication line: Prior to repairing or replacing a communication line, the operator owner/authorized operator shall notify the Department and lift manufacturer. The operator owner/authorized operator are responsible for verifying and documenting tower and wind loads, proper switch function and annunciation.
  - (ii) Haul rope: In the event of rope damage, other rope repairs or splicing, the Department shall be notified verbally, and it will require an inspection after repairs. The Department requires verbal notification within 48 hours of any rope splice, repair or inspection to be done. In emergency situations, the Department will respond as quickly as possible. (Wire Rope Splice or Repair Report)
  - (iii) The Department shall be notified verbally if a failed electrical circuit is bypassed. Additionally, before resuming normal public operations, the following requirements shall be met as to: (ANSI B77.1, Section 2.3.2.5.9.). This shall also be noted in the operational log.

#### Section 2.04 Incident Reporting Requirements

- (a) All tramway incidents shall be reported immediately to the Vermont Department of

Labor, Passenger Tramway Division.

- (b) An "Incident" is defined as any one of the following:
- (i) Tramway-related serious injury or death (a serious injury is defined as one where rescue staff ~~is called to assess~~ assesses the injured person and that person is referred to a higher level of care).
  - (ii) A passenger has fallen six feet or more from the passenger tramway.
  - (iii) The tramway must be closed during public operation for repairs, including incidents that require lift evacuation by Auxiliary Power Unit (APU) or rope.
- (c) Incident Report Documentation
- (i) A detailed report of any incident which occurs during public operation of a tramway shall be sent to the Department within 72 hours of the time of the incident.
  - (ii) Report shall include pertinent information such as name /gender/age of injured person(s) as well as a description of the incident.
  - (iii) Following an incident, the Department may require interviews with the following people, including but not limited to, the injured person (s), lift operators, lift maintenance personnel, ski patrol, and the owner/authorized operator.  
The Incident Form is available from the Department or online (Vermont Tramway Incident Form). <http://www.labor.vermont.gov/document/passenger-tramway-incident-report>

#### Section 2.05 Variances

- (a) The Board may, upon written application, grant a variance from the strict application of these rules if it determines that the passenger ropeway will be at least as free from danger to persons using it as if it met the express requirements of these rules. The burden of proof shall be on the applicant. Variances shall be in writing.
- (b) Each owner/authorized operator requesting any variance is required to submit an application with supporting documentation. Any one variance shall not apply to more than one passenger ropeway.
- (c) A variance issued after the effective date of these rules shall be valid for three years, unless the Board specifies otherwise when the variance is granted.

#### Section 2.06 Violation of Rules

- (a) Passenger Ropeway Shutdown
  - (i) Items which may warrant immediate tramway shut down by the Department include failure of protection circuits, operation circuits, supervision circuits, improperly functioning brakes or back stops, line sheave failure or potential failure conditions, sheave train misalignment, an inadequate counterweight or carriage clearance, restricted counterweight or carriage movement, and any other condition which may affect safe operation of passenger ropeway.

(b) Orders

- (i) The Department may request an engineering review of a passenger ropeway or specific components (s) by the lift manufacturer and/or qualified lift engineer. The request shall be made by the Department in writing to the passenger ropeway owner/authorized operator.
- (ii) If, after investigation, the Department finds that a violation of any of these rules exists, or that there is a condition in the passenger ropeways construction, operation or maintenance or any other condition endangering the public, it shall forthwith issue its written order setting forth its finding, the corrective action to be taken, and fixing a reasonable time for compliance therewith. The order shall be served upon the owner/authorized operator involved by registered mail or in person and shall become final unless the owner/authorized operator applies to the Vermont Passenger Tramway Board for a hearing in the manner provided ~~in section 709 of the title.~~ (for in 31 V.S.A. § 709.

(c) Emergency Orders

- (i) Whenever the condition is deemed to be imminently hazardous, involving safety of passengers, the Department's representative shall be authorized to order the owner/authorized operator in writing to immediately suspend operation of the passenger ropeway, until such time as the hazardous condition has been remedied. (31 V.S. A. §708)

(d) Suspension

- (i) If any owner/authorized operator fails to comply with a lawful order issued under 31 V.S. A. §708 and 31 V.S.A. §709 the Department may order the owner/authorized operator to cease operations for such time as it considers necessary for the protection of the safety of the public (31 V.S.A. §711).

Article III. Operation & Maintenance for Passenger Ropeways

Section 3.01 General

(a) Devices Transported on a Passenger Ropeway

- (i) Owner/authorized operator may permit the use of hang-gliders, ski bobs, tubes, sleds, bicycles or other devices to be transported on their passenger ropeway by providing safeguards for public and lift equipment, if the Department is notified and provides written authorization.
- (ii) The Department shall be notified in writing of devices to be transported on passenger ropeways beyond what is described in ~~ANSI B77.1~~ Section 1.05 of these rules as meeting the definition of "skier". Notification shall include passenger ropeways permitting additional devices, operating procedures, staff training, and evacuation plan for guests/devices. Additionally, owner/authorized operator shall be prepared to perform a demonstration of evacuation during inspection of the passenger ropeway. Devices shall not be transported without written authorization from the Department.

Authorization will be valid for up to three years and may be renewed, or a longer term variance may be requested from the Board.

- (iii) Equipment used for ski patrol/rescue operations (i.e., toboggans, sleds) and adaptive equipment (i.e., SMB: sit-ski, mono-ski, bi-ski, and similar) are exempt from the rule.
- (iv) Devices to be transported on passenger ropeways, other than those used by a "skier" as defined in Section 1.05 of these rules, must have an adequate safety ~~leash~~ tether.

(b) Reverse Operation

- (i) For any passenger ropeway that is designed to operate in reverse direction, the owner/~~recognized~~ authorized operator shall post signs for the public notifying them that the lift may operate in a controlled manner in reverse.

(c) Drones (~~Unmanned Aerial Aircraft~~) (Unmanned Aircraft Systems)

- (i) Drones may not be operated ~~directly over any tramway, or~~ "within the clearing envelope of a tramway, defined as within five feet (1.53 meters) of ropes, track cables, and carriers under design operating conditions," during public operation of the tramway (reference ANSI B77.1, Section 2.1.1.4) unless an owner/authorized operator imposes a more restrictive standard.
- (ii) Drones must remain sufficiently clear of all tramway cables, towers, structures, carriers, other components, and the entire clearing envelope including the space from any supporting overhead cable to the surface, so as to not create a hazard to persons or property.
- (iii) The owner/authorized operator of the tramway shall develop rules/procedures for drone use in the vicinity of tramways.

(d) Signs

- (i) All passenger ropeways shall have a sign reading as follows posted near the loading area/lift instructions: "if you are unfamiliar with the use of this lift, please ask attendant."
- (ii) Signs not specifically required by the ANSI B77.1, Annex D, or this rule may be required by the Department to cover special needs.
- (iii) Any additional signage that may affect safety and/or wind loading shall have Department approval before installation.

Section 3.02 Certification, Calibration and Testing

(a) Certification

- (i) NDT: (nondestructive testing). All nondestructive testing (NDT) certifications and annual eye exams, including outside contractors, shall be on file in one location and shall be available to the Vermont Passenger Tramway Technician upon request. Training of all NDT personnel shall be per ASNT-TC-1A. Reference document ASNT CP-189-~~2004~~ (current version) for certifications and specific written practices, audited every five years by an independent NDT Level III Technician. The results of this audit are to be forwarded to the Department of Labor, Passenger Tramway Division.

- (ii) Welding: Welding on any passenger ropeway shall only be performed by persons possessing the proper certification for the specific type of welding in accordance with the American Welding Society standards. Welding procedure for work being performed must come from a qualified engineer or manufacturer. Welding performed on any passenger ropeway must have NDT completed prior to public operation.
  - (iii) Tools and Equipment: All torque wrenches and dynamometers required for assembly/testing of components, including during new construction, must be calibrated annually. The calibration certificate must be kept on file and an inspection sticker shall be placed on test equipment.
- (b) Testing
- (i) Nondestructive Testing (NDT)
    - (A) Each year on all passenger ropeways, the minimum grip, clip, hanger and carrier NDT shall be a rotating sample of 10 units or 20% of total units, whichever is greater. If any of the first units are rejected per the manufacturers criteria, another 20% or 10 units, whichever is greater, shall be tested. Any rejections in the second sample group shall be cause for 100% of the units to be tested. If the manufacturer's recommendations are stricter than this, then those recommendations shall be followed. The Passenger Tramway Technician shall be notified of these rejected components.
    - (B) Each new grip and hanger shall have documented NDT prior to public use.
  - (ii) Brake Testing: All brakes shall pass a torque test at an interval not to exceed 30 days. A brake test log shall be kept at each drive and shall include the most recent test results, the date, and the name of the person performing the test.
  - (iii) Annual Wire Rope Inspection: An annual wire rope inspection shall be performed by an independent wire rope specialist who has been approved by the Department and shall include the haul rope, counterweight rope, backstay support rope sockets and other auxiliary ropes. A Wire Rope Inspection Report shall be filed with the Department or online (Wire Rope Inspection).
  - (iv) MRT. (Magnetic rope testing) – Detachable Ropeways, Trams & Relocations: MRT is required on all detachable ropeways and trams within one year of installation and every three years thereafter. MRT is required on all passenger ropeway relocations. A qualified rope specialist shall review the MRT report, and all anomalies are to be addressed. A copy of the MRT inspection shall be filed with the area owner/authorized operator, the Department and the rope specialist.

- (v) Wire Rope Splice & Repair: Splicing of hauling wire ropes shall be done by a wire rope specialist approved by the Department or under the supervision of a qualified person recognized by the Department. The use of micro-press clips or similar devices is prohibited. A certification of Wire Rope Splice or Repair form shall be filled out and filed with the Department for all splicing or repair of wire haul ropes. This form is available from the Department or online (Wire Rope Splice/ Repair Certification).

### Section 3.03 Lift Evacuation Plan

#### (a) Lift Evacuation Plan

- (i) A comprehensive plan shall be documented and filed with the Department for review each operating season. All area operators shall assure that their plan meets the requirement of ANSI B77.1, Section 2.3.2.5.7. and ANSI-ASSE Z359.
- (ii) Lift Evacuation plans shall include the location of equipment, process for evacuation, and consideration for special circumstance (i.e., night evacuation, evacuation of disabled persons, and evacuation during summer operations and special events).

#### (b) Lift Evacuation Training

- (i) Lift evacuation training shall be conducted prior to each operating season and shall continue throughout the operating season, at intervals not to exceed 30 days. Ongoing training can include but is not limited to classroom instruction, video instruction, and hands on.
- (ii) All training shall be documented and made available to the Department for review as requested.

#### (c) Lift Evacuation Equipment

- (i) The use of line savers or other rope protection devices shall be used whenever the loaded rope contacts the haul cable.
- (ii) The owner/authorized operator shall maintain an equipment inspection log for all equipment directly used to evacuate passengers.
- (iii) All evacuation gear shall be available for inspection by the Department.
- (iv) Reference (ANSI B77.1, Section 2.3.2.5.7).

#### (d) Lift Evacuation Demonstration

- (i) Prior to each operation season, to include night operations and special events, a lift evacuation demonstration shall be performed at an area designated by the Vermont Passenger Tramway Technician.

### Section 3.04 Acceptance & Dynamic Testing

- (a) Acceptance Testing (ANSI B77.1, Section 2.1.1.11). Before an aerial lift that is new or relocated, or that has not been operated for routine maintenance within the previous 2 years, is opened to the public, it shall be given thorough tests by qualified personnel to verify compliance with the plans and specifications of the designer. The designer or manufacturer shall propose and submit an Acceptance Test Procedure (ANSI B77.1, Section 2.1.1.11). Prior to the Acceptance Inspection and the Acceptance Test, the aerial

lift shall be continuously operated with empty carriers on the line as follows: 6 hours on each power unit classified as a prime mover; 1 hour on each power unit classified an evacuation power unit operating the lift.

- (i) Stops shall be minimized to replicate normal operation during the continuous operation.
- (ii) All terminal, line structures, and line equipment shall be thoroughly checked both before and during the continuous run test to check for overheating of moving parts, excessive vibration or deflection of mechanical or structural components, free movement of tension systems, and other related conditions (ANSI B77.1, Section 2.1.1.11.1).
- (iii) It shall be the responsibility of the owner/authorized operator to see that the following condition have been met: Tightness of all structural connections; Lubrication of all moving parts; Alignment and clearances of all open gearing; Installation and alignment of all drive system components; Position and freedom of movement of counterweights or other tension systems and carriages; Haul rope alignment at entrance to bull wheels; Operation of all electrical components, including circuit protection and grounding; Adjustment of brakes for stopping distance and brake torque testing; Minimum clearances for carriers, track cable and haul rope sags under the most adverse static loading; Proper alignment to track cable saddles ( as applicable ) and haul rope sheave units; Proper track cable to saddle angles and unhindered inline motion of track cable in saddles as applicable; Actual testing of evacuation equipment and procedures at the most difficult location; Proper location of towers and terminals in accordance with the plans and specifications. Terminal and tower rope/cable working points shall be documented by an "as built" survey, and any variation from the design drawings shall be noted and approved by the engineer responsible for design (ANSI B77.1, Section 2.1.1.11.2)
- (b) Dynamic Testing (ANSI B77.1, Section 2.3.4.4) Dynamic testing shall be performed at intervals not exceeding seven (7) years. A written schedule for systematic dynamic testing shall be developed and followed. The owner/authorized operator shall provide qualified personnel to develop the test procedure and conduct the dynamic test. The schedule shall establish specific frequencies and conditions for dynamic testing. The testing shall simulate or duplicate inertial loadings. The test load shall be 110% of the design live load. The results of the testing shall be documented in the maintenance log. The testing shall include, but is not limited to the following: Braking systems; Evacuation power units; Tension system; Electrical systems.

#### Section 3.05 Personnel and Safety

- (a) Personnel
  - (i) Owner/authorized operator shall ensure that all lift attendants are able to read and understand lift instructions and are able to give and receive verbal communication to other attendants and passengers.



- (ii) The Vermont Passenger Tramway Board does not allow one attendant to operate more than one lift (load/unload conveyors are exempt).
  - (iii) Owner/authorized operator must ensure that all attendants have been properly trained in the operation of the lift prior to performing work on any passenger ropeway.
  - (iv) Personnel participating in the operation or maintenance of any passenger ropeway shall be at least sixteen (16) years of age consistent with the provisions of USDOL Wage and Hour Division Fact Sheet 43, Child Labor Provisions of the Fair Labor Standards Act (FLSA) for Nonagricultural Occupations (12/16). Personnel participating in the maintenance of any passenger tramway shall be at least eighteen (18) years of age, with the exception of 16- and 17- year-olds participating in the registered apprenticeship program administered by the Vermont Ski Areas Association and the Department's Registered Apprenticeship Program.
  - (v) An owner/authorized operator should ensure that all lift personnel are familiar with the Vermont Passenger Tramway Safety Rules. A printed copy of the rules shall be prominently posted in employee common area(s) where they are available to all lift attendants each workday.
- (b) Personnel Safety
- (i) Procedures for performing operation and maintenance functions require precautionary measures necessary to ensure the safety of the personnel involved in conformance with applicable Vermont Occupational Safety and Health standards and codes. Implementation of the procedures intended for the protection of the public and operating and maintenance personnel is the responsibility of the owner/authorized operator.
  - (ii) One or more persons trained to provide first aid/emergency care at the Basic Life Support (BLS) level, including CPR, shall be available at all times when a passenger ropeway is operating and transporting passengers. There shall be ready access to first aid/emergency care supplies and equipment, including provisions for transporting an injured person to an enclosed and, if required, heated shelter.
- (c) Emergency Lighting
- (+) In addition to ANSI B77.1, Section 2.2.12.4., emergency lighting ~~This~~ shall also include maintenance work areas and drive and return terminals of passenger ropeways not otherwise covered by NFPA (National Fire Protection Association) Life Safety Code., ~~as well as drive and return terminals of passenger ropeways.~~
- (d) Fire Alarm Systems
- i) Fire alarm systems shall be installed in all drive and return terminals that are not visible to the operator. The system shall be monitored at the operator's work position by use of approved notification devices.
  - ii) Any structure closer than 100 feet to any part of a passenger ropeway shall have a method to notify the lift operator of a fire.

- iii) Fire alarm initiation and notification devices shall be installed in accordance with the National Fire Alarm and Signaling Code (NFPA 72) current edition as adopted by the Vermont Fire and Building Safety Code.
  - iv) Installation and maintenance of the system shall comply with the Vermont Fire and Building Safety Code.
  - v) ~~NOTE:~~ Any building connected to a passenger ropeway shall comply with the rules of the Division of Fire Safety of the Department of Public Safety.
- (e) Smoke & Carbon Monoxide Detectors
- (i) Smoke detectors are to be installed in all lift terminals and operator buildings.
  - (ii) Carbon monoxide detectors are to be installed in all lift buildings where emission-producing fuels are burned.
- (f) Loading and Unloading
- (i) Lift attendants responsible for loading and unloading foot passengers shall stop the lift for special situations. The owner/authorized operator is required to have written procedures outlining what should be done when confronted with special loading or unloading situations including, but not limited to, the infirm, elderly, adaptive, or more than one small child per riding adult.
  - (ii) The load and unload stations shall be equipped with a means of stopping the lift at any point along the load/unload platform when operating primarily for foot passengers.
  - (iii) It is required that a permanent red “stop line” be provided on the ramp where downhill loading occurs. The location of the stop line is to be determined taking into account the length of the ramp and the speed of the lift, making certain the chair stops on the ramp once the stop occurs.
  - (iv) All foot passengers shall be loaded and unloaded at speed not to exceed 250 feet per minute.
  - (v) The passenger (s) must have the restraint bar fully closed except when they are embarking or disembarking the lift.
- (g) Maintenance / Electrical Failure Log
- (i) A daily log of all mechanical and electrical failures shall be maintained and such failures affecting safety shall be reported verbally to the Department forthwith.

Section 3.06 Surface Lift & Tows (ANSI B77.1, Section 5 & 6)

- (a) This includes T-Bar, J-Bar, platter lift, handle tow, fiber and wire rope tows, and similar type devices.
  - (i) All bull wheels shall be equipped with plane monitoring switches.
  - (ii) All tows used for “recreational devices” as defined in Section 1.05, including those used for tubing operations must have a rollback device installed that act directly on the drive sheave assembly.

- (iii) No personnel shall be allowed between the stop gate and bull wheel while the lift is in operation.
- (iv) Terminal areas: Stop gates shall be installed on the incoming side so that the distance from the stop gate to the first obstruction is more than 150% of the distance required to stop the empty tow operating at maximum speed. The stop device shall extend across the tow beneath the incoming rope and the outgoing rope (ANSI B77.1, Section ~~6-6.2.3.3~~ 6.2.3.2).
- (v) All terminals shall have a barrier to prevent unauthorized or inadvertent access.
- (vi) Prior to construction, modification, or relocations of any surface lift or tow the owner/authorized operator shall submit a complete set of design specifications to the department in English, 15 business days in advance.
- (vii) All surface lifts and tows shall be equipped with a start alarm.
- (viii) On a speed change command, a time delay needs to be included to allow the cable to come to the desired speed for a time to stabilize the cable before another speed change can happen. (Fast to slow, Slow to Fast commands).
- (ix) NDT (nondestructive testing) is required on all grips, and hangers as spelled out in ~~Article 3~~ Section 3.02.

Section 3.07 Conveyors (ANSI B77.1, Section 7)

- (a) Conveyor: An outdoor transportation system wherein passengers are transported uphill on a flexible moving element (conveyor belt) ANSI B77.1, Section 7
- (b) Maximum conveyor speed is 160 feet/minute (0.8 meter/second).
- (c) A conveyor relocated within the physical boundaries of a ~~resort~~ ski area need not comply with the latest edition of ANSI B77.1 so long as the slope on which the relocated conveyor is placed is equal to, or less than original design by the manufacturer.
- (d) Maintenance snow removal operations shall follow manufacturer's recommendations and lock out procedures.
- (e) All conveyors shall be equipped with a start alarm. (ANSI B77.1, Section 7.2.9)
- (f) Night Operation reference (ANSI. B77.1, Section 7.2.12).
- (g) The owner/authorized operator shall assure required decking alongside conveyors is reasonably clear of snow and ice accumulation while the conveyor is open to the public.

Section 3.08 Chair Lifts (ANSI B77.1, Section 2, 3, & 4)

- (a) This includes fixed grip, detachable grip, gondolas and aerial tramways.
- (b) Lift Speed Protocol for Detachable Grip Lifts. For areas that are installing their first detachable lift, the following protocol will be in effect. Before a detachable lift may be operated at design speed for the public it must be run at:
  - (i) 75% of full design speed for 32 hours.
  - (ii) 90 % of full design speed for 64 hours. During this reduced speed period the lift may be operating for the public.

- (c) All bull wheels shall be equipped with plane monitoring switches.
- (d) Each chair shall be equipped with a restraint device (restraint bar), which shall not yield to forward pressure applied by passenger (s).
- (e) Auxiliary engines shall be checked and started each day prior to operation and shall be run online at least every 30 days for a minimum of 15 minutes.
- (f) Lanyard stops shall be provided in all drive and return terminals and must be equipped with appropriate signage.
- (g) A stop gate or other device shall prevent a chair with the restraint device down from entering the load area.
- (h) Failures in the tower derail detection function, including open, ground fault and crossed loop conditions or any other circuit that could impact the safe operation of the lift shall be detected.
- (i) Work Carrier: Reference ANSI B77.1 Section 3, work carrier design 3.1.4.4.5, requirements for all work carriers 3.1.4.4.5.1, Exceptions for reduced speeds 3.1.4.4.5.2, Exceptions for dedicated grips at reduced speeds 3.1.4.4.5.3, work carrier 3.3.2.4.4.
- (j) No items are to be installed or placed under chairs and gondola cabins on the uphill and downhill sides of the lift line ~~no items are to be installed or placed~~. (Snowmaking guns, Snowmaking hydrants, fence post, building etc.) so as to create a fall hazard.
- (k) On a speed change command, a time delay needs to be included to allow the cable to come to the desired speed for a time to stabilize the cable before another speed change can happen. (Fast to Slow, Slow to Fast Commands)
- (l) Auxiliary and evacuation power units must have at each motor, a written and posted operating procedure.
- (m) ~~Lift~~ Work Carrier Evacuation Demonstration
  - (i) A Work Carrier Evacuation Plan shall be filed with the Department each operating season. The plan shall include the number of trained personnel required to evacuate a work carrier, a list of available equipment and its storage location(s), and consideration for special circumstances including night evacuations. The plan shall also include procedures for activating offsite emergency services, as well as procedures for transporting arriving responders to the evacuation site. The Work Carrier Evacuation Plan may be incorporated into the Lift Evacuation Plan required by Section 3.03, or into an alternative workplace emergency plan maintained by the owner/authorized operator.
  - (ii) Annually a work carrier evacuation demonstration ~~to~~ shall be performed by area maintenance personnel.
  - (iii) As part of the demonstration, a Lift work work carrier to shall be installed on the line and moved to an area designated by Vermont Passenger Tramway Technician.

### Section 3.09 Load Conveyor (ANSI B77. 1 Annex C)

- (a) This includes conveyors for loading and unloading of lifts.
- (b) Load conveyors: an endless belt that assists in loading and unloading ropeway passengers.
- (c) Load conveyor shall be accessible by foot and adaptive passengers.
- (d) It shall be possible to maintain lift operation and passenger loading/unloading even when the conveyor is not operating.
- (e) Each load/unload conveyor shall be registered with the Department as specified in Section 2.01.

### Section 3.10 Summer Operations

- (a) ~~Lift~~ Aerial lift loading and unloading speed not to exceed 250 feet/minute.
- (b) The ground below the lift line shall be maintained for lift evacuation purposes.
- (c) All loading and unloading areas shall be equipped with a means of stopping the lift.
- ~~(d) Loading and unloading areas shall be constructed in compliance with American Disabilities Act (ADA) guidelines.~~
- (e) Mountain bike racks are to be nondestructive ~~testing~~ tested (NDT) annually.

## Article IV. Construction and Design Rules

### Section 4.01 Plan and Review and Approval

- (a) 15 business days prior to construction, modification or relocation of a passenger ropeway the owner/authorized operator must submit to the Department for review a complete electronic set of final design specifications written in the English language and stamped by a Professional Engineer licensed in the State of Vermont. This shall include a profile of the lift line, the anchoring system, and a plan showing the proximity of power lines, highways and rivers, lifts, and other structures. Any changes or modifications to the design or specifications shall be submitted to the Department for review prior to making the change or modification.
- (b) A copy of the Passenger Tramway Construction Guidelines and Requirements is available from the Department and online (Tramway Construction Guidelines).

### Section 4.02 Anchor Review and Approval

- (a) The type of bolt and system of anchoring shall be mechanical and shall be approved by the Department. Installation, testing, grouting and design shall conform to the recommendations of the anchor system manufacturer or application designer.
- (b) The Department shall be verbally notified at least 24 hours in advance of any drilling of holes, setting of anchors, proof testing of anchors or grouting. A Vermont Passenger

Tramway Technician, or a qualified engineer or their assignee shall witness the drilling of rock anchor holes and the placing, tensioning and locking of all rock anchors.

#### Section 4.03 Construction Activities

##### (a) Placement of Concrete

- (i) Before any concrete is placed in any foundation or for the base of a tower, a Vermont Passenger Tramway Technician of the Department shall ascertain that the foundation extends below the frost line or is adequately anchored to rock. The frost line is assumed to be a minimum of 4 feet.
- (ii) Concrete used in the construction of passenger ropeways shall have minimum compression strength of Class B 3,500 PSI at 28 days. Concreting shall be per Vermont Standard Specification for Construction, Division 500, Section 501 "Structural Concrete" and Section 507 "Reinforcing Steel". ACI-318 may be used as a reference for structural concrete design.
- (iii) When pouring concrete, the end of the spout may not be greater than 6-feet above the final placement of concrete (i.e., concrete may not freefall more than 6-feet).
- (iv) The Vermont Passenger Tramway Technician, or a qualified engineer or their assignee shall witness the placing of the concrete; ensure proper testing and taking of samples to assure that the concrete work is executed in accordance with the plans and specifications.
- (v) The taking of concrete samples and testing shall be performed by a third-party vendor, not affiliated with the concrete contractor. A minimum of two (2) samples ~~is~~ are required from each concrete truck at the time of delivery. The third party shall provide results in writing to the Department as soon as possible following each cylinder test.
- (vi) The Department shall be notified verbally at least 24 hours in advance of pouring the concrete to allow the presence of a Vermont Passenger Tramway Technician.

##### (b) Blasting

- (i) PPV (Peak Partial Velocity) to less than 0.5/sec, for frequencies less than 40 hertz and PPV less than 2.0 in/sec for frequencies less than 40 hertz.

- (ii) The Department may require the use of a seismometer for close structures and foundations. If a seismometer is used, a report must be filed with the Department.
- (c) Location and Restricted Activities
  - (i) Passenger ropeways shall not be located so close to electric power lines, snowmaking lines, features of terrain, trees or structures so as to be considered a hazard to the safe operation of the tramway.
  - (ii) No exposed power line in excess of 50 volts shall be located closer than 100 feet from a passenger ropeway line, measured from the centerline of the haul rope, without the written approval of the Department.
- (d) Passenger Ropeway Protection of Electronic Components
  - (i) Exposed distribution or transmission power lines shall be located so that, in the event of failure, no portion of the energized line will contact the lift.
  - (ii) All exposed AC wiring over 120v shall be installed in a UL-approved raceway, per NEC-70 (current version). When a manufacturer finds that it is not possible to comply with this section, a pre-construction meeting with the Department shall be required.
- (e) Radios and similar
  - (i) The installation of radio transmitters, cellular equipment, wind towers and similar in, on, or near, passenger ropeways shall not be done without written authorization of the Department. Written approval from the lift manufacturer shall be required, or if the manufacturer is no longer in business, from a qualified engineer.

Article V. Effective Dates

Section 5.01

- (a) The Effective date of these Passenger Tramway Rules is ---- (not yet determined)----
- (b) Any passenger tramway construction or modification commenced after the effective date of these rules shall be made in conformance with these rules and with ANSI B77.1-2022.

Any passenger tramway construction or modification commenced prior to the effective date of these rules, but subsequent to the 2013 Rule amendments, shall be made in conformance with the Vermont Passenger Tramway Safety Rules- 2013, and with ANSI B77.1- 2011, ANSI B77.1A – 2012 supplement, ANSI B77.1- 2017, or ANSI B77.1-2022.

## Passenger Tramway Safety Rules

### 2012 Vermont Passenger Tramway Rules & Addendum to ANSI B.77.1-2011 with ANSI B.77.1a-2012 Supplement

#### 1000.0 Authority

These rules are adopted under the provisions of 31 VSA § 704 authorizing the Passenger Tramway Board to adopt reasonable rules relating to public safety in the construction, operation, maintenance, and inspection of passenger tramways.

#### 1001.0 Definitions

1001.1 "Commissioner" means the Commissioner of the Department of Labor

1001.2 "Limits of Tramway" means that area defined by the outward swing clearance of the carriers or tow handles as they move around the bullwheel and along the line. This defines the jurisdiction of the Passenger Tramway Board.

1001.3 "Conveyor": a class of outdoor transportation wherein skiers, or passengers with recreational devices, are transported on a flexible moving element. The circulating, flexible moving element (conveyor belt) travels on one path and generally returns underneath.

1001.4 "Other Classifications": tramway configurations that do not conform to any of the classifications specifically provided for in these rules shall be evaluated by the Department on the basis of relevant codes and standards subject to wide enough use to justify a separate category and addition to this code.

1001.5 "Tramway Incident": is defined as any personal injury occurring on, or caused by, a passenger tramway or any mechanical/electrical failure.

#### 1002.0 General Provisions

##### 1002.1 Variances.



The Tramway Board may, upon written application, grant a variance from the strict application of these rules if it determines that the tramway will be at least as free from danger to persons using it as if it met the express requirements of these rules. The burden of proof shall be on the applicant. Variances shall be in writing. (See ANSI B.77.1 2011 with ANSI B.77.1a-2012 Supplement Section 1.2.3)

#### 1002.2 Application for Registration and Fees.

On or before November 1st in each year, every operator of a tramway shall apply to the Department, on forms prepared by it, for registration. The application shall contain such information as the Department may reasonably require. Fees are variable and are computed in accordance with 31 VSA § 707.

#### 1002.3 Annual Department Inspection.

An annual inspection of the entire installation shall be made by a Department Passenger Tramway Technician and a signed copy of his inspection report shall be filed promptly with the Department and with the area operator. An additional inspection shall be made before any tramway may be used during the non-ski season and/or night operation.

#### 1002.4 Registration.

Except as otherwise provided in these rules, a registration shall be issued only to those operators whose tramways meet the minimum requirements contained in these rules.

No tramway shall be operated for the purpose of transporting passengers, in the summer or winter, without having a valid registration, unless authorized by the Department in writing.

The registration plate shall be posted in public view at the lift to which it pertains.

#### 1002.5 Signs.

Signs not specifically required by the ANSI B.77 Standard or this rule may be required by the Department to cover special needs. Any additional signage that may affect safety and/or wind loading shall have written or verbal Department approval before installation.

#### 1002.6 Incident Reporting

A detailed report of any incident involving personal injury or mechanical/electrical failure, resulting in lift closure, which occurs during public operation of a tramway shall be sent to the Department within 72 hours from the time of the incident. The Incident Form is provided by the Department.

All tramway incidents shall be reported by telephone immediately to the Department or Department's Passenger Tramway Technician. An incident is defined as when there is a tramway-related serious injury or death or when a passenger has fallen six feet or more from the tramway, or when the tramway must be closed for repairs.

A serious injury is defined as one where Rescue Staff are called to assess the injured person and that person is referred to a higher level of care.

All failures of tramways that require lift evacuation by rope or Auxiliary Power Unit (APU) shall be reported immediately.

Items which may warrant immediate tramway shut down by the Department include:

- 1) Failure of protection circuits, operation circuits, supervision circuits etc.
- 2) Improperly functioning brakes or back stops.
- 3) Line sheave failure or potential failure condition, sheave train misalignment.
- 4) Non-functioning or misadjusted APU
- 5) An incomplete daily preoperational lift inspection, or log
- 6) Inadequate counterweight or carriage clearance, restricted counterweight or carriage movement
- 7) Any other condition, which may affect safe operation of tramway.

1002.7 Mechanical/Electrical Failure Log.

A daily log of all mechanical and electrical failures shall be maintained and such failures affecting safety shall be reported to the Department forthwith. All failures of tramways that require lift evacuation by rope or APU shall be reported immediately.

The Department shall be notified immediately anytime that a safety circuit is operated in a bypass mode when open to the public. This shall also be noted in the operational log.

#### 1002.8 Inspections and Maintenance

All aerial tramways shall be dynamically tested at intervals not exceeding seven years. An acceptance test may be required by the Department when changes or modifications occur as defined in ANSI B.77.1-2011 WITH ANSI B.77.1A-2012 SUPPLEMENT section 1.2.4.4 – Ropeway modification.

Each year on all aerial tramways, the minimum grip, clip, hanger and carrier NDT shall be a rotating sample of 10 units or 20% of total units, whichever is greater. If any of the 20% or 10 units, whichever is greater, is rejected per manufacturer's criteria, another 20% or 10 units, whichever is greater, shall be tested. Any rejects in this second sample group shall be cause for 100% testing. If the manufacturer's recommendations are stricter than this, then those recommendations shall be followed. The Passenger Tramway Technician shall be notified of these rejected components.

During the annual inspection, the area operator shall be prepared to demonstrate APU operation and related emergency procedures during a loss of control power.

In the event a communication line is repaired or replaced the area operator shall;

- 1) Notify the Passenger Tramway Technician and the Lift Manufacturer, if they are still in business, as soon as possible.
- 2) Verify and document proper switch function and annunciation.

The area operator shall be prepared to demonstrate a 110% dynamic test of any replacement, rebuild or repair that effects the operation of the APU.

#### 1002.9 Brake Testing

All brakes shall be torque tested at an interval not to exceed 30 days of operation.

A brake testing log shall be posted at each drive which will give the most recent test results, the date, and shall be signed by the person performing the test on all brakes.

#### 1002.10 Lift Speed Protocol for Detachable Grip Lifts.

For areas that are installing their first detachable lift, the following protocol will be in effect.

Before a detachable lift may be operated at design speed for the public it must be run at:

1. 75% of full design speed for 32 hours.
2. 90% of full design speed for 64 hours.

During this reduced speed period the lift may be operating for the public.

#### 1002.11 Fire Alarm Systems

Fire alarm systems are to be installed in all drive and return terminals that are not visible to the operator. The system shall be monitored at the operator's work position.

Any structure closer than 100 feet, measured from the centerline of the haul, tension or backstay ropes, shall have a method to notify the lift operator of a fire.

NOTE: Any building connected to a passenger tramway shall comply with the rules of the Fire Prevention Division of the Department Public Safety

#### 1002.12 Carbon Monoxide Detectors

Carbon monoxide detectors are to be installed in all lift buildings where emission-producing fuels are burned.

#### 1002.13 Personnel

Resort operators shall ensure that all lift attendants have sufficient training and experience to be able to read and understand lift instructions and to give and receive verbal communication from other attendants and passengers.

#### 1002.14 Certifications

All Non-destructive testing (NDT) certifications and annual eye exams, including outside contractors, shall be on file in one location and shall be available to the Passenger Tramway Technician upon request.

Training of all NDT personnel shall be per ASNT-TC-1A. Reference document ASNT CP-189-2001 for certifying NDT Technicians is permitted.

All areas utilizing an in-house NDT program shall have their program, including certifications and specific written practices, audited every five years by an independent NDT Level III Technician. The results of this audit are to be forwarded to the Department of Labor, Tramway Division.

#### 1003.0 Special Provisions

##### 1003.1 Devices Transported on a Tramway

Before hang-gliders, ski bobs, tubes, sleds (other than first aid sleds or toboggans) bicycles or other devices can be transported on a tramway, application in writing to transport them shall be made to the Department specifying the lift's registration number. Area operators must obtain written approval from the manufacturer or, if the original equipment manufacturer is no longer in business, a qualified engineer.

In subsequent years the area operator only needs to notify the Tramway Technician of their intentions to transport these devices.

##### 1003.2 Skier Notification of Reverse Operation.

For any lift that is designed to operate in reverse direction, the area operator shall post signs for the public notifying them that the lift may operate in a controlled manner in reverse.

#### 1004.0 Plans and Orders

##### 1004.1 Submission of Plans

Three weeks prior to construction, modification or relocation of a tramway the owner must submit to the Department for review a complete set of design specifications written in the English language and stamped by a Professional Engineer licensed in the State of Vermont. This shall include a profile of the lift line, the anchoring system, and a plan showing the proximity of power lines, highways and rivers, lifts, and other structures.

Any changes or modifications to the design or specifications shall be submitted to the Department for review prior to making the change or modification

The Department shall be notified at least 48 hours in advance of any drilling of holes, setting of anchors or proof testing of anchors. The type of bolt and system of anchoring shall be mechanical and shall be approved by the Department. Installation, testing and design shall conform to the recommendations of the anchor system manufacturer or application designer. A Passenger Tramway Technician, qualified engineer or their assignee shall witness the drilling of rock anchor holes and the placing, tensioning and locking of all rock anchors.

#### 1004.2 Orders

If the Department finds that a violation of any of these rules exists, or that there is a condition in passenger tramway construction, operation or maintenance or any other condition endangering the safety of users of the tramway, the Department shall issue a written order setting forth its findings, the corrective action to be taken and fixing a reasonable time for compliance therewith. The order shall be served upon the operator, either in person or by certified mail and shall become final unless the operator applies to the Board for a hearing in the manner provided in 31VSA section 709. Whenever a condition is deemed to be imminently hazardous, the Department's representative shall be authorized to order the operator in writing to immediately suspend operation of the tramway until such time as the hazardous condition has been remedied.

#### 1004.3 Location

No exposed power line in excess of 50 volts shall be located nearer than 100 feet of a tramway line, measured from the centerline of the haul rope, without the written approval of the Department. Blasting with high explosives within 100 feet of any tramway location shall require verbal permission from the Department. Excavation deeper than 12 inches within 15 feet of any tramway structure shall require written permission of the Department.

Tramways shall not be located so close to electric power lines, features of terrain, trees or structures so as to be considered a hazard to the safe operation of the tramway. Exposed distribution or transmission power lines shall be located so that, in the event of failure, no portion of the energized line will contact the lift.

#### 1004.4 Placement of Concrete

Before any concrete is placed in any foundation or for the base of a tower, a Passenger Tramway Technician of the Department shall ascertain that the foundation extends below the frost line or is adequately anchored to rock. The frost line is assumed to be a minimum 4 feet. The Passenger Tramway Technician, a qualified engineer or their assignee shall witness the placing of the concrete, insure proper testing and taking of samples to assure that the concrete work is executed in accordance with the plans and specifications. The Department shall be notified at least 48 hours in advance of pouring the concrete to permit the presence of a Passenger Tramway Technician.

Concrete used in the construction of passenger tramway shall have minimum compression strength of Class B 3,500 PSI at 28 days. Concreting shall be per the Vermont Standard Specification for Construction, Division 500, Section 501 "Structural Concrete" and Section 507 "Reinforcing Steel". ACI-318 may be used as a reference for structural concrete design.

#### 1004.5 Protection of Electronic Components

All exposed AC wiring over 120v shall be installed in a UL-approved raceway, per NEC – 70 (2005). When a manufacturer finds that it is not possible to comply with this section, a pre-construction meeting with the Tramway staff shall be required

1004.6 When hydraulic or pneumatic tension systems are used, they must comply with the following requirements:

- (1) In addition to ANSI B77.1 X.1.2.10.1, All ram connection pins shall have a device to hold the pin in correct position without using the force of the ram. Such devices may be a cotter pin, locking plate or similar locking device.
- (2) High velocity check valves will be used to prevent sudden loss of supply or system pressure to all cylinders due to hose breakage or other loss of haul rope tension. These valves shall be of internal design or be mounted contiguous to the tension cylinders.
- (3) There shall be a pressure switch that will shut off the pump before the system can be over pressured. A hand pump may be used to operate the lift for evacuation if mechanical or electrical failure occurs.

(4) The lift design shall provide for retention of the carriage in the event of failure of any of any critical carriage component parts e.g. Carriage support wheels, axles or rails.

#### 1004.7 Personnel Safety

Procedures for performing operation and maintenance functions require precautionary measures necessary to assure the safety of the personnel involved in conformance with applicable Vermont Occupational Safety and Health standards and codes. Implementation of the procedures intended for the protection of the public and operating and maintenance personnel is the responsibility of the owner, supervisor, and the individual worker.

1004.8 The installation of radio transmitters and related equipment in, on or near aerial tramways shall not be done without written authorization of the Department. Written approval from the lift manufacturer shall also be required, or if the manufacturer is no longer in business, from a qualified engineer.

1004.9 All torque wrenches used for assembly of critical components, including during new construction, must be calibrated. The calibration certificate must be kept with, or attached to, the wrench.

All dynamometers and torque wrenches used for brake performance testing or adjustment shall be calibrated annually and the documentation shall be posted in the brake testing log.

1005 Surface lifts: J-bars, T-bars, Platter pulls and similar devices; Wire rope and Fiber rope tows

#### 1005.1 Stop Gates

On all tows, the stop gate shall protect above and below the haul rope entering each bull wheel on the incoming side.

1005.2 Bull wheels shall be equipped with plane monitoring switches.

#### 1006 Aerial Tramways



## 1006.1 Bull Wheels

Bull wheels shall be equipped with plane monitoring switches.

## 1006.2 Rope Evacuation

The use of line savers or other rope protection devices shall be used whenever the loaded rope contacts the haul cable. All connections such as hooks and snaps shall be load rated with a safety factor of five.

There shall be a test evacuation at least once prior to each summer and winter operation at a point designated by the Department. The Department shall be notified at least 48 hours in advance of any such required evacuation demonstration.

All rope evacuation plans shall be filed with the Department annually and shall be reviewed by the Department. All area operators shall assure that their plan meets the requirements of ANSI X.3.2.5.7.

Rope evacuation training shall be conducted at the beginning of each operating season and shall continue throughout the operating season, at intervals not to exceed 30 days. Ongoing training does not have to be hands on.

All carabineers or similar devices shall be of the double-locking type or multiple opposing single locking type.

All evacuation gear shall be available for inspection by the Department.

## 1007 Special provisions for chair lifts

### 1007.1

A. Lift attendants responsible for loading and unloading foot passengers shall stop the lift for special situations. The area is required to have written procedures outlining what should be done when confronted with special loading or unloading situations including, but not limited to, the infirm, elderly, adaptive, or more than one small child per riding adult.

B. The load and unload stations shall be equipped with a means of stopping the lift at any point along the load/unload platform when operating primarily for foot passengers.

C. It is required that a "stop line" be provided on the ramp where downhill loading occurs. The location of the stop line is to be determined taking into account the length of the ramp, the speed of the lift, and the length of the safety net (where required). The stop line shall be indicated by a permanent red line that shall not create a tripping hazard.

D All foot passengers shall be loaded or unloaded at speed not to exceed 250 feet per minute.

#### 1007.2 Chairs

Each chair shall be equipped with a restraint bar, which shall not yield to forward pressure applied by passenger(s).

The passenger(s) must have the restraint bar fully closed except when they are embarking or disembarking the lift.

#### 1007.3 Stop Gates

A stop gate or other device shall be provided prior to the chair entering a loading area to stop the lift in the event the restraint bar is deployed, and shall be located such that the stopped carrier does not contact waiting passengers.

#### 1008 Wire rope

##### 1008.1 Splices in Haul Ropes

Splicing of hauling wire ropes shall be done by a splicer approved by the department or under the supervision of a qualified person recognized by the department. The use of micro-press clips or similar devices is prohibited.

## 1008.2 Annual Wire Rope Inspection

An annual wire rope inspection shall be performed by an independent wire rope inspector who has been approved by the Department. A copy of this inspection report shall be filed with the department and with the operator.

The annual wire rope inspection report shall include haul rope, counterweight rope and backstay support rope or other auxiliary ropes.

In the event of rope damage, splicing or other rope repairs, the department shall be notified and it may require an inspection after repairs.

The Department shall be given 48 hours notice of any rope splice, repair or inspection to be done. In emergency situations, the Department will respond as quickly as possible.

If MRT is required it shall be done prior to or concurrent with the annual rope inspection. A copy of the MRT inspection shall be filed with the area, the Passenger Tramway Technician and the rope inspector. The MRT report shall be reviewed by the rope inspector prior to the annual rope inspection, and shall note all anomalies found. All anomalies are to be addressed by the rope inspector.

## 1009.0 Adoption of Standards Applicable to Passenger Tramways

The American National Standard for Passenger tramways – Aerial tramways and lifts, surface lifts tows and conveyors – Safety Requirements, ANSI B77.1-2011 with ANSI B.77.1a-2012 Supplement , except as amended, altered or added to in this rule, shall apply to all construction, operation, and maintenance of passenger tramways.

In addition to the standards and codes cited in ANSI B.77 as supplemented the following standards shall apply:

Vermont Standard Specifications for Construction, Division 500, Section 501, "Structural Concrete" and Section 507 "Reinforcing Steel".

ACI-318 may be used as a reference for structural concrete design.

National Fire Protection Association: "Life Safety Code" – NFPA #101 (editions adopted by the Department of Public Safety)

Nondestructive testing as defined by American Society for Nondestructive Testing (current edition).

ANSI 1.2.4.2

Add: A conveyor relocated within the physical boundaries of a resort not need not comply with the latest edition of ANSI B77.1 under the following condition:

The slope on which the relocated tow is placed must be equal to, or less, than original design.

ANSI 1.5.1

Add "including fiber rope tows", such that a Qualified Engineer shall be responsible for the design and installation of fiber rope tows.

Modify Sections 2.1.1.5.1; 3.1.1.5.1; 4.1.1.5.1

When aerial lifts cross one another, the following conditions shall be met:

A. Any deropement of the upper lift shall cause both lifts to stop and a deropement of the lower lift that reduces vertical clearance between the aerial lifts shall cause both aerial lifts to stop.

B. The minimum vertical clearance between the haul rope of the lower aerial lift and the top of the carrier seat of the upper aerial lift shall be 15ft under the most adverse loading condition.

Modify Sections 3.1.3.3.2 and 4.1.3.3.2, adding the following sentence to paragraph a: "The inside deropement guard shall be of sufficient design and strength to withstand the forces of deropement while at the same time allowing a grip to pass unimpeded".

Modify Sections: 2.3.4.4, 3.3.4.4 and 4.3.4.4 to read:

“The test load shall be equivalent to the design live load plus 10 percent.”

Modify Section 5.3.2.2.b and 6.3.2.2. a:

The Vermont Passenger Tramway Board prohibits the use of television surveillance in lieu of an operator/attendant.

Modify Section 6.1.1.5.1:

Add the words “When the down coming rope, including handles, if applicable, is less than 7 feet” to vertical clearance criteria.

Modify Section 6.1.2.6.3:

Add the words: “When used for tubing operations, a rollback device must be installed and shall act directly on the drive sheave assembly.”

Modify Sections 6.1.5 and 6.3.2.2:

Add: “No personnel shall be allowed between the stop gate and bullwheel when the lift is operating.”

The Vermont Passenger Tramway Board does not allow one operator/attendant to operate more than one lift.

Add to sections 2-4

ANSI X.1.2.1

Auxiliary engines shall be checked and started each day before transporting passengers. The aerial lift shall be operated using the APU at least 15 minutes per week.

Add to sections 2-7:

ANSI X.2.3

Failures in the tower derail detection function, including open, ground fault and crossed loop conditions or any other circuit that could impact the safe operation of the lift shall be detected in accordance with the requirements for both complex and non-complex elements (see ANSI B77.1 2011 with ANSI B.77.1a-2012 Supplement Section 1.4 Definitions) found in ANSI B77.1 2011with ANSI B.77.1a-2012 Supplement

### 3.2.3 – Protection Circuits

The tower detection circuit shall be functional when the lift is operated under normal conditions.

Protection devices shall be installed on the tension system and carriage system. The carriage protection device shall activate in either direction before the carriage travels more than 18 inches from its normal range of operation when fully loaded. However, in no case may the protection device be located closer than 6 inches from the maximum point of permissible travel of the tension device.

Lanyard stops shall be provided and appropriately marked in all drive and return terminals.

#### ANSI ANNEX A

Modify Section A.4.1.2:

Add “or 3000 Hrs whichever is greater” to the MRT requirement

#### ANSI ANNEX D

Modify Table D1, Line m: Add. In lieu of D 1 (m) use pictograms D17, D18 or D19

ANNEX D Modify Table D1, add a sign “Lowering bar required” with the modified arrow.

#### ANNEX F

Modify F.4.3: add “or Coast Guard Approved plastic tanks.”

Clean  
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Vermont Passenger Tramway Safety Rules  
And Addendum to ANSI B77.1-2022

UNANNOTATED VERSION

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Article I. General Provisions

Section 1.01 Declaration of Policy

- (a) It shall be the policy of the State of Vermont to prevent unnecessary hazards in the operation of ski tows, lifts, and tramways (collectively referred to as passenger tramways), to ensure that reasonable design and construction are used, that accepted safety devices are provide for and that periodic inspections and adjustments are made, all for the purpose of making safe the operation of passenger tramways (31 V.S.A. §701). The board shall have no jurisdiction over the construction, modification, or periodic inspection of a passenger tramway at a private residence when such passenger tramway is not used, or intended to be used, by the general public.

Section 1.02 Authority

- (a) These rules are adopted under the provisions of 31 VSA § 704 authorizing the Passenger Tramway Board to adopt reasonable rules relating to public safety in the construction, operation, maintenance, and inspection of passenger tramways.

Section 1.03 Penalties

- (a) Operating without passing inspection: Any owner/authorized operator who operates a passenger tramway without first passing the annual inspection by the Department shall be fined not more than \$1000.00 for each day of operation.
- (b) Operating without paying fee-due-State: Any owner/authorized operator who operate a passenger tramway without paying the fee-due-State as provided in 31 V.S.A. § 707 of this title shall be fined not more than \$50.00 for each day of operation.
- (c) Operating after an order to cease: Any owner/authorized operator who operates a passenger tramway after being ordered to cease operations shall be fined not more than \$5000.00 for each day of illegal operation. (31 V.S.A. §712).

Section 1.04 Adoption of Standards Applicable to Passenger Tramways

- (a) The American National Standard for Passenger Ropeways – Aerial tramways and lifts, surface lifts tows and conveyors- Safety Requirement, ANSI B77.1-2022, except as amended, altered or added to in this rule, shall apply to all construction, operation, and maintenance of passenger tramways.
- (b) In addition to the standards and codes cited in ANSI B77.1-2022 as supplemented the following standards shall apply:
  - (i) Vermont Standard Specifications for Construction, Division 500, Section 501, “Structural Concrete” and Section 507 “Reinforcing Steel”.
  - (ii) The American Concrete Institute ACI-318 (current edition) may be used as a reference for structural concrete design.
  - (iii) National Fire Protection Association (NFPA): “Life Safety Code”- NFPA #101 (editions adopted by the Department of Public Safety).
  - (iv) Nondestructive testing as defined by American Society for Nondestructive Testing ASNT TC-1A (current edition) and ASNT CP-189 (current edition).

- (v) American Welding Society (AWS) Standard Welding Procedure Specifications (SWPS), current editions
  - (vi) National Electrical Code NFPA 70, current edition.
  - (vii) Vermont Fire and Building Safety Code, current edition.
  - (viii) The Fall Protection Code as defined by the American National Standards Institute- American Society of Safety Professionals ANSI/ASSP Z359.1 (current edition).
- (c) (i) The owner/authorized operator of an aerial passenger tramway open to the public shall maintain on the premises a physical or electronic copy of the current ANSI B77.1 standard(s) applicable to their licensed tramways.
- (ii) The Department of Labor shall maintain a physical or electronic copy of each ANSI B77.1 standard applicable to tramways operating within the State of Vermont, and shall make the standard(s) available for review by the public upon reasonable request.
- (iii) The Department of Labor shall maintain a physical copy of all other applicable standards referenced in these rules, or shall maintain electronic access to those standards. Such standards shall be made available for review by the public upon reasonable request to the Department.

#### Section 1.05 Definitions

**All definitions found in A.N.S.I B77.1 Section 1-1.4 apply.**

**All definitions found in 31 V.S.A. §702 apply.**

**“ANSI B77.1” refers to the current version of ANSI B77.1**

**“Attendant”** The individual assigned to particular duties or functions in the operation of a passenger ropeway.

**“Carrier, work”** Structural and mechanical assemblage in or on which authorized personnel and equipment are transported on a limited basis to perform line maintenance. Unless qualified, the work carrier includes, for example, the carriage, grip or clip, hanger, and work platform.

**“Certified Welder”** A person who has met the requirements of the American Welding Society for the type of welding to be performed.

**“Circuit (s), bypass”** A circuit (s) that partially or entirely circumvents monitoring devices and remote signal inputs of a malfunctioning device to allow operation of the system, under the specific conditions set forth for each ropeway type.

**“Commissioner”** Commissioner of the Department of Labor

**“Department”** the Passenger Tramway Division of the Department of Labor.

**“Limits of tramway”** An area defined by the outward swing clearance of the carriers or tow handles as they move around the bull wheel and along the line as defined by ANSI B77.1 as “the path of the wire rope on the up-going or return side of a ropeway.” The limits of a conveyor lift shall be defined by the path of the conveyor. This defines the jurisdiction of the Passenger Tramway Board.

**“Other classifications”** Tramway configurations that do not conform to any of the classifications specifically provided for in these rules shall be evaluated by the Department on the basis of relevant codes and standards subject to wide enough use to justify a separate category and addition to this code.

**“Owner/Authorized Operator”** A person, who owns, manages or directs the operations and maintenance of a passenger ropeway, or the authorized operator by such owner.

**“Passenger Ropeway/Passenger Tramways”** Includes all devices that carry, pull, or push passengers along a level or inclined path (excluding elevators) by means of a haul rope or other flexible element that is driven by a power unit remaining essentially at a single location. This includes aerial tramways, detachable grip aerial lifts, fixed grip aerial lifts, surface lifts, tows, and conveyors.

**“Qualified personnel”** Individuals who, as a result of training and experience, understand and demonstrate competence with the design, construction, operation or maintenance of a passenger ropeway and associated hazards.

**“Recreational Device”** Tube, sled, luge, cart, etc., except a skier, which is pulled uphill on the surface with a passenger riding on the device.

**“Passenger Ropeway modifications”** as described by ANSI B77.1, Section 1.2.4.4 with the following additions:

A change in the lift’s electrical drive unit from AC or DC.

All modifications to be reviewed by a Qualified Engineer.

**“Tramway”** See passenger Ropeway

**“Safeguarding”** Protection of personnel from hazards by the use of guards, devices, or methods.

**“Skier”** A skier is any person utilizing a device that attaches to at least one foot or the lower torso for the purpose of sliding on a slope. The device slides on the snow or other surface of a slope and is capable of being maneuvered and controlled by the person using the device.

**“SMB”** (Sit-Ski, Mono-Ski, Bi-Ski) Common Adaptive Ski Equipment. Includes (Sit-Ski) structures in which the skier sits with metal edges attached underneath for control and maneuverability, skiing equipment consisting of a body support structure mounted over one ski (Mono-Ski) or tow skis (Bi-Ski) that articulate when the device leans side-to-side (\*ANSI B77.1, Section 1.4).

**“Vermont Passenger Tramway Technician”** person hired by the State of Vermont to inspect passenger ropeways for public safety and monitor construction, operations, and maintenance of passenger ropeways with the State.

**“Unseated Passenger”** A passenger who is unable to get seated in a chair on an aerial ropeway during the loading process, or who fails to stay seated between the loading point and unloading point, resulting in being suspended or falling from the chair.

Article II. Vermont Tramway Rules

Section 2.01 Registration and Fees

- (a) Registration and Fees shall be determined and submitted in accordance with 31 V.S.A. §707.
- (b) The registration plate shall be posted in public view at the lift to which it pertains.

Section 2.02 Tramway Inspections

- (a) An annual inspection for the entire installation shall be made by a Vermont Passenger Tramway Technician and a copy of the inspection report shall be filed promptly with the Department and with the owner/authorized operator.
- (b) An additional inspection is required prior to operating outside the scope of the current inspection (i.e., summer, special events, modifications, and night operation). Other demonstrations, tests, or inspections may be required as they pertain to the safe operation of the passenger ropeway.
- (c) During the annual inspection, the area owner/authorized operator shall be prepared to demonstrate the following, as applicable:
  - (i) Operation of the auxiliary power unit (APU) motor and related emergency evacuations procedure during a total loss of control power. AUP shall operate the lift at a minimum of 100 feet per minute.
  - (ii) Operation of the evacuation power unit and related emergency evacuation procedures, evacuation power unit shall operate the lift at a minimum of 100 feet per minute.
  - (iii) Proper function of all stop and slow buttons at all terminals.
  - (iv) Brake Testing, Service Brake, Bull Wheel Brake, Rollback Device(s) High-speed backstop.
  - (v) Tension System: Demonstrate low pressure will stop the lift, demonstrate high pressure will stop the lift. Lock all check valves.
  - (vi) All required signs in place
  - (vii) Lift houses and terminals. Appropriate fire extinguishers in place as required with current inspection tags. Smoke and carbon monoxide detectors in place as required.
  - (viii) Documentation. Pertinent NDT records (grips, hangers, bull wheels, carriers, and similar as required.
  - (ix) Wire rope annual inspection report.
- (d) RPD (Rope Position Detection) Switch check records (Detachable lifts)

- (e) MRT (Magnetic Rope Testing) testing records
  - (i) Electrical Testing, Over-speed at 110%, Over-speed at 115%, Phase loss, Field loss, Tach loss, Overcurrent
- (f) Reference ANSI B77.1, Section 4-Table 4-4 for minimum and maximum stopping times and distance.

#### Section 2.03 Department Notification Requirements

- (a) Prior to construction, modification, or relocations of a tramway the owner/authorized operator shall submit a complete set of design specifications to the Department in English, at least 15 business days in advance.
- (b) Construction
  - (i) Blasting with high explosives within 100 feet of any tramway location shall require verbal permission from the Department. (Section 4.03 for Blasting Requirements)
  - (ii) Excavation deeper than 12 inches within 15 feet of any tramway structure shall require verbal permission from the Department.
  - (iii) As pertaining to rock anchors, a verbal notification to the Departments required at least 24 hours prior to performing any of the following: drilling holes, setting of anchors, proof testing of anchors or grouting.
  - (iv) Placement of concrete tower or terminal foundations require a verbal notification to the Department at least 24- hours prior.
  - (v) Any special events involving a passenger ropeway require a verbal notification to the Department at least 24 hours prior. (May require section 2.02 Tramway inspection)
- (c) Maintenance/Repair
  - (i) Communication line: Prior to repairing or replacing a communication line, the operator owner/authorized operator shall notify the Department and lift manufacturer. The operator owner/authorized operator are responsible for verifying and documenting tower and wind loads, proper switch function and annunciation.
  - (ii) Haul rope: In the event of rope damage, other rope repairs or splicing, the Department shall be notified verbally, and it will require an inspection after repairs. The Department requires verbal notification within 48 hours of any rope splice, repair or inspection to be done. In emergency situations, the Department will respond as quickly as possible. (Wire Rope Splice or Repair Report)
  - (iii) The Department shall be notified verbally if a failed electrical circuit is bypassed. Additionally, before resuming normal public operations, the following requirements shall be met as to: (ANSI B77.1, Section 2.3.2.5.9.). This shall also be noted in the operational log.

#### Section 2.04 Incident Reporting Requirements

- (a) All tramway incidents shall be reported immediately to the Vermont Department of

Labor, Passenger Tramway Division.

- (b) An "Incident" is defined as any one of the following:
  - (i) Tramway-related serious injury or death (a serious injury is defined as one where rescue staff assesses the injured person and that person is referred to a higher level of care).
  - (ii) A passenger has fallen six feet or more from the passenger tramway.
  - (iii) The tramway must be closed during public operation for repairs, including incidents that require lift evacuation by Auxiliary Power Unit (APU) or rope.
- (c) Incident Report Documentation
  - (i) A detailed report of any incident which occurs during public operation of a tramway shall be sent to the Department within 72 hours of the time of the incident.
  - (ii) Report shall include pertinent information such as name /gender/age of injured person(s) as well as a description of the incident.
  - (iii) Following an incident, the Department may require interviews with the following people, including but not limited to, the injured person (s), lift operators, lift maintenance personnel, ski patrol, and the owner/authorized operator.  
The Incident Form is available from the Department or online (Vermont Tramway Incident Form). <http://www.labor.vermont.gov/document/passenger-tramway-incident-report>

#### Section 2.05 Variances

- (a) The Board may, upon written application, grant a variance from the strict application of these rules if it determines that the passenger ropeway will be at least as free from danger to persons using it as if it met the express requirements of these rules. The burden of proof shall be on the applicant. Variances shall be in writing.
- (b) Each owner/authorized operator requesting any variance is required to submit an application with supporting documentation. Any one variance shall not apply to more than one passenger ropeway.
- (c) A variance issued after the effective date of these rules shall be valid for three years, unless the Board specifies otherwise when the variance is granted.

#### Section 2.06 Violation of Rules

- (a) Passenger Ropeway Shutdown
  - (i) Items which may warrant immediate tramway shut down by the Department include failure of protection circuits, operation circuits, supervision circuits, improperly functioning brakes or back stops, line sheave failure or potential failure conditions, sheave train misalignment, an inadequate counterweight or carriage clearance, restricted counterweight or carriage movement, and any other condition which may affect safe operation of passenger ropeway.

(b) Orders

- (i) The Department may request an engineering review of a passenger ropeway or specific components (s) by the lift manufacturer and/or qualified lift engineer. The request shall be made by the Department in writing to the passenger ropeway owner/authorized operator.
- (ii) If, after investigation, the Department finds that a violation of any of these rules exists, or that there is a condition in the passenger ropeways construction, operation or maintenance or any other condition endangering the public, it shall forthwith issue its written order setting forth its finding, the corrective action to be taken, and fixing a reasonable time for compliance therewith. The order shall be served upon the owner/authorized operator involved by registered mail or in person and shall become final unless the owner/authorized operator applies to the Vermont Passenger Tramway Board for a hearing in the manner provided for in 31 V.S.A. § 709.

(c) Emergency Orders

- (i) Whenever the condition is deemed to be imminently hazardous, involving safety of passengers, the Department's representative shall be authorized to order the owner/authorized operator in writing to immediately suspend operation of the passenger ropeway, until such time as the hazardous condition has been remedied. (31 V.S. A. §708)

(d) Suspension

- (i) If any owner/authorized operator fails to comply with a lawful order issued under 31 V.S. A. §708 and 31 V.S.A. §709 the Department may order the owner/authorized operator to cease operations for such time as it considers necessary for the protection of the safety of the public (31 V.S.A. §711).

Article III. Operation & Maintenance for Passenger Ropeways

Section 3.01 General

(a) Devices Transported on a Passenger Ropeway

- (i) Owner/authorized operator may permit the use of hang-gliders, ski bobs, tubes, sleds, bicycles or other devices to be transported on their passenger ropeway by providing safeguards for public and lift equipment, if the Department is notified and provides written authorization.
- (ii) The Department shall be notified in writing of devices to be transported on passenger ropeways beyond what is described in Section 1.05 of these rules as meeting the definition of "skier". Notification shall include passenger ropeways permitting additional devices, operating procedures, staff training, and evacuation plan for guests/devices. Additionally, owner/authorized operator shall be prepared to perform a demonstration of evacuation during inspection of the passenger ropeway. Devices shall not be transported without written authorization from the Department. Authorization will be valid for up to three years and may be renewed, or a longer term variance may be



requested from the Board.

- (iii) Equipment used for ski patrol/rescue operations (i.e., toboggans, sleds) and adaptive equipment (i.e., SMB: sit-ski, mono-ski, bi-ski, and similar) are exempt from the rule.
- (iv) Devices to be transported on passenger ropeways, other than those used by a “skier” as defined in Section 1.05 of these rules, must have an adequate safety tether.

(b) Reverse Operation

- (i) For any passenger ropeway that is designed to operate in reverse direction, the owner/authorized operator shall post signs for the public notifying them that the lift may operate in a controlled manner in reverse.

(c) Drones (Unmanned Aircraft Systems)

- (i) Drones may not be operated within the clearing envelope of a tramway, defined as “within five feet (1.53 meters) of ropes, track cables, and carriers under design operating conditions,” during public operation of the tramway (reference ANSI B77.1, Section 2.1.1.4) unless an owner/authorized operator imposes a more restrictive standard.
- (ii) Drones must remain sufficiently clear of all tramway cables, towers, structures, carriers, other components, and the entire clearing envelope including the space from any supporting overhead cable to the surface, so as to not create a hazard to persons or property.
- (iii) The owner/authorized operator of the tramway shall develop rules/procedures for drone use in the vicinity of tramways.

(d) Signs

- (i) All passenger ropeways shall have a sign reading as follows posted near the loading area/lift instructions: “if you are unfamiliar with the use of this lift, please ask attendant.”
- (ii) Signs not specifically required by the ANSI B77.1, Annex D, or this rule may be required by the Department to cover special needs.
- (iii) Any additional signage that may affect safety and/or wind loading shall have Department approval before installation.

Section 3.02 Certification, Calibration and Testing

(a) Certification

- (i) NDT: (nondestructive testing). All nondestructive testing (NDT) certifications and annual eye exams, including outside contractors, shall be on file in one location and shall be available to the Vermont Passenger Tramway Technician upon request. Training of all NDT personnel shall be per ASNT-TC-1A. Reference document ASNT CP-189 (current version) for certifications and specific written practices, audited every five years by an independent NDT Level III Technician. The results of this audit are to be forwarded to the Department of Labor, Passenger Tramway Division.

- (ii) Welding: Welding on any passenger ropeway shall only be performed by persons possessing the proper certification for the specific type of welding in accordance with the American Welding Society standards. Welding procedure for work being performed must come from a qualified engineer or manufacturer. Welding performed on any passenger ropeway must have NDT completed prior to public operation.
  - (iii) Tools and Equipment: All torque wrenches and dynamometers required for assembly/testing of components, including during new construction, must be calibrated annually. The calibration certificate must be kept on file and an inspection sticker shall be placed on test equipment.
- (b) Testing
- (i) Nondestructive Testing (NDT)
    - (A) Each year on all passenger ropeways, the minimum grip, clip, hanger and carrier NDT shall be a rotating sample of 10 units or 20% of total units, whichever is greater. If any of the first units are rejected per the manufacturers criteria, another 20% or 10 units, whichever is greater, shall be tested. Any rejections in the second sample group shall be cause for 100% of the units to be tested. If the manufacturer's recommendations are stricter than this, then those recommendations shall be followed. The Passenger Tramway Technician shall be notified of these rejected components.
    - (B) Each new grip and hanger shall have documented NDT prior to public use.
  - (ii) Brake Testing: All brakes shall pass a torque test at an interval not to exceed 30 days. A brake test log shall be kept at each drive and shall include the most recent test results, the date, and the name of the person performing the test.
  - (iii) Annual Wire Rope Inspection: An annual wire rope inspection shall be performed by an independent wire rope specialist who has been approved by the Department and shall include the haul rope, counterweight rope, backstay support rope sockets and other auxiliary ropes. A Wire Rope Inspection Report shall be filed with the Department or online (Wire Rope Inspection).
  - (iv) MRT. (Magnetic rope testing) – Detachable Ropeways, Trams & Relocations: MRT is required on all detachable ropeways and trams within one year of installation and every three years thereafter. MRT is required on all passenger ropeway relocations. A qualified rope specialist shall review the MRT report, and all anomalies are to be addressed. A copy of the MRT inspection shall be filed with the owner/authorized operator, the Department and the rope specialist.

- (v) Wire Rope Splice & Repair: Splicing of hauling wire ropes shall be done by a wire rope specialist approved by the Department or under the supervision of a qualified person recognized by the Department. The use of micro-press clips or similar devices is prohibited. A certification of Wire Rope Splice or Repair form shall be filled out and filed with the Department for all splicing or repair of wire haul ropes. This form is available from the Department or online (Wire Rope Splice/ Repair Certification).

### Section 3.03 Lift Evacuation Plan

#### (a) Lift Evacuation Plan

- (i) A comprehensive plan shall be documented and filed with the Department for review each operating season. All area operators shall assure that their plan meets the requirement of ANSI B77.1, Section 2.3.2.5.7. and ANSI-ASSE Z359.
- (ii) Lift Evacuation plans shall include the location of equipment, process for evacuation, and consideration for special circumstance (i.e., night evacuation, evacuation of disabled persons, and evacuation during summer operations and special events).

#### (b) Lift Evacuation Training

- (i) Lift evacuation training shall be conducted prior to each operating season and shall continue throughout the operating season, at intervals not to exceed 30 days. Ongoing training can include but is not limited to classroom instruction, video instruction, and hands on.
- (ii) All training shall be documented and made available to the Department for review as requested.

#### (c) Lift Evacuation Equipment

- (i) The use of line savers or other rope protection devices shall be used whenever the loaded rope contacts the haul cable.
- (ii) The owner/authorized operator shall maintain an equipment inspection log for all equipment directly used to evacuate passengers.
- (iii) All evacuation gear shall be available for inspection by the Department.
- (iv) Reference (ANSI B77.1, Section 2.3.2.5.7).

#### (d) Lift Evacuation Demonstration

- (i) Prior to each operation season, to include night operations and special events, a lift evacuation demonstration shall be performed at an area designated by the Vermont Passenger Tramway Technician.

### Section 3.04 Acceptance & Dynamic Testing

- (a) Acceptance Testing (ANSI B77.1, Section 2.1.1.11). Before an aerial lift that is new or relocated, or that has not been operated for routine maintenance within the previous 2 years, is opened to the public, it shall be given thorough tests by qualified personnel to verify compliance with the plans and specifications of the designer. The designer or manufacturer shall propose and submit an Acceptance Test Procedure (ANSI B77.1, Section 2.1.1.11). Prior to the Acceptance Inspection and the Acceptance Test, the aerial

lift shall be continuously operated with empty carriers on the line as follows: 6 hours on each power unit classified as a prime mover; 1 hour on each power unit classified an evacuation power unit operating the lift.

- (i) Stops shall be minimized to replicate normal operation during the continuous operation.
  - (ii) All terminal, line structures, and line equipment shall be thoroughly checked both before and during the continuous run test to check for overheating of moving parts, excessive vibration or deflection of mechanical or structural components, free movement of tension systems, and other related conditions (ANSI B77.1, Section 2.1.1.11.1).
  - (iii) It shall be the responsibility of the owner/authorized operator to see that the following condition have been met: Tightness of all structural connections; Lubrication of all moving parts; Alignment and clearances of all open gearing; Installation and alignment of all drive system components; Position and freedom of movement of counterweights or other tension systems and carriages; Haul rope alignment at entrance to bull wheels; Operation of all electrical components, including circuit protection and grounding; Adjustment of brakes for stopping distance and brake torque testing; Minimum clearances for carriers, track cable and haul rope sags under the most adverse static loading; Proper alignment to track cable saddles ( as applicable ) and haul rope sheave units; Proper track cable to saddle angles and unhindered inline motion of track cable in saddles as applicable; Actual testing of evacuation equipment and procedures at the most difficult location; Proper location of towers and terminals in accordance with the plans and specifications. Terminal and tower rope/cable working points shall be documented by an "as built" survey, and any variation from the design drawings shall be noted and approved by the engineer responsible for design (ANSI B77.1, Section 2.1.1.11.2)
- (b) Dynamic Testing (ANSI B77.1, Section 2.3.4.4) Dynamic testing shall be performed at intervals not exceeding seven (7) years. A written schedule for systematic dynamic testing shall be developed and followed. The owner/authorized operator shall provide qualified personnel to develop the test procedure and conduct the dynamic test. The schedule shall establish specific frequencies and conditions for dynamic testing. The testing shall simulate or duplicate inertial loadings. The test load shall be 110% of the design live load. The results of the testing shall be documented in the maintenance log. The testing shall include, but is not limited to the following: Braking systems; Evacuation power units; Tension system; Electrical systems.

#### Section 3.05 Personnel and Safety

- (a) Personnel
  - (i) Owner/authorized operator shall ensure that all lift attendants are able to read and understand lift instructions and are able to give and receive verbal communication to other attendants and passengers.

- (ii) The Vermont Passenger Tramway Board does not allow one attendant to operate more than one lift (load/unload conveyors are exempt).
  - (iii) Owner/authorized operator must ensure that all attendants have been properly trained in the operation of the lift prior to performing work on any passenger ropeway.
  - (iv) Personnel participating in the operation or maintenance of any passenger ropeway shall be at least sixteen (16) years of age consistent with the provisions of USDOL Wage and Hour Division Fact Sheet 43, Child Labor Provisions of the Fair Labor Standards Act (FLSA) for Nonagricultural Occupations (12/16). Personnel participating in the maintenance of any passenger tramway shall be at least eighteen (18) years of age, with the exception of 16- and 17- year-olds participating in the registered apprenticeship program administered by the Vermont Ski Areas Association and the Department's Registered Apprenticeship Program.
  - (v) An owner/authorized operator should ensure that all lift personnel are familiar with the Vermont Passenger Tramway Safety Rules. A printed copy of the rules shall be prominently posted in employee common area(s) where they are available to all lift attendants each workday.
- (b) Personnel Safety
- (i) Procedures for performing operation and maintenance functions require precautionary measures necessary to ensure the safety of the personnel involved in conformance with applicable Vermont Occupational Safety and Health standards and codes. Implementation of the procedures intended for the protection of the public and operating and maintenance personnel is the responsibility of the owner/authorized operator.
  - (ii) One or more persons trained to provide first aid/emergency care at the Basic Life Support (BLS) level, including CPR, shall be available at all times when a passenger ropeway is operating and transporting passengers. There shall be ready access to first aid/emergency care supplies and equipment, including provisions for transporting an injured person to an enclosed and, if required, heated shelter.
- (c) Emergency Lighting
- (i) In addition to ANSI B77.1, Section 2.2.12.4., emergency lighting shall also include maintenance work areas and drive and return terminals of passenger ropeways not otherwise covered by NFPA (National Fire Protection Association) Life Safety Code.
- (d) Fire Alarm Systems
- i) Fire alarm systems shall be installed in all drive and return terminals that are not visible to the operator. The system shall be monitored at the operator's work position by use of approved notification devices.
  - ii) Any structure closer than 100 feet to any part of a passenger ropeway shall have a method to notify the lift operator of a fire.

- iii) Fire alarm initiation and notification devices shall be installed in accordance with the National Fire Alarm and Signaling Code (NFPA 72) current edition as adopted by the Vermont Fire and Building Safety Code.
  - iv) Installation and maintenance of the system shall comply with the Vermont Fire and Building Safety Code.
  - v) Any building connected to a passenger ropeway shall comply with the rules of the Division of Fire Safety of the Department of Public Safety.
- (e) Smoke & Carbon Monoxide Detectors
  - (i) Smoke detectors are to be installed in all lift terminals and operator buildings.
  - (ii) Carbon monoxide detectors are to be installed in all lift buildings where emission-producing fuels are burned.
- (f) Loading and Unloading
  - (i) Lift attendants responsible for loading and unloading foot passengers shall stop the lift for special situations. The owner/authorized operator is required to have written procedures outlining what should be done when confronted with special loading or unloading situations including, but not limited to, the infirm, elderly, adaptive, or more than one small child per riding adult.
  - (ii) The load and unload stations shall be equipped with a means of stopping the lift at any point along the load/unload platform when operating primarily for foot passengers.
  - (iii) It is required that a permanent red "stop line" be provided on the ramp where downhill loading occurs. The location of the stop line is to be determined taking into account the length of the ramp and the speed of the lift, making certain the chair stops on the ramp once the stop occurs.
  - (iv) All foot passengers shall be loaded and unloaded at speed not to exceed 250 feet per minute.
  - (v) The passenger (s) must have the restraint bar fully closed except when they are embarking or disembarking the lift.
- (g) Maintenance / Electrical Failure Log
  - (i) A daily log of all mechanical and electrical failures shall be maintained and such failures affecting safety shall be reported verbally to the Department forthwith.

Section 3.06 Surface Lift & Tows (ANSI B77.1, Section 5 & 6)

- (a) This includes T-Bar, J-Bar, platter lift, handle tow, fiber and wire rope tows, and similar type devices.
  - (i) All bull wheels shall be equipped with plane monitoring switches.
  - (ii) All tows used for "recreational devices" as defined in Section 1.05, including those used for tubing operations must have a rollback device installed that act directly on the drive sheave assembly.

- (iii) No personnel shall be allowed between the stop gate and bull wheel while the lift is in operation.
- (iv) Terminal areas: Stop gates shall be installed on the incoming side so that the distance from the stop gate to the first obstruction is more than 150% of the distance required to stop the empty tow operating at maximum speed. The stop device shall extend across the tow beneath the incoming rope and the outgoing rope (ANSI B77.1, Section 6.2.3.2).
- (v) All terminals shall have a barrier to prevent unauthorized or inadvertent access.
- (vi) Prior to construction, modification, or relocations of any surface lift or tow the owner/authorized operator shall submit a complete set of design specifications to the department in English, 15 business days in advance.
- (vii) All surface lifts and tows shall be equipped with a start alarm.
- (viii) On a speed change command, a time delay needs to be included to allow the cable to come to the desired speed for a time to stabilize the cable before another speed change can happen. (Fast to slow, Slow to Fast commands).
- (ix) NDT (nondestructive testing) is required on all grips, and hangers as spelled out in Section 3.02.

#### Section 3.07 Conveyors (ANSI B77.1, Section 7)

- (a) Conveyor: An outdoor transportation system wherein passengers are transported uphill on a flexible moving element (conveyor belt) ANSI B77.1, Section 7
- (b) Maximum conveyor speed is 160 feet/minute (0.8 meter/second).
- (c) A conveyor relocated within the physical boundaries of a ski area need not comply with the latest edition of ANSI B77.1 so long as the slope on which the relocated conveyor is placed is equal to, or less than original design by the manufacturer.
- (d) Maintenance snow removal operations shall follow manufacturer's recommendations and lock out procedures.
- (e) All conveyors shall be equipped with a start alarm. (ANSI B77.1, Section 7.2.9)
- (f) Night Operation reference (ANSI. B77.1, Section 7.2.12).
- (g) The owner/authorized operator shall assure required decking alongside conveyors is reasonably clear of snow and ice accumulation while the conveyor is open to the public.

#### Section 3.08 Chair Lifts (ANSI B77.1, Section 2, 3, & 4)

- (a) This includes fixed grip, detachable grip, gondolas and aerial tramways.
- (b) Lift Speed Protocol for Detachable Grip Lifts. For areas that are installing their first detachable lift, the following protocol will be in effect. Before a detachable lift may be operated at design speed for the public it must be run at:
  - (i) 75% of full design speed for 32 hours.
  - (ii) 90 % of full design speed for 64 hours. During this reduced speed period the lift may be operating for the public.

- (c) All bull wheels shall be equipped with plane monitoring switches.
- (d) Each chair shall be equipped with a restraint device (restraint bar), which shall not yield to forward pressure applied by passenger (s).
- (e) Auxiliary engines shall be checked and started each day prior to operation and shall be run online at least every 30 days for a minimum of 15 minutes.
- (f) Lanyard stops shall be provided in all drive and return terminals and must be equipped with appropriate signage.
- (g) A stop gate or other device shall prevent a chair with the restraint device down from entering the load area.
- (h) Failures in the tower derail detection function, including open, ground fault and crossed loop conditions or any other circuit that could impact the safe operation of the lift shall be detected.
- (i) Work Carrier: Reference ANSI B77.1 Section 3, work carrier design 3.1.4.4.5, requirements for all work carriers 3.1.4.4.5.1, Exceptions for reduced speeds 3.1.4.4.5.2, Exceptions for dedicated grips at reduced speeds 3.1.4.4.5.3, work carrier 3.3.2.4.4.
- (j) No items are to be installed or placed under chairs and gondola cabins on the uphill and downhill sides of the lift line. (Snowmaking guns, Snowmaking hydrants, fence post, building etc.) so as to create a fall hazard.
- (k) On a speed change command, a time delay needs to be included to allow the cable to come to the desired speed for a time to stabilize the cable before another speed change can happen. (Fast to Slow, Slow to Fast Commands)
- (l) Auxiliary and evacuation power units must have at each motor, a written and posted operating procedure.
- (m) Work Carrier Evacuation
  - (i) A Work Carrier Evacuation Plan shall be filed with the Department each operating season. The plan shall include the number of trained personnel required to evacuate a work carrier, a list of available equipment and its storage location(s), and consideration for special circumstances including night evacuations. The plan shall also include procedures for activating offsite emergency services, as well as procedures for transporting arriving responders to the evacuation site. The Work Carrier Evacuation Plan may be incorporated into the Lift Evacuation Plan required by Section 3.03, or into an alternative workplace emergency plan maintained by the owner/authorized operator.
  - (ii) Annually a work carrier evacuation demonstration shall be performed by area maintenance personnel.
  - (iii) As part of the demonstration, a work carrier shall be installed on the line and moved to an area designated by Vermont Passenger Tramway Technician.



Section 3.09 Load Conveyor (ANSI B77. 1 Annex C)

- (a) This includes conveyors for loading and unloading of lifts.
- (b) Load conveyors: an endless belt that assists in loading and unloading ropeway passengers.
- (c) Load conveyor shall be accessible by foot and adaptive passengers.
- (d) It shall be possible to maintain lift operation and passenger loading/unloading even when the conveyor is not operating.
- (e) Each load/unload conveyor shall be registered with the Department as specified in Section 2.01.

Section 3.10 Summer Operations

- (a) Aerial lift loading and unloading speed not to exceed 250 feet/minute.
- (b) The ground below the lift line shall be maintained for lift evacuation purposes.
- (c) All loading and unloading areas shall be equipped with a means of stopping the lift.
- (d) Mountain bike racks are to be nondestructive tested (NDT) annually.

Article IV. Construction and Design Rules

Section 4.01 Plan and Review and Approval

- (a) 15 business days prior to construction, modification or relocation of a passenger ropeway the owner/authorized operator must submit to the Department for review a complete electronic set of final design specifications written in the English language and stamped by a Professional Engineer licensed in the State of Vermont. This shall include a profile of the lift line, the anchoring system, and a plan showing the proximity of power lines, highways and rivers, lifts, and other structures. Any changes or modifications to the design or specifications shall be submitted to the Department for review prior to making the change or modification.
- (b) A copy of the Passenger Tramway Construction Guidelines and Requirements is available from the Department and online (Tramway Construction Guidelines).

Section 4.02 Anchor Review and Approval

- (a) The type of bolt and system of anchoring shall be mechanical and shall be approved by the Department. Installation, testing, grouting and design shall conform to the recommendations of the anchor system manufacturer or application designer.
- (b) The Department shall be verbally notified at least 24 hours in advance of any drilling of holes, setting of anchors, proof testing of anchors or grouting. A Vermont Passenger Tramway Technician, or a qualified engineer or their assignee shall witness the drilling of rock anchor holes and the placing, tensioning and locking of all rock anchors.

#### Section 4.03 Construction Activities

##### (a) Placement of Concrete

- (i) Before any concrete is placed in any foundation or for the base of a tower, a Vermont Passenger Tramway Technician of the Department shall ascertain that the foundation extends below the frost line or is adequately anchored to rock. The frost line is assumed to be a minimum of 4 feet.
- (ii) Concrete used in the construction of passenger ropeways shall have minimum compression strength of Class B 3,500 PSI at 28 days. Concreting shall be per Vermont Standard Specification for Construction, Division 500, Section 501 "Structural Concrete" and Section 507 "Reinforcing Steel". ACI-318 may be used as a reference for structural concrete design.
- (iii) When pouring concrete, the end of the spout may not be greater than 6-feet above the final placement of concrete (i.e., concrete may not freefall more than 6-feet).
- (iv) The Vermont Passenger Tramway Technician, or a qualified engineer or their assignee shall witness the placing of the concrete; ensure proper testing and taking of samples to assure that the concrete work is executed in accordance with the plans and specifications.
- (v) The taking of concrete samples and testing shall be performed by a third-party vendor, not affiliated with the concrete contractor. A minimum of two (2) samples are required from each concrete truck at the time of delivery. The third party shall provide results in writing to the Department as soon as possible following each cylinder test.
- (vi) The Department shall be notified verbally at least 24 hours in advance of pouring the concrete to allow the presence of a Vermont Passenger Tramway Technician.

##### (b) Blasting

- (i) PPV (Peak Partial Velocity) to less than 0.5/sec, for frequencies less than 40 hertz and PPV less than 2.0 in/sec for frequencies less than 40 hertz.

- (ii) The Department may require the use of a seismometer for close structures and foundations. If a seismometer is used, a report must be filed with the Department.
- (c) Location and Restricted Activities
  - (i) Passenger ropeways shall not be located so close to electric power lines, snowmaking lines, features of terrain, trees or structures so as to be considered a hazard to the safe operation of the tramway.
  - (ii) No exposed power line in excess of 50 volts shall be located closer than 100 feet from a passenger ropeway line, measured from the centerline of the haul rope, without the written approval of the Department.
- (d) Passenger Ropeway Protection of Electronic Components
  - (i) Exposed distribution or transmission power lines shall be located so that, in the event of failure, no portion of the energized line will contact the lift.
  - (ii) All exposed AC wiring over 120v shall be installed in a UL-approved raceway, per NEC-70 (current version). When a manufacturer finds that it is not possible to comply with this section, a pre-construction meeting with the Department shall be required.
- (e) Radios and similar
  - (i) The installation of radio transmitters, cellular equipment, wind towers and similar in, on, or near, passenger ropeways shall not be done without written authorization of the Department. Written approval from the lift manufacturer shall be required, or if the manufacturer is no longer in business, from a qualified engineer.

Article V. Effective Dates

Section 5.01

- (a) The Effective date of these Passenger Tramway Rules is ----- (not yet determined)-----
- (b) Any passenger tramway construction or modification commenced after the effective date of these rules shall be made in conformance with these rules and with ANSI B77.1-2022.

Any passenger tramway construction or modification commenced prior to the effective date of these rules, but subsequent to the 2013 Rule amendments, shall be made in conformance with the Vermont Passenger Tramway Safety Rules- 2013, and with ANSI B77.1- 2011, ANSI B77.1A – 2012 supplement, ANSI B77.1- 2017, or ANSI B77.1-2022.



# The Vermont Statutes Online

The Vermont Statutes Online have been updated to include the actions of the 2023 session of the General Assembly.

NOTE: The Vermont Statutes Online is an unofficial copy of the Vermont Statutes Annotated that is provided as a convenience.

## **Title 31 : Recreation and Sports**

### **Chapter 015 : Ski Tramways**

(Cite as: **31 V.S.A. § 704**)

#### **§ 704. Rules**

The Board may, in accordance with 3 V.S.A. chapter 25, adopt reasonable rules relating to public safety in the construction, operation, maintenance, and inspection of passenger tramways. The rules authorized hereunder shall conform as nearly as practicable to established standards, if any, and shall not be discriminatory in their application to operators of passenger tramways. Rules adopted by the Board shall in no way reduce or diminish the standard of care imposed upon passenger tramway operators under existing law. (Added 1961, No. 266, § 4, eff. Aug. 1, 1961; amended 1981, No. 36, § 2.)



# Proposed Rules Postings

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### Deadline For Public Comment

Deadline: Dec 31, 2023

The deadline for public comment has expired. Contact the agency or primary contact person listed below for assistance.

### Rule Details

|                  |                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rule Number:     | 23P031                                                                                                                                                                                                                                                                                                      |
| Title:           | Vermont Passenger Tramway Rules.                                                                                                                                                                                                                                                                            |
| Type:            | Standard                                                                                                                                                                                                                                                                                                    |
| Status:          | Final Proposed                                                                                                                                                                                                                                                                                              |
| Agency:          | Department of Labor                                                                                                                                                                                                                                                                                         |
| Legal Authority: | 31 V.S.A. § 704                                                                                                                                                                                                                                                                                             |
| Summary:         | This is an amendment of an existing rule, which is being revisited primarily for the purpose of adopting by reference the most recent industry standard. This is the 2022 edition of the American National Standards Institute (ANSI) B77.1, the American National Standard for Passenger Ropeways - Aerial |

Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors Safety Requirements. The rule also includes a Vermont-specific Addendum, further supplementing the national standard.

Persons Affected:

Ski areas, the Vermont tourist industry more broadly, and the members of the general public who ride on ski lifts.

Economic Impact:

There should be little economic impact to ski areas when it comes to new lift construction, since new lifts are designed and built to the 2022 ANSI standard whether Vermont adopts it or not. One area of potential economic impact has been identified in Annex F.1.4, which may require additional fireproofing in some older lift machine rooms located in wooden structures.

Posting date:

Sep 20,2023

## Hearing Information

Hearing 10-24-2023 1:00 PM [ADD TO YOUR CALENDAR](#)  
date:

Location: Department of Labor

Address: 5 Green Mountain Drive, PO Box 488

City: Montpelier

State: VT

Zip: 05601

Hearing

Notes:

Hearing 10-24-2023 1:00 PM [ADD TO YOUR CALENDAR](#)  
date:

Location: via MS Teams

Address: Meeting ID: 215 293 622 301 Passcode: MxQ44t Call in (audio only) +1 802

City: n/a

State: VT

Zip: n/a

Hearing Link: <https://gcc02.safelinks.protection.outlook.com/ap/t-59584e83/?urlhttps:>

Notes: 9c02-70edcc7559c62522252c2522Oid2522253a2522d0b34112-3303-4261-9

## Contact Information

### Information for Primary Contact

**PRIMARY CONTACT PERSON - A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE.**

Level: Primary  
 Name: Dirk Anderson  
 Agency: Department of Labor  
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 State: VT  
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 Email: dirk.anderson@vermont.gov

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**Information for Secondary Contact**

**SECONDARY CONTACT PERSON - A SPECIFIC PERSON FROM WHOM COPIES OF FILINGS MAY BE REQUESTED OR WHO MAY ANSWER QUESTIONS ABOUT FORMS SUBMITTED FOR FILING IF DIFFERENT FROM THE PRIMARY CONTACT PERSON.**

Level: Secondary  
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 Agency: Department of Labor  
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 City: Montpelier  
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**Keyword Information**

Keywords:

- passenger tramway
- ski lift



ski tow  
chairlift  
ski area

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| The Caledonian Record<br>Julie Poutré ( <a href="mailto:adv@caledonian-record.com">adv@caledonian-record.com</a> )                                                                                                                                                                                  | Tel: 748-8121 FAX: 748-1613                                |
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| Vermont Lawyer<br>( <a href="mailto:hunter.press.vermont@gmail.com">hunter.press.vermont@gmail.com</a> )                                                                                                                                                                                            | Attn: Will Hunter                                          |

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**FROM:** APA Coordinator, VSARA

**Date of Fax:** February 6, 2024

**RE:** The "Proposed State Rules " ad copy to run on

**September 28, 2023**

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## PROPOSED STATE RULES

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By law, public notice of proposed rules must be given by publication in newspapers of record. The purpose of these notices is to give the public a chance to respond to the proposals. The public notices for administrative rules are now also available online at <https://secure.vermont.gov/SOS/rules/>. The law requires an agency to hold a public hearing on a proposed rule, if requested to do so in writing by 25 persons or an association having at least 25 members.

To make special arrangements for individuals with disabilities or special needs please call or write the contact person listed below as soon as possible.

To obtain further information concerning any scheduled hearing(s), obtain copies of proposed rule(s) or submit comments regarding proposed rule(s), please call or write the contact person listed below. You may also submit comments in writing to the Legislative Committee on Administrative Rules, State House, Montpelier, Vermont 05602 (802-828-2231).

---

### Vermont Passenger Tramway Rules.

Vermont Proposed Rule: 23P031

AGENCY: Department of Labor

CONCISE SUMMARY: This is an amendment of an existing rule, which is being revisited primarily for the purpose of adopting by reference the most recent industry standard. This is the 2022 edition of the American National Standards Institute (ANSI) B77.1, the American National Standard for Passenger Ropeways - Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors Safety Requirements. The rule also includes a Vermont-specific Addendum, further supplementing the national standard.

FOR FURTHER INFORMATION, CONTACT: Dirk Anderson, Department of Labor, P.O. Box 488, Montpelier, VT 05601 Tel: 802-828-4391 Fax: 802-828-4046 Email: [dirk.anderson@vermont.gov](mailto:dirk.anderson@vermont.gov) URL: <https://labor.vermont.gov/>.

FOR COPIES: Mike Nellis, Department of Labor, P.O. Box 488, Montpelier, VT 05601 Tel: 802-777-2242 Fax: 802-828-4046 Email: [mike.nellis@vermont.gov](mailto:mike.nellis@vermont.gov).

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### Child Support Guidelines.

Vermont Proposed Rule: 23P032

AGENCY: Agency of Human Services, Office of Child Support

CONCISE SUMMARY: This rule governs the guidelines used for calculating child support obligations in Vermont. 15 V.S.A. § 654 states that the Secretary may amend the guideline from time to time as may be necessary, but not less than once every four years. Federal law, 45 C.F.R. § 302.56 (e), mandates that the child support guidelines be reviewed, and revised, if appropriate, at least once every four years to ensure the application results in appropriate child support order amounts. The existing child support guidelines went into effect 1/2/2020, so OCS has conducted a review to ensure the associated tables that convert gross income to after tax income and identify expenditures on children adjust for current tax rates and economic conditions.

FOR FURTHER INFORMATION, CONTACT: Lisa Rivers, Office of Child Support, NOB 2 South, 280 State Drive, Waterbury, VT 05671 Tel: 802-585-8209 Fax: 802-241-0524 Email: [lisa.rivers@vermont.gov](mailto:lisa.rivers@vermont.gov) URL: <https://dcf.vermont.gov/ocs/parents/calculator>.

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