

VERMONT ENVIRONMENTAL BOARD  
10 V.S.A. Chapter 151

Re: L&S Associates  
Land Use Permit #2W0434-8-EB (Revised)

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

This decision, dated September 21, 1993, pertains to an appeal of a permit issued to L&S Associates for the construction of a refrigerated warehouse on Technology Drive off of Route 5 in Brattleboro (the **Project**).<sup>1</sup> For the reasons explained below, the Board has determined to grant the permit.

I. BACKGROUND

On July 17, 1992, the District #2 Environmental Commission issued Permit Amendment #2W0434-8 to L&S Associates (formerly C&S Associates) (the Applicant) authorizing the construction of a 202,000 square foot warehouse, parking for cars and trucks, a truck repair center, and a restroom building for truck drivers.

On August 14, an appeal was filed by William Tyler concerning **10** V.S.A. § 6086(a)(1) (air), (5) (transportation), **8** (aesthetics), **9(K)** (public investment), and **10** (local and regional plans). On August 18, Mr. Tyler filed a motion to withdraw the appeal.

On August 18, an appeal was filed by Angelo DeCicco concerning Criteria **1** (air and noise), 5, 8, 9(K), and 10. Later in the day on August 18 Mr. DeCicco filed a withdrawal of his appeal.

On August 20, an appeal was filed by the Dummerston Planning Commission (DPC) concerning Criteria **1** (air and noise), 5, 8, 9(K), and 10.

On August 20, **Windham** Citizens for Responsible Growth (WCRG) filed two motions for party status, one of which included an appeal of the denial of party status by the District Commission.

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<sup>1</sup>**The Environmental Board's decision on reconsideration of its June 2, 1993 decision in this matter is included herein. This decision supersedes the June 2 decision in its entirety.**

DOCKET #557R

L & S Associates

Land Use Permit Application #2W0434-8-EB  
Revised Findings of Fact, Conclusions of Law,  
and Order

Page 2

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On September 1, the Applicant filed a notice of cross-appeal and entry of appearance. The Applicant appealed the District Commission's decision to grant party status to Angelo DeCicco as an adjoining property owner under Criteria 1(air), 5, and 8 and to DPC and Mr. Tyler as parties by permission on Criterion 5.

A prehearing conference was convened by Board Chair Elizabeth Courtney on October 30, 1992, and a Prehearing Conference Report and Order was issued on November 10, 1992. A number of preliminary issues were raised. Parties filed memoranda and on November 24, 1992, the Board issued a Memorandum of Decision allowing the appeals of DPC and WCRG and on December 4, 1992, it issued a Supplemental Memorandum of Decision.

The hearings were convened on January 27, 1993 in Brattleboro. The hearings continued on January 28, February 17 and 18, and March 3 and 4. The following parties participated in the hearings:

L&S Associates (the Applicant) by William W. Schroeder, Esq.  
Town of Brattleboro by Ted Brovitz  
Brattleboro Planning Commission by Charles Miller  
Windham Regional Planning Commission (WRC) by James Matteau  
Windham Citizens for Responsible Growth (WCRG) by Gerald R. Tarrant, Esq.  
Dummerston Planning Commission (DPC) by Ahren Ahrenholz and Suzanne Whidden  
Town of Dummerston by William Ash  
Coalition of C&S Employees (the Coalition) by Lawrin W. Crispe, Esq.

On March 4 the Board recessed the hearing pending the filing of proposed findings by the parties and Board deliberation and decision.

On March 3, the Applicant filed a summary of proposed findings on Criteria 1(air) and 5 and WCRG filed proposed findings on Criteria 5 and 9(K). On March 9, the Applicant filed a summary of proposed findings on Criterion 9(K), WCRG filed supplemental proposed findings on Criteria 1(air), 5, and 9(K), and DPC filed proposed findings. On March 17, WRC submitted a document and the Town of Brattleboro and the Brattleboro Planning Commission filed proposed findings.

The Board deliberated concerning this matter on March 10 and 24, April 7, and May 5, 19, and 26, 1993. On May 26, following completion of its review of the evidence presented, the Board declared the record complete and adjourned the hearing.

To the extent any proposed findings of fact and conclusions of law are included below, they are granted; otherwise, they are denied.

On June 2, 1993, the Board issued Land Use Permit Amendment #2W0434-8-EB (the Permit) and supporting Findings of Fact, Conclusions of Law, and Order.

## II. RECONSIDERATION

### A. Backaround

On June 25, 1993, pursuant to Board Rule 31, WCRG filed a motion to clarify and alter the Permit. On July 2, the Applicant filed a motion to alter the Permit.

On July 2, the Board received a letter from Richard Valentinetti, Director of the Air Pollution Control Division (APCD) at the Agency of Natural Resources (ANR) concerning the conditions in the Permit relating to air pollution.

Responses to the motions to alter were filed by the Windham Regional Commission (WRC), the Town of Brattleboro, WCRG, and the Applicant.

On July 20, the Board issued a memorandum of decision in which it stated that it would reconsider certain permit conditions as requested by the parties. The Board also decided to reopen the hearing to take testimony from the APCD concerning the conditions relating to air pollution and from the Vermont Agency of Transportation (AOT) concerning possible solutions to the traffic congestion and unsafe conditions that the Board had found would result from the Project as proposed. The Board issued a subpoena to Gordon MacArthur, Director of Engineering at AOT. The comments from Richard Valentinetti were treated as prefiled testimony, and parties were provided an opportunity to present witnesses to respond to Mr. Valentinetti's comments.

On July 26, Kurt Janson, attorney for ANR, submitted a letter in which he stated that Brian Fitzgerald, Chief of the Permits Section of the APCD, would testify along with

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Richard Valentinetti. On July 30, the Applicant submitted prefiled testimony for Colin High and WCRG submitted prefiled testimony for Craig Stead. On August 2, ANR submitted copies of documents that had been sent to Gerald Tarrant, attorney for WCRG, in response to a subpoena.

The Board convened a public hearing on August 5, with the following parties participating:

The Applicant by William W. Schroeder, Esq.  
Town of Brattleboro by Thomas W. Costello, Esq.  
Brattleboro Planning Commission by Ted Brovitz  
WRC by Lew Sorenson  
ANR by Kurt Janson, Esq.  
AOT by Scott Whitted, Esq.  
Town of Dummerston by William Ash  
DPC by Ahren Ahrenholz  
WCRG by Gerald R. Tarrant, Esq.  
Coalition of C&S Employees by April Angiletta

The Board recessed the hearing pending submission of documents from the parties and deliberation and decision by the Board.

On August 13 the Town of Brattleboro and Brattleboro Planning Commission filed a Proposed Alteration of Permit. On August 13 WCRG filed Proposed Findings. On August 17 the Applicant filed a Post-Hearing Memorandum dated August 13. Responses to the Applicant's Post-Hearing Memorandum were filed by WCRG and WRC on August 18. On August 20 the Applicant submitted a letter stating that the Applicant disagrees with some of WCRG's findings.

On August 27 it was discovered that the Applicant had not sent copies of its August 13 Post-Hearing Memorandum to all parties. Parties were sent copies and were notified that they must contact the Board by September 3, 1993 if they wished additional time to comment. No such requests were received.

The Board deliberated concerning reconsideration on August 5 and 19, September 1, and by telephone the week of September 13, 1993. Based upon its review of the record and testimony presented at the August 5 hearing, the Board has revised some of the findings of fact and conclusions of law in its June 2 decision and added others. These changes are reflected in this decision which supersedes the June 2 decision in its entirety. To the extent any proposed

findings of fact and conclusions of law are included below, they are granted; otherwise, they are denied.

B. Reconsideration Issues

In its motion to alter filed on July 2, the Applicant requested the Board to amend Conditions 16, 37, 38, 39, and 42 of the June 2 Permit and to add a Condition 43. The Applicant included proposed conditions and a memorandum explaining the basis for its request. After the hearing on August 5, the Applicant submitted a Post-Hearing Memorandum which included revised proposed conditions.

Following are summaries of the changes to the permit conditions sought by the Applicant in its **Post-Hearing** Memorandum and by WCRG in its Motion to Alter, as well as the positions of the Town of Brattleboro and the WRC.

The Applicant

1. Condition 37

The Applicant requests that Condition 37 be changed to either one of the following: A) Limit, between the hours of 8:00 to 9:00 a.m., 12:00 noon to 1:00 p.m., and 3:00 to 6:00 p.m., the number of tractor-trailer trucks that may enter or exit the Project to no more than 28 trips per hour. Between 3:00 to 6:00 p.m., the hourly limit of 28 truck trips would be an average for those three hours, but the absolute limit for any one of those hours would be 39 trucks entering or exiting the Project. B) Limit, during the same hours as in A, the number of tractor-trailer trucks that may exit the Project per hour to no more than 12. Between 3:00 to 6:00 p.m., the hourly limit of 12 trucks would be an average for each of those three hours, but the absolute limit for any one of those hours would be 17 trucks exiting the Project. There would be no limit on the number of trucks that could enter the Project.

2. Condition 38

The Applicant requests that the limit on the number of contract carrier tractor-trailers using Route 9 west of Brattleboro to and from the Project be raised to a maximum of 48 one-way trips per day, on an annual average.

3. Condition 39

Instead of being required to place its identifying logo and individual identifying numbers on its trailers, the Applicant has offered to arrange for independent monitoring (by the Town of Brattleboro or the WRC) of the number of tractor-trailer trucks entering and exiting the Project at the gate and on Route 9 west of Brattleboro. The Applicant states that traffic volumes at the Project gate would be measured by continuous tube counters located just outside the gate, and that the number of tractor-trailers on Route 9 west would be determined by 24-hour surveys of contract carrier drivers exiting or entering the Project gate, conducted on at least twelve randomly selected days of each year. The Applicant would reimburse the Town or the WRC for the reasonable costs of monitoring.

4. Condition 43

The Applicant requests that a new condition be added that allows the Applicant to exceed the limits on tractor-trailer trips set forth in Conditions 37 and 38 during six days of each year.

5. Conditions 16 and 42

The Applicant requests that the conditions pertaining to air pollution monitoring be modified. The Applicant has offered to conduct monitoring of levels of carbon monoxide (CO), particulates (PM10), and oxides of nitrogen (NOx) at the Route S/Route 9/I-91 Intersection both before and after the commencement of operations at the Project. The pre-operations monitoring would be conducted "continuously"<sup>2</sup> during a one-month period commencing November 25, according to procedures determined by the APCD. The Applicant requests that if the pre-operations monitoring confirms the conservatism of the Applicant's modeling studies, the APCD and the District Commission may decide not to require post-I operations monitoring. The Applicant has also offered to conduct monitoring of PM10 and NOX at the Project site within one year following commencement of operations at the

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<sup>2</sup>The Applicant proposed "continuous" monitoring for a one-month period. However, the Board understands the testimony of Brian Fitzgerald and Richard Valentinetti of the APCD to be that "continuous" or "reference" monitoring is conducted over a long period of time. Thus it is likely that the Applicant actually meant "continual" monitoring.

Project. In addition, the Applicant has offered to analyze air inversion data from the Vermont Yankee meteorological monitoring station for the monitoring period. The Applicant suggests that the monitoring be done in accordance with procedures approved by the APCD and the District Commission.

WCRG

1. Condition 37

WCRG requests the Board to place a restriction on the total number of one-way truck trips that may enter or leave the Project during peak traffic hours, and that the number be a maximum of 23.

2. Condition 38

WCRG requests the Board to add to the limit of 120 contract Carrier one-way trips from C&S travelling on Route 9 west of Brattleboro to include common carriers as well. WCRG suggests that, based upon the Board's finding that contract carriers constitute approximately 58 percent of all trucks using the warehouse, the Board also limit the number of common carriers so that the total one-way daily trips using Route 9 do not exceed 206 contract and common carriers. WCRG also requests that a daily limit, and not an annual average, be imposed. WCRG requests that the Board require the Applicant to survey all drivers using its Vermont facilities in order to determine the actual number of truck trips on Route 9.

3. New Condition on Traffic Data

WCRG requests the Board to add a condition that the traffic data that the Applicant is required to gather be filed with the District Commission for public review within a reasonable time after it is collected.

4. Condition 16 and 42

WCRG requests the Board to require all air monitoring information and meteorological data to be filed with the District Commission for public review within a reasonable time after it is collected.

Brattleboro Selectboard and Plannins Commission  
(collectively, the Town)

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1. Condition 37

The Town requests the Board to limit the number of tractor-trailer trucks entering or leaving the Project to 25 per hour during the peak hours of 12:00 noon to 1:00 p.m. and 3:00 p.m. to 6:00 p.m. During other hours, the number of tractor-trailer trucks entering or leaving the Project should be limited to no more than 39 per hour. The Town supports the Applicant's request for permission to exceed the daily and hourly limits on six days of the year, but would limit the number of tractor-trailer trucks entering or leaving the Project to no more than 39 per hour during peak hours. The Town would have the Board require that when the Applicant anticipates the need to exceed the hourly limits, the Applicant will contact the Town so that the Town may take appropriate measures to mitigate the effect of additional truck traffic on Route 5. The Town believes the Applicant should pay for any such mitigation.

2. Condition 38

The Town requests the Board to limit the number of contract tractor-trailer truck trips travelling to and from the Project on Route 9 west of Brattleboro to no more than 48 per day.

3. Condition 39

The Town supports the Applicant's proposed amendment in its Motion to Alter dated July 1, 1993 and would add that the Permittee must provide the Town with vehicle counting equipment and the Town will conduct traffic volume analysis at the entrance to the Project.

4. Conditions 16 and 42

The Town supports the Applicant's request in its Motion to Alter dated July 1, 1993.

5. Condition 43

The Town supports the addition of a condition proposed by the Applicant in its July 1 Motion to Alter which would require the Applicant to conduct quarterly counts of tractor-trailers entering and leaving the Project during the peak traffic hours and, if congestion or safety problems have been exacerbated by traffic from the Project exceeding the limits imposed by the Permit, would require the



Applicant to file a proposal to mitigate the increase in traffic congestion or safety problems.

Windham Regional Commission

The WRC is willing to assist with conducting or overseeing independent traffic and air quality monitoring. WRC suggests that investment could be made in the installation of automatic traffic counters (ideally class counters) in other key locations.

The WRC suggests that if limitations on traffic during peak hours are imposed, and a variance allowed, this provision should be formally revisited by the District Commission within two years and that, in the interim, the Applicant should meet with all parties on a quarterly basis to assess the effect of the variance and related traffic control efforts, and that a report of such meeting should be filed with the District Commission. The WRC would be willing to assist in that process.

The WRC states that truck traffic on Route 9 is an on-going concern.

C. Reconsideration Discussion

1. Conditions 37 and 43

The Applicant has requested the Board to impose a limitation on total tractor-trailer trucks entering and leaving the Project during peak hours, rather than only on trucks leaving the Project. The reason for the Board's limitation on outgoing trucks only in the June 2 Permit was our concern that if the number of trucks that may enter the Project is restricted, trucks may have to be turned away at the gate, and that these trucks would leave the Project and create more traffic on Route 5 or other area roads while waiting to enter the facility. The Board's concern was based in part upon the Applicant's representations during the hearings in January, February, and March, 1993 that it has no control over the times that the common carriers will arrive at the Project. At the August 5 hearing, Richard Cohen, representing the Applicant, testified that the Applicant is able to control the arrival times of the common carriers by scheduling appointments, and that while they may be an hour earlier or later than the appointment time, they do not arrive at random. With this in mind, and because the Board is sympathetic with the Applicant's need to manage the

total number of trucks entering and leaving the facility, we are willing to accede to the Applicant's request to limit the total number of both incoming and outgoing trucks per hour rather than just the outgoing trucks.

The Board cannot, however, allow more than 24 tractor-trailers in any one hour during peak periods, for the following reason. In its June 2 decision, the Board concluded that the Project, as proposed, would result in unreasonable congestion and unsafe conditions along Putney Road and at the Intersection of Routes 5, 9, and I-91 and would materially interfere with the public's ability to use Putney Road during certain hours for commuting, shopping, eating, and recreation. This was based on the Applicant's testimony that the maximum number of truck trips on any given day would be 600, that truck trips are fairly evenly spread throughout the day (24 hours), but that there could be as many as 39 truck trips in some hours. We concluded that the addition of at least 25<sup>3</sup> tractor-trailer truck trips per hour during peak hours would add too many trucks to an already-congested road system. We heard no testimony during the hearing on August 5 that would cause us to change our conclusions. Allowing more than 24 truck trips per hour during peak hours would exceed the number which we found would violate Criteria 5 and 9(K) and would contradict our findings and conclusions that the Project, as proposed, would not comply with Criteria 5 or 9(K).<sup>4</sup> Accordingly, we will allow, during peak hours, a maximum number of tractor-trailer trucks that reflects the lower end of the hourly maximum stated by the Applicant.

With respect to the Applicant's request that restrictions apply to the hours of 8:00 to 9:00 a.m., 12:00 noon to 1:00 p.m., and 3:00 to 6:00 p.m., rather than the peak hours identified by the Board, the Board has re-

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<sup>3</sup>The 24 tractor-trailer trip figure referred to on page 34 of the original decision dated June 2, 1993 should have read between 25 and 39 tractor-trailer truck trips per hour on peak days. The 25 truck trip figure is derived from the Applicant's testimony that the maximum number of trucks on the highest shipment day will be 600. 600 divided by 24 hours in a day equals 25 trucks per hour on the highest day. However, the Applicant also testified that there could be as many as 39 truck trips per hour on certain days.

<sup>4</sup>In the motions to reconsider filed by the Applicant and WCRG, only the Board's conditions, and not any findings of fact or conclusions of law, were challenged.

reviewed the Applicant's traffic counts in Exhibit A-29 and AOT's traffic counts taken from its X011 counter on Route 5 near the Fairfield Plaza from January through December 1992 (Exhibit WCRG-12). In addition, the Board has taken official notice of AOT traffic counts taken from the same counter during the months of March, April, May, and June 1993. The previous traffic counts, as well as the more recent ones, clearly show that the traffic volumes increase beginning around 12:00 noon (although on some days the traffic between 11:00 a.m. and noon is quite high), and remains high until around 6:00 p.m. In fact, on some days, particularly on weekends but also on some weekdays, the traffic volumes during the hours between 1:00 and 3:00 are as high or almost as high as the highest traffic hours. Accordingly, the restrictions must apply to the hours between 12:00 noon and 6:00 p.m.

However, because the traffic counts indicate that the 8:00 to 9:00 a.m. hour traffic is considerably lower than the 12:00 noon to 6:00 p.m. traffic volumes, we will eliminate the morning hour restriction.

We also reject the concept of a maximum average number of trucks per hour. As explained above, this would defeat the Board's attempt to reduce the unreasonable congestion and unsafe conditions through restrictions on peak hour tractor-trailer truck traffic at the intersection of Routes 5, 9, and I-91 and on Putney Road.

With respect to the peak hour restriction, we note that the Applicant's testimony was that on average days, the maximum number of tractor-trailer trips will be 310. This is equivalent to approximately 13 tractor-trailer truck trips per hour. Thus the restriction during peak hours amounts to 11 truck trips more than the Applicant testified would be the average number.

The Applicant requests six days per year without any limitations on traffic. We understand from the testimony that on several days per year, particularly before holidays, there is a need for more food to be moved around by tractor-trailer. We are concerned, however, as are the other parties in this proceeding, that the peak days for the Applicant's tractor-trailer volume will coincide with the peak days for traffic volume on Putney Road. Therefore, a condition permitting a 15 percent increase in tractor-trailer traffic on six days each year will include a requirement that the Applicant notify the Town of

Brattleboro in sufficient time for the Town to institute appropriate mitigation of the additional traffic, such as hiring traffic control officers, as the Town deems necessary, and that the Applicant shall reimburse the Town for its expenses. In addition, in order to discover whether the number of days of exceedences exceeds six, the Board will require the Applicant to notify the District Commission, in writing, within ten days after each day that the restrictions are exceeded.

Conditions 38 and 39

The Applicant requests the Board to allow a maximum of 48 tractor-trailer trips per day on Route 9 west of Brattleboro, based upon an annual average. An annual average, however, would likely be impossible to monitor, and could result in an unacceptable number of trucks on some days. Therefore, we will limit the number of truck trips to and from the project on Route 9 to a maximum of 48 per day. We will also eliminate the requirement that the C&S identifying logo be put on the Applicant's tractor-trailers, and instead will agree with the parties' suggestion that surveys be taken of tractor-trailer drivers in order to determine actual numbers of tractor-trailers on Route 9. In order to provide accurate and useful information, the survey must be taken on the 12 highest days in the year of Project traffic as well as at least six randomly chosen days throughout the year.

The Town of Brattleboro and the Windham Regional Commission have offered to monitor traffic and conduct surveys, if their expenses are reimbursed by the Applicant. We have therefore left it up to the Town and the Windham Regional Commission to determine who will be responsible (they can do so jointly), and to submit a proposal to us for the monitoring and surveying.

Conditions 16 and 42 (air Pollution)

We have considered the Applicant's requests and the testimony of ANR'S air pollution experts, and have revised the conditions to clarify our requirements for air pollution monitoring. We continue to believe that in order to understand the air quality consequences of this Project, it is necessary to collect current background data on certain critical pollutants and then compare the level of pollutants after operations have commenced with the background levels.

III. ISSUES

1. Whether the proposed Project complies with Criterion 1 (air pollution).
2. Whether the proposed Project complies with Criterion 5 (traffic).
3. Whether the proposed Project complies with Criterion 9(K) (public investments).

IV. FINDINGS OF FACT

A. Project Description

1. L&S Associates is a real estate partnership owned by the principal shareholders of C&S Wholesale Grocers. L&S owns all of the C&S facilities in Brattleboro and leases the facilities to C&S.
  2. The Project consists of a 202,000 square foot warehouse building and related parking and site improvements. The building will house C&S Wholesale Grocers' produce, meat, and dairy storage and distribution operations. It will include office space, truck repair and maintenance facilities, and other support services.
  3. The Applicant's consultant on air pollution and traffic for this Project, as well as previous projects, has been Resource Systems Group (RSG).
  4. The Project will be located in the Southern Vermont Industrial Park on a 39.7 acre parcel owned by the Applicant. The total size of the industrial park is 71.4 acres. The Park is located off U.S. Route 5 (Putney Road) approximately 1.5 miles north of downtown Brattleboro.
  5. Goods will be shipped to and from the Project by diesel tractor trailers. The Applicant has its own fleet of trailers which will be used for deliveries to grocery stores from the proposed warehouse. These trailers will be pulled by diesel tractors operated by companies under contract to the Applicant. These are referred to as "contract carriers." Goods will be shipped to the new warehouse by tractor-trailers owned and operated by independent trucking firms, referred to as "common carriers." The Applicant estimates that approximately
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- 42 percent of all trucks using the Project will be common carriers.
- 6 . C&S's trailers are not identified on the trailers as belonging to C&S.
  - 7 . Grocery products will be shipped from the Project to customers throughout New England and New York state by contract carrier. Grocery products will be brought to the Project by common carrier. Contract carriers will also pick up goods from suppliers on their way back to the Project. Common carriers will often pick up loads from the Project.
  8. The Project will employ 360 people. The site will include a total of 274 parking spaces for C&S trailers, 70 parking spaces for common carrier tractor trailers, 170 parking spaces for contract carrier tractors, and 170 employee parking spaces.
  9. Common carriers will arrive at the Project around the clock. A common carrier parking lot is designated for those that arrive before their scheduled loading time to wait.
  10. The Applicant owns a 66-acre industrial site located on Old Ferry Road in Brattleboro, approximately one mile north of the site of the proposed new warehouse. The Old Ferry Road site contains an operating distribution center which contains seven buildings totalling 700,000 square feet. Included in the complex are warehouses that contain a freezer, dry goods storage building, and refrigerated space for meat and dairy products. Support facilities such as repair garages are located on the site. There are parking spaces for 1,235 vehicles.
  11. The Applicant initially applied for and received a permit to build its Old Ferry Road facility in 1980 (Land Use Permit #2W0472). Since the mid-1980s, the Applicant has undergone several expansions at its Old Ferry Road facility for which it received permit amendments. In 1991, the Applicant received an amendment authorizing the addition of 203 truck trailer parking spaces and 33 employee parking spaces and the addition of 209 employees at the Old Ferry Road facility. In early 1992, the Applicant received a permit amendment to add parking and other ancillary

facilities at the Old Ferry Road facility and to increase employees there to 1,000.

12. The Applicant owns another warehouse facility in White River Junction. If the new facility is constructed, the people working at the produce department at the White River Junction facility will be transferred to the new operation. The White River Junction warehouse will continue to be used for other kinds of product.
  13. The Applicant's business since 1991 has grown faster than the Applicant expected. Total sales of product in 1991 were approximately 114 percent of 1990 sales, and total sales of product in 1992 were approximately 152 percent of 1990 sales.
  14. In early 1992, the Applicant began supplying a major regional grocery chain, Purity Supreme. This customer accounted for about half of the 1992 increase. In the fall of 1992, the Applicant added two other regional chains as customers, Victory and Big Y. The addition of these customers accounts for the balance of the 1992 increase. The Applicant had anticipated the Purity Supreme business but had not expected the other customers. Most of the increased business has been served at the existing Old Ferry Road facility, while the produce warehouse in White River Junction and a warehouse in the Boston area have absorbed a small amount of the additional business.
  15. Since its business has expanded at the Old Ferry Road warehouse, the Applicant has hired 250 additional employees to work at that facility. These employees will be transferred to the new facility when it is constructed.
  16. The Applicant proposed to construct the new warehouse facility in order to accommodate the additional business that the Applicant anticipated. The Project will handle only produce, meat, dairy, and frozen food operations.
  17. It takes approximately three hours to load or unload a truck at the warehouse. Trucks are loaded and unloaded through large doors in the side of the building. The new project will have 48 loading doors.
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B. Criteria 5(traffic) and 9(K)(public investments)

18. The site of the Project is located on Technology Drive between U.S. Route 5 (Putney Road) and Interstate 91, approximately 800 feet west of the intersection of Technology Drive and Putney Road. Technology Drive is a two-lane, 28-foot wide paved Class 3 Town Highway located approximately seven-tenths of a mile south of Exit 3 of Interstate 91.
19. Putney Road is used both for commuting into Brattleboro from the north and for business, shopping, and recreation purposes. Many Dummerston residents regularly travel along Putney Road. AOT classifies this roadway a "minor arterial." In the vicinity of Technology Drive, Putney Road is a two lane highway with auxiliary turning lanes in some locations.
20. The Town of Dummerston town line is located approximately one and one-half miles north of Technology Drive *on* Putney Road, and four-tenths of a mile north of the existing C&S warehouse. Downtown Brattleboro is approximately one and one half miles south of Technology Drive.
21. In order to get to or from Exit 3 of I-91, vehicles must travel through the intersection of the I-91 access road with Putney Road and Route 9 (the Intersection). The Intersection is approximately seven-tenths of a mile north of Technology Drive. The road from the Interstate that continues across Putney Road becomes Route 9 east to New Hampshire.
22. Most of the trucks leaving the proposed Project will turn left from Technology Drive onto Putney Road to head north to the Intersection where they will either turn right onto Route 9 east to New Hampshire or left onto the Interstate access road at Exit 3. Little or no truck traffic from the Project will go through downtown Brattleboro.
23. Trucks leaving the existing warehouse facility on Old Ferry Road turn left from Old Ferry Road onto Putney Road and either turn left at the Intersection to New Hampshire or right at the Intersection to I-91. The majority of trucks go directly to I-91 at Exit 3.



24. Putney Road between Technology Drive and the Intersection contains a number of retail and service businesses. On the west side of Putney Road are located several retail businesses and shopping plazas, the Brattleboro Reformer, a bowling alley, and two gas stations. On the east side of Putney Road are located six or seven restaurants including **McDonalds** and **Dunkin Donuts**, a gas station, several motels, two lumber yards, a hardware store, a video store, and several miscellaneous businesses. There are a total of 13 unsignalized curb cuts along this section of road. The Route 5 strip is the most significant retail concentration in the Brattleboro region. Its mix of retail stores and businesses is attractive to shoppers.
  25. The Applicant represents that the new facility will function in the same manner as the existing Old Ferry Road facility, and that it is reasonable to use the traffic counts from Old Ferry Road to predict the truck and passenger vehicle traffic at the Project.
  26. There will be virtually no truck or passenger car trips between the proposed warehouse and the existing facility on Old Ferry Road. The new operation will be completely self-contained, including administrative offices, truck repair facilities, a fueling center, and tractor and trailer parking.
  27. The Project will have a maximum of 257 employees on site at any one time. According to the Applicant's formula of 3.05 passenger trips per day per employee, the employees at the new warehouse will generate 704 passenger vehicle trips per day. Based on the geographic distribution of current C&S employees, 72 percent of the passenger vehicle trips will use Route 5 north of Technology Drive and 28 percent will use Route 5 south of Technology Drive toward Brattleboro. Beyond the Intersection, 49 percent of total passenger vehicle traffic will use I-91, 21 percent use Route 9 east, and two percent use Route 5 north toward Dummerston and Putney.
  28. The Project will generate an average of approximately 310 one-way tractor-trailer truck trips per day, and a maximum of 600 tractor-trailer truck trips per day on the highest days. Based upon the Applicant's formula for estimating the number of common carriers, approximately 254 of the tractor-trailer truck trips on
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the highest days will be common carriers. The Project will operate 24 hours per day. Tractor-trailer truck trips will be spread fairly evenly throughout the 24 hours.

29. Despite the Applicant's representation that tractor-trailer truck trips will be spread fairly evenly throughout the 24-hour day, the Applicant expects up to 24 tractor-trailer truck trips during the afternoon peak hour on an average shipment day and up to 39 tractor-trailer truck trips during the afternoon peak hour on the highest shipment day of the year. That translates into one tractor-trailer truck every 2-1/2 minutes during the peak hour on average days, and one tractor-trailer truck every 1-1/2 minutes on the highest shipment day.
30. Although the Applicant stated that its main repair and maintenance operation is located at the Old Ferry Road facility and will be located at the new facility on Technology Drive, C&S trucks have used repair facilities in Westminster, Vermont; Vernon, Vermont; and Chesterfield, New Hampshire. Trucks driving to or from these repair facilities are in addition to the truck traffic reported by the Applicant. The Applicant is also operating a temporary trailer storage project on the north side of Old Ferry Road across from the permitted C&S facility.
31. Common carriers that arrive before their scheduled unloading times are supposed to wait in the parking lot. Sometimes these trucks hang out in other private parking lots in the area. For example, some common carrier drivers have used the parking lots of the Ames Department Store on Putney Road south of the Intersection and the Howard Johnson parking lot on the southeast corner of the Intersection.
32. The Applicant can regulate the activities of its contract carriers, including arrival and departure times. It can also regulate the hours that common carriers arrive by scheduling appointments. Common carriers usually arrive within an hour of their appointments.
33. The Applicant stated that as many as 800 contract carrier trips and an unknown number of common carrier tractor-trailer truck trips per day have been entering

and leaving the Old Ferry Road facility since the Applicant expanded its business. The land use permit for that facility limits contract carriers to 494 trips per day and common carriers to 224 trips per day, for a permitted total of 718 tractor-trailer truck trips per day.

34. A traffic count conducted by the Dummerston Planning Commission for 24 hours from November 30 to December 1 revealed 974 tractor-trailer truck trips leaving and entering the existing C&S warehouse. This number does not include tractors without trailers ("**bobtails**") and light and medium trucks. The number of bobtails counted on Putney Road over the 24-hour period **totalled** 45. The number of C&S generated light and medium duty truck trips on Putney Road over the 24-hour period **totalled** 66.
35. Another 24-hour traffic count conducted on December 14-15, 1992 by **WCRG's** traffic expert to determine the total number of tractors, trailers, and other trucks leaving and entering the Old Ferry Road site revealed a total of 1,137 tractor-trailers (50 of which left or entered the site between 5:00 and 6:00 p.m.); 65 other trucks; and 77 bobtails. This is in contrast to the maximum 718 tractor-trailer truck trips allowed in the permit for the Old Ferry Road facility.
36. In December 1991, the Applicant applied for an amendment authorizing the addition of 203 **tractor-trailer** parking spaces and 33 employee parking spaces and the addition of 209 employees at the Old Ferry Road facility. The District Commission accepted a mitigation program offered by the Applicant to eliminate 400 one-way commuter trips per day and the Applicant's promise not to increase any additional trips during the 4:00 to **5:30** p.m. period. The permit amendment requires that if the ride-sharing program offered by the Applicant did not succeed in achieving the goal of eliminating 400 trips by September 1, 1992, the Applicant must submit documentation of the elimination of 50 C&S generated trips during the 3:00 p.m. to **5:30** p.m. period, determined by the District Commission to be the peak traffic volume time.
37. The Applicant was not able to achieve its goal of reducing the number of one-way commuter trips by 400 through the creation of carpools. The Applicant

L & S A s s o c i a t e s  
Land Use Permit Application #2W0434-8-EB  
Revised Findings of Fact, Conclusions of Law,  
and Order

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claimed in a letter to April Hensel, District Coordinator, dated September 14, 1992 that it reduced the number of incoming and outgoing trips during the peak hour from 717 on December 6, 1991 to 655 on July 9, 1992. However, since July 1992, 250 employees have been added at the Old Ferry Road project. Based upon the Applicant's formula, the number of daily employee passenger trips has increased by approximately 540 over the past year.

The Level of Service (LOS) is a standardized grading system that reflect the levels of delay resulting from congestion at signalized intersections. LOS A is excellent (no delay), B is 5-15 seconds delay, C is 15-

39. LOS

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41.

LOS

42.

or downwards based upon patterns obtained from a continuous counter.

43. RSG has determined that the LOS during the design hour is currently D at the Intersection for five separate movements (east bound to north bound, east bound through, west bound to south bound, north bound to west bound, and south bound to east bound), and RSG expects it to remain at D with or without construction of the proposed Project. This is because RSG believes there is now excess capacity at the Intersection because the total traffic volume which could be accommodated while achieving LOS D ranges from 3200 to 3300 vehicles per hour. **Two** other movements will have LOS E, and one movement will have LOS F.
  44. The LOS for unsignalized intersections at some side streets off Putney Road is currently at E and will remain at E with or without the proposed Project.
  45. Traffic volumes at the Intersection during the afternoon peak hour in previous years have ranged between 2,100 and 2,800 vehicles, and traffic volumes during the morning peak hour have ranged between 1,700 and 2,000 vehicles. A traffic count done by WCRG on December 18, 1992, found 3,207 vehicles passing through the Intersection between 4:30 and 5:30 p.m. This represents an increase of more than 14 percent over the traffic volumes used by the Applicant to calculate current and future levels of service. This volume of traffic will reach the level which RSG has determined will cause a decline from LOS D to LOS E at the Intersection.
  46. RSG revised its design hourly volume based on traffic counts at the Intersection from 4:00 to 5:00 p.m. on December 23, 1992, and relied on this volume for its newly calculated 30th highest hour, although the peak hour on that date was between 2:00 and 3:00 p.m. The 30th highest hour as calculated by RSG may not reflect the 30th highest hour in 1992, since according to VAOT data, December was the ninth lowest traffic volume month of 1992.
  47. In making its traffic projections, the Applicant used traffic counts from 1990 and 1991 and applied a growth factor of less than one percent per year. In contrast, VAOT data from its continuous counters show a 5.1 percent increase from November 1991 to November 1992 on Putney Road, with an average daily traffic volume of 17,567. It may be that the lower traffic volumes in
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L & S Associates

Land Use Permit Application #2W0434-8-EB  
Revised Findings of Fact, Conclusions of Law,  
and Order

Page 22

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1990 and 1991 were the result of a depressed economy, and that the increased traffic reflects the improvement in the economy in 1992.

48. RSG presented lower design hourly volumes and lower traffic volumes for the 1996 p.m. peak period at the Intersection in connection with this application than it presented to the District Commission in connection with amendment application proceedings in 1991 and early 1992 for the Old Perry Road project. For instance, RSG's earlier projection for the traffic volume northbound on Putney Road was 1,250 vehicles, compared with its projection submitted with this application of 977 vehicles for the same place. The lower volumes were based on the use of older traffic data and a low growth factor.
49. The level of service calculations performed by RSG were based upon its low projections of traffic growth. Calculations based upon the updated traffic counts could show lower levels of service.
50. Had RSG relied on recent traffic data and a more realistic growth factor, the projected traffic volumes would have been higher than the volumes it projected in 1990 since both C&S and the total number of vehicles at the Intersection have grown since then.
51. Exhibit #WCRG-12 is a copy of 24-hour traffic counts from AOT's X011 continuous counter located near the Fairfield Plaza on Putney Road, from January through December 1992. The Board takes official notice of traffic counts from the same counter for the months March, April, May, and June 1993. Based upon these data as well as traffic counts provided by the Applicant, the peak hour traffic congestion occurs during the period from 4:30 to 5:30 p.m. However, on most days traffic volumes markedly increase between 11:00 a.m. and 12:00 noon, and continue to be high until they drop off around 6:00 p.m. On many days, the traffic volume during other afternoon hours is almost as high as the peak hour. The existing traffic creates congestion at the Intersection and on Putney Road on many days during the afternoon.
52. The Applicant defines the "peak" days (days of highest traffic) as those that fall just before Thanksgiving, Christmas, and other holidays.

53. In order to improve traffic flow from the unsignalized curb cuts, the Applicant plans to pay for installation of a traffic light at the intersection of Technology Drive and Putney Road, and to coordinate the traffic signals along the Putney Road corridor to cause vehicles to move in organized "platoons" with large gaps in between. The Applicant believes this will improve opportunities for vehicles to enter Putney Road at the unsignalized curb cuts.
54. The Applicant believes that the **"platoon"** effect will be accomplished by the coordination of the timing at the existing traffic signals from the Fairfield Plaza through Black Mountain Road. The timing of the signals will be set so that they turn green progressively along the corridor, thereby allowing a group of vehicles to move through the corridor without stopping. The signals will be coordinated in both directions.
55. Because of the large number of curb cuts along the affected section of Putney Road, the intended progression of vehicles can easily break down. Vehicles that turn onto Putney Road and trucks entering Putney Road from Technology Drive can destroy the platoon effect. Platooning generally works well on one-way streets, and can be effective on two-way streets if side street spacings are optimal, if there is minimal traffic entering the main roadway from the side streets, and if there is no interference between side streets. On this section of Putney Road, drivers attempting to leave driveways between intersections will have a difficult time turning left, because they will need to find simultaneous gaps in both northbound and southbound traffic. The Applicant's traffic signal retiming plan does not create such simultaneous gaps.
56. In 1987, AOT listed the Intersection as a **"high accident"** location. AOT's 1990 and 1991 reports also list this Intersection as a **"high accident"** location. In November 1989 AOT retimed the traffic signals at the Intersection to eliminate conflicting turning movements. Since the retiming, accident rates have been below the so-called "critical rate." The **"critical rate"** is an accident rate equal to double the average accident rate for similar intersections throughout the state.
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57. From January 1990 to March 1, 1992, there were 39 reported accidents on Putney Road between Technology Drive and the Intersection. Approximately 38 percent of these accidents were rear end collisions. Approximately 28 percent were caused by failure to yield right of way. A large number of these accidents involved vehicles entering or leaving locations such as Pizza Hut or the bowling alley and getting hit by a through vehicle.
58. A major cause of accidents along this section of Putney Road appears to be the high number of unsignalized side streets and driveways and the inconsistent lane patterns, which lead to erratic driving and excessive lane shifting. With the addition of the tractor-trailer trucks from this Project, the difficulty in safely making left turns from unsignalized side streets and driveways will be increased during the hours of high traffic volume, thereby increasing the likelihood of accidents.
59. A tractor-trailer truck at an intersection has the impact of as many as five passenger cars with respect to the amount of time it takes to get through the intersection from a standing start. If 19 trucks leave the Project during the peak hour, the equivalent could be up to 100 passenger cars in terms of congestion at the Intersection.
60. Automobile drivers are often reluctant to follow trucks because of the exhaust fumes, limited visibility, and operating characteristics. In these circumstances, automobile drivers will often take unsafe risks to get ahead of a truck or to prevent a truck from pulling in ahead of them. Tractor-trailers also reduce visibility for passenger car drivers.
61. An overly congested shopping district tends to drive customers and businesses away, as people avoid the unpleasantness and risks involved with sharing the road with large trucks.
62. Because of congestion at the Intersection, vehicles attempting to exit the Interstate on the eastbound exit ramp at Exit 3 often back up onto the Interstate during the afternoon peak hour. The Applicant plans to remedy this by adding extra green light time to eastbound traffic at the Intersection. One result, however, will



be that the delay for the other movements through the Intersection will increase.

63. The Applicant proposes to reconfigure the intersection by creating a wider turning path for vehicles entering Technology Drive from Putney Road southbound.
  64. The Brattleboro Planning Commission conditioned its site plan approval of the Project on the Applicant's implementation of the following, as described in Exhibit #A14-D.
    - a. Make a fair contribution towards **construction** of sidewalks along both Technology Drive and Putney Road.
    - b. Cooperate with, and make a fair contribution towards, the construction of a side connector road between Technology Drive and either **Chickering** Drive or Black Mountain Road if and when such a road is proposed for construction.
    - c. Provide a designated area as a bus stop, and provide a shelter.
    - d. Provide a designated parking area for bicycles, including a storage rack.
    - e. Encourage alternative non-motorized modes of transportation.
  65. The Brattleboro Planning Commission has planned improvements to Putney Road which will increase the public's enjoyment of the area and attract more business for the merchants of the area. Their plans call for the addition of bicycle lanes and pedestrian walkways to encourage shoppers and beautify the area.
  66. Relatively few pedestrians or bicyclists use the Putney Road corridor in the area of the proposed Project. The design of a highway strip commercial area is not conducive to use by pedestrians and bicycles. The higher traffic volumes and large number of curb cuts and turning vehicles create unsafe conditions for those modes of transportation. Nonetheless, some bicyclists do use Putney Road.
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67. The Applicant proposes to organize its employee shift schedules at the proposed warehouse so that no shifts will start or finish during the period from 3:00 to 5:30 in the afternoon. The Applicant does not operate with traditional shifts; shifts are related to the work that is to be performed and when it is completed, the employees leave.
68. Over the past few years AOT has been aware that Putney Road and the Intersection were suffering increasing congestion which required a solution. AOT is particularly concerned about the traffic backing up onto the Interstate at Exit 3.
69. Because of its concern about the congestion on Putney Road, in the last few years AOT evaluated the feasibility of adding an exit to Interstate 91 to serve the Technology Drive Industrial Park or constructing a connector road from the Project site to Exit 3 which would run parallel and close to the Interstate. There is little likelihood that a new exit could be built. A connector road is technically possible but problematic for a number of reasons, including that a cemetery and perhaps wetlands are located in the path of any connector road, and that the process for condemning the private property that would have to be taken would likely take years.
70. AOT is committed to making significant improvements to the Putney Road corridor and the Intersection. Planning solutions to the congestion problems have begun cooperatively between AOT, the Town of Brattleboro, and the Windham Regional Commission. The first step in the process is a Project Scoping Report which will propose three conceptual corridor improvement plans that will be presented to the public sometime after completion in February 1994. Once the community agrees on the best solution, the following work must be undertaken before the solutions can be implemented: relating the solution to a comprehensive solution for the total highway network; obtaining financing for the planning segment, the permitting segment, and construction portion of the work; obtaining all required permits; negotiating right-of-way purchases and, if necessary, pursuing condemnation of land; and construction of the improvements. It would be difficult, although possible, for improvements to be made within the next five years.

71. Route 9 is a state highway that begins in Brattleboro and continues west across the state through Bennington. It is an arterial route that connects the Connecticut and Hudson River Valleys, and is the only direct **east-west** route in the southern part of the state. The Applicant uses that route fairly heavily and uses it from all their facilities. The Applicant did not include any information on Route 9 as a public investment affected by this Project or on any public investments on Route 9 potentially affected by this Project.
72. **It** is not clear how many tractor-trailer trucks using existing C&S facilities drive on Route 9 west of Brattleboro or how many tractor-trailer trucks associated with the Project will use that road. A memorandum to the Applicant from RSG, dated March 2, 1992 (Exhibit 24 in the District Commission proceeding), states that C&S tractor-trailer trucks and common carriers servicing the Applicant currently comprise 19 trips on Route 9 east of Wilmington, and that the Applicant did not anticipate any additional trucks on that road as the result of the proposed Project. This number came from a survey of C&S drivers that the Applicant did in mid- to late-1991. The survey only asked the drivers what route they had taken that particular day, not what route they used generally. The Applicant's business has doubled since mid-to-late 1991, on an annualized basis, and the Applicant has obtained significant new accounts since that time.
73. At the hearing on March 4, the Applicant stated that the average number of C&S truck trips on Route 9 is 120 per day, based upon checking its records for one day in February 1993. The 120 trip figure does not include any common carriers. The Applicant does not know how many common carriers use Route 9 to get to, or return from, its facilities. The Applicant assumes that the truck trips on Route 9 are evenly distributed over 24 hours but has not verified this.
74. When the Applicant initially discussed its proposal with the **Windham** Regional Commission, the **Applicant** presented information that the total daily average of C&S contract **carrier** trucks that will use Route 9 west will be 18, and the total daily average of common carriers from C&S that will use Route 9 west will be
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one. As a result, the Windham Regional Commission was not concerned about truck traffic on Route 9 west, and it did not determine if there were any public investments on Route 9 or, if so, what the impacts of the Project would be.

75. The Applicant requests a limit of 48 tractor-trailer truck trips per day from this Project on Route 9 west of Brattleboro on an annual average. Surveys will be taken to determine the number of tractor-trailer trucks that use this route.
76. The Windham Regional Commission is concerned about growing traffic problems on Route 9, particularly in the villages of Wilmington and West Brattleboro.
77. The Academy School, a public elementary school, is located on Route 9 in the Village of West Brattleboro, as is the West Brattleboro Fire Station. The Marlboro Elementary School is also located on Route 9.

C. Criterion 1 (air pollution)

General

78. The total number of parking spaces at the proposed Project will be 684. The parking lot will contain 274 parking spaces for C&S trailers and 70 parking spaces for common carrier tractor-trailers. Some of the common carriers parked at the warehouse awaiting unloading will idle their truck motors to operate amenities in the truck cab and to keep diesel fuel from jelling in cold weather.
79. The trailers operated by the Applicant and common carriers will be equipped with diesel-powered refrigeration units, known as "reefers." The reefers are powered by diesel engines mounted on the trailers. Some of the reefer units will run while the trailers are parked at the Project, either to cool the trailer in preparation for loading or to keep the contents cool. Approximately 80 reefers will be operating on the site during any given period. Reefers and trucks may be idling 24 hours a day.
80. The reefers will produce exhaust emissions and noise, both at the Project and on the highway. The reefers

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(CFCs)

(NOx),

particulate the fine

NOx,

one-  
hour maximum average of 35 ppm.

The Applicant was required to obtain an air pollution control permit from ANR for the expansion of parking at its Old Ferry Road project. In conjunction with its permit application, the Applicant conducted an air quality impact analysis to document existing CO concentrations near the Intersection. The analysis was based upon traffic counts conducted in June 1990 and December 1991.

The Applicant's air quality study documented existing CO concentrations at the Intersection of 10.8 ppm for a one hour average, and 8.6 parts per million for an eight-hour average. ANR reviewed the Applicant's analysis and performed remodeling to verify the results. Based on its

ppm for the one-hour average and

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eight-hour average. ANR believes the higher range is

#AP-92-001 to the  
facility.

87. Two types of monitoring air quality are generally employed. The reference, or continuous, method, is used for the verification of air quality models. The procedures are prescribed by the federal government in the Federal Register. Continuous monitoring occurs at one selected site. The instrumentation consists of continuous recording equipment that needs to be housed in an environmentally controlled trailer. Continuous monitoring is conducted for a long period of time in order to develop trends.
88. The saturation method is a short-term air monitoring program that measures the amount of certain air pollutants over a given geographical area. A number of small portable monitoring instruments are used which can be attached to telephone poles. Saturation monitoring is used for CO and PM10 but is not used for NOx. It is not controlled by federal regulations and there is more room for error than with continuous monitoring.
89. Saturation monitoring is labor intensive. Continuous monitoring requires more expensive equipment but minimal labor.
90. Air Pollution Control Permit #AP-92-001 contains conditions. These include a requirement for a saturation ambient air monitoring study for particulate matter (PM10) and CO at the Intersection. The Permit states that should the results of the monitoring study indicate exceedences of the one-hour or eight-hour CO standard, the Applicant is required to submit a report to ANR on methods it will employ to reduce the concentrations of CO at the Intersection.
91. Air Pollution Control Permit PAP-92-001 required the Applicant to perform a saturation ambient air monitoring study for PM10 and CO at the Intersection for 30 days beginning November 25, 1992. The Applicant

did not begin the monitoring until December 15, 1992. In early December 1992 the Applicant's attorney was notified by Richard **Valentinetti**, Director of the Air Pollution Control Division, that the Division would not accept the results of the study proposed by the Applicant as fulfillment of the permit condition. The purpose of requiring monitoring during the time period specified is that **NOx** emissions are expected to be the highest during that time.

92. The Applicant performed saturation ambient air monitoring at the Intersection from December 15, 1992 to January 15, 1993. Although the Air Pollution Control Permit requires submission of the results of the monitoring within 90 days of its completion, the results were not submitted to the APCD until July 15, 1993.
  93. The Applicant failed to comply with the air monitoring requirements of the APCP in four ways: 1) Monitoring was not done during the time period required by the air permit; 2) the monitoring methods did not receive prior approval from the APCD as required by the permit; 3) the monitoring study did not follow necessary quality assurance protocols and acceptable monitoring procedures; and 4) a study was not filed within 90 days of the completion of the monitoring as required by the permit. A detailed analysis of the deficiencies in the monitoring conducted by the Applicant is contained in memoranda from the APCD (Exhibit R-ANR-3).
  94. Despite several warnings from the APCD beginning in early November 1992 that the Applicant's air consultants had not satisfied monitoring protocol or the quality assurance plan, that the equipment for an acceptable saturation study was not available, and that the APCD would not accept the Applicant's data, the Applicant's expert witness testified to the Board on January 28, 1993 that although the monitoring data collected in December and January had not been finally accepted by the APCD, the data was reliable because "[t]hese results have been validated by the use of calibration equipment approved by the agency, by protocol approved by the agency."
  95. The only component of diesel emissions considered by the State air permit is carbon monoxide. The computer model used by the Applicant on which its air pollution
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analysis was based predicts only the concentration of CO. The model assumed a decrease in levels of CO due to better emission controls on newer vehicles, improvements to the highway to facilitate movement of vehicles and reduce congestion, and organization of workers' shifts at the Old Ferry Road project to ensure arrival and departure at off-peak traffic periods of the day.

96. There are no state or federal air pollution permit requirements applicable to the operation of diesel truck tractors or reefers. There are no applicable standards for evaluating the effect of truck diesel exhaust in a parking lot.
97. While federal standards have been adopted and apply to the diesel exhaust pollution from newly manufactured diesel tractor engines, no federal or state standards apply to the emissions generated by diesel reefer engines.
98. Because the Project will be located in an area of traffic congestion, and will have trucks idling in the parking lots, RSG performed computer modeling to determine if the Project will cause any violations of state or federal air quality standards. No violations were projected by RSG's modeling.
99. The Applicant has no control over the age, maintenance, or diesel emissions produced by the common carrier tractors, which comprise approximately 42 percent of the tractors and reefers using the proposed Project.
100. New idling diesel trucks emit approximately 5.4 grams of particulates per hour, while older engines emit considerably more. An average is approximately 11.8 grams per hour.

Oxides of Nitroaen

101. Diesel motors produce NOx in greater concentrations than gasoline-powered automobiles. NOx consists of three difference compounds: nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and nitrogen trioxide (NO<sub>3</sub>).
102. NOx in high concentrations irritates the lung and makes it more susceptible to respiratory infections. NOx



creates acid haze and acid rain and contribute to the formation of ozone.

103. The United States Environmental Protection Agency (E.P.A.) regulates **NOx** emissions from diesel trucks. Currently, new diesel trucks can emit no more than 5.0 gm/bhp-hr. In 1998 this limitation will be reduced to 4.0 gm/bhp-hr. The Applicant's contract haulers have a new fleet of truck tractors which meet current and future standards.
  104. The only ambient air quality standard in Vermont for **NOx** is an annual average concentration of 100 micrograms per cubic meters (**ug/m3**) or 53 ppb for **NO<sub>2</sub>**. There is a federal annual long-term standard for **NO<sub>2</sub>** but no federal short-term standard. The Vermont standard is the same as the federal standard. However, under Vermont law only stationary sources are required to show compliance with the standard. There is no stationary source associated with this Project which is subject to this standard.
  105. The State of Vermont has two **NOx** monitoring stations, one in downtown Burlington and one in downtown **Rutland**. These locations were chosen because of their relatively high populations. In Burlington the annual average concentration of **NO<sub>2</sub>** is approximately 35 micrograms per cubic meter and in **Rutland** 28 micrograms per cubic meter, both well below the 100 **ug/m3** annual average long-term standard.
  106. Trucks emit substantially more **NOx** than automobiles on a one-to-one basis. There has been no study of the mass loading in the Brattleboro area in terms of the increase of **NOx** because of truck traffic.
  107. The District Commission requested that RSG test **NO<sub>2</sub>** levels at the Applicant's facility on Old Ferry Road to confirm that elevated **NOx** levels were not resulting from operating reefers and idling trucks and tractors. On June 17, 1992, RSG took readings from 7:35 - 8:40 a.m. at the boundary of the existing Old Ferry Road site using the **Thermo** Environmental Instruments Model 42 Chemiluminescence **NO-NO<sub>2</sub>-NOx** Analyzer. The instrument was calibrated to **E.P.A.** specifications by CAE, Inc. prior to field set-up. Ambient temperature at the time of the readings was 19 degrees Celsius,
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within the E.P.A. reference standard of 15 to 35 degrees.

108. RSG's testing showed that at site 1, the C&S parking lot at the Old Ferry Road entrance, the average total NO<sub>2</sub> was 9.2 ppb. At site 2, downwind from the Applicant's common carrier truck parking lot, the average total NO<sub>2</sub> was 9.2 ppb. The Vermont and federal annual standard for NO<sub>2</sub> is 53 ppb. The one-hour monitoring at the Applicant's facility cannot provide a sufficient sample size to estimate annual average NO<sub>2</sub> concentrations, but simply provides information on NO<sub>2</sub> levels.
109. No air pollution monitoring for NO<sub>x</sub> or NO<sub>2</sub> levels was done for the Technology Drive site. Nonetheless, since the proposed project is approximately one-half the size of the Old Ferry Road facility, it is reasonable to conclude that the amount of NO<sub>x</sub> and NO<sub>2</sub> generated by diesel exhaust from the Project will likely be below the federal and state standards.
110. The APCD has required the Applicant to perform air monitoring in conformance with the air permit condition beginning in late November 1993. A NO<sub>x</sub> study could probably be done at the same time.

#### Diesel Particulates

111. Particulates are small particles of pollution that are visible when highly concentrated. Diesel soot is between .1 and .5 microns in size. This particle size, when inhaled, penetrates to the deepest part of the human lung and is cleared only with difficulty. This particle size remains airborne indefinitely and does not settle to the ground. It is washed from the ambient air only by rain or snow. As a consequence, diesel soot is being breathed all the time in areas where it is emitted or to which it is blown. Smaller particle sizes are worse from a health standpoint than larger particles.
112. Two categories of particulates are regulated by the U.S. E.P.A. and the State of Vermont: Total Suspended Particulates (TSP) and Total Respirable Particulates (PM<sub>10</sub>). The TSP standards apply to all particulates; the PM<sub>10</sub> standard applies to particulate matter with a diameter less than 10 microns. Both standards

generally apply only to stationary sources and limit both the increase in particulate concentrations from the stationary source and the overall concentration of particulates.

113. RSG modeled particulate emissions generated by diesel trucks at the proposed site using the E.P.A.'s PARTD and ISCST computer model. The model predicted that the Project will meet the TSP and PM10 ambient air quality standards.
  114. As with NOX, the E.P.A. particulate regulations for trucks will become significantly more stringent in the next few years. At this time, trucks are required to meet a 0.25 gram per brake horsepower-hour standard which will be reduced to 0.10 by 1994. Part of this reduction will be achieved by a reduction in the sulphur content of diesel fuel from 0.25 percent to 0.05 percent by weight by 1995.
  115. As discussed above with respect to NOX, the Applicant's contract carriers have replaced their trucks with a new tractor fleet. The new tractors are equipped to meet the federal air pollution standards which will apply to diesel trucks in 1994, both for NOX and for particulates.
  116. Approximately 42 percent of the tractor-trailer truck traffic at the Project will be common carrier tractor-trailer trucks which are not under the Applicant's control. These vehicles will not all meet the 1994 emission standards. The Applicant estimates, however, that by 1994 or 1998 these vehicles will be replaced with truck tractor models which meet the 1994 particulate emission standards.
  117. The Applicant estimates that the maximum annual concentration of diesel exhaust from the Project will be approximately 2.6 micrograms per cubic meter. Although the E.P.A. has no standards for diesel engine exhaust, after reviewing data on the long-term toxicity of diesel exhaust it has concluded that a level of exposure that is safe and free of side effects is 5 micrograms per cubic meter.
  118. Monitoring of particulates at the Intersection by the Applicant showed a maximum 24-hour concentration of 72 micrograms per cubic meter. The federal and Vermont
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state standards for PM10 on a 24-hour basis are 150 micrograms per cubic meter.

119. The World Health Organization is affiliated with the United Nations. It recommends guidelines to set standards to protect public health and was referred to by both the Applicant's and WCRG's expert witnesses as authoritative. Its recommended standards for PM10 on a 24-hour basis is 70 micrograms per cubic meter.
120. The Applicant estimates that the proposed Project will add 35 micrograms per cubic meter of PM10 to the ambient air. The background particulate level has been found to be 72 micrograms per cubic meter. Adding the two together equals a projected level of 107 micrograms per cubic meter after the proposed Project is built. This exceeds the World Health Organization's standard, but is below State and federal standards.

#### Health Risk Assessments

121. All of the state and federal standards discussed above for carbon monoxide, oxides of nitrogen, toxic air pollutants, and particulates are designed to protect the health of the public, including sensitive individuals.
122. Mobile sources are exempt from the State's Air Pollution Regulations. Nevertheless, the Applicant has predicted that the level of emissions generated from the maximum number of diesel engines operating at the Project will meet these standards. RSG calculated the total amount of each toxic pollutant found in diesel exhaust and predicted that emissions of phenanthrene, pyrene, benzo-a-pyrene, formaldehyde, acetaldehyde and acrolein during the highest eight hour period will be well below the State's action levels. The "action level" is the threshold amount of emissions which require an applicant to conduct further study to determine if concentrations are hazardous.
123. Because of the potential health risk from diesel exhaust, RSG evaluated the effect of various pollutants contained in diesel exhaust in three ways. First, RSG predicted the air concentration or amount of each pollutant produced from running diesels at the proposed warehouse and compared this result to state air quality standards applicable to stationary sources such as

diesel generating stations. Second, RSG evaluated the increased risk of cancer for *an* individual exposed to aldehydes and to the "marker" carcinogenic diesel exhaust pollutant benzo-a-pyrene at the maximum calculated concentration for a period of 70 years. Third, RSG compared the exposure of harmful pollutants from the Project's diesels to other common sources of pollution.

124. Benzo-a-pyrene is one of a group of compounds produced from a combustion process known as polycyclic aromatic hydrocarbons (PAH). Benzo-a-pyrene is considered a marker for PAR. That is, exposure levels and health risks PAH generally coincide with exposure levels and health risks of benzo-a-pyrene. As discussed above, benzo-a-pyrene levels are below State action levels.
  125. Carbon monoxide causes acute health problems such as dizziness, headaches and even death in severe cases. The State Department of Health has a warning level standard of 35 ppm for indoor hockey rinks (if the CO level exceeds this concentration at any time, the rink will be evacuated). CO concentrations of 50 ppm in a 1.5 hour period and 30 ppm for a 4 hour period raise levels of carboxyhemoglobin in the blood, leading to adverse health effects.
  126. RSG modeled the worst case air concentrations of **benzo-a-pyrene** and aldehydes which will result from the operation of trucks and refrigerated trailers at the proposed site. RSG used a model approved for use by both the State of Vermont and the E.P.A. The model predicts the highest annual average concentration on or near the Project site. RSG then applied a health risk analysis technique used by the State of California to predict the cancer risk.
  127. The benzo-a-pyrene model predicted that the risk of cancer for the highest exposed individual, assuming one lifetime of exposure at the worst case building receptor, will be one in more than 15 million. The formaldehyde and acetaldehyde model predicted that the risk of cancer for the highest exposed individual, assuming one lifetime of exposure at the worst case building receptor, will be one in 1.8 million. The E.P.A. and most other regulatory agencies consider a risk of less than one in one million to be below an
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action level. These risks are for a person located at the worst-case site for an entire lifetime.

128. A comparison of the amount of total particulates and PAH produced by the diesel motors operating at the Project with other sources in the Town of Brattleboro indicates the following:
- a. The diesel motors operating at the Project could produce 523 grams of total particulates per hour and .0006 grams per hour will consist of PAH.
  - b. By contrast, all industrial sources in the town currently produce 8300 grams per hour of total particulates.
  - c. All woodstoves in the Brattleboro area produce an estimated 24,000 grams per hour of total particulates and 3 grams per hour of PAH, based on the assumption that 25 percent of Brattleboro households burn wood. If it is assumed that 8.7 percent of households burn wood as primary heat, as indicated in the 1980 census, woodstoves in Brattleboro produce approximately 8,000 grams per hour of total particulates and one gram per hour of PAH.
129. The burning of fossil fuels and wood produces pollutants similar to diesel exhaust. Particle sizes created by fossil fuels and wood burning are larger than those of diesel. In some areas of the country, wood burning is either prohibited outright or prohibited during inversion events.
130. The federal standards for diesel engines have been in effect since the early 1980s. The standards cover particulates, oxides of nitrogen, carbon monoxide, and hydrocarbons. Standards for diesel exhaust emissions have been tightened because of the potential for adverse health effects. including the potential to cause cancer.
131. A Colorado Department of Health study of the human health impacts of diesel exhaust concluded that diesel exhaust particulates are of great concern for their effects on human health. Because many of the compounds adsorbed onto the diesel particulate's carbon core have

been proven to be mutagenic and carcinogenic, there is great concern about increasing the incidence of lung cancer, as well as increased aggravation of symptoms in patients with chronic obstructive pulmonary disease.

132. The E.P.A. has developed ambient air quality standards for certain pollutants, including carbon monoxide, oxides of nitrogen, sulfur dioxide, and particulate matter. The allowable ambient concentrations are set at concentrations intended to protect public health, including sensitive individuals.
133. The Vermont air **toxics** regulations were also developed with the purpose of protecting the health of people living and working near sources of air contaminants.
134. Neither the E.P.A. nor the State of Vermont has established a cancer risk factor for whole diesel exhaust or for **particulates** from diesel exhaust.
135. The E.P.A. has not established a "unit risk factor" (the risk of contracting cancer when exposed to a specific pollutant concentration) for whole diesel exhaust. It is currently reviewing the information on diesel exhaust to establish a unit risk factor.
136. RSG conducted a cancer risk assessment for diesel pollutants from the Project, based on the two chemicals present in diesel engine exhaust which are known or suspected carcinogens and for which the E.P.A. has adopted a unit risk factor: formaldehyde and benzo-a-pyrene. RSG predicted that the cancer risks from those two compounds will be one in about two million for formaldehyde and one in fifteen million for benzo-a-pyrene.

Environmental Factors

137. Meteorology plays a significant role in affecting dispersal of pollutants. The Applicant's proposed warehouse is located in a river valley surrounded by high hills and ridges. Air inversions, which present a "lid" or "cap" to the vertical mixing or dispersive ability of air and pollutants, occur in the **Brattleboro** area. During air inversions wind speeds are quite low, from tenths of a mile per hour to zero. The result is that whatever pollutants exist in the air stay relatively close to the ground rather than dispersing,
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and are therefore breathed in more concentrated amounts for longer periods of time than if there were wind to disperse the pollutants.

138. Air pollution modeling includes data of wind speed, wind direction, and temperature collected at surface meteorological stations by the National Weather Service (NWS). These stations are the only ones allowed by the U.S. E.P.A. for use in air pollution modeling. The closest NWS stations to Brattleboro are Burlington, Vermont; Albany, New York; Concord, New Hampshire; Lebanon, New Hampshire (closed in 1964); and Worcester, Massachusetts. ANR recommends the use of Concord weather data for refined air pollution modeling in Brattleboro. Other stations may also be used on a site specific basis only if they follow U.S. E.P.A.'s strict quality control guidelines.
139. The Applicant's modeling of the roadways used one mixing height (from Albany), stability class D (neutral atmosphere), and 1 meter per second wind speed for all conditions. This is considered by U.S. E.P.A. and ANR to be the worst case meteorological condition for an eight-hour period during a winter day and to be the appropriate assumptions to use in modeling. The Applicant's modeling of the parking areas used one full year of meteorological data from Concord (surface data) and Albany (upper air data). The surface data included hourly wind speed, wind direction, cloud cover, temperature, and ceiling height. The upper air data included twice daily mixing heights observations.
140. The assumptions that were used in the air pollution modeling performed by the Applicant were selected to yield a conservative, worst-case result.
141. The Applicant's air pollution computer model assumes a constant 2.2 miles per hour (one meter per second) wind, but cannot take into account the times when the wind speed is less than 2.2 miles per hour. During air inversions the wind speed is sometimes less than 2.2 miles per hour.
142. Modeling done using both Concord and Lebanon weather data predicted that the highest annual average concentrations of diesel particulate due to the Project at the closest Dummerston Town line will be at most 0.05 micrograms per cubic meter. This is below the 1



microgram per cubic meter that U.S. E.P.A. signifies as being a "significant" concentration.

143. The terrain at Lebanon and Concord is different from Brattleboro. This difference could affect the applicability of the modeling to Brattleboro. No data exists on the actual frequency of air inversions in the Brattleboro area.
144. Data on air inversions is available from the Vermont Yankee weather tower in Vernon. The Vermont Yankee site is representative of the Brattleboro area for the purpose of determining the frequency and duration of air inversions in the area. This information can be found by analyzing historic data from that tower.
145. Current data from the Vermont Yankee meteorological tower for the next period during which the Applicant monitors air quality can be obtained in order to analyze the relationship between air inversions and ambient air quality at the Intersection and the Project site.

#### Chlorofluorocarbons

146. Chlorofluorocarbons (**CFCs**) are a class of chemical compounds which contain chlorine or fluorine and which are gases at normal temperatures. **CFCs** are used in refrigeration systems because of their ability to transfer heat efficiently. The refrigeration units on the Applicant's trailers, as well as the common carrier trailers, use **CFCs**.
  147. Vermont's controls on **CFCs** in air conditioning apply to passenger automobiles, not trucks. Some refrigerated trucks use **CFCs** as a refrigerant.
  148. **ANR** has published a report on "**Ozone** Depleting Chemical Usage in the State of Vermont," dated January 1990. This report ranks certain chlorofluorocarbons in terms of their relative ozone depleting potential relative to CFC-11, a common refrigerant. As refrigerants, CFC-12 is almost equivalent to CFC-11 in terms of its ozone depleting potential. CFC-115 has approximately 40 percent and HCFC-22 has only five percent of **CFC-11's** ozone depleting potential. Refrigerant chemicals such as HFC-134a do not harm the ozone layer at all.
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49/51 is percent mixture of  
HCFC-22 and CFC-115. R-502 has an ozone depleting  
potential of 0.23 and a global warming potential of  
4.0.

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addition, a unit is checked for leaks when there is a problem with the unit.

154. During truck servicing, the Applicant uses refrigerant pump-down and reclamation equipment which minimizes refrigerant loss. The Applicant owns four Robinair model 17500B freon reclaimers. Whenever a refrigeration system is to be opened, it is connected to a reclaimer. Thus, when a refrigerant leak is detected, the refrigerant is reclaimed through the reclaimer, and then the unit is pumped down to evacuate any air left in the system. When the repairs are complete, the unit is recharged.

Additional Monitorins Data

155. WCRG's expert witness stated that in order to better assess the impact of the proposed Project on the air quality, the following information would be needed:
- a. A year's worth of monitoring data to determine ambient levels of particulates and oxides of nitrogen at the proposed warehouse site or the Intersection.
  - b. Diesel exhaust emission levels for tractors and reefers for all of The Applicant's activities in the Brattleboro area as demonstrated by testing of the ones actually used.
  - c. Information on the dispersion of particulates and oxides of nitrogen in the area, using a model that incorporates Brattleboro's unique topography and meteorology.
156. The APCD requires Quality Assurance Plans to be submitted for its review and approval prior to the commencement of any monitoring program. Performance audits then need to be performed to ensure the Quality Assurance Plan is being followed. The APCD would be willing to conduct the quality assurance and performance audits needed as part of the Applicant's monitoring program as required by this permit.

Dust

157. Dust will be controlled during construction as needed by the application of water or calcium chloride or both. Following construction, the use of permanent
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landscaping and appropriate materials such as concrete and asphalt pavement in the parking lots, together with regular sweeping, will adequately-control dust.

Noise

158. Construction is planned to occur 24 hours a day, seven days a week until the Project is completed. Noise will be controlled during construction through the use of factory-installed (or equivalent) mufflers on all motorized equipment. No blasting is anticipated. The Project is located in an industrial park, in an area of primarily commercial uses. There are no nearby residential areas which will be affected.
159. The Project will generate noise from automobile traffic, truck traffic, and refrigeration compressors located on truck trailers. Approximately 80 reefers will be operating on the site during any given period, 24 hours a day.
160. The noise level of the Project will be approximately 57 decibels (dBA) at the property line.
161. The Town of Brattleboro has adopted an ordinance which limits noise to no more than 70 dBA at the property line.
162. All trucks must meet noise standards promulgated by the federal government. Federal regulations require the manufacture of trucks that generate no more than 80 dBA at 50 feet when travelling from 0-35 mph. Federal regulations limits interstate carriers, which include the Applicant, to the generation of no more than 90 dBA at speeds over 35 mph at 50 feet when travelling under load. Since all of the trucks on contract to the Applicant have been purchased since 1992, they meet those standards.
163. The nearest residential area to the Project is south of the West River on U.S. Route 30. Noise transmissions in this direction will be minimized by the construction of an on-site noise fence and berm. The Applicant estimates, based upon modeling, that additional noise at the Hathaway residence, the closest residence to the Project, and at the DeCicco property adjoining the north boundary of the Project, caused by diesel

tractors and reefer units will be less than 2 dBA during the average and nighttime periods.

164. Any change in noise of less than 3 dBA is generally considered imperceptible.
165. In estimating noise from the Project, the Applicant assumed the construction of an earthen berm, as specified on the site plan; the construction of a 12-foot high solid wall between the main trailer parking area and the West River to reduce noise levels from the warehouse at the residences along the river by over 5 dBA; and the replacement of the louder Thermal King reefer units with quieter Carrier reefer units within five years, which the Applicant plans to do.

V. CONCLUSIONS OF LAW

A. Criterion 5(Traffic)

Criterion 5 of 10 V.S.A. § 6086(a) requires the Board to find that the Project will not cause unreasonable congestion or unsafe conditions with respect to the use of highways. The burden of proof is on any party opposing the Project. 10 V.S.A. § 6088(b). The burden of producing sufficient evidence on which the Board can make positive findings is on the Applicant. Re: Killinaton, Ltd. and International Paoer Realty Corn., #1R0584-EB-1, Findings of Fact, Conclusions of Law, and Order (Part III) at 20-21 (Sept. 21, 1990); Re: Pratt's Propane, #3R0486-EB, Findings of Fact and Conclusions of Law at 4-6 (Jan. 27, 1987). The Board may not deny a permit pursuant to Criterion 5, but may impose permit conditions to alleviate impacts created by a proposed Project. 10 V.S.A. § 6087(b).

The primary area of concern with respect to traffic congestion and safety is Putney Road from the area of the Project at Technology Drive to the Intersection of Putney Road/Route 9/I-91. This section of road contains many retail and service businesses, including several fast food restaurants. There are a total of 13 unsignalized curb cuts along this strip of Putney Road. The Intersection has been listed by the Vermont Agency of Transportation as a high accident location.

Putney Road is used both for commuting into Brattleboro from the north and for business, shopping, and recreation purposes. At certain times of the day, particularly between

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Land Use Permit Application #2W0434-8-EB  
Revised Findings of Fact, Conclusions of Law,  
and Order

Page 46

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12:00 noon and 6:00 p.m., traffic levels are high and there is congestion, particularly at the Intersection. Because of the high traffic volumes along Putney Road at certain times, vehicles have difficulty turning into and out of the many access driveways that service the businesses along that strip of highway. The Levels of Service for some side street intersections off Putney Road are currently at E. The Applicant estimates that they will remain at E with or without the proposed Project.

Vehicles attempting to exit Interstate 91 at Exit 3 are sometimes backed up onto the Interstate due to the congestion at the Intersection during the afternoon peak hour. This creates a dangerous condition on the Interstate. Based upon the Applicant's traffic counts, the Level of Service at the Intersection during the design hour is currently D for five separate movements, and the Applicant projects that it will remain at D with or without the proposed Project.

Most of the Applicant's traffic estimates and projections were based upon traffic counts taken in 1990 and 1991, to which the Applicant applied a growth factor of less than one percent per year. Traffic counts done in 1992 by WCRG and UPC, as well as by VAOT and the Applicant, demonstrate that there had been a 5.1 percent increase in traffic on Putney Road since November 1991.

Because of the increase in traffic on Putney Road that was not taken into account in the Applicant's traffic modeling, the Applicant's estimates of existing traffic are lower than is actually occurring, and it is likely that projections of future traffic are lower than will actually occur. Therefore, the Board cannot rely on the representations made by the Applicant concerning existing and future congestion on Putney Road, including the level of service figures.

The congestion on Putney Road is serious enough that the Vermont Agency of Transportation, along with the Town of Brattleboro and the Windham Regional Commission, are devoting substantial resources to trying to find a solution. Given the evidence of existing congestion on Putney Road, and the growth in traffic that is expected to occur, the Board believes that the Project as proposed will cause unreasonable congestion and unsafe conditions on Putney Road between Technology Drive and the Intersection,

L & S Associates  
Land Use Permit Application #2W0434-8-EB  
Revised Findings of Fact, Conclusions of Law,  
and Order

P a g e

as well as at the Intersection, during the hours of high traffic volumes.

The Applicant estimates that on peak days the Project will add between 25 and 39 tractor-trailer truck trips during the afternoon peak hour on the highest shipment days. This amounts to between one tractor-trailer truck every two and one-half minutes and one every one and one-half minutes on the highest shipment days. The Board believes that during times of existing congestion on Putney Road, the addition of these trucks will unreasonably exacerbate the congestion along Putney Road and at the Intersection. The vehicles turning in and out of the many businesses and numerous curb cuts along this stretch will experience an increase in truck traffic that will make it even more difficult to make the turns, thereby increasing the likelihood that drivers will take unsafe risks to get in and out of the businesses. Furthermore, the tractor-trailer trucks will obstruct the view of drivers of vehicles along Putney road and make it difficult for them to see the vehicles trying to turn into and out of the many side streets and driveways, thereby increasing the likelihood of accidents.

The Applicant has proposed improvements to Putney Road to decrease congestion and increase safety. These include installing a traffic signal at the intersection of Technology Drive and Putney Road; reconfiguring that intersection by creating a wider turning path for vehicles entering Technology Drive from Putney Road southbound; retiming and coordinating the timing of the traffic signals on Putney Road; and organizing its employees' shift schedules at the proposed warehouse so that no shifts will start or finish during the period from 3:00 to 5:30 p.m.

The Board is concerned that, except for the reconfiguration of the Technology Drive and Putney Road intersection, these improvements may not result in the intended reduction in congestion or increase in safety, for the following reasons. First, installation of a traffic signal at the intersection of Technology Drive and Putney Road could result in more rear-end collisions. Second, while the retiming of the traffic light at the Putney Road/Route 9/I-91 Intersection will add more green time for the Interstate 91 exit ramp to alleviate back-ups at Exit 3 during peak hours, it will also cause longer delays for the other movements at that intersection, thereby decreasing the level of service for other turning movements. Third,

evidence demonstrates that it is likely that the so-called "platoon" effect that the Applicant claims will result in gaps in the traffic to allow left turns into and out of the side streets and driveways on Putney Road may not work as intended. Fourth, congestion on Putney Road occurs throughout the afternoon, from approximately 12:00 noon to 6:00 p.m. It is not likely that the Applicant can organize its employee's shifts to avoid employee vehicles entering or leaving the Project during those hours. Moreover, the Applicant's statement that its employees do not work traditional shifts, but leave when their work is complete, indicates that it may be difficult to control the times that employees leave.

Furthermore, because the Applicant's projections of traffic volumes and levels of service at the various intersections along Putney Road are based upon outdated traffic figures, and traffic growth has steadily increased over the past year, it is likely that the congestion along the road and the deterioration of levels of service at the intersections will be greater than projected.

The Applicant argues that the additional traffic from the Project amounts to only two percent of the traffic on Putney Road, and is therefore an insignificant increase. The Board does not agree that this increase is insignificant, particularly since this figure includes as many as 39 additional tractor-trailer truck trips during peak traffic volume hours. In an area already experiencing congestion and unsafe conditions at certain hours, an increase of two percent or more can unreasonably increase the congestion and unacceptably exacerbate unsafe conditions. See Re: Shimon and Malka Shalit, #8B0334-3-EB, Findings of Fact, Conclusions of Law, and Order at 11-12 (Feb. 8, 1991). Moreover, the percentage increase in trucks is much greater than two percent. Given the existing driving conditions on Putney Road, the addition of between 25 and 39 tractor-trailer trucks trips during hours of high traffic volume will create unsafe conditions as drivers' ability to see vehicles turning into and out of the numerous side streets and driveways will be made more difficult by the existence of the trucks. Turning in and out of the side streets and driveways will also be more difficult with the addition of a substantial number of tractor-trailer trucks on this section of roadway during peak times. In In re Pilarim Partnership, 153 Vt. 594 (1990), the Supreme Court ruled that Criterion 5 does not require that a proposed development be the principal cause or original source of



traffic problems, and that several causes may contribute to a particular effect or result. Id. at 596. Furthermore, the Intersection has been classified as a high accident location and it is not reasonable to add a substantial number of trucks during peak hours to an intersection already experiencing a high number of accidents.

For the reasons stated above, the Board concludes that the Project will create unreasonable congestion and unsafe conditions along Putney Road. Since the Board cannot deny a permit under Criterion 5 even if a project will create unreasonable traffic congestion and unsafe conditions, but may impose conditions to alleviate the burdens created, the Board will include a condition in the permit that will limit the number of tractor-trailer trucks that may enter or leave the Project during the hours of higher traffic levels on Putney Road, 12:00 noon to 6:00 p.m. This will reduce the number of trucks from the Project that will be added to the road during the hours of highest traffic volumes, thereby decreasing the concerns about safety as well as congestion.

B. Criterion 9(K) [Public investments]

Criterion 9(K) of 10 V.S.A. § 6086(a) requires that before granting a permit, the Board must find that a project adjacent to public facilities, services, and lands,

including, but not limited to, highways, airports, waste disposal facilities, office and maintenance buildings, fire and police stations, universities, schools, hospitals, prisons, jails, electric generating and transmission facilities, oil and gas pipe lines, parks, hiking trails and forest and game lands, ... will not unnecessarily or unreasonably endanger the facility or quasi-public investment in the facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of or access to the facility, service, or lands.

Putney Road is a public facility within the meaning of Criterion 9(K). The Board believes that for the reasons stated above with respect to congestion and safety under Criterion 5, the Project will materially interfere with the function, efficiency, and safety of, and the public's use and enjoyment of, and access to, Putney Road. As described above, the increase in the tractor-trailer truck traffic

from the Project on Putney Road will materially interfere with the public's ability to use Putney Road during certain hours for commuting, shopping, eating, and recreation. The Board is also concerned that the addition of a substantial number of trucks will be in contradiction to the Town of **Brattleboro's** plans to increase the public's enjoyment of the area by adding bicycle lanes and pedestrian walkways to encourage shoppers and beautify the area. Thus the Board concludes that, as proposed, the Project will not comply with Criterion 9(K) with respect to Putney Road.

The Board believes, however, that with a permit condition that will limit the number of tractor-trailer trucks that may be added to the Intersection and to the stretch of Putney Road between the Intersection and Technology Drive during the hours of high traffic volumes, the concerns about the effect on Putney Road will be greatly reduced.

The Board also considers Route 9 west of Brattleboro as a public facility within the meaning of Criterion 9(K). Black's Law Dictionary defines "adjacent" as "**lying** near or close **to.**" The Board believes that the word "adjacent" is a relative term that must be considered in the context of the scale of a project. Given the magnitude of the truck traffic from this Project and the potential effect on the highway network, the Board believes that the impact of the **Project** on Route 9 west of Brattleboro must be considered under Criterion 9(K).

The information provided to the Board by the Applicant about the number of **C&S** generated trucks that currently use Route 9 west of Brattleboro and that will use that road if the Project is built was not definite. The Applicant told the WRC in 1992 that no more than 19 tractor-trailers from the Project would use Route 9 west of Brattleboro, but then testified that approximately 120 C&S trucks per day use that road, on average, and that it does not know how many common carriers delivering to or from C&S facilities use it. The Applicant also testified that the Project will result in 20 additional trucks using Route 9 west, but that those 20 trucks are already using this road. In the reconsideration hearing, the Applicant requested to be able to have as many as 48 one-way truck trips from the Project use this **road** segment per day, on an annual average.

The Applicant provided no information on the effect of the Project's trucks on Route 9 west and the public

facilities along it, such as the Marlboro School. The WRC testified that it is not concerned about an additional 20 trucks from this Project, or the total of 120 **C&S** truck trips per day, but that at some point the increase in traffic will have adverse impacts on the villages of West Brattleboro and Wilmington, as well as the Marlboro Elementary School.

Because the Applicant has presented inconsistent information on the number of tractor-trailer truck trips from the Project that will use Route 9 west of Brattleboro, the Board will impose a condition that limits the number of truck trips from the Project using that road Brattleboro to 48 per day, and will require by permit condition that monitoring and surveys be conducted in order to establish the number of tractor-trailer trucks from this Project that actually use that roadway. This limitation may be increased or decreased by the District Commission after one year, depending upon the findings of the survey and monitoring and information on the impact on the public facilities on Route 9.

Based upon the Applicant's representations and the permit conditions, the Board concludes that the Project complies with Criterion 9(K).

C. Criterion 1(Air)

Criterion 1 of 10 V.S.A. § 6086(a) requires the Board to find that the proposed warehouse Project will not result in undue air pollution. The Applicant has the burden of proving that the Project will not cause undue air pollution. 10 V.S.A. § 6088(a). The standard of proof is by a preponderance of the evidence. In re Muzzy 141 Vt. 463, 472-3 (1982). That is, the Applicant must prove that it is more likely than not that the Project will not cause undue air pollution.

The Applicant has requested that the Board consider the air pollution control permit issued to the existing C&S project on Old Ferry Road as a rebuttable presumption that the proposed Project complies with Criterion 1(air), pursuant to Environmental Board Rule 19. which states in pertinent part:

(E) Permits creating presumptions. In the event a subdivision or development is also subject to standards of or requires one or more permits from

another state agency, such permits or certifications of compliance or letter that no permit is necessary, when entered in the record pursuant to Rule 17(B), will create the following presumptions:

. . .

(2) That no undue air pollution will result:

(a) Air pollution control permit - Agency of Natural Resources, under 10 V.S.A. Chapter 23 and regulations promulgated thereunder.

Rule 19 authorizes submission of a permit for a project as a rebuttable presumption for that Project, not for another project. Thus the Board cannot accept the air pollution control permit for the existing C&S project as a rebuttable presumption of compliance with Criterion 1(air) for the proposed Project.

A great deal of evidence on the potential health effects of diesel emissions from the trucks and idling refrigeration units was presented to the Board. There is little or no disagreement among the parties that diesel soot emissions have adverse health effects at some level of exposure. The parties did not agree on what that level is. The Applicant cited studies and federal and state standards to demonstrate that the level of emissions to be generated by this Project are well below any level of concern. WCRG and DPC cited studies and the guidelines of the World Health Organization to demonstrate that there is cause for concern about potential adverse health effects from the diesel emissions from this Project. They believe that too little is known about background ambient air levels to be confident that the additional pollutants from this Project will not create air pollution that is undue.

Based upon the evidence and conditions imposed by both the District Commission and the Board, the Board concludes that it is more likely than not that the Project will not cause undue air pollution. It is clear that it will produce some air pollution, since diesel emissions contain pollutants and there will be diesel emissions from the additional trucks on the highway and the idling trucks and operating refrigerated units parked at the Project. The Board believes, however, that the air pollution from the Project will not be undue. Although there are no applicable

permit requirements for mobile sources of emissions (the trucks and refrigerated units involved in the Project), the Applicant conducted evaluations to determine whether the diesel emissions at the Project site will comply with state and federal standards applicable to stationary sources. These standards establish ambient air concentration levels for various time periods which, if met, will protect against adverse health effects both for the general population and for unusually sensitive individuals.

The Applicant predicts that the level of pollutants from the diesel trucks will violate no state or federal standards for the various constituents of diesel exhaust, including carbon monoxide, oxides of nitrogen, **benzo-a-pyrene**, formaldehyde, and particulates. The Applicant's estimates for various pollutant levels were largely based on air pollution modeling. Many of the assumptions made were for potential "**worst case**," so that even if some of the assumptions were in error, it is likely that there will be no violations of standards.

The Applicant also performed cancer health risk assessments of aldehydes and benzo-a-pyrene. The results predict that the increased risk of cancer for each of these two emissions, given a lifetime of exposure at the **worst-case** location, will be less than one in a million.

The Applicant's contract carriers have recently purchased a new fleet of trucks that meet the latest E.P.A. standards. With the stricter standards on diesel exhaust emissions imposed by the E.P.A. going into effect over the next few years, the common carrier trucks will also be replaced with improved engines. The ambient air in the vicinity of the Project should therefore improve, as long as the number of additional vehicles is not so great that it counteracts the effect of stricter emission controls.

Although we are persuaded by a preponderance of the evidence that the Project will not cause undue air pollution, evidence of potential adverse health effects from diesel emissions raises concerns about the effect of additional diesel trucks both on the highway and idling at the Project. We agree with **WCRG** and UPC that there are deficiencies in the knowledge of existing background levels of **co**, **NOx**, and particulates in the vicinity of the Project. Information about the frequency of air inversions in the Brattleboro area was lacking, and the only available information about air quality in the vicinity of the Project

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during air inversions was based upon models of questionable applicability. We also question the necessity of the long idling time for the refrigeration units in the parking lot.

We believe that further air monitoring will provide better information on background levels of CO, NOx, and particulates. Such information will be important when evaluating the effect on air quality of the additional trucks and refrigerated units from the Project. To ensure that undue air pollution will not occur, we will also require air quality monitoring after the Project operations have commenced.

Accordingly, we will leave in place the conditions in the District Commission's permit that require further monitoring of certain constituents of diesel exhaust. Similarly, we will leave in place conditions that require the submission of annual reports regarding the phasing out of the use of CFCs, and the development of an operational plan to reduce truck idling.

We will also leave in place the District Commission's condition that retains Commission jurisdiction over air pollution to ensure compliance with permit conditions and representations made in the application, and to evaluate additional air pollution information required by the Commission's permit and this amendment, as well as to modify permit conditions if necessary to ensure that no undue air pollution occurs. In addition, we will require the District Commission to convene a hearing approximately one year after operation of the Project has commenced in order to evaluate the results of the monitoring and the recommendations of the APCD concerning the need for further permit conditions.


The Board also concludes that the Project will not create undue air pollution with respect to dust and noise. This conclusion is based upon the Applicant's representation that dust will be controlled and that noise from the Project at the property line will not exceed 57 dBA. The condition in the District Commission's permit to require confirmation of the decibel levels after the Project is fully operational will remain in place.

VI. ORDER

Land Use Permit Amendment #2W0434-8-EB is hereby issued. Jurisdiction is returned to the District #2 Environmental Commission.

Dated at Montpelier, Vermont this 22nd day of September, 1993.

ENVIRONMENTAL BOARD

  
Elizabeth Courtney, Chair  
Ferdinand Bongartz  
Terry Ehrich  
Lixi Fortna  
Arthur Gibb  
Samuel Lloyd  
William Martinez  
Steve E. Wright

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c:\wp51\decision\c&s2.dec (v)

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C E R T I F I C A T E     O F     S E R V I C E

I hereby certify that I, Stephanie J. Kaplan, General Counsel, Environmental Board, sent a copy of the foregoing Revised Land Use Permit Amendment and Findings of Fact, Conclusions of Law and Order to Parties, regarding L&S Associates, #2W0434-8-EB, Motion to Clarify and Alter by U.S. Mail, postage prepaid, on this 22nd day of September, 1993, to the following:

L&S Associates by  
William Schroeder, Esq.  
Downs, Rachlin & Martin  
Courthouse Plaza  
P.O. Box 190  
Burlington, VT 05402

Brattleboro Planning  
Commission  
c/o Ted Brovitz  
230 Main Street  
Brattleboro, VT 05301

Town of Brattleboro by  
Thomas W. Costello, Esq.  
11 Putney Road  
P.O. Box 483  
Brattleboro, VT 05302

Windham Regional Commission  
c/o James Matteau  
139 Main St. Suite 505  
Brattleboro, VT 05301

Dummerston Board of  
Selectmen  
C/o William Ash  
RR 2, Box 995  
Putney, VT 05346

Dummerston Planning  
Commission  
c/o Ahren Ahrenholz  
Town of Dummerston  
RR 2, Box 995  
Putney, VT 05346

Agency of Natural Resources  
c/o Kurt Janson, Esq.  
Rep., State Agencies  
103 S. Main, 3 Center  
Waterbury, VT 05671-0301

Coalition of C&S  
Employees by  
Lawrin P. Crispe, Esq.  
Crispe & Crispe  
P.O. Box 556  
Brattleboro, VT 05302-0556

Windham Citizens for  
Responsible Growth by  
Gerald R. Tarrant, Esq.  
Tarrant and Marks  
P.O. Box 1440  
Montpelier, VT 05601-1440

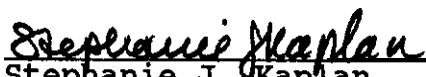
VT Agency of Transportation  
c/o Scott Whitted, Esq.  
133 State Street  
Montpelier, VT 05633-5001

FOR INFORMATION ONLY

C&S Wholesale Grocers, Inc.  
c/o Joel R. Cherington  
P.O. Box 821  
Brattleboro, VT 05302

Guilford Town Planning Comm.  
c/o Tom Hannan  
RFD 3, Box 332  
Brattleboro, VT 05301

April Hensel  
District X2 Coordinator  
RR #1, Box 33  
N. Springfield, VT 05150

  
Stephanie J. Kaplan  
General Counsel  
c:\wp51\cs\2W0434-8.cs (v)