

Ski Corridor Technical Committee

Chronology of Meetings, Agreements and Consultant Findings Pursuant to Criterion 5 (Transportation)

June 4, 1997

Region wide corridor transportation planning meeting at Okemo Mountain Resort. Rutland Regional Planning Commission takes the lead on coordinating with the stake-holders to address corridor planning in the Route 103/Route 100/Route 4 corridors.

June 25, 1997

Co-operative agreement between Killington, Ltd. and Okemo Mountain, Inc. to participate in a planning process with the Vermont Agency of Transportation, with the three Regional Planning Commissions and the appropriate towns to develop acceptable traffic management and mitigation plans. The management plan will be designed to achieve acceptable levels of service for present and future winter design hour traffic volumes attributable to Killington and Okemo

December 21, 1998

Memorandum of Agreement between Killington, Ltd, Southern Windsor County Regional planning Commission, Two Rivers-Ottawaquechee Regional Commission and Rutland Regional Planning Commission, in connection with Application #1R0835(Killington Master Plan – Phase I); Killington, Ltd.is requesting affirmative findings from the District Environmental Commission on Criteria 5 and 9K

The agreement is an acknowledgement by the parties that impacts of traffic generated at any point may cross municipal, regional, and District Commission boundaries, and represents a willingness by all parties to work cooperatively to avoid, minimize, and mitigate impacts where detrimental. It is the intent of this Agreement to lay a foundation for the management of resort-related traffic that will result in a smoothly functioning, efficiently maintained transportation infrastructure that serves the needs of its users and protects the interests and character of Vermont communities and resort visitors.

The process is named the Ski Country Traffic Management Plan, or TMP. The goal of the TMP is to define a benchmark, or threshold level of traffic congestion and volume, and to outline what steps will be taken by the participants to mitigate the effects of traffic beyond that amount. When ongoing traffic monitoring programs, or traffic projections from individual Act 250 applications (including Master Plan applications) indicate that a threshold has been or will be exceeded, mitigation strategies will be chosen and implemented. Monitoring will continue and if the mitigation strategies do not achieve the desired results, additional strategies will be implemented until resort-related traffic is at or below the threshold. Actual mitigation techniques will not necessarily be prescribed when mitigation triggers are identified, but may be designed and applied in response to the condition that exist when triggers are reached.

November 8, 1999

Request for Proposal for engineering research and analysis to seek additional ways to measure traffic and determine what an acceptable threshold should be for determining undue congestion. The scope of work includes:

- Research existing data sources
- Review resort/RPC MOAs and Act 250 permits
- Gather Local Input

- Research and summarize available methods of assessing traffic congestion
- Develop and demonstrate proposed threshold methodology
- Specify Format/Summary of Monitoring
- Provide List and Description of Mitigation Techniques
- Produce draft report and present to MOA parties
- Produce Final report

June 14, 2000

Public presentation of the TMP elements at the Ludlow town hall conference room

- Introductions and project genesis
- Summary of process and review of previous planning efforts
- Review of existing methods for assessing traffic congestion
- Presentation of alternatives for assessing congestion in study area
- Presentation of alternatives for thresholds
- Discussion/Reaction
- Next Steps

July 10, 2000

Summary of technical meeting with the Traffic Management Plan partners

- Wilbur Smith Associates presented information about the use of the CORSIM model to accomplish the objectives of the Ski Country Traffic Management Plan.

August 30, 2000

Ski Corridors TMP Technical Committee meeting at the National Life Building in Montpelier

- Discussion of potential applicability of Vermont Statewide Model
- Demonstration of prototype modeling methods
- Presentation and discussion of possible approaches for setting and adjusting thresholds
- Presentation and preliminary discussion of mitigation techniques

August 30, 2000

WSA meeting with Act 250 District Coordinators

- Meeting to determine if there are issues that might make implementation of alternative congestion measures more difficult, and to develop a sense of the degree to which the tentatively recommended measures and thresholds might be embraced.

August 30, 2000

WSA identification of Traffic Mitigation Strategies for the Ski Corridor

- Roadway Mitigation Strategies
- Intelligent Transportation Systems Strategies
- Travel Demand Management Strategies

August 30, 2000

Wilbur Smith Associates (WSA) Task 4 Report, National Publication Search; Research and Summarize Available Methods of Assessing Traffic Congestion. One finding is that traditional Level of Service (LOS) measures are not acceptable for quantifying congestion. It does not take into account travel times and “crush capacities.” The report concludes congestion measures used today have four components:

- Duration- the amount of time congestion affects the travel system
- Extent- the number of people, vehicles, and or geographic area affected by congestion
- Intensity-severity of congestion
- Reliability- how predictable is the congestion

Perhaps the most applicable measurement for the ski corridor is Total Delay. Once a corridor is selected, a standard amount of travel time to travel the distance of the corridor is established. This can be either based on non-congested conditions (such as an existing medium volume ski weekend.) When travel time is re-measured along the corridor during the peak analysis period, the resultant measure is the difference in travel time between acceptable and congested conditions. Congestion reflects an increase in travel time or delay beyond that acceptable to travelers. In other words:

- Congestion is travel time or delay in excess of that normally incurred under light or free-flow travel conditions.
- Unacceptable congestion is travel time or delay in excess of an agreed-upon norm, The agreed-upon norm may vary by type of transportation facility, travel mode, geographic location, and time of day.

The perception of congestion can vary by the perceiver. The local communities and their perception of congestion and its effect on their lives are to be taken into consideration along with the perception of the long distance commuter.

Communities may establish the thresholds of where congestion begins but should realize that these may understate or overstate the congestion level which motorists perceive. This is very important in the Ski corridor case since the setting of congestion thresholds affects not only the measures, but also the mitigation requirements.

October 26, 2000

(WSA) Phase I report. The Southern Windsor County Regional Planning Commission, the Rutland Regional Planning Commission, and the Two Rivers-Ottawaquechee Regional Commission working in Partnership with the Vermont Agency of Transportation and two major ski areas, have developed a new analytical tool for assessing the impact of development-related traffic growth in regionally-significant highway corridors.

For years bodies responsible for development review have relied on traffic engineering measures such as Level of Service for evaluation. Planners around the country have begun to search for appropriate alternatives.

Research suggests that traditional Level of Service measures, in and of themselves, are not acceptable for quantifying congestion in resort oriented settings at local intersections and more particularly the long corridor segments. Examples of point to point travel times using the intersection and segment change in per vehicle travel times were compiled and presented to the Technical Committee. The Committee agreed that the technique fulfilled the requirements of the study and requested that the technique be developed to a full-scale area-wide system for application.

The new alternative measure is best described as a measure of the average time it would take for vehicle to travel the length of a given corridor during peak traffic conditions. Existing travel times are to be measured in the field and used as a baseline. Future travel time are to be estimated with an electronic spreadsheet using as inputs project-related traffic growth and outputs from widely available traffic analysis software.

The goal is to development mitigation measures in response to the delays projected as a result of development traffic. Traffic mitigation programs implemented in urban areas have incorporated a broad range of strategies, such as limitation on parking supply, carpool programs and ride-matching, flex-time and compressed work week, and travel allowances and subsidies to encourage transit use. However, many of these strategies would

not be appropriate in a rural, resort area. The strategies deemed most likely to be effective in the Ski Corridor study area include Travel Demand Management Services, and guaranteed Ride Home Program. Several resort areas, including Killington, Okemo and Mount Snow, have utilized the local transit system to offer visitors and employees an alternative to travel by private car. These services have been extremely successful in gaining ridership over the last five years. The transit strategy is highly desirable in that it alleviates congestion on the Mountain Road and also increases the access to the resorts younger, non-driving employees and local visitors.

July 23, 2002

The Technical Committee had concerns relative to the product that was delivered by Wilbur Smith Associates in connection with the first contract with them. It was the consensus of the group that the model development/calibration has not been tested enough to determine its usefulness and that its viability should be given a chance with further development, calibration and testing. To this end it was decided that the Phase 2A work as outlined in the proposal from WSA dated May 23, 2002, would be the only part of the proposal that we would proceed with.

August 27, 2002

Joe Segale reviewed the conceptual framework for the travel time measurement model. The committee agreed that the conceptual basis for the travel time model, and the measurement of travel time, are acceptable. The committee is concerned about the ability of the model to reasonably represent the actual travel times measured.

The Phase 2A scope of work includes populating the spreadsheet with intersection turning movement and delay data, revising the spreadsheet to show change in travel time between scenarios, testing the model in six corridors, refining and calibrating the model, and developing a data collection plan. The Phase 2A work is scheduled to be complete by September 30, 2002. WSA will also include step-by-step instructions on updating and running the model. The committee will decide whether or not to pursue Phase 2B, Evaluation of Land Use Scenarios, and Phase 2C, Public Policy Discussion, after the Phase 2A is complete.

March 31, 2003

WSA Phase II-A Model refinement and calibration phase. Travel time runs, contract with CME Creighton Manning Engineering, LLP. Extensive travel time surveys and intersection counts to determine baseline volumes to populate and calibrate the model. Surveys conducted on design day winter conditions in February and March through the corridors identified in the Master Plan traffic study corridor for the Killington Master Plan Application 1R0835.

January 31, 2005

WSA Phase II-B findings, final deliverable

Jackson Gore Phase II case study tested the model's sensitivity to a development project and possible mitigation strategies.

Summary:

Mitigation Measure Sensitivity Analysis Findings:

- The model is sensitive to all mitigation measures tested and demonstrates that some strategies are more effective than others at addressing travel time increases.
- The model could be a useful tool in developing a corridor-wide approach to mitigation a project's impact.
- The model can be used to test the effectiveness of roadway segment improvements which are not typically considered in traditional traffic impact studies.

Action Threshold Recommendations:

- The action threshold for a specific project and study corridor should range between 0-10 percent. It should be selected in cooperation with the developer, regional planning commissions, and Vtrans.
- The action threshold should not be applied as absolute measure of failure. It should be applied as a screening tool that helps to identify and quantify an impact of a proposed development. Selection of the mitigation measures should consider their impacts to the surrounding area and costs.

Model Management Recommendations:

- All RPC's should have access to the model. However, only one RPC should be assigned the lead responsibility of maintaining the latest master copy of the model and logging all revision from one version to the next. The lead RPC would be responsible for updating the input data, periodic validation, and pursuing enhancements to the model.
- To facilitate the interaction between the RPC's , a ski corridors working group should be established that meets at least once a year to review the status of the model, updates, procedures for sharing the model, and lessons learned from application of the model.
- The model should be validated every 2-3 years. To validate the model, it is necessary to conduct travel time runs and collect traffic counts at the same time.

Act 250 Process Recommendations:

- A cooperative process should be followed when the Ski Corridor travel Time Model is utilized in the Act 250 process. The RPC's, VTrans, and developer should meet before analyses begin to agree on assumptions including the corridors to be studied and action thresholds.
- The developer, through a traffic engineering consultant, should provide all necessary traffic volumes and intersection delay estimates for all scenarios. The RPC's should run the Ski Corridor Travel Time Model using the data, report on the results, and work wit VTrans and the developers to select appropriate mitigation measures.