



## State Support of Freight Villages as an Economic Development Strategy

Prepared for  
Division of Transportation Investment Management

Prepared by  
CTC & Associates LLC  
WisDOT Research & Library Unit

June 4, 2007

*Transportation Literature Searches are prepared for WisDOT staff and investigators to identify completed research and other authoritative information in an area of interest. The citations below are representative, rather than exhaustive, of available English-language studies on the topic. Primary online resources for the literature searches are OCLC's [WorldCat](#) and [TLCat](#), U.S. DOT's [TRIS Online](#), the National Transportation Library ([NTL](#)), TRB's Research in Progress ([RiP](#)) database, and other academic, engineering and scientific databases as appropriate.*

*To request a literature search, contact the WisDOT Library at [library@dot.state.wi.us](mailto:library@dot.state.wi.us) or (608) 264-8142, or WisDOT Research at [research@dot.state.wi.us](mailto:research@dot.state.wi.us) or (608) 261-8198.*

**Topic/Problem Statement:** Document the Feasibility, Costs and Benefits of State Support of Freight Villages as an Economic Development Strategy for Wisconsin.

**Keywords:** freight village.

**Library of Congress Descriptors/Transportation Research Thesaurus Terms:** appraisals, case studies, decision making, economic analysis, economic models, evaluation, financial analysis, freight service, freight terminals, freight traffic, freight villages, government funding, infrastructure, input output models, intermodal facilities, intermodal terminals, intermodal transportation, investments, location, methodology, Monte Carlo method, nodes (networks), private enterprise, public private partnerships, return on investment, Trans-European Network for Intermodal Transport, uncertainty.

### Summary

We located three relevant articles published in TRB's *Transportation Research Record*, and in the journals *Transport Policy* and *Transportation*.

### Citations

*Links to online copies of cited literature are provided when available. Contact the WisDOT Library to obtain hard copies of citations.*

**Title:** Multicriteria Approach to the Evaluation of Intermodal Freight Villages

**Author(s):** Seraphim Kapros, Konstantinos Panou and Dimitrios Tsamboulas

**Date:** 2005

**Source/URL:** *Transportation Research Record: Journal of the Transportation Research Board*, No. 1906, Transportation Research Board of the National Academies, Washington, D.C.: 56-63.

**Description:** 63 pp.

**Contents:** This project developed an integrated methodological process for evaluating the expected effects of freight villages, considering their viability and stakeholder priorities. Because the criteria differ, multicriteria analysis (MCA) is proposed as the most appropriate method. The proposed methodology identifies the set of decision

criteria, defines the most appropriate indicators, and uses a set of objective measures, where possible. The definition of stakeholder categories and decision criteria sets may provide added value to the proposed process. As a tool, the process provides the appropriate platform for planning freight villages, which are infrastructure investments of public and private funds. The proposed methodology can be a useful decision-making tool for various actors. First, it offers public authorities an overall sense of freight village usefulness, justifying or not the investment of public funds. Further, the methodology offers potential private investors an integrated framework for combining the private economic reasoning with the public good logic, to strengthen their eventual participation in an investment scheme with private and public funds.

**Title: Freight Village Evaluation Under Uncertainty with Public and Private Financing**

**Author(s):** Dimitrios Tsamboulas and Seraphim Kapros

**Date:** 2003

**Source/URL:** *Transport Policy*; Vol. 10, No. 2; April 2003: 141-156(16). The article is appended to this literature search.

**Description:** 15 pp.

**Contents:** The introduction of public/private partnerships for the construction and operation of transportation infrastructure has created the need for a specific methodology and corresponding model for assessing the financial viability of intermodal terminals known as freight villages. The financial evaluation model developed in this paper can be integrated in a wider methodology for planning and evaluating investments in new freight villages when a mix of public and private funds exists. Four stages are distinguished: (a) site selection and traffic forecasts; (b) definition of services offered and corresponding dimensions; (c) estimation of investment and operation costs; and (d) evaluation of investments. The model is developed specifically for the financial evaluation of investments for a freight village incorporating uncertainty considerations in the values of the variables considered. The financial evaluation method identifies the variables which determine the cash flow of inputs and outputs related to the construction and operation of a freight village. Furthermore, the model produces financing scenarios, based on combinations of public funds, private funds and bank loans. In addition to using Monte Carlo simulation, the expected values of some key variables (investment costs, forecasted volumes and revenues) are estimated. Ultimately, using linear programming, an optimization related to the amount of private funds invested for a specific freight village is determined related to a mix of public and private funds under certain constraints. The model is applied to the case of a new freight village in northern Greece. Results from this application show that the model is easy to apply. The scenario optimization process of the methodology proves that a fully private investment is not viable, while a public/private partnership exhibits a high internal rate of return.

**Title: Appraisal of Investments in European Nodal Centres for Goods -- Freight Villages: A Comparative Analysis**

**Author(s):** D. Tsamboulas and I. Dimitropoulos

**Date:** 1999

**Source/URL:** *Transportation*; Vol. 26, No. 4; 1999: pp. 381-398(18). The article is appended to this literature search.

**Description:** 18 pp.

**Contents:** The paper presents and analyzes appraisal methods used for the assessment of potential investments in nodal centers for goods (also called freight villages), which constitute an essential element of the Trans-European Network for Intermodal Transport. A methodological procedure is applied to identify the underlying factors that influence the choice of an appraisal method, without assessing or comparing the appraisal methods themselves. Following this procedure, issues addressed by the methods are grouped into three broad dimensions, and with the use of non-parametric statistical tests, existing relationships are identified between nodal centers' characteristics, the appraisal methods and the actors involved in the decision process. On applying the above procedure to European nodal centers for goods, it is found that the choice of appraisal method and the decision criteria for the investment are linked primarily to the nodal center's size, catchment area and the support or absence of political approval for the investment. The results of the analysis can be particularly useful at the policy making level, serving as non-formal "qualitative guidelines" to identify the appraisal method to be applied, as well as the options and impacts to be considered.