

Appalachian Transportation Institute (ATI) Research Project Description

Project Number: ATI TRP 99-17

Project Title: Magnetic Levitation Planning for West Virginia

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Project Objective: This project will review the various applications of magnetic-levitation around the US and the nation and assess its' applicability as a potential mode of transportation in the state of West Virginia.

Abstract: The Federal Railroad Administration will be finalizing the location of a large scale magnetic levitation demonstration project in either PA or MD over the next few months. This work will review the status and specific details of the planned USDOT magnetic levitation demonstration including an assessment of magnetic levitation scientific and engineering requirements relevant to a potential N-S and E-W routes in WV and in the region. The project will also address the definition of the knowledge base that will be needed to directly support and assist the state of WV in consideration for this as a new transportation mode. The project will also perform a preliminary assessment of the potential economic benefit and or feasibility for magnetic levitation to enhance the transportation system in the state of WV.

Task Descriptions:

1. Gather all available literature on technologies relevant to maglev systems and the literature on maglev design concepts, particularly the Transrapid system and its requirements and components (this system/technology has already been identified by the PA and MD Projects as the technology which they will use for construction of the US maglev demo system).

2. Develop a detailed understanding of the US commercial demonstration project and monitor its progress. Accomplishing this task and sharing the resulting information with the State of WV will provide the State with essential technical and conceptual information for our state's Transportation planners and decision makers: the WV State Government: the Governor, the WV Delegation to the Federal Government, the State Legislature, WVDOT, and other units.

3. Assess the maglev business and economic development opportunities to the industrial and business community in WV: existing industries which may have opportunity to participate as a supplier of parts, components, materials and services to the US demo project and in the future, to the construction and deployment of maglev guide-way systems in WV.

4. Propose potential routes for magnetic levitation in WV.

Milestones, Dates, Schedule: Start Date: Jan 1, 2001, End Date: Dec 31, 2001

Budget: \$50,000.

Student Involvement: The project will provide employment support for at least 1 undergraduate and 1 graduate student. The student workers will support the Principal Investigator as project assistants. This project is not anticipated to lead to a student thesis directly.

Relationship to Other Research Projects: None at this time.

Technology Transfer Activities: Final reports will be available on the ATI website. All, ATI Principal Investigators will present findings through the ATI Transportation Seminar Series to invited guests from WVDOT, USDOT, other ATI Principal Investigators, students and other invited guests. Other opportunities to present the project results will be explored including conferences and peer reviewed journals, etc.

Potential Benefits of this Project:

1. Develop information and serve as a monitor for WVU, Marshall and WV of world and US progress in maglev and share this information with the State of WV.

2. Assist faculty and students with understanding magnetic levitation and its application to transportation systems and

3. Assist faculty and students with understanding in the wide range of technologies needed in the design and construction of commercial maglev transportation systems.

4. Introduce and assist WV in becoming more aware of and better prepared for the introduction of this new mode of transportation into WV's future transportation system.

TRB Keywords: maglev transportation, maglev, Transrapid International, high speed ground based transportation systems.