

# IT TAKES MORE THAN TECHNOLOGY TO DEPLOY MAGLEV — IT TAKES A STRATEGY AND A COALITION

## No. 42 US Maglev Coalition

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### ABSTRACT:

Maglev is a safe, fast, quiet, and efficient way to travel. Billions have been spent on development and China has deployed a system in Shanghai. Studies have confirmed the utility and need and now it is time to promote the construction of a revenue producing system in the US. The US Maglev Coalition is working to insure the next transportation bill has funds for such a system.

### I. INTRODUCTION:

#### *1.1 Background*

The stage is finally set for the deployment of Maglev in the US. Maglev is a safe, fast, quiet and efficient way to travel. In Shanghai, the world's first commercial maglev line makes its 19-mile trip from Pudong International Airport to the city's financial district in less than eight minutes, hitting a top speed of nearly 270 miles per hour. Recently the Chinese government announced their intention to begin construction of the extension to the city of Hangzhou, over 100 miles from Shanghai.

The U.S., Germany, Japan and China are estimated to have spent billions of dollars in the past 20 years investigating the potential of maglev. A U.S. maglev network will provide significant environmental advantages, mitigating highway congestion and in short-haul air routes, while offering a new, fast, quiet, safe and energy-efficient transportation option for intercity travel and connections to airports and seaports. Deploying maglev will stimulate our economy by creating new jobs and high-tech manufacturing opportunities.

#### *1.2 The Case for Maglev Concerning Congestion*

The case for Maglev is compelling. Our country is faced with gridlock on the ground and winglock in the air and in the last few years the cost of fuel has risen dramatically.

Look at the statistics. The gridlock is a result of the demand for travel which has been growing at a rate that is four times the growth in population. Americans are trapped in congestion for a total of 3.7 billion hours a year and waste 2.3 billion gallons of gas. According to the US DOT, the total cost of travel and commercial immobility is over \$200 billion annually. More recent analyses predict that the population will grow even more than projected due to immigration with the concomitant growth in auto travel.

Moving people is just part of the story; we also have to consider freight movement. Commercial vehicle miles traveled for freight is increasing at a rate faster than household miles. From 1993 to 2002, the value of goods moved by truck increased from \$4.7 trillion to \$6.7 trillion and truck-ton miles grew by 56 percent. If we can't efficiently move people or freight our economy is paralyzed.

That is the picture of growth from the macro level. To bring this down to a more local level, I can give you statistics from the Baltimore-Washington Maglev project which I represent. The Baltimore Washington Corridor is the fourth largest consolidated market in the United States. The two Municipal Planning Organizations responsible for the region projected 50 percent growth in the combined corridor by 2040. This growth is on top of already serious congestion and before the recent Base Relocation and Closing Act (BRAC) decision which determined that as many as 40,000 new jobs could come to the region.

### *1.3 The Case for Maglev Concerning the Environment*

Results from our Draft Environmental Impact Statement show with a Maglev in our corridor could eliminate over 18,000 auto trips a day. That trip diversion totals 426,000 Vehicles Miles Traveled (VMT) and we can save 22,000 gallons of gas daily. The projections for Maglev energy usage total 1.2 billion BTUs daily. Autos consume 2.8 billion BTUs daily. In the 40-mile corridor, Maglev could save over 1 trillion BTUs of energy annually. If we can make savings like these in 40 miles, consider the ramifications of all the major cities in the entire eastern seaboard being linked by Maglev.

This daily trip reduction means that we can also reduce harmful pollutants involved in the creation of ozone. With a Baltimore-Washington Maglev, we can remove a combination of Volatile Organic Compounds (VOC), Nitrogen Oxide (NO<sub>x</sub>) and Carbon Dioxide (CO<sub>2</sub>) that totals 1.72 tons daily. Again, imagine the results with an entire Eastern Seaboard served by Maglev.

The result of a long history of transportation choices favoring highway spending has had a profound effect on the environment. There is now agreement by scientists around the world that everyone has to reduce greenhouse gases that are instrumental to the global warming that is threatening our planet. According to sources like the National Resources Defense Council, automobiles are the second largest source of air pollutants and create nearly 1.5 billion tons of CO<sub>2</sub> annually. Air travel produces 19 times the greenhouse gas emissions of trains. Added to

that, aircraft emissions at higher altitudes go directly into the stratosphere and have more than twice the global warming effect of emissions from cars and power stations at ground level.

When we discuss all the promise Maglev holds for improving transportation and the environment, we also have to look at what progress has actually been made in deploying this technology in this country.

Maglev studies prove that Maglev has distinct environmental advantages. Maglev creates no local emissions. Maglev has lower noise and vibration impacts and requires less land consumption. Even when Maglev is compared to another environmentally benign mode — high speed rail — Maglev consumes less energy than high speed rail at comparable speeds.

Millions of dollars have been spent to confirm the utility and need, for Maglev. Conditions are ripe for promoting the construction of a revenue-producing Maglev line. So with the conditions calling for a better technological solution to transportation, what is the major impediment to building a system? The major stumbling block has been federal funding. In the US our transportation funding priority has been tipped toward highway spending since 1956 when the National Highway Bill was enacted.

## II. FEDERAL FUNDING

Transportation funding for the national highway system became a huge economic development boon. Cities that had flourished during river or rail transportation were left behind if they were not included in the national highway system. The federal government provided 90 percent of the cost of building these highways. Transit and rail were held to a higher state matching requirement. The unintended consequence of that action so many years ago is that highways always have gotten the lion's share of any state's transportation budget. With only a 10 percent matching requirement, state DOTs favored highway development because the state dollars went further.

According to transportation historians, the federal government's decision to invest in forty-one thousand miles of "freeways" condemned any chance railroads had to recapture a substantial share

of passenger traffic. Even in the 1950s, passenger rail travel was the loss leader for the railroads.

The propaganda promoting highway spending created a juggernaut that has not been diminished over the succeeding decades. Recognizing that the only way to break down the barriers was to educate decision makers at all levels, those interested in promoting Maglev came together to form the US Maglev Coalition.

### *2.1 The Role of the US Maglev Coalition*

The US Maglev Coalition is leading the way for Maglev in this country. Our mission is to support the development of superspeed magnetic levitation (Maglev) transportation technology in the United States. Deploying Maglev technology in the US will provide our economy a tremendous economic stimulus, by creating new jobs, and bringing new technologies on-line. An Americanized Maglev network will provide significant environmental and safety advantages to traveling Americans, mitigating congestion on the roads and in short-haul air routes, while offering travelers a new, faster, more efficient transportation option.

The Coalition represents those interested in moving the agenda for Maglev as a transportation option for this country. Members include: projects, companies engaged in projects or interested in working on projects, technology companies, labor, public agencies, and associations.

### *2.2 Track Record of US Maglev Coalition*

What has the Coalition done? What is our track record? Prior to the enactment of the SAFETEA-LU transportation bill, the US Maglev Coalition worked with our congressional friends to promote a Maglev title within the bill that would provide an outline for a program that would be the natural progression of the TEA 21 Maglev Deployment Program. The Coalition advocated for multi-tiered program to allow for the progress made under TEA 21 to grow into a legitimate program on a par with other modes. The Coalition's goal was to continue and expand the next wave of the transportation evolution by providing sufficient federal support to fund the construction of at least one Maglev project,

and to put Maglev on an equal footing with other modes with funding and a program.

The Coalition worked long and hard to win supporters during the preparation of the eventual bill. The success of the Coalition's education effort was measured by the fact that the Senate version of the bill had a Maglev title which authorized \$3.1 billion and replicated the program proposed by the Coalition. The House title, however, was much less robust and contained only \$90 million to continue the Maglev studies.

### *2.3 Failures of SAFETEA-LU Bill*

The Coalition was encouraged by the Senate adopting our recommended funding levels and three-tiered program. Unfortunately there was the SAFETEA-LU SNAFU. When SAFETEA-LU was finally enacted, the bill was two years late. This was further compounded by the administration's insistence on reducing the size of the entire bill. In the end, the Senate version which totaled \$318 billion did not prevail. The compromised total was \$285 billion which meant that over \$30 billion had to be cut from the final bill. The good news was that Maglev survived in the final bill. The bad news was that the House version was adopted which contained just \$90 million for Maglev.

If the reduction from \$3.1 billion to \$90 million wasn't bad enough news, there was a part two to the SAFETEA-LU SNAFU. As the bill was completed, errors were made which had to be corrected for the funds to be released. The Coalition worked diligently first to notify committee staff that there were errors in the bill and then to correct them. The most serious error was the loss of contract authority for the Maglev funds which meant that the funds were not guaranteed funds. The second error was in the vaguely worded disposition of the east coast funds. There was no clear guide for how to distribute the east coast funds.

SAFETEA-LU was passed in 2005. It took until June of this year to complete the passage of the SAFETEA-LU Technical Corrections bill. Through the efforts of the Coalition, the contract authority guaranteed status was restored to the Maglev funds. Working with congressional members who support Maglev, we were able to

include the word “existing” to modify the word “projects” rather than “project” for the east coast funds to preserve the original intent of the bill.

House Transportation and Infrastructure Committee staff credited the US Maglev Coalition for being the most vigilant on the issue of correcting the Maglev section and gaining the results sought.

The SAFETEA-LU SNAFUS created a serious slowdown in funding that has had very real consequences for the projects. Having exhausted the Maglev program funds from TEA 21 and waiting for the SAFETEA-LU Technical Corrections bill, projects have struggled to keep up momentum. It is difficult to maintain local support when a project can make no progress. Another example, National Environmental Protection Act (NEPA) requirements dictate that no more than three years can elapse between the approval of the Draft Environmental Impact Statement and the submission of the Final Environmental Impact Statement. Without funds, projects cannot complete required work and keep the already completed work fresh.

#### *2.4 Continuing Efforts of US Maglev Coalition*

The Coalition has worked tirelessly to continue educating our constituencies about the technology and to keep it on their radar screens. We have invited federal officials, hill staff and reporters to symposia we have hosted to focus on advancements in Maglev. Noted Chinese, Japanese and German guest lecturers have been featured. The Coalition has arranged face to face meetings for our members with Congressional members to discuss Maglev.

The Coalition counts as part of our success the fact that we have been invited a number of times by the House Transportation and Infrastructure Committee to participate in hearings and forums to discuss the future of high speed ground transportation and to represent Maglev technology. The Coalition has arranged for members to sit down with House T&I Ranking Minority John Mica to hear him discuss the latest T&I bill introduced for high speed ground transportation and the goals he shares with Chairman Oberstar for the next transportation bill.

As everyone is aware, the next six-year transportation bill is due in 2009. Now it is time to

do the hard work needed to make sure sufficient Maglev funds are included in the bill so that the technology can take a quantum leap forward. With the economy as it is and the transportation needs so great, Maglev is up against the forces that want to protect the status quo. All the facts that point to the need for Maglev in our country are competing with the fact that there is no operational system in this country. Despite the Catch 22 nature of this, it is what we are faced with.

### III. COALITION FEDERAL FUNDING STRATEGY

The US Maglev Coalition has a strategy for the bill, but we also believe that we may have to adapt it and respond as we see the shape of the discussions of how the bill will be structured. Currently the Coalition is committed to work again to achieve a robust, multi-tiered program for Maglev. Let me emphasize the word program, not just study funds, a viable program that includes construction funds to build and expand on the work that has been accomplished based on valid criteria. The Coalition will work for a program that recognizes Maglev is a legitimate mode alternative. As we all gear up for the next bill, many in transportation related groups are recommending that we not have another reauthorization bill, but an authorization bill that addresses the new realities rather than just adding to what has been done in the past. Like others, the Coalition believes that the next bill must be outcome related which means that critical analysis has to be applied to funding decisions which includes the effect of projects on the environment.

#### *3.1 Three-Tier Program for Maglev*

The Coalition program currently has three tiers. The first tier of the program would be for mature projects that have met the threshold of having completed their Draft Environmental Impact Statement. The funds in the new bill for the Tier I projects would be awarded for:

- Final Environmental Impact Statement
- Final Design and Engineering
- Pre-construction and construction

The second Tier would be for projects that have completed an initial level of study that would qualify them for funds for:

- Draft Environmental Impact Statement
- Preliminary engineering and design

The third Tier would mandate the Federal Railroad Administration issue a new Request for Proposals for Maglev studies. This would open the door for cities and states across the country that did not apply for funds during TEA 21.

The TEA 21 Maglev Deployment Program was a closed program. Once the initial seven projects were selected for study funds, there was no further opportunity for new projects to apply for funds. There is no other mode of transportation that operates in the same manner. A state may have to compete with hundreds or even thousands of highway proposals, but there is no institutional barrier to submitting a proposal. The playing field for transportation funding has been tipped in favor of highways for so long, no one ever questions the fact that there are serious inequities in funding programs and priorities.

Events in the past few years have made it very clear that as a nation we can no longer ignore the inconvenient truth that our planet is in danger. In order for long-term survival, our transportation system must become more environmentally benign. Transportation has to be less dependent on oil, and we must particularly wean ourselves from dependence of foreign oil. In making transportation decisions, our country must weigh the impact of greenhouse gases and find ways to make our carbon footprint smaller. Maglev is a transportation technology whose time has come. When the question is how does this country increase capacity without further damage to the environment, Maglev is the answer.

Even though all the signs point to the fact that Maglev should be a key component of the next transportation bill, success is by no way guaranteed. For those who understand the potential of Maglev technology, it is hard to understand why there hasn't been more progress by now. The answer is that there are too many entrenched factions fighting to protect the status quo. The uneven playing field

that was created in the 1950s with the national highway bill is not going to be leveled without a concerted effort. When you add the current constraints on the economy to the mix, it all points to a pitched battle before the bill is completed.

### *3.2 Need for a Common Voice in the Campaign for Maglev Funding*

We all need to take a page from transportation history and demonstrate what deploying this technology can mean economically. For years the highway interests swamped the competition from other modes by showing the economic effects of highway funding. The auto industry linked with construction industry and materials suppliers to make the case for the economics of building the highway system. They created the car culture.

The factions that have benefited from the uneven playing field have many years of experience in fighting for funding. Now it is time to help the pendulum swing in another direction. We who believe in Maglev must all unite and work together to demand a fair share of funding by making our case for the benefits of Maglev. Either we all work together for our cause, or we will all be left behind. Working together, we can achieve a robust level of funding in the next transportation bill. Dividing our effort is a recipe for failure.

The TEA 21 Maglev Deployment Program was a blueprint for moving the technology from initial feasibility to construction. The path was clearly laid out with funding levels dictated. But the SAFETEA SNAFU has left the program in question. The US Maglev Coalition three-tier Maglev funding strategy would provide a framework for the future with funding levels that will make it possible to accomplish our goals.

The time has come to demonstrate there are better solutions to transportation. The time has come to build the first projects. The time has come to move less mature projects to the next level. The time has come to convince local governments that instead of only considering highways, Maglev may provide a better option.

To insure success for Maglev, all who are interested in the technology must join forces to have our voice

and our message heard. If the economy continues to lag significantly, the fight over transportation dollars will be difficult and intense. Jointly we have to make a compelling case for Maglev federal funding. Together we must demonstrate how Maglev can attract private investment. Collectively we must

Success for Maglev in the next transportation bill means success for the economy. Success for Maglev means putting thousands of people to work building the next generation of transportation technology. Success for Maglev means decreasing gridlock and winglock while creating greater flow for both goods and people. Success for Maglev means less dependence on foreign fuel. Success for Maglev means a better environment. Success for Maglev means saving energy. Success for Maglev means saving lives. Success for Maglev means a title in the bill with a revenue stream to move projects to construction.

We need an army to win the funding battle.

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