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How Can California Meet the Employment, Education, and Training Needs of High-Speed Rail?

Mineta Transportation Institute's free report offers insights and possible solutions.

San Jose, Calif., March 14, 2012 – The Mineta Transportation Institute (transweb.sjsu.edu) has published *Estimating Workforce Development Needs for High-Speed Rail in California*, a report assessing the overall employment, education, and training needs associated with building and operating the California High-Speed Rail (CHSR) network. The report also seeks to develop insight into how these challenges can be addressed by all levels of the California education system. Principal investigator was Peter Haas, PhD, with assistance from Paul D. Hernandez, MPIA, and Katherine Estrada, MPA. The 160-page report is available for free PDF download from transweb.sjsu.edu/project/1027.html

"Much public discussion has focused on how high-speed rail may or may not provide real and long-term employment," said Dr. Haas. "However, given the high profile of national and state commitments to high-speed rail, it is essential to have a comprehensive analysis that discusses the education, training, and related needs that will be created during the build-out and operation of the California HSR network. By estimating the required people power, skills, and knowledge, this report identifies those workforce development challenges and offers some solutions."

The report addresses four specific questions:

- What types of workers will the CHSR network require at various phases of the project's life over the next 15 years?
- How many of each type of employee are needed over the life of the project, and how do those estimates change over the life of the project?
- What specific skills and knowledge does the CHSR workforce require?
- What is the existing capacity for training and educating this workforce, and how must it adapt to the challenges posed at each stage of the CHSR?

The comprehensive document notes that workforce development is intrinsically tied to the CHSR network build primarily because of the initial reasoning behind developing the network. The system was proposed in part, according to the report, because it has the capacity to jump-start the California economy insomuch as it buttresses the construction workforce with procurement bids. It also will inevitably have direct impact on industries outside of construction, including those associated with the design, operation, and maintenance of the network, through the infusion of technology into the system.

The report also includes sections on estimates of workforce and employment development needs, and an assessment of existing capacity for HSR workforce development. These sections delve into several key factors, including critical issues of HSR technology; an employee estimates summary; education impacts by phase; workforce development needs during the peak phase; the capacity of community colleges, trades training, and higher education; the interplay of university and industry; the possible means of achieving workforce goals; and several other factors.

The majority of the employment estimates use "personnel years" – similar to using "labor hours" to estimate a project – which is the most accurate way to estimate workforce needs. This is standard industry

practice because it enables the most precise calculation of the amount of labor necessary to complete a given project.

"Rather than continuing to speculate on workforce development impacts, it was necessary to provide a public document that presents fact-based research," said Dr. Haas. "This report does not address the general needs of rail construction, which are already known. Rather, it gives particular attention to specific skills and training requirements necessary to build and operate the technology-rich, 220-mph high-speed rail."

Some of those requirements include natural disaster detection capability; intrusion prevention and detection; specific communications, electrical, and energy management systems; advanced train control, signaling, and collision prevention; noise and vibration management; national traction power systems; maintenance for rolling stock and systems; and many other particular requirements.

The complete 160-page report includes 30 figures and 28 tables that illustrate key issues and findings. It is available for free PDF download at transweb.sjsu.edu/project/1027.html

ABOUT THE RESEARCH TEAM

Peter J. Haas, PhD, is a professor in the Department of Political Science at San José State University and Education Director for the Mineta Transportation Institute. The author of numerous scholarly and professional articles, he earned a PhD in political science (concentration in public policy and public administration) from the University of North Carolina at Chapel Hill in 1985. A former director of the SJSU Master of Public Administration program, he also has consulted at every level of government and for various nonprofit agencies. Dr. Haas has authored and co-authored numerous reports and publications covering transportation and is co-author of the text *Applied Policy Research: Concepts and Cases*. In 2003, he received a Senior Specialist grant from the Fulbright Foundation to teach and study in Latvia.

Paul Hernandez, MPIA, is a Research Associate with Mineta Transportation Institute. He holds a Master of Pacific International Affairs degree from the Graduate School of International Relations and Pacific Studies from the University of California, San Diego, with focus on transportation policy and analysis. He also holds a Politics BA from University of California, Santa Cruz. His research interests include state, national, and international high-speed rail systems, and California's emerging transportation infrastructure and technology initiatives. He is a consultant on FRA high-speed rail projects and adviser to transportation technology start-up firms.

Katherine Estrada, MPA, recently earned her Master of Public Administration degree from San José State University. She previously was a research assistant while earning her undergraduate degree in political science from the University of California, Los Angeles. Currently employed by the City of San José, her research interests include transportation and land use planning.

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The Mineta Transportation Institute (MTI) conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues, especially as they relate to transit. MTI was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized under TEA-21 and again under SAFETEA-LU. The Institute has been funded by Congress through the US Department of Transportation's (DOT) Research and Innovative Technology Administration, by the California Legislature through the Department of Transportation (Caltrans), and by other public and private grants and donations, including grants from the US Department of Homeland Security. DOT selected MTI as a National Center of

Excellence following competitions in 2002 and 2006. The internationally respected members of the MTI Board of Trustees represent all major surface transportation modes. MTI's focus on policy and management resulted from the Board's assessment of the transportation industry's unmet needs. That led directly to choosing the San José State University College of Business as the Institute's home. Visit transweb.sjsu.edu

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