

## “Smart Parking” Program Draws Commuters Off Freeway to Rail

*Demonstration Project Finds Early Success*

Early results from an innovative “Smart Parking” demonstration project in the San Francisco metropolitan area show that commuters can be persuaded by roadside signing that provides real-time parking availability information to change their commute, exit a freeway to access a rail station park-and-ride lot, and continue their commute via rail. The demonstration project, which began operating on December 8, 2004, is limited in size. Results from the first week of operation show that an average of nearly 15 commuters per morning peak period were attracted to the park-and-ride lot by means of the signing at the freeway. Variable message signs indicate how many parking spaces are available at a Bay Area Rapid Transit (BART) station (Rockridge), which is located close to the freeway (Route 24) and a short distance downstream from the signs. A total of 35 parking spaces at this station are reserved for commuters drawn off the freeway; an additional 15 parking spaces are allocated to an advanced reservation system.

Susan Shaheen, the project’s principal investigator and program leader for policy and behavioral research at California Partners for Advanced Transit and Highways (PATH), a unit of the Institute of Transportation Studies and headquartered at University of California at Berkeley, observed a similar project in Germany. Shaheen, together with Rick Warner, CEO of ParkingCarma, and Randell Iwasaki,



*As part of the Smart Parking demonstration project in the San Francisco area, real-time parking information is provided by a temporary changeable message sign. (Photo: Courtesy of University of California, Berkeley)*

California Department of Transportation (Caltrans) acting chief deputy director, came up with the Smart Parking concept.

Shaheen indicated that Smart Parking has the potential to:

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## Survey of Communities Finds Shorter Commute Times a Priority

*Alternatives to Increasing Road Capacity Preferred*

Sprawling communities like those surrounding many of the nation’s large cities do not appeal to most Americans, according to the 2004 American Communities survey conducted by Smart Growth America, a coalition of nearly 100 nonprofit organizations, and the National Association of Realtors®, the nation’s largest trade association. According to the random survey of 1,130 adults conducted in late August and early September 2004, Americans place a high value on limiting

their commute times, and are more likely to see improved public transportation and changing patterns of housing development as the solution to longer commutes than increasing road capacity. Half of Americans choose improving public transportation when given three options to solve long-term traffic problems in their states. A third of the public believes the best answer is developing communities where people do not have to drive long distances,

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# New Font on Highway Signs Significantly Increases Legibility

*Increased Reaction Times Could Save Lives; FHWA Provides Interim Ruling*

Increasing the legibility of highway signs can reduce driver reaction times and, more importantly, possibly save lives. Researchers at the Pennsylvania and Texas Transportation Institutes have documented that use of a new sign font, Clearview, can speed driver recognition by 16%–29%.

In September 2004, the Federal Highway Administration (FHWA) issued an interim ruling that allows states to choose between traditional lettering and Clearview for positive contrast (light lettering on dark background) signs. Pennsylvania Department of Transportation's (PennDOT's) Bureau of Highway Safety and Traffic Engineering was instrumental in encouraging the FHWA to consider including Clearview in the Manual of Uniform Traffic Control Devices as an alternative to traditional FHWA signage lettering. (States wishing to use Clearview for positive contrast signs must submit a written request to the director of the FHWA, Office of Transportation Operations. The interim approval memorandum can be viewed at [http://mutcd.fhwa.dot.gov/res-interim\\_approvals.htm](http://mutcd.fhwa.dot.gov/res-interim_approvals.htm).) The final rulemaking is expected to be issued in 2005 once research on Clearview's effectiveness in negative contrast (dark lettering on lighter background) signs, now underway by TTI, is completed.

Both the PennDOT and Texas DOT have received interim approval from the FHWA and are in the process of phasing in the use of Clearview on their positive contrast state signage. Early versions of Clearview are being used in several Canadian cities and provinces (Ontario, British Columbia, Ontario); Clearview is also the English language font for road guide signs in Israel. Many sign fabricators in the U.S. now offer Clearview font as an alternative.

The Clearview font system and its font software, ClearviewHwy, were developed by a team of researchers led by Don Meeker of Meeker & Associates and James Montalbano of Terminal Design, Inc. Meeker and others embarked on



*The Clearview font (top photo) has been found to be more legible than the presently used E-modified font (bottom photo). (Photo: Courtesy of Meeker & Associates)*

efforts to design the new signage font in response to a 1994 FHWA study that recommended a 20% increase in letter height to accommodate viewing distance and reaction time requirements of older drivers. That 20% increase in letter height would result in a 40%–50% increase in the total area of a sign. Clearview researchers'

challenge was to design a typeface that could obtain that same 20% gain in legibility without actually increasing letter height or sign size, thus allowing highway departments to reap the benefits of improved visibility without the expense of installing

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## New Font on Highway Signs Significantly Increases Legibility

larger, more costly signage.

Clearview font letters were developed specifically to address three additional issues with the legibility of Standard Highway Signs (SHS) alphabets:

- improve the speed and accuracy of destination recognition and the legibility distance of word messages;
- improve word pattern recognition by using mixed case words of the same size, composed of lower case letters designed for highway sign applications;
- control or minimize the halation of words displayed on high brightness retroreflective materials for drivers with reduced contrast sensitivity.

The effectiveness of Clearview fonts over the SHS Alphabet Series has been demonstrated in several studies on positive contrast signs. In Pennsylvania Transportation Institute (PTI) studies, researchers noted a 16% improvement in recognition by older drivers for an equal-size footprint for the Series D letters and Clearview-Condensed, with little change in overall sign size (Garvey PM, Pietrucha MT, Meeker D: "Effects of Font and Capitalization on Legibility of Guide Signs" *Transportation Research Record* 1605, 1997, pp. 73-79). For drivers traveling at 45 mph, that 16% legibility enhancement could mean 80 extra feet of reading distance and 1.2 seconds of additional reaction time.

The use of mixed case letters also gave viewers time to read the unique footprint of the word, thus increasing accuracy, viewing distance, and reaction time. Research revealed that when the upper/lowercase Clearview-Condensed (condensed) was compared with the most commonly used all-capital-letter typeface (FHWA Series D), there was a 14% increase in recognition when viewed by older drivers at night, with no loss of legibility. When the size of Clearview-Condensed was increased by 12% to equal the overall footprint of the uppercase display, the recognition gain doubled to 29%, with little change in overall sign size.

The superiority of the combination of Clearview font on a retroreflective background was confirmed in a Texas Transportation Institute (TTI) study, which documented a 12% increase in legibility for overhead and shoulder-mounted guide

signs with Clearview and microprismatic sheeting (Hawkins G, Carlson P: *Evaluation of Clearview Alphabet with Microprismatic Retroreflective Sheetings*, FHWA/TX-02/4049-1, 2001). The researchers evaluated shoulder and overhead mounted highway guide signs on Type III retroreflective sheeting. In this study, Clearview performed no worse than, and in some cases outperformed, Series E-modified. TTI then performed a second study of the two fonts, this time using microprismatic retroreflective sheeting. The results demonstrated an 11%–12% increase in the legibility

distance for guide signs using Clearview.

More details on the research can be obtained from Philip Garvey, PTI, tel. (814) 863-7929, e-mail: pmg4@psu.edu, and Paul Carlson, TTI, tel. (979) 847-9272. Product information is available from Donald Meeker, Meeker & Associates, tel. (914) 834-1904, e-mail: dtmeeker@meekerdesigns.com and from the website [www.clearviewhwy.com](http://www.clearviewhwy.com). Questions concerning the FHWA Interim Approval can be directed to Fred Ranck, tel. (708) 283-3545, e-mail: fred.ranck@fhwa.dot.gov.

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## Survey of Communities Finds Shorter Commute Times a Priority

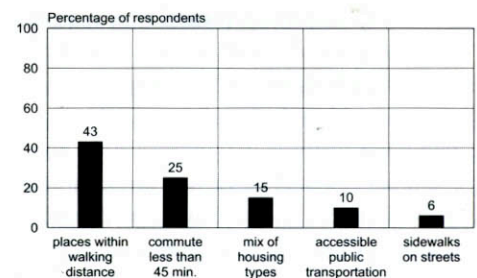
and only 18% believe the answer is building new roads.

The survey shows that the public's priorities also express the desire for more places to walk or bike in their communities. The report found that 55% of survey participants prefer to live within a few blocks of stores, restaurants, libraries, and schools, with a work commute of less than 45 minutes. The vast majority (73%) of individuals who preferred a more sprawling, car-dependent community (45%) placed a priority on the ability to have a large home on a large lot and were willing to give up a shorter commute.

In determining where to live, a limited commute time is an important factor. Among a list of fourteen priorities in choosing where to live, 79% of survey participants found that being within a 45-minute commute to work was "very" or "somewhat" important. This priority was of particular importance to individuals who plan to buy a home in the next three years (87%). Another important statistic relating to the American Communities survey addresses the current lack of public transportation and places to walk. When asked about current community conditions, 46% of survey participants found

there was insufficient public transportation within walking distance. In addition, participants felt there should be more places to bike (46%), more shops or restaurants within walking distance (42%), and more places to walk or exercise for fun (40%) in their communities. A full copy of the report can be accessed at [www.realtor.org/sg3.nsf/pages/narsga2004survey?opendocument](http://www.realtor.org/sg3.nsf/pages/narsga2004survey?opendocument).

### Most Attractive Characteristic of "Smart Growth Communities" by Survey Respondents



Source:  
2004 American Community Survey, conducted by Smart Growth America and National Association of Realtors®