The Roadside Forest and Community Image

Freeway or highway roadsides are often the introductions to communities. Drivers consider places to stop, shop or return. Does the view from the road influence these decisions?

Environmental cues help form judgments about new situations or people. Certain visual characteristics create impressions about places. Another University of Washington study attempted to test the judgments that people make about unfamiliar places based on freeway or highway appearances.

Social scientists often study the relationships of people to places. The form and character of a place can shape moods, attitudes, and responses of residents. Recently communities are considering the effects of character of place on residents and visitors. Business communities, in particular, take an interest in the image that the community projects to consumers.

A mail survey of licensed drivers in Washington State evaluated the perceptions of place that people sometimes associate with roadside landscape. Study participants viewed one of two community settings (see bottom large photos in previous pages) and rated a series of statements about the place.

Consumer Appeal: One set of statements contained information about merchants, products and services. Based on statistical analysis, three categories of response patterns arose:

- Business Quality
- Appealing Character
- Shopping Convenience

Furthermore, mean ratings on each category differed significantly ($p<.001$), with the community images containing more green space having higher values. Ratings of Appealing Character were 50% higher for the more landscaped setting. Potential consumers probably infer other characteristics of a community based on visual cues. Ratings of both Business Quality and Shopping Convenience were 13-20% higher in the communities with more green space and vegetation.

Business Environment: They were also asked to rate a list of statements about business' interaction in the simulated setting. Two statistical categories were identified:

- Civic Commerce
- Community Health

"Civic Commerce" included statements, such as "merchants care about the community" and "public and private organizations work together." Higher levels of agreement for this category were associated with the green setting. Issues of "Community Health" (such as economic condition and crime rate) were also rated higher in the greener community.

Product Pricing: Contingent valuation is also used by economists to value things that cannot be bought and sold. In this study, people were asked to specify what they would pay for a collection of goods and services. Resulting pricing patterns are indirect indicators of green space value to communities. Do trees influence how much people are willing to pay for goods? The answer from this study is "yes!" For the eight listed items, higher prices were given for goods in the green community. For instance, sports shoes were priced 7% higher in the green setting, while sit-down dinners or floral bouquets were assigned 10% higher prices.

Urban Forestry Research and Roadside Management

People value trees and other vegetation along roads. Drivers react negatively when roadsides are stripped of vegetation. This study suggests that the public prefers other approaches.

First, well-maintained vegetation can serve as a green "frame" to focus the driver's eye on roadside commerce. Also, drivers are exposed to large amounts of information. Carefully framing businesses and their products with vegetation may help drivers distinguish individual businesses within a stream of complex roadside information.

Finally, communities shouldn't ignore the messages or cues from trees. A community forest that greets potential visitors will provide many benefits. Trees and green space may positively influence both consumers' attitudes about a place's character and the prices that shoppers are willing to pay. Green makes a difference!

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Washington Community Forestry Council

The Washington Community Forestry Council was organized by the Washington State Department of Natural Resources (DNR) in 1991. Its goal is to provide leadership and vision to help citizens preserve, plant and maintain community trees and forests. The Council consists of a general membership and an Executive Advisory Committee to the State Forester. Join by calling **1-800-523-TREE.**

"TreeLink" is a quarterly publication of the DNR Community Forestry Program. The program's purpose is to educate citizens and decision-makers about the economic, environmental, psychological and aesthetic benefits of trees and to assist local governments, citizen groups and volunteers in planting and sustaining healthy trees and vegetation wherever people live and work in Washington State.

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The View from the Road

The Urban Forest and Our Freeways

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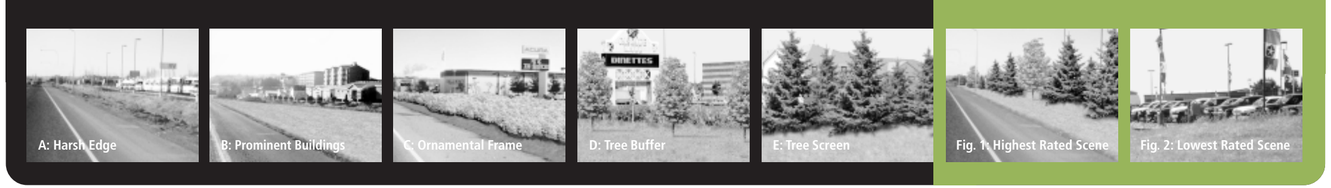
Every year Americans spend more time in their cars. In recent decades, trips and mileage have increased by up to 85 percent. Today Americans travel 2.3 billion miles daily on urban freeways and highways.

They pass slices of landscape — called freeway roadsides — which are valuable land resources beyond the white lines.

This issue of TreeLink examines the peace of mind and other benefits that these roadsides and rest areas — 97,500 acres in Washington alone — offer stressed motorists.



Transportation Systems — Quantity and Quality

Historically, the study of transportation has been the domain of engineers, who are primarily concerned with the physical design and construction of transportation systems. They have been joined by the legal and economic professions, which address issues such as the pricing and regulation of transportation services. More recently social scientists—sociologists, geographers, psychologists and marketing specialists—have examined transportation topics.

Transportation issues span many aspects of contemporary life, including land use, employment, pollution, economic vitality and the overall quality of life. The quality and character of freeway roadsides may have significant effects on driving behavior and also can impact other aspects of daily life. As transportation issues become more complex, social scientists are discovering options and strategies that are compatible with individuals, neighborhoods and entire communities.

The Roadside and Driver Stress

Social sciences can contribute to a better understanding of driving and stress. Many state and local highway systems are being used at full capacity. As Americans spend more time on the road and face greater traffic congestion each year, driving stress becomes a public health issue.

Scientists have studied how human bodies and minds cope with stressful situations, including driving conditions. "Fight or flight" is our coping response to high threat stressors. Other low-level, constant stressors (such as crowding or work pressures) trigger less perceptible responses. Physiologically, people respond to stress on many levels—cardiovascular, skeletomuscular and neuroendocrine—mobilizing the body and mind to deal with demanding situations. This mobilization of the body and mind's resources can lead to fatigue if the stress is long-term. Psychologically, stress causes feelings of fear, anger or sadness.

Psychological and physiological stress responses can trigger negative behavior. Studies show that stress aftereffects include substance abuse, decline in frustration tolerance and lower ability to perform work-related tasks.

The degree of stress response while driving depends on road and traffic conditions. Changes in mind and body are documented for all driving experiences. For instance, heart rate variability and blood pressure increase when a person is driving when compared to non-activity situations. Demanding driving conditions, such as on-ramps, off-ramps and roundabouts, tend to increase stress response. Commuting may be one of the most stressful experiences of urban life. Increased blood pressure is associated with longer or more difficult commutes. Lowered job satisfaction, higher illness rates, absenteeism and lower performance on various cognitive tasks also are related to longer or more difficult commutes.

While the stresses of driving and commuting are documented, surprisingly few studies have studied the effectiveness of mitigating factors in the driving environment for easing stress response.

One recent study by a team of social scientists at Texas A&M University (Parsons, et al.), found the effects of roadside character on stress response. Using physiological stress indicators such as heart rate, blood pressure and skin conductance, the investigators discovered several response patterns.

Drivers viewing built-up, strip mall style roadside environments were slower to recover from stressful situations.

Study participants who were exposed to roadside nature scenes (forests or golf courses) returned to "normal" baseline measures faster with a greater ability to cope with other introduced stressors.

An "immunization effect" was confirmed. Exposure to a natural roadside setting decreased the magnitude of response to a later stressful task. This suggests that an "inoculation" of nature enhances a driver's ability to cope with the demands of driving.

Can the driving environment mitigate stress? Professional wisdom and folklore have long endorsed the idea that experiences of nature contribute to well-being. Recent research confirms that the roadside landscape positively affects some dimensions of stress response.

Visual Quality and the Roadside

"Roadside visual quality" is another focus area of transportation social science. Federal transportation agencies have developed methods for evaluating roadside scenery, though most applications are in rural or wildland areas. Meanwhile, there are more than 836,000 miles of American urban roads (1997, FHA). Since drivers spend an ever-increasing amount of time on urban roads, sights and responses are important.

A University of Washington study quantified preferences for visual highway environments. This is important because many urban freeways are commercial corridors. Research can indicate successful roadside design practices for both the business community and freeway users while managing public land resources.

One study suggests that an "inoculation" of nature enhances a driver's ability to cope with the demands of driving.

Public Preferences and the Roadside Urban Forest

Six base images were digitally edited to show freeway roadsides with different levels and arrangements of vegetation. The survey was completed by 400 drivers and 115 business people who rated each roadside image.

Roadside Preferences: An average rating was calculated for all 36 scenes. Scenes with the lowest and highest mean ratings (Figures 1, 2) differ significantly (see top right photos). While both depict commercial corridors, trees effectively screen views of buildings and products in the highest-rated scenes. A three-point preference difference (on a scale of 5) indicates how much trees and reduced views of buildings improve perceptions of roadside quality.

Roadside Perceptions: Image ratings also were analyzed for the clusters or categories which elicit common responses. Five visual categories were identified (see photos above).

Generally, preference ratings for categories increase with the presence of vegetation in the roadside setting. Categories "A" and "B"—the lowest—showed adjacent commercial land uses. Categories "C" and "D"—also rated low—showed vegetation interrupting the visual prominence of urban areas and framing views beyond the road. Category "E"—rated highest—depicts scenes with background buildings screened by trees, with only distant glimpses of commercial settings. Roadside viewers are sensitive to the relative balance of natural and built content—preferring blended arrangements of plants and buildings.

Comparing Business and Public

Business owners often pay premium real estate prices for highly visible land adjacent to high volume roadways. In this study business people and drivers varied little in their judgments of visual quality. Freeway frontage owners should consider incorporating these shared preferences into their businesses. Strategically placed trees and vegetation may draw attention to signs or products, without creating dangerous visual distractions.

What can the view from the road tell us about a community? COMMUNITY 1 (below left): Little planning for landscape or green space. COMMUNITY 2 (below right): Planning for quality landscape and green space has occurred.