

MEMORANDUM

To: Brian Cox
From: Jeremy Nelson
Date: 12/16/07
Subject: Nelson/Nygaard's review of Humboldt County DRAFT Circulation Element

Purpose of this Memo

Nelson\Nygaard was tasked by the Humboldt County Department of Health and Human Services (Public Health Branch, Division of Environmental Health) with reviewing the DRAFT Circulation Element (dated 11/28/07) undertaken as part of General Plan Update.

Specifically, Nelson\Nygaard was asked to provide written comments to the Department of Health and Human Services on the effectiveness of the DRAFT Circulation Element as currently written in promoting active modes of transportation and better public health outcomes. We were asked to provide our comments in advance of 12/20/07 Preliminary Public Hearing at the Planning Commission.

This memo contains our written comments after reviewing the DRAFT Circulation Element. Our comments focus on areas of the document that could potentially be improved to further the policy goals of promoting active modes of transportation and better public health outcomes.

Nelson\Nygaard Comments on Draft Circulation Element

8.1 Introduction

- Page 8-1: The Circulation Element could note the evolving vision and goals for the County transportation system (e.g. support of public health, economic development, sustainability, etc.) as articulated by participants in the General Plan Update community outreach and other related community initiatives.

8.2 Description of Transportation Facilities

Roadway Infrastructure

Road Capacity

- Page 8-2: While Nelson\Nygaard does not know the details of the traffic model used to project future auto Level of Service (LOS), it appears to assume that existing peak-hour auto volumes will grow into the future, likely by applying current drive alone mode share to future population growth. This assumption results in a trendline growth projection of status quo peak-hour auto traffic volumes. If this is the only output of the model, it implies that auto capacity enhancements will be required. An additionally useful approach would be to also model the impacts on peak-hour auto traffic congestion of proposed policies, programs, and investments that *reduce* auto trips by shifting peak-hour drive-alone vehicle trips to other modes.

For example, the impact of planned and proposed improvements to commuter transit service on peak-hour LOS could be modeled by including a reasonable reduction in peak-hour auto trips. Other trip-reducing programs, policies, and investments (such as expanded pedestrian and bicycle infrastructure, requiring new development to unbundled parking costs provide free transit passes to residents and/or employees, and carsharing programs) could be modeled in a similar fashion. This latter approach of modeling the LOS impacts of a cluster of feasible TDM (transportation demand management) measures appears to be in line with the general policy direction and goals of the Circulation Element. An added benefit of this approach is that it allows decision makers to evaluate the relative cost-effectiveness of roadway capacity enhancements that increase peak-hour auto capacity compared to programs and policies that reduce peak-hour vehicle trips.

- Page 8-2: The model notes that most population growth will occur in the Urban Study Areas (USAs). In urban infill, mixed-use development context, more trips occur by transit, walking, and bicycling. If the traffic model doesn't already account for this effect, it could do so by factoring down auto trips by a reasonable amount for all growth in the USAs.
- Page 8-2: The use of auto Level of Service as a measure of the performance of the roadway system appears to be exclusive of all other transportation performance measures for other modes including transit, bicycles, and pedestrians. Auto LOS is also uni-dimensional in that it only measures one aspect of motorists' experience (e.g. seconds of delay at a particular node) at the exclusion of other factors such as safety, total network access, overall qualitative experience, etc. Reliance on LOS as a uni-modal and uni-dimensional measurement of transportation system performance does not seem to be in line with the general policy direction of the Circulation Element.
- Page 8-2: The document references modeling and mapping of Average Daily Traffic (ADT). While these maps were not available for Nelson\Nygaard's review, it should be noted that ADT is not the primary measure of a transportation system's performance or failure. This is because motorists don't perceive ADT of a particular roadway segment, but rather peak-hour congestion. For this reason, the Circulation Element could focus on measurement and mitigation of peak-hour auto trips rather than ADT.

- Page 8-2: It might be beneficial to specify any existing multi-modal improvements that are required when private developers construct new roadway facilities for access to and from their development, or as off-site mitigations. If such a package of multimodal mitigations does not exist, the Circulation Element could include a policy to develop multi-modal mitigations for new development (as well as design standards per next comment).

Road Maintenance

- Page 8-3: It might be beneficial to include a policy in the Circulation Element to develop multi-modal design standards that are triggered when private developers construct new roadway facilities and the public sector maintains/repairs existing roadways.

Public Transportation

- Page 8-5: The Circulation Element could include expanded performance measures for public transit beyond the existing headway-based performance measure. Such measures could include measures such as:
 - Percent of households and/or carless households within walking distance to transit service
 - On-time reliability (e.g. schedule variability)
 - Customer satisfaction surveys
 - Other transit performance measures could be developed depending on available data
- Page 8-5: The Circulation Element could call for design standards for transit facilities, and specifically bus stops in both small town/urban and rural contexts.

Non-Motorized Transportation

- Page 8-5: The Circulation Element mentions the need for Level of Service performance measures for bicycling and walking. If such performance measures are included as a goal in the document, they could also include Safety and Quality of Service indicators.
- Page 8-5: Per comments above, the Circulation Element could as a goal the development of design standards for pedestrian and bicycle facilities appropriate to both small town/urban and rural contexts.

Truck Transportation

- Page 8-6: The Circulation Element could note that planned or proposed roadway infrastructure improvements to accommodate large tractor-trailers should not compromise access and safety by other modes, and could trigger multi-modal street design standards to facilitate inclusion of pedestrian and bicycle facilities as part of the project.

Air Transportation

- Page 8-5 to 8-6: The Circulation Element could note the need to improve transit, bicycle, and pedestrian access to existing airports.

- General Comment: Nelson\Nygaard's understanding is that some areas of Humboldt County have taxi cab service. The Circulation Element may want to provide a description of taxi cab providers and service, and could include goals for improving taxi access, especially to and from county airports.

8.3 Goals and Policies

- Page 8-9: The Circulation Element could include a preamble noting the policy framework and criteria which shaped the Goals and Policies. This might include direction from policymakers and/or the evolving vision and goals for the County transportation system (e.g. support of public health, economic development, sustainability, etc.) as articulated by participants in the General Plan Update community outreach and other related community initiatives.
- Page 8-9: The Circulation Element goals enumerated here could be broadened and expanded to include specific goals and performance measures for each mode, prioritizing safety and access to employment, education, and services. Finally, it is becoming increasingly common for General Plan Circulation Elements to include goals on environmental sustainability generally, and specifically on measuring greenhouse gas emissions and reducing a community's total "carbon footprint."
- General Comment: Nelson\Nygaard's review of the Goals, Policies, and Implementing measures in this section led us to conclude that the analysis for transportation system performance for autos is well developed (roadway classifications, auto LOS, etc), goals, design standards, performance measures for other modes are less well developed. While the Circulation Element in many instances calls for multimodal infrastructure and policies, Nelson\Nygaard's experience is that these are less likely to be implemented unless they are articulated at the same level of detail and specificity as the auto design standards and performance measures. By not including more specific multimodal design standards and performance measures, the Circulation Element will not be as effective in providing clear guidance to public agency staff and policymakers on how to balance trade-offs and resolve conflicts at a programmatic level (e.g. what investments to prioritize with limited transportation funds) nor at a project level (e.g. how to design to accommodate priority modes within limited right-of-way). The remainder of our comments on this section below are put forth to help address this issue.
- General Comment: The Circulation Element could include multimodal performance measures and mitigation measures to use during CEQA analysis as an alternative to LOS. One problem with CEQA analysis as it is often performed is the reliance on auto 'Level of Service' (LOS). LOS is a performance measure that typically counts seconds of delay for cars that would result as a result of new development or a transportation project (such as where an auto lane is converted to a two-way bike lane). However, LOS is an inadequate performance measure of environmental impacts. This is because LOS analysis assumes that accommodation of increased vehicle trips automatically equates with improved environmental outcomes, which is a demonstrably false assumption. LOS methodology is also an inadequate measure of the performance of

the transportation system because it typically only focuses on only one dimension of travel (time in seconds of delay) for only one mode (automobiles) at one point in the transportation system (a single intersection or road segment). In addition, the “improvements” often required to address estimated reductions in auto LOS (e.g. widening roads and intersections) oftentimes have negative impacts on transportation system safety and convenience for pedestrians, bicyclists, and transit users. For these reasons, auto LOS is an inferior analytical tool for measuring how well the transportation system is functioning for all modes at a system-wide level.

A best practice approach is to develop multimodal quality of service (or QOS) performance measures deployed at a network- or area-wide level. Multimodal performance measures can be developed to measure person delay (rather than just auto delay) and to incorporate measurements of system efficiency, safety, and comfort for transit riders, bicyclists, and pedestrians. Such a methodology allows communities to direct their scarce transportation resources towards projects and programs that help them achieve local priorities -- such as safety for all modes -- rather than funding transportation investments in projects that may reduce delays for autos but potentially degrade conditions for all other modes.

Many cities and counties in California assume that they are required to use LOS methodologies to measure the environmental impacts of vehicle trips projected for new development under the state CEQA law. However, CEQA does not require LOS to be used as a performance measure, and it gives local jurisdictions significant latitude as to what transportation impacts they measure as part of their environmental analysis, how they determine if the impacts are significant enough to require mitigation (e.g. an offset to compensate for the impact), and what kinds of mitigations they can require. In addition to reforming their local CEQA screening criteria, significance thresholds, and impact methodologies, local and regional governments can simply adopt a “statement of overriding considerations” for projects that accomplish larger community goals. An example: while completing bike lane network might result in some increase in parking and traffic congestion in some areas at certain times, doing a full environmental review and mitigation would likely cost more than the total cost to implement all the bike lanes; in this situation, adopting a statement of overriding considerations is an appropriate way for local and regional governments with limited resources to both meet local transportation needs and improve environmental outcomes.

Local jurisdictions can also avoid the analytical bias of auto LOS as a transportation or environmental performance measure by requiring mitigations of safety or congestion impacts that reduce estimated vehicle trips rather than simply default to capacity enhancements to accommodate status quo growth projections of auto traffic.

An increasing number of California cities and counties are requiring new development to mitigate projected vehicle trips by providing incentives and facilities that encourage occupants and visitors to take transit, bike, and walk. Instead of requiring new development to widen roads or intersections to accommodate a maximum number of projected vehicle trips, these localities are requiring implementation of proven methods for reducing vehicle trips.

- General Comment: Related to the above comment, the Circulation Element could facilitate the creation of a countywide transportation impact fee program for new development. Transportation impact fees can guide development goals for the County as well as creating another funding mechanism for multi-modal projects, such as bicycle, pedestrian, and transit improvements. Establishing clear policy for how impact fees are assessed, collected, and spent is crucial to creating new standards. In order to implement a development impact fee, an initial nexus study must be completed to establish a reasonable connection between the new development and the proposed use of the fee and a rough proportionality between the fee level and the actual mitigation costs. Then, a community can fund multimodal projects based on approved project priority lists and design standards in place to guide implementation. The most innovative transportation impact fees assess a fee on the number of vehicle trips projected by new development and dedicate the fee revenue to multimodal improvements. An example: a new development project estimated to produce an increase in auto trips could either implement measures to reduce those trips (such as incorporating mixed uses, free transit passes, carsharing program, and/or bicycle and pedestrian amenities) or could pay an impact to fund desired multi-modal projects on a pre-approved project list that will help reduce auto trips and improve safety for all modes.

- General Comment: The Circulation Element could facilitate the development of a county-wide transportation demand management (TDM) program. A TDM program would be developed and implemented in conjunction with the development of multimodal performance measures and the transportation impact fee program. The TDM program could include regulatory requirements to use proven techniques for reducing auto trips as well as incentives for developers that implement best practices to provide transportation choice and decrease automobile trips (e.g. to provide bicycle commuter facilities -- such as secure parking and bike commuter showers – and inviting, well-connected pedestrian facilities).

- General Comment: The Circulation Element could develop road classifications that don't focus solely on the road's functional designation for auto traffic (e.g. arterial, collector, or local), but could also incorporate a functional designation for other modes as well (e.g. transit, bicycles, and pedestrians). In addition, road classifications could also incorporate a place designation that responds to the road's adjacent land use context.

- General Comment: The Circulation Element could facilitate the creation of multimodal project evaluation criteria to comprehensively evaluate lifecycle costs and benefits. Project selection and evaluation criteria for capital and operating expenditures typically look at a narrow set of factors to evaluate costs and benefits over a short period of time. In order to achieve multimodal goals, cities and counties could consider revising their project evaluation criteria to evaluate costs and benefit factors in a wide range of areas (economic development, public health, public safety, etc) and over the project's entire useful life.

- For example, vehicle capacity enhancements may not be the most cost-effective mobility improvement considering the County’s road maintenance backlog and the policy goals of promoting active transportation modes and better public health outcomes. The Circulation Element states that one of the County’s major challenges is roadway maintenance, with currently \$100 million worth of repairs outstanding. This maintenance backlog presumably leaves the County with little discretionary funding for significant capital improvements, but the following from Gainesville Circulation element might be worth bearing in mind: “[...] spending by various urban areas did not help drivers avoid the costs of being stuck in traffic, compared to those areas that did not spend large amounts of money to add capacity. The analysis found that between the two groups, the urban areas that added more new lanes spent roughly \$22 billion more on construction, but their drivers are still paying high costs due to congestion delays, and these delays are not made up for by time savings due to the widening, since the savings are either small in comparison to the delays, or result in more lost time due to the “triple convergence” (or “induced traffic”) problem. Therefore, widening streets is not only ineffective, but it is expensive as well.”¹

General Comment: The Circulation Element could include specific language about revising and updating local and county land use Zoning Codes to support policy goals of promoting higher use of active transportation modes and better public health outcomes. A substantial body of research has established the link between land use patterns and travel behavior. Local zoning regulations influence not only a community’s built form but also create transportation impacts. Often zoning codes aren’t updated for multiple years, and therefore have become outdated “policy fossils” reflecting a decades-old community vision that may no longer fit with current community goals. To achieve emerging transportation and public health goals, some jurisdictions have revised local and county zoning codes to encourage land uses and urban design principles that also support the community’s desired transportation outcomes. This encourages development that improves transportation choices, reduces auto dependency, and increases the overall safety and efficiency of the transportation system. This can include the following:

- Creating complete neighborhoods with incentives and requirements that encourage mixed-use development. By incentivizing or requiring mixed uses and a moderate increase in density appropriate for small towns and rural areas, city and county land use regulations can influence whether non-automobile modes are a viable option for community residents (e.g. whether it is reasonably safe and convenient to walk or bike from home to nearest grocery store, or if driving is the only choice).
- Creating complete streets with multimodal design standards for new development: By requiring adequate pedestrian, bicycle, and transit passenger facilities for all new development and redevelopment projects, Humboldt County and local communities can also improve non-motorized access and improve transportation choices. In particular by reviewing standards for street widths, traffic calming measures, sidewalk/path requirements, and other urban design issues, planners

¹ Source: Texas Transportation Institute, 1998 Annual Report on Metropolitan Congestion, reported in Surface Transportation Policy Project.

can partner with the development community to create better-quality community streets, while also and improving the overall safety and convenience of the transportation system for all modes.

8.4 Staff Analysis and Alternatives

- General Comment: Much of the information in this section (and particularly the analysis of pedestrian and bicycle infrastructure needs and performance measures) could be included in Section 8.2.
- Page 8-42: In our experience, suggestive policies are less likely to be implemented and enforced than mandatory policies. Nelson\Nygaard believes that the “Plan Alternative A” mandatory policies will make the Circulation Element more effective in achieving policy goals of promoting active modes of transportation and better public health outcomes.
- Page 8-72 to 8-78: It was unclear to us what distinguishes the goals, policies, and programs in Alternative D (from the Framework Plan) from those goals, policies, and programs contained in other alternatives. For this reason, we did not review these in depth.
- Page 8-79 to 8-90: It was unclear to us the relationship of the goals policies, and programs here (excerpted from the 1979 Trails Plan, McKinleyville Community Plan, Eureka Community Plan) to the current draft of the Circulation Element. For this reason, we did not review these in depth.

8.5 Preliminary Environmental Impact Analysis

- Page 8-90: There is no universal basis for using auto LOS C at peak hour as a threshold of significance under CEQA. It is unclear whether this threshold is based on past practice, adopted policy, or the result of thresholds used in other communities. Regardless, the Circulation Element could state the basis for using LOS C as a significance threshold, and articulate locations or conditions where it might be acceptable to accept lower auto LOS as a tradeoff to accomplish other transportation goals (such as pedestrian and bicycle safety and comfort).
- Page 8-90: The Circulation Element includes no quantitative performance measures to assess and mitigate the impacts to transit as part of CEQA analysis.
- Page 8-90: There is no CEQA requirement for parking deficits to be considered as an environmental impact under CEQA. Best practice in transportation planning is to consider parking deficits as a self-correcting market phenomenon, not an environmental impact.
- Page 8-91: High auto LOS can result in faster vehicle speeds, which are correlated with safety impacts.