

Alliance for Sustainability

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Transportation & Land use for vital low-carbon communities, including transit oriented development -

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(651) 287-4862 jerkel@mncenter.org www.mncenter.org MCEA supports a balanced multimodal system of transportation and secure and sufficient funding for the transit so that in the Twin Cities a regional transit ways network can be built and the capacity of the regional transit system can be doubled.

Introduction

In thinking about how climate can be integrated into land use planning and regulation, it is helpful to keep in mind that cities are agglomeration economies and large-scale ecosystems. In both economic and ecological terms, cities exist and are more efficient and resilient than other forms of development because of the proximity, diversity, and opportunities for interaction they afford. The smart growth criticism of the conventional form of post-World War II urban development is that it runs directly against these economic and ecological characteristics.

CSEO Policy Options

The Environmental Quality Board used the Center for Climate Strategies to model and assess recommendations for reducing GHG emissions sufficiently to meet the Governor's commitment of getting back on track to achieving the goals set out in the Next Generation Energy Act. The recommendations were broken out by economic sectors and transportation was found to represent about 25% of MN's 2010 GHG emissions, the second highest emitting sector in MN.

In general, emissions from the transportation sector can be reduced by working on cleaner fuels, more efficient engines, and reducing vehicle miles traveled. In fact, only working on fuels and engines may lead to what economists call a rebound effect in which the savings resulting from cleaner fuels and more efficient engines is traded off for even more VMT. We can see that happening right now with the rise in VMT following the fall in the price of oil as the Saudis have sought to impose market discipline on high-cost oil and gas production from shale formations and tar sands in Canada and the United States.

CCS considered four recommendations in the transportation sector. One of them, TLU-2, was intended to test the effect of more compact urban forms. It found that strategies based on increasing densities and broadly mixing uses would reduce GHG emissions by a cumulative 7 MMTCO_{2e} through 2030. In fact, it had the second best potential for reducing GHG emissions in the transportation sector behind only the transportation pricing mechanisms considered in TLU-1.

In evaluating TLU-2, CCS modeled concentrating most of the region's planned growth into already developed areas, increasing the density of development, and adding more diversity of allowed uses. The effect of the strategies was to reduce the number of vehicle trips that **must** be taken and reduce the length of vehicle trips that actually **are** taken. In addition, more compact forms of development would mean more multi-unit housing types which tend to be more energy efficient than single-family detached homes. This suggests the quantifica-

tion of reduced GHG emissions is understated because of cross-sectoral interaction with recommendations CCS considered for more energy efficient building requirements.

The modeled results are reflected in the real-world performance of transit-oriented development. TOD is compact, mixed-use forms of development within a radius of a half-mile of transit stations. Research shows that residents of TODs reduce vehicle trips by 40% and VMT by 50%. In terms of modal shifts, residents of TODs use transit at 10X the rate of the region as a whole. They bike at 2X the regional rate and walk at 4X the regional rate. These results have important implications for energy use, economic growth, and public health.

The keys, then, to building more proximity, diversity, and interaction into land use planning and regulations:

To start with: Climate monitoring and assessment should be an integral part of the comprehensive planning process – After all, what gets measured gets managed

Then:

- **Allow a broad mix of uses** –this can vary across the board and in specific districts
- The **mix of uses** needs to be more than just allowing a couple of different housing types in a residential district – the mix should include housing/commercial/retail.
- **Set higher densities for the uses that are allowed** -- again, this can vary across the board and in specific districts
- **Change performance standards to accept the mix of uses and densities that are set** -- think smaller lots and setbacks, increased heights and lot coverage, different housing types, accommodation for small-scale wind/solar installations, EV charging stations
- **Reduce parking requirements** – consider setting them as maximums rather than minimums
- **Modify road standards, adopt complete streets policies, and implement safe routes to schools programs**
- **Coordinate density changes with the investments in additional transportation options** that will make them pencil out
- **Protect natural areas/open spaces, tree protection/preservation ordinances** -- tree canopy can shade buildings and reduce the need to cool them (a cross-sectoral nod to FOLU-3)

These tools are fairly well known. This trick isn't finding a good example to use from some another city in this region or other region; it is finding the political will to implement them.

Zoning Consider shifting from straight Euclidean zoning to **form-based codes**. It takes more work up-front but reduces disagreements when projects are proposed.

Autonomous Vehicles Within the planning horizon of this round of comp plans, more than **70% of MN's vehicle fleet may be 100% autonomous**. You should begin thinking hard about how that technology will change everything you know about urban form and how land use is regulated. Just as with demographic trends, planning by looking back at what has happened without considering what may be coming is like driving down the road using only your rearview mirror – you won't even know what is coming until you are heading into the ditch.

References

- 1) **Climate Strategies Report 2016** (5 MB) https://www.eqb.state.mn.us/sites/default/files/documents/CSEO_EQB.pdf
- 2) **CSEO Policy Option Documentation** (55 MB)
<https://www.eqb.state.mn.us/sites/default/files/documents/CCS%20Appendix%20with%20policy%20details%20and%20results.pdf>

Local Planning Handbook – Transportation <https://metro council.org/Handbook/Plan-Elements/Transportation.aspx>

The 2040 Transportation Policy Plan describes two funding scenarios for the highway and transit improvements to the metropolitan transportation system.

Current Revenue Scenario: This is the adopted metropolitan transportation system plan which includes affordable improvements. Local comprehensive plans will be reviewed for conformance with this “fiscally constrained” plan.

Increased Revenue Scenario: This scenario includes regional projects that could be implemented if additional revenues are made available for transportation. While the local comprehensive plans can include these improvements, they must be described as unfunded and the uncertainty of their implementation clearly distinguished from the rest of the plan.

