

## Illinois Climate Change Advisory Group

Subgroup: Transportation

Policy Name: #17 Implement smart growth initiatives and expansion of mass transit

5-11-07

Policy Type: Other

Estimated 2020 Reductions Compared to BAU:

At least, **0.29 MM tons to 0.42 MM tons CO2**

### Affected sectors, subsectors or entities

For example:

Sector: Transportation

Subsector: Multi-mode

Entities: Government planning and mass transit agencies

### Description

This straw proposal consists of two components: 1) Expansion of mass transit in Northeastern Illinois and in urban centers across the state, 2) Implementation of planning policies to facilitate smart growth and restrain urban sprawl.

#### *Mass transit expansion*

This straw proposal would fully implement maintenance and service enhancement measures proposed in the joint report by RTA, CTA, PACE and Metra entitled “Moving Beyond Congestion.”<sup>1</sup> These measures include:

- Replacing aging trains and buses.
- Improve and maintain rail ties, bridges, viaducts, signals and safety equipment.
- Provide faster and more frequent service on all bus and rail lines, especially on weekends and non-peak hours.
- Enhance suburb to suburb transit service and improve reverse commuter routes.

In addition, new transit projects currently proposed or in the design phase would be fully implemented by 2020. These include:

- The CTA Circle Line connecting existing transit stations along the edge of central Chicago.
- Expansion of existing CTA lines including the Red, Orange and Yellow lines.
- New transit service on the proposed Ogden/Carroll St. transitway extending westward from the Navy Pier and connecting several existing transit stations.
- Construction of the Suburban STAR Line connecting dozens of large suburban communities between Joliet and O’Hare International Airport.
- Extension of several Metra commuter rail lines including: the Northwest Line, BNSF Line and Electric District.

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<sup>1</sup> See: <http://movingbeyondcongestion.org/>

- Creation of a new Metra line to serve Chicago's Southeastern suburbs.
- Construction of two Bus Rapid Transit lines in the PACE transit network along Cermak Road and Golf Road.

Together these improvements will reduce trip times for passengers and stimulate mode switching away from personal automobiles to mass transit. This will reduce traffic congestion, air pollution and GHGs while also providing new locations for smart growth and transit oriented development.

*Implementation of urban planning policies that stimulate smart growth*

This straw proposal would implement new urban planning guidelines across the state that restrain urban sprawl and redirect development towards urban centers. This would reduce the need for highway driving and create more compact, walkable communities. These guidelines would be funded and implemented through the following measures:

1. Implement a state development impact fee that would be limited to certain fast growing areas. This fee would be variable depending on the type and location of the development. This measure is designed to capture the state's full costs of accommodating "sprawl."
2. Mandate a limit on the installation of impervious surfaces in certain fast growing areas. This would encourage denser development while also protecting water quality.
3. Use the revenue from the development impact fee presented above along with 1 percent of the Hotel Operators Tax to fully fund and expand the existing (but currently unfunded) Illinois Local Planning Fund. This measure is derived from IL HR 2473, currently under consideration.
4. Apply criteria to the Local Planning Fund application that if met, would provide higher consideration of applications and higher maximum levels of planning grants. These criteria would require applications to create plans that encourage smart growth. See appendix for Wisconsin's 14 criteria that encourage such local plans.
5. Allow IDCEO to issue grants to developments that are consistent with the LEED for Neighborhood Development (LEED-ND) standards of the U.S. Green Building Council. LEED-ND certification guarantees neighborhoods adhere to the core principles of sensible growth: a range of housing types near jobs and services, walkable and bike-friendly communities, access to open space and transit, appreciating property values and economic viability for a markedly improved quality of life. This measure is derived from IL SB 135, currently under consideration.

It is important to note that this type of policy proposal while achieving modest emission reductions in the near-term, can catalyze large and dramatic reductions in future years out to 2050. This is due to shifts in development patterns through expanded transit and transit oriented development that have mild effects in early years but much larger impacts

over time. Thus, far greater gains in GHG reductions are likely possible post-2020 through this policy option.

### **Rough estimate of reductions from BAU in 2020**

*Rough calculations of mass transit improvements and expansion:*

The Moving Beyond Congestion report estimates that if all measures and projects are fully implemented, vehicle miles traveled would be reduced by 11 million in 2020 as compared to BAU.

Using the fuel economy average for new U.S. passenger vehicles (light trucks and passenger vehicles see: <http://www.epa.gov/otaq/cert/mpg/fetrends/420s06003.htm>) and CO2 emissions factors from the U.S. Energy Information Administration (see: <http://www.eia.doe.gov/oiaf/1605/coefficients.html>), total CO2 reductions from these measures are as follows:

11 million miles (VMT savings from mass transit) / 21 miles per gallon (latest model year average) = 523,810 gallons of gasoline.

(523,810 gallons of gasoline X 43.3 kg CO2 per gallon) / 1000 kg per metric ton = **22,689 tonnes of CO2.**

This is likely a conservative estimate as the actual average fuel economy of existing passenger vehicles in Illinois is likely to be lower than the new model average used here.

*Rough calculations for smart growth planning measures:*

According to the Northeastern Illinois Planning Commission, 521,000 people with an average density of about 22 persons per acre could live in 40,000 acres of transit oriented developments (TODs) in Metro Chicago by 2020. The average density in Metro Chicago is currently about 11 persons per acre.

[http://chicagoareaplanning.org/snapshot/regional\\_snapshot\\_final\\_web.pdf](http://chicagoareaplanning.org/snapshot/regional_snapshot_final_web.pdf)

Therefore, the TOD adds roughly 11 people per acre on top of the 11 that would be expected. Out of the 521,000 people NIPC estimates could be in the TODs, half (11 out of 22) or 260,000 would live in the TODs who would not under a BAU scenario.

[http://www.nipc.org/planning/pdf/nipc\\_transit.pdf](http://www.nipc.org/planning/pdf/nipc_transit.pdf)

Illinois – people per household: 2.63

<http://quickfacts.census.gov/qfd/states/17000.html>

According to the Denver Regional Council of Governments, TODs can reduce rates of greenhouse gas emissions by 2.5 to 3.7 short tons per year for each household.

<http://www.drcog.org/index.cfm?page=LearnaboutTOD>

260,000/2.63= 98,859 households X 2.5 short tons GHGs reduce per household/year=247,148 short tons per year

260,000/2.63= 98,859 households X 3.7 short tons GHGs reduce per household/year=365,778 short tons per year

Although rail transit is virtually non-existent anywhere else in Illinois, it could be added in the future, and TODs can happen around bus transit hubs. Metro Chicago comprised roughly  $\frac{3}{4}$  of the state's population. Assume another 15% of the population could take advantage of TODs. Using the same assumptions for metro Chicago = 52,000 people = 49,494 to 73,155 short tons per year.

Illinois statewide totals: 296,642 - 438,993 short tons per year

Short tons are then converted to metric tons by dividing the totals by 1.102 presenting a range for state wide total reductions in 2020 of:

**269,185 to 398,360 metric tons**

Note these calculations only cover the TOD portion of this proposal, additional reductions would likely be achieved through increased access to transit and the expansion of current and construction of new transit systems.

### **Timetables, duration and stringency**

By 2008 new planning guidelines are in place, existing transit projects are completed and new projects are in the planning phase.

By 2015 and after the majority of new development statewide is taking place in urban centers as opposed to suburbs and that transit options are well on their way to a dramatic expansion.

### **Barriers to implementation**

Additional resources will be required to expand and maintain mass transit networks statewide.

Also, new planning mandates would need to be imposed on urban planning agencies.

### **Appendix**

Listed below are Wisconsin's fourteen local comprehensive planning goals. The more planning applicants can demonstrate a commitment to these goals, the greater the chance of grant funding.

For more information see: [http://www.doa.state.wi.us/docs\\_view2.asp?docid=5963](http://www.doa.state.wi.us/docs_view2.asp?docid=5963)

1. Promotion of the redevelopment of lands with existing infrastructure and public services and the maintenance and rehabilitation of existing residential, commercial and industrial structures.
2. Encouragement of neighborhood designs that support a range of transportation choices.
3. Protection of natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces, and groundwater resources.
4. Protection of economically productive areas, including farmland and forests.
5. Encouragement of land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state governmental and utility costs.
6. Preservation of cultural, historic and archaeological sites.
7. Encouragement of coordination and cooperation among nearby units of government.
8. Building of community identity by revitalizing main streets and enforcing design standards.
9. Providing an adequate supply of affordable housing for individuals of all income levels throughout each community.
10. Providing adequate infrastructure and public services and an adequate supply of developable land to meet existing and future market demand for residential, commercial and industrial uses.
11. Promoting the expansion or stabilization of the current economic base and the creation of a range of employment opportunities at the state, regional and local levels.
12. Balancing individual property rights with community interests and goals.
13. Planning and development of land uses that create or preserve varied and unique urban and rural communities.
14. Providing an integrated, efficient and economical transportation system that affords mobility, convenience and safety and that meets the needs of all citizens, including transit-dependent and disabled citizens.

***Commends by CCAG members:***

From Al Larson, Mayor of Schaumburg.

On the STAR Line:

The **Suburban Transit Access Route** (STAR Line) is a widely supported rail initiative that will address urban sprawl while encouraging economic growth in over 100 communities in northeastern Illinois along the proposed route. The 55-mile route, connecting Joliet to O'Hare International Airport will use the dedicated transportation corridors of the EJ & E and I-90, connecting in Hoffman Estates at Prairie Stone. This first of its kind suburban to suburban commuter rail has already spurred many of the communities along its route to revisit their zoning and land use plans to include transit orientated development (TOD). This rebirth in walkable communities is occurring in areas that are currently underserved and lagging in their ability to meet the demand curve in transportation as a result of growth in population, employment and households. The STAR Line will give nearly 1.2 million employees an alternative to driving as well as provide a transportation option to nearly 1.6 million residents who live in areas of high traffic congestion.

Forecasted population, household and employment growth for the northeastern Illinois Region is projected to increase by 12%, households by 16% and employment by 22%. By linking nearly 100 communities in the southwest, west and northwest suburban regions of northeastern Illinois, the STAR Line fills a critical void for inter suburban commuter rail service that will complement the existing suburban to city model.

The higher density provided in the transit orientated development's (TOD's) that will emerge around the proposed stations will attract those employers who wish to capitalize on the greater access to our region's labor pool. The entire region will benefit from fewer cars on the road as emissions are lowered and traffic congestion is mitigated. Additionally, the service corridor of the STAR Line will integrate areas that are already populated in the region. Areas with major hospitals, colleges and universities, and business and employment centers will benefit including key job centers along this corridor.

Currently, one out of five people in the region live within five miles of the proposed STAR Line and one-fourth of the region's jobs are in this area as well. The STAR Line is critical to the future of this region and to keeping the business environment strong.

### **STAR Line Benefits**

The proposed STAR Line is studying the use of Diesel Multiple Units or DMU's. These 90 to 100 passenger vehicles are an exciting new transit technology that provides improved fuel efficiency, better acceleration and greater flexibility compared to traditional commuter rail operations.

Annual benefits commencing upon project completion in 2020

#### **Air Pollutions**

- 158 fewer tons of volatile organic compounds emissions
- 231 fewer tons of nitrogen oxide emissions
- 1,300 fewer tons of carbon monoxide emissions
- \$1.25 million in public health savings from reduced emissions

#### **Energy**

- 13.1 million gallons of fuel saved
- \$20.9 million savings for drivers

#### **Congestion Mitigation**

- 188 million fewer vehicle miles traveled
- \$12.6 million in savings due to highway congestion cost avoidance

#### **Travel Times**

- 880,000 hours saved

- \$11.9 million in savings to Metra passengers and drivers

#### Safety

- 759 auto accidents eliminated
- \$8.5 million saved in avoided costs

#### Regional Planning Efforts

Through the Regional Planning Act of 2005, the Chicago Metropolitan Agency for Planning (CMAP) was formed by merging Northeastern Illinois Planning Commission (NIPC) and the Chicago Area Transportation Study (CATS). Bringing the business community to the planning table is an important CMAP initiative. Like others in the region, business leaders are frustrated by traffic snarls, the lack of affordable housing and other factors that erode our economic competitiveness. Too often, those voices have not been heard in the debate over how to shape growth through land-use planning and transportation.

The STAR Line Business Alliance is a group of concerned corporate citizens who have experienced the effects of increasing highway congestion on their ability to do business in the Chicago region. This group of citizens came together to help build support for this important transportation initiative. The STAR Line Business Alliance includes representatives from many corporate citizens along the route including: Arlington Park, Carol Stream Chamber of Commerce, Chicagoland Chamber of Commerce, DuPage Airport Authority, Elk Grove Chamber of Commerce, Greater Aurora, Greater O'Hare Assoc. of Industry & Commerce, Greater Woodfield Conv. & Visitors Bureau, Harper College, IKEA, Jackson Moving & Storage, Metropolitan Planning Council, Motorola, Naperville Area Chamber of Commerce, Northwest Municipal Conference, NSACI, Prairie Stone, Roosevelt University, Schaumburg Business Association, Sears Centre, Siemens, St. Alexius Medical Center, Walgreens Co. and Woodfield Mall to name a few.

In February, 2007, CMAP, published a Regional Snapshot for the seven counties they serve. This document states that jobs and prosperity literally depend on the success at guiding growth in ways that preserve overall quality of life. Getting there requires a collaborative effort in which communities, including residents, local officials, advocacy groups, business leaders, and other stakeholders, come together to focus on the long-term goals they have in common rather than on the short-term factors that might separate them. Because globalization brings many opportunities and challenges, the region as a whole needs to compete as an integrated unit whenever possible. Neighbors may compete to attract investment in the global economy, but urban and suburban communities must act as members of the same team because their futures and fortunes are intertwined

The STAR Line project represents a cooperative effort of 100 communities and several transit service boards to create planned regional growth patterns through expanded transit and transit orientated development with the goal of reducing current and projected congestion.



Advisory Group to consider and recommend policies and strategies to reduce greenhouse gas (GHG) emissions in Illinois.

The RTA and CTA submit this written comment to raise the level of awareness of transit in general and MBC in particular, as a highly-effective tool for achieving the Governor's goal of reducing GHG emissions. The following comments focuses on the proposed Policy #17: Implementing smart growth initiatives and expansion of mass transit. The comments seek to address the following items:

Provide corrected and additional data on the environmental benefits of implementing MBC.

Point out the congestion reduction benefits of transit compared to other strategies.

Outline the benefits of short-term transit enhancements (i.e. faster/more frequent service - the third bullet point under 'Mass Transit Expansion' in the latest straw proposal) along with long-term transit expansion projects that are more aligned with timeframes needed for land use changes

Emphasize that the baseline conditions will change if MBC operating program is not funded.

#### Environmental Benefits of Public Transit

Climate change is a global issue with local impacts – and transit is one of the most effective ways to combat its impact in the northeastern Illinois region. By providing public transportation, the RTA and its operating agencies CTA, Metra and Pace are helping Chicago-area residents do their part in mitigating global warming. The typical public transit rider consumes on average one half of the oil consumed by an automobile rider. It is estimated that the current public transit in northeastern Illinois cuts gas usage by 150 million gallons. With one gallon of gas producing 20 pounds of carbon dioxide (CO<sub>2</sub>), that means there are 3 billion fewer pounds of CO<sub>2</sub> in our atmosphere each year because of public transit.

Additionally, by reducing criteria pollutants public transportation is helping the northeastern Illinois region meet the national air quality standards. Public transportation produces 95 percent less carbon monoxide (CO), 90 percent less in volatile organic compounds (VOCs), and about half as much carbon dioxide (CO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>), per passenger mile, as private vehicles. This means fewer children with asthma and other breathing problems. It means fewer seniors with respiratory conditions. It means clearer skies and safer and healthier communities.

#### MBC VMT Reduction and Emission Reduction Estimates

Moving Beyond Congestion is a five-year plan to maintain, enhance and expand our transit system to meet the transportation demands of changing urban neighborhoods and growing suburban communities. The plan has identified the need for \$10 billion in additional capital funds and an ongoing, annual need for \$400 million in operating funds.

The RTA estimates that a total of 1,858 million vehicle miles traveled would be reduced by 2020 as compared to Business as Usual (BAU). This is estimated from the following:

635 million mile of automobile vehicle miles traveled (VMT) will be reduced from the implementation of the MBC capital program

1,223 million miles of auto VMT will not occur if the MBC operating program is funded

Using the fuel economy average for new U.S. passenger vehicles, the total CO<sub>2</sub> reductions from MBC are as follows:

1,858 million miles (VMT savings from implementation of MBC operating and capital programs) / 21 miles per gallon = 88,476,190 gallons of gasoline

(88,476,190 gallons of gasoline X 8.8 kg CO<sub>2</sub> per gallon) / 1,000 kg/metric ton =  
**778,590 tonnes of CO<sub>2</sub>**

Chicago Metropolis 2020, in partnership with the RTA, is utilizing quantitative models to estimate the benefits of MBC operating and capital funding scenarios for the surface transportation system and the resulting economic benefits for businesses and residents. The consulting team and modeling tools used for The Metropolis Plan: Choices for the Chicago Region (2003) and The Metropolis Freight Plan: Delivering the Goods (2004) is being used. The Metropolis Transportation Model that was developed for those plans was used to quantify transportation results in terms of travel times and other performance indicators. A regional economic model was then applied to estimate the impact of those transportation results on household disposable income, business production, income, sales, and jobs. **The preliminary results of the modeling indicate that over 1 billion vehicle miles traveled and over 125 million hours spent traveling would be reduced annually by 2020 if both the MBC capital and operating programs are implemented.** The impacts of combining the MBC program with supportive land use changes are even larger.