



American Planning Association
Georgia Chapter

Making Great Communities Happen

Transportation Planning

AICP EXAM REVIEW

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Georgia Tech Student Center

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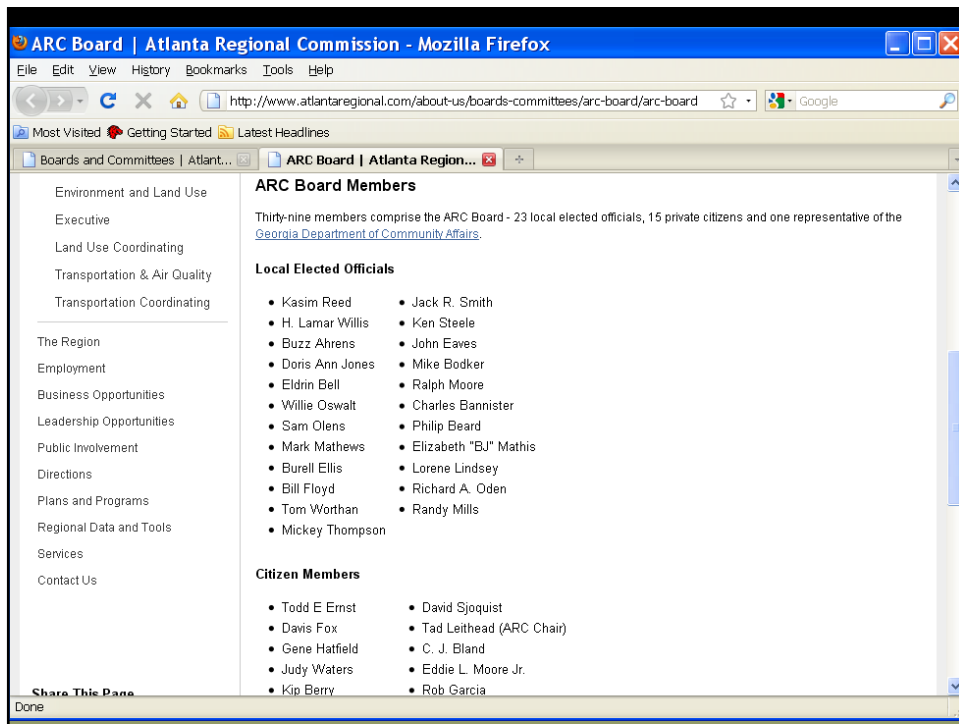
Defining transportation planning

- The process of identifying transportation problems and looking for solutions to those problems is called transportation planning.
- With transportation planning, we work out the best ways to get you to . . .
- where you live,
- where you work,
- where you shop,
- where you go to school,
- where you take vacations, and
- . . . anywhere else you need to go.



The Governments

- State Departments of Transportation (DOTs) are the largest units of government that develop transportation plans and projects. They are responsible for setting the transportation goals for the state. To do so, they work with all of the state's transportation organizations and local governments. They are responsible for planning safe and efficient transportation between cities and towns in the state.
- Metropolitan Planning Organizations (MPOs) represent areas with a population of 50,000 people or more. An MPO may have "council of governments" or "regional planning commission" in its official name. Each MPO is different because individual metropolitan areas are so different. A policy board, which is comprised of local elected officials, set an MPO's policy; but other groups, such as non-profit organizations, community organizations, or environmental organizations, can influence the direction an MPO follows.



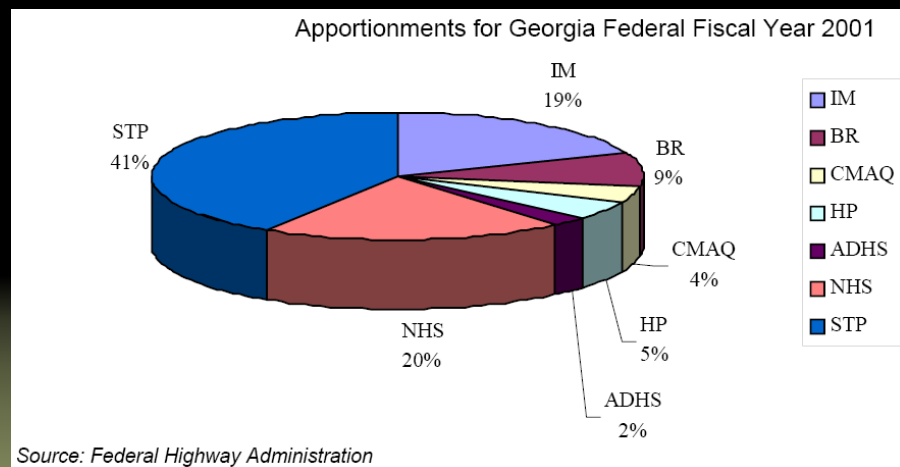
The Governments

- Local governments carry out many transportation planning functions, such as scheduling improvements and maintenance for local streets and roads.
- Transit agencies provide transportation for the public. Public transportation includes buses, subways, light rail, commuter rail, monorail, passenger ferryboats, trolleys.
- The Federal Government (U.S. DOT) oversees the transportation planning and project activities of the MPOs and state DOTs
 - provide advice and training
 - supplies critical funding needed for transportation planning and projects.

Federal Funding

- Federal-Aid Highway Act of 1956
- ...
- ISTEA
 - Intermodal Surface Transportation Efficiency Act, 1991
- TEA-21
 - Transportation Equity Act for the 21st Century, 1998
- SAFETEA
 - Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, 2005

Federal Trust Fund Expenditure

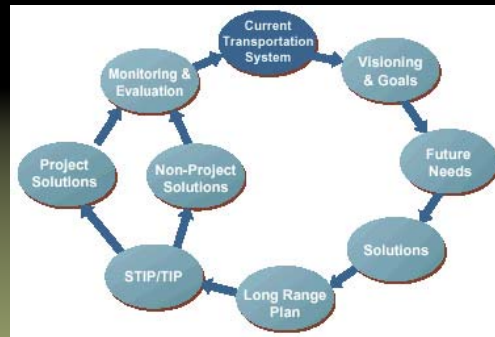


Planning Process (3C)

Continuing: Planning must be maintained as an ongoing activity and should address both short-term needs and the long-term vision for the region.

Cooperative: The process must involve a wide variety of interested parties through a public-participation process.

Comprehensive: The process must cover all transportation modes and be consistent with regional and local land-use and economic-development plans.



Transportation Plans & Programs

- A vision plan provides broad goals for what the region or state will look like and reflects what is important for the future.
 - Projected population growth
 - Projected economic changes
 - Current and future transportation needs (air, bicycle, bus, rail, roads, pedestrian, and water)
 - Safety
 - Maintenance, operation and management of transportation facilities
 - Preserving the human and natural environment
 - Quality of life
- The vision is a foundation for plans to improve the transportation system .

Putting the Plans in Place

- Transportation planners help translate the vision into long-range transportation plans. Planners look at different transportation alternatives and work with the public to select the alternatives that make the most sense for their areas. Sometimes they use mathematical models to predict future travel; sometimes they lead public discussions to get the opinion of the public and experts.
- Usually, the first product after the long-range plan is a Statewide Transportation Improvement Program (STIP) or an MPOs' Transportation Improvement Program (TIP). These improvement programs are required to be developed on a 2-year cycle. They contain individual transportation improvements and projects. All federally funded projects must be part of an improvement program to be implemented.

Project Development

- Most projects must first go through the transportation planning process, appear in the TIP and/or STIP, have some citizen involvement, and be approved by transportation officials. The project development process is critical because it links the planning process with the actual project location, design, and eventual construction.



The NEPA Process

- Projects closely looked at to see how they might impact the community, the natural environment, and our health and welfare. Before any project can move forward to construction, the FHWA and FTA may address and comply with more than 40 laws related to safety and the environment. These laws cover social, economic, and environmental (SEE) concerns ranging from community cohesion to threatened and endangered species. To get through this detailed process, FHWA and FTA use the National Environmental Policy Act (NEPA) process to evaluate all SEE concerns with each individual project.



The National Environmental Policy Act of 1969 (NEPA)

- It enunciated for the first time a broad national policy to prevent or eliminate damage to the environment.
- Created an environmental protection agency in every state
- Requires an environment impact analysis
- Identifying and studying alternatives becomes the key to the NEPA process' objective of finding transportation solutions that help preserve and protect the value of environmental and community resources.
 - Alternative analysis is "Heart of EIS"

Funding Projects

- States and MPOs must identify project funds that will be readily available over the three-to-five-year life of the Transportation improvement Program.



Peachtree streetcar



Funding Sources

Primary Sources

- Special Peachtree Corridor Tax District
- City General Funds/Bonds
- Parking Tax
- Federal/State Funds (matching funds for local investments)
- Streetcar Fare Revenues
- Foundation Grants and Developer Contributions

Secondary Sources

- Regional Transportation Funds (if this source is created)
- MARTA Funds (if available)
- TAD Funds (use of future bond funds)
- Hotel/Motel Tax (future reallocation of funds)

Public Funds for Transportation

- Public funds by national average
 - 21% from federal government
 - 52% from state government
 - 27% from local government

Federal Trust Fund Sources

- Gasoline tax: 51%
 - 18.4 cents per gallon
- Diesel fuel: 24%
- Gasohol: 16%
- Fees on tires, trucks and other user charges: 9%
- General fund appropriations (sometimes)

State Transportation Funds

- Fuel tax
 - Average state tax: 20 cents
 - Georgia: 7.5 cents per gallon
 - Rhode Island: 30 cents per gallon
- Tolls
 - Delaware's major source (over 50%)
- General fund appropriations
- Bond issue proceedings

GA Funding Sources

- Motor fuel tax
 - 7.5 cent/gallon since 1971 (lowest in the country)
 - 4% sale tax added in 1979, with 3% goes to GDOT
- License
- Title registration fees
- Tag fees
- Motor carrier tax
- Personal property tax

Local Transportation Funds

- General fund appropriations
 - About 1/2
- Property tax
 - About 1/6
- The remaining 1/3
 - Bond issue proceeds
 - Investment income
 - Fees/user fees
 - Locally enacted retail sales taxes
 - Tolls
 - Benefit assessment districts

Transit Financing

- Federal level
 - Mass Transit Account of the Highway Trust Fund
 - 2.86 cents of 18.4 cent-per-gallon tax
- State level
 - 10 states do not use gas tax for transit
 - 19 state spend less than 1 percent on transit
 - 4 states spend between 15 and 25% of their gas tax on transit
- Local level
 - Sale taxes, property tax, general revenue, advertising, and fares

Facilities: Roads

System	VMT	Miles
Principal Arterials	30% 55%	12% 4%
Principal Arterials and Minor Arterials	45% 75%	6% 12%
Major and Minor Collectors	20% 35%	20% 25%
Local Roads	5% 20%	65% 75%

Classification by function: mobility vs. land access

Parking: generation factor

Generator	Peak Space Factor
Shopping Center >600,000 sq. ft.	1.0-5.0 spaces per 1,000 square feet GLA
Shopping Center <600,000 sq. ft.	1.0-4.0 spaces per 1,000 square feet GLA
Office	0.5-3.0 spaces per 1,000 square feet GLA
Office	0.1-.75 spaces per employee
Medical Center	.75-4.5 spaces per bed
Medical Center	.10 - .75 spaces per employee
Industrial	.67-3.5 spaces per 1,000 square feet GLA
Industrial	.36-1.6 spaces per employee
University/College	.10-.50 spaces per student
University/College	.80 spaces per staff person
Cinema	10-85 spaces per screen
Hotel	.20-1.5 spaces per room
Restaurant	5-25 spaces per 1,000 square feet GLA
Residential	.20-2.0 spaces per unit

- Source: ITE, Parking Generation 2nd edition

Travel Demand Management

- Car ownership
 - Title fee, license fee
- Driving behavior
 - Gasoline tax, toll collection
 - Insurance: lump-sum vs. mileage based
 - Cashing out free parking
- Alternatives
 - HOT and HOV lane
 - Transit
 - Biking, walking
- Workplace arrangement
 - Telecommuting
 - Satellite office
 - Staggering working hours

Traffic Impact Analysis

- Understanding the demands placed on the community's transportation network by development
- Goals
 - Forecast additional traffic associated with new development, based on accepted practices.
 - Determine the improvements that are necessary to accommodate the new development.
 - Assist communities in land use decision-making
- large communities in particular will need to determine appropriate mixes of transportation modes, including public transit options

Land Use	Base Unit	Rates		
		AM Peak	ADT	ADT Range
Residential				
Single Family Home	per dwelling unit	.75	9.55	4.31-21.85
Apartment Building	per dwelling unit	.41	6.63	2.00-11.81
Condo/TownHome	per dwelling unit	.44	10.71	1.83-11.79
Retirement Community	per dwelling unit	.29	5.86	
Mobile Home Park	per dwelling unit	.43	4.81	2.29-10.42
Recreational Home	per dwelling unit	.30	3.16	3.00-3.24
Retail				
Shopping Center	per 1,000 GLA	1.03	42.92	12.5-270.8
Discount Club	per 1,000 GFA	65	41.8	25.4-78.02
Restaurant				
(High-turnover)	per 1,000 GFA	9.27	130.34	73.5-246.0
Convenience Mart w/ Gas Pumps	per 1,000 GFA		845.60	578.52-1084.72
Convenience Market (24-hour)	per 1,000 GFA	65.3	737.99	330.0-1438.0
Specialty Retail	per 1,000 GFA	6.41	40.67	21.3-50.9
Office				
Business Park	per employee	.45	4.04	3.25-8.19
General Office Bldg	per employee	.48	3.32	1.59-7.28
R & D Center	per employee	.43	2.77	.96-10.63
Medical-Dental	per 1,000 GFA	3.6	36.13	23.16-50.51
Industrial				
Industrial Park	per employee	.43	3.34	1.24-8.8
Manufacturing	per employee	.39	2.10	.60-6.66
Warehousing	1,000 GFA	.55	3.89	1.47-15.71
Other				
Service Station	per pump	12.8	168.56	73.0-306.0
City Park	per acre	1.59	NA	NA
County Park	per acre	.52	2.28	17-53.4
State Park	per acre	.02	.61	.10-2.94
Movie Theatre	per movie screen	89.48	529.47	143.5-171.5
w/Matinee	Saturday (PM Peak)			
Day Care Center	per 1,000 GFA	13.5	79.26	57.17-126.07

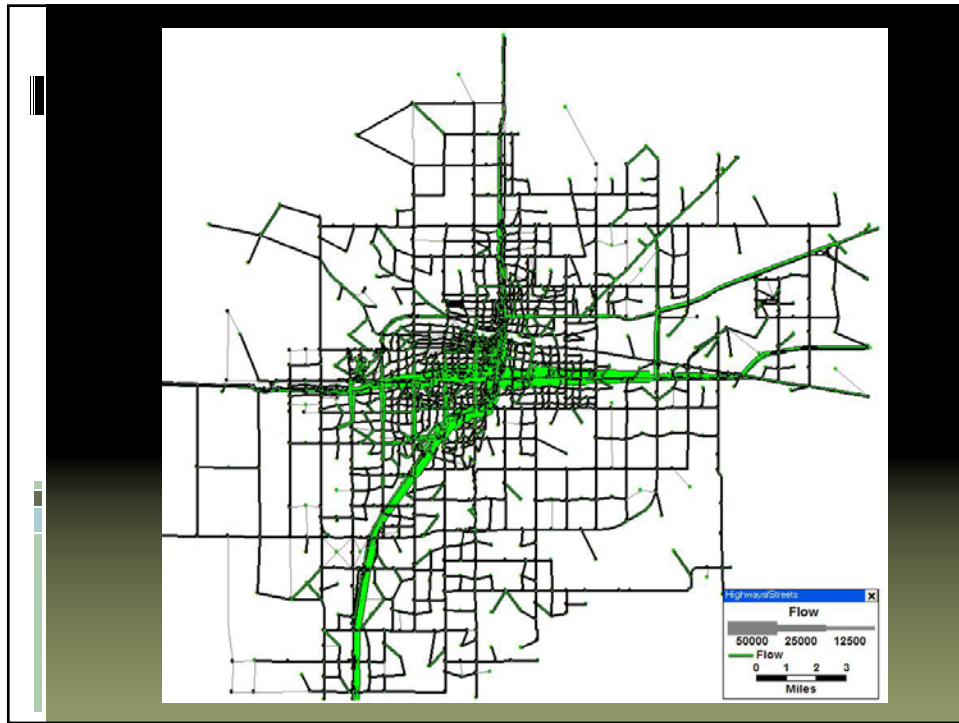
Source: Institute of Transportation Engineers (ITE). Trip Generation.

Travel impacts of land development

- High density
 - Making low-mobility options possible, at least for transit trips
- Mixed use
 - Internal site trips
- Urban design promoting non-motorized transportation
 - Streetscape, building facade
 - Bus stop and rail station design

Conventional Urban Travel Forecasting Process

- Four technical phases: collection of data, analysis of data, forecasts of activity and travel, and evaluation of alternatives.
- Four step models
 - Trip generation
 - Trip distribution
 - Mode split
 - Trip assignment



Title of Your Session

QUESTIONS?