

Community Impact Assessment

Developing a Preliminary Community Profile using Hard Data

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***Beverly Ward** is part of the Center of Urban Transportation Research at the University of South Florida in Tampa. A native of Birmingham, Alabama, she got involved in 1984 through 1991 in transit issues, managing properties around the state, and became Assistant Director of the Alabama Transit Association. At the Center for Urban Transportation Research, she's working in areas of transportation planning, capitalizing on her expertise in transit and transportation risk management. Her presentations, publications, and general research deal with technical applications and travel behavior. Most recently, Beverly's been looking at community impacts and risk assessment and she's been providing technical assistance to the TRB Subcommittee for community impact assessment. She holds a Ph.D. in Applied Anthropology and is involved in a number of national anthropology organizations, the Society for Public Administration, and is a member of the TRB Joint Committee on the CIA. She also works on the Committee for Women's Transportation at TRB.*

Part I: Developing a Community Profile

Most people associate the "CIA" acronym not with Community Impact Assessment, but of course with the Central Intelligence Agency. But the comparison is apt, because as you know, our type of CIA really does involve intelligence-gathering activities. We like to talk about CIA in the context of both planning and project development - which unfortunately is quite a novel idea in some quarters, linking planning and project development!

The big-picture "umbrella" (Figure 1) view of CIA conveys two ideas: that CIA encompasses a number of issues, and that CIA philosophy considers those issues in tandem: for example, the idea that public outreach should be continuous, or that transportation professionals should be proactive about partnering.

The purple book [NAME?] addresses a number of the tasks involved in doing CIA, but we've added a few:

- Define the Action & the Study Area
- Develop a Community Profile
- Collect Data
- Analyze Impacts
- Identify Solutions
- Partner
- Involve the Public
- Practice the 6-Cs
- Be Just
- Document



FIGURE 1

One of those added is partnering to include other agencies, such as resource agencies, and the public, our most important partner. "Practice the 6 'C's" builds on the planning profession's "C process" [WHAT IS THIS?], with three additional "C"s: being a Conduit, Coordinating, and taking a Comprehensive approach. In "Being Just," our principle of justice goes beyond environmental justice to embrace the philosophy of being just to all communities. And the need to document your process means not only including documentation in your EIA - but also passing it along so that it becomes part of the legacy of the project, providing a record of commitments that have been made to communities.

One of the first and most important tasks in doing CIA is developing a community profile. Community profiling allows us to gain an understanding of the community as a whole, as well as individual neighborhoods within the community and special groups and populations. In general, a community profile involves the following:

1. Summarize the Past, Present, and Recently Anticipated Future of a Place
2. Assess Community Trends and Conditions (Past and Current)
3. Take an Inventory of Study-Area Features
4. Identify Community Issues
5. Summary of Findings





Item 2: "Assessing community trends and conditions" - means looking at population, land use, the economic base, and employment and housing characteristics. This doesn't need to be generated as original data, because a lot of it is archival; much of it can be obtained by partnering with other agencies.



Item 3: "Taking an inventory of study-area features" - means mapping social features, businesses, activity centers, neighborhoods, community facilities and services, special populations, cultural & aesthetic resources. The need to map these assets can't be emphasized enough. We have very good information on the natural environment - and you can include humans as part of the natural environment as well as the built environment - but we very rarely look at how a community uses these resources.



Item 4: "Identify Community Issues" - this process begins once you've developed a map of study-area features; you review your secondary sources and begin talking knowledgeable people. The hard data you've accumulated offers clues about stakeholders and key people to seek out for interviews, and about how and where you should visit the community - all of which helps create a list of issues. At this point, you begin taking a back-and-forth approach in developing your Community Profile. As you gain more information, you run it back through the process until the project is completed. Finally, creating a summary of your findings in the community profile establishes baseline information that you can build on and - equally important - pass on to the next phase of the project.

This diagram from the Purple Book shows how the different phases of creating a Community Profile related to and influence each other. (Figure 2)

This table can help community impact analysts remember what to look for in the community and provide a structure for notes. (Figure 3)

There are a couple of great examples of transportation design in Broward County, Florida, that show the results of a good CIA process. Broward County has been practicing a "good neighbor policy" since the 1980s. They're proactive with their citizens and they attempt to communicate with the public and explain the constraints of design criteria; they've also become much more flexible with those constraints. They also make very liberal use of graphics in



FIGURE 2

| Community Profile Information | |
|-------------------------------|-------|
| Profile Category | Notes |
| Community Facilities | |
| Public Services | |
| Possible Impacts | |
| Roadway Issues | |
| Land Use/Commercial | |
| Economic/Social/Historical | |
| Population/Demographics | |
| Neighborhood Boundaries | |

FIGURE 3



FIGURE 4



FIGURE 5



FIGURE 6



FIGURE 7

communicating with the public so that ideas are not just explained, but illustrated, and projects are discussed as works in progress - not "done deals."

Broward County's work on Route AIA in Fort Lauderdale Beach has really helped to revitalize the area economically. The new road features a "wave wall," along with brick pavers and lighting.

(Figures 4-6)

Along Interstate 75 between Belleville and Ocala, Florida, they built a land bridge - America's first - utilizing transportation enhancement funds. This project is important in that it reconnects a 110-mile greenway across four counties, which was bisected by I-75. An equestrian park is being developed on one side of the bridge, which is 52.5 feet wide and 200 feet long, with 400-foot ramps at each end. The actual bridge is dirt-covered and incorporates native vegetation, which required special engineering with U-beams to accommodate the extra weight of the dirt and landscaping. The bridge follows a natural ridge so as to minimize some of the environmental impacts, and has a midpoint viewing area. (Figures 7-15)

Within the Florida DOT, Secretary Rick Chesser of District Four (which covers Broward County) is developing measures for Community Impact Assessment - an approach that is spreading throughout the state. It starts with these items:

- A safe facility for the user and the community
- Satisfies the purpose and needs established by all parties involved
- In harmony with the community and preserves environmental, scenic, aesthetic, historic, and natural resources of the area
- Exceeds the expectations of both the designers and customers and achieves a level of excellence in the public's mind
- Designed and built with minimal disruption to the community
- Seen as having added lasting value to the community

Part II: Using Hard Data in a Community Profile

"We live in two worlds:

*The world we can measure with line and ruler, and
the world we feel with our hearts and imagination."*

Those are words from the Romantic poet Leigh Hunt - and they really are apt when it comes to distinguishing "hard" data from "soft" data. Hard data comes from the world we can measure with line and ruler. It fits well into a map or can be displayed on a bar chart. Then there's world that we feel with our hearts and imagination - that's the "soft" data that relates to the quality-of-life issues in a community, issues that can't be measured with a line and ruler.

Metroplitan Planning Organizations

By now we all know that CIA - the evaluation of effects of our transportation investments - needs to start early in the process. And for those of use who are not yet familiar with what Metropolitan Planning Organizations (MPOs) have to offer, we'd like to introduce them as a great place to start gathering your hard data for the CIA process. Metropolitan planning comes out of a regulatory background. In my experience back in the '80s, project development activities would begin at the Maryland State Highway Administration or the Maryland DOT - but we at the Baltimore MPO were never to be seen at those development meetings. But the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) was landmark legislation that really empowered the Metropolitan Planning Organizations; and in 1998, the Transportation Equity Act for the 21st Century (TEA-21) continued that empowerment and strengthened the role of metropolitan planning in general.

If you're not familiar with the MPO in your local area, the Association of Metropolitan Planning Organizations (<http://www.ampo.org/publications/ITSNewsletter/>) is a great place to locate it and get an introduction. MPOs come in different shapes and sizes, but they all:

- Are designated by the Governor of a state
- Cover an area with a population of at least 50,000
- Act as forums for regional transportation planning, collaboration, and decision-making

They work in conjunction with the state DOTs and transit providers to identify transportation needs and priorities. The amount of data an MPO provides over the Internet depends on its size and the staff,



FIGURE 8



FIGURE 9



FIGURE 10



FIGURE 11



FIGURE 12



FIGURE 13



FIGURE 14



FIGURE 15

but in general it's growing all the time. The typical MPS has the following types of data: (Figure 26)

- Population
- Employment
- Households
- Income
- Transportation Networks (highway, transit, bicycle/pedestrian)
- Traffic Counts

Population and employment are the bread-and-butter databases for an MPO. For population information, there's a great window of opportunity now with the availability of 2000 Census data online; as for employment data, MPOs use it to feed into forecasting models for travel demand in developing 20-year planning scenarios. MPOs also have present and future year social economic data, which is key in developing an effective Community Impact Assessment. Another benefit is that many MPOs are establishing performance measures that a transportation professional can possibly carry forward into the project development process. Benchmarks are established on a regional basis that you can refine within your corridor or that adapt to your particular project - and a lot of the criteria work has been done as well. So why reinvent the wheel?

Keep in mind that, along with performance measures, most of this information is typically given at a systems or regional level, or else it covers a transportation or travel-analysis zone. But those zones are just aggregations of data, so when you get into project development you can break down and refine the data. You may not always get down to mitigation levels on a project basis or have information available on an MPO website to that level. But you will find a lot of aggregations of data that you can take further on into the process for refinement as part of your environmental impact process. Some MPOs with bigger budgets and more staff may have project-specific information available if they've been involved in the environmental review process. And some state DOTs have been working closely with the MPOs towards that end. It's going to vary by MPO.

But in general, we know that these data sources exist - it's simply a matter of finding out where they are located. Contact with your local MPO is key to answering that question. We recommend contacting your MPO's technical committee or the individual at your state DOT who attends that committee's meetings. You can also check the MPO's website and also talk with the director of technical services - the person who does actual data analysis rather than policy. Find out what's on their meeting agendas, what they're talking about. Is it relevant to your day-to-day activities? How's the data being used? And obviously, how old is the data and how accu-

rate is the data? All of these are important questions at both the planning and project development stage - but perhaps most important is ensuring that population, employment and other demographic data from an MPO is the endorsed growth scenario that relates to the current plan. Oftentimes, alternative growth scenarios are considered in the process of updating plans, so you need to be sure you've got the correct information, especially if it's being put forward into project development.

Typical thematic map available from a larger MPO, showing the Newark, NJ area. Most MPOs have maps at a transportation zone level; this one shows median household income, a key descriptor of a community, neighborhood, or region. (Figure 16)

When you talk with your MPO or attend their meetings, you should have a familiarity with their key planning products so that you to know what to ask for, and can find out what kinds of data collection and analyses are underway. These documents are not always free, but are available if you ask:

- Long-Range Plan
- 20-year horizon
- Updated every three years in metropolitan areas
- Transportation Improvement Program (TIP)
- 3 to 5 year implementation plan
- Projects with more scope, description, information
- Unified Planning Work Program (UPWP)
- Schedule of work tasks/budget underway during the next fiscal year
- Information on data collection, maps, and products to be produced during upcoming year
- Generally available on an MPO website



The metropolitan transportation process today is guided by the TEA-21 legislation from 1998, using keywords that are important for Community Impact Assessment, such as:

- Safety
- Accessibility
- Mobility
- Quality of Life
- Environment
- Public Involvement
- People!

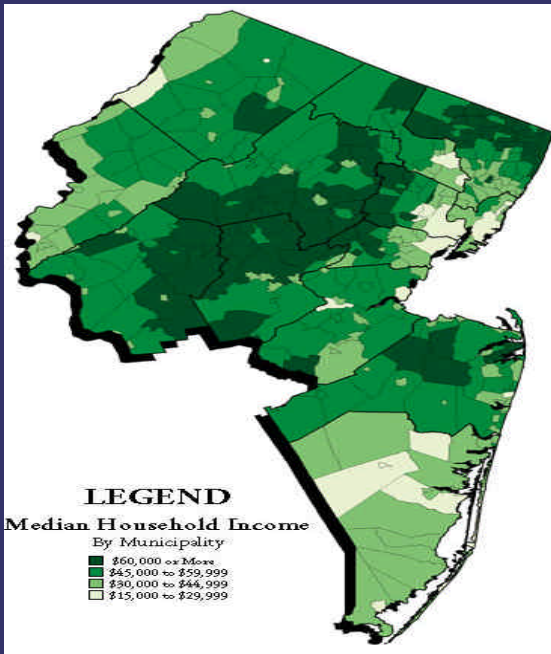


FIGURE 16

Some MPO policy boards are keener than others on looking at these kinds of issues in the planning process. But if the commitment is there at the top levels of the organization, the data will exist or be produced at some point during the course of their Unified Planning Work Program. So again, the opportunities to obtain analyses and data collection at the metropolitan level come mainly from the 20-year long-range plan and the Transportation Improvement Program. These documents are all rich in CIA data - including job access or reverse commute studies - that you can refine at a project level.

Data Sources

Transportation professionals are already familiar with a lot of data products - and obviously, the U.S. Census is the richest source of data available, with increasing amounts of data from the 2000 Census available online to develop a Community Profiles, to look at the social and economic aspects of a region, of a corridor.

U.S. Census Products (<http://www.census.gov>)

- 1990/2000 U.S. Census Data (Minority, Poverty, Poor Pre-school Children, Median Household Income)
- Census Transportation Planning Package
- Regional Economic Information System and County Business Patterns
- Public Use Microdata Sample of Census Data (PUMS)
- TIGER Files

When you're trying to understand the accessibility and mobility needs of a community, regional economic information, county business patterns, and data relating to employment are all key types of hard data that should be used. Accessibility is a question of linking populations with suitable job skills to appropriate, available jobs on a geographic basis - rather than merely linking masses of people with masses of jobs, which as we know is not how things work in the real world. The census website has numerous links to appropriate data sources, as does the site for the TRB Census Subcommittee (www.TRBcensus.com).

In trying to give a more accurate portrayal and perspective of communities, employment always comes up on the short end of the data spectrum and that's because the Census data, obviously, is more focused and intensive on the household end of things. So while the Census is good for household data, the following are sources for richer employment data.

Non-Census Data Sources

- U.S. Department of Labor
- ES-202 (local area employment and payroll data)
- Family and Children Services
- Medicaid, Food Stamp, and Income Assistance
- Economic Development Agencies
- State and local tax collecting agencies
- Schools, School Districts race and low-income lunch program
- Real Estate Market
- Workforce Investment Boards



Private Data Sources

- Dun and Bradstreet databases
- Donnelly Directory
- Real estate market surveys

Transportation Data Sources

- Projects or reports underway at your local MPO
- Job Access Grants: example from the Baltimore area that has a lot of rich CIA data and implications
- Travel Surveys - Origin Destination Surveys, Household Travel Surveys: many metropolitan areas are updating these surveys to coincide with 2000 Census data
- Management Systems: in different states of repair or disrepair depending on what state or what metropolitan area you're in, but always a possibility.
- Previous Project Studies
- Aerial Photographs/Internet Mapping Queries: Many larger MPOs are using interactive mapping so you can run queries and get an aerial photograph and Census data for ½-mile radius comes along with it - a wonderful tool

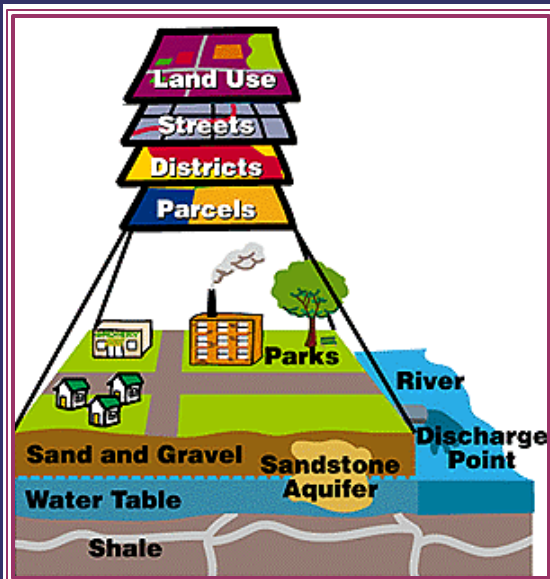


FIGURE 17

Analytical Tools: GIS and Travel Demand Models

Basically, Geographic Information Systems (GIS) is a method to visualize, manipulate, analyze, and display spatial data, and produce "Smart Maps" which link into a database. GIS store, analyze, and display hard data at any appropriate geographic scale. They are a wonderful tool for analyzing and overlaying different types of data, and give you a number of visual and spatial mapping capabilities. When we're talking about GIS, we're really referring to the three "W"s of geography: What is where, why is it there, and (maybe most importantly), why do we care? I think we know why we care, but we don't always take care to forward and hand off some of that information in the project development process - and that's really important. (Figure 17)

Types of GIS Data:

- Location Data: How Many - What Kind - Where
- Scale of Data: Local to Global
- Data Presentation: Words, Charts, Graphs, Tables, or Maps

Exploring through GIS helps you turn data into information into knowledge. GIS makes it very convenient and visually appealing to look at lots of different data layers - charts, graphs, tables, maps, you name it - in a comprehensive fashion (Figure 18). Large matrices and databases don't have a lot of impact at a public meeting, do they? Sometimes they don't have much punch at a technical committee meeting, either (Figure 19). But if you begin to visualize them, to look at them in the context of GIS, things begin to take shape. So we're really talking about combining data from many sources and the geographic information systems. Many of the MPOs, particularly larger ones, have a lot of their base maps and this information available on their websites and are happy to share it with you (Figure 20).

Travel Demand Models input hard data into analyses of transportation investment scenarios at the regional level. Basically they are a series of mathematical equations that are used to represent how choices are made when people travel. They answer questions about how, when and where travel takes place; how many thousands of individual travelers there are; and travel behavior characteristics. Most mid-sized to large MPOs have implemented travel demand models as planning tools, and some are using regional travel demand models as an accessibility and mobility tool, looking at some of these issues on a regional level. We do want to remember that models are only planning tools, they're not Biblical or gospel in proportions. Some MPOs have been including an activity-based modeling approach that focuses on every household, but most MPOs are still employing the traditional four-step planning process:

Four-Step Process for Travel Demand Models

- Trip Generation
- Trip Distribution
- Mode Choice
- Trip Assignment



Just be sure your process has an active mode choice component because to do effective CIA analyses you have to look at transit service, transit network improvements and accessibility. Some smaller MPOs do not have the transit network in that component fully integrated into their modeling approach yet, so that's a question you ask up front.

Why are the models important for community impact assessment? They tell us about travel not just today, but also give us implications for travel in the future - and for CIA analyses we're looking not at

| Name | FIPS | State | Pop | Area | Other |
|----------------|------|--------|------------|-----------|-----------|
| Alabama | 01 | Public | 4,688,024 | 68,823 | 130,923 |
| Alaska | 02 | Public | 608,782 | 1,717,854 | 1,412,864 |
| Arizona | 04 | Public | 3,075,721 | 113,799 | 293,819 |
| Arkansas | 05 | Public | 2,915,918 | 52,338 | 139,328 |
| California | 06 | Public | 33,871,648 | 158,333 | 400,951 |
| Colorado | 08 | Public | 3,716,171 | 104,037 | 269,281 |
| Connecticut | 09 | Public | 3,534,586 | 5,543 | 5,543 |
| Delaware | 10 | Public | 787,184 | 1,916 | 1,916 |
| Florida | 12 | Public | 15,134,687 | 57,920 | 149,999 |
| Georgia | 13 | Public | 4,455,844 | 59,725 | 152,242 |
| Hawaii | 15 | Public | 1,212,383 | 10,430 | 10,430 |
| Idaho | 16 | Public | 1,043,994 | 143,043 | 143,043 |
| Illinois | 17 | Public | 12,812,508 | 149,997 | 379,997 |
| Indiana | 18 | Public | 6,081,263 | 37,727 | 96,997 |
| Iowa | 19 | Public | 3,045,744 | 72,609 | 181,609 |
| Kansas | 20 | Public | 3,401,229 | 82,278 | 205,609 |
| Kentucky | 21 | Public | 4,046,318 | 40,423 | 101,043 |
| Louisiana | 22 | Public | 4,488,997 | 52,433 | 131,043 |
| Maine | 23 | Public | 1,329,084 | 9,329 | 23,329 |
| Maryland | 24 | Public | 5,773,553 | 8,013 | 20,013 |
| Massachusetts | 25 | Public | 6,349,094 | 8,013 | 20,013 |
| Michigan | 26 | Public | 10,123,483 | 96,997 | 242,997 |
| Minnesota | 27 | Public | 5,296,977 | 225,609 | 564,043 |
| Mississippi | 28 | Public | 2,819,347 | 47,923 | 119,923 |
| Missouri | 29 | Public | 5,993,718 | 68,923 | 172,923 |
| Montana | 30 | Public | 987,670 | 145,609 | 364,043 |
| Nebraska | 31 | Public | 1,926,718 | 77,609 | 194,043 |
| Nevada | 32 | Public | 2,050,519 | 113,609 | 284,043 |
| New Hampshire | 33 | Public | 1,277,099 | 9,329 | 23,329 |
| New Jersey | 34 | Public | 8,791,289 | 14,329 | 35,329 |
| New Mexico | 35 | Public | 2,019,347 | 121,609 | 304,043 |
| New York | 36 | Public | 18,979,347 | 49,923 | 124,923 |
| North Carolina | 37 | Public | 7,927,347 | 51,609 | 129,043 |
| North Dakota | 38 | Public | 688,670 | 76,609 | 191,043 |
| Ohio | 39 | Public | 11,354,347 | 44,609 | 111,043 |
| Oklahoma | 40 | Public | 3,756,347 | 69,609 | 174,043 |
| Oregon | 41 | Public | 3,496,347 | 95,609 | 239,043 |
| Pennsylvania | 42 | Public | 12,281,347 | 30,609 | 76,043 |
| Rhode Island | 44 | Public | 1,058,347 | 1,609 | 4,043 |
| South Carolina | 45 | Public | 3,534,347 | 32,609 | 81,043 |
| South Dakota | 46 | Public | 812,347 | 76,609 | 191,043 |
| Tennessee | 47 | Public | 5,688,347 | 40,609 | 101,043 |
| Texas | 48 | Public | 21,193,347 | 699,609 | 1,749,043 |
| Utah | 49 | Public | 2,334,347 | 84,609 | 211,043 |
| Vermont | 50 | Public | 608,347 | 9,329 | 23,329 |
| Virginia | 51 | Public | 6,534,347 | 40,609 | 101,043 |
| Washington | 53 | Public | 5,688,347 | 71,609 | 178,043 |
| West Virginia | 54 | Public | 1,812,347 | 61,609 | 154,043 |
| Wisconsin | 55 | Public | 5,296,347 | 65,609 | 164,043 |
| Wyoming | 56 | Public | 509,347 | 95,609 | 239,043 |

FIGURE 18

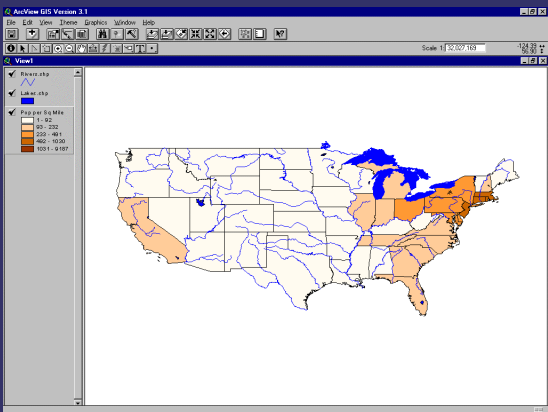


FIGURE 19



FIGURE 20

just today, but future trends as well. They also shape transport plans and investments, and are a part of the environmental review process. But in the end models are a valuable planning tool that helps us to make better decisions.

What to do with the output from a travel demand model? Some of it might be helpful for you to take further into a corridor or project-level analyses, such as the routes of travel (including minimum paths), traffic volumes, transit patronage forecasts, speeds, volumes. Keep in mind that if you're focusing on a particular corridor or a smaller scale project, you can do a sub-area model using the regional model as the focal point. Refine the network, the assumptions, in the study area. There are also micro-simulation packages that are effective aids as well.

Environmental Justice & Four Case Studies

Many MPOs are developing analytical techniques for environmental justice for their long-range plan and their Transportation Improvement Program (TIP), and they're developing demographic profiles as well. We basically define "environmental justice" as a process designed to help avoid, minimize, or mitigate disproportionately high and adverse effects on minority and low income populations; to ensure their full and fair participation in transportation planning; and to prevent the denial of benefits by protected populations.

In the context of doing CIA, determining the needs for low-income and minority populations means not just digging deeper into the data, but accounting for how that data relates to existing facilities and services across modes of transit. That is, one has to consider more than highway improvements - you cannot do effective CIA without transit data.

Let's look at a couple of examples of how some of the data sources and analytical tools mentioned above are being used for typical MPO transit planning activities from across the country, especially in looking at accessibility as a performance measure on a system-wide scale.

A: Metropolitan Washington Council of Governments - DC

The Metropolitan Washington Council of Governments is doing an environmental justice assessment of their long-range plan (and, possibly, because of Federal Highway's recent outreach in response to the Executive Order on environmental justice and transportation

planning). They're considering major improvements in their long-range plan; looking at how and where population and employment will be growing; looking at regional accessibility to jobs; and developing a demographic profile of low-income and minority populations. All of that goes into making that environmental justice assessment

They're also producing various gross scenarios, such as examining increases in regional daily travel from 2000-2020. They found that vehicle trips will increase by 35%; transit trips, by 46%; and total vehicle miles traveled (VMT), by 39%. So the picture in the Washington area for growth and regional daily vehicle traffic doesn't look too pretty. But this is fairly typical for MPOs that are looking at Regional Accessibility Measures for their 20-year plans. A Regional Accessibility Measure gives the number of opportunities that can be reached in a given increment of time; it makes an assumption that the accessibility measure will increase when the amount of activity increases in a particular employment area or transportation zone - and when the speed of travel from one zone to another increases as well.

Establish Demographic Profiles

- Focus on four minority groups and low-income populations as outlined in the Executive Order, and identified geographic locations and concentrations, using 1990 Census tract data (like many MPOs, they're transitioning to year 2000 data as it becomes available). They found that their low-income population was 6%+; black, 27%+; Hispanic, 6%+; and Asian 5%+.

So a lot of the work on a regional scale is being done at the MPOs or is underway in response to the Environmental Justice Executive Order. They're not just focusing on the four populations outlined in the Order, but also at other important racial or ethnic communities in their particular area.

An example of some of the maps being produced in the Washington area. This one looks at transportation improvements in the context of spatial distributions of low-income populations, and how transportation improvements will provide accessibility for these populations to jobs, et cetera. (Figure 21)

Like the Metropolitan Washington Council of Governments, you can make some assumptions in doing your analysis of regional accessibility in the context of the long-range plan. Many MPOs regard their TIP with this same approach because in a perfect planning world, the TIP is a subset of the long-range plan: It covers the upcoming three to five years, those projects moving forward for implementation.

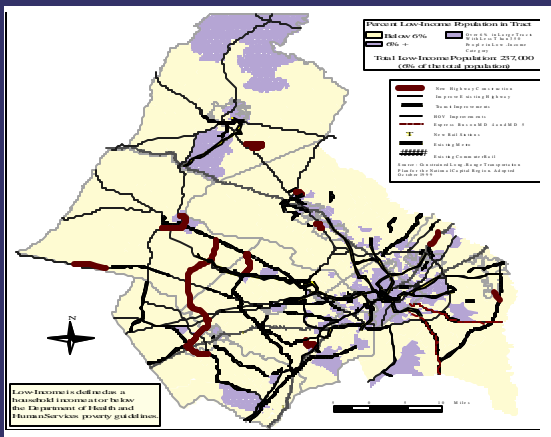


FIGURE 21

One assumption is that a key measurement will be a change in regional accessibility to jobs. Change categories will be defined and reviewed for each affected population. And when implementing transportation networks and looking at how they effect various populations, there's the notion of losses and gains in accessibility. Assumed losses in accessibility will be categorized as "burdens"; assumed gains, as "benefits." So if you find that the benefits and burdens of long-range plan appear evenly distributed for job accessibility among the protected populations - well, that means you're succeeding.

B: Metropolitan Transportation Commission - San Francisco, CA

Thematic mapping for racial and ethnic populations is very commonplace in the San Francisco area, even among the small MPOs. (Figure 22)

Many MPO's are looking at changes in transit accessibility, comparing various combinations of projects in their 20-year plan and their TIP to the basic no-build alternative. (Figure 23)

San Francisco refers to its "protected populations" as "disadvantaged neighborhoods," showing that we need to be aware of and sensitive in our labeling and categorizing. (Figure 24)

The San Francisco MTC's Regional Accessibility Analysis is intended to assess the impacts of the regional plan on regional equity in accessibility. To measure equity, the MTC developed transit and automobile accessibility measures; accessibility impacts were compared between "disadvantaged" population areas "non-disadvantaged" areas. (See the full case study at http://www.fhwa.dot.gov/planning/toolbox/sanfrancisco_overview.htm).

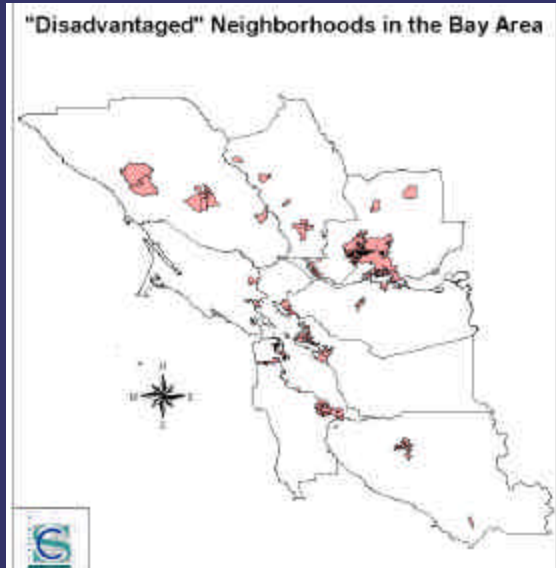


FIGURE 24

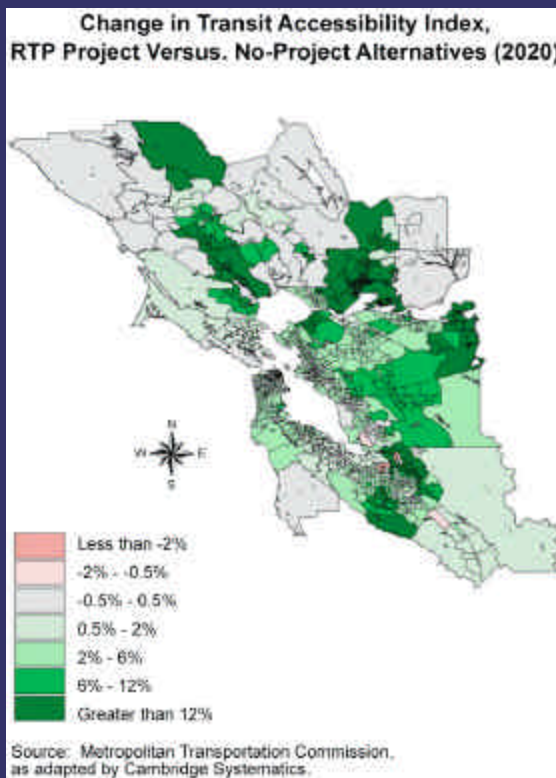


FIGURE 23

Environmental Justice MTC - San Francisco, CA

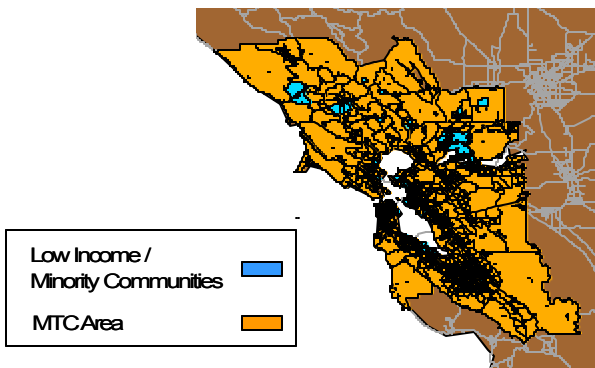


FIGURE 22

C: Mid-Ohio Regional Planning Commission - Columbus, OH

Columbus, Ohio has gotten a lot of play for using environmental justice in their planning process. They also have very dynamic public involvement plans and programs - you can do no wrong by getting involved with the public early on in the planning stage. The Mid-Ohio Regional Planning Commission used household travel surveys, transit surveys, and travel-demand forecasting models to come up with standards for travel time. They developed two standards for travel time: 45 minutes on transit to anywhere in the system; and 25 minutes in auto to metro area, tracking how far that covers.

They also asked the community, "What matters to you from a transportation investment standpoint?" Some of the responses below aren't surprising, but they're definitely factors that transportation professionals can take a closer look at in the project-development process:

- Childcare access & affordability
- Education
- Regional mass transit accessibility
- Employer commitment to transportation
- Transportation affordability
- Coordination with social service agencies
- Commute time via bus
- Affordable housing
- Commitment to public transit by mainstream
- Employer coordination
- Limited travel opportunities for transit captive
- Geographic mismatch between candidate workers and entry-level jobs
- Dispersion of jobs throughout region, making it difficult for COTA to deliver target populations to them

The Planning Commission came up with lots of maps looking at distributions of minority populations over their transportation network: zonal distributions, protected populations, disadvantaged populations, and so forth. A map showing households with no cars is especially key data - it's said that 10 percent of U.S. households do not own an automobile.

[SLIDES 68-70 - LINK TO ANOTHER PAGE FOR THESE]

They also produced a lot of accessibility maps; this one shows access to health care facilities, a major component in environmental justice analysis. Other maps show travel time to shopping, colleges, and the central business district. Most important, they didn't just compare auto and transit, but looked at transit service in both peak and off-peak hours. Transportation professionals have to consider all times of the day, since many people who are part of protected populations do not work 9-to-5 shifts. (See the full case study at www.fhwa.dot.gov/environment/ej2.htm) (Figure 26)

Charts (figure 27) showing Measures of Effectiveness (MOEs) were developed showing current year, Horizon year- No Build, Build & TIP, by groups of concern

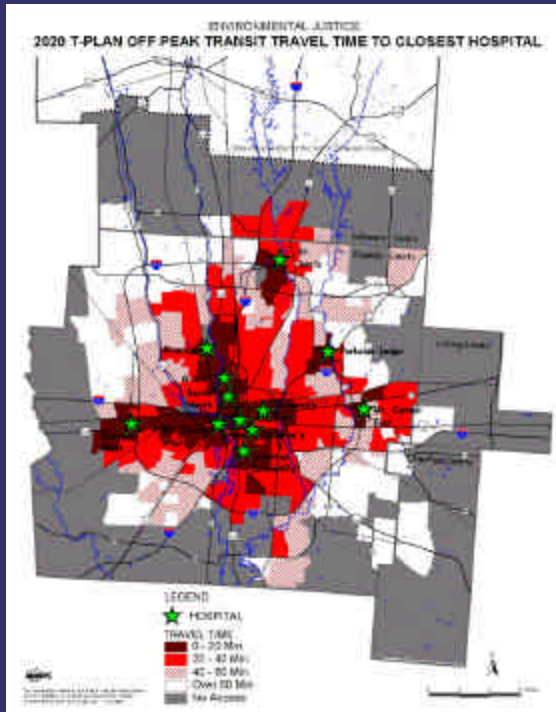


FIGURE 26

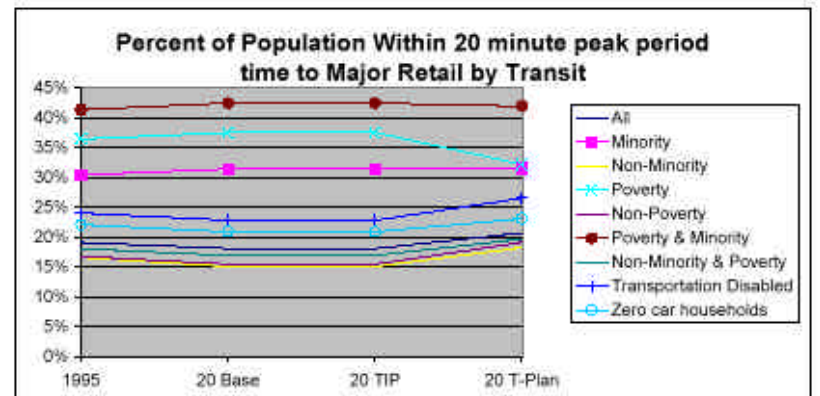
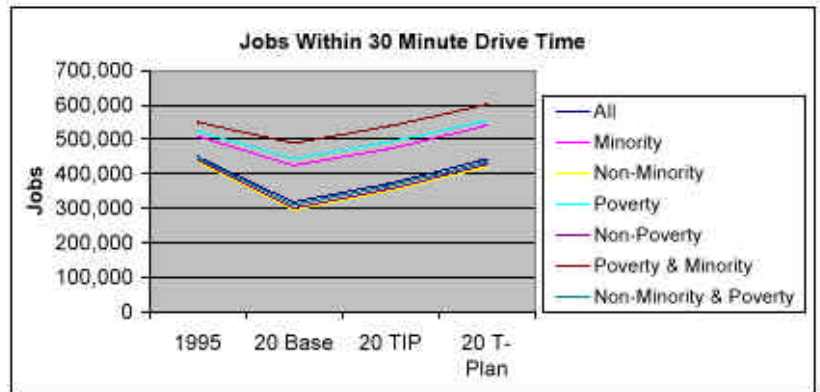


FIGURE 27

D: Baltimore Metropolitan Council - Baltimore, MD

Figure 28 shows output from the 2000 study on regional job access and reverse-commutes done by the Baltimore MPO. They gathered data on temporary assistance for needy families (TANF) (another great database to be bringing into an analysis) from a regional standpoint, taking the percentage of cases and breaking it down into counties, and further into transportation zones and other finer levels of geographic distribution.

TANF CASES BY JURISDICTION IN THE BALTIMORE REGION, 2000

| <i>Jurisdiction</i> | <i>Total TANF Cases</i> | <i>% of Regional Total</i> |
|-------------------------|-------------------------|----------------------------|
| Anne Arundel County | 904 | 4.5% |
| Baltimore City | 16,109 | 79.9% |
| Baltimore County | 2,535 | 12.6% |
| Carroll County | 188 | 0.9% |
| Harford County | 297 | 1.5% |
| Howard County | 188 | 0.6% |
| Baltimore Region | 20,151 | 100.0% |

FIGURE 28

GIS can overlay the locations of those cases onto a region and show them in the context of political jurisdictions (figure 29).

(Figures 30, 31) This data example shows the need to clearly document definitions and assumptions. The chart on the left shows where Baltimore-area residents are falling below the poverty level at regional, county, and municipal levels. Translated to the GIS map on the right, it shows a preponderance of low-income families in Baltimore City.

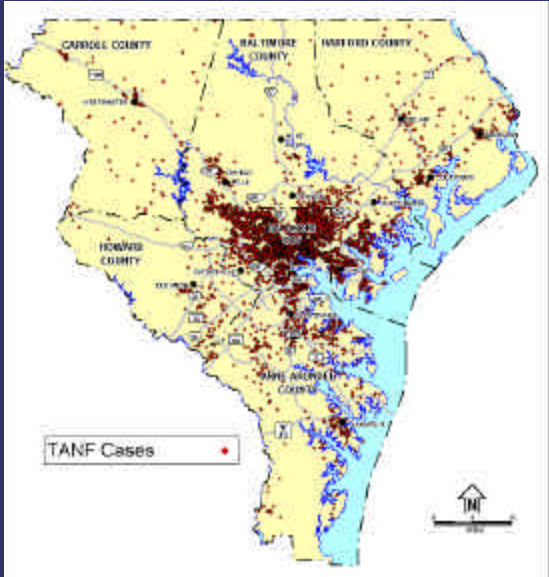


FIGURE 29

Households with Median Income of Less than \$25,000 in the Baltimore Region, 1999

| Jurisdiction | Total Households | Households Under \$25,000 | Percent of Region | Percent of Households |
|-------------------------|------------------|---------------------------|-------------------|-----------------------|
| Anne Arundel County | 172,436 | 27,307 | 12% | 16% |
| Baltimore City | 241,139 | 98,028 | 45% | 41% |
| Baltimore County | 288,656 | 59,471 | 27% | 21% |
| Carroll County | 53,232 | 9,481 | 4% | 18% |
| Harford County | 79,522 | 15,750 | 7% | 20% |
| Howard County | 91,267 | 10,208 | 5% | 11% |
| Baltimore Region | 926,252 | 220,299 | 100% | 100% |

FIGURE 30

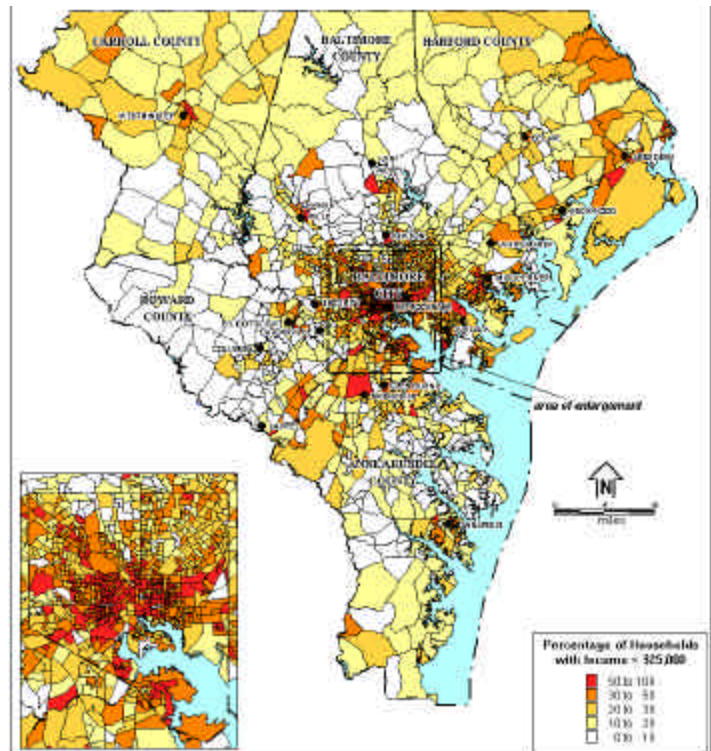


FIGURE 31

Leading Low-Wage Occupations, 1998

- Nurses Aides, Orderlies & Attendants
- General Office Clerks
- Home Health Aides
- Medical Assistants
- Receptionists & Information Clerks
- Janitors and Cleaners
- Guards & Watch Guards
- Counter & Rental Clerks
- Retail Sales Persons
- Cashiers
- Food & Beverage Preparation and Service Workers
- Waiters & Waitresses
- Combined Food Preparation & Service Workers
- Helpers, Roofers
- Motor Vehicle Operators
- Truck Drivers-Light, Delivery Route Workers
- Library Assistants & Bookmobile Drivers
- Preschool Teachers & Child Care Workers
- Freight, Stock, & Material Movers, Hand Helpers, Laborers, and Material Movers

Source: Occupational Outlook Handbook, US DOL, BLS and BMC analysis.

FIGURE 32



FIGURE 33

It's interesting how information on leading low-wage occupations from a couple of years ago helps us get a better understanding of where these types of jobs may be located. And while we know where they are today, the wild card is where are they will be in 20 years. That's where the planning process comes into play and assumptions are made at a metropolitan level (figures 32, 33).

Using GIS, you can overlay this kind of information onto the transportation system and look at various improvement scenarios, such as the geographic distribution of child-care centers (figure 34).

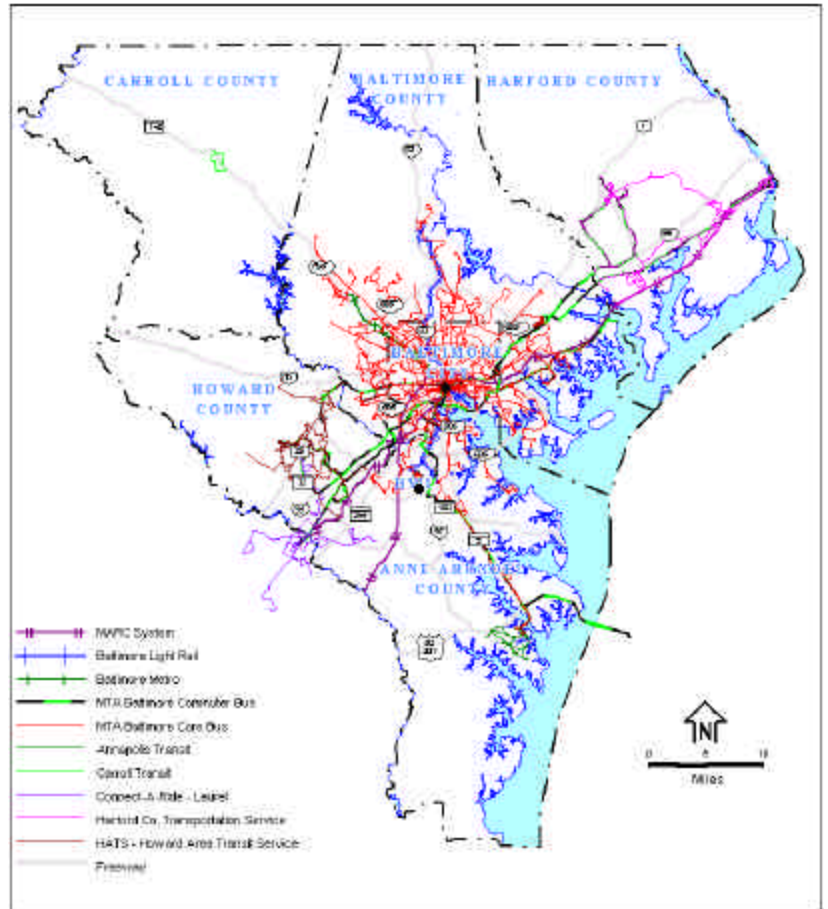


FIGURE 34

Zooming in with GIS shows these views at a community or neighborhood level. Saturday and Sunday transit service is important to some populations, or transit service and temporary assistance for needy families. So you combine data on case populations with overlays in GIS, incorporate access to the MTA overnight bus using the standard assumption of a 1/4-mile-walk to transit (which could be shortened or lengthened) - and put the whole picture together (figures 35-39).

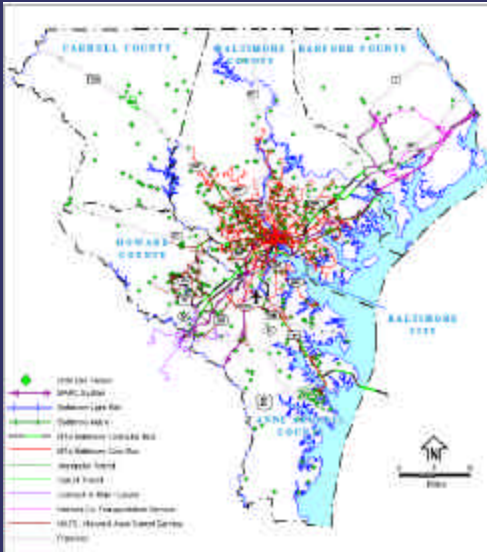


FIGURE 35

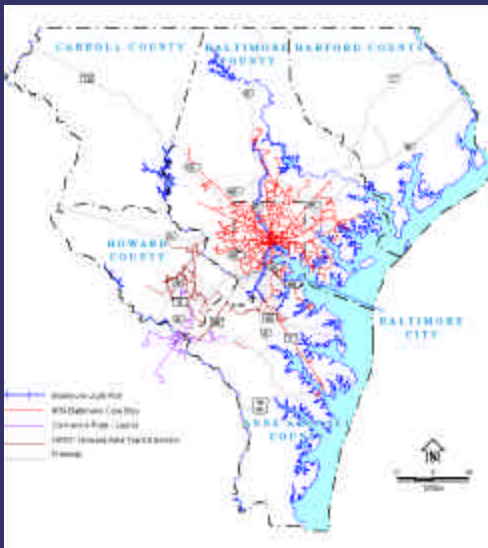


FIGURE 36

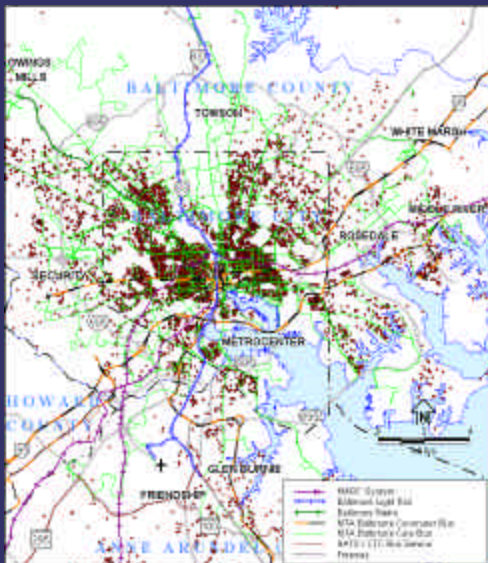


FIGURE 37

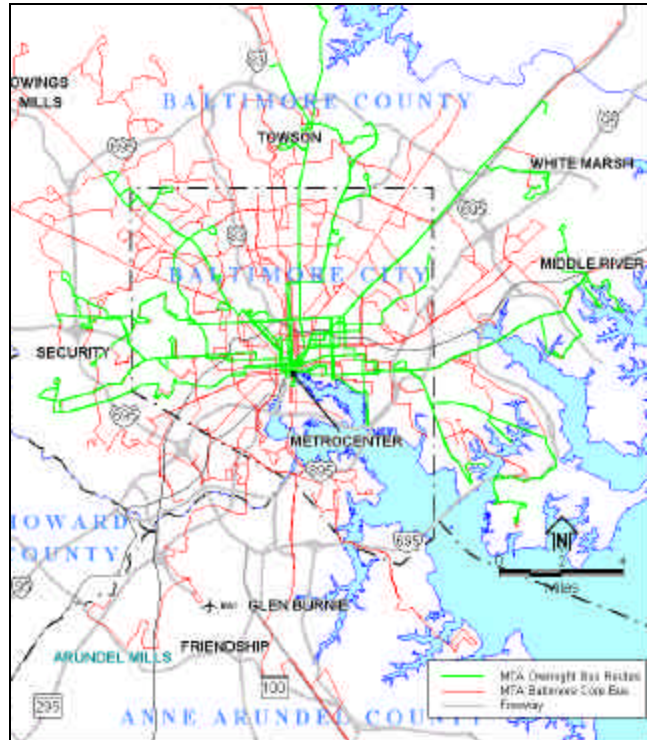


FIGURE 38

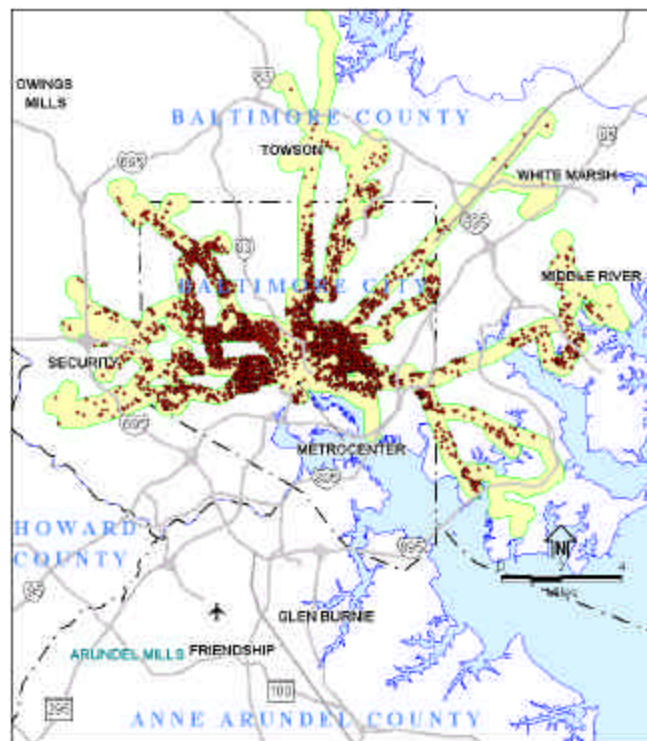


FIGURE 39

A Regional Employment Center is defined as "A recognizable and geographically defined area that contains total employment at or exceeding 10,000 jobs by place-of-work and the potential number of low-wage occupations at businesses and organizations in this area exceeds 1,000 jobs." (figure 40)

[slides 83 - 84 - not sure where to put these so put them here for now - and leave this note...]

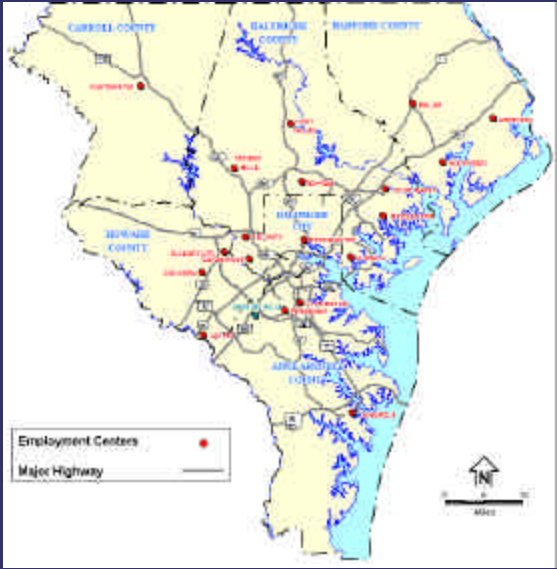
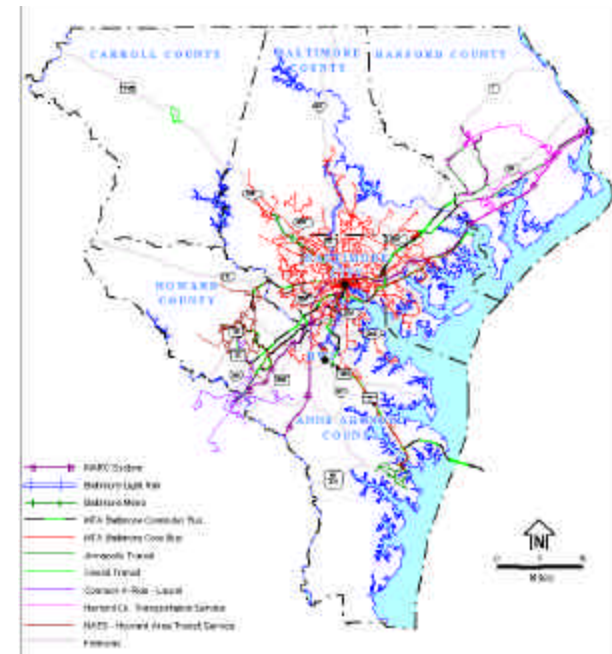
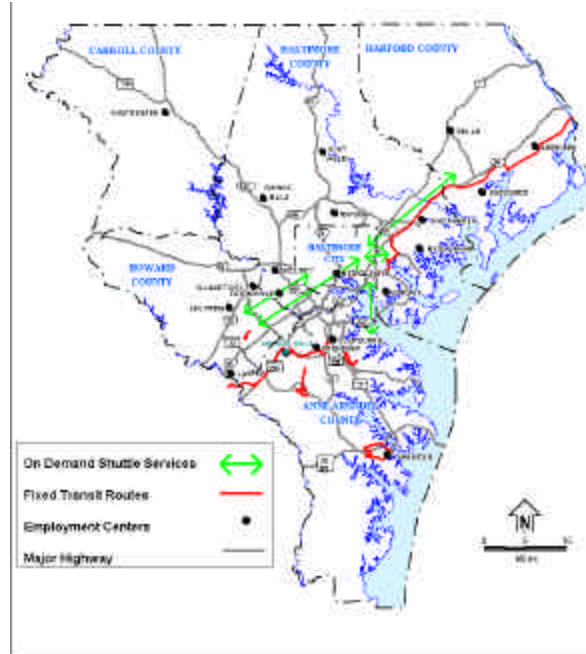


FIGURE 40



Conclusion



Suffice it to say, there's a mountain of community data available at a regional/local scale for further refinement that is extremely valuable. A typical MPO spends much of its budget on data collection, data analysis, and data maintenance. If a partnership approach with your MPO

hasn't been developed in your area, you should cultivate it. You can tap into their long-range plan and TIP accessibility analysis; they have great proficiency with GIS tools and travel demand models; and they have public-involvement plans in place, which offer you opportunities to start communicating with the public early in the planning process. Use your MPO's experience and its output reports developed as part of their travel forecasting processes as input into your refined environmental analysis at a project level - and then keep them involved as projects go into the environmental review phase as well. MPOs are a great Community Impact Assessment partner - working with them simply adds up to good planning sense.

For more information visit the Community Impact Assessment website: www.ciatrans.net