TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

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The Memphis and Shelby County Office of Sustainability, in coordination with a consortium of municipalities, organizations, and stakeholders, is developing a plan to enhance regional livability and sustainability while helping guide regional growth and development. The plan, known as the Mid-South Regional Greenprint and Sustainability Plan, includes a three-state, four-county region that is roughly consistent with the Memphis urbanized area. The region is centered on the City of Memphis and includes Shelby County and Fayette County, Tennessee, as well as parts of northern Mississippi (DeSoto County) and eastern Arkansas (Crittenden County).

The Greenprint is a wide-reaching effort designed to create a regional vision and strategic plan that will strengthen economic opportunities and, at the same time, ensure that growth is concurrent with other regional goals and objectives, including environmental stewardship and economic equity. A key part of the project is to ensure that benefits generated by regional growth are accessible to the broader community and distributed equitably across the region.

An equitable distribution involves ensuring that as many people as possible have access to regional benefits—especially employment. Identifying strategies to help diversify and expand travel options in the Mid-South Region is the focus of the Bus Transit to Workplace Study, one of the sub-tasks to the overall Regional Greenprint and Sustainability Plan.

The mobility needs in the Mid-South Region are well beyond expanded bus transit. Congruent with the work being completed through the Regional Greenprint Plan, a broader definition of and strategies for overall Access to Work was needed. Employment in the Mid-South area is diverse, with key employment nodes in industrial or suburban areas, removed from easy transit access. This geographic, and even temporal, distribution of employment demands a more targeted and far-reaching set of solutions to meet the transportation needs of the greater Memphis region. A series of potential transportation solutions has thus been created to help guide Access to Work improvements, which may be employed at an employer, local or regional level.

The Transportation Demand Management Toolkit (“TDM Toolkit”), is designed to help diversify regional travel options by introducing a series of strategies to the region known as transportation demand management, or TDM. Across the United States, communities, regions and employers have used TDM as part of other strategies to help manage growth, alleviate congestion, and encourage economic development. In the Mid-South Region, the main objective is to increase the accessibility of employment, much of which is located in suburban areas and is inaccessible due to a lack of regional transit service. Providing greater access helps both potential employees by opening up economic opportunities and employers by enlarging their potential labor pool and minimizing costs. In many cases, there are direct tax benefits or available funding for the implementation of these Access to Work strategies.
TDM strategies are based on the premise that current travel patterns are designed to favor driving alone. Employers around the Mid-South region have located in areas where they are assured access to large parking lots and are able to provide “free” parking to employees. As a rule of thumb, however, a surface parking space costs about $3,000 to build, plus annual maintenance, tax and opportunity costs. A space in a covered parking structure costs a minimum of $20,000 per space to build and another $150/year to maintain. In addition, people who can’t or don’t drive often pay high costs to get to work – either in terms of time-consuming transit trips, high transit fares and/or long or uncomfortable bike or walk trips. TDM strategies work to level this playing field by creating options that make it less expensive for people to ride the bus, safer for people to walk or ride their bikes, and easier to create carpools.

The TDM Toolkit provides an overview of the most common and widely used transportation demand management (TDM) strategies in the United States. TDM strategies are designed to work together, with the most significant impact on creating options and changing travel behaviors arising from implementing different combinations of strategies. Individual employers, sub-regions and communities can tailor strategic packages that work best with their unique conditions and circumstances. The goal of the Toolkit is to educate employers and policy makers about the program and opportunities available through TDM and to encourage development of the strategies.

Most of the strategies are designed to be implemented by employers but can be established or assisted on an area, municipal or regional level. Employers around the country, recognizing that difficult or costly commutes is one of the primary reasons employee leave their jobs, have demonstrated an interest and willingness to develop these strategies because they have proven effective at helping employers attract and retain a quality workforce.

The public sector is an important participant in this conversation for two reasons. First, government is a major regional employer with a large municipal and county workforce concentrated in downtown Memphis and along Poplar Avenue. As in the private sector, attracting and retaining workers is important to successful operations, and being able to reach a larger pool of employees will strengthen operations. Second, experience suggests that the private sector often – but not always – looks to the public sector for initiative and inspiration on TDM strategies. As a result, in many cases, the public sector should be at the forefront of TDM policy development and implementation, including bringing likely partners together, brokering arrangements for service provision, or even as a funding applicant.

Policy makers are also critical to the development of a successful regional TDM program. Implementation requires a change in the status quo as well as an investment of time and money. Support from policy makers, to either be the first to implement new programs or to dedicate staff resources to developing the program, are an essential part of making it work. A key objective of the TDM Toolkit, therefore, is to educate policy makers about the potential of TDM and the potential benefits for the Mid-South Region.
The TDM Toolkit developed for the Access to Work component of the Mid-South Regional Greenprint Plan consists of 15 strategies that are roughly categorized as either employer-based strategies or regional strategies.

- Employer- or worksite-based strategies are programs and incentives to help diversity of commute options and create lower-cost options for how people get to and from work. These strategies are designed to be implemented by employers; however, experience around the country suggests that employers will need support, encouragement and technical advice to be easily initiated by employers.

- Regional TDM strategies are programs and services that are best implemented on a larger scale, such as a neighborhood (i.e., the medical district) or a large employment center (i.e., President’s Island). In some cases, regional strategies may be implemented on a much broader scale, such as throughout the Mid-South Region. Some regional TDM strategies require policy initiatives and coordination across multiple government entities, while others may be initiated or managed at a regional level but implemented locally.

### Employers- or Worksite-Based Strategies

1. Employer Shuttles
2. Employer-Subsidized Transit/Vanpool Passes
3. Commuter Bus Service
4. Seasonal Bus Service
5. Parking Cash-Out
6. Commuter Bike Benefits
7. On-site Bicycle Facilities

### Regional Strategies

1. Universal Pass Programs (U-Pass)
2. Vanpools
3. Park-and-Ride Lot Development
4. Pedestrian Facilities/ Safe Routes to Work
5. Carpooling, Rideshare, and Ride Matching Services
6. Transportation Management Associations (TMAs)
7. Guaranteed Ride Home Programs
8. Transit Funding Strategy
A critical question in moving forward with TDM strategies is potential funding. TDM strategies, by design, are intended to encourage and reward alternative forms of transportation, including ride-sharing, transit, biking and walking. In most cases, TDM expenditures equal or can reduce the investments employers are already making in parking. However, implementation still requires an investment in time, resources and money.

About half of the strategies included the TDM Toolkit are employer-based strategies. These strategies could be initiated and led by employers, and in most cases, employers may also be required to invest in these programs. There are some strategies, such as transit and vanpool fare subsidies and bike benefits, where investments made by employers are tax deductible, helping to reduce or minimize the financial impacts. Actual costs will vary based on employment size and the number of employees who participate in the program. National experience suggests, however, that the long-term benefits outweigh costs.

There are other strategies, such as development of park-and-ride lots and improvements to pedestrian and bicycle facilities, that are typically funded by the public sector. Moreover, other strategies, such as ridesharing or vanpool programs or a guaranteed ride home program, are of a scale on which the public sector can typically take the lead in developing and managing supporting infrastructure or systems. The public sector may also take responsibility for marketing and encouraging participation in any implemented programs. These programs are eligible for funding under some of the traditional federal transportation programs, including those administered by the Federal Transit Administration (FTA) and the Federal Highways Administration (FHWA). Because TDM strategies typically reduce drive-alone commuting, many regions fund their programs with Congestion Mitigation Air Quality (CMAQ) funds.

Under the new federal transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21), CMAQ funds continue to be eligible for projects that increase vehicle occupancy rates or otherwise reduce demand for peak period travel, some expanded use for transit operations and workforce development, training, and education activities. TDM programs also tend to be very low-cost as compared to other transportation projects and programs and offer relatively cost-effective solutions to regional transportation issues.
employer-/worksite-based TDM strategies

» Employer Shuttles
» Employer-Subsidized Transit Pass
» Commuter Bus Service
» Seasonal Bus Service
» Parking Cash-Out
» Commuter Bicycle Benefits
» On-site Bicycle Facilities
**employer shuttles**

Employer-, or site-specific, shuttles connect employment sites with the closest or most convenient transit stations or centers. Shuttles can provide service for employees that meets the “last mile” challenge of getting from a transit station or stop that may be near but not within walking distance to their job. Employer shuttles usually operate at work shift times and can be operated by a single employer or a combination of employers. Shuttles may be operated as a partnership between a transit agency and a major employer.

Shuttle services typically serve riders in a well-defined area or along a specific route and provide convenient and direct service to desired destinations. They function as an important first-mile/last-mile connection and often connect to a major transit service. If the service receives public funding, then it must be open to the general public, but routes and schedules can be customized to the needs of the employer.

**How it works**

If a shuttle serves a single employer, then it would typically be managed and operated by that employer. If a shuttle serves employment centers or corridors, Transportation Management Association (TMA) can organize group of employers to operate the bus. TMA’s can be an effective third party to design the service, allocate costs and balance needs among multiple stakeholders. TMA’s, in turn, could operate the service themselves or contract with a public or private service provider. Most employer shuttles operate “fare-free” as most riders are associated with the employer or institution paying for the route.

Employer shuttles are simple when they are designed to serve one site, but this approach can be more expensive than a single entity would like to pay. If shuttles serve multiple employers, operations and management are more complicated, but the cost to each organization is lower, and could serve more riders.

Developing an employer- or site specific shuttle service involves the following steps:

- Develop a shuttle service plan including operating hours, alignment/operating path, any special vehicle requirements and the frequency of service.
- Develop a management plan for implementation, including roles and responsibilities for overseeing and managing the service.
- Finalize running times for the development of accurate route schedules.
- Establish marketing, outreach and staff orientation plans.

**Best Practice**

The *Dallas Area Rapid Transit in DFW region, Texas*, participates in several site-specific shuttle partnerships, in partnership with universities, major employers, and retail destinations. Serving the dozens of employers scattered around DFW Airport with traditional fixed-route bus service is impractical for several reasons. The airport covers an area of more than 18,000 acres, with numerous office parks, warehouses, and industrial zones lining Airfield Drive, which forms an almost complete loop around the airport. Developments are spaced miles apart in some cases, and many are set back quite a distance from Airfield Drive. Most importantly, unlike the central terminal area where air travelers and employees combine to create a constant flow of shuttle passengers, potential ridership along airfield drive is limited to a handful of shift change times. DART’s policy allows the agency to provide up to 50% operating funding for services operated by employers or third-party private entities when the service reduces DART’s requirements for regular bus service or expands coverage to areas within the DART service area, but not served by existing routes.
Application to Mid-South

Aerotropolis

The area around the Memphis International Airport, known as the Aerotropolis, is the largest concentration of jobs in the Mid-South Region. There is transit service to the Aerotropolis area, with service density and frequency concentrated at the two MATA service hubs ("terminals") at Airways and American Way. The challenge for many workers, however, is the last mile connection from the MATA terminals to the employment site. In some cases, there is additional service that could bring workers closer to their worksite, but service is less frequent or not well timed to shift start or end times. Even where a MATA bus can get workers close to employment sites, the connecting environment often lacks sidewalks, crosswalks and bike paths. Designed for moving traffic and freight, many of the Aerotropolis corridors operate at high vehicular speeds. To connect the many Aerotropolis employees to density of existing service, an employer shuttle could be operated from Airways and/ or American Way to specific worksites.

As an order of magnitude estimate, operating a shuttle service for seven hours a day (e.g., 6:00 a.m. to 9:30 a.m. and 2:30 p.m. to 6:00 p.m.) and 250 days per year, inclusive of marketing and administrative, would be approximately $120,000 annually. (Depending on the number of employers participating in shuttle operations, the cost per employer may range from $12,000 to $20,000 per year.)

There are several large employers at the Aerotropolis, thus a potential shuttle service could likely serve multiple organizations and employers. To get a program started, therefore, would require an entity to broker the deal and assume responsibility for finding partners, developing a cost-sharing agreement and crafting an effective service plan. The process of developing a shuttle may also catalyze a TMA and other employer transportation programs.

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1 Assumes one vehicle and an hourly operating cost of $60 per hour. Estimate does not include capital costs.

Best Practice

Emery Go-Round - Emeryville, California, is a small community located in the San Francisco Bay area, on the east bay between the cities of Oakland and Berkeley. It is located near the Bay Area Regional Transit (BART) service area but is too far to walk for most people. As key part of Emeryville economic development strategy, therefore, involved ensuring that the community was accessible to as many people as possible.

A key part of this economic development strategy was the Emery Go-Round shuttle. The shuttle was established in 1995 and continues to operate today with three services all free. These private transportation services are open to all Emeryville residents, shoppers, visitors and employees of Emeryville businesses. The vast majority of funding for the Emery Go-Round shuttle is provided by commercial property owners in the citywide transportation business improvement district. Last year, the shuttle carried 1.5 million riders.

Service is operated by the Emeryville Transportation Management Association, a non-profit organization whose primary purpose is to increase access and mobility to, from and within Emeryville while alleviating congestion through operation of the shuttle program. The TMA Board of Directors, which also serves as the official representative of property owners for the business improvement district, sets the service parameters for the Emery Go-Round, provides fiscal oversight, approves the annual operating budget and sets organizational policy.
Employer Transit Fare Programs are typically organized as a partnership between the transit agency and local employers, and provide free or discounted bus passes to employees. This is a relatively simple program that, while easily administered, can have a significant impact on commute patterns and is appreciated by employees.

Transit commuter benefits, including subsidized or free bus passes and/or vanpool passes, are unlike flexible spending accounts in that they are not subject to complex disclosures and reporting requirements. Tax-free transit commuter benefits are used by employers throughout the U.S. to subsidize the cost of employee commutes. The benefit is also tax-free to the employee and tax-deductible for employers under the federal government. This strategy has been shown to increase transit ridership in both the short and long term.

Typically, transit passes are provided as part of a larger transportation demand management (TDM) program that includes parking cash-out, bike/walk commute benefits or other incentives to encourage employees to use different transportation modes.

How it works

The federal tax code allows employers to offer tax-free benefits for the purposes of taking transit, vanpooling, and paying for parking. These “Qualified Transportation Fringe Benefits” are deducted from corporate gross income for taxes paid by the employer. Both employers and employees save on taxes because neither pays federal income or payroll taxes on these benefits.

Benefits include:
- Up to $230 is excludable from gross income per month for vanpooling and transit
- Up to $230 is excludable for parking

Employers may also offer employees $20 per month for reasonable expenses associated with bicycling to work (see commuter bicycle benefits for complementary strategy).

The program can have contributions paid in one of three ways:
1. Employer Paid: the employer pays the full benefit and gets the payroll tax reduction and business expense.
2. Employee Paid: the employer sets up the program and allows employees to put away pre-tax income for the vanpool or transit expense, saving them taxes.
3. Employer/Employee Cost-Sharing: the employee receives a tax-free subsidy for part of his/her commuting expense and the employer’s federal payroll taxes are reduced on the amount of the subsidy.

Some employers have had success using third-party vendors to help manage the program, but many employers are able to manage the program internally. The Internal Revenue Service (IRS) recommends employers maintain the following records as part of the program:
- Authorization forms that allow employers to set aside wages for “qualified fringe transportation benefits”
- Record of cash reimbursements

There are no further substantiation requirements if employer distributes vouchers and no written plan or IRS permission is necessary to implement a program.
Application to Memphis

Employers located in downtown (such as the City of Memphis and Shelby County) and midtown Memphis (Le Bonheur Children’s Hospital, University of Tennessee) are excellent candidates for an employer transit pass program, as are employers that already have a high number of people commuting by transit, such as FedEx.

The City of Memphis and Shelby County, for example, provide employees with free parking but do not offer a transit benefit. As such, they are rewarding people who drive to work and effectively discouraging people who use transit, even though the City of Memphis is a primary contributor to MATA and the City must provide overflow parking to accommodate all employees. Providing a subsidized (or free) transit pass to employees incentivizes employees for using transit and supporting a city-funded program. The transit benefit program would also encourage the county’s vanpool program.

FedEx has some 30,000 employees at its facility on Democrat Road, many of whom use MATA to get to/from work. Subsidizing transit passes would be greatly appreciated by employees already using the bus as it would increase their incomes; it is also likely that the benefit would encourage more people to commute by transit. An increase in ridership would also encourage MATA to increase service to Democrat Road, which would make the service more attractive for more employees. Offering subsidized passes also encourages transit use for non-work trips, increasing MATA’s effectiveness and providing other benefits for employees.

Other potential locations
Methodist Hospital (Bellevue Blvd) | Veterans Affairs Medical Center (Poplar Ave) | IRS (Shelby Dr)

Best Practices

_Barnes Jewish and St. Louis Children’s Hospital, Missouri_, has provided transit pass subsidies for employees since 2006. The passes offer unlimited travel for employees commuting to the hospital by MetroBus or MetroLink during the month of purchase. The hospital offers a $20 subsidy and employees who purchase the pass through payroll deduction are eligible to receive a discount. Over 50% of hospital employees participate, including many who travel from rural areas outside of St. Louis.

The hospital also offers a shuttle to/from transit stations, a Guaranteed Ride Home program, ridematch services for carpoolers, secure bicycle parking and showers. The hospital also has an on-campus transit hub, which they say showcases the campus as an attractive place to work.

_Duke Energy_ employs nearly 2,500 people in downtown Charlotte, NC, in an area known as Uptown that is well served by transit. Initially about 100 employees commuted by transit. In 2006, Duke Energy began offering a $50 monthly subsidy towards the purchase of a Charlotte Area Transit (CATS) transit services, either in a form of monthly bus pass or a vanpool pass. By the end of 2006, the number of people participating in the program and commuting by transit more than doubled to 225 people. In 2007, Duke Energy increased the subsidy to cover the full cost of either a bus pass or vanpool program and participation. At the end of 2007, CATS opened its light rail line, and program participation increased to nearly 385 employees, or roughly 16% of the employees eligible for the program.

Employee feedback has been incredibly positive, such that Duke Energy expanded the program to employees based in Cincinnati, Ohio, and Houston, Texas. In addition, Duke Energy expanded the program so that people purchasing monthly transit passes also receive two free parking passes each month. The employee commute program also includes free parking for carpools and vanpools, new bike parking facilities, showers and lockers for bike commuters and an internal Transit Subsidy Program webpage where employees can learn more about the program.
Commuter bus services are bus services designed to serve a very specific need such as transporting to/from a specific work site or work shift. The term commuter buses can also be used to reference express bus service from park and ride lots into a downtown destination, but for purposes of this TDM Toolkit, the term has been defined to mean a bus that is designed specifically to bring people to and from a particular work site. Commuter buses are often a direct replacement of, rather than an additive service to, existing public transportation.

How it works

Commuter buses are typically an employer or Transportation Management Association (TMA) initiative and designed by the sponsor(s) to meet a very specific need, such as getting workers from one or more neighborhoods to work. In most cases, services are fully paid for by the sponsoring entity. To date, most commuter buses have not been able to access federal or state funds to help operate the service. Most examples of employer-sponsored commuter buses have grown out of a need to attract and retain employees in areas with high commuting costs due to long or expensive travel and/or high time costs associated with congested travel conditions. It is also true that many commuter bus programs evolved out of other TDM programs, including employer-provided/subsidized bus passes, expansive vanpool programs and other support programs such as ride-matching, guaranteed ride home, etc.

Commuter buses have become increasingly popular in and around communities with a significant proportion of people employed are high-tech industries, such as the San Francisco Bay Area in California and Seattle, Washington. In most cases, employers developing private commuter bus services already work closely with regional and local transit providers so the commuter bus service is incorporated into the service network and supports other regional transit efforts.

Application to the Mid-South Region

Commuter bus services in the Mid-South Region may make sense for commuters traveling to one or more of the major regional employers, such as the Tunica Resorts, FedEx (especially late night shifts), or possibly some of the regional hospitals located on the outskirts of the urbanized area. However, given there are only limited transit services outside of the City of Memphis and the region has not yet developed a culture of ride-sharing, such as carpooling or vanpool, commuter bus service may not be appropriate except in cases where such service would have compelling financial appeal. Thus, prior to developing commuter bus service, employers should begin with more “entry level” TDM strategies such as carpooling and vanpooling.
Best Practice

Microsoft Connector Shuttles - In 2007, Microsoft introduced “the Connector,” a shuttle service for employees living in the Seattle area and traveling to the Microsoft campus in Redmond, a suburban community about 20 miles east of Seattle. The shortest path between Seattle and Redmond involves traveling the State Route 520 bridge over Lake Washington. The 520 bridge is tolled, with higher rates applied during typical commute times; the charge for a one-way crossing can be as high as $5.25. Employee complaints about the length and cost of the commute made offering alternative transportation options a key strategy to attract and retain employees. These reasons plus a commitment to environmental stewardship led Microsoft to develop the employee shuttle.

The Connector service grew from 13 to 22 bus routes and now carries about 700,000 people a year. Individual routes are developed to reflect neighborhoods with high concentrations of employees and are designed to serve as many people as possible with direct and fast service. Most Connector routes offer about four or five trips per day, so employees have schedule options but the service is still efficient. Each of Microsoft’s Connector buses are equipped with Wi-Fi, power ports and bike racks.

The Microsoft Connector does not compete with the local transit provider, King County Metro. Instead, the service tries to fill gaps and provide a more cohesive network. Some employees may, for example, use the Connector to get to work but ride a Metro bus home. Microsoft’s Connector may use a bay at Metro’s bus transit center but cannot use on-street transit stops. As a result, Microsoft works with local churches and business to establish stops in white curb zones and parking lots. With an average daily ridership of 3,400, the service equates to about one percent of Metro’s daily ridership1. It is also worth noting that in addition to the commuter bus, Microsoft also offers employee free bus passes and a full suite of TDM programs.

1 Private Commuter Buses: Rogue Operations or New Model?, University of California, Berkeley, CA 2013
Seasonal buses are slightly different than commuter buses, but offer a similar concept in that the service is highly tailored to a specific need. Seasonal bus services generally refer to services that are available for only part of the year and are associated with a specific demand and often in response to a specific infrastructure need, such as not enough parking or excessive traffic congestion. As a result, many seasonal services are associated with vacation or resort communities, such as beach and national park communities in the summer or ski resorts in the winter. In other examples, seasonal service may be affiliated with an academic calendar.

**How it works**

The concept behind seasonal services is that demand from a place exceeds either the roadway capacity or parking resources. For instance, employers associated with the hospitality trade need employees to get to work reliably, but typically also want to save their parking spots for visitors. As a result, they thus have a strong incentive to encourage employees to commute by alternative modes. Employees are also attracted to alternative commute options to save money.

Seasonal services can be challenging to implement because transit agencies must add short-term drivers who are qualified and willing to work and provide vehicles that may not be in service at other times of the year. In some cases, agencies have been able to work within the constraints because demand is so acute that they are compelled to meet it. In other cases, seasonal services align with each other (i.e., summer services and public school bus schedules) to create a full year of service. In addition, sometimes, agencies are able to accommodate shorter seasonal demands through creative strategies, such as re-assigning vehicles and hiring temporary workers. Agencies may be motivated to pursue these types of services because of the potential for additional contract revenue that can be used as a local match.

**Best Practice**

The **Milwaukee County Transit Authority** offers as series of summertime services, including service to Milwaukee Brewers Games, Lakefront Festival, the Wisconsin State Fair, and other summer time special events. While many of these events are focused on getting participants to and from the events, at least two of the services – the Milwaukee Brewers Game service and the Lakefront Festivals - are also designed with employees in mind. Events are frequent enough so that combined, they represent a fairly significant increase in service needs.
Application to the Mid-South Region

Seasonal service, especially as it relates to specific employer needs, on the other hand, may have a more immediate application. The need for seasonal service reflects the fact that the Mid-South economy has a strong logistics sector, which typically has a strong seasonal fluctuation around the holiday period (i.e. Thanksgiving to early January). As a result, many employers add staff during the holidays, including employers such FedEx, who rely on a large evening shift of employees to sort and pack mail and packages. Seasonal hiring during the holiday period is also evident at the shopping malls. Demand for people to get to and from worksites is stronger during the holiday period at some major employment locations, such as FedEx, Ingram Micro, the Wolfchase Mall, and retail activity along Germantown Road. In addition, because many people may not work at these locations regularly, the current transportation and parking challenges (i.e., low service frequency, no evening service bus) may be more acute and people may be more willing to explore new and different options. Providing added parking for seasonal peaks can carry additional costs also.

MATA may work with some of the major employers to develop specific bus routes to meet a need for seasonal commuter runs at peak times. Discussions should also include strategies to help support tailored transit services, either through direct funding or cost-sharing strategies such as purchasing bus passes in bulk. These types of bus routes would not meet all employee needs but four or five routes could be designed to bring employees from key neighborhoods with high concentrations of workers to the work site. Seasonal services could be designed similar to school bus service, so they make a handful of stops to pick up employees and then bring these workers to the front door of their job site. This type of direct service avoids challenges associated with walking to and from a bus stop at night or when the weather is bad.
The cost of providing parking is often hidden from the user. Parking is free, for the most part, to employees, customers, patients and visitors in Shelby County. In a Parking Cash-Out program, an employer would pay an employee for not using their parking space. Offering a monetary incentive to an employee not to drive can be the most effective means of changing behavior and reducing parking demand. Parking cash-out has even been shown to work in the absence of other seemingly viable transportation options and has saved employers money. Parking Cash-Out has been shown to reduce auto commuting and parking demand by 10-30%.

Benefits

Employers continue to offer parking, but offer the cash value (full or partial) of the parking subsidy to any employee who does not use it. The parking cash-out program can benefit employers by:

- Reducing the need for employee parking and costs associated with leasing parking space
- Reducing the maintenance costs of parking areas
- Allowing businesses to convert employee parking spaces to operational space, customer parking spots or revenue-producing activities
- Eliminating the need for new parking construction
- Reducing parking crunches associated with daily or seasonal peak demands

Employees benefit from a parking cash-out program because it gives them the option of receiving extra money instead of driving to work or gives them the value of the parking space if they cannot use it. Because there is no detrimental effect on employees who continue to drive to work, the program is perceived as fair to both employees who opt in and those who opt out.

How it works

The cash value of the parking subsidy can be offered in these forms:

- Employees can be given a general “transportation fringe benefit” for not parking. This can be as little as $20/month or priced less than or equal to the market value of an employee parking space.
- A transit/vanpool subsidy equal to the value of the parking subsidy (of which up to $120/month is tax-free for both employer and employee).
- A taxable carpool/walk/bike subsidy equal to the value of the parking subsidy.

Best Practice

CALIBRE in Alexandria, Virginia, provides taxable cash incentives to employees who commute to work via carpools and vanpools that are not eligible for the company’s transit subsidy program. Employees who carpool with other employees to one of the company’s facilities will each receive $32.50 per month in taxable income and must agree to accept a shared company-provided parking benefit in lieu of an individual company-provided parking benefit. Employees who work at CALIBRE facility and who do not require any parking will receive $65 per month in taxable income and must agree to waive their right to a company-provided parking benefit

1 http://www.bestworkplaces.org/pdf/ParkingCashout_07.pdf
Application to Mid-South

Parking cash-out programs can work anywhere, even in places where few options for alternative transportation seem to exist. Cash-out may be the most regionally applicable strategy, as it does not rely on the presence of other infrastructure or programs for its success, though those other mechanisms amplify the benefits of a parking cash-out program. Nevertheless, parking cash-out can work best in the following types of situations:

- **When employers are providing free parking in an area of high parking demand and limited land availability.** This is especially true where an employer maintains, has built or is considering parking garages, or pays monthly parking fees in established garages for its employees. (Note that parking garages can cost $20,000 space/minimum + an annual maintenance cost of $150/space). Most of these locations are likely in downtown Memphis or the Medical District.
  
  Potential Locations: Methodist Hospital, University District, Baptist Hospital

- **The business is located in an area with multiple transportation options (transit, bicycle facilities) or where employees live close to work**
  
  Potential Locations: Aerotropolis, Downtown, Medical District

- **Where a business has seasonal peak needs, and leases added space just for parking**
  
  Potential Locations: Olive Branch, FedEx

- **Cash-out can work even in situations where non-peak shifts make other TDM options infeasible, by encouraging informal car-sharing**
  
  Potential Locations: Germantown Road Shopping Mall Areas, President’s Island
A commuter bicycle benefit is an incentive to encourage employees to bike to work. The federal government has a tax provision that allows any employer to provide a reimbursement of up to $20 per month for expenses incurred by the employee in conjunction with their commute to work by bike. The reimbursement is a fringe benefit paid by the employer and is tax-deductible to the employer.

There are some critical differences between federal bicycle commuter benefits and other transportation fringe benefits including:

- Employees cannot reimburse themselves with pre-tax income; the reimbursement must be paid by the employer.
- Employees cannot receive both a transit and a bicycle fringe benefit in the same month.
- The benefit is not indexed to inflation, so the amount remains fixed until changed at the federal level.

The intent of the commuter bike benefit is to help defray some of those fixed costs associated with biking such as the purchase of a bicycle, bike lock and/or helmet, use of bike parking facilities and shower facilities, and general bicycle maintenance. Bicycling advocates suggest that the benefit is another step in the right direction to build morale.

**How it works**

An employer may provide up to $20 per month for expenses incurred by an employee in conjunction with his/her commute to work by bike.

Employers must initiate the program. They typically provide it as part of other transportation fringe benefits such as public transit passes or vanpool fares. Employers who provide the benefit are eligible for a tax deduction.

The federal law defines bicycle commuting as any month in which an employee regularly uses a bicycle for a substantial portion of the travel between home and work and does not receive any other qualified transportation benefit such as transit or parking. Some companies require employees to keep logs or record the number of times they bike to work, while others rely on the “honor” system.

Some employers administer the program through a third party, which assumes responsibility for keeping track of who is eligible for the benefit and sending out the benefit checks.

**Best Practice**

*The National Institutes of Health* in Bethesda, Maryland, has been providing its employees with incentives to encourage the use of transportation alternatives. Approximately 12,500 of its 23,000 employees participate in the Institute’s commuting alternatives program.

NIH offers on-site facilities for bicyclists and walkers and was one of the first federal agencies to offer a Bicycle Subsidy Program as an incentive. NIH is a champion for Commuter Connections’ Bike to Work Day, with 590 employees participating in this year’s event.

**Step-by-step instructions for an employer**

1. Determine how you want the benefit to work
   - To date, most employers administer the bicycle benefit program through a vendor, such Accor (see also http://www.commutercheck.com/employers)

2. Set up payroll deduction for the bicycle benefit.
   - As of January 1, 2014, $20 per month of commuting costs are exempt from federal income and payroll taxes

3. Create marketing materials to tell employees you are going to offer the benefit.

4. Record which employees purchase the bus pass or tickets and the amount paid

Best Practice

City Market, an independent grocery store in Burlington, Vermont, gives employees extra cash for biking to work.

City Market was the first Vermont company to provide this benefit to staff, although it has since been adopted by other large employers in the state, including the University of Vermont.

"We have limited parking," acknowledges HR Director Meredith O'Neill. "Every space we can keep open for customers is a win-win for everyone. Employees think the bike commuting benefit is great!"

Application to Mid-South

St. Jude Children’s Research Hospital

St. Jude Children’s Research Hospital is one of the largest employers in the Mid-South Region, with over 4,000 employees in downtown Memphis, just north of the Memphis Medical District. While St. Jude Children’s Research Hospital is located downtown, it has a campus-style layout with several buildings spread out on a single parcel of land. In part, because it is a hospital, St. Jude has a focus on employee health, and the campus includes a one-mile walking trail and a fitness center with shower facilities.

St. Jude is a large employer, and the commute challenges are varied. The hospital has a large amount of parking that it provides at considerable cost. In addition, some employees (in a survey) said that they are challenged to get to work quickly, safely and economically. About 65% of St. Jude employees live within a 30-minute travel time of the hospital, and 25% of them live within 15 minutes of work. Some of these workers could potentially be encouraged to bike to work if an incentive were available. St. Jude is also located along and close to several existing and proposed bike lanes.

Offering an employee bike benefit would both help address employee commute needs as well as fit in with the hospital culture. St. Jude already has bike racks on campus, several of which are full on days when the weather is nice. In addition, because St. Jude already has shower facilities, it is easier for people to ride their bikes to work.

Other Potential Bike Commuter Benefit Sites:
Southwest Tennessee Community College | City of Memphis | Shelby County | Methodist Hospital
Bicycling is growing in popularity around the country and in the greater Memphis area. Bicycling to work is becoming more popular as a cost-effective, environmentally friendly and healthy way to commute. New facilities in the region, such as the Shelby Farms Green Line have been highly successful, and the Mid-South Greenprint Plan has developed a series of recommendations for bicycle trails, on-street bicycle lanes, and other infrastructure to provide connections throughout the region.

This expansion of bicycle infrastructure opens up bicycling to many more potential commuters. However, this regional infrastructure is only one part of encouraging bicycling. Prospective bicyclists also need to be supported once they reach their destination. In many places, employers are providing on-site bicycle amenities for use by employees and visitors. Bicycle facilities are included as part of new constructions, but can also easily be retrofitted into existing buildings and employer campuses.

*On-site bicycle parking facilities can reduce parking and traffic demand by up to 15% for minimal one-time capital investment.*

## Types of Facilities

### Bicycle Parking

Bicycles can cost anywhere from a hundred to several thousand dollars, but all bicyclists seek safe, secure, weather-protected bicycle parking for their bicycles. Parking could be located inside the building, in a parking garage, or in a weather-protected facility in a parking lot. Bicycle parking should be located near the employee entry.

### Shower and Changing Facilities

End-of-trip and support facilities are key parts of a complete bicycle trip. Shower, changing, and locker facilities promote bicycle commuting by providing a convenient place for bicyclists to deal with the effects of active transportation and weather elements, and/or a secure place to store clothing and other necessities. Existing locker rooms can serve this purpose, or simple, secure facilities can be an easy addition to many buildings.

### Bicycle Repair Facilities

A simple, do-it-yourself bicycle stand is an inexpensive investment that provides essential support for cyclists, especially when tire gauges, air pumps, and wrenches and other tools for minor repairs are also provided. A bicycle stand can fit in a small space in the building or co-located with bicycle parking.

### Additional Bicycle Amenities

For larger employers, or in areas with multiple bicycle facilities, a full-service, staffed bicycle repair shop could provide professional repair services as well as bike rentals, valet bike parking, and bike share registration.

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**Benefits of Bicycle Commuting**

- Reduced parking demand
- Environmentally Sustainable
- Improved Health
- Flexibility
- Low Cost
**Application to Mid-South / Implementation**

As bicycling grows in popularity in the Mid-South Region, the provision of on-site bicycle facilities by employers can grow concurrently wherever possible. The larger the employer, the more cost-effective it becomes to provide on-site facilities that support existing bicycle commuters and attract new one. Facilities in remote industrial areas (like President’s Island) are the least conducive to attracting bicyclists, but even in these areas, providing minimal on-site facilities can remove barriers for potential bicycle commuters.

**Areas near Bicycle Infrastructure**

Employment locations near regional bicycle paths or major on-road facilities are the easiest to access and the most likely to attract bicycle commuters in significant numbers. The map shows the areas of the Mid-South Region that are within a mile of existing and proposed bicycle routes.

**Areas near MATA service**

All MATA buses are equipped with on-board bicycle racks, which can significantly extend the potential reach of bicycle commuters. Employment areas that are within easy bicycling distance of a MATA stop are also good candidates for on-site bicycle facilities.

**Developing Guidelines for New Construction**

The Mid-South Greenprint Plan could develop general guidelines for the provision of on-site bicycle facilities, including proposed ratios and siting guidelines. These could be adopted or encouraged as part of ongoing development permitting or incorporated into building codes.

**Provide Audits for Existing Sites**

The Office of Sustainability, individual municipalities, or a Transportation Management Association could work with individual employers to provide audits and apply bicycle facility guidelines to current sites.

**Additional Considerations**

Developing on-site bicycle facilities are all about understanding the needs of bicyclists and removing barriers to bicycle use. Additional considerations to be reviewed/applied on a site-specific basis should include:

- **Bicycle Signage** – Prominently placed, easily readable signs directing bicyclists from the worksite entry point to the bicycle parking facility. These should be included inside the building if parking is located there.
- **Short-term bicycle parking** – Simple, easily accessible racks located near building entries for customers, visitors, or employees who make several bicycle trips during the day.
- **Lighting** – Bicycle parking areas and the paths to reach them should be well lit to provide added visibility and protection.
- **Bicycle entries** – Many Greater Memphis employers are located in gated facilities that are only accessible by motorized vehicles. Whether staffed or card-controlled, special accommodations should be made to allow bicyclists to use these or even more convenient entries if possible.
- **On-site Connections** – Once past the entry gate, facilities should have paved, accessible roadways or paths to building entries and/or bicycle parking.
- **Off-site Connections to Regional Facilities/MATA stops** – The “last mile” connection between an employer’s front door and the regional facility can be the most difficult for bicyclists and should be reviewed and improved on an individual basis by adding bicycle lanes, sharrowas and/or signage.
regional TDM strategies

» Universal Pass Program (U-Pass)
» Vanpool Service
» Park-and-Ride Lots: Shared Lots and Pocket Parks
» Pedestrian Facilities / Safe Routes to Work
» Carpooling, Rideshare, and Ride Matching Services
» Transportation Management Association (TMA)
» Guaranteed Ride Home Program
» Regional Transit Funding Strategy
universal pass program (u-pass)

University and college transit passes - often referred to as “U-Passes,” “Eco-Passes,” or “Universal transit passes” – are created through partnerships between public transit authorities and universities or large institutions. These programs are a mutually beneficial way to increase transit ridership and offer greater mobility to students, faculty, and staff. Many universities are also motivated to develop U-Pass programs as part of environmental stewardship programs.

How it works

The cost of a U-Pass program typically is based on the number of trips taken by pass holders and the pre-determined cost per trip.

Transit and universities/colleges work together to create a U-Pass agreement. This agreement is typically formalized with a contract to ensure that transit agencies are adequately reimbursed for ridership and universities are confident that they benefit from the relationships through improved service and discounted rates.

Negotiations

- **Discounted per trip rates**: U-Pass programs almost always offer the university a discounted trip rate. The amount of the discount must balance the benefit of a large, bulk purchase with the actual cost of providing the service.

- **Actual trips taken by U-Pass holders**: The number of trips taken together with the fare determines the cost of the program, thus agreement on how the number of trips taken is measured is critical. Depending on the type of fare collection system used by a transit agency, pass usage may be easily measured at the farebox. In other cases, the U-Pass program can measure trip levels through surveys.

- **Escalation rates**: U-Pass programs are nearly always effective in increasing transit ridership. Consequently, program costs can increase substantially after the first year. Transit agencies and universities often negotiate escalation rates to ensure program cost increases are manageable for end users, especially in the early years of the program.

Funding

Most U-Pass programs involve some funding from users. U-Pass programs are usually funded by the university, either out of general or parking revenues and/or from the student body through student fees. **Engaging students in program development and negotiations, therefore, is critical.** Key to success is to spread the costs of the trips over the entire university population so that the cost per person remains quite low. The reasoning behind the shared cost is that additional transit riders benefit drivers by reducing traffic and parking congestion. Universities also typically benefit financially through reduced or deferred demand for campus parking.

Other Considerations

- **Fraud**: Fraud prevention methods are an essential element of all U-Pass agreements, especially programs that allow riders to show or “flash” their student ID to the driver. Many programs tie the U-Pass to the student ID card and require students to affix brightly colored stickers each semester to show that they are still enrolled in school. Other programs distribute passes each semester.

- **Complementary Strategies**: While U-Pass programs tend to be affiliated with bus service, in most cases they are part of a broader multi-modal transportation strategy that includes improved bike programs, carshare programs, carpooling/vanpooling strategies, and often, increased parking rates.

- **Marketing**: For U-Pass programs to be successful, they must be successfully marketed. Marketing should capitalize on the cost benefits to riders and the environmental benefits associated with the program and should include information about how to use transit and/or other transportation programs.
Application to Mid-South

University of Memphis

University of Memphis is one of the flagship institutions in Tennessee's university system. There are over 23,000 students and 5,500 faculty and staff on campus during the academic year. The campus also has a large commuting population with nearly 86% of the student body living off campus. The University of Memphis currently charges for parking, and charges vary depending on location and lot type. The University also sponsors a shuttle, The Blue Line, to support on-campus circulation.

The University of Memphis is located near the intersection of Highland and Southern Avenues- about one block from Poplar Avenue, one of the strongest transit corridors in the region. Direct transit service to the U of M campus is available on the Route 5 Central from downtown and the Route 9 Highland, which travels along Highland Street. Routes 5 and 9 have relatively low levels of service. Negotiating service increases is often part of a U-Pass program.

Other potential U-Pass partners:
Southwest Tennessee Community College | University of Tennessee Health Science Center | Christian Brothers University | Rhodes College

The University of Memphis operates an on-campus shuttle to move people around campus and between major destinations. This new service operates from 7:00 a.m. to 11:00 p.m.

A U-Pass program could complement this program by providing access from off-campus areas to campus, allowing students, faculty, and staff to get where they need to go without traveling by car.

See also federal employer subsidy for complementary strategy.

Best Practice

The University of Washington (UW), like the University of Memphis, is an urban campus located just outside of downtown Seattle. The UW U-Pass is one of the first and most successful examples in the U.S. The program began in the early 1990s and offers students, faculty and staff unlimited, free-fare access to most public transportation services in the Puget Sound region. When the program was initially implemented, the largest regional operator, Seattle King County Metro (KCM) added transit service to the main UW campus in Seattle. UW also increased parking fees substantially and offered a series of other transportation demand management programs, such as vanpool fare credits, discounted carpool parking, guaranteed ride home, etc. Students, faculty and staff accessed bus service by using their university ID cards. Revenues to support the program were raised through a transportation fee charged to students, faculty, and staff, with a contribution from parking fees. The UW UPass program resulted in a significant increase in demand for transit services, and over time, as ridership has increased, so has transit service to the campus.

Students are required to participate in the UPass program and pay a $76 fee per quarter. Participation is optional for faculty and staff, who pay $136/quarter for the program. Studies of UW’s UPass program demonstrate that since the program began, drive-alone commuting has decreased by some 38%. The program also generates approximately $7.5 million annually for King County Metro (which is among several transit providers participating in the program).

Letter from UW President Michael Young to King County Council, 2011
Vanpools are a type of ride-sharing, similar to carpooling, but typically involving more people and a shared, provided vehicle. In most cases, vans are owned or leased by a sponsoring organization and riders share the cost of operating the vehicle to and from work. Vanpools have had the most success where employees travel longer distances along corridors with limited or no existing transit service. **Vanpool services can reduce traffic and parking demand by up to 5%**.

### How it works

Vanpools typically consist of a group of 5 to 15 commuters who rideshare to and from work in vans either leased from an outside operator or self-supported by participants. If the van is leased, the operator owns the vehicle and is responsible for maintenance and insurance. If the van is self-supported, the van is owned by an individual and costs are divided among individual riders.

#### Drivers

In most cases, one of the vanpool participants serves as the primary driver and another as a backup driver. Vanpool drivers usually ride free in exchange for their driving and coordination responsibilities. The driver may also receive a certain number of personal travel miles in the commuter van.

#### Expenses

Vanpool expenses (fuel, insurance, maintenance and repairs) are typically covered by the fares paid by vanpool members. In some cases, a separate entity and/or sponsoring agency may help cover eligible low-income vanpool members’ fares. The cost for participants depends on the size of the van, the length of the commute trip, the number of participants, and the availability of employer or government subsidies.

### Best Practice

**Utah Transit Authority (UTA)** in Salt Lake City manages a vanpool program with a program manager and support specialists as well as marketing, accounting and maintenance support staff. UTA does not subsidize individual vanpools; however, the majority (80-90%) of the riders have access to the federal transit subsidy. In 2010, UTA managed 525 vanpool programs.

UTA’s vanpool fleet includes a combination of minivans and vans (12-15 passengers). To sign up for a vanpool, individuals call UTA and tell them about their needs. UTA then will either place them in an existing vanpool or, if no vanpool is operating and there is a sufficient number of riders, a new vanpool will be formed.

The average mileage for a vanpool is 1,700 miles per month, or about 40 miles per one-way trip.

Each vanpool has two drivers plus a bookkeeper. Drivers are allowed 50 personal travel miles per month. Fares cover fuel, maintenance, and insurance. They are based on mileage, not passengers, so fares may fluctuate as membership changes.

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Application to Mid-South

MILLINGTON

Ingram Micro is a major employer in Millington, located north of Memphis. The company employs approximately 150 workers, about 110 of which are paid an hourly wage of between $8 and $12 per hour. Hourly employees work in one of two shifts: 4:00 a.m.-1:00 p.m. (strict start and end times) or 10 a.m.- up to 10 p.m. (flexible and changes with demand).

Ingram Micro is located 15 miles north of downtown Memphis, or about 29 miles from Southaven and 26 miles from West Memphis. There is no transit service in the area, and given that the location is outside of the MATA service area, no service is planned at this time. Workers traveling from these locations can spend as much as $25 per day on transportation. Including gasoline alone, a 50-mile round trip would require two gallons of gasoline or about $7, which is roughly one hour of paid work time.

Memphis has an active vanpool provider, vRide, with one active vanpool bringing people from Southaven, Mississippi, to the Veteran’s Administration Hospital in Memphis. Contact Michael Devry at Michael.devry@vride.com for more information on vRide’s services.

See also federal employer subsidy for complementary strategy.

Other Potential Vanpool Service Sites:
- Tunica County Casinos
- Brother International
- Wal-Mart Stores, Bartlett
- Carrier Corporation
- Target, Collierville
- Southland Park Gaming and Racing
- Family Dollar
- Hino Motors

Average vehicle gets 24.6 miles per gallon

U.S. Energy, April 16, 2012:

Cost per gallon of gasoline is $3.57

(MemphisGasPrices.com)
A walkable environment gives people more transportation choices and improves the overall quality of life. A well-designed network of streets and sidewalk systems are essential to make people feel safe. It also allows people to make connections between transportation modes as well as between neighborhoods. Investments in the pedestrian environment have positive impacts on all road users and can encourage economic vibrancy, physical activity and overall area health. In many places in Memphis, basic pedestrian infrastructure is lacking, yet pedestrian activity persists. Pedestrian infrastructure improvements can reduce parking and traffic by 5-15% at minimal cost\(^1\).

**Why it’s important**

Walking is the cheapest, easiest and most convenient way to travel. Everyone - whether they drive, ride transit, carpool, bicycle or take a taxi – is a pedestrian at some point in their trip. Yet, in many of the areas of densest employment in the Mid-South region, getting to the front door of a building is difficult. Large employment sites are set back from roadways, with no pedestrian path to the building entry. Parking lots are oceans of asphalt. Many sites are also fenced, with a gate that is only accessible by motorized vehicle, even where bus stops are right nearby. Roadways lack sidewalks, lighting or any form of pedestrian refuge. Traffic signals and major roadways are practically impossible to cross as a pedestrian. Pedestrian connections to adjacent neighborhoods or nearby shops or restaurants do not exist. Improving pedestrian access makes all other travel options more feasible and makes it easier to get to work.

**How it works**

A Safe Routes to Work program contains the same five key components as the Safe Routes to Schools program but modified for employees:

- **Education**: Teach employees the skills necessary to navigate through busy streets and show them how to be active participants in the program. This can be provided through a simple pamphlet or brochure.
- **Engineering**: A licensed traffic engineer can assist businesses in developing a plan to provide a safer environment for employees to walk and bike to work.
- **Encouragement**: Events, contests and promotional materials are incentives that encourage employees to try walking and biking.
- **Enforcement**: Police officers, crossing guards and other law enforcement officials can participate throughout the Safe Routes process by monitoring traffic speeds and intersections. Police can also help pedestrians feel safer.
- **Evaluation**: Program participation should regularly be monitored to determine the growth in employee participation. Typically, “before and after” surveys are taken to ascertain any change in travel mode to work over the course of the year.

**Funding**

The Tennessee DOT Multimodal Access Fund is available for projects such as bicycle lanes, sidewalk and pedestrian crossing improvements, bus shelters, and park and ride facilities, among others. TDOT set aside $30 million in its *Three-Year Work Plan* for the fund (or an average of $10 million per year, though yearly amounts could vary depending on interest). Multimodal Access projects, TDOT says, will be funded 95 percent by the department with a 5 percent match from local funds. Projects with a total cost of $1 million or less are eligible\(^2\).

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What can be done

Promoting bicycle and pedestrian transport modes can also be accomplished through simple design changes, some of which can be implemented at little additional cost. Simple, low-cost pedestrian infrastructure improvements include:

- Providing access from residential neighborhoods to regional facilities
- Adding pedestrian gateways to employment complexes at strategic locations (near bus stops, crossings)
- Creating continuous sidewalks and crosswalks at intersections
- Handicapped-accessible curb ramp design
- Highly visible pavement markings
- Designing tight curb radii
- Pedestrian-scaled lighting

Best Practice

Safe Routes to Schools programs have been employed nationally to look at specific and common travel paths and make improvements. A Safe Routes to Work program could work similarly and integrate health, fitness, traffic relief, environmental awareness and safety under one employer-focused program.

Through the Safe Routes to School program, the City of Oxford, Mississippi passed a complete streets ordinance in 2010 in order to make more pedestrian improvements including constructing a median and three raised crosswalks. The median was built to calm traffic around the city’s middle school, and the crosswalks were constructed to allow children to safely cross the street from the middle school to the Boys and Girls Club.

The town of Cottonwood, Minnesota, received $87,575 in Safe Routes to School funds from the Minnesota DOT; $3,000 was be used for educational and promotional activities, and the remainder was to be used to construct a path around the lake, which was completed in 2009. Before the construction of the path, only about 5% percent of Lakeview students walked or biked to school. Today, 11% of students use the path at least once per week and an additional 13% use the path at least once per month to walk or bike to school and for other recreational purposes. Students are not the only ones to take advantage of the path. In the evenings, large numbers of individuals and families use the path for jogging, walking, or bicycling.
Application to Mid-South

While many areas can benefit from pedestrian improvements, physical and programmatic improvements are most applicable building from areas of multiple activity – near residential areas, where multiple employers are located, near transit hubs, and in areas with complementary activity. Examples include:

Poplar Avenue/I-240 cluster

There are many midsized employers here, often in suburban-style office developments. Poplar Avenue is the busiest bus corridor in Greater Memphis, but it can be difficult to cross the street. Improvements could focus on developing safe, well-lit crossings at strategic locations to take advantage of bus stops.

Nonconnah Industrial Park (Aerotropolis)

Medtronic is one of the largest employers in Shelby County, and Nonconnah is an attractive, landscaped environment with multiple other businesses. While this area lacks a full complement of nearby stores and restaurants – this is partially due to the difficulty, inconvenience and time it takes for employees to walk in this area. Sidewalks are inconsistent, buildings are set back, and there is little to slow traffic speeds in through this corridor. Front-door pedestrian connections are also sorely lacking.

President’s Island

While few would walk to President’s Island, the area around the market could be a key transit/pedestrian node. Linking the multiple employers on President’s Island to this node could strengthen that area as a transit hub and provide more interaction between businesses.

Germantown Road

This suburban retail corridor is populated by restaurants, big box stores, smaller establishments, and national chains. Pleasant, residential neighborhoods are adjacent to this corridor, but the overall design is auto-oriented. Germantown Road itself is difficult to cross, as are the many cross streets, driveways and parking lots. Pedestrian improvements could minimize traffic on this corridor, allow for greater interaction, and enhance the ability of employees to benefit from carsharing, transit or other transportation demand management programs.
Carpooling is the shared use of a car by the driver—usually the owner of the vehicle—and one or more passengers. When carpooling, people either get a ride or offer a ride to others instead of each driving separately. Carpooling arrangements and schemes involve varying degrees of formality and regularity. Carpools may be formal - arranged through an employer, public website, etc. - or casual, where the driver and passenger might not know each other or have agreed upon arrangements.

How it works

One of the greatest impediments to carpool and vanpool formation can be finding suitable partners with similar work schedules, origins, and destinations. Facilitated rideshare matching can overcome this by matching interested commuters. Commuters enter their travel preferences into a database and receive a list of potential rideshare partners. The success of these programs is largely determined by the number of participants and, in turn, the number of potential matches that can be made.

Experience indicates that ridesharing programs can attract as much as 5-15% of commute trips if they offer only information and encouragement, and double that success (10-30%) if linked with financial incentives such as parking cash-out or vanpool subsidies\(^1\).

Rideshare programs may be administered through individual employers, but are often most effective when coordinated through a transportation management association or other local or regional entity. When coupled with a parking cash-out or other incentive program, ridesharing can be a powerful incentive to reducing parking and auto travel demand, even where no other transportation options exist.

Additionally, providing well-signed priority spaces near the most convenient walking entries of a parking facility for carpools is an easy yet attractive TDM strategy.

Best Practice

North Central Texas Council of Governments. Tryparkingit.com is an online carpool/vanpool initiative provided through the North Central Texas Council of Governments for the Dallas/Fort Worth metro area. Try Parking It allows commuters to create an online account and log on to find and connect with people with similar commutes. It also allows users to track their contributions to clean air and congestion reduction and receive an estimate of miles and money saved. Try Parking It users have saved more than 5 million travel miles through the program.

Application to Mid-South

The Memphis Area RideShare Program (MAR) is an initiative through the Shelby County Health Department to encourage area commuters to consider alternative options to driving single-occupancy vehicles to work. MAR partners with vRide to provide a web-based ride matching service and incentive system that allows commuters to search for other people with similar commuting patterns.

Ridesharing can be most successful in areas of high employment density or when linked in a geographic area over multiple employers. Single large employers may already see informal car-sharing happen, and can easily implement their own programs. Areas with high density from multiple employers have great potential to link commuters through ridesharing. These areas include:

- Poplar Avenue
- I-40 corridor outside I-240 Loop
- Collierville
- Distribution Centers in Olive Branch, MS

A Transportation Management Association (TMA) is typically a non-profit organization that serves to provide transportation coordination and program implementation within a geographically defined area. TMA’s are member-controlled, non-profit organizations and consist primarily of area businesses and institutions. Often, TMA’s include public-private partnerships and have established coordination and funding relationships with local, regional and state governments.

Roles of a TMA

Transportation Management Associations can provide a variety of services that encourage more efficient use of transportation and parking resources, such as:

- **Access management**: TMA’s can be involved in the land use planning, pedestrian and bicycle planning processes, transit improvement plans and roadway design practices to encourage smart growth development and create more pedestrian-oriented streetscapes.

- **Commuter programs**: TMA’s can provide various programs for employers to incentivize their employees to reduce their automobile trips. These may include commuter financial incentives (parking cash-out and transit allowances), rideshare matching, alternative scheduling, telecommuting options, Guaranteed Ride Home programs, and walking and cycling encouragement facilities and programs, etc.

- **Coordination between employers and facilitation with public agencies**: TMA can effectively coordinate between employers and with public sector. A TMA Coordinator can help administer transportation demand management programs at specific businesses or developments.

- **Parking management and brokerage**: TMA’s can provide parking brokerage services, allowing businesses to share, trade, lease, rent and sell parking facilities. For example, a TMA can match businesses that have extra parking supply at a particular time with nearby businesses that need parking at that time.

- **Direct service provision**: TMA’s can directly provide various services to employers such as shuttles, special event planning and transit services, public and community relations programs, etc.

- **Standard and guidelines development**: TMA’s can aid the process of developing appropriate and targeted TDM standards and guidelines for employers, such as the system design of bike parking.

- **Wayfinding and multimodal navigation tools**: TMA’s may assist implementing multimodal navigation tools including signs, maps, guidebooks, websites and applications for electronic devices that provide information on travel options to a particular destination.

- **Marketing and promotion**: TMA’s can help determine consumer needs and preferences through surveying, creating appropriate targeted products, providing useful information about products to consumers, and promoting their use.

How it works

- Regional or local governments, chambers of commerce, or the management of a major facility (such as a mall or hospital) can help create a TMA and provide seed funding.

- Developers or facility managers may be required to establish a TMA to mitigate local congestion and parking problems.

- TMAs are typically staffed by a mobility coordinator who administers and actively markets local transportation demand management programs. Through the TMA, a mobility coordinator will:
  - Serve as a facility-wide concierge, providing personalized information on transit routes and schedules, ridesharing information, bicycle routes and facilities, and other transportation options available to residents, employees and customers
  - Negotiate with transit agencies for low-cost transit passes
Funding

- Initial funding to establish TMAs normally comes from local governments, highway or planning authorities, major private businesses, etc. Federal funds, such as the Congestion Mitigation Air Quality (CMAQ) program can be used to support TMA start-up costs and up to three years of operating assistance (see http://www.fta.dot.gov/documents/cmaq08gd.pdf).

- Later, TMAs are typically funded through dues paid by member businesses and government grants.

- TMAs can also charge a certain amount in fees for their services, such as shuttles, parking management, etc.

- Many TMAs rely heavily on public, government-controlled funds, such as the federally funded Congestion Mitigation Air Quality (CMAQ) program or local city or county sources, to fund their organization.

- City Business Improvement Districts (CBID) can also provide funding for businesses to implement tailored TDM strategies.

- Foundation funding is also sometimes available for TMAs to fund specific projects and programs. The TMA can either take the lead in responding to foundation opportunities or work with area partners on a joint application.

Application to Memphis

Aerotropolis

With over 83,000 jobs in just over 31 square miles, the Aerotropolis area is a prime candidate for the establishment of a Transportation Management Association. The Aerotropolis Study has highlighted a great need for transportation coordination amongst the over 2,000 employers in the area. This relatively compact area has large and small employers, significant transportation infrastructure and very specific challenges.

Most importantly, through the Aerotropolis Master Plan, many of the key employers and government agencies are already engaged in discussions about transportation. This initial organization and seeking of common interests is often the most challenging aspect in the initiation of a TMA.

Initial tasks for the Aerotropolis TMA should include:

- Seeking federal or state funding
- Coordination and implementation of Aerotropolis Master Plan transportation recommendations
- Establishing a local circulator shuttle(s) between Airways Center and area employers
- Employer outreach on TDM programs

Other Potential Sites for the formation of a Transportation Management Association:

Medical District
- Parking management
- Enhanced MATA pass sales
- Coordination with proposed new transit service
- Bicycle programs
- Safe Routes to Work

President’s Island
- Coordinating employee shifts
- Organizing car/vanpools
- Providing local circulator service
**Best Practice**

There are over 150 TMA’s nationally, which range in size, budget and service provided, but all work on coordinating transportation and programs that provide increased mobility and choice.

**Greater Mercer County (NJ) Transportation Management Association**

Operating in a suburban environment, the Greater Mercer TMA (GMTMA) promotes and provides alternative transportation choices for its association, which includes large and small employers, local governments, authorities and state agencies. Established in 1984, the GMTMA now has an annual budget of $750k, funded partially through membership fees and federal funds. GMTMA offers a range of services to its members including:

- Bus and Shuttle Service Coordination for employer-funded shuttles
- Carpool and Vanpool Service Assistance
- On-site Commuter Information Exchanges
- Traffic Alerts - Notices about construction projects, accidents and incidents that impact travel.
- Transit and Transportation Advocacy
- Transportation Site and Needs Assessments

GMTMA has also recently expanded its service offerings to include a Senior Shuttle and work with local schools on Safe Routes to School and Walking School Bus implementation.

**Addison County Transit Resources (ACTR), Vermont. Way to Go! Addison County is a Transportation Management Association made up of organizations that joined together to reduce single-occupancy vehicle traffic and improve commuting options.**

ACTR is a 501(c)(3) non-profit organization. ACTR’s funding is an 80/20 mix of state and federal grants and private funds from individuals, businesses, towns and philanthropic organizations to supplement the public grants, as well as provide the local match required to acquire public grants.

ACTR works closely with businesses and public agencies to create employee transportation networks, bike/pedestrian programs, rideshare resources, car share resources, transit/shuttle operations, resource/legislative advocacy and commuter services to increase transportation efficiencies through a demand management approach.
Guaranteed Ride Home (GRH) programs can be the glue that makes many other Transportation Demand Management programs effective. This initiative recognizes that for workers to commute without their own vehicle, there will be times when they will need a viable travel alternative. Whether a commute is made by bike, transit or vanpool, there will be an occasional need to work late, make unplanned trips home to take care of sick family members, or have an alternate plan due to inclement weather. The Guaranteed Ride Home program allows for a taxi or other ride home under these circumstances, making the use of alternative travel arrangements on a daily basis more palatable and feasible.

Statistics on such programs indicate that although they tend to have relatively low employee utilization rates, they have very high satisfaction rates from participants, thus providing a high benefit for a low cost to employers. A recent Nelson\Nygaard study evaluating the effectiveness of a regional GRH program in Alameda, California, found that 95% of program participants felt that the GRH program did encourage alternative mode use. Another study found that 15-25% of program enrollees would otherwise drive to work if the GRH program did not exist.

**How it works**

Guaranteed Ride Home programs can be organized by an individual employer, a Transportation Management Association, or a governmental entity (Transit Agency, Municipality, Service Provider). The program operator develops contact information for employees to use and has a network of providers to offer the ride home. Programs can work with voluntary providers, through the use of taxi vouchers, or through a combination of resources. Employees (or the employer) are typically pre-registered, and eligibility requirements include (general) use of alternative modes for commuting. In many cases, a limit is placed on the number of times an employee can use the program in order to prevent abuse, but these are rarely breached.

**Best Practice**

**Transit Agency:** TANK (Transit Authority of Northern Kentucky) offers a Guaranteed Ride Home program for monthly pass holders. Registered riders can use the service up to four times a year. Rides are typically offered in cases of unplanned overtime or a family emergency during the workday.

**Transportation Management Association:** The Missoula Ravalli Transportation Management Association (Montana) administers the Guaranteed Ride Home program for eligible employees including all those with transit passes, and employees of member companies. The program uses taxis to provide safe, reliable and free trips for those in emergency or unexpected situations. Trips are provided for up to a 50-mile radius.

**Individual Organization:** The Buffalo Niagara Medical Campus (NY) obtained federal funding to implement a Guaranteed Ride Home program as part of a larger transportation demand management grant to serve its 12,000 employees. Over $35,000 through an FTA Job Access and Reverse Commute Program (JARC) grant is specifically allocated for this program, which supports other TDM initiatives.

**Applicability to Mid-South**

The Mid-South Region already has a Guaranteed Ride Home Program. This program needs more marketing, momentum and support to increase awareness and use. The program can be expanded to include MATA pass holders and can be included in the development of any new TDM program. Establishing the parameters, policies and provision of a program for ease of adoption by individual employers or a transportation management association could also be completed by the Greenprint Consortium, the Office of Sustainability, the County or other entities as appropriate.
Park-and-ride lots are parking facilities where people can park their cars and either join a carpool or vanpool, or get on a bus or other transit service. Park-and-ride lots expand the reach of transit because people who are unable to walk to a bus stop can still access transit by driving short distances or by getting dropped off.

Traditionally, park-and-ride lots are located in suburban locations outside of downtowns, along train lines or express bus services. These park-and-ride lots tended to be larger, formal facilities with lots dedicated to the park and ride function and, in most cases, offered a range of passenger amenities. In more recent years, transit agencies have developed shared park-and-ride lots within existing facilities that frequently have excess parking, such as shopping malls, or entities that primarily use their parking on weekends, such as faith-based organizations. Shared park-and-ride lots are often marked with signage but otherwise offer little in the way of passenger amenities. These types of arrangements have proven successful around the country.

In some urban areas, there are limited opportunities to develop traditional or even shared park-and-ride lots. Consequently, some transit agencies have started to develop “pocket park-and-ride lots” as opportunities present themselves. Pocket park-and-ride lots are smaller lots with space for 30 or fewer vehicles, but that are strategically located along key bus routes. Pocket park-and-ride lots take advantage of available parking to encourage more people to ride transit. They may also be used in locations where people meet to carpool.

**Application to Mid-South**

The Mid-South region is developing a network of commuter services but, to date, lacks much of the infrastructure necessary to help commuters find and use alternative forms of transit. Developing more park-and-ride lots, both for carpoolers and transit riders, is an important part of the strategy. Because there are few existing park-and-ride lots, there are many opportunities in the region. Any new programs, however, would need extensive marketing.

The Mid-South region could develop park-and-ride lot facilities in a number of locations, including at the end of bus services that can be used for bus riders traveling into downtown Memphis, or as a location for people to meet and carpool to employers located at the periphery of the urbanized area. Park-and-ride lots located at the end of routes, such as Route 50-Poplar, Route 40-Wolfchase or Route 36-Hack’s Cross, for example, could be used for people traveling into town, such as carpoolers commuting to work at locations in Germantown, Collierville, or Fayette and DeSoto Counties. At a future date, the park-and-ride lots could also be used as pick-up points for employer shuttles and other “last mile” connections to bring people from the end of a transit service to an employment center.

Park-and-ride facilities, as discussed, can include a small or large number of spaces; ideally the lot size will reflect demand and offer potential for expansion. There are also opportunities to develop and market existing park-and-ride opportunities such as the parking available at the MATA terminals, including the North End Terminal, Central Station, American Way and Airways. Each of these facilities has a limited amount of parking that could be used as a park-and-ride lot for both traditional (into Downtown) and reverse commutes (to suburban jobs).

As the Mid-South Region develops park-and-ride lot infrastructure, it is also important to include the full suite of supporting programs and products, including employer transportation programs, ride-matching services, vanpool programs, guaranteed ride home, bike facilities (lockers and racks), and signage and marketing.
How it works

Pocket park-and-ride lots can be developed in a variety of ways ranging from transit agencies purchasing and developing sites; using former Department of Transportation construction staging areas near freeways; and, signing contracts with shopping malls and faith-based organizations.

When creating pocket park-and-ride lots, the idea is not to look for large parking lots but rather smaller, strategically located lots that can be served from the street or are close to a major bus stop. The intent is to increase the range of transit for people who can’t quite walk to a bus stop but would still benefit from using transit for part of their trip.

Locating pocket park-and-ride lots involves touring major bus service corridors to identify potential space. In many cases, there are already informal places where riders have found and use small pockets of parking to access the bus. Space may be partial space at an employer or retail establishment that overbuilt parking, or through a site that has changed ownership and parking no longer matches need. Once space is identified, transit staff can research ownership and discuss potential sharing agreements with the owners.

Finding and securing pocket park and ride lots is not easy, largely because opportunities are limited and building owners can be wary of sharing parking. An important strategy for transit agencies is to use clear communication to ensure that their agreement with the property owner is reasonable and enforced. Improvements to the lot may be feasible through direct or grant funding.

Funding

Park and ride lots are typically funded by a combination of federal, state and local funding programs. Depending on the location of the park and ride lot in the Mid-South area, these funding sources may include:

- Urbanized Area Formula Funds (Section 5307): funding for capital, operating, and planning assistance for public transportation in urbanized areas. Capital programs typically require a 20% match from local entities, which may include the state.
- Rural Area Formula Funds (Section 5311): funding for capital, operating, and planning assistance for public transportation in non-urbanized areas. Capital programs typically require a 20% match from local entities, which may include the state.
- Bus and Bus Facilities Program (Section 5339): this new funding program under MAP-21 provides funding for buses and bus-related facilities and probably could be used for park and ride lot development.
- The Congestion Mitigation Air Quality (CMAQ) program provides funding for strategies that reduce air pollution. CMAQ funds can be used for a wide variety of transit uses, including park-and-ride facilities.

Best Practice

The Virginia Department of Transportation (VDOT) has an active system of over 300 park and ride lots around the state. Some lots serve rail and bus transit, and others are for carpoolers only.

As part of developing the park and ride lot system, VDOT also created a well-organized and easy-to-use website that helps potential users find the nearest or most convenient park and ride lot and clearly describes any restrictions on using the lot as well as available transit and vanpool service available from the lot. VDOT also recently launched a marketing plan with strong branding and signage to promote the park-and-ride lot network, let people know when new lots are available, and link the park and ride lot with their 511 travel information system.

VDOT is also in the process of developing a cost savings calculator and trip planner to articulate benefits from using the park and ride lot.
Transit funding is a significant challenge facing the Mid-South as it works to increase access to employment markets and diversify travel choices. The main challenges associated with transit funding are:

1. The only jurisdiction funding transit in the region is the City of Memphis.
2. There is no dedicated funding source for transit service, even in the City of Memphis.

Broader participation in regional transit funding would allow the Memphis Area Transit Authority (MATA) to provide service to more areas, including larger employment sites located outside the city boundaries. Dedicated funding sources, on the other hand, would provide a reliable source of annual revenues to support transit operations and capital projects.

Encouraging jurisdictions or voters to provide funding for any new government programs and services is never easy. In the current economic climate where government entities struggle to fund existing programs, it is even more difficult to identify and find support for new funding. That said, many communities around the United States have succeeded in raising funds for transit.

Best Practices

The Bi-State Development Corporation, or Metro Transit, is the regional transit provider in metropolitan St. Louis. In 2009, the agency was forced to make dramatic service cuts as a result of budget shortfalls. Voters responded in 2010 by approving a ½-cent sales tax in St. Louis County to support Metro. The tax was estimated to raise on the order of $75 million annually. In addition, the countywide sales tax triggered a ¼-cent sales tax in the City of St. Louis, raising approximately an additional $8 million. Support for the transit tax was led by the Greater St. Louis Transit Alliance, a coalition of organizations that support public transportation. The coalition included several large employers, educational institutions and municipalities.

The tax allowed Metro to restore service levels to near pre-reduction levels and ridership growth has been robust for the past two years. In the first quarter of 2012, Metro led the nation with the largest percent increase in bus ridership.

St. Louis County is home to about 1 million people, about 320,000 of whom live in the City of St. Louis. The entire metropolitan region includes nearly 2.8 million people and spans counties in both Illinois and Missouri. Like Memphis and Shelby County, St. Louis County is considerably wealthier than the City of St. Louis, with per capita incomes of roughly $34,000 and $22,000 respectively (US Census 2012).

The Triangle Transit Authority of North Carolina is largely assumed to consist of three counties (Wake, Durham and Orange) and two cities (Raleigh and Durham), plus the Town of Chapel Hill. The region is recognized for, among other things, its major educational institutions, including the University of North Carolina at Chapel Hill, Duke University, and North Carolina State University. The region has also emerged into the national spotlight over the past several decades, in part through rapid growth and development.

Public transit services, much like the region, are decentralized with separate systems operating in each of the major communities and surrounding counties. The largest regional transit provider, Triangle Transit Authority, worked closely with area counties to develop a Bus and Rail Investment Plan. This plan included development of light rail as well as significant expansion of the bus network. Implementation of the plan is dependent on raising funds through local sales taxes. Counties are able to make independent decisions about the tax.

To date, two of the three counties (Orange and Durham) passed a ½-cent sales tax increase in 2012 to support regional and local transit. The third county, Wake County, which is home to Raleigh, the region’s largest city, has not yet put the tax on the ballot. Expansion of transit service, however, has already begun in Orange and Durham Counties.
Challenges

As mentioned, encouraging governments and voters to tax themselves for new services is never easy and the current economic and political climate exacerbates traditional challenges. The region faces additional challenges including:

- **Local taxing authority.** Local taxing authority and options vary considerably by state. Given that the Mid-South region spans three states—Tennessee, Mississippi and Arkansas—there are likely three different taxing options to navigate.

- **Politics and perceptions.** Outside of the cities of Memphis and West Memphis, most communities in the Mid-South region have very limited experience with public transportation services or the Memphis Area Transit Authority (MATA). Consequently, there are considerable perceptions about transit service generally and MATA service in particular that will need to be addressed as part of any funding strategy.

- **Funding requirements.** MATA’s current operating budget is roughly $55 million annually, of which 40% ($22m) represent funds from the City of Memphis (2011 MATA Annual Report). MATA cut nearly 20% from its budget in 2013; thus, to restore service levels and expand services regionally would require an increase of up to 50%. Assuming state and federal funding could expand in line with local funds, the region would need to raise more than $11 million annually.

Opportunities

While clear challenges exist, there are also several reasons why beginning to develop a regional transit funding strategy makes sense:

- **Strong Need and Growing Interest.** The City of Memphis and MATA are at a critical point for transit funding. Challenges at the municipal level have forced MATA to consistently cut service, including a 20% cut in service in 2013. As a result, services are operating at minimal levels and are barely able to serve demand. At the same time, there is increasing interest in developing transit service as identified by the Bus Riders Transit Union and the Mid-South Regional Greenprint Plan, as well as other local and regional initiatives. The timing is opportune.

- **Tennessee Senate Bill 1471 was signed into law in 2009.** This bill allows for the creation or expansion of regional transportation authorities in Tennessee’s urban areas. It also creates opportunities for urban areas to identify and dedicate regional revenues to transit, subject to voter approval. New revenues may be used to support existing services and future transit investments.

- **Different Funding Mechanisms.** While sales taxes are the most common way to raise funds for transit, regions have had success raising funds through a variety of mechanisms (including combinations of the following) such as gas taxes, vehicle registration fees, driver license fees, “sin” taxes on drinks, and business license fees. As part of developing a funding strategy, the region should consider the full range of revenue enhancements, recognizing that in some cases several smaller strategies may be effective.

- **Non-Profit Sponsorship.** In nearly every national example, sponsorship for transit taxes are led by a non-profit or non-governmental organization specifically dedicated to establishing financial support. Non-profit/non-governmental organizations, especially if they are non-partisan, are frequently able to pull together broad coalitions and build broad support in the community.
For more information, please contact

Memphis and Shelby County
Office of Sustainability

or visit www.midsouthgreenprint.org