




Bloomington Route Optimization Study



EXISTING CONDITIONS AND MARKET ANALYSIS



Fall 2018

Prepared for:



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1. INTRODUCTION

Like many college towns, Bloomington, Indiana is served by two complementary transit systems. The Bloomington Public Transit Corporation (BPTC) provides fixed-route and ADA paratransit service throughout the Bloomington Urbanized Area. Indiana University operates its own fixed-route transit service, focused on the mobility needs of IU students, faculty, and staff.

BPTC's fixed-route service, known as Bloomington Transit (BT), carries over three million passengers annually. The BTaccess paratransit service provides approximately 35,000 passenger trips a year. Both of these services experienced dramatic ridership growth since their inception in the early 1980s. Between 1984 and 2014, total BPTC ridership increased from less than 500,000 riders per year to more than 3.5 million. However, after peaking in 2014, BPTC has seen its ridership decline in recent years. Similarly, Indiana University's Campus Bus Service now carries three million annual passengers, down from a peak of 3.7 million in 2011.

The decline in transit ridership in Bloomington is consistent with national trends and coincided with a rapidly changing mobility landscape. Factors contributing to this decline include the prevalence of new and emerging technologies such as app-based ride hailing services, shared-use bicycles and scooters, and even changing retail habits such as online shopping. In addition, development trends in Bloomington have resulted in more people living downtown and within walking or biking distance of the IU Campus. These residents are likely less reliant on transit to get to key regional destinations, both because of proximity and availability of other mobility options.

This study is an opportunity to take a fresh look at Bloomington's existing transit services and assess how well they align with the mobility needs of the changing region. Understanding the existing and future markets for transit service is a fundamental part of identifying service gaps and opportunities to make better use of existing resources. Bloomington Transit and the IU Campus Bus Service must be well matched to market demand to be most effective. As a first step in determining the future direction of transit in Bloomington, this memo includes four key parts:

- **Existing Services:** An overview of existing transit services in the study area, including current operating characteristics;
- **Fares and Finances:** A description of current fare policies and funding sources;
- **Market Analysis:** An assessment of both the need and potential for transit service in the study area based on density and demographic characteristics as well as regional travel patterns; and
- **Document Review:** A summary of previous planning efforts and relevant studies.

2. EXISTING SERVICES

Bloomington Transit

During regular service, Bloomington Transit operates nine fixed routes, between approximately 6:00 AM and midnight on weekdays; eight routes between 7:25 AM and 11:30 PM on Saturdays; and two routes between 9:30 AM and 9:45 PM on Sundays. **Figure 1** shows a system map of the current BT network;

Table 1 summarizes the basic service characteristics for each fixed route.

While BT routes are numbered 1 through 9, six of the routes consist of two “interlocked” branching serving different parts of the BT service area. For example, Route 1 operates between Meadows Hospital and downtown Bloomington on its northern branch, and between downtown Bloomington and Clear Creek Shopping Center on its southern branch. These branches essentially function as independent routes and are presented as separate schedules on the Bloomington Transit website. Thus, **Table 1** summarizes 15, rather than 9, fixed-route services operated by Bloomington Transit.

Figure 1 | BT System Map

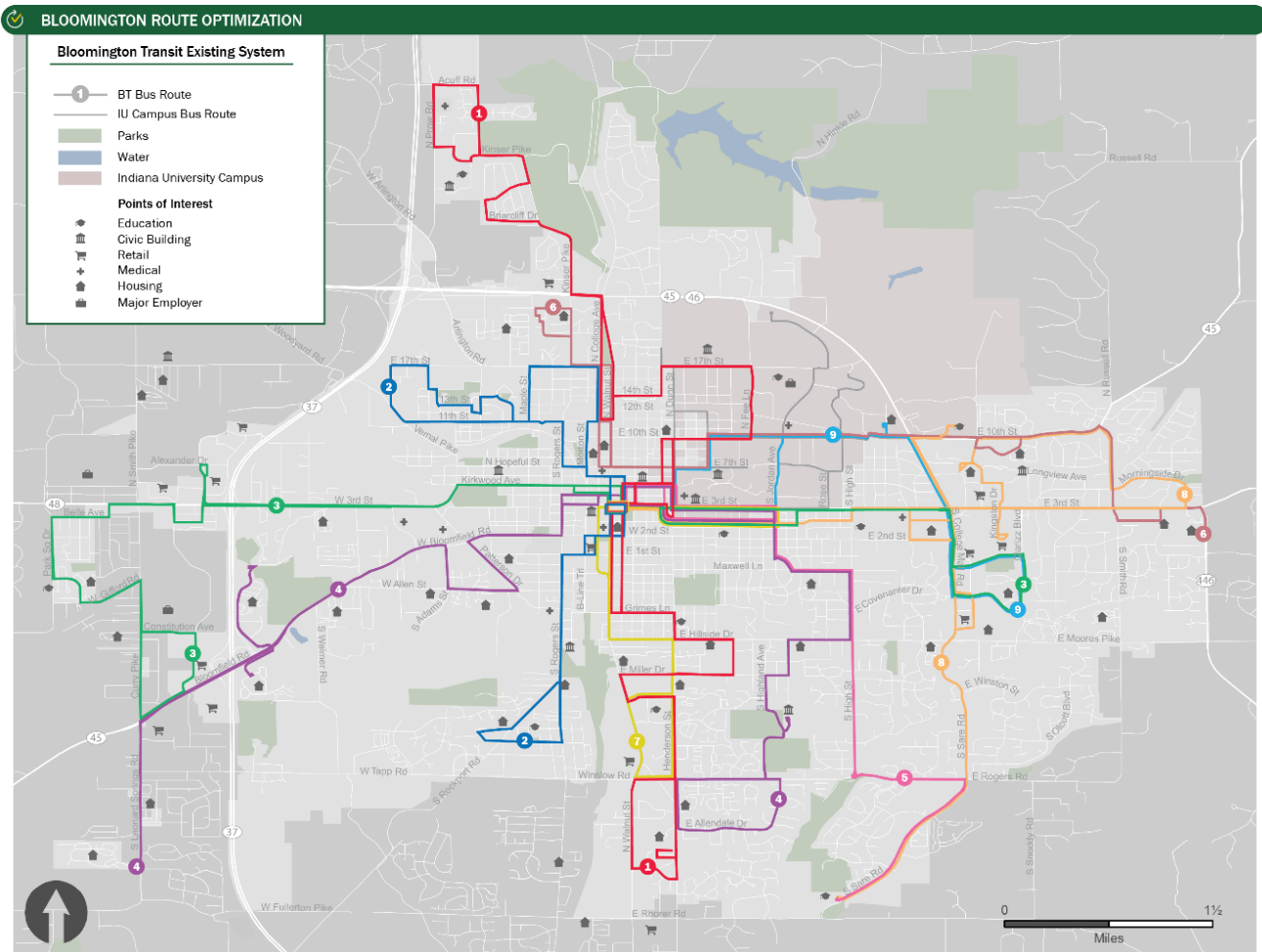


Table 1 | BT Fixed-Route Services Characteristics

Route	Name	Service Description	Service Span	Average Service Frequency
1	North Fee Ln/ Bloomington High School North	Local service operating between downtown Bloomington, Indiana University campus, and Meadows Hospital	Monday-Friday: 6:30 AM-11:35 PM Saturday: 7:35-AM-6:35 PM	60 minutes
1		Local service operating between	Monday-Friday: 6:25 AM-11:30 PM	30 minutes

Route	Name	Service Description	Service Span	Average Service Frequency
	South Walnut/Clear Creek	downtown Bloomington and Clear Creek Shopping Center	Saturday: 7:25-AM-6:30 PM	60 minutes
2	South Rogers/ Countryview Apartments	Local service operating between downtown Bloomington and Countryview Apartments	Monday-Friday: 6:21 AM-11:04 PM	30 minutes (60 minutes after 7:00 PM)
			Saturday: 7:51-AM-6:51 PM	60 minutes
2	West 11 th Street via Showers Complex	Local service operating between downtown Bloomington and the intersection of Crescent Rd and W 17th Street	Monday-Friday: 6:19 AM-11:28 PM	30 minutes (60 minutes after 7:00 PM)
			Saturday: 8:10-AM-6:36 PM	60 minutes
3	College Mall/ East 3 rd Street	Local service operating on East 3 rd Street between downtown Bloomington and Reserve apartments	Monday-Friday: 6:31 AM-11:37 PM	30 minutes (60 minutes after 9:00 PM)
			Saturday: 7:31-AM-7:01 PM	30 minutes
3	Highland Village/Curry Pike	Local service between downtown Bloomington and Walmart on Bloomfield Road	Monday-Friday: 6:02 AM-11:32 PM	30 minutes (60 minutes after 7:30 PM)
			Saturday: 7:32-AM-7:01 PM	60 minutes
4	High Street/ Sherwood Oaks	Local service between downtown Bloomington and Allendale Drive & Walnut Street Pike	Monday-Friday: 6:35 AM-11:35 PM	60 minutes
			Saturday: 8:10 AM-6:35 PM	60 minutes
4	Bloomfield Rd/Heatherwood	Local service between downtown Bloomington and Heatherwood Mobile Homes	Monday-Friday: 6:35 AM-11:50 PM	60 minutes
			Saturday: 8:10 AM-6:50 PM	60 minutes
5	Sare Road	Local service between downtown Bloomington and	Monday-Friday: 7:03 AM-11:00 PM	60 minutes
			Saturday: 8:03 AM-7:00 PM	60 minutes

Route	Name	Service Description	Service Span	Average Service Frequency
6	Campus Shuttle	Shuttle service between The Arch and Knightridge apartments through IU campus	Jackson Creek Middle School on Sare Road	
			Monday-Thursday: 6:50 AM-11:30 PM	20 minutes (40 minutes after 6:30 PM)
			Friday: 6:50 AM-11:30 PM	20 minutes (40 minutes after 5:50 PM)
			Saturday: 7:30 AM-11:30 PM	80 minutes
6	Campus Limited	Limited service between Smallwood and Fountain Park apartments	Sunday: 9:30 AM-7:30 PM	80 minutes
			Monday-Thursday: 7:30 AM-9:50 PM	20 minutes (40 minutes after 6:30 PM)
			Friday: 7:10 AM-2:10 PM	20 minutes (40 minutes after 5:50 PM)
7	Henderson/Walnut Express	Express service Winslow Plaza and 3 rd Street south of campus	Monday-Thursday: 7:00 AM-9:40 PM	15/20 minutes (35 minutes after 7:20 PM)
			Friday: 7:00 AM-7:25 PM	15/20 minutes (35 minutes after 5:40 PM)
8	Eastside Local	Local service between Jackson Creek Middle School and the intersection of 3 rd Street and Morningside Drive	Monday-Saturday: 8:27 AM-7:08 PM	60 minutes
9	IU Campus/Mall/Convenanter & Clarizz	Local service between the intersection of Convenanter Drive and Clarizz Boulevard and IU campus; Loop	Monday-Thursday: 7:24 AM-10:38 PM	10 minutes
			Friday: 7:25 AM-10:45 PM	12 minutes (45 minutes after 7:45 PM)

Route	Name	Service Description	Service Span	Average Service Frequency
9	IU Campus Limited	service around campus	Saturday: 8:30 AM-10:30 PM	28 minutes (45 minutes after 6:20 PM)
			Sunday: 10:30 AM-9:45 PM	45 minutes
		Limited service between the intersection of Conventer Drive and Clarizz Boulevard and 3 rd Street south of campus	Monday-Friday: 7:30 AM-6:30 PM	30 minutes

During the summer (beginning in early May), BT reduces its service as follows:

- Reduced service on Route 6 and Route 6 Limited;
- No service on Route 7; and
- Reduced service on Route 9 and Route 9 Limited.

Indiana University Campus Bus Service

During regular service, the Indiana University Campus Bus Service operates five routes between approximately 7:20 AM and 3:00 AM on weekdays; four routes from 10:00 AM to 3:00 AM on Saturdays; and three routes between 12:10 AM and 10:30 PM on Sundays.

Figure 2 shows a system map of the current IU Campus Bus network, followed by a summary of service characteristics in

Table 2. During the summer session, IU operates significantly reduced service, including no service on Routes B, W, W Limited, or the Night Owl.

Figure 2 | IU Campus Bus System Map

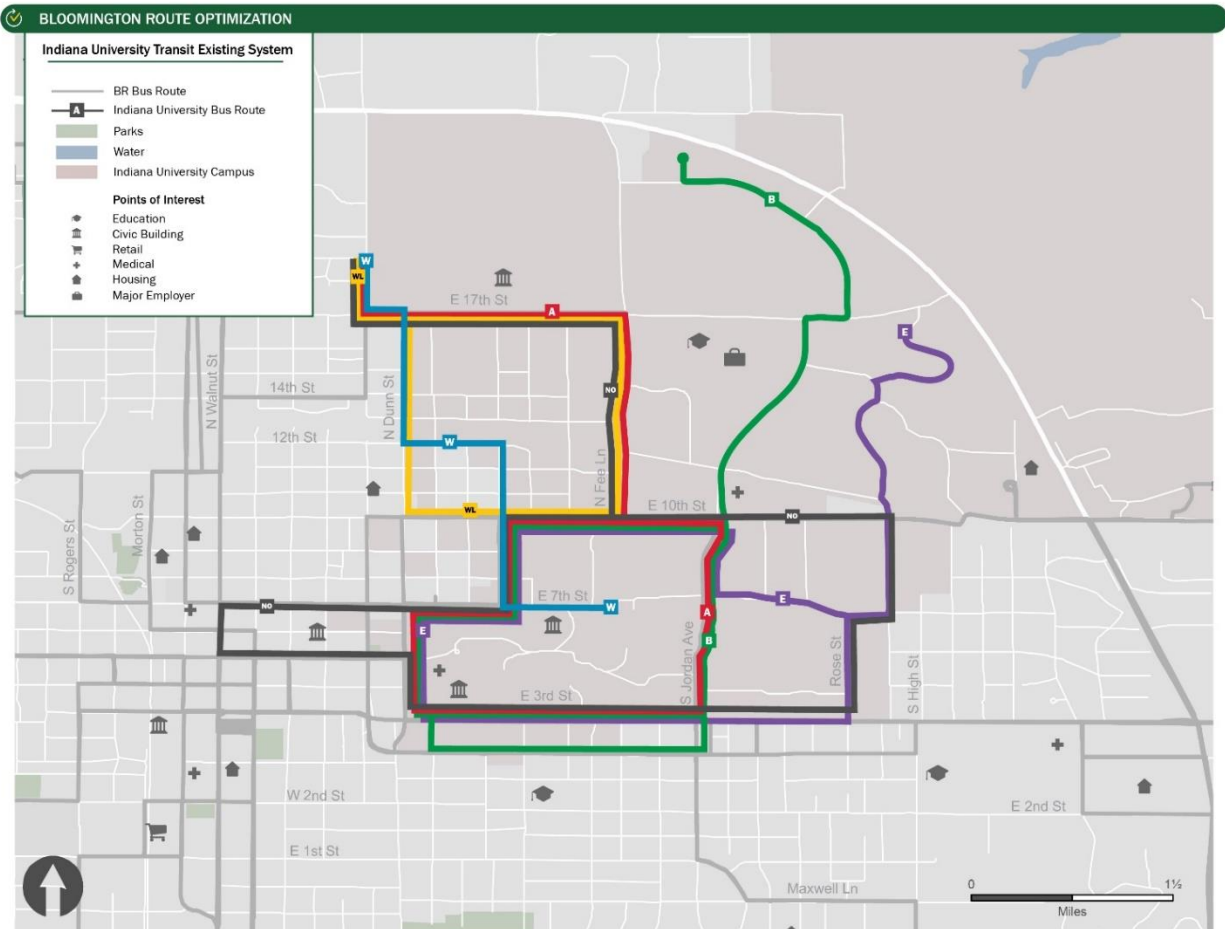


Table 2 | IU Campus Bus Route Services Characteristics

Route	Name	Service Description	Service Span	Average Service Frequency
A	A Route	Shuttle service between Memorial Stadium and the intersection of 3 rd Street and Jordan Ave; Loop service around campus	Monday-Thursday: 7:25 AM-12:35 AM	Day: 8 minutes Evening: 19 minutes
			Friday: 7:20-AM-10:20 PM	Day: 10 minutes Evening: 21 minutes
			Saturday: 10:00-AM-9:44 PM	30/45 minutes
			Sunday: 12:10-PM-10:29 PM	30/45 minutes
30B	B Route	Shuttle service along Jordan Ave between Fisher Court and 3 rd Street south of campus	Monday-Thursday: 7:30 AM-12:20 AM	Day: 11 minutes Evening: 27 minutes
			Friday: 7:30-AM-10:40 PM	Day: 18 minutes Evening: 32 minutes
			Saturday: 10:20-AM-9:40 PM	30-35 minutes
			Sunday: 12:30-PM-9:40 PM	30-35 minutes
E	E Route	Shuttle service between Evermann Apartments and the intersection of 3 rd Street and Indiana Ave; Loop service around campus	Monday-Thursday: 7:25 AM-12:10 AM	Day: 15 minutes Evening: 34 minutes
			Friday: 7:30-AM-11:20 PM	Day: 20 minutes Evening: 36 minutes
			Saturday: 11:05-AM-5:50 PM	60 minutes
			Sunday: 1:05-PM-5:50 PM	60 minutes
W	W Route	Shuttle service between Memorial Stadium and Indiana University Auditorium	Monday-Thursday: 7:25 AM-10:27 AM	Day: 10 minutes Evening: 29 minutes
			Friday: 7:30-AM-5:19 PM	12 minutes
WL	W Limited Route	Limited stop route that serves Luddy Hall, Psychology, and Kelley School	Monday-Thursday 7:20 AM- 11:00 AM	10 minutes

Route	Name	Service Description	Service Span	Average Service Frequency
Night Owl	Night Owl Route	Friday and Saturday night service between IU campus and downtown Bloomington	Friday and Saturday: 10:05PM-2:58 AM	25 minutes

BTaccess

BTaccess is a paratransit service for persons with disabilities who are unable to use BT fixed-route service. All BTaccess vans are equipped with wheelchair lifts. Eligible riders may request service between any two addresses within the City of Bloomington, and no service is provided outside of the city limits. Eligibility is determined by BPTC staff through an application and verification process.

BTaccess trips must be scheduled by 5:00 PM the day before service is being requested. **Table 3** shows the BTaccess service calendar and schedule.

Table 3 | BTaccess Service Calendar and Schedule

Time of Year	Days	Span of Hours	Service Area
Year Round ¹	Monday-Friday	6:10 AM-11:30 PM	All areas within Bloomington incorporated area
IU Fall and Spring Semesters	Saturday	7:30 AM-11:30 PM	All areas within Bloomington incorporated area
	Sunday	9:30 AM-10:30 PM	
IU Break Periods	Saturday	7:30 AM-7:30 PM	All areas within Bloomington incorporated area
	Sunday	9:30 AM-7:30 PM	

Passenger Amenities and Transit Facilities

Transit Center

BPTC's primary transit hub is the Transit Center located at 301 S Walnut Street (**Figure 3**). The facility is served by BT Routes 1, 2, 3, 4, 5, and 7. In addition, the Transit Center is served by Greyhound Lines and Rural Transit (see Regional Transit Service). Passenger amenities include real-time bus tracker displays, system maps, ticket/pass sales, seating, restrooms, and Wi-Fi. Besides serving as Bloomington's main transit hub, the Transit Center also includes a large multipurpose room and houses City and County 911 police dispatch offices.

Figure 3 | Bloomington Transit Downtown Center

¹ BTaccess service is not provided on the following holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, and Christmas Day. If these holidays fall on a Sunday, they will be observed the following Monday. Service ends by 7:30 pm on Christmas Eve and New Year's Eve.



Image source: bloomingtontransit.com

Bus Stops and Amenities

Bloomington Transit has 512 bus stops, including 72 with shelters, and six with benches only. The IU Campus Bus Service includes 56 bus stops with 13 shelters.

Passenger Information

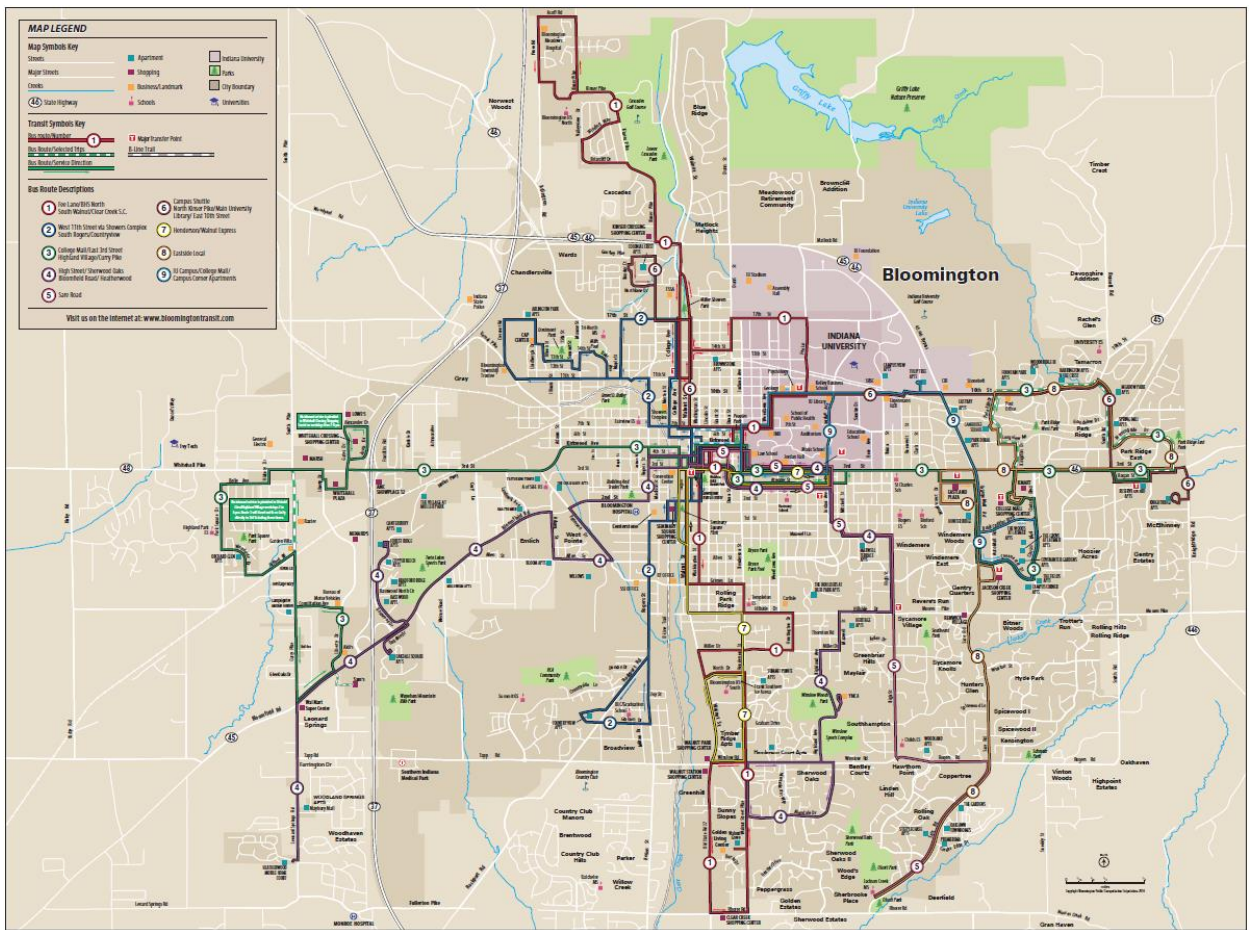
BT passenger schedules and system maps (**Figure 4**) are available at the Transit Center and at several stops along Route 3. BT service information is also available online through the agency's website, <https://bloomingtontransit.com/>. In addition to maps and schedules, the website includes a trip planner tool.



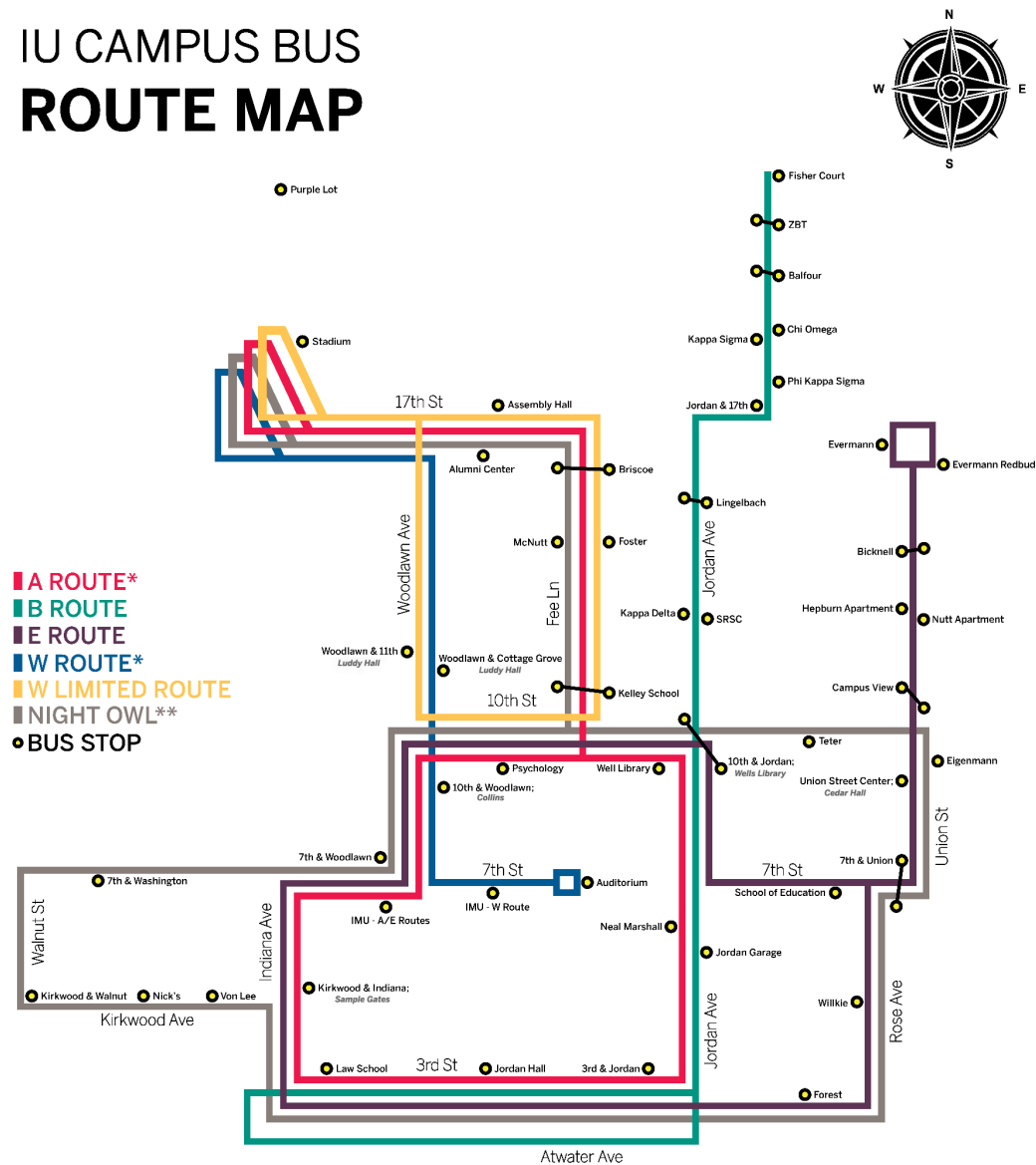
Image source: Indiana Public Media

IU Campus Bus information, including schedules and system maps (**Figure 5**) can be found at https://iubus.indiana.edu/campus_bus/. IU does not post paper copies of schedules or maps.

Real-time bus tracking is available for both systems at <https://bloomington.doublemap.com/map/>.



IU CAMPUS BUS ROUTE MAP



*A and W routes also stop in the Purple Lot at the stadium after 7 p.m.
**Friday and Saturday, when fall and spring semesters are in ses-

NOTE: This map is only a graphic representation of the routes, and bus stops are subject to change.

Regional Transit Services

Rural Transit

Rural Transit is a service of the Area 10 Agency on Aging, a private, non-profit organization. Rural Transit offers scheduled bus service on weekdays between Spencer, IN and downtown Bloomington from 6:00 AM to 7:00 PM; and between Ivy Tech Community College and downtown Bloomington from 6:40 AM to 5:45 PM. Services include:

- **Scheduled Routes** operating in Monroe and Owen Counties. Route information and schedules can be found online at <http://www.area10agency.org/ruraltransit/>. Fares for one-county trips are \$1.00 and fare for two-county trips are \$2.00;
- **Door-to-Door Service** provided with ADA-compliant vehicles on request. Service is available in Lawrence, Monroe, Owen, and Putnam Counties. Fares are \$3.00 per county traveled; and
- **Group Transportation** for shopping, field trips, or special events. Fares vary depending on duration and location.

Intercity Bus

The Hoosier Ride Service provides access to destinations in Indiana, Michigan, Illinois, Ohio, Kentucky, and Tennessee. In addition, Greyhound provides intercity bus service from Bloomington to destinations in Indiana and across North America. Both services depart from the Transit Center in downtown Bloomington.

Airport Shuttle

GO Express Travel operates a shuttle service between Bloomington and Indianapolis International Airport every two hours from 4:40 AM until 12:25 AM on Tuesdays, Wednesdays, and Saturdays; and hourly from 3:40 AM until 12:25 AM on Mondays, Thursdays, Fridays, and Sundays.

3. FARES AND FINANCES

Fares

Bloomington Transit accepts cash fares in exact change on buses. Passes may be purchased at the Transit Center and at the BT office. Detailed information on fixed-route and paratransit fares is described below.

Fixed-Route Fares

BT's regular cash bus fare for adults is \$1.00, with free transfers. Reduced fares are offered to senior citizens age 60 and older, students enrolled in grades K-12, and qualifying persons with disabilities. Payment by reduced fare requires presentation of a valid Reduced Fare ID, BPTC-issued student ID card, or Medicare card to the bus driver. In addition, IU Bloomington students, faculty, and staff ride BT buses fare-free with a University-issued Crimson Card. IU Campus Bus routes are free of charge for all riders.

Transfers between BT Routes are free and are valid at locations where routes intersect. Transfers are only issued at the time of boarding to customers who pay a fare or board with a Bloomington Transit ticket. Valid for one hour, transfers may not be used for return trips and are not necessary for monthly and semi-annual pass holders except for transfers to Rural Transit. At the downtown Transit Center, Rural Transit accepts BT transfers and BT accepts Rural Transit transfers within an hour of issuance.

BT offers a series of passes, as summarized in **Table 4**.

Table 4 | BT Fixed-Route Fare and Pass Prices

	Regular Fare	Senior Citizens (60 and older with ID Card)	Persons with Disabilities	Students enrolled in grades K-12	IU Bloomington Students, Faculty, and Staff (with Crimson Card)	Children (Under the Age of 4)	City of Bloomington and Monroe County Employees
Cash Fare	\$1.00	\$0.50	\$0.50	\$0.50	Free (All Routes)	Free (All Routes)	Free (All Routes)
10-Ride Ticket	\$10.00	\$5.00	\$10.00	\$5.00	-	-	-
Monthly Pass	\$30.00	\$15.00	\$30.00	\$15.00	-	-	-
Semi-Annual Pass	\$150.00	\$75.00	\$150.00	\$75.00	-	-	-
Summer Fun Pass	-	-	-	\$12.00	-	-	-

BTaccess Fares

Registration for BTaccess is free and required to schedule a BTaccess trip. Each trip costs \$2.00. Ten and 30-ride cards cost \$20.00 and \$60.00, respectively, and are available at the Transit Center, BT office, and by mail. With notice (the day before a trip) a companion may accompany the registered customer paying the same fare, while Personal Care Attendants ride free.

Finances

Bloomington Public Transit Corporation (BPTC)

Operating Revenues

Bloomington Public Transit Corporation's (BPTC) finances include BT fixed-route service and BTaccess revenues and expenses. During FY2018, BT's operating revenue (outlined in **Figure 6**) totaled approximately \$11 million. Thirty-five percent of operating revenue is derived from federal funds, and state PMFT funds make up 23 percent. Remaining revenue comes from local taxes, the farebox, additional local sources, and payments and reimbursements from Indiana University for students and staff (accounting for 11 percent of operating revenue).

Table 5 shows total FY2018 revenue amounts as well as differences between revenue sources and estimated changes in the proposed FY2019 budget. In FY2019, while BPTC's budget is expected to decrease by approximately 6 percent, almost 50 percent more funds are proposed to be transferred from the operating reserve. Furthermore, federal funds are proposed to be 21 percent lower.

Figure 6 | Bloomington Public Transit Corporation FY2018 Operating Revenue Sources

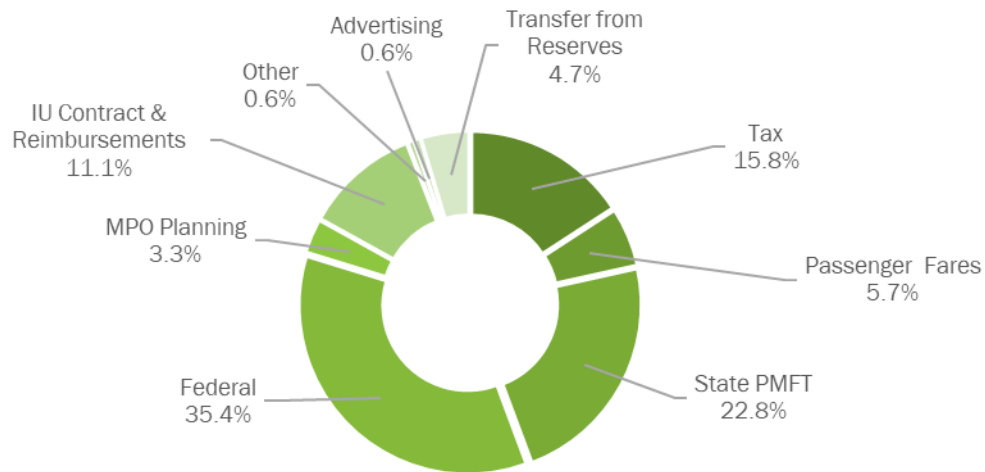


Table 5 | Bloomington Public Transit Corporation FY2018 Total Revenue Sources

Funding Source	FY2018 Amount	Change in Proposed FY2019 Budget
Tax Total	\$1,749,650	7.8%
Property Tax Levy	\$1,267,948	3.4%
Financial Institution Tax	\$10,381	4.3%
License Excise Tax	\$51,730	13.6%
Local Option Income Tax	\$415,690	20.8%
Commercial Vehicle Excise Tax	\$3,901	3.1%
Passenger Fares	\$630,000	-4.8%
Advertising Sales	\$70,000	21.4%
State PMTF	\$2,516,035	0.2%
Federal	\$3,913,793	-6.4%
MPO Planning	\$365,000	-90.7%
Transfer from Reserves Total	\$514,216	-26.6%
Transfer from Operating Reserve	\$252,966	49.3%
Transfer from Reserves to Match grants	\$261,250	0.0%
IU Total	\$1,281,014	-4.6%
IU Contract Revenue	\$1,102,714	0.8%
IU Reimbursements	\$178,300	-38.3%
Miscellaneous	\$67,000	41.8%
Total Operating Revenue	\$11,106,708	-5.6%

Source: Bloomington Public Transit Corporation

Operating Expenses

FY2018 BPTC operating expenses totaled approximately \$8 million (**Figure 7**). The largest expense item in the budget is Tool and CDL, while the agency spends 24 percent of expenses on employee benefits. Salaries and Benefits make up over 16 percent of expenses.

Table 6 reports differences between FY2018 expenses and estimated changes in the proposed FY2019 budget. The FY2019 budget is expected to lower expenses by one percent overall. Notably, the agency anticipates spending nearly 45 percent more on fuel and oil and 45 percent less on professional services.

Figure 7 | Bloomington Public Transit Corporation FY2018 Operating Expense Sources

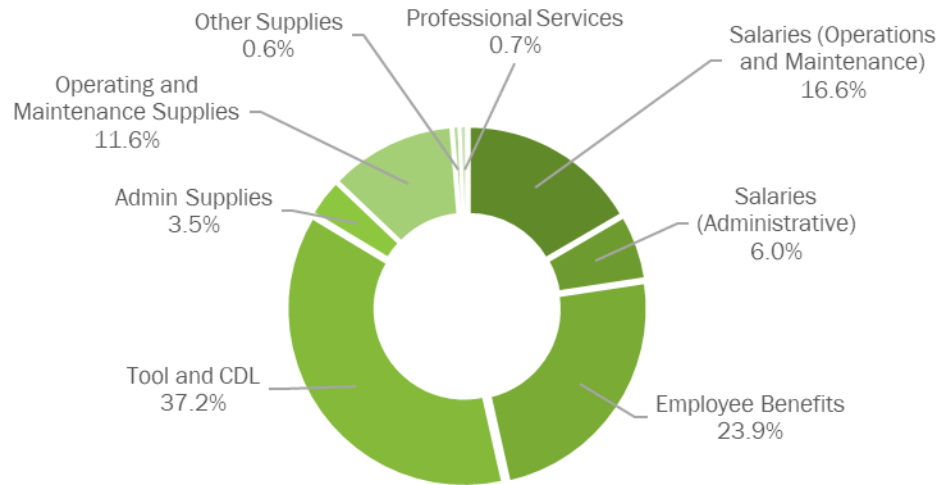


Table 6 | Bloomington Public Transit Corporation Operating Expenses

Funding Source	FY2018 Amount	Change in Proposed FY2019 Budget
Salaries (Operations and Maintenance)	4,099,688	-0.3%
Salaries (Operators): Fixed and BTaccess Operators	3,017,501	-2.2%
Salaries (Other Operating): Managers and BTaccess Dispatchers	323,937	13.5%
Salaries (Maintenance)	758,250	1.1%
Salaries (Administrative)	438,237	14.9%
Employee Benefits	1,416,844	-2.2%
FICA	347,151	1.1%
PERF (Retirement Plan Benefit)	408,488	-0.5%
Health/Dental/Disability/Life/Vision/Insurance	626,815	-5.4%
Unemployment	10,000	0.0%
Employee Uniforms	24,390	2.0%
Tool and CDL	10,300	1.4%
Admin Supplies	29,809	2.5%
Office Supplies	\$ 14,809	5.0%
Garage Uniforms/Drug Testing	15,000	0.0%
Operating and Maintenance Supplies	1,159,474	26.9%
Fuel/Oil/Grease/Fluids	630,000	45.2%
Parts	529,474	5.0%
Other Supplies	122,906	2.0%
Professional Services	931,805	-45.6%
Total Operating Expenses	8,209,063	-1.1%

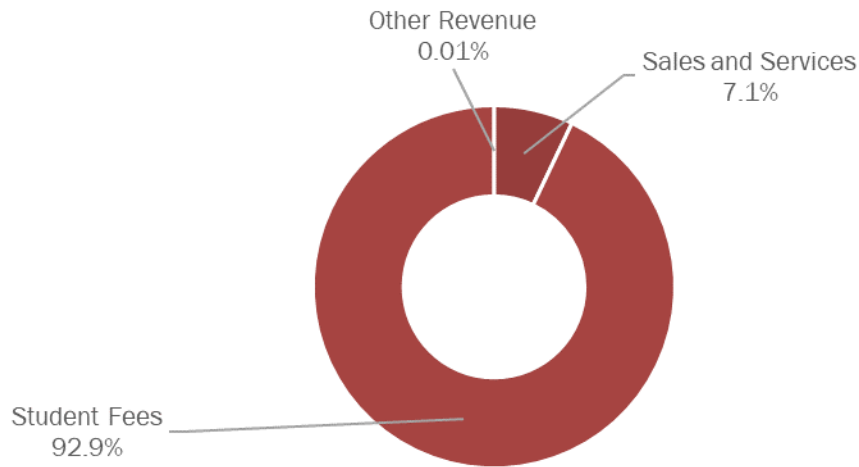
Source: Bloomington Public Transit Corporation

Indiana University Campus Bus Service

Operating Revenue

Figure 8 summarizes Indiana University Campus Bus Service operating revenues during FY2018. The vast majority of revenues – nearly 93 percent – are derived from student fees. The remaining seven percent of revenues come from sales and services as well as miscellaneous sources.

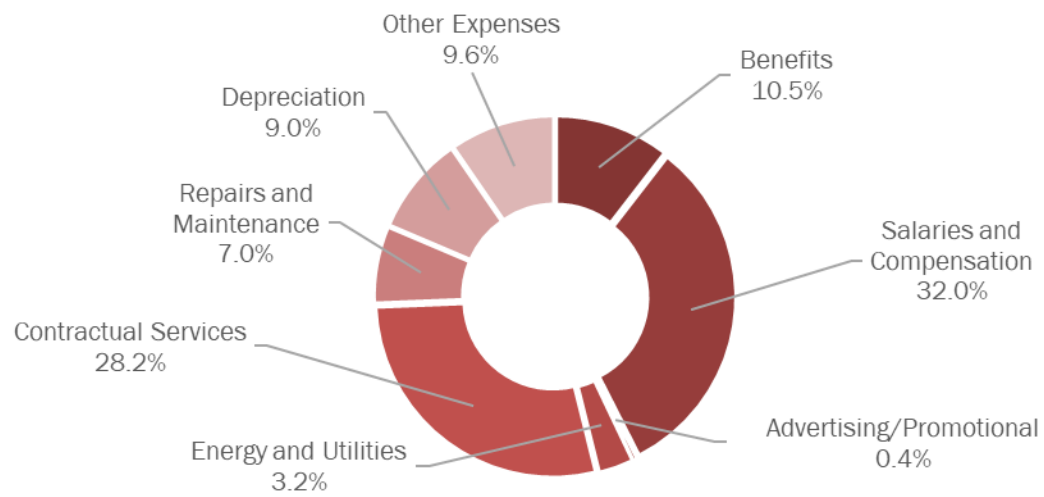
Figure 8 | Indiana University Campus Bus Service FY2018 Operating Revenue Sources



Operating Expenses

Over a third of Indiana University's transit operating expenses go toward salaries and compensation (**Figure 9**). Over 28 percent are expended on contractual services. Remaining operating expenses are split among benefits, repairs and maintenance, depreciation, energy and utilities, and other expenditures.

Figure 9 | Indiana University Campus Bus Service FY2018 Operating Expense Sources



4. MARKET ANALYSIS

More than any other factor, the effectiveness and efficiency of public transportation is determined by density. Where there are higher concentrations of people and/or jobs, transit ridership tends to be higher. At the same time, most transit agencies have a mandate to provide comprehensive service in the communities they serve, and to provide mobility for residents with no other means of transportation. The purpose of this Market Analysis is to both identify the strongest transit corridors in the Bloomington region and to highlight areas with relatively high transit need. Thus, the Market Analysis consists of two key components: Transit Potential and Transit Need.

While Transit Potential is an analysis of population and employment density, Transit Need focuses on socio-economic characteristics such as income, automobile availability, age, and disability status that are indicative of a higher propensity to use transit. Transit use is also influenced by the built environment. In particular, there are certain land uses – such retail centers, civic buildings, multifamily housing, educational institutions, medical facilities, and major employment centers – that tend to generate transit trips at a relatively higher rate. As such, these ridership generators are included in the maps describing Transit Potential and Transit Need.

Transit Potential

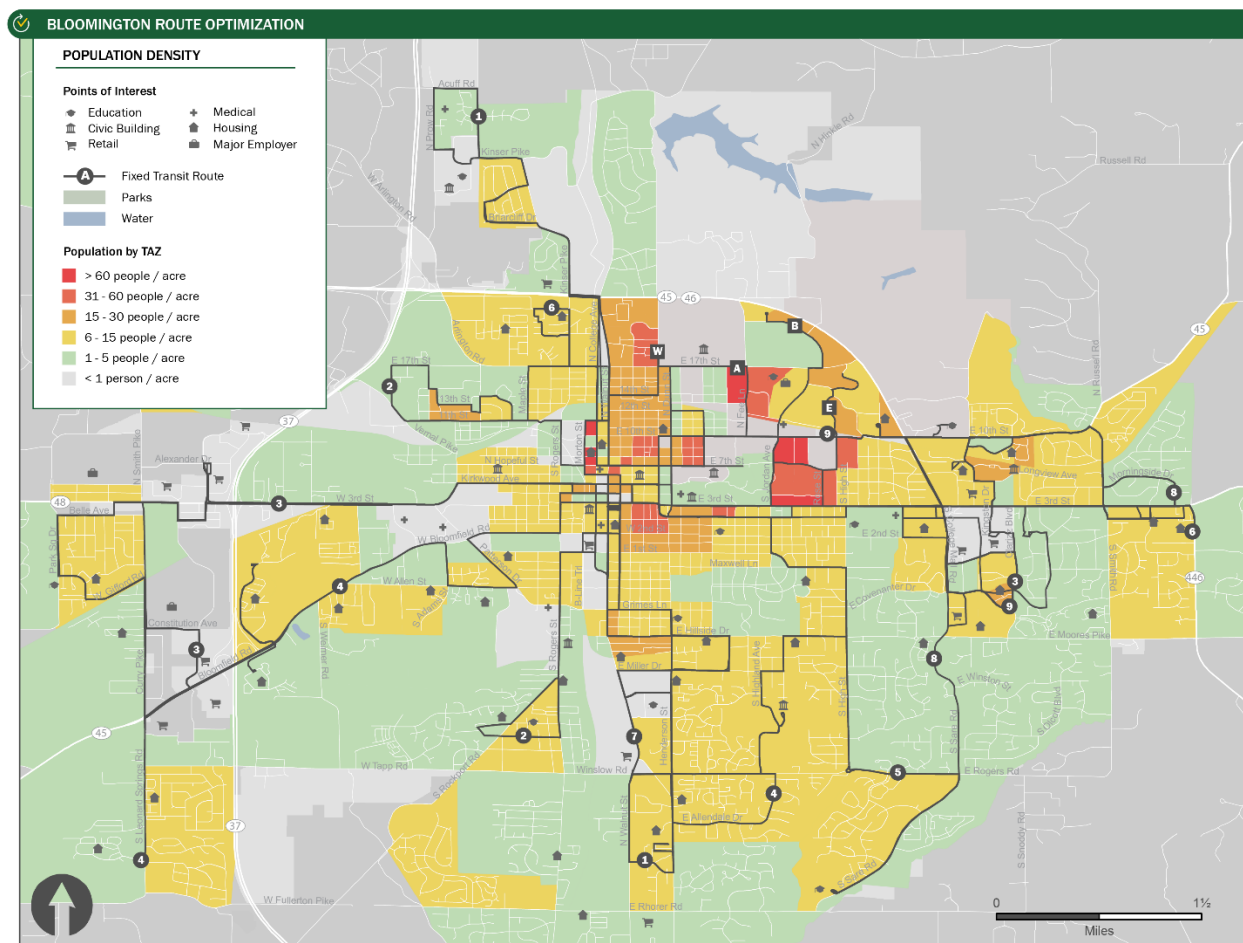
Transit service is generally most effective in areas with high concentrations of residents and/or jobs. The following Transit Potential analysis uses 2013 population and employment projections from The Bloomington/Monroe County Metropolitan Planning Organization's long-range transportation plan (Transform 2040). The geographic divisions used for this analysis are Transportation Analysis Zones (TAZ).

Population Density

Public transportation is most efficient when it connects population and employment centers where people can easily walk to and from bus stops. The reach of transit is generally limited to within one-quarter mile to one-half mile of the transit line, or a 10-minute walk. For this reason, the size of a transit travel market is directly related to an area's population density. Typically, a density greater than five people per acre is needed to support base-level (hourly) fixed-route transit service. **Figure 10** shows the population density of Bloomington. Yellow areas indicate places where fixed-route service could be feasible; areas with darker colors have the potential to support more frequent service.

While much of Bloomington has low to moderate population density, pockets of higher density can be found in downtown, north of downtown off North Walnut Street, and around Indiana University. Virtually all areas and corridors that have the density to support fixed-route transit service currently have some level of service.

Figure 10 | Bloomington Population Density

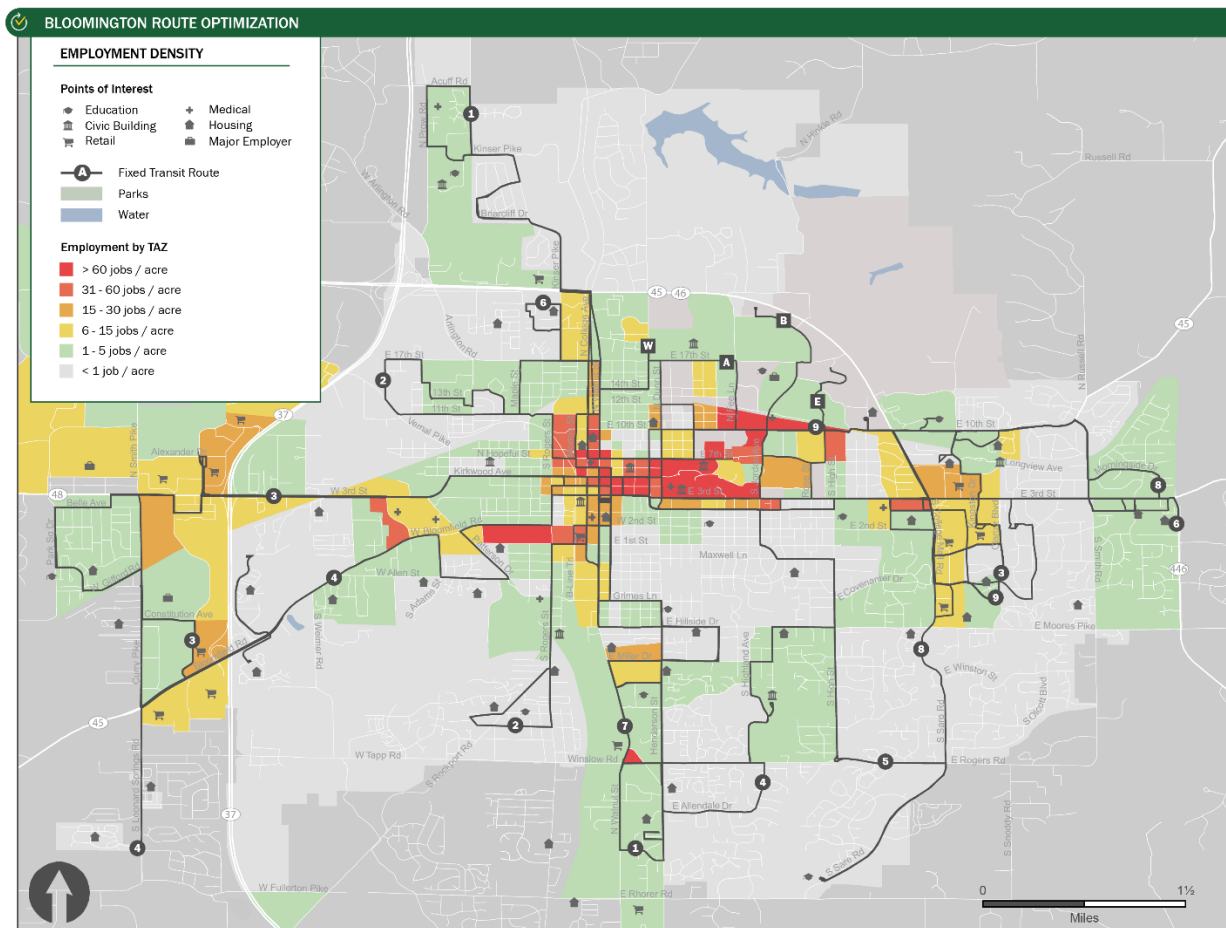


Employment Density

Given that traveling to and from work accounts for the largest single segment of transit trips in most markets, the location and number of jobs in a region are also strong indicators of transit demand. Transit that serves areas of high employment density also provides key connections to job opportunities. Like population density, an employment density greater than five jobs per acre can typically support base-level fixed-route service. This density corresponds with yellow areas in **Figure 11**.

Bloomington's jobs are concentrated around downtown; at Indiana University and its surroundings; and at several outlying areas, including south of West Bloomfield Road, southwest of downtown. Like population density, employment density in Bloomington dissipates further outside the downtown and University regions.

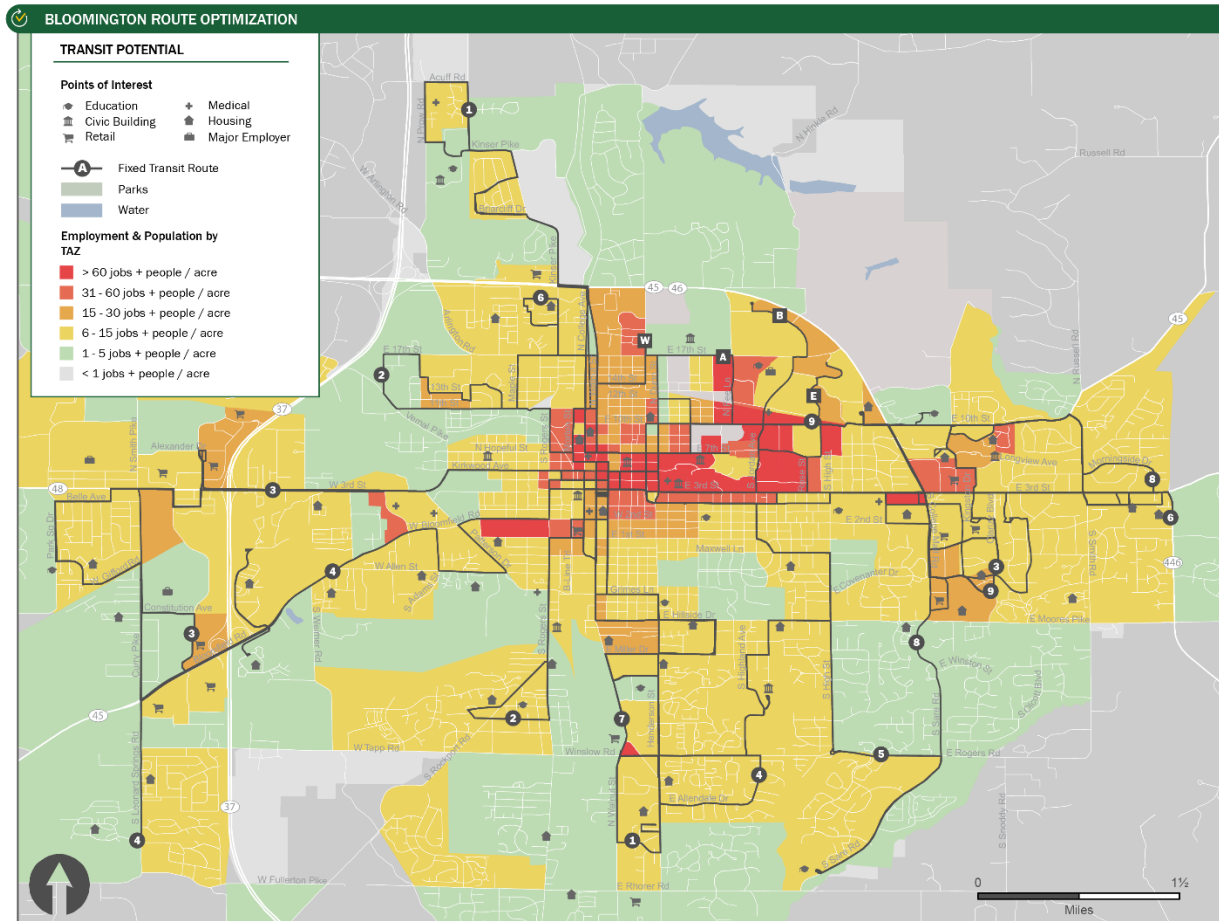
Figure 11 | Bloomington Employment Density



Transit Potential

Transit Potential, shown in **Figure 12**, combines the population and employment densities for each TAZ to indicate the viability of fixed-route service in an area. In Bloomington, the highest potential for transit service exists in the downtown area and in the vicinity of Indiana University. Additionally, most areas in Bloomington with density sufficient to support fixed-route service are currently served by at least one BT or IU Campus Bus route. Relatively dense areas lacking transit service include north of West 3rd Street and west of State Route 37; south of State Route 45/46 and east of College Avenue; pockets east of South Leonard Springs Road; and southwest of the Route 2 terminus.

Figure 12 | Bloomington Transit Potential



Transit Need

Above all, public transportation is a mobility tool. Certain population subgroups have a relatively higher propensity to use transit as their primary means of local and regional transportation. These groups include:

- **People without access to an automobile**, whether it be by choice or due to financial or legal reasons, often have no other transportation options besides using transit;
- **Persons with disabilities**, many of whom can't drive and/or have difficulty driving;
- **Low-income individuals**, typically because transit is less expensive than owning and operating a car;
- **Youth / young adults** who are either too young to drive, or have in recent years shown a greater interest in transit, walking, and biking than in driving; and
- **Older adults**, who as they age, often become less comfortable or less able to operate a vehicle.

The maps that follow (**Figure 13 - Figure 17**) show the densities of each of these five high-transit-propensity population subgroups by Census block group to help determine where the need for transit service in the study area is greatest.

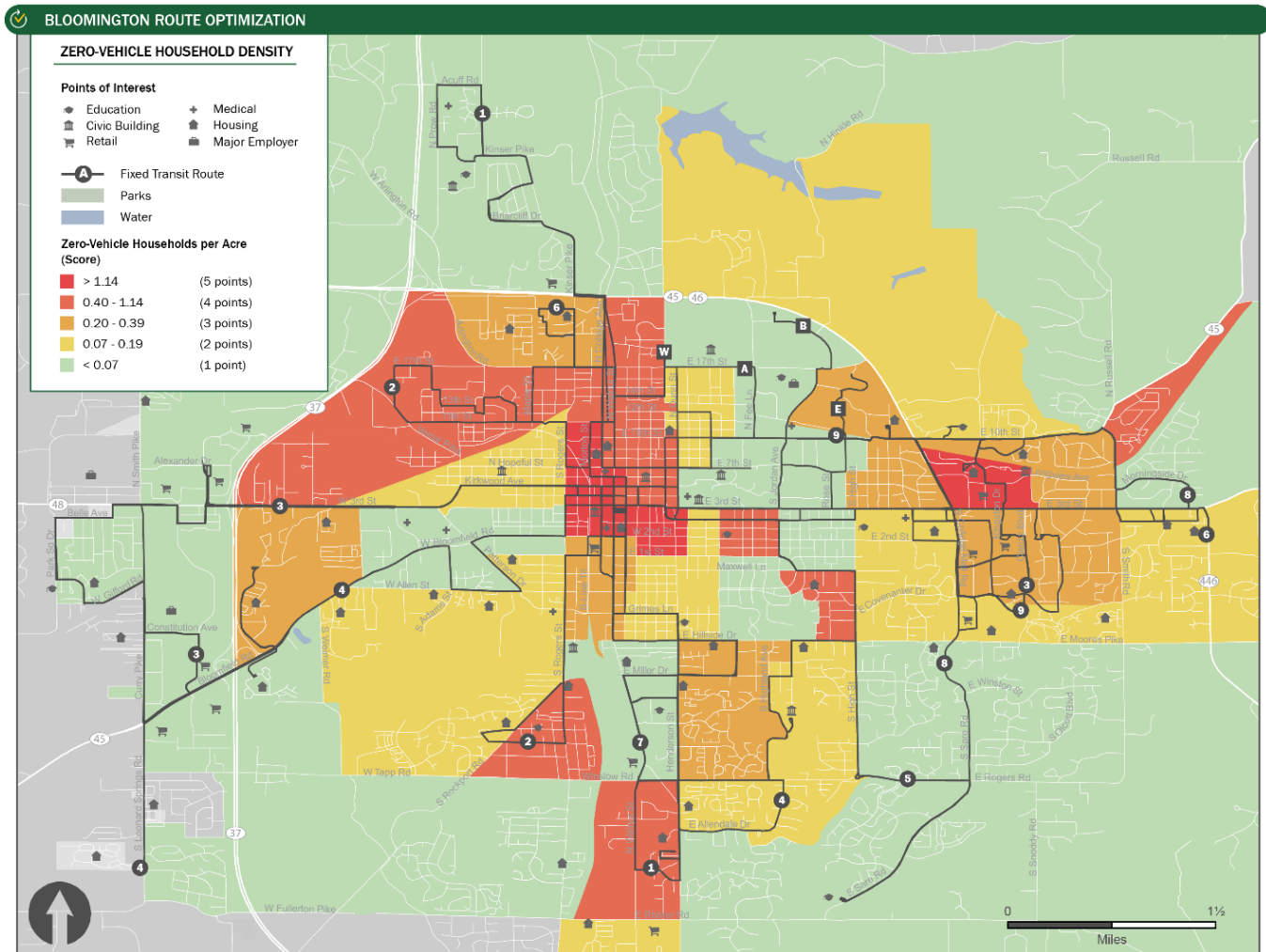
With density ranges differing for each demographic analysis, the maps utilize a Jenks Natural Breaks Classification Method to assign each block group to one of five density categories. For each analysis, depending on the natural break category into which it falls, a score from 1 (lowest density) to 5 (highest density) is assigned to each block group. Following the analysis of each individual factor, the Transit Need Index map (**Figure 18**) shows the composite Transit Need score for each block group based on the sum of its scores in each preceding analysis. For example, if a block group falls in the highest density category for each of the five demographic analyses, it will end up with a Transit Need Index value of 25 (5+5+5+5+5). The lowest possible Transit Need Index score is 5 (1+1+1+1+1).

While the Transit Potential analysis highlights areas of Bloomington with actual densities to support fixed-route service, Transit Need is a relative measure that estimates the need for transit compared to other block groups. There is not, however, a specific Transit Need Index score or value that represents a threshold for supporting fixed-route service. Instead, Transit Need should be considered alongside Transit Potential. If two areas have similar and sufficient Transit Potential, the area with higher Transit Need should be prioritized for service. Conversely, in some locations, while the density of transit-dependent population groups may be relatively high, if the total population and/or employment density are still quite low, the potential to generate substantial fixed-route transit ridership will also remain low.

Zero-Vehicle Household Density

Figure 13 shows the density of zero-vehicle households in Bloomington. Higher densities of zero-vehicle households can be found in and around downtown and on East 3rd Street near College Mall. Other areas with high concentrations of zero-vehicle households are located in northwest Bloomington, pockets along South Walnut Street, Broadview, and south of the IU campus.

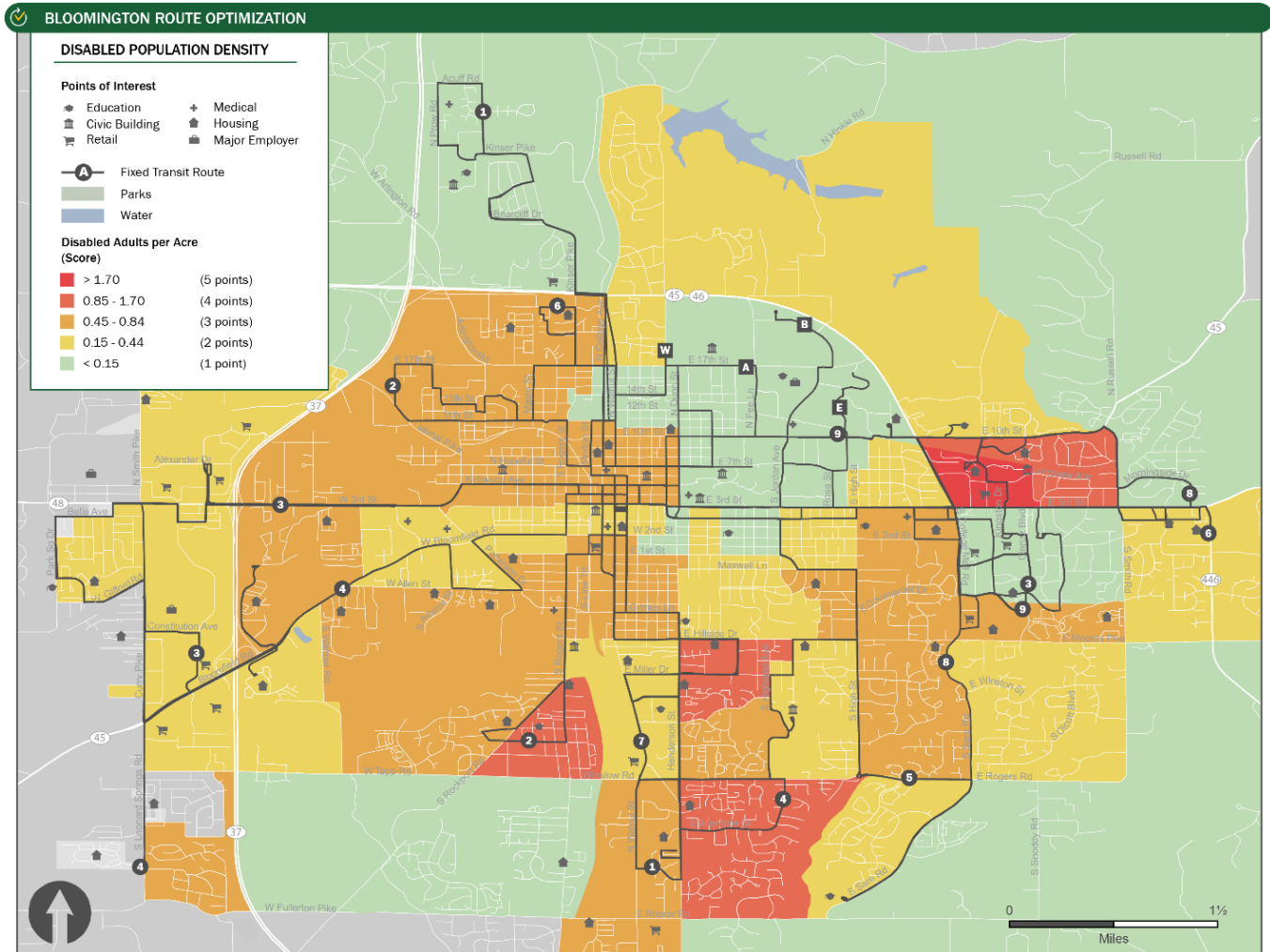
Figure 13 | Bloomington Zero-Vehicle Household Density



Disabled Population Density

Figure 14 shows the density of disabled populations in Bloomington. Disabled populations are most concentrated off East 3rd Street north of College Mall, as well as in pockets off South Henderson Street and South Rockport Road. All areas receiving four or five points in this analysis are served by at least one BT fixed-route service.

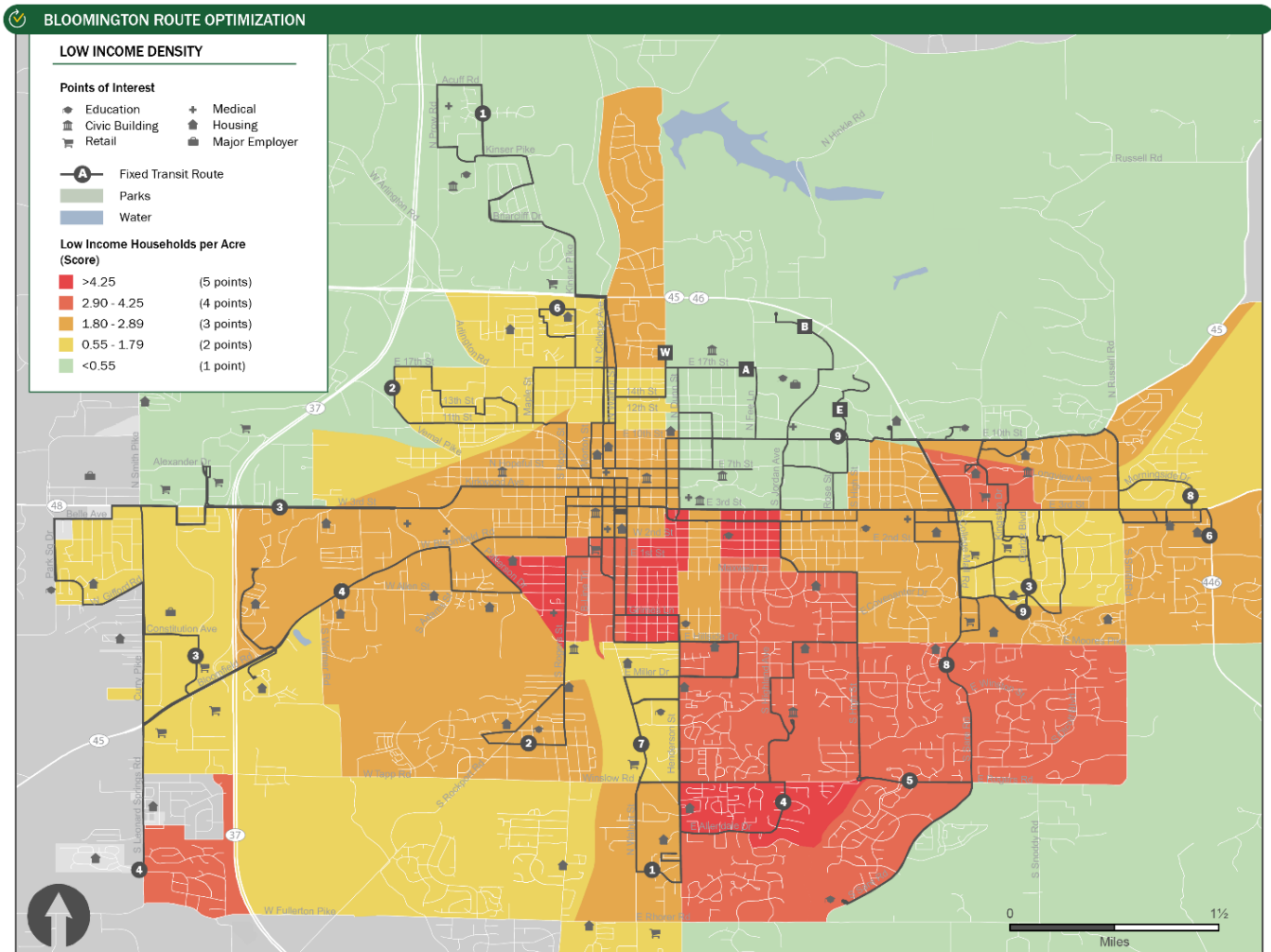
Figure 14 | Bloomington Disabled Population Density



Low-Income Population Density

Figure 15 shows the density of low-income households in Bloomington. While low-income households are generally concentrated in southeast Bloomington, additional pockets of low-income populations can be found around Bloomington Hospital, south of downtown and the IU campus, and in the Sherwood Green Condominium area. While some neighborhoods that fall within areas receiving four or five points in this analysis do not have BT service, there generally is service on the nearest major arterial street.

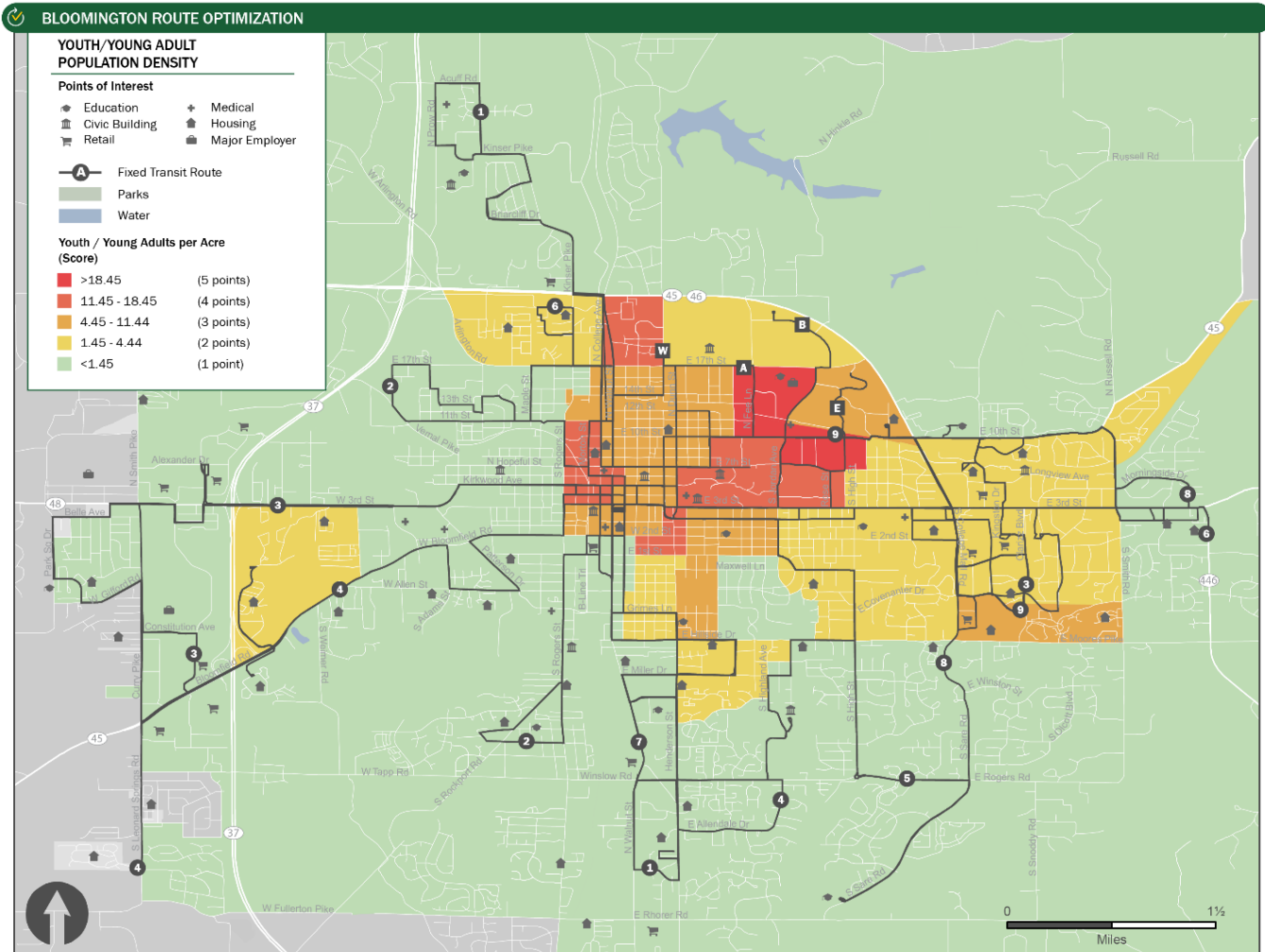
Figure 15 | Bloomington Low-Income Population Density



Youth/Young Adult Population Density

Figure 16 shows the population density of youths and young adults in Bloomington. This demographic group is most concentrated in and around downtown as well as the IU campus. Higher densities of youths and young adults can also be found along East 3rd Street, north of East Moores Pike, and north of Bloomfield Road. All areas receiving four or five points in this analysis are served by multiple BT and IU Campus Bus fixed-route service.

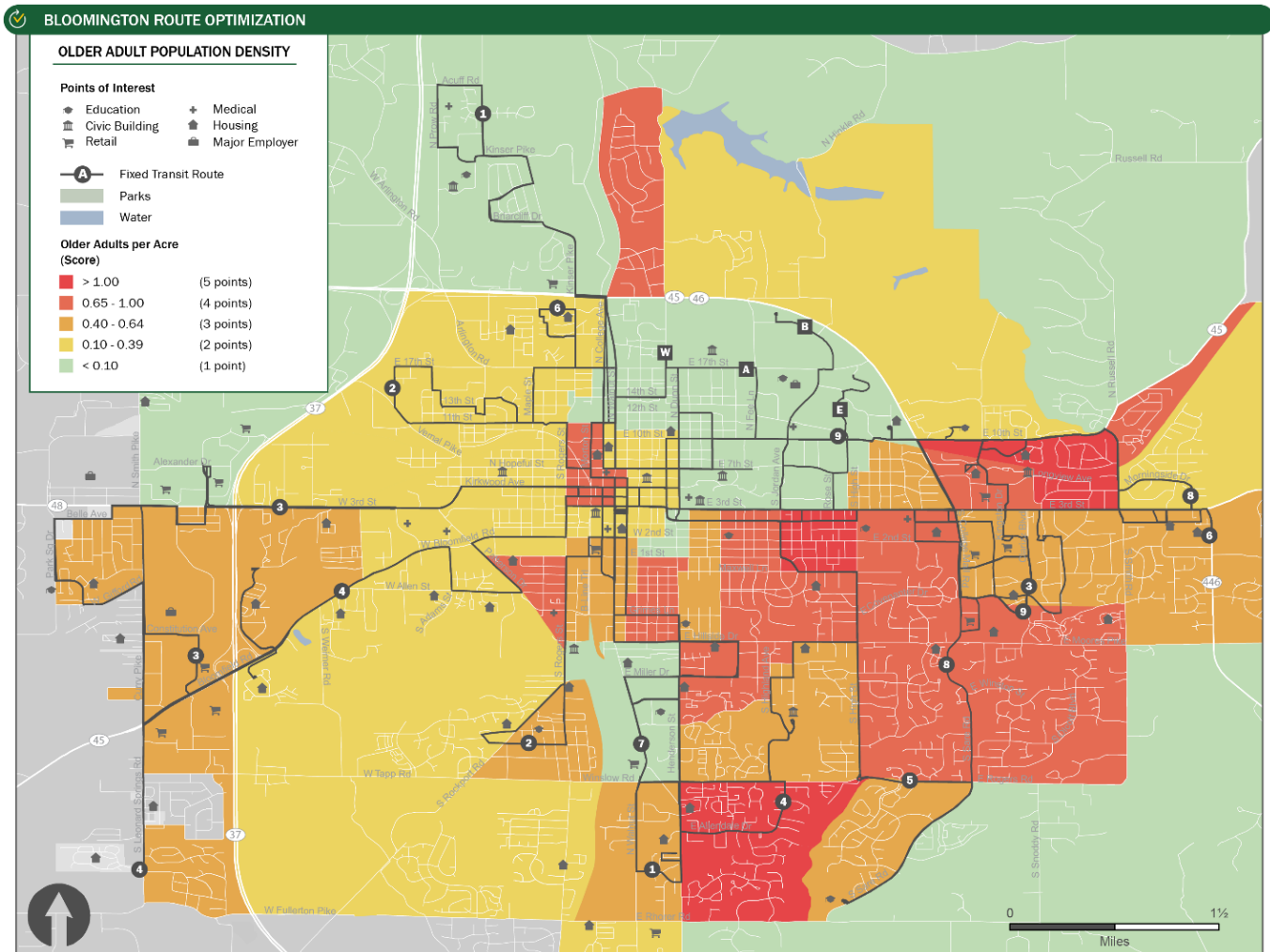
Figure 16 | Bloomington Youth/Young Adult Population Density



Older Adult Population Density

Figure 17 shows the density of older adults in Bloomington. This population is most concentrated south of East 3rd Street and east of South Henderson Street, as well as south of Winslow Road. Additional pockets of high density can be found along North Walnut Street north of State Route 45/46; along portions of North Morton Street; along portions of South Roger Street; and in southeast Bloomington. In some of these areas – including north of State Route 45/46 – fixed-route service is not available.

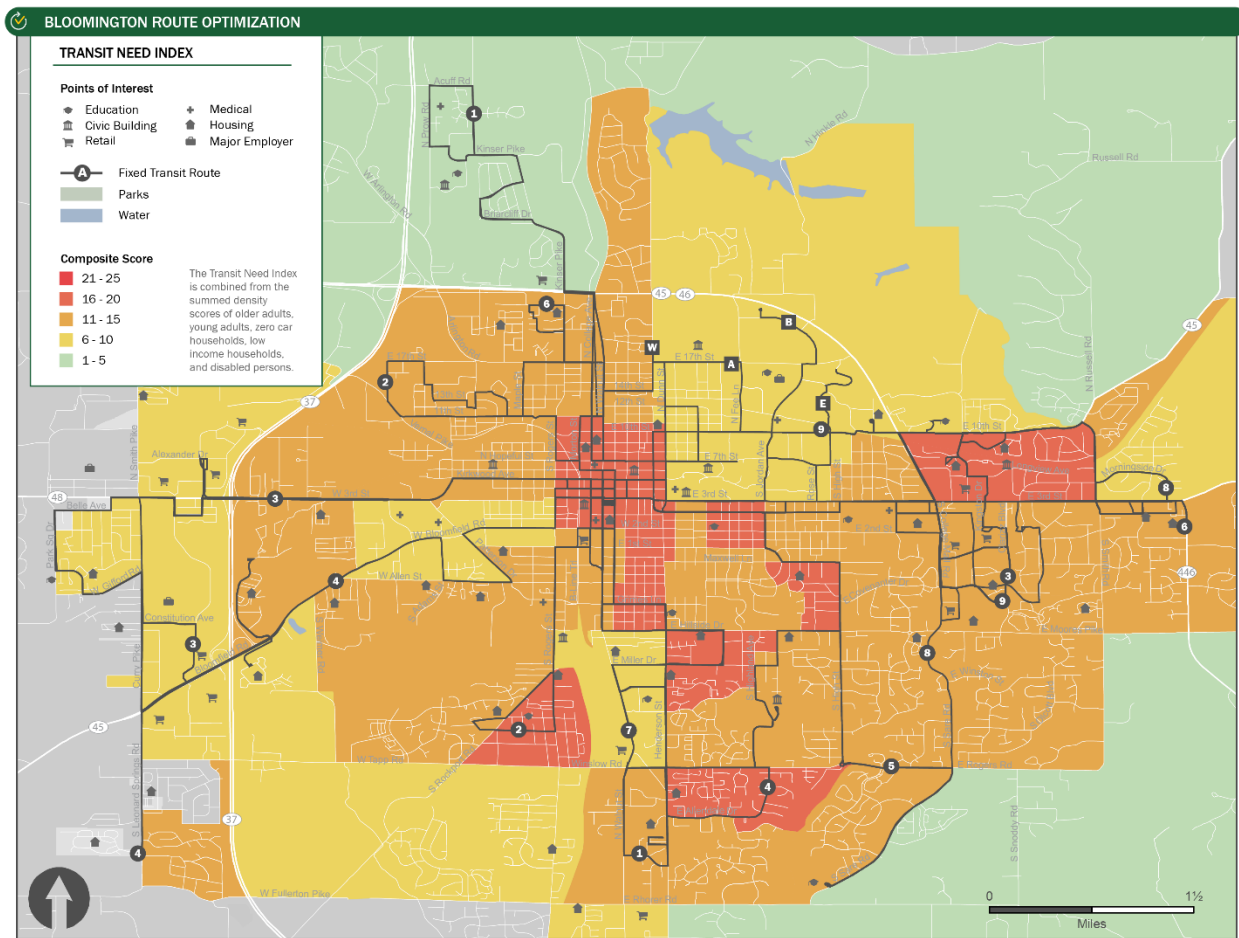
Figure 17 | Bloomington Older Adult Population Density



Transit Need

Figure 18 combines the five density maps into one composite Transit Need Index. Transit Need Index values are highest in downtown Bloomington, and along portions of East 3rd Street and South Henderson Street. Pockets of higher Transit Need are also found along South Roger Street and South High Street. Areas of Bloomington scoring relatively high have at least one fixed-route within close proximity. However, areas with moderate transit need – including the northern portion of North Walnut Street, and along South Smith Road – are not currently served by fixed-route service.

Figure 18 | Bloomington Transit Need Index



5. DOCUMENT REVIEW

Multiple documents guide transit service planning and policy in Bloomington, detailing the community's transportation needs, goals, and future plans. The following documents were reviewed as part of the existing conditions and market analysis:

- Transit Development Program Update (2009) – Bloomington Public Transportation Corporation;
- 2018 City of Bloomington Comprehensive Plan;
- Draft Transportation Plan (September 2018) – City of Bloomington;
- Transform 2040 – the Metropolitan Transportation Plan for the Bloomington/Monroe County MPO;
- Transportation Demand Management Plan – Indiana University Bloomington; and
- Plans for the IU Health Bloomington Hospital Regional Academic Health Center.

Below, a summary of each document is provided, including the purpose of each and their implications for transit planning in Bloomington.

Transit Development Program Update (2009)

Date: 2009

Author: Bloomington Public Transportation Corporation

Purpose

In 2009, the Bloomington Public Transportation Corporation updated its transit development program (TDP). This document established a plan for Bloomington Transit to accommodate the city's future growth over a period of five to ten years.

Summary

The plan summarized existing transit service in Bloomington, including available fixed-route and demand response service, route performance, ridership, and crowding conditions. The plan's public outreach and survey effort revealed preferences for more transit service on weekends, earlier in the day, and/or later in the evening; and more frequent service during morning and evening peak hours.

Planners analyzed three different theoretical transit network route concepts designed to bridge service gaps: a radial system with cross-town service, a grid-like route network, and a corridor-based route network. Each concept was designed to serve new destinations previously unserved by transit, including Ivy Tech Community College, the possible future new location for a regional hospital, the rapidly growing employment area west of State Route 37, Batchelor Middle School, the Henderson Street corridor north of Grimes Lane, and the proposed new developments in the southwest areas of the city.

The TDP's preferred service improvement plan was a hybrid version of three concepts largely influenced by existing and anticipated transit service gaps and needs. Highlights include:

- Enhanced service during all periods on weekdays, Saturdays, and Sundays;
- Corridor service on 3rd Street, 10th Street, and Walnut Street/College Avenue, connecting to the downtown-IU core, with weekday peak period headways of 20 minutes or less;
- Local service, covering most areas of the city and connecting the outlying communities to the downtown-IU core or to the corridor service, with weekday peak period headways of 30 minutes;
- Crosstown service, to minimize transfers and reduce overall travel time, with headways of 60 minutes or less during all service periods;
- A pilot program for a park and ride express route connecting a park and ride lot to downtown via 15-minute service;

- Recommendations to add sidewalks and pedestrian crosswalks on roadways with new transit and to ensure accessibility for people with mobility challenges;
- A new downtown passenger transfer facility at the southeast corner of S Walnut and 3rd Streets;
- Consideration to raise the 10th Street railroad underpass to accommodate larger transit vehicles; and
- Transit priority measures such as transit signal priority and right-turn queue jump lanes along the following potential corridors:
 - 10th Street from Woodlawn to the By-pass, and further to Smith Road;
 - 3rd Street from downtown to High Street and further to Smith Road;
 - 3rd Street from downtown to Curry Pike;
 - Walnut Street, from downtown to Grimes Lane;
 - College Avenue, from downtown to Walnut Street;
 - Walnut Street, from downtown to 17th Street; and
 - College Avenue, from downtown to 17th Street.

Implications

The 2009 TDP's recommendations can be reviewed to determine which have been implemented and which remain relevant to current service gaps and needs. Although the TDP is nearly ten years old, it remains a valuable resource to this study.

2018 City of Bloomington Comprehensive Plan

Date: 2018

Author: City of Bloomington

Purpose

The City of Bloomington's 2018 Comprehensive Plan is a long-range plan for land use and development with an outlook to 2040. The plan is intended to guide city leaders in decisions about investments and resources.

Summary

The Bloomington Comprehensive Plan extensively documents Bloomington's population, economy, services, and more. The plan includes goals, policies, maps, illustrations, and implementation strategies to guide development from the physical, social, and economic standpoints.

The plan's transportation objective is to provide multimodal transportation options. Following a summary of existing transit service, broad transit gaps and needs are identified. Land use – especially mixed-use development – is identified as crucial to future transit ridership. One transportation project of note included in the plan is Interstate 69, which, when fully built, will connect Bloomington more directly to Indianapolis. Transit recommendations include:

- Provide more frequent service, and expand service earlier in the morning, later in the evening, and on Saturdays and Sundays;
- Develop transit-oriented development (TOD) standards to complement transit planning;
- Study opportunities to site park and ride facilities at strategic locations around the community; and
- Develop a plan to improve pedestrian access to transit stops.

Implications

Future transit studies and plans should align with the comprehensive plan's priorities and recommendations. Additionally, Bloomington should consider providing more transit options for commuters who travel from outer parts of the city and county to downtown Bloomington, in preparation for the opening of I-69 and the growth and development that it is likely to bring.

City of Bloomington Draft Transportation Plan

Date: September 2018

Author: City of Bloomington

Purpose

In September 2018, the City of Bloomington released its Draft Transportation Plan, which offers a multimodal outlook for the city while aiming to better promote and include active transportation.

Summary

This document sets a path forward for the city in terms of road network design, roadway classification, and roadway typologies and design, seeking to better accommodate and incorporate pedestrians, bicycles, and transit vehicles throughout the roadway network. The plan also discusses strategies and recommendations to more effectively accommodate buses on roadways to improve the attractiveness and efficiency of bus travel. These include:

- More effectively manage curb space allocation to prioritize transit vehicles, including keeping bus stops clear of other vehicles and blockages;
- Give transit high priority on the streets which serve heavily traveled bus routes (including 3rd Street, 7th Street, and 10th Street);
- Explore options to reduce conflicts between buses and ride-hailing vehicles (such as Uber and Lyft) by conducting a study and dedicating specific pickup locations; and
- Improve pedestrian access to transit through treatments such as consolidating driveways, providing safe walk access through parking lots, prioritizing sidewalk connections to bus stops, and providing safe mid-block crossings.

The plan also recommends that the city further establish transit as a city priority through implementing wider lanes along frequent transit routes; intersection improvements such as signal priority and queue jumps; improved motorist yielding policies; and two-way restoration projects that improve transit access.

Implications

Future recommendations for bus optimization should consider the street classifications and typologies in this draft plan to ensure the new recommendations comply. Additionally, the active transportation component of the draft transportation plan emphasizes the importance of providing safe pedestrian access to transit. When planning new transit routes in Bloomington, planners should pay special attention to pedestrian access to bus stops.

Transform 2040 – Bloomington/Monroe County MPO Metropolitan Transportation Plan

Date: December 2017

Author: Bloomington/Monroe County Metropolitan Planning Organization (BMCMPPO)

Purpose

Transform 2040 is a long-range transportation plan that predicts future transportation needs of Bloomington and Monroe Counties. The document puts forth a plan of action to meet those needs by the year 2040. The plan provides an analysis of 12 future scenarios that incorporate anticipated policy considerations, demographic changes, and land use changes.

Summary

Transform 2040 was developed based on a review of the Bloomington/Monroe County MPO's policies and vision as well as stakeholder and public outreach. Plan goals and objectives are outlined in five areas: mobility and accessibility, transit, community, safety, and preservation.

The plan identifies future transportation needs relating to safety, convenience, transportation options, and accessibility. Notable public transit recommendations include:

- Provide seven-day-a-week service, including Sundays, on all routes not campus-oriented;
- Increase daily transit service hours;
- Increase the frequency of transit service; and
- Increase the coverage of transit service areas to reflect population and employment growth.

The plan also recommends pursuing the creation of a regional transit authority to improve efficiency of the distribution of federal funding resources. Transform 2040 recommends a scenario based on the transportation improvements programmed in the BMCMPPO FY 2016-2019 Transportation Improvement Program (TIP) and urban infill land use patterns. This recommended scenario allocates growth to existing housing by minor increases in neighborhood densities.

Implications

The public transit needs identified in the plan should be considered in the context of route optimization in Bloomington. In particular, this study should consider the potential implications of providing increased service on weekends as well as increasing frequency and coverage, where possible.

Transportation Demand Management Plan – Indiana University Bloomington

Date: 2012

Author: Auxiliary Business Services and Transportation Policy Advisory Committee – Indiana University Bloomington

Purpose

The Indiana University Transportation Demand Management (TDM) Plan includes a study of employee and student commuting behavior and a set of recommended TDM programs and transportation infrastructure improvements to encourage fewer single-occupancy vehicle trips to campus.

Summary

In Spring 2012, the university conducted a survey of employees and off-campus students on commute patterns and general awareness of TDM programs. The survey asked respondents to indicate which TDM programs and infrastructure improvements would best promote non-single occupancy vehicle commuting.

Survey findings indicated that although a majority of off-campus students do not drive alone to campus, 71 percent of employees do. Based on survey results, the TDM plan offers the following recommendations, primarily aimed at employee commuters:

- **Promotion of fare-free transit.** Although all IU students and employees have access to free trips on the city's buses, many employees may lack awareness of this free benefit;
- **Transit improvements.** Bloomington Transit should implement more direct routes, more frequent service, extended hours, and improved bus stop amenities. IU should also encourage commuters to live near transit routes when possible;
- **Guaranteed ride home program expansion.** Guaranteed ride home programs provide a ride home in the event of an emergency or an unexpected need to stay late at work. At the time of plan publication, this program was only open to registered members of carpools at IU. The plan recommends expansion of the program to cover all commuters who do not drive alone; and
- **Transportation Coordination Committee.** The plan recommends that IU establish a Transportation Coordination Committee (TCC) to coordinate transportation and land-use planning on campus and to coordinate quarterly with Bloomington Transit and other local and regional entities.

Implications

Promotion and encouragement of transit via TDM programs can play a large role in increasing transit ridership. As such, the recommendations of the IU TDM Plan – especially those regarding transit improvements and the promotion of fare-free transit – should be taken into account when planning new routes or enhancements to existing routes.

Plans for the IU Health Bloomington Hospital Regional Academic Health Center

Date: 2015-18

Author: Indiana University Health

Purpose/Summary

Indiana University Health is relocating the its IU Health Bloomington Hospital from southwest Bloomington. The new facility, which will include a new regional academic health campus, will be located at 2000 North Range Road, the current site of the IU golf driving range just off the State Route 45/46 bypass. Ultimately, other health and medical-related facilities will also be relocated to the campus site.

The existing hospital location is not served by any current BT or IU Campus bus route. However, the hospital site plan includes a pull-off lane set to accommodate several buses and a passenger shelter. The pull-off lane will likely be located at a parking lot just off Range Road, which runs east/west into the State Route 45/46 bypass.

Implications

Although this site is not currently served by public transit, given that the hospital will be a major regional generator, BT has considered realigning certain routes to provide service. Likely candidates for realignment are BT Routes 6 and 6 Limited, which could shift northwest to provide service to the hospital shelter either via State Route 45/46 or via Range Road.