IndyGo

2019-2025 Capital Plan

Adopted by the IPTC Board

August 28, 2019

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INTRODUCTION & OVERVIEW

In November 2016, nearly 60 percent of Marion County voters cast ballots in favor of adopting a 0.25 percent income tax dedicated to fund transit improvements. This transit levy was subsequently enacted by the Indianapolis-Marion County City County Council in February 2017. The resources derived from this tax will support the implementation and operation of the Marion County Transit Plan (Transit Plan), a component of *IndyConnect*—Central Indiana's Regional Transit Plan—as developed by the Indianapolis Metropolitan Planning Organization (MPO), IndyGo, and the Central Indiana Regional Transit Authority (CIRTA).

The Transit Plan calls for IndyGo to expand the frequency and hours of service for its fixed-route local network, construct and operate three new rapid transit lines, and change the orientation of its network from a hub-and-spoke network to a grid system. The strategic framework for these changes were developed as part of IndyGo's *IndyGo Forward* Comprehensive Operational Analysis and will be implemented over the next five years.

To effectively operate the increased local service and three rapid transit corridors and provide for a highly functioning transit system, several capital investments are necessary. These investments include capital expenditures within the following areas:

- **Fleet:** The addition and replacement of IndyGo vehicles and equipment to increase the reliability and operational efficiency of IndyGo's fleet and equipment to service and maintain the fleet;
- **On-Street Infrastructure and Bus Rapid Transit:** associated with bus rapid transit, fixed-route stops, and shelters;
- **Facilities:** Expansion, renovation, repair, and maintenance of IndyGo facilities to house IndyGo employees across divisions and support the efficient execution of their job responsibilities;
- **Information Technology & Finance:** Addition and/or replacement information technology and other administrative systems to promote a modern, high-functioning workplace; and
- **Safety, Security, and Training** equipment and enhancements.

In order to provide a fiscally-constrained plan, provide for financial forecasting and budgeting, and prioritize and coordinate investments, a five-year capital investment budget was first created in 2017. This tool was a joint effort of the finance and capital projects & planning divisions, with input from departments across the agency. That plan was presented and adopted by the IPTC Board of Directors on December 7, 2017 and updated in March 2018.

As part of the planning for the 2018 annual operational budgeting process, a decision was reached to update IndyGo's five-year capital plan, each year, on a five-year rolling basis. As such, this document—IndyGo's 2019-2025 Capital Plan—reflects a new five-year capital plan that incorporates the latest project costs and revenue estimates and extends the planning horizon to 2024 (and 2025 for the Blue Line Rapid Transit project).

Similar to the previous five-year capital plan, this document summarizes and organizes the figures included in the five-year capital budget, organizes those figures into a useful format, and provides additional detail on the sources and uses. This document is intended to serve as a benchmark for projecting, prioritizing, and programming capital expenditures for the next five years and will serve as a framework for IndyGo's official annual budgeting process. The document will assist in planning for IndyGo's pursuit of external funding, competitive grant programs, and/or debt instruments intended to finance capital expenditures.

The capital plan is organized into the following sections.

- The **Annual Summaries** section provides a comprehensive overview of the five-year capital program as well as a summary-level annual breakdown of anticipated capital revenue and expenditures.
- The **Funding Sources** section provides information on the sources of revenue expected to be programmed toward capital expenditures through 2024.
- The **Capital Expenditures** section provides an explanation of the expenditure, an anticipated cost for each expenditure, and the anticipated revenue source(s) for that capital cost.
- **Annual Itemized Expenditure Tables** section provides an itemized quarterly table of expenditures for each year, sorted by category of cost.

Relative to IndyGo's previous five-year capital plan, this plan shows of $552,215,682 in expenditures, an increase of $7.4 million (1.4 percent) over the previous plan.

The IndyGo 2019 – 2025 Capital Plan provides a forecast of planned revenue and expenditures based on currently available information. IndyGo will routinely update its assumptions and projections as capital projects are implemented, revenue is realized, and/or information otherwise becomes available.

Table 1 will be updated with any changes to this document and enable IndyGo to track versions of this document over time. The numbering conventions associated with the version control will be as follows: whole numbers will reflect the incorporation of substantial changes made to the sources and/or uses of capital funds and/or with updates following the adoption of IndyGo's annual budget; incremental updates (tracked by decimal numbers) will reflect minor changes made between these more substantial changes. Entries for minor changes may be removed from the version control table upon the adoption of a new major changes. The Date of Revision is the date that this document was revised; the Date of Budget refers to the version control date in the excel budget file upon which these revisions are based.

Table 1. Version Control Table

Version	Purpose of Change	Date of Revision	Date of Budget	Responsible
1.0	Adopted by the IPTC Board	8/28/19	8/28/19 (v1.0)	John Marron

ANNUAL SUMMARIES

IndyGo's 2019-2025 Capital Plan represents a substantial investment in transit and transit-supporting infrastructure. These investments will include expenditures associated with rolling stock, enhancements to on-street infrastructure and bus rapid transit projects, IndyGo facilities, IT and finance, public affairs, and safety, security and training enhancements. The purpose of this plan is to coordinate these expenditures with expected sources of revenue and time these investments in such a way to maintain adequate and acceptable cash flow for the agency.

To that end, the annual summary (see Table 2) shows an annual breakdown of planned expenditures and aligns those expenditures with expected revenue on an annual basis. It is intended that the following serves as a summary of the total five-year plan and serves as an annual planning resource in developing more detailed capital budgets on an annual basis through 2024 (see table note re: 2025 expenditures).

Expected expenditures have been developed through a process jointly-coordinated by IndyGo's finance and capital projects divisions and reflects the input of divisions and departments throughout IndyGo. Individual expenditures and anticipated revenue sources are described in greater detail in subsequent sections of this document.

The timing of individual expenditures reflects a planning effort that sought to examine the interrelationship of planned projects to IndyGo's operational needs as suggested by each division and matching those needs with anticipated revenue. As such, the following tables reflect a prioritization of planned expenditures, fiscally-constrained, across the agency. IndyGo will continue to monitor sources of anticipated revenue and the need for the expenditures, adjusting the plan as needed.

Table 2. Annual Summary

	Q3/Q4 2019	2020	2021	2022	2023	2024	2025*	Total
Expenditures	$48,880,682	$97,709,667	$72,173,333	$95,630,000	$120,106,000	$93,055,000	$24,661,000	$552,215,682
Fleet	$8,806,000	$13,451,667	$5,298,333	$4,750,000	$5,115,000	$14,950,000	$0	$52,371,000
On-Street Inf. & BRT	$29,036,682	$70,196,000	$62,800,000	$88,950,000	$114,736,000	$77,850,000	$24,661,000	$468,229,682
Facilities & Equipment	$5,440,000	$8,785,000	$3,655,000	$1,700,000	$0	$0	$0	$19,580,000
Information Technology	$4,533,000	$2,489,000	$200,000	$0	$0	$0	$0	$7,222,000
Public Affairs	$170,000	$225,000	$0	$0	$0	$0	$0	$395,000
Safety & Security	$895,000	$2,563,000	$220,000	$230,000	$255,000	$255,000	$0	$4,418,000
Sources	$48,880,681	$97,709,666	$72,173,333	$95,630,000	$120,106,000	$93,055,000	$24,661,000	$552,215,681
Grants	$26,213,846	$56,007,828	$38,725,132	$62,783,352	$61,810,200	$51,225,374	$0	$296,765,733
Cash	$18,887,532	$26,715,453	$29,911,197	$17,836,621	$19,595,800	$10,877,620	$24,661,000	$148,485,223
Bonds	$3,779,303	$13,786,385	$3,537,004	$15,010,027	$22,300,000	$30,952,006	$0	$89,364,725
Other	$0	$1,200,000	$0	$0	$16,400,000	$0	$0	$17,600,000
Expected Capital Surplus (Deficit)	($1)	($0)	$0	$0	$0	$0	$0	($1)

Note: Sources are listed for the time period in which they are expected to be expended, not the time period in which they are realized and/or made available to IndyGo.

*2025 included only to capture the full construction period associated with the Blue Line. Other expenditures are only projected through 2024.

The following series of tables provides annual overviews of planned capital expenditures and anticipated revenue to fund or finance these projects. These resources will generally be drawn from federal formula funds and competitive grants, cash or IndyGo capital revenue, debt financing, or other sources.

3Q/4Q 2019 Capital Projects: $48.9 Million

This pas year has seen the advancement of the first of the substantial capital projects related to the implementation of the Transit Plan, including but not limited to the construction of the Red Line BRT. Most of the planned expenditures for the remainder of the year are associated with on-street infrastructure and bus rapid transit projects—final payments associated with the Red Line comprise the largest share of these investments. In total, $29.0 million are planned in on-street infrastructure and rapid transit projects. Additionally, we anticipate $8.8 million in fleet and related projects, $5.4 million to be invested in facilities projects, and $4.5 million in information technology projects. Safety and Security and Public Affairs will also see expenditures of less than $1 million each (see Table 3).

The majority of programmed expenditures (53.6 percent) will be funded through grants received through the Federal Transit Administration (FTA), complemented by IndyGo's capital revenue (cash). IndyGo also expects to spend resources from the $26 million bond approved in 2018.

Table 3. 3Q/4Q 2019 Capital Projects

Revenue	Q3	Q4	Q3/Q4 Total
Grants	$17,745,940	$8,467,907	**$26,213,846**
Cash	$13,594,671	$5,292,861	**$18,887,532**
Bonds	$1,195,071	$2,584,232	**$3,779,303**
Other	$0	$0	**$0**
Total Revenue	**$32,535,682**	**$16,345,000**	**$48,880,681**
Expenditures	**Q3**	**Q4**	**Q3/Q4 Total**
Fleet	$8,806,000	$0	**$8,806,000**
On-Street Infrastructure & BRT	$17,561,682	$11,475,000	**$29,036,682**
Facilities and Equipment	$3,075,000	$2,365,000	**$5,440,000**
Information Technology	$2,473,000	$2,060,000	**$4,533,000**
Public Affairs	$170,000	$0	**$170,000**
Safety, Security, and Training	$450,000	$445,000	**$895,000**
Total Expenditures	**$32,535,682**	**$16,345,000**	**$48,880,682**

2020 CAPITAL PROJECTS: $97.7 MILLION

2020 will see the advancement of design activities associated with the Purple and Blue Lines and expenditures associated with the purchasing of Purple and Red Line buses. IndyGo also anticipates executing the two-way conversion of Michigan Street on the east side, pending the concurrence of the City of Indianapolis Department of Public Works (DPW). In all, 71.8 percent of 2020 capital expenditures are targeted to on-street infrastructure and bus rapid transit projects (see Table 4).

Additionally, substantial renovations and enhancements to IndyGo's facilities will continue as IndyGo's staff and fleet increase in size to meet the new service profile. The largest of these facilities projects includes the build out of a training and contingency facility as well as maintenance area renovations at IndyGo's main facility. IndyGo has also programmed $2.6 million for safety and security upgrades and $2.5 million for IT/Finance. 57.3 percent of programmed expenditures are sourced from grants.

Table 4. 2020 Capital Projects

Revenue	Q1	Q2	Q3	Q4	Total
Grants	$22,381,135	$10,168,413	$19,753,280	$3,705,000	$56,007,828
Cash	$17,622,962	$13,809,104	($10,569,947)	$5,853,333	$26,715,453
Bonds	$12,982,903	$803,483	$0	$0	$13,786,385
Other	$0	$0	$1,200,000	$0	$1,200,000
Total Revenue	**$52,987,000**	**$24,781,000**	**$10,383,333**	**$9,558,333**	**$97,709,666**
Expenditures	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet	$220,000	$9,765,000	$1,883,333	$1,583,333	$13,451,667
On-Street Infrastructure & BRT	$46,460,000	$10,736,000	$5,825,000	$7,175,000	$70,196,000
Facilities and Equipment	$3,330,000	$2,855,000	$2,000,000	$600,000	$8,785,000
Information Technology	$1,489,000	$600,000	$200,000	$200,000	$2,489,000
Public Affairs	$225,000	$0	$0	$0	$225,000
Safety, Security, and Training	$1,263,000	$825,000	$475,000	$0	$2,563,000
Total Expenditures	**$52,987,000**	**$24,781,000**	**$10,383,333**	**$9,558,333**	**$97,709,667**

*Note: Here and elsewhere in the plan, negative cash balances for a quarter indicate the reimbursement of IndyGo's Capital Cum Fund for resources previously expended on a project that are now reimbursable due the execution of a federal grant.

Site Plan
IndyGo Super-Stops - NEW YORK ST. / DELAWARE ST.
Indianapolis, Indiana

A-1

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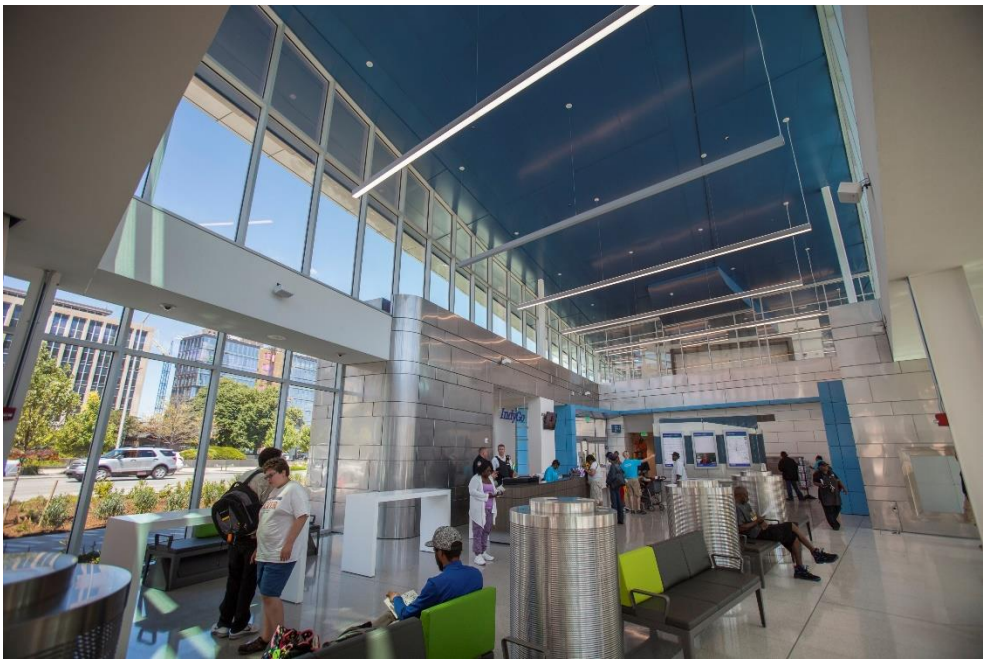
2021 Capital Projects: $72.2 Million

IndyGo will continue its robust investment in the rapid transit network and on-street infrastructure throughout 2021 as construction of the Purple Line will move forward in earnest, design activities on the Blue Line and Red Line extensions are advanced, and 30th Street is converted to a two-way street (pending DPW concurrence). These investments in on-street infrastructure and rapid transit represent 87 percent of $72.2 million in planned expenditures.

IndyGo will also continue to invest in its primary facility, including reconstruction of its loading dock and concrete driveway, masonry repairs, and renovations to the maintenance area. IndyGo also anticipates investments in its fixed route fleet, its paratransit fleet, BRT bus docking technology, and maintenance equipment. Investments in fleet and facility represent an additional $5.3 million and $3.7 million, respectively, in expenditures (see Table 5). Grant resources are expected to fund 53.7 percent of planned expenditures, with the balance coming mostly from IndyGo capital revenue and bonds.

Table 5. 2021 Capital Projects

Revenue	Q1	Q2	Q3	Q4	Total
Grants	$11,372,441	$8,566,033	$11,851,269	$6,935,390	**$38,725,132**
Cash	$4,863,889	$11,828,967	$6,978,731	$6,239,610	**$29,911,197**
Bonds	$1,537,004	$0	$0	$2,000,000	**$3,537,004**
Other	$0	$0	$0	$0	**$0**
Total Revenue	**$17,773,333**	**$20,395,000**	**$18,830,000**	**$15,175,000**	**$72,173,333**
Expenditures	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet	$1,583,333	$1,415,000	$2,300,000	$0	**$5,298,333**
On-Street Infrastructure & BRT	$14,950,000	$17,450,000	$15,375,000	$15,025,000	**$62,800,000**
Facilities and Equipment	$820,000	$1,530,000	$1,155,000	$150,000	**$3,655,000**
Information Technology	$200,000	$0	$0	$0	**$200,000**
Public Affairs	$0	$0	$0	$0	**$0**
Safety, Security, and Training	$220,000	$0	$0	$0	**$220,000**
Total Expenditures	**$17,773,333**	**$20,395,000**	**$18,830,000**	**$15,175,000**	**$72,173,333**



2022 Capital Projects: $95.6 Million

A total of $89.0 million in 2022 expenditures will advance the construction of on-street infrastructure and rapid transit facilities (93.0 percent of IndyGo's total planned capital expenditures for 2020), with the majority of those expenditures oriented toward advancing the Purple and Blue Lines. The remaining expenditures will be allocated to fleet replacement ($4.75 million) and retrofitting of the downtown transit center to accommodate level boarding. A substantial portion of programmed expenditures in 2022 will be grant-funded (65.7 percent), with the balance from the IndyGo capital fund and bonds (see Table 6).

Table 6. 2022 Capital Projects

Revenue	Q1	Q2	Q3	Q4	Total
Grants	$22,329,500	$24,403,852	$9,100,000	$6,950,000	**$62,783,352**
Cash	($4,579,500)	$5,816,121	$8,925,000	$7,675,000	**$17,836,621**
Bonds	$0	$13,760,027	$500,000	$750,000	**$15,010,027**
Other	$0	$0	$0	$0	**$0**
Total Revenue	**$17,750,000**	**$43,980,000**	**$18,525,000**	**$15,375,000**	**$95,630,000**
Expenditures	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet	$0	$1,450,000	$3,300,000	$0	**$4,750,000**
On-Street Infrastructure & BRT	$17,750,000	$42,300,000	$14,375,000	$14,525,000	**$88,950,000**
Facilities and Equipment	$0	$0	$850,000	$850,000	**$1,700,000**
Information Technology	$0	$0	$0	$0	**$0**
Public Affairs	$0	$0	$0	$0	**$0**
Safety, Security, and Training	$0	$230,000	$0	$0	**$230,000**
Total Expenditures	**$17,750,000**	**$43,980,000**	**$18,525,000**	**$15,375,000**	**$95,630,000**

2023 Capital Projects: $120.1 Million

2023 represents the year with the largest sum of anticipated expenditures within this capital plan. In 2023, IndyGo anticipates final expenditures associated with the Purple Line project as well as incurring construction expenses related to the Blue Line and the Red Line extensions. These on-street infrastructure and rapid transit projects represent more than 95 percent of programmed expenditures ($114.7 million). IndyGo also plans to continue its fleet replacement schedule for local fixed-route vehicles and its paratransit fleet. IndyGo anticipates 51.5 percent of capital expenditures to be funded through grants, with the balance attributable to a mix of bonds, cash, and funding partners (City of Indianapolis Department of Metropolitan Development and the Indianapolis Neighborhood Housing Partnership) for rapid transit projects. (see Table 7).

Table 7. 2023 Capital Projects

Revenue	Q1	Q2	Q3	Q4	Total
Grants	$23,756,803	$13,340,000	$16,213,397	$8,500,000	**$61,810,200**
Cash	$6,034,197	$1,875,000	$7,061,603	$4,625,000	**$19,595,800**
Bonds	$0	$8,500,000	$5,300,000	$8,500,000	**$22,300,000**
Other	$13,200,000	$0	$3,200,000	$0	**$16,400,000**
Total Revenue	**$42,991,000**	**$23,715,000**	**$31,775,000**	**$21,625,000**	**$120,106,000**
Expenditures	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet	$0	$1,815,000	$3,300,000	$0	**$5,115,000**
On-Street Infrastructure & BRT	$42,736,000	$21,900,000	$28,475,000	$21,625,000	**$114,736,000**
Facilities and Equipment	$0	$0	$0	$0	**$0**
Information Technology	$0	$0	$0	$0	**$0**
Public Affairs	$0	$0	$0	$0	**$0**
Safety, Security, and Training	$255,000	$0	$0	$0	**$255,000**
Total Expenditures	**$42,991,000**	**$23,715,000**	**$31,775,000**	**$21,625,000**	**$120,106,000**

2024 Capital Projects: $92.8 Million

In the final year of this capital plan, IndyGo will continue advancing the Blue Line and Red Line Extension rapid transit projects. The majority of expenditures in 2024 ($71 million) are targeted toward Blue Line construction. IndyGo anticipates a purchase of eleven electric buses totaling more than $10 million. IndyGo anticipates 55 percent of the expenditures in 2024 to be grant reimbursable (see Table 8).

Table 8. 2024 Capital Projects

Revenue	Q1	Q2	Q3	Q4	Total
Grants	$14,740,535	$9,740,000	$18,244,839	$8,500,000	**$51,225,374**
Cash	$6,212,459	$660,000	$4,005,161	$0	**$10,877,620**
Bonds	$5,452,006	$8,500,000	$8,500,000	$8,500,000	**$30,952,006**
Other	$0	$0	$0	$0	**$0**
Total Revenue	**$26,405,000**	**$18,900,000**	**$30,750,000**	**$17,000,000**	**$93,055,000**
Expenditures	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet	$0	$1,550,000	$13,400,000	$0	**$14,950,000**
On-Street Infrastructure & BRT	$26,150,000	$17,350,000	$17,350,000	$17,000,000	**$77,850,000**
Facilities and Equipment	$0	$0	$0	$0	**$0**
Information Technology	$0	$0	$0	$0	**$0**
Public Affairs	$0	$0	$0	$0	**$0**
Safety, Security, and Training	$0	$0	$0	$0	**$0**
Total Expenditures	**$26,150,000**	**$18,900,000**	**$30,750,000**	**$17,000,000**	**$92,800,000**

FUNDING SOURCES

IndyGo's sources of funds for capital projects come from three major sources: grants, bonds, and capital revenue. Grant funding is further categorized into different programs from the FTA. Some of these funds are provided to IndyGo through federal formulas, as established by Congress. IndyGo also routinely seeks competitive grant funding from the FTA and the MPO to supplement its formula funds. IndyGo has also been awarded FTA Section 5309 Capital Investment Grants funding for the Red Line, a competitive program to fund major capital projects that requires a successful application and the meeting of several project development milestones before accessing the funding; it anticipates federal investments through this program on the Purple and Blue Lines as well. In addition to these sources of federal funds, IndyGo has received the support of the City of Indianapolis, via DPW, and through the Department of Metropolitan Development (DMD). Specifically, the City, through DMD, has committed resources through the Downtown and Airport tax increment finance (TIF) districts to the Red and Blue Lines, respectively. IndyGo also is partnering with the Indianapolis Neighborhood Housing Partnership to advance joint development activities adjacent to the Blue Line.

Each of the sources of funding accessed by IndyGo for capital projects are described in greater detail throughout this section. Once IndyGo has secured funding, it assigns an identification number to the grant. These grant numbers are used throughout the sources and uses tables in the Capital Expenditures section of this document to link projects to specific funding sources. Table 9 outlines the relationship between those grant numbers and their original funding sources. Using this table, readers of this capital plan will be able to cross reference the sources and uses tables with the table below to identify the original funding source.

Table 9. IndyGo Grant Number/Funding Sources

5307 Formula	5309 Small Starts/ TIGER	5339 Formula	5310 Formula	CMAQ/STBG (TA, NEPA, IT)	STBG
IN90X683-11.41.03	Small Starts (Red)	IN-2016-024-11.44.03	IN-2017-018-11.12.04 (w/5307)	IN-2016-016-44.23.02	IN-2016-016-11.42.08
IN90X683-11.44.03	Small Starts (Purple)	IN-2016-024-11.32.07	IN-2019-001-11.12.04	IN-2016-016-11.71.03	IN95X046-11.71.03
IN90X605-11.42.07	Small Starts (Blue)	IN-2016-024-11.12.04	FY 2019-2024 5310	IN-2016-016-11.42.08 (w/STBG)	IN95X046-11.42.09
IN90X683-11.42.11		IN-2016-024-11.12.01		IN-2016-016-11.42.07	2020 STBG
IN90X683-11.42.06		IN-2016-024-11.42.11		IN-2016-016-11.12.01	2021 STBG
IN90X683-11.42.09		IN-2016-024-11.42.06		2020 CMAQ-TSP	
IN90X668-11.44.03		IN-2017-18-11.12.01 (w/5307)		2022 STP/CMAQ	
IN90X668-11.41.03		IN-2019-001-11.42.20		2023 STP/CMAQ	
IN95X046-11.42.20		IN-2009-001-11.12.15			
IN-2017-018-11.12.01 (w/5339)		FY 2019-2024 5339			
IN-2017-018-11.32.07		Solar Array (5339 competitive)			
IN-2017-018-11.42.20					
IN-2017-018-11.42.11					
IN-2017-018-11.42.06					
IN-2017-018-11.12.04 (w/5310)					
FY2017 5310					
IN-2019-001-11.12.01					
IN-2019-001-11.32.07					
FY 2019-2024 5307					
5307 Security Set Asides					

*The MPO Green Line grant, another source of federal grant funding, was competitively awarded outside of the programs listed above.

GRANTS

FTA Urbanized Area Formula Grants (Section 5307)

FTA Section 5307 resources are federal funds allocated to transit providers in urbanized areas throughout the United States. These resources are intended to provide support for transit agencies serving incorporated areas of more than 50,000 people. Funding is apportioned on the basis of a legislative formula; for areas with a population of more than 200,000, the formula is based on a combination of bus revenue vehicle miles, bus passenger miles, fixed guideway revenue miles, and fixed guideway route miles, as well as population and population density.

Table 10. Anticipated 5307 Formula Funds for Capital

Total	$29,462,757
FY 2019	$3,729,939
FY 2020	$3,999,978
FY 2021	$4,455,390
FY 2022	$5,339,879
FY 2023	$5,889,577
FY 2024	$6,047,994

These funds are used to support capital projects, as well as operations, and therefore are only partially available for capital projects. Capital projects supported through this funding program are generally required to secure a 20 percent local match. Funds allocated under this program are available in the year they are appropriated and through the subsequent five years.

It is anticipated that $29,462,757 will be available for capital expenditures from the 5307 program to support capital projects through 2024 (see Table 10). This amount does not include 5307 Security Set Asides – 5307 formula funds required to be used for security purposes, which total an additional $980,451 throughout the plan.

The Indiana Department of Transportation (INDOT) recently completed an audit of its Section 5311 program; this funding source is reserved for rural trips. The audit revealed a significant percentage of rural providers in central Indiana are completing trips that begin and end in the Indianapolis urbanized area; INDOT has determined that these trips should be categorized as urban trips; Section 5311 recipients, operating in suburban counties, will see a reduction in their 5311 funding. These providers will be eligible to receive regional 5307 funding. As a result, IndyGo may see a loss in the its share of regional 5307 funding beginning in 2021. Those potential reductions have been included within the planning assumptions associated with this plan.

FTA Bus & Bus Facilities Infrastructure Investment Program (Section 5339)

This FTA program makes federal resources available to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities. These projects may include efforts to incorporate technological changes or innovations that reduce fleet emissions. Funding from this program is provided both through formula allocations and competitive grants. Capital projects funded through the FTA 5339 program generally require at least a 20 percent local match of the net capital project cost.

It is anticipated that $12,676,779 in formula funds will be available through 2024 for capital projects (see Table 11). IndyGo will also submit applications to secure competitive funding associated with this program over the course of this plan; to the degree those applications are successful, they will reduce the amount required to be secured through cash, bonds, or other means.

Table 11. Anticipated 5339 Formula Funds for Capital

Total	$12,676,672
FY 2019	$1,934,765
FY 2020	$1,961,009
FY 2021	$2,035,432
FY 2022	$2,179,973
FY 2023	$2,269,803
FY 2024	$2,295,691

FTA Enhanced Mobility for Seniors and Individuals with Disabilities (Section 5310)

This program provides formula funding for the purpose of assisting private nonprofit groups in meeting the transportation needs of older adults and persons with disabilities. IndyGo is the designated recipient for Section 5310 funding for the Indianapolis urbanized area. IndyGo is responsible for administering 5310 funding to eligible entities for eligible activities within the urbanized area. IndyGo receives formula funds from the federal government and administers a competitive process to eligible entities; awardees are subrecipients.

These resources can be used to purchase (and operate) buses and vans, wheelchair lifts, ramps, securement devices, transit-related information technology, mobility management programs, acquisition of contracted transportation services such as IndyGo's paratransit operations, and other expenditures.

IndyGo expects a total of $3,949,760 will be available for capital projects through 2024 (see Table 12). Any expenses associated with this program for capital expenditures requires at least a 20 percent local match of the project cost.

Table 12. Anticipated 5310 Formula Funds for Capital

Total	$3,949,760
FY 2019	$625,276
FY 2020	$635,007
FY 2021	$649,612
FY 2022	$664,553
FY 2023	$679,838
FY 2024	$695,474

FTA Section 5309: Small Starts & TIGER

The FTA Capital Investment Grant program (Section 5309) is the primary federal funding source associated with major transit capital investments such as bus rapid transit facilities. Projects seeking Small Starts funding, a categorization within the Section 5309 program, are required to apply for entry into the program and then go through a phased project development process before securing a fully-executed grant agreement.

Depending upon the level of competitiveness of a particular project, the federal support for the project may range between 50 percent and 80 percent, with required match derived from other sources of funding.

The 5309 program is the primary funding mechanism associated with IndyGo's Red Line Rapid Transit Phase I project; that project successfully secured 80 percent participation from the federal government.

Per the Small Starts Grant Agreement executed in May 2018, IndyGo will receive a total of $74,989,685 to support the Red Line BRT project, including resources available for construction, BRT vehicles, fare equipment, and other project related costs.

IndyGo anticipates applying for and receiving 5309 funds for the Purple and Blue BRT projects as well. The capital plan assumes a 50 percent award by the federal government on these projects, totaling $177,500,000 (see Table 13); this figure represents an increase to the previous capital plan. The increase is largely attributable to design changes on the Purple Line and timing changes on the Blue Line.

Should these resources not be available due to changes to the 5309 program or due to the federal budget, IndyGo would look to reduce the costs of these projects through scope changes and value engineering. IndyGo would likely seek to expand its capital bond to offset any reductions relative to the expectations established within the development of the Transit Plan. IndyGo has been accepted into Project Development under 5309 for the Purple and Blue Lines, the first threshold in receiving resources under this program.

Table 13. Anticipated 5309 Small Starts Funds

Total	$252,489,685
Red Line (Phase I)	$74,989,685
Purple Line	$77,500,000
Blue Line	$100,000,000

Congestion Mitigation and Air Quality (CMAQ) and Surface Transportation Block Grant (STBG)

The CMAQ program provides a flexible funding source for transportation projects that improve air quality and reduce congestion. Typical uses of these funds include infrastructure, vehicles for new transit service, and replacement vehicles. In central Indiana, these funds are administered by the MPO.

The Surface Transportation Block Grant (STBG) is funding administered by the Federal Highway Administration. STBG funding is the largest funding source managed by the MPO. These resources may be used for highway or transit projects, as determined and prioritized at the local level. Typical transit projects funded through STBG could include purchase of vehicles, construction of fixed-guideway systems, and other transit-related investments.

For the years 2020-2023, 7 percent of the region's Transportation Improvement Plan is programmed for transit-related activities. The Capital Plan anticipates STBG awards of $5,650,000 and $4,867,537 for fleet replacement in 2020 and 2021, respectively. STBG funding for 2023 and 2024 is projected to be $4,595,827 and $9,744,839, respectively; the elevated 2024 amount represents an MPO investment in the IndyGo's 2024 fleet replacement.

IndyGo has requested and successfully been awarded CMAQ funding from the MPO throughout its history. Currently, IndyGo is receiving CMAQ funding for the following activities: Purple Line outreach, preliminary engineering, and NEPA activities. The capital plan also programs $1,353,280 from a CMAQ award to install transit signal priority infrastructure on BRT routes at key intersections to increase service reliability.

Additionally, a combined $4,595,827 million in STBG and CMAQ for the Red Line Rapid Transit extensions to the county lines has been awarded for 2022.

MPO Green Line Grant

As part of the long-running study of the potential for rapid transit in various corridors throughout central Indiana, the MPO was awarded a grant to examine the feasibility of an enhanced corridor between downtown and Hamilton County via northeast Marion County. As these planning efforts matured, this corridor was denoted as the Green Line. Through preliminary planning and environmental work, it was determined that this corridor may have environmental and financial sustainability concerns that limited the feasibility of that corridor for rapid transit activities.

In 2017, in conversations between the MPO and IndyGo, it was determined that a study of the northeast downtown corridor served by several local routes that travel north and east from downtown may benefit from enhanced infrastructure. Such a study would fulfill the purpose and intent of the grant; through that process, the MPO awarded IndyGo $700,000 in capital funding to pursue planning and preliminary design activities in these areas. These resources are dedicated to funding the planning work for IndyGo's "Super Stops" project along Delaware and Alabama Streets and Fort Wayne Avenue. Most of these resources will be expended by the end of 2019.

INDYGO CAPITAL REVENUE (CASH)

IndyGo capital funds are resources derived from proceeds from property taxes in accordance with IC 36-9-4-48 and revenue from the transit income tax enacted in 2017. These sources, for capital projects, are typically used to provide local match for federal grants and pay for other general capital projects. Revenue from these taxes are held in the IndyGo Capital Cum Fund (Cash), established by the IPTC Board of Directors in 2004 and serve as a relatively liquid source of capital to support capital projects. At present, this tax is assessed on properties within Indianapolis and Beech Grove, but not within the other excluded cities and towns of Marion County. Currently, the capital plan calls for a total of $123.8 million to be drawn from the Capital Cum fund from 2019 to 2024 to advance this capital plan and implement the Transit Plan.

INDYGO ANTICIPATED DEBT (BONDS)

Periodically, IndyGo must issue general obligation bonds for the purpose of providing local financial contributions to federally-funded capital and equipment projects. The size and scope of IndyGo's current five-year capital program will require the issuance of bonds to provide resources to advance this capital plan and successfully implement the Transit Plan. Principal and interest payments for bonds issued to advance capital projects within this plan would be made from the proceeds of the newly adopted 0.25 percent local income tax that became effective in Marion County on October 1, 2017. This capital plan assumes a 2019 appropriation of $58.4 million from the income tax. The bonds would have a first lien position on the proceeds of the local option income tax.

The current capital plan requires $102.9 million in total debt issuance through 2024, including the $26 million bond issuance approved by the Indianapolis-Marion County City County Council (and additional financing costs) and the Indianapolis Bond Bank in August 2018 and a proposed $73.3 million bond in 2022.

In projecting the finance costs associated with the future bond issuance, IndyGo has assumed interest rates that are based upon the Thompson Reuters Municipal Market Data (MMD) AAA Curve. This approach yields conservative estimates in that the projections use the MMD yield as a baseline and then add additional basis points to provide a level of cushion for market uncertainties and future fluctuations in the bond market.

Further, in projecting debt and debt service payments throughout the course of this plan and through IndyGo's 20-year financial projections, aggregate annual debt service payments are split between a portion covered through the FTA 5309 Small Starts program and the remainder, which IndyGo will source through its capital debt service fund. This inclusion of financing costs within Section 5309 project costs is a requirement of FTA; this plan reflects that requirement accordingly.

OTHER SOURCES

City of Indianapolis: Department of Public Works

The City of Indianapolis is a funding partner for IndyGo's rapid transit projects. IndyGo and the City, through DPW, are party to an Interlocal Agreement, detailing the roles and responsibilities of the ongoing maintenance and operations of the rapid transit infrastructure on the Red Line project. It is anticipated that agreements for future rapid transit projects will include a commitment of $3.1 million from DPW.

Tax-Increment Financing (City of Indianapolis: Department of Metropolitan Development)

The Metropolitan Development Commission (MDC) serves as the City's redevelopment commission. Within any redevelopment or economic development area, the MDC has authority to create an allocation area for purposes of capturing incremental new taxes in the area through tax-increment financing (TIF). Eligible uses of the TIF revenues include capital project expenditures, such as public infrastructure projects, which directly serve or benefit a redevelopment or economic development area.

The MDC determined that Red Line Rapid Transit Project will directly benefit the Consolidated Redevelopment Allocation Area located in downtown Indianapolis and has provided $6 million in TIF revenue to support construction of that project. The MDC executed an agreement to appropriate these TIF resources to IndyGo in July 2018.

Similarly, the MDC has determined that the benefits of improving the West Washington Street corridor, from Holt Road to High School Road, would substantially advance the City's goals in that area. These benefits include enhanced transit operations in that area; substantial improvements to the street, sidewalk, and stormwater infrastructure; and the supporting of reinvestment and revitalization within the vicinity of the Indianapolis International Airport. Further, it is believed that any investment made in the Blue Line through the TIF funds would ultimately lead to value capture, in which the initial investment sparks development that creates additional resources within the TIF. For those reasons, the MDC has agreed to allocate $12.5 million

from the Airport TIF to the Blue Line BRT project, upon execution of a Small Starts Grant Agreement for the Blue Line.

Joint Development: Indianapolis Neighborhood Housing Partnership

Per the FTA Circular on Joint Development (FTA C 7050.1A), "As a matter of policy, the FTA encourages project sponsors to undertake joint development, and promotes the project sponsors ability to work with the private sector and others to pursue joint development." These joint development projects promote investments that encourage private investment and/or economic development adjacent to transit facilities, thereby creating a public transit benefit. As part of its Blue Line Small Starts Application, IndyGo has programmed $4 million in the project budget for the purposes of joint development. Assuming federal participation at 50 percent of project costs, up to $100 million, the local match joint development activities would be $2 million. The Indianapolis Neighborhood Housing Partnership has agreed to allocate up to $2 million from its Equitable Transit Oriented Development Fund to support joint development activities, upon execution of a Small Starts Grant Agreement for the Blue Line.

CONTINGENCY PLANNING

Each of the anticipated expenditures for projects included in this plan contain some contingency to address unanticipated issues and unexpected costs that may arise within the execution and implementation of individual projects. For projects that are smaller in scope in terms of their complexity and anticipated expense, contingencies may represent a fairly minor part of the budgeted expenditures (~5 percent). However, to accommodate the additional risk and uncertainty in more complex projects, such as the implementation of rapid transit projects, contingencies are much greater (~30 percent of anticipated project costs; see more below). IndyGo has been conservative in its budgeting to ensure it has the adequate resources necessary to overcome unanticipated issues and deliver these projects as planned.

Should anticipated revenue programmed to support individual projects not be realized throughout the course of this plan, IndyGo has considered strategies it would employ to ensure that it remains able to deliver the implementation of the Transit Plan, as outlined to the public in advance of the 2016 general election. If funding were unavailable for a smaller project due to an unanticipated change in funding sources, the cost of the project may be addressed through unspent contingency on other projects, delayed, or otherwise re-evaluated. IndyGo continues to monitor actual expenditures relative to anticipated expenditures, as outlined in this plan and the previous capital plan, making revisions (to expenses and revenue sources) as needed.

Contingency Planning for Small Starts (BRT)

As part of its Small Starts application process for the Red Line BRT project and its capital planning efforts, IndyGo developed a 20-year financial model to evaluate long-term cash flow and support capital and operational planning through 2039. Through this 20-year financial model, a scenario examining the impact of no federal Small Starts participation in the construction of the Purple and Blue bus rapid transit corridors was considered; in such a scenario, IndyGo is still able to deliver the Transit Plan, as presented to voters in advance of the 2016 general election.

Should the Small Starts program be no longer available or IndyGo be unable to access its funding on future rapid transit projects, IndyGo would adjust its capital program outlined in this document by increasing the total of its anticipated bonds. Additionally, it would seek to reduce expenses through eliminating a portion of the planned contingency from the Purple Line, the Blue Line western corridor would be constrained to that which was in the Transit Plan (i.e., no additional infrastructure past Holt Road), the Red Line extension stations would be slightly pared down, and other adjustments in planned expenditures would be made to assist in cash flow as the debt would be retired.

CAPITAL EXPENDITURES

Implementation of the Transit Plan will include local service improvements, fleet replacement, construction and operation of rapid transit corridors, bus stop optimization and adjustments, information technology upgrades, improvements to supporting infrastructure, and the expansion and enhancement of transit operations and maintenance facilities. The expenditures associated with these improvements fall into six categories:

- **Fleet:** These expenses include planned replacement of local-fixed route vehicles, paratransit vehicles, and support vehicles for IndyGo's existing electric fleet, as well as equipment to maintain the fleet in good condition.
- **On-street infrastructure and bus rapid transit:** The core of the Transit Plan is the implementation of three rapid-transit lines and the switch to a grid-based local network with faster and more frequent service running longer hours. The capital expenses associated with bus rapid transit are substantial and represent a significant majority of capital expenditures over the next five years. In addition to implementing the rapid transit corridors, IndyGo is working with the City to explore one-way street conversions and other infrastructure projects, as well as improving several local route stops, shelters, and sidewalks.
- **Facilities projects:** As IndyGo increases its fleet and the size of its staff, it is updating, upgrading, renovating, and modernizing its facility to accommodate its growth. Several projects are planned for IndyGo's primary administration and maintenance facility at 1501 W. Washington St. IndyGo is also pursuing the redevelopment of an industrial site to serve as a training and contingency facility and level boarding modifications at the downtown transit center.
- **Information technology and finance:** Similar to other transit agencies in large cities, IndyGo deploys several systems that improve its efficiency in monitoring and operating transit service; many of these systems fall within the purview of information technology and/or finance. IndyGo anticipates dedicating resources to upgrading existing systems, maintaining systems, and adopting new technologies as part of this five-year capital effort.
- **Public Affairs:** IndyGo's public affairs team is responsible for internal and external communication, business development, enhancing the rider experience, promoting customer service, advancing a number of special projects, engaging with advertisers, and assisting in translating the community's needs into agency initiatives. These tasks rely on exceptional communication and reliable communication infrastructure. As such, the capital needs associated with IndyGo's public affairs division are meant to enhance the agency's ability to facilitate communication within the agency and between the agency and its riders and other partners.
- **Safety, Security, and Training:** IndyGo considers the safety and security of its employees, passengers, fleet, and facilities in all that it does. Safety and security measures are built into nearly every capital project regardless of size or scope; thus, safety and security expenditures are a sub-component of every project included in this plan. Additionally, IndyGo plans to secure specific safety, security, and training equipment, separate from other projects, over the course of the next five years.

The following pages outline and describe each of IndyGo's planned expenditures through 2024 (and through 2025 for the Blue Line). Detailed tables of expenditures and sources are available in the subsequent section. For projects that have incurred costs prior to the drafting of this plan, the total costs listed here include only the remainder of these projects' costs (unless otherwise noted).

FLEET: REPLACEMENT, UPGRADES, AND MAINTENANCE

Fixed Route Bus Replacement

IndyGo will have 180 vehicles in its operational fleet following the delivery of all BYD BRT buses; among this fleet, IndyGo has vehicles as old as model year 2000 operating in daily service. Vehicles beyond their useful life benchmarks have reduced reliability, require additional service, and create more emissions than more recent model years. Over the past few years, IndyGo has made substantial strides in bringing its fleet under the FTA's useful life benchmarks. Of the 180 vehicles, only four have surpassed their useful life based on years in service and 58 have surpassed the minimum useful life standard in terms of mileage. IndyGo plans to substantially upgrade its fleet as part of the Transit Plan, ensuring its entire fleet is within the useful life for buses.

Additionally, recognizing the environmental benefits, the operational efficiencies, and the reduced externalities of operating electric buses, IndyGo's fleet replacement plan calls for the replacement of all diesel vehicles with electric ones by 2035. In total IndyGo's fleet will include 195 vehicles, comprised of 139 electric vehicles in local service, and 56 electric-vehicles in rapid transit service.

Between 2019 and 2024, IndyGo plans to replace 75 fixed-route coaches. It is planned that replacements in 2021 and beyond will be fully electric vehicles.

IndyGo currently plans a mix of bus purchases and leases to support these bus acquisitions; leasing can result in a substantial cost savings in the up-front cost of these vehicles (when locally funded). IndyGo anticipates a total expenditure of $37,100,000 through 2024 with resources from grants and cash. IndyGo will also pursue competitive grant applications – and creative financing strategies – to speed the process of updating and upgrading the local fleet to bring the fleet into a state of good repair.

Open Door Van Replacement

IndyGo provides paratransit services throughout Marion County to serve those individuals who are unable to utilize the fixed-route transit service; this contracted service is known as Open Door. IndyGo's Open Door service operates a fleet of mid-sized body-on-chassis transit vehicles with wheelchair lifts.

Like fixed route vehicles used by IndyGo, these vans have a limited useful service life before they need to be replaced. To ensure that IndyGo's service remains safe and reliable, IndyGo has programmed $7,315,000 in expenditures though 2024 to replace paratransit vehicles that have met or exceeded their useful service life. These costs will be allocated to grants, and future IndyGo capital revenue.

Other Rolling Stock & Equipment

Support Vehicle Replacement - IndyGo transportation and maintenance teams require quick and reliable transportation to respond to incidents in the field involving buses, operators, or other infrastructure. As with other vehicles in its fleet, IndyGo periodically needs to replace its support vehicles to ensure that they remain safe and reliable for employees. IndyGo has programmed $936,000 through 2024 to replace support vehicles; it is anticipated that these costs will be covered through grants and capital revenue.

Maintenance Heavy Equipment and Other Expenses - IndyGo's vehicle fleet often requires major repairs at its maintenance and operations facility to ensure that buses can quickly be returned to service. These repairs require heavy equipment that has a limited useful life. To enable IndyGo to continue to conduct these repairs at its maintenance facility, this equipment—including, but not limited to, scissor lifts, cutter machines, bending machines, platform and portable lifts, a hydraulic press, a metal lathe, and other heavy equipment—must be purchased and/or replaced. In total, IndyGo anticipates expenditures of $1,800,000 through 2024, a $300,000 investment per year, with funds sourced from grants and future capital revenue.

BRT Bus Docking Technology - Lane Transit District in Eugene, Oregon piloted a magnetic guidance system to guide BRT vehicles into rapid transit stations and achieve precision docking. IndyGo is exploring the potential application of this technology within its BRT system to provide for a consistent and routinely accessible docking maneuver at BRT stations. This system would ease the burden upon coach operators in executing these

maneuvers and ensure reliability and access for those passengers using assistive mobility devices; eliminate the need to deploy bridge plates and ramps, reducing dwell time; and reduce or eliminate vehicle damage due to striking stations.

The system would require modification of existing BRT vehicles require the deployment of magnetic pucks in the vicinity of station areas. The capital plan programs $5,000,000 for this effort starting in 2020; it is currently programmed to be sourced from IndyGo capital revenue, but staff will pursue competitive grant opportunities or other avenues to reduce the local share of expenditure.

Automatic Passenger Counters Upgrade – IndyGo vehicles are equipped with Automatic Passenger Counters (APCs) which are connected to a system that records boardings and alightings on buses throughout the day. This system is the only way in which IndyGo is able to attribute boardings and alightings to individual stops throughout its system. Furthermore, as IndyGo implements the two-hour transfer window and operates the BRT system, the APC system will become increasingly critical in determining overall ridership. IndyGo's ridership of record is derived from its fare payment system; however, the use of mobile app technology and two-hour transfer windows may mean riders may take transfers without having to engage with the fare system a second time; as such, highly reliable APC counters is critical in accurately measuring and monitoring ridership.

IndyGo's newer vehicles are equipped with enhanced, more reliable APC counters, while older vehicles use older hardware. These older units are less reliable and present more variation between boardings and alightings than do the newer counters. Further, the introduction of two types of hardware into a system in which a single measure of ridership is to be derived creates some data integrity challenges. For these reasons, IndyGo is pursuing an upgrade to its APC counters across its buses that have at least five years left among their useful life and have not already been equipped with upgraded APCs. IndyGo has programmed $220,000 from cash reserves in 2020 to advance this project.

Table 14. Fleet: Sources and Uses

	APC Upgrade	BRT Bus Docking Technology	Paratransit Bus Replacement	Fixed Route Bus Replacement	Support Vehicle Replacement	Maintenance Heavy Equipment	Total
2024 STP/CMAQ				$9,744,839			**$9,744,839**
2020 STP				$5,650,000			**$5,650,000**
2021 STP				$4,867,537			**$4,867,537**
FY20195339				$1,934,765			**$1,934,765**
IN-2017-018-11.12.01				$1,743,134			**$1,743,134**
IN-2017-018-11.12.04			$1,233,930				**$1,233,930**
IN-2019-001-11.12.04			$801,228				**$801,228**
FY2023 5310			$679,838				**$679,838**
FY2022 5310			$664,553				**$664,553**
FY2021 5310			$649,612				**$649,612**
FY2020 5310			$635,007				**$635,007**
FY2019 5310			$625,276				**$625,276**
IN-2016-024-11.12.01				$553,589			**$553,589**
FY2024 5310			$473,889				**$473,889**
IN-2019-001-11.12.01				$418,348			**$418,348**
IN-2017-018-11.42.06(						$240,000	**$240,000**
IN-2017-018-11.42.11					$208,000		**$208,000**
IN90X683-11.42.11					$117,681		**$117,681**
IN-2016-024-11.12.04			$77,094				**$77,094**
IN-2016-024-11.42.11					$35,911		**$35,911**
IN-2016-024-11.42.06						$240,000	**$240,000**
IN90X683-11.42.06						$240,000	**$240,000**
Grant Subtotal	**$-**	**$-**	**$5,840,426**	**$24,912,212**	**$361,592**	**$720,000**	**$31,834,229**
Cash	**$220,000**	**$5,000,000**	**$1,474,574**	**$12,187,788**	**$574,409**	**$1,080,000**	**$20,536,771**
Total	**$220,000**	**$5,000,000**	**$7,315,000**	**$37,100,000**	**$936,000**	**$1,800,000**	**$52,371,000**

BUS RAPID TRANSIT & ON-STREET INFRASTRUCTURE

BRT: Red Line Rapid Transit (Phase I)

The IndyGo Red Line Phase I is the first of three major bus rapid transit projects in Indianapolis. The project includes all requirements for BRT—station infrastructure, dedicated running ways, transit-signal priority, level boarding, and off-board fare collection infrastructure—as well as improvements to streets, sidewalks, ramps, and drainage within the corridor. The project cost also includes fully-electric, 60-foot vehicles specifically designed to operate on the planned BRT project.

The Red Line will operate 20 hours per day on weekdays with peak headways between 10 and 12 minutes. Current weekday ridership within the corridor is 7,762, with an expected 10,291 daily riders once the Red Line is operational.

The first phase of the Red Line will reach from Broad Ripple at 66th Street, traveling through downtown to the University of Indianapolis. Design activities for the Red Line occurred from 2015 through 2017, and a construction management contract was awarded in 2016. The Red Line construction contracts were awarded in December 2017, and the Small Starts Grant Agreement was executed in May 2018.

Major construction is complete, as of August 2019. However, additional expenditures will occur under this line item as contractors finish all work related to the project, retainage is released, and expenses related to buses are realized.

Table 15. Red Line BRT Sources and Uses

Total Cost	**$96,329,980**
Total Remaining Cost (as of 7/01/19)	**$41,286,682**
Sources (remaining)	
Federal Small Starts (5309)	**$32,083,989**
IndyGo Capital Cum Fund (Cash)	**$9,202,693**
Uses (remaining)	
Professional Services & Administration	**$2,000,000**
Vehicles	**$17,000,000**
Construction	**$22,286,682**

BRT: Purple Line Rapid Transit

The Purple Line is to be the second of the three rapid transit lines constructed in accordance with the Transit Plan; its operational profile will mirror that of the Red Line (see Red Line Phase I). The cost of the project includes those components required to operate the BRT as well as a substantial investment in streets, sidewalks, and drainage infrastructure.

The Purple Line will replace Route 39, the route with IndyGo's highest single-route ridership. The Purple Line alignment will largely mirror the Route 39 corridor—operating along Meridian Street to 38th Street and east on 38th Street to Post Road—and then extend northward on Post Road. The corridor's northern terminus will be in Lawrence Village. The Purple Line will share the Red Line infrastructure from 18th and Meridian to 38th and Park, providing five-minute headways for those traveling between those stations and downtown. Design for the Purple Line commenced in 2017 and will continue through 2020. Construction is anticipated to begin in late 2020, with revenue service beginning in late 2022 or early 2023.

The Purple Line is in FTA's Section 5309 project pipeline, having been accepted into project development in 2017. The current capital plan anticipates a 50 percent cost share between federal and local resources; however, contingencies are in place to support the project if the federal share should differ from what is anticipated.

Table 16. Purple Line BRT Sources and Uses

Total Cost	**$155,000,000**
Total Remaining Cost (as of 7/01/19)	**$150,736,000**
Sources (remaining)	
Federal Small Starts (5309)	**$77,500,000**
FY2017 Super Stops, Shifted to Purple Line	**$2,800,000**
FY2019 5307	**$3,729,939**
FY2020 5307	**$3,999,978**
FY2021 5307	**$4,455,390**
FY2022 5307	**$5,339,879**
Indianapolis DPW	**$1,200,000**
Bonds	**$9,177,155**
Bond Contingency	**$3,690,716**
IndyGo Capital Cum Fund (Cash)	**$38,842,944**
Uses (remaining)	
Professional Services & Administration	**$21,350,000**
Vehicles	**$22,500,000**
Construction	**$104,626,097**
Financing Costs	**$2,259,903**

BRT: Blue Line Rapid Transit

The Blue Line is planned as the third of the three bus rapid transit lines outlined in the Transit Plan. This BRT facility will mirror the operational profiles of the Red and Purple lines.

The service is planned to operate along Washington Street, generally following what is IndyGo's current Route 8. The line will provide 10-minute service on Washington Street from Cumberland in the east to High School Road in the west; at High School Road, the line will branch with alternating routes continuing in rapid service to the Indianapolis International Airport, via South Perimeter Road, or west on Washington in local service to Bridgeport.

Design activities for the Blue Line began in early 2018. Construction is anticipated to begin in 2023, with revenue service beginning in 2025.

Expenditures during the Project Development (PD) phase of the Blue Line will be funded from the IndyGo IndyGo capital revenue and a bond issuance to be finalized in the second half of 2018. Upon execution of the Small Starts grant, 50 percent of PD expenditures would be reimbursed. Local contributions during the construction phase would be primarily derived from bonds, the Airport TIF, a DPW contribution, and up to $2 million in local match, for the purposes of joint development, provided by the Indianapolis Neighborhood Housing Partnership from its Equitable Transit Oriented Development fund.

Relative to the previous five-year capital plan, the $220,000,000 in planned expenditures for the Blue Line is $20 million more than previously planned. This increase in cost is primarily attributable to the decision to delay the Blue Line construction period until after a number of INDOT projects are completed. Relative to the 2017 Capital Plan (and consistent with last year's plan), this plan includes the extent of West Washington Street, from Holt Road to High School Road, within the project. This area requires substantial improvements to street, sidewalk, and drainage infrastructure (in addition to the costs attributable to stations). The City, through the MDC, has allocated $12.5 million from the Airport TIF as an upfront investment, which will be recaptured through future investments, to support these upgrades.

IndyGo has been approved by the FTA to enter project development for the Blue Line, having submitted a federal Small Starts application in 2018. IndyGo anticipates a federal award of $100,000,000 to supplement local sources required for the project. Contingencies are in place to support the project if the federal share should differ from what is anticipated. [1]

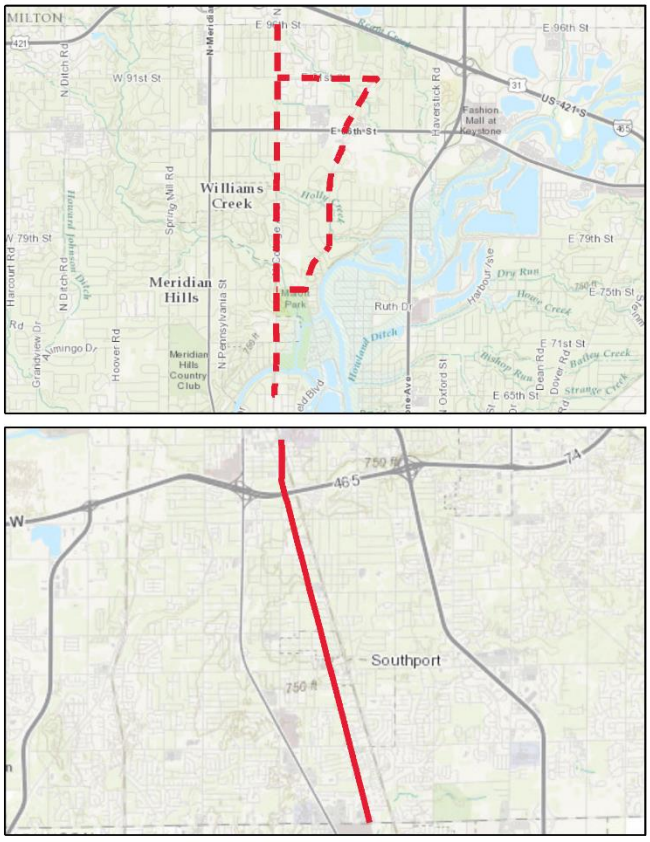
Table 17. Blue Line BRT Sources and Uses

Total Cost	**$220,000,000**
Total Remaining Cost (as of 7/01/19)	**$216,661,000**
Sources (remaining)	
Federal Small Starts (5309)	**$100,000,000**
FY2020 5339	**1,961,009**
FY2021 5339	**2,035,432**
FY2022 5339	**2,179,973**
FY2023 5339	**2,269,803**
FY2024 5307	**6,047,994**
Airport TIF	**$12,500,000**
Indianapolis DPW	**$1,200,000**
Existing Bond	**$2,382,601**
Future Bond (2022)	**$65,000,000**
IndyGo Capital Cum Fund (Cash)	**$19,084,189**
INHP / Joint Development Match	**$2,000,000**
Uses (remaining)	
Professional Services & Administration	**$33,800,000**
Vehicles	**$27,000,000**
Construction	**$145,561,000**
Financing Costs	**$10,300,000**

[1] Note: The total Blue Line expenditures listed on this page include expenditures anticipated for 2025, beyond the five-year horizon for our plan.

BRT: Red Line Rapid Transit (Phases II & III)

As part of the Transit Plan implementation, the Red Line BRT service will be extended to the county line to the north (Phase II) and south (Phase III). This project scope will include all components required to operate the rapid transit service as well as required infrastructure improvements.



The southern alignment of the route is planned to extend southward from the University of Indianapolis, along Shelby and Madison to the vicinity of Greenwood Park Mall. The northern alignment of the route will extend northward from the 66th Street terminus of the Red Line Phase I to College Avenue and 96th St; the alignment between those points will be finalized through the design process.

The *Indy Connect* plan calls for the Red Line to extend northward to the City of Westfield and southward to the City of Greenwood. The extensions of the Red Line outside of Marion County is contingent upon local funding sources being developed within Hamilton and Johnson counties. Preliminary design and environmental work associated with these extensions was conducted as part of the Red Line Phase I design efforts; however, those extraterritorial extensions are not included in this capital plan.

Table 18. Red Line Extensions BRT Sources and Uses

Total Cost	$39,000,000
Sources	
FY2023 5307	$5,889,577
FY2024 5339	$2,295,691
2023 STP/CMAQ (Red Line Ext.)	$4,595,827
DPW	$700,000
IndyGo Capital Cum Fund (Cash)	$25,518,905
Uses	
Professional Services & Administration	$7,250,000
Vehicles	$10,250,000
Construction	$21,500,000

Two-way conversions

Local routes operating on one-way pairs reduce the usefulness of the transit service for riders. For the service to be useful to the rider, both corridors need to be walkable to riders' origins and destinations; by nature, one-way streets create distances that are farther from either origins and destinations. Further, those not familiar with the transit system and its operations may not easily discern that a particular transit line on a map only goes in one direction.

Indianapolis' street pattern has several one-way pairs upon which IndyGo currently operates transit service; these streets will see increased transit service with the implementation of the Transit Plan. At the time of the Transit Plan adoption, East Michigan Street, 30th Street, and Central Avenue were one-way streets recommended for 15-minute service. To make these routes more efficient and effective, it was proposed to these streets to two-way streets with transit service operating in both directions.

These projects would include new traffic signals and pavement markings; they may also require resurfacing of these streets with upgraded sidewalks and pedestrian crossings. Any changes to the City's street network will require the approval of the City of Indianapolis–DPW. IndyGo plans to continue working closely with DPW to plan and implement these projects.

The conversion of Central Avenue occurred in late 2018. IndyGo has completed traffic studies to assess the potential impacts of converting Michigan Street and 30th Street; pending the concurrence of DPW, construction will commence on the Michigan Street conversion in 2020, and 30th Street will begin in 2021.

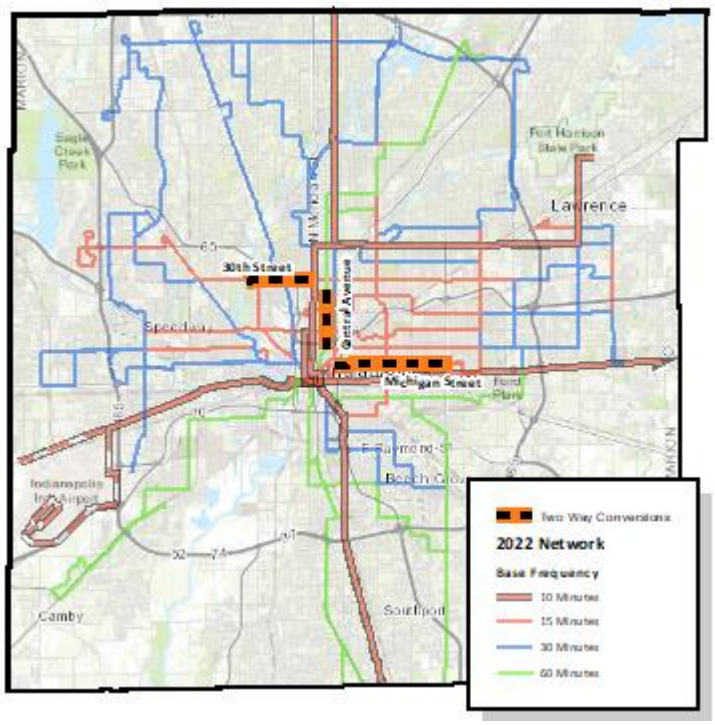


Table 19. Two-Way Conversions: Sources and Uses

	Michigan Street	30th Street	Total
Remaining Cost	**$4,350,000**	**$2,150,000**	**$6,500,000**
IndyGo Capital Cum Fund (Cash)	$4,350,000	$2,150,000	$6,500,000
Construction	$4,350,000	$2,150,000	$6,500,000

Transit Stop Amenities: Shelters, Signs, & Sidewalks

As part of the implementation of the Transit Plan, in accordance with IndyGo's service standards, many local routes will be restructured, and the placement of bus stops may be altered. As part of this effort, bus stops will be added, eliminated, or relocated and locations of existing shelters and other amenities will be adjusted accordingly. As part of this effort, IndyGo is also seeking to optimize the spacing of bus stops to improve system efficiency and service reliability. Planning for these efforts began in 2018.

The implementation of planning and executing bus stop improvements is a complex process; planning for the usage of stops, and stop amenities, on a yet-to-be-activated local network creates further challenges. As part of the route restructuring and bus stop optimization efforts associated with the Transit Plan, some stops will be eliminated, and other stops may see improvements. It is estimated that nearly 75 percent of IndyGo's existing bus stops will be impacted in some manner. For those stops seeing improvements, these efforts may include improvements to adjacent sidewalks, curbs, and ramps.

Prioritization of the placement of local transit amenities, such as benches and shelters, is being based on multiple variables, including transfer points, frequency of service, adjacent land uses and their density/intensity, and their propensity to generate trips.

Beyond the initial investments in 2019 and 2020, and throughout the course of this plan, IndyGo plans for the annual repair, replacement, and/or construction of additional transit stop amenities throughout its service area. As such, these improvements have funding attributed in each year of the plan, through 2024, with resources sourced from bonds and cash.

Table 20. Transit Stop Amenities Sources and Uses

Total Cost Remaining							**$5,300,000**
	2019	**2020**	**2021**	**2020**	**2023**	**2024**	**Total**
Sources (remaining)							
Existing Bond	$423,869	$424,869	0	0	0	0	$848,738
IndyGo Capital Cum Fund	$1,131	$1,200,131	$850,000	$850,000	$850,000	$700,000	$4,451,262
Uses (remaining)							
Professional Services & Admin	$75,000	$225,000	$150,000	$150,000	$150,000	$0	$750,000
Construction	$350,000	$1,400,000	$700,000	$700,000	$700,000	$700,000	$4,550,000

Downtown Local Route "Super-Stops"

The Transit Plan route reconfiguration includes multiple local routes coming from the north and east into downtown, overlapping on their routes into the Julia M. Carson Transit Center. To speed and enhance local service through the downtown area and secure operational efficiencies where these routes overlap, IndyGo is proposing a series of "Super-Stops" that will have many of the characteristics of bus rapid transit stations, except for level-boarding.

These stops will be partially elevated to reduce the step-up height into buses, be longer than traditional bus stops (as there will be several frequent lines which access them, and it is possible that more than one bus may be at the stop at any time), include real-time information, and have sheltered waiting areas. These stops may also include other electronic features, such as security cameras or off-board fare collection.

The first application of super-stops will serve Alabama Street, Delaware Street, and Fort Wayne Avenue, where Routes 10, 19, and 28 overlap; nearer the transit center, these stops may also serve Routes 2, 6, 7, 9, 34, and 37. As part of this project, Fort Wayne Avenue will be converted from a one-way street to a two-way street, between Alabama and Delaware Streets. The corridors upon which these routes operate may also incorporate bus-only or BAT lanes proximate to the Super-Stops; at present, exclusive or semi-exclusive lanes are being explored for Delaware Street. The feasibility of these lanes will be determined, in consultation with DPW, as planning proceeds.

In the original *Indy Connect* plan, the Green Line was envisioned as a rapid transit corridor serving northeast Marion County extending into Hamilton County. During planning for the Green Line, feasibility issues associated with the route and its financial sustainability were identified; it was determined not to proceed with rapid transit planning for that corridor. The area of downtown for which this project is planned is within the planning area for the Green Line and meets the purpose for the funding source associated with planning

activities for that area. Planning efforts for this project have been partially funded through the Green Line planning grant from the MPO, with the remainder of planning resources and all construction resources to be funded through future IndyGo capital revenue. Planning work for this effort is nearly complete, and the project is expected to be constructed in 2020.

Super Stops 2.0: Vermont Street Corridor

As part of planning for the network redesign that will occur in 2020, Vermont Street was identified as a critical east-west connector across town for transit service; the street was selected, in part, to minimize potential conflicts with busier east-west streets and to provide a direct connection to rapid transit stops for the Red and Purple Lines. The proposed reconfiguration of the street to support heavy transit utilization will include the location of a second round of Super Stops, as well as signal enhancements, street resurfacing, and pedestrian enhancements.

The extent of the project would stretch from Vermont St. at Alabama St., to Vermont St. at Indiana Ave., to Indiana Ave. at Michigan St. The goal of the proposed improvements would be to accommodate increased reliability for transit riders, increased levels of comfort and safety, seamless transfers between local buses, the Red Line, and the Purple Line, and decreased risk of significant delay under the new frequent bus grid. This project represents the second iteration of local route Super Stops project; this effort is intended to be funded using local resources only.

Table 21. Downtown Super-Stops Sources and Uses (Delaware, Alabama, & Fort Wayne)

Total Cost Remaining	**$2,541,000**
Sources (Remaining as of 7/1/19)	
MPO Green Line Grant	$104,800
IndyGo Capital Cum Fund (Cash)	$2,436,200
Uses (Remaining as of 7/1/19)	
Professional Services & Admin	$141,000
Construction	$2,400,000

Table 22. Super Stops 2.0: Vermont Street Corridor

Total Cost	**$2,400,000**
Sources	
IndyGo Capital Cum Fund (Cash)	$2,400,000
Uses	
Professional Services & Admin	$300,000
Construction	$2,100,000

Mobility Hubs Infrastructure

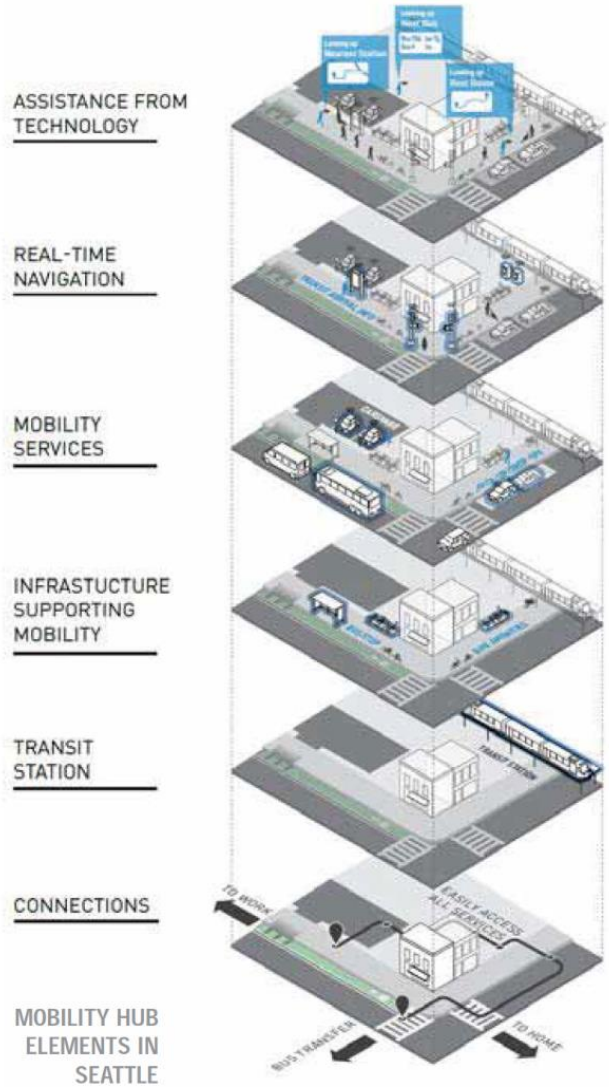
The City of Indianapolis *IndyMoves!* Plan, the city's transportation integration plan, called for the City and IndyGo to work collaboratively to advance the development of mobility hubs, defined within that plan as:

> *"[Facilities] to make transportation connections seamless. Mobility hubs can include transit connections, high-quality pedestrian and bicycle access, safety and comfort amenities (such as lighting, weather protection, and restrooms), wayfinding and trip planning information, ride-hailing pick-up and drop-off space, dedicated car and bike share parking, bicycle storage, real-time travel information, payment kiosks and fare vending, electrical vehicle charging, commuter services, and placemaking and public realm activation.*

Physically co-locating mobility services in strategic areas—near rapid and/or frequent transit routes, and adjacent to vibrant neighborhood nodes, affordable housing projects, community amenities, and/or social services agencies—and opening access to these services through community partnerships is a strategic role for IndyGo. These hubs should help to address first/last mile connection challenges, increase ridership, and serve as an impetus for improving access to the mobility ecosystem, of which the transit system serves as the backbone.

In 2018, IndyGo was awarded a technical assistance grant from the FTA through the Shared Use Mobility Center to focus on planning with community-based partners around the deployment of mobility hub(s). In advancing those efforts, IndyGo has been working collaboratively with the John Boner Neighborhood Center and Englewood Community Development Corporation. This effort will culminate in the production of a *Mobility Hubs Business Plan* to be completed later this year; this business plan will guide the deployment of demonstration mobility hubs, from which IndyGo will learn lessons, adapt approaches, and further build these facilities into its future planning and deployment efforts.

This plan calls for the development of two demonstration mobility hubs that will serve to advance the state of practice around mobility hubs, identify lessons learned and best practices, and serve as the basis upon which IndyGo grows and adapts this strategy to other locations. This effort is targeted for 2020, with local capital funds programmed for this effort.



MOBILITY HUB ELEMENTS IN SEATTLE

Source: Seattle Department of Transportation

Table 23. Mobility Hubs

Total Cost	**$640,000**
Sources	
IndyGo Capital Cum Fund (Cash)	**$640,000**
Uses	
Professional Services/Admin	**$140,000**
Land Acquisition	**$100,000**
Equipment	**$200,000**
Construction	**$200,000**

Other On-Street Infrastructure

Transit Signal Priority - Transit Signal Priority, or TSP, is a technology that permits vehicles to communicate with signals at intersections and give the vehicle priority over other traffic. In practice, these systems hold a green phase of a light for a few extra seconds to allow approaching buses to pass through the intersection or shorten the length of a red light for a bus stopped at a signal. These systems are designed to work with other systems providing "pre-emption" authority to emergency vehicles, in which the movement of emergency vehicles preempts all other traffic movements through an intersection, including buses.

IndyGo will include TSP equipment in its BRT corridors, contributing to the service reliability of the BRT system. Likewise, IndyGo will conduct analyses to assess the need for TSP systems elsewhere throughout its local service network to improve service reliability and secure operational efficiencies.

IndyGo anticipates allocating $1,691,600 in 2020, from a CMAQ award and capital revenue, to fund the installation of additional TSP equipment throughout the network.

Table 24. Transit Signal Priority Sources and Uses

Total Cost	$1,691,600
Sources	
2020 CMAQ - TSP	$1,353,280
IndyGo Capital Cum Fund (Cash)	$336,720
Uses	
Professional Services & Administration	$340,000
Construction	$1,350,000

Rural Street Under Pass - As part of the Transit Plan implementation, IndyGo plans to provide crosstown service with a 15-minute base frequency along Keystone Avenue/Rural Street (Route 26). Due to clearance concerns where Rural Street passes below the CSX railroad tracks south of Washington Street, the Route 26 currently makes a substantial out-of-direction detour to Sherman Drive.

This detour will become increasingly costly, requiring additional coaches and operators required to provide 15-minute service on this route. To improve and provide effective high-frequency service, IndyGo is proposing to alter Rural Street to increase clearance beneath the CSX railway. This would permit service to remain on Rural Street and eliminate the time-consuming detour.

IndyGo has begun exploration activities and coordination with CSX and DPW. Based on its preliminary investigations, IndyGo anticipates allocating an additional $1,475,000 from capital revenue to complete this project.

Table 25. Rural Street Underpass Sources and Uses

Total Cost (remaining)	$1,475,000
Sources	
IndyGo Capital Cum Fund (Cash)	$1,475,000
Uses	
Professional Services & Administration	$225,000
Construction	$1,250,000

Image Credit: No Mean City

Table 26. BRT and On-Street Infrastructure Sources and Uses (Remaining)

	Red Line Phase I	Purple Line	Blue Line	Red Line Extensions	Two-Way Conversions	Transit Amenities	Super-Stops	Vermont St Super-Stops	Mobility Hubs	Rural Street Underpass	Transit Signal Priority	Total
Small Starts - Blue			$100,000,000									**$100,000,000**
Small Starts - Purple		$77,500,000										**$77,500,000**
Small Starts - Red	$32,083,989											**$32,083,989**
FY2024 5307			$6,047,994									**$6,047,994**
FY2023 5307				$5,889,577								**$5,889,577**
FY2022 5307		$5,339,879										**$5,339,879**
2023 STP/CMAQ				$4,595,827								**$4,595,827**
FY2021 5307		$4,455,390										**$4,455,390**
FY2020 5307		$3,999,978										**$3,999,978**
FY2019 5307		$3,729,939										**$3,729,939**
FY2017 5307		$2,800,000										**$2,800,000**
FY2024 5339				$2,295,691								**$2,295,691**
FY2023 5339			$2,269,803									**$2,269,803**
FY2022 5339			$2,179,973									**$2,179,973**
FY2021 5339			$2,035,432									**$2,035,432**
FY2020 5339			$1,961,009									**$1,961,009**
2020 CMAQ - TSP											$1,353,280	**$1,353,280**
MPO Green Line Grant							$104,800					**$104,800**
FY2023 5307			$-									**$-**
FY2019 5339			$-									**$-**
Grant Subtotal	**$32,083,989**	**$97,825,186**	**$114,494,210**	**$12,781,095**	**$-**	**$-**	**$104,800**	**$-**	**$-**	**$-**	**$1,353,280**	**$258,642,560**
OTHER												
DPW		$1,200,000	$1,200,000	$700,000								**$3,100,000**
Airport TIF			$12,500,000									**$12,500,000**
Joint Development			$2,000,000									**$2,000,000**
Other Subtotal	**$-**	**$1,200,000**	**$15,700,000**	**$700,000**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$17,600,000**
Cash	$9,202,693	$38,842,944	$19,084,189	$25,518,905	$6,500,000	$4,451,262	$2,436,200	$2,400,000	$640,000	$1,475,000	$336,720	**$110,887,913**
Bonds		$12,867,870	$67,382,601			$848,738						**$81,099,209**
Total	**$41,286,682**	**$150,736,000**	**$216,661,000**	**$39,000,000**	**$6,500,000**	**$5,300,000**	**$2,541,000**	**$2,400,000**	**$640,000**	**$1,475,000**	**$1,690,000**	**$468,229,682**

FACILITIES

As part of its ongoing operations, IndyGo regularly engages in maintenance and rehabilitation projects to maintain its facility at 1501 W. Washington Street; this facility houses IndyGo's administration, operations, maintenance, and drivers' facilities. Beyond routine maintenance and rehabilitation projects, this facility will require several upgrades to enable service increases associated with the implementation of the Transit Plan. Additionally, IndyGo plans to acquire and renovate a facility to serve as a training and contingency site. Collectively, these efforts will position IndyGo to remain effective and efficient in providing transit service and adequately house the increase in rolling stock and employees necessitated by the implementation of the transit plan.

Office Area Renovations (Including Furniture)

As the number of IndyGo employees grows, substantial renovations are necessary to house the staff and their job functions. In addition to adding office space, IndyGo must ensure adequate conference space for meetings and ancillary activities. IndyGo is in the midst of office area renovations, with those renovations to be complete later this year; renovations to other parts of the facility are also underway.

Remaining costs associated with office area renovations are anticipated to total $2,380,000; these expenditures will occur mostly in 2019 with an additional expenditure planned for 2021. Funds will be derived from future capital revenue.

Level Boarding Modifications (DTC)

Level boarding—where a boarding or alighting passenger is able to step on or off the bus to a platform that is level with the floor height of the bus—has been shown to significantly reduce dwell times for buses. There is benefit for all users, but level boarding is especially beneficial for passengers using assistive mobility devices, strollers, and bicycles. Reducing dwell times is the primary reason level boarding modifications are considered a key requirement for bus rapid transit service.

When the transit center was designed and constructed, it did not make sense to include level boarding due to variations and incompatibility with IndyGo's existing fleet. However, with the restructuring of local routes that will free up bays in the transit center, with the standardization of buses being used on the rapid transit corridors, and the introduction of three new rapid transit routes, IndyGo will need to retrofit five bays of the transit center to serve the bus rapid transit vehicles and provide level boarding experiences. Additionally, the project will ensure that the configuration of the bays provide accessibility to rapid transit lines.

IndyGo anticipates expending a total of $1,700,000 in 2022 to complete the modifications, with funding derived from capital revenue. These efforts will be funded separately from the rapid transit projects funded through the Small Starts projects outlined previously.

DTC Lounge and Office Area Renovations

In order to accommodate the growth in IndyGo staff associated with the implementation of the Transit Plan, modifications and renovations to the interior of the DTC will be necessary. Most importantly, with the growth in the number of operators providing IndyGo service, the already crowded operator lounge will need to be expanded to accommodate more drivers. Additionally, the office spaces on the first and second floors will be adapted and modified for a different use. IndyGo will retrofit and furnish the second-floor office space in order to potentially house the IndyGo call center; through the design work, an assessment would be conducted regarding the first-floor office space. In total, these renovations are expected to total $750,000 in 2020; these funds will be derived from cash.

Bus Charging Infrastructure

As IndyGo implements bus rapid transit service and shifts more of its fleet to electric-propulsion vehicles, it must install additional charging infrastructure throughout the maintenance and operations facility and

increase the capacity of electrical service to its facility. The addition of this charging infrastructure will enable IndyGo to pursue its long-range bus replacement plan, which calls for introducing an average of eleven new fixed route electric-propulsion buses annually between 2021 and 2035 and 56 new 60' electric BRT vehicles between 2018 and 2022. By 2032, IndyGo projects having a total of 195 buses in its fleet (56 BRT vehicles and 149 in local service), all of which will be electric. This project began in 2018 and is nearly complete. An additional $500,000 is anticipated this effort, to be expended in 2021, from a competitively awarded grant and cash.

Training and Contingency Facility Purchase & Renovation

IndyGo plans to construct a facility in the Riverside neighborhood for regular training as well as to act as the contingency operations location. This facility will contain an approximately 6,000 square foot building that will house a classroom, training equipment, and materials/equipment necessary to serve as a contingency site. The site will also house a large concrete lot where driver training can occur with a Commercial Driver's License (CDL) training course and mock BRT station. In the event that an emergency renders our facility at 1501 W Washington St inaccessible, this site would act as a temporary emergency staging ground; in such an event, the training classrooms could be adapted to provide space for mission critical office staff.

IndyGo anticipates the allocation of $4,900,000 to acquire, construct, and outfit the new facility in 2019 and 2020. Funding for the project will be derived from IndyGo's existing bond and cash

Building Exterior Improvements

In order to maintain its current facility in good condition and limit future renovation expenses, the exterior of IndyGo's main facility needs ongoing maintenance and improvements. Currently, the capital plan calls for repair to structural cracks and lintels in the masonry structure, concrete driveway replacement, and a reconfiguration of the loading dock. These improvements will be funded through a combination of grants and IndyGo capital revenue; the total cost of the improvements is anticipated to be $1,400,000. These improvements will occur in 2021 and 2022.

Masonry Repair - Brickwork and masonry-building materials are durable for several years if they are properly maintained. Periodic tuckpointing and joint repair between bricks is needed to prevent erosion of the masonry from water and other elements; routine maintenance to this effect occurred in 2018. It is anticipated that structural repairs will be needed on the masonry structure and lintels in 2021; these costs are expected to total $300,000.

Concrete Driveway and Loading Dock - The existing driveway surrounding the IndyGo facility—where buses enter and exit the facility—is aging and in need of replacement. The loading dock is also in need of preventative maintenance, repair, and renovation. These efforts will be phased in such a way that they are completed after several other projects to prevent deterioration associated with heavy construction traffic. This project is anticipated to cost $1,100,000 in 2021.

Maintenance Area Renovations

Several renovations are planned for the maintenance area to accommodate additional vehicles, larger vehicles, and the increased number of mechanics that will be required to service the fleet. These efforts will be sequenced in such a way to minimize disruption to operations and to ensure that the facility is able to accommodate the BRT vehicles. Subprojects associated with these renovations include converting pit bays to parallelogram lifts, relocating maintenance supervisor offices, relocating maintenance technician facilities (restrooms, offices, lockers, and computer lab), adapting to accommodate BRT buses, expanding the welding bay, and other changes. These projects are anticipated to total $3,400,000 with funding derived from grants and future capital revenue. Expenditures are anticipated to occur between 2019 and 2021

Wash Rack Replacement, Door Widening & Paint Booth

Washing and maintaining buses requires additional infrastructure beyond what would typically be used in commercial car washes. Most obviously, these wash racks must be able to accommodate much larger vehicles

than standard car washes; further, the system needs to be designed in such a way to remove salt and grime that is accumulated through regular transit service. These services also need to be able to be performed without impacting the finish of the bus. IndyGo's existing wash rack is aging and in need of an upgrade to effectively service an expanded fleet; as part of this upgrade, doors will be widened to enable ease of operations.

To keep the fleet in good condition, IndyGo needs to add a down-draft paint booth. These paint booths help manage airflow and control of paint spray by forcing air through the paint area and minimizing errant spray. This system allows IndyGo's maintenance team to operate more efficiently and service more buses, a necessity with the increase in service.

For this project, IndyGo anticipates spending $2,600,000 in 2019 and 2020, with resources derived from grants and capital revenue.

Drivable Floor Scrubbers/Sweeper

IndyGo uses a drivable floor scrubber/sweeper to maintain its facility to clean garage floors, bus bays at the transit center, and other concrete surfaces; this equipment is necessary to clean and sweep trash, oil, grease, and other fluids in these areas as well as IndyGo parking lots. In turn, this regular maintenance extends the useful life of these facilities.

IndyGo currently has an aging floor scrubber that is at the end of its useful life for its interior facilities; in the winter, this scrubber cannot keep up with the salt and debris brought into the facility from buses. IndyGo currently has no equipment to service its exterior facilities; it currently contracts with a firm to provide these services.

This project would support the replacement of the internal floor scrubber and support the purchase of a scrubber/sweeper that could be used in outdoor operation. The plan programs $250,000 to be spent in 2019 to support these purchases.

Sidewalk, Steps, and Ramps

Among other renovations and repairs necessary to IndyGo’s main administrative and operations facility, as noted throughout this section, the steps, handicamp ramps, and sidewalks around the main entrance of the facility are mostly original to the building. Over time, IndyGo has engaged and patching and minor repair work, but the infrastructure is reaching the point where a substantial repair is necessary; there are currently numerous cracks and unevenness in sidewalks, curbs are starting to deteriorate, and steps are starting to show wear.

IndyGo plans an investment of $200,000, programed from local capital fund revenue, to support this project; it is programmed for 2021.

Solar Array

As part of its transition from diesel to electric fleet, and in order to reduce costs associated with powering its fleet, IndyGo installed a 1 megawatt hour (MWh) rooftop solar array at its primary administrative and operations facility in 2015. The existing rooftop solar array spans four acres, includes 4,300 panels, and cost $2.5 million (in 2015 dollars). The array is rated to generate 1 megawatt per hour at its peak performance; these solar panels were originally installed with the intent of offsetting the charging needs of its 21 electric buses in its fleet at that time.

With the ongoing transition to an electric fleet, IndyGo will continue to consume more electricity. To capture additional solar energy, IndyGo would need to add an additional solar array. This effort was the focus of a competitive grant application to the FTA’s Low-No Emissions program in 2018; IndyGo was successfully awarded $980,000 from this program, 70 percent of the total cost of the project.

IndyGo is currently in the process of planning and designing the array, with an intent to install the array in 2020. In total, $1,400,000 is programmed to this effort, with 70 percent from the federal program outlined above and 30 percent local match ($420,000) coming from IndyGo's capital fund.

Facility Needs Assessment

IndyGo has long considered the utility of owning its own paratransit facility; the training and contingency facility – outlined above -was considered, in part, at its origin to perhaps be adaptable to serve as a paratransit facility in addition to a training site (see further discussion below under illustrative projects). Further, as IndyGo fixed route operations expand in terms of the number of buses, span of service, and size of operator/maintenance staffs, IndyGo has an opportunity to comprehensively evaluate its needs, opportunities, and challenges with respect to its facilities relative to its service(s). To that end, IndyGo plans to expend $100,000 on a facility needs assessment, using cash, in 2020.

Illustrative Projects: Facilities

In addition to those projects for which future capital sources have been identified and programmed, IndyGo is aware of other projects that would be beneficial to the agency, its operations, and/or the experience of its riders should funds become available.

These projects are listed as "Illustrative Projects" in this capital plan. This language is modeled after projects in the MPO's Transportation Improvement Program meaning the project is noted, but costs are not included in the fiscally constrained plan.

Additional Maintenance & Paratransit Facility - IndyGo currently relies on its contracted service provider to house its own operations and maintenance facility as part of the paratransit service contract. This arrangement increases IndyGo's costs to provide paratransit service and increases its risks of a service disruption in the event the contractor is unable to meet its contractual obligations. IndyGo's current contractor passes through costs associated with leasing a facility to IndyGo.

Should funds be available to advance such a project, IndyGo would seek to identify a facility with the requisite size, condition, space, and location to purchase and house its paratransit operations. It is anticipated that any selected facility will need to be retrofitted to include space and infrastructure to include bus wash equipment, exhaust circulation, service lifts, bus parking, electric charging infrastructure, floor drains, a training room, and other equipment. A selected site would likely also require retrofitting to meet IndyGo safety and security standards.

Additional Contingency Site Equipment: Dispatch & Generator – As noted above, IndyGo is currently pursuing the (re)development of a contingency and training site. There are several expenditures that would be necessary to accommodate this site to become a fully-equipped operations center, including a generator and dispatch equipment. Such equipment would expand the usefulness and adaptability of the training and contingency facility and help to ensure continuity of operations should IndyGo's primary facility become inoperable for a prolonged period of time

Table 27.Facilities Sources and Uses

	Office Area Renovate	DTC Level Boarding	DTC Office Renovate	Bus Charge	Training / Conting'cy Facility	Building Exterior	Maint. Area	Wash Rack / Paint Booth & Door Widen	Floor Scrubber	Sidewalk, Steps & Ramps	Solar Array	Facility Needs Assessment	Total
IN90X683-11.44.03							$633,537	$1,327,810					$1,961,347
IN-2016-024-11.44.03							$1,041,107						$1,041,107
Solar Array Low No											$980,000		$980,000
IN-2019-001-11.12.15						$880,000							$880,000
IN90X668-11.44.03								$752,190					$752,190
IN-2019-001-11.12.15							$677,598						$677,598
IN-2019-001-11.42.20				$91,269									$91,269
Grant Sub Total	$-	$-	$-	$91,269	$-	$880,000	$2,352,242	$2,080,000	$-	$-	$980,000	$-	$6,383,511
Cash	$2,380,000	$1,700,000	$750,000	$408,731	$1,796,517	$520,000	$1,047,758	$520,000	$250,000	$200,000	$420,000	$100,000	$10,093,006
Bonds					$3,103,483								$3,103,483
Total	$2,380,000	$1,700,000	$750,000	$500,000	$4,900,000	$1,400,000	$3,400,000	$2,600,000	$250,000	$200,000	$1,400,000	$100,000	$19,580,000

INFORMATION TECHNOLOGY & FINANCE

Enterprise Resource Planning (ERP)

ERP is a business process by which core managerial functions of an organization or business are integrated into one complete system. ERP systems enable the streamlining of information across an agency and may include functions such as accounting, budgeting, human resources, order management, management of capital projects, and other functions. ERP serves as a platform to make complex projects easier to coordinate across departments and divisions.

In June 2016, the IPTC board approved engaging Crowe Horwath to develop and implement a new ERP system for IndyGo. IndyGo previously used Ellipse, a MinCom product, as its ERP platform, supporting core financial management activities, procurement, grants management, and asset management functions. That platform was more than ten years old when it was brought to the board for replacement. Adoption and integration of the new system was begun in 2018; future phases of this effort will occur in 2020 and 2021 and will continue through the remainder of 2018.

For the remainder of the project, IndyGo anticipates expending a total of $1,000,000 with the funding sourced from capital revenue.

Fare Collection & Validation System

In 2017, IndyGo underwent an internal fare study to inform IndyGo's future fare system(s), fare policies, fare structures, and fare collection technologies. The ideal solution was identified to be a comprehensive system, able to operate seamlessly across IndyGo services—BRT, local fixed route, and paratransit —and be convenient and accessible to users.

Through a competitive procurement process, IndyGo selected Parkeon (d/b/a Flowbird) to provide its fare system modernization. Through Flowbird's work, IndyGo riders will have several ways in which riders can pay fares, including but not limited to paying through a smart device (such as a smart card) linked to an account, a mobile ticket, other forms of proof of payment, and cash. This system will support fare validation and fare enforcement activities on IndyGo's bus rapid transit system.

This effort begun implementation in the second half of 2018 and will continue through 2019. In total, IndyGo expects to invest a total of $4,268,678 in this project, $3,373,937 of which are capital costs. IndyGo anticipates an additional $1,338,000 to be expended in 2019 associated with this project; these funds will be derived from IndyGo capital revenue.

Wireless Vehicle Communication

IndyGo requires enhanced mobile data communication capabilities, bandwidth, and speed to meet data transmission requirements for its transportation platforms. Currently, IndyGo is using the city's public data radio network which is nearing the end of its useful life in terms of its functionality for IndyGo's purposes. This functionality is especially critical in supporting real-time data functionality for IndyGo dispatch, telematics, passenger information, and safety and security functions across platforms.

These systems need periodic upgrading to keep up with technological advances; beyond that, upgrading these systems will proved for enhance data collection capabilities, more accurate location and schedule data, and tracking performance metrics. These upgrades may also be a prerequisite for other systems IndyGo is pursuing and may also be used to provide wireless access for IndyGo passengers. These upgrades are underway; an additional $820,000 is expected to be expended through the rest of 2019. These funds will be derived from IndyGo capital revenue.

ITS Upgrade (CAD/AVL)

IndyGo is committed to identifying and deploying the industry standard (or better) with respect to technological tools that enable it to manage its operations and serve its customers. One tool advancing this

commitment—and allowing for the collection, analysis, and dissemination of reliable data of its existing fleet of transit vehicles—is a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system.

IndyGo has selected Avail Inc., to replace IndyGo's previous CAD/AVL system with state-of-the-art Intelligent Transportation System (ITS) solutions that provide enhanced functionality for data collection, real-time information, web and mobile application capabilities, and the potential for integration with other services. Avail's systems are being deployed across IndyGo service platforms—BRT, local fixed route, and paratransit services—and support vehicles.

This ITS upgrade will underway; the capital plan allocates a remaining amount of $2,375,000 for this upgrade, in 2019, sourced from grants and capital revenue.

Hastus Software Upgrade

GIRO, Inc. provides the HASTUS software solution for route scheduling and planning, customer comment tracking, and daily operational functions. Adapted for multiple platforms, Hastus provides advanced operations optimization techniques and powerful data-management tools. IndyGo has used HASTUS since 2005, upgraded the system in 2015, and plans to upgrade again in 2020.

The platform includes modules for Planning, Scheduling, Operator Bid, Self Service, Bid Web, Daily Operations, Employee Management, Customer Service, and web-based route planning information systems. The Daily Operations Module manages operator payroll and attendance as well as Operator Bidding and Employee Management. The Planning side provides all data from bus stops and shelters to route schedules and operator work shifts. The customer services module manages comments as well as trip planning via the website and other real-time platforms.

IndyGo has programmed $800,000 in 2020 for the upgrade; resources are to be drawn from a combination of grants and cash.

Data Warehouse

As part of the implementation of the IndyGo *Strategic Plan*, adopted by the Board of Directors in February 2019, IndyGo is committed to establishing and sustaining a performance-driven organization. As part of this effort, IndyGo staff are working collaboratively to identify, define, and develop key performance indicators (KPI) for the agency and for individual departments and divisions. IndyGo currently has a number of systems that generate agency data that can be helpful in monitoring and assessing performance; however, these data are often housed across various systems that do not easily communicate with each other. The goal of this project, in support of the strategic planning goal, is to implement a centralized data warehouse that would serve as a clearinghouse and aggregator of data from across agency systems. This system would serve as the back-office engine for any employee- and/or public-facing KPI dashboards and provide easier access to agency data for analysts. IndyGo has programmed $64,000 from IndyGo capital revenues in 2020 for this project.

Disaster Recovery and Business Continuity Plan

In an effort to ensure that IndyGo establishes a business continuity plan (BCP, or COOP in Transportation parlance) that will incorporate all aspects of operational functionality, our current COOP will be revised to fulfill the needs for continued operations of all affected departmental areas. With this initiative, we will address current business processes and procedures, operational asset recovery and normalizing (transitioning back to normal state), security, safety, communication plans, and physical movement of assets/personnel based on various event levels and its severity resulting in a negative impact to business. Through the execution of the final plan, IndyGo will perform event recovery exercises at least twice per year, one being from a tabletop exercise and the other from forcing a randomly selected event without warning.

The revised COOP document will be assessed at least once (1) a year for potential revision and/or updates. The ownership of the revised COOP document will reside with the Vice President of IT / CIO, or as designed by the CEO.

Key components of the COOP are as follows:

- Contingency plan for key infrastructure assets
- IT – initiative to move critical applications and services to the cloud (IaaS, PaaS, SaaS)
- Establishing at least one (1) physical contingency location for personnel and key operational assets (i.e. housing diesel and electric fleet, etc.)
- Analysis of key business processes to establish the existence of alternative solutions
- Communication plan(s) including methods and platforms (i.e. email, Twitter, Facebook, company website, etc.) to make aware the event level and severity to all applicable parties

Funding for this project will be sourced from grants and local capital funds, in an amount of $825,000, in 2020.

Illustrative Projects: IT/Finance

In addition to those projects for which future capital sources have been identified and programmed, IndyGo is aware of other projects that would be beneficial to the agency, its operations, and/or the experience of its riders should funds become available.

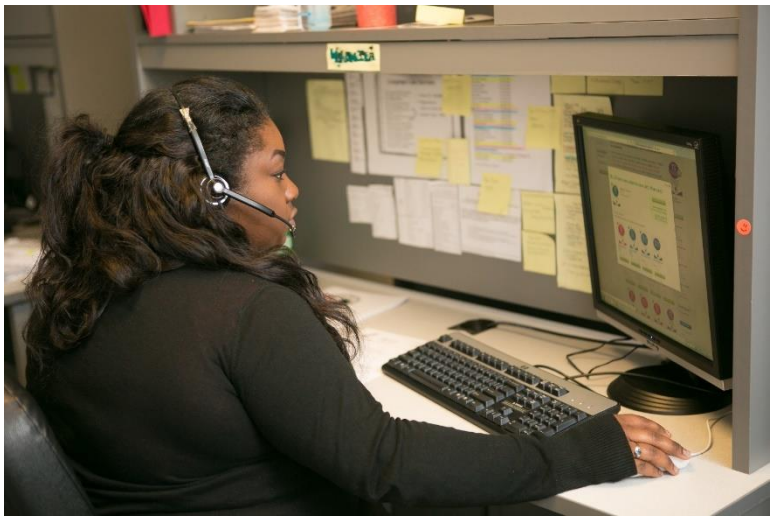
These projects are listed as "Illustrative Projects" in this capital plan. This language is modeled after projects in the MPO's Transportation Improvement Program meaning the project is noted but costs are not included in the fiscally constrained plan.

Payment Integration Platform – As noted above, IndyGo is working with Flowbird to develop and implement a modernized fare payment system. While this system itself represents a significant upgrade to how the public pays for and experiences the transit system, the platform can serve to revolutionize the shared mobility system throughout IndyGo's service area through payment integration with other mobility providers.

As part of its RFP process that resulted in the selection of Flowbird, IndyGo listed a system architecture that could provide for these integrations and the potential for enhanced partnership portals as part of its desired outcomes. Flowbird's system design includes such an architecture that can be adapted to expand into an integrated payment platform with limited technical upgrades.

Achieving such an integration was one of the core components of IndyGo's submission to the FTA as part of the FTA's Integrated Mobility Innovation grant program in August 2019. As IndyGo awaits response on the success of that application, IndyGo will continue to seek out opportunities to achieve this integration.

VOIP Solution- IndyGo transitioned itself to a cloud-based voice communications system (VoIP) in 2017. We currently have an agreement with our VoIP provider (Vonage) on a month-to-month basis. The project seeks to go out for solicitation and establish a contract with a VoIP provider over a three-year term with optional two years to garner better pricing and support. Key components of the solution include enhanced administrative capabilities, interoperability with existing assets, enhanced mobile and desktop capability, distinguished admin portal security levels, call recording storage and archiving, unified messaging, enhanced conference calling and optional eFaxing.



This effort is programmed to be funded through IndyGo's operational budget; however, should grant resources be available for this project, IndyGo would consider a capital expenditure.

Secure Communications Network

IndyGo desires to enhance its communications network to make those communications more secure. Such could be achieved through a dedicated secure communications network that would utilize a microwave or small cell technology at our BRT stations; this service could further be adapted to operate across the entire IndyGo fleet. Through such a project, the planning and design phase would seek to identify and resolve logistical issues related to expansion and existing infrastructure. It is anticipated that this project could result in a substantial cost savings relative to our current operations with respect to communications. IndyGo staff will identify potential grant opportunities that could support the planning, design, and implementation of this project.

Table 28. IT & Finance Sources and Uses

	ERP	Fare Collection	Wireless Vehicle Comms	ITS Upgrade (CAD/AVL)	Hastus Upgrade	Data Warehouse	Disaster Recovery BCP	Total
IN-2016-016-11.42.08				$1,153,245				**$1,153,245**
IN-2016-016-11.71.03				$660,629				**$660,629**
IN95X046-11.71.03)							$651,741	**$651,741**
IN95X046-11.42.08					$251,267			**$251,267**
IN-2017-018-11.42.20				$32,000				**$32,000**
Grants Subtotal	**$-**	**$-**	**$-**	**$1,845,874**	**$251,267**	**$-**	**$651,741**	**$2,748,882**
Cash	**$1,000,000**	**$1,338,000**	**$820,000**	**$529,126**	**$548,733**	**$64,000**	**$173,259**	**$4,473,118**
Total	**$1,000,000**	**$1,338,000**	**$820,000**	**$2,375,000**	**$800,000**	**$64,000**	**$825,000**	**$7,222,000**

PUBLIC AFFAIRS

IndyGo's public affairs team is responsible for internal and external communication, business development, enhancing the rider experience, promoting customer service, advancing a number of special projects, engaging with advertisers, and assisting in translating the community's needs into agency initiatives. These tasks rely on exceptional communication and reliable communication infrastructure.

As such, the capital needs associated with IndyGo's public affairs division are meant to enhance the agency's ability to facilitate communication within the agency and between the agency and its riders and other partners. This capital plan programs expenditures for an agency intranet, outfitting the IndyGo call center, and for development activities associated with an IndyGo mobile application.

Public Affairs Intranet

The Public Affairs intranet would facilitate enhanced communications capabilities throughout the agency, providing for a critical channel of communication between employees. The Public Affairs team has engaged in planning efforts through 2020, administering a survey of IndyGo employees on communication preferences, to help shape the deployment of the intranet. At full build out, the intranet will host a homepage with timely and important messaging, provide other means to facilitate communication, and host division/department/project-specific pages to facilitate agency collaboration.

The Capital Plan programs $75,000 in 2020 to implement this initiative; these resources are programmed from IndyGo's capital fund.

Call Center

IndyGo plans to bring its call center in house to better coordinate messaging and communication, realize operational efficiencies, and provide for greater oversight of customer service relationships. Bringing the call center back within the organization requires the build-out of the infrastructure necessary to handle call volumes, route and resolve customer comments, and service customer accounts. At a minimum, this infrastructure includes a Customer Relationship Manager software deployment, call center technical hardware (e.g., computers, monitors, headphones, etc.), furniture, and other items. IndyGo has programmed $170,000 to this effort within this plan; these expenditures will be sourced through IndyGo's capital fund and begin this year.

Mobile App Development

Enhancing riders' experience by providing convenient and timely information is critical in attracting and retaining transit users. At present, trip planning, real time arrival, and trip payments are held in separate mobile applications (a legacy of different providers providing the back-office infrastructure for each of these services). Through this project, IndyGo will seek to consolidate trip planning, service alert communication, managing of fare media, and real time arrival into a single, IndyGo-branded mobile application. The mobile app will serve as a one-stop, singular source of information for all IndyGo users. This capital plan programs $150,000 from IndyGo's capital fund to advance this initiative in 2020.

Table 29. Public Affairs Sources and Uses

	Intranet	Call Center	Mobile App Development	Total
Cash	$75,000	$170,000	$150,000	$395,000
Total	$75,000	$170,000	$150,000	$395,000

SAFETY, SECURITY, & TRAINING

Safety and security measures are incorporated within projects listed throughout this capital plan; each activity adheres to and advances IndyGo's safety and security policies. In planning, designing, and constructing any capital project, IndyGo staff and consultants work with IndyGo's Safety, Security, and Training department to ensure activities conform to IndyGo's safety and security protocols.

To that end, most safety and security capital expenditures within this plan are embedded within the various other projects and project budgets outlined throughout this document. In addition to project-specific measures, IndyGo will also need to secure additional safety, security, and training equipment.

Main Facility CCTV

IndyGo maintains closed-circuit television capabilities to ensure the safety and security of its facilities, employees, and visitors. As with any tech-based infrastructure, these systems need to be replaced from time to time as the systems meet the end of their useful life and/or technology or safety and security procedures evolve beyond the ability of the existing system. To that end, IndyGo maintains its safety and security equipment—including the main facility CCTV system—within its useful life and will need to update and upgrade its CCTV system in 2019. In total, IndyGo anticipates an expenditure of $795,000 to be sourced from grants and capital revenue.

Training Simulators

Research suggests the use of a bus training simulator, in conjunction with both classroom and on-the-road training, improves transit driver safety. Simulators continue to build upon basic driving skills while helping to develop effective forward planning and good judgement under pressure. Studies from different Bus Operator Training Simulators have shown that accidents could be lowered by 35 to 60 percent. They have also been shown to be able to improve on fuel economy and the overall efficiency of transit operations.

Simulators can also allow operators to practice driving in different types of weather, traffic and emergency situations without putting the operator or equipment in harm's way. They can be used to recreate accidents that have happened and let the operator see what could have been done differently, enabling this training to occur with no risk to company property, workers, or the community. IndyGo has budgeted a total of $350,000 from cash revenue, in 2020, to purchase one simulator.

Vehicle CCTV

IndyGo maintains closed-circuit television capabilities on its fixed route buses and will include these components on future buses as well. These systems include cameras, DVRs, wireless download capabilities, GPS kits, wireless radios, cables, mounting equipment, a server, and needed software. Specific equipment and apparatuses may vary based upon the needs of IndyGo and the evolution of technology between today and when the equipment is replaced. IndyGo anticipates programming $1,960,000 beginning in 2020 with annual investments thereafter, to be sourced from grants and future capital revenue, to meet this need.

Security Door Upgrades at Main Facility

The safety and security of IndyGo employees, visitors, and facilities are of paramount importance. IndyGo coordinates closely with local, state, and federal entities to ensure that maintains safe and secure environments. To that end, upgrades are needed to the entrances and exits of IndyGo's main facility. These upgrades can be separated into those doors that service vehicular traffic and those that serve pedestrians.

In order to facilitate air movement through the facility, reducing climate control costs and providing for a more comfortable working environment, many large facilities open large doors; however, needing to be mindful of security concerns at our facility, doors cannot be left open throughout the day. To realize the benefits of being able to operate with open doors while containing security risks, IndyGo plans to install security screen doors on doors 1 through 9 in its facility. Pedestrian entrances are also in need of upgrades to ensure that the doors maintain a secure environment.

These expenditures are expected to total $1,100,000 in 2019 and 2020. This project will be sourced from a mix of grants and capital revenue.

On-Board Data Recorder & Collision Avoidance System

Through outreach with other transit agencies and industry events, IndyGo has recently become aware of a video-safety program that provides the agency with real-time operator analytics, focused on capturing and reducing risky driving behavior. The system can track and record data related to driving behavior to facilitate incident review, coaching, and future training. Through this application, the system can assist in reducing collisions, improve safety performance, help Identify hazards, and reduce claims against the agency.

The system records data related to hard braking, speeding, distracted driving, and other risky behaviors. Further, the system tracks the frequency of incidents attributable to specific drivers, specific routes, specific intersections and many other categories; this will help the agency identify and respond to recurring situations. The system is compatible with most bus camera streams and may integrate with many different platforms for information sharing. This system will advance agency goals and objectives related to FTA requirements for safety management system reporting and performance tracking.

To advance this project, IndyGo has programmed $213,000 in 2020 from IndyGo capital revenue.

Table 30. Safety, Security, and Training Sources and Uses

	Main Facility CCTV	Training Simulators	Security Doors	On-Board Recorders	Vehicle CCTV	Total
5307 Security Set Asides			$400,000		$580,541	**$980,541**
IN95X046-11.42.09					$504,753	**$504,753**
IN-2019-001-11.12.15			$337,459			**$337,459**
IN-2019-001-11.32.07					$254,275	**$254,275**
IN-2017-018-11.32.07			$142,541			**$142,541**
IN-2016-024-11.32.07	$140,000					**$140,000**
IN90X683-11.42.09)	$77,483					**$77,483**
Grant Subtotal	**$217,483**	**$-**	**$880,000**	**$-**	**$1,339,569**	**$2,437,052**
Cash	**$577,517**	**$350,000**	**$220,000**	**$213,000**	**$620,431**	**$1,980,948**
Total	**$795,000**	**$350,000**	**$1,100,000**	**$213,000**	**$1,960,000**	**$4,418,000**

ANNUAL ITEMIZED EXPENDITURE TABLES

The following tables show planned expenditures, by quarter, for each project listed throughout the capital plan and annual summaries by program area. While these tables do not include source of funds, they may be cross-referenced with the narrative and tables in the previous section to match these expenditures with individual sources of funds. Note that the detailed expenditures are projections and will be updated with each revision as costs are finalized through procurement efforts, revenue is realized, projects are added or completed, and/or new information otherwise becomes available.

Table 31. 2019 Detailed Expenditures

					$48,880,682
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$8,806,000**
Fixed Route Bus Replacement			$8,200,000	$0	$8,200,000
Support Vehicle Replacement			$306,000	$0	$306,000
Maintenance Heavy Equipment			$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$29,036,682**
Red Line Phase I			$15,286,682	$9,000,000	$24,286,682
Purple Line			$1,500,000	$1,500,000	$3,000,000
Blue Line			$400,000	$400,000	$800,000
Rural St Underpass			$225,000	$0	$225,000
Downtown Super Stops			$50,000	$50,000	$100,000
Vermont Street Super Stops			$100,000	$100,000	$200,000
Transit Stop Amenities			$0	$425,000	$425,000
Facilities					**$5,440,000**
Office Area Renovations			$2,200,000	$0	$2,200,000
Training/Contingency Facility Construction			$0	$1,100,000	$1,100,000
Maintenance Area Renovations			$75,000	$75,000	$150,000
Wash Rack & Paint Booth & Door Widen			$800,000	$800,000	$1,600,000
Drivable Floor Scrubbers			$0	$250,000	$250,000
Solar Array Expansion			$0	$140,000	$140,000
IT & Finance					**$4,533,000**
Fare Collection/Validation System			$863,000	$475,000	$1,338,000
Wireless Vehicle Communication			$410,000	$410,000	$820,000
ITS Upgrade (CAD AVL)			$1,200,000	$1,175,000	$2,375,000
Public Affairs					**$170,000**
Call Center			$170,000	$0	$170,000
Safety, Security, and Training					**$895,000**
Main Facility CCTV Upgrade			$400,000	$395,000	$795,000
Security Door Upgrades			$50,000	$50,000	$100,000

Table 32. 2020 Detailed Expenditures

					$97,709,667
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$13,451,667**
Automatic Passenger Counters Upgrade	$220,000	$0	$0	$0	$220,000
BRT Bus Docking Technology	$0	$250,000	$1,583,333	$1,583,333	$3,416,667
Paratransit Bus Replacement	$0	$1,400,000	$0	$0	$1,400,000
Fixed Route Bus Replacement	$0	$7,800,000	$0	$0	$7,800,000
Support Vehicle Replacement	$0	$315,000	$0	$0	$315,000
Maintenance Heavy Equipment	$0	$-	$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$70,196,000**
Red Line Phase I	$17,000,000	$0	$0	$0	$17,000,000
Red Line Extensions	$3,750,000	$0	$0	$0	$3,750,000
Purple Line	$24,000,000	$1,500,000	$1,500,000	$3,250,000	$30,250,000
Blue Line	$1,000,000	$1,000,000	$1,000,000	$2,000,000	$5,000,000
Michigan St. Conversion	$0	$4,350,000	$0	$0	$4,350,000
Rural St. Underpass	$0	$1,250,000	$0	$0	$1,250,000
Downtown Super Stops	$15,000	$826,000	$800,000	$800,000	$2,441,000
Vermont Street Super Stops	$100,000	$700,000	$700,000	$700,000	$2,200,000
Transit Signal Priority Installation	$170,000	$620,000	$900,000	$0	$1,690,000
Transit Stop Amenities	$425,000	$350,000	$425,000	$425,000	$1,625,000
Mobility Hubs Infrastructure	$0	$140,000	$500,000	$0	$640,000
Facilities					**$8,785,000**
DTC Lounge/Office Renovations	$375,000	$375,000	$0	$0	$750,000
Training/Contingency Facility Construction	$1,200,000	$1,200,000	$1,400,000	$-	$3,800,000
Maintenance Area Renovations	$75,000	$600,000	$600,000	$600,000	$1,875,000
Wash Rack & Paint Booth & Door Widen	$1,000,000	$0	$0	$0	$1,000,000
Solar Array Expansion	$630,000	$630,000	$0	$0	$1,260,000
Facility Needs Assessment	$50,000	$50,000	$0	$0	$100,000
IT & Finance					**$2,489,000**
ERP	$400,000	$400,000	$0	$0	$800,000
Hastus Software Upgrade	$64,000	$0	$0	$0	$800,000
Data Warehouse	$825,000	$0	$0	$0	$64,000
Disaster Recover & Business Continuity Plan	$400,000	$400,000	$0	$0	$825,000
Public Affairs					**$225,000**
Public Affairs Intranet	$75,000	$0	$0	$0	$75,000
Mobile App Development	$150,000	$0	$0	$0	$150,000
Safety, Security, and Training					**$2,563,000**
Training Simulators	$-	$350,000	$0	$0	$350,000
Security Door Upgrades	$50,000	$475,000	$475,000	$0	$1,000,000
On-Board Data Recorders	$213,000	$0	$0	$0	$213,000
Vehicle CCTV Replacement	$1,000,000	$0	$0	$0	$1,000,000

Table 33. 2021 Detailed Expenditures

					Total: $72,173,333
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$5,298,333**
BRT Bus Docking Technology	$1,583,333	$0	$0	$0	$1,583,333
Paratransit Bus Replacement	$0	$1,415,000	$0	$0	$1,415,000
Fixed Route Bus Replacement	$0	$0	$2,000,000	$0	$2,000,000
Maintenance Heavy Equipment	$0	$0	$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$62,800,000**
Red Line Extensions	$550,000	$550,000	$550,000	$550,000	$2,200,000
Purple Line	$12,400,000	$12,400,000	$12,400,000	$12,400,000	$49,600,000
Blue Line	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$8,000,000
30th St. Conversion	$0	$2,150,000	$0	$0	2,150,000
Transit Stop Amenities	$0	$350,000	$425,000	$75,000	$850,000
Facilities					**$3,655,000**
Office Area Renovations	$0	$0	$30,000	$150,000	180,000
Bush Charging Infrastructure	$0	$0	$500,000	$0	500,000
Building Exterior Improvements	$220,000	$930,000	$250,000	$0	1,400,000
Maintenance Area Renovations	$600,000	$400,000	$375,000	$0	$1,375,000
Sidewalks, Steps, and Ramps	$0	$200,000	$0	$0	200,000
IT & Finance					**$200,000**
ERP	$200,000	$0	$0	$0	$200,000
Public Affairs					**$0**
Safety, Security, and Training					**$220,000**
Vehicle CCTV Replacement	$220,000	$0	$0	$0	$220,000

Table 34. 2022 Detailed Expenditures

					Total: $95,630,000
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$4,750,000**
Paratransit Bus Replacement	$0	$1,450,000	$0	$0	$1,450,000
Fixed Route Bus Replacement	$0	$0	$3,000,000	$0	$3,000,000
Maintenance Heavy Equipment	$0	$0	$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$88,950,000**
Red Line Extensions	$550,000	$550,000	$550,000	$550,000	$2,200,000
Purple Line	$12,400,000	$12,400,000	$12,400,000	$12,400,000	$49,600,000
Blue Line	$4,800,000	$29,000,000	$1,000,000	$1,500,000	$36,300,000
Transit Stop Amenities	$0	$350,000	$425,000	$75,000	$850,000
Facilities					**$1,700,000**
DTC Level Boarding Modifications	$0	$0	$850,000	$850,000	$1,700,000
IT & Finance					**$0**
Public Affairs					**$0**
Safety, Security, and Training					**$230,000**
Vehicle CCTV Replacement	$0	$230,000	$0	$0	$230,000

Table 35. 2023 Detailed Expenditures

					Total: $120,106,000
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$5,115,000**
Paratransit Bus Replacement	$0	$1,500,000	$0	$0	$1,500,000
Fixed Route Bus Replacement	$0	$0	$3,000,000	$0	$3,000,000
Support Vehicle Replacement	$0	$315,000	$0	$0	$315,000
Maintenance Heavy Equipment	$0	$-	$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$114,736,000**
Red Line Extensions	$4,550,000	$4,550,000	$11,050,000	$4,550,000	$24,700,000
Purple Line	$18,286,000	$0	$0	$0	$18,286,000
Blue Line	$19,900,000	$17,000,000	$17,000,000	$17,000,000	$70,900,000
Transit Stop Amenities	$0	$350,000	$425,000	$75,000	$850,000
Facilities					**$0**
IT & Finance					**$0**
Public Affairs					**$0**
Safety, Security, and Training					**$255,000**
Vehicle CCTV Replacement	$255,000	$0	$0	$0	$255,000

Table 36. 2024 Detailed Expenditures

					Total: $93,055,000
Project	**Q1**	**Q2**	**Q3**	**Q4**	**Total**
Fleet					**$14,950,000**
Paratransit Bus Replacement	$0	$1,550,000	$0	$0	$1,550,000
Fixed Route Bus Replacement	$0	$0	$13,100,000	$0	$13,100,000
Maintenance Heavy Equipment	$0	$0	$300,000	$0	$300,000
BRT and On-Street Infrastructure					**$77,850,000**
Red Line Extensions	$6,150,000	$0	$0	$0	$6,150,000
Blue Line	$20,000,000	$17,000,000	$17,000,000	$17,000,000	$71,000,000
Transit Stop Amenities	$0	$350,000	$350,000	$0-	$700,000
Facilities					**$0**
IT & Finance					**$0**
Public Affairs					**$0**
Safety, Security, and Training					**$255,000**
Vehicle CCTV Replacement	$255,000		$0	$0	$255,000