



MD 355 Ride On Plus Transit Improvements

*US Department of Transportation National Infrastructure Investments
TIGER VII Discretionary Grant Application*

Montgomery County, Maryland

June 3, 2015



Prepared by:

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Transportation
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TIGER

Tiger ID: mcdot41



Project Overview

Project Name: MD 355 Ride On Plus Transit Improvements

Project Type: Limited stop electric bus service with related stop improvements and Bikeshare

Project Location: Montgomery County (County), Maryland; 6th and 8th Congressional Districts of Maryland; National Capital Region Transportation Planning Board (TPB) Metropolitan Planning Organization

Project Description: The MD 355 Ride On Plus Transit Improvements Project (ROP) will transform mobility options with the implementation of an 11-mile, premium, limited-stop bus service to improve transit travel time and increase transit frequencies in the corridor. Funding for the ROP project will enable the purchase of 14 zero emission electric buses; related infrastructure improvements including bus stop improvements; electric charging stations; accessible pedestrian improvements; real time travel passenger information; adaptive transit signal priority improvements; and Bikeshare stations.

The project will improve passenger transit mobility by connecting riders to high density housing and employment centers, including major private and government job centers, and education centers in the County. The service would include connections to the Walter Reed National Military Medical Center, National Institutes of Health, Nuclear Regulatory Commission and Food and Drug Administration.

The project will leverage lessons learned from the region's USDOT TIGER One grant award that provided the pilot framework and funding for real time passenger information and associated bus technologies in the corridor.

Funds Requested: \$17,000,000

Grant Recipient

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I. PROJECT DESCRIPTION

The MD 355 Ride On Plus Transit Improvements Project (ROP) will fund a MD 355 Ride On Plus premium bus service with 14 zero emissions electric busses as well as transit related infrastructure projects. The project scope includes electric induction charging stations; bus stop improvements; bicycle / pedestrian improvements; real time travel passenger information; adaptive transit signal priority improvements; and Bikeshare enhancements. The ROP will improve passenger transit mobility while connecting riders to major jobs, housing and education centers in the County. The project will leverage resources from the region's USDOT TIGER One grant award that provided the framework and partial funding for real time passenger information and associated bus technologies in the corridor.



The ROP will transform community mobility options by providing enhanced bus service, improved bus travel times, an improved passenger experience and first-mile / last-mile connections through bicycle sharing while reducing emissions in the corridor. Transit users, cyclists and pedestrians will benefit from improved access and mobility to residential and commercial areas. The project provides service and transportation access to 359,000 residents (growing to over 452,000 residents by 2040) and 304,000 jobs (growing to over 407,000 jobs by 2040) within two miles of the corridor. Stop improvements and busses will be compliant with the Americans with Disabilities Act of 1990 (ADA). Additional project highlights are noted below:

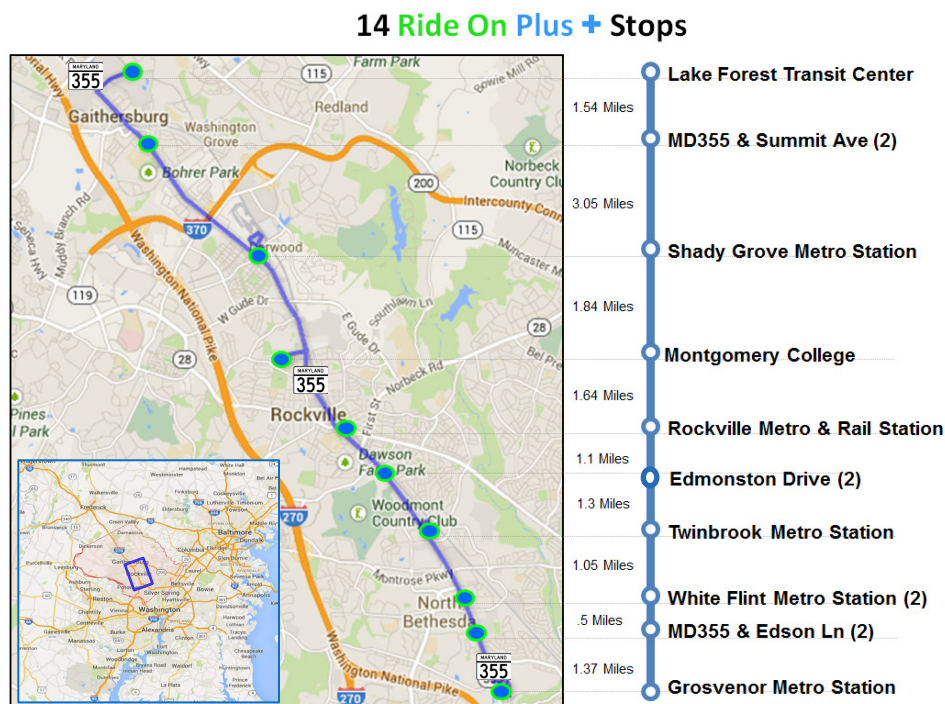
- The MD 355 Ride On Plus project will serve 14 stops along the 11 mile route between the Lakeforest Transit Center in Gaithersburg, Maryland and the Grosvenor Metrorail station near Interstate 495 south of Rockville and White Flint. The ROP will not duplicate existing bus service within the corridor.
- The service will connect to five Metrorail stations, numerous existing local and regional bus routes, Maryland Transit Administration (MTA) commuter bus and one MARC commuter / Amtrak rail station.
- The service is expected to operate seven days per week with 10 minute peak headways and increases in average speeds of 25 to 50 percent over existing Ride On routes.
- Adaptive transit signal priority for the ROP buses at 31 signals along the route will increase transit efficiency and reliability.
- The Bikeshare component will expand the existing Montgomery County Bikeshare system by over 30 percent, the regional Bikeshare system by five percent and provide additional opportunity to expand

the County's existing program to offer free Bikeshare memberships and other benefits to low income participants.

- The County's commitment is for a 20 percent capital match of the project funds, and will be leveraged by the County's commitment to annual payment of both the bus and Bikeshare operating expenses in the corridor. Upon successful award, the final capital match may be larger than the base 20 percent based on agreements to be finalized with municipal and private sector partners upon successful award.
- The project supports Montgomery County's proposed 100-mile master planned bus rapid transit network.
- The project will improve transit, bicycle and pedestrian access within two miles of, and will improve transit, bicycle and pedestrian access to, 50 elementary and middle schools; seven high schools; five K-12 private schools; five hospitals; 13 community centers, seven libraries, five of the top 10 largest employers in Montgomery County, one community college; two universities and over 2,800 senior and subsidized housing units.
- The project has minimal or no right-of-way impacts so environmental documentation may not be required. Transit and stop area amenity improvements meet the definition of [categorical exclusion](#) as noted in 23 CFR Part 771 (See Project Readiness & NEPA section for additional details).

The MD355 Ride On Plus project is supported by Federal, County and Municipal elected officials. Bus improvements are recommended in all of the Montgomery County Master Plans along the corridor. Transit improvement projects are included in Montgomery County's FY2015-2020 Capital Improvements Program, the [Maryland Department of Transportation's \(MDOT\) FY2015-FY2020 Consolidated Transportation Program](#) (CTP), and the National Capital Region Transportation Planning Board's [Transportation Improvement Program and Constrained Long Range Transportation Plan](#).

Map / Table / Figure 1: Project Area Map



A. PROJECT LOCATION & CONTEXT

The project is located in Montgomery County, Maryland just north of Washington D.C. Montgomery County is part of the National Capital Region Transportation Planning Board (TPB) Metropolitan Planning Organization (MPO). The County's estimated population is just over 1,000,000 and is a part of the Washington-Baltimore-Northern Virginia (DC-MD-VA-WV) Combined Statistical Area with a population of over 9,000,000. The proposed project is within two miles of five of the County's [largest employers](#), including the National Institutes of Health with approximately 18,000 employees, the Walter Reed National Military Medical Center with approximately 11,000 employees, Adventist Healthcare with over 5,900 employees, the US Nuclear Regulatory Commission with over 3,000 employees, Montgomery College with over 2,700 employees and the National Institute of Standards with over 2,700 employees. Countywide, [population is forecast](#) to grow to over 1.2 million while [employment is forecast](#) to grow 40 percent to approximately 735,000 jobs by 2040. Within two miles of the service, the ROP will provide improved bicycle and pedestrian access, improved transit travel times and mobility to 350,000 residents (growing to over 450,000 residents by 2040) and 300,000 jobs (growing to over 405,000 jobs by 2040).

The proposed project is expected to improve the quality of life and attract new business by providing intermodal connections to bus and rail, new jobs and additional travel options. Montgomery County offers many competitive business resources including "Fast Track" permitting and a Countywide Transit Corridors Functional Master Plan to guide transit infrastructure supporting economic development and growth.

PUBLIC INVOLVEMENT AND TRANSIT COMMUNITIES

A number of County-led initiatives have focused on improving transit service in the County. Specifically, the County Department of Transportation (MCDOT), the Maryland National Capital Park & Planning Commission (MNCPPC), the Maryland State Highway Administration (SHA), Maryland Transit Administration (MTA) and the Washington Metropolitan Area Transit Authority (WMATA) have worked extensively with the community. Local area master plans such as the 2013 Countywide Transit Corridors Functional

RideOn Plus + Expected Service Plan

High Frequency Service

- 10 minute peak
- 15 minute off – peak

Span of Service

- Peak: 5am – 9am and 3pm – 7pm
- Off Peak: 9am – 3pm and 7pm – 1am
- 7 days/week service



Planned development along MD 355 in White Flint contains an integrated blend of **office**, **residential**, **retail**, and **institutional** uses that creates opportunities for increased transit ridership and short walking and biking trips for both work and non-work needs.

Master Plan will continue to provide guidance on integrating corridors into the existing fabric of the communities as well as future development/redevelopment. Additional public meetings will be held prior to implementation of the Ride On Plus service and a marketing plan will be put into action to maximize ridership in the corridor.

To establish a Rapid Transit System (RTS), the County has formed a number of advisory groups comprised of residents, major employers, business owners and other relevant stakeholders for each active corridor. These groups are engaged in the facility planning process to advise and make recommendations to the County on the design, construction and proposed station locations for the transit corridors including the MD 355 corridor that connect with and runs parallel to the proposed Ride On Plus project. The MTA also has advisory committees in place to coordinate implementation of the connecting Corridor Cities Transitway Bus Rapid Transit (BRT) line, which will connect with both the ROP and RTS network.

Public involvement will remain a priority goal in implementing the ROP Service and related projects. The public and the advisory groups will be actively engaged as the County moves forward with implementation of the project. Additional Title VI analysis will be completed as required.

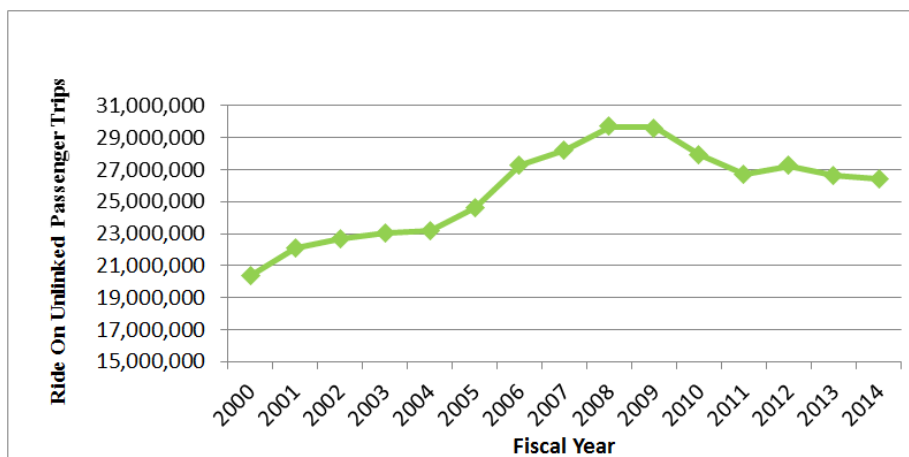
PUBLIC TRANSIT, RAIL SERVICE AND BIKESHARING

Ride On is a local transit service owned and operated by Montgomery County. Since starting as a feeder bus service to Washington's Metro in 1975, Ride On has grown to its current 281 peak vehicles on 78 different bus routes. On an average weekday, Ride On carries 88,370 riders and operates 2,591 revenue hours. Table 2 shows Ride On's unlinked passenger trips from fiscal year 2000 to fiscal year 2014.



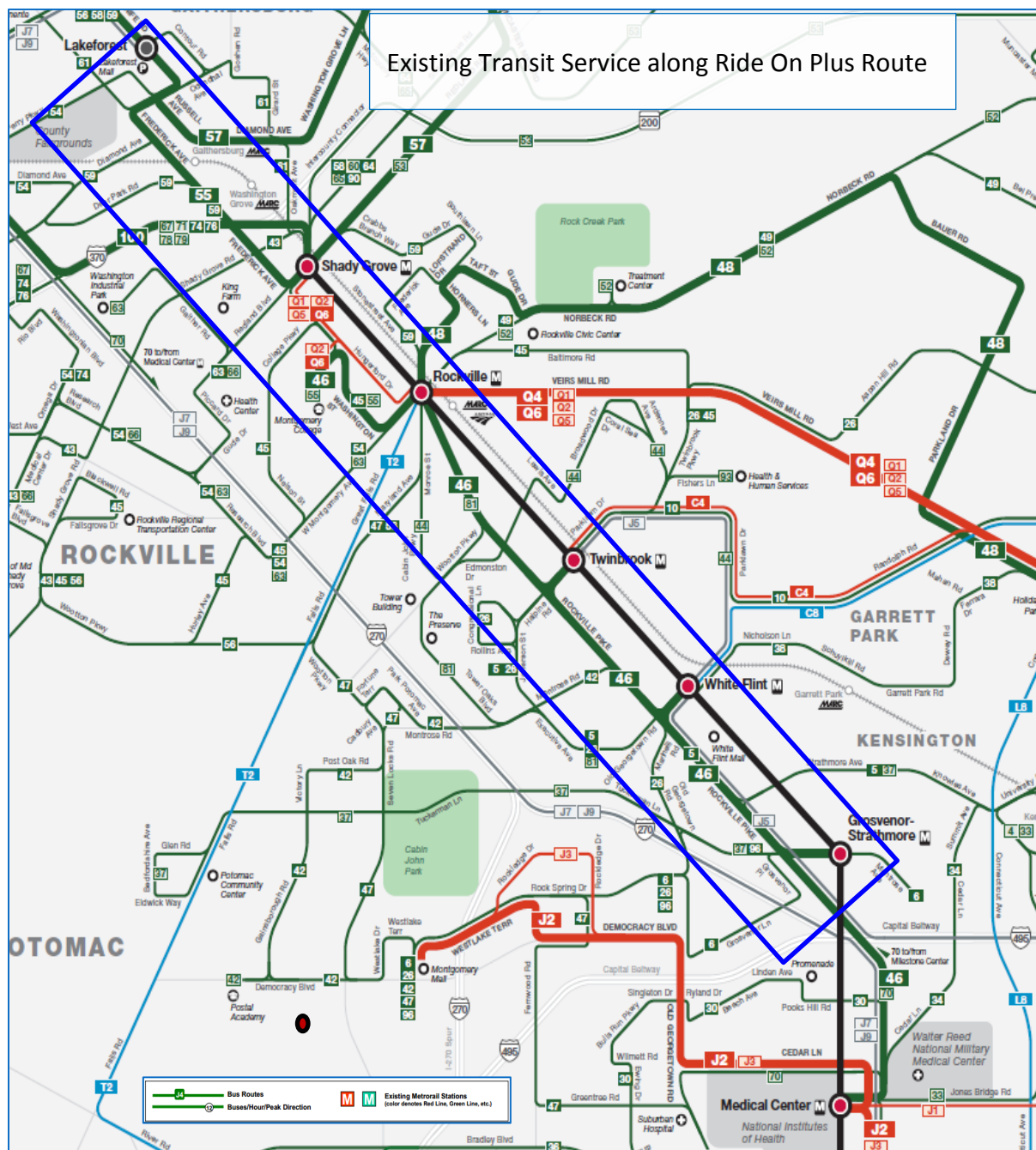
Montgomery County is served by multiple transit agencies. The Washington Metropolitan Transit Authority (WMATA) provides rapid rail service with the Red Line and Metrobus service on 17 bus lines. The Maryland Transit Administration (MTA) operates the MARC commuter rail service and commuter bus service. Ride On provides local and express bus services. In September of 2014, there were over 31,000 daily Metrorail boardings at the Shady Grove, Rockville, Twinbrook, White Flint and Grosvenor stations combined. WMATA-Metrobus, Metro Access (mobility service), and Montgomery

Map / Table / Figure 2: Ride On Passenger Trips per year FY2000 –FY2014



County Ride-On provide public transportation through a fixed route bus system and accessible complementary paratransit demand response service. The Ride On Plus would provide direct or improved connections to over 28 Ride On routes and four Metrobus routes. On average, there are approximately 12,000 daily weekday Metrobus and over 40,000 daily weekday Ride On bus boardings on routes intersecting with the proposed MD 355 Ride On Plus service in Montgomery County. In addition to the local bus and rail, there are over 20 existing Bikeshare stations located in Shady Grove, Rockville and North Bethesda within two miles of the Ride On Plus Route, 50 countywide and over 350 regionwide.

Map / Table / Figure 3: Existing Transit Service connecting to proposed MD 355 Ride On Plus Service



B. TRANSPORTATION INVESTMENTS INCLUDED

The project will transform community mobility options by providing enhanced bus service, improved bus travel times, an improved passenger experience and first-mile / last-mile connections through bicycle sharing while reducing emissions in the corridor. Specific transportation investments included in this project are:

- Fourteen zero emission electric custom-branded buses with front and rear door boarding, computer aided dispatch/automated vehicle location (CAD/AVL) systems.
- Three electric bus induction charging stations.
- At all Ride On Plus stops, 75-square-foot heated and lighted shelters with seating will be installed including electrical hookups and related ADA sidewalk improvements as needed
- Covered bicycle parking at 10 of the 14 stops.
- Real time travel information kiosks with next trip information for Ride On Plus, local and regional bus service, Metrorail, MARC commuter rail, plus location and availability information for Bikeshare and car sharing.
- Expansion of the existing Capital Bikeshare network in Montgomery County to link with the Ride On Plus service with 17 new Bikeshare stations near Shady Grove, Twinbrook, White Flint, the Grosvenor Metrorail station, east and west of MD 355 at Edson Lane, and near the Bethesda Trolley Trail, which is a major north-south, off-road path linking urban centers along MD 355.
- Adaptive transit signal priority improvements at 31 signals along the corridor including signal system hardware/roadside equipment, vehicle hardware, required software and installation.
- Initial targeted marketing and outreach for Ride On Plus service.
- Access to regional trails including the Bethesda Trolley Trail, Carl Henn Millennium Trail, Shady Grove Station Access Trail and other local trails and bikeways included in the County's Master Plan of Bikeways.
- Improved access to numerous local bus stops: the Shady Grove, Rockville, Twinbrook, White Flint and Grosvenor Metrorail Stations; the Rockville MARC Commuter Rail station; and the 21 existing Bikeshare stations in corridor.
- Monitoring and evaluation of project ridership and benefits.

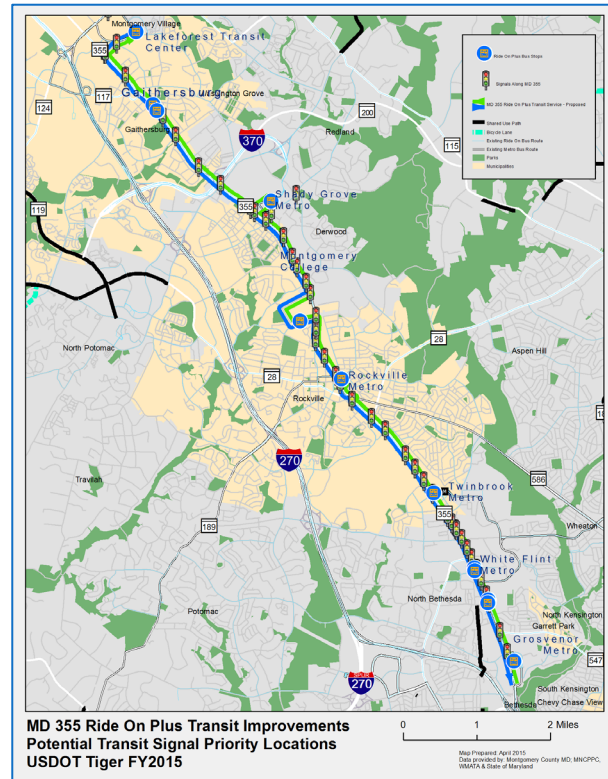
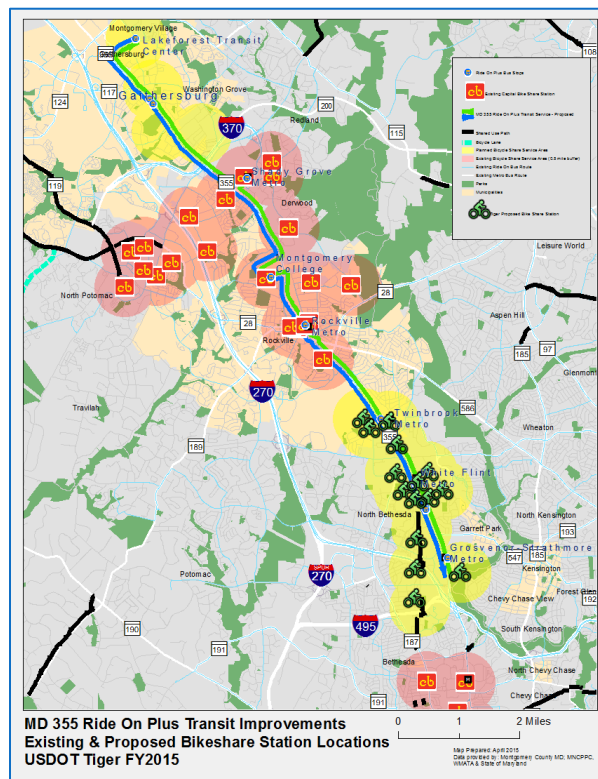
Final design of the signal and stop improvements as noted in Table 4 will meet the requirements of the Americans with Disabilities Act (ADA), the Manual on Uniform Traffic Control Devices, the American Railway Engineering and Maintenance of Way Association, American Association of State Highway and Transportation Officials, and other relevant requirements and guidelines to ensure that a high level of service, safety, and durability are provided.

Short-term Construction Effects and Mitigation

During construction of the MD 355 Ride On Plus signal and stop improvements, construction activities may include temporary sidewalk and intersection detours, which will be coordinated and permitted as appropriate in submitted Maintenance of Traffic plans.

Map / Table / Figure 4: Table of Proposed Ride On Plus Stop & Bikeshare Improvements

Stop Name	Shelter or Shelter Upgrade	Electric Connections	Real Time Travel Info Screen	ADA Improvements	Bike Share (Near ROP Stop / Metrorail Station)	Off-site Bike Share	Covered Bicycle Parking
Lakeforest Transit Center	Upgrade	Yes	Yes	As needed	Future	Future	Yes
MD 355 at Summit Ave NB	Upgrade	Yes	Yes	As needed	Future	Future	Yes
MD 355 at Summit Ave SB	Upgrade	Yes	Yes	As needed	Future	Future	Yes
Shady Grove Metro (West)	Upgrade	Yes	Yes	As needed	Future	Future	n/a
Montgomery College	Upgrade	Yes	Yes	As needed	Existing	Existing	Yes
Rockville Metro	Upgrade	Yes	Yes	As needed	Existing	Existing	n/a
Rockville Stop Edmonston Dr NB	Upgrade	Yes	Yes	As needed	Existing	Existing	Yes
Rockville Stop Edmonston Dr SB	Upgrade	Yes	Yes	As needed	Existing	Existing	Yes
Twinbrook Metro	Upgrade	Yes	Yes	As needed	19 dock station	2*15 dock stations	n/a
White Flint Metro NB	Electric Only	Yes	Yes	As needed	19 dock station	2*15 dock stations	Yes
White Flint Metro SB	Upgrade	Yes	Yes	As needed	19 dock station	2*15 dock stations	Yes
MD 355 at Edson Lane NB	Upgrade	Yes	Yes	As needed	19 dock station	15 dock station	Yes
MD 355 at Edson Lane SB	Upgrade	Planned	Already Planned	As needed	Future	2*15 dock stations	Yes
Grosvenor Metro	Upgrade	Yes	Yes	As needed	19 dock station	3*15 dock stations	n/a
Number of Improvements	13	13	13	14	5	12	10



Map / Table / Figure 5: Maps of Proposed Bikeshare Station Expansion and Transit Signal Priority Improvements

C. TRANSPORTATION CHALLENGES ADDRESSED

This project addresses challenges associated with projected future congestion levels, traffic safety, improved economic competitiveness, and livability for the region. The goal of the project is to accommodate existing and future travel demand, relieve transportation system deficiencies, improve travel safety, enhance intermodal linkages and promote economic development and existing and planned growth patterns. The MD 355 Ride On Plus project is consistent with local, regional, and State planning documents, and does not conflict with the ultimate build out of a MD 355 RTS as listed as a study in the National Capital Regional Transportation Planning Board MPO's Constrained Long Range Plan (CLRP and Transportation Improvement Program (TIP). Any construction will include best management practices for environmental site design to be applied to all aspects of the final design and construction. Ride On Plus is an independent project from the future MD 355 Bus RTS project, though it will help build ridership and demand in the corridor.



US Senator Ben Cardin speaks at 40th Anniversary of Ride On in May 2015 about how Ride On is critical factor in County's Growth

IMPROVED MOBILITY & LIVABILITY

As noted in Montgomery County's adopted area Master Plans and the 2013 Countywide Transit Corridors Functional Master Plan, the County is working towards the creation of an integrated multi-modal transportation system that includes roadways, transit, bikesharing and bicycle and pedestrian facilities. The County encourages and in some cases requires developers to provide bicycle, pedestrian and transit facilities that can be integrated with adjoining land uses throughout the project area. Such facilities are included in the scope of this project as proposed by private sector development. The proposed development includes mixed use land designations that will support shorter trips and provide opportunities for residents to live in close proximity to employment opportunities. Inclusion of Bikesharing stations, improved bicycle amenities at stops and additional bus services will all support improved bicycle and pedestrian mobility in the corridor. Montgomery County has specific Transportation Policy Area Review (TPAR) standards for transit adequacy for all areas of the County. These standards deal with service coverage area, span of service and frequency of services. The Ride On Plus service expansion is expected to improve all of the TPAR transit performance measures along the corridor.

CONGESTION MANAGEMENT AND MOBILITY

Existing congestion on MD 355 and the local street network near the Ride On Plus Service would be improved by the diversion of existing auto trips to bicycling, walking and transit. For additional details on existing and future projected travel patterns in the MD 355 corridor [click here](#).

Map / Table / Figure 6: Existing and Modeled Ride On Bus Ridership along MD 355

Routes	Daily Riders
Ride On Route 46	3,800 – Actual 2014 Weekday
Ride On Route 55	8,100 – Actual 2014 Weekday
Ride On Route 59	3,900 – Actual 2014 Weekday
Ride On Plus – USDOT TIGER VII	5,000 – Modeled 2015

The average congestion along MD 355 has been plotted and tracked as measured speed as a percentage of the free flow speed by time of day.

Congestion along MD 355 in the project corridor is not limited to peak period nor is it directional in nature showing the potential benefits of additional limited stop transit service with signal priority throughout the day northbound and southbound.



Map / Table / Figure 7: Average weekday arterial congestion is shown along the MD 355 Ride On Plus Corridor (March, 2015 – Source www.ritis.org)

Map / Table / Figure 8: Existing & modeled intersection no-build level of service at MD 355 intersections & MD 355 traffic volumes (Source: Maryland State Highway Administration)

MD 355 Intersections	2015 AM LOS (Delay in seconds)	2015 PM LOS (Delay in seconds)		2040 AM LOS (Delay in seconds)	2040 PM LOS (Delay in seconds)
MD 124 (Mont. Vil. Ave)	E (58)	F (97)		E (65)	F (107)
Shady Grove Road	F (96)	E (77)		F (120)	F (87)
Gude Drive	F (81)	D (54)		F (105)	E (76)
MD 28 (Veirs Mill Rd)	C (34)	D (39)		D (38)	D (40)
Twinbrook Parkway / Rollins Ave	C (21)	C (34)		C (25)	D (36)
MD 187/Old Georgetown Rd	D (45)	D (47)		E (69)	E (79)
MD 547 (Strathmore Ave)	C (34)	D (50)		D (45)	E (69)
Cedar Lane	E (62)	F (105)		D (36)	E (71)

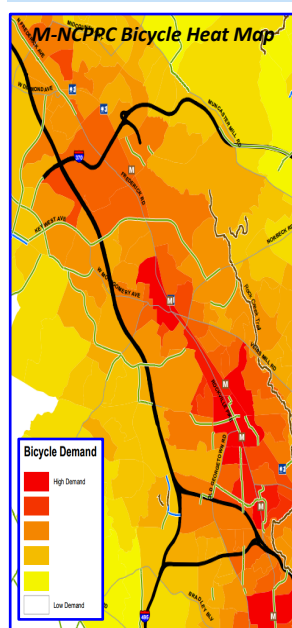
Roadway Sections (North to South)	2015 Average Daily Volumes (counted)	2040 Average Daily Volumes (projected)	Total Average Traffic Growth 2015 to 2040
I-370 to MD 28	41,400 - 50,600	50,100 - 61,000	21%
MD 28 to I-495	40,800 – 60,800	51,200 – 73,325	23%

IMPROVED ECONOMIC COMPETITIVENESS

The transportation investments made under this project are also necessary to assist private development. Development and redevelopment in the area is expected to create short-term economic stimulus with construction jobs and long-term permanent job growth with the addition of commercial, retail, and residential development.

Given its location, the project area provides a unique opportunity to enhance existing mixed-use transit oriented communities. The transportation investments made under this project will connect residents and businesses allowing for shorter trips for all vehicles and modes within the community and from the community to the rest of Montgomery County, Washington D.C., and the region. The White Flint Sector Plan has non-auto driver mode share (NADMS) goals of 50 percent commercial and 51 percent residential that must be met for new developments to move forward to final development stages. There are 63 different private companies with [greater than 100 employees](#) headquartered in communities along the MD 355 Ride On Plus route.

D. EXPECTED USERS



It is anticipated that the proposed service will be used by residents and employees accessing adjacent land uses both locally and regionally throughout the corridor. Currently Ride on Routes 46, 55 and 59 along MD 355 are among the highest ridership Ride On routes in the County. More than 2 to 10 percent of the existing population in many areas of the corridor currently walk or bike to work and the addition of Bikeshare and new transit will greatly benefit them.

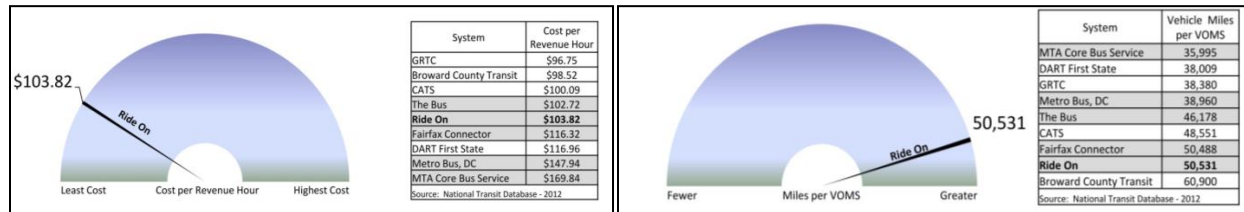
Mode of Egress	# of Responses	% of Responses
Walk	6,173	58.9
Metrorail	1,509	14.4
Ride On	1,326	12.7
Metro bus	650	6.2
Drive a car that was parked	134	1.3
Carpool	88	0.8
Bicycle	62	0.6
Taxi	29	0.3
Multiple answers	506	4.8
Total responses	10,477	
No response	282	
Total surveys	10,759	

Source: Ride On On-board Survey – December 2014

The December 2014 Ride On on-board survey shows almost 60 percent of Ride On users accessing local transit service by bicycling or walking; with over 20 percent connecting to Metrobus and Metrorail. Ride On operates extremely efficiently compared to similar-sized transit systems, with low operating costs per revenue hour and miles operated per vehicle, as shown below. The ROP will benefit from Ride On's operating efficiency.

In July 2011, transportation planners prepared a countywide map to assist in prioritization of investments in bicycle routes and support facilities. Called a Bicycle Heat Map, the tool predicts where demand for bike commuting, errands, or other non-recreation trips is greatest. Greater clusters of homes and jobs, proximity to transit, schools, and other community facilities, and connections between activity centers, all lead to greater bicycling demand. The map above shows high demand for new bicycle routes in Montgomery County in the area of the planned MD 355 Ride On Plus service. The proposed project components will respond to that demand.

Map / Table / Figure 9: Ride On Operating Cost per Revenue Hour & Miles Operated Per Vehicle



E. PROJECT SCHEDULE

The proposed project schedule is shown in Table 10. Specific completion dates may be expedited depending on project schedules set forth in the final grant agreement.

Map / Table / Figure 10: Proposed Project Schedule – MD 355 Ride On Plus Transit Improvements

Project Phase	Phase Status / Initiation Date	Estimated Completion Date
Finalize FTA Grant Agreement	November 1, 2015	April, 2016
Categorical Exclusion Finalized	December, 2015	December, 2016
Complete Capital Funding Contract for Bus Acquisition	November, 2015	April, 2016
Receive Ride On Plus Busses, Testing & Training	July, 2017	September, 2017
Finalize Design for Stop Improvements, Real Time Travel Info. Signs and Charging Station Sites	April, 2016	January, 2017
Performance Monitoring & Evaluation	September, 2016	June, 2019
Finalize Transit Signal Priority (TSP) Design	April, 2016	January, 2017
Install TSP at signals along corridor	January, 2017	January, 2018
Initiate Ride On Plus Service	January, 2018	
Purchase & Install Bikeshare Stations in Corridor	April, 2017	January, 2018
Complete Stop Improvements & Install Real Time Travel Signs	April, 2017	January, 2018
Substantial Completion of all project tasks and project closeout	December, 2018	June, 2019

PROJECT PARTIES

The grant recipient for this project will be the Montgomery County Department of Transportation. The County will oversee all aspects of the project and will coordinate through the Maryland State Highway Administration's (SHA) design review process for completion of the proposed transit signal priority improvements. Agreements with the City of Gaithersburg and City of Rockville for work inside their municipal boundaries will be documented through applicable permit processes. The project has numerous letters of support from local, regional, state, federal, and non-profit representatives who support the project and the application to USDOT for grant funding, all of which are included in Attachment A.

III. GRANT FUNDS & SOURCES/USES OF PROJECT FUNDS

The total cost estimate of the Ride On Plus project is \$21,250,000 (2015 dollars) and the project partners are requesting \$17,000,000 in TIGER VII funding, or 80 percent of total project costs. Local matching funds of \$4,250,000 will be provided by Montgomery County, Maryland. Additional private sector and local municipal match commitments to increase the local match higher than 20% will be negotiated and finalized upon successful award.

Map / Table / Figure 11: TIGER VII FY 2015 Proposed Funding Estimates by Source

Tiger FY2015 Request - Estimated Capital Funding by Source		
Ride On Plus - MD 355 Priority Bus		Project Percent
Tiger Proposed (Federal Share)	\$ 17,000,000	80%
State		TBD
Total County Share	\$ 4,250,000	20%
Other Private & Municipal	\$ -	Amounts TBD
Total Ride On Plus Only	\$ 21,250,000	100%
Annual "Soft" Match %		
Annual Operating 100% Share (Soft Match)	\$ 6,137,500	29%

As of May, 2015, Montgomery County has programmed \$97 million in the adopted FY 2015-2020 Capital Improvement Program (CIP) for Ride On Fleet purchases, \$2.35 million of which would specifically be used as a match on this award. In addition, the County would fund the balance of the total project less any grant award from this or other applicable CIP projects. Link to FY 2015 – FY 2020 CIP:

http://www.montgomerycountymd.gov/OMB/Resources/Files/omb/pdfs/fy15/cip_pdf/500821.pdf

Map / Table / Figure 12: County Hard and Soft Match Overview for Ride On Plus project

County Total Capital Match Upon Award	20% Capital	plus soft	\$	4,250,000
Ride On Bus Fleet Expansion - CIP P500821			\$	2,350,000
Bus Stop Improvements - CIP P507658			\$	130,000
Other County CIP Transfers			\$	1,770,000
Bikeshare Municipal & Private - Capital ^a	TBD	-	\$	-

a = As of February, 2015, in addition to committed capital contributions private sector developers in corridor have committed up to 15 additional right-of-way sites for Bikeshare stations. The City of Rockville has also committed to contributing operating or capital costs upon successful award.

County Annual Operating Costs (County "Soft" Match)			
Bus	Equivalent %	27.8%	\$ 5,900,000
TSP (Maintenance)	Equivalent %		\$ 25,000
Bikeshare County	Equivalent %	1.0%	\$ 212,500
Bikeshare City of Rockville	Equivalent %	Capital &/or Operating for 3 stations	
Bikeshare City of Gaithersburg	Equivalent %	tbd	
Bikeshare Private - Operating	Equivalent %	9 private sites with 5-12 year terms	

It is anticipated that Bikeshare implementation will be leveraged by capital and /or operating match from municipal and private sector partners. Specific municipal and private sector commitments are ongoing and subject to final adoption of transportation mitigation agreements and upon successful award.

Map / Table / Figure 13: Detailed Cost breakout by project item

Project Item	Unit Cost	#	Total Cost
Bus Stop Improvement (Design & Install) (See "Stops" Tab)			
Canopy / Shelter Add / Upgrade	\$ 25,000	13	\$ 325,000
Real Time Passenger Information (RTPI) Signs	\$ 25,000	13	\$ 325,000
Transit Signal Priority (Design & Install)			
Field Hardware & Install (including engineering)	\$ 35,000	31	\$ 1,085,000
Vehicle Hardware & Install (including engineering)	\$ 20,000	14	\$ 280,000
Software & Licensing	\$ 75,000	1	\$ 75,000
Vehicles			
Bus - Electric	\$ 950,000	14	\$ 13,300,000
Bus Computer Aided Dispatch / Automated Vehicle Location	Included	14	Included
Bus Fare Technology (Front & Rear Door)	Included	14	Included
Electric Charging Station (at least one needed)	\$ 1,000,000	3	\$ 3,000,000
Bicycle & Pedestrian Improvements (& Install)			
Bicycle Parking - Covered	\$ 15,000	10	\$ 150,000
Bikeshare Station (Bikes & Docks)	\$ 80,000	17	\$ 1,360,000
ADA Sidewalk upgrades (Linear Feet)	\$ 200	1,000	\$ 200,000
Marketing	\$ 480,000	1	\$ 480,000
Subtotal			\$ 20,580,000
Overhead & Grant Administration (3%)			\$ 670,000
Total			\$ 21,250,000

SCALEABLE PROJECT

While the County would like to implement the Ride On Plus Project and related improvements all at one time, it is possible to reduce the project scope and maintain independent utility and benefit. Ultimately, the benefits of the ROP would not be realized without completing all aspects. While the top priority for funds is construction of the entire Ride On Plus project, the project could still benefit from a grant award of \$14.1 million to fund a stand-alone bus and charging station purchase. The Bikeshare component would be retained, but stop improvements and transit signal priority implementation would be deferred until additional funds were available. Funding the project with two charging stations also could be feasible. The full project request includes three charging stations at \$1 million each. CNG busses priced at a unit cost of \$600,000 each could also be used, but with greater negative impacts on air quality and noise benefits compared to electric busses.

Map / Table / Figure 14: Scalable Project Elements

Project Element	FY15 TIGER Grant	Project Total
Ride On Plus Project – Bus & Charging Stations	13,040,000	16,300,000
Bikesharing Expansion	1,088,000	1,360,000
Scaled Project Total	14,128,000	17,660,000
Priority Full Project Total	17,000,000	21,250,000

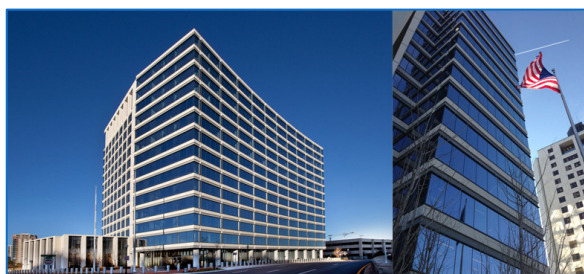
SELECTION CRITERIA

This project is well aligned with the TIGER Discretionary Grant program selection criteria, providing both long-term and short-term benefits to Montgomery County and the surrounding region. In the long-term, this project will provide an important link to the multimodal transportation network, thus reducing operating costs, travel times, vehicle exhaust emissions and other environmental benefits compared with the current conditions. At the same time, the ROP will increase job opportunities, economic competitiveness, and improve livability in the County and National Capital Region by stimulating development of this key corridor into a vibrant, mixed-use community. In the short-term, this project will provide economic stimulus to the region via creation of construction jobs.

A. PRIMARY SELECTION CRITERIA

The positive, long-term outcomes from the proposed investment in the Ride On Plus Transit improvements include annual operating cost savings through a reduction in travel time along this corridor, reduction in commute lengths for riders, conversion of single-occupancy vehicle trips to transit, walking and bicycle trips, and reductions in criteria pollutant and greenhouse gas emissions from vehicles operating in the corridor, and reduced pollutant loads to surrounding waters. Montgomery County's population is expected to increase by over 23 percent by 2040 while job growth is forecasted at approximately 40 percent.

Ride On's state-of-the-art maintenance and operation facility seen below (which opened in October 2013) near the northern end of the Ride On Plus service corridor has capacity to service and maintain the proposed fleet expansion.



Existing construction of high density housing & US Nuclear Regulatory Commission building along planned Ride On Plus Route in White Flint Area

Source: bethesdanow.com & LCOR Corporation

i. STATE OF GOOD REPAIR

The bus purchase component of the Ride On Plus project will enable the County to convert planned bus expansion from CNG / Diesel purchases to electric buses. It is anticipated that maintenance and fuel savings will be realized by this conversion. Smaller bus shelters will be replaced at stops with larger, newer shelters with enhanced amenities to accommodate increased ridership.



ii. ECONOMIC COMPETITIVENESS

The transportation investments made under this project will contribute positively to the future development and re-development in the corridor area. Given its location, the project area provides a unique opportunity to enhance the existing and planned mixed-use, transit-oriented communities. The transportation investments made under this project will connect the proposed communities and improve existing intermodal transportation options allowing for shorter trips for all vehicles and modes both within the community and into Washington D.C. and the surrounding region. Additional Bikeshare stations resulting from future development will also provide opportunities for more users of the project.



iii. QUALITY OF LIFE

This project clearly meets USDOT's goal of providing new affordable and convenient transportation choices. The project supports ongoing efforts towards the development and redevelopment of this portion of Montgomery County into transit-friendly, mixed-use urban centers that are less auto dependent communities. In addition to an equitable transit fare structure, Montgomery County offers free Bikeshare memberships, bike safety training, helmets and route assistance to low-income residents through the Job Access Reverse Commute Program. These participants would benefit from the addition of new Bikeshare resources in the County to access transit and job opportunities.



Conceptual Covered Bicycle Parking Design

This project directly furthers the "livability principles" developed by US DOT, US HUD, and US EPA as part of the Partnership for Sustainable Communities. Specifically, this project will:

- provide more transportation choices to the region’s population;
- expand availability of location-efficient housing within Montgomery County;
- provide greatly enhanced public access and mobility to a region;
- enhance the economic competitiveness of Montgomery County by improving the overall transportation system and allowing the development of new sources of employment; and
- enhance the quality of life by providing permanent bicycle and pedestrian facilities.

The project will also support existing and proposed dense, transit-friendly, mixed use urban neighborhood communities by improving transit, bicycle and pedestrian access and mobility for residents in the corridor.

iv. ENVIRONMENTAL SUSTAINABILITY

The project will promote environmental sustainability by providing the following benefits:

- Reduced travel time and congestion will reduce vehicle emissions of particulate matter; nitrogen oxide, carbon monoxide, Volatile Organic Compounds and carbon dioxide;
- Convert vehicle trips from single occupant vehicle to transit, bicycling and walking;
- Utilize the following green elements in the project design where feasible: zero emission electric buses; solar Bikeshare stations; and energy efficient signals.



Photo: Metrobus and Ride On Shared Stop

Source: www.justupthepike.com

v. SAFETY

While the project is not primarily a safety project, safety will be maintained through traffic plans during implementation. The ROP will incorporate appropriate safety elements into the adaptive transit signal priority (TSP) system design. Specific TSP design safety elements include use of a signal control algorithm that adjust signals to maintain safe and adequate pedestrian crossing intervals where applicable; emergency vehicle pre-emption; and basic timing plans that maintain safe operations requirements. Reduced vehicle miles travelled (VMT) by conversion of auto trips to transit trips can also reduce crash volumes in the corridor.

B. SECONDARY SELECTION CRITERIA

i. INNOVATION

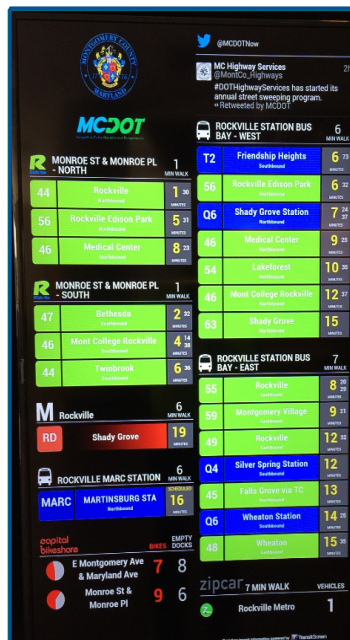
“Proof of Concept” – Electric Buses and Charging Stations

One of the primary intents of this project is to apply innovative electric bus and charging technologies to a high frequency service. Applying the zero emission and energy consumption bus technologies on higher passenger volume routes can magnify the per capita benefits for costs and emissions reductions

for the new transit service. Performance will be carefully monitored to compare operating costs between the new electric bus service and existing diesel / compressed natural gas buses in the fleet.

Real Time Transit Information Screens

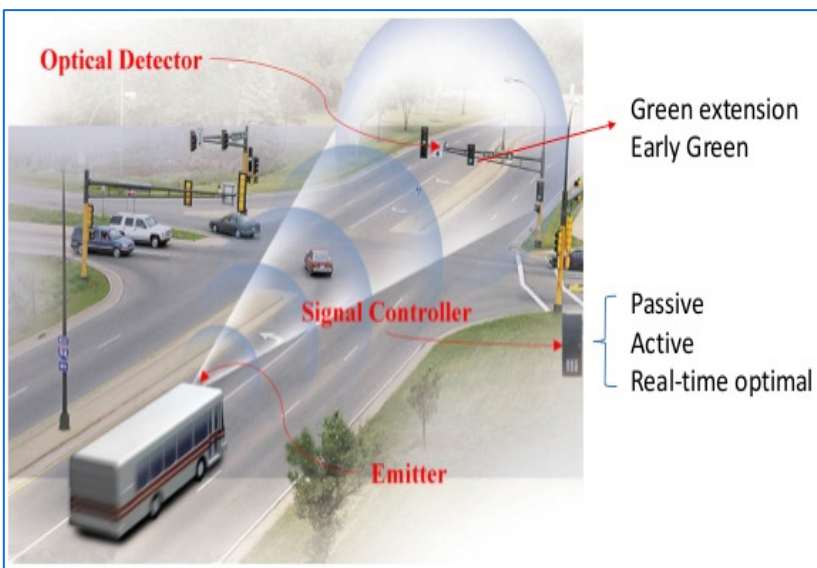
As part of USDOT's TIGER One award, the Washington Region was able to test and install real time arrival displays on priority corridor Metrobus routes around the region including in Montgomery County. The Ride On Plus project intends to build on this success and install up to 13 new real time travel information screens at stops along the route. The newer screens will show information about Metrorail and Metrobus, commuter rail arrivals; Bikeshare availability; and car sharing proximity. This live technology should increase ridership by improving rider confidence in the bus services, enable transit riders to quickly choose and adjust their preferred mode of travel, and promote the short bus headways available from the Ride On Plus service.



USDOT TIGER One Bus Next Bus Arrival Screen & Second Generation Transit Information Screen

Adaptive Transit Signal Priority

The Montgomery County Department of Transportation's Division of Traffic Engineering and Operations (DTEO) and the Division of Transit Services (Ride On) have been working together to implement a transit signal priority (TSP) pilot that includes three traffic signals on Ride On Route 55. Ride On's contractor has provided technical and project management support for the bus side implementation while DTEO has relied on vendor support for the specific road side equipment required. The pilot was placed into operation and traffic signals have been responding to TSP requests from buses since January 2013. The data indicates that the bus equipment and roadside



equipment are performing as planned and expected. Late buses reliably turn on their emitters and send signals to traffic signals equipped for TSP operation. The traffic signal controllers respond to the TSP requests from late buses and react predictably.

The TIGER Ride On Plus project would expand the County's TSP pilot to full implementation at up to 31 signals on MD 355. The successful pilot shows that TSP can be implemented smoothly in the County and will help accelerate this key project element. In addition, USDOT TIGER One regional award has provided a number of valuable lessons learned in the testing of TSP technology around the DC region with respect to both fleet and traffic signal system compatibilities. This knowledge will enable easier implementation of the MD 355 TSP project and provide opportunities for TSP use to be expanded to other local Ride On and WMATA Metrobus routes.

ii. PARTNERSHIP

This project is being sponsored by Montgomery County with partnership for implementation with the cities of Rockville and Gaithersburg; Montgomery College; WMATA and the Maryland Department of Transportation. All partners and owners of adjacent parcels will be involved in aspects of the project that may be affected by pending development plans or where they have the potential for contributing additional funding and partnering commitments. Specifically, partnerships with private and municipal partners are anticipated for installation of stop improvements and siting and operating Bikeshare expansion. Project implementation will be coordinated with ongoing WMATA Metrorail and Metrobus station improvements in the corridor.

BIKESHARE STATIONS AT NEW DEVELOPMENTS

Obtained through Development Approval Process and/or Traffic Mitigation Agreements (TMAGs)

as of 2/9/2015

DEVELOPMENTS BY LOCATION	Site Only	Site & Paymt	Capital Contribution (Est.)	# Years Operating Expenses	# Stations	Estimated Installation Date	Station Size
North Bethesda Area							
Pike and Rose	X				2 or 3	2015	
North Bethesda Market II		X	\$ 65,000	Up to 5	1		19-dock
Rock Spring Center	X				1		TBD
Parklawn North/NIAID	X						
Greater Shady Grove Area							
Mallory Square		X	\$ 170,875	5	1	2015	15-dock
Hanover Shady Grove		X	\$ 55,000	12	1		15-dock
Camden Shady Grove		X	TBD	12	2	2016	
National Cancer Institute	X				1	Dec 2013 (Actual)	15-dock
Shady Grove Station - Pending		X	TBD	12	4		
Gables White Flint		X					19-Dock

Montgomery County will take numerous steps to inform and involve the public and community groups, including holding public meetings/presentations. All proposed traffic signal improvements along the corridor and its intersections/interchanges have been coordinated with Montgomery County and SHA traffic engineering divisions.

iii. JOB CREATION

This project will stimulate economic stimulus into the region's economy through the creation of construction jobs. In the long-term, the project will directly contribute to the creation of an even greater number of permanent new jobs in Montgomery County by enhancing the communities along proposed private development in the White Flint, Rockville and Gaithersburg business districts. See table 15 for a projection of construction spending, construction labor effort and direct and induced job creation for the project construction period. As shown, the construction phase of this project would create 276 job-years. Montgomery County will continue to work with its private sector partners and use all reasonable efforts to promote economic opportunity for all public and private construction related to the project.

Tiger FY2015 - MD 355 Ride On Plus Transit Improvements	Construction Spending	Construction Labor Effort (job-hours)	ROP- Total Job Creation (Job-Years)
Total	21,250,000	2,299,090	276
FY16-17 ROP -Job Creation (Job-Years)	FY18 ROP -Job Creation (Job-Years)	FY19 ROP -Job Creation (Job-Years)	FY20 ROP-Job Creation (Job-Years)
66	68	70	72

Source: USDOT & White House Council on Economic Advisors

Note: Spending per year and per quarter will vary based on final procurement

Map / Table /
Figure 15: Ride On
Plus Construction
Spending and Job
Creation

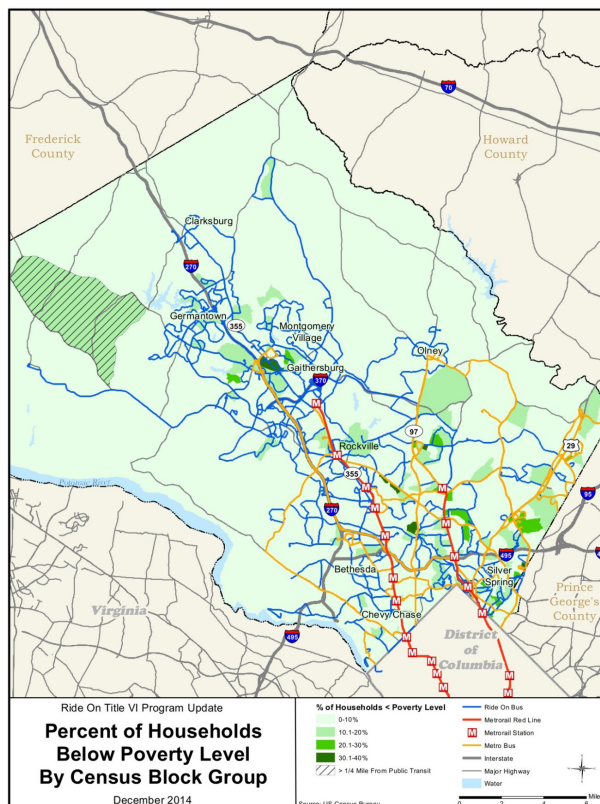
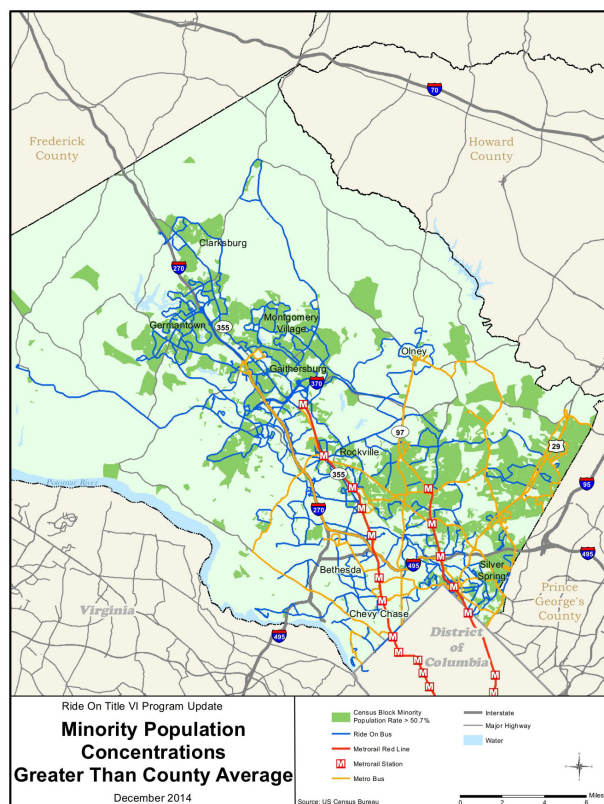
iv. LADDERS OF OPPORTUNITY

This project meets the USDOT's goals for the provision of "ladders of opportunity" by creating or improving connections between people and centers of employment, education, and services while removing barriers to connected systems of transportation. Specifically, the Ride On Plus project will provide new and improved accessible transit, bicycle and pedestrian access to the existing residences and business, parks, schools, community services, local bus, regional commuter rail, light rail, and Metrorail. The MD 355 Ride On Plus "ladders of opportunity" map on page 23 shows the spatial distribution of these linkages within two miles of the Ride On Plus service.

v. RIDE ON PLUS & TITLE VI

It is anticipated that the Ride On Plus project will have significant positive effects on Title VI populations along the corridor. In accordance with federal and state guidelines, the Montgomery County Department of Transportation (MCDOT) monitors the performance of its transit system relative to system-wide service standards and service policies on a tri-annual basis. Overcrowding is a problem on some Ride On routes with peak loads that exceeded service standards. During Fiscal Year 2014 there were four routes that exceed Ride On's PM Peak Hour Load factor policy of 120 percent including Route 55 – 174 percent, Route 59 – 125 percent, Route 61 – 122 percent and Route 1 – 125 percent. The Ride On Plus will help address the overcrowding that is occurring on two of the four routes and provide additional transit service capacity on these routes.

During October 2014, Ride On Route 55 routes carried an average of over 7,700 weekday riders. A 2014 survey of Route 55 riders showed that Route 55 riders are 90% minority and 84.6% low income with household incomes less than \$50,000 per year. Ride On system-wide ridership is 84% minority.



In accordance with Federal Transit Administration (FTA) and the Maryland Transit Administration (MTA) guidelines, Ride On has developed policies, programs, and practices that ensure that federal and state transit dollars are used in a manner that is nondiscriminatory as required under Title VI. FTA Circular 4702.1B. Ride On collects information on the race, color, national origin, English proficiency, language spoken at home, household income and travel patterns of its riders using customer surveys.

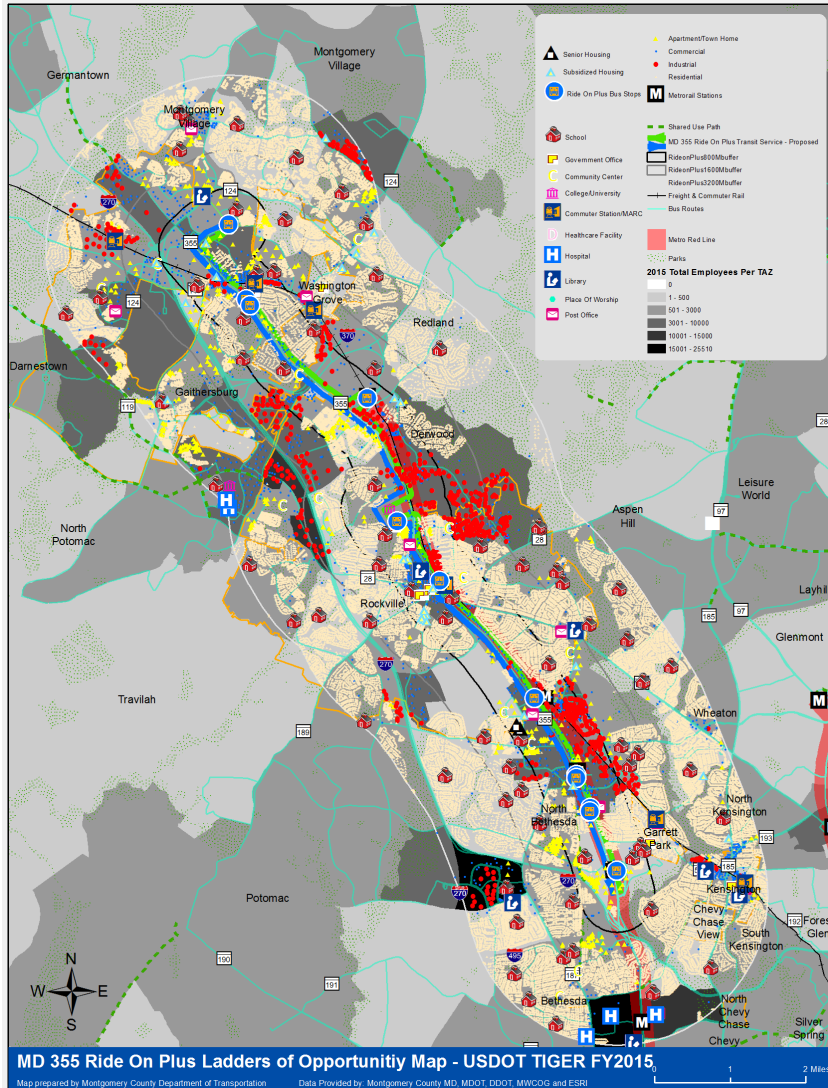
Map / Table / Figure 16: 2014 Montgomery County Ride On Rider Survey – Household Income & Ethnic Backgrounds

Ethnic Background	# of Responses	% of Responses
American Indian or Alaska Native	116	1.14
Asian	966	9.47
Black or African Descent	4,305	42.19
European Descent	1,687	16.53
Hawaiian of other Pacific Islander	28	0.27
Hispanic	2,226	21.82
Middle Eastern Descent	147	1.44
Other and Two or More Races	728	7.14
Total Responses	10,203	100.00
Blank or no response	463	
Total Surveys Returned	10,666	

Source: Ride On On-board Survey – December 2014

Household Income	# of Responses	% of Responses
Less than \$20,000	2,714	29.39
\$20,000 to \$29,999	2,395	25.93
\$30,000 to \$49,999	1,931	20.91
\$50,000 to \$74,999	825	8.93
\$75,000 to \$99,999	456	4.94
\$100,000 to \$149,999	474	5.13
\$150,000 to \$199,999	246	2.66
\$200,000 or more	194	2.10
Total Responses	9,235	100.00
Blank or no response	1,431	
Total Surveys Returned	10,666	

Source: Ride On On-board Survey – December 2014



Map / Table / Figure 17:
MD 355 Ladders of
Opportunity Map
(Click on Map for Higher
Resolution Version)

C. RESULTS / SUMMARY OF BENEFIT-COST ANALYSIS

A detailed [benefit-cost analysis](#) (BCA) was conducted for the Ride On Plus project for submission to the US DOT as a requirement of a discretionary grant application for the TIGER VII program. The [analysis](#) and [worksheet](#) was conducted in accordance with the benefit-cost methodology as recommended by the US DOT in the Federal Register (80-FR-18283), and the 2015 Benefit-Cost Analysis for TIGER Grant Applications (USDOT, April 2015)¹ and the 2015 Tiger Benefit-Cost Analysis (BCA) Resource Guide (USDOT, April 2015)²). As recommended the BCA was conducted for a 20-year analysis period after operations begin in 2018 (2018 – 2037). The BCA provides conservative estimates of both benefits and costs. Full life-cycle costs including replacement of assets at the end of their economic life, operations and maintenance of the system, and recovery of remaining useful life at the end of the analysis period

¹ http://www.dot.gov/sites/dot.gov/files/docs/TIGER_BCA_Guidance.pdf

² http://www.dot.gov/sites/dot.gov/files/docs/Tiger_Benefit-Cost_Analysis_%28BCA%29_Resource_Guide_1.pdf

were assessed. Sensitivity analyses using discount rates of 7 percent and 3 percent along with various assumptions on the methods and inputs for estimating the benefit measures (travel time savings, user cost savings, air quality, etc.) were also performed.

Summary of Results

Table 18 provides a summary of the Benefit Analysis results. As shown, the project enhances the mobility and travel options within the MD 355 corridor resulting in net benefits over the 20 year analysis period of \$73,320,893 in undiscounted 2015\$, and Net Present Value (NPV) of \$19,787,869 when a 7 percent discount rate is applied to future costs and benefits, or \$44,945,412 when a 3 percent discount rate is applied.

Map / Table / Figure 18: Benefit-Cost Analysis Summary (2015\$)

Benefit-Cost Analysis Summary (2015\$)		Discount Rate		
		No Discount	3%	7%
Benefits				
Good Repair	Qualitative at this time			
Economic	User Time Savings	\$ 166,428,593	\$ 111,184,852	\$ 68,916,438
Competitiveness	User Cost Savings	\$ 41,389,111	\$ 28,019,513	\$ 17,672,488
Quality of Life	Qualitative at this time			
Sustainability	Greenhouse Gas & Emissions Cost Reductions	\$ 186,996	\$ 129,348	\$ 83,803
Safety	Accident Reduction	\$ 39,318,195	\$ 26,502,368	\$ 16,618,396
Total Benefits		\$247,322,895	\$165,836,081	\$103,291,125
Costs				
	Capital Costs	\$ 47,567,002	\$ 32,237,943	\$ 25,006,698
	O&M Costs	\$126,435,000	\$ 88,652,726	\$ 58,496,558
	Total Costs	\$174,002,002	\$120,890,669	\$ 83,503,256
Benefits - Costs		\$ 73,320,893	\$ 44,945,412	\$ 19,787,869

The \$21.25 million initial capital costs funded by the TIGER Grant increase to \$47,567,002 in undiscounted 2015\$ (\$25 million NPV at 7 percent discount and \$32.2 million NPV at a 3 percent discount rate) over the 20 year life of the project primarily due to the replacement of the vehicles after 12 years, and the Bikeshare stations and bikes after 10 years.

The operation and maintenance (O&M) costs of \$126,435,000 in undiscounted 2015\$ (\$58.5 million NPV at 7 percent discount and \$88.6 million NPV at a 3 percent discount rate) is significant and driven by the additional \$5.9 million annual cost to operate the Ride On Plus Service and \$150,000 annual operation costs for the three electronic charging stations. The additional costs for the service operations are likely to be high since no concomitant service reductions to existing or planned transit service was assumed for the cost analysis. While the specific reduction in parallel service has not been calculated at this time, benefits can be realized by assuming reductions in parallel route service of up to 10 percent per route since the ridership estimation and forecasts predicted a noticeable shift in existing riders to the new route.

After the remaining life at the end of the 20 year analysis period of all capital cost items is valued and subtracted this results in a total cost over the 20 years of \$174,002,002 in undiscounted 2015\$ (\$83.5 million NPV at 7 percent discount and \$120.9 million NPV at a 3 percent discount rate).

The benefits that were quantified and valued for the cost-benefit analysis include those for economic competitiveness (travel time savings and user cost savings), sustainability (reduction in emissions), and

Safety (reduction in accidents). The benefits are the result of the improved transit travel times along the corridor (from an average speed of 11 to 13 mph for existing service to 16.3 mph for the Ride On Plus service) and a reduction in wait times from the 10 minute peak and 15 minute off peak Ride On Plus headways in both directions throughout the day. These lead to 1,633 new riders shifting from autos in 2018 and approximately 5,000 boardings (the difference is due to existing riders changing to the new service) throughout the day.

Consequently, the most significant benefits are shown to be from user travel time savings of \$166,428,593 in undiscounted 2015\$ (\$68.9 million NPV at 7% and \$111.2 million NPV at 3%). These benefits are conservative based upon the average time on the Ride On Plus service and actual travel times. As explained in attachment C, they would be higher if the travel forecast modeled door to door times accounting for the full trip, or the perceived times accounting for the additional inconvenience that travelers attribute to waiting or transferring were used.

Travelers who switch from automobile to transit also can receive benefits due to reduced out of pocket costs of driving a car and parking versus the transit fare that they pay for their new transit trip. These changes in user costs result in \$41,389,111 in undiscounted 2015\$ (\$17.7 million NPV at 7 percent and \$28.0 million NPV at 3 percent).

The air quality and safety benefits from reduced auto travel on the roads within the region and primarily along the corridor are also quantified for the cost-benefit analysis. The air quality emissions savings assume that the new Ride On Plus service will use fully electric vehicles that do not produce local area emissions. The value of the air quality savings is \$186,996 in undiscounted 2015\$ (\$83,803 NPV at 7 percent and \$129,348 at 3 percent). This may in fact increase due to service reductions in parallel service, or increase depending on where and how the power for the bus charging stations is produced. Last are the safety benefits due to the reduction in auto travel. These are mostly due to injury only accidents and sum to \$39,318,195 in undiscounted 2015\$ (\$16.6 million NPV at 7 percent and \$26.5 million at 3 percent).

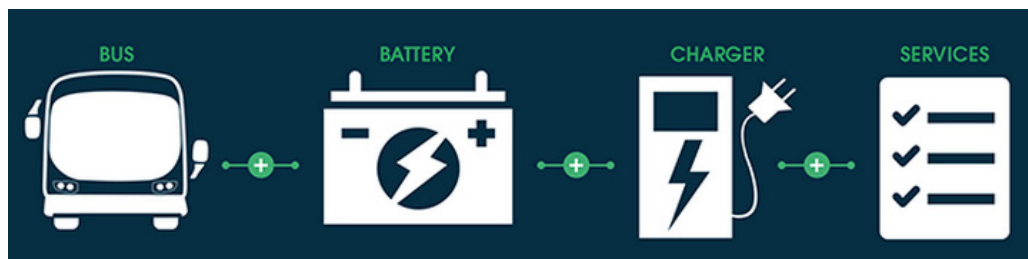
Overall this results in a positive net benefit – costs over the 20 year life of the project. Additional Benefits are noted in the tables below.

Map / Table / Figure 19: Qualitative Baseline Impacts, Benefits & Results

Economic Benefit	Summary of Results (7% Discount, 20 years)	Page Reference in BCA (Spreadsheet)
Input into other impacts (below)	2015 new transit trips = 1,500 2015 route change = 3, 500 Doubles by 2040 Prorated by year	Demand Analysis
Monetized value of travel time savings	\$68.9 Million	Travel Time NVP
Monetized value of User Cost Savings	\$17.7 Million	User Cost NPV
Monetized value of emission reductions	\$83.8 Thousand	Air Quality NPV
Monetized value of accident costs	\$16.6 Million	Safety NPV
Savings in Ride On Operations and Maintenance Costs	Qualitative at this time	In main narrative
	Qualitative at this time	In main narrative

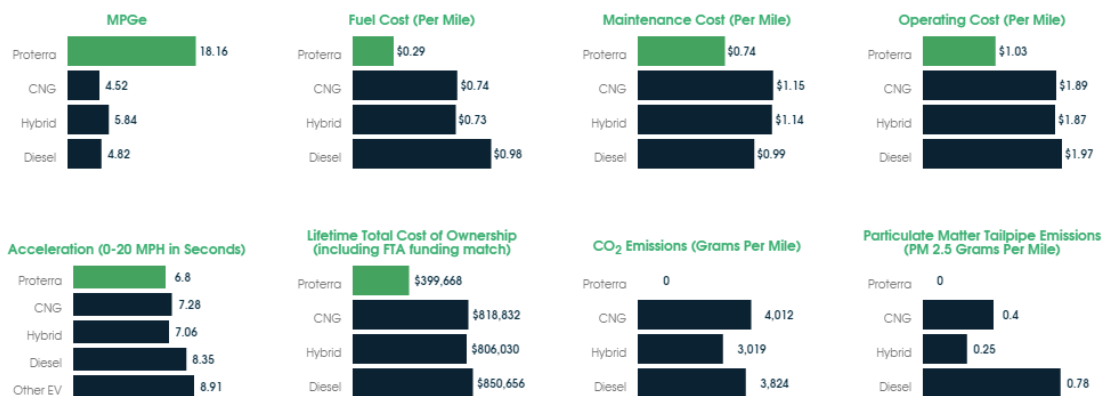
Current Baseline & Problem to be Addressed	Change to Baseline/Alternative	Type of Impact
Regional 2014 Constrained Long Range Plan assumptions and networks for 2015 and 2040	Ride On Plus service added:	Change in system use (transit riders, road volumes, etc.)
Prorated over 20 yr. analysis period (2018-2037)	13.1 mile 14 stops	Travel Time Savings
No continuous local service along corridor	Faster at 16.3 mph average speed	User Cost Savings
Slow transit service with many stops (10 to 12 mph)	Frequent (10 min. peak; ~15 min. offpeak headways)	Air Quality reduction in emissions
Slow transit service with many stops (10 to 12 mph)	ADA pedestrian improvements	Reduced accidents on roadways due to lower VMT
Infrequent transit service along some segments of corridor	17 new bike share stations, improved station amenities (canopies, seating, passenger information, bike parking, etc.)	Good Repair savings
Traffic signals add additional delay	Branding and Marketing	Quality of Life due to lower congestion, increased bike use, healthier users
Lack of pedestrian and bicycle support and amenities	Transit Signal Priority; All Electric Vehicles	
All lead to reduced transit ridership and highly congested auto travel in the corridor.	No other service reductions assumed for CBA (though likely to occur in real world)	

Map / Table / Figure 20: Example Cost Savings per Passenger and Bus for Electric Bus Implementation³



Operational Performance and Savings

On Your Specific Route



³ Source: www.proterra.com



For additional details on the Benefit Costs Analysis methodology, assumptions, and results please refer to the [Detailed Benefit Cost Analysis](#) and [associated spreadsheets](#) in attachment C.

II. PROJECT READINESS & NEPA

USDOT is rightly focused on awarding grants that have a high-level of readiness to begin work promptly upon grant award. Project readiness is a function not only of the specific factors defined in the grant criteria, but also with regard to a grantee's capacity to establish and follow an extensive management plan. In all respects, the Ride On Plus Project is "shovel ready."

- Bus expansion, operations and related bicycle and pedestrian amenity improvements are typically defined as Categorical Exclusions according to FTA guidance on NEPA based on 23 C.F.R. §771.118. A specific determination for CE status will be requested from FTA upon successful award.
- Any right-of-way needs are expected to be accommodated on properties owned by the State of Maryland, Montgomery County and Montgomery College, the cities of Rockville and Gaithersburg. There are existing operating and maintenance agreements between the County and roadway owners for stop improvements along the corridor. Right-of-way acquisition is not anticipated as part of this project

A. PROJECT SCHEDULE

[See Table 10 on page 13 for the projected schedule](#) for completion of the proposed transportation investments under this project. As shown, implementation activities are expected to begin as early as December 2015, with substantial completion of all project work expected by April 2018. Should contract and purchasing permit, it is possible that certain project elements would be completed sooner.

i. PROJECT RISKS & PERFORMANCE MONITORING

There are minor risks associated with implementation of the Ride On Plus project in the context of this application: phasing/segmenting and joint procurement.

- Phasing/Segmentation – The general risk of obligating funds in a timely manner is minimized by the ability to complete project phases of independent utility.
- General Procurement timing and schedule delays

To assess the results of the projects a comprehensive set of before and after performance measures will be put in place for each project component and is noted in the schedule.

B. PROJECT PLANNING APPROVALS

With an anticipated Categorical Exclusion document to be received by FTA, the project is ready to proceed with final design and implementation expeditiously, if grant funds were to be received.

i. LEGISLATIVE APPROVALS

The following legislative approvals are associated with and have been granted for this project:

- FY 2015 – FY 2020 Montgomery County Maryland Capital Improvement Program (CIP)
http://www.montgomerycountymd.gov/OMB/Resources/Files/omb/pdfs/fy15/cip_pdf/500821.pdf

ii. STATE AND LOCAL PLANNING

METROPOLITAN PLANNING ORGANIZATION

The National Capital Regional Transportation Planning Board (TPB) Metropolitan Planning Organization (MPO), TPB provided a letter of support from the MPO to USDOT for the Ride On Plus Project. The FY 2015 – FY 2020 Transportation Improvement Program, the Maryland State Transportation Improvement Program (STIP), and the TIP would be amended to reflect any additional funding provided through the TIGER VII program for the Ride On Plus Project.

[National Capital Region Transportation Planning Board Constrained Long Range Transportation Plan and TIP](#)

COUNTY & MUNICIPAL MASTER PLANS

The Ride On Plus Project limits include a number of approved and adopted City and County Master Plans. These include:

County & Municipal Master / Sector Plans

- [City of Rockville Master Plan](#)
- [City of Gaithersburg Master Plan](#)
- [North Bethesda/Garrett Park Master Plan \(1992\)](#)
- [Shady Grove Sector Plan \(2006\)](#)
- [Twinbrook Sector Plan \(2009\)](#)
- [White Flint Sector Plan \(North Bethesda's Urban Center\) \(2010\)](#)
- [White Flint 2 Sector Plan](#)

Related County Plans & Studies

- [2015 Ride On Title VI Plan](#)
- [2013 Countywide Transit Corridors Functional Master Plan](#)
- [Corridor Cities Transitway](#)
- [MD 355 North Rapid Transit Corridor](#)
- [MD 355 South Rapid Transit Corridor](#)
- [MD 586 Veirs Mill Road Rapid Transit Corridor](#)

C. DESIGN & TECHNICAL FEASIBILITY

Conceptual design, operation plans and siting have been completed for the Ride On Plus project as part of the County Transit Operations Planning efforts. Final design for this project and related project components would be completed upon successful award.

D. FINANCIAL FEASIBILITY

Local match funding for this project will be provided by Montgomery County, Maryland through a combination of capital improvement programs, annual operating budgets and private sector contributions.

III. FEDERAL WAGE RATE CERTIFICATION

The MCDOT agrees to comply with all applicable requirements of subchapter IV of chapter 31 of title 40, United States Code of Federal Regulations (Federal Wage Rate Requirements) for all work associated with this project. See signed certification statement at attachment B.

ATTACHMENTS

A – LETTERS OF SUPPORT

This project is broadly supported by the Maryland Congressional and U.S. Senate Delegations and a number of other public and private stakeholders that have provided support letters, which can be found in [attachment A](#); additional support letters from other stakeholders may be sent directly to Secretary Foxx via the U.S. Postal Service.

The list below itemizes the support letters that can be found in Attachment A:

- Barbara Mikulski, United States Senator, MD
- Benjamin Cardin, United States Senator, MD
- U.S. Representative John Sarbanes, 3rd Congressional District, MD
- U.S. Representative John Delaney, 6th Congressional District, MD
- U.S. Representative Chris Van Hollen, 8th Congressional District, MD
- Pete Rahn, Secretary, Maryland Department of Transportation
- Isiah Leggett, Montgomery County Executive
- George Leventhal, President, Montgomery County Council
- Casey Anderson, M-NCPPC - Montgomery County Planning Board
- National Capital Region Transportation Planning Board (MPO)
- Dr. DeRionne Pollard, President, Montgomery College
- Mayor & Council, City of Rockville, Maryland
- Mayor & Council, City of Gaithersburg, Maryland
- Interim General Manager and Chief Executive Officer, Washington Metropolitan Area Transit Authority
- Federal Realty Investment Trust, Rockville, Maryland
- LCOR Corporation, White Flint / Bethesda, Maryland



U.S. Representative John Delaney & U.S. Representative John Sarbanes along with MCDOT & Ride On Directors visiting MCDOT Ride On Transit Maintenance Facility in April, 2015

B – FEDERAL WAGE RATE CERTIFICATION

C – COST BENEFIT ANALYSIS BACKGROUND & WORKSHEET