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From: Dr. Walter Hook, Chief Executive Officer, ITDP  
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Date: 6/29/2012  
Re: ITDP Comments on *Report and Recommendations of the County Executive's Transit Task Force*

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ITDP was pleased to have had the opportunity to read and comment on the *Report and Recommendations of the County Executive's Transit Task Force*. It is the result of many months of hard work by a broad range of key county stakeholders and is an unprecedented effort by Montgomery County to move forward with the rollout of a countywide bus rapid transit (BRT) network.

As advisors to cities and regions that are implementing BRT internationally, the Institute for Transportation and Development Policy (ITDP) has extensive knowledge and experience in BRT project implementation - politically, financially, and technically - and has helped cities around the world bring their projects to fruition.

The Task Force report is an important first step towards the build-out of an RTV network. It created a single voice among the stakeholder community and resulted in a cohesive vision. As stated in the report, "the County must work to preserve its ability to implement the project in the overriding interest of the community." This report has, therefore, helped to define that interest. Additionally, by allowing the stakeholder community to work through many of the issues expected to be faced in implementing a BRT system, the work of the Task Force helped to prepare the community for the challenges ahead. Finally, the report proposes a plan for financing which can now be carried forward to the County Council who will vote on whether special tax districts may be created for the purpose of funding this project.

In the case of Montgomery County, ITDP's specific role is that of technical advisor. This was requested of us by the MCDOT, as well as by the Rockefeller Foundation, from which we

receive our funding for our U.S. program. We have a signed Memorandum of Understanding (MOU) with the Montgomery County Department of Transportation (MCDOT) to fill this role. Our comments on this report are therefore technical and are meant to provide you with a sense of our recommended way forward.

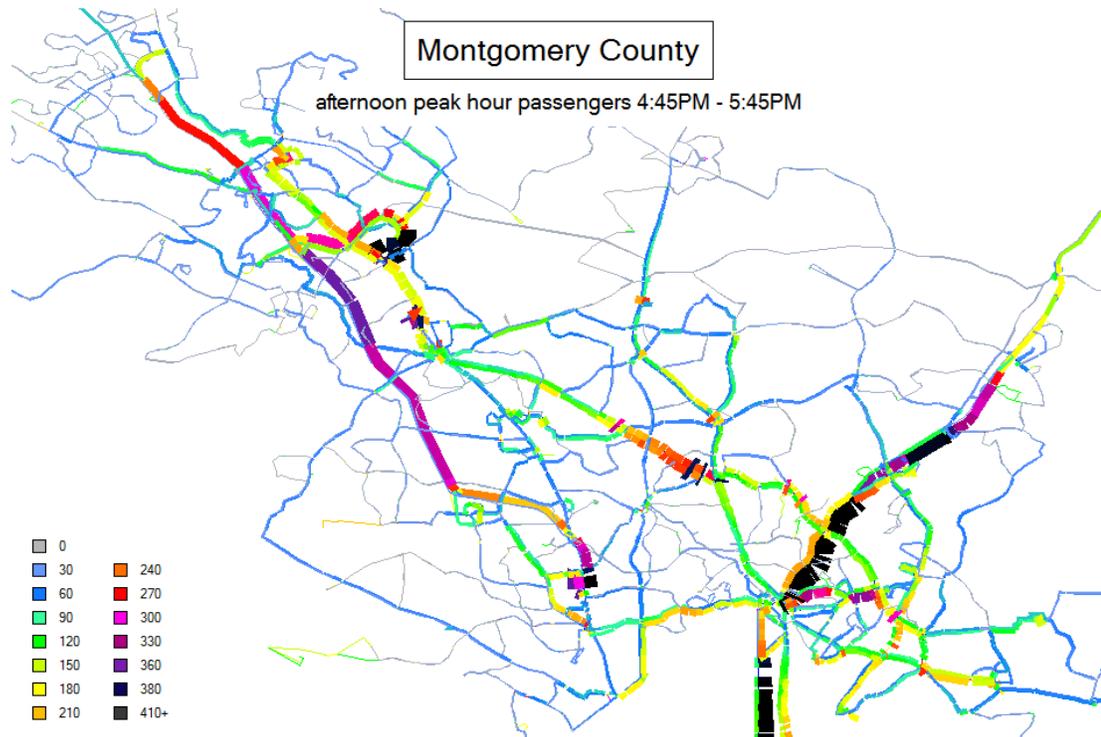
The Task Force's creation of "guiding principles" to begin to define the technical design of the network provides a good conceptualization for what an RTV system in Montgomery could look like. ITDP, along with a broad group from the international BRT technical community, has created a metric called the **BRT Standard**, which is a system that allows BRT projects anywhere in the world to be scored against international best practice in BRT system design, and rated as either *Minimum BRT*, *Bronze*, *Silver*, or *Gold*. Many of the "guiding principles" and "world class features" laid out in this report are elements taken directly from the BRT Standard, and the degree to which these are carried forward will determine the ranking for each corridor. The "RTV Performance Standards," as well, meet international best practice for BRT system design and will score well on the BRT Standard scale if upheld.

As in all of our technical work internationally, engineering decisions for any BRT project must always be grounded in a careful analysis of existing conditions. The report makes the following statement, which is reasonable from the perspective of the project's goal, but not as helpful to the next steps where design decisions need to be made:

"The Task Force is proposing that the County develop a system that is a "game changer" - that attracts a completely new universe of riders. It is very difficult to assess the prospective ridership of a transformational system when traditional modeling focuses on existing transit ridership as the base for its forecast."

We are excited by the prospect of this project becoming a "game changer," and in fact, that is largely why we have chosen to engage in the Montgomery County BRT project; however, BRT system design decisions and phasing must start from the basis of existing bus ridership even if land use changes over time are also considered. This is critical, as that base of ridership will continue to make up the majority of the ridership for many years after system opening. A BRT system that opens with no riders will be viewed as a failure, even if transit-oriented development occurs and the ridership grows over the years. Put another way, if a lane is taken away from traffic and dedicated to BRT, in a "corridor of transformation," that lane will either remain empty until ridership materializes - something that will be distasteful to the car drivers who have lost their lane - or will be full of empty buses - something that will have significant cost ramifications to the system. It is therefore preferable to initiate the first BRT corridors

where reasonable levels of passenger ridership already exist. As none of other work done for this project to date established this baseline, we retained Logit Consultoria, an engineering firm that has worked on many of the best BRT projects in the world, to provide us with existing bus demand numbers. This should be the first iteration in selecting viable BRT corridors for cost effective infrastructure improvements. Note that Logit did not include the Purple Line Corridor or the Corridor Cities Transitway in its study since those are already progressing independent of this work. The following map shows PM peak hour bus demand for all corridors in Montgomery County.



Because of this, we are placing a particular focus on project phasing - i.e., identifying which corridors should be implemented first so they will open yielding a maximum level of user benefits. The Task Force organized the chosen corridors into a phasing plan, as they recognized that implementing all of the corridors at once is an impossible task. That said, we believe that even the 74.7 miles identified for Phase 1 is more than any one city or county can take on at one time.

According to our analysis, the four arterial corridors with the bus highest demand are US 29, Viers Mill Road, MD 355, and Georgia Avenue. Based on dialog with MCDOT, Logit carried its

analysis forward with those four corridors. Based on this, Logit is currently working on a more detailed service plan for those four corridors.

The following graphic provides the maximum peak hour, peak directional ridership for the four corridors analyzed, and compares them to BRT corridors elsewhere in the world.

- **Maximum demand observed: US29**
- **US29**                      **800 passengers per hour per direction, AM**
- **Veirs Mill Road**            **280 passengers per hour per direction, AM**
- **MD355**                      **250 passengers per hour per direction, AM**
- **Georgia Avenue**            **200 passengers per hour per direction, PM**

System	Passengers per hour per direction
Bogotá, TransMilenio	45,000
São Paulo, Corredor Santo Amaro	35,000
Porto Alegre, Corredor Assis Brasil	28,000
Curitiba, Eixo Sul	10,500
Mexico City, Metrobús	11,000
Pittsburgh, PA	5,000
Rouen, France	1,700

This graphic shows that even the highest demand corridor in Montgomery County has half the demand of one of the lowest BRT corridors in the world.

The only corridor of those studied that has reasonably high demand along the whole corridor is US 29. The demand pattern on the other arterials does not generally span the full length of those streets, but rather is concentrated in specific segments, often feeding the metro system. Viers Mill Road, for example, which has the second highest bus demand of the corridors studied, has its main concentration of demand on the short segment between Randolph Road and Wheaton, where many passengers transfer to metro. Rockville Pike is the third highest demand corridor studied. However, the demand is not uniform along the corridor. The major concentration of demand is north of downtown Rockville, and then again in a short segment entering Bethesda between Route 270 and the Bethesda metro.

Because these existing demand levels are quite low, the Task Force is correct that the potential for future development must also be explored if higher quality BRT is to be justified. This is true not only because demand is mostly likely to grow in urbanizing corridors, but also because gold-standard BRT design elements are targeted at minimizing types of bus delay that typically only manifest themselves on more urban corridors. For instance, gold-standard BRT is generally in the central median because on an urban corridor the curb lane is frequently

obstructed. These obstructions include right turning vehicles stuck behind pedestrians crossing the street; taxis dropping passengers off; delivery vehicles stopping in front of shops, etc. Off-board fare collection is typically important where there are a large number of people boarding and alighting at particular stations.

While there are pockets of projected densification along the US 29 corridor, the types of delay that BRT is designed to reduce are not prominent on the US 29 corridor. Because the land use pattern is largely that typical of land adjacent to a limited access highway, such as strip malls and set-back single family homes, none of these types of delay are typically observed.

Furthermore, most of the trips on US 29 are “through trips” from far-flung suburban areas, so a large number of riders are passing through the entire corridor to the Silver Spring metro. Therefore, relatively few are getting on and off along the corridor. As such, there are relatively few concentrations of boarding and alighting delay other than at the Silver Spring metro. So, the benefits of BRT infrastructure on the US 29 Corridor would not be particularly great. Therefore, for US 29, we would recommend considering lighter improvements to the existing bus system, such as a dedicated lane, but not necessarily all of the other elements that go along with gold-standard BRT.

While Viers Mill Road has reasonable demand between Connecticut Avenue and the Wheaton metro, there is not a lot of developable land in the corridor. There is densification occurring along Georgia Avenue north of the Wheaton metro, but not so much on Viers Mill Road. We generally recommend that the first gold-standard BRT be built along a longer stretch of developable land, where some demand also already exists.

The land along Rockville Pike in downtown Rockville and southbound has greater development potential and, in fact, a strong development plan already exists for the area around White Flint. This strip-mall type of development is envisioned to become a more urban corridor. If this vision is implemented, the sorts of bus delay that BRT is good at solving would be made manifest. Some developers are already supportive of gold-standard BRT for the increased floor area ratios (FARs) they could receive. There are also plans to significantly expand the level of activity at NIH and the Naval Medical Hospital.

Therefore, because of the reasonable demand north of Rockville and in Bethesda, and the development plans south of Rockville, Rockville Pike appears to us to be the best place to start building a gold-standard BRT. As the benefits of this gold-standard BRT will not really manifest themselves until the corridor is urbanized, it seems to us that the roll-out of BRT should be contemporaneous with the roll out of new urbanization efforts.

The remaining Phase 1 corridors are likely to have much lower demand or street geometries on which true BRT may be difficult to implement. It is not advised to take on these challenges from the start as is it a challenge alone implementing the first BRT corridor, even under the best circumstances. Future corridors, beyond Rockville Pike, must only be considered if in concert with development plans in order to help ensure that the investment will be justified and the system is not to run at a significant operational loss.

Now that we have mapped existing bus demand throughout the County, we will begin to propose service plans for several of the corridors in Phase 1. Service plans provide information on which bus routes should operate on the corridors, where they need to stop, and where they may even need to turn off the corridors to serve neighborhoods. These service plans will be the basis for decisions on station locations, station sizes, bus fleet numbers, BRT infrastructure treatments, and true costs. We will share with you these proposals once they are complete. Further, Logit will provide MCDOT with the baseline demand numbers and the modeling tools necessary to easily create their own service plans on any other corridors within the County. Once the County has agreed on a sensible service plan, we can dig into the design process. There, the devil is in the details and the conceptual level design will ultimately only loosely inform the tough engineering decisions.

ITDP is pleased to be working in Montgomery County on this monumental project. We hope to continue as technical advisors to the County to help get to the most appropriate *and* highest quality BRT solution. Should the County achieve success at implementing gold-standard BRT, Montgomery County will become one of the new models to which other cities and counties look in order to build their own BRT systems.