The Dilemma of Urban Road Space Reallocation: An Outreach and Engagement Strategy for Bus Rapid Transit on Seattle's Madison Street

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Abstract

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The 2012 Seattle Transit Master Plan recommends bus rapid transit (BRT) for a new high capacity transit line on Madison Street. In the most recent budget, the City approved $1 million to study and develop a BRT concept for Madison Street. In order to build full-fledged BRT, as opposed to enhanced bus service or "BRT Lite," the City must reallocate road space on Madison Street to create a dedicated right of way, high quality stations and transit priority treatments. While there is an extensive body of literature covering the technical challenges to implementing BRT in a dense, urban environment, the political challenges have received far less attention. This thesis examines key American BRT implementation cases, stakeholder engagement research, and a careful analysis of Madison Street's unique opportunities and constraints in order to craft a strategy that will lead to successful implementation of true BRT. The resulting strategy, dubbed "BRT+," builds on the success of Cleveland's Healthline BRT and other cases, bringing diverse stakeholders together to develop a vision for the corridor that includes non-transit investments such as station area plans, pedestrian improvements, and other stakeholder generated priorities. In order to craft a BRT plan and complimentary non-transit improvements, the strategy relies on a multi-layered outreach and engagement effort that combines civic leadership, robust stakeholder involvement and effective broad based communications.

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Table of Contents

Preface

This thesis is a response to the challenge Seattle and many other American cities face in implementing cost effective, environmentally sustainable transportation improvements such as bus rapid transit. By and large, America has the technical know-how and the financial resources to drastically reduce our carbon footprint and improve our urban environment, but progress can be painfully slow and the march of time is unrelenting. The 2012 Seattle Transit Master Plan (TMP) provides a long term vision for the future of Seattle's public transit network that can make Seattle more sustainable while enhancing neighborhoods in a variety of ways. Within the overall network, the TMP identifies a number of key corridors that make up the backbone of transit service. One of these lines is a proposed high capacity corridor on Madison Street, from the Elliot Bay waterfront to 23rd Avenue. The TMP recommends bus rapid transit (BRT) as the preferred mode for this corridor and the City has already approved funding to study the corridor.

Cities such as Los Angeles have shown that BRT can be as attractive to transit riders as light rail (Taylor 2007). Madison Street BRT could run on 100% electricity from sustainable sources. Prospects for financing a BRT system are good and the line could be built quickly. Despite Madison Street BRT's budding momentum and support, implementing BRT in a dense urban environment presents major challenges. The gap between establishing the *goal* of building BRT and *construction* is rife with potential pitfalls and political mishaps which can result in "BRT Drift (Rutherford 2013)," a reduction of BRT quality with substantially slower, less reliable, less attractive service.

While there is an extensive body of literature covering the technical challenges to implementing BRT in a dense, urban environment, the political challenges have received far less attention (Panero 2011). In order to build true BRT, Seattle must reallocate road space from other modes and purposes for the sake of building BRT stations and dedicated transit lanes.

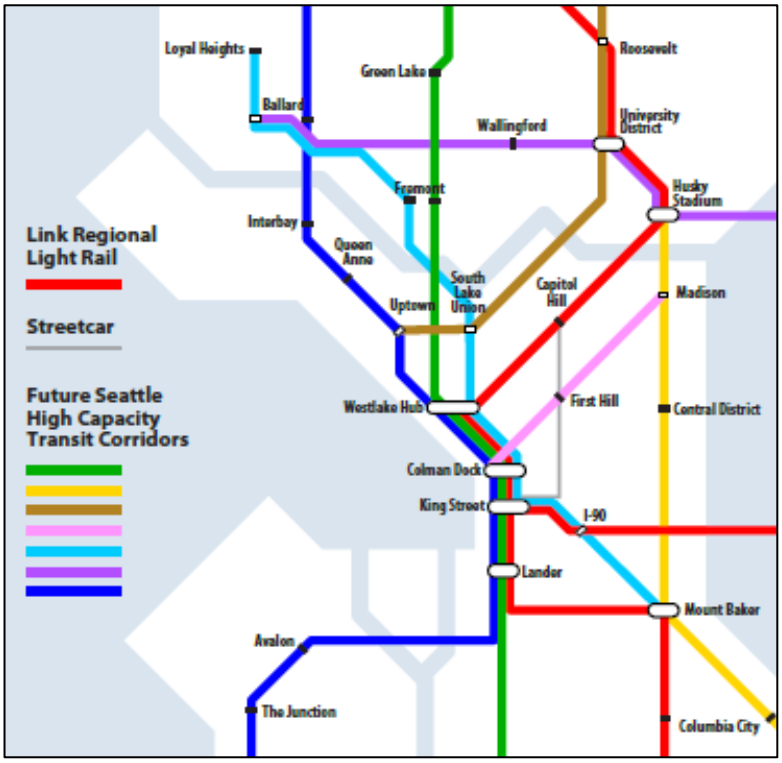

Fig. 1. A long range vision for a high capacity network in Seattle by 2040 from the Seattle Transit Master Plan. Madison Street BRT is the pink line.
Source: (Seattle Department of Transportation 2012)

Reallocating road space often uncovers competing stakeholder interests and a wide range of opinions about the nature of urban traffic congestion and how to address it. For different stakeholders, "the problem" of urban congestion might be interpreted as the lack of parking, too much density, crowded sidewalks, danger to pedestrians, economic hindrance, changing neighborhood character, noise,

pollution and more. Inevitably, some stakeholders will see BRT, or any major change to the roadway, as not just a bad investment but an attack on their interests because it results in tradeoffs such as less parking.

In order to navigate this potentially volatile situation, it is instructive to examine other BRT implementation cases across the United States. Without exception, implementation of high quality BRT has required careful navigation of stakeholder interests and concerns. With the rapid growth of BRT in America, there is an emerging set of common obstacles, challenges and potential solutions to stakeholder concerns. This thesis is a survey of these emerging issues and a guide for planners and advocates wrestling with the following questions:

- How can community engagement strengthen BRT design and lead to partnerships, win-win scenarios and other positive outcomes?
- What are the most common forms of stakeholder resistance that lead to diminished quality in BRT design?
- How can cities build strong coalitions in order to build high quality BRT projects?

In addition to BRT specific cases, this thesis adapts strategies and ideas from similar forms of urban road space reallocation as well as literature on stakeholder and community engagement to address wicked problems. Seattle and Madison Street's unique strengths and potential challenges determine how these broader lessons can be applied.

The thesis culminates in a proposed engagement and outreach strategy for Madison Street called "BRT+." The strategy is based on Cleveland's Healthline BRT. Cleveland demonstrated a successful approach to overcoming skepticism and opposition to BRT by delivering more than $30 million of non-transit investments along $170 million for a 6.8 mile BRT Line, addressing a range of stakeholder interests such as placemaking, streetscape improvement and economic development. In order to pursue the "BRT+" strategy, Seattle and partner agencies need to employ a multi-layered approach with three levels of focus:

1. Civic leadership that highlights policies and planning that will guide Madison BRT planning. This requires city leaders such as elected officials, department directors and community leaders to reinforce the goals of BRT such as reducing greenhouse gases and creating an effective 21st century urban transportation system.
2. A direct, fair and transparent stakeholder engagement process that:
    a. Educates stakeholders such as residents, businesses and community organizations along the corridor about BRT
    b. Engages these stakeholders in the decision making process to help vet BRT concepts, prioritize BRT elements such as station location and pursue possible coordinated investments such as station area planning.
    c. Identifies ways that BRT can complement other city and stakeholder goals such as economic and community development.
    d. Identifies negative impacts and helps devise mitigation plans
3. Broadcasting the stakeholder engagement process to the broader public through the press and other channels, aiming primarily at the citywide audience.

If Seattle is successful in implementing BRT on Madison Street, it would be a major breakthrough toward building out a sustainable high capacity transit system. Cleveland has already provided an excellent example of how to bring together interests around BRT to build high quality systems in

relatively constrained urban environments. Similar to Cleveland's Euclid Avenue, Madison Street connects major transit hubs, medical centers and a university. The neighborhoods around Madison Street already have land use patterns that support high transit ridership. Furthermore there are a wide range of city and neighborhood goals and aspirations that compliment and reinforce the potential benefits of BRT such as maintaining livability while accommodating growing density. Effective stakeholder engagement and well executed outreach can help leverage these strengths to overcome the challenges that BRT implementation will face.

Part I: Overview

1 Introduction

Bus rapid transit (BRT) can dramatically improve transit speed, reliability and convenience *if* a city has political willpower to provide sufficient road space and transit priority treatment. While international examples abound, many observers think American cities lack the will to make such changes (Vuchic 2005). A few American cities have challenged this notion and Seattle is particularly well poised to follow suit, armed with transit supportive policies, long range transit plans and political support. Whether or not Seattle succeeds will depend largely on how Seattle residents and key stakeholders react to the concept development and implementation phases. The central question of this thesis is how to craft an effective engagement and outreach strategy that makes the difficult but crucial process of reallocating precious road space possible.

Fig. 2 What is Bus Rapid Transit?

Bus Rapid Transit (BRT) consists of rubber tired buses and a systematic set of improvements to the roadway, stations and vehicles, with an emphasis on speed and reliability of service. While there has been growing use of the term BRT, there has been a trend toward broadening the definition for the sake of promotion. This paper uses the rigorous, international "BRT Standard" definition developed by the Institute for Transportation and Development Policy (ITDP). The most important element is to improve the right of way from mixed traffic operations (buses moving with general traffic) to separated bus lanes or busways. Other crucial elements for BRT are easier boarding through off board payment and elevated platforms as well as intersection treatments to minimize delay to BRT vehicles. The goal of these and other improvements is to create fast, convenient and reliable service that has higher capacity and attracts more riders than regular bus service.

Dedicated lanes

Roadway alignment ensures dedicated lanes are unobstructed (Class B ROW)

Off-board payment

Intersection treatments to keep buses moving

High quality buses that are easy to board, emit less pollution, and provide quieter, smoother rides

Frequent service with all day coverage.

High quality stations that are universally accessible and provide easy connections to other modes

Branding or differentiation to make higher quality service immediately apparent

This introduction provides background information on what BRT is and why most of America's so-called BRT Lines are misrepresented as such. Cleveland's Healthline and a handful of planned lines around the country provide evidence that it is possible for American cities to build true BRT in congested urban settings. The importance of meaningful stakeholder engagement, civic leadership and effective outreach appear to be central to developing a new BRT line in congested urban settings. In order to craft an effective strategy for Madison Street, this thesis examines BRT implementation strategies in other American cities, other forms of road space reallocation and careful research of Seattle's unique challenges and opportunities.

The Emergence of BRT

The chorus of supporters for bus rapid transit has grown from a small group of outside the box thinkers in the 1970s to agencies, transit advocates and governing bodies around the world (Vuvhic 2002). In the United States, planners and policy makers who are pursuing bus rapid transit solutions include Nashville, Eugene, Los Angeles, Minneapolis, New York, Oakland, San Francisco, Boston, Chicago and, most importantly, the Federal Transit Administration. "Think rail, build bus" is the motto the FTA uses to encourage agencies to pursue rail like goals and outcomes with the affordability and flexibility of a bus system. In May of 2012, American cities were planning 35 new BRT lines and that number continues to grow (National BRT Institute 2012).

Amid the rapid growth of BRT, confusion about the definition of bus rapid transit has also grown. Today, there is no clear consensus as to what constitutes BRT though the differences between higher quality systems and so called "BRT Light" or "enhanced buses" are obvious to people who have used both kinds of service. Los Angeles' Metro Rapid, Seattle's RapidRide and New York's Select Bus are all examples of enhanced bus programs that employ speed and reliability enhancements along with branding and amenities that create the look and feel of BRT. But, due to cost and the difficult political nature of obtaining separate right of way for surface transit, none of these systems come close to the speed, capacity and quality of optimized BRT systems such as Bogota's Transmilenio, Istanbul's Metrobus, or Los Angeles' Orange Line. This creates a fuzzy continuum between high quality BRT systems and conventional bus lines that employ some BRT tools in a less aggressive manner.

The continuum of service from regular, local buses to "not quite BRT" starts with regular buses that have employed some BRT tools. For example, the City of Seattle has been working with King County Metro (Seattle's primary transit service provider) to improve key bus lines by building speed and reliability improvements along with enhancing bus stops and sidewalks on high ridership routes. These projects employ a modest but effective set of BRT tools such as queue jumps and transit signal priority (Seattle Department of Transportation 2013). Seattle is currently investing $4 million into these improvements on the Northwest Market/45th Street corridor which will result in a 20% reduction in travel time, improved reliability and better bus stops.[1]

Moving up the continuum, we get to service that is clearly differentiated from regular buses through branding, and has moderately more BRT treatment, but does not make the crucial step toward full-fledged BRT by dedicating exclusive right of way (King County Metro 2012). King County Metro's RapidRide is in this category. RapidRide and Seattle's Priority Bus Corridors represent important

[1] Time savings estimate is for Metro Route 44 running eastbound during the PM Peak (Seattle Department of Transportation 2013).

incremental improvements over regular bus service, but they tend to provide significantly less speed, reliability and ridership increases compared to "true BRT" (Walker 2012).

True BRT

In an effort to clarify what separates BRT from normal bus service and distinguish system quality, the Institute for Transportation and Development Policy (ITDP) publishes a rating system that distinguishes BRT from enhanced buses and awards gold, silver and bronze ratings to the world's BRT systems. According to ITDP, the United States has only a handful of true BRT lines. In fact, while 60 lines around the United States were claiming BRT status in 2010 (NBRTI 2010), only 5 met ITDP's basic definition of BRT.

This type of outside rating provides an important reality check as more and more transit agencies seek to promote bus service enhancements through branding. Looking through ITDP's ratings of US BRT systems is a sobering reminder of the gulf between typical bus systems and BRT. Cleveland's Healthline is the top scoring American BRT system and it only merits a bronze rating. Other attempts at BRT such as Boston's Silver Line, which was touted as a vision of the future when it opened in 2004, do not come close to qualifying as true BRT according to ITDP (Weinstock 2011), primarily because of the difficulty in dedicating sufficient right of way for adequate bus lanes.

While it is important to recognize that true BRT is not necessarily the optimal choice for any given community, it is good to know where a plan lies on BRT spectrum to aid in decision making. In Seattle's case, while the preferred mode in the Seattle Transit Master Plan is BRT, enhanced bus was left as an option for further consideration.

ITDP's 2013 update to its rating system specifies five crucial elements which require minimum scores in order to be deemed BRT. These elements are:

1. Busway alignment
2. Dedicated lanes (which ITDP calls the "essence of BRT")
3. Elevated boarding
4. Off-board payment
5. Intersection treatment

One of the ways ITDP's rating system can be most helpful is for planners and communities to determine whether or not they wish to pursue a true BRT system, and if they do begin this process, the rating system can be a barometer for whether or not the design is staying true to this goal. Many observers have noted the phenomenon of BRT drift. Essentially, the idea to create a BRT line sets the planning process in motion. Then, as difficult decisions about cost, political alliances and allocation of space add pressure to the planning process, corners are cut and sacrifices are made to complete the project.

This is particularly true when it comes to reallocating existing roadway for dedicated busways. The places where dedication of space for bus lanes would help most are often where reallocating space generates the most controversy. Agencies looking to avoid potential controversy will not pursue dedicated lanes at these locations. The end results of this kind of planning process can be closer to average bus service than BRT. By employing the ITDP corridor design standards, an honest, clear decision can be made to pursue BRT or enhanced bus service.

CATEGORY	MAX SCORE
BRT BASICS (pp. 15–21)	
Busway alignment	7
Dedicated right-of-way	7
Off-board fare collection	7
Intersection treatments	6
Platform-level boarding	6
SERVICE PLANNING (pp. 22–27)	
Multiple routes	4
Peak frequency	3
Off-peak frequency	2
Express, limited, and local services	3
Control center	3
Located in top-ten corridors	2
Hours of operations	2
Demand profile	3
Multi-corridor network	2
INFRASTRUCTURE (pp. 28–32)	
Passing lanes at stations	4
Minimizing bus emissions	3
Stations set back from intersections	3
Center stations	2
Pavement quality	2

	MAX SCORE
STATION DESIGN AND STATION-BUS INTERFACE (pp. 33–36)	
Distance between stations	2
Safe and comfortable stations	3
Number of doors on bus	3
Docking bays and sub-stops	1
Sliding doors in BRT stations	1
QUALITY OF SERVICE AND PASSENGER-INFORMATION SYSTEMS (pp. 37–38)	
Branding	3
Passenger information	2
INTEGRATION AND ACCESS (pp. 39–44)	
Universal access	3
Integration with other public transport	3
Pedestrian access	3
Secure bicycle parking	2
Bicycle lanes	2
Bicycle-sharing integration	1
TOTAL	**100**
BRT BASICS (Minimum Needed: 18)	**33**

Fig. 3. ITDP Rating Chart for Bus Rapid Transit. Note the "BRT Basics" category that highlights essential attributes of BRT.
Source: (Institute for Transportation and Development Policy 2013)

It is important to note that ITDP's BRT Standards need to be tempered by local conditions and goals. In other words, certain attributes might have more value to certain communities such as fully enclosed stations in places with extreme weather or closer stations in topographically challenging terrain. ITDP's standards help make crucial distinctions such as the difference between Class B ROW (bus lanes or busways) and Class C ROW (mixed traffic operations) that equate to fundamentally different levels of speed, reliability and safety (Vuchic 2005). Still, BRT requires a

systematic implementation of improvements that can be altered to react to local challenges and opportunities. This presents an opportunity to tailor corridor design to suit the communities it serves.

BRT Drift

The Federal Transit Administration (FTA) has its own guidelines for BRT which is more forgiving than ITDP's definition (Bryant 2013). This is probably a more important definition for transit agencies as it is a determining factor in making projects more competitive for grants such as the FTA's Small Starts and New Starts programs. Recent BRT projects such as Eugene's EmX West Extension can receive 80% or more of their funding from the FTA (Adis 2012). However, from most transit riders' perspectives, the FTA definition over emphasizes traits such as branding and underestimates the importance of travel time. The FTA definition is intentionally broad and avoids setting clear policy on important details such as alignment and station design.

One of the FTA's key criteria is to maintain a separate bus lane for at least half of the route during peak travel periods. This is a perfect example of a metric which can be manipulated in a BRT design process to meet the FTA definition of BRT without speeding buses up at all. By providing bus lanes in less dense areas where there is little congestion and avoiding the creation of bus lanes in heavily congested areas, one can meet the FTA's definition without significantly improving travel time, in an effort to appease motorists who might object. This conflict is real and present in almost any BRT planning process aside from systems which strictly use defunct rail ROWs or unused road medians. Not surprisingly, both of the West Coast's existing, true BRT systems took advantage of such situations.

Securing road space in congested chokepoints can be a daunting challenge. Even Istanbul's Metrobus, which was the sixth busiest BRT line in the world in 2010, conceded to resistance over taking a general traffic lane on the Bosphorous Bridge linking Asia and Europe (Yazici 2013). In Istanbul's case, engineers devised a creative solution to give buses separated busways up to the bridge so they bypass most traffic. In other cases where these challenges lead to a BRT Light style design, transit agencies tend to avoid priority bus measures at highly congested chokepoints such as busy bridges.

Seattle's RapidRide D Line met substantial criticism from riders who were surprised how much the new line was still subject to random traffic delays and regular congestion (Lindblom 2013). Despite the fact that RapidRide meets the FTA requirements for BRT, even planners at Metro avoided using the term BRT when the system launched, preferring BRT Lite or Enhanced Bus (Bender 2013). While RapidRide employs the FTA's prescriptive list of BRT components, it performs far below true BRT lines such as Los Angeles' Orange Line, Cleveland's Healthline or Eugene's EmX. While Metro's RapidRide brings many improvements over the local bus service it replaces, ITDP's rating system helps us compare existing RapidRide to a more ideal BRT service. RapidRide, along with 35 of a self-reported 40 lines on the National Bus Rapid Transit Institute's list of existing BRT Lines do not meet the basic criteria for BRT as defined by ITDP (NBRTI 2012, Weinstock 2011).

While it is easy to point fingers at political leaders or planners for caving to special interests, political backlash to BRT can be a genuine threat to future plans. A new BRT system in Dehli, India led to a lawsuit that went all the way India's Supreme Court (Sharma 2012). While the transit agency prevailed and the BRT system has been immensely popular with riders, other road users continue to mobilize against any expansion of the system. In dense urban areas, transit planners must walk a fine line and pay attention to the needs of many road users while planning a BRT system.

Ultimately, while ITDP's standards provide an excellent guide to BRT system quality, investments in transit service need to be placed in a metropolitan region's social, economic and political context as well. Congestion in urban areas is a wicked problem and stakeholders often have very different perspectives on what is needed to improve the situation. For this reason, in dense urban environments where space is constrained, the biggest difficulty facing BRT planners is how to reallocate space and resources for BRT in a fair, transparent process which considers the needs of all road users.

Improving Design and Implementation through Stakeholder Engagement

While community engagement helps legitimate BRT planning, it can also be a powerful tool to improve planning and design (Briggs 1998). Public education and outreach are important as well, but directly engaging affected citizens in discussion and deliberative decision making can improve BRT plans and help find solutions to particularly tricky problems. Engagement can help identify key values and interests needed to prioritize investments (Nabatchi 2012). Engagement can also help identify issues and craft thoughtful mitigation for potential consequences of project implementation (Risner and Bergan 2012).

As mentioned previously, BRT design can be improved through careful integration into its surroundings. Cleveland's Healthline is a prime example of BRT that benefited from the power of collaboration in a variety of ways. Outreach and engagement activities were extensive with a total of over 2000 presentations or meetings and 150 stakeholder collaborations such as place-making workshops for major stations. Major institutions along the line helped improve station areas and pay for BRT service, thus the name "Healthline" (Panero 2011). Urban designers worked with members of the public on streetscape design and a public art program (Project for Public Spaces 2007). The City encouraged private investment in commercial property along the line and worked with the Office of Housing and Urban Development on affordable housing. Cleveland reaped major benefits by looking widely for ways to leverage BRT investment to help further complimentary goals.

While one of the arguments for rail over BRT is the ability to spur transit oriented development, there is growing evidence that the mode itself is less important than tangible transportation benefits (such as travel times) and good strategic planning (Cervero 1998). Coordinated strategies that align land use and transportation goals can be very successful in shaping walkable, transit oriented communities (Bocarejo 2013). The most well-known international example of well-coordinated BRT

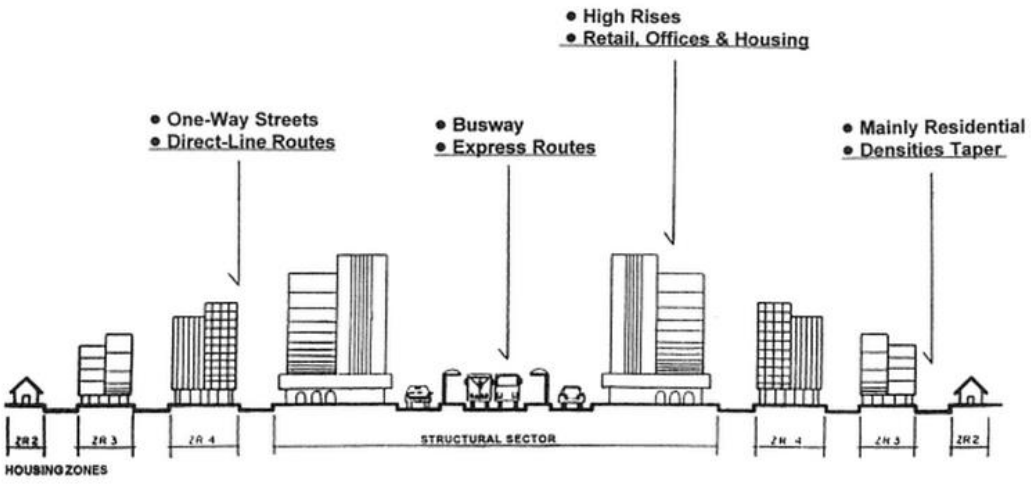

Fig. 4. A cross section of a BRT corridor in Curitiba, Brazil shows the linear density land use planning along BRT lines. Source: (Cervero 1998)

and land use planning is Curitiba, Brazil which implemented BRT and a comprehensive plan that focused density along the trunk lines. This approach yielded significant economic and environmental benefits while allowing the government to pursue other goals such as green space initiatives in less dense locations (Cervero 1998).

Ultimately, there must be willing investors in the private sector to develop property in a way that maximizes transit investments (Gehring 2009). The neighborhoods along Madison Street are already dense and there are more residential towers, offices and institutional expansion slated for development. The question is how to ensure that new development takes full advantage of transit investments. Tailoring station area planning by engaging with property owners and potential developers along a transit line is one of the best ways to find out what policies and programs will effectively encourage private investors to accomplish transit oriented development goals (Urban Land Institute NW 2012).

Fig 5 Cleveland's Healthline BRT on Euclid Avenue included investments in urban design, public art, pedestrian improvements and economic development. Source: (EMBARQ USA)

Crafting an Outreach and Engagement for Madison Street BRT

The goal of this thesis is to craft a community engagement and outreach strategy for the City of Seattle and its nascent Madison Street BRT plan. There is a tremendous body of literature covering the question of how to implement BRT from a technical and engineering standpoint (Levinson 2003). There is even a wealth of empirically based research on details such as how to enhance the average

rider's sense of safety and diminish perceived wait times (Taylor 2007). ITDP's rating system distills much of this research and knowledge into key BRT metrics. However, a gaping hole remains in our understanding of the political challenges facing BRT implementation in American cities. To craft the Madison Street outreach and engagement strategy, this thesis surveys American BRT implementation cases, similar forms of road space reallocation such as road diets and the unique conditions along Madison Street that may help or hinder efforts to implement BRT.

Process issues such as stakeholder engagement and how to tailor design to unique community goals and opportunities have been keys to implementing BRT in cities such as Cleveland. While it is not wise to prescribe rigid guidelines for community engagement, BRT planners need a heuristic map of potential points of conflict, how to build partnerships and effective means of conveying information about BRT to new audiences (Escobar 2012; Rockefeller Foundation 2013).

In April of 2013, the Rockefeller Foundation gave $1.2 million in grant money to four cities to pursue research, communication and community engagement that will support the implementation of high quality BRT lines in America (Rockefeller Foundation 2013). Chicago, which was one of the recipients, has announced a goal of becoming the first city in America to implement a gold standard BRT line (based on the ITDP rating system) and a coalition of civic organizations and institutions has formed to support and develop an ambitious BRT plan. City officials have been educating the public on what BRT is and how it could benefit proposed corridors. Planners have committed to working with neighborhoods to make sure BRT delivers as much benefit as possible and negative impacts are minimized or mitigated.

This thesis recommends that Seattle follow cities like Cleveland and Chicago by crafting an ambitious approach to outreach and community engagement. For most Seattle residents, BRT is a new, complex approach that promises to transform a well-known technology (a bus) into a something more akin to light rail. This can be hard to believe for those who have not seen true BRT in action. On top of this, BRT on Madison Street would require tradeoffs including the loss of on street parking spaces and impacts to general traffic. If Seattle is serious about its goals of reducing dependence on fossil fuels, building transit oriented neighborhoods and maintaining mobility for its growing population, such tradeoffs are necessary. A well framed, fair and transparent process can help make tradeoffs as painless as possible and maximize the potential benefits of BRT.

2 Madison Street BRT Overview

As mentioned previously, Seattle's Transit Master Plan (TMP) identifies Madison Street as a high capacity corridor. From a potential ridership perspective, it is an optimal corridor as it passes through several of the densest neighborhoods in the state and serves three major institutions: Seattle University, Swedish Medical Center and Virginia Mason Hospital. However, cars dominate the relatively narrow right of way, making bus service on the street slow and erratic. Madison Street's crossing over Interstate 5 is a particularly common source of delay.

The Seattle Transit Master Plan estimates that BRT could cut 8 minutes off the current travel time on the 2.5 mile route and attract 14,000 riders every weekday (Seattle Department of Transportation 2012). An estimate for high end BRT on Madison Corridor is $42.2 million per mile (Seattle Department of Transportation,). By comparison, the First Hill Streetcar will cost $53.6 million per mile but will not improve travel times beyond what would be expected with regular bus service (Lindblom 2012).

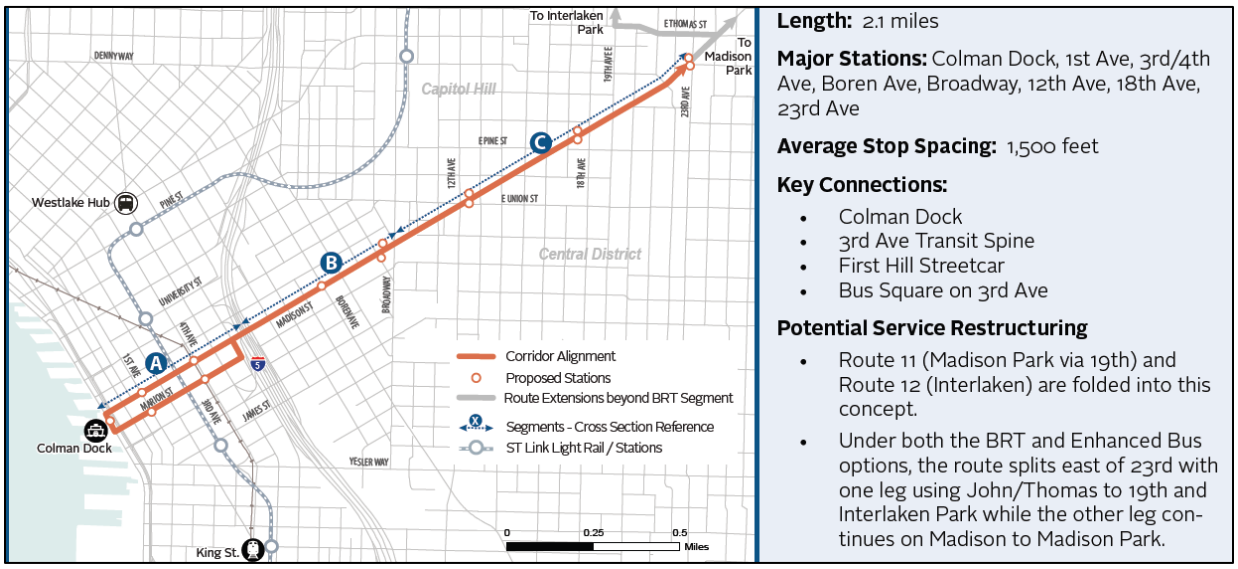

Fig. 6. Overview of Madison Street BRT corridor from the Seattle Transit Master Plan. Source: (Seattle Department of Transportation 2012)

Madison Street is an attractive corridor for BRT for several important reasons. BRT on Madison Street would be a major breakthrough for east west travel in the area, which tends to be very slow due to Seattle's hour glass shape. The line would connect the Coleman Dock transit hub and other major transfer points with dozens of transit lines. In the future, Madison Street could also act as a trunk line for buses to reach 3rd Avenue from the waterfront, or branch off Madison Street to provide fast service to the Central District and Madrona via Union Street among other potential destinations. The corridor features high residential and employment densities with more growth coming. These neighborhoods already have high transit and pedestrian mode shares.

Context

The route begins at the western base of Madison Street at Coleman Dock. Seattle plans a major redevelopment of the waterfront that will make this hub even more important in years to come. The line traverses across a future Center City Street Car Connector that might be located on First Avenue, the Third Avenue transit spine and light rail tunnel, the First Hill Streetcar on Broadway and the likely terminus is at 23rd Avenue, which has a major north south bus route connecting the University of Washington with Rainier Valley.

Potential transit ridership along the corridor is high. In particular, transit ridership downtown has grown dramatically in the last decade. Already, 43% of downtown commuters ride transit to work (Commute Seattle 2013). This number has climbed in the last decade while single occupancy vehicle trips have dropped from 50% in 2000 to 34% in 2012 (Commute Seattle 2013). The major institutions along Madison Street all project major growth and plans for ambitious campus expansions within a few blocks of Madison Street. These major institution expansions along with proposed efforts to encourage employees and students to use transit will account for thousands of new daily transit trips, based on current mode shares. For detailed information about major institution expansion, see Appendix D. On top of these employment centers, there are 24,741 households within one third of a mile of Madison Street and the expected population growth of 1.67% a year is double the national average (U.S. Census Bureau 2010). 55% of 2010 residents walked or rode transit to work and 32% of residents were renters without access to a private vehicle (U.S. Census Bureau, American Community Survey 2010).

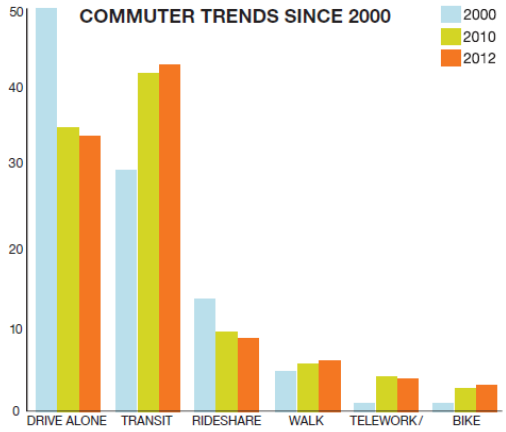

Fig. 7. Downtown Seattle commute mode splits from 2000 to 2012. Source: (Commute Seattle 2013)

Mode Selection

One of the reasons Madison Street has been singled out for BRT is the steepness of the hill. The steep grades eliminate most forms of rail from contention and the cost of grade separated transit of any kind makes it unlikely to happen for anytime soon. BRT was recommended over other modes of transit such as funiculars or gondolas, partially because of its proven success in other American cities and partially because of how it could seamlessly integrate with existing bus service, both from an operations perspective and from the perspective a of a rider who needs to transfer. One idea that surfaced was to build a cablecar, similar to the one that used to run along Madison Street (similar to San Francisco's famous cablecar). Unfortunately, as aesthetically pleasing as they would be, cablecars cannot provide the speed and reliability that are paramount goals for the corridor. They would also be very expensive and difficult to procure (Bryant 2013).

Fig. 8. Modern electric trolley bus in Lyon, France. Source: (City Tank 2011)

Another tipping factor in favor of BRT is the fact that most of Madison Street is already wired for electric trolley buses (Bryant 2013). Trolley bus wire means the BRT line could run on zero emission electricity, supplied by Seattle City Light. Seattle City Light's portfolio is based almost entirely on hydro-electric power and by connecting directly to the power grid, trolley buses are more efficient than battery powered vehicles. Electric motors also provide quieter operations than normal buses and better acceleration on hills (Seattle Department of Transportation 2012). Trolley bus operations make it more challenging to overlay limited stop service on top of local service though this is still possible. Because of this limitation of trolleybuses, thoughtful consideration will be required to design stations and road alignment to handle service expansion over time.

Operating a trolley bus rapid transit system (TBRT) has become much easier due to the advances in auxiliary power units which allow trolley buses to go off wire. While Seattle's current fleet of trolley buses are old and lack auxiliary power, in Venezuela and China, modern trolley buses have been integrated into BRT systems. Both of these countries utilize off wire capability to negotiate portions of routes where hanging wire was untenable for various reasons. Additionally, auxiliary power makes operations easier and more cost effective. For example, it is much easier to maneuver around bases and handle unexpected deviations due to accidents or construction (King County Metro 2011). A TBRT system would also be extremely competitive for federal grant money, meeting the definition of a fixed guideway transit service that opens up more federal grant opportunities (Bender 2013).

Challenges

Madison Street presents a host of major challenges to building BRT, particularly in terms of geometry. Madison Street climbs steep grades and east of I-5 it cuts at an angle to the rest of the street grid. On top of this, the right of way ranges in width from 52' to 60'. The current road width ranges from 42' to 49'. While countries such as the Netherlands have shown how BRT can work in constrained right of ways, this would be a bold, challenging step for an American city. A number of BRT experts advise 75' to be the minimum right of way recommended for adding BRT to existing roadway (Levinson 2003), however guidelines such as this need to be reexamined in light of local conditions and traffic volumes.

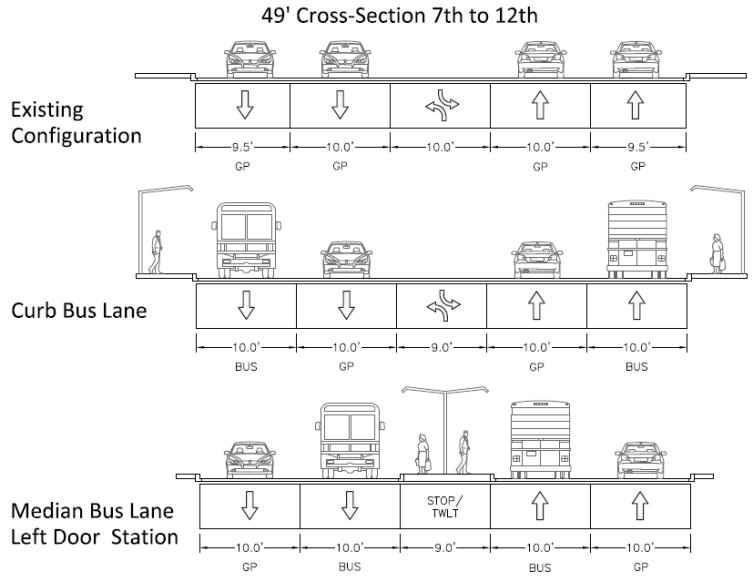

Fig. 9. Cross-sections depicting current lane configuration on Madison Street between 7th and 12th as well as possible BRT configurations. Source: (Seattle Department of Transportation 2012)

Traffic volumes on Madison Street ranged from 16,000 to 25,000 vehicles per day in 2011. These volumes are low enough that a well-crafted travel lane reduction should have minimal impacts on congestion. In fact many cities have reduced travel lanes on roads with similar volumes and improved safety while maintaining the level of service through road diets (Burden and Lagerway 1999). A road diet is typically a reduction in lanes from two in both directions to one with well positioned turn pockets. Road diets have been shown to make roads safer by making auto movement more consistent, predictable and drastically reducing excessive speeding (greater than 10 mph over the speed limit). The fact that a road diet would be possible implies that there could be a way to reduce general traffic lanes and actually make the roadway safer for cars as well as providing space for BRT. Seattle has experience implementing road diets and although they have tended to generate controversy when proposed (Madrid 2012), completed projects such as Nickerson Street have resulted in safer, more pleasant streets that manage to accommodate similar traffic volumes (Seattle Department of Transportation 2011). Despite this supporting evidence, addressing particular intersections and congested areas such as approaches to Interstate 5 will require detailed study and creative roadway design.

Perhaps a more contentious issue than reduction of travel lanes will be reduction in parking. Recently, an expansion of restrictions on Madison Street parking resulted in protest from several local retailers who feel that their needs for street parking are being ignored (Dong 2013). The change that caused this backlash was relatively minor: the existing rush hour parking restriction, between I-5 and Broadway, was expanded from 4-6 pm to 3-7 pm. Due to the narrow roadway, in any true BRT scenario, most of these parking spaces would need to be eliminated altogether. While conflict like this hints at the potential for even greater confrontation over BRT, the fact that parking has been restricted during rush hour for more than ten years, has allowed many businesses to adjust and become less dependent on street parking. For example, most new buildings on Madison Street have dedicated off street parking and are less reliant on curbside parking. A divide between businesses that have such parking arrangements and might be more receptive to BRT and businesses that are more dependent on street parking is explored in the Stakeholder Engagement section of the Madison Street Outreach and Stakeholder Engagement Strategy.

History of the Corridor

The neighborhoods along Madison Street were quintessential examples of early twentieth century American urban forms built around public transit. The cablecars that ran along Madison Street from the late 1800s were the dominant mode of travel on the corridor. Cablecars were removed right before World War II and the post war period saw a major shift to auto-oriented development. While many western American cities developed along transit lines in the late 1800s and early 1900s, most of that service diminished in the twentieth century and public right of ways gradually became saturated with cars. Similar to Los Angeles' Redline streetcar network, Seattle's widespread electric transit system was scrapped and replaced with a diminished system of diesel buses and trolley buses around 1940. With little extra space to show for public transit system removals, many roads have less person throughput capability today than they did 75 years ago. Madison Street is a case in point.

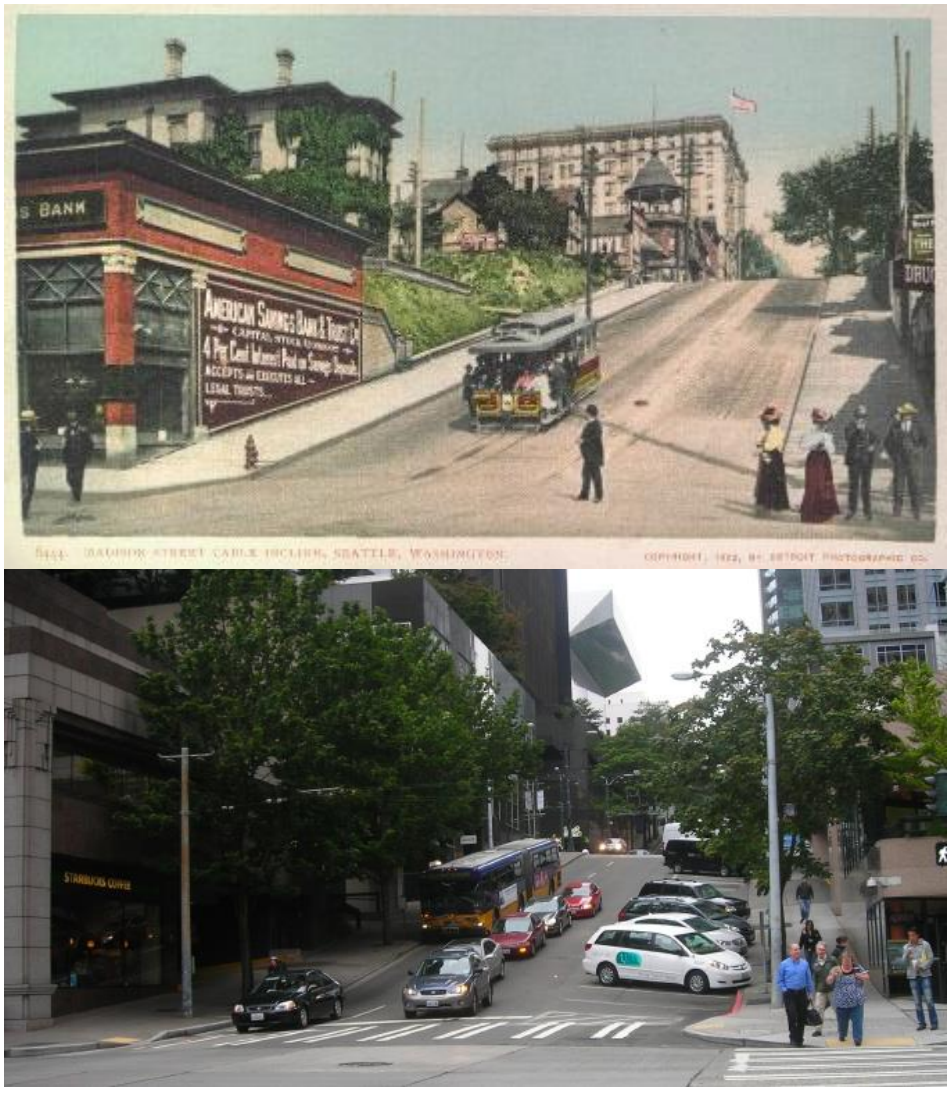

Fig. 10. Madison Street and Second Avenue around 1900 and today. Source: (Dorspadt 2012)

In 1900 the Madison Cablecar connected Lake Union and Lake Washington with 2 minute headways between vehicles that could carry 60 passengers each (Dorspadt 2012). Madison carried up to 1800 passengers per hour on its cablecars and at the same time, the street carried an array of vehicles for personal transportation and deliveries. Due to the steep hills, the cablecar was the lifeline for most businesses and residents, allowing the development of landmarks like Madison Beach Park and Coleman Dock.

Today, most of Madison Street has transit service every half hour for most of the day and every fifteen minutes during rush hour. Transit service at this level moves less than 350 passengers per hour during peak travel periods. Vehicle capacity where street parking is allowed is about 1000 vehicles per hour. Despite this diminished capacity to move people, the increase in vehicles make Madison Street busier and louder than ever, resulting in unpleasant pedestrian and passenger waiting environments with narrow sidewalks abutting fast moving traffic. The poor pedestrian environment has been well documented by community groups such as the First Hill Improvement Association and in the First Hill Neighborhood Plan.

Fig. 11. Madison Street, west of Boren. Note the narrow sidewalk and lack of space for the existing bus stop. Source: (Google Maps 2013)

Despite this trend toward diminished transportation capacity, population and employment growth have surged along Madison in the recent decades. Employment has been driven by education and healthcare sectors. The First Hill and Capitol Hill neighborhoods, which Madison cuts through, have far more concentrated multi-family buildings than most of the city. Yet, any move to invest in high quality public transit on this surface street faces potentially strong resistance. There is significant automobile congestion during peak travel periods and some community groups and retail businesses are afraid lost parking will result in deterioration of Madison Street's restaurants and retail environment.

Looking for Transit Solutions

For many ardent transit supporters, the ideal solution to roadway constraints would be grade separated transit such as a subway, but limited funding will likely continue to thwart widespread grade separated rail investment in the region (MacDonald 2009). While a multi-billion dollar investment in light rail for the Seattle Metropolitan Area is underway with Sound Transit's Link light

rail, the geographic and political realities of this sprawling region will leave many areas with no alternative to surface transit. The First Hill Neighborhood knows this all too well. First Hill was supposed to be part of Sound Transit's initial Link Light Rail alignment until budget constraints forced the agency to pursue a cheaper alignment serving fewer potential riders (Hadley 2005). This turn of events led Sound Transit to help fund the new First Hill Streetcar and a study which explored potential for transit improvements on Madison Street.

Given that only five American BRT systems meet the current ITDP definition of BRT and all five had substantially more right of way, Madison Street BRT would be a bold new step for America. While no proposed BRT route in America navigates such a thoroughly narrow corridor from end to end, BRT lines such as Cleveland's Healthline, Chicago's planned Ashland Avenue BRT and San Francisco's planned Geary Line cut through dense, narrow urban streets for portions of their routes. Because these three BRT lines have had to grapple with space limitations and context that most closely resemble Madison Street, they are particularly relevant case studies. The different characteristics of these and other BRT systems can be found in the BRT Typologies chapter.

If Seattle does not pursue true BRT and opts for enhanced bus service, many improvements can still be made. King County Metro's study of speed and reliability improvements for Madison Street recommends a comprehensive package that could aid existing local service or result in a BRT Lite service like King County Metro RapidRide. Resulting time savings would be far less than BRT, about one minute versus eight minutes for the whole route (Seattle Department of Transportation 2012), though bus scheduling would be much more reliable. More information on regular bus with a high level of service and enhanced bus service are in the BRT Typologies chapter.

Currently, SDOT is working with King County Metro and stakeholders from other city agencies to conduct initial traffic analysis and determine if BRT is feasible and consider impacts on other modes such as bicycle and pedestrian plans. Assuming BRT passes these initial "fatal flaw" tests, a more in depth concept development process will begin in late 2013 (Bender 2013).

3 Defining the Problem: Bus Rapid Transit and the Paradox of Density

Transit lines that run through walkable neighborhoods with high residential and employment densities tend to attract the highest ridership (Frank 1995; Ewing, Pendall and Chen 2002; Litman 2011). Increasing proximity of trip generators such as homes and trip attractors such as workplaces or schools also makes public transit more cost effective (Walker 2012). Unfortunately, in developed cities, areas with high density tend to lack space to build new transit infrastructure. Planners looking to expand and improve transit systems face a paradoxical dilemma: transit's greatest potential to provide public benefit is precisely where it is most difficult to implement.

In Seattle, many of the densest parts of the city cluster around arterials that were designed for streetcars and horse drawn vehicles. Commercial and multifamily buildings tend to be built up to the edge of lots. The streets themselves often have narrow lanes and parking is scarce enough that people pay $4 per hour to park on the street in some neighborhoods. The only way one could expand the right of way is to buy property along the road and demolish buildings. The likelihood of this happening in Seattle neighborhoods such as downtown or First Hill is close to zero (Mazzella 2013).

Many ardent transit supporters point to subways or some other means of grade separated transit as the answer to improving transit service in these areas. Unfortunately, while the densest parts of the city could probably justify this expense with high ridership, most American cities lack political will to raise sufficient revenue, particularly given how geographically large most metropolitan areas are. Even with more aggressive funding, the time it would take to finance and build widespread grade separated transit is another major impediment. Even with efforts such Los Angeles' Fast Forward initiative to greatly increase the city's bonding capacity, the prospects of building out widespread rail networks are leading transit agencies to include BRT as a compliment to rail. Sound Transit's Long Range Plan is one of many plans that include BRT and other bus improvements to compliment and fill in gaps between rail lines.

Sound Transit's light rail system gets more media attention than the agency's buses, but express bus service has higher ridership than its rail operations (Sound Transit 2012). The agency's 2005 Regional Transit Long-Range Plan indicates BRT will be an important part of future development:

> "The long-range plan includes a regional bus network comprised of a spectrum of service types intended to provide commuting options not already available in the designated corridors. The spectrum includes several types of bus rapid transit (BRT) with varying levels of priority over other traffic, as well as regional express bus routes operating with limited or no priority." (Sound Transit 2005)

Similar goals have been introduced in transit plans across the country. Despite this enthusiasm from a growing number of transit planners, general public perceptions of buses do not reflect this rosy view of their potential. Many people doubt that agencies will have the will to build out true BRT lines when the difficult realities of road space reallocation set in.

In the aftermath of Hurricane Sandy, New York City demonstrated just how quickly and inexpensively a BRT like system could be implemented when the political will to reallocate road space exists. The MTA built a "bus bridge" to connect Brooklyn to Manhattan when flooding shut down various parts of the subway. The storm necessitated that the city use authority to reallocate road space for more efficient usage. In order to keep people moving, the city used traffic cones, traffic light adjustments and platoons of buses to build a makeshift BRT system within days of the storm. While the system was hastily put together and a great deal of traffic had to be redirected to alternate routes, one "bus bridge" carried 70,000 riders per day between Brooklyn and Manhattan (Rubenstein 2013).

In the months after Hurricane Sandy, a state commission making recommendations on how New York could be more resilient in future storms recommended adding BRT lines to both improve the existing transit network and create more flexibility and potential capacity in extreme situations like subway floods (Rubenstein 2013). New York's future approach could be indicative for how the rest of America will approach BRT. New York will still rely on its subway system and it is currently building a new subway line under 2nd Avenue. But the cost and decades it has taken to build the 2nd Avenue Line are a major part of why New York is one of dozens of American cities currently planning BRT lines. They can be implemented much more quickly, cheaply and BRT can provide a high level of service, assuming a city can live with the tradeoff of losing road space and shift priority treatment away from other modes.

Therefore, the problem is how to build support and overcome conflict among stakeholders for a transformation of bus service and reconfiguration of existing right of way. Literature on public engagement is helpful for how to address such an issue. In "Public Engagers and the Political Craft of Participatory Policy Making**"** Oscar Escobar makes the case that guidelines for public engagement must be interpreted and applied loosely (2012). Political acts such as collaboration require agencies to tailor approaches to existing conditions and stakeholder needs. Nonetheless, evidence based research on outcomes of public participation processes are useful. BRT planners are quickly developing a range of approaches to communicate and engage with community members. They are also running into similar obstacles and resistance. All of this can inform new planning initiatives, given appropriate translation to local conditions.

This thesis is a survey of these emerging issues and a guide for planners and BRT supporters wrestling with the following questions:

- How can community engagement strengthen BRT design and lead to partnerships, win-win scenarios and other positive outcomes?
- What are the most common forms of stakeholder resistance that lead to a reduction in quality of a BRT design?
- How have planners been able to address this resistance through creative design or mitigation?

In addition to looking at BRT case studies, similar endeavors in transportation such as streetcar alignment and road diets can be informative. Ultimately, BRT is just one of many ways American cities can transform underperforming streets. A broader set of approaches to repurposing road space such as sidewalk enhancement, the creation of parks and pedestrian plazas, bicycle paths, streetcars, and surface light rail all face similar dilemmas of road space reallocation.

The European Commission's report "Reclaiming Streets for People: Chaos or Quality of Life?" recommends that cities approach the issue of traffic congestion as more than an engineering problem to overcome (2004). The report focuses on cities that transformed congested urban centers by reallocating road space from cars to more pedestrian oriented purposes such as plazas, enhanced sidewalks, bicycle infrastructure and transit. The report showed in many cases, rather than simply redistributing the existing car traffic, there was significant "traffic evaporation." The European Commission Report makes a strong case that traffic models which look backward at travel behaviors, underestimate transformative urban transportation projects in dense areas that create significantly better environments for people to walk, bike and use transit. Creative solutions to congestion can maintain critical access for vehicles while also addressing community desires for better, healthier places to be. Along with walking, biking and car sharing, bus rapid transit can be a critical piece to achieving broader community goals by reducing traffic, improving overall safety and creating opportunities to redesign urban corridors into places people want to be.

The European Commission advocates for approaches that reflect the notions that people are adaptable, rational and while we like to be able to drive, we tend to prefer human oriented neighborhoods to car oriented ones. Anthony Downs lays out the powerful model of triple convergence in *Stuck in Traffic* showing that new road capacity in growing metropolitan areas does not result in lasting congestion reduction as drivers make temporal, modal and route shifts to take advantage of that space. These shifts in behavior bring congestion back to equilibrium. Triple divergence is essentially the same phenomenon in reverse. That removal of car capacity results in people shifting to other modes, travelling at different times and selecting alternative routes.

The European Commission suggests that removing car capacity in order to provide amenities such as plazas or transit can achieve much greater behavioral change than triple divergence suggests. The European Commission provides a dozen case studies of well executed urban road space reallocation resulting in "traffic evaporation" and transformative change as people adopt new mode s and engage with their urban cores in new ways. The key to these transformations is to make such a shift in a way that minimizes the pain of disrupting existing travel behavior while maximizing the potential benefits. Ultimately, working with citizens and stakeholders directly to craft these goals, strategies and mitigation efforts is essential if such an investment is to be successful. Transforming a street so that it becomes a more valuable asset to the neighborhoods it serves requires the input and participation of those neighborhoods. Normative decisions about what would make it nicer to walk, bike or take transit in a neighborhood will impact a project's success and if businesses and residents along a corridor work together on a vision, a project stands a much better chance of overcoming resistance to change.

Part II- Current State of BRT in America

4 BRT Typologies

BRT consists of a systematic set of improvements. As such, it is useful to look at BRT typologies in order to better understand possible outcomes for Madison Street and find cases that have particular relevance in terms of applicable outreach and engagement strategies. With the growth in BRT in the United States, there are more domestic examples to learn from. U.S. cases can be particularly helpful for crafting outreach and engagement strategies due to differing styles of governance and public involvement in other countries.

Background

Cities in the United States began experimenting with BRT tools such as dedicated bus lanes in the 1970s amid the growing recognition of the world's finite oil supply and deleterious effects of emissions (Vuchic 2005). While early US efforts tended to focus on specific elements such as bus lanes on freeways, Curitiba, Brazil pioneered the first comprehensive implementation of BRT improvements in 1974 (Cervero 1998).

Cities around the United States have come around to BRT, thanks in large part to the success of international examples. Cities such as Bogota, Columbia have shown that robust BRT in dense urban environments can transport passenger volumes that experts once thought were impossible without rail (Cain 2006). Bogota's Transmilenio carried 1.6 million riders per day in 2010 (Yazici 2013) on 51 miles of trunk line served by integrated local feeders. The city's master plan calls for 241 miles of

Fig. 12. Bogota's Transmilenio BRT demonstrates the current upper limits of BRT system capacity and is one of the most influential BRT designs in the world. Source: (ITDP 2013)

BRT trunk line to carry the same number of daily riders that New York's subway system serves today (Cain 2006). The cost comparison of the total BRT project to rail is staggering. In 1997, Bogota chose to pursue an initial BRT investment instead of an 18 mile rail corridor. The initial 18 mile rail investment would have cost $3.2 billion. The estimated capital costs for the entire 241 mile BRT network is $3.3 billion (Cain 2006).

No BRT efforts in the United States approach Bogota's level of ambition and there are a number of factors such as the cost of labor that make building and operating BRT in the United States very different from developing countries. Yet, American cities have taken notice of international cases like Bogota and a variety of approaches to BRT and uses of BRT tools have taken root (Cain 2006). The following is a brief survey of the primary typologies that have emerged in the United States in the following order:

- Regular bus with a high level of service
- Enhanced Bus or BRT Lite replacing local service
- Enhanced Bus or BRT Lite overlaying local service
- True BRT in an underutilized ROW
- True BRT in a congested ROW

Regular Bus with a High Level of Service

Often lost from the discussion of BRT is the way regular bus service can be systematically improved using tools and techniques from the BRT toolkit. While this approach does not feature the branding element, enhancing regular bus service allows planners to target improvements that provide the most bang for the buck. Cities such as Seattle and San Francisco are implementing strategies like this to improve key bus routes and resulting time savings can be similar to what has been achieved by BRT Lite projects.

Tools include bus stop consolidation to reduce dwell time, transit signal priority, modest bus stop enhancements, bus lanes and improved fare collection technology to make boarding faster. One particularly effective tool is a queue jump. By creating a bus only lane approaching a congested intersection and providing an early green light for buses, transit riders can zip past queues of general traffic.

Planning and design for improvements such as this has become more comprehensive and bolder, approaching the same level of sophistication behind some BRT Lite projects. San Francisco's Transit Effectiveness Project (TEP) details how the city plans to upgrade its transit network through targeted spot improvements and corridor enhancement while the city also pursues BRT on two major arterials. The TEP identifies a "Rapid Network" of key rail and bus lines and establishes goals and policies to ensure this core network is fast, reliable and convenient to use. The local bus routes in the rapid network will be targeted for comprehensive improvements, similar to BRT Lite but without the same level of branding (San Francisco Planning Department 2013).

Seattle's Transit Master Plan identifies 12 priority bus corridors for similar treatment building off the 2005 Seattle Transit Plan that established a similar network. Since 2006, SDOT has made major investments in several bus corridors and built spot improvements around the City (Seattle Department of Transportation 2012). Joint projects on bus speed and reliability have brought SDOT

and King County Metro into a closer working relationship, laying the foundation and building capacity for future work on more ambitious projects such as BRT.

King County Metro conducted a study of Madison Street to identify potential speed and reliability savings to improve existing bus service on Madison Street. The recommended set of improvements included transit signal priority, bus stop consolidation and combining nearby routes to add frequency. The plan even includes dedicated bus lanes on portions of downtown though not through First Hill or Capitol Hill.

Enhanced Bus or BRT Lite

BRT Lite is also a broad category as it encompasses all branded bus lines that employ some measures from the BRT toolkit. Often, enhanced buses have some bus lanes though they are not as extensive as full BRT. They can suffer during peak travel periods but they tend to attract increased numbers of riders over previous service. New York's Selectbus, Los Angeles' Metro Rapid, Seattle's RapidRide are among the dozens of examples.

Fig. 13. Los Angeles' Metro Rapid and King County Metro's RapidRide. Sources: (LA Metro 2013, Seattle Times 2012)

One major difference between different BRT Lite systems is whether or not the service functions as a local route with closer stop spacing or as a limited stopping overlay route. Los Angeles' Metro Rapid was overlaid on top of an existing local route so stops could be spread a half mile apart. This is one of the features that makes it much faster than the local service despite lack of dedicated right of way.

It is unclear whether or not implementation of BRT Lite can act as an effective stepping stone to eventual full scale BRT implementation. Alameda County Transit is pursuing a plan to replace enhanced bus service running through Oakland with full scale BRT and might provide a template for how to do so. Similarly, Los Angeles' Metro Rapid on Wilshire Boulevard finally got bus lanes for a portion of its route, reducing travel times significantly during rush hour. On the other hand, underwhelming enhanced bus improvements can make it more difficult to convince taxpayers and elected officials to continue investing in BRT. It can also be difficult to translate incremental improvements into increased ridership if improvements are staggered over a long time. The process of how to implement incremental improvements to move from regular bus service to enhanced bus service to BRT certainly warrants further study.

Bus Rapid Transit in an underutilized ROW

Fig. 14. Pittsburgh's MLK Jr. East Busway and Eugene's EmX. Sources: (Perk and Catala 2009, Lane Transit District 2013)

Los Angeles' Orange Line, Pittsburgh's East Busway and Eugene's first EmX Line are prominent examples of building BRT in underutilized space. The Orange Line converted an old railway corridor that had become obsolete. Eugene's EmX took advantage of a large median for a significant portion of its line though it Eugene has taken on building in congested ROW as well. These projects require significant funding and political will but they are not as politically volatile as reallocating road space on busy arterials. One of the biggest objections comes from transit advocates who think BRT is a bad substitute for a potential rail corridor.

In Los Angeles, a study on public perception of different modes found that transit riders preferred the Orange Line to a recently built light rail line, the Blue Line (Cain and Flynn 2009). Underutilized corridors allow BRT designs to incorporate natural buffers of greenery. Eugene's EmX In Los Angeles, a multimodal path runs alongside the Orange Line connecting to a major regional park. The disadvantage of underutilized corridors is that they are usually not in ideal locations for transit. For example, Los Angele's Orange Line runs along the backside of industrial properties for long stretches. Still, it is easier to implement BRT in an unused railway than it is to implement in a busy downtown street.

Bus Rapid Transit in a Dense Corridor

Madison Street BRT would definitely be in this category. These are corridors going where the improvements will have major impacts on thousands of daily riders, but the only way to build BRT is to reallocate existing roadway. Outreach and engagement are much more important at this level. Cleveland's Healthline is the best example of BRT in a congested corridor where space is at a premium and adding BRT will impact other modes. Planned lines in San Francisco, Chicago, Oakland, Eugene, Nashville and a number of other cities show that Seattle is not alone in pursuing this concept. San Francisco's Geary Corridor works in a downtown ROW that is comparable to Madison Street though for only a portion of its route.

If social and political currents continue to push American cities to make aggressive steps toward curbing emissions and providing more robust transit options, this typology could become very popular and the precedents that current efforts set may influence how many other cities adopt this approach.

Fig. 15.(Clockwise from top) The Healthline in Downtown Cleveland, a rendering of Chicago's Ashland Avenue BRT, a rendering of Alameda County Transit's East Bay BRT. Sources: (RTA 2013, BRT Chicago 2013, AC Transit 2013)

5 Challenges and Obstacles to BRT Implementation

New BRT proposals face a number of barriers to implementation that outreach and engagement can help overcome. Even lines that have gained initial buy in from key government agencies and politicians can face barriers which might derail planning or diminish potential service. Most of these difficulties stem from the fact that BRT is a solution that often requires reorganization, reconfiguration and transformation of existing government agencies, places and behavior. The challenges that face BRT fall into four general themes:

1. **The Wicked Problem of Urban Congestion**. Stakeholders with divergent interests tend to have divergent interpretations of this problem and how to solve it.
2. **Interagency Collaboration**. Cities without experience building BRT have to build new capacity and create new working relationships across agencies. At a minimum, a city department of transportation and a transit agency typically need to work closely on service and capital investment plans.
3. **Overcoming Rail Bias**. Because BRT relies on buses, there is an inherent skepticism that it can provide world class transit service, even among transit supporters.
4. **Implementing a Complex Strategy**. Effective BRT implementation, particularly in congested streets, requires a complex strategy of many small improvements as well as management and mitigation of secondary effects on other modes.

The Wicked Problem of Urban Congestion

Urban road space reallocation inevitably stirs controversy. Excessive demand for road space and negative environmental consequences are forcing cities to reevaluate how to make transportation networks more sustainable and maximize public benefit. Unfortunately, road space is a limited resource with increasing numbers of users who have different needs and ideas about how to extract more value from it. Since the Madison Street right of way (ROW) can only be widened in a few short segments, any reallocation plan such as expanding sidewalks, adding bike lanes, adding parking, adding transit or general traffic lanes requires a loss of space for other users. Concerned citizens and government officials exhibit a wide range of technical expertise, values, concerns and ideas about what should be done, often leading to conflict. Optimal solutions are elusive and even the basic goals and criteria for evaluation take effort to pin down (Page 2012).

Given that wicked problems often engender mistrust among stakeholders with opposing positions, it is not surprising that BRT planning has been marked by acrimony and major disagreements. Leadership and a clear vision to build a high quality transit system can help alleviate this, but even in Eugene, Oregon, where the City had already built a successful BRT line, expansion of the system stoked major controversy and caused significant design revision toward a more expensive, slower and less direct route (i.e. BRT drift). Still, Eugene managed to persevere through controversy and will complete construction of EmX West in 2016 or 2017 (Ardis 2012). This case helps illuminate how forceful positions against BRT can become.

As mentioned earlier, Eugene's first BRT line took advantage of unused median space for a significant portion of its route. The planned West Eugene extension on the other hand, will follow a

street with less available ROW, requiring reallocation of space to build dedicated lanes. The West Eugene extension plan stirred anger from a group of businesses on West 11th Avenue and a neighborhood group called Residents for Responsible Rapid transit (R3T) who felt that their needs were being ignored. Anger over perceived mistreatment led to a prolonged campaign against the line and attempted lawsuits to stop the plan altogether. RT3 came out strongly that LTD's public engagement process was not adequate and purposefully ignoring neighborhood concerns. This backlash convinced Lane Transit District (LTD) to shift the route away from the opposition groups' neighborhood, resulting in increased travel times for trips between the west and east end of the line (Vickrey 2006; Hutson and Koleszar 2007).[2]

The outcry from the business owners exhibited mistrust, fear and confusion about the proposal. "My main concern is that it's $80 million and it's going to destroy a lot of businesses in an economy that will not allow them to rebuild," said Bob Macherione, who supports a no-build option. "It's being misrepresented to the public as a worthwhile plan, and it's really just an expansion of LTD at the cost of taxpayers (Nelson 2012)." Opponents' conviction that the plan was an attack on their interests led to a loud and public attack that called into question everything from basic facts about funding sources to impacts on traffic and parking. For example, the $95 million budget is made up of Federal Transit Administration funding and a special Oregon Lottery fund for 79% and 21% of total capital costs, respectively (Lane Transit District 2012). Despite this, many opponents claimed the project would siphon local tax dollars from road projects (Our Money Our Transit 2012).

Opponents used attention grabbing tactics such as a prop tank on a business' parking lot, social media and a petition to try to kill what they dubbed "the Green Dragon"(Our Money Our Transit 2012). On closer inspection, the core group of opponents was a small group with a deep mistrust of public transit. According to the local newspaper, The Register-Guard, of the 24 businesses collecting signatures opposing the EmX project, 11 were automotive related businesses. A belief that BRT was part of the "war on cars" and by extension the opponents way of life helped fuel the bombastic responses which included purchasing ads on Lane Transit District's own buses decrying the proposal. Opponents worked to spread their message and give the appearance of broad-based rebuke for EmX; however, Chuck Areford, a proponent of BRT in Eugene, visited a number of businesses who

Fig. 16. Anti EmX advertisements that ran on the back of Eugene buses, paid for by a group of businesses opposed to BRT expansion.
Source: (Our Money Our Transit 2012)

[2] While opposition to the route was the major force that led to the design change, the route deviation also allowed the line to serve the Whitaker neighborhood, a potentially high ridership neighborhood that had a coalition of support for the line (Areford 2012).

displayed “No EmX” signs and learned that some of the businesses themselves were not opposed to the project but landlords and parking lot owners had insisted on blanketing their properties with signs opposing the project (Areford 2012).

As the name implies, “Tax Payers United” were ideologically opposed to expansion of government services, not just public transit. However, they managed to frame public discussion with the assumption that the EmX project would benefit transit riders (a minority of the population) at the expense of small businesses and drivers. According to the Register-Guard, LTD held 300 meetings with businesses and property owners leading to alterations to the design such as expanding the roadway to avoid taking lanes, creating route deviations and compromising on elements of true BRT design in an effort to find middle ground between these seemingly intractable positions (Eyster 2011). A dichotomy of current transit riders benefiting at the expense of car drivers was far from LTD’s vision for BRT yet it became a dominant theme for many observers and dampened enthusiasm among people who would potentially benefit from the extension.

While this case provides an example of how extreme positions can be in the BRT planning process, it is also important to note that most disagreements can be successfully addressed in direct communication and deliberation. After the alignment was approved the Register Guard published an editorial extolling the work of Lane Transit District to work with affected businesses, despite the

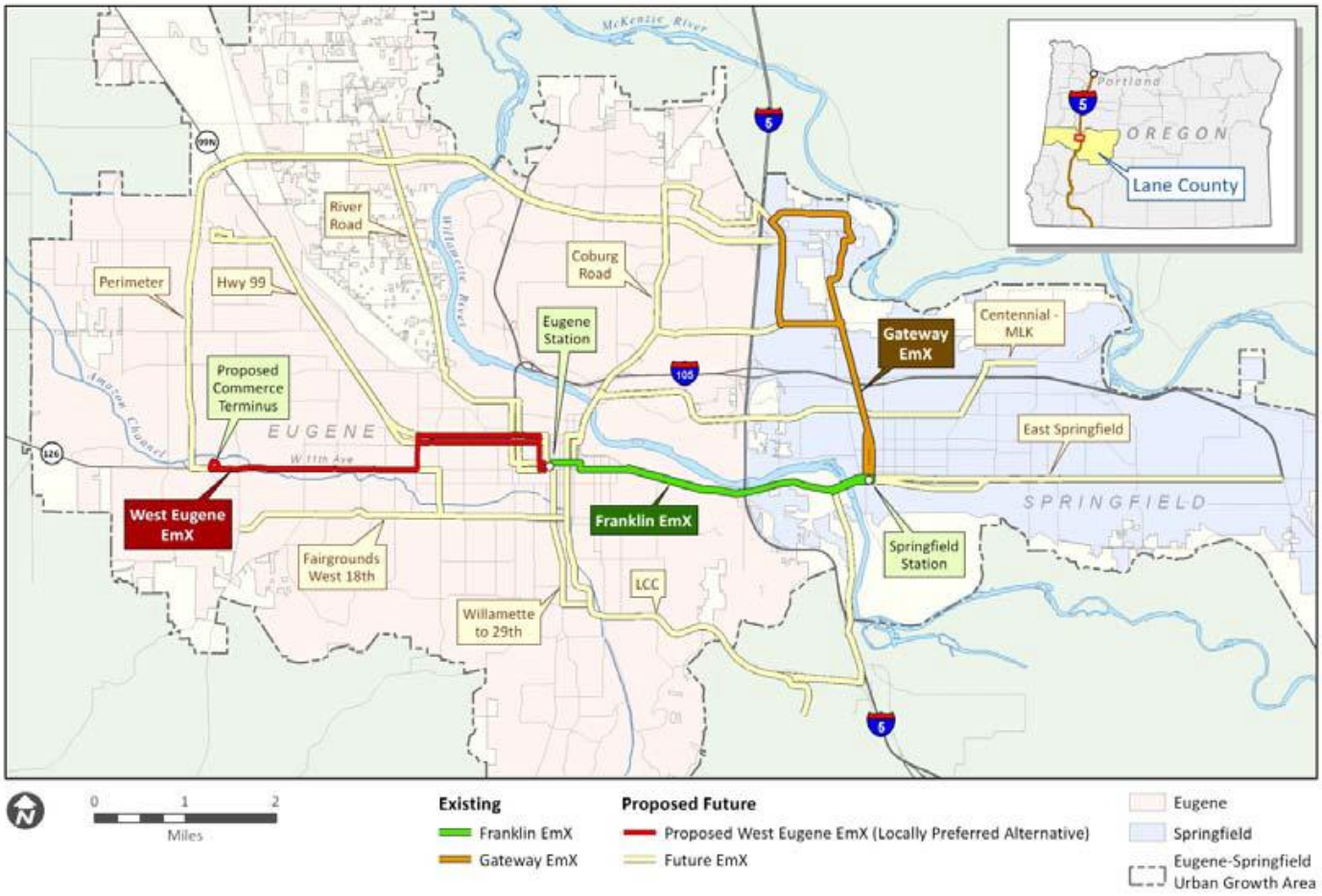

Fig. 17. Map of proposed West Eugene EmX expansion and previous EmX corridors. Source: (Lane Transit District 2013)

newspaper's tendency to amplify the controversy in the BRT planning process. Planners engaged in hundreds of small meetings and conversations working out details such as how to accommodate particular parking spots, station location, construction impacts, and much more (Eyster 2011). While some stakeholders might never agree on fundamental value issues, it is a mistake to assume that all disagreements reflect irreconcilable positions.

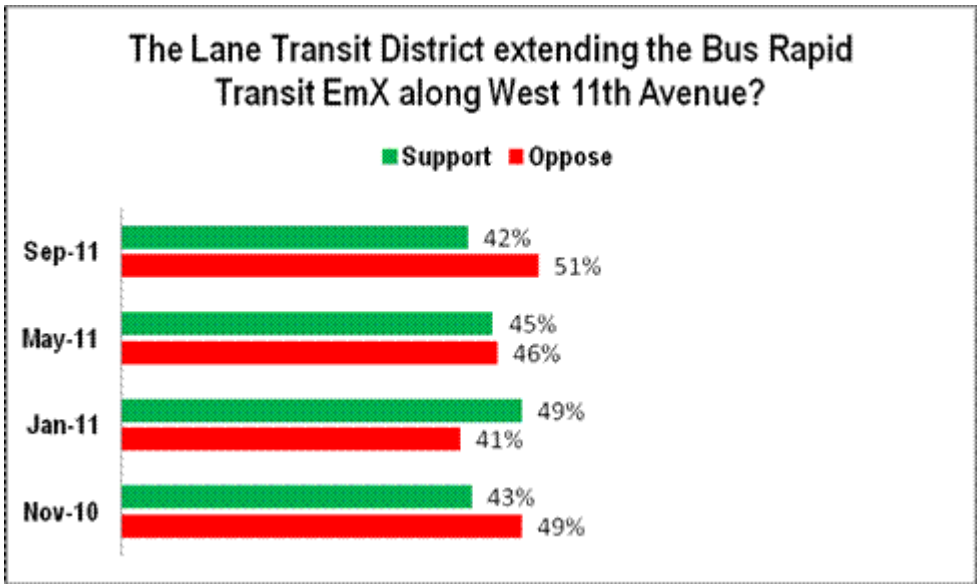

Fig. 18. Survey results from 2011 showing the shifting public support during heated debated about the future of EmX. Source: (Lindholm 2011)

Despite pushback from BRT opponents and concessions on BRT design that left some transit supporters disappointed in the final design, LTD and the Eugene City Council approved the final EmX extension alignment in October, 2012. The final design has dedicated bus lanes for most of the route, streetscape improvements and high quality stations. In order to win approval for the final alignment, LTD employed a broad stakeholder outreach strategy and a media campaign, though a relatively small number of opponents managed to sway public opinion at times. Despite fluctuating polling that reflected waxing and waning public support for the project, the final alignment was approved by the LTD board (an advisory board made up of elected officials) by a 5 to 1 vote.

Interagency Collaboration

Every metropolitan area in America has a different way of allocating decision making for the components of its transportation network. Depending on where the impetus to build BRT begins, there are a range of potential agency partnerships needed. Even coordination within an agency can be a challenge. For example, within a city's department of transportation there are often competing objectives to move cars, ship freight, improve transit, improve bicycle infrastructure and improve pedestrian conditions. This process of internal deliberation starts before a proposal is put forward but it continues throughout the concept development phase. SDOT is in the middle of these discussions right now and there are difficult choices to be made about where to place bicycles and pedestrian conditions among many other issues (Bender 2013). Assuming that at least one relevant governing

body and agency determine that BRT is a worthwhile goal, the next level of discussion is how to coordinate with other affected agencies.

In the case of Madison Street in Seattle, the City has initiated the BRT planning process though King County Transit is the transit service provider. For a city that controls the right of way and a transit agency which operates service to collaborate, the two agencies first need a general agreement on goals. In the case of Madison Street BRT, high level discussions between Seattle Department of Transportation, Seattle Department of Planning and Development and King County Metro Transit laid the groundwork for the project. In particular, a joint trip to Cleveland to see the new Healthline BRT and participate in a BRT conference provided a setting for high level discussions between representatives from the agencies to come to general agreement on the potential for Madison Street (Bryant 2013). Building this high level agreement such as a shared vision for BRT in a corridor is the crucial first step for agencies to begin collaboration.

Even with a shared understanding of the potential for BRT to succeed in a corridor, different agencies have different priorities, varying levels of financial capacity and divergent mandates. The City of Seattle's Transit Master Plan does not line up perfectly with King County metro's priorities for Seattle investment. Part of the reason the City is initiating Madison Street BRT is due to Seattleites desire for more robust, higher capacity, higher quality transit service than the county has been able to pursue (Mazzella 2013). While many planners at King County Metro share the belief that core Seattle routes warrant higher levels of service, the county has a responsibility to spread transit service across a large geographic area (Whistener 2013).

Until recently, the county had been forced to work within a geographical equity framework that required 40% of new funding to go to the East Side of the county, 40% for the South of the county and only 20% could be spent on service in Seattle. This policy was maintained by political pressure from county councilmembers in suburban areas who felt Seattle had historically received far more than its fair share of funding. Recently, a regional transit task force recommended cutting this policy which opened up the possibility of investing more heavily in corridors where transit demand is highest. This is one of the developments that make cooperation between the City and County possible for this BRT line. Still, the County has structural deficits which might force major cuts in service over the next few years. These cuts have the potential of curtailing the county's ability to be a strong partner on a new BRT line as priorities shift to maintaining as much existing service as possible. There is simply not a lot of slack that can be cut from King County's system in order to devote existing resources to a new service (Bryant 2013).

The tensions resulting from different agencies' internal capacities, financial strength, goals and mandates can lead to a disparity in willingness to invest time and resources into collaborative efforts. However, to put Seattle's difficulties in perspective, it is useful to look at Montgomery County, Maryland. Montgomery County is attempting to launch an ambitious countywide long range BRT plan that requires collaboration among dozens of cities. With thousands of daily commuters to Washington, D.C. in a spread out suburban county, BRT would provide much more coverage than eventual expansion of rail can provide alone. However, this requires the procurement of dedicated bus lanes across jurisdictions like the City of Rockville. Officials from Rockville, Maryland, have expressed skepticism that BRT service would benefit their town as much as other towns in the proposed network (Waibel 2013). While the county has voted in support of conversion of two lanes of State Highway 355 to BRT lanes, the portions of the highway running through municipalities like Rockville require city approval. If the county fails to win approval from the all of the cities, the resulting service will be greatly diminished. Rockville has its own agenda which does not include bus

lanes on one of its major thoroughfares. Whether or not the county and Rockville can reach agreement remains to be seen.

There are a variety of other forms of interagency collaboration that can be challenging such as working with a department of planning and development to develop coordinated plans for station areas. Strategies such as the Puget Sound Regional Council's Growing Transit Communities emphasize rail station TOD over the possibilities for TOD around bus lines (Puget Sound Regional Council 2013). Changes like this can require amending comprehensive plans and other major shifts. Similarly, metropolitan planning organizations need to approve of BRT plans in order for them to qualify for federal funds. While interagency issues such as these do not necessitate public outreach, interagency collaboration needs to be considered in the BRT stakeholder engagement process.

Overcoming Rail Bias

Misunderstanding and preconceptions can result in confusion and a lack of enthusiasm for new BRT proposals (Humphrey, 2009). Perhaps the most vexing problem is how BRT often fails to capture support among transit supporters. Even among thoughtful transit advocates, there is often skepticism and long held notions of rail's superiority over buses (Walker 2012). In response to a proposal to pursue new BRT investments, the Pittsburgh Gazette suggested people of Pittsburgh take an open mind, yet the editorial admitted it was not as easy to get excited about BRT. "Although we still see light rail as the transit of the future and a nostalgia for streetcars still tugs at our hearts, there's nothing wrong with Pittsburghers learning and investigating what Bus Rapid Transit could do in getting us from point A to point B (Pittsburgh Post-Gazette 2013)."

Surprisingly, Pittsburgh already has an excellent example of bus rapid transit. The city's East Busway was an early example of allocating unused railroad right of way for a trunk line with minimal interruptions, providing faster and more reliable service for thousands of riders a day and increasing property values along the corridor (Perk 2009). Despite the success of the busway, many transit supporters remain skeptical of new BRT proposals and voice dissent because BRT is considered a lost opportunity to get light rail in a deserving corridor (Pittsburgh Post-Gazette 2013). Unfortunately, rail can illicit irrational exuberance and lead to investments that fall short of expectations or consume extraordinary shares of transit budgets. This problem is exacerbated by the geographic spread of most American cities where the impact of short segments of high quality rail fail to make significant impacts on travel behavior.

Seattle has continued to invest in streetcars which are more expensive, slower and less reliable than enhanced buses or BRT would be on the same routes (Lindblom, 2013; Seattle Transit Master Plan 2012). The most common argument in support of the streetcar lines in the face of these facts is that streetcars spur economic development. Several studies show BRT can also be successful at spurring development (Cain and Flynn 2009). Still, rail bias has been particularly strong in cities such as Pittsburgh and Seattle, where streetcar networks thrived in the early 20th Century. The arguments that rail is superior at attracting passengers and spurring investment are pervasive and can be self-fulfilling. For example, Seattle's South Lake Union Streetcar was partially paid for by property owners along the line who have developed the neighborhood around it. Building such interest for bus rapid transit requires more active leadership.

What light rail supporters don't often realize is that the political burden of obtaining unimpeded rail alignments can be just as challenging as building BRT. In Seattle, Sound Transit's first light rail line was built at grade level through the Rainier Valley in order to make a longer, more affordable initial

investment. Unfortunately, it ended up costing the agency far more money and political capital to build on the surface than anticipated. Neighbors decried the loss of parking and rather than press on anyway, the agency used eminent domain to buy property and widen the road (Ketcherside 2009). Ultimately, light rail and streetcars are more expensive to squeeze into well used right of way and they cannot maneuver around obstacles or brake as quickly as buses, important traits in an urban environment. Buses can also run on electricity and be more comfortable than we often expect them to be. Despite the technical rationale which finds BRT to be a less expensive, superior solution for many urban surface transit needs, many continue to see BRT as regular bus service with a makeover.

Implementing a Complex Strategy

Similar to the way BRT has not yet become a standard component in the tool kit of urban transportation problem solving, systematic approaches to transforming transportation networks that cluster smaller projects together can have a hard time gaining traction. A rail corridor, bridge or a tunnel is an investment that clearly adds something new of value. Cleveland's BRT plan for Euclid Corridor on the other hand, was a complex strategy. The package included new bus lanes, stations, thoughtful reorganization of an existing street, upgrading traffic signals, new urban design elements, land use planning and economic development.

One of the overlooked phenomena in Curitiba, Brazil is how the city capitalized on its BRT investment with supportive land use and complimentary traffic improvements. While the focus of attention tends to be BRT, Curitiba's high transit ridership is the result of concerted effort on a variety of urban planning and transportation initiatives (Cervero 1998). Not surprisingly, two of the key champions of Cleveland's Healthline were inspired to pursue BRT after visiting Curitiba. U.S. Senator George Voinovich and Cleveland Mayor Frank Jackson recognized the power of BRT as a catalyst for improving neighborhoods along a line (Transport Matters 2013). Cleveland proudly proclaims that the Healthline helped spark $2.8 billion in new development along the corridor (Sasaki, 2013). All told, between public and private sources, the Euclid BRT project was responsible for $5.5 billion in total investment in the corridor including projects such as federally funded affordable housing, city funded streetscape design and new mixed use development (Sasaki, 2013). The federal government has put the goal of coordinating transit, housing, economic development and environmental protection funding in the so called Partnership for Sustainable Communities.

Unfortunately, there are three major drawbacks to expansive approaches like this:

- Inevitably, a broad strategic plan with many small components requires more coordination of stakeholders, politicians and agencies.
- A strategy made up of many coordinated modest improvements often fails to capture the imagination of politicians and the general public. It is hard to explain the benefits or have a ribbon cutting ceremony for a complex strategy. A new tunnel or light rail line, on the other hand, has the distinct advantage of simplicity and clarity.
- Often, funding streams dictate certain approaches to problems, limiting how money can be spent and encouraging cities to find problems to match available funding solutions.

Seattle's Alaska Way Viaduct replacement planning is a primary case in point. Seattle's elevated waterfront highway has been crumbling for years and competing visions for what to build after tearing it down created a political stalemate. Ultimately, the debate centered on whether or not to replace the viaduct with another elevated highway or instead build a tunnel. A third plan gained some traction but failed to win broad support despite showing more potential benefit than either highway

replacement schemes. The problem with the third plan, known as surface/transit/I-5 (ST5), is that it is a collection of hundreds of smaller fixes which were not easily digested. ST5 proponents suggested redirecting the $2.8 billion in state funds to build a new highway tunnel, dispersing the investment to strengthen existing systems. Primary targets for investment included: making the downtown street grid more efficient, improving I-5 (the other highway which runs through the center city), and improving public transit to move more people through the existing streets than would be possible otherwise.

Seattle Mayor Greg Nickels, SDOT director Grace Curnican and a coalition of supporters pursued the latter approach and made a strong case that it would achieve more of the state's desired outcomes, but city leaders gave up on the idea when it became apparent that the state would not invest in a systematic urban transportation improvement plan that was on par with the level of funding available for a deep bore tunnel (Brewster 2011). Ultimately, the bias toward monumental improvements and highways trumped the logic of an innovative strategy which had much more potential for accomplishing mobility, accessibility, equity and sustainability goals of Seattle and Washington State. Cities across America have come to realize that highway expansion is not the answer for improving urban cores, yet the complexity of other solutions often leads us back to what we know and are familiar with.

David M. Kennedy writes about the ways strategic problem solving can be difficult to convey to a broad audience in his book about problem oriented policing, *Don't Shoot* (2011). When describing the national reaction to the so called "Boston Miracle" which dramatically reduced homicide in 1996 through strategic analysis of gang relationships and effective interventions with gang members, Kennedy writes that the media was only capable of picking up small pieces of the strategy. "The coverage mostly grabbed a single moving part and skipped the logic entirely. Elements that together had been central to what *did* happen were made to carry a weight they never had, and never could." Kennedy notes that most people used the Boston Miracle to justify their own preconceptions about what is effective at reducing violence. Even after widespread recognition of what occurred in Boston, there was a lack of consensus about what caused the phenomena.

While these examples of complex strategies might seem unrelated to the question of how to implement BRT, they are perfect examples of how the best solutions to problems often go ignored due to lack of institutionalized capacity and our collective desire for clear fixes to problems. Solutions that do not have existing socio-political channels or require building new alliances and combining resources in new ways inevitably face a steeper challenge. In autocratic regimes, this can be accomplished through enlightened dictatorship but this obviously comes with a host of downsides. In a democracy, if BRT has potential for transformative change, deliberative partnerships and strategies to align interests need to be developed. Just as David Kennedy proved that law enforcement and gangs could work together to stop violence, BRT planners need to find creative ways of approaching the political landscape, uncover interests of key stakeholders and build new alliances to support the development of BRT.

For each community, a unique package of potential BRT benefits will differ in response to the values and unique needs of the neighborhoods and people it serves. It might require collaboration with unlikely partners such as transit agencies working with offices of economic development, human service agencies, affordable housing advocates, parks departments, local businesses or other groups that could end up opposing BRT because it detracts from other goals, remain ambivalent or becoming supporters as strategies develop to ensure mutual benefit.

6 Emerging Solutions for BRT Implementation

In April of 2013 Cleveland's Healthline was given an award from the Institute for Transportation and Development Policy and dubbed "the best practice" in American BRT. As mentioned previously, the Healthline not only employed outreach to help citizens understand the BRT proposal, city leaders brought together government resources and partners from anchor institutions to craft a strategy for transformative change along the corridor.

Cleveland's success started with political leadership from the mayor and support from politicians such as US Senator George Voinovich (Hellendrung 2012). Officials mobilized government resources around the concept. The next important circle of partners consisted of leaders from major institutions such as Universities and hospitals along the line. While many people in Cleveland saw BRT as an inferior choice to light rail, the message that BRT was something that could actually be built was persuasive enough to bring people to the table.

In order to fund the plan, a complex agreement was formed between the Regional Transit Authority (RTA), the Federal Transit Administration, the Ohio Department of Transportation, the Northeast Ohio Areawide Coordinating Agency, the city of Cleveland, and several medical centers. While the total cost of the project was $200 million, $31.6 million went toward non-transit improvements such as sidewalks, utilities, bicycle infrastructure and public art (Hellendrung, 2012). This approach of coordinating investments in transit and non-transit improvements brought more stakeholders to the table and encouraged them to play vital roles in determining how to transform the corridor.

Fig. 19. Cleveland employed charrettes and public meetings to explore urban design, public art and streetscape improvements. Source: (Sasaki 2013)

Through 2000 meetings, potential opportunities were explored and stakeholder interests and concerns were addressed (Hellendrung 2012). Planners divided the corridor into eight distinct subsections where more community focused discussions took place around particular stations and neighborhood concerns. A key to the strategy became the notion of trying to capture what people like about rail in the BRT plan. Some negative impacts such as loss of some parking spaces were unavoidable and many residents remain skeptical that removing general traffic lanes for transit is a worthwhile idea, yet, these controversies did not blow up the process.

It took ten years to go from the initial proposal to completion of construction, however, debate over how to build a rail line on Euclid Avenue had been going on for almost thirty years (Hellendrung, 2012). In addition to building partnerships to connect businesses and organizations on the Healthline corridor itself, the process helped strengthen organizational ties and relationships as well. In 2010, a bio tech incubator and an economic development agency helped create the Cleveland Health-Tech Corridor, a three mile long economic development zone that seeks to agglomerate knowledge based industries around a portion of the line (Hellendrung, 2012).

Chicago, Pittsburgh, Nashville, Alameda County in California, Montgomery County in Maryland, Eugene, New York and San Francisco are all attempting to follow similar strategies to implement BRT plans with comprehensive stakeholder engagement approaches. Whether or not these cities can achieve similar results to Cleveland remains to be seen and clearly Cleveland built off of its own unique strengths and needs so there is no blueprint for how to create a transformative BRT corridor. Still, stakeholder engagement, public outreach, civic leadership and coalition building appear to have the power to address the major obstacles facing BRT implementation identified in this chapter.

Part III- Madison Street Outreach and Stakeholder Engagement Strategy

7 A Multilayered Approach

Despite Seattle's elected officials' willingness to invest in a Madison Street BRT study, the range of possibilities for the corridor is wide. Depending on how the corridor planning process proceeds, Seattle will probably end up with one of two different kinds of service, an enhanced bus corridor or a high performance BRT line. It is up to planners and a variety of stakeholders to shape whether or not Seattle follows Cleveland, Chicago and San Francisco and builds ambitious surface street BRT in some of its densest neighborhoods. The following strategy is an attempt to incorporate the lessons learned from other BRT planning processes, road reallocation efforts and democratic approaches to wicked problem solving.

The goal of this process is to achieve more than BRT. This strategy is intended to pursue "BRT+." The "+" remains to be defined by stakeholders, representing the integration of transit goals and other city priorities. BRT can be a part of a larger transformation for a city, shaping it in subtle and surprising ways. While the Healthline was part of an economic revitalization of a corridor (Panero 2012), Curitiba used BRT to plant the seeds for an entirely new vision of sustainable, dense land use patterns (Cervero 1998). These precedents and others show how BRT corridor planning lends itself to a process of community engagement that can be rich, insightful and tremendously beneficial to BRT. Stakeholder engagement can lead to partnerships and ways of aligning city investments that add value to BRT and vice versa, in virtuous circles. This is the essence of BRT+.

The overall theme that emerges when examining successful campaigns to build BRT corridors and what seems likely to succeed in an American city like Seattle is a multilayered approach which includes:

- High level: Effective leadership to amplify and reinforce policies, vision and goals around land use, transportation and sustainability.
- Mid-level: Targeted stakeholder involvement including relevant government agencies and members of the public. This is the most important layer for determining key attributes of the system and how BRT will be integrated into the City.
- Low level: Broad public education, messaging and engagement with the public at large.

The stakeholder engagement strategy depends upon leaders to voice high level policy and goals to help shape the stage for stakeholder engagement. The middle layer of stakeholder engagement has the power to craft the solutions to high level policies and goals. How stakeholders react to the process will have a profound effect on how the broader public views the process. The public at large play a critical role in evaluating the process and it is important to keep an eye on how stakeholder involvement and planning effect broader perceptions about the project.

Citywide Leadership

City leaders play an important role in building a coordinated effort and reminding the public about shared values and goals that guide the BRT implementation and engagement processes. There are many policies and plans for Seattle and the Puget Sound Region that outline how Seattle should become more sustainable, reduce dependence on automobiles and invest in high quality transit.

Focusing on the fact that Madison Street BRT is an attempt to live up to a shared vision can help set the stage for collaboration and stakeholder engagement. To demonstrate what this aspect of the Madison Street BRT strategy might look like, it is useful to return to Chicago and examine their current efforts.

The Chicago Transit Administration (CTA) and the Chicago Department of Transportation (CDOT) have launched an ambitious outreach and engagement initiative to implement several BRT corridors including Ashland Avenue BRT. Along with building a coalition of city organizations and agencies, under the name ”BRT Chicago,” leaders like Mayor Rahm Emanuel have been enlisted to clarify the purpose of pursuing BRT. A recent press release from BRT Chicago announcing the beginning of “community engagement efforts to build a vision for faster and more reliable transit in Chicago” offers an excellent template for what BRT goal and vision setting at the high level looks like (BRT Chicago 2013).

Fig. 20. Rendering of Ashland Avenue BRT used in outreach campaign. Source: (BRT Chicago 2013)

The press release moves from high level vision statements to more detailed goals and it emphasizes that despite these goals, there is still flexibility and room to work with stakeholders to improve the concept.

The press release starts with a big vision statement from Mayor Rahm Emanuel:

> “Bus Rapid Transit is one of the easiest and most cost-effective ways to expand and modernize our city’s transit network for the 21st century and is an important component of my plan to create a world-class transit system. We will work with our local communities to best determine how to maximize the positive impacts BRT would provide to riders, while boosting local economic development and improving quality of life for all city residents.” (BRT Chicago 2013)

Including Mayor Emanuel’s statement in the press release helps legitimate the BRT planning process and frames this project as an important citywide issue. He balances both a clear vision and goal to build BRT with a need to work with communities in crafting the plan. The press release then moves to a more detailed vision from the Chicago Transit Authority and Chicago Department of Transportation and rationale behind corridor selection.

As the stakeholder engagement process kicks in, it is important to steer the discussion to how to implement BRT on a given corridor, rather than whether or not this is the best corridor possible,

whether or not BRT is a worthwhile investment or broader questions such as whether or not a city should have public transportation. If a city has not satisfactorily addressed these basic questions already, it is probably not ready to implement a BRT corridor (Vuchic 2005). Still, it is important to reiterate the reasons why a given corridor has been chosen and why BRT is worth pursuing.

> "Ashland Avenue has the highest CTA bus ridership with more than 30,000 riders per weekday," said CTA President Forrest Claypool. "By introducing BRT, we will be providing one in ten Chicagoans with access to faster and more reliable transit, allowing a rail-like experience at a lower cost."
>
> "CTA and CDOT will also begin working with local stakeholders on developing a plan that would create faster, more reliable bus service by increasing bus speeds by more than 80 percent during peak travel times and create economic benefits for business and residents along the entire corridor." (BRT Chicago 2013)

While at the outset, there needs to be a balance between setting clear goals and allowing flexibility to respond to the engagement process, in Chicago's case, the agencies offered many details about how these goals would likely be accomplished and how potentially negative impacts could be mitigated:

> "The vision to redesign streets to make transit more efficient includes bus-only lanes, transit signal priority and balancing the needs for all users, including autos. This vision maximizes street potential, enhances the pedestrian environment and represents the highest BRT standard."
>
> "In addition to faster travel, proposed BRT on Ashland will:
>
> - Save about 8 minutes per trip based on the current average trip length on the #9 Ashland bus of 2.5 miles
> - Preserve approximately 90 percent of parking on both sides of the street
> - Enhance streetscapes with more than 75 blocks of new streetscaping, including medians, better lighting, wider sidewalks and more greenery
> - Allow the potential for pre-payment for faster boarding, similar to CTA 'L' stations
> - Preserve approximately 95 percent of loading zones for delivery trucks" (BRT Chicago 2013)

While Seattle will not be able to make similar promises about maintaining on street parking on all of Madison, this provides a rough template for how to craft BRT goals. Aside from politicians, leaders from transit advocacy groups, neighborhood organizations, institutions and the business world can also play an important role at this level. Businesses and major institutions can be particularly compelling supporters of transit initiatives. For example, Microsoft has been an important supporter for transit funding in recent years, despite its suburban location. The University of Washington has worked closely with Metro and lobbied on its behalf to ensure quality transit service for its students and employees.

It is incumbent on Seattle Department of Transportation and King County Metro to work with potential BRT supporters at Seattle University, Virginia Mason Medical Center and Swedish Medical

Center, all of which are on Madison Street. In addition, BRT supporters should look for support from citywide and state wide transit groups like Transportation Choices, business oriented groups like the Downtown Seattle Association, environmental groups like the Sierra Club and others. These groups can help shine a light on the goal of building high quality transit in central Seattle.

Most of these organizations have goals that dovetail with Madison Street BRT already. For example, Commute Seattle, which is run by the Downtown Seattle Association in conjunction with SDOT and King County Metro has a goal of reducing single occupancy vehicle commute trips to downtown to 30% of total mode share by 2016 (Commute Seattle 2013). Similar goals can be found in Appendix D for each of the major institutions along Madison Street. Planners and advocates for BRT will need to tap into these interests and values to build a coalition of support for Madison Street BRT.

Goals, Policies and Plans Supporting Madison Street BRT

Existing plans and policies can be important tools for political leaders and agencies to bring the vision of BRT to the public. Existing plans, policies and mandates can help define how we judge BRT plans. At the state level, Washington has growth management laws that call for cities to make dense urban cores livable and attractive to residents. The state has also set targets to reduce vehicle miles travelled and needs to support ways to make this possible. Developing local capacity to build BRT could further all of these goals in a cost effective manner. Given the dire situation of state and county budgets, the fact that BRT is less expensive to implement than rail is a crucial selling point.

Looking at the Central Puget Sound region, Madison Street BRT would further numerous regional goals. The Puget Sound Regional Council's *Growing Transit Communities Strategy* states, "Growth, as envisioned in VISION 2040, should benefit all people by increasing economic development and access to jobs, expanding housing and transportation choices, promoting neighborhood character and vitality, and improving public health and environmental quality (Puget Sound Regional Council 2013)." Transportation 2040 calls for major reductions in vehicle miles travelled but critics such as Futurewise have made a strong case that the plan has no chance of meeting these goals (Futurewise 2013). Developing a new regional tool like BRT could be a game changer, allowing high capacity transit to expand much further and faster than light rail can alone. BRT could be a missing piece in the puzzle to meet greenhouse gas emissions targets.

Locally, the Seattle Comprehensive Plan outlines the importance of transit oriented "urban villages" and, as previously noted, the Seattle Transit Master Plan identifies Madison Street as a key high capacity corridor. Currently, the Seattle Planning Commission is developing recommendations for new funding mechanisms and tools to develop transit oriented neighborhoods through the Seattle Transit Communities Initiative. Within SDOT, there are a range of policies such as the designation of priority bus corridors and policy of prioritizing the movement of people and goods over the volume of vehicles. The 2005 Seattle Strategic Transportation Plan and the Seattle Transit Plan identified the need to prioritize transit on certain surface streets and Seattle passed a property tax levy in 2006 that allowed SDOT to start investing in transit infrastructure including bus speed and reliability measures. Metro's RapidRide has proven that the county and city can work together on enhanced bus service. The implementation of RapidRide has caused some to question whether or not local governments can ever build true BRT. Even the Seattle Times, which can be a fierce critic of Seattle's supposed "anti-car" policies ran a front page article about criticism RapidRide has received for not living up to speed and reliability expectations (Lindblom 2012). Responses like this can be used to embolden leaders to be more aggressive in calling for true BRT and encouraging community leaders to be assertive in crafting and fulfilling ambitious BRT goals.

Having supportive policies and plans can be key determining factors in whether or not a city can successfully build and keep BRT improvements in place (Vuchic 2005). However, there is a difference between a vision that happens to be in a planning document and a vision that is championed and broadly supported. Just as Chicago Mayor Rahm Emanuel and Cleveland Mayor Mark Jackson declared their support for BRT, Seattle needs elected officials and other leaders to speak out. Editorials, speeches, and other large scale public forums are excellent venues for addressing the big reasons and underlying values driving projects forward. Understanding of shared values and goals can help fuel a productive public engagement process (Varley 1992).

Stakeholder Engagement

While it is important to find champions for BRT and civic leaders that can articulate existing goals that BRT can achieve, an honest and meaningful stakeholder engagement process is the crux of this proposed outreach and engagement strategy. Stakeholder engagement activities will range from coordinating government agencies to building support among key organizations to grassroots involvement of residents, employees and transit riders. Cleveland's approach of enlarging the process to include non-transit improvements was successful at bringing together stakeholders with disparate interests to transform the corridor. Seattle should look to stakeholders to find the best ways to expand the project and coordinate with other investments in the area. Ideally, the project will not take as long as Cleveland's Healthline to plan, but given the nature of BRT as a relatively new concept and the number of agencies involved, Madison Street BRT will probably need several years to move from concept development to construction. While it will take longer to pursue a plan that goes beyond transportation improvements, the process stands a better chance of creating true transit oriented communities and building support for BRT.

Who should Planners Engage?

Appendix A provides an in depth chart of potential stakeholders who can play important roles in the Madison BRT planning process. They are divided in two categories, internal and external. For the sake of simplicity, all government agencies are considered internal stakeholders. External stakeholders include a full range of positions from potentially strong supporters to potentially strong opponents.

Internal Stakeholders

As the agency overseeing this process, SDOT will need to invest a wide array of internal resources into this project. A number of disparate groups within SDOT will need to work together for this project to be successful. While coordinating within one department seems relatively straightforward from the outside, it is not always as easy in practice. Most notably, there are competing visions for Madison Street as a BRT line and also as a major bicycle route. Unfortunately, with the constrained right of way, accommodating both bicycle infrastructure and true BRT is difficult, given the political challenge of limiting auto traffic. Initial conversations on the issue show potential to include separated bicycle paths on portions of Madison and include work on a parallel route for other segments. Similarly, sidewalks are narrow and space will be difficult to find for as many improvements to the pedestrian space as planners would like. Groups working on parking have important insight into community desires for this expensive and scarce commodity along much of the route.

Other SDOT groups that will be affected include urban forestry, freight planning, and emergency vehicle access. The initial technical advisory group that is conducting a preliminary traffic analysis includes SDOT employees with expertise on signals, bicycle planning, sidewalks and representatives from the Department of Planning and Development and King County Metro. The initial traffic analysis that recently began has brought together representatives from these departments and agencies. As the project moves into concept development, it would be wise to implement an interdepartmental team to ensure Seattle Public Utilities, Seattle City Light, and other parts of the city coordinate their efforts and look for potential cost savings and synergies. Road construction could be an excellent opportunity to upgrade stormwater facilities or install a planned fiber network.

Working with federal and regional government agencies to secure funding will be critical. This is an excellent time to launch BRT projects with the FTA targeting efforts at promoting BRT. If Seattle can show that high quality 100% electric BRT is achievable on Madison, despite how narrow the road is, it would be a very competitive project for FTA funding. This is the kind of low risk/high reward capital project that could win a Small Starts grant that would cover up to $80 million which happens to be the estimated project cost in the Seattle Transit Master Plan.

The state might also provide funding though state transit funding has been low and grants are likely to be much smaller than a federal contribution. One area where the state might be more likely to contribute funding is for improvements to the Interstate 5 on and off ramps that cause major congestion on Madison Street. Currently, the State and King County are trying to come up with a long range plan for stable transit operations funding and capital funding has been meager. The City will likely be able to supply a sufficient contribution to capital expenses to qualify for federal funding if the state and county cannot help. A lingering question about operations funding for new service will need to be addressed with the county as they are currently facing a major budget shortfall.

External Stakeholders

This project calls for a broad community engagement approach as BRT could have repercussions for many residents around the city. Certain key stakeholders along the route need particular attention due to the immediate impacts of the project. Ensuring these key stakeholders are involved in the process will increase the likelihood of buy in and create opportunities for constructive feedback.

As mentioned above, it would be wise to engage civic minded groups and form a coalition of supporters for BRT generally and Madison Street in particular. Current BRT efforts in Chicago, San Francisco and Pittsburgh all have coalitions of supporters which cover a range of economic development interests, smart growth proponents, environmentalists and transit advocates. Independent BRT advocacy organizations have sprung up in San Francisco and Pittsburg. Chicago's official coalition includes the Chicago Architecture Foundation, ITDP, the Rockefeller Foundation and more than thirty other organizations.

One of the most critical relationships needs to be established among Virginia Mason, Swedish Medical Center and Seattle University. These three major stakeholders already work together on transportation issues and it would be wise to meet with that working group to explore the potential of BRT to help further their interests. The Downtown Seattle Association is another major stakeholder who represents the downtown business establishment and tends to support transit projects.

Neighborhood councils and groups include three District Councils, the First Hill Improvement Association, the Capitol Hill Community Association and Friends of the Waterfront, a new organization that is very active with Seattle's ambitious waterfront planning effort. Planners should attend these groups' meetings, introduce BRT concepts and get input as the process moves forward. The Department of Neighborhoods has community liaisons that can connect city planners to other key neighborhood networks.

In addition to large community organizations, planners should meet with cultural institutions such as Town Hall and the Frye Art Museum, churches such as First Presbyterian, retirement communities such as Horizon House and Exeter House, businesses and human service agencies along the corridor. As the Eugene EmX extension case makes clear, small business owners who feel shut out of a process can be powerful and persuasive opponents. On the other hand, organizations like the Bullitt Foundation that just completed construction of one of the most sustainable buildings in the Northwest on Madison and 15th Avenue could be powerful advocates.

Finally, it is important to note that the door to engagement needs to be open and welcoming of new voices and groups that might not be immediately apparent. SDOT will need to keep an eye out for new stakeholders who seem particularly interested in the process. Making it easy to find information about the project, sign up for the project mailing list and attend meetings will be critical to forming the full stakeholder group.

Keys to Effective Engagement for BRT+

A key tenet of this strategy is that well-crafted stakeholder engagement can wed transit and non-transit goals to create "BRT+." Cleveland certainly accomplished more than providing great transit service, spurring economic investment and neighborhood revitalization. Seattle can pursue complimentary goals to BRT in a similar fashion, though the shorter length of the corridor will lead to a smaller scale approach. Given the current slate of large scale projects underway in Seattle including Yesler Terrace redevelopment, Waterfront redevelopment, the Highway 99 deep bore tunnel, Center City Connector and Ballard High Capacity transit project, it is unrealistic to expect Madison Street BRT to be the number one focus for civic leaders and priority for resources. However, due to the strong desire for higher quality transit in Seattle and the important precedent that trolley bus rapid transit would have for future planning, this project will be prominent and it will be easy to foster a strong engagement process. SDOT will need to provide a large enough core team to support an ambitious meeting schedule and hopefully the Seattle Department of Planning and Development as well as King County Metro can follow suit.

Stakeholder Engagement Structures

One underlying theme that should be woven throughout the process is the creation of a nexus between political power, technical expertise and neighborhood insight. A successful engagement process will encourage these three spheres to support each other. In Minneapolis a current transit planning effort called the Midtown Corridor Alternatives Analysis is considering BRT, among other modes, for a high capacity transit line. Minneapolis set up a policy advisory committee, a technical advisory committee and a community advisory committee to vet a preferred local option with the support of the project management team. Ultimate decision making authority is in the hands of the policy advisory committee which is made up of elected officials (Metro Transit 2013). This type of power structure helps define roles and a board made up of elected officials is a logical choice to

make final decisions as elected officials will be key players in delivering funding to implement a final plan.

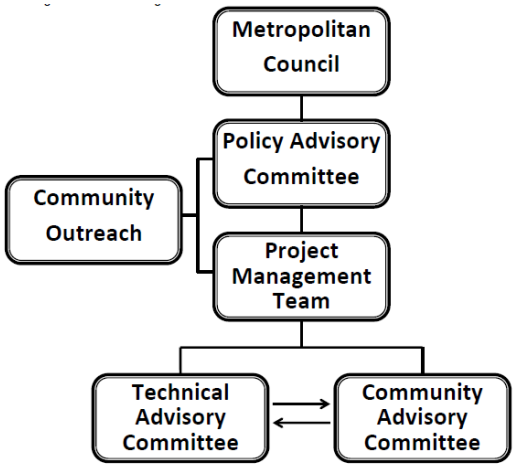

Fig. 21. Minneapolis Community Engagement Structure for Midtown Alternatives Analysis provides structure for coordinating among different agencies and public stakeholders. Source: (Metro Transit 2013)

The BRT+ strategy will require a similar level of organization, engagement from elected officials and a method of employing formal citizen and technical advising groups. However, establishing a formal political body might not be feasible and as long as there is clear communication between elected officials and the project management team on essential parameters such as funding sources, the project management team could assume the role of the policy advisory committee. SDOT has experience working with citizen advisory committees on projects including priority bus corridor enhancements and the Seattle waterfront redevelopment and seawall replacement plan. Ideally, committee members should be clear representatives of a variety of interests along the corridor and they need to have open minds and a willingness to consider alternative solutions to a problem (Bender 2013).

SDOT has coordinated a Technical Advisory Group with a number of SDOT employees, King County Metro employees and some representatives from Department of Planning and Development (Bender 2013). Currently, this group is advising a consultant on the creation of preliminary scenarios for traffic modeling purposes and preliminary information to inform future concept development. As the project moves forward, this group will need involvement from other agencies such as Seattle Public Utilities. Building these partnerships requires the aforementioned high level leadership, most likely coming from the mayor's office. Even if other city departments cannot get deeply involved, SDOT has the power to address streetscape, place-making and other opportunities to add value to the right of way. SDOT has urban designers and experience working on public space projects such as pedestrian plazas. One current project that has demonstrated SDOT's capacity to work on transit and address a broad range of social issues is a comprehensive approach to improving Third Avenue, Seattle's downtown "transit spine." This planning effort is attempting to address issues of public safety and urban design along with transit performance enhancements (Bender 2013).

Engagement Techniques

Meetings will take on many forms and while it seems hard to imagine how Cleveland's Healthline planners engaged in 2000 meetings, this number is a good indication that there should be a wide variety of opportunities to share BRT planning updates, receive input and negotiate key decisions. The meetings will fall into the following categories:

- A handful of large public meetings that demonstrate the broad and varied interests at play and provide an opportunity for all of Seattle to check in and weigh in.
- Regular meetings of the advisory committees
- Visiting stakeholders on their turf including district council meetings, neighborhood groups, trips to institutions and other groups who request presentations.
- Less formal and more intimate meetings, negotiations and discussions with key stakeholders.
- Participation in large public events.

While it is not feasible for every meeting to consist of the city council, mayor, technical experts from applicable areas, representatives of neighborhood interests and civic minded organizations, it would be good to have at least one or two meetings that actually do aspire to this vision of key players coming together to talk about Madison Street BRT. Large public meetings that kick off and close the planning process will be good opportunities for bringing together a full spectrum of participants, although large events do not lend themselves to deliberative negotiation. This is one the reasons why it is also important to have meaningful discussions and negotiations with key stakeholders in private or through backchannels throughout the engagement process.

Seattle's waterfront redevelopment project employed large, festive open houses and more targeted issue based open houses with in depth dialogue around issues such as ecology, transportation and public space. The waterfront process has also had an ongoing citizen advisory committee and solicited input through a well-designed website. Not only should these tactics be incorporated into BRT planning, the waterfront planning team is an important stakeholder group as Madison BRT will terminate at Coleman Dock and provide much needed transit access to the waterfront.

Introducing the concept of BRT+ will be critical to informing meaningful discussion. The most effective method of learning about transformative BRT lines is to visit them. Short of that, inviting speakers from cities like Cleveland or Chicago or experts such as Robert Cervero would work well with many groups. Presentations should balance clear explanations of how BRT will work with how BRT will benefit the community. Video that shows BRT and surrounding development could be useful. Encouraging citizens to think in terms of what they would want to get out of light rail could also help people entertain the possibilities that BRT presents.

Open discussion about goals and values needs to be incorporated into the process early on. Addressing values at the outset allows stakeholders to understand where each other are coming from. When project goals are unclear or stakeholders suspect their interests are being ignored, resentment can build. Madison Street planners need to engage the public at this level early to demonstrate due diligence in bringing both problems and creative solutions to light.

Potential Questions for the Community Engagement Process

Preparing for questions from BRT skeptics and people who have divergent interests is essential if BRT is to become a reality. Taking a cue from Chicago, it is important to think of the most challenging questions and strongest arguments against BRT and address these early and often. Some of these questions, such as the effect of diminished parking on retail, have already been raised and it behooves the city to address them as quickly and thoroughly as possible.

At the outset it will be critical to identify and highlight community interests and values. Dialogue at the beginning of the process with stakeholder groups needs to both explain the range of potential BRT options and open the door for new suggestions. Economic development, pedestrian infrastructure, parking, safety, bicycles, and hospital access are all potential issues which the community might place high value on addressing. Establishing a rough priority at the outset of the process will help scope the project in such a way that planners and city officials can implement community driven planning and design within a reasonable budget and timeline. There also might be opportunities to build public private partnerships.

As problems and controversial issues surface, it will important to engage directly with affected parties to craft potential mitigation strategies. If no adequate mitigation is possible, planners need to make a compelling case for why the project should move forward. The most likely scenario is the loss of street parking affecting a business. Does the benefit of a given parking space outweigh the potential benefits to the transit riders who will be stuck in traffic? Offering up mitigation strategies, even if they do not satisfy the affected party at least shows good faith and helps lessen the political damage that a small group of angry constituents can inflict on elected officials and department heads.

Parking

Restricting street parking has been a vexing issue for transportation planners across America for many years. Studies have shown that drivers prefer to park on a street rather than enter a parking garage and many businesses believe that longer distances between parking and their front doors inevitably means less revenue. A number of long time transit planners do not believe Seattle will have the will to reduce street parking on Madison Street to the level needed to accommodate true BRT. Despite a long history of mandatory parking minimums for new buildings and city policy which prioritizes transit and general traffic over street parking, the removal of street parking is a major ordeal, even when the public benefits are clear and compelling. Existing restrictions on parking along Madison are already drawing criticism from long time businesses who feel certain parking spots are a key feature for drawing customers. Despite these impediments, planners have shown that it is possible to remove parking as long as there are clear benefits and a concerted effort to help those who are most affected by the decision.

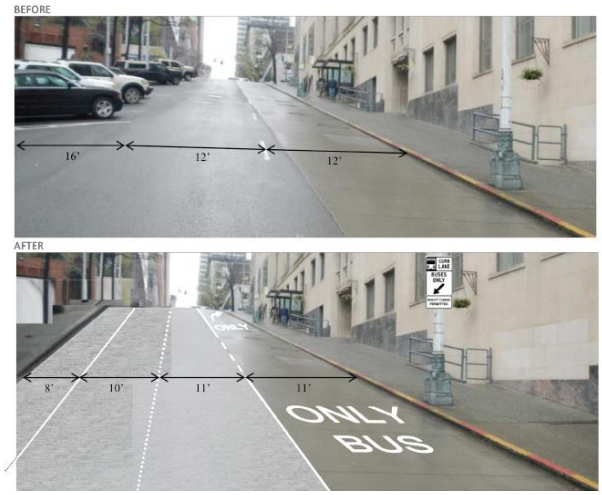

Fig. 22. Rendering showing how the addition of a bus lane on Marion Street would alter channelization, including the loss of half of existing parking spaces. Source: (King County Metro 2010)

It is crucial to note that different businesses have a wide range of interests around parking. This is why it is important to engage stakeholders directly in devising mitigation strategies around lost parking. Many older buildings have no parking and rely more heavily than new buildings on street parking. As one of Seattle's older thoroughfares, Madison Street has a number of old buildings which house business owners who feel reliant on street parking including restaurants, bars, delis, and bakeries. On the other hand, Madison Street has many newer buildings which included parking garages in their construction. Businesses with parking garages are more likely to accept the loss of street parking in exchange for dramatically improved transit access and pedestrian environments, to minimize the need for parking. For example, the major institutions along Madison Street have adopted rigorous transportation demand management programs in an effort to reduce the need for more parking garages. All three major institutions conduct travel surveys and have a good understanding of how encouraging transit ridership can save money and irreplaceable space that can be used for more productive purposes than parking structures.

One of the key features of parking on Madison Street itself is that it is already restricted during the afternoon rush hour. Recently this restriction expanded from 4-6 pm to 3-7 pm. This change prompted strong reaction from a number of businesses along the line (Dong 2013). As one might expect, the most vocal opponents were in older buildings that do not have parking garages. Owners of a German Deli and a fifty year old bar and grill voiced opposition to the change at the First Hill Improvement Association (FHIA) Meeting where the concept of BRT was introduced on April 16, 2013. These retailers and concerned residents also encouraged the FHIA to take an active role in monitoring the health of retail on Madison. The FHIA sent a message to City council members and staffers sounding alarm at the potential loss of retail on Madison and lack of retail on First Hill in general. FHIA requested that before any drastic changes occur on Madison Street, such as the BRT proposal, a study of the retail health needs to be conducted on First Hill and any future transportation changes need a supporting plan for maintaining businesses which serve the dense neighborhood.

Within the hierarchy of kinds of parking, SDOT gives special consideration to loading zones for businesses. One potential solution to the loss of on street parking for businesses on Madison could be a reallocation of parking on side streets from primarily serving long term residential parking to shorter term parking. In 2010 a neighborhood parking plan was adopted in First Hill which expanded the residential parking zone (RPZ) which allows residents with proper RPZ permits to park for free. Between this program and an abundance of handicap permits which also allow free parking, there is

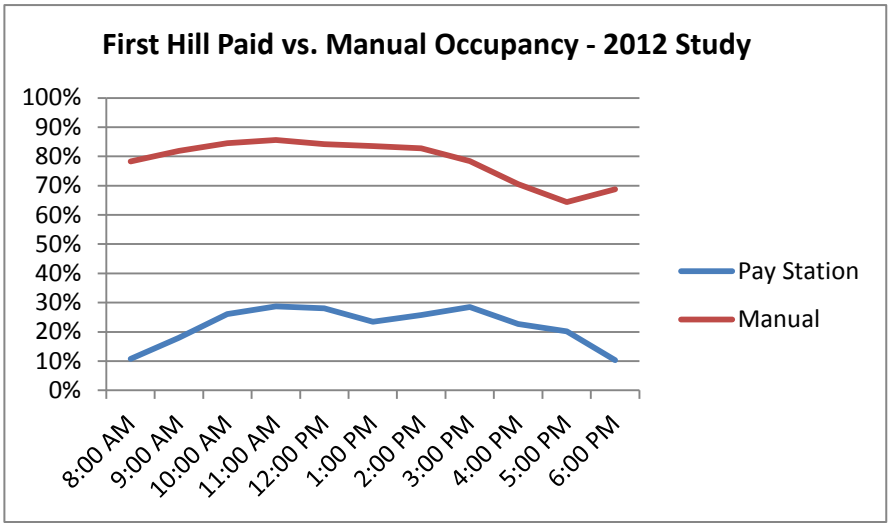

Fig. 23. Chart showing First Hill on street paid parking occupancy (red line) compared to number of people paying (blue line). The disparity is due to large number of residential permit and disabled permit holders.
Source: (SDOT 2013)

far more demand than available on street parking supply. In part because of these users, metered spots are hard to find, despite a cost $4 per hour.

One way to mitigate this impact would be to look at parking broadly in affected areas and look for creative solutions such as replacing parking spots that residents are using for longer term parking with short term parking. This could pit residents against businesses so it will need to be approached with caution. Current parking occupancy is among the highest of all paid parking areas in Seattle, due in large part to RPZ holders and disabled permit parking. Working with parking garages to ensure available parking inventory is well utilized at all times of the day is one way to create some opportunities for new parking.

Bicycle Infrastructure

BRT on Madison presents problems and opportunities for bicyclists. The major opportunity is funding for bicycle infrastructure. The FTA now includes pedestrian and bicycle facilities around a BRT Line as an acceptable way to spend transit funding. Bicycle paths that contribute ridership within three miles of a route can qualify. Seattle is also planning a bike share system that could include docks near stations, allowing seamless intermodal connections from BRT. The BRT buses themselves can help carry bicyclists up the hill with bike racks outside or inside vehicles.

The problem facing bicyclists is the narrow right of way on Madison itself. Currently, many bicyclists use Madison Street despite the lack of bicycle infrastructure and narrow lanes. While there appears to be enough room for a bicycle lane downtown, it might be impossible to build BRT and bicycle lanes through First Hill. There is a clear need for alternative routes and unfortunately I-5 limits the number of streets that connect downtown to Capitol Hill. The steep grade of this area also limits the number of reasonable alternatives to Madison Street. One possible solution is a cycletrack or buffered lane on Spring Street and/or Seneca Street. Spring and Seneca both cross I-5 and have similar grades. Any alternative route will require some deviating from a straight line and the question of whether or not bicyclists will use a slightly circuitous route if it is safer and more spacious needs to be examined further.

Fig. 24. Bicycle master plan. Note the lack of connectivity on or near Madison across I-5. Source: (SDOT 2007)

Sidewalks, Parks and Pedestrian Experience

Sidewalks throughout the corridor are narrow with the exception of a few bumped out corners downtown and stretches of sidewalks next to newer developments that set their buildings back to allow for more sidewalk space (the Swedish Medical Tower at Madison and Terry). On top of being narrow, in some places sidewalks are crumbling. First Hill also lacks park space and gathering areas.

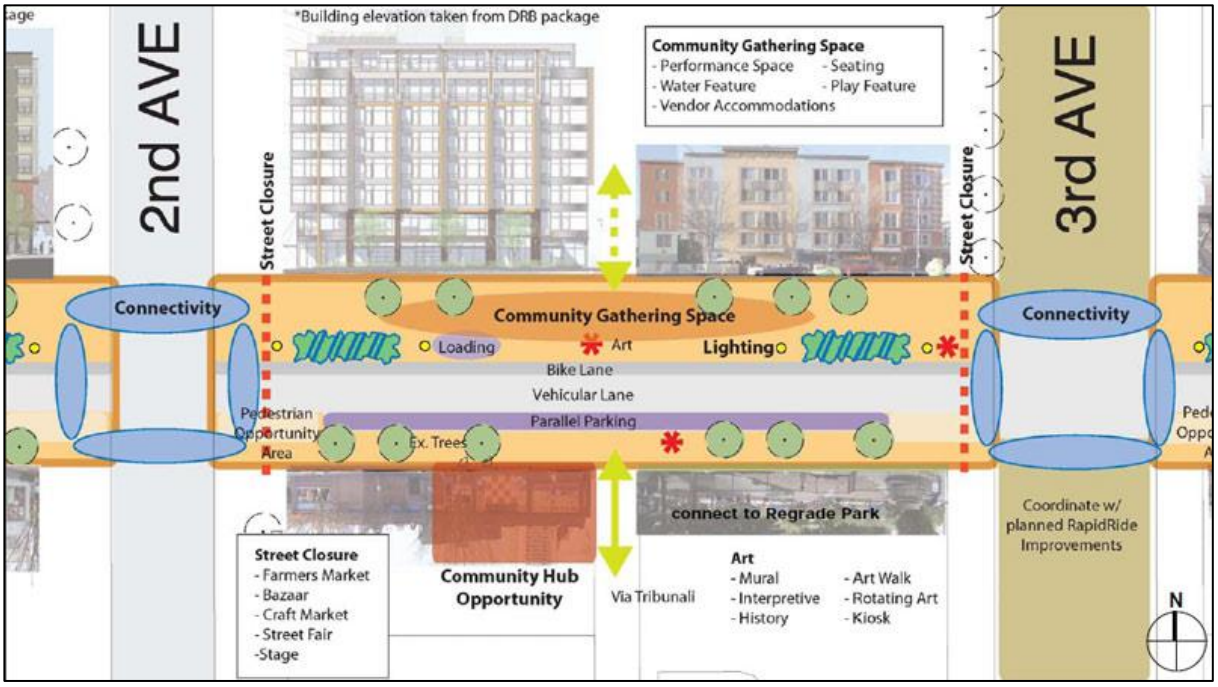

Fig. 25. Plans for Bell Street park blocks. A similar approach could be implemented on First Hill for a perpendicular street leading to Madison Street. Source: (Seattle Parks and Recreation 2013)

First Hill neighborhood groups have been looking for ways to add green space and one idea that has been floated recently could be a major opportunity for SDOT and Madison Street BRT. Seattle Parks has $5 million dedicated to investing in a park for First Hill from a parks and open space levy that apportioned money to various neighborhoods. Because the neighborhood is so dense the community has had a hard time finding a suitable location. One idea that has recently been floated is to build a linear park along a street. Seattle is currently converting Bell Street in Belltown into a green street that will still have vehicle access but will serve as a neighborhood park. Coordinating investment in a linear park that connected to Madison Street could be an excellent win-win for pedestrians and transit riders.

There is a strong constituency for improved sidewalks and streetscape on First Hill. Improving walkability was an important aspect of First Hill's neighborhood plan. Currently, the First Hill Improvement Association is working to get SDOT grants to fix some dilapidated sidewalks. As mentioned above, an FTA Small Start grant could include money for sidewalk improvements. Other potential partners are the major institutions who have development plans on major sections of Madison Street. The citizens' advisory board for Seattle University's master plan update

recommended that Seattle University replicate the work the school did on streetscape design for 12th Avenue, investing in streetscape design for Madison Street, between Broadway and 12th Avenue. Seattle University already plans to open up its campus with better pedestrian accessibility and new landscaping to the area. Seattle University could be an excellent partner to help plan and finance station area urban design improvements.

Similarly, Virginia Mason plans on developing a block at Madison and Boren that currently has narrow crumbling sidewalk and an inadequately narrow bus stop waiting area. Virginia Mason's master plan calls for adding a 10 ft. setback and pedestrian improvements. Swedish Hospital has several development plans as well. Timing with all of these projects might make it difficult to coordinate investments seamlessly. Regardless of when the improvements occur however, these institutions can play a major role in eventually adding and improving pedestrian space.

Fig. 26. Image of future waterfront redesign for Seattle's central waterfront. Source: (Seattle Waterfront and James Corner Field Operations 2013)

Other opportunities include the Coleman Dock transit hub which is undergoing major redesign. This area could become a more important bus transfer location after the viaduct is removed and it will be poised to grow and become a more attractive neighborhood.

In terms of smaller scale opportunities, there are a number of places where the city can take advantage of dead space, created by Madison Street as it cuts at an angle to the grid on Capitol Hill. A number of street segments abutting Madison serve little mobility or access purpose and could even

be better for traffic flow if they were turned into pedestrian plazas. The eastbound approach to Madison on Union Street is one example. Another way that placemaking can be addressed in small areas is through public art. Cleveland's public art program adds interest and variety to the corridor that make it a memorable place. The decorative touches and large scale works allowed community participants and local artists to put their fingerprints on the corridor enhancements.

Fig. 27. Public art along Euclid Avenue. These were some of the projects that were developed as part of a $1.3 million public art initiative.
Source: (Hellendrung 2012)

Locating BRT Stations

Reducing the number of stations along the corridor is one of the most important steps to speeding up the line. Yet, Madison presents a particularly difficult situation for major stop consolidation. Most strikingly, because the route runs up such steep grades, stations will have smaller walksheds than a flatter corridor. For this and other reasons, average station spacing will probably be around 1500 ft., according to consultants working on the initial traffic analysis. Locating the best spots for these stations involves an examination of many factors and ultimately relies on values and best guesses about future development and transportation changes. Questions that need to be addressed include: where is there potential for complimentary transit oriented development (TOD)? How is other transit service likely to change in the future? Are there concentrations of potential riders who have difficulty accessing stations?

While it is important to involve stakeholders in station location selection, planners need to ensure there are parameters. Stop consolidations and route changes typically create difficult conversations with a wide range of positions. Some residents in Madrona and First Hill have been vocal in opposing service changes and stop consolidation to improve service. For example, a group protested removal of a bus stop that was less than two blocks from another stop. Metro acquiesced despite the lack of evidence that any specific individuals would endure hardship. The potential consequence that someone wouldn't be able to get to the bus was enough to stoke opposition to bus stop removal. Many well intentioned citizens share the belief that taking out a bus stop equates to taking away someone's service. However, it will be important to make it clear at the beginning of the process that BRT service needs to be more like subway service than bus service and adequately spaced stops are a big part of what makes transit fast and attracts ridership. The complicating issue of other transit service running on or near Madison Street BRT will play a big role in this discussion. If there are local routes with closer stop spacing on or near Madison, that might open the door to wider stop spacing and vice versa.

Aside from general stop spacing for speed and reliability purposes, another important parameter to guide decision making is to ensure Madison BRT has good connections to crossing transit service. The major junctions to consider are:

- The waterfront. Not only will this area serve ferries at Coleman Dock but there are lingering questions about how buses which currently use the Viaduct will be rerouted. Seattle could push to make this area a transit hub.
- 1st Avenue. 1st will probably be the corridor for a new center city connector streetcar. Even if this is not the case, 1st has historically had strong transit service and will likely have it in the future.
- 3rd Avenue. This is the transit spine of Seattle and will be the primary transfer point for most riders.
- Broadway. This is where Madison BRT will intersect the First Hill Streetcar.
- 23rd Avenue. A major north south transit corridor which connects the Rainier Valley and University of Washington.

Lastly, there are many opportunities to locate stations where existing and planned development will provide good supporting land use to drive ridership. The major institution plans in Appendix D provide details about where these institutions will be building in the near term. There are several excellent locations which will be receiving wider sidewalks, active street frontage, pedestrian amenities such as new landscaping and increased density. Working with these and other property owners along the line could reveal a variety of excellent options for developing great station areas.

Service Levels and Planning

While Metro could potentially offer local service and a limited stop BRT service overlaid on top, more likely, Metro will opt to fund only one level of service for Madison Street BRT and some local service would also run on portions of the corridor. Service on Madison includes Route 11 that runs all the way to Madison Beach, Route 12 that turns north on 19th Ave and Route 60 that only

Fig. 28. Close up of current transit map. Source: (King County Metro 2012)

runs on Madison for a portion of First Hill. There are a number of routes that run within a few blocks. Route 2 is a heavily used line between Madrona to downtown and through to Queen Anne. Route 2 runs just 2 blocks away from Madison from 12th to 3rd and there have been a number of proposals to combine the routes on Madison to add frequency.

This has been a divisive issue with some Route 2 riders who protested loudly during the last service change proposal. Finding the right balance between maintaining local service and shifting service hours to Madison BRT will take careful negotiation. One idea could be to retain the old 2 Route but decrease frequency and add a 2 express that would use the Madison corridor to make a faster alternative. This is one of a number of ways Madison BRT could be a trunk line for routes that would branch off to different locations.

Economic Impacts

Questions about how BRT will impact property values and business have already been raised. As mentioned previously, the First Hill Improvement Association requested a study of its retail core to determine if it can sustain parking removal and if First Hill should look into allowing retail in other areas as more and more of Madison Street is devoted to major institutions. Seattle's Office of Economic Development can play a role in working on questions like this and determining if there are ways to study them. Similarly, the Department of Planning and Development and the Seattle Planning Commission have an active interest in transit oriented neighborhood economic health. They

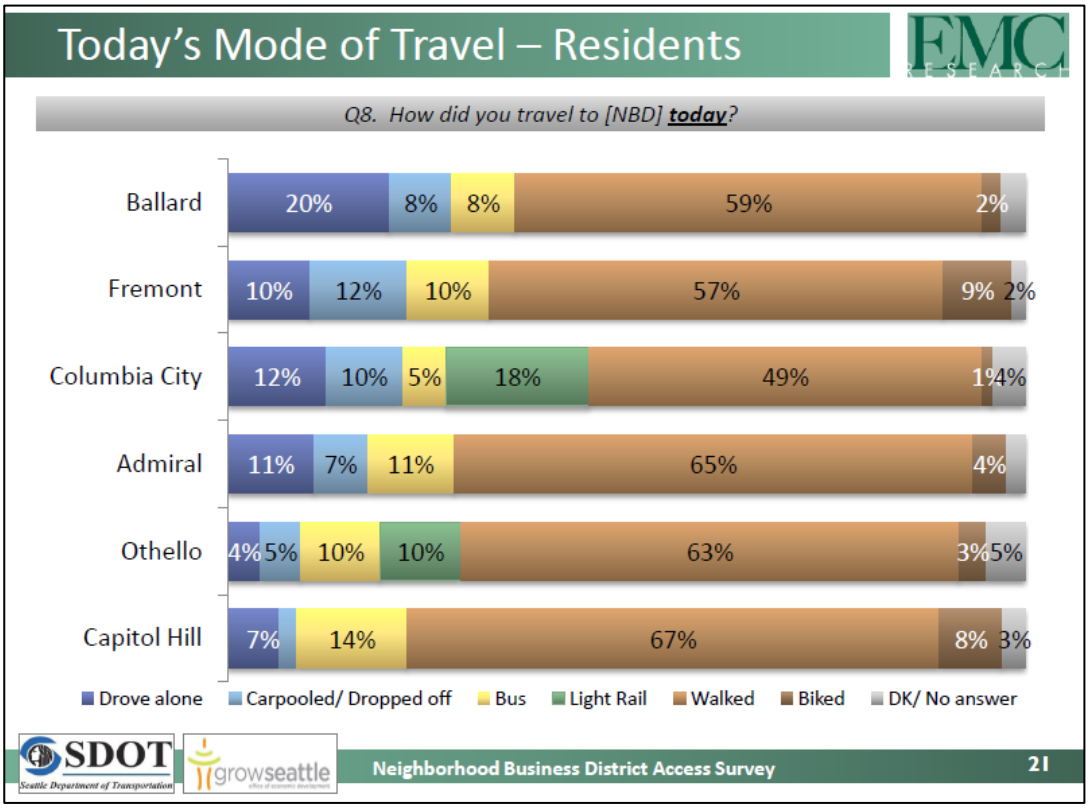

Fig. 29. Mode shares from previous intercept studies of business districts that demonstrate how many people walk to Seattle business districts. This can be important information to guide businesses to support pedestrian improvements as part of a BRT+ package. Source: (Seattle Office of Economic Development 2012)

might be willing to look into new tools to ensure First Hill has adequate retail opportunities. As retailers are vital to the success of Madison Street, their concerns need to be addressed clearly and directly.

One tool that Seattle has employed in other neighborhoods is a business district intercept survey. Seattle Department of Transportation and the Office of Economic Development have partnered on six studies gathering useful transportation and market information about how customers arrived to a neighborhood, how often they come, and what attracts them to the neighborhood (Seattle Office of Economic Development 2013). This could be a useful tool for helping the First Hill understand its current customer base and demonstrating the importance of walking, biking and transit in bringing customers to a neighborhood. Results from previous neighborhoods have shown surprisingly high alternative mode shares for Seattle urban village centers. Regional mode splits mask how prevalent walking, bicycling and transit are for Seattle's business districts.

Other potential questions regarding economic development could focus on impacts to major institutions. All of the institutions on Madison Street recognize the need to encourage transit use. One of the reasons is that it allows them to devote less money and precious space to structured parking. High quality transit can also be a selling point in the competition to attract top quality talent. All three of the major institutions recognize the importance of creating a better pedestrian environment and open space as well. High quality urban environments are increasingly seen as important competitive advantages to developing knowledge based economic centers (Center for Transit Oriented Development 2011).

Traffic Operations

Finally, it will be important to examine general traffic with particular attention to Interstate 5 on ramps, exits and crossings. While BRT will create some negative impacts, there might be potential to improve general traffic conditions by looking at perpendicular and parallel routes. In addition to travel time and capacity, this can be an opportunity to address safety.

Broad Based Messaging and Outreach

Broad based messaging and outreach includes website development, electronic communications, media strategy, press releases, and other forms of reaching out to a wider audience. This will be an important aspect of planning throughout the process. Early objectives include: explaining what BRT is, building on the goals set forth in the Transit Master Plan and highlighting the growing movement around the United States to implement true BRT. As the project develops, the website will serve as a clearinghouse of information with a document library, a gateway to involvement and documentation of the stakeholder engagement process. Managing media contacts throughout the process will be essential and sending regular emails to a large list of participants will help maintain a thread of continuity for the disparate stakeholders and observers of the process.

One of the keys to broader messaging is to focus on the vision of high capacity transit for all of Seattle that guides this process. Emphasizing a collective vision and shared history can help frame the process as an inevitable step toward where Seattle is heading which requires the care and attention of Seattle's citizens. Seattle's current waterfront redevelopment project serves as an excellent example and evidence of internal capacity to pursue this strategy. Themes in Waterfront Seattle's communications have included "Waterfront for All," "Your Waterfront," and other means

Fig. 30. WaterfrontSeattle.org is an excellent example of a website that is attractive, conveys a sense of inclusiveness, provides adequate information and acts as a gateway to further participation. (Source: Waterfront Seattle 2013)

of indicating that the removal of the viaduct will lead to the waterfront opening up to the people of Seattle (Waterfront Seattle 2013). This encourages participation and events held for waterfront planning have been very well attended.

BRT planning websites should include examples of projects that demonstrate the possibilities of the technology. Since many people are unfamiliar or confused about the definition of BRT, video, photographs and plans from other places can help inform and they avoid the pitfalls of presenting finished looking plans for Madison Street. While it is tempting to engage in high quality rendering early in the process, this is not the best use of resources as there are ample examples of real BRT in other places. To show possible BRT configurations on Madison Street, planners should produce simple renderings, alternative plans and drawings that leave possibilities open for improvement and development. While planners will have a pretty clear idea of what will and won't work at the beginning of the process, detailed renderings often inflate the sense of certainty about design elements and dissuade people from involvement.

There are a number of ideas floating around for how to engage people online in the planning process. Online engagement can be illuminating but one must be careful to recognize that it is difficult to know who is responding and how many times they are responding. Surveys and direct questions are a tried and true form of soliciting meaningful feedback and they definitely will play an important role. Online surveys are cheap and easy to administer. There are also a number of emerging tools that can engage people in different ways. Pittsburgh, who also received a Rockefeller grant, has a coalition of BRT supporters spearheaded from outside government (Rockefeller Foundation 2013). The group has made a video game to allow users to design their own BRT corridor (Get There PGH 2013). While it is unclear what type of citizen would be attracted to such a game, it is well designed, attractive and it invites people to provide answers to the difficult questions about how to reallocate road space and what level of investment to make in station amenities. The heart of the game is determining how bus lanes should be placed, whether or not to expand sidewalks, add bike lanes,

preserve parking or preserve general traffic lanes. Players can see the effect their decisions have on project cost and future ridership.

Fig. 31. Pittsburgh's "BRT Sim" is a game that allows players to craft key elements of BRT design such as road configuration and station amenities. Player choices result in different project costs, levels of ridership and warnings about negative effects. Source: (Get There PGH 2013)

Combining the elements of straight forward survey and an interactive video game, the Seattle Department of Transportation used an interactive map while updating its bicycle master plan in 2013. Users were directed to draw the routes they use, where they would like to see improved bicycle infrastructure, and where they enjoy riding among other questions. A similar approach could be used to solicit fine grained answers to questions such as where should the city improve sidewalks and streetscapes along the corridor, where should bicycle routes be added near the line and where people park when driving to destinations on Madison Street.

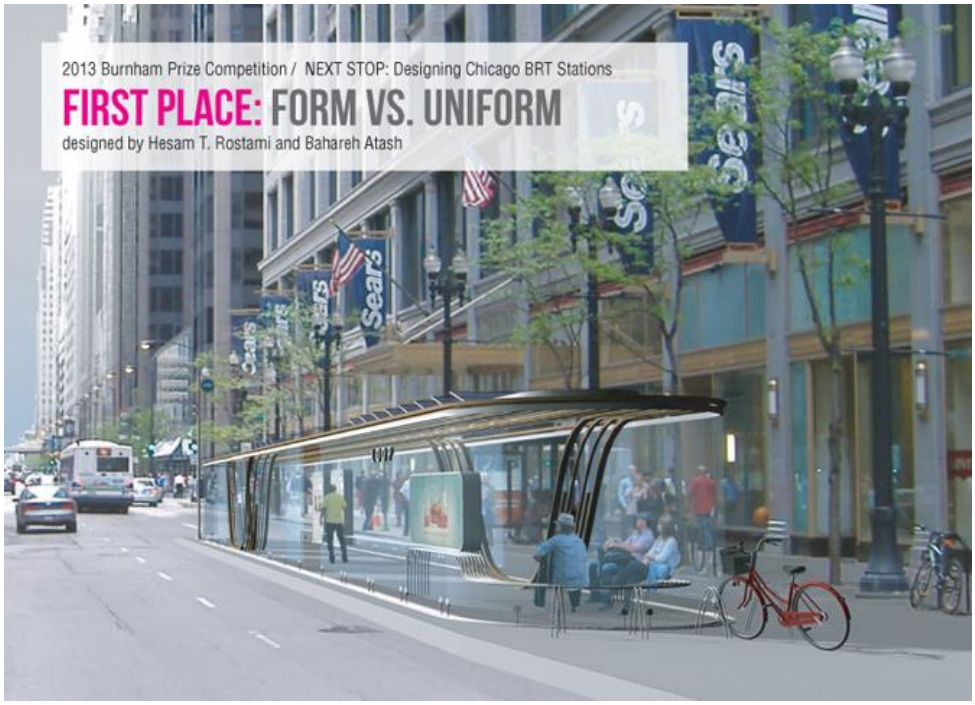

Fig. 32. Winning entry into a BRT station design competition held by the Chicago Architecture Club, a highly successful of an example of involving the public in the design process in a meaningful way (Chicago Architecture Club 2013).

One other way to solicit broad involvement online is to solicit design ideas. The Chicago Architecture Club is holding a competition to design future BRT stations (Chicago Architecture Club 2013). This is open to international submissions and participants receive in depth information about the CTA's requirements and goals to guide design. Ideas in a similar vein could include a contest to submit a proposal for the best non transit improvement that could be made along the corridor which would also contribute to the goals of making Seattle more sustainable and encouraging alternative forms of transportation.

Once concept development progresses, crafting a video that sums up the vision can be a powerful tool. Nashville has one of the most succinct and attractive videos that give both the basic information about where BRT will go as well as excellent renderings of station areas. Images and video of true BRT help dispel the impression that this is simply a bus with a makeover. AC Transit in California also has a computer simulation of its East Bay BRT showing station design, streetscape design and traffic patterns with powerful detail (Alameda County Transit 2013). In Seattle, a rendering of the First Hill Streetcar configurations was a popular communications piece that was picked up on various local blogs (Seattle Streetcar 2013).

Providing engaging content that will spur interest online will help Madison BRT planning get attention through other blogs and websites. There are a number of local blogs that play important roles in framing discussions. Once engaging content has been posted to the web, the outreach team will need to alert blogs such as the Seattle PI, Seattle Transit Blog, Seattle Met, Publicola and various neighborhood news blogs. If content is informative, interesting and newsworthy, it will spread online and reach many thought leaders and attentive observers.

Fig. 33. Rendering of Alameda County transit's East Bay BRT line from a video depicting major stations and operations.
Source: (AC Transit 2013)

As the process moves along, documenting community involvement and showing how it affects ultimate design outcomes will be essential to demonstrate broad support for the project. Press releases about the planning process should highlight stakeholder contributions and provide enough detail about the process to show that it is fair and transparent. As the project moves from alternatives to final design, it will be especially important to tell the story of how BRT plans address community concerns and city goals. In addition to press releases, other cities have maintained blogs, sent out newsletters and compiled document libraries during the planning process. There should be some form of permanent online record showing how the plan evolves over time.

8 Phasing

Three phases of stakeholder engagement mark the major milestones of the proposed strategy. The first phase of Madison BRT engagement will involve stakeholder identification, presentation of basic BRT concepts and establishment of parameters, mandates and goals. In order to pursue shared ownership and stakeholder buy in, participants need to be involved in the process of setting goals and identifying potential solutions. A key to creating an inclusive and effective process is to move beyond political grandstanding and position based confrontation over road space reallocation. Ensuring stakeholders have a chance to frame key questions at the outset of the process will legitimate the process and reveal public values (Escobar 2012).

Rather than merely identifying potential problems, initial meetings need to prioritize the most important questions. For example, rather than focusing discussion on a contentious, position based issue such as the loss of parking, meeting facilitators should steer the group to the formation of guiding questions such as, 'how can we ensure BRT provides a net benefit for small businesses along Madison?' The creation and prioritization of questions like this will provide a basis of common understanding and trust before the difficult task of choosing the best methods to address these concerns. The World Café model of public conversation employs the concept of formulating powerful questions and could be a good model for larger meetings with diverse stakeholders in the first phase of the strategy. "Framing your issues as questions is the hardest part, because we're so used to thinking in terms of problems. But something fundamental changes when we begin to ask questions together. The questions create more of a learning conversation than the normal stale debate about problems" (Brown 2005). This phase will apply both to internal stakeholders, across city and county departments, as well as external stakeholders.

Building off the identification of key questions, public values and interests in phase one, phase two will explore options to address these questions and reflect community input. This phase marks the bulk of concept development. Working through community issues and addressing priorities as defined in phase one will hopefully lead to a smooth process. Inevitably some stakeholders will be disappointed with certain aspects of the plan so it will need to be understood that not every desire can be addressed. Establishing a clear the scope of immediate construction and creating a sub area plan that will steer future investments will provide recourse for good ideas that cannot be completed in the near term. One of the keys to success, requiring joint solutions between elected officials, technical experts and community members, will revolve around how to address concerns that do not fit neatly into the silos of participating agencies. For instance, the issue of retail health along Madison Street has already been raised by the First Hill Improvement Association. It will take leadership to bring in new partners and resources to address a question like this. As alternatives shrink and a final design emerges, it is important to frame the design by the goals and concerns raised through the engagement process.

The third phase consists of implementation, construction and BRT launch. In the last ten years Seattle has completed a number of road reconstruction projects that can serve as models for BRT construction. In particular, the First Hill Streetcar project addressed many of the same construction issues that Madison BRT will need to address in overlapping neighborhoods. Metro and SDOT

increasingly collaborate on complex transit projects such as RapidRide and other transit corridor enhancement projects. While BRT will present new challenges, construction and implementation should incorporate lessons from these efforts and the internal capacities that have been developed. Launching the service with a great marketing campaign and continued engagement to shape development along the corridor will be critical to translating investments into public benefits.

After the project is built, there are still important steps to take to maximize benefit from the Line. Approaches to encourage ridership once BRT launches range from celebratory events to press releases to allowing riders to use the service for free. Offering free fare tickets to a large number of people is a great way to allow the service to advertise itself. Another element that will help introduce people to the service is to send ambassadors to stations to help explain how the system works. Finally, it is incumbent that the process is well documented and a thorough evaluation of the project is conducted, both for the stakeholders involved and future BRT corridor planners.

Conclusion

Bus rapid transit is still in a formative state in America with few examples that paint a clear picture of how Seattle should proceed with implementing BRT on Madison Street. Technical challenges and financial constraints have been well studied; however, political hurdles associated with reallocating road space in a dense urban environment need further examination. By surveying planned and existing American BRT lines, stakeholder engagement literature and an analysis of Madison Street's unique challenges and opportunities, potential benefits of a rigorous stakeholder engagement strategy emerge. The BRT outreach and engagement strategy dubbed "BRT+" attempts to maximize these benefits in order to overcome resistance to implementing true BRT.

BRT+ is a multilayered strategy built around the core activity of engaging key stakeholders in the following decisions:

- BRT corridor design
- BRT station design
- BRT and affected Metro bus service planning
- Complimentary initiatives such as station area planning, urban design strategies, streetscape improvements and major institution integration
- Identification of negative impacts and potential mitigation

The complimentary initiatives are a key facet of the strategy, drawing on the experience of Cleveland's Healthline which included $30 million of non-transit investments to compliment $170 million of transit investments for the 6.8 mile corridor. A key activity to help form a coalition around Madison Street BRT will be the selection of complimentary investments such as the following:

- Partnering with Seattle University, Virginia Mason and Swedish Hospital on station area design in conjunction with campus expansion plans that have already been identified. For instance, SDOT and Seattle University can work together on redesigning the streetscape on Madison Street between Broadway and 12th, situating a new station in an improved and more pedestrian friendly location.
- Creation of a linear park perpendicular to Madison Street on First Hill. Seattle Parks has $5 million to acquire land and build a new park. The agency has been working with neighborhood groups on the idea already and SDOT could play a vital role in developing the concept.
- Building on working relationships downtown such as the waterfront planning efforts and the 3rd Avenue design initiative that are currently underway and already working on key issues such as perception of public safety and transit hub design.

The identification of negative impacts and potential mitigation strategies are similarly important to ensuring BRT is a community asset rather than an intrusion. Due to the width of the corridor, Madison Street BRT will require careful balancing of goals and demand for road space. Creative solutions that seek a balance between potentially conflicting interests will be needed to make decisions such as station location and intersection treatments.

Surrounding the stakeholder engagement process, high level leadership and broad based outreach can play important roles in moving BRT forward. Civic leaders can frame the discussion and explain the goals of pursuing BRT. Elected officials can help align city resources to pursue an appropriate suite

of improvements along with BRT implementation to maximize BRT's potential. Broad based outreach and engagement can help introduce the BRT concept and demonstrate its potential.

Madison Street has strong potential to have world class trolley bus rapid transit line. The strengths to build an outreach and engagement strategy include supportive land use, key stakeholders who understand the importance of transit, transit friendly city policies, political support and strategic location for transit system development. By devoting resources to build a coalition of informed and engaged stakeholders and intertwining transit and non-transit goals, BRT implementation can lead to a positive transformation of the transit network, Madison Street and surrounding neighborhoods.

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APPENDIX A

Stakeholder Analysis Guide for Madison Street BRT

Internal: Potential Key Government Stakeholders-

Seattle and King County elected representatives. Seattle's mayor would play a critical role helping to coordinate city resources and plans, perhaps through the formation of an interdepartmental team to help coordinate the project. To a less direct extent, state level budget decisions will have a major impact on King County's ability to invest service hours for this project.

City level agencies

- Seattle Department of Transportation
  - ***Project Lead***- Policy and Planning- Transit Programs
  - Cross Department Coordination needed on
    - Parking
    - Bicycle Plan
    - Pedestrian Plan
    - Freight
    - Street Use
    - Capital Projects and Capital Structures
    - Major Institution Coordination
- Department of Planning and Development
- Department of Neighborhoods
- Seattle Public Utilities
- Seattle Parks
- Seattle Housing Authority
- Office of Economic Development

County Level

- Metro
  - Service Planning
  - Capital Investment and Fleet Management
- 4 Culture. Potential partner for urban design elements such as public art or historic preservation projects.

Regional Level

- Sound Transit. While not a direct participant in Madison Street BRT at this time, Sound Transit might fund future BRT expansion if Madison is a success. It also funded a major study of possible transit improvements along Madison Street with important background information.
- PSRC. As the Metropolitan Planning Organization for the area, PSRC helps ensure a project like Madison BRT qualifies for federal grants and controls some funds on its own.

State Level

- The state could provide a regional mobility grant or other funding for construction.
- Washington State Ferries. Coordinating the connection to Colman Dock after it is redeveloped along with the waterfront.
- Work around I-5 will need to coordinate with WSDOT.

Federal Level

- FTA. Small Starts grants and other funding could pay for the vast majority of transportation related improvements for Madison Street including pedestrian and bicycle improvements within a half mile and three miles, respectively.
- HUD
- Housing
- Economic Development

Contracted Consultants

- Transportation planning such as Nelson Nygaard, DKS or Fehr and Peers
- Outreach and Facilitation such as PRR
- Urban and landscape design firms such as Mithun, Sasaki or SVR

External: Community Stakeholders and Beyond

Local

- District Councils
  - Downtown District Council
  - East District Council
  - Central District Council

- Community Groups
  - First Hill Improvement Association
  - Downtown Seattle Association
  - Capitol Hill Neighborhood Groups
  - Waterfront Related Groups

- Major Institutions
  - Seattle University
  - Swedish
  - Virginia Mason

- Schools
- Churches
- Residents
- Students
- Employees

- Property Owners and Real Estate Developers

- Business Owners
  - Businesses with off street parking
  - Business with limited parking/ strong demand for street parking
  - Businesses with strong neighborhood transportation demand
  - Businesses with regional customers and long distance transportation demand

City and Regional Levels

- Transit Riders and Seattle Transit Advocates such as Transportation Choices and the Seattle Transit Blog.
- Smart growth and sustainability advocates such as Futurewise, Forterra, Sightline and the Bullitt Foundation
- Area businesses
- Shipping and freight community
- News and media outlets

National Transportation and Land Use Stakeholders

- ITDP
- Rockefeller Foundation
- Cities with BRT experience- Cleveland, Chicago, San Francisco, International
- Outside academics and experts

APPENDIX B

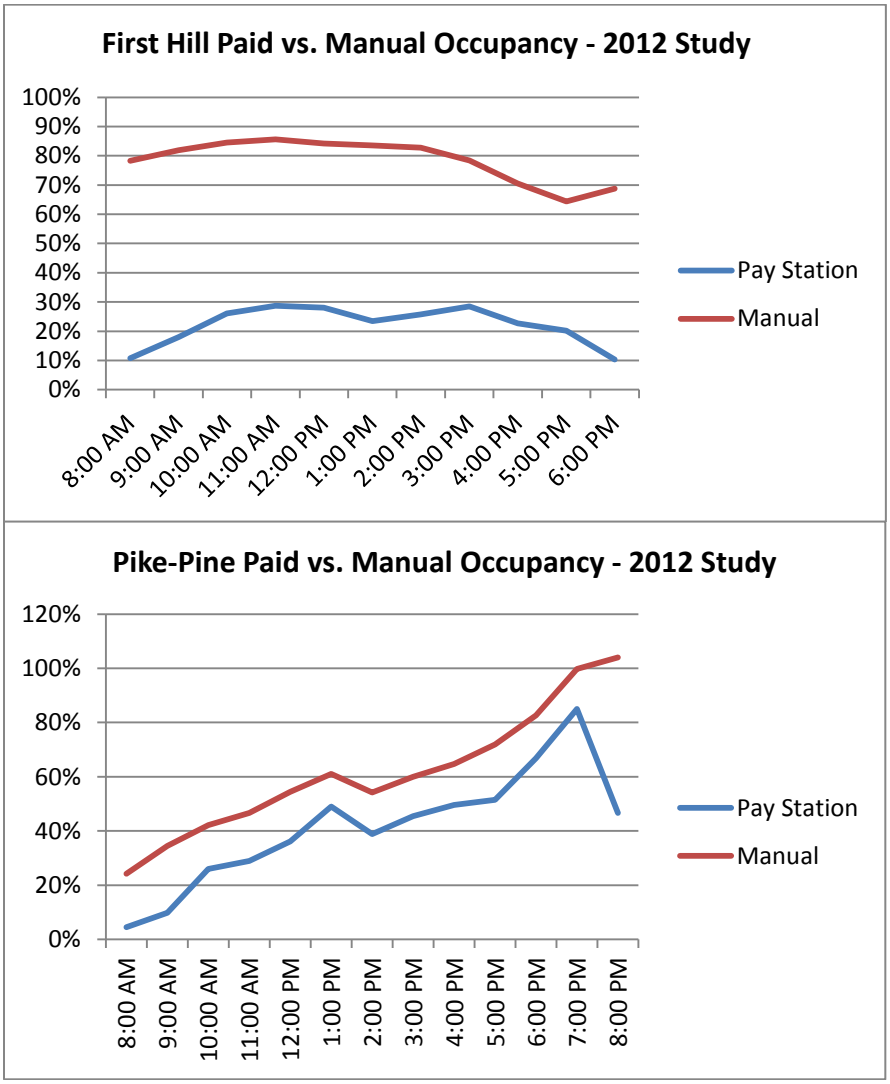
In addition to the Transit Master plan, other plans and studies with implications for Madison Street include:

- Neighborhood Plans, particularly First Hill
- Seattle Bicycle Master Plan (update in process)
- Seattle Pedestrian Master Plan
- King County Metro Strategic Plan for Transportation
- King County Metro Rapid Trolley Plan
- Sound Transit Long Range Plan
- Seattle Waterfront Plan (in development)

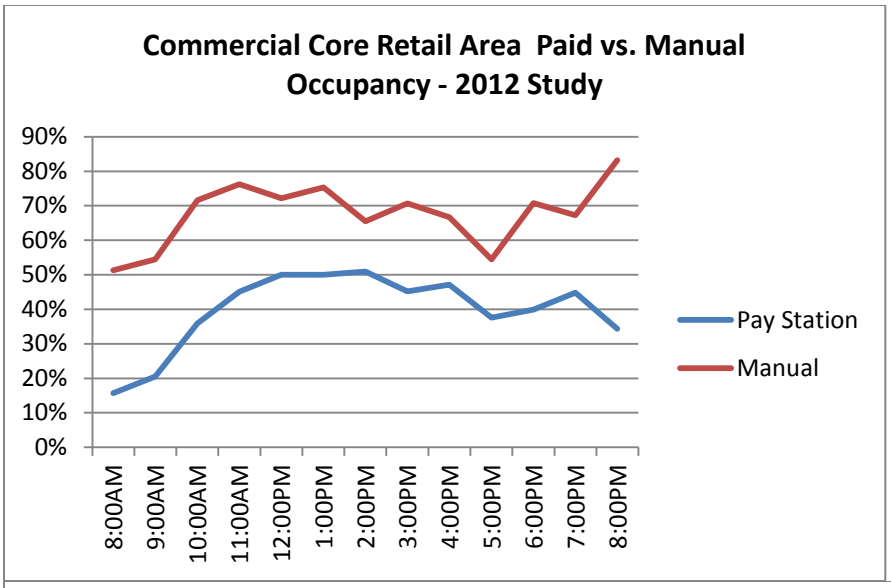
APPENDIX C

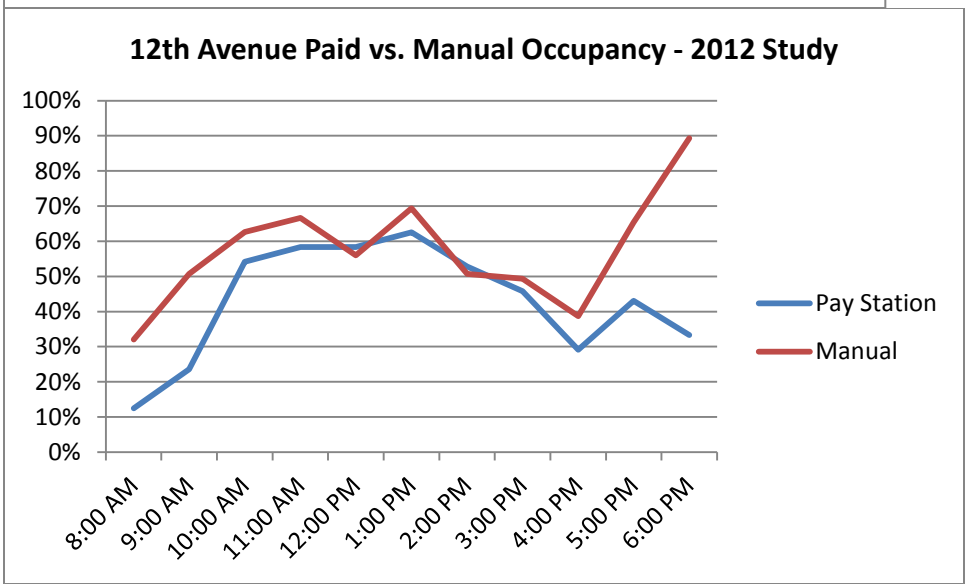
2012 SDOT Paid On-Street Parking Occupancy Rates for First Hill, Downtown, Waterfront and Adjacent Neighborhoods[3]

Paid Versus Manually Counted Occupancy: this provides an estimate of actual occupancy and how many people paid for parking, primarily by using disabled passes and residential permits.



[3] Seattle Department of Transportation Draft 2012 Paid Parking Report for the Performance Based Parking Pricing Study.


Commercial Core Retail Area Paid vs. Manual Occupancy - 2012 Study
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
8:00AM
9:00AM
10:00AM
11:00AM
12:00PM
1:00PM
2:00PM
3:00PM
4:00PM
5:00PM
6:00PM
7:00PM
8:00PM
Pay Station
Manual


12th Avenue Paid vs. Manual Occupancy - 2012 Study
100%
90%
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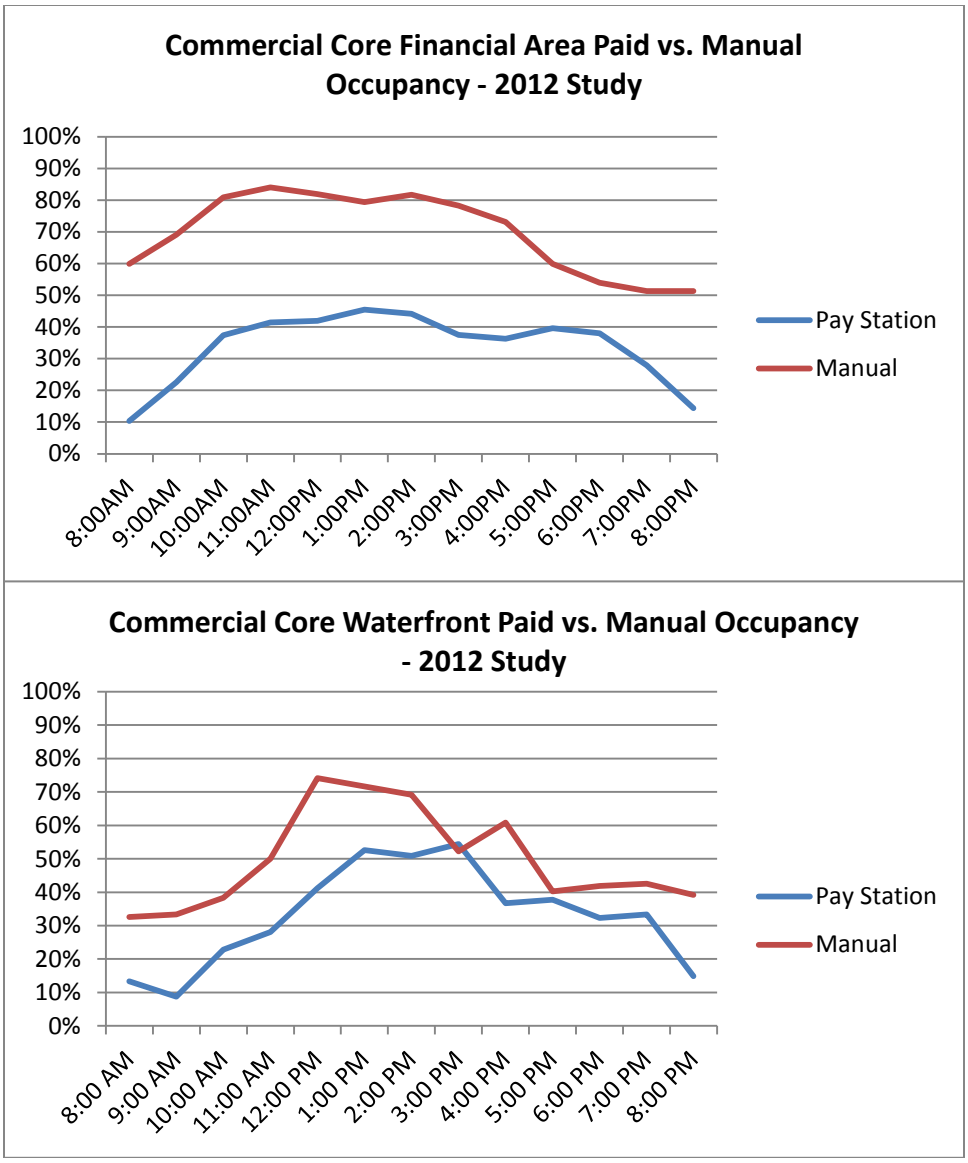
Pay Station
Manual


Commercial Core Financial Area Paid vs. Manual Occupancy - 2012 Study
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8:00AM
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7:00PM
8:00PM
Pay Station
Manual
Commercial Core Waterfront Paid vs. Manual Occupancy - 2012 Study
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50%
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8:00 AM
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8:00 PM
Pay Station
Manual

APPENDIX D

Major Institutional Plans and Development that could Impact Madison BRT Corridor
April 4, 2013

The primary purpose of this document is to highlight sections of the major institution plans which might have relevance for station location and design along the Madison Corridor. To a lesser extent, these plans may have some influence on channelization options. In addition, many plans call for TDM and other measures that signal other types of potential partnerships which may be beneficial to Madison BRT. At the end of this document there is also a list of other organizations and businesses along Madison that could also be major stakeholders in a Madison BRT community engagement process.

Major institutions with master plans in the affected area are:

- Seattle University (Institutional Master Plan last updated in 2012)
- Virginia Mason (Master Plan update in process)
- Swedish Medical Center (Institutional Master Plan last updated in 2005)

These three organizations collaborate in First Hill Transportation Meetings where they address, among other issues, transit routes and service changes.

Key takeaways for bus station location:

- Virginia Mason's plan includes redevelopment along Madison between Boren and Terry with a 10' setback to provide room for a potential transit stop. They will also provide active street front shops and invest in urban design with the goal of creating a better pedestrian experience.
- Seattle University is proposing a development at the SE corner of Madison and Broadway which presents an opportunity to incorporate a station.
- Swedish has already made a wider sidewalk at Madison and Boren which could be utilized for a station area. The 2005 plan identified the corner of Madison and Broadway as a potential development site so further inquiry is needed to see if this could happen soon.

Overall, these three organizations seem to have potential to be strong partners on the Madison BRT project, similar to the roles hospitals and Cleveland State University played in the formation of Cleveland's Healthline. In Cleveland, University Hospital and the Cleveland Clinic provided sponsorship for the line while Cleveland State University and several other major property owners changed their institutional master plans to orient their sites toward future BRT stations. The BRT project also spurred broader street and landscaping improvements which enhance station areas and helped spur new development.

Seattle University

According to Seattle University's Institution Master Plan, the school will continue to expand dramatically and pursue look for ways to improve their. Historically, Seattle University faced inward but in the last decade they have pursued ways to remove barriers between campus and adjacent neighborhoods. Of particular interest for Madison BRT, the school plans on developing around Broadway and Madison and they have been asked by DPD and the Citizens Advisory Board to develop a streetscape plan for Madison in a similar vein to their 12th Avenue streetscape plan.

Seattle University's Transportation Management Plan calls for increasing subsidies for transit ridership and ensuring parking pricing makes transit a competitive option in addition to TDM programs and rules preventing freshman from bringing cars with them to live on campus.

Percentage of Campus Population & SOV Commuting Percentages

Group	1995			2001			2007		
	Population	% SOV	SOV Population	Population	% SOV	SOV Population	Population	% SOV	SOV Population
Faculty	405	67%	271	580	59%	342	1,322	39%	516
Staff	505	48%	242	500	42%	210			
Commuter Students	4,375	63%	2,756	4,256	54%	2,298	5,800	50%	2,900
Resident Students	820	0%	0	1,467	0%	0	1,728	0%	0
Totals	6,105	53%	3,269	6,803	42%	2,850	8,850	39%	3,416

Commute mode share trends from the Transportation Management Plan (Pg. 158)

Element	Strategies
Transit Goal: Increase transit ridership through subsidies, improved access, and the marketing of program benefits.	1. Keep the cost of transit commutes below the cost of SOV commutes by providing the following incentives: a. Faculty & Staff: Subsidize up to 75% of the costs of an individual transit pass for faculty and staff cross sound commuters and provide a regional pass (Flex Pass) that is valid on Metro, Community Transit, and Sound Transit routes for $10 per month. When the ORCA card system is fully operational, evaluate the costs and benefits of using it as a replacement for all other passes. b. Commuter students: Maintain a minimum subsidy of 30% for all types of Puget Passes for commuter students without a parking permit. When the ORCA card system is fully operational, evaluate the costs and benefits of using it as a replacement for all other passes. Maintain the average daily SOV parking rate at appoint that is higher than the cost of the average subsidized transit trip. c. Provide a guaranteed ride home to transit users in case of emergency. d. Provide staff access to a University subsidized car share program as allowed under program policies. 2. Work to improve transit access and utilization by: a. Continuing the 'Bus-It' program or a similar program for resident students to make available a free transit pass to check out for off-campus trips. b. Continuing to work with neighboring major institutions, King County Metro, and other agencies to improve transit access to the campus and surrounding neighborhood. c. Developing and participating in programs such as shuttle services, subsidizing transit routes, or other programs that will improve transit access to the University and connections with Light Rail stations. d. Evaluating the costs and benefits of consolidating the transit pass programs into a single program that is funded through a transportation fee and SU subsidies. e. Improving customer access to transportation planning services and subsidized transit passes.

Transit element strategies of the Transportation Management Plan (Pg. 160)

One opportunity looks particularly promising: Seattle U. is planning to build a new 65' tall, 100,000 sq ft. academic building on Madison and Broadway in 2020. One of the key architectural elements of

the building is a "significant corner feature to identify SU from the perspective of Broadway and Madison; scale to match surrounding buildings and offer a public, pedestrian friendly frontage (pgs. 47, 48)." This might present a chance to incorporate a station that acts as a gateway to campus and has close proximity to the Seattle University streetcar station.

Proposed development at the corner of Broadway and Madison (pg. 42)

PROPOSED NEAR-TERM AND LONG-TERM PLANS

Long-Term Campus Plan

The plan on this page shows the full build-out of the proposed campus. The timing, phasing, and specific uses associated with this plan are approximate. As circumstances change, projects may proceed earlier or later than proposed and indicated uses at each development site may be altered. The proposed plan adds a total of 2,145,000 square feet to the campus over the life of this plan. Details on specific projects, phasing, and gross building areas can be found on the following pages. Following the near-term and long-term plans is a discussion of the proposed uses for the 1313 E Columbia site.

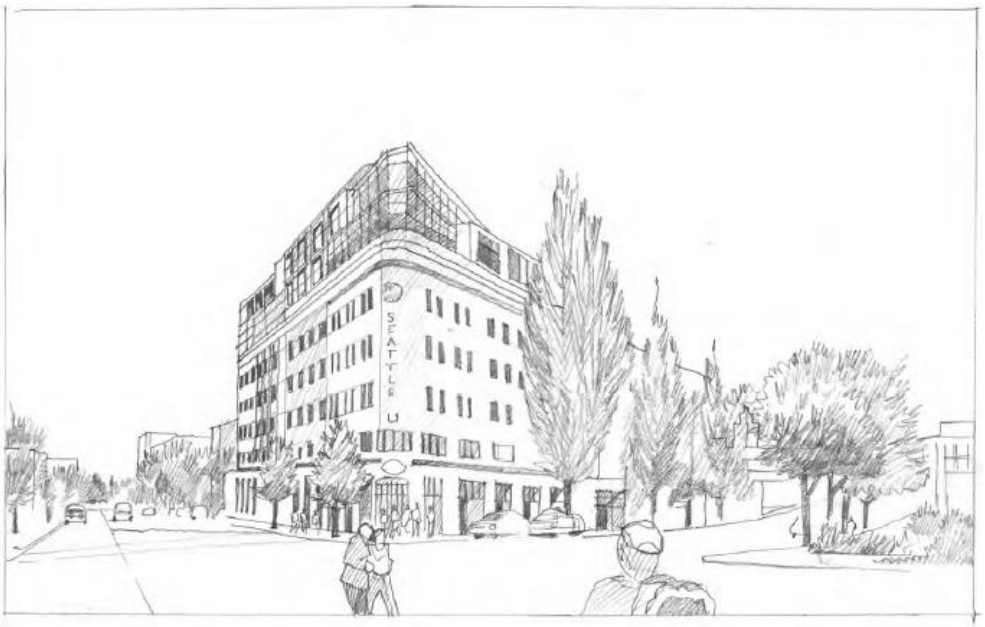
In addition, SU identifies a broader goal of "improving perimeter streetscape on Broadway and Madison, as well as pedestrian crossings." This will compliment increasing density on campus. The

2028 vision increases the campus wide floor to area ratio from the existing .9 to 1.79. The north side of campus near Broadway and Madison would receive a large portion of this increase.

This would dovetail nicely with the creation of a new BRT station at Madison and Broadway and perhaps Madison and 12th though this corner is constrained by narrow sidewalks and redevelopment plans that would incorporate the existing self storage building as shown in the drawing below. This means there is little opportunity to widen this narrow sidewalk for a curbside station.

DPD and the Seattle University Master Plan Citizens Advisory Board made the following recommendations along with approving the most recent update of the plan:

> *Within three years of MIMP approval, the University will prepare and submit to DPD and SDOT for their approval conceptual streetscape design plans for (1) the east side of Broadway between Madison Street and Jefferson Street and (2) the south side of Madison between Broadway and 12th Avenue, similar to the conceptual plan for 12th Avenue depicted at pages 142-143 of the MIMP. The University will work with the City and other property owners to identify public and private funding sources to implement the concept plans over time.*
>
> *The plans shall be prepared consistent with the provisions of the Seattle Right-of-Way Improvements Manual. Elements of the plan must include, but are not limited to: street-level setbacks/land uses and pedestrian environment, private/public realm interface, pedestrian level lighting, way-finding, streetscape furniture, landscaping and tree selection. The plans shall also address all Pedestrian Master Plan priority improvement locations and facilities identified in the Bicycle Master Plan. Where there are bike lanes and right turn only lanes at the same corner, evaluate the feasibility of National Association of City Transportation Officials-standard bicycle facilities.*



Sketch of future development which would incorporate the existing Self Storage building at 12th and Madison. This plan limits potential sidewalk expansion in this possible station area.

Once completed, these plans shall be considered during review of any applications for permits to improve any development site adjacent to Broadway or Madison.[4]

This is an important process for Madison BRT planners to be a part of.

Virginia Mason

Virginia Mason's institutional master plan recognizes the importance of its location for both attracting patients and employees who live or work downtown and in the surrounding dense neighborhoods. Virginia Mason has more than 300 employees within two miles and over 2,100 employees who live within Seattle. Altogether, Virginia Mason employs 5,500 people and brings in more than 900 volunteers a year.

Virginia Mason's current transit commute share is 46% (pg. 101). Their stated goal is to keep single occupancy vehicle commuting rate under 30%.

Table 18 Virginia Mason Commute Mode Performance by Percentage (2001-2011)

Commute Mode	Year					
	2001	2003	2005	2007	2009	2011
Drove alone	28%	29%	28%	25%	23%	27%
Carpool (2-6)	17%	13%	15%	15%	12%	10%
Vanpool (4-6)	0%	2%	1%	1%	2%	2%
Vanpool 7+	1%	1%	1%	1%	-	-
Bus	42%	43%	41%	43%	46%	43%
Rail	1%	1%	1%	2%	3%	3%
Bicycled	1%	1%	2%	3%	2%	4%
Walked	5%	5%	5%	4%	6%	6%
Teleworked	0%	0%	0%	0%	1%	<1%
Compressed work week	0%	0%	0%	0%	0%	<1%
Did not work	3%	3%	3%	4%	-	-
Other	2%	3%	2%	3%	1%	2%
Motorcycle	0%	0%	0%	0%	1%	1%
Ferry (car/van/bus)	0%	0%	0%	0%	1%	<1%
Ferry (walk-on)	0%	0%	0%	0%	2%	2%

(pg. 101)

[4] **Seattle University Major Institution Master Plan Citizens Advisory Committee Final Report and Recommendations, pg. 22**

GOALS	OBJECTIVES
LANDSCAPING AND OPEN SPACE	
Maintain plantings and street trees	• Replace trees that need to be moved or removed for development
Enhance campus greenery, open space	• Use thoughtful site planning and landscape design, working at a campuswide and site specific level • Make use of multiple scales of plant materials, pocket parks, plazas, median strips, setbacks and roof decks • Add plantings and other features to attract birds, pollinators and other desirable fauna to the gardens
CAMPUS MOBILITY	
Maintain and improve the mobility of pedestrians and other nonmotorized travelers to move through the Virginia Mason MIO boundaries (don't become a closed-off campus)	• Address steep slopes with steps, handrails and ramps • Extend overhangs, awnings, or other weather protection features to protect pedestrians from rain along designated pedestrian corridors where feasible • Use "Crime Prevention Through Environmental Design" principles to enhance safety of the pedestrian experience
Improve sidewalks and streetscapes to enhance the pedestrian and other nonmotorized user experience	• Use three-dimensional plantings, artwork, pedestrian-scale lighting and street furnishing to enrich the pedestrian experience
Make entries easy to find, welcoming and accommodating	• Improve accessibility of entries • Locate entries to facilitate pedestrian egress
Enhance ease of pedestrian flow, improve circulation, accessibility, wayfinding, connectivity, visual interest	• Reveal activities within buildings at street level with an interactive sidewalk edge, transparency of street-level facades
Enhance the ability of people to pass through the larger buildings via interior and exterior "streets" that are combinations of entries, major corridors and skybridges	• Expand the existing network of skybridges to create interior and exterior pedestrian connections across the entire campus • Consider developing tunnels where feasible to move materials "off-stage" from the public

Virginia Mason Major Institution Plan Mobility Goals include provision of awnings, enhancing pedestrian experience and addressing steep slopes with steps, handrails and ramps. An overarching landscaping goal that could affect BRT stations is the attempt to open campus to the community through plazas and pocket parks (pgs. 6, 9).

Table 19 Proposed/Current TMP Comparison

Element	Current TMP	Proposed TMP
Transit *Goal: Increase transit ridership through subsidies, improved access and the marketing of program benefits.*	1. Lower the cost of transit commutes: a. Virginia Mason offers 75% transit subsidy for bus, ferry and trains b. Guaranteed ride home program c. Zipcar is available for employees for personal and business use (5 hours each per month) d. Company fleet vehicles available through the parking office for business use 2. Improve transit access and utilization: a. Financial support for Metro Bus route 211 b. Participation in Transit Now agreement along with Swedish and Harborview Medical Centers to increase service to the King Street Station and the ferry terminal c. Attend First Hill transportation meetings to work with Swedish, Harborview and Seattle University on common projects such as transit routes d. Work with First Hill institutions to extend bus routes to King Street Station and ferry access e. One after-hour taxi leaves the hospital turnaround at 7:40 pm nightly to cover gaps in transit service due to limited hours of operation 3. Moved to ORCA pass system in 2010 4. Link Light Rail honors Virginia Mason Puget Passes (not vanpool passes)	1. Lower the cost of transit commutes: a. Provide 75% transit subsidy for bus, ferry and trains through the ORCA program b. Provide a guaranteed ride home in case of family emergency c. Provide Zipcar access to employees for personal and business use (5 hours each per month) d. Provide fleet vehicles for business use 2. Improve transit access and utilization: a. Continue financial support for Metro Bus routes where they benefit Virginia Mason employees b. Continue participation in Transit Now agreement along with Swedish and Harborview Medical Centers to increase service to the King Street Station and the ferry terminal c. Participate in First Hill transportation meetings to work with Swedish, Harborview and Seattle University on common projects such as transit routes d. Continue offering ORCA passes to employees through Wageworks, which automatically deducts costs from staff paychecks and applies the appropriate fare reductions stated above to staff purchases for multiple transportation choices

Virginia Mason's Transportation Management Plan calls for the strengthening of pedestrian corridors and it highlights several improvements which have important implications for Madison BRT. Madison, between Boren and Terry, is one of several pedestrian corridors which will feature wider sidewalks for circulation and a transit stop, street oriented shops and inviting urban design. Perpendicular routes will also be strengthened which would help draw people into the campus from a potential BRT station at Boren.

Current bus stop at Madison and Boren. This building will be replaced by future Virginia Mason expansion which will incorporate a 10' setback for improved pedestrian circulation and transit stop though no timeline is set in the plan.

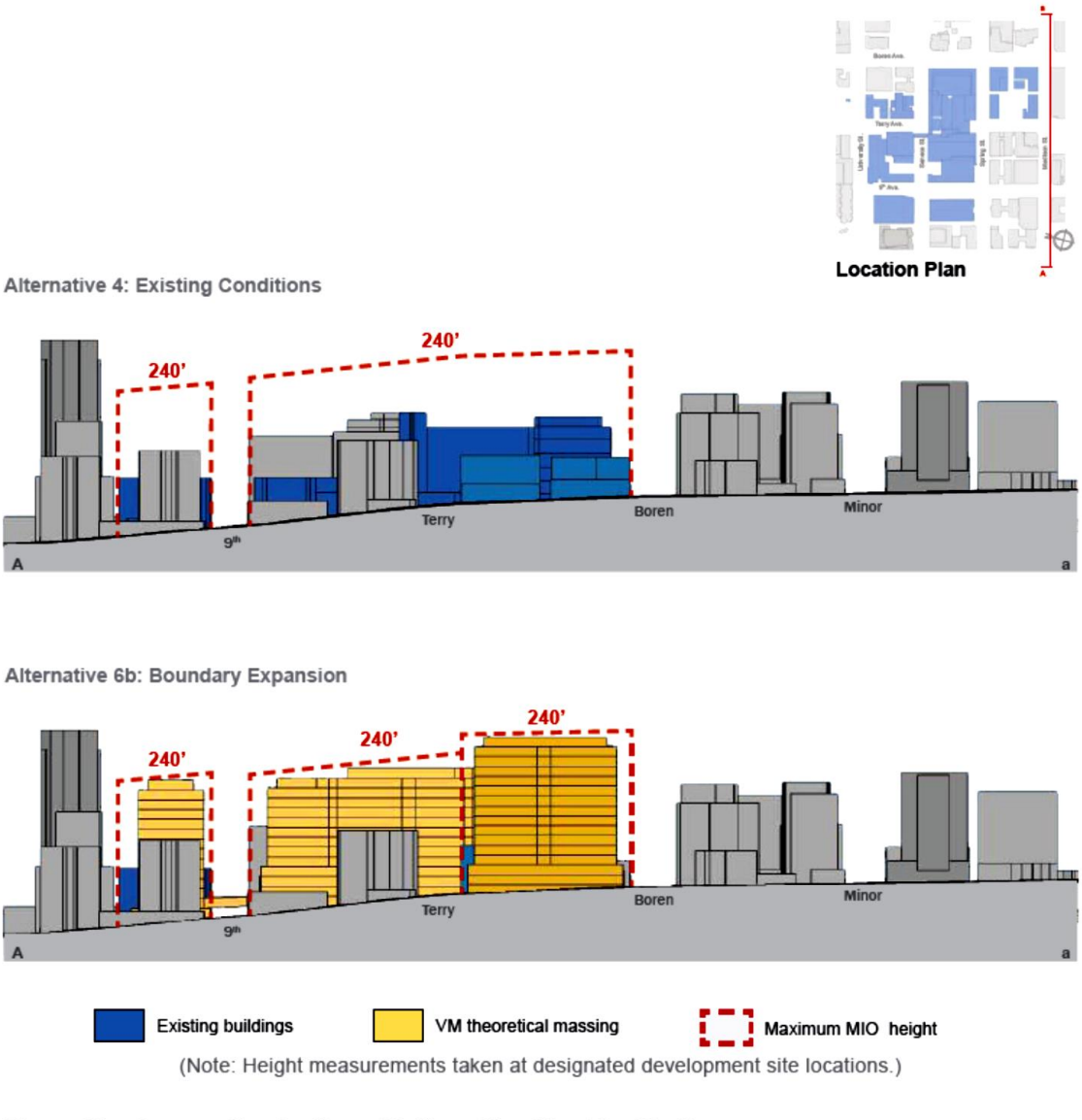


Figure 24 – Comparative Sections, Madison Street Looking North

Swedish Medical Center

Swedish Medical Center encompasses 2 million square feet of medical facilities, office and retail. One of the mission priorities laid out for Swedish is to mitigate the institution's impact on the neighborhood and center city. To this end, Swedish is actively engaged in efforts to reduce SOV commuting, provide ample parking (3,800 spaces in 2005), mitigate parking loss for neighbors (by paying for RPZ passes) as well as improving pedestrian and transit connections.

One important consideration regarding Swedish facilities along Madison is that Swedish sold properties in 2004 to Health Care Property Investors Inc. Swedish still uses the buildings, has first right of refusal and includes these properties as important features in their master plan, however it is important to note that there are other owners involved. "The properties include the 1101 Madison medical office building, retail space and parking garage; the Arnold Pavilion (9th floor and above), located at 1221 Madison; the 600 Broadway medical office building and parking garage; the Madison Garage and retail space on Madison St. between Summit and Boylston Aves.[5]"

The Design Precepts map below shows the institution's desire to enhance pedestrian and retail frontage on Madison and highlights the need to work around a future light rail station. Light rail alignment has changed since this was written in 2005. While the First Hill Streetcar will partially mitigate this loss, Madison BRT could also fill the role Swedish once envisioned Light Rail to have.

Swedish's circulation plan has important implications for Madison BRT with several parking garages between Madison and Marion which utilize Madison as an approach. Currently, there are signalized intersections at Minor and Summit as well as a patient loading area between these streets on the south side of Madison. The circulation map below shows how left turns off Madison are needed to access this garage with a primary entrance on Boylston will need to be considered for any alignment on Madison. Removal of left turns at one or both of these intersections might require a reconfiguration of Swedish Medical Center's parking garage ingresses and egresses.

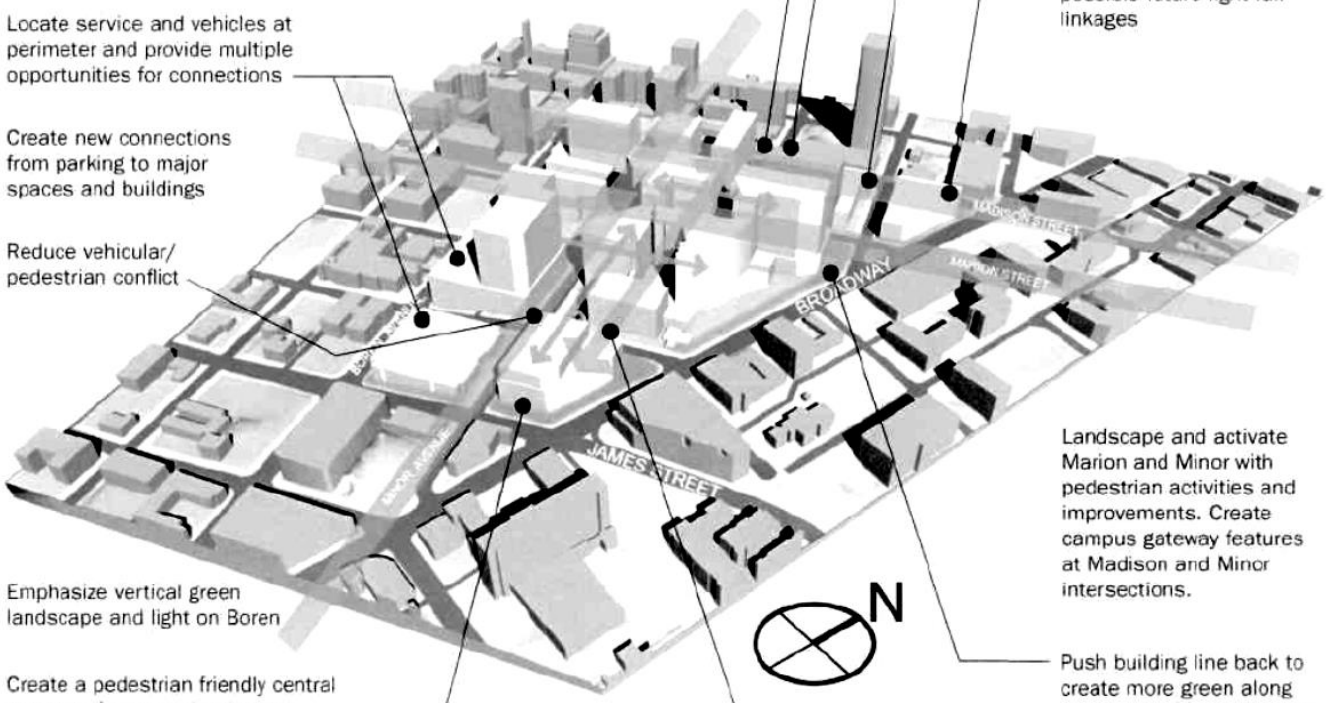
Similarly, there is parking access on Boylston which may heavily rely on the signalized intersection at Boylston and Madison. Another potential challenge is a loading zone on the street for the Alcoa Building at Madison and Broadway. There is an alternative loading zone around the corner on Boylston. The site of the Alcoa building is highlighted for potential development which could help create more space for a station at Madison and Broadway. Following up with Swedish about their current plans for this site is an important step.

The Swedish Medical Tower's frontage along Madison at Boren currently has a wide pedestrian space providing one of the more comfortable current bus stops. This might be a good place for a BRT station, consistent with Swedish's goals of creating a porous campus, reducing impacts on the neighborhoods, reducing pedestrian/ vehicle conflict and improving pedestrian experience.

[5] Swedish News. http://www.swedish.org/About/Blog/December-2004/Swedish-Selects-Purchaser-for-Medical-Office-Build

FIGURE 1.3

Design Precepts



Flexible buildings - separating permanent infrastructure and temporal, universal space: A life centered place that - collects, connects, shelters and heals

Reinforce the Swedish brand with unified campus character, defined boundaries and clear enrty points

Direct flexible facility development that is highly accessible, functional and efficient

Guide campus development that is porus and connected with the neighborhood

Extend special campus paving to Boren intersections

Locate service and vehicles at perimeter and provide multiple opportunities for connections

Create new connections from parking to major spaces and buildings

Reduce vehicular/ pedestrian conflict

Emphasize vertical green landscape and light on Boren

Create a pedestrian friendly central space and new west entrance

Enhance pedestrian safety and security

Emphasize edge/gateway along James and mitigate height/bulk/scale impacts along Broadway with architectural design and transparency

Create an identity to the city and portal to the neighborhood

Reduce vehicular/ pedestrian conflict

Create covered galleria as major linkage from Madison

Enhance pedestrian/retail activity on Madison

Take advantage of new building opportunity to create strong presence at campus corners/edges and improve wayfinding

Preserve flexibility for possible future light rail linkages

Landscape and activate Marion and Minor with pedestrian activities and improvements. Create campus gateway features at Madison and Minor intersections.

Push building line back to create more green along Broadway and provide view of entrance

Create patient transport bridge over Cherry

Highlight the existing rotunda to new exterior place via major circulation spine

Circulation Maps

FIGURE 2.5

Existing Local Circulation/Access to Outpatient Buildings

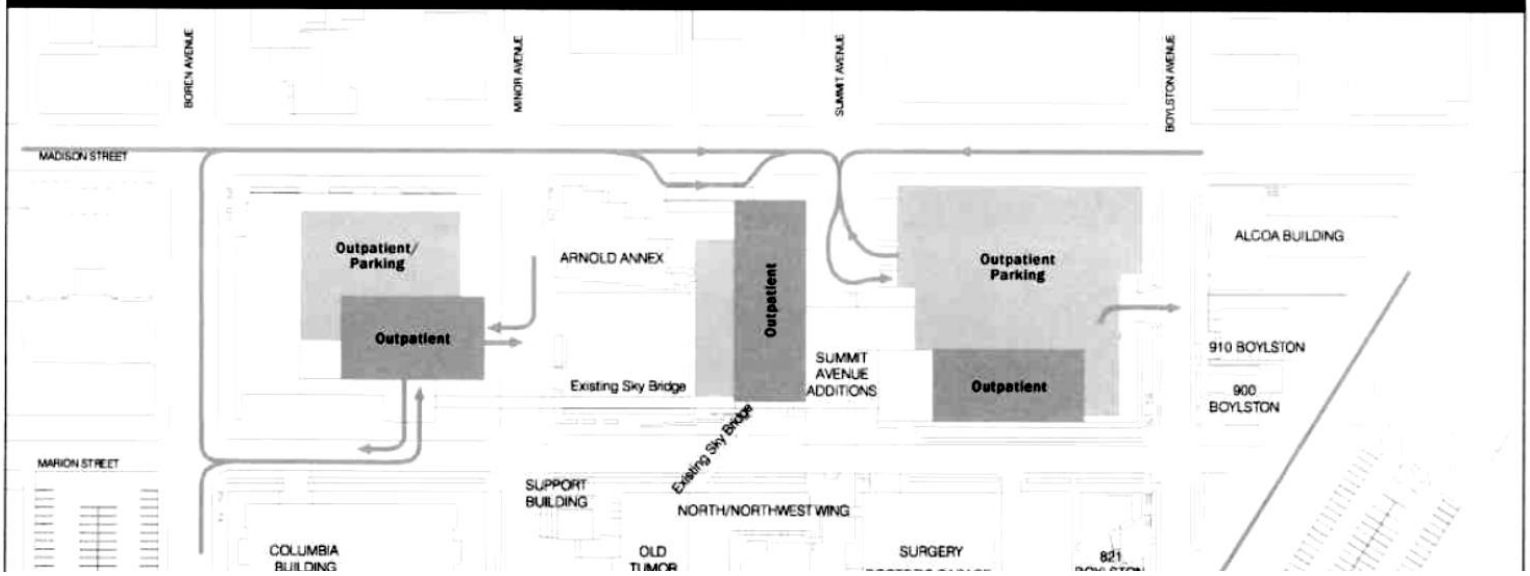


FIGURE 2.6

Future Local Circulation/Access to Outpatient Buildings

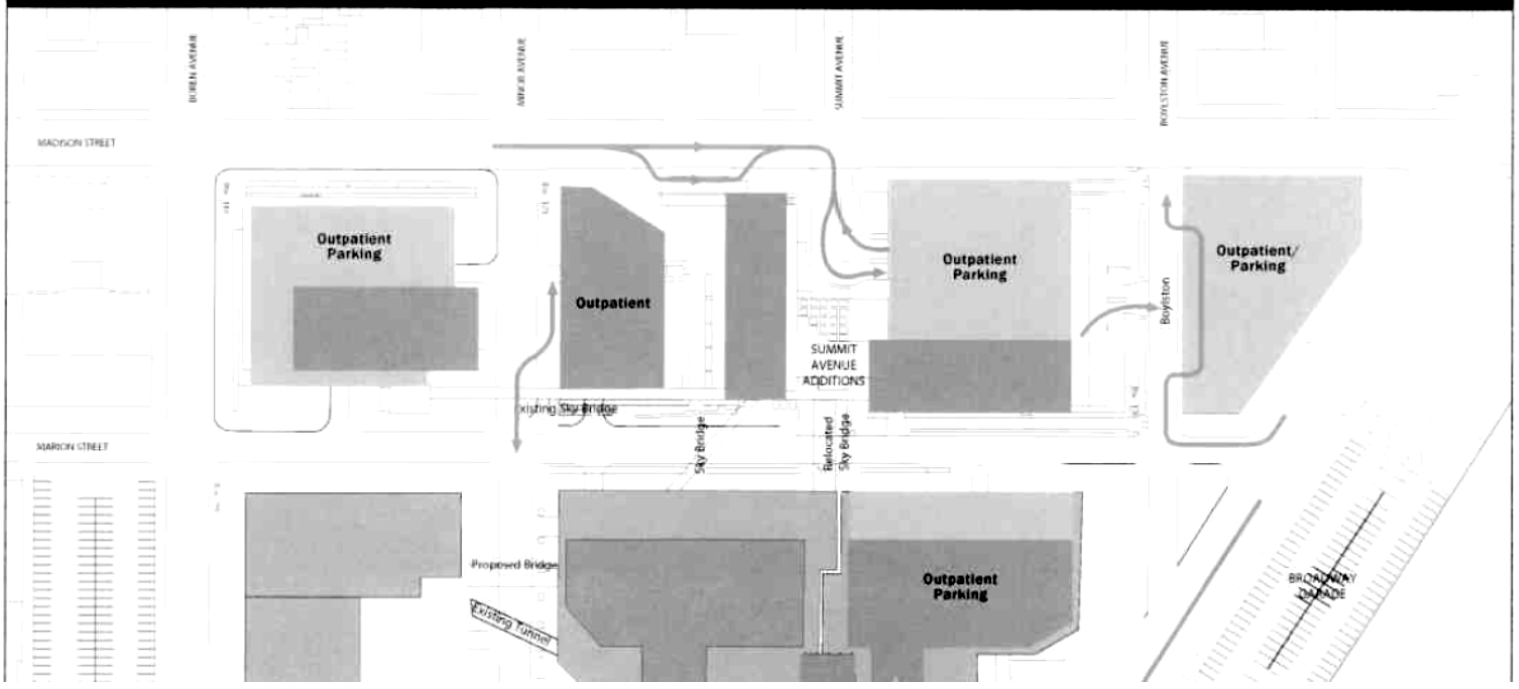


FIGURE 2.7

Existing Local Circulation/Access to Emergency Department

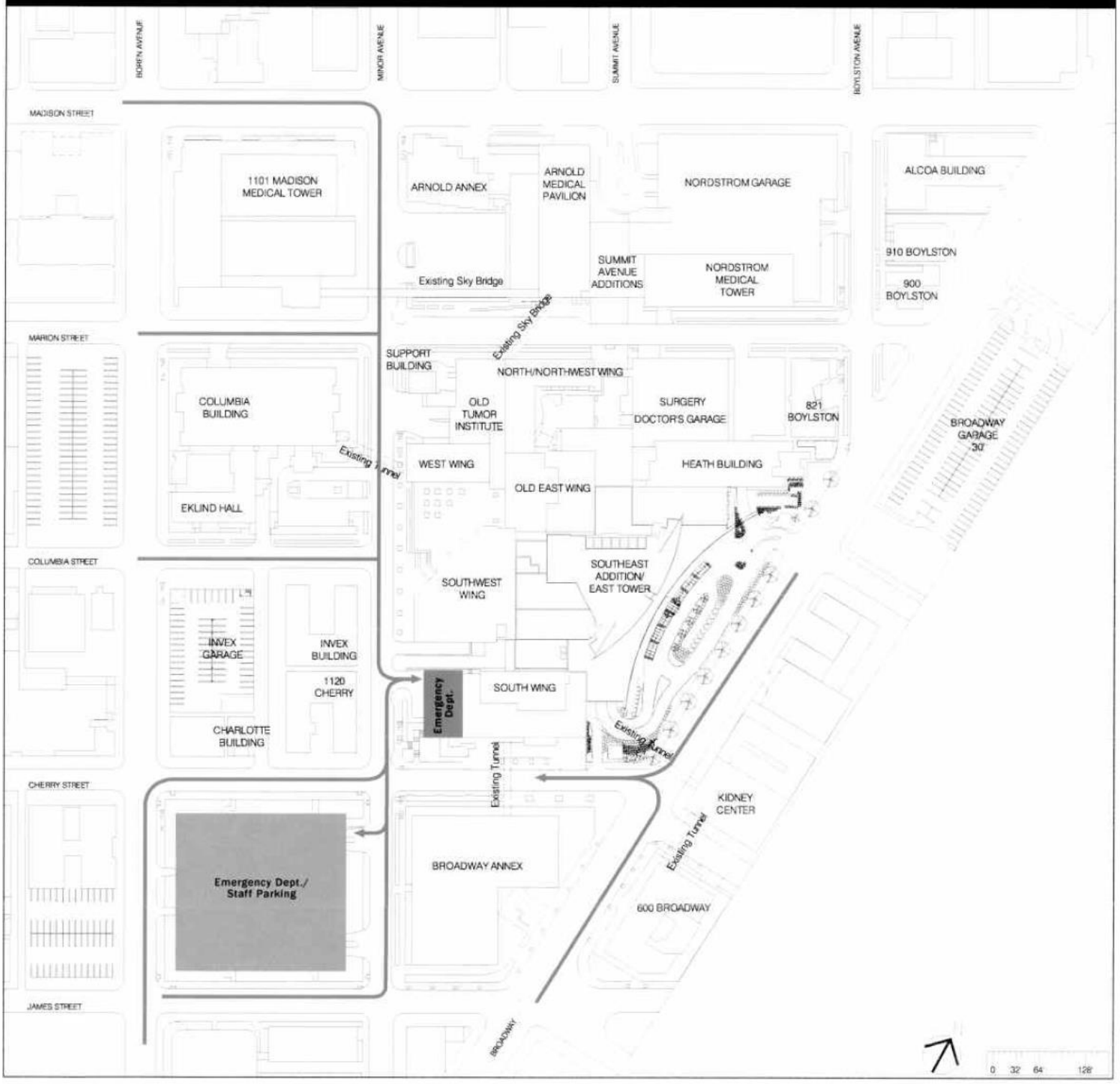


FIGURE 2.8

Future Local Circulation/Access to Emergency Department

Other Important Organizations, Businesses and Institutions along Madison for Consideration in Future Outreach and Engagement

In addition to the major institution plans, the First Hill Neighborhood plan has relevant sections relating to transit and pedestrian improvements which pulled together a wide variety of area stakeholders. The plan includes a list of stakeholders who helped create the plan. Other groups and institutions that have played significant roles in neighborhood planning and transit decisions in the area include Town Hall and the First Hill Improvement Association.

Madison also features a large number of sizable businesses and organizations that could become important stakeholders. Even small retailers and businesses could become fierce opposition to Madison BRT if there is not a fair, transparent process that invites their input and considers their unique circulation and access needs. Circulation for numerous hotels and grocery stores might be particularly difficult given the constrained right of way along Madison. They might require in depth design consideration, similar to what will be needed for Swedish Medical Center and its extensive parking circulation needs. On the other hand, some organizations might recognize the potential of BRT and support more aggressive design approaches. Planned Parenthood is an example of an organization that will receive a big boost in transit quality and might support aggressive bus prioritization along the narrow portion of Madison between 19th and 23rd.

Businesses and organizations that might become major stakeholders include the Seattle Academy, Madison Market, Trader Joe's, Safeway, the Silver Cloud Inn, The Sorrento Hotel, the Renaissance Hotel, US Appeals Court, Seattle Public Library, Exeter House and Horizon House retirement communities, the Polyclinic, Aurora Medical Services, the new Bullitt Center, Planned Parenthood, Deaf-Blind Services Center, Madison Temple Church of God, Seattle First Presbyterian, The Fourth and Madison Building as well as other office buildings downtown, and numerous apartment buildings.