Fairfax Multimodal Transit Hub

Niehoff Urban Studio
Wasson Way Planning Capstone Spring 2014

Nicholas Charles
Di Meng
The Fairfax multimodal hub project is attempting to create a transportation center where all modes of travel can come together. Students have also integrated a bike trail project along the proposed light rail line (Wasson Way) that would connect to the existing Little Miami Scenic trail. The site has potential for a Transit Oriented Development, which would include affordable density residential units that Fairfax currently lacks. Various alignment and elevation options for the two light rail lines (Wasson Way and Oasis) are explored and the station is designed to include access to both. The integration of light rail, bus, bicycle, pedestrian, and personal vehicle travel into one destination hub is the ultimate goal of this project. This would provide citizens of Fairfax, as well as other neighborhoods along the light rail line, with more viable options for travel outside of personal vehicles (cars). The development of multimodal transit centers with flourishing greenspace encourages physical activity and healthy lifestyles, which the City of Cincinnati is pushing for moving into the future.
Background Research

Our area of study was the Fairfax/Red Bank section of the Wasson Way line, and we explored the existing conditions in Fairfax thoroughly before attempting to design our site. The total population (1,693 as of 2012) has decreased by over 12% in the last decade. However, Fairfax does contain several thriving businesses and strong business districts which bring an additional 1,500 people to the area daily from commuter trips. The average house value in Fairfax is 130,500 (as of 2011); only about 18% of the residents of the area have a bachelor's degree or higher, and less than 6% have a graduate degree so the workforce/population is largely in blue collar occupations. Using this and additional housing data provided by CAGIS, we decided that affordable density housing was lacking in Fairfax. We also noticed a lack of retail/restaurant development in the area, which lead us to the development of a mixed-use site across from our hub station. This development would contain retail/restaurant on the first floor and 5-6 additional floors of affordable density housing to service the commuter workforce traveling to Fairfax every day (as well as anyone else who desires to relocate around the hub station). [Data courtesy of city-data.com]

We placed the multimodal transit hub where we did based on the fact that the Wasson Way light rail line and the Oasis light rail line move toward each other and run parallel for several hundred yards in Fairfax. The area contains many steep slopes, and our selected hub station site contains a 45 foot change in elevation; however, we wanted to work with the natural topography in the area due to its close proximity to the river and the beautiful view-sheds the topography produces. The Wasson line comes from the western boundary of our site (Ault Park) and stretches east across Red Bank Road and Columbia Parkway/Wooster Pike/US-50, eventually running parallel to a current Norfolk Southern owned access road; the Oasis line enters the site at the Southern border (along Old Wooster) and sweeps northeast running parallel to the Wasson line shortly after they both cross over Wooster Pike/Wooster Road. We believe that the Fairfax neighborhood bus routes should tie in with the light rail station/bike path in order to provide the most transportation options to the residents and visitors (providing multiple modes of entry/exit/pass-through). We also recognize the existing commuter population that needs to retain

Alignment

We examined the different alignment options for the Wasson and Oasis Lines where they come together and ultimately decided that both lines should continue East (as opposed to merging the two or stopping either one at the Fairfax hub). The reasoning for this is that both lines will go to different areas on the Eastern side of the city (one will travel out to Newtown and the other will go to Beechmont/Eastgate). The city could benefit greatly from adding a connection to the Beechmont shopping and auto district and the Newton connection would serve that shopping and residential district as well. Our alignment options were based off of the information presented in the Eastern Corridor document via the UC Community Design Center.

Elevation

When working with the topography of the site, we examined the slope of the hill and the standards presented in the Eastern Corridor document in order to figure out where the incline would have to begin if we were to make the two rail lines meet at grade. We would need about 175 feet before the hub station, which is available, and steel structure would elevate the Oasis line up to the same grade as the Wasson Line. The cost of this steel structure would exceed the cost of developing the access skyway with the natural topography, so we chose to use an incline/decline design to allow pedestrians and potential users to access the Oasis Line from the Wasson line via escalator/elevator.

Public/Open Space & Bike Trail

Our idea for the public green space on site is to develop an open space that facilitates pedestrian movement and enjoyment as well as to create a green corridor between the hub station and the Wasson line (underneath the access skyway) that would serve as a scenic route for the Wasson Way bike trail. The current plan according to other bike trail groups is to take the main bike path across the bridge coming down from Ault Park and once you cross over Wooster Pike the idea is to run the main path up Columbia Parkway/US-50 into Mariemont. We would propose adding an additional trail to follow the along the upper river bank to give the bicyclists and pedestrians access to the spectacular view-sheds in the area. The scenic bike path would then pass in between Cincinnati Gear Works and the Norfolk Southern owned building up onto Mariemont Avenue. We also propose connecting the two halves of mariemont Avenue in order to take the bike path up through Dogwood Park to rejoin the main route in Mariemont.

The green space we have created in between our hub station and the mixed-use development is meant to facilitate pedestrian, auto, and bus traffic through the same area safely (separated enough to make each individual user feel safe). We have altered the existing roadway in order to slow vehicular traffic down and facilitate safer pedestrian movement through the site as well as to provide a loop for busses and cars to pick up and drop off at the multimodal transit center and the mixed-use development. Wide pedestrian walkways will extend from the front of the retail/mixed-use to the street as well as from the hub station to the street. This will also create a pedestrian square outside of the hub station which will be fortified with restaurants and coffee shop/newstand developments.
Sudbury Hill is a case study from London that we used when designing the hub station exterior/interior. It provides a great example of using a skywalk/elevated walkway to access the various platforms in the light rail station, and also provides covered walkways to platforms. The walk experience at Sudbury Hill is very pleasant and despite being a large station does not get too overwhelming. When we were designing our site, one of the main issues we ran into was the walkability, especially from one end to the other. We looked at several station designs and Transit Oriented Developments that used different approaches to improving walkability, such as escalators/moving sidewalks.

Hillingdon Station provided us with inspiration for the interior of the hub station as well as for the materials to design it with (steel and glass). The existing businesses in Fairfax are industrial oriented, therefore we thought steel and glass would represent the character of the business district as “industrial”. The station contains wide walkways, several coffee/news/travel oriented retailers, information kiosks, and furniture. It also helped us decided to create the main building as one large open atrium, and the glass exterior gives the users clear views out onto the Little Miami River and its riverfront green space.

Miami Central Station is the prime example we based our station design off of. It uses a skyway to access the multiple platforms of different light rail lines and also includes access for buses and personal vehicles. The city also did a nice job developing the green space surrounding the station as a pedestrian friendly area. The scale is slightly bigger than what would be required for the Fairfax station, however we believe its feasible on a smaller scale. If the TOD portion of our site attracts more residents and workers to the area the influx of population could necessitate a bigger station, so we tried to design a little larger than what would currently be needed.

The new railroad square development had a lot of influence on our design of the mixed-use buildings on our site. The developer did similar programming making the first floor retail/commercial and upper floors housing, and they also created a very walkable and inhabitable public space in between the development and the light rail line. The shape of the buildings create a purely pedestrian corridor that moves people toward and away from the light rail line. This development is also close to a river and contains riverfront development, capitalizing on the natural beauty of the site.
This urban development in Silver Springs is a prime example of excellent public space. Large wide set pathways for pedestrians, slowed down auto and bus traffic, and high density housing on site. This design helped us to develop our circular public space and new traffic pattern, as well as helped us to realize that a 5-6 story high density residential development was not out of the question. The retail centers on the first floor areas of both sides of this development draw in pedestrians and make the area a vibrant living space that interacts with its open/public space.

This design precedent also strengthened our circular concept as well as reinforced that we should allow bus and personal vehicle access into our multimodal transit hub. This site brings together light rail, bus, auto, and pedestrian traffic. Our site would have the addition of bike path joining into the hub and would further expand the transit options for the people of Fairfax (and Cincinnati in general). This transit hub also uses and open glass type design and creates a beautiful edge to the auto boulevard its located along.

*Additional information pulled from the Eastern Corridor document located on the CDC’s shared server under technical resources for the Spring Wasson Way Studio*