BELMONT COMMUNITY PATH FEASIBILITY STUDY

Evaluation: Criteria and Application

Determining feasibility should be an objective and transparent process based on reliable research and analysis of comprehensive criteria. In the case of this project, feasibility is determined based on extensive research of the Study Area's existing conditions and refinement of conceptual design and matrix criteria with public guidance. Determination of feasibility is based on a point scale system with the highest scoring Alignment having the highest degree of feasibility for this path. Five categories have been identified and include:

- User Experience – Through the public engagement process during this and previous studies, the Belmont community has identified User Experience as the most important trait for the Community Path and comprises the qualitative traits of the proposed Path alignments. As such, the subtotal of this category will be weighted 2 times more than other categories. This category includes consideration of a user's experience including:
    - Ease of physical access to the path (steps, ramps, directness)
        - 1 point = access to proposed alignment can only be gained in both directions if already on the Path and/or must be accessed by back-tracking from starting point
        - 2 points = access can only be gained in one direction if already on the Path and/or must be accessed via a series of ramps
        - 3 points = access is limited in both directions and/or must accessed via over 3 sets of steps/3 or more ramps
        - 4 points = access is open to at least one direction and/or must be accessed via 1-2 sets of steps/1-2 ramps
        - 5 points = access is direct and unrestricted
    - Aesthetics of the Path corridor (views, landscaping, amenities)
        - 1 point = wall/fence visible 2-5' from path, negative views (loading docks/stockpiles/rail), no lawn, no trees or shrubs
        - 2 points = wall/fence visible 6-10' from path, negative views (loading docks/stockpiles/rail), lawn, no trees or shrubs
        - 3 points = wall/fence visible 11-25' from path, some combination of lawn/trees/shrubs
        - 4 points = wall/fence visible over 25' from path, neutral views, some combination of lawn/trees/shrubs
        - 5 points = wall/fence visible over 25' from path, positive views (landscape or architecture), some combination of lawn/trees/shrubs
    - Sense of personal comfort from the user's perspective (noise, pollution, personal space)
        - 1 point = 8' wide for majority of alignment and/or walls/fence within 2' from Path and/or passes 50' or more length with sustained loud noise/odor/garbage and/or less than 15' from rail/high traffic
        - 2 points = 8' wide for portion of alignment and/or wall/fence 2-5' from path and/or passes 20'-50' length with sustained loud noise/odor/garbage and/or less than 15' from rail/high traffic
        - 3 points – 10-14' wide for majority of alignment and/or wall/fence 5-10' from path and/or passes 20-50' length with intermittent loud noise/odor/garbage and /or 15'-25' from rail/high traffic
        - 4 points = 14'-16' wide and/or wall/fence 11'-25' from path and/or passes 1'-20' length with intermittent loud noise/odor/garbage and/or 25' or more from rail/high traffic
        - 5 points = 16' wide and/or wall/fence 25' or more from path and/or does not pass intermittent loud noise/odor/garbage and/or not along rail/high traffic

- Conflicts with vehicles
  - 0 points = alignment crosses an intersection with various negative conditions including excessive vehicular traffic volumes, multiple approaches/conflict points, poor sight lines, and lack of signal/inability to add signalization or alignment crosses 5 or more highly trafficked driveways within 500 linear feet of path
  - 1 point = alignment includes on-road bike path
  - 2 points = alignment includes a mid-block crossing
  - 3 points = alignment crosses a signalized intersection with heavy traffic and/or alignments is immediately adjacent to road
  - 4 points – alignment crosses a signalized intersection with low-traffic flow
  - 5 points = no/few vehicular conflicts
- Conflicts with pedestrian way
  - 1 point = community path (bicycles) crosses perpendicular to high-occupancy pedestrian way
  - 2 points = community path (bicycles) crosses perpendicular to low-occupancy pedestrian way
  - 3 points = community path (bicycles) runs parallel with high-occupancy pedestrian way
  - 4 points = community path (bicycles) runs parallel with low-occupancy pedestrian way
  - 5 points = no/few community path/pedestrian way conflicts

- <u>Environmental and Cultural Impacts</u> – This category includes potential negative impacts to:
  - Significant wetlands (large to high quality wetlands)
    - 0 points = Over 5,000 sf of loss to high quality wetlands (as defined in CMR 310)
    - 1 points = Between 3,500-5,000 sf of loss to wetlands
    - 2 points = Between 1,000-3,500 sf of loss to wetlands
    - 3 points = Between 500-1,000 sf of loss to wetlands
    - 4 points = Minimal loss, less than 500 sf
    - 5 points = No wetland loss
  - Historic resources (historic structures and sense of historical character in districts) Reference shall be made to the Design Guidelines for Belmont Historic Districts, dated December 2009 or latest edition. Each Path alignment has being evaluated as to the amount of "changes and additions" and if they may be deemed to be subject to review by the Historic District Commission and if they seem "harmonious, and to prevent the intrusion of incongruous elements that might detract from the aesthetic and historic values of the district" through which the Path alignment may pass.
    - 1 point = Path alignment passes through a Historic District or property, and necessitates direct physical change(s) to a historic structure and/or landscape that is clearly incongruous with the historic context
    - 2 points = Path alignment passes through and/or adjacent to Historic District and blocks access to or negatively affects/blocks views of the Historic District and/or landscape
    - 3 points = Path alignment passes through and/or adjacent to Historic District and necessitates change(s) to an historic elements and/or landscape but has the ability to meet Historic District General Guidelines
    - 4 points = Path alignment passes through and/or adjacent to Historic District but does not proposed any changes to the Historic structure and/or landscape
    - 5 points = Path alignment does not pass through or adjacent to an Historic District/property
  - Woodland with stands of mature trees
    - 1 point = removes over 5 acres of mature woodland
    - 2 points = removes 2-5 acres of mature woodland
    - 3 points = removes .5-2 acres of mature woodland
    - 4 points = removes 10,000 sf to .5 acre mature woodland
    - 5 points = does not remove mature woodland

- Design Attributes- This category goes beyond Path attributes that would be designed into every alternative alignment (ADA access, meeting codes and regulations, industry design standards for multi-use paths) and includes four elements that differentiate the alternatives:
    - Encroachment on private property
        - 0 points = residential structure
        - 1 point = other structure
        - 2 points = private residential property
        - 3 points = other private property
        - 4 points = construction easement/not permanent
        - 5 points = no encroachment
    - Ease of access/patrolling by Fire and Safety personnel (views, remoteness)
        - 0 points = Path alignment makes it infeasible to patrol or too difficult to access in emergency situations
        - 1 point = No direct access points to the alignment and/or cannot be viewed from adjacent roads/patrol-able property
        - 2 points = 1-2 access points to the alignment and/or over 300' to furthest point within alignment and/or cannot be viewed from adjacent roads/ patrol-able property
        - 3 points = 1-2 access points and/or 100'-300' to furthest point and/or limited views from adjacent road/ patrol-able property
        - 4 points = 2 or more access points and/or 50'-100' to furthest point and/or good views from adjacent road/ patrol-able property
        - 5 points = 2 or more access points and/or under 50' to furthest point and/or excellent views from adjacent road/ patrol-able property
    - Potential for positive partnerships for land acquisition, funding, and/or maintenance
        - 0 point = MBTA has rejected the proposed alignment/know private owner will not agree/requires speculation about usability of land at time of BOS determination
        - 1 point = Agreement with property owner is unknown and/or no other entity can potentially maintain alignment and/or alignment is unlikely to qualify for funding
        - 2 points = Property owner is undecided but unlikely to agree and/or no other entity can potentially maintain alignment and/or limited funding sources have been identified that could apply to this alignment
        - 3 points = Property owner is undecided but likely to agree and/or entity other than Town is likely to maintain alignment and/or limited funding sources have been identified that could apply to this alignment
        - 4 points = Property owner is positive but Agreement needs to be adopted and/or entity other than Town is likely to maintain alignment and/or several funding sources have been identified that could apply to this alignment
        - 5 points = Alignment through land already identified for path use and/or entity other than Town has agreed to maintain alignment and/or several funding sources have been identified that could apply to this alignment
    - Distance from residential structures - Most every Path alignment in this study passes adjacent to private residential property. While many studies have shown a positive experiential and economic effect on residences in close proximity to community paths, there is a strong public expression of additional potential negative impacts and therefore relative average distance (per Path stretch) to residential structures was added to the Evaluation Matrix
        - 1 point = 0'-10' to structure
        - 2 points = 11'-20'
        - 3 points = 21'-30'
        - 4 points = 31'-40'
        - 5 points = 41'-50' and over to structure

- Transportation – This category goes beyond the required elements of safety which all alignments would be required to fully meet or exceed; and instead focuses on the differentiating factors of:
    - Connectivity to destinations such as significant resources, amenities and transit
        - 1 point = no connection to community destinations
        - 2 points = 1 connection 500' to 1000' from path
        - 3 points = 1 direct connection within 500' of path
        - 4 points = 2-3 connections 500' to 1000' of path
        - 5 points = 2-3 direct connections within 500' of path
    - Ease of universal accessibility (directness of accessible routes; quantity and challenge of accessible routes/ramps)
        - 1 point = accessible access to alignment is in opposite direction from primary access and/or access or alignment includes 5 or more ramps
        - 2 points = accessible access is removed from primary access and/or access or alignment includes 3-4 ramps
        - 3 points = primary access is accessible and access or alignment includes 2-3 ramps
        - 4 points = primary access is accessible and access or alignment includes 1 ramp
        - 5 points = accessible route is primary route and does not include any ramps
    - Consistency of community path to connect the MCRT/Wayside Trail to Fitchburg Cut-off Path (connection to Alewife Station), relative directness
        - 1 point – heads away from MBTA stations and/or away from rail line
        - 3 points – Takes Path away from MBTA station or rail line for short distance but still within 500'
        - 5 points – Directly leads to MBTA station and/or follows rail line
    - Impacts on existing traffic/transportation
        - 1 point – Likely to cause notable disturbance to existing traffic patterns or require roadway realignment with adverse impact to vehicular flow
        - 3 points – Neutral
        - 5 points – Likely to reduce vehicular traffic volume or requires installation of a signal or intersection reconstruction with positive impact on vehicular flow
    - Conflicts with rail
        - 1 point = At-grade rail crossing
        - 2 points = "pinch point" closer than 15' to rail
        - 3 points = 15' - 25' to rail
        - 4 points = Over 25' to rail
        - 5 points = Not along rail

- Cost – This category includes four considerations of cost:
    - range of construction costs
        - 1 point = segment over $10 mil per mile or link over $4 mil
        - 2 points = segment $7.5 mil -$10 mil per mile or link $3 mil to $4 mil
        - 3 points = segment $5 mil to $7.5 mil per mile or link $2 mil to $3 mil
        - 4 points = segment $3 mil to $5 mil per mile or link $1 mil to $2 mil
        - 5 points = segment under $3 mil per mile or link under $1 mil
    - relative levels of annual and life-cycles operations and maintenance costs
        - 1 point = path consists of large number and/or high complexity of structures and/or path is farther removed from primary DPW operations and/or limited access increases complexity of maintenance and/or path consists of large extent of shrub beds
        - 5 points = path consists primarily of at-grade elements that are close to/easily accessible by standard DPW procedures/equipment and contains a limited amount of shrub beds
    - ability of each Path alignment to qualify for various Funding sources

        - 1 point = Path location is not along rail/intended MCRT route, nor on agency property that may contribute to funding
        - 5 points = Path follows consistently with MCRT preferred alignment and/or is on agency owned property that supports path construction
    - Value Added: High scores in this category indicate that there is a high community value added by the path alignment; Low scores in this category indicate there is a negative overall community impact by the alignment; a score of 3 indicates a neutral rating in this category.

Within these five categories, 21 individual criteria are evaluated for each Alternative Alignment. The Feasibility criteria matrix contains the evaluation of all proposed Alternative Alignments. Points are assigned on the following scale:

- 0 point for FATAL FLAWS
- 1 point for low or negative assessments
- 3 points for medium or neutral assessments
- 5 points for high or maximum positive assessments
- 2 or 4 points for an assessment that falls between the higher and lower number

In addition to the evaluation of each Alternative Alignment by the established feasibility criteria, unique situations are considered where a proposed alignment is incompatible with the site or defined guideline/plan for a specific reason. These situations are defined as "fatal flaws" and typically contain design characteristics that violate a defined goal, code, initiative or requirement. Alignments with fatal flaws in select locations are included in the matrix to fully vet all alternatives; but they receive a score of **0** and are <u>not</u> considered for a Recommended Route (combination of high-ranking alternative Alignments for the full length of the Study Area). As such, the following fatal flaws have been identified:

- Direct impact to an existing residential dwelling
- Over 5,000 sf of loss to high quality wetlands (as defined in MassDEP CMR 310)
- Path location is infeasible to patrol or too difficult to access in emergency situations or impedes access to other areas under Town responsibility
- MBTA has rejected the proposed alignment/know private owner will not agree/requires speculation about usability of land at time of BOS determination
- Alignment crosses an intersection with various negative conditions including excessive vehicular traffic volumes, multiple approaches/conflict points, poor sight lines, and lack of signal/inability to add signalization or alignment crosses 5 or more highly trafficked driveways within 500 linear feet of path