

Appendix F
Walkability Index

LAND-USE AND WALKABILITY EVALUATION CRITERIA

This appendix provides more detailed explanation of certain land-use criteria that are presented in the text.

Station Area TOD Potential (Criterion 2.07) and Year 2025 Households and Jobs Increased through TOD (Criteria 2.03 and 2.06)

The following process was used to determine the data needed to evaluate these three TOD related items

a. Identification of “Opportunity Sites”: “Opportunity sites” are the areas around each candidate station that are most likely to experience redevelopment (changes in uses or increased intensity of current uses) over the next two decades. These sites were identified based on criteria such as: presence of vacant or partially empty properties; commercial sites whose original tenants have been replaced by more opportunistic uses (e.g. thrift shops in former supermarket sites); age and presumed end of useful investment life (e.g. multi-family developments more than 25 years old); and sites and small areas surrounded by such conditions.

The acreages for all stations along each alternative were summed to estimate the overall TOD potential for each alternative.

b. Future Land-Use Mix: For the stations subject to a TOD scenario, the total acreage of the opportunity sites was redistributed across the all or some of the five land-use categories to reflect that station’s share of the total future transit-oriented market potential. Most changes impacted what the team and its economic advisors determined to be commercial sites “in excess” of likely future demand for such space, or were redevelopment of multi-family sites at higher densities. (Density and FAR for all future uses were assumed to be somewhat higher than the base year 2000 densities derived from the tax assessor’s data base.) In a very few cases, it was assumed that multi-family housing will replace some existing single-family housing (usually small isolated pockets within or adjacent to non-residential areas) by 2025. In most cases, however, single family areas were left unchanged.

c. Determination of total year 2025 Households and Jobs: Once a future land-use mix was established, two sets of calculations were performed. First, the full buildout redevelopment capacity was estimated. Second, the economic subconsultants determined for each station with redevelopment potential a plausible year 2025 level of TOD development by estimating the likely level of market “absorption” (% of available land to be developed by 2025) for each land-use.

Once, the year 2025 land-use acreage for each of the five land-uses within the opportunity sites was established, these acreages were converted into the total number of jobs and households for these opportunity sites. The remainder of the ½ mile area is assumed to reflect the LUAM 2025 data. The LUAM 2025 data for that station was then adjusted to reflect these changes and to avoid double counting.¹

Property Value Impact Evaluation Methodology (Criteria 3.05 and 3.06)

Many transit systems in various US cities have seen a long term rise in the value of properties near transit stations. The research is quite clear on this point². Nevertheless, there are no set guidelines or formulas for estimating

¹To avoid any double-counting of the opportunity sites data (i.e. simply adding the original LUAM presumed use plus a new TOD use), the data for redevelopment sites were “clipped” out and the data for those parcels recommended for redevelopment substituted.. Areas not redeveloped were assumed to maintain the same number of jobs or households as indicated in the LUAM data, (often the same or close to the same as today for the more stable areas).

² **ARTICLES:**

Transit's Value-Added Effects: Light and Commuter Rail Services and Commercial Land Values.

Transportation Research Record, Vol. 1805, 2002, pp. 8-15; R. Cervero, M. Duncan

Benefits of Proximity to Rail on Housing Markets, Journal of Public Transportation, Vol. 5, No. 1, 2002, pp. 1-18; R. Cervero, M. Duncan.

Rail's Added Value, Urban Land, 2002, Vol. 61, No. 2, pp. 77-84; R. Cervero, M. Duncan.

Reports:

Transit Oriented Development in America: Experiences, Challenges, and Prospects. Washington, D.C.: Transit Cooperative Research Program, 2004; R. Cervero, with G. Arrington, J. Smith-Heimer, R. Dunphy, and others.

Transit-Oriented Development and Joint Development in the United States: A Literature Review, Research Results Digest Number 52, Transit Cooperative Research Program, October 2002; R. Cervero, C. Ferrell and S. Murphy.

http://gulliver.trb.org/publications/tcrp/tcrp_rrd_52.pdf

the long term land value premiums (sales or rental rates) that might accrue simply because of light rail implementation. Research that isolates LRT *per se* is still fairly scarce, with empirical evidence only beginning to trickle in.

In general, the land-value impacts of TOD have been the greatest (as high as a doubling of per-square foot property values) in healthy and buoyant real-estate markets and settings with considerable peak-hour congestion. Increases in land value have been fairly tepid (i.e., no measurable land-value differences) in settings with flat real estate markets and little congestion to speak of.

Based on a research survey and in consultation with the client, the consultants developed the following guidelines for estimating potential transit related property value benefits.

Given the somewhat low-key nature of the residential real estate market in South County, a modest property value increase (c. 5%) is assumed to be generally attributable solely to LRT implementation. This 5% premium was applied to the current values of all residential properties within the 1/2 mile area around candidate station except for those cited in items 2 and 3 below. This increase applied to all stations whether they were designated for TOD or not.

Because of likely perceived visual and noise impacts, no property value premiums were attributed to residential properties directly abutting the LRT right of way within the 1/2 mile area around stations.

In light of the nuisance factor attached to large park and ride stations, no premium was applied where residential development was along the main access roads or fronted the proposed park and ride site. This would apply to the P1, O4 and O8 stations—Watson (Purple), Reavis Barracks, and Butler Hill. At the B3-Gravois station, houses that back up to the new likely access roads to get to the station were also excluded.

Given the current “oversupply” of commercial land in much of the study area, a similarly modest increment was applied to non-residential properties. As station area businesses are likely to benefit more from the increased foot traffic around stations (and perhaps increased park and ride access) this increment was set at 8% and applied to all non residential properties.

The application of these guidelines proceeded as follows.

Residential Properties (Criterion 3.05)

Before estimating the potential increase in property values near candidate stations, two groups of properties were removed from the overall pool of existing residential properties. The first group was residential parcels directly abutting the LRT right of way within the ½ mile area around stations. In light of the nuisance factor attached to large park and ride stations, residential parcels along the main arterials leading to the park and ride sites and properties fronting the parking structures were removed from the pool at stations P1, O4, B3 and O8.

In St. Louis County, all residential properties –single family and multifamily-- within the ½ mile area around candidate stations not removed from group based on the two criteria cited above were identified through GIS and their current assessed value determined through the tax assessor's data base. All these values were aggregated and a 5 percent increase in the total assessed value was computed and added.

The assessed value for residential parcels in the City of St. Louis (within the ½ mile area around stations O2 and O2.5) was not available in the GIS database. As there were a total of some 1900 single family units in the 1/2 mile around these stations eligible to be included in this evaluation, it was impractical to research the current assessed value of each. But, because units near the St. Louis stations are relatively similar to each other in age and type, a sample of about 30 single-family residential parcels located along different blocks was chosen and their assessed value was obtained from reference to the City of St. Louis' online assessor's database. The assessed values of the 30 parcels were averaged and the average multiplied the total number of residential parcels around these City of St. Louis stations. This result was considered the estimated total assessed value of City single family parcels around stations O2 and O2.5.

Since there were less than 20 multi-family units and townhomes the actual assessed value of each one was determined by reference to the online assessor's data base and these were aggregated and added to the total for single family units. This aggregate was then increased by 5%.

Non-Residential Properties (Criterion 3.06)

We selected all commercial properties within the ½ mile area around candidate stations using GIS. Thereafter, we aggregated the total assessed value for the selected parcels and computed an 8 percent increase in the total assessed value.

Since there were just 16 commercial parcels in the City of St. Louis that were within the ½ mile area around candidate stations (O2 and O2.5), we looked up

the assessed value of each one of these 16 parcels in the City of St. Louis' online assessor's database.

Walkability Index (Criterion 3.11)

The consultants developed a walkability index for use in the Metro South study to document the quality of the station area pedestrian environments, primarily within ¼ mile of candidate stations.

The checklist identifies the key physical and environmental factors affecting the pedestrian trip and conditions that characterize a good pedestrian environment. The index records how the physical conditions within an area (street crossings, sidewalk conditions, topography, etc.) promote or fail to promote the ease, comfort, and safety of pedestrians and bicycle access to candidate stations. A sample checklist is attached to this appendix.

Factors were given prime significance in this assessment were:

- Continuity of Sidewalks
- Directness of Routes
- Major Street Crossings
- Distance from Station to Major Destinations/Origins

For each candidate station site, the focus was on the area within ¼ mile of the candidate station site. The consultants reviewed in a more general way the area 1/4 to 1/2 mile from the candidate station site. The consultants also estimated how easy it might be to correct any key deficiencies.

The total of the scores for a candidate station area will become the walkability index for that station area. The maximum possible score was 95; the minimum was 19. Most scores fell within a 25 to 45 range, reflecting the study areas typical lack of sidewalks, designated crossings or pedestrian safety provisions such as median islands for crossing of busy arterials.

Total scores for each station along an alternative were summed and averaged by the number of station to enable each alternative to be compared to each other.

Space is provided to record comments and observations and record any unusual or locally specific conditions that should be addressed when preparing detailed plans or identifying capital projects that may be needed to improve the walkability (or bicycle friendliness) of the station area.