

## Design for Health

### Health Impact Assessment: Threshold Analysis



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## Characteristics of the Threshold HIA

- Level III: Most specific in the suite of HIA tools provided by Design for Health.
- Informed by synthesizing and digesting available research.
  - What does the “research tells us”
  - How strong/clear is that research
  - How can it be applied to more specific projects or plan proposals



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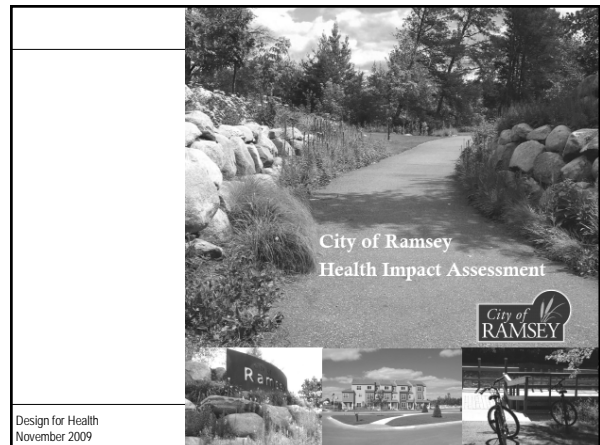
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## Structure of the Threshold HIA

- Uses same categories of public health categories as other tools in the Design for Health HIA suite
- Further breaks these areas down into 20 or so specific criteria
- Requires specific knowledge of the plan or project (e.g., specific information or characteristics about plan element or development proposal)
- Scoring is based on sliding scale

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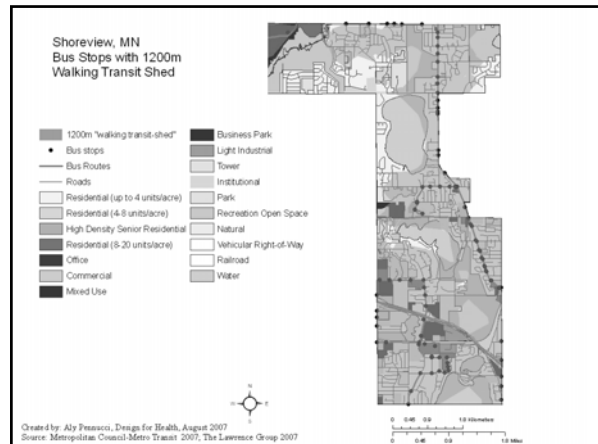


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<b>Topic: Accessibility - Transit Service (Threshold)</b>	
<b>Intent</b>	Ensure adequate transit service.
<b>Rationale</b>	Transit service not only provides alternatives to auto-travel, but provides means of mobility for the elderly, young and/or financially disadvantaged.
<b>Requirements</b>	Residential components of the plan are built at an average of at least 4 (preferably 7) units per gross acre.
<b>Definitions</b>	Net acres are often referenced in zoning codes and consider only the developed area. Gross acres refers to the total land area, which may include streets, parks, water features, and other land not used directly for residential or employment-related development.
<b>Submission</b>	<ul style="list-style-type: none"> <li>•Site plan with residential (or employment) density calculations.</li> <li>•Density calculations based on analysis completed at the block group level or smaller.</li> </ul>
<b>Credits Available</b>	9 points: An average of more than 10 residential units / gross acre or more than 50 million sq. ft. commercial/office space in the study area. 7 points: 9 units / gross acre or 35-50 million sq. ft. commercial/office space in the study area. 4 points: 7 units / gross acre or 8-20 million sq. ft. commercial/office space in the study area. 2 points: 4 units / gross acre or 5-8 million sq. ft. self-contained commercial/office space in the study area.
<b>Credits Awarded</b>	



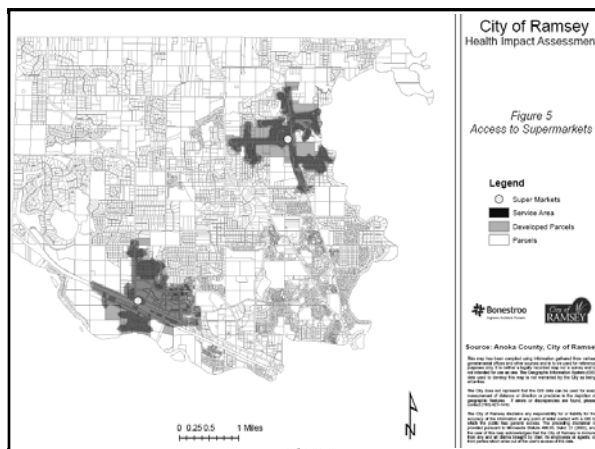
<b>Topic: Accessibility - Transit stops (Threshold)</b>	
<i>Intent</i>	Ensure that residents can conveniently walk to transit service.
<i>Rationale</i>	On average, people are willing to walk up to 1200 m (three-quarters of a mile) to access a transit stop.
<i>Requirements</i>	All residential or employment areas are located within 1200 m distance of a transit stop with hourly service.
<i>Definitions</i>	A transit stop is a bus or train stop with service at least every hour during the daytime on weekdays and weekends. The "walking-transit-shed" area is an area within a 1200 m walk from each transit stop.
<i>Submission</i>	Site plan showing the location of transit stops, complete with 1200 m "walking-transit-shed" area highlighted for each stop. This is a street network buffer and can be easily produced using GIS—use the "generalize" buffer in ArcGIS 9.2 and later.
<i>Credits Available</i>	9 points: Entire developed area is shaded within the "walking-transit-shed." 6 points: Fifty-percent of the developed area is shaded within the "walking-transit-shed." 3 points: If there are any transit stops within the study area that run with at least hourly service during the week from 9am-5pm.
<i>Credits Awarded</i>	



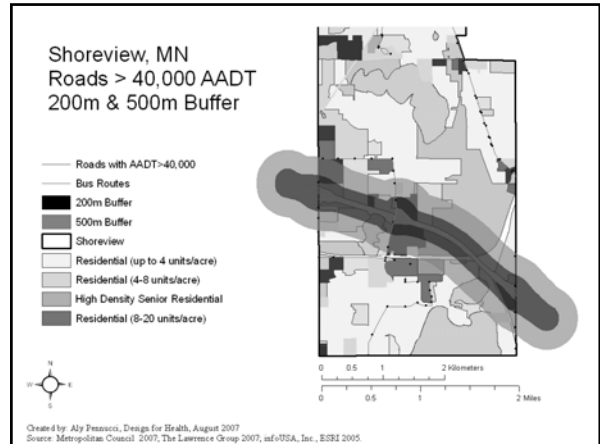
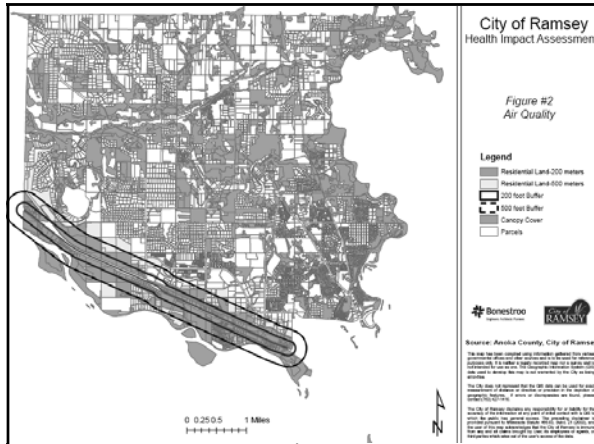
<b>Topic: Food – Distance to a supermarket or fruit and vegetable shop (Threshold)</b>	
<i>Intent</i>	Provide access to fruits and vegetables.
<i>Rationale</i>	Studies show distances to supermarkets have the clearest effects on health. We also assume that fruit and vegetable stores would have similar benefits.
<i>Requirements</i>	Supermarkets or fruit and vegetable stores within 1600 m (1 mile) of all residential areas.
<i>Definitions</i>	A supermarket or fruit and vegetable store is a farmer's market or an establishment with a NAICS code of 445110 or 455230.*
<i>Submission</i>	Map showing the location of existing (or proposed) supermarket or fruit and vegetable stores, and a 1600 m network buffer around each (easily done using the "generalize" buffer in ArcGIS 9.2 and later versions).
<i>Credits Available</i>	12 points: Entire developed area is covered by the buffer. 8 points: If 50% of the developed area is covered by the buffer. 5 points: If 25% of the developed area is covered by the buffer. 1 BONUS point: There is a farmer's market (during summer months) within the buffer area.
<i>Credits Awarded</i>	

<b>Food Stores--NAICS Code Examples</b>	
• <b>445</b>	<b>Food and Beverage Stores</b>
• <b>4451</b>	<b>Grocery Stores</b>
• <b>44511</b>	Supermarkets and Other Grocery (except convenience) Stores
• <b>44512</b>	Convenience Stores
• <b>4452</b>	<b>Specialty Food Stores</b>
• <b>44521</b>	Meat Markets
• <b>44522</b>	Fish and Seafood Markets
• <b>44523</b>	Fruit and Vegetable Markets
• <b>44529</b>	Other Specialty Food Stores
• <b>445291</b>	Baked Goods Stores
• <b>445292</b>	Confectionery and Nut Stores
• <b>445299</b>	All Other Specialty Food Stores
• <b>4453</b>	Beer, Wine, and Liquor Stores

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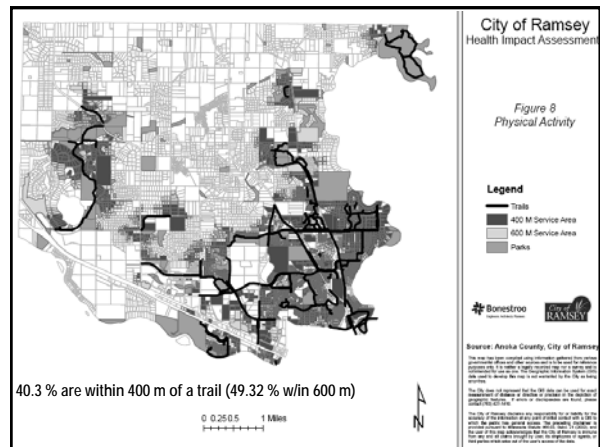
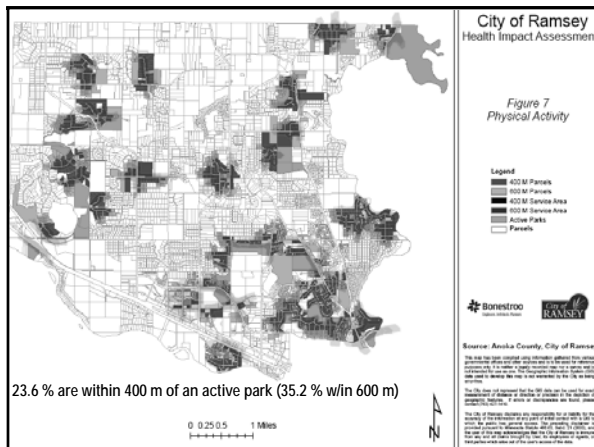


<b>Topic: Air Quality - Distance from a freeway for residential uses and uses occupied by children (Threshold)</b>	
<i>Intent</i>	Prevent respiratory diseases and premature births.
<i>Rationale</i>	Studies show decreasing particulates, respiratory diseases and premature births as distance from major roads increases. Residential areas, schools and playgrounds are key environments for sensitive populations.
<i>Requirements</i>	Residential areas, schools, day care facilities, playgrounds and sports fields should be more than 200 m (656 ft) from a major road.
<i>Definitions</i>	A major road is defined as having an average annual daily traffic (AADT) > 40,000, a freeway or a road with six or more lanes. Uses occupied by children include schools, day-care facilities, playgrounds and sports fields. Canopy refers to the horizontal extension of a tree's branches in all directions from its trunk.
<i>Submission</i>	Comprehensive plan map or site plan that depicts relevant land uses: (a) all roads in the area with AADT > 40,000, (b) a 200 m (656 ft) buffer from each major road, and (c) a 500 m (1640 ft; 1/3 mile) buffer from each major road.
<i>Credits Available</i>	9 points: There are no residential uses, schools, playgrounds, sports fields, and day care facilities within 500 m of a major road and the buffer area has complete canopy. 7 points: Same as above but the buffer lacks tree canopy. 4 points: There are no residential uses, schools, day care facilities, playgrounds, and sports fields within 200 m of a major road. 2 bonus points: If there is 50% tree canopy in entire study area.
<i>Credits Awarded</i>	

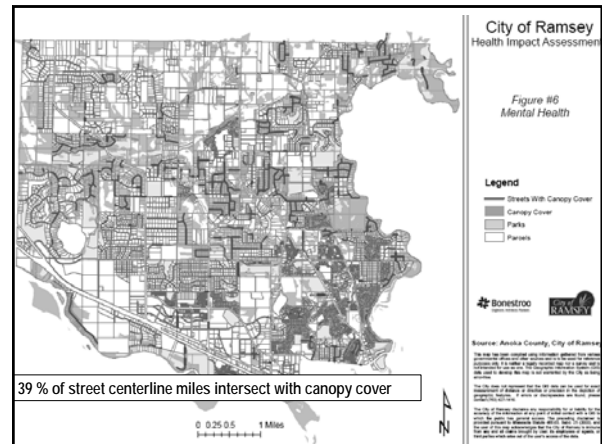


<b>Topic: Physical Activity –</b> <i>Access to playing areas, parks and trails (Threshold)</i>	
<b>Intent</b>	To make it easier for people to engage in a variety of activities, potentially increasing physical activity.
<b>Rationale</b>	Different people have different ways of being physically active and a variety of environments support such activities.
<b>Requirements</b>	Proportion of residential areas located less than 400 m (1/4 mile; 1312 feet) – 600 m (1968 ft) of a neighborhood park or open space.
<b>Definitions</b>	Neighborhood parks and open space areas should be publicly accessible and can facilitate active recreation (e.g. walking, cycling, organized games).
<b>Submission</b>	Map showing proximity to open spaces and parks that can accommodate active outdoor play with accompanying 400m and 600 m street network buffer around the parks.
<b>Credits Available</b>	6 points: all residences located within the 400 m buffer. 3 points: all residences located within the 600 m buffer. 1 point: 50 percent of residences within the 600m buffer.
<b>Credits Awarded</b>	

<b>Topic: Physical Activity:</b> <i>Access to trail system (Association)</i>	
<b>Intent</b>	To make it easier for people to engage in a variety of activities potentially increasing physical activity.
<b>Rationale</b>	Different people have different ways of being physically active and a variety of environments support such activities.
<b>Requirements</b>	Off-street trail system within 600 m (1968 ft).
<b>Definitions</b>	An off-street facility allows for bicycling and walking and is well suited for recreation and is more than 400 m (1312 feet; ¼ mile) long, for example.
<b>Submission</b>	Map showing proximity to off street trail system with accompanying 400 m and 600m network buffer, preferably measured from access points to the trail.
<b>Credits Available</b>	6 points: All residences are located within the 400 m buffer. 3 points: All residences are located within the 600 m buffer. 1 point: 50 percent of residences are within the 600m buffer.
<b>Credits Awarded</b>	



<b>Topic: Mental Health - Views of green (Association)</b>	
<i>Intent</i>	Provide views of green spaces, with canopy trees, from all buildings or dwellings. These may include parks, tree-lined streets, and tree-covered neighborhoods.
<i>Rationale</i>	Having access to views of green space serves to reduce stress and improve mental health.
<i>Requirements</i>	Provide views of green spaces, with canopy trees, from all buildings. These can be trees at the street level or, for those living in taller buildings, views to parklands or other green spaces
<i>Definitions</i>	Canopy is the top layer of a tree, including branches and foliage.
<i>Submission</i>	Provide tree inventory and/or plan for the municipality or the development and its context as well as accounts (sketches or other visual documentation) of views in multiple directions.
<i>Credits Available</i>	7 points: If any one of the following are satisfied: <ul style="list-style-type: none"> <li>•A majority of streets are lined with trees,</li> <li>•There are several pocket parks or larger around major employment and residential areas; or</li> <li>•There are views of green from the windows of most housing/work locations.</li> </ul>
<i>Credits Awarded</i>	



<b>Threshold Analysis (Draft)- Score sheet</b>						
Topic, Threshold or Association	Credits available				Total credits available	Credits Awarded
<b>Topic: Accessibility</b>					<b>18</b>	
Transit service (Threshold)	9	7	4	2		9
Transit stops (Threshold)	9	6	3			9
<b>Topic: Air Quality</b>					<b>18</b>	
Distance from a freeway for residential uses and uses occupied by children (Threshold)	9	7	4	2*		9
Polluting uses (Association)	6					6
Air quality mitigation (Association)	3	1				3
<b>Topic: Environmental and Housing Quality</b>						<b>7</b>
Minimize exposure to lead (Association)	7					7
<b>Total Credits--Potential and Awarded</b>						<b>100</b>

TOPIC	HIA THRESHOLD	CURRENT ACHEIVEMENT	GOAL	POLICY DIRECTIONS
Accessibility	1. Residential Density at 4u/acre. 2. Employment and Residential uses within ¼ mile of hourly transit service.	1. At build out, density will be ~ 3u/acre. 2. No transit service in the City currently.	Encourage dense Residential Development in appropriate Locations to capitalize on transit service	1. Implement the plan for Town Center 2. Secure a stop on the Northstar Commuter Rail Line
Air Quality	1. No residential areas, schools, day care, playgrounds, sports fields within 650 feet of a major road. 2. Polluting point sources regulated locally and by the state or feds. 3. Provide tree canopy to mitigate air pollution.	1. One after school program and three sports field within buffer area. Substantial residential use and some parks within buffer. 2. 5 polluting sources, only regulated by State of MN, not locally 3. Little tree canopy along Highway 10.	Reduce the impact of air pollution on children and other Vulnerable populations	1. Plan land uses with populations of children away from major roads. 2. Continue to use local permitting process and state controls to regulate point-source polluters. 3. Encourage the addition of tree canopy along Highway10 and other future "major roads".

TOPIC	HIA THRESHOLD	CURRENT ACHEIVEMENT	GOAL	POLICY DIRECTIONS
Environment and Housing Quality	Document policies that restrict lead substances in exposed surfaces of dwelling units and other areas inhabited by children.	Lead bearing substances are regulated by the building code consistent with State standards.	Limit or eliminate the use of lead in buildings	1. Continue to use the building code and state regulations to limit the use of lead-bearing substances.
Food	Supermarkets and fruit and vegetable stores within 1mile of all residential areas.	6.8% of residential parcels are within a 1mile buffer of existing grocery stores.	Provide at least 50% of residences with walking access to fresh fruit and vegetables	1. Encourage the development of more neighborhood serving grocery 2. Identify and reserve locations suitable for grocery store development
Mental Health	Provide views of green space with canopy trees from all buildings.	39% of streets have canopy cover. A majority of housing has views to green space.	Provide views to green space from new development and establish tree canopy on 50% of streets	1. Use park dedication to increase views to green space. 2. Continue to plan developments with views to open space. 3. Require tree canopy on new streets.

