

**Arden Hills  
Healthy City Planning Workshop  
April 16, 2010**

# Summary Report Appendices

**This summary completed June 2010**

**Design for Health**

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# Arden Hills Healthy City Planning Workshop April 16, 2010

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# **Appendix A: Final Agenda**

## **Workshop Agenda**

### **Part 1: Introduction (11:30 to 12:15)**

- Registration and graffiti wall
- Introduction to health planning and project
- Presentation about the proposals, population, and local conditions
- Introduction to core tasks

### **Part 2: Working Session (12:15 to 2:00)**

- Task 1: Over lunch: Voting on statements about health effects (12:15)
- Task 2 (small group): Identifying impacts of proposals (1:00)
- Task 3 (small group): Identifying potential changes to the proposals to respond to impacts (1:30)

### **Part 3: Reporting and Prioritizing (2:00 to 3:00)**

- Report back about impacts/changes
- Discussion about impacts/changes
- Task 4: Prioritize changes to the proposal (vote with dots)
- Closing remarks: What next?

### **Training Session—Trainee Participants Only (3:10 to 4:00)**

## Appendix B: Attendees

Armstrong	Cheryl		Ramsey County Public Health
Bernard	Lance		APA MN Chapter
Dallman	Amber		MDH
deAlwis	Deepa		MPCA
Dunlap	Sara		MDH
Eastham	John		Ramsey County Sheriff's Office
Effinger	Kristy	President	Arden Manor Residents' Association
Eshenaur	Tannie		MDH
Fix	Mike		Army
Garretson	Cindy	PTRC Member	Parks, Trails, and Rec Committee
Gold	John	Safety and Wellness Manager	Northwestern College Representative
Harpstead	Stan	Mayor	City Council
Holden	Brenda		City Council
Kelly	Jim		MDH
Kunkel	Bruce	Vice President for Campus Services	Bethel University Representative
Larson	Clay	Chair of the Planning Commission	Planning Commission
Lee	Mary		National Guard
Lindh	Dan	CEO	Presbyterian Homes
Mertensotto	Chuck		AH Resident
Muessig	Philipp		PCA
Nielsen	Carole		Mounds View School District
Nikolai	Karen		Hennepin County
Raab	Kristin		MDH
Salmela	Lyle		AH Resident/CCC
Salter	Mike		Ramsey County Sheriff's Office
Scott	Sam	Planning Commissioner	Planning Commission
Seiber	Julie		Ramsey County PH/AH Resident
Straumann	Rich	PTRC Member	Parks, Trails, and Rec Committee
Symonik	Dan		MDH
Zimmerman	Clay	Planning Commissioner	Planning Commission

## **Appendix C: Results from Exercises**

### **Graffiti Wall—What Does Good Health Mean to You?**

Upon arrival, workshop participants were asked the above question and to provide a written response on a post it note. Results are presented below, with similarly responses grouped accordingly.

- Good health means:
  - Prevention
  - Healthy life style
  - Healthy environment
  - Health care that changes as we age
  - Opportunity to remain active
- A livable community with trails, sidewalks, bike lanes
- A combination of physical, mental and spiritual well-being
- Being motivated to go outside because of features in the environment
  - Trails
  - Pedestrian malls
  - Low traffic
  - Safety
- What good health means to me:
  - Noise and air pollution control
  - Walkable community
  - Natural light transparency
  - Indoor and outdoor air quality
- Healthy eating and physical opportunities to exercise and move safely
- Family and friends, fellowship and food
  - Safe bike trails
  - Healthy foods
  - Walk daily
- A rewarding and fulfilling life
- Good health to me means a combination of being physically fit, mentally stable and spiritually right
- Good health means I'm healthy enough to enjoy life and pursue life goals
- Good health is the good fortune to live the lifestyle you choose
- Good health means feeling full of energy with enthusiasm for daily life and contributing to society
- A healthy body free of disease, a healthy mind at peace, and a healthy environment
- Good health is the goal that allows a person to fully enjoy their retirement
- The ability to do what you want without thinking about it
- Active, emotionally happy
- Getting the last run down the mountain at Snowbird in Utah

### Task 1: Voting on Statements about Health Effects -

You are provided 10 dots. For each of the below 10 health effect statements, place a dot to VOTE: YES, NO, or UNCERTAIN. Feel free to write additional comments on a post-it note or write directly on the sheet.

Category	Potential Health Effects	YES	NO	Uncertain	Comments
<b>Access</b>	1. The TCAAP development will make activities, services, & destinations closer to one another, thereby improving opportunities for walking, cycling, & getting to health services.	28	0	0	Depends on composite plan being implemented
	2. The TCAAP development will provide increased opportunities for attractive transit service in the area	15	2	12	Needs to be actively implemented. "Attractive?"= Accessible? Safe? Cheap? Wall art?
<b>Air Pollution</b>	3. The TCAAP development will ensure residential and other development is adequately spaced from high trafficked and polluting roadways such as I-35	17	4	8	These are desires rather than certainties due to need for new zoning and a master plan, but I hope they come to fruition. Hwy 96 and I35 won't go away.
<b>Physical Activity</b>	4. The TCAAP development will provide enhanced areas for physical activity	23	0	0	
	5. The TCAAP development will provide increased connections with other trails around the area, thereby improving options for physical activity	27	0	2	
<b>Food</b>	6. The TCAAP development will increase the availability of healthy food options	0	3	24	Only if demand is there. Needs to be both stores and gardens.

Category	Potential Health Effects	YES	NO	Uncertain	Comments
<b>Water Quality</b>	7. The TCAAP development will require that the land be cleaned to a level consistent with all types of development and would decrease groundwater contamination	17	3	9	
<b>Safety</b>	8. The TCAAP development will lead to a decrease in the number of motor vehicle accidents (per capita)	0	9	21	Traffic patterns?
	9. The TCAAP development will entail traffic calming and other urban design treatments to decrease the number of walking or cycling accidents (per capita)	10	2	17	Has to be designed in.
<b>Environ. &amp; Housing</b>	10. The TCAAP development will provide an adequate variety of housing that is deemed affordable and needed for Arden Hills	18	1	9	They need to also consider a manufactured home park

*Arden Hills Healthy Planning Workshop*

Additional over-arching comment from participant: “The TCAAP development ...(a) “should” or (b) “can.” Are these statements +/-? Need another column.



## Task 2 (small group): Identifying Impacts of Proposals

Instructions: Table 5 on pages 24-25 of the Briefing Packet provided a preliminary review of potential health impacts related to various health topics. Please use this worksheet to complete the following statement:

*“Relative to the ‘no-build’ scenario, development on the TCAAP site will...”*

Please list potential health impacts in the table below. Indicate whether the impact is positive or negative and whether the impact will have particular effects on certain groups.

### Group 1

Health impact	Positive or negative (+/-)	Differential impacts on groups (e.g. children, elderly, persons with disabilities, persons with lower incomes)? Please state who will be affected.
Traffic	-	
Traffic frustration		
Traffic short cuts		
Traffic safety		
Traffic air quality		
During development traffic gets worse		
Traffic into development		
Traffic safety accidents		
Parking and congestion related to parks		
Limited access for emergency vehicles (need wider streets/impervious)		
Safe routes to schools		
No schools (kids bus or cross Hwy 96)		
Air pollution	-	
Noise pollution	-	
Access to transit	-	
No rail—only bus (may improve with TCAAP)	?	
Lose park and ride	?	
Walkability		
Bike and pedestrian access to regional trails	+	
Housing near retail	?	

<b>Health impact</b>	<b>Positive or negative (+/-)</b>	<b>Differential impacts on groups (e.g. children, elderly, persons with disabilities, persons with lower incomes)? Please state who will be affected.</b>
Potential for increased crime to pedestrians	-	
Increase social interaction	+	
Exercise options	+	
Older people need very close access	?	
Feeling part of the Arden Hills community	?	
Mental spiritual health via connection to nature	+	
Change image of Arden Hills after 60 years	+	
Access to health facilities	-	
Different intergenerational types of housing	+	
Affordable housing	?	
Mixed-use—people can live and work locally	+	
Senior housing	?	
New population—need more services (fire, safety, etc)	?	
Potential to create innovative best practices development (water quality, geothermal, recreation)	+	
Crime—more people+	-	
Brings jobs to community (mixed types, live-work/mixed use)	+	

## Group 2

		Differential impacts on groups (e.g. children, elderly, persons with disabilities, persons with lower incomes)? Please state who will be affected.
<b>Health impact</b>	<b>Positive or negative (+/-)</b>	
Housing	+	
Housing lifecycle (age)		
Housing affordability		
Mixed income housing		
Intergenerational housing		
Social capital (can create community)	+	
Indoor air quality	+	
Multimodal transport		
Outdoor air quality	-	
Food access	-	
Community gardens		
Farmers market		
Physical activity		
People move around safely	+	
Accessible		
Complete streets and trails		
Healthcare access	+	
Mental health	+	
Greenspace		
Water/soil		

### Group 3

	Positive or negative (+/-)	Differential impacts on groups (e.g. children, elderly, persons with disabilities, persons with lower incomes)? Please state who will be affected.
<b>Health impact</b>		
Noise from traffic		
Air quality		
Food		
Social capital		
Housing		
Access to site		
Bike/walk		
Transit		
Mental health		
Livability		
Water quality		
Physical activity		
	+	
Psychological impact of knowing the site is developed		

### Task 3 (small group): Identifying Potential Changes to the Proposals to Respond to Impacts

Instructions: Based on the earlier discussion and prioritization of potential project impacts, please identify potential changes that might be made to the TCAAP development scenario. Consider changes that might enhance positive impacts and those that might mitigate negative impacts.

#### Group 1: Positive

*Write in positive impacts below and identify one or more potential changes for each impact:*

#### **Positive impact #1: Jobs**

Amenities: i.e. city could pay for landscaping and trails;

Tax incentives

Zone for broad mix of activities (and therefore, jobs)

Promote jobs that sustain residents via recruitment—create policy for lower income jobs

#### **Positive impact #2: Housing**

Meet Metropolitan Council affordability standards in new growth

Provide senior housing (esp. affordable) or student affordable housing (to take pressure off other areas)

Promote more mix of rental/ownership

More manufactured housing/coops and trusts

#### **Positive impact #3: Bike and pedestrian**

For seniors, benches and real destinations within a quarter mile  
Bike parking  
Dog parks

## **Group 2: Positive**

### **Positive impact #1: Physical activity**

Complete streets  
Parks and rec. activities  
Large park/ pocket parks/ community gardens/ playgrounds  
Lighted streets  
Mixed use/ destinations  
Trails

### **Positive impact #2: Accessibility**

Walkable and bikable destinations  
Complete streets  
Mixed use transit and housing  
Connectivity/ coordination living services  
Amenities/ road/ street-side

### **Positive impact #3: Social capital**

Mixed use, density, ages  
Green spaces/ community gardens/ playgrounds  
Community facilities  
Housing

### **Positive impact #4: Mental health**

Opportunities for physical activity  
Proximity to work—mixed use  
Greenspace/ parks/ trees/ trails/ water  
Physical safety  
View of wildlife/ green

## **Group 3: Positive**

### **Positive impact #1: Physical activity**

Street standards—complete streets  
Traffic calming  
Strategic bridge development

### **Positive impact #2: Livability/ mental health**

Community gardens  
Address tree planting

### **Positive impact #3: Meet housing demand**

Green design standards  
Housing for seniors and families

## **Group 1: Negative**

*Write in negative impacts below and identify one or more potential changes for each impact:*

### **Negative impact #1: Traffic safety**

- Traffic calming
- Low speed limits
- Enforce crossing/bike/pedestrian laws
- Signage

### **Negative impact #2: Access to transit**

- Work with Met Council and employers

### **Negative impact #3: Traffic—air and noise pollution**

- Recharge station for electric vehicles
- Noise barriers
- Hour Car
- Ciculator
- Improve access to TCAAP
- Street trees

## **Group 2: Negative**

### **Negative impact #1: Food access**

- Community gardens
- Supermarket, farmers market, food coop
- Soil remediated
- greenhouse

### **Negative impact #2: Outdoor air quality**

- Complete streets and transit service
- Mixed use
- Tree canopy
- Traffic calming measures

### **Negative impact #3: Soil and water**

- Clean soil to new standards
- Compost site

## **Group 3: Negative**

### **Negative impact #1: How to “deal” with development climate**

- Energy conservation
- Indoor air
- Decrease impermeable surfaces
- Employing renewable energy—wind, solar , geothermal
- Light transparency

### **Negative impact #2: Pollution (noise, air)**

- Transit hub
- Aggressive tree planting

Trails

### **Negative impact #3: Safety**

Roundabouts

Traffic calming

Mix of housing types to ensure natural surveillance

Centralized parking

## **Task 4: Prioritize Changes to the Proposal**

Changes to be made to enhance positive impacts and reduce negative impacts

Sorted by number of votes:

19—mix of housing types/ prices

18—trails

16—transit—more, better access, possible hub

16—green building techniques for housing, buildings

15—complete streets for all users and modes

8—zone for broad mix of jobs (that sustain people through lives)

7—renewable energy (e.g. district energy)

6—stormwater management

6—farmers markets

6—community gardens/greenhouses

5—street trees

5—traffic calming (e.g. roundabouts, etc.)

4—design buildings for physical activity

4—destinations for pedestrians/bikers

4—dog parks

3—crosswalks/bike crossings

3—CPTED principles (indoor and outside, public and private)

3—grocery stores included (i.e. food coops)

3—tree planting, public and private

3—street amenities (lighting, benches, trees)

2—city circulator transit

2—amenities

2—tax incentives

2—soil remediation

1—mix of densities

1—car sharing

1—large parks and open space

1—signage

0—low speed limits

0—recharge station for electric vehicles

0—bike parking

0—viewshed protection  
0—pocket parks  
0—PROWAG—access for people with disabilities

## **What Next?**

### **What Can Be Done Soon?**

- Many of the proposed actions could be started now, before TCAAP is developed. These include, but are certainly not limited to:
  - Strengthening the existing trail system by considering important connections or intersections
  - More closely studying regional transportation patterns (e.g., destinations and flows) to better understand the role of increased transit and/or a hub.
- Other actions could be incorporated into TCAAP's rezoning, which is under way. Such actions, including green building techniques, providing a mix of housing types/prices, and complete streets, might also be extended to the rest of Arden Hills.
- Among the priorities identified above, it is possible to identify inexpensive ideas and low hanging fruit, as first steps toward implementation.
- Identify champions:
  - Arden Hills residents and elected officials who attended the workshop can act as champions. Several energetic and influential individuals suggested there is a core group with energy that can help mobilize certain actions.
  - The Planning Commission and Parks, Trails, and Recreation Committee can also act.
  - There are other resources at the state level including Minnesota Department of Transportation (Mn/DOT) and the Minnesota GreenStep Cities program.
- Report on the workshop in local newspapers to increase awareness of the issue and help ensure widespread "buy-in" for the suggestions.



## Appendix D: Workshop Process and Organization

This appendix includes internal notes and detailed explanations of each part of the workshop. It also reproduces handouts and PowerPoints. Note that the handouts are reduced.

### Internal Agenda

#### Part 1: Introduction

11:30-11:40 Registration and graffiti wall (instructions on PPT, **facilitators staff registration**)

11:40-11:50 Introduction to health planning and project (**welcome from Department of Health and facilitators**)

11:50-12:10 Presentation of proposals, population, /local conditions (**presentation by local community development director**)

12:10-12:15 Introduction to core tasks (**facilitation team**)

#### Part 2: Working Session

12:15-1:00 Task 1: Over lunch: Voting on statements about health effects (**Facilitation by team**)

1:00-1:30 Task 2 (small group): Identifying impacts of proposals (**3 tables with facilitators plus one floating facilitator; check that participants identify impacts and select top 3-5 that they write on a flipchart to report back in Part 3**)

- What are the potential impacts on health, positive and negative, arising from the implementation of this proposal?

1:30-2:00 Task 3 (small group): Identifying potential changes to the proposals to respond to impacts (improve positives, reduce negatives) (**Same as Task 2**)

- What changes could be made to the proposal to enhance the positive impacts on health?
- What changes could be made to the proposal to enhance the positive impacts on health?

#### Part 3: Reporting and Prioritizing

2:00-2:20 Report back about impacts/changes (**Facilitators work as team reporters refer to flipcharts that are on easels**)

2:20-2:30 Discussion about impacts/changes (**Facilitators work as team; give instructions about having a short break and voting on top priorities for changes**)

2:30-2:50 Task 4: Prioritize changes to the proposal (vote with dots) (with **Coffee/soda, fruit and cookies**)

2:50-3:00 Closing remarks: What next? (Includes reporting and dissemination of the results, and the process for decision-making about the proposal) (**Facilitate as a team**)

#### Training Session

3:00-3:10 Break to let non-trainees leave

3:10-4:00 Debriefing exercise for trainees

Props Needed:

- Overhead projector

- Tables that can be clustered
- Copies of simplified agenda, impacts and change worksheets, big statements blown up for voting with does, facilitation instructions
- Four flip charts and easels, big post-its, very thick and medium sharpies (6 of the former), lots of dots, masking tape
- Lunch and soda/coffee for later

# PowerPoints

## Presentation by Design for Health

**Design for Health**

**Arden Hills: Healthy City Planning Workshop**  
April 16, 2010

**11:30 Registration + (A) Answer Question on Post-It:**  
"What does good health mean to you?"  
**(B) Fill in brief survey**

**11:40 Part 1: Introduction**

**12:15 Part 2: Working Session**

**2:00 Part 3: Reporting and Prioritizing**

**3:00 Close**

**3:10 Session for Trainees**

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**Part 1: Introduction**

1. Introduction to health planning
  - Introduce each person and affiliation
  - Overview of what we are doing
2. Proposals and local conditions
3. Core tasks introduced
  - What you will be doing
  - How the report will help you

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**1. Introduction: Health Planning**


- Workshop looks at TCAAP and alternatives in terms of: **"potential effects"** on the health of a population, and the **"distribution"** of those effects within the population"  
World Health Organization, Gothenburg Consensus Paper, 1999
- Both positive and negative effects
- Effects may be different depending on age, income, predispositions
- Ultimate goal is to make recommendations that can keep or even enhance the positives and moderate the negatives

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April 2010

**1. Introduction: Causes of Health**

Causes/determinants of health include

- Biology
- Individual behavior
- Social and economic contexts
- Access to various services, and
- The environment




- Workshops like this one tend to deal with the lower end of the list / outer part of the diagram

Design for Health  
April 2010 <http://www.rotherhampt.nhs.uk/hia/determin.gif>

**1. Introduction: Health and Planning**

There are many connections between health and planning, policy, and environments




- Accessibility
- Air quality
- Climate change
- Environmental & housing quality
- Food
- Health facility access
- Mental health
- Noise
- Physical activity
- Safety
- Social capital
- Water quality

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April 2010 There's a paragraph on each of these in the report

**1. Introduction: Health Research**

**Key Questions Research Summaries**

- Health research can be voluminous and very focused
- The analyses in the packet draw on detailed reviews of research on built environment and social issues related to planning
- Focus on areas in which planners, policy makers, and others can create change
- <http://www.designforhealth.net>



Design for Health  
April 2010

Part 1: Introduction

1. Introduction to health planning

– Introduce each person and affiliation

– Overview of what we are doing

2. Proposals and local conditions

3. Core tasks introduced

• What you will be doing

• How the report will help you

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1. Introduction: Core Tasks Introduced

• Task 1: Over lunch: Voting on statements about health effects (dots on wall)

• Task 2 (small group): Identifying impacts of proposals

• Task 3 (small group): Identifying potential changes to the proposals to improve health

Draw on the report

• Health and planning summaries, area profile, plan inventory, development alternatives, preliminary prediction of impacts

• Your role will be to help improve the predictions and help prioritize what to change and what to keep to improve health

• Highlights of the preliminary predictions follow:

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1. Introduction: Scoping Draft Findings

• Composite Plan alternative appears to have impacts on:

– Definitely positive: Mental health and physical activity options

– Possibly positive: accessibility, environment/housing, and food environment (depends on what shops, housing, and transit goes in)

– Likely negative: air quality

• No build alternative:

– Likely negative: missed opportunities to improve accessibility, physical activity and water quality

• Following maps are from the composite plan

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City of Arden Hills Health Impact Assessment

Figure 10: Air Quality and Major Roads

High W Rte

High W Rte

Intermittent Land Use W

Tree Canopy

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

City of Arden Hills Health Impact Assessment

Figure 11: Air Quality and Polluting Businesses

Tree Canopy Inventory Site

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

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April 2010

Air Quality: Roads and Polluting Businesses

City of Arden Hills Health Impact Assessment

Figure 17: Access to Transit

Bus Stop

Intermittent Parcel

Tree Canopy Inventory Site

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

City of Arden Hills Health Impact Assessment

Figure 18: Supermarket Access

Supermarket

Intermittent Parcel

Tree Canopy

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

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Access: Transit and Supermarkets

City of Arden Hills Health Impact Assessment

Figure 12: Air Quality and Tree Canopy

Tree Canopy

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

City of Arden Hills Health Impact Assessment

Figure 14: Streets with Canopy Cover (10-20%)

Streets with Canopy Cover

Tree Canopy

Parcel

Map Source: Metropolitan Council, City of Arden Hills, Minnesota Department of Transportation, Minnesota Department of Natural Resources

MPC

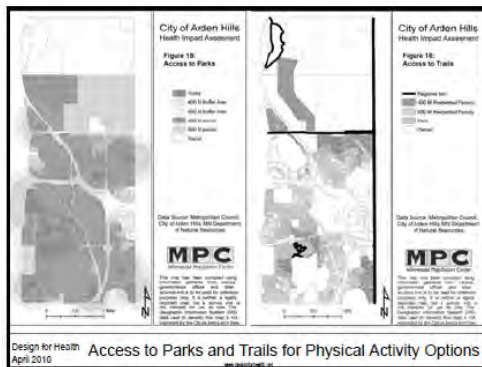
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Tree Canopy: For Air Quality and Mental Health

Arden Hills Healthy City Planning Workshop Background Materials, 2010

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## Design for Health

### Arden Hills: Healthy City Planning Workshop April 16, 2010

11:30 Registration  
11:40 Part 1: Introduction  
12:15 Part 2: Working Session  
2:00 Part 3: Reporting and Prioritizing  
3:00 Close  
3:10 Session for Trainees

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## 1. Working Session

Consider these issues when thinking about health impacts

- Accessibility
- Air quality
- Climate change
- Environmental & housing quality
- Food
- Health facility access
- Mental health
- Noise
- Physical activity
- Safety
- Social capital
- Water quality

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## 3. Reporting and Prioritizing

- Report back about impacts/changes
  - Discuss impacts/changes
- Task 4: Prioritize changes to the proposal (vote with dots)
- Closing remarks: What next?
  - Reporting, decision making, and dissemination

Design for Health April 2010

## Design for Health

### Arden Hills: Healthy City Planning Workshop April 16, 2010

11:30 Registration  
11:40 Part 1: Introduction  
12:15 Part 2: Working Session  
2:00 Part 3: Reporting and Prioritizing  
3:00 Close + Brief Survey  
3:10 Session for Trainees


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## Training Session

1. Where can you incorporate health impact assessment techniques in your current work (e.g. adding analyses, adding questions in existing surveys, altering workshop formats)?
2. Where might you be able to add a full blown HIA?
3. What is the biggest barrier to doing more sooner?
4. What is one step you'll take in the next month to increase how you use HIA tools and techniques in your current work?

Design for Health April 2010

## Presentation by James Lehnhoff, Community Development Director, Arden Hills



**Arden Hills: Healthy City Planning Workshop for the  
Twin Cities Army Ammunition Plant Property**

**April 16, 2010**


**James Lehnhoff, Community Development Director**

*Mayor Stan Harpstead*  
*Council Members: David Grant, Brenda Holden,  
 David McClung, and Fran Holmes*

*City Vision*  
 Arden Hills is a strong community that values its unique environmental setting, strong residential neighborhoods, vital business community, well-maintained infrastructure, fiscal soundness, and our long-standing tradition as a desirable City in which to live, work, and play.

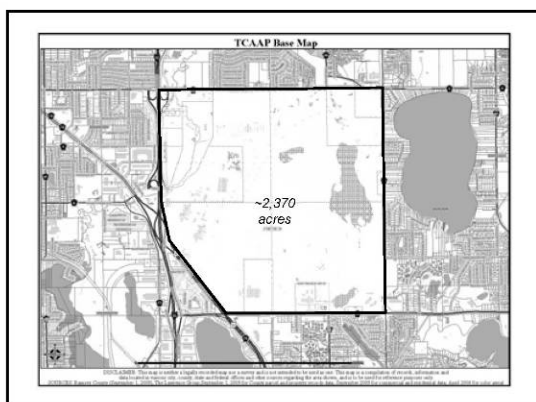
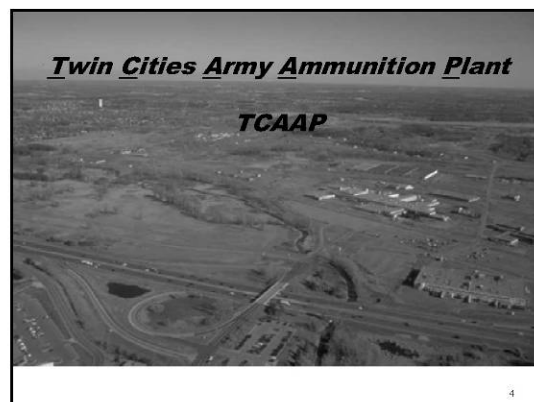
### Arden Hills Quick Facts

- Incorporated in 1951
- 9.4 Square miles
- Fully developed (except for TCAAP)
- 9,890 people
- 2,959 households
- ~13,000 jobs
- Two colleges
  - Bethel University
  - Northwestern College
- 15 City parks – 145 acres
- Regional Park – 217 acres
- Excellent freeway access/  
divided by freeways



### Arden Hills Profile


- **Population**
  - Median age increased from 33.9 in 1990 to 36.2 in 2000
  - 25-34 age group decreased by 32% from 1990 to 2000
  - Forecasted population increase to 12,900 by 2030
  - Population increase will largely occur on the TCAAP property
  - Educated community
    - 93% are high school graduates
    - 51% have a bachelor's degree or higher
- **Housing Stock**
  - Most housing constructed from late 1960s to early 1980s
  - Well-maintained housing with low turnover
  - Lowest foreclosure rate in Ramsey County
  - Housing type:
    - 80% - single family housing (compared to a metropolitan average of 69%)
    - 10.5% - multi-family housing (compared to metropolitan average of 26%)
    - 9% - manufactured housing
  - Averaged assessed value in 2007 was \$292,000



### History of TCAAP

- Farm land in Mounds View Township
- Army purchases 2,370 acres in 1941

1940



## History of TCAAP 1945

- 1942 – Manufacturing begins
- 1943 – Site is fully operational
- Primarily small caliber, howitzer and grenade production occurred on site.
- Operations scaled back after WWII (1945)
- Arden Hills incorporated in 1951
- Manufacturing increased again during Korean and Vietnam Conflicts



7

## History of TCAAP



8

## History of TCAAP



9

## History of TCAAP



10

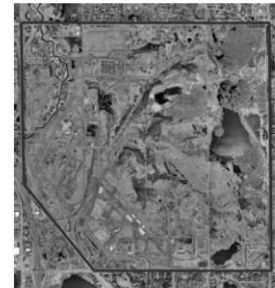
## Historical Photos



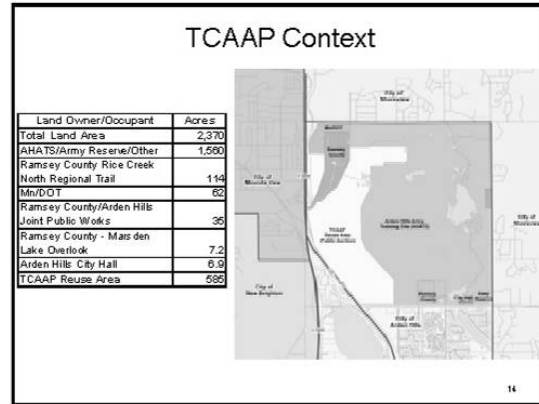
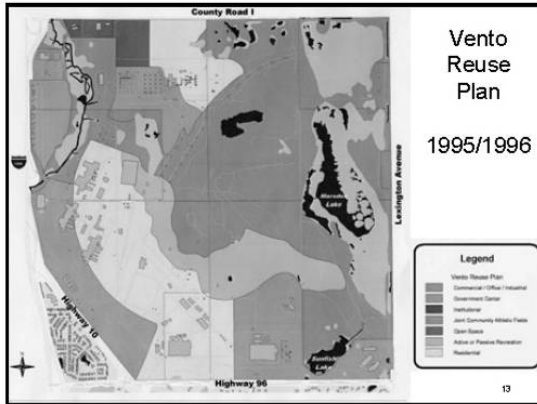
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## History of TCAAP 2008

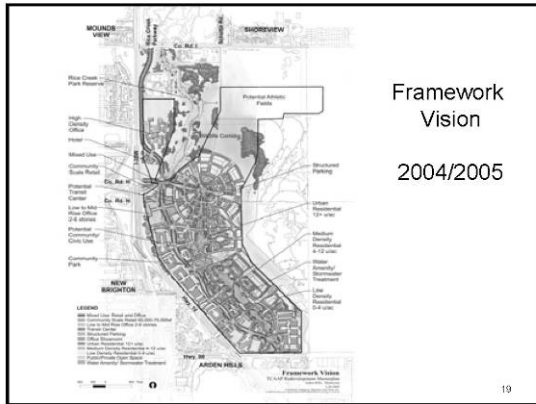
- 15 - 20 billion rounds of ammunition produced
- Largely decommissioned by mid-1980s
- Arms productions by private companies continued into early 2000s
- Discussion to surplus a portion of the property in the 1990s
- 774 acres declared surplus property in 1994



12







### Draft Redevelopment Plan

- Draft plan included:
  - ~350 acres of developable area
    - 1,750 housing units and estimated 3,500 – 3,500 residents
    - 2.2 to 2.8 million square feet of commercial, retail, and office space
    - 5,000 jobs
  - ~168 acres of parks and open space
    - 50 acre Wildlife corridor
    - 76.5 acre public use area
  - Property Access:
    - County Road H – reconstruction
    - US Hwy 10 – new interchange
    - County Road 96
- 10 to 20 year development timeline

**TCAAP Master Plan**  
Composite Plan - Option B

20

### TCAAP Reuse Timeline

- May 2009 – Developer withdrew from the TCAAP redevelopment project
- June 2009 – General Service Administration (GSA), on behalf of the US Army, initiated the Public Auction process to sell the 585 acres of excess TCAAP property
  - GSA is the Army's real estate agent
  - GSA announces that the public auction will take place in the summer of 2010
  - Auction now anticipated at the end of June 2010
  - Auction process is independent of the City

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### TCAAP Regional Park, Trails, and Open Space Proposal

- October 2009:
  - Discussed concept of using a portion of the TCAAP Reuse Area as a regional park and open space with a land transfer from TCAAP to Ramsey County prior to the public auction
  - Arden Hills City Council & Ramsey County Board of Commissioners joint meeting
- County Board directs their staff to work with the City to identify strategic sites on the TCAAP property that would benefit the regional park and open space system

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### TCAAP Regional Park, Trails, and Open Space Opportunity Sites

- A – Wildlife Corridor
  - 50 acres
  - Part of the previous proposal with the developer and was already set to transfer to Ramsey County as part of the public auction
- B & C – Trailhead
  - 29 acres
  - 500 feet wide
  - Seasonal recreational access to the Arden Hills Army Training Site (AHATS)
- D – Trail Corridor
  - 30 acres
  - 150 feet wide
  - Uninterrupted trail corridor from the Highway 95 regional trail to the Rice Creek North Regional Trail
  - Connect to future development on TCAAP

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### Proposed TCAAP Land Transfers

- Ramsey County – 109 acres
- MN National Guard – 63.7 acres
- Public Auction Area – 428.5 acres
- Anticipate a commitment for the transfer to Ramsey County and the National Guard prior to the public auction

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## TCAAP Environmental Status and Remediation

- Army is selling TCAAP as "industrial" property
  - Army is only required to remediate the TCAAP property to levels appropriate for industrial uses
  - Industrial standard was negotiated by the Army with the Environmental Protection Agency in the late 1980s
- Public Auction and Remediation Requirements
  - Army will not be completing the remaining environmental remediation prior to the public auction
  - Army remains responsible for ensuring that the remediation to the industrial requirement is complete but it doesn't have to be the Army that completes the remediation
  - Purchaser will complete the required environmental remediation

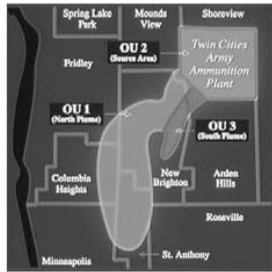
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## Environmental Remediation

- Most of the property is at the negotiated industrial standard or higher
- Remediation Areas
  - 4.6 acres require remediation to meet the negotiated industrial requirement
  - 25.9 acres of building/slab footprints may require additional investigation and remediation
- Portions of the property meet residential standards



## Groundwater Contamination Map



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## TCAAP Environmental Status and Remediation

- City is seeking residential, commercial, light industrial, park, and open space uses
  - Portions of the TCAAP property can already accommodate these planned uses
  - Additional remediation will be required to accommodate the planned uses
  - Purchaser will be required to work with the MPCA to complete the remediation to the necessary level to allow for the desired development

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## TCAAP Public Auction Process

- June 2009 – GSA and Army announced that the TCAAP reuse area will be sold through a public online auction process
- June 2010 – Online auction begins

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## Land Use Planning and Regulations

- September 2009 – Arden Hills City Council unanimously approves the 2030 Comprehensive Plan
- TCAAP Goal: Develop TCAAP in a way that accommodates a mix of land uses that is sensitive to the natural environment, economically sustainable, and a benefit to the community
  - Incorporate the TCAAP property into the community and region
  - Provide a variety of housing options
  - Diversify the City's commercial base
  - Enhance the park and open space system
  - Complete the environmental remediation

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## Land Use Planning and Regulations

- Once sold the TCAAP reuse area is subject to the City's Comprehensive Plan and zoning regulations

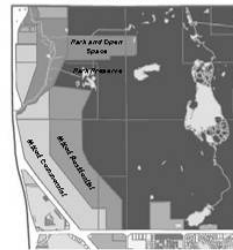
### 2030 Comprehensive Plan Future Land Use Plan and Map for TCAAP:

- Primer Tracer area is categorized as "park and open space"
- Wildlife Corridor is categorized as "park preserve" and anticipated to be transferred to the County
- "Mixed Residential" – variety of housing types and densities in close proximity, including single-family homes, townhomes, condominiums, apartments, and senior housing options.
- "Mixed Business" – variety of businesses, including commercial, light industrial, office, general business, and retail.
- Parks, trails, and open spaces will be incorporated throughout the mixed residential and business area.

2030 Comprehensive Plan – Future Land Use Map



2030 Future Land Use Map



Current Zoning Map



## TCAAP Zoning Project

- TCAAP zoning project began in February 2010
- Purpose:
  - Update the zoning regulations to implement the 2030 Comprehensive Plan
  - Inform potential bidders of the land use requirements
- City's goal is to approve the zoning regulations in June prior to the public auction

## DRAFT TCAAP Zoning Regulations

- Proposed zoning regulations are a "plan to create a plan"
  - Outlines development parameters and requirements
  - Retains flexibility but provides guidance to potential bidders
  - Process to work with a future developer
- When the property develops, it will still require a cooperative effort between the City, developer, and region



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## Handouts

### Task 1: Voting on Statements about Health Effects

Instructions for Lunchtime Activity: You are provided 10 dots (one dot is one vote). Consider the below issues and think about the BROAD health effects they might have regarding the TCAAP redevelopment.

For each issue (and relative to the 'no-build' scenario), place your votes in the POSITIVE, NEGATIVE or UNCERTAIN Column. Not every issue requires a vote; feel free to write additional comments. The idea is to get some broad consensus over what issues are important.

Health Category	Issue	Will have a <b>POSITIVE</b> Impact on Health	Will have a <b>NEGATIVE</b> Impact on Health	Important issue, but uncertain (too difficult to say)	Comments
<b>Air Pollution</b>	Auto driving to access residential and commercial activities				
	Placing development close to I-35 (residential or other)				
<b>Accessibility</b>	Making activities, services, and destinations closer to one another				
<b>Physical Activity</b>	Ability to provide transit service				
	Connecting trails within the region				
<b>Food</b>	Availability of increased food choices				
<b>Water Quality</b>	Groundwater contamination				
<b>Safety</b>	Decreased motor vehicle accidents				
	Decreased walking or cycling accidents				
<b>Environment and Housing</b>	Variety of needed housing styles for Arden Hills				
	Other				
	Other				

## Task 2: Identifying Impacts of Proposals

Instructions: Table 5 on pages 24-25 of the Briefing Packet provided a preliminary review of potential health impacts related to various health topics. Please use this worksheet to complete the following statement:

*"Relative to the 'no-build' scenario, development on the TCAAP site will..."*

Please list potential health impacts in the table below. Indicate whether the impact is positive or negative and whether the impact will have particular effects on certain groups.

Health impact	Positive (+/-)	Differential impacts on groups (e.g. children, elderly, persons with disabilities, persons with lower incomes)? Please state who will be affected.



**Task 3: Identifying Potential Changes to Proposal**

Instructions: Based on the earlier discussion and prioritization of potential project impacts, please identify potential changes that might be made to the TCAAP development scenario. Consider changes that might enhance positive impacts and those that might mitigate negative impacts.

*Write in positive impacts below:*

Positive impact #1	Positive impact #2	Positive impact #3
<i>Identify potential changes to proposal to enhance each of the positive impacts identified above.</i>		

*Write in negative impacts below:*

Negative impact #1	Negative impact #2	Negative impact #3
<i>Identify potential changes to proposal to mitigate each of the negative impacts identified above.</i>		

## **Facilitator Notes: Tasks 2 and 3**

Note: tasks 1 and 4 are vote with dot exercises—these are the two tasks in facilitated small groups.

### **Task 2 Identifying Impacts of Proposals**

- Break into small groups – three tables with facilitators and one floater
- Refer to instructions and point to Task 2 worksheet in participants’ packets.
- Refer to Table 5 in Briefing Packet as a preliminary assessment of potential health effects – emphasize that it was just preliminary and intended to highlight a range of impacts related to a number of health topics.
- Read statement from worksheet – “Relative to the no-build scenario, development on the TCAAP site will...”
- Encourage them to think broadly – both positive and negative, address wide range of health topics (give examples – air quality, food access, physical activity, social capital, mental health)
- Participants work individually to generate an initial list (5 minutes)
- At each table, participants take turns listing their impacts and facilitator records on flip chart (20 minutes), then discuss to identify top 3 positive impacts and top 3 negative impacts and denote with star on flip chart (5 minutes)
- Floating facilitator prompts end of Task 2 and suggests moving on to Task 3

### **Task 3 Identifying Potential Changes to Proposals to Respond to Impacts**

- Remain in same small groups with same facilitators
- Facilitators refer to instructions and point to Task 3 worksheet in participants’ packets
- Record top positive (front side) and negative impacts (back side) on individual worksheets
- Participants work individually to generate an initial list of potential changes to enhance positive impacts and mitigate negative impacts (5 minutes)
- At each table, participants take turns listing their changes (for both positive and negative) and facilitator records on flip chart (20 minutes), then discuss key impacts/changes to report to full group (5 minutes)

### **Part 3**

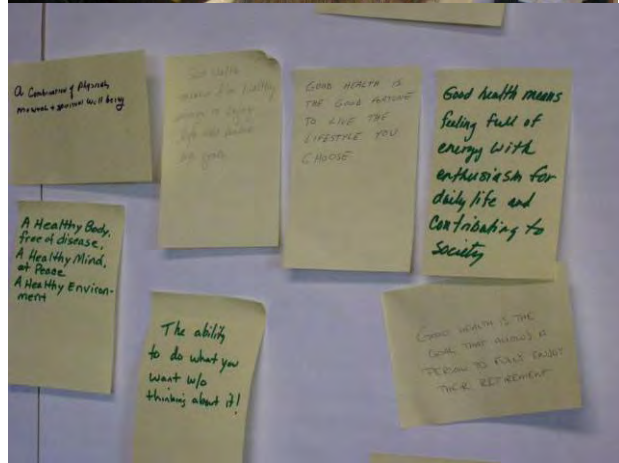
- Identify a reporter for each group who describes impacts/changes (5 minutes per group)
- Floating facilitator records changes on flip chart at front of room – generating a list with no repetition to prepare for voting



## Images of Various Tasks and Activities at the Workshop

### Part 1: Introduction (11:30 to 12:15)

Registration and Graffiti Wall



- . Introduction to health planning and project
- . Presentation about the proposals, population, and local conditions
- . Introduction to core tasks



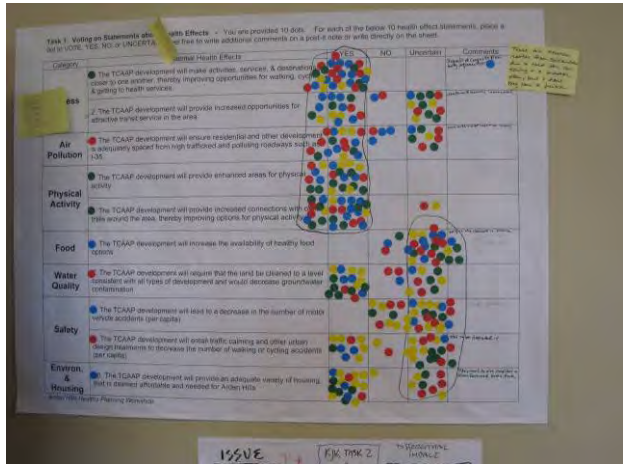
## Part 2: Working Session (12:15 to 2:00)



Task 1: Over lunch: Voting on statements about health effects (12:15)



Task 2 (small group): Identifying impacts of proposals (1:00)







Task 3 (small group): Identifying potential changes to the proposals to respond to impacts



Part 3: Reporting and Prioritizing (2:00 to 3:00)

Report back about impacts/changes  
Discussion about impacts/changes  
Task 4: Prioritize changes to the proposal (vote with dots)





**Appendix E: Background Information Packet Distributed Prior to Meeting**

**Arden Hills  
Healthy City Planning Workshop  
April 16, 2010**

**Background Information**

**Please Read Before  
the Workshop**

**Arden Hills  
Healthy City Planning Workshop  
April 16, 2010**

**Background Information**

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## **Draft Agenda**

### **Part 1: Introduction**

- 11:30-11:40 Registration and graffiti wall
- 11:40-11:50 Introduction to health planning and project
- 11:50-12:00 Presentation about the proposals
- 12:00-12:10 Presentation of population profile/local environmental conditions
- 12:10-12:15 Introduction to core tasks

### **Part 2: Working Session**

- 12:15-1:00 Task 1: Over lunch: Voting on statements about health effects
- 1:00-1:30 Task 2 (small group): Identifying impacts of proposals
  - What are the potential impacts on health, positive and negative, arising from the implementation of this proposal?
- 1:30-2:00 Task 3 (small group): Identifying potential changes to the proposals to respond to impacts (improve positives, reduce negatives)
  - What changes could be made to the proposal to enhance the positive impacts on health?
  - What changes could be made to the proposal to enhance the positive impacts on health?

### **Part 3: Reporting and Prioritizing**

- 2:00-2:20 Report back about impacts/changes
- 2:20-2:30 Discussion about impacts/changes
- 2:30-2:50 Task 4: Prioritize changes to the proposal (vote with dots) with **Coffee**
- 2:50-3:00 Closing remarks: What next? (Includes reporting and dissemination of the results, and the process for decision-making about the proposal)

### **Training Session**

- 3:00-3:10 Break to let non-trainees leave
- 3:10-4:00 Debriefing exercise for trainees



# 1. Explanation of Healthy City Planning

## Overview

Source: Adapted from *Design for Health 2007, Integrating Health into comprehensive Planning*, [http://www.designforhealth.net/pdfs/Information\\_Sheet/BCBS\\_ISHealthCompPlanning\\_082307.pdf](http://www.designforhealth.net/pdfs/Information_Sheet/BCBS_ISHealthCompPlanning_082307.pdf). Please see that document for full references.

There is growing interest in the link between the built environment and health. The following common definitions of health illustrate a connection to the built environment (Ison 2000):

- “Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity,” as defined by the Preamble to the Constitution of the World Health Organization (WHO 1948).
- “Health is a resource for everyday life, not the object of living. It is a positive concept emphasizing social and personal resources as well as physical capabilities,” as defined in WHO’s “Health Promotion Glossary” (Nutbeam 1998).

Health assessments have been defined by the WHO Gothenburg consensus paper of 1999 as “A combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”

They look at a variety of influences on health beyond individual age, heredity and lifestyle including social and community networks, economic contexts, access to various services, and the wider environment.

## Key Topics Connecting the Built Environment and Health

The list below provides a brief introduction to how public health concerns are linked to community planning issues. For more detail see the Design For Health’s *Key Question Research Summaries*: <http://www.designforhealth.net/resources/researchsummaries.html>

**Accessibility:** Accessibility planning focuses on the degree to which people can easily get to destinations that directly or indirectly are linked to supporting human health. Planners can help increase access by ensuring a variety of nearby destinations for residents (e.g., employment, health care, grocery stores, etc.), and that these destinations can be reached by a variety of transportation modes (e.g., bicycling, walking, automobile, transit). Accessibility concerns focus less on automobile users and more on bicyclists, pedestrians, and transit riders since these people tend to be underserved. Universal design is an aspect of accessibility that is particularly focused on specialized populations. Providing a variety of activities and a range of transportation options to increase choices for individual travelers is important for all residents, but particularly for those groups that are transit dependent. In any health analysis, it is also important to consider the degree to which residents have good physical access to health care services.

**Air Quality:** Clean air is an important element in creating healthier communities. Both indoor and outdoor-air quality are important in human health, with key pollutants including carbon monoxide, sulfur and nitrogen oxides, carbon dioxide, lead, and other air toxins and volatile organic compounds (Frumkin, Frank, and Jackson 2004, 73). From a planning perspective, automobile emissions are a key area of concern. Mounting evidence suggests that sprawling land-use patterns contribute to increased reliance on the automobile, for example, and thus increased emissions (Handy 2005), while other material suggests that the congestion of central



cities or higher-density areas leads to dangerous air quality (FHWA 2006), particularly for active individuals, such as cyclists and pedestrians (EPA 2007). The topic of air quality, however, becomes increasingly complicated because air easily transcends political boundaries, and this makes it difficult to coordinate a joint-planning response (Randolph 2004).

**Climate Change:** Climate change is a global issue and it can be challenging for individual cities, regions, states, and nations to determine how they can contribute to reducing, monitoring, regulating, or mitigating climate change effects. While much of the research on climate change is focused on environmental health outcomes, human health outcomes also are apparent. In general, climate change, itself, does not cause health problems; however, human health is affected indirectly through the relationship of climate change to air pollution, water pollution, weather patterns, and the spreading of disease. In this context, planners play an important role in affecting development patterns, transportation systems, and regulations in ways to reduce greenhouse gases emissions and protect carbon sinks, such as forests, wetlands, and agricultural lands.

**Environment and Housing:** Environmental and housing issues include a broad range of topics such as indoor and outdoor housing quality (building materials, crowding, location of housing, and presence of toxics), contaminated and/or potentially contaminated sites – to name just a few. Beyond air and water quality, exposure to other pollutants may have negative impacts on health. Exposure to pollutants can be unpredictable, but in some cases can be affected by land-use decisions and building codes. Especially for children, for example, exposure to lead paint is a significant concern in many older urban neighborhoods (Evens and Gard 2005). Contaminated soils and exposure to hazardous waste, associated with ongoing or previous industrial activities, may also be a concern where residents are put in close contact with brownfield sites (Randolph 2004; Bullard 1990).

**Food Environment:** Local, state, and federal groups have referred to the rising levels of obesity as a public-health crisis, particularly because it is connected to a range of other health issues. Traditionally, planners and public-health officials have tried to decrease levels of obesity through the lens of physical activity; however, there has been a recent movement towards looking at accessibility to healthy foods. A significant group of people do not consume adequate healthy food. Good nutrition has been promoted over time through public health programs. However, access to nutritious food is emerging as an important planning issue involving topics from supermarket and restaurant locations to providing space for community gardens (Laraia et al. 2005; Chung and Myers 1999; Kaufman and Pothukuchi 2000; Morland, Wing, and Diez Riux 2002; Crewe, ed. 2004).

**Mental Health:** The World Bank and the World Health Organization estimate that by the year 2020, mental-health disorders will account for 15 percent of disease, and that depression will become one of the largest health problems in the world (Maller et al. 2005, 45-6). Vegetated environments have positive effects on physiological measures, such as heart rate, skin conductance, muscle tension, and blood pressure (Maller et al. 2005). Exposure to nature may lead to decreased levels of stress, greater job satisfaction and faster recovery from fatigue (Kaplan and Kaplan 1989; Ulrich 1984; Ulrich et al. 1991; Maller et al. 2005). For planners, parks and open-space planning is an important consideration. Many comprehensive plans identify these resources, assess residents' needs for parks and open space, and identify areas for protection as part of the land-use planning process (Kelly and Becker 2000).

**Noise:** Community or neighborhood noise is emitted from a variety of sources including roads, rail, air traffic, industry, construction, and neighborhood activities. The health consequences of harmful levels of noise can be significant, including hearing impairment and loss, interference with speech communication, disturbance of rest and sleep, as well as the potential for physiological, mental-health, and performance effects. Noise control is a federal, state, and local issue in the United States. Local planners can minimize the adverse effects by working cooperatively with other public and private agencies to plan, design, and construct development projects. In addition, effective land-use planning and development may discourage sensitive land uses near highways and other noise sources, and promote the use of open space separating roads from developments.

**Physical Activity:** The connection between urban form and physical activity has been the area where most debate has occurred in recent years. Researchers are moving beyond an emphasis on either leisure physical activity (e.g., walking for exercise) or utilitarian physical activity (e.g., walking to work) to a more comprehensive view. In health terms it is particularly important to consider the intensity (moderate v. vigorous) of the activity, as well as the overall amount. Different subpopulations (age, gender, and ethnicity), however, have differing barriers towards achieving recommended exercise goals. Together, these elements create a framework for planners and designers in order to help them build environments to create opportunities for physical activity from parks and open space to sidewalks and land use, including safety considerations. Active transportation—walking and cycling— requires a different set of infrastructure than the roads and trails needed for motorized transportation (Committee on Physical Activity 2005).

**Social Capital:** Social capital may be characterized as one's social network or sense of attachment to one's community. It should be noted that the lack of social capital, like poor air quality, is not a health outcome but may be associated with or contribute to health (Carpiano 2006). Research is mixed on whether or not the built environment can influence social capital, partly because it is difficult to define and measure. Depending upon how social capital is measured, some research finds that mixed use, walkable urban areas increase social capital (Leyden 2003; Lund 2002), while others find that less dense areas, like suburban communities, have higher levels of trust in their neighbors (Williamson 2004). Social capital is one of the least understood issues in terms of its relationship to public health, as well as to the built environment.

**Water Quality:** Water quality refers to both drinking water and groundwater/surface water. Diseases are quickly spread through water because of its solvent nature, which makes it easy to pass along to all living things (Frumkin, Frank, and Jackson 2004). It is still a priority for communities as they must coordinate and manage these very systems or work with other public/private groups to make sure that they are protecting surface and groundwater, and planning for public facilities to protect water quality (Berke et al. 2006; Randolph 2004).

## 2. Profile of the Area

### Characteristics of Residents

According to the 2008 Arden Hills Comprehensive Plan, the City experienced the following key demographic trends between 1990 and 2000:

Arden Hills has an aging population:

- In 1990, the median age of Arden Hills' residents was 33.9 compared to 32 in Ramsey County. By 2000, the median age of Arden Hills' residents increased to 36.2 compared to 33.7 in Ramsey County.
- The 25-34 age group decreased by 32% in Arden Hills, compared to just a 12% decline in the metropolitan area.
- The number of **families with children** increased by 10% in the metropolitan area but **decreased by 17%** in Arden Hills.
- The **proportion of people over age 55 is anticipated to increase greatly from 1990 to 2012, increasing from 19% to 30% of the population.**

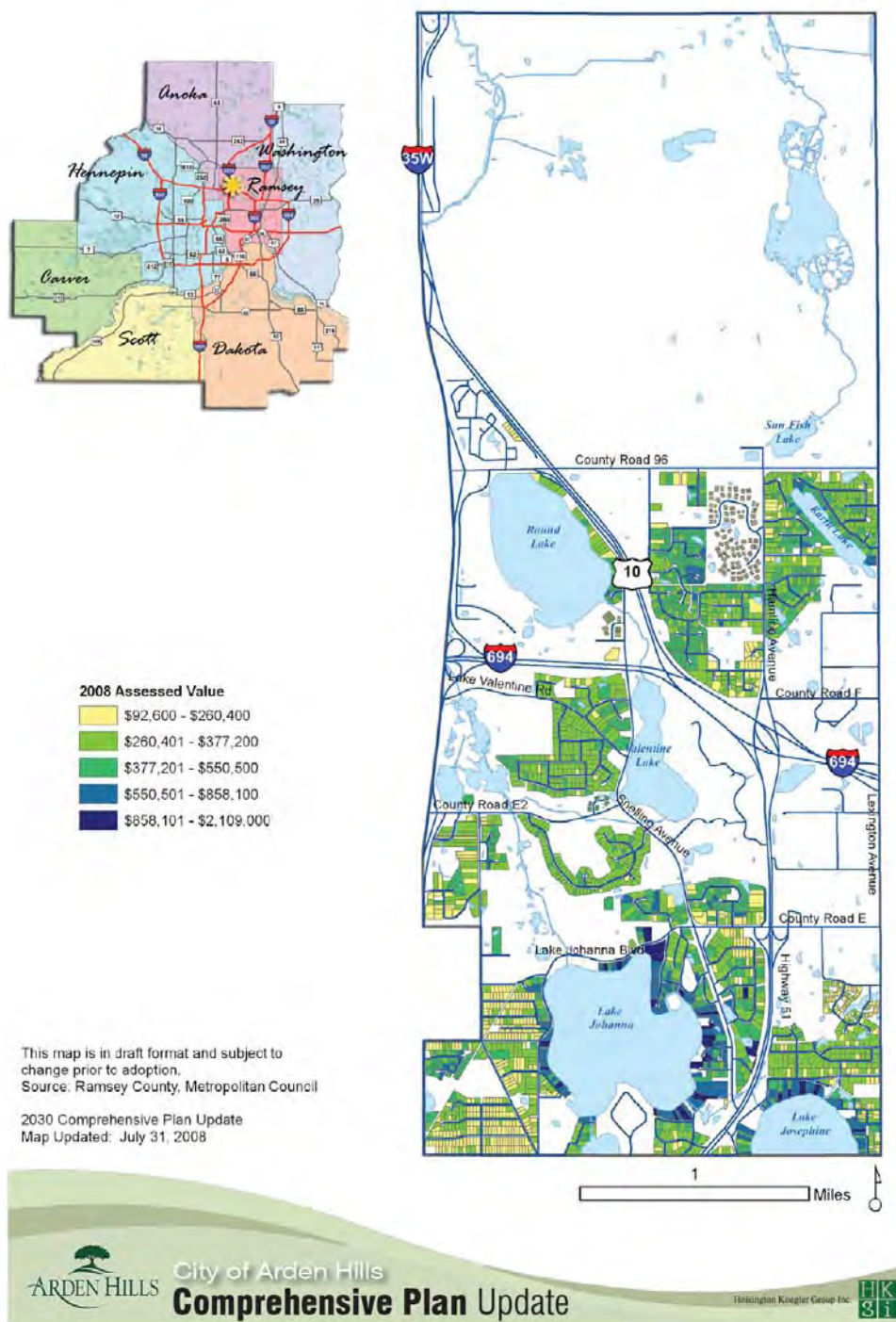
Arden Hills has a homogeneous housing stock:

- Most of the housing units in Arden Hills were built in the 1970s.
- **Almost 80% of the housing in Arden Hills is single-family housing** (attached and detached) compared to a metropolitan average of 69%.
- Arden Hills has a lower percentage of multi-family housing (10.5%) than its neighbors, Ramsey County (32%), or the seven county metropolitan area as a whole (26%).
- The mean assessed value of housing in Arden Hills in 2007 was \$291,778, with **25% of housing at or below the affordable home price of \$206,800** (based on affordability for those at 80% of area median income) and 13% at or below \$152,000 (based on 60% of area median income). See Figure 1 for a map of assessed housing value in city.

Arden Hills has a good employment base:

- In 2000, Arden Hills had **28% more jobs than residents**. DEED reported 13,909 jobs in 2008. The Census estimated the population and 9,608 in 2008--about 44 percent more jobs than people.
- Of those Arden Hills residents who are employed, approximately 29% work in Arden Hills and many others work in either St. Paul or Minneapolis.

Based on the most current Metropolitan Council projections, Arden Hills is expected to **increase in population over the next 20 years by approximately 15 percent**. Much of this growth is expected to occur on the proposed TCAAP site. As detailed in Table 1, this is a higher rate of growth than is expected for those communities adjacent to Arden Hills, due to the presence of undeveloped TCAAP site.



**Figure 1: 2008 Assessed Value of Housing in Arden Hills**

Source: 2030 Comprehensive Plan Update Figure 7.7

**Table 1: Metropolitan Council Population Forecasts**

	2000	% change 2000-2010	2010	% change 2010-2020	2020	% change 2020-2030	2030
<b>Arden Hills**</b>	<b>9,652</b>	<b>16.00%</b>	<b>11,200</b>	<b>15.20%</b>	<b>12,900</b>	<b>0.00%</b>	<b>12,900</b>
Mounds View*	12,738	1.30%	12,900	0.80%	13,000	3.10%	13,400
New Brighton	22,206	2.20%	22,700	-0.90%	22,500	1.30%	22,800
Roseville	33,690	6.90%	36,000	2.80%	37,000	3.50%	38,300
Shoreview	25,924	9.90%	28,500	1.80%	29,000	0.00%	29,000

Source: Metropolitan Council. Regional Statistics and Data: Forecasts by Community.  
<http://www.metrocouncil.org/metroarea/RDFforecasts.pdf>

### Geography and History

The Twin Cities Army Ammunition Plant is located on 2,370 acres (3.7 square miles) in the city of Arden Hills.<sup>1</sup> As shown in Figure 2, it is bounded on the north by County Road I, on the south by Highway 96, by Lexington Ave on the east, and Interstate 35W on the west. The cities of Mounds View, New Brighton, and Shoreview are each adjacent to the site.

Below are a few highlights from the facility's history:

- TCAAP was built in 1941 on private farmland in Mounds View Township and used to manufacture and testing of munitions for the United States Armed Forces beginning in 1942 (see Figure 3).<sup>1</sup>
- The facility remained active through World War II, the Korean War, the Vietnam War, and the first Gulf War.<sup>1</sup>



**Figure 2: TCAAP Site and Vicinity**

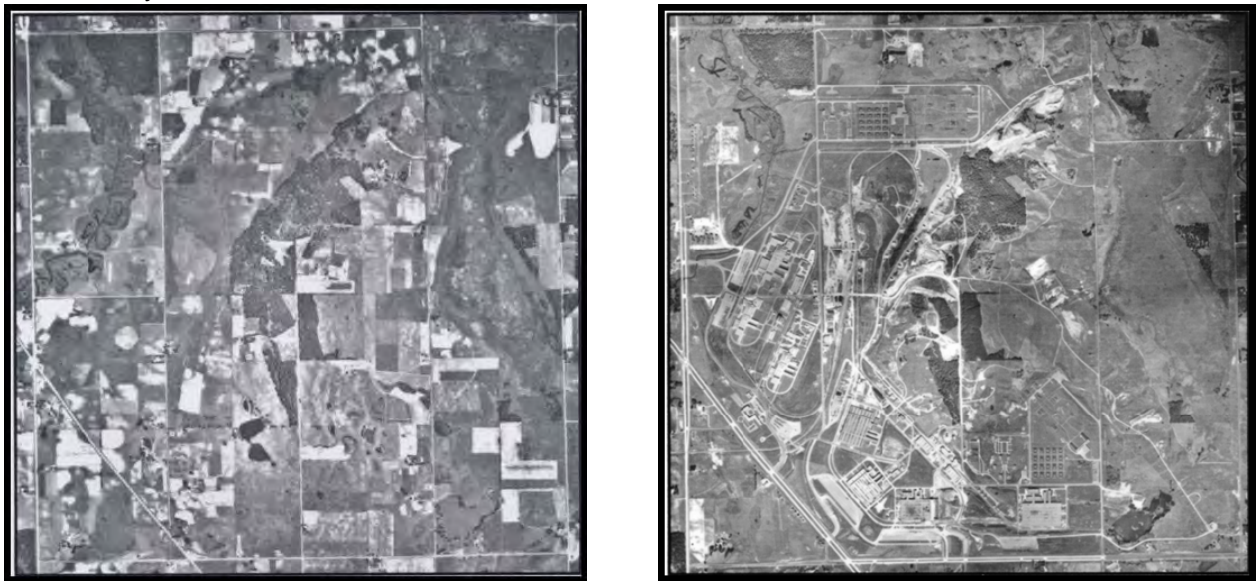
Source: City of Arden Hills



- At the height of its operation, the site employed 25,000 individuals.<sup>1</sup>
- By the mid-1970s, the U.S. government began to reduce its operations. Private companies continued to produce limited munitions at the facility after the federal government ceased its operations.<sup>1</sup>
- Currently, the Minnesota Army National Guard leases about 1,560 acres from the federal government for use as a training facility (see Figure 4).<sup>1</sup>

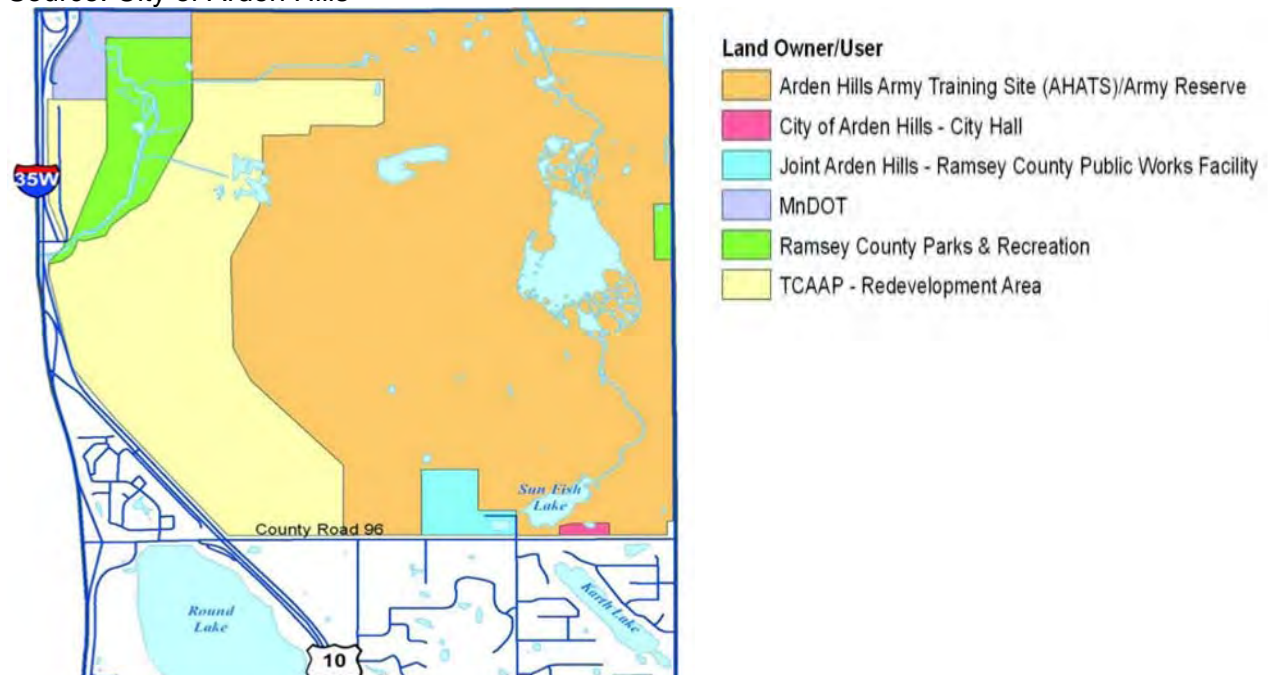
**Figure 3: TCAAP site, 1940 (left) and 1945 (right)**

Source: City of Arden Hills



**Figure 4: TCAAP Ownership**

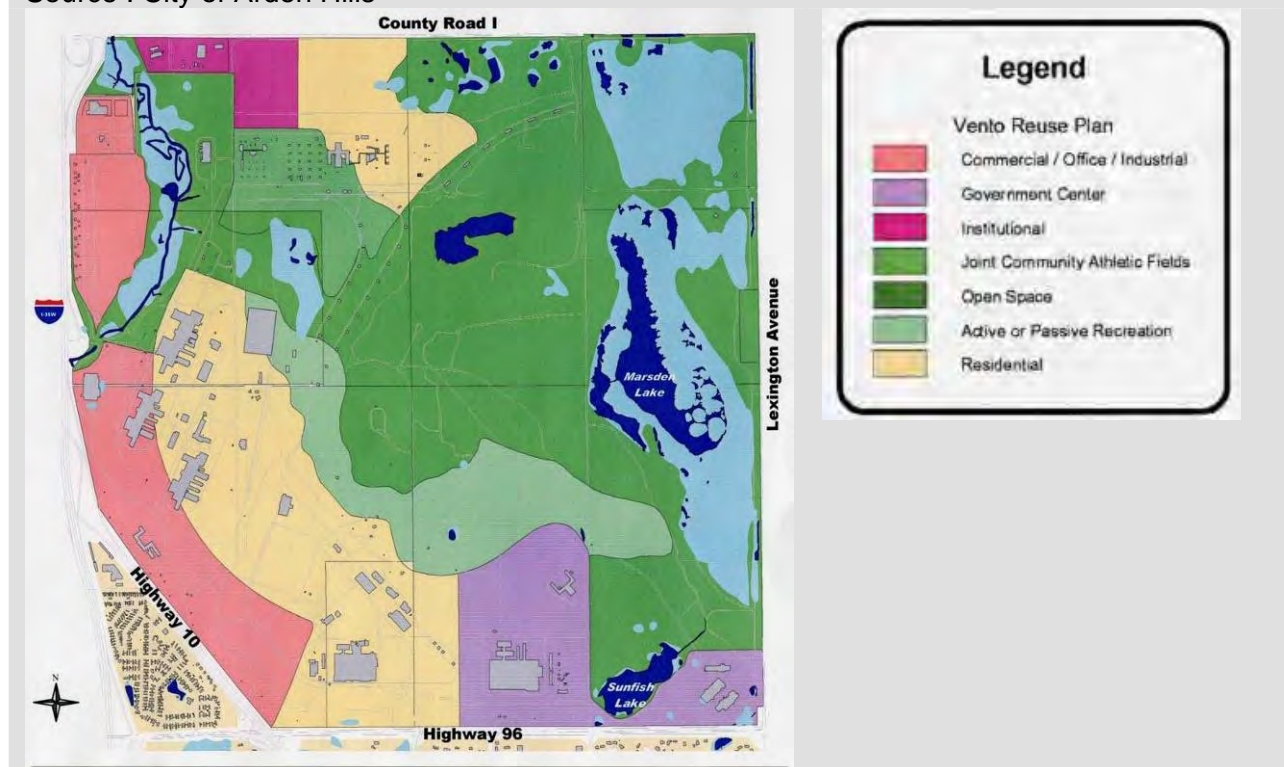
Source: City of Arden Hills



- In 1994, the United States Army formally declared 774 acres of the Twin Cities Army Ammunition Plant an excess federal property that was to be sold.<sup>1</sup>
- At that time, Congressman Bruce Vento became interested in redeveloping the site and provided the impetus for a series of discussions about the future of the site.<sup>1</sup> The resulting recommendations, which included mixed-use development, transit, retail, and parks, were incorporated in Arden Hills' 1998 Comprehensive Plan (See Figure 5).<sup>2</sup>
- In 2005, the Arden Hills City Council approved a preliminary plan for the site - the "Framework Vision" included mixed-density housing, commercial and office space, mixed use buildings, parks, and a transit center.<sup>3</sup>
- In 2007, Arden Hills in collaboration with Ryan Companies' RRLD, a private developer, entered into a purchase agreement with the federal government to acquire 585 acres (about 25%) of the TCAAP site, with phased development planned to occur over 10-20 years.<sup>1</sup>
- As shown on Figure 4, the remaining excess property includes<sup>1</sup>:
  - 62 acre Minnesota Department of Transportation driver's license facility
  - 112 acres of Ramsey County Parks and Recreation lands adjacent to Rice Creek.
  - Arden Hills City Hall and a joint Arden Hills-Ramsey County Public Works Facility
- The majority of the TCAAP property (about 66%) was not offered for sale by the federal government and continues to serve as a training facility for the Minnesota Army National Guard.<sup>4</sup>

**Figure 5: Vento Reuse Plan, 1990s**

Source : City of Arden Hills



- In May of 2009, RRLD ended its partnership with the City of Arden Hills and its interest in the purchase agreement and the City is no longer attempting to acquire the TCAAP site.<sup>4</sup>
- The General Services Administration and the U.S. Army are in the process of selling the 585 acre parcel through a public auction, currently scheduled to take place in June 2010.<sup>5</sup> The City Council passed a resolution voicing its displeasure with the public auction and requested that Ramsey County consider acquiring 475 acres to be used for parkland and open space in addition to the 49 acre wildlife corridor. The remaining 61 acres would be available for redevelopment.<sup>6</sup>
- In October 2009, the Ramsey County Board of Commissioners discussed the concept of acquiring the additional 475 acres for parkland and open space. Although the Board of Commissioners were not favorable to acquiring the additional 475 acres, the Board directed their staff to determine if a smaller portion of the property would make a positive addition to the regional park and space system.
- In December 2009, the Ramsey County Department of Parks and Recreation identified a trailhead and trail corridor comprising approximately 43 acres for addition to the regional park and open space system. The 43 acres would be in addition to the 49 acre Wildlife Corridor. The Arden Hills City Council and the Ramsey County Board of Commissioners unanimously supported the trailhead and trail corridor concept.
- The National Guard subsequently requested an additional 64 acres for addition to the Arden Hills Army Training site in the northeast corner of the TCAAP property. The remaining 429 acres would be available for redevelopment through the General Service Administration's public auction.
- At the time of this report, the General Service Administration and U.S. Army had not made a final determination on Ramsey County's request for the trailhead or trail corridor or for the National Guard's request.

Arden Hills is staying involved in the process, and the city has been explaining its development expectations to interested buyers of the site.<sup>7</sup> Whoever purchases of the site will be required to comply with Arden Hills' Comprehensive Plan and the city's zoning requirements.<sup>8</sup>



## Environmental Conditions

Arden Hills Community Development staff members have provided information suggesting that any existing pollution on the TCAAP site can be mitigated. Thus, the site can be cleaned to a level that is consistent with all possible types of future development. The U.S. Army is only required to clean the site to an industrial standard, but additional remediation can occur as a condition of future development. Specific contamination details are limited, but a preliminary risk characterization has been prepared that indicates the potential for contamination across the site, based on previous activities.

Figure 6 indicates these areas of potentially higher contamination in red and brown. In addition to clean up of potentially contaminated soils, demolition of buildings, roads, concrete pads, and utilities will be required prior to future development.

Groundwater remediation on the site and in those areas impacted nearby is currently underway. The U.S. Army remains responsible for this clean up effort. Figure 7 shows the location of a plume of groundwater contamination, as delineated by the Minnesota Pollution Control Agency.

**Figure 6. Risk Characterization Map for TCAAP Site**  
Source: City of Arden Hills



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**Figure 7: Groundwater Contamination Zone Map**

Source: Minnesota Pollution Control Agency



### Health Conditions

Prior to considering the health affects specifically emanating from the TCAAP site, it is important to understand the current state of health related matters in the larger Arden Hills community. Health data is not typically collected at the community level, thus it is necessary to rely on data for Ramsey County as a whole.

First, in terms of health indicators and healthy behaviors as shown in Table 2, the following trends are relevant:

- Ramsey County exhibits health indicators very similar to the state of Minnesota as a whole.
- More than one-third of county residents are overweight and one-quarter obese.
- More than one in 10 residents rates their own health as fair or poor.

- Almost one-quarter of county residents report limitations in their activity due to health or other impairment.
- Ramsey County performs better than Minnesota in terms of access to healthy foods.

<b>Table 2. Health Indicators and Healthy Behaviors (2008)</b>		
	<b>Ramsey County</b>	<b>Minnesota</b>
Overweight (excluding obese) <sup>1</sup>	37.30%	37.80%
Obese <sup>2</sup>	24.70%	24.90%
Health status (fair or poor) <sup>3</sup>	11.50%	11.40%
Reporting limitations <sup>4</sup>	22.80%	22.50%
No exercise <sup>5</sup>	18.30%	18.10%
Access to health food <sup>6</sup>	47.00%	40.00%
Poor physical health days <sup>7</sup>	3.0 (per 30 days)	3.1 (per 30 days)
Poor mental health days <sup>8</sup>	2.8 (per 30 days)	2.8 (per 30 days)

Sources: Minnesota Department of Health. *2008 Minnesota County Health Tables*; and Robert Wood Johnson Foundation and University of Wisconsin Population Health Initiative. 2008. *County Health Rankings*. <http://www.countyhealthrankings.org/minnesota>.

<sup>1</sup>Overweight: Body Mass Index (BMI) between 25.0 and 29.9.

<sup>2</sup>Obese: Body Mass Index (BMI) of 30.0 or greater.

<sup>3</sup>Health status: Estimate of those who perceive their health is fair or poor.

<sup>4</sup>Reporting Limitations: Percent who are limited in activity due to health or impairment.

<sup>5</sup>No exercise: Percent who reported no physical activity during the past month.

<sup>6</sup>Percent of zip codes which contain a healthy food outlet, defined as a grocery store or produce stand/farmers' market.

<sup>7</sup>Self-reported answer to the question, "how many days during the past 30 days was your physical health not good?"

<sup>8</sup>Self-reported answer to the question, "how many days during the past 30 days was your mental health not good?"

Table 3 provides additional data related to mortality, focusing specifically on those causes of death most likely to be related to environmental factors. Key findings include:

- Heart disease is a slightly less common cause of death in Ramsey County as compared to the state.
- Overall, more than 20% of deaths in Ramsey County are attributed to heart disease, diabetes, hypertension, and atherosclerosis.

**Table 3: Causes of Mortality (2008)**

	<b>Ramsey County</b>	<b>Minnesota</b>
Heart disease	16.8%	19.4%
Diabetes	2.8%	2.8%
Hypertension	1.6%	1.3%
Atherosclerosis	0.1%	0.1%

Source: Minnesota Department of Health. *2008 Minnesota County Health Tables*.

Finally, limited data is available related to healthy behaviors among youth in Ramsey County. Table 4 provides data related to physical activity and consumption of healthy foods. Key findings include:

- By 12<sup>th</sup> grade, more than 30% of girls and 17% of boys are physically active one or fewer times per week.
- Frequency of exercise and physical activity decreases among males and females as they get older.
- Approximately one out of five students is eating five or more servings of fruit or vegetables per day and 17-20% of students (depending on age) are consuming one or fewer servings. Nationally 24% of students eat five or more servings per day.<sup>9</sup>

**Table 4: Youth and Health in Ramsey County (2007)**

		6 <sup>th</sup> grade		9 <sup>th</sup> grade		12 <sup>th</sup> grade	
		Male	Female	Male	Female	Male	Female
On how many of the last 7 days did you exercise or play sports that made you sweat or breathe hard for at least 2 minutes?	0 days	13%	13%	10%	14%	10%	19%
	1 day	7%	9%	5%	9%	7%	12%
	2 days	11%	12%	9%	13%	11%	17%
	3 days	11%	14%	10%	14%	13%	15%
	4 days	12%	14%	12%	12%	12%	11%
	5 days	13%	15%	17%	17%	18%	13%
	6 days	7%	8%	10%	7%	8%	6%
	7 days	26%	16%	26%	14%	20%	9%
On how many of the last 7 days were you physically active for a combined total of at least 30 minutes?	0 days	8%	9%	7%	10%	7%	15%
	1 day	8%	10%	5%	9%	7%	10%
	2 days	10%	12%	9%	13%	10%	15%
	3 days	12%	14%	8%	13%	11%	14%
	4 days	11%	13%	10%	11%	13%	11%
	5 days	13%	17%	15%	17%	18%	14%
	6 days	8%	8%	9%	9%	9%	7%
	7 days	30%	17%	36%	18%	26%	12%
How many servings of fruits, fruit juices or vegetables did you eat yesterday?	0 servings	7%	5%	8%	6%	7%	5%
	1 serving	12%	12%	12%	14%	12%	12%
	2 servings	21%	19%	21%	23%	20%	22%
	3 servings	21%	23%	21%	22%	24%	25%
	4 servings	17%	19%	17%	18%	17%	17%
	5 or more	22%	21%	20%	17%	20%	18%

Source: Minnesota Department of Health. 2007. Minnesota Student Survey County Tables.

### 3. Inventory of Existing Plans and Policies

#### Comprehensive Plan

Arden Hills adopted the 2030 Comprehensive Plan update (outlining future development options and potential for the city) in September 2009. It is accompanied by the Zoning code which details things such as setbacks, impervious coverage, landscaping requirements, or sign regulations.

While there is not a detailed master plan in place for TCAAP, the 2030 Comprehensive Plan sets the foundation for a mixed use development on the TCAAP property that includes housing, parks, open space, and businesses. In particular, the City Council unanimously expressed support for a mixed use concept at their February 22, 2010, work session.

By as early as summer of 2010, the property would be up for public auction and it is the City's goal to have more specific regulations approved or close to approval prior to this time. In previous planning activities, the City's development partner withdrew from the project before a final plan was approved.

The planning process has become somewhat unique since the developer withdrew from the project. Typically, a city would adopt a master plan through a community planning process. Once the master plan was adopted, the zoning regulations would be written to implement the plan—zoning is an implementation tool for planning and not a plan by itself. While the Comprehensive Plan provides the overall concept for the TCAAP property, it does not include the details typically found in a zoning code. Without a detailed plan prior to the public auction, the City's focus is on preparing the zoning regulations that will inform the creation of a detailed master plan at a future date. The proposed zoning regulations essentially become a “plan to create a plan.”<sup>10</sup>

There is a specific section of the Comprehensive Plan addressing TCAAP; however, it contains quite a bit of flexibility. Within the portion of TCAAP that may be redeveloped, the property is divided into two land use categories:

- Mixed Residential (~220 acres)<sup>1</sup> – provides for a variety of housing types and densities in close proximity, including single-family detached homes, single-attached homes, condominiums, townhomes, apartments, and senior housing options. The anticipated average density is 10.4 units per acre with a minimum average density of six units per acre up to a maximum density of 46 units per acre. This land use is designated for the proposed TCAAP redevelopment, and the density is subject to change once a final land use plan is selected.
- Mixed Business (~240 acres) – areas designated for a variety of businesses, including commercial, certain light industrial uses, warehousing, office, general business, retail. This designation will be used for the future business uses on the TCAAP property.<sup>1</sup>

These two land use categories were based on the mixed use development concept that was being prepared with the former developer. Despite the changes to the TCAAP planning process, these

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<sup>1</sup> The acreage has not been adjusted to account for the Ramsey County open space requests.

categories still serve as the basis for a TCAAP redevelopment plan and allow the City to update the zoning regulations for the TCAAP property. As it stands, housing would be limited to the Mixed Residential area and businesses would be limited to the Mixed Business area.<sup>10</sup>

### **Zoning Code Update**

The western and southern side of the TCAAP property is currently zoned I-2: General Industrial District. The eastern side of the property is zoned R-1: Single Family Residential. While the new future land use categories in the Comprehensive Plan do not necessarily exclude the uses in the existing I-2 or R-1 zones, the existing zoning does not support the concepts proposed on the future land use map. Due to the discrepancy in uses and because the existing zoning was not designed with a large redevelopment in mind, the City is moving forward with updating the zoning regulations for the TCAAP property.

Until there is a detailed master plan, it is not possible create the specific zoning regulations that are typically written into the ordinance. However, the City has the option of establishing the parameters that a future TCAAP redevelopment must follow. These parameters can be incorporated into two new zoning districts that align with the Comprehensive Plan's Future Land Use Map. The new zoning district would require the developer to use the Planned Unit Development (PUD) process, which could be enhanced to specifically address the unique circumstances of the TCAAP property. The PUD process was also going to be used in the concept discussed with the previous developer.<sup>10</sup>

## 4. Development Alternatives

There are two current development alternatives that will be considered for purposes of this Rapid Assessment workshop:

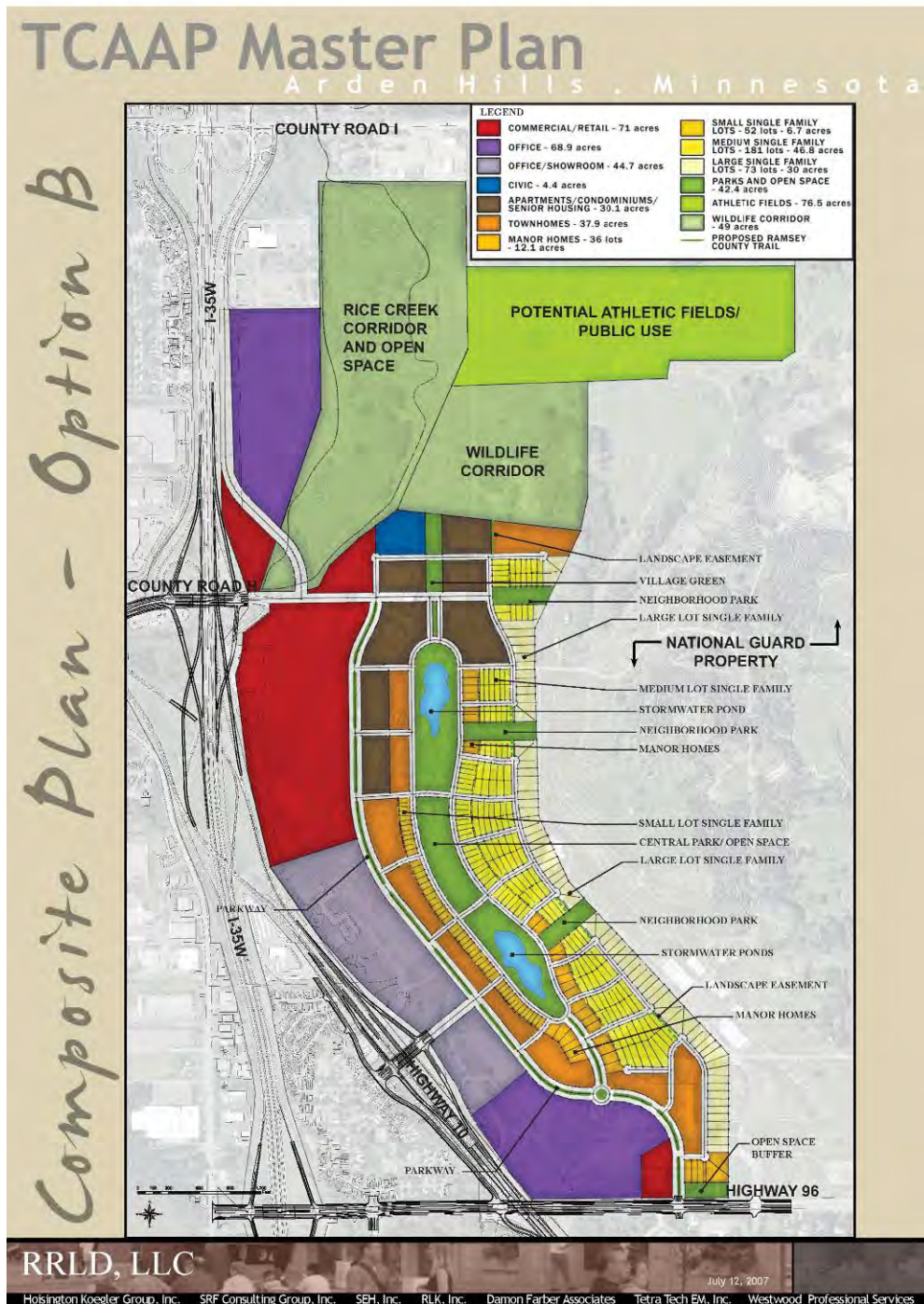
- **No-build:** A no-build alternative which would continue to leave the property vacant
- **Composite plan:** A mixed-use development plan consisting of residential, commercial, office, and open space

A schematic map of the composite development plan is provided below in Figure 8. The plan at this point is not approved; the development is subject to change and the following profile is provided to be conceptual at this stage. As shown, it includes:

- An approximate 1,750 housing units to accommodate an estimated 3,000-3,500 residents (almost a 33% increase over current population levels).
  - These housing units will be distributed across:
    - (a) townhomes and row houses along a central north-south spine,
    - (b) condominiums and senior housing situated in the north, and
    - (c) a combination of small to medium sized lots for single family residences along the eastern edge.
- It is envisioned there will be four areas of non-residential uses, totaling 2.8 million square feet, including:
  - two office parks, a retail shopping center (including a hotel and some restaurants), and
  - a showroom/office section .
- There would be various lakes and trails surrounding the developed area and a total of 168 acres of parks and open space (including the wildlife corridor and primer/tracer area).

The property would be accessed at three points: County Road H (a reconstruction), US Hwy 10 (this would be a new interchange), and County Road 96.





**Figure 8:  
Composite  
Plan**

Source: City  
of Arden Hills



## 5. Preliminary Prediction of Impacts and their Importance

To better understand the nature of the alternatives and their possible impacts, we complete three tools useful for this purpose: a preliminary checklist for screening; a scoping tool, and a selection of maps from a “threshold” analysis.

### Preliminary Checklist

The first tool is a preliminary checklist which can be used to identify health issues and determine the degree to which further assessment is needed. The tool itself can be found at:

<http://www.designforhealth.net/resources/hiaprimchecklist.html>. This straightforward two-page form enables planners to assess whether a project is significant enough in size and scope and has enough potential health effects to warrant more review:

- Part 1 addresses the size of the project/plan and
- Part 2 focuses on easily assessable specific items. These effects can be positive or negative, and are not the only effects that a project/plan may have.

### Figure 9: Composite Option, Checklist Part 1

Note: This indicates that an HIA may be needed and part 2 of the form should be filled out.

Part 1: Is it of enough significance to assess?<sup>1</sup>

COMPOSITE

Key Questions	No	Uncertain	Yes
<b>Geographical extent:</b> Does it apply to a geographic area of a full city block or larger? <sup>2</sup>	0	1	2
<b>Reversibility:</b> Will the changes be difficult or expensive to reverse once put in place?	0	1	2
<b>Population size:</b> Does it substantially increase the residential population or workforce of any area of 100 acres or more (e.g. an increase greater than 33%)? <sup>3</sup>	0	1	2
<b>Cumulative impact:</b> Is it occurring in a place where specific local health problems have been identified (e.g. traffic safety, air quality, lack of healthy foods, contaminated brownfield)?	0	1	2
<b>People affected:</b> Does the project or plan affect vulnerable groups (e.g. children, older people, and people with low incomes)?	0	1	2
<b>Land use:</b> Does it substantially change the predominant land (e.g. from residential to commercial)?	0	1	2
<b>Institutional capacity:</b> Is the capacity of local government, nonprofit, and private organizations to address any potential problems adequate?	2	1	0
<b>Total</b>	0	2	10
= 12			
If total score is 11 or greater, HIA may be needed, move to Part 2.			
If total score is 7-10, a HIA is potentially needed, moving to Part 2 recommended.			
If total score is 6 or less, no HIA is required. You may wish to do a HIA on a targeted area or problem.			

## Figure 10: Composite Option, Checklist Part 2

Note: This indicates that an HIA is potentially needed though it is on the margin. Issues of investigation include transit accessibility, food access, water quality, traffic safety, and housing mix.

Part 2: Does the plan or proposal meet some initial thresholds for a healthy community? Answer the following in relation to the plan or project and adjacent uses.<sup>5</sup>

**COMPOSITE**

Key Questions	No	Uncertain	Yes
<b>Accessibility:</b> Does the plan involve residential components that are built at an average density greater than seven units per acre of buildable land available for residential use? <sup>4</sup>	2	7 vs 1	0
<b>Accessibility:</b> Is there regularly scheduled transit service within three-quarter miles of all residential and employment areas? <sup>6</sup>	2	1	0
<b>Physical activity/social capital:</b> In order to provide options for physical activity and social interaction, particularly for children, are all residential areas located within 400 meters of either a neighborhood park, trail, or open space?	2	1	70
<b>Social capital:</b> Does the plan or project include a mix of housing densities and/or tenures (e.g. at least 15-20% of the housing stock in a different use tenure or as apartments/condos)?	2	1	0
<b>Air quality:</b> Are there any residential areas or schools within 200 meters of a major auto-related transportation corridor such as a freeway or road with six or more lanes?	0	1	2
<b>Air quality:</b> Does the plan or project area include businesses that disproportionately contribute pollutants (e.g., dry cleaners, automotive paint, manufacturing)?	0	1	2
<b>Water quality:</b> Is it developed on a site with existing water and sewer infrastructure?	2	1	0
<b>Food:</b> Are there supermarkets or fruit and vegetable stores located within a mile of each home?	2	1	0
<b>Safety:</b> Does the plan or project adequately account for safe circulation patterns for all modes such as employing traffic calming measures, using separate facilities for non-motorized modes, or ensuring adequate lighting and sight lines.	2	1	0
<b>Total</b>		+ 7.5	+ 0 = 7.5
<b>If total score is 13 or greater, it is recommended that you conduct an HIA.</b> <b>If total score is 8-12, an HIA is potentially needed.</b> <b>If total score 7 or less, no HIA is required. You may wish to do a HIA on a targeted area or problem.</b>			

### Notes

<sup>(1)</sup> The following criteria are adapted from Commonwealth of Australia (2001, 18) Health Impact Assessment Guidelines. Canberra: Commonwealth Department of Health and Aged Care, and from the "HIA Screening Tool developed by the UK Department of Health" and cited in Commonwealth of Australia 2001 (39-40).

<sup>(2)</sup> A city block is approximately 5 acres or two hectares. This size is based on common professional ideas about significant size.

<sup>(3)</sup> These numbers reflect professional judgment not any research evidence.

<sup>(4)</sup> Threshold is suggested in Pushkarev, B. S. and J. M. Zupan, "Where Transit works: Urban Densities for Public Transportation," in *Urban Transportation: Perspectives and Prospects*, ed. by H. S. Levinson and R. A. Weant, Westport, CT, Eno Foundation (1982); other empirical investigations have honed in on similar thresholds as a minimum for intermediate bus transit with one-half miles between bus stops.

<sup>(5)</sup> The questions in Part 2 are based on the research reviewed in the Design for Health Key Questions Series.

<sup>(6)</sup> This threshold is based on detailed distance decay curves of thousands of transit boardings in the Twin Cities (Kritzek et al. 2007, Active Communities/Transportation Research Group); 0.75 miles is where there was considerable drop-off in walk to transit activity.

**Figure 11: No Build Option, Checklist Part 1**

Note: It indicates that part 2 of the checklist is not needed.

Part 1: Is it of enough significance to assess?<sup>1</sup>

**NO BUILD**

Key Questions	No	Uncertain	Yes
<b>Geographical extent:</b> Does it apply to a geographic area of a full city block or larger? <sup>2</sup>	0	1	2
<b>Reversibility:</b> Will the changes be difficult or expensive to reverse once put in place?	0	1	2
<b>Population size:</b> Does it substantially increase the residential population or workforce of any area of 100 acres or more (e.g. an increase greater than 33%)? <sup>3</sup>	0	1	2
<b>Cumulative impact:</b> Is it occurring in a place where specific local health problems have been identified (e.g. traffic safety, air quality, lack of healthy foods, contaminated brownfield)?	0	1	2
<b>People affected:</b> Does the project or plan affect vulnerable groups (e.g. children, older people, and people with low incomes)?	0	1	2
<b>Land use:</b> Does it substantially change the predominant land (e.g. from residential to commercial)?	0	1	2
<b>Institutional capacity:</b> Is the capacity of local government, nonprofit, and private organizations to address any potential problems adequate?	2	1	0
<b>Total</b>	0	2	4
=6			
If total score is 11 or greater, HIA may be needed; move to Part 2.			
If total score is 7-10, a HIA is potentially needed, moving to Part 2 recommended.			
If total score is 6 or less, no HIA is required. You may wish to do a HIA on a targeted area or problem.			

## Scoping Tool

The second tool (Tables 5 and 6) provides more detailed information on the expected impact to various health determinants, the level and likelihood of impact, and measurable indicators to assist in evaluating the impact of the actions. Severity and likelihood of impact was assessed by the project team using current literature and professional experience to guide their assessment. The tool draws on a number of similar tools and exercises including Hennepin County's *Lowry Corridor, Phase 2, Health Impact Assessment* (Lezotte-Anderson, Boyd, and Nikolai 2007).

Note impact severity (third column in Tables 5 and 6) uses the following code:

- +++ Strongly positive influence
- ++ Moderately positive influence
- + Mildly positive influence
- Neutral influence
- Mildly negative influence
- Moderately negative influence
- Strongly negative influence
- U – Uncertain
- N/A

**Table 5: Health Determinants and Impacts for Composite Plan Alternative**

<i>Categories of health determinants</i>	<i>Specific health determinants</i>	<i>Impacts and their severity:</i>	<i>Likelihood of Impact (S= Speculative; P= Probable)</i>	<i>Differential impacts on group(s) (children, elderly, disadvantaged populations, people with disabilities)</i>	<i>Measurable Indicators of Health Determinants at Left</i>
Accessibility	-Development would require considerable attention to the locations of bus stops (none currently serve the area)	U			-Density calculations based on analysis completed at the block group level or smaller. -Location of transit stops, complete with 1200 m “walking-transit-shed” area highlighted for each stop
Air quality	-Residential and commercial activity would increase pollutants, particularly from mobile sources. -There are proposed residential uses within 500m of I-35	-- --	P		- Roads in the area with AADT > 40,000, and a 200 m (656 ft) buffer from each major road, and as well as a 500 m (1640 ft; 1/3 mile) buffer from each major road. -Detailed canopy analysis (using aerial photographs) or a detailed planting Plan.
Environment and Housing	-Assuming housing stock could adjust lower income families, this would be a good opportunity	U		-Elderly appear to be well provided for in housing options - Housing affordable to those at 80% of area median income, the level is \$206,800—market analysis show few such homes (see appendix)	
Food environment	-Unclear based on profile of retail development	U	S		-Map showing the location of existing (or proposed) supermarket or fruit and vegetable stores, and a 1600 m network buffer around each
Mental health	-Increased landscaping would enhance resident’s access to green and other open space.	+++	P		-tree canopy is currently weak and would require attention

Physical activity	-Available trails would increase the availability of attractive options for physical activity -Furthermore, trails would increase connectivity	++	S		-Map showing proximity to open spaces and parks that can accommodate active outdoor play with accompanying 400m and 600 m street network buffer <sup>1</sup> around the parks
Social capital	-Townhomes and condominiums diversify housing in Arden Hills	+	S		
Safety	-Traffic calming could provide	U	S	Children walking to school	
Water quality	-Increased impervious surface from roadways would decrease water quality - Existing contamination would be brought up to standards, thereby having positive affect on nearby groundwater	--  ++	P	Would positively benefit those southwest of the site (Figure 7)	

On average, the Composite Plan alternative appears to have Positive impacts on mental health and physical activity. Conditions related to accessibility, environment/housing, and food environment could be positive, depending on the detailed nature of development, occupancy within the retail sector, and transit planning options that are provided. Issues related to air quality will most likely be negatively affected.

**Table 6: Health Determinants and Impacts for No Build Alternative**

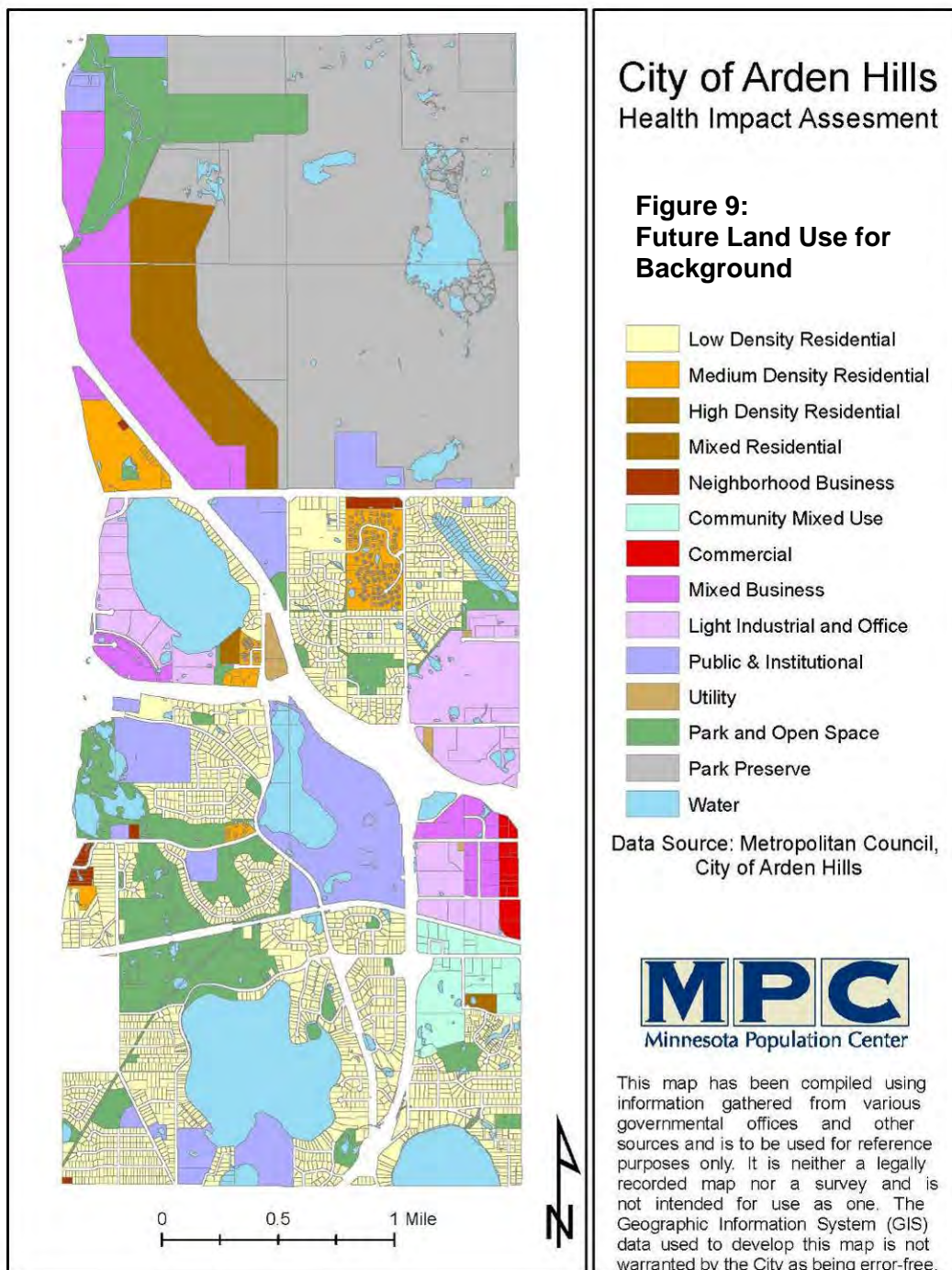
Health Determinants and Impacts					
Categories of health determinants	Specific health determinants	Impacts and their severity	Likelihood of Impact (S= Speculative; P = Probable)	Differential impacts on particular group(s) (children, elderly, disadvantaged populations, people with disabilities)	Measurable indicators of health determinants that could be used
Accessibility	-Missed opportunity to round out and further bolster transit service	-	S		
Air quality					
Environment and Housing					
Food environment					
Mental health			S		
Physical activity	-Missed opportunity for connecting valuable trail system, thereby providing opportunities for physical activity	--			
Social capital	-Assuming a strong latent demand for housing, a missed opportunity for affordable housing		P	Elderly Disadvantaged populations	
Safety					
Water quality	-Existing contamination would not be brought up to residential standards, thereby continuing to affect nearby groundwater	--	P		

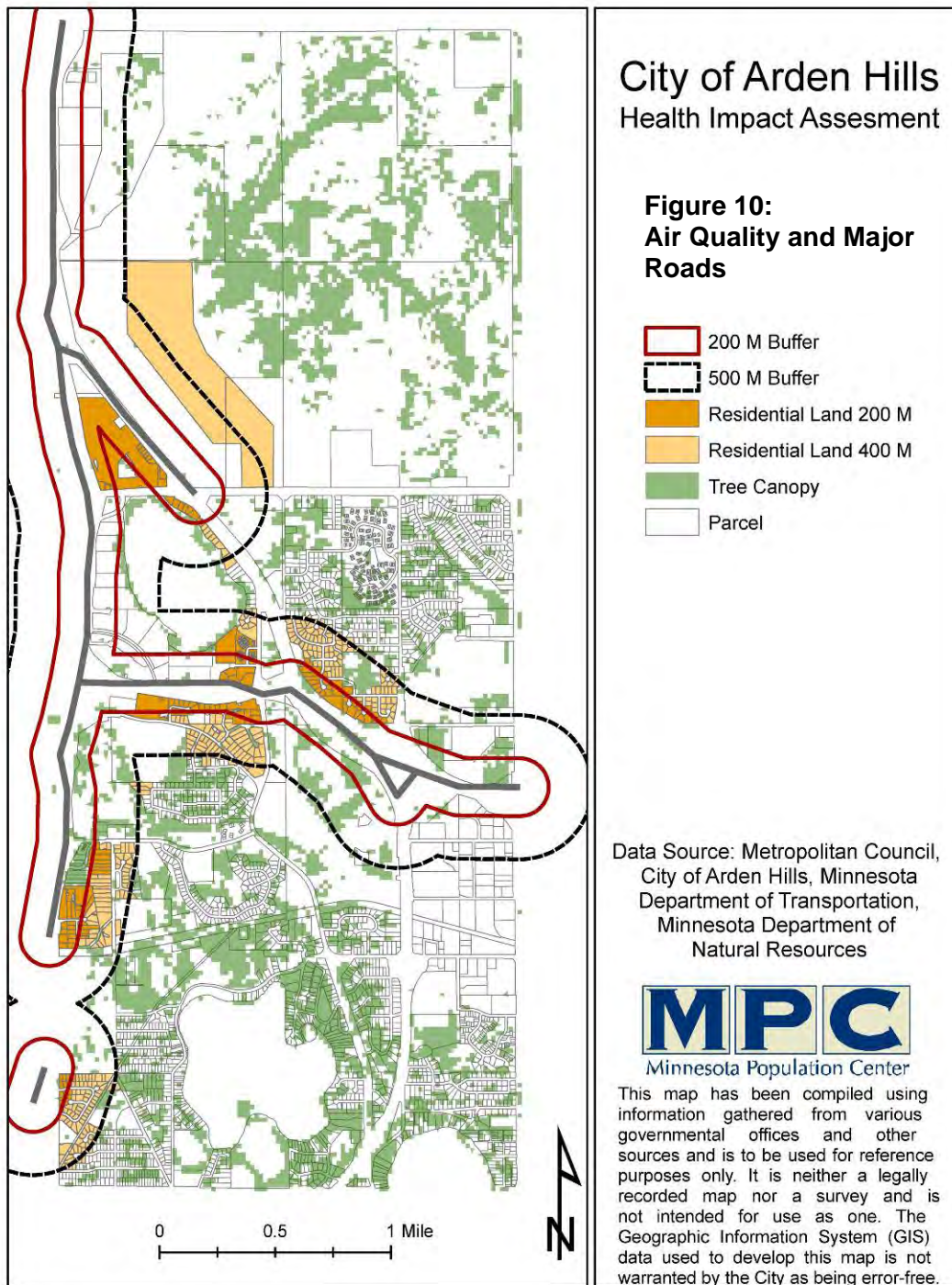
On average, the no build alternative reveals negative impacts across three dimensions, albeit minor. and unknown or non-applicable impacts on other dimensions.



## Threshold Analysis Maps

The following maps are based on the Design for Health Threshold Analysis guide available at <http://www.designforhealth.net/resources/hiathresholdanalysis.html>. These do not constitute a full threshold analysis but provide some useful background information. Sources of thresholds are based on analyses summarized in Key Questions papers at <http://www.designforhealth.net/resources/researchsummaries.html>



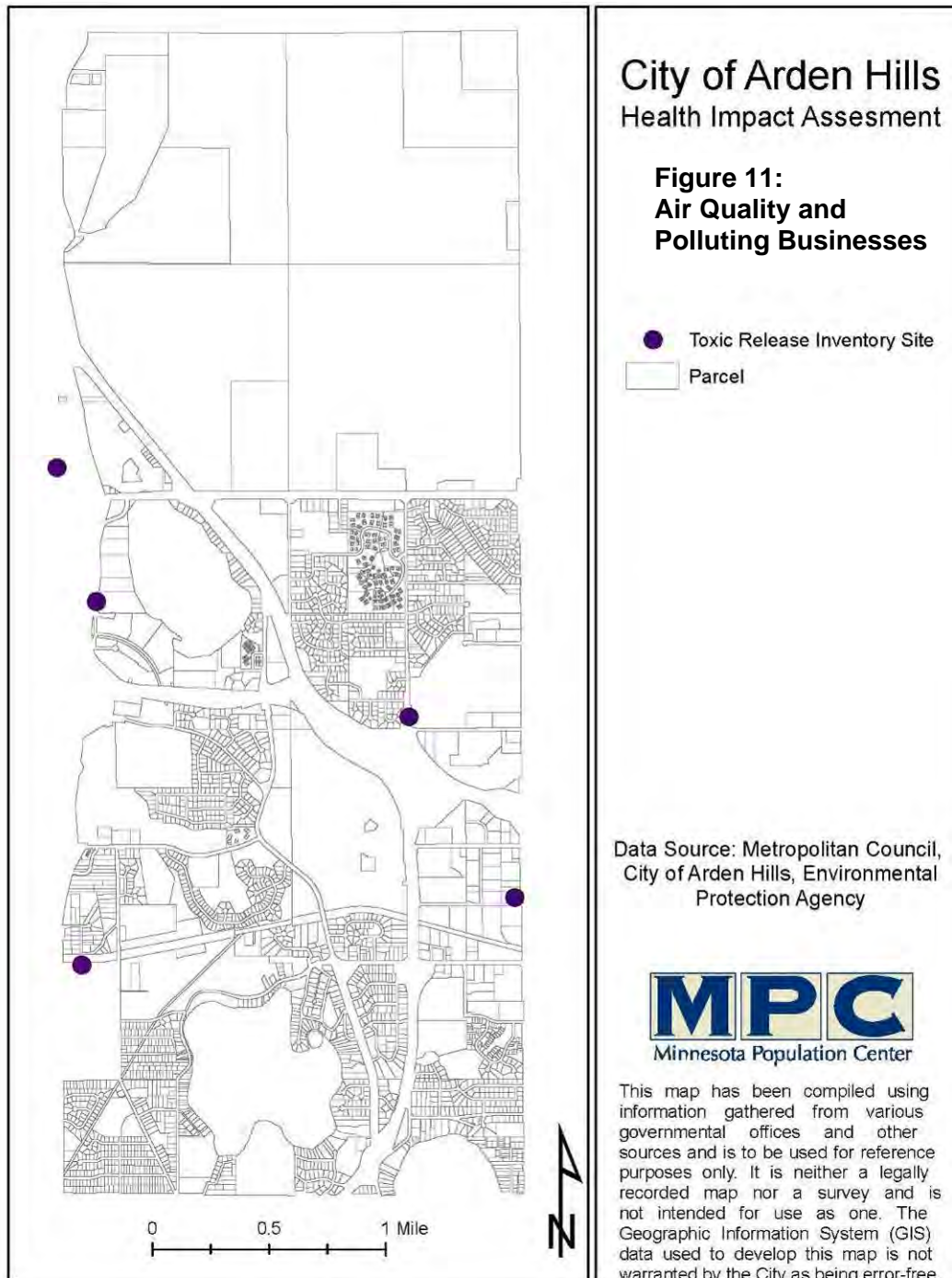


**Rationale:** Studies show decreasing particulates, respiratory diseases and premature births as distance from major roads increases. Residential areas, schools and playgrounds are key environments for sensitive populations.

**Requirements:** Residential areas, schools, day care facilities, playgrounds and sports fields should be more than 200 m (656 ft) from a major road.

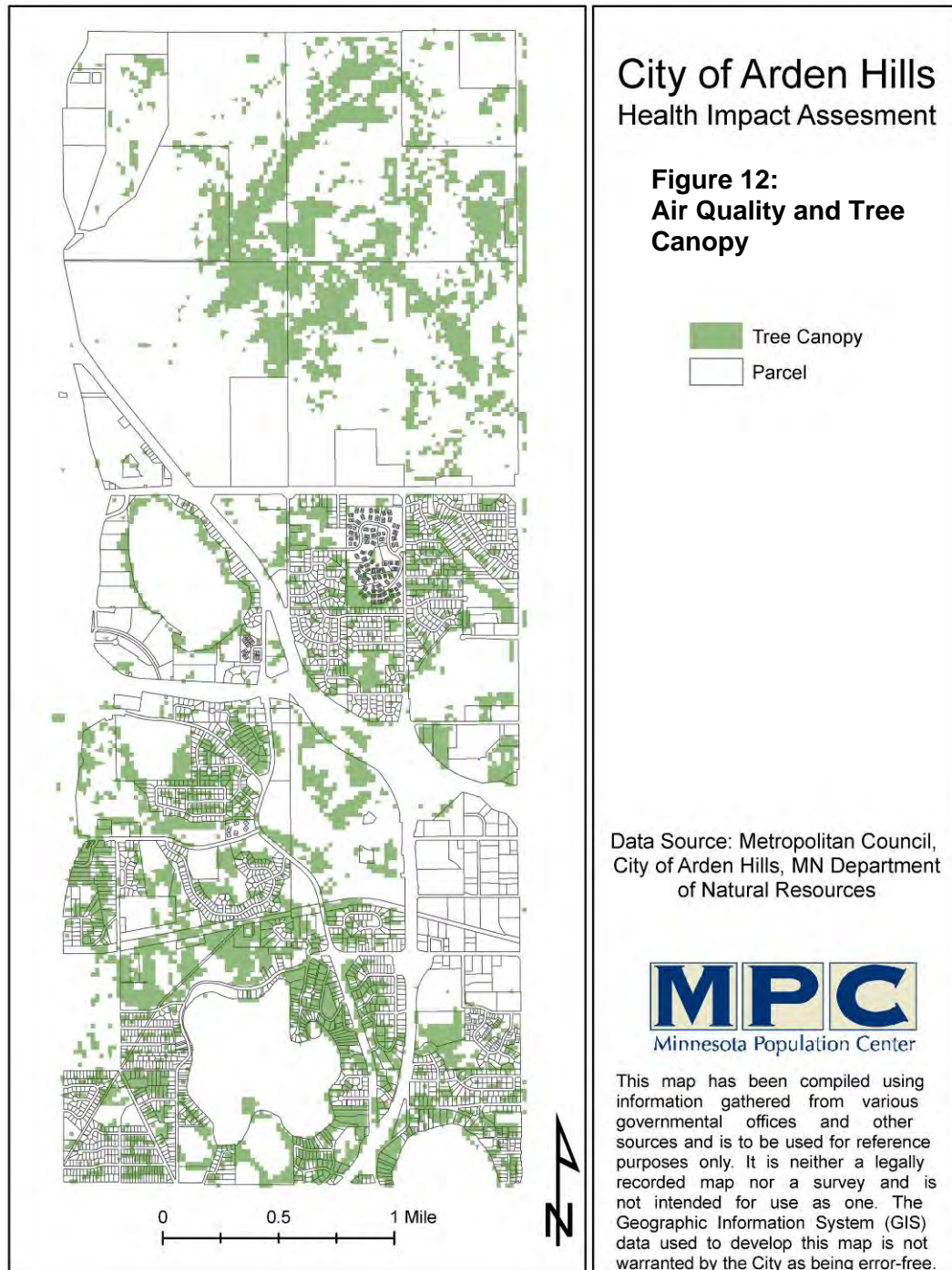
**Definitions:** A major road is defined as having an average annual daily traffic (AADT) > 40,000, a freeway or a road with six or more lanes. Uses occupied by children include schools, day-care facilities, playgrounds, and sports fields.





**Rationale:** Certain businesses contribute disproportionately to air-quality problems.

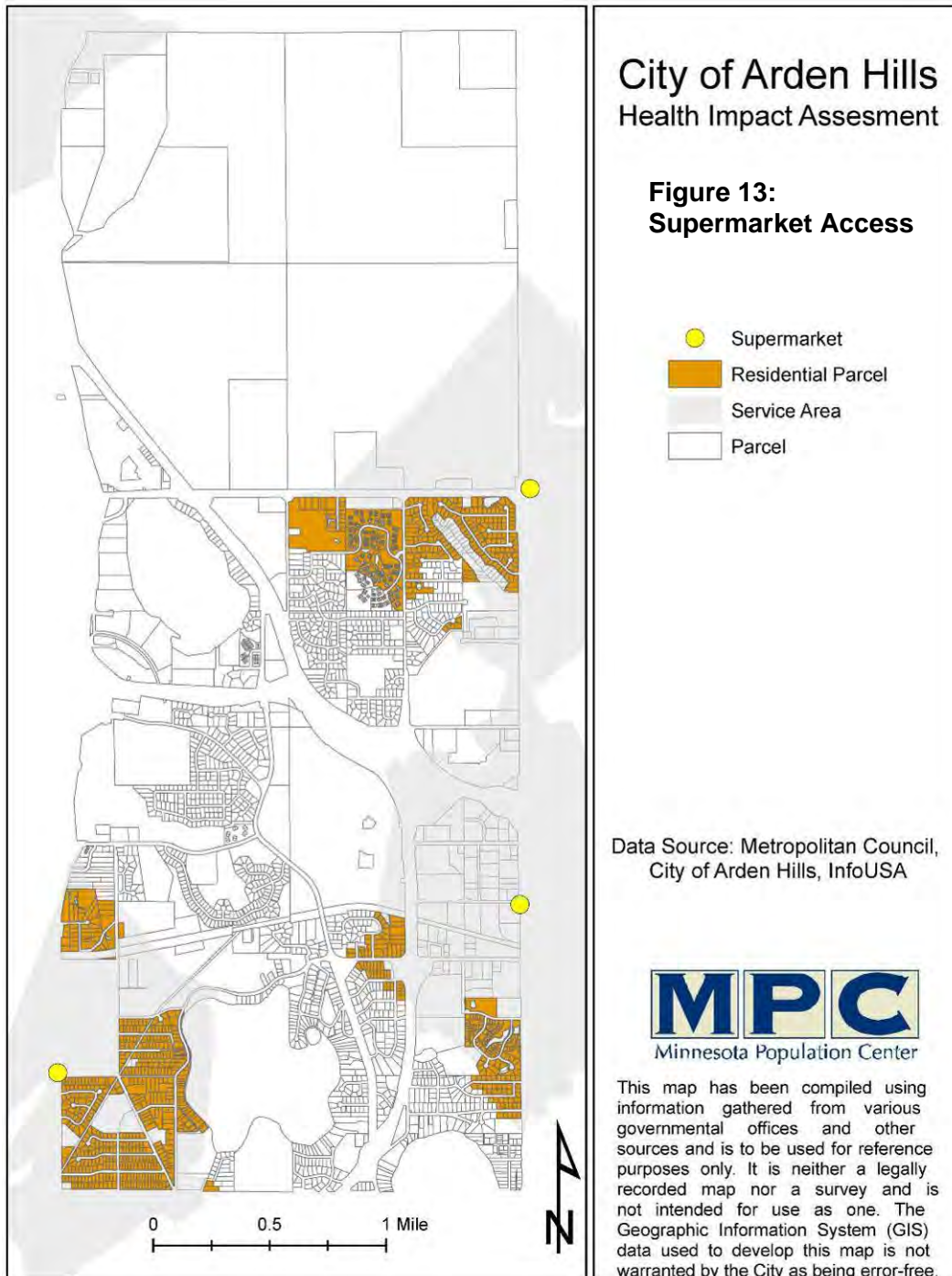
**Requirements:** Non-residential uses need to be non-polluting or have adequate air pollution reduction technologies. **Definitions:** Certain businesses that disproportionately contribute pollutants (e.g., certain dry cleaners, automotive paint shops, manufacturing plants).



**Rationale:** There is some evidence that well designed plantings can reduce air pollutants, specifically by helping remove particulates. The ability of plants to improve air quality, however, depends on plant species, pollutants, wind, climatic factors, etc., and the topic needs more research.

**Requirements:** Tree canopy should be provided. In this case we set a threshold of 50%.

**Definitions:** Canopy refers to the horizontal extension of a tree's branches in all directions from its trunk, while canopy coverage is the combined density of canopy provided by multiple trees over a geographic area.

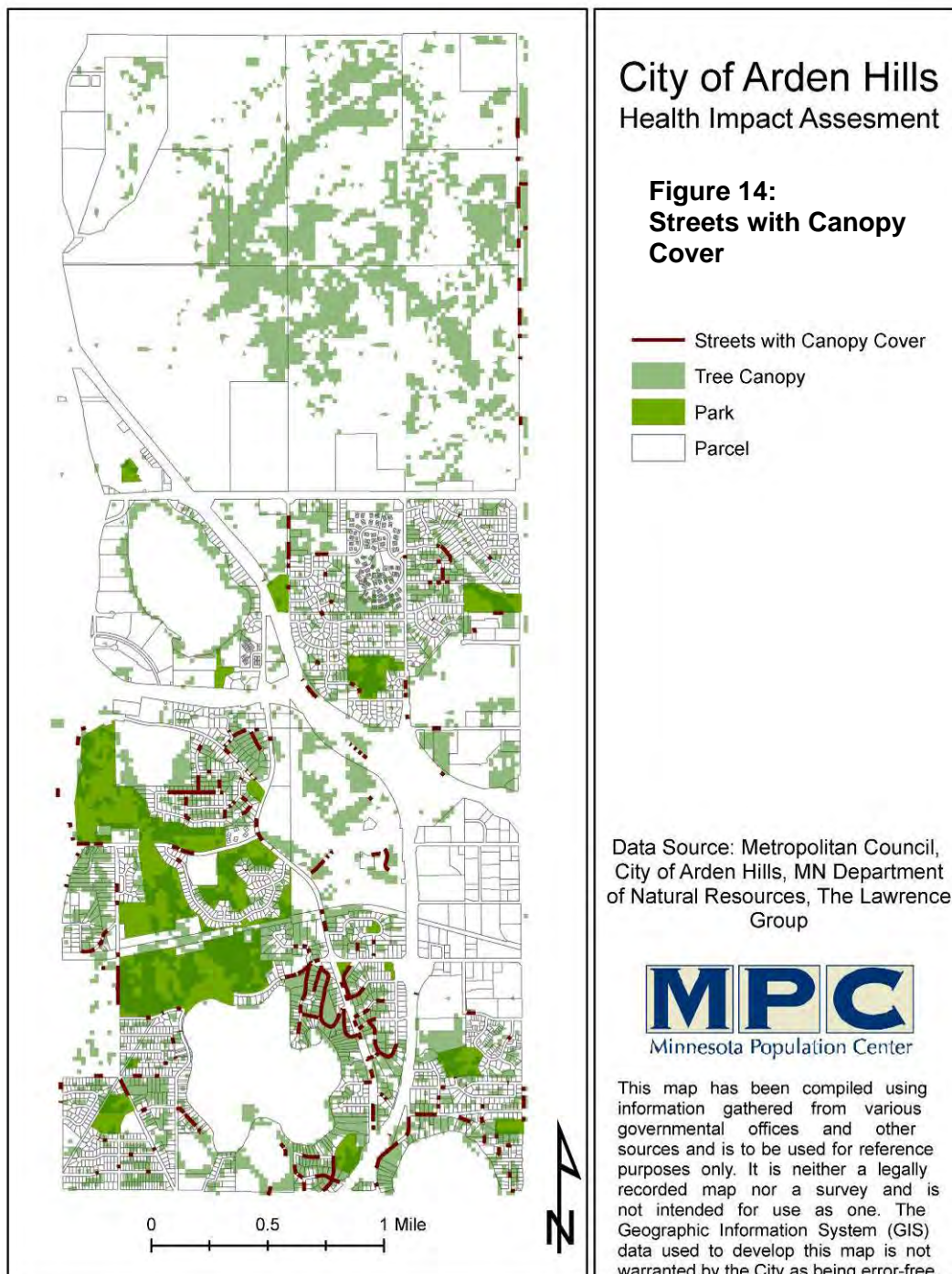


**Rationale:** Studies show distances to supermarkets have the clearest effects on health. We also assume that fruit and vegetable stores would have similar benefits.

**Requirements:** Supermarkets or fruit and vegetable stores within 1600 m (1 mile) of all residential areas.

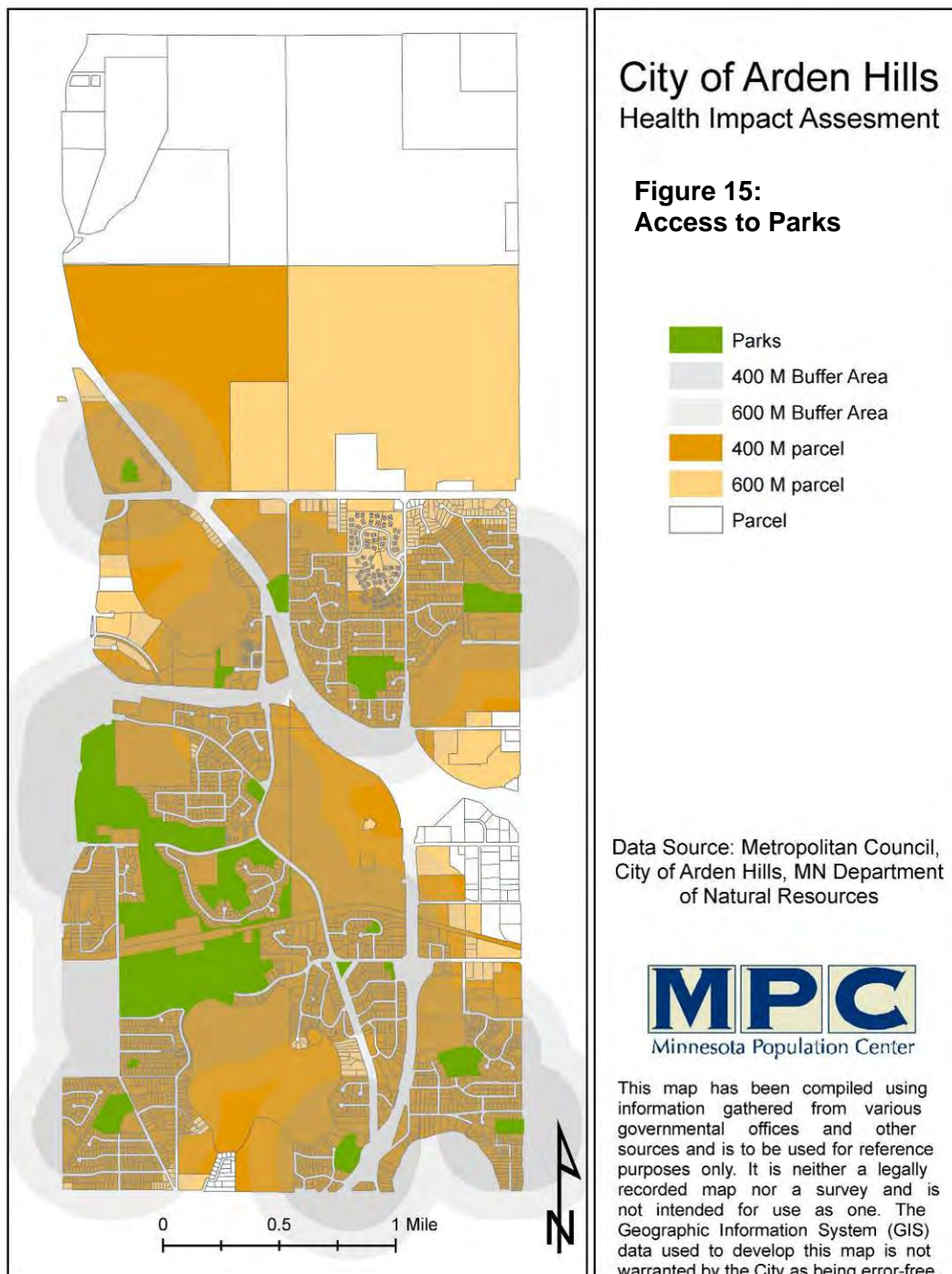
**Definitions:** A supermarket or fruit and vegetable store is a farmer's market or an establishment with a NAICS code of 445110 or 455230.





**Rationale:** Having access to views of green space serves to reduce stress and improve mental health.

**Requirements:** 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.

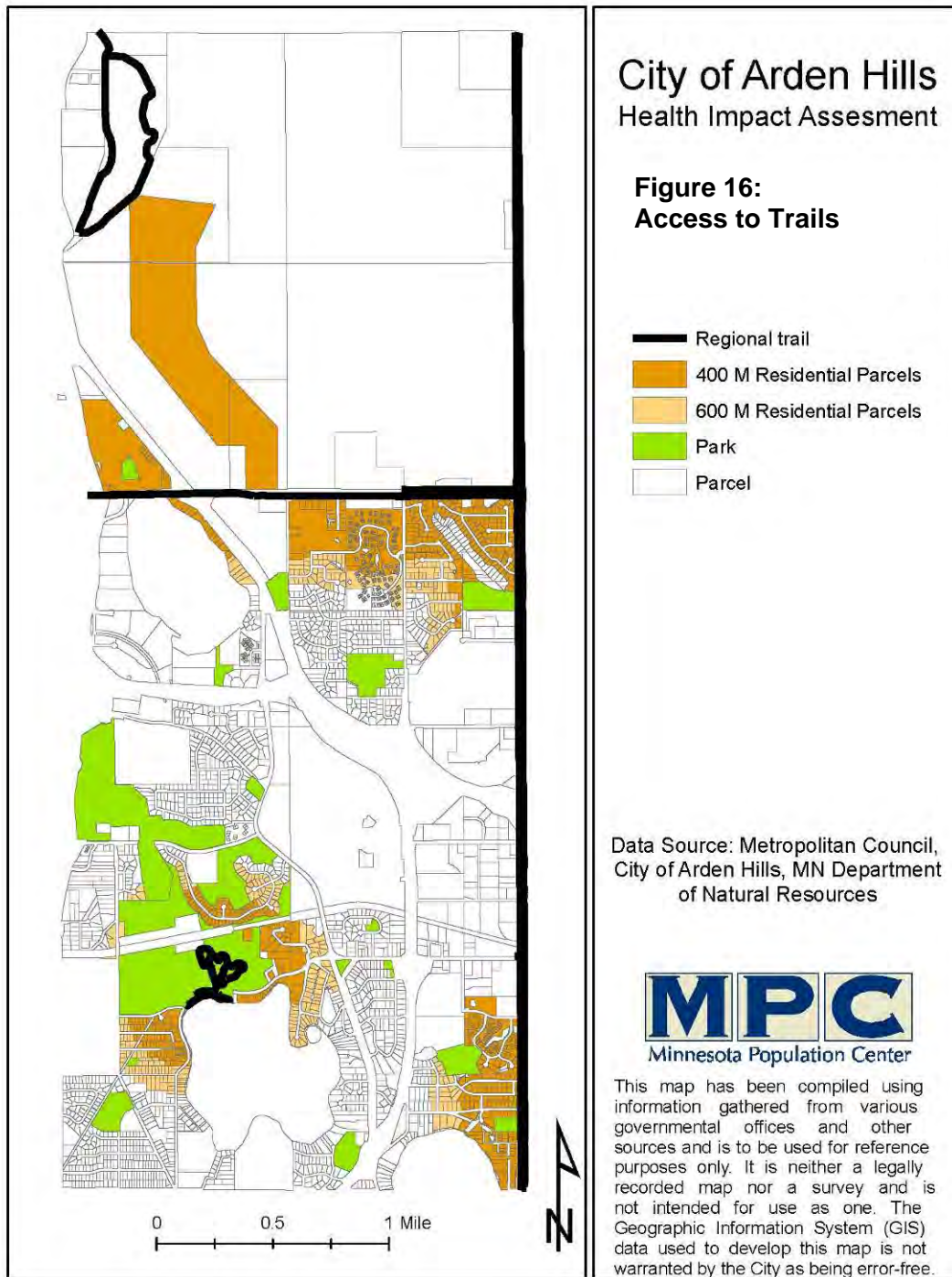


**Rationale:** Different people have different ways of being physically active and a variety of environments support such activities.

**Requirements:** Proportion of residential areas located less than 400 m (1/4 mile; 1312 ft) – 600 m (1968 ft) of a neighborhood park or open space.

**Definitions:** Neighborhood parks and open space areas should be publicly accessible and can facilitate active recreation (e.g. walking, cycling, organized games).

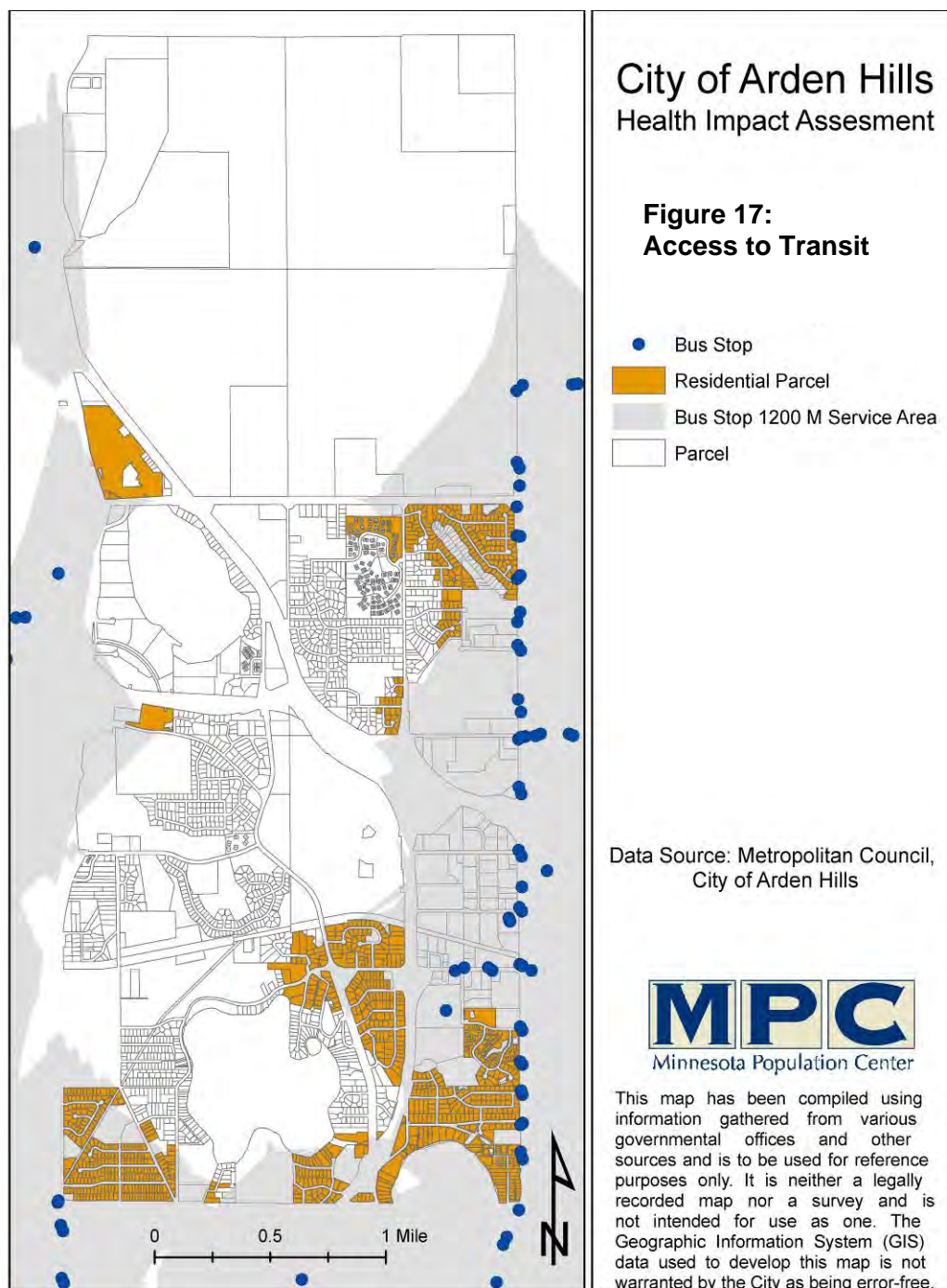




**Rationale:** Different people have different ways of being physically active and a variety of environments support such activities.

**Requirements:** Off-street trail system within 600 m (1968 ft).\*

**Definitions:** 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.



**Rationale:** On average, people are willing to walk up to 1200 m (three-quarters of a mile) to access a transit stop.

**Requirements:** All residential or employment areas are located within 1200 m distance of a transit stop with hourly service.

**Definitions:** 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



## Appendix: Housing Market Demand

From: Maxfield Research, Inc. *Housing Market Analysis and Demand Estimates for the TCAAP Site in Arden Hills, Minnesota*. Prepared for The City of Arden Hills. Arden Hills, Minnesota. January 2008.

TABLE 34 SUMMARY OF HOUSING DEMAND ON THE TCAAP SITE* 2008 to 2020			
	Purchase Price/ Monthly Rent Range**	No. of Units	Pct. of Total
<b>Owner-Occupied Housing</b>			
Single-Family, Move-up	\$325,000 - \$525,000	525 - 535	65%
Single-Family, Executive	\$525,000+	285 - 290	35%
<b>Total</b>		<b>810 - 825</b>	<b>100%</b>
Townhome, Entry-Level	\$225,000 - \$275,000	395 - 405	71%
Townhome, Upper-End	\$275,000+	165 - 175	29%
<b>Total</b>		<b>560 - 580</b>	<b>100%</b>
Condominium***		95 - 105	100%
<b>General Occupancy Rental Housing</b>			
Market Rate Apartments	\$950/1BR - \$1,400/2BR	325 - 335	80%
Affordable Apartments	\$675/1BR - \$820/2BR	80 - 85	20%
<b>Total</b>		<b>405 - 420</b>	<b>100%</b>
<b>Senior Housing</b>			
Adult Rental	\$950/1BR - \$1,250/2BR	105 - 115	21%
Adult Ownership	\$160,000+/1BR, \$225,000+2BR	155 - 165	31%
Congregate	\$1,500+/Mo.	130 - 140	26%
Assisted Living	\$2,700+/Mo.	60 - 70	12%
Memory Care	\$3,800+/Mo.	50 - 60	10%
<b>Total</b>		<b>500 - 550</b>	<b>100%</b>
<b>Total Units</b>		<b>2,370 - 2,480</b>	
* Figures shown are the total number of units that could be supported on the TCAAP Site, not the recommended number. Our recommendations are presented later in this section.			
** Prices/Rents are quoted in 2008 dollars.			
*** Demand for condominiums will come in a later phase - closer to 2020.			
Source: Maxfield Research Inc.			

## References

- <sup>1</sup> City of Arden Hills. Arden Hills 2030 Comprehensive Plan. Approved September 2009.  
[www.ci.arden-hills.mn.us/compplan](http://www.ci.arden-hills.mn.us/compplan)
- <sup>2</sup> City of Arden Hills. "The Planning Process-Public Input Important." *TCAAP Bulletin*. Issue 1, November 2002. <http://www.ci.arden-hills.mn.us/vertical/Sites/%7B376A25A1-53F5-4768-BB37-F5FF4BC3A716%7D/uploads/%7B38A0DDB6-AEB1-4631-AFF0-1B996AF785CE%7D.PDF>
- <sup>3</sup> City of Arden Hills. Framework Vision. [http://www.ci.arden-hills.mn.us/index.asp?Type=B\\_BASIC&SEC={2779F066-74CF-422B-98C3-F7592A69DCF9}&DE={78B49399-7433-4DCE-9D60-C3811A10AB21}](http://www.ci.arden-hills.mn.us/index.asp?Type=B_BASIC&SEC={2779F066-74CF-422B-98C3-F7592A69DCF9}&DE={78B49399-7433-4DCE-9D60-C3811A10AB21})
- <sup>4</sup> City of Arden Hills. Twin Cities Army Ammunition Plant. [http://www.ci.arden-hills.mn.us/index.asp?Type=B\\_BASIC&SEC=%7B38DB759C-28F6-4022-AF72-49CF49908A08%7D](http://www.ci.arden-hills.mn.us/index.asp?Type=B_BASIC&SEC=%7B38DB759C-28F6-4022-AF72-49CF49908A08%7D)
- <sup>5</sup> Baca, Maria Elena. "TCAAP site to get health workover." *Star Tribune*, February 28, 2010.  
<http://www.startribune.com/local/north/85746702.html>
- <sup>6</sup> City of Arden Hills. Resolution Adopting Arden Hills TCAAP Reuse Guidelines, Resolution No. 2009-018. June 29, 2009. <http://www.ci.arden-hills.mn.us/vertical/Sites/%7B376A25A1-53F5-4768-BB37-F5FF4BC3A716%7D/uploads/%7BA3A3B107-A645-4712-B791-1D98C96E32D6%7D.PDF>
- <sup>7</sup> Garlock, Kate. "TCAAP, buyer beware." *Bulletin-News*, November 25, 2009.  
<http://www.bulletin-news.com/main.asp?SectionID=60&SubSectionID=128&ArticleID=5167> (accessed March 12, 2010).
- <sup>8</sup> Garlock, Kate. "County Board lukewarm on making TCAAP park land." *East Side Review*, November 8, 2009.  
<http://www.eastsidereviewnews.com/main.asp?SectionID=64&SubSectionID=284&ArticleID=3934>
- <sup>9</sup> Minnesota Department of Administration 2010. Children's Report Card. <http://server.admin.state.mn.us/children/indicator.html?Id=1076&G=30&CI=26>
- <sup>10</sup> City of Arden Hills. Memo to Planning Commission re: TCAAP Planning Process and Zoning Regulations. March 3, 2010.