

# Northside STEAM Safe Routes to School Sidewalk Gap Project

**Date:** Thursday, October 4, 2018

**Time:** 6:30 p.m. – 8:00 p.m.

**Location:** Multi-Purpose Room at the Ann Arbor STEAM at Northside School, 912 Barton Dr, Ann Arbor

**Attendees:** Jane Allen, Project Manager  
Cynthia Redinger, Transportation Engineer  
Liz Margolis, Executive Director of Student and School Safety, AAPS  
Carlene Colvin-Garcia, Safe Routes to School (SRTS) Committee Co-Coordinator  
Colleen Synk, SRTS Operations Coordinator, Michigan Fitness Foundation  
Anne Bannister, City of Ann Arbor Council member  
Sumi Kailasapathy, City of Ann Arbor Council member  
Northside STEAM SRTS Special Assessment District residents and property owners

## Summary

Note: The following is not a direct transcript of the meeting discussion. This summary has been developed from notes taken during the meeting and emails from residents; questions are paraphrased. Questions from residents are marked with a 'Q,' answers/responses from Staff are marked with an 'A.' Where clarifications or responses have been added after the meeting, these are denoted as "post-meeting notes." Comments from residents are also captured at the end of this document.

## Questions and Answers:

**Q:** Why were no additional connections to Northside STEAM made, such as a drop-off circle?

**A:** *Traffic ordinances did not allow for adding an additional drop off and pick up loop off the back of the school on Pontiac Trail. AAPS did design a loop in the original renovation plan but it was not allowed due to turn radius and how near this loop would be to the Pontiac Trail/Barton Dr. Intersection.*

**A:** *Post meeting notes: The SRTS is a program designed to get students to school through active transportation – even if only for a small portion. (E.g. parking remotely and walking the rest of the way in.)*

**Q:** Clarify mobilization and overall costs of the project. The assessment costs are not equitable to all property owners across multiple Special Assessment Sidewalk Projects.

**A:** *Mobilization is a pay item required by MDOT for federally funded projects, which covers the cost for the contractor to move their equipment on and off the site. It is generally 10% of the construction cost. A percentage of this, based on the assessable costs (related to new sidewalk only) to total construction cost ratio is included in the assessable costs. Previous projects used federal Surface Transportation Program (STP) funding which can cover 80% of construction. The SRTS Grant is capped at \$400,000.*

# Northside STEAM Safe Routes to School Sidewalk Gap Project

**A:** *Post meeting notes: MDOT defines Mobilization as:*

*150.01. Description. This work consists of preparatory work and operations including, but not limited to, the following:*

*A. The movement of personnel, equipment, supplies, and incidentals to the project site;*

*B. The establishment of the Contractor's offices, buildings, and other facilities to support work on the project including associated job site posters;*

*C. Other work and operations the Contractor must perform;*

*D. Expenses incurred, before beginning work on pay items at the project site; and*

*E. Pre-construction costs, exclusive of bidding costs, that are necessary direct costs to the project rather than directly attributable to other pay items under the contract.*

**Q:** What was the real number of Traver St. residents who participated in the SRTS analysis?

**A:** *Post Meeting Notes: The Local Planning Team included the following people, none of which are recorded as property owners on Traver St.*

*Joan Fitzgibbon, School Principal, A2 STEAM*

*Ed Broom, School Vice-Principal, A2 STEAM*

*Cynthia Redinger, Transportation Engineer, City of Ann Arbor*

*Aimee Bednar, A2 STEAM Parent Volunteer*

*Jeni Gaul, A2 STEAM Parent Volunteer*

*Ann Putvin-Berger, A2 STEAM Parent Volunteer*

*John Beeson, SRTS Bike & Walk to School Planner*

*Carlene Colvin-Garcia, A2 STEAM SRTS Co-Coordinator*

*Nicole Chardoul, A2 STEAM SRTS Co-Coordinator*

*Dani Parker, PTSO President*

*Officer Jamie Adkins, Ann Arbor Police Department*

*Officer Scott Zeleny, Ann Arbor Police Department*

*Sergeant Bill Clock, Ann Arbor Police Department*

**Q:** What type of grant is this?

**A:** *Post Meeting Notes: This is a TAP grant (Transportation Alternatives Program). Michigan has maintained the Safe Routes to School (SRTS) program by setting aside a pro-rata portion of the TAP funds for SRTS projects.*

**A:** *Post meeting notes: **Safe Routes to School (SRTS)** is a program to make it safe, convenient, and fun for children, including those with disabilities, to bicycle and walk to school. When routes are safe, walking or biking to and from school is an easy way to get the regular physical activity children need for good health. Safe Routes to School initiatives also help ease traffic jams and air pollution, unite neighborhoods, and contribute to students' readiness to learn in school.*

# Northside STEAM Safe Routes to School Sidewalk Gap Project

**Q:** What is the school traffic vs. neighborhood traffic on Traver St.?

**A:** *Post Meeting Notes: Northside STEAM is part of the neighborhood, so there is no way to distinguish between school traffic and neighborhood traffic.*

**Q:** What are the impacts of having reduced parking at the school?

**A:** *Post Meeting Note: Vehicles cannot park at the school lots to drop-off and pick-up students, instead they are encouraged park on nearby streets that have legal parking (Taylor, Peach, Pear, John A Woods, Chandler, Amhurst, Indianola, Traver, and David are listed on their brochure) and at designated drop-off areas (Northside Community Church and Bethel A. M. E.)*

**Q:** Can we have Traffic Calming on Traver St.?

**A:** *Although the minimum conditions were not met to qualify for the Traffic Calming Program on past applications, residents can always reapply. See [a2gov.org/trafficcalming](http://a2gov.org/trafficcalming)*

**Q:** Please provide updated student information.

**A:** *Post Meeting Note: In the fall of 2016, 305 students were surveyed about their travel experience to and from school, and 17% (52 students) walked. The SRTS Committee is working at collecting more recent data. However, the goal of the SRTS program is to increase the number of students arriving to school by non-motorized means.*

**Q:** Why install sidewalks when there are fewer local students?

**A:** *Post Meeting Note: The City of Ann Arbor is always looking to improve safety and provide improved non-motorized access. Further, only 7% of Northside STEAM's population live outside the Ann Arbor district boundaries. (There are 49 School of Choice students out of 630 total student enrollment.)*

**Q:** How was Brookside chosen for this project, as west of Delafield on Brookside there are no sidewalks?

**A:** *The results of the SRTS process were evaluated by the SRTS committee and priority locations were selected.*

**Q:** Is it possible to reopen SRTS process? (A resident's Proposal for Reopening the Sidewalks Planning Process is attached.)

**A:** *Post Meeting Note: If the process is started over at this time, the Grant would be forfeited. The City would then have to reapply for the grant, and doing so at this stage would affect the City's ability and competitiveness for applying for Safe Routes to School (SRTS) funding as well as Michigan Transportation Alternatives Program (TAP) funding in the future. However, the process of modifying the grant could be pursued. The process to modifying a grant after it's been given a conditional commitment (CC) can be lengthy and depends on how extensively the scope of work would be changed. If an adjustment, either addition or subtraction, is requested the City would need justification as to why it is being removed. Further, documentation of support of these changes by the city, school(s), and neighborhood would need to be provided. Finally, it would have to be demonstrated that there would not be a negative impact on the connectivity of the routes for SRTS by the adjustments being made. As these locations were selected specifically to increase connectivity, this would likely be a difficult bar to clear.*

# Northside STEAM Safe Routes to School Sidewalk Gap Project

**Q:** Around 3 pm during school hours parents often pick up their kids right on the corner of Traver and Barton, which is already heavily traveled that time of day for the beginning of rush hour, creating a chaotic and dangerous traffic situation for both drivers and school kids alike. I feel putting in a sidewalk may make that situation even worse. In fact I think it would make more sense to restrict the pick up spot to the Taylor/Peach road areas to avoid the dangers of extra traffic and children near a busy intersection.

**A:** *Post Meeting Note: City of Ann Arbor Engineering and Police Department staff have been on-site to watch drop-off and pick-up patterns around Northside on many occasions. Staff have observed parents reasonably using the parking areas on Traver to access the school property. These uses of public roads are permitted as long as motorists are not encroaching upon No Parking areas. Installation of sidewalk, providing dedicated pedestrian space on Traver, will provide a safer environment for all transportation users.*

**Q:** To make Traver a safer road I would suggest you put up two speedbumps between Barton and John A. Woods.

**A:** *Post Meeting Note: The installation of traffic calming devices is governed by the City's Traffic Calming Program, [www.a2gov.org/trafficcalming](http://www.a2gov.org/trafficcalming). Please reach out to the program manager, Cynthia Redinger, 734-794-6410 x. 43632, with any questions you may have.*

**Q:** Another suggestion is to make Traver and John A. Woods a 3 way stop.

**A:** *Post Meeting Note: The installation of a multiway STOP control is regulated by the Michigan Manual of Uniform Traffic Control Devices. Multi-way STOP control regulates right-of-way at an intersection and must meet minimum volume warrants. The intersection would have to meet these requirements for a change in traffic control.*

**Q:** Can I install my own sidewalk if it is cheaper?

**A:** *Post Meeting Note: If you wanted to install the sidewalk on your own prior to the Assessment Roll being established (March 2019 as described in the presentation notes on [a2gov.org/steam](http://a2gov.org/steam)) to save money, if possible, you can.*

*There would be requirements:*

- *Apply for Right-of-way (ROW) Permit*
- *Submit Engineered Drawings of proposed sidewalk (you would have to meet the offset and elevation at the adjacent parcel lines as designed by the City, which could be provided)*
- *ADA compliant design and driveway approach requirements*
- *ROW permit would require city inspection during construction*
- *Materials would have to be tested for subbase compaction and concrete strength*

# Northside STEAM Safe Routes to School Sidewalk Gap Project

## Comments:

**C:** It has come to my attention that the city is considering putting in a sidewalk on the one block stretch of Traver between Barton and John A. Woods roads and that the project would likely entail the removal of many beautiful old trees. These trees give my neighborhood beautiful shade, homes for wildlife, and just make it a pretty and relaxing place to live. I implore you and the city council members to oppose this idea which seems short sighted and costly to me.

**Response:** *The design is being conducted in such a way as to prioritize the preservation of trees to the greatest extent possible.*

**C:** We live at 701 Brookside Dr and the proposed sidewalk will cross our front yard. We first learned of this project at the June 2018 meeting. We feel totally blindsided by this project. I want you to know we are not in favor of this project for many reasons. We are seniors and have lived in this house 51 years. This will be a significant unplanned for expense for us. We do not understand how our block was chosen for this project as we do not see children walking to school on Brookside Dr.

**Response:** *It is highly likely that the reason they don't see students walking on Brookside is because there are not sidewalks and it is not a safe walk zone.*

**C:** After attending the meeting, I have concluded this project is too expensive for the benefits gained. There are not enough students walking or riding bikes to school to justify the vast expenses and damage to the environment. One million dollars should not be spent for a handful of students walking to school. The real issue seems to be the traffic around the school and the unsafe issues surrounding drop offs and pick ups at school. The expenditures to individual property owners and long time residents is excessive. Many of these individuals are older and on fixed incomes. The project is a fine example of government over kill to solve a nonexistent problem. More sidewalk will not increase the number of students walking to school or improve school safety around campus.

**C:** If a sidewalk must be put in I suggest you extend it from the curb on the northwest side and make the side a non parking zone. Only so many people park on the road anyway and a thinner road might also slow rushed motorists down. I also think tearing down beautiful old trees that make our neighborhood such a charming area, is a huge mistake that wont solve enough of the issues and will cost taxpayers and property owners money that need not be spent.

**C:** Parking is not allowed at intersections.

**C:** There was little community involvement from the SRTS team. The whole neighborhood needs to be involved.

**C:** The safety of the Barton & Starwick intersection is a concern.

**Response:** *There is a Proposed Intersection Improvement Project at Barton & Starwick to take place after the SRTS Project. Updated Signage has also been installed recently.*

**C:** Something which was alluded to at the meeting on Oct 4th, but needs to be made as a more pressing point for the city council is that there is no need for new sidewalks to allow children to safely walk or bike to the Northside school. There are existing sidewalks on Peach (via John A Woods) which provides

## Northside STEAM Safe Routes to School Sidewalk Gap Project

safe access to school for any student traveling from the south toward school. There is no need for a student to use Traver Rd northeast of John A Woods. Parents dropping their children off can use Taylor and the back parking area to securely see their children off without the hazards of the busy morning commuter intersection at Barton and Traver. The state and city could repurpose funds to other projects and save taxpayers money. All that is required is a dedicated campaign by the school district to inform parents of this route and the advantages to them and their children.

**C:** The property owners of the 1600 block of Traver Road have asked that the planning process for the safety of school children attending the STEAM school be reopened to address the safety issue broadly (including environmental impacts, alternative approaches to road safety, and equity issues related to assessments) and that it include members of the 1600 block of Traver Rd as well as other members of the neighborhood affected by the present plan.

***Response:*** See question above asking if the SRTS process can be reopened.

Notes have been inserted by City staff to correct erroneous information or to clarify statements.

## PROPOSAL FOR REOPENING THE SIDEWALKS PLANNING PROCESS TO INCLUDE MEMBERS OF THE 1600 BLOCK OF TRAVER ROAD AND TO ADDRESS OF IMPACTS AND ALTERNATIVES TO THE PROPOSED SIDEWALKS

October 3, 2018

From the homeowners on the 1600 block of Traver Road

### 1. *Introduction*

Traver Road is a particularly beautiful part of Ann Arbor with many mature trees, tall shrubs and bushes, and rolling hills. Several of the properties border Willow Pond which adds to the richness and variety of fauna and flora in the area: small mammals, birds, amphibians (toads and frogs), reptiles (snakes); and of course many insects including butterflies and bees. These features are highly valued by the people who live here. The removal of trees, shrubs and other woody vegetation and the replacement of soil with hard surfaces would have a major negative impact on the landscape, environment, and privacy of the properties on the 1600 block. Such impacts run directly counter to the *City of Ann Arbor Climate Action Plan of 2012*. The regrading of land could cause increased erosion and runoff which would affect the Huron River Watershed.

The burden on property owners on the 1600 block resulting from the removal of trees, shrubs, and other woody vegetation, the negative impacts on the environment and the landscape, the loss of privacy, the actual and potential impacts of changed drainage, and the costs of homeowner assessments vastly outweighs the benefit in pedestrian safety, which can be effectively achieved in many other ways. For these reasons we oppose the installation of sidewalks on the easements for our properties.

We also propose that the planning process is reopened to include members of the Northside neighborhood including several members of the 1600 block of Traver Road to address these impacts.

### 2. *History*

The current sidewalk plan was originally proposed by the Northside STEAM Safe Routes to School Committee which focused on filling sidewalk gaps to improve safety for children attending the school. This plan is seen as a pilot for other Ann Arbor neighborhoods close to schools. It is likely to become a prototype for

further sidewalk plans around the City. Consequently, it is important for the city to address all dimensions of the security of school children, including not only immediate issues of road safety but also security in a general sense that includes environmental protection against global warming. Such a planning process for the STEAM school should be seen as relevant to planning for neighborhoods around schools across Ann Arbor.

This initial formulation of the project did not fully include the homeowners whose properties would be impacted by the project. Some homeowners were aware of an initial invitation to participate in the safe routes to school study and of the public forum on the project in June 2018 but many others were unaware until after the June meeting in August or even later when they received notification of the extent of planning for the 1600 block of Traver Road. and were informed that the City would seek permits for the entry of heavy machinery onto their properties and beyond the right of way.

The possibility of Temporary Grading Permits were discussed at the June 26, 2018 Administrative Hearing

Planning for the Northside of Ann Arbor has focused almost exclusively on installing sidewalks on both sides of neighboring streets and roads. It has ignored environmental and social dimensions of security, including the very strong emphasis of the City of Ann Arbor 2010 Climate Change Action Plan on preserving the woody vegetation growing in urban areas. Indeed, in many respects the sidewalk plan is in conflict with the principles established by the Climate Action Plan. [See below and Appendix 1]

Both sides of Traver St, John A Woods to Barton were in the Near-Term Opportunities of the 2013 update of the Non-Motorized Plan

While we certainly understand that the safety of children attending the STEAM school is important, other aspects of the security of our City—both the day-to-day safety of the roads and the long-term environmental dimensions of security—are relevant to protecting children, now and in the future.

Safe Routes to School Committee initiated this project

### 3. Policy Making: The Need to Reopen the Planning Process

To date, the decision process initiated by the City Systems Planning Department has not involved many of the owners of affected properties. As noted above, many home owners only learned of the City's plans in August and September. Also, site plans have only been made available on request. It was only at the beginning of August that property owners were first informed that high-impact, heavy machinery would be needed to enter their properties, outside the right of way.

Every affected property owner was invited to the Administrative Hearing held June 26, 2018. The Presentation is available at [www.a2gov.org/STEAM](http://www.a2gov.org/STEAM). Temporary Grading Permits were discussed. Every property owner also received a site plan by mail as the design progressed.

The general problem with the process to date is the strong focus on sidewalks to the exclusion of attention to other dimensions of road safety and the impacts on the urban environment of which the 1600 block is an integral part.

We therefore propose that the planning process be reopened and broadened to address road safety, environmental, and equity dimensions and to include members of the Northside community on Traver Road who own properties that are directly affected by the plan.

The City has determined that the benefits to pedestrian safety outweigh the addition of impervious surfaces and an increase of storm water runoff to our storm sewer system.

#### 4. *Environmental Impacts*

The serious environmental impacts of the sidewalk project have scarcely been addressed to date. The sidewalks as planned for the 1600 block of Traver Road would remove, or radically weaken the root systems of large mature trees— notably sugar maples and black walnuts many of which are over 70 years old. It would also remove stands of mature smaller trees and shrubs such as old stands of lilacs that have also been in place for decades. [It is indicative of the orientation of the current plans that such stands of shrubs are categorized as “brush”.]

Mrs. Wright asked what a line in a drawing meant, and it should have been described as vegetation instead of brush.

In addition, the current plan would remove retaining walls which have maintained current drainage patterns for decades. Their removal has potential for causing increased erosion. The introduction of hard surfaces will increase runoff into drains, causing additional pollution of the Huron River Watershed. There is also real concern for damage to private property through the entry of high-impact heavy machinery during this removal process.

Mrs. Wright's Lilacs and Retaining Wall are not proposed to be removed.

In general, the proposed installation of sidewalks contradicts the City's commitment in its 2012 to protect its urban forest as a major part of its efforts to reduce global warming—the dominant security issue of our time.

We've tried to avoid tree removals by moving around them and relocating the curb.

To quote the report:

“An urban forest includes all the woody vegetation growing in an urban area, including trees, shrubs and vines found along city streets, public parks, and private property. . . .Urban forest play a major role in sequestration [of carbon] . . . One sugar maple tree reduces CO<sub>2</sub> levels by 502 pounds per year.” (p. 141)

Further quotations from the report are provided in Appendix 1.

## 5. *Alternative Approaches to Road Safety*

While sidewalks can add to safety along roads, other approaches can be just as important for achieving the same goals. Safety on the 1600 block of Traver Road can be improved in the following ways:

a) Reduction of speed limits and calming of traffic. Motorists going far over the 25 mph speed, especially down the hill from John Woods Drive to Barton Drive could be slowed in many ways, including: i) by installing stop signs at the intersection of Traver and John Woods; and crossings at this intersection; ii) by a speed bump in the center of the block; iii) better signage warning about children walking to school.

b) Reduction of speed limits on Barton Drive should also be undertaken. This is particularly important because Barton Drive is a connector between M-14 and Plymouth Road. Speeds tend to be well over the limit, which greatly increases the risk to children crossing between the STEAM school and the eastern side of Barton Drive.

c) Expanding parking at convenient, off-site locations (such as the AME Church on John Woods) for parents dropping off and picking up their children from the STEAM school. Use of a part of the park near the school should be explored for this purpose. Inadequate parking at present encourages drivers to park on Traver Road right up to Barton Road, increasing the risk to STEAM students.

## 6. *Equity Issues*

These arise in an especially problematic form whenever new sidewalks are installed on the city easements. Sidewalks are installed in the Public Right-of-Way.

There are significant equity issues associated with the homeowner assessments. Compared to the three most recent sidewalk assessments of \$31/foot, \$31/foot and \$16/foot (please see the appendix for references), the original proposed assessment for this project (\$98/foot) was over three and six times higher. Even the revised assessment for this project (\$48/foot) is over 50% higher than the previous per foot assessments.

The original estimate was \$89/ft which included Pear St. and Apple St. Previous projects used federal Surface Transportation Program (STP) funding which can cover 80% of construction. The SRTS Grant is capped at \$400,000.

Because of the very long frontal length of several of the properties on Traver Road, the total assessments for some of the homeowners will be almost \$10,000, This is three times higher than the highest of the total assessments for any homeowner for the previous three sidewalk projects.

The proposed assessments for this project are just too high for homeowners. Sidewalks are for the greater good of the community and significant portions of their installation costs should not be borne solely by the adjacent homeowners. Recently, the City elected to transfer the costs to maintain sidewalks from the homeowner to the city. The same reasoning should be applied to the sidewalk installation costs, thereby removing the homeowner assessments for installed sidewalks.

Chapter 13 of City Code: The Council shall have power to determine that the whole or any part of the cost of any improvement shall be defrayed by special assessments upon the property especially benefitted, but the determination shall not be made until the preliminary proceedings provided for in section 1:284 shall have been completed.

### 7. Proposals

The options below should be combined with the traffic calming and alternative parking measures proposed in part 5, a) through c).

A. *No Sidewalks*: Address safety issues by other means (see above, part 5) and protect the environment.

There are relatively few children on a single block and precedent for this option has already been set by the agreement between the residents of Apple and Pear Streets and the city.

Elimination of Pear & Apple streets was a compromise to reduce costs between the City and SRTS Committee, not the residents.

B. *Move the curb of the north side of 1600 block in toward the center of the road by 4-5 feet and use this space for a sidewalk.*

This sidewalk would use the existing ~1 foot of curb (some of it currently covered by soil and plants) plus ~4-5 feet of the road). The road at its narrowest is currently 32.5 feet—which provides 8 feet for parking on one side of the road plus 20 feet for two lanes for cars, leaving 5.5 feet for a sidewalk. Such a sidewalk can easily accommodate the small number of children on this block who would need to use it. The “road diet” created in this way can be used as a further measure for traffic calming.

Current plans do involve relocating the curb and utilizing existing parking space for new sidewalks, although this takes place on both sides of the road at different location without removing ALL parking on this block of Traver St. In order to use the SRTS Grant, sidewalks must be installed on both sides of the street.

It has been suggested by one of our Council members that construction of such a sidewalk might be included as part of repairing Traver Road under the Capital Improvement Plan.

*C. Create a multiple-use lane in the 1600 block of Traver Road.* Through the implementation of high visibility paint and a concrete bumper, designate 3-8 feet of the North side of Traver road for pedestrians and bicycles that is separate from motorized vehicle traffic. This would connect to sidewalks on Barton and John Woods that go directly to the school. Parking would then be restricted to only one side of the block.

*D. Create High-Visibility Multi-Use Lanes on Both Sides of the 1600 Block.*

## *8. Conclusions*

The residents of the 1600 block of Traver Road believe that a collaborative solution can be reached to create a safer road for residents, children, and the future of our planet. We strongly encourage the Council and the planning engineers to work with us to assess these alternatives in terms of environmental impact, feasibility, safety, and cost.

Above all, we are dedicated to maintaining the integrity of our properties and their vegetation, while working cooperatively to find a solution that furthers a progressive Ann Arbor with its strong commitment to addressing global warming.

Installing sidewalks offer an alternative to driving. According to the U.S. Environmental Protection Agency, more than half of the air pollution in the nation comes from vehicles, primarily automobiles. And, besides pollution, cars emit greenhouse gas emissions that contribute to global warming.

Sidewalks provide many benefits including safety, mobility, and healthier communities. In addition to reducing walking along roadway pedestrian crashes, sidewalks reduce other pedestrian crashes. Further, by moving pedestrians off the travel lanes, motorist operations are improved.

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FHWA's Guidance Memorandum on Consideration and Implementation of Proven Safety Countermeasures offers the following guidance for the application of sidewalks and shoulders: Accessible sidewalks or pathways should be provided and maintained along both sides of streets and highways in urban areas, particularly near school zones and transit locations, and where there is frequent pedestrian activity.

Sidewalks should be considered the preferred treatment for accommodating pedestrians in urban areas and where frequent pedestrian use is expected.

Appendix I: *Excerpts from the City of Ann Arbor Climate Action Plan*

[https://www.a2gov.org/departments/systems-planning/planning-areas/energy/Documents/CityofAnnArborClimateActionPlan\\_low%20res\\_12\\_17\\_12.pdf](https://www.a2gov.org/departments/systems-planning/planning-areas/energy/Documents/CityofAnnArborClimateActionPlan_low%20res_12_17_12.pdf)

“An urban forest includes all the woody vegetation growing in an urban area, including trees, shrubs and vines found along city streets, public parks, and private property. . . .Urban forest play a major role in sequestration [of carbon] . . . One sugar maple tree reduces CO<sub>2</sub> levels by 502 pounds per year.” (141)

“Ann Arbor’s urban forest provides a wide range of other environmental benefits to the community. Street and park trees minimize the urban heat effect in downtown areas, thereby reducing GHG emissions by minimizing the need for cooling in urban buildings.” (141)

“Urban forests also improve air quality by absorbing pollutants through the pores in the surface of their leaves.” (141)

“Ann Arbor’s public trees intercept 65 million gallons of storm water each year.” (142)