

## For local government (Exhibit A)

### 1. General information \* Required fields

Name of governing body: **City of Ann Arbor, Michigan**

You can create a name for each response. Name of this response: **Ann Arbor**

List communities included in your response:

**City of Ann Arbor**  
**University of Michigan (U-M)**

**Around Ann Arbor are 3 townships & the cities of Ypsilanti, Saline, Dexter, & Chelsea. To ensure fast and efficient deployment, the City & U-M have partnered to deliver a streamlined installation experience. For a broader implementation, the City and U-M are strong and willing supporters of a multiple city or regional effort.**

Contact person:

Name: **Tom Crawford**

Title: **Chief Financial Officer**

Address: **100 North 5th Ave, Ann Arbor**

State: **MI**

ZIP (5 Digit): **48104**

Phone number: **734-794-6511**

Email: [\*\*TCrawford@A2gov.org\*\*](mailto:TCrawford@A2gov.org)

Contact person has authority to provide these answers as the official position of the responding local government? **Yes**

If not, please provide contact information for the local government official who does have such authority:

## 2. Background information about your community

Population (2000 US Census): **114024**

Populated area in square miles: **28** Sq. Miles

Please describe how the population is distributed:

**(2000 US Census) describes the City's population as:**

**Ages 0-5: 5%**

**Ages 5-17: 12%**

**Ages 18-34: 45%**

**Ages 36-64: 30%**

**Ages 65 & over: 8%**

**White: 80%**

**Black: 9%**

**Asian/Pacific Islander: 8%**

**Hispanic: 3%**

**Graduate/Professional Degree:39%**

**Bachelor Degree:30%**

**Associate:4%**

**Some college, no degree:14%**

**High school:9%**

**No degree:4%**

**48% of land is residential, 18% recreational, 11% public**

[http://data.a2gov.org/feeds/GIS/AA%20LandUse/AA\\_LandUse.kmz](http://data.a2gov.org/feeds/GIS/AA%20LandUse/AA_LandUse.kmz)

Median household income (\$ per annum): \* **51434** (2006-2008 US Census ACS est.)

Number of housing units: \* **50606** (49,106 plus University Family Housing (1,500))

Number of single family homes: **20229**

Number of multi-family homes: **8538**

Number of apartment complexes: **BLANK**

Average number of units per apartment complex: **BLANK**

Number of gated communities: **0**

Average number of housing units per gated community: **0**

Approximate percentage of households in entire community with access to broadband Internet service (%): **100**

Approximate percentage of the households in entire community that are currently subscribing to broadband Internet service (%): **89**

Overall description of Terrain:

**The landscape consists of hills & valleys, with the terrain becoming steeper near the Huron River. The elevation ranges from 750 ft. to over 1,000 ft. The west-central and northwestern parts of the city are the highest parts of the city; the lowest parts are along the Huron River and in the southeast. Ann Arbor Municipal Airport with 3,500 feet of runway, has an elevation of 839 ft.**

Percentage of plains (%): **0**

Percentage of rolling hills (%): **98**

Percentage of mountains (%): **0**

Percentage other terrain (%): **2**

*Climate:*

Average annual highest temperature (F):

**58**

Average annual temperature (F):

**49**

Average annual lowest temperature (F):

**40**

Average amount of snowfall per year (inches):

**40**

Average amount of rainfall per year (inches):

**32**

Average amount of hurricane or tornado activity in a year (days):

**0**

Local government:

Form of local government (city, town, county, etc.):

## **City**

Local government rule: Home Rule - Limited Rule - Other:

## **Home Rule**

Source of government decision making (city manager, city council, mayor, etc.):

**Council-Manager form of government. City Council is a policy making board and the Mayor is the presiding member of the City Council. The City Council hires the City Administrator who is the CEO and is responsible for administering all aspects of the City's operating units.**

*Utilities:* Please list the largest utilities and the approximate percentage of the community covered by each provider

Provider Name Coverage (%)

Electric: **Detroit Edison (DTE) 100**

Gas : **MichCon (DTE) 100**

Water: **City of Ann Arbor 100**

Sewer: **City of Ann Arbor 100**

Cable: **Comcast 94**

Phone: **AT&T 85;**

*Local economy mix (if available):*

Source: 2006-08 SEMCOG

Number of high tech jobs: **19016**

Number of manufacturing jobs: **1392**

Number of education services jobs: **18944**

Number of other service sector jobs: **62421**

Colleges and universities (List names and average number of students enrolled at each, if available):

**The University of Michigan is the largest university campus in the world with a \$5.5 billion budget per year and over 31 million square feet of buildings. Based on research volume, with over \$1 billion per year, U-M is generally ranked among the top three research universities in the world. It conducts programs of world-class quality in essentially all academic and professional disciplines, attracting leading scholars and students from around the world. Its 40,000 students and 61,025 faculty and staff, most of whom are residents of Ann Arbor, provide the community with an extraordinary asset for such a high-tech project.**

**Ann Arbor Enrolment**

<b>University of Michigan</b>	<b>39,515</b>
<b>Cleary College</b>	<b>857</b>
<b>Concordia College</b>	<b>896</b>

**Directly adjacent communities:**

**Washtenaw Community College 14,200 (3,800 estimated to live in Ann Arbor)**

**Eastern Michigan University 22,032 (unknown how many live in Ann Arbor)**

Major hospitals/health care facilities (List names):

**Ann Arbor University of Michigan Health System is consistently ranked among nation's best by U.S. News and World Report (14);**

**930 beds, 12,000 staff, 5,568,090 square feet**

**Specialties: Cancer, cardiovascular, depression, diabetes, organ transplant, burn/trauma.**

**Includes C.S. Mott Children's Hospital which ranks among nation's best in nine pediatric specialties.**

**Hospitals and Health Centers include Mott's Children's Hospital, Kellogg Eye Center, Women's Hospital, and health clinics located in the cities of: Ypsilanti, Saline, Livonia, Howell, Brighton, Canton, Chelsea and Dexter.**

**VA Ann Arbor Healthcare System Center is a major tertiary care center with 98 acute beds, 40 nursing home beds, 1600 staff, and 800 volunteers.**

**Directly adjacent communities:**

**St. Joseph Mercy Hospital is a 537-bed teaching hospital located on a 340 acre campus in Ypsilanti, Michigan.**

Current providers of high speed Internet service (Residential) (Company; DSL, Cable modem, wireless, fiber, etc.):

**Comcast - Cable modem, DOCSIS**

**AT&T - EVDO, DSL, U-Verse**

**Dish Networks - Satellite**

**Direct TV Networks - Satellite**

**123net - Wireless PTP**

**EarthLink - DSL**

**Sprint - EVDO**

**Verizon - EVDO**

Other significant features of your community that could be relevant for this project:

**Significant Corporate Presence:**

- + Domino's (headquarters)
- + Borders Group (headquarters)
- + Thomson Reuters
- + Google
- + DTE Energy

**Extraordinary knowledge assets which could utilize an ultra high speed network**

- + concert halls and theaters attracting leading performers from around the world
- + one of the nation's leading medical centers
  
- + The UM itself is the largest research university in the country (over \$1 billion in research grants) and is a global leader known for advancing all aspects of life: health, law and public policy, the arts and humanities, science and technology. It is complemented geographically by a regional university (Eastern Michigan University), and a technology driven community college (Washtenaw Community College) which are just outside the City's borders.

**Existing Regional & National Connectivity**

- + The UM network provides for the diverse needs of researchers, students in residence halls and a hospital. The backbone runs at 10Gbps and will be upgraded to 100Gbps. This network is built using a single mode fiber network that extends to all 225 buildings and to Chicago. This infrastructure has substantial available capacity and could easily be used to connect to Google data centers on the fiber path.
  
- + Internet2 (headquartered in Ann Arbor - <http://www.internet2.edu/about/>) is a nonprofit advanced networking consortium comprising more than 200 U.S. universities in cooperation with 70 leading corporations, 45 government agencies, laboratories and other institutions of higher learning as well as over 50 international partner organizations. In addition to providing substantial network capacity, Internet2 engages its community in the development of important new technology including middleware, security, network research and performance measurement capabilities which are critical to the progress of the Internet.

**Culture of utilizing new technology to develop applications that have changed the world**

- + 1960s - development of time-sharing (with IBM)
- + 1970s - collaboration technology (with NSF)
- + 1980s - the Internet (with IBM and MCI) & digital photography (Photoshop and Adobe)
- + 1990s - next generation global networks (with Internet2)
- + 2000s - providing search access to the knowledge of the world through digitizing the contents of the world's great libraries (with Google)

**The presence of thousands of students, faculty and entrepreneurs has created a highly innovative culture.**

### **3. Collaborating on a Google fiber trial**

In this section, we ask you to share how your community would work with Google to enable us to proceed quickly and effectively.

Are you, the local government, willing to appoint an individual to serve as a single point of contact (I)? \* Yes/No

**YES**

(I) A single point of contact to coordinate the local government and community's interactions with Google, to obtain as promptly as possible whatever information Google may require, and to resolve any problems that may arise as quickly and effectively as possible.

If so, please describe the responsibilities and authority that this individual will have:

**Tom Crawford, Chief Financial Officer**

**Responsibilities include all financial related activities, procurement, information technology, risk management, and project champion for the Google Fiber for Communities initiative.**

Describe any current or planned programs in your community to accelerate and expand adoption and use of broadband Internet access:

**The Ann Arbor community has 100% physical access to broadband internet primarily through cable and telephone DSL.**

**The City's award winning district library has free and open access to computers with broadband access and offers many classes in which members can be exposed to and learn how to use computers. The City's Senior Center offers free internet access and the City and County contribute old computing equipment to a local organization to be refurbished and re-used by local individuals who are unable to purchase new equipment.**

**Since 2004, the City has been a strong supporter of a county-wide effort to bring ubiquitous wireless coverage with a minimal level of free access. This initiative, dubbed Wireless Washtenaw, was pursued to bridge the digital divide which primarily exists in the western part of the county, to promote economic development, and to improve the residents' lives.**

Additional reasons you believe that Google should select your community for this project:

### **Existing relationship with community**

**Google and the City of Ann Arbor already have a relationship from when Google's Adwords office was opened here four years ago. The relationship has grown and deepened over the past four years and is indicative of what Google can expect if Ann Arbor is chosen for its fiber deployment.**

### **Friendly business environment**

**The state and regional economic development organizations (MEDC and SPARK respectively), the University of Michigan, and the City all work together to provide collaborative opportunities, incentives and a spirit of cooperation in recognition of mutual desires/wants. The City's response when Google Adwords expressed interest in Ann Arbor was fast, creative and flexible.**

### **Ideal control model for experiment**

**The City is somewhat isolated geographically but is immediately surrounded by areas of diverse residential density and economic levels. Within ten miles the area goes from 10Gbps access at the University of Michigan to virtually no internet access in the rural western communities. However, the community is also connected with 10 Gbps or more access to communities and institutions around Michigan and to the internet in Chicago. This “hub and spoke” infrastructure could allow innovations in Ann Arbor to be developed, tested and leveraged in other communities.**

### **Culture of Experimentation**

**Ann Arbor is further distinguished by its cultural willingness to experiment. From its liberal societal values based in the 1960s culture to its modern day interest in alternative energy, environmentalism and life sciences, Ann Arbor remains a thought leader in many areas. A corporate example of this involves the dominant local newspaper. In 2009, the Ann Arbor News discontinued operations as a traditional daily newspaper and reinvented itself as a totally online, web 2.0 news organization called AnnArbor.com.**

### **Business environment to support innovation (examples)**

- + Advanced Manufacturing - home to Picometrix, the leading supplier of 10, 40, 100 Gbps optical receivers used in the optical network equipment that enable high speed broadband deployment and terahertz instrumentation.**
- + Networking – Barracuda networks, Arbor Networks, Greenview Data**
- + Application development – business incubators, accelerator, wet labs, Tech Arb, UMHS with multiple clinics, Altarum Institute, Health Media, Menlo Innovations, & many more.**

**Choosing Ann Arbor is choosing leadership, talent and opportunity.**

Please provide a web link to any additional information you wish us to consider

[www.a2fiber.com](http://www.a2fiber.com)

Submissions using Google Maps or YouTube are encouraged:

Google is interested in working with communities in which it can rapidly install fiber-optic facilities and offer ultrahigh speed Internet access services. Google respects the legitimate responsibility of local governments to preserve and protect community assets, minimize disruption, ensure the safety of the public, address aesthetic concerns and property values, and obtain reasonable compensation for the use of public assets.

#### **4. Your community's support**

Have you performed any outreach, study or analysis regarding support in your community for this type of trial?

**Yes**

Describe how you ascertained or plan to ascertain the level of community support for this project (e.g., surveys, public hearings, meetings with community groups, etc.)

**To inform the community, an awareness program called A2 Fiber ([a2fiber.com](http://a2fiber.com)) was conducted. Citizens were urged to show their support by completing a Google community nomination form, becoming a Facebook Fan, following on twitter, or by submitting a video.**

**Traditional tactics were used such as advertising, media relations, email marketing, flyers, bookmarks at the library, meeting presentations (Rotary, Chamber of Commerce, associations, etc.) and a public hearing.**

**Additionally, community influencers personally reached out to their respective constituents (business, technology, research, students, etc.).**

**Compared with other City awareness and educational campaigns, the groundswell and community support has been phenomenal. Should Ann Arbor be chosen these campaign efforts will continue. Please visit [www.A2fiber.com](http://www.A2fiber.com) to learn about our results.**

Please describe your community's level of support for this project.

**As demonstrated in the previous answers, Ann Arbor citizens have shown overwhelming support for Google's Fiber in the Community project. Based on the Ann Arbor MSA population statistics, more than 10 percent of the Ann Arbor population has gone on record showing their support.**

Please briefly summarize any additional comments or suggestions you would like to make to Google on behalf of your community:

**Ann Arbor is one of the most diverse communities on the planet. Whether it's video conferencing for education or medical purposes, optics, aerospace, micro and nano technology for materials and communication, social studies, auto research, as well as every aspect of IT, we communicate with people around the world every day. Give us bandwidth. We'll fill it up.” - Skip Simms, Ann Arbor resident**

**This is just one among hundreds of pleas from Ann Arbor citizens asking Google to choose Ann Arbor. Collectively residents, students, researchers and businesses identified 10 reasons why Google should select Ann Arbor as the No. 1 broadband network fiber test location. Please review this short video to hear from community members who share why they think Ann Arbor is the perfect innovative incubator for this effort.**

**<http://www.youtube.com/a2fiber#p/a/u/1/rP8aMoKoA8o>**

## 5. Facilities and resources

Deployment of a community-wide fiber network will require Google to work closely with local government entities and other organizations. Google seeks to identify resources owned by the community that may assist in the rapid, smooth deployment of a residential fiber optic network. In this section, we ask you to share information about particular facilities and assets within the community that may be used or affected as part of such a facilities deployment, particularly those owned by the local government.

Please respond as completely and accurately as possible.

### ***Pole Attachments:***

*Please identify the entities, including units of the local government, that own or control utility poles in your community:*

**Entity Name: DTE Energy**

Number of poles owned or controlled: **11894**

Annual rate per pole for pole attachment:

- by telecommunications carriers (\$): **BLANK** negotiated (see attached [link])
- by cable system operators (\$) **4**
- Internet access providers (\$): **BLANK**

**Entity Name: AT&T**

Number of poles owned or controlled: **3325**

Annual rate per pole for pole attachment:

- by telecommunications carriers (\$): **BLANK**
- by cable system operators (\$) **4**
- Internet access providers (\$): **BLANK**

**Entity Name: City of Ann Arbor**

Number of poles owned or controlled: **1910**

Annual rate per pole for pole attachment:

- by telecommunications carriers (\$): **BLANK**

- by cable system operators (\$) **BLANK**

- Internet access providers (\$): **BLANK**

*If the local government will make its own poles available for attachments by Google, please estimate the number of days to complete the following steps, assuming full cooperation from Google:*

Negotiation of a master pole attachment agreement: **30 Days**

Issuance of permits for individual attachments: **0** There is no requirement for individual permits other than what's negotiated in the master agreement

Developing specifications for make-ready work: **5**

Completing make ready work: **10**

*If a unit of your local government has access to poles owned or controlled by third parties that it could make available to Google, please provide the following information:*

Number of poles: **1114.**

Entity or entities that own or control the poles: **University of Michigan**

Rate that you would charge Google (\$) per pole per year: **BLANK**

Describe any restrictions on your right to make such poles available to Google:

**No restrictions from U of M or DTE. Ann Arbor has a letter of commitment from DTE regarding access to and attachment rates for 75% of the poles.**

<http://www.a2fiber.com/DTEletterofsupport.pdf>

Please identify any state or local laws, ordinances, rules or other legal measures that govern access and rates for attachment:

**There are two different standards in Michigan depending on whether a company is licensed as a telecommunications company (including ISPs) or a cable company. A telecommunications company would need to already own poles, negotiate to install new poles, or negotiate attachment rates with existing pole owners. Detroit Edison (who owns most of the poles) is a strong supporter of Ann Arbor being chosen for this project and has made a number of favorable commitments as demonstrated in the attached letter.**

**<http://www.a2fiber.com/DTEletterofsupport.pdf>**

**Cable companies operate under the State's standard franchise agreement and pay a flat rate of \$3.74/pole/year**

Please provide contact information for any entities named above:

**City of Ann Arbor  
Tom Crawford  
Chief Financial Officer  
[TCrawford@A2Gov.org](mailto:TCrawford@A2Gov.org)  
(734) 794-6511**

**University of Michigan  
Andy Palms  
Director Communications Systems  
[Palms@umich.edu](mailto:Palms@umich.edu)  
(734) 764-7128**

**DTE  
Paul M.Ganz  
Regional Relations  
[GanzP@DTEEnergy.com](mailto:GanzP@DTEEnergy.com)  
(734) 332-8145**

**Conduits:**

*Please identify the entities, including units of local government, that own or control utility conduits in your community:*

Entity Name: **City of Ann Arbor**

Linear feet of conduit owned or controlled: **165000**

Annual rate per foot for conduit use (\$):

- by telecommunications carriers (\$): **BLANK**

- by cable system operators (\$) **BLANK**

- Internet access providers (\$): **BLANK**

Entity Name: **DTE**

Linear feet of conduit owned or controlled:

Annual rate per foot for conduit use (\$):**BLANK**

- by telecommunications carriers (\$): **BLANK**

- by cable system operators (\$): **3**

- Internet access providers (\$): **BLANK**

*If the local government will make its own conduits available for use by Google, please estimate the number of days to complete the following steps, assuming full cooperation from Google:*

Negotiation of a master conduit agreement: **7**

Issuance of permits: **0**

*If a unit of your local government has access to conduit owned or controlled by third parties that it could make available to Google, please provide the following information:*

Linear feet: **89760**

Entity or entities that own or control the conduit:

**University of Michigan**

**U of M also has 47,500 ft. of tunnels to which the City has access**

Rate that you would charge Google (\$) per linear foot per year: **BLANK**

Describe any restrictions on your right to make such conduit available to Google:

**The City and U of M have a reciprocal use agreement for sharing conduit and tunnels.**

**In addition to the underground conduit mentioned above, the City owns 184,800 linear feet of aerial fiber.**

**The City has areas which could be utilized for staging during construction.**

**The Ann Arbor Public School is willing to work with Google to utilize TSRs in the elementary schools.**

Please identify local laws, ordinances, rules or other legal measures that govern access rights and rates for conduit use:

**Because the City's and University's private networks run through much of the existing conduit, both organizations require notification, as-builts after construction and sometimes on-site presence when access is needed.**

Please provide contact information for any entity named above:

**City of Ann Arbor**

**Tom Crawford**

**Chief Financial Officer - Project Lead on Google Fiber Initiative**

**[TCrawford@A2Gov.org](mailto:TCrawford@A2Gov.org)**

**(734) 794-6511**

University of Michigan  
Andy Palms  
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[Palms@umich.edu](mailto:Palms@umich.edu)  
(734) 764-7128

DTE  
Paul M.Ganz  
Regional Relations  
[GanzP@DTEEnergy.com](mailto:GanzP@DTEEnergy.com)  
(734) 332-8145

Public Rights of Way:

Does your local government directly control and administer the use of all public rights of way within its jurisdiction?

**Yes.**

Describe any other entities that control and administer the use of the public rights of way in your community:

**In 2002, the State of Michigan enacted Act 48, the Metropolitan Extension Telecommunication Rights-of-Way Oversight (METRO) Authority, which established standard application forms, timelines, agreements and fees statewide.**

*With respect to your process for managing access to public rights-of-way, please estimate the number of days-to complete the following- steps, assuming cooperation from Google:*

Negotiation, approval, and issuance of a master right-of-way agreement: **5**

Issuance of construction permits: **5**

Post-construction inspections and approvals: **2**

*Please indicate the amount or method of calculating all fees and charges for use of the public rights of-way, including the following (if applicable):*

Application fees: **500**

Linear foot (or other) usage fees:

**Telecom: .05/ft/yr governed by the METRO Act and paid to the METRO Authority if telecom/ISP**

**Cable Provider: .01/ft/yr plus PEG fee of 7% of revenue**

Inspection fees: **0**

Other fees or charges: **0**

***Community sensitivities and policies:***

Please describe any historical districts or other culturally or environmentally sensitive areas:

**Ann Arbor historic district map**

**([http://data.a2gov.org/feeds/GIS/AA%20Historic%20Districts/AA\\_Historic\\_Districts.kmz](http://data.a2gov.org/feeds/GIS/AA%20Historic%20Districts/AA_Historic_Districts.kmz))**

**Historic districts exist in the City of Ann Arbor, however most telecommunication wires and equipment can be administratively approved by staff. The historic district staff person will be part of the City's special response team for the Google project.**

Please describe your under-grounding plans and policies, if any:

**New development in the City may require underground utilities and cables see Chapter 50 of the City's municipal code <http://tinyurl.com/v8oksph>**

**The City included funding Fiber deployments as specifically authorized by the Local Development Financing Authority. In response to Google's Fiber to the Communities initiative the LDFA has pledged \$250k to support such effort**

Please identify unique ordinances, rules, policy statements, and other legal measures specific to your community that Google would have to comply in developing a fiber project:

**In a new run of three or more new poles, building appeals board approval is required.**

**Field cabinets can be installed in the right-of-way if they are less than 25 cubic ft. in size, over 25 cubic feet additional approvals and notice to property owners is required.**

**Installations must comply with the City's Public Works Department Standard Specifications.**

## 6. Construction

*Has your community worked with, studied or evaluated the following types of construction methods for fiber to the home networks:*

Aerial **YES**

Trenching **YES**

Boring **YES**

Micro-trenching **YES**

Plow **YES**

Rock Saw **YES**

In speaking with existing fiber installation companies in the area, they've indicated experience with all of the above. The City itself has primarily utilized aerial, trenching, and boring.

*Check approved methods of construction for your community: \**

Aerial **YES**

Trenching **YES**

Boring **YES**

Micro-trenching **YES**

Plow **YES**

Rock Saw **YES**

None/Other

Are there other construction methods that are approved for use in construction of fiber to the home or other telecommunications networks in your community? If so, please list them below:

**Reuse of existing infrastructure is encouraged.**

## **7. Regulatory issues**

Please describe the local regulatory obligations, if any, that would apply to Google if this project went forward in your community:\*

**There is an existing tax credit available for broadband providers:**

**[http://www.dleg.state.mi.us/mpsc/comm/broadband/mcl\\_207\\_13b.pdf](http://www.dleg.state.mi.us/mpsc/comm/broadband/mcl_207_13b.pdf) and there is incentive to share right of way infrastructure.**

**Because Google has an existing Michigan Economic Growth Authority incentive in place related to its Ann Arbor office, new local employees may qualify for the tax incentive to Google.**

Please describe local business obligations and taxes/fees, if any, that would apply to Google if this project went forward in your community:

**Property taxes would be due on personal and real property located in the city.**